Geotechnical Engineering Report
Roadway and Retaining Walls
State Project 63-H137
Hartford, Connecticut

Vol. II

Prepared for:

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APPENDIX 3
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Appendix 3

Boring Logs

R-Series

RW-101-Series through RW-108-Series
RW-110-Series through RW-112-Series

B-01-Series, B-02-Series, B-03-Series

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-01
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-14-08	Route No.:		Northing:	839315.3
Finish Date:	10-14-08	Bridge No.:		Easting:	1014912.0
				Surface Elevation:	62.1

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	9 14 7 6	24	7			Medium dense, fine to coarse SAND, little(+) Silt, some(-) fine Gravel, (moist)	60
						Varved Clay		
	S-2	4 4 5 5	24	14			Stiff, gray Clayey SILT, trace fine Sand, (moist)	
5	S-3	2 3 4 5	24	12			Medium, tan to gray (1/8" to 3/16" varves) Clayey SILT	55
10	S-4	4 6 8 9	24	24			Stiff, brown to tan (1/8" to 3/16" varves) SILT and CLAY, trace fine Sand	50
15	S-5	2 2 2 3	24	24			Soft, light gray (varves 1/4" to 3/8") CLAY and SILT, trace fine Sand	45
							END OF BORING 17ft	
20								40
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-02
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-7-08	Route No.:		Northing:	839368.1
Finish Date:	10-7-08	Bridge No.:		Easting:	1015015.8
				Surface Elevation:	62.1

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: Fall:	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill	Medium dense, Top 6": gray brown fine to coarse SAND, some fine to coarse Gravel, little Silt Bottom 8": tan to gray SILT, little fine Sand, (moist)	60
	S-1	9 13 4 7	24	14				
	S-2	6 7 13 14	24	5			Medium dense, tan to gray SILT, little to fine to coarse Sand, (moist)	
5						Varved Clay		
	S-3	6 8 11 26	24	19			Very stiff, gray to tan SILT and CLAY (varves 1/8" thick), trace fine Sand	55
	S-4	16 18 20 20	24	13			Hard, gray to tan SILT and CLAY (varves 1/8" thick), trace fine Sand	
10								
	S-5	4 5 7 10	24	24			Stiff, gray to tan SILT and CLAY (varves 1/8" thick), trace fine Sand	50
15								
	S-6	4 5 5 8	24	24			Stiff, gray to tan CLAY and SILT (varves 1/8"), trace fine Sand	
							END OF BORING 17ft	45
20								40
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-03
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-14-08	Route No.:		Northing:	839462.8
Finish Date:	10-14-08	Bridge No.:		Easting:	1015126.8
				Surface Elevation:	66.0

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		65
	S-1	6 6 7 8	24	12			Medium dense, brown fine to coarse SAND, little Silt, little(-) fine to coarse Gravel (moist)	
	S-2	10 12 7 6	24	10			Medium dense, red brown fine to coarse SAND, little fine to coarse Gravel, trace Silt	
5								
	S-3	5 4 3 2	24	12			Medium dense, red brown fine to coarse SAND, little fine Gravel, little Silt	60
	S-4	3 5 8 12	24	14			Top 6": Medium dense, red brown fine to coarse SAND, little fine Gravel, little Silt Bottom 8": red brown, fine SAND, trace Silt	
10								
	S-5	8 8 7 9	24	10			Medium dense, red brown fine to coarse SAND, little fine Gravel, trace Silt	55
15								
	S-6	5 4 4 3	24	24			Top 12": Loose, red brown fine SAND, little Silt, little fine Gravel Bottom 12": Medium, gray to tan (1/16" to 1/10" varves) SILT and CLAY, trace red fine Sand	50
						Varved Clay		
							END OF BORING 17ft	
20								45
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-04	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-2-08	Route No.:	Northing: 839525.8	
Finish Date: 10-2-08	Bridge No.:	Easting: 1015228.2	
		Surface Elevation: 69.8	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	5 6 8 8	24	12		Fill	Medium dense, dark gray to light brown fine SAND, little Silt, trace Brick	
	S-2	5 6 4 3	24	12			Loose, brown fine to coarse SAND, some Silt, trace fine Gravel	
5								65
	S-3	3 3 3 6	24	12			Loose, brown fine to coarse SAND and SILT	
	S-4	6 8 11 15	24	14			Medium dense, gray to brown fine to coarse SAND and SILT, trace Asphalt fragments	
10								60
	S-5	2 2 3 4	24	8		Varved Clay	Medium, dark gray SILT and CLAY, trace Organics	
	S-6	4 4 7 11	24	18			Stiff, gray CLAY and SILT, trace Organics	
15								55
	S-7	6 10 13 18	24	15			Very stiff, gray CLAY and SILT, trace Organic fibers	
							END OF BORING 17ft	
20								50
25								45

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 7 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-05	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-2-08	Route No.:	Northing: 839602.1	
Finish Date: 10-2-08	Bridge No.:	Easting: 1015269.3	
		Surface Elevation: 68.7	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @14' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	3 6 6 8	24	12		Fill	Medium dense, fine to coarse SAND, some Silt, trace fine to coarse Gravel, trace Brick, trace Concrete	
	S-2	12 6 4 4	24	12			Medium dense, fine to medium SAND, some Silt, little fine to coarse Gravel, trace Brick	65
5	S-3	2 3 4 5	24	13			Top 4": Loose dark brown fine SAND and SILT, trace fine Gravel, trace Cinder Bottom 9": Loose, brown fine SAND and SILT, trace organic fibers	
	S-4	5 6 8 7	24	13			Medium dense, brown fine SAND and SILT, trace organic fibers	60
10	S-5	4 5 6 8	24	24		Varved Clay	Stiff, brown (varved 1/8") CLAY and SILT, trace fine Sand partings	55
15	UP-1		24	24				
	S-6	2 2 2 3	24	24			Medium, gray (varved to 1/4") Silty CLAY and Clayey SILT	50
20							END OF BORING 19ft	45
25								

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

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

Total Penetration in Earth: 19ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-06
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-8-08	Route No.:		Northing:	839600.3
Finish Date:	10-8-08	Bridge No.:		Easting:	1015275.0
				Surface Elevation:	72.0

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Concrete		
						Fill		
	S-1	18 14 9 8	24	4			Medium dense, brown fine to coarse SAND and SILT, little(-) fine to coarse Gravel (moist)	70
	S-2	10 15 12 10	24	0		Varved Clay	No recovery	
5								
	S-3	7 5 5 6	24	17			Stiff, gray varved Clayey SILT (1/8" to 3/16"), little fine red Sand (sand varves 1/32" to 2" thick) (moist)	65
10								
	S-4	2 3 3 3	24	24			Medium, gray (1/8" to 3/16" thick) CLAY and SILT, trace red fine Sand, spaced 1/4" to 1/2" in sample, less than 1/52" in thickness	60
15								
	S-5	2 3 4 6	24	24			Medium, gray (1/8" to 3/16" thick) CLAY and SILT, trace red fine Sand, spaced 1/4" to 1/2" in sample, less than 1/52" in thickness	55
							END OF BORING 17ft	
20								
								50
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-07
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-7-08	Route No.:		Northing:	839705.3
Finish Date:	10-7-08	Bridge No.:		Easting:	1015350.4
				Surface Elevation:	68.9

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @9' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	4 4 5 4	24	13			Loose, brown fine to coarse SAND, some Silt, trace fine Gravel, (moist)	
	S-2	3 9 11	18	12			Very stiff, tan to brown Clayey SILT, some fine to medium Sand, trace fine Gravel	65
5						Varved Clay		
	S-3	5 6 9 10	24	20			Very stiff, gray SILT and CLAY (varves 1/2" thick), trace fine Sand	
	S-4	9 10 11 10	24	18			Very stiff, gray SILT and CLAY (varves 1/2" thick), trace fine Sand	60
10								
	S-5	2 3 3 4	24	24			Medium, gray CLAY and SILT (varves 1/2" thick), trace fine Sand	55
15								
	S-6	2 2 2 3	24	24			Medium, gray SILT and CLAY (varves 1/2" thick)	
							END OF BORING 17ft	50
20								
								45
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-08
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-30-08	Route No.:		Northing:	839362.3
Finish Date:	9-30-08	Bridge No.:		Easting:	1015214.0
				Surface Elevation:	60.6

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @8' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		60
	S-1	44 16 19 13	24	12			Dense, dark gray to brown fine to coarse SAND, some fine to coarse Gravel, little Silt	
	S-2	12 13 17 15	24	16			Medium dense, gray to brown fine to coarse SAND, some Silt, little fine to coarse Gravel	
5	S-3	8 7 8 10	24	20			Medium dense, gray to black SILT and fine to medium SAND, little fine to coarse Gravel, trace Coal	55
	S-4	8 9 9 7	24	12			Medium dense, gray to brown fine to coarse SAND, some Silt, trace Brick Cinders, (wet)	
10	S-5	5 8 18 25	24	17		Varved Clay	Medium dense, brown SILT and Silty CLAY, (varved)	50
15	S-6	12 13 16 17	24	18			Very stiff, brown (varved) Silty CLAY	45
							END OF BORING 17ft	
20								40
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-09	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-2-08	Route No.:	Northing: 839287.6	
Finish Date: 10-2-08	Bridge No.:	Easting: 1015169.1	
		Surface Elevation: 52.7	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @15' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
	S-1	6 6 5 3	24	15		Fill	Medium dense, brown fine to medium SAND, little fine to coarse Gravel, little Silt	
	S-2	2 2 3 4	24	12			Top 6": Loose, brown fine to medium SAND, little fine to coarse Gravel, little Silt Bottom 6": Loose, black fine SAND, little Silt, trace Cinders, (moist)	50
5	S-3	2 2 5 7	24	18		Varved Clay	Top 6": Loose, gray SILT and CLAY, trace Organics Bottom 12" Medium, brown CLAY and SILT, trace fine Sand	
	S-4	8 11 12 14	24	20			Very stiff, brown (varves 1/4" to 1/2" thick) Silty CLAY, trace fine Sand (moist)	45
10	S-5	6 8 12 12	24	24			Very stiff, brown (varves 1/4" to 1/2" thick) Silty CLAY, trace fine Sand	40
15	S-6	3 4 4 5	24	24			Medium stiff, brown to red brown (varves 1/4" to 1/2" thick) Silty CLAY, trace fine Sand (wet)	
							END OF BORING 17ft	35
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-10
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-14-08	Route No.:		Northing:	839465.5
Finish Date:	10-14-08	Bridge No.:		Easting:	1015367.4
				Surface Elevation:	56.6

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @9' during drilling

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	8 7 9 10	24	12		Fill	Medium dense, tan fine GRAVEL, some fine to coarse Sand, trace Silt (moist)	55
	S-2	5 7 6 8	24	14		Varved Clay	Stiff, red brown to tan, (varves 1/8" to 3/16" thick) SILT and CLAY, little fine Sand	
5	S-3	3 4 5 5	24	11			Stiff, gray to tan (varves 1/8" thick) SILT and CLAY, trace fine Sand	50
10	S-4	5 10 22 25	24	19			Hard, gray to tan (varves 1/4" thick) SILT and CLAY, trace fine Sand	45
15	S-5	5 7 8 8	24	20			Very stiff, tan to red brown (varves 1/3" thick) CLAY and SILT, trace fine Sand	40
							END OF BORING 17ft	
20								35
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-11	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-29-08	Route No.:	Northing: 839449.1	
Finish Date: 9-29-08	Bridge No.:	Easting: 1015553.8	
		Surface Elevation: 50.9	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	10 12 18 15	24	0		Fill	Medium dense, black to brown fine to coarse SAND, little Silt, little fine to coarse Gravel, (based on auger cuttings)	50
	S-2	15 10 8 11	24	0				
5	S-3	9 14 17 20	24	16		Varved Clay	Very stiff, brown to red, (varved 1-15") Silty CLAY	45
	S-4	12 17 18 16	24	14			Very stiff, brown to red, (varved 1-15") Silty CLAY	
	S-5	6 10 13 17	24	24			Very stiff, brown to red, (varved 1-15") Silty CLAY	
10	S-6	2 7 9 12	24	20			Very stiff, brown to red, (varved 1-2" thick) Silty CLAY	40
15	S-7	2 3 3 4	24	24			Medium, (varved 1.5-2" thick) Silty CLAY	35
							END OF BORING 17ft	
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 7 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-12	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-29-08	Route No.:	Northing: 839551.4	
Finish Date: 9-29-08	Bridge No.:	Easting: 1015822.2	
		Surface Elevation: 50.8	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
	S-1	3 12 12 14	24	12			Medium dense, brown Clayey SILT, little fine to coarse Sand, little fine Gravel	50
	S-2	14 14 14 10	24	14			Medium dense, brown fine to coarse SAND, little Silt	
5								
	S-3	3 5 6 7	24	8		Varved Clay	Top 3": Medium dense, brown fine to coarse SAND, little Silt Bottom 5": Stiff, tan to red brown Silty CLAY	45
	S-4	6 7 7 14	24	18			Stiff, varved red brown to tan Silty CLAY, (wet)	
10								
	S-5	3 4 8 10	24	16			Stiff, brown and dark brown Clayey SILT and Silty CLAY, trace Roots, trace wood fragments	40
15								
	S-6	6 14 28 34	24	18			Top 2": Dense, brown and dark brown Clayey SILT and Silty CLAY, trace Roots, trace wood fragments Middle 10": Dense, red to brown Clayey SILT Bottom 6": Dense, red brown Clayey SILT, some fine to coarse Sand	35
							END OF BORING 17ft	
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES: Drilled on paint mark.	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-13
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-14-08	Route No.:		Northing:	839713.2
Finish Date:	10-14-08	Bridge No.:		Easting:	1016510.2
				Surface Elevation:	47.9

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @14' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Crushed Stone		
	S-1	8 6 12 50/3"	21	10		Fill	Medium dense, black to brown fine to medium SAND, little fine Gravel, little Silt (moist) (small black pieces)	
								45
	S-2	1 2 1 2	24	9		Varved Clay	Very loose, tan to red brown SILT and CLAY, little fine Gravel, trace fine Sand	
5	S-3	2 3 5 3	24	11			Loose, tan to red brown (varved 1/2" thick) SILT and CLAY, some fine to medium Sand, trace fine Gravel, (moist)	
						Glacial Till		40
10	S-4	17 27 25 29	24	12			Very dense, red brown fine SAND, little fine Gravel, trace Silt	
								35
15	S-5	14 28 55 71	24	13			Very dense, red brown fine SAND, little fine Gravel, trace Silt	
							END OF BORING 17ft	30
20								
								25
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES: H2O reading after pulling rods out of hole.	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-14	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-25-08	Route No.:	Northing: 839735.6	
Finish Date: 9-25-08	Bridge No.:	Easting: 1016679.5	
		Surface Elevation: 48.5	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @5' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
	S-1	5 4 8 7	24	18			Medium dense, dark gray fine to coarse SAND, some Silt, little(-) fine to coarse Gravel	
	S-2	7 50/ 4"	10	6			Very dense, dark gray fine to coarse SAND, some Silt, (moist)	45
5						Varved Clay		
	S-3	6 5 6 10	24	14			Stiff red brown, Silty CLAY and Clayey SILT (layered), trace fine Sand (wet)	
	S-4	6 6 7 12	24	12			Stiff red brown, Silty CLAY and Clayey SILT (layered), trace fine Sand	40
10								
	S-5	9 10 10 13	24	0			No recovery	
	S-6	4 4 4 4	24	20			Medium, red brown Silty CLAY and brown Clayey SILT. (varves 1-2' thick)	35
15	S-7	50/5"	5	5		Glacial Till	Top 3": Hard, red brown Silty CLAY and brown Clayey SILT. (varves 1-2' thick) Bottom 2" red brown Clayey SILT, some fine to coarse SAND, little fine Gravel	30
20	S-8	50/5"	5	5			Hard, red brown Clayey SILT, little fine to coarse Sand, trace fine Gravel	
							END OF BORING 20.4ft	25
25								

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

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

Total Penetration in Earth: 20.4ft Rock: 0ft	NOTES: Used HSA to 20'. S1: Augered through cobble to 4.5'. S3: Bedding is nearly vertical throughout sample. S5: May have pushed gravel fragment, blow count not reliable.	Sheet 1 of 1
No. of Soil Samples: 8 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-15
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-8-08	Route No.:		Northing:	839824.3
Finish Date:	10-8-08	Bridge No.:		Easting:	1016907.9
				Surface Elevation:	46.6

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	5 7 7 8	24	16			Stiff, brown Clayey SILT, little fine Sand, trace decomposed Wood, (moist)	45
						Varved Clay		
	S-2	10 10 11 14	24	10			Very Stiff, gray to red brown (varves 1/4" to 1/2" thick) Clayey SILT and CLAY, trace fine Sand	
5								
	S-3	7 9 13 14	24	24			Very Stiff, gray to red brown (varves 1/4" to 1/2" thick) Clayey SILT and CLAY, trace fine Gravel	40
10						Glacial Till		
	S-4	5 27 70/6"	18	7			Hard, red brown Clayey SILT, little fine to coarse Sand, trace fine Gravel	35
15	S-5	70/6"	6	6			Very dense, red brown fine SAND and SILT, little fine Gravel	
							END OF BORING 15.5ft	30
20								
								25
25								

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

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

Total Penetration in Earth: 15.5ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-16
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-1-08	Route No.:		Northing:	839751.9
Finish Date:	10-1-08	Bridge No.:		Easting:	1016904.7
				Surface Elevation:	48.3

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @5' after drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
	S-1	11 10 10 16	24	12		Fill	Medium dense, dark gray to brown fine to coarse SAND, some(-) Silt, little(-) fine Gravel	
	S-2	16 90/3"	9	0			No recovery	45
5	S-3	2 4 4 6	24	12			Loose, brown fine SAND, some fine to coarse Gravel, some Silt	
	S-4	3 3 7 12	24	16		Varved Clay	Stiff, gray SILT and CLAY, trace organic fibers	40
10	S-5	13 15 21 20	24	20			Hard, gray SILT and CLAY, trace fine Sand partings, trace Organic fibers	35
15	S-6	25 26 40 43	24	18		Glacial Till	Very dense, red brown, fine to medium SAND and Clayey SILT, little fine Gravel	
							END OF BORING 17ft	30
20								25
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	R-17
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-7-08	Route No.:		Northing:	839687.6
Finish Date:	10-7-08	Bridge No.:		Easting:	1016937.1
				Surface Elevation:	47.4

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	6 7 5 8	24	3			Medium dense, brown fine to coarse GRAVEL, little fine to coarse Sand, little Silt	45
	S-2	7 12 9 10	24	15		Varved Clay	Very Stiff, Top 7": brown fine to medium SAND, trace silt Bottom 8": tan to red brown Clayey SILT	
5	S-3	7 9 11 14	24	21			Medium dense, gray to red brown (varved 1/8"thick layers) SILT and CLAY	
						Glacial Till		40
10	S-4	10 50/2"	8	8			Very dense, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	
							END OF BORING 12ft	35
15								30
20								25
25								

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

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

Total Penetration in Earth: 12ft Rock: 0ft	NOTES: Auger refusal at approximately 12 feet.	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-18
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-24-08	Route No.:		Northing:	839778.3
Finish Date:	9-24-08	Bridge No.:		Easting:	1017478.4
				Surface Elevation:	46.7

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	3 5 13 21	24	18		Fill	Medium dense, black fine to coarse SAND, little Silt, little fine Gravel	45
	S-2	16 17 20 25	24	12			Dense, brown fine to coarse SAND and SILT, (moist)	
5	S-3	23 49 80	18	12		Glacial Till	Hard, red brown Clayey SILT, some fine to coarse Sand, (moist)	40
10	S-4	21 38 55 62	24	19			Hard, red brown Clayey SILT, some fine to coarse Sand, (moist)	35
15	S-5	55 68 100	18	10			Hard, red brown Clayey SILT, some fine to coarse Sand, (moist)	30
							END OF BORING 16.5ft	
20								25
25								

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

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

Total Penetration in Earth: 16.5ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-19
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-3-08	Route No.:		Northing:	840073.1
Finish Date:	10-3-08	Bridge No.:		Easting:	1017735.4
				Surface Elevation:	29.8

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
						Weathered Bedrock		
	S-1	46 50/2"	8	6			Very dense, red brown fine to coarse SAND, little Silt, little fine Gravel	25
5								
	S-2	50/4"	4	4			Very dense, red brown fine to coarse SAND, little Silt, little fine Gravel	
							END OF BORING 8ft	
10								20
15								15
20								10
25								5

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

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

Total Penetration in Earth: 8ft Rock: 0ft	NOTES: Auger refusal at approximately 8 feet.	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-20
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-2-08	Route No.:		Northing:	840034.0
Finish Date:	10-2-08	Bridge No.:		Easting:	1017950.1
				Surface Elevation:	26.0

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	50/4"	4	4		Fill	Very dense, brown fine to medium SAND, some Silt, little fine to coarse Gravel	25
	S-2	31 20 28 37	24	24			Very dense, brown fine to coarse SAND and(-) SILT, trace fine Gravel	
5	S-3	19 27 40 34	24	12		Glacial Till	Very dense, red brown fine to coarse SAND and Clayey SILT, little fine Gravel	20
	S-4	27 25 25 30	24	14			Hard, red brown Clayey SILT, little fine to coarse Sand	
10	S-5	9 8 12 14	24	24			Very stiff, red brown CLAY and SILT, trace fine Gravel, trace fine Sand	15
15	S-6	50/2"	2	2		Weathered Bedrock	Very dense, gray fine to coarse SAND and fine GRAVEL, little Silt, (dry)	10
							END OF BORING 15.2ft	
20								5
25								

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

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

Total Penetration in Earth: 15.2ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-21
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-1-08	Route No.:		Northing:	839867.6
Finish Date:	10-1-08	Bridge No.:		Easting:	1018169.8
				Surface Elevation:	33.0

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	5 13 12 7	24	14		Fill	Top 4": Medium dense, dark brown fine to medium SAND and SILT, trace roots Bottom 10": Medium dense, brown fine to coarse SAND, little Silt	
	S-2	12 40 25 15	24	4			Very dense, dark gray SILT and fine to coarse SAND, little fine to coarse Gravel, (moist)	30
5	S-3	4 4 8 6	24	18			Medium dense, gray fine to medium SAND and SILT, (moist)	
	S-4	7 12 23 15	24	16			Dense, gray fine to coarse SAND and Clayey SILT, (moist)	25
						Weathered Bedrock		
10	S-5	50 50/1"	7	5			Very dense, brown fine to coarse SAND, some Silt, little fine Gravel	
								20
15	S-6	50/5"	5	4			Very dense, brown fine to coarse SAND, some Silt, little fine Gravel	
							END OF BORING 15.4ft	
								15
20								
								10
25								

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

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

Total Penetration in Earth: 15.4ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: R-22	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-1-08	Route No.:	Northing: 839756.7	
Finish Date: 10-1-08	Bridge No.:	Easting: 1018246.8	
		Surface Elevation: 41.1	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @17' after 0.5 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
	S-1	3 6 9 7	24	14			Top 3": Medium dense, dark brown fine to coarse SAND and SILT Bottom 11": Medium dense, brown fine to medium SAND, little Silt, little fine to coarse Gravel, trace Roots	40
	S-2	9 19 6 8	24	12			Medium dense, red brown to brown SILT and (-) fine to coarse SAND, trace fine Gravel	
5	S-3	29 45 50/3"	15	12			Top 6": Very dense, dark brown fine to medium SAND and SILT, trace Roots Bottom 6": Very dense, red brown fine to coarse SAND and SILT, little fine Gravel	35
	S-4	50/5"	5	0			No recovery	
10	S-5	6 17 15 27	24	16			Dense, red brown to gray fine to medium SAND and SILT, little fine to coarse Gravel, trace Roots and organic material	30
15	S-6	14 12 32 20	24	12			Dense, red brown to gray fine to medium SAND and SILT, little fine to coarse Gravel, trace Roots and organic material (1/4" diameter piece of wood)	25
	S-7	8 20 20 47	24	12			Dense, gray to brown fine to medium SAND and SILT, trace roots	
20	S-8	42 48 50/5"	17	8			Very dense, black to red fine to medium SAND, some Silt, little Brick	
	S-9	18 27 27 44	24	18			Very dense, dark gray fine to medium SAND and SILT, little fine to coarse Gravel	20
25							END OF BORING 24ft	

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

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

Total Penetration in Earth: 24ft Rock: 0ft	NOTES: Auger refusal at approximately 24 feet.	Sheet 1 of 1
No. of Soil Samples: 9 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	R-23
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840483.8
Finish Date:	10-6-08	Bridge No.:		Easting:	1018428.6
				Surface Elevation:	38.7

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @9' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone		
	S-1	9 12 26 38	24	14		Fill	Dense, gray fine to coarse SAND, some(-) Silt, little fine GRAVEL, (color change to red brown last 2")	
	S-2	9 10 10 16	24	14			Medium dense, brown fine to coarse SAND, little Silt, trace fine Gravel, trace Concrete Fragments	35
5	S-3	9 11 11 12	24	14			Medium dense, brown fine to coarse SAND, little Silt, trace fine Gravel	
	S-4	17 80/1"	7	4			Very dense, brown fine to coarse SAND, little Silt, (moist)	
								30
						Varved Clay		
10	S-5	2 4 9 36	24	20		Glacial Till	Top 10": Stiff brown Silty CLAY (varves 1/2" thick) Bottom 10": Medium dense fine to coarse SAND, some Silt, little fine Gravel	
								25
15	S-6	100/2"	2	2			Very dense, red brown fine to coarse SAND, some Silt	
							END OF BORING 15.2ft	
								20
20								
								15
25								

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

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

Total Penetration in Earth: 15.2ft Rock: 0ft	NOTES: Installed 2" PVC monitoring well, 10' screen, 5' riser, bentonite seal 4-5', filter sand 0-5', surface protection.	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: R-24	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-7-08	Route No.:	Northing: 840405.9	
Finish Date: 10-7-08	Bridge No.:	Easting: 1018434.8	
		Surface Elevation: 38.7	

Project Description: New Britain / Hartford Busway - Roadway

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	34 38 41 42	24	18			Very dense, Top 4": gray fine to coarse SAND, little fine to coarse Gravel, little Silt Bottom 14": red brown fine to coarse SAND, some Silt, little(-) fine to coarse Gravel, (moist)	
	S-2	24 23 19 15	24	20		Varved Clay	Very dense, Top 4": gray fine to coarse SAND, some Silt, little Gravel, Bottom 16": red brown fine to coarse SAND, some Silt, little fine to coarse Gravel	35
5	S-3	8 9 8 11	24	14			Very stiff, red brown CLAY and SILT	
	S-4	8 8 9 31	24	24			Very Stiff, red brown, Top 4": SILT and CLAY (varves 1/8" thick layers) Bottom 20": SILT and CLAY, trace fine Sand, trace fine Gravel	30
10	S-5	100/6"	6	6		Weathered Bedrock	Hard, red brown Clayey SILT, little fine to coarse Sand (little fine Gravel, little decomposed Bedrock in bottom 2")	
								25
15	S-6	100/1"	1	1			Very dense, red brown Weathered BEDROCK	
							END OF BORING 15.1ft	
								20
20								

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

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

Total Penetration in Earth: 15.1ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

INSERT
GREEN SHEET
HERE

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-101-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-2-08	Route No.:	Northing: 839208.6	
Finish Date: 10-2-08	Bridge No.:	Easting: 1014923.0	
		Surface Elevation: 60.0	

Project Description: New Britain / Hartford Busway - Retaining Wall 1

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						6" Asphalt		60
	S-1	6 6 6 9	24	16		Fill	Medium dense, brown to gray SILT, some fine to coarse Sand, trace(-) fine Gravel	
	S-2	8 9 12 13	24	12			Medium dense, SILT, little fine to medium Sand	
5								55
	S-3	7 8 10 11	24	20			Medium dense, fine to medium SAND, some Silt, little fine to coarse Gravel	
	S-4	10 11 12 15	24	20		Varved Clay	Top 4": Medium dense, brown fine to medium SAND, some Silt Bottom 16": Very stiff, gray to brown CLAY and SILT	
10								50
	S-5	6 8 11 14	24	18			Very stiff, brown, (varved 1/8") Silty CLAY and SILT, trace fine Sand (moist)	
15								45
	S-6	2 3 3 6	24	21			Medium stiff, brown (varved 1/4" to 1/2") Silty CLAY and Clayey SILT, trace fine Sand (wet)	
							END OF BORING 17ft	
20								40
25								35

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES: Augered through asphalt from 0 to 6 inches	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-102-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-30-08	Route No.:	Northing: 839125.5	
Finish Date: 9-30-08	Bridge No.:	Easting: 1014872.6	
		Surface Elevation: 52.9	

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' after 0 hours

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	6 19 30 25	24	14		Crushed Stone	Top 3": Medium dense, gray fine to coarse GRAVEL, little Sand	
						Fill	Bottom 11": Dense, dark gray to brown fine to medium SAND, little Silt, trace fine Gravel	
	S-2	17 8 11 16	24	16		Varved Clay	Top 8": Medium dense, brown fine to medium SAND, trace Silt.	50
							Bottom 8": Very stiff, gray to brown Silty CLAY (varves 1/8 to 1/4"), trace fine Sand partings	
5	S-3	6 5 8 9	24	20			Stiff, gray (varved 1/4") Silty CLAY and SILT, trace(-) fine Sand	
								45
10	S-4	2 2 2 2	24	12			Soft, gray CLAY and SILT	
								40
15	S-5	2 1 2 2	24	12			Very soft, gray CLAY and SILT	
							END OF BORING 17ft	35
20								
								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-102-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-30-08	Route No.:	Northing: 839180.1	
Finish Date: 9-30-08	Bridge No.:	Easting: 1014957.1	
		Surface Elevation: 52.8	

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3" after 0 hours

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	3 10 20 20	24	14		Fill	Dense, black to dark brown fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Cinder	
	S-2	19 19 10 12	24	16		Varved Clay	Top 10": Dense, brown fine to coarse SAND, some Gravel, little Silt. Bottom 6": Very stiff, gray brown SILT and CLAY, trace fine Sand,(wet)	50
5	S-3	15 20 28 23	24	24			Hard, brown SILT and Clay, trace fine Sand	45
10	S-4	9 7 10 9	24	24			Very stiff, brown SILT and CLAY, trace fine to medium Sand, trace fine Gravel	40
15	S-5	2 3 2 3	24	24			Medium, brown Silty CLAY (layers to 1/2" thick) and red brown CLAY and SILT (layers to 1/4" thick), sample is varved	
							END OF BORING 17ft	35
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-102-3	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-29-08	Route No.:	Northing: 839257.9	
Finish Date: 9-29-08	Bridge No.:	Easting: 1015133.5	
		Surface Elevation: 52.4	

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' after 0 hours

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	12 18 30 17	24	16		Fill	Dense, black to brown fine to coarse SAND, little Silt	
	S-2	16 15 9 10	24	18		Varved Clay	Top 10": Medium dense, brown fine to coarse SAND, little Silt (wet) Bottom 8": Very stiff, gray Silty CLAY, slightly organic odor	50
5	S-3	7 9 17 22	24	14			Very stiff, gray Silty CLAY (wet)	
	S-4	17 17 18 17	24	16			Hard, brown Silty CLAY (1/8" to 1/2") and SILT, little fine Sand	45
10	S-5	7 11 12 13	24	20			Very stiff, brown Silty CLAY (1/8") and SILT, little fine Sand	40
15	S-6	3 3 3 5	24	24			Medium, tan Silty CLAY and SILT, little fine to coarse Sand	35
20	S-7	WOHWOH 3 3	24	24			Soft, gray Silty CLAY and Clayey SILT	30
25								

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

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

Total Penetration in Earth: 29ft Rock: 0ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 8 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-102-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-29-08	Route No.:		Northing:	839257.9
Finish Date:	9-29-08	Bridge No.:		Easting:	1015133.5
				Surface Elevation:	52.4

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' after 0 hours

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	UP-1		24	24		Varved Clay *(con't)*		
	S-8	WOHWOHWOH 4	24	24			Very soft, gray Silty CLAY and Clayey SILT	25
							END OF BORING 29ft	
30								20
35								15
40								10
45								5
50								

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

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

Total Penetration in Earth: 29ft Rock: 0ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 8 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-102-4	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-29-08	Route No.:	Northing: 839292.5	
Finish Date: 9-29-08	Bridge No.:	Easting: 1015201.5	
		Surface Elevation: 51.9	

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	9 9 17 22	24	14		Fill	Medium dense, black to gray fine to coarse SAND, some Silt (moist)	
	S-2	24 11 7 10	24	12			Medium dense, brown fine to coarse SAND, some Silt (moist)	50
5	S-3	6 7 9 14	24	18		Varved Clay	Very stiff, gray Silty CLAY and SILT layers, slight organic odor (moist)	45
	S-4	11 20 27 29	24	18			Hard, brown Silty CLAY and SILT, trace fine Sand	
10	S-5	10 15 16 19	24	14			Hard, tan Silty CLAY and SILT (wet)	40
15	S-6	19 20 18 21	24	16			Hard, tan to brown Silty CLAY (1/4") and SILT, little fine Sand	35
							END OF BORING 17ft	
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES: 3 1/4" HSA used from 0' to 5', HW casing used from 5' to 15'.	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	RW-102-5
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-14-08	Route No.:		Northing:	839348.7
Finish Date:	10-14-08	Bridge No.:		Easting:	1015311.6
				Surface Elevation:	51.9

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: NW, 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						6" Crushed Stone		
	S-1	10 14 100/ 1"	13	10		Fill	Very dense, brown fine SAND, some fine to coarse Gravel, little Silt, (moist)	50
	S-2	3 3 4 6	24	20		Varved Clay	Medium, brown to gray Clayey SILT, some fine Sand	
5	S-3	6 8 9 11	24	24			Very stiff, gray to tan varved (1/8") SILT and CLAY	45
10	S-4	6 9 11 12	24	18			Very stiff, tan varved (1/8") CLAY and SILT	40
15	S-5	2 3 3 6	24	24			Medium, tan varved (1/4" to 1") Silty CLAY	35
							END OF BORING 17ft	
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES: 3 1/4" HSA used from 0' to 5', HW casing used from 5' to 15'.	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: RW-102-6	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-14-08	Route No.:	Northing: 839426.2	
Finish Date: 10-14-08	Bridge No.:	Easting: 1015499.5	
		Surface Elevation: 51.2	

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						6" Crushed Stone		
	S-1	4 8 12 11	24	15		Fill	Medium dense, tan to red brown fine to medium SAND, little fine Gravel, trace Silt (moist)	50
	S-2	8 6 5 8	24	14		Varved Clay	Top 5": Medium dense, tan fine to medium SAND, little fine Gravel, trace Silt Bottom 9": Stiff, red to tan varved CLAY (1/8" partings) and SILT (2 1/2" partings)	
5	S-3	4 6 8 9	24	6			Stiff, red to tan varved CLAY (1/8" partings) and SILT (2 1/2" partings)	45
10	S-4	2 2 3 4	24	24			Medium, red brown to tan (varved 1/8" to 1/4" partings) CLAY and SILT	40
	UP-1		24	24				
15	S-5	2 1 1 2	24	24			Soft, red brown to tan (varved 1/4" to 2" partings) tan CLAY and SILT	35
	S-6	2 1 2 2	24	24			Soft, red brown to tan (varved 1/4" to 2" partings) CLAY and SILT	
							END OF BORING 18ft	
20								30
25								

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

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

Total Penetration in Earth: 18ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-102-7
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-29-08	Route No.:		Northing:	839467.9
Finish Date:	9-29-08	Bridge No.:		Easting:	1015593.0
				Surface Elevation:	50.1

Project Description: New Britain / Hartford Busway - Retaining Wall 2

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' after 0 hours

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	7 6 6 7	24	12		Crushed Stone	Top 6": Medium dense, gray fine to coarse GRAVEL	50
						Fill	Bottom 6": Medium dense, brown fine to coarse SAND, little Silt (moist)	
	S-2	5 4 4 3	24	18		Varved Clay	Top 10": Loose, gray fine to medium SAND and SILT(wet)	
							Bottom 8": Medium, gray to brown varved Silty CLAY and Clayey SILT	
5								45
	S-3	2 2 2 2	24	19			Medium, tan varved Silty CLAY and SILT	
10								40
	S-4	2 2 3 4	24	22			Medium, gray varved Silty CLAY and SILT, trace(-) fine Sand	
15								35
	S-5	5 7 7 9	24	24			Stiff, tan to red brown varved SILT and Silty CLAY	
							END OF BORING 17ft	
20								30
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-103-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-26-08	Route No.:	Northing: 839629.7	
Finish Date: 9-26-08	Bridge No.:	Easting: 1016099.2	
		Surface Elevation: 48.9	

Project Description: New Britain / Hartford Busway - Retaining Wall 3

Casing Size/Type: 3 1/4" HSA, 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @5' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	3 4 7 9	24	12		Fill	Medium dense, gray fine to coarse SAND, little fine Gravel, little Silt	
	S-2	50/3"	3	3			Very dense, gray fine to coarse SAND, little fine Gravel, little Silt	
								45
5	S-3	4 4 5 7	24	3			Loose, brown Clayey SILT, little fine to coarse Sand	
	S-4	5 7 7 8	24	12		Varved Clay	Stiff, gray and red brown varved Silty CLAY and SILT, trace fine to coarse Sand	40
10	UP-1		24	24				
	S-5	4 4 7 5	24	18			Stiff, gray and red brown varved Silty CLAY and SILT, little fine to coarse Sand	35
15	S-6	21 29 27 15	24	12		Glacial Till	Very dense, red brown fine to coarse SAND and SILT, some fine to coarse Gravel	
							END OF BORING 16ft	
								30
20								
								25
25								

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

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

Total Penetration in Earth: 16ft Rock: 0ft	NOTES: HSA used from 0 to 5 feet HW casing used from 5 feet to 16 feet	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-103-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-25-08	Route No.:	Northing: 839653.7	
Finish Date: 9-25-08	Bridge No.:	Easting: 1016186.6	
		Surface Elevation: 49.0	

Project Description: New Britain / Hartford Busway - Retaining Wall 3

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @4.5' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	2 4 5 3	24	18		Fill	Loose, dark gray fine to coarse SAND, some Silt, trace fine Gravel, trace Cinders and Brick	
	S-2	5 3 5 8	24	18			Top 4": Loose, dark gray fine to coarse SAND, some Silt, trace fine Gravel, trace Cinders and Brick Bottom 14": Loose, red brown, Clayey SILT some fine to coarse Sand	45
5	S-3	4 4 5 10	24	18			Stiff, tan Clayey SILT, trace Root Fibers	
	S-4	7 7 11 11	24	14			Very Stiff, tan Clayey SILT, trace Root Fibers	40
10	S-5	12 13 20 25	24	20		Glacial Till	Hard, Top 10": tan Clayey SILT, trace Root Fibers Bottom 10": red brown Clayey SILT, trace fine Sand	35
15	S-6	5 6 50/3"	15	15			Hard, red brown Clayey SILT, trace(-) fine Sand	
							END OF BORING 16.25ft	30
20								25
25								

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

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

Total Penetration in Earth: 16.25ft Rock: 0ft	NOTES: Installed 2 inch PVC monitoring well with 10 foot screen, 6 foot riser, filter sand 16 to 2 feet, bentonite 2 to 1 foot, concrete standup protector with 3.7 foot stickup	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-104-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-25-08	Route No.:		Northing:	839775.7
Finish Date:	9-25-08	Bridge No.:		Easting:	1017061.4
				Surface Elevation:	48.0

Project Description: New Britain / Hartford Busway - Retaining Wall 4

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @4' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	5 6 13 17	24	12		Fill	Medium dense, brown to dark gray fine to coarse SAND, little Silt	
	S-2	20 18 10 10	24	18		Glacial Till	Top 10": Medium dense, brown fine to medium SAND, trace fine to coarse Gravel. Bottom 4": Very stiff, red brown, Silty CLAY (wet)	45
5	S-3	20 22 18 19	24	18			Top 8": Hard, red brown, Silty CLAY Bottom 10": Dense red brown, fine to coarse SAND, little Silt, trace fine Gravel	
	S-4	15 17 19 21	24	8			Dense, red brown fine to coarse SAND and fine to coarse GRAVEL, some Silt	40
10	S-5	10 13 15 19	24	18			Medium dense, red brown fine to coarse SAND and Clayey SILT, little fine Gravel	
								35
15	S-6	50/3"	3	3			Very dense, red brown fine to coarse SAND, some fine to coarse Gravel, some Silt	
								30
20	S-7	10 15 17 45	24	16			Dense, red brown fine to coarse SAND, little fine Gravel, little Clayey Silt	
								25
25								

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

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

Total Penetration in Earth: 27.5ft Rock: 0ft	NOTES: Auger refusal at approximately 27.5 feet	Sheet 1 of 2
No. of Soil Samples: 8 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-104-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-25-08	Route No.:		Northing:	839775.7
Finish Date:	9-25-08	Bridge No.:		Easting:	1017061.4
				Surface Elevation:	48.0

Project Description: New Britain / Hartford Busway - Retaining Wall 4

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @4' after 0 hrs.

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-8	50 34 25 21	24	12		Glacial Till *(con't)*	Very dense, red brown fine to coarse SAND and fine to coarse GRAVEL, some Clayey Silt	
							END OF BORING 27.5ft	20
30								
								15
35								
								10
40								
								5
45								
								0
50								

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

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

Total Penetration in Earth: 27.5ft Rock: 0ft	NOTES: Auger refusal at approximately 27.5 feet	Sheet 2 of 2
No. of Soil Samples: 8 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-104-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-1-08	Route No.:		Northing:	839827.7
Finish Date:	10-1-08	Bridge No.:		Easting:	1017167.6
				Surface Elevation:	63.0

Project Description: New Britain / Hartford Busway - Retaining Wall 4

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @16' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement		
	S-1	21 16 19 11	24	14		Fill	Dense, gray to brown fine to coarse SAND, some Silt, little fine to coarse Gravel	
	S-2	10 19 16 12	24	12			Dense, gray to brown fine to coarse SAND, some Silt, little fine to coarse Gravel	60
5	S-3	15 16 16 19	24	18		Glacial Till	Hard, yellow brown to red brown Clayey SILT, some fine to coarse SAND, little fine Gravel, (moist)	
								55
10	S-4	21 24 30 39	24	14			Hard, red brown Clayey SILT and fine to coarse SAND, some fine to coarse Gravel, little Silt	
								50
15	S-5	28 32 38 70	24	18			Hard, red brown Clayey SILT and fine to coarse SAND, little fine Gravel (wet)	
							END OF BORING 17ft	45
20								
								40
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-105-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-1-08	Route No.:	Northing: 839839.9	
Finish Date: 10-1-08	Bridge No.:	Easting: 1017481.1	
		Surface Elevation: 63.8	

Project Description: New Britain / Hartford Busway - Retaining Wall 5

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @7' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	2 3 4 12	24	16		Fill	Loose, dark brown to red brown fine to coarse SAND and Clayey SILT, little fine to coarse Gravel, (moist)	
	S-2	10 13 16 19	24	12			Medium dense, brown fine to coarse SAND and Clayey SILT, little fine Gravel	60
5	S-3	4 4 4 5	24	14			Loose, Top 6": brown fine to coarse SAND and Clayey SILT, little fine Gravel Bottom 8": dark brown, fine to coarse SAND, some Silt, little fine Gravel, trace Roots	
	S-4	3 4 5 9	24	12			Loose, brown fine to coarse SAND and SILT, little fine Gravel	55
10	S-5	20 27 34 52	24	18		Glacial Till	Hard, red brown Clayey SILT and fine to coarse SAND, little fine Gravel	50
15	S-6	70 100	12	8			Hard, red brown Clayey SILT and fine to coarse SAND, little fine Gravel	
							END OF BORING 16ft	45
20								40
25								

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

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

Total Penetration in Earth: 16ft Rock: 0ft	NOTES: Installed 2" PVC monitoring well with 10 foot screen, 6 foot riser, filter sand from 15 to 3 feet, bentonite chips 3 to 1 foot w/ standpipe locking protector.	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-105-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-24-08	Route No.:	Northing: 839795.5	
Finish Date: 9-24-08	Bridge No.:	Easting: 1017653.5	
		Surface Elevation: 49.0	

Project Description: New Britain / Hartford Busway - Retaining Wall 5

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @4' after 1 hour

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	5 5 13 17	24	18		Fill	Medium dense, brown SILT and fine to coarse SAND, trace(-) fine Gravel	
	S-2	9 14 12 14	24	16			Medium dense, brown Top 3": fine to coarse SAND and SILT, little fine Gravel Bottom 13": fine SAND, trace Silt (moist)	45
5	S-3	36 26 21 27	24	12			Dense brown to gray fine to coarse SAND and SILT, trace wood (wet)	
	S-4	45 49 48 46	24	12		Glacial Till	Top 6": Very dense brown fine to coarse SAND, trace Silt (wet) Bottom 6": Very dense, red brown Clayey SILT, some fine to coarse SAND, little fine to coarse Gravel, (wet)	40
10	S-5	100/5"	5	5			Very dense, red brown fine to coarse GRAVEL and fine to coarse SAND	
							END OF BORING 13ft	35
15								
								30
20								
								25
25								

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

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

Total Penetration in Earth: 13ft Rock: 0ft	NOTES: Auger refusal at approximately 13 feet	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-106-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-24-08	Route No.:		Northing:	839779.2
Finish Date:	9-24-08	Bridge No.:		Easting:	1017587.3
				Surface Elevation:	47.3

Project Description: New Britain / Hartford Busway - Retaining Wall 6

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @4' after 3 hours

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	4 10 13 8	24	14		Fill	Medium dense, gray to brown fine to coarse SAND, some Silt, trace(+) fine to coarse Gravel	
	S-2	9 7 5 20	24	18			Medium dense, Top 14": red brown to gray brown fine SAND, trace Silt Bottom 4": dark gray fine SAND, some Silt, trace roots, trace wood fragments	45
5	S-3	13 38 62 45	24	18		Glacial Till	Hard, red brown Clayey SILT, some fine to coarse Sand, little(-) fine Gravel	
	S-4	32 50 36 41	24	12			Hard, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	40
10	S-5	15 26 39 52	24	18			Hard, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	35
15	S-6	16 29 50 47	24	18			Hard, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	
							END OF BORING 17ft	30
20								25
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-106-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-29-08	Route No.:	Northing: 839807.0	
Finish Date: 9-29-08	Bridge No.:	Easting: 1017800.0	
		Surface Elevation: 48.0	

Project Description: New Britain / Hartford Busway - Retaining Wall 6

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @5' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Crushed Stone		
	S-1	11 12 16 22	24	6		Fill	Top 2": Medium dense, gray fine to coarse GRAVEL. Bottom 4": Medium dense, gray fine to coarse SAND, little Silt	
	S-2	12 11 11 12	24	15			Medium dense, brown fine to medium SAND, trace Silt (moist)	45
5								
	S-3	7 8 10 10	24	2			Medium dense, brown fine to coarse SAND, little Silt (moist)	
	S-4	13 11 20 22	24	18		Glacial Till	Dense, Top 9": brown fine to medium SAND, little Silt. Bottom 9": red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	40
10								
	S-5	23 25 29 31	24	12			Hard, red brown Clayey SILT, some fine Sand, little fine Gravel	35
15								
	S-6	28 30 100	18	13			Hard, red brown Clayey SILT, some fine Sand, little fine Gravel	
							END OF BORING 16.5ft	30
20								
								25
25								

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

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

Total Penetration in Earth: 16.5ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-106-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-24-08	Route No.:		Northing:	839892.2
Finish Date:	9-24-08	Bridge No.:		Easting:	1017988.3
				Surface Elevation:	49.1

Project Description: New Britain / Hartford Busway - Retaining Wall 6

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @8' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	14 22 15 10	24	14		Crushed Stone Fill	Dense, Top 6": gray fine to coarse GRAVEL Bottom 8": gray brown fine to coarse SAND, little Silt	
	S-2	9 10 11 10	24	18			Medium dense, brown fine SAND, little Silt	45
5	S-3	8 12 10 11	24	18			Medium dense, brown fine SAND, little Silt	
	S-4	6 2 3 19	24	20		Glacial Till	Loose, Top 10": gray brown fine to medium SAND, little fine Gravel, trace Silt, (moist) Bottom 10": red brown Clayey SILT, some fine to coarse Sand, little fine Gravel, (wet)	40
10	S-5	17 29 53 53	24	20			Hard, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	35
15	S-6	12 31 39 41	24	20			Hard, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel	
							END OF BORING 17ft	30
20								25
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: RW-107-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-15-08	Route No.:	Northing: 840005.0	
Finish Date: 10-15-08	Bridge No.:	Easting: 1018150.0	
		Surface Elevation: 50.0	

Project Description: New Britain / Hartford Busway - Retaining Wall 7

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0								50
	S-1	3 12 12 15	24	10		Topsoil	Medium dense	
						Fill	Top 5": brown fine SAND, some Silt Bottom 5": gray fine to medium SAND, some Gravel, trace Silt, (moist)	
	S-2	17 15 16 16	24	9			Dense, tan fine to medium SAND, trace Silt	
5								45
	S-3	2 5 4 4	24	9			Loose, tan fine to medium SAND, trace Silt	
	S-4	3 6 6 5	24	9			Medium dense, tan fine to medium SAND, trace Silt	
10							Stiff,	40
	S-5	3 3 5 9	24	22		Glacial Till	Top 6": red brown Clayey SILT, little coarse SAND, trace fine Gravel Bottom 16": red brown Clayey SILT, little coarse Sand, little fine Gravel, (moist)	
15								35
	S-6	12 17 20 23	24	19			Hard, red brown Clayey SILT, little coarse Sand, trace fine Gravel	
							END OF BORING 17ft	
20								30
25								25

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: RW-107-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-7-08	Route No.:	Northing: 840089.5	
Finish Date: 10-7-08	Bridge No.:	Easting: 1018226.4	
		Surface Elevation: 56.2	

Project Description: New Britain / Hartford Busway - Retaining Wall 7

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		55
	S-1	9 40 50 48	24	10			Very dense, red brown fine to coarse SAND, little Silt, trace fine Gravel, (moist)	
	S-2	49 50 50/4"	16	3			Very dense, gray fine to coarse SAND,some Silt, trace fine Gravel	
5								
	S-3	35 30 23 33	24	11			Very dense, red brown fine to coarse SAND,some Silt, trace fine Gravel (moist)	50
	S-4	34 33 12 11	24	13			Dense, red brown fine to coarse SAND, some Silt, trace fine Gravel	
						Glacial Till		
10								
	S-5	16 18 20 26	24	12			Hard, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	45
	S-6	41 35 33 46	24	12			Hard, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	
15								
	S-7	18 29 39 38	24	19			Hard, red brown Clayey SILT, some fine to medium Sand, trace fine Gravel	40
							END OF BORING 17ft	
20								
								35
25								

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

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

Total Penetration in Earth: 17ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 7 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-108-1	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-22-08	Route No.:	Northing: 840017.1	
Finish Date: 9-22-08	Bridge No.:	Easting: 1018197.1	
		Surface Elevation: 47.1	

Project Description: New Britain / Hartford Busway - Retaining Wall 8

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @12' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	9 11 10 11	24	12		Crushed Stone / Fill	Medium dense, Top 10": gray fine to coarse GRAVEL Bottom 2": brown fine SAND, little Silt	45
5	S-2	3 3 2 2	24	4			Loose, brown fine SAND, little Silt	40
	S-3	2 2 1 2	24	3			Very loose, brown fine SAND, little Silt	
10	S-4	3 4 16 65	24	8			Medium dense, brown to dark gray fine SAND and SILT, (moist)	35
						Glacial Till		
15	S-5	5 14 20 31	24	16			Dense, red brown fine to coarse SAND and Clayey SILT, little fine Gravel, (wet)	30
20	S-6	100/6"	6	4			Very dense, brown fine to coarse SAND, some Silt, little fine Gravel	
							END OF BORING 20.5ft	25
25								

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

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

Total Penetration in Earth: 20.5ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	RW-108-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-7-08	Route No.:		Northing:	840184.0
Finish Date:	10-7-08	Bridge No.:		Easting:	1018315.4
				Surface Elevation:	49.0

Project Description: New Britain / Hartford Busway - Retaining Wall 8

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	31 22 23 44	24	6			Dense, red brown fine to coarse SAND, little(-) fine Gravel, little Silt, (moist)	
	S-2	21 26 19 10	24	18			Dense, red brown fine to coarse SAND, some Silt, little fine Gravel	45
5							Medium dense, red brown	
	S-3	9 10 10 16	24	19		Glacial Till	Top 6": fine to coarse SAND and fine to coarse GRAVEL, trace Silt, (moist) Bottom 13": fine SAND and SILT, little fine Gravel	
								40
10								
	S-4	15 21 32 34	24	16			Hard, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	
								35
15								
	S-5	32 100	12	11			Hard, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	
							END OF BORING 16ft	
								30
20								
								25
25								

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

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

Total Penetration in Earth: 16ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	RW-108-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-7-08	Route No.:		Northing:	840267.6
Finish Date:	10-7-08	Bridge No.:		Easting:	1018381.7
				Surface Elevation:	44.4

Project Description: New Britain / Hartford Busway - Retaining Wall 8

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill	Medium dense, Top 9": gray fine to coarse SAND, little fine Gravel, little Silt Bottom 9": red brown fine to coarse SAND, little fine Gravel, some Silt	
	S-1	10 11 10 8	24	18				
	S-2	3 4 4 7	24	12			Loose, Top 3": gray fine to coarse SAND and fine to coarse GRAVEL Bottom 9": red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	40
5								
	S-3	4 3 4 12	24	21			Loose, Top 18": gray SILT,some fine to coarse Sand, little fine Gravel Bottom 3": red brown fine to medium SAND, trace fine Gravel, trace Silt	
	S-4	18 19 24 28	24	0		Glacial Till	No recovery	35
10								
	S-5	13 22 40 47	24	14			Hard, red brown Clayey SILT, some fine to coarse Sand, trace fine Gravel	
								30
15	S-6	100/2"	2	2			Very dense, Decomposed BEDROCK	
							END OF BORING 15.2ft	
								25
20								
								20
25								

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

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

Total Penetration in Earth: 15.2ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 6 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-110-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840204.5
Finish Date:	10-6-08	Bridge No.:		Easting:	1018290.2
				Surface Elevation:	37.9

Project Description: New Britain / Hartford Busway - Retaining Wall 10

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone		
	S-1	45 46 46 35	24	14		Fill	Very dense, red brown fine to coarse SAND, some fine to coarse Gravel, little Silt	35
	S-2	14 50/4"	10	5		Glacial Till	Very dense, red brown fine to coarse SAND and SILT, little fine to coarse Gravel	
5								30
10							END OF BORING 9ft	25
15								20
20								15
25								

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

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

Total Penetration in Earth: 9ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-110-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840284.3
Finish Date:	10-6-08	Bridge No.:		Easting:	1018343.3
				Surface Elevation:	39.2

Project Description: New Britain / Hartford Busway - Retaining Wall 10

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone		
	S-1	44 26 27 33	24	12		Glacial Till	Very dense, red brown fine to coarse SAND, some Silt, little fine Gravel	
	S-2	16 22 23 26	24	16			Dense, red brown SILT, and(-) fine to coarse SAND, trace fine Gravel	35
5	S-3	20 25 26 29	24	18			Very dense, red brown fine to coarse SAND and SILT, little fine Gravel	
								30
10	S-4	100/1"	1	1/2			Very dense, red brown SILT and fine SAND	
							END OF BORING 10.1ft	
								25
15								
								20
20								
								15
25								

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

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

Total Penetration in Earth: 10.1ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-110-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840357.7
Finish Date:	10-6-08	Bridge No.:		Easting:	1018380.4
				Surface Elevation:	39.2

Project Description: New Britain / Hartford Busway - Retaining Wall 10

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone	Very dense,	
	S-1	27 28 21 22	24	15		Glacial Till	Top 8": gray fine to coarse SAND and fine to coarse GRAVEL, little Silt Bottom 7": red brown fine to coarse SAND, some(+) Silt, little(-) fine Gravel	
	S-2	22 17 18 24	24	12			Dense, red brown fine to coarse SAND and SILT, little fine Gravel	35
5								
	S-3	18 24 47 51	24	18			Very dense, red brown fine to coarse SAND and CLayey SILT, little fine Gravel	
								30
10	S-4	100/1"	1	1/2			Very dense, red brown SILT and fine SAND	
							END OF BORING 10.1ft	
								25
15								
								20
20								
								15
25								

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

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

Total Penetration in Earth: 10.1ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-111-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840078.0
Finish Date:	10-6-08	Bridge No.:		Easting:	1017838.8
				Surface Elevation:	27.1

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone		
						Fill		25
	S-1	25 40 25 47	24	12			Very dense, brown fine to coarse SAND, little fine to coarse Gravel, little Silt	
						Glacial Till		
5	S-2	20 38 41 46	24	3			Very dense, red brown fine to coarse SAND and SILT, little fine Gravel	
	S-3	50/5"	5	1			Very dense, red brown fine to coarse SAND and fine GRAVEL, some Silt	
							END OF BORING 7ft	20
10								
								15
15								
								10
20								
								5
25								

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

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

Total Penetration in Earth: 7ft Rock: 0ft	NOTES: Auger refusal at approximately 7 feet.	Sheet 1 of 1
No. of Soil Samples: 3 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-111-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840062.0
Finish Date:	10-6-08	Bridge No.:		Easting:	1017929.5
				Surface Elevation:	25.1

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @14' during drilling

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		25
						Crushed Stone		
	S-1	16 21 20 15	24	14		Sand Fill	Dense, brown fine to coarse SAND, little fine Gravel, little Silt	
						Glacial Till		
5	S-2	7 11 13 18	24	12			Medium dense, red brown SILT and fine to coarse SAND, little fine Gravel	20
	S-3	14 11 15 15	24	14			Medium dense, red brown SILT and fine to coarse SAND, little fine Gravel	
10	S-4	32 50/4"	10	9			Very dense, red brown fine to coarse SAND and SILT, little fine Gravel	15
15							END OF BORING 15ft	10
20								5
25								

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

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

Total Penetration in Earth: 15ft Rock: 0ft	NOTES: Auger refusal at approximately 15 feet.	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-111-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840034.0
Finish Date:	10-6-08	Bridge No.:		Easting:	1018002.3
				Surface Elevation:	26.1

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Crushed Stone		25
						Fill	Very dense, Top 4": gray fine to coarse SAND, some fine to coarse Gravel, little Silt Bottom 10": red brown fine to coarse SAND, little fine Gravel, little Silt	
	S-1	48 49 50 53	24	14		Glacial Till		
	S-2	50/2"	2	2				
5							Very dense, red brown fine to coarse SAND and fine to coarse GRAVEL, little Silt	
							END OF BORING 5ft	20
10								
								15
15								
								10
20								
								5
25								

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

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

Total Penetration in Earth: 5ft Rock: 0ft	NOTES: Auger refusal at approximately 5 feet.	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: RW-111-4	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-7-08	Route No.:	Northing: 840098.8	
Finish Date: 10-7-08	Bridge No.:	Easting: 1018136.8	
		Surface Elevation: 29.9	

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Fill		
	S-1	14 16 19 29	24	8			Dense, gray fine to coarse SAND, some fine to coarse Gravel, trace Silt	
	S-2	25 26 90/2"	14	13		Glacial Till	Very dense, red brown fine to coarse SAND, little(-) fine Gravel, some Silt, (moist)	
5	S-3	100/4"	4	3		Decomposed Bedrock	Very dense, red brown decomposed BEDROCK	25
10	S-4	100/1"	1	1			Very dense, red brown decomposed BEDROCK	20
							END OF BORING 10.1ft	
15								15
20								10
25								5

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

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

Total Penetration in Earth: 10.1ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-111-5
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840152.9
Finish Date:	10-6-08	Bridge No.:		Easting:	1018206.1
				Surface Elevation:	33.5

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
	S-1	4 15 25 17	24	14		Glacial Till	Medium dense, Top 7": black to dark brown fine to medium SAND, some Silt Bottom 7": red brown fine to coarse SAND, little fine Gravel, little Silt	
	S-2	19 90	12	6			Medium dense, red brown fine to coarse SAND, little fine Gravel, little Silt	30
5	S-3	100/4"	4	4			Very dense, red brown SILT and fine SAND	
								25
10	S-4	100/1"	1	1			Not recorded	
							END OF BORING 10.1ft	
								20
15								
								15
20								
								10
25								

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

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

Total Penetration in Earth: 10.1ft Rock: 0ft	NOTES: Auger refusal at approximately 10.1 feet.	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: RW-111-6	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-6-08	Route No.:	Northing: 840205.7	
Finish Date: 10-6-08	Bridge No.:	Easting: 1018262.8	
		Surface Elevation: 35.9	

Project Description: New Britain / Hartford Busway - Retaining Wall 11

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	6 10 15 20	24	14		Fill	Medium dense, brown and gray fine to coarse SAND, little fine to coarse Gravel, little Silt	35
	S-2	32 44 61 35	24	18		Glacial Till	Very dense, red brown fine to coarse SAND, some fine Gravel, little Silt	
5	S-3	50/1"	1	1			Very dense, red brown fine to coarse SAND and SILT	30
							END OF BORING 6ft	
10								25
15								20
20								15
25								

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

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

Total Penetration in Earth: 6ft Rock: 0ft	NOTES: Auger refusal at approximately 6 feet.	Sheet 1 of 1
No. of Soil Samples: 3 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-112-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-3-08	Route No.:		Northing:	840075.3
Finish Date:	10-3-08	Bridge No.:		Easting:	1018133.6
				Surface Elevation:	30.6

Project Description: New Britain / Hartford Busway - Retaining Wall 12

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	4 8 16 17	24	18		Fill	Top 12": Medium dense, brown fine to coarse SAND, little Silt, little fine to coarse Gravel Bottom 6": Medium dense, gray fine GRAVEL, little fine to coarse Sand, little Silt	30
	S-2	23 24 38 45	24	14		Glacial Till	Very dense, red brown fine to coarse SAND and Clayey SILT, little fine Gravel	
5							END OF BORING 5ft	25
10								20
15								15
20								10
25								

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

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

Total Penetration in Earth: 5ft Rock: 0ft	NOTES: Auger refusal at approximately 5 feet.	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	RW-112-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-6-08	Route No.:		Northing:	840130.1
Finish Date:	10-6-08	Bridge No.:		Easting:	1018191.6
				Surface Elevation:	32.9

Project Description: New Britain / Hartford Busway - Retaining Wall 12

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type:
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt		
						Sand Fill		
	S-1	19 35 51 59	24	12			Very dense, gray fine to coarse SAND, some fine Gravel, little Silt	
								30
	S-2	45 90	12	3		Glacial Till	Very dense, red brown fine to coarse SAND, some Silt, little fine Gravel	
5	S-3	100/2"	2	2			Very dense, red brown fine SAND and SILT	
								25
10	S-4	100/1"	1	1			Very dense, red brown fine SAND and SILT	
							END OF BORING 10.1ft	
								20
15								
								15
20								
								10
25								

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

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

Total Penetration in Earth: 10.1ft Rock: 0ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: 0		SM-001-M REV. 1/02

INSERT
GREEN SHEET
HERE

Connecticut DOT Boring Report

Inspector:	Robert Marshall	Town:	Hartford	Hole No.:	B-01-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-9-08	Route No.:		Northing:	839828.6
Finish Date:	10-9-08	Bridge No.:		Easting:	1017358.5
				Surface Elevation:	70.1

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @15.5' after 0.0 hours

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement	3" ASPHALT over 9" CONCRETE	70
	S-1	12 11 15 26	24	6		Fill	Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel, trace Ash/ Cinders	
	S-2	31 50/ 5"	11	8			Very dense, brown fine to medium SAND, some Silt, little fine to coarse Gravel, trace Concrete fragments, trace Organics	
5								65
	S-3	26 35 25 38	24	12			Very dense, brown fine to medium SAND, some fine to coarse Gravel, little Silt, trace Ash/ Cinders/Concrete fragments	
	S-4	50/ 4"	4	3			Very dense, brown fine to medium SAND, some fine to coarse Gravel, little Silt, trace Ash/Cinders/Concrete fragments	
10								60
	S-5	4 5 12 18	24	2			Medium dense, brown fine to coarse GRAVEL, trace fine to coarse Sand	
	S-6	19 22 23 24	24	0		Glacial Till	No recovery	
15								55
	S-7	39 25 24 35	24	0			No recovery	
	S-8	18 25 31 70/4"	22	12			Very dense, red brown fine to medium SAND, some Clayey Silt, little fine to coarse Gravel, (wet)	
20								50
	S-9	24 44 57 67	24	12			Very dense, red brown fine to medium SAND, some Silt, little fine Gravel, (wet)	
25								

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

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

Total Penetration in Earth: 30.4ft Rock: 0ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 11 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Robert Marshall	Town:	Hartford	Hole No.:	B-01-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-9-08	Route No.:		Northing:	839828.6
Finish Date:	10-9-08	Bridge No.:		Easting:	1017358.5
				Surface Elevation:	70.1

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @15.5' after 0.0 hours

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-10	38 57 70/5"	17	14		Glacial Till *(con't)*	Very dense, red brown fine to medium SAND, some Silt, little fine Gravel, (wet)	45
30	S-11	70/5"	5	2			Very dense, red brown coarse GRAVEL, some fine to medium Sand, little Silt, (wet)	40
							END OF BORING 30.4ft	
35								35
40								30
45								25
50								

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

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

Total Penetration in Earth: 30.4ft Rock: 0ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 11 No. of Core Runs: 0		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	B-01-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-25-08	Route No.:		Northing:	839734.7
Finish Date:	9-29-08	Bridge No.:		Easting:	1017288.2
				Surface Elevation:	46.7

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @2.5 ' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	14 8 9 10	24	15		Fill	Top 8": Medium dense, black fine to coarse SAND and GRAVEL, little Silt Bottom 7": Medium dense, brown fine to medium SAND, trace Gravel, trace Silt	45
	S-2	10 13 18 19	24	13		Silty Sand	Top 9": Dense, brown fine to medium SAND, trace Gravel, trace Silt Bottom 4": Dense, dark red brown Clayey SILT, some fine to coarse Sand, little Gravel, (wet)	
5	S-3	15 13 17 15	24	14			Top 4": Dense, dark red brown Clayey SILT, some fine to coarse Sand, little Gravel, (wet) Bottom 10": Dense, brown SILT, (wet)	40
						Varved Clay		
10	S-4	6 7 8 12	24	16			Stiff, (varved 1" thick) red brown to tan varved CLAY	35
15	S-5	8 10 18 26	24	22		Glacial Till	Medium dense, red brown Clayey SILT, some fine to coarse Sand, little fine Gravel, (wet)	30
20	S-6	11 17 24 25	24	14			Dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	25
25								

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

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

Total Penetration in Earth: 30ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	B-01-3
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-25-08	Route No.:		Northing:	839734.7
Finish Date:	9-29-08	Bridge No.:		Easting:	1017288.2
				Surface Elevation:	46.7

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @2.5 ' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-7	31 100	12	12		Glacial Till *(con't)*	Very dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	20
						Bedrock		
30	C-1		60	51	22		Very Poor Quality, Moderately Hard, Moderately Weathered, gray to red brown aphanitic SILTSTONE, primary joints (bedding plane) are low 2" to 8" spacing. No high joints. Coring time (min./ft.): 7, 7, 8, 8, 8	15
35	C-2		60	60	53		Fair Quality, Slightly Hard, Weathered, red brown aphanitic SILTSTONE. Primary joints are low, 2" to 10" spacing. One high angle joint is rough, curved, irregular. Coring time (min./ft.): 8, 8, 8, 8, 8	10
40							END OF BORING 40ft	5
45								0
50								

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

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

Total Penetration in Earth: 30ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	B-01-4
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-25-08	Route No.:		Northing:	839728.0
Finish Date:	9-25-08	Bridge No.:		Easting:	1017360.9
				Surface Elevation:	46.8

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	6 11 9 10	24	15		Crushed Stone Fill	Top 8": Medium dense, gray fine to coarse GRAVEL Bottom 7": Medium dense, gray fine to coarse SAND and SILT, (moist)	45
	S-2	3 9 8 8	24	19		Glacial Till	Top 12": Medium dense, brown fine to coarse SAND, trace Silt, (wet) Bottom 7": Medium dense, red brown Clayey SILT, some fine to coarse Sand, (wet)	
5	S-3	13 15 25 35	24	18			Dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	40
10	S-4	21 33 38 44	24	20			Very dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	35
15	S-5	16 24 35 38	24	14			Very dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	30
20	S-6	14 19 100	18	10			Very dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	25
25								

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

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

Total Penetration in Earth: 30ft Rock: 10ft	NOTES: Used solid stem augers to 10'. Drove casing to 20', then open hole.	Sheet 1 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: B-01-4	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-25-08	Route No.:	Northing: 839728.0	
Finish Date: 9-25-08	Bridge No.:	Easting: 1017360.9	
		Surface Elevation: 46.8	

Project Description: New Britain / Hartford Busway -

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @3' during drilling

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-7	100/5"	5	4		Glacial Till *(con't)*	Very dense, red brown Clayey SILT, some fine to coarse Sand, little fine to coarse Gravel, (wet)	20
						Bedrock		
30	C-1		60	59	65		Fair, Moderately Hard, Slightly Weathered, gray, aphanitic SILTSTONE. Bedding is massive. Primary joints horizontal, 2" to 18" spacing. Several high angle secondary joints are rough, carved. Coring time (min./ ft.): 7, 7, 7, 8, 8	15
35	C-2		60	58	83		Fair, Moderately Hard, Slightly Weathered, gray, aphanitic SILTSTONE. Bedding is massive. Primary joint spacing is 2" to 24" and no secondary joints. Coring time (min./ ft.): 8, 8, 8, 9, 9	10
40							END OF BORING 40ft	5
45								0
50								

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

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

Total Penetration in Earth: 30ft Rock: 10ft	NOTES: Used solid stem augers to 10'. Drove casing to 20', then open hole.	Sheet 2 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: B-02-2	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-2-08	Route No.:	Northing: 839999.1	
Finish Date: 10-2-08	Bridge No.:	Easting: 1018068.5	
		Surface Elevation: 27.1	

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 4"/HW, 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	2 21 40 52	24	16		Fill	Very dense, brown to red brown, fine to coarse SAND, some Silt	
	S-2	50/ 5"	5	0				25
5	S-3	50/ 5"	5	4			Very dense, red brown fine to coarse SAND, some Silt, little Gravel, (wet)	
	S-4	50/ 0"	0	0				20
10	S-5	50/ 3"	3	2		Bedrock	Very dense, red brown fine to coarse SAND, some Silt, trace decomposed Siltstone	
								15
15	C-1		60	59	0		Very poor quality, moderately weathered, moderately hard, red brown to gray aphanitic SILTSTONE, primary (bedding plane) joints are horizontal 1/2 to 3" spacing. Coring time (Min/Ft) 1,4,4,4,4	10
20	C-2		60	48	0		Very poor quality, moderately weathered, moderately hard, red brown, gray aphanitic SILTSTONE Coring time (Min/Ft) 4,2,4,4,4	5
25							END OF BORING 25ft	

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

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

Total Penetration in Earth: 15ft Rock: 10ft	NOTES: HW casing used from 0' to 5' NW casing used from 5' to 14"	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Ray Underwood	Town: Hartford	Hole No.: B-02-2F	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-6-08	Route No.:	Northing:	
Finish Date: 10-7-08	Bridge No.:	Easting:	
		Surface Elevation:	

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
5	S-1	50/ 2"	2	1		Siltstone	Very dense, red brown fine to coarse SAND and SILT. Augered moderately hard 5' to 10'	
10							END OF BORING 10ft	
15								
20								
25								

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

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

Total Penetration in

Earth: 10ft Rock: 0ft

No. of Soil Samples: 1 No. of Core Runs: 0

NOTES: Drilled to install OW, instead of in B-02-4, & to confirm soils due to poor recoveries in B-02-2. Please note revised soil conditions from B-02-2.
No water in bore hole 7am. Terminated ball hole in decomposed bedrock, no drain. Made 4 trials 3' to 8' (B-02-2A, B, C, D) north & east of B-02-2, all encountered hard rock or boulders 2 approximately 1', 5th trial B-02-2F was drilled 15' West of B-02-2, which appeared to encounter decomposed SILTSTONE @ 4'.

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Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: B-02-3	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-3-08	Route No.:	Northing: 839961.6	
Finish Date: 10-3-08	Bridge No.:	Easting: 1018033.6	
		Surface Elevation: 26.2	

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 4"/HW, 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement	Asphalt over gravel base	
						Fill		25
	S-1	18 15 9 5	24	12			Medium dense, gray fine to coarse SAND and GRAVEL, little Silt	
	S-2	11 6 7 8	24	16			Medium dense, gray fine to coarse SAND and GRAVEL, little Silt Medium dense	
5	S-3	9 10 15 24	24	18			Top 6": gray fine to coarse SAND and GRAVEL, little Silt Bottom 6": red brown fine to medium SAND, trace Silt	20
	S-4	50/3"	3	3			Very dense, brown coarse GRAVEL and fine to coarse SAND, little Silt	
10	S-5	7 16 34 38	24	14			Top 4": Very dense, brown coarse GRAVEL and fine to coarse SAND, little Silt Bottom 10": Very dense, red brown fine to coarse SAND and GRAVEL, little Silt	
						Glacial Till		15
						Bedrock	Very poor quality, moderately to highly weathered, moderately hard, red brown aphanitic SILTSTONE with horizontal jointing at 1/2 to 3 inch spacing. Coring time(Min./Ft.) 3,2	
15	C-1		24	14	0			10
							END OF BORING 16.2ft	
20								5
25								

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

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

Total Penetration in Earth: 14ft Rock: 2ft	NOTES: HW casing used from 0 to 5 feet NW casing used from 5 to 14 feet Rollerbit refusal at approximately 14 feet	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 1		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: B-02-4	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 10-3-08	Route No.:	Northing: 839964.8	
Finish Date: 10-3-08	Bridge No.:	Easting: 1018069.8	
		Surface Elevation: 28.2	

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill		
	S-1	40 47 42 33	24	18			Very dense, red brown fine to medium SAND, some Silt, little Gravel	
	S-2	13 9 8 60	24	14			Top 8": Medium dense, red brown fine to medium SAND, trace Silt Middle 4": Medium dense, gray GRAVEL Bottom 6": Very dense, red brown fine to coarse SAND, little Silt	25
5	S-3	50/ 0"	0	0		Bedrock		
								20
10	C-1		60	60	75		Good quality, medium hard, slighty weathered, red brown, aphanitic SILTSTONE. Primary (bedding joints) joints are low angle 2-12" spacing. Coring time (min./ft.): 6, 6, 6, 6, 6	15
15	C-2		60	60	15		Very poor quality, medium hard, moderately weathered, red brown, aphanitic SILTSTONE. Primary joints are low angle 1-4" spacing Coring time (min./ft.): 6, 6, 6, 6, 6	10
20							END OF BORING 19.5ft	

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

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

Total Penetration in Earth: 9.5ft Rock: 10ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 3 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Dan Farstad	Town:	Hartford	Hole No.:	B-02-5
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-16-08	Route No.:		Northing:	839905.4
Finish Date:	10-17-08	Bridge No.:		Easting:	1018001.2
				Surface Elevation:	48.9

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	3 10 8 12	24	6		Fill	Medium dense, red brown fine to medium SAND, little Gravel, little Silt, trace Brick	
	S-2	3 4 3 6	24	12			Loose, brown fine to medium SAND, trace Silt	45
5	S-3	4 8 10 16	24	2		Glacial Till	Medium dense, red brown Clayey SILT, little fine to coarse Sand	
	S-4	7 12 16 22	24	10			Medium dense, red brown Clayey SILT, some Gravel, little fine to coarse Sand	40
10	S-5	17 21 25 29	24	22			Dense, red brown Clayey SILT, some Gravel, little fine to coarse Sand	35
15	S-6	17 20 25 31	24	24			Dense, red brown Clayey SILT, some Gravel, little fine to coarse Sand	30
20	S-7	21 29 31 38	24	24			Very dense, red brown Clayey SILT, some Gravel, little fine to coarse Sand	25
25								

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

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

Total Penetration in Earth: 25.6ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Dan Farstad	Town:	Hartford	Hole No.:	B-02-5
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-16-08	Route No.:		Northing:	839905.4
Finish Date:	10-17-08	Bridge No.:		Easting:	1018001.2
				Surface Elevation:	48.9

Project Description: New Britain / Hartford Busway - Busway SB Over I-84 WB On-Ramp

Casing Size/Type: 3 1/4" HSA	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @None observed

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-8	100/ 1"	1	1		Bedrock	Very dense, red brown weathered SILTSTONE	
	C-1		60	60	23		Very poor quality, moderately hard, slightly weathered, red brown, SILTSTONE Coring time (min./ft.): 2, 3, 3, 5, 3	20
30	C-2		60	60	50		Poor quality, moderately hard, slightly weathered, red brown, SILTSTONE Coring time (min./ft.): 3, 3, 4, 3, 3	15
35							END OF BORING 35.6ft	10
40								5
45								0
50								

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

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

Total Penetration in Earth: 25.6ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	B-03-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-15-08	Route No.:		Northing:	839913.4
Finish Date:	10-15-08	Bridge No.:		Easting:	1018039.2
				Surface Elevation:	50.1

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @7.5' after 10 hrs.

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	2 2 2 3	24	5		Crushed Stone / Fill	Loose, blue gray GRAVEL, some brown fine to medium Sand, trace Silt, (moist)	50
5	S-2	2 5 6 7	24	12			Medium dense, tan fine to medium SAND, trace Silt, (moist)	45
						Glacial Till		
10	S-3	6 12 14 18	24	11			Medium dense, red brown Clayey SILT, little fine Sand, little Gravel, (moist)	40
15	S-4	28 37 46 61	24	0			No recovery	35
20	S-5	100/ 2"	2	1		Bedrock	Very dense, red brown, weathered SILTSTONE	30
25	C-1		60	59	63		Fair quality, moderately hard, slightly weathered, red brown, fine grained, SILTSTONE, very close to	

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

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

Total Penetration in Earth: 22ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 5 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Ray Underwood	Town:	Hartford	Hole No.:	B-03-1
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-15-08	Route No.:		Northing:	839913.4
Finish Date:	10-15-08	Bridge No.:		Easting:	1018039.2
				Surface Elevation:	50.1

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @7.5' after 10 hrs.

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25						Bedrock *(con't)*	moderate jointing, few high to moderate angles. Coring time (min./ft.): 3, 3, 2.5, 5, 3.5	25
	C-2		60	60	43		Poor quality, moderately hard, slightly weathered, red brown, fine grained, SILTSTONE, very close to close jointing, few high to moderate angles. Coring time (min./ft.): 3, 4.5, 4, 4, 3	
30								20
							END OF BORING 32ft	
35								15
40								10
45								5
50								

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

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

Total Penetration in Earth: 22ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 5 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Dan Farstad	Town:	Hartford	Hole No.:	B-03-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-16-08	Route No.:		Northing:	839991.5
Finish Date:	10-16-08	Bridge No.:		Easting:	1018145.7
				Surface Elevation:	49.7

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @6' after 0 hrs.

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	2 7 8 9	24	6		Fill	Medium dense, brown fine SAND, little Gravel, trace Silt	
	S-2	9 10 9 8	24	14			Medium dense, brown fine SAND, trace Silt	
5	S-3	2 2 2 2	24	12			Loose, brown fine SAND, trace Silt	45
	S-4	3 3 4 10	24	18			Loose, brown fine SAND, trace Silt	
	S-5	7 6 7 9	24	18			Medium dense, brown fine SAND, little Silt, (wet)	
10	S-6	2 6 11 16	24	14		Glacial Till	Medium dense, red/brown, Top 3"; Clayey SILT, little fine Sand, trace Gravel Bottom 11": fine to medium SAND, some Clayey Silt, little Gravel	40
15	S-7	10 11 18 23	24	24			Medium dense, red brown fine to medium SAND, some Silt, trace Gravel	35
20	S-8	100/ 2"	2	2		Bedrock	Very dense, red brown fine to medium SAND, little Gravel, little Silt, (weathered Siltstone fragments)	30
25								25

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

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

Total Penetration in Earth: 24ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Dan Farstad	Town:	Hartford	Hole No.:	B-03-2
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	10-16-08	Route No.:		Northing:	839991.5
Finish Date:	10-16-08	Bridge No.:		Easting:	1018145.7
				Surface Elevation:	49.7

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 3"/NW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: Fall:	Hammer Wt.: 140 lbs. Fall: 30"	

Groundwater Observations: @6' after 0 hrs.

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	C-1		60	60	88	Bedrock *(con't)*	Good quality, moderately hard, slightly weathered, red brown, SILTSTONE Coring time (min./ft.): 3, 4, 4, 3, 4	
30	C-2		60	60	83		Good quality, moderately hard, slightly weathered, red brown, SILTSTONE Coring time (min./ft.): 3, 4, 4, 4, 4	20
35							END OF BORING 34ft	15
40								10
45								5
50								0

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

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

Total Penetration in Earth: 24ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector:	Garry Jacobson	Town:	Hartford	Hole No.:	B-03-6
Engineer:	Geo**Design**, Inc.	Project No.:	63-H137 / 0331-014.0	Stat./Offset:	
Start Date:	9-24-08	Route No.:		Northing:	839864.7
Finish Date:	9-24-08	Bridge No.:		Easting:	1018040.2
				Surface Elevation:	50.2

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: Fall:	

Groundwater Observations: @10' during drilling

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Crushed Stone		50
	S-1	6 11 16 12	24	12		Fill	Medium dense, gray Top 3": fine to coarse GRAVEL Bottom 9": fine to coarse SAND, some Silt	
	S-2	16 11 10 25	24	14			Medium dense, brown fine to coarse SAND, little Silt, little Gravel	
5								45
	S-3	10 10 13 14	24	15			Medium dense, brown fine to coarse SAND, little Silt, little Gravel	
	S-4	15 18 17 20	24	12			Dense, brown fine to coarse SAND, little Gravel, trace Silt, (moist)	
10						Glacial Till		40
	S-5	12 15 21 35	24	15			Dense, red brown Clayey SILT, some fine to coarse Sand, little Gravel, (wet)	
15								35
	S-6	17 28 37 40	24	13			Very dense, red brown Clayey SILT, some fine to coarse SAND, little Gravel, (wet)	
20								30
	S-7	16 33 51 56	24	18			Very dense, red brown Clayey SILT, some fine to coarse SAND, little Gravel, (wet)	
						Bedrock		
25								

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

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

Total Penetration in Earth: 25ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Inspector: Garry Jacobson	Town: Hartford	Hole No.: B-03-6	
Engineer: Geo**Design**, Inc.	Project No.: 63-H137 / 0331-014.0	Stat./Offset:	
Start Date: 9-24-08	Route No.:	Northing: 839864.7	
Finish Date: 9-24-08	Bridge No.:	Easting: 1018040.2	
		Surface Elevation: 50.2	

Project Description: New Britain / Hartford Busway - Busway NB Over I-84 WB On Ramp

Casing Size/Type: 4"/HW	Sampler Type/Size: SS / 1 3/8"	Core Barrel Type: NQ
Hammer Wt.: 300 lbs. Fall: 24"	Hammer Wt.: Fall:	

Groundwater Observations: @10' during drilling

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25						Bedrock *(con't)*		25
	C-1		60	60	87		Good quality, moderately hard, slighty weathered, red brown, aphanitic SILTSTONE, primary joints low angle to horizontal 4-16" spacing. Coring time (min./ft.): 8,8,9,9,9	
30								20
	C-2		60	48	40		Poor quality, hard, slighty weathered, red brown, aphanitic SILTSTONE, primary joints low angle, 2-8" spacing. Coring time (min./ft.): 8,8,9,9,9	
35							END OF BORING 35ft	15
40								10
45								5
50								

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

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

Total Penetration in Earth: 25ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

INSERT TAB
APPENDIX 4
HERE

Appendix 4

Laboratory Test Results

Index Tests
Sieve & Hydrometer Analyses

GeoTesting
express
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1145 Massachusetts Avenue
Boxborough, MA 01719
978 635 0424 Tel
978 635 0266 Fax

Geotechnical Test Report

April 6, 2009

GTX-8917
New Britain – Hartford Busway
#63-H137
Project

Hartford, CT

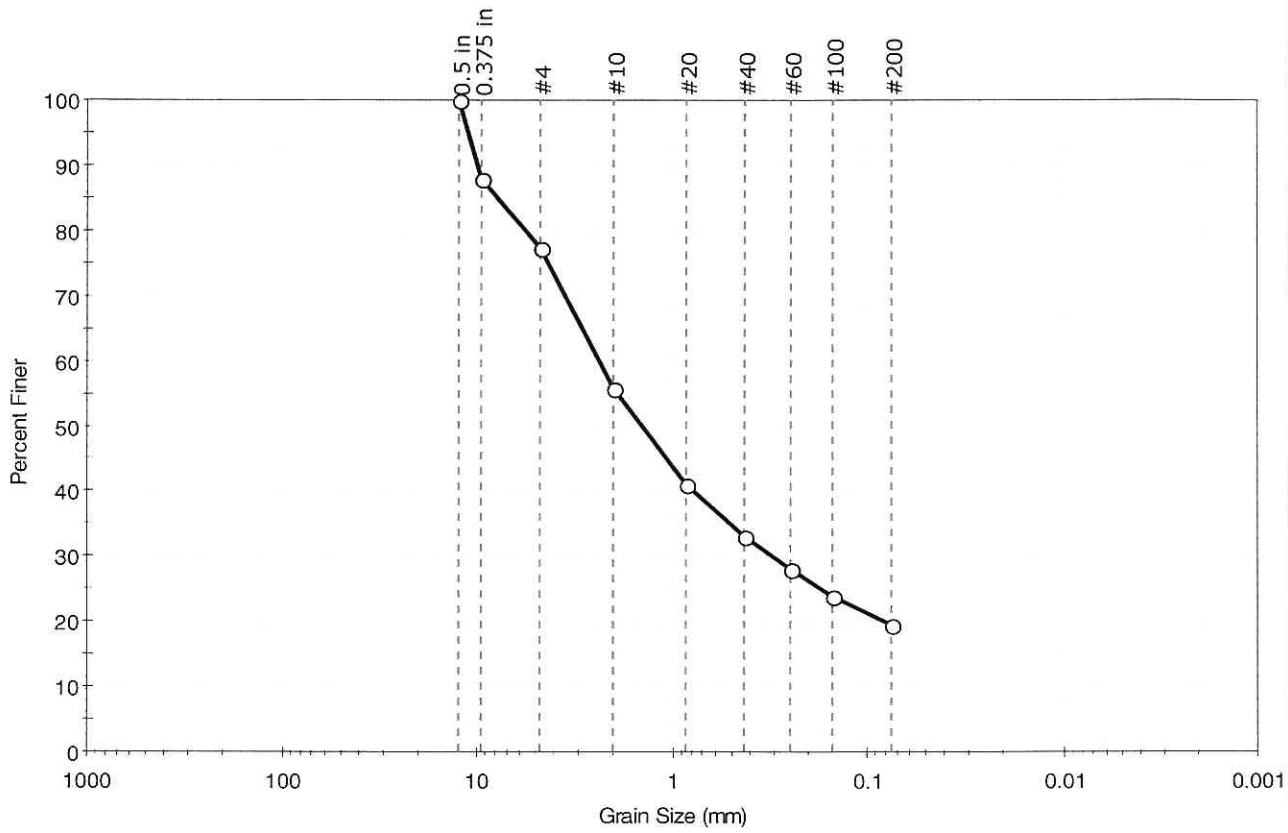
Prepared for:

GeoDesign

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149713		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	22.6	57.8	19.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	88		
#4	4.75	77		
#10	2.00	56		
#20	0.85	41		
#40	0.42	33		
#60	0.25	28		
#100	0.15	24		
#200	0.075	20		

Coefficients

D_{85} = 7.8210 mm D_{30} = 0.3059 mm
D_{60} = 2.3739 mm D_{15} = N/A
D_{50} = 1.4303 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

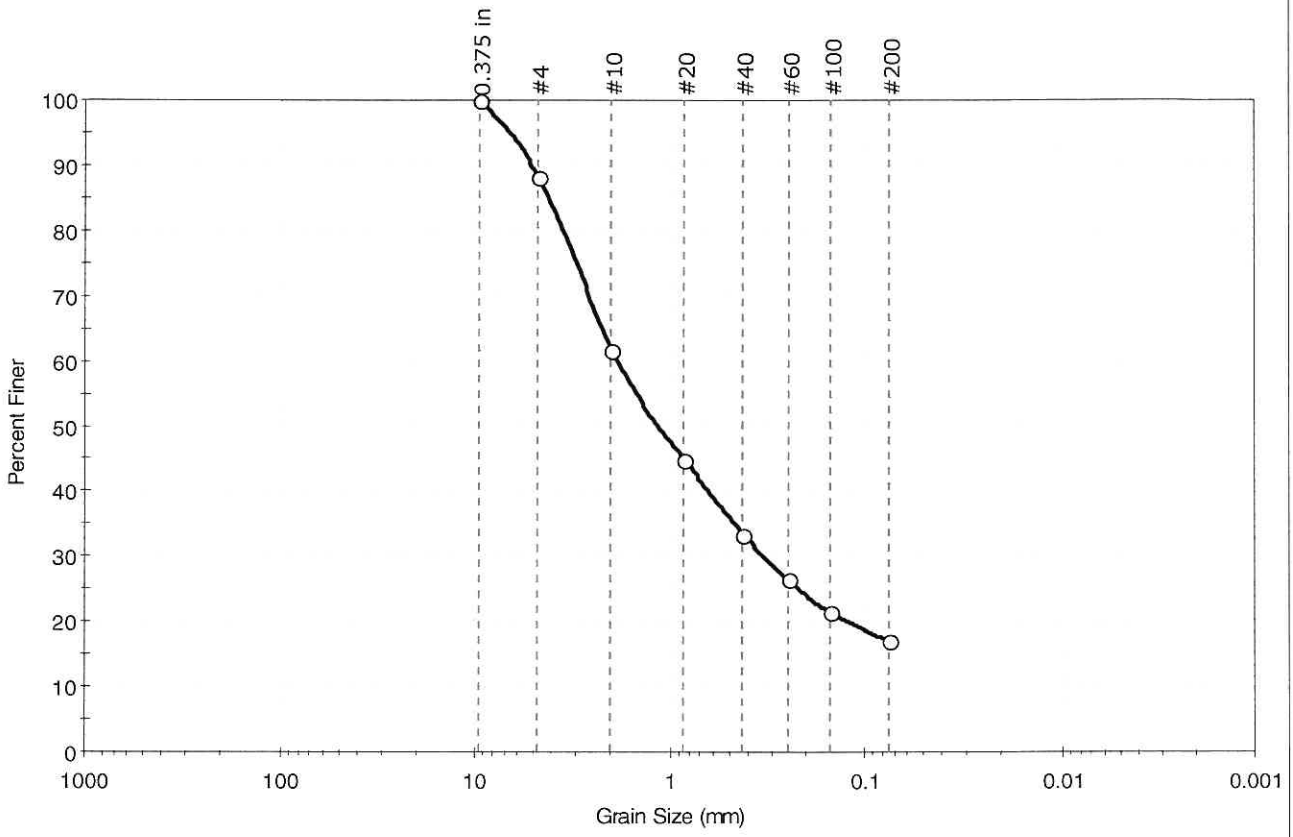
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149714		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.7	71.2	17.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	88		
#10	2.00	62		
#20	0.85	45		
#40	0.42	33		
#60	0.25	26		
#100	0.15	21		
#200	0.075	17		

Coefficients

D_{85} = 4.2727 mm D_{30} = 0.3274 mm
D_{60} = 1.8276 mm D_{15} = N/A
D_{50} = 1.0994 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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GeoTesting express
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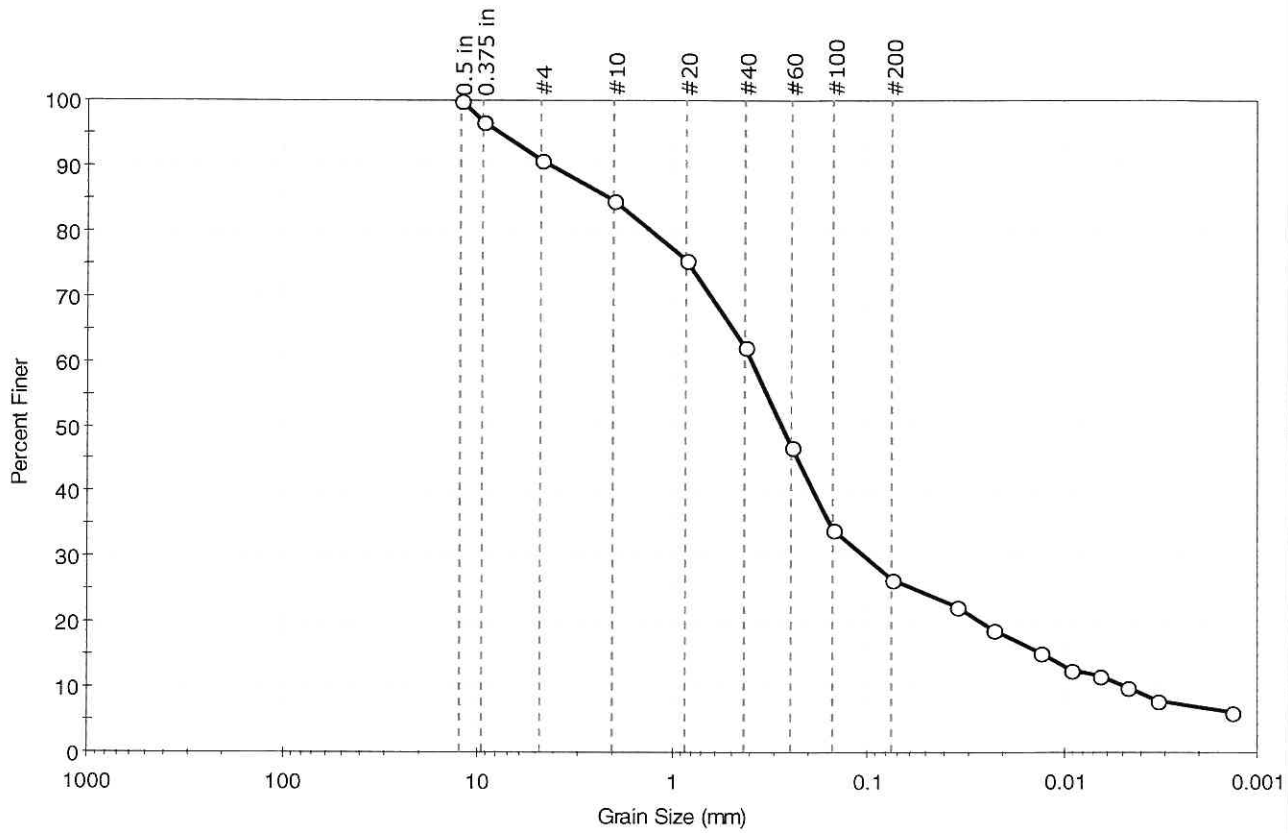
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-4	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 04/02/09	Checked By:	jdt
Depth : 2.0-4.0 ft	Test Id: 149741		
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silty sand		
Sample Comment:	-		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.2	64.2	26.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	97		
#4	4.75	91		
#10	2.00	85		
#20	0.85	76		
#40	0.42	62		
#60	0.25	47		
#100	0.15	34		
#200	0.075	27		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0353	22		
---	0.0225	19		
---	0.0130	15		
---	0.0093	13		
---	0.0066	12		
---	0.0047	10		
---	0.0033	8		
---	0.0014	6		

Coefficients

D_{85} = 2.1046 mm D_{30} = 0.1019 mm
D_{60} = 0.3934 mm D_{15} = 0.0125 mm
D_{50} = 0.2784 mm D_{10} = 0.0048 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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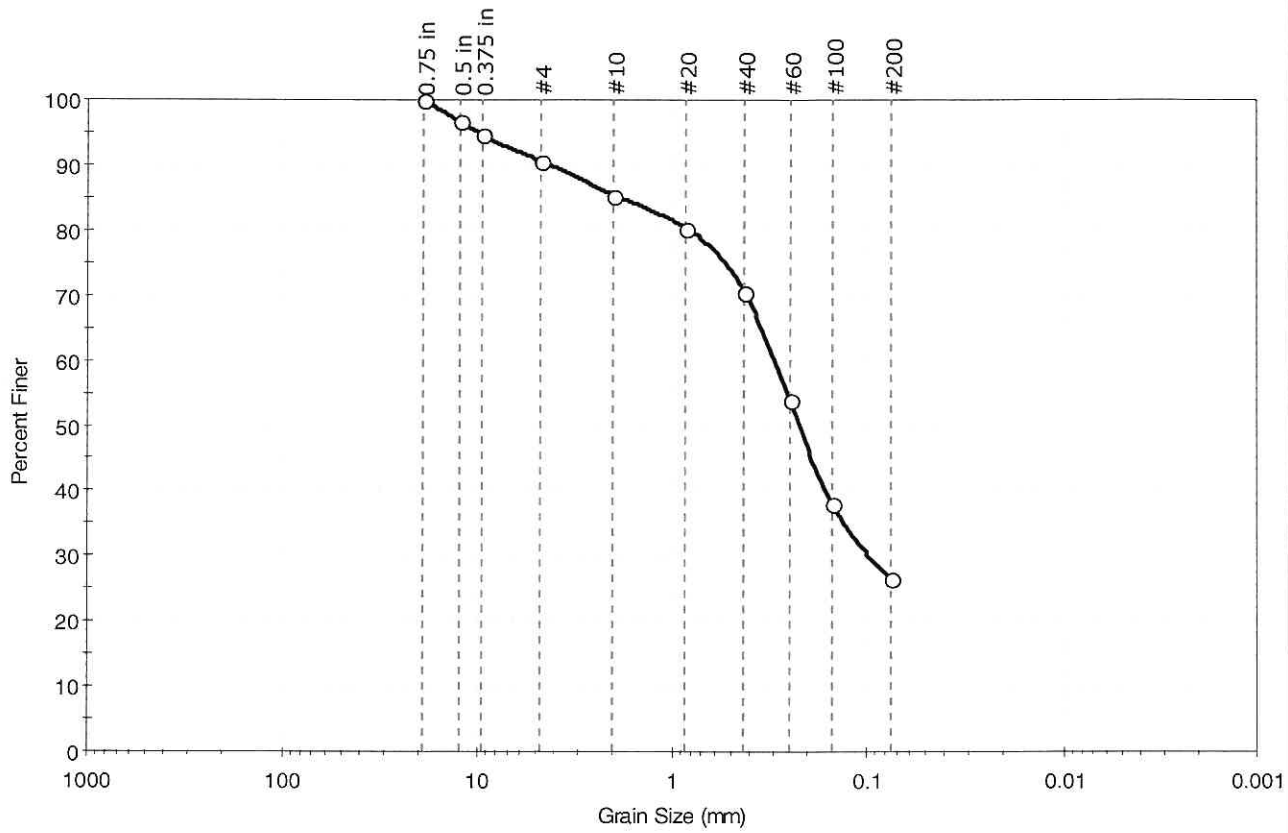
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-5	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0-2.0 ft	Test Id: 149715		
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	9.3	64.0	26.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	97		
0.375 in	9.50	95		
#4	4.75	91		
#10	2.00	85		
#20	0.85	80		
#40	0.42	70		
#60	0.25	54		
#100	0.15	38		
#200	0.075	27		

Coefficients

D_{85} = 1.8764 mm D_{30} = 0.0918 mm
D_{60} = 0.3033 mm D_{15} = N/A
D_{50} = 0.2195 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
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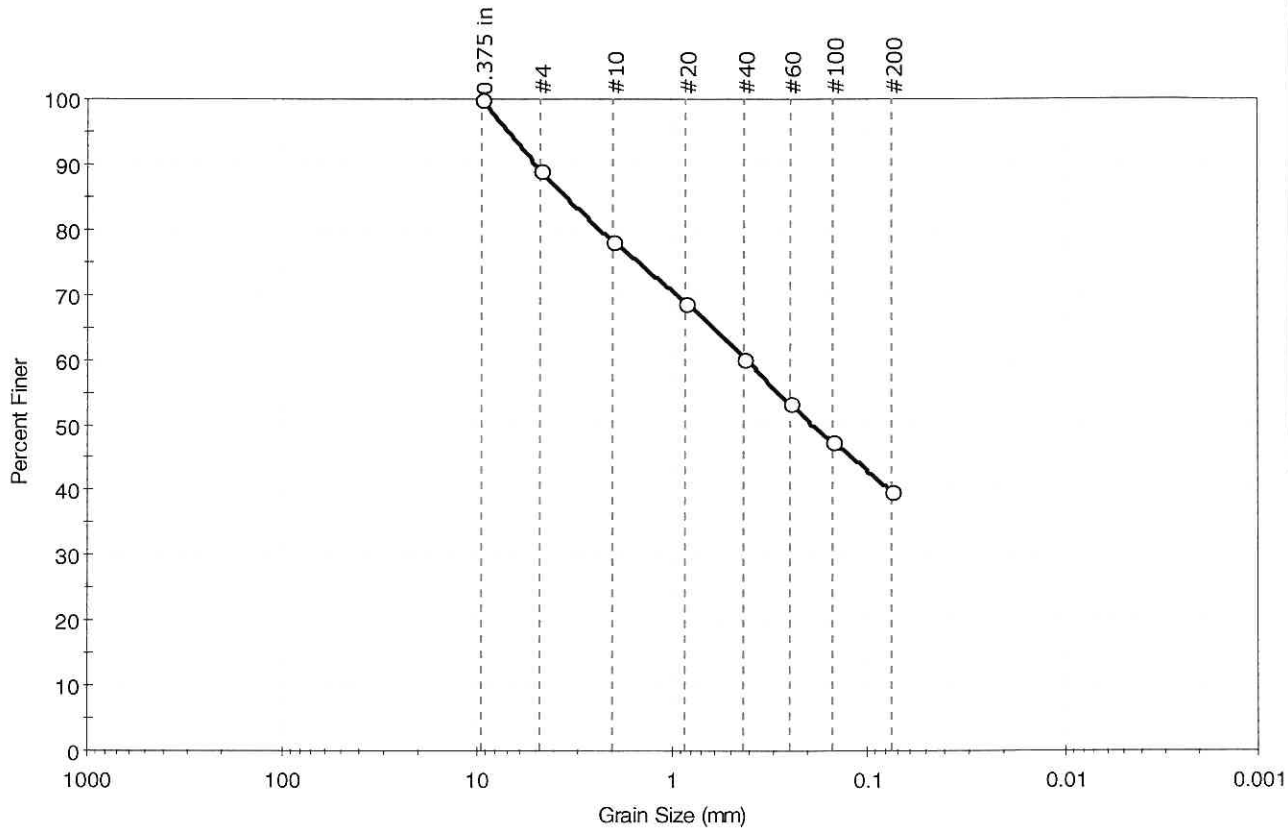
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-6	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/30/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149716		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.0	49.2	39.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	89		
#10	2.00	78		
#20	0.85	69		
#40	0.42	60		
#60	0.25	53		
#100	0.15	47		
#200	0.075	40		

Coefficients

D_{85} = 3.4579 mm D_{30} = N/A
D_{60} = 0.4172 mm D_{15} = N/A
D_{50} = 0.1871 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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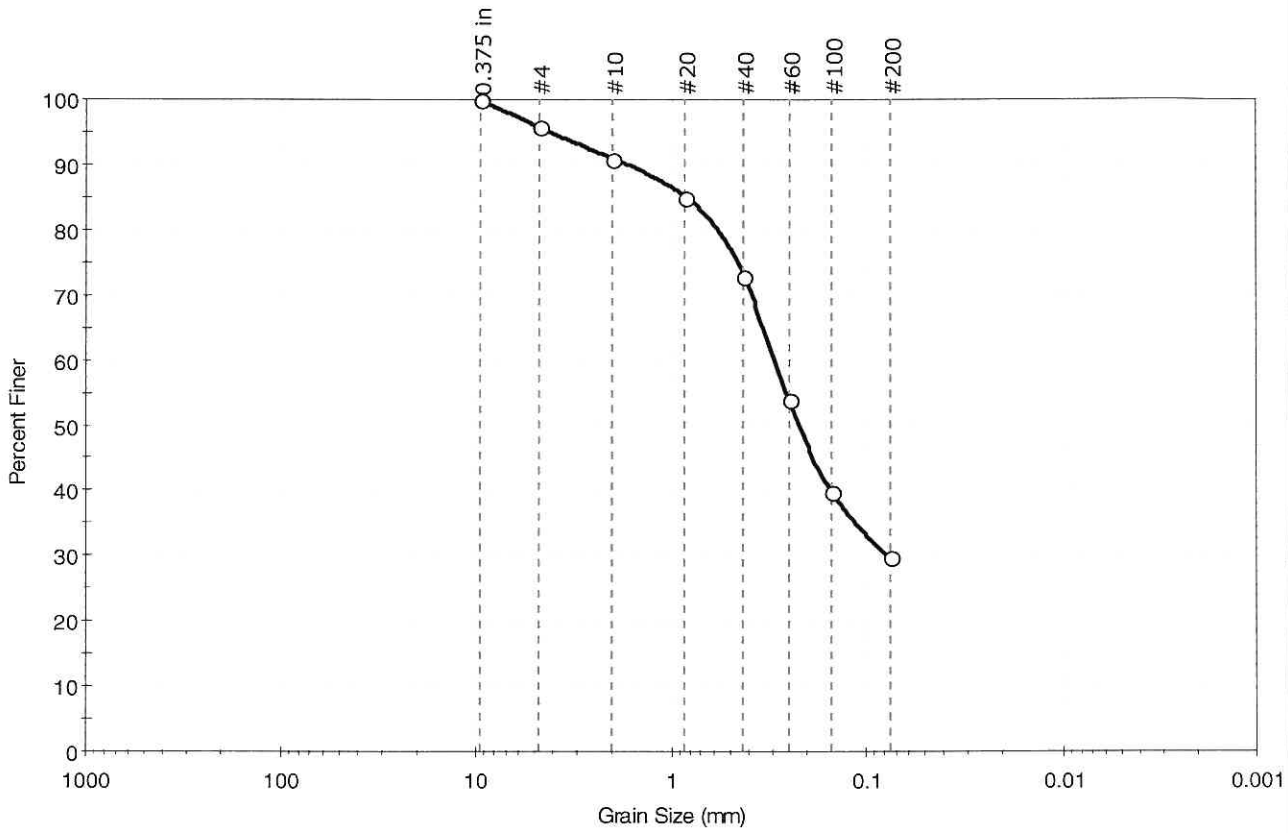
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-7	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.5-3.5 ft	Test Id: 149717		
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	4.2	66.1	29.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	96		
#10	2.00	91		
#20	0.85	85		
#40	0.42	73		
#60	0.25	54		
#100	0.15	40		
#200	0.075	30		

Coefficients

D_{85} = 0.8457 mm D_{30} = 0.0767 mm
D_{60} = 0.2966 mm D_{15} = N/A
D_{50} = 0.2168 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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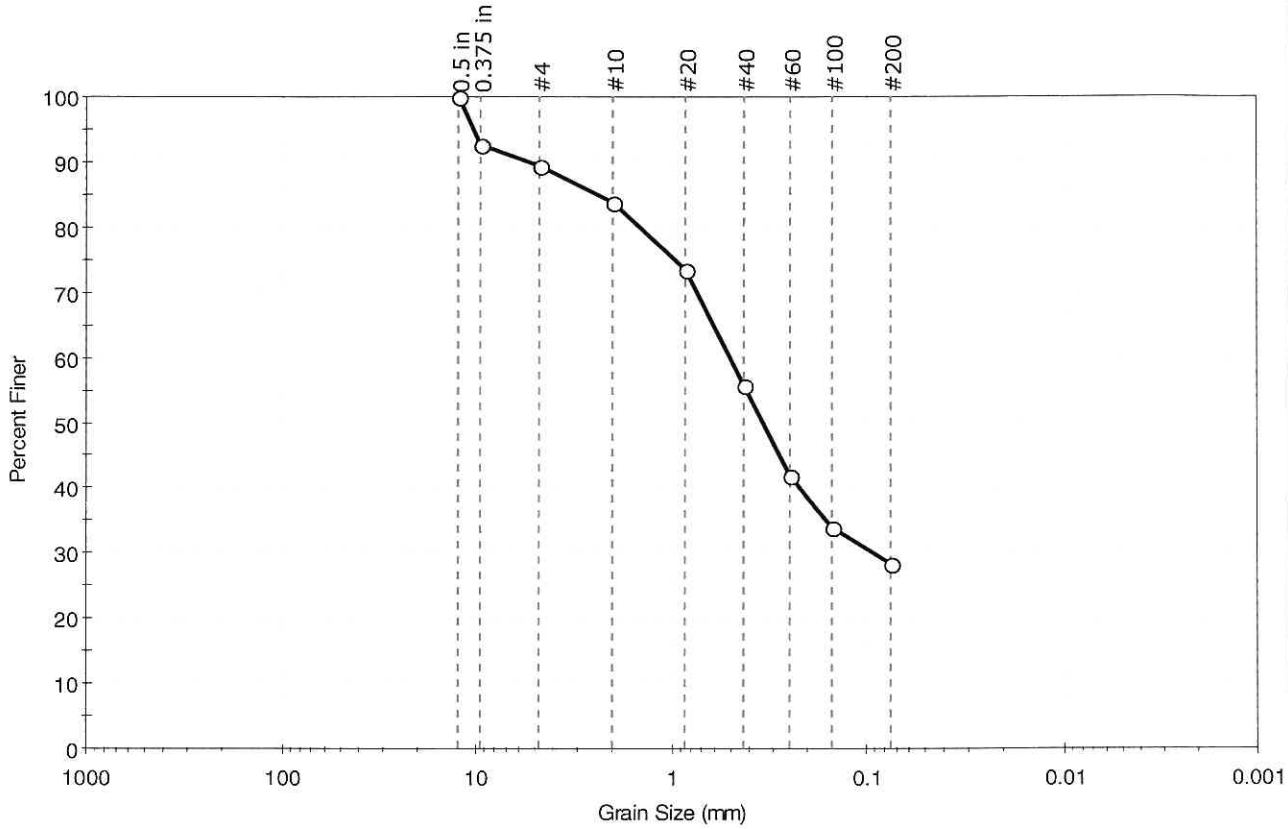
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-14	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	n/a
Depth : 0-2.0 ft	Test Id: 149718		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.8	60.8	28.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	93		
#4	4.75	89		
#10	2.00	84		
#20	0.85	73		
#40	0.42	56		
#60	0.25	42		
#100	0.15	34		
#200	0.075	28		

Coefficients

D_{85} = 2.4141 mm D_{30} = 0.0916 mm
D_{60} = 0.5021 mm D_{15} = N/A
D_{50} = 0.3410 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

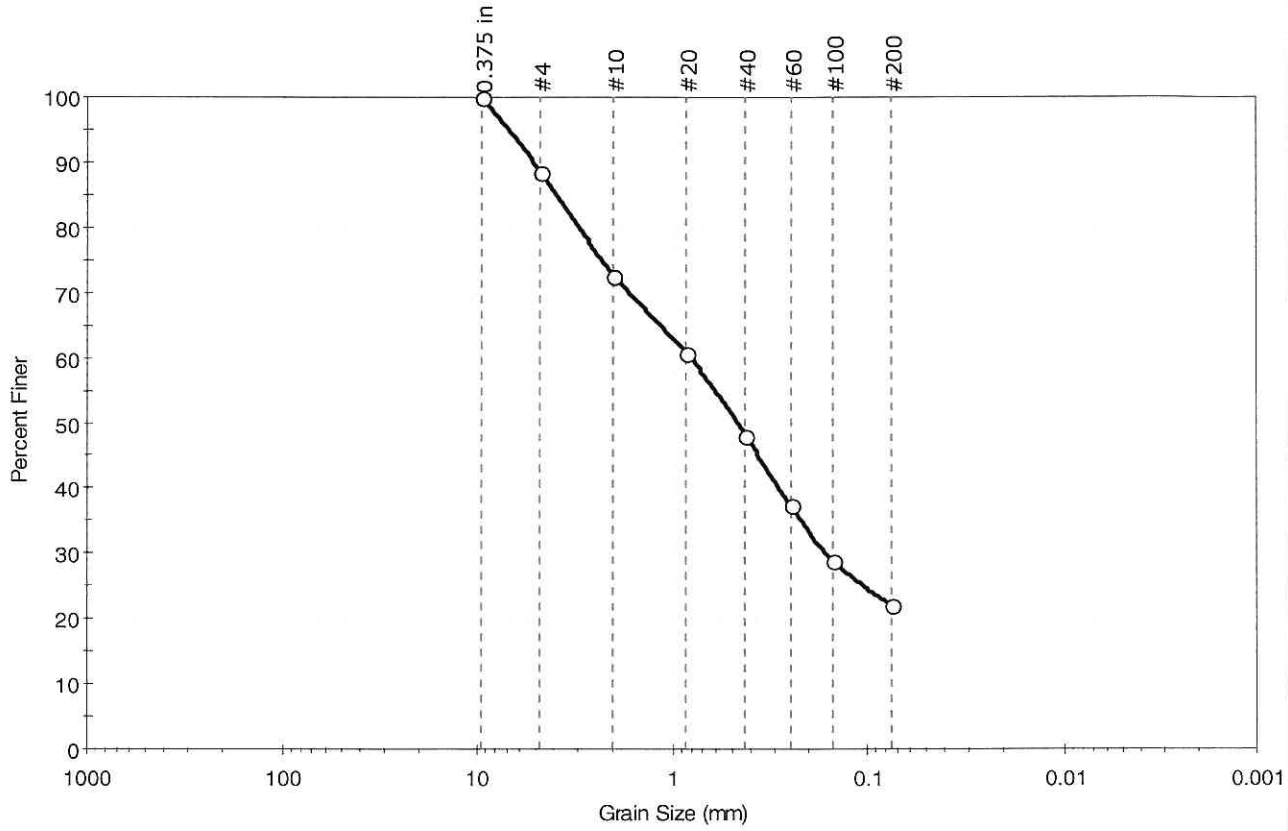
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-16	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0.5-2.5 ft	Test Id: 149719		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	11.5	66.4	22.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	89		
#10	2.00	73		
#20	0.85	61		
#40	0.42	48		
#60	0.25	37		
#100	0.15	29		
#200	0.075	22		

Coefficients

D_{85} = 3.9122 mm D_{30} = 0.1598 mm
D_{60} = 0.8177 mm D_{15} = N/A
D_{50} = 0.4712 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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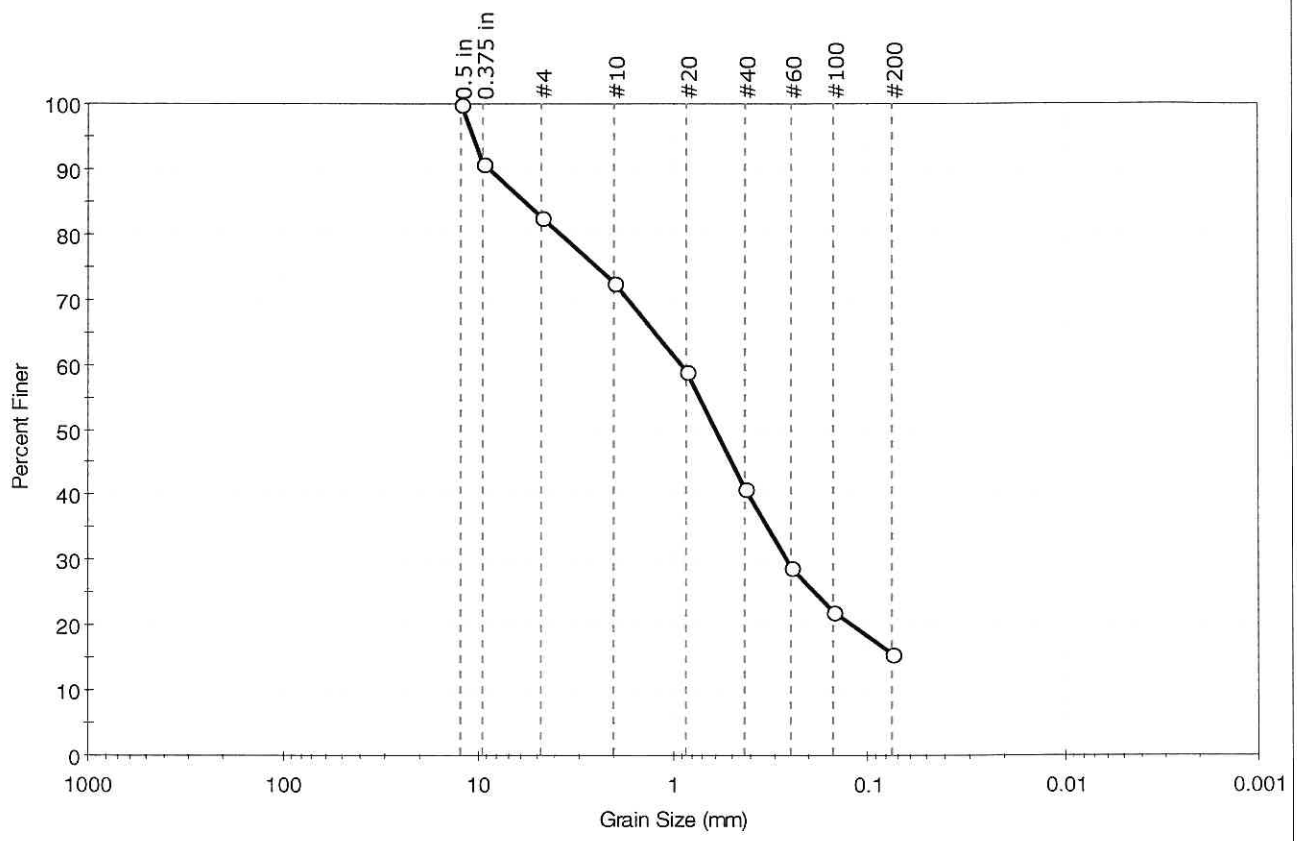
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-18	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0-2.0 ft	Test Id: 149720		
Test Comment:	---		
Sample Description:	Moist, very dark brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	17.5	66.8	15.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	91		
#4	4.75	83		
#10	2.00	73		
#20	0.85	59		
#40	0.42	41		
#60	0.25	29		
#100	0.15	22		
#200	0.075	16		

Coefficients

D_{85} = 5.8112 mm	D_{30} = 0.2625 mm
D_{60} = 0.9059 mm	D_{15} = N/A
D_{50} = 0.6022 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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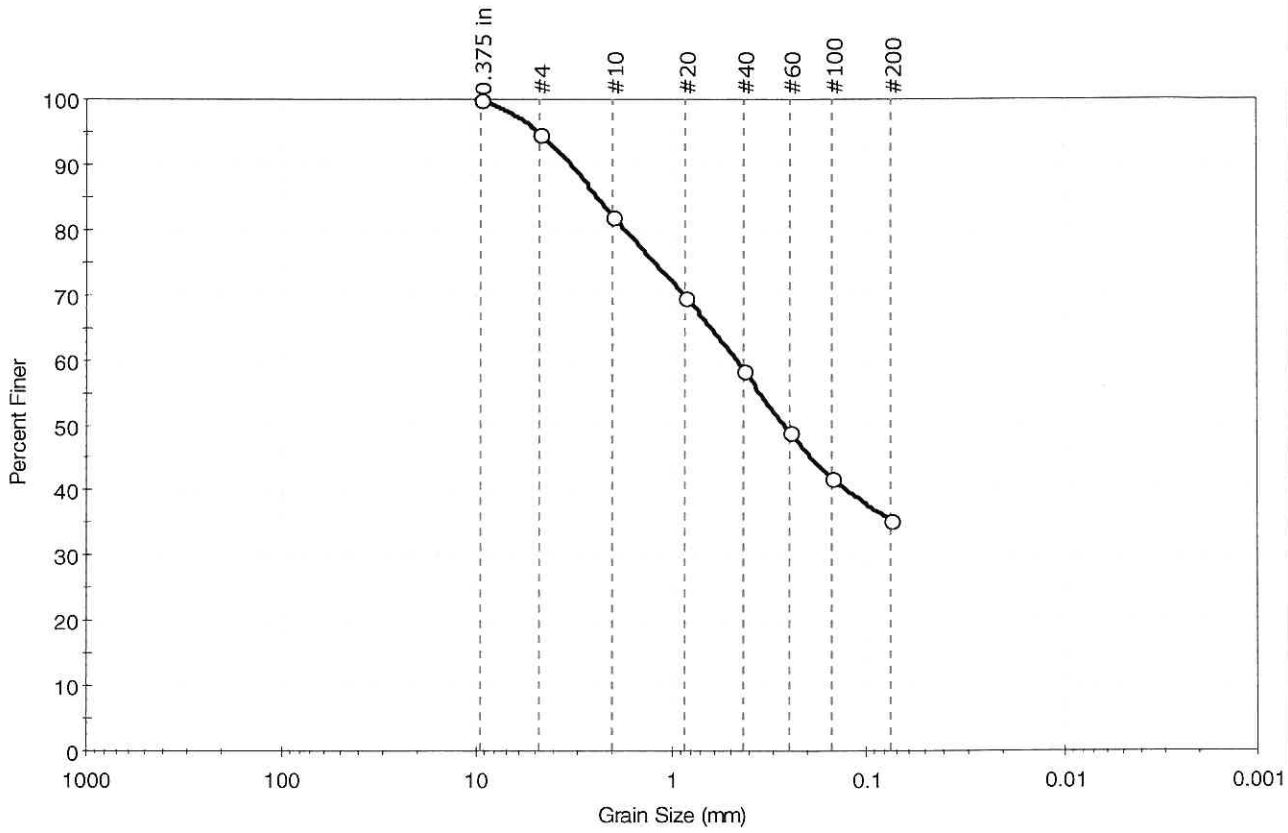
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-20	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/31/09	Checked By:	n/a
Depth : 2.0-4.0 ft	Test Id: 149721		
Test Comment:	---		
Sample Description:	Moist, light yellowish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	5.2	59.3	35.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	95		
#10	2.00	82		
#20	0.85	70		
#40	0.42	58		
#60	0.25	49		
#100	0.15	42		
#200	0.075	36		

Coefficients

D_{85} = 2.4590 mm D_{30} = N/A
D_{60} = 0.4704 mm D_{15} = N/A
D_{50} = 0.2650 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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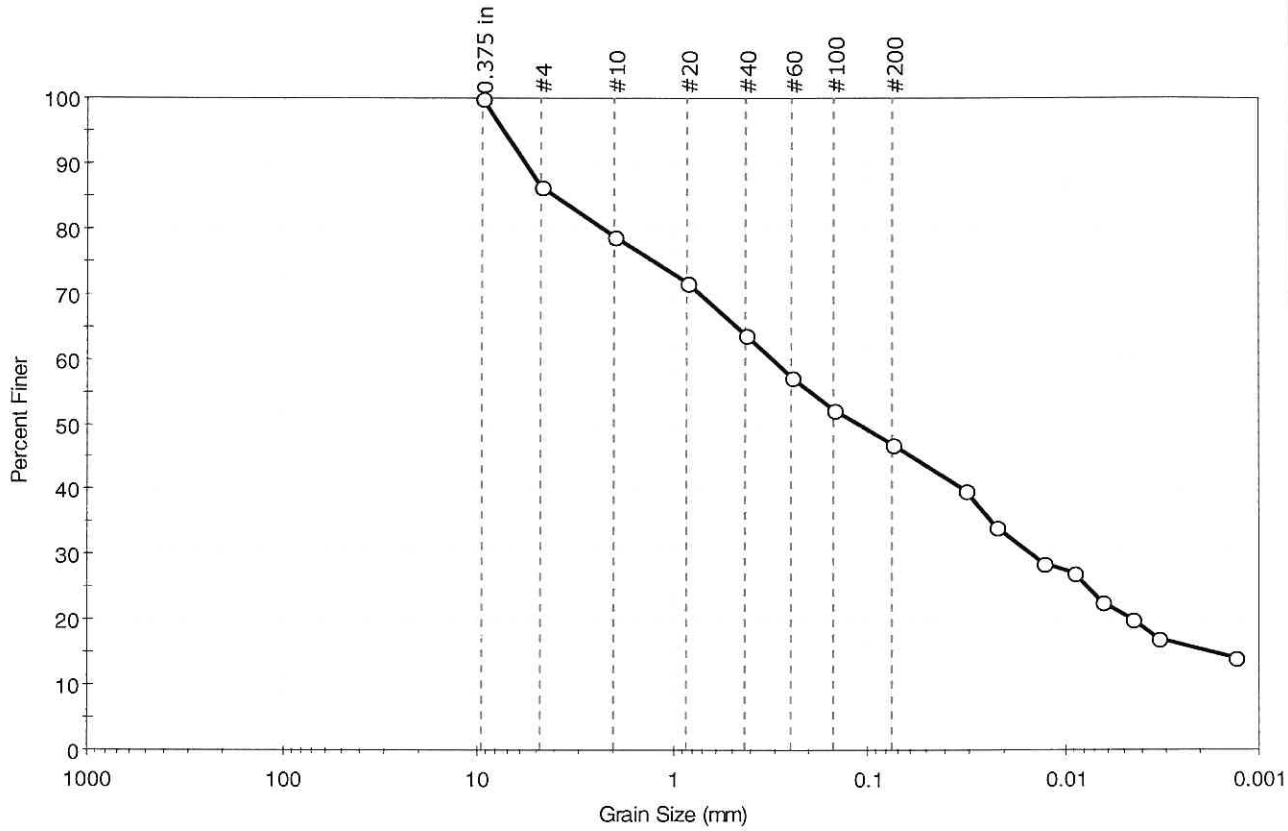
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-21	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/31/09	Checked By:	jdt
Depth : 2.0-4.0 ft	Test Id: 149742		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	13.6	39.6	46.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	86		
#10	2.00	79		
#20	0.85	72		
#40	0.42	64		
#60	0.25	57		
#100	0.15	52		
#200	0.075	47		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0321	40		
---	0.0221	34		
---	0.0128	28		
---	0.0091	27		
---	0.0065	23		
---	0.0045	20		
---	0.0033	17		
---	0.0013	14		

Coefficients

D_{85} = 4.0473 mm D_{30} = 0.0148 mm
D_{60} = 0.3133 mm D_{15} = 0.0017 mm
D_{50} = 0.1138 mm D_{10} = 0.0004 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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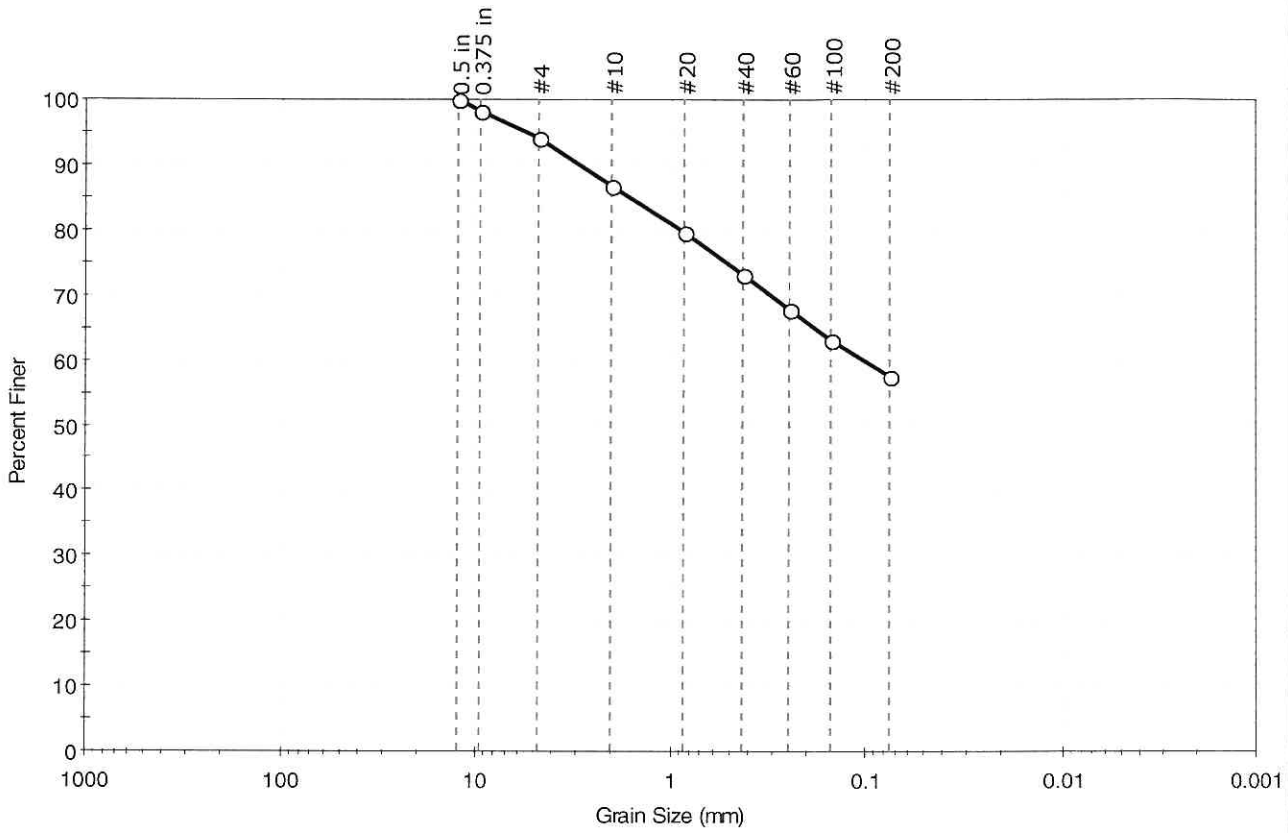
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-22	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/30/09	Checked By:	jdt
Depth : 2.0-4.0 ft	Test Id: 149722		
Test Comment:	---		
Sample Description:	Moist, reddish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.0	36.5	57.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	94		
#10	2.00	87		
#20	0.85	80		
#40	0.42	73		
#60	0.25	68		
#100	0.15	63		
#200	0.075	57		

Coefficients

D_{85} = 1.6102 mm	D_{30} = N/A
D_{60} = 0.1028 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
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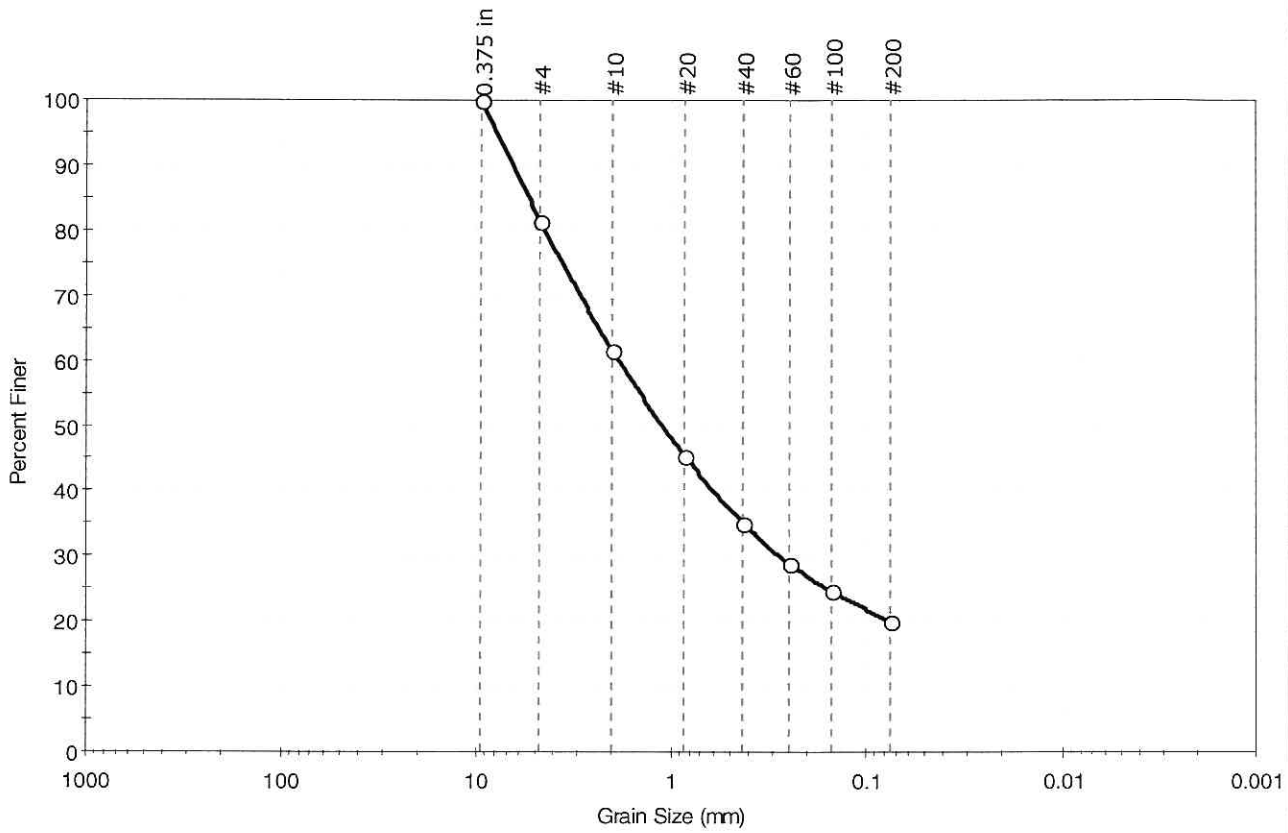
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-23	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/30/09	Checked By:	n/a
Depth : 1.0-3.0 ft	Test Id: 149723		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	18.5	61.4	20.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	82		
#10	2.00	62		
#20	0.85	45		
#40	0.42	35		
#60	0.25	29		
#100	0.15	25		
#200	0.075	20		

Coefficients

D_{85} = 5.4150 mm D_{30} = 0.2743 mm
D_{60} = 1.8453 mm D_{15} = N/A
D_{50} = 1.0843 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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GeoTesting express
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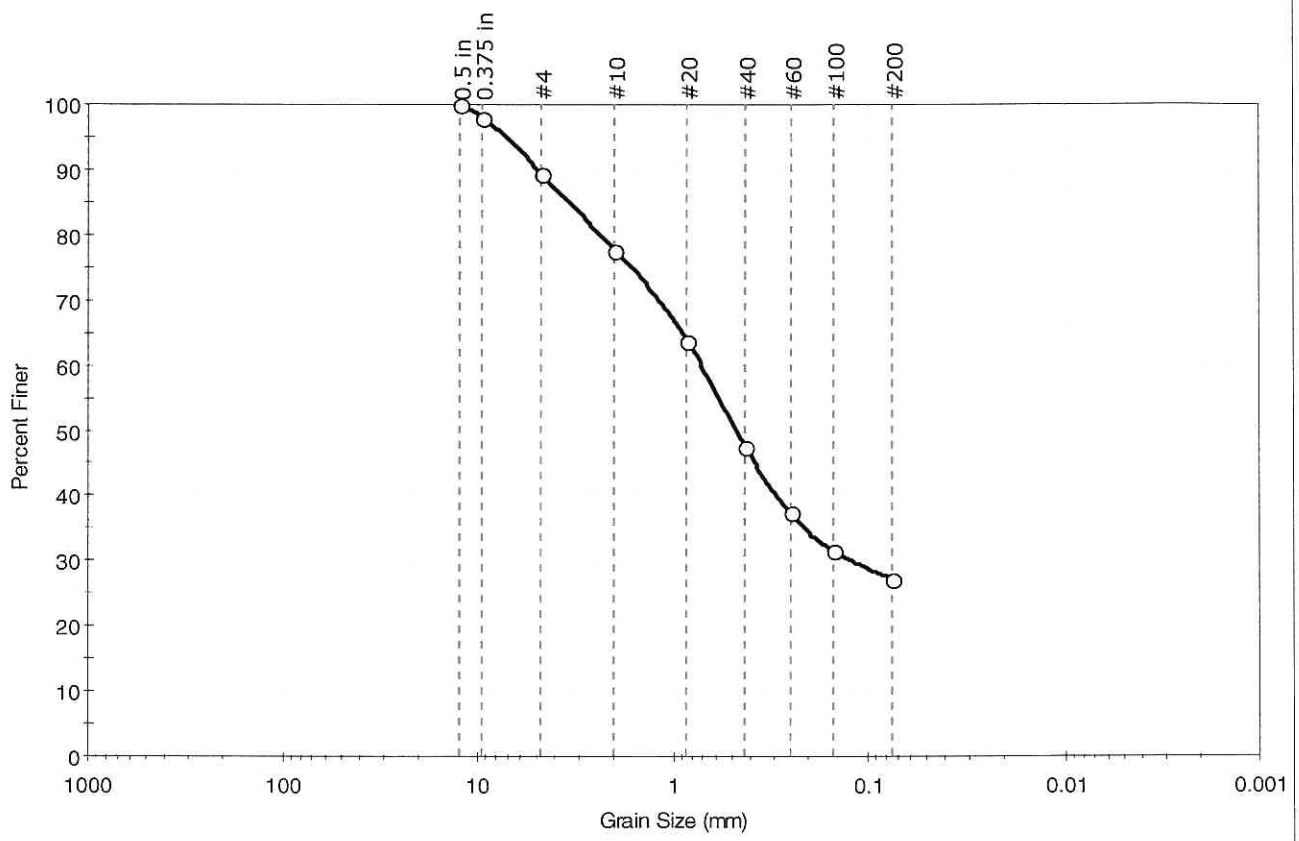
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: R-24	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149724		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.7	62.1	27.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	89		
#10	2.00	78		
#20	0.85	64		
#40	0.42	47		
#60	0.25	37		
#100	0.15	32		
#200	0.075	27		

Coefficients

D_{85} = 3.4431 mm D_{30} = 0.1170 mm
D_{60} = 0.7250 mm D_{15} = N/A
D_{50} = 0.4750 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

GeoTesting express
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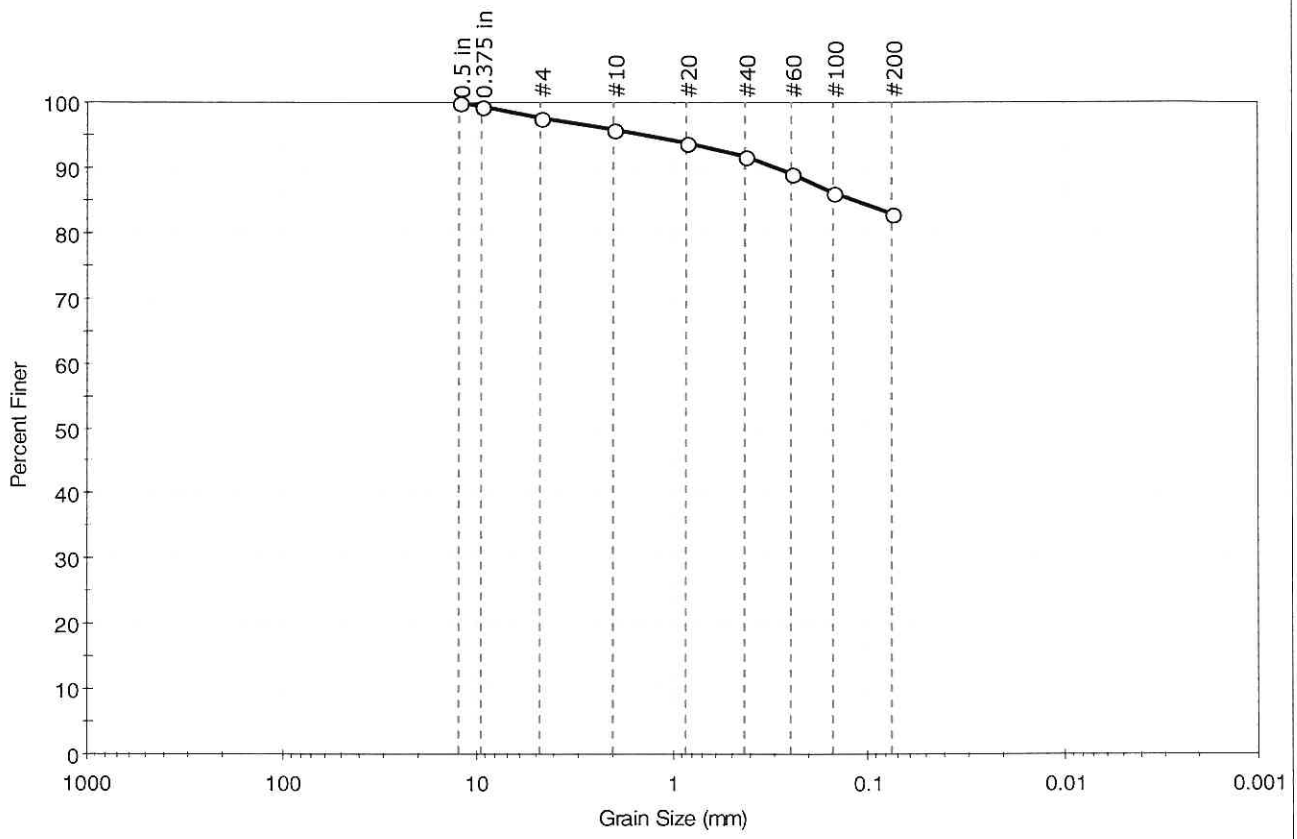
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-101-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/26/09	Checked By:	n/a
Depth : 0.5-2.5 ft	Test Id: 149725		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	2.3	14.8	82.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	99		
#4	4.75	98		
#10	2.00	96		
#20	0.85	94		
#40	0.42	92		
#60	0.25	89		
#100	0.15	86		
#200	0.075	83		

Coefficients

D_{85} = 0.1197 mm	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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GeoTesting express
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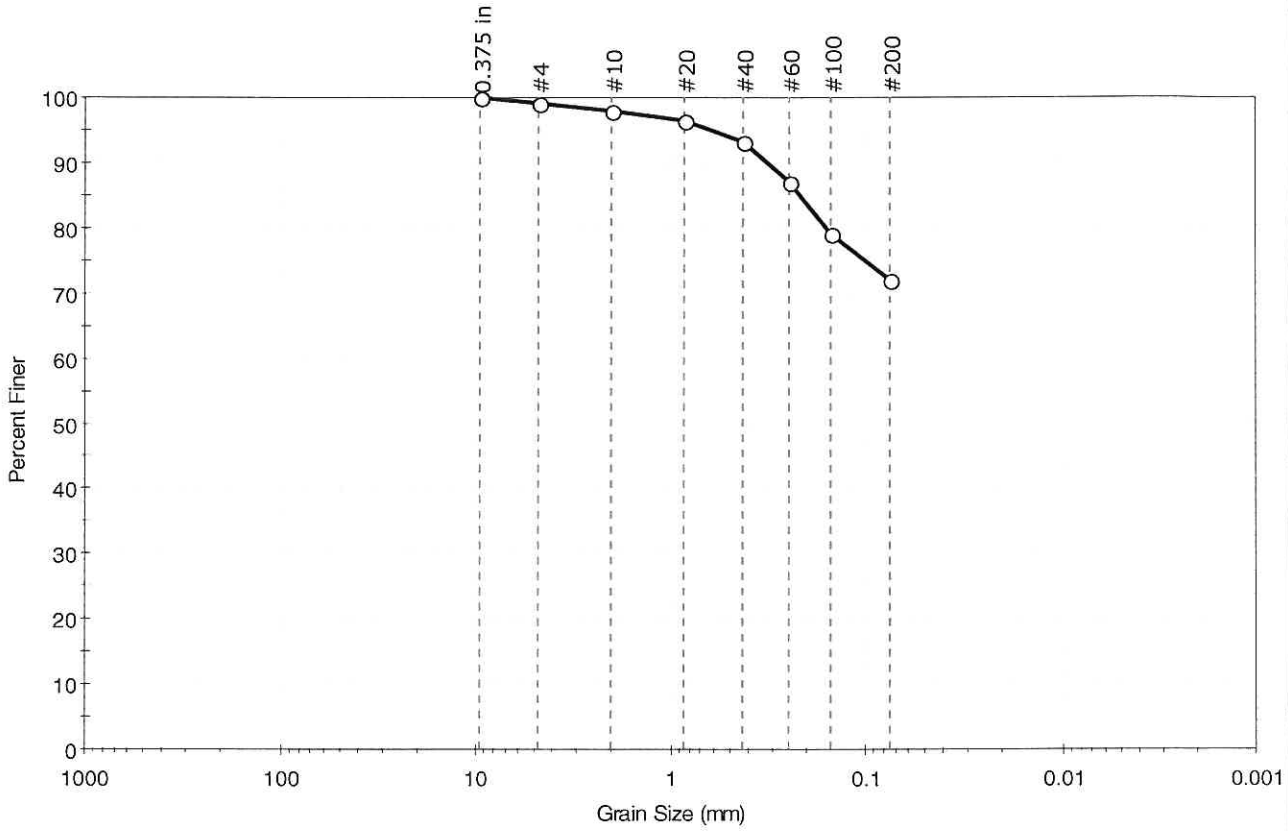
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-101-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/31/09	Checked By:	jdt
Depth : 2.5-4.5 ft	Test Id: 149726		
Test Comment: ---			
Sample Description:	Moist, yellowish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.8	27.1	72.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	98		
#20	0.85	96		
#40	0.42	93		
#60	0.25	87		
#100	0.15	79		
#200	0.075	72		

Coefficients

D_{85} = 0.2205 mm D_{30} = N/A
D_{60} = N/A D_{15} = N/A
D_{50} = N/A D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

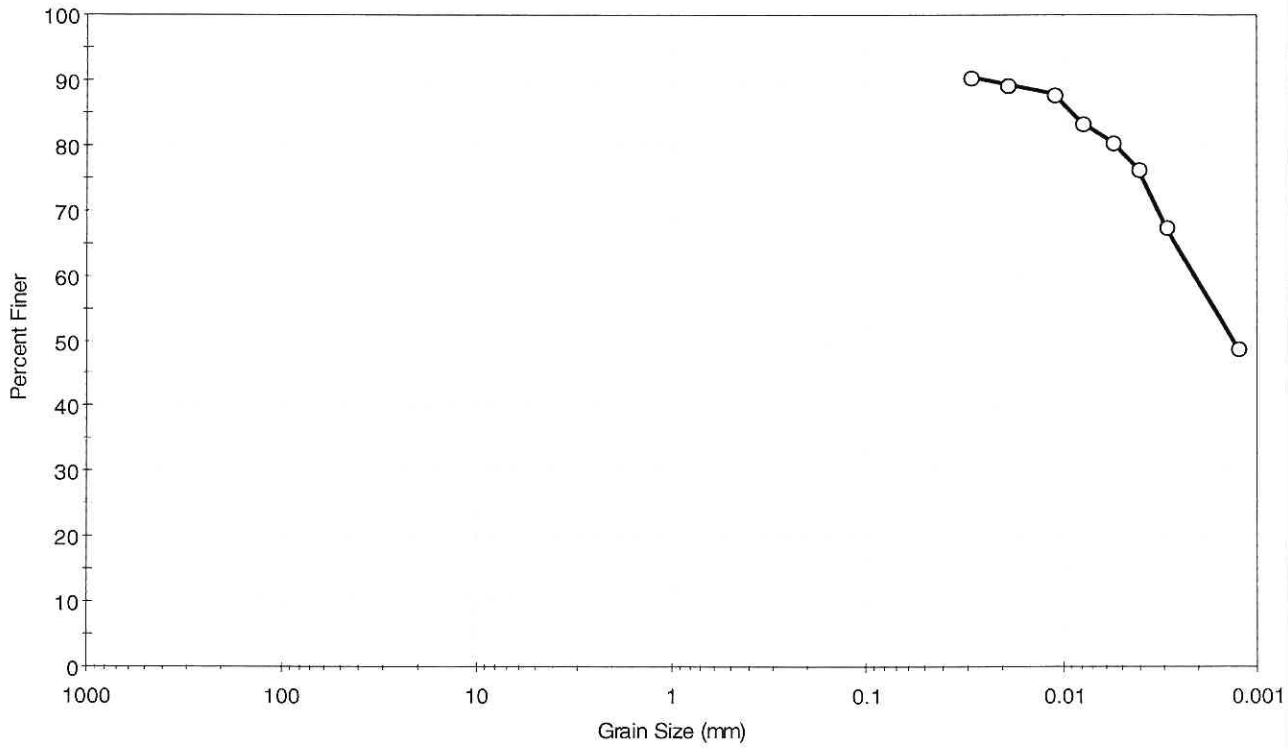
Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-101-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-5	Test Date: 04/03/09	Checked By:	jdt
Depth : 10.0-12.0 ft	Test Id: 149756		
Test Comment:	---		
Sample Description:	Moist, grayish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	—	—	—

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0295	91		
---	0.0192	89		
---	0.0112	88		
---	0.0080	83		
---	0.0056	81		
---	0.0041	76		
---	0.0029	68		
---	0.0013	49		

Coefficients

D_{85} = 0.0090 mm	D_{30} = N/A
D_{60} = 0.0021 mm	D_{15} = N/A
D_{50} = 0.0013 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO ()

Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

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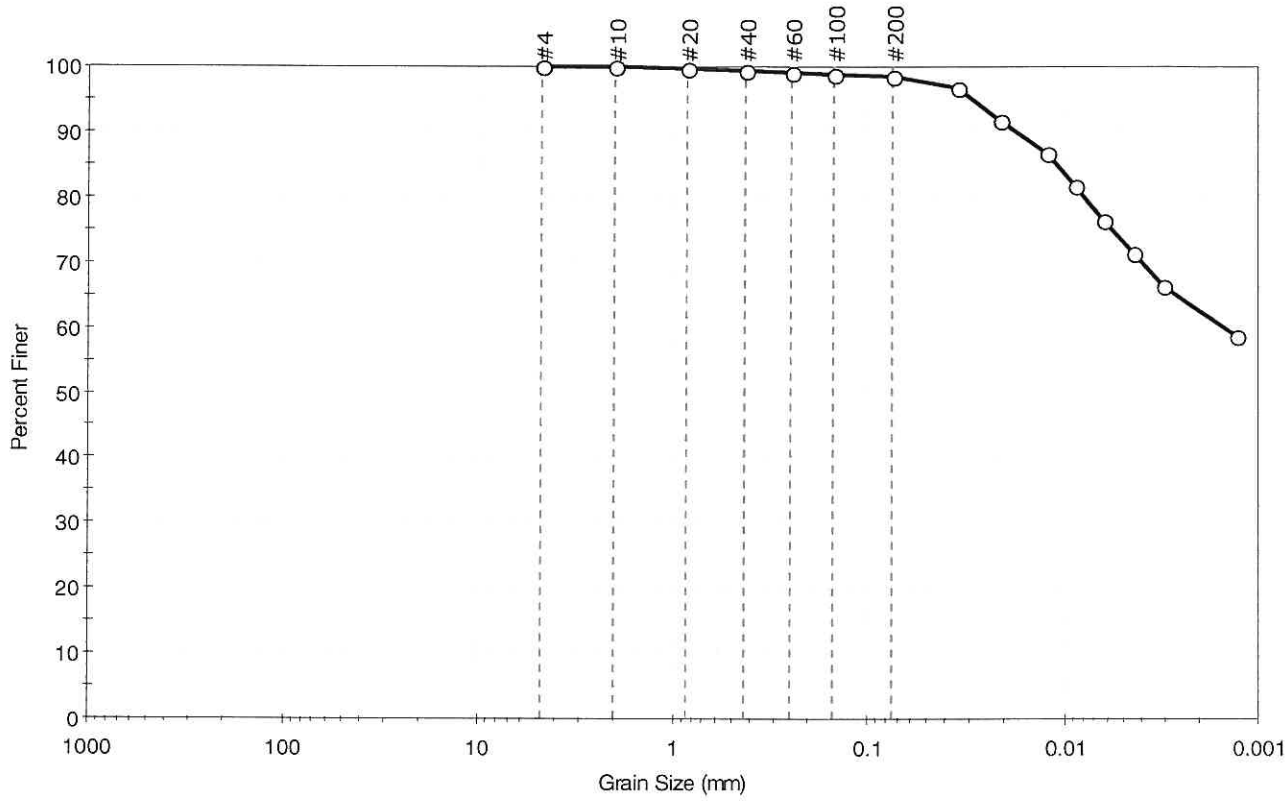
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-3	Test Date: 04/02/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149743		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0346	97		
---	0.0214	92		
---	0.0124	87		
---	0.0088	82		
---	0.0062	76		
---	0.0044	71		
---	0.0031	66		
---	0.0013	59		

Coefficients

D_{85} = 0.0111 mm	D_{30} = N/A
D_{60} = 0.0015 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-6 (34))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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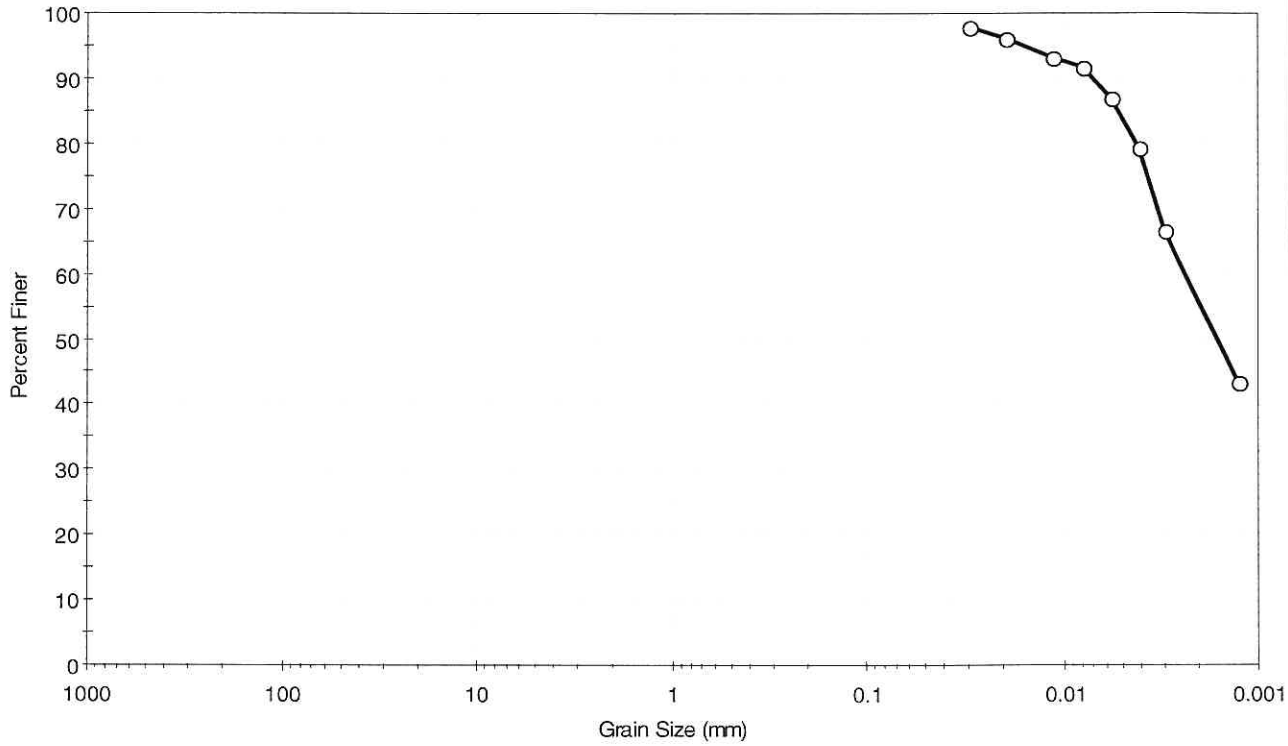
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-5	Test Date: 04/02/09	Checked By:	jdt
Depth : 15.0-17.0 ft	Test Id: 149757		
Test Comment: ---			
Sample Description:	Wet, grayish brown clay		
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	--	--	--

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0304	98		
---	0.0196	96		
---	0.0113	93		
---	0.0080	92		
---	0.0057	87		
---	0.0041	79		
---	0.0030	67		
---	0.0013	43		

Coefficients

D_{85} = 0.0052 mm D_{30} = N/A
D_{60} = 0.0023 mm D_{15} = N/A
D_{50} = 0.0016 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO ()

Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

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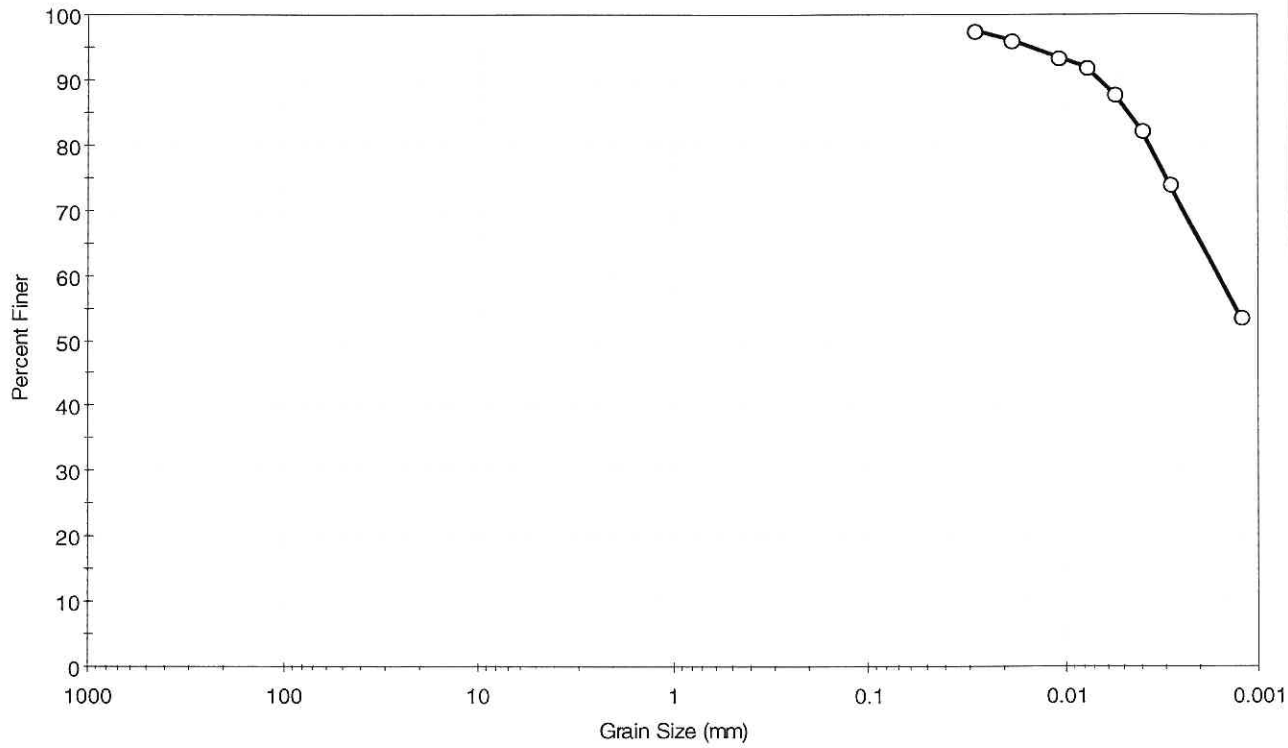
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-7	Test Date: 04/02/09	Checked By:	jdt
Depth : 20.0-22.0 ft	Test Id: 149758		
Test Comment: ---			
Sample Description:	Moist, grayish brown clay		
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	--	--	--

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0287	98		
---	0.0189	96		
---	0.0108	93		
---	0.0077	92		
---	0.0055	88		
---	0.0040	82		
---	0.0029	74		
---	0.0012	54		

Coefficients

D_{85} = 0.0046 mm D_{30} = N/A
D_{60} = 0.0016 mm D_{15} = N/A
D_{50} = N/A D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO ()

Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

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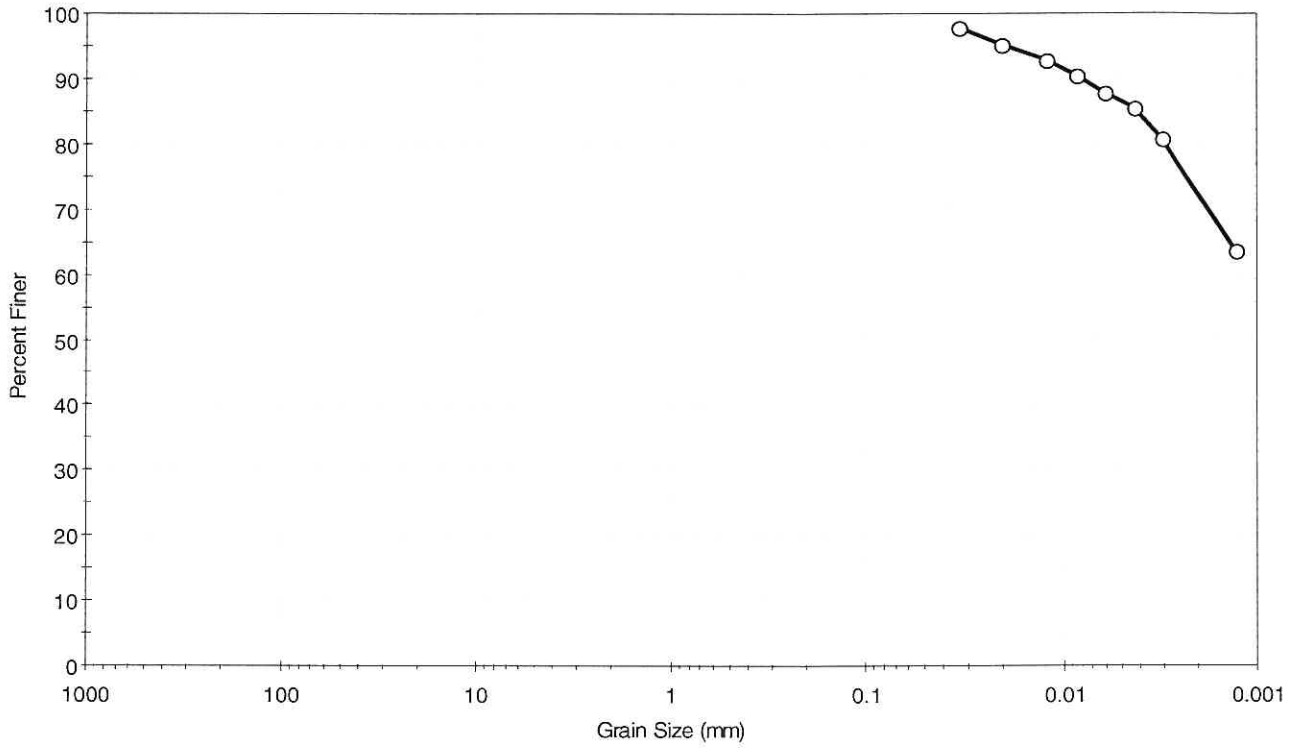
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-5	Sample Type: jar	Tested By:	jbr
Sample ID:S-5	Test Date: 04/02/09	Checked By:	jdt
Depth : 15.0-17.0 ft	Test Id: 149759		
Test Comment: ---			
Sample Description: Moist, grayish brown clay			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	—	—	—

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0342	98		
---	0.0207	95		
---	0.0122	93		
---	0.0086	90		
---	0.0061	88		
---	0.0043	86		
---	0.0031	81		
---	0.0013	64		

Coefficients

D_{85} = 0.0041 mm D_{30} = N/A
D_{60} = N/A D_{15} = N/A
D_{50} = N/A D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO ()

Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

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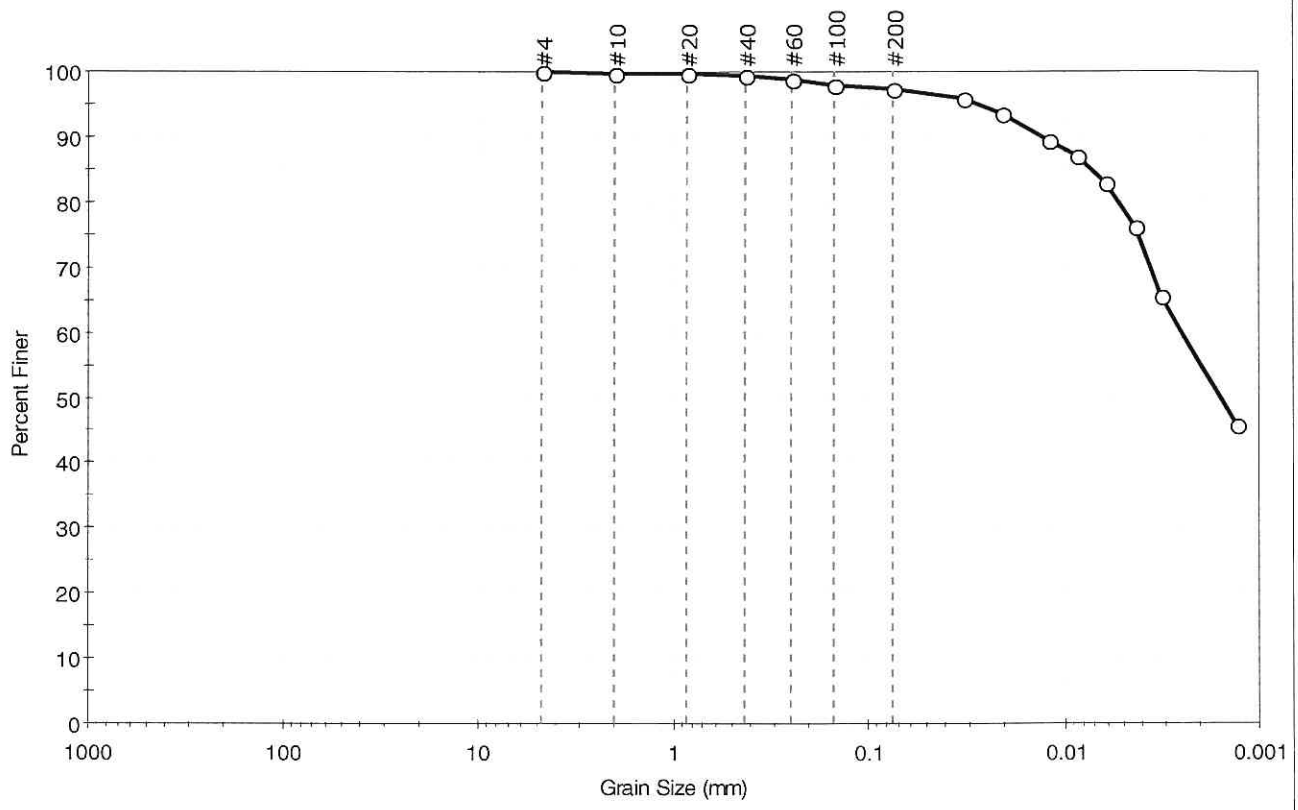
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-7	Sample Type: jar	Tested By:	jbr
Sample ID:S-4	Test Date: 04/02/09	Checked By:	jdt
Depth : 10.0-12.0 ft	Test Id: 149744		
Test Comment:	---		
Sample Description:	Moist, grayish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.8	97.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.075	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	96		
---	0.0209	94		
---	0.0121	89		
---	0.0086	87		
---	0.0061	83		
---	0.0043	76		
---	0.0031	65		
---	0.0013	46		

Coefficients

D_{85} = 0.0072 mm	D_{30} = N/A
D_{60} = 0.0025 mm	D_{15} = N/A
D_{50} = 0.0016 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-7-6 (24))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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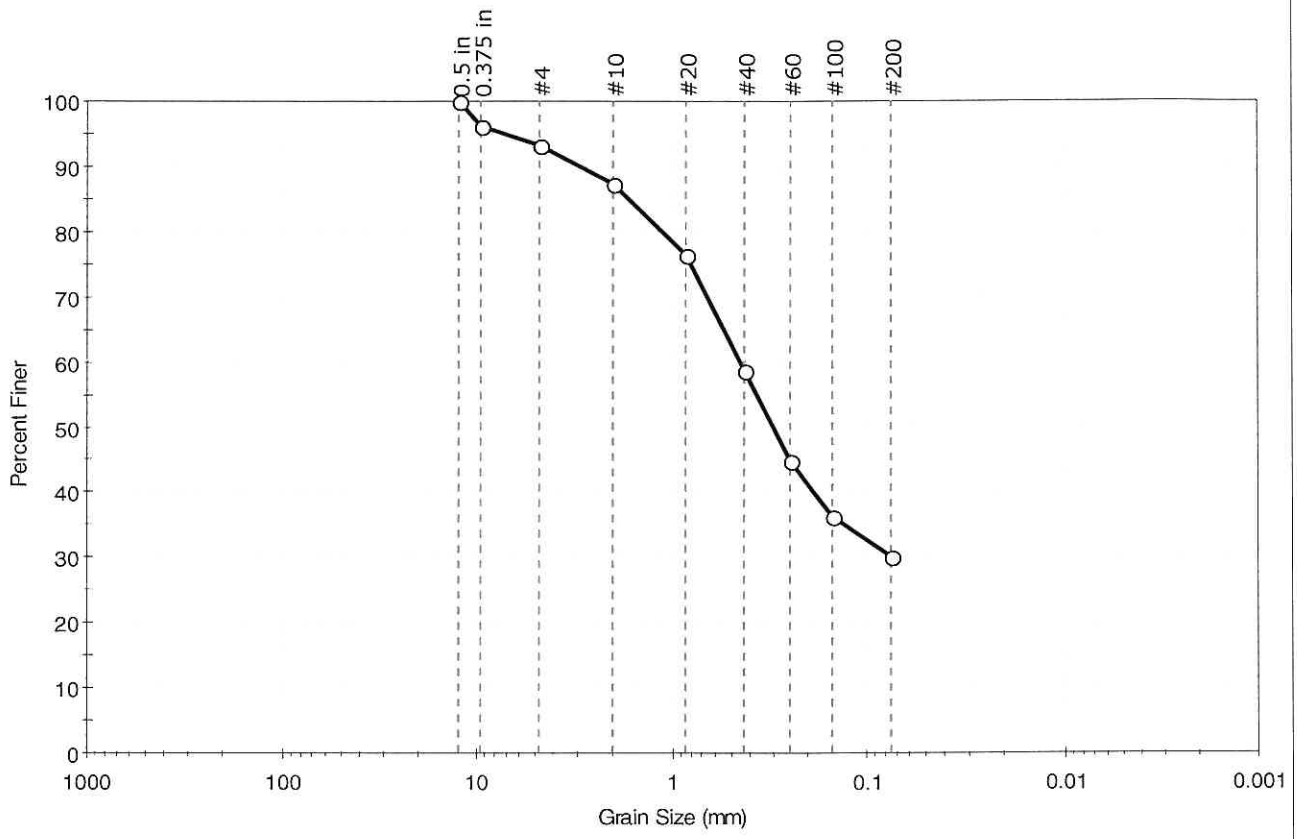
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-103-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0-2.0 ft	Test Id: 149727		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.8	63.0	30.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	96		
#4	4.75	93		
#10	2.00	87		
#20	0.85	76		
#40	0.42	59		
#60	0.25	45		
#100	0.15	36		
#200	0.075	30		

Coefficients

D_{85} = 1.6566 mm D_{30} = N/A
D_{60} = 0.4493 mm D_{15} = N/A
D_{50} = 0.3055 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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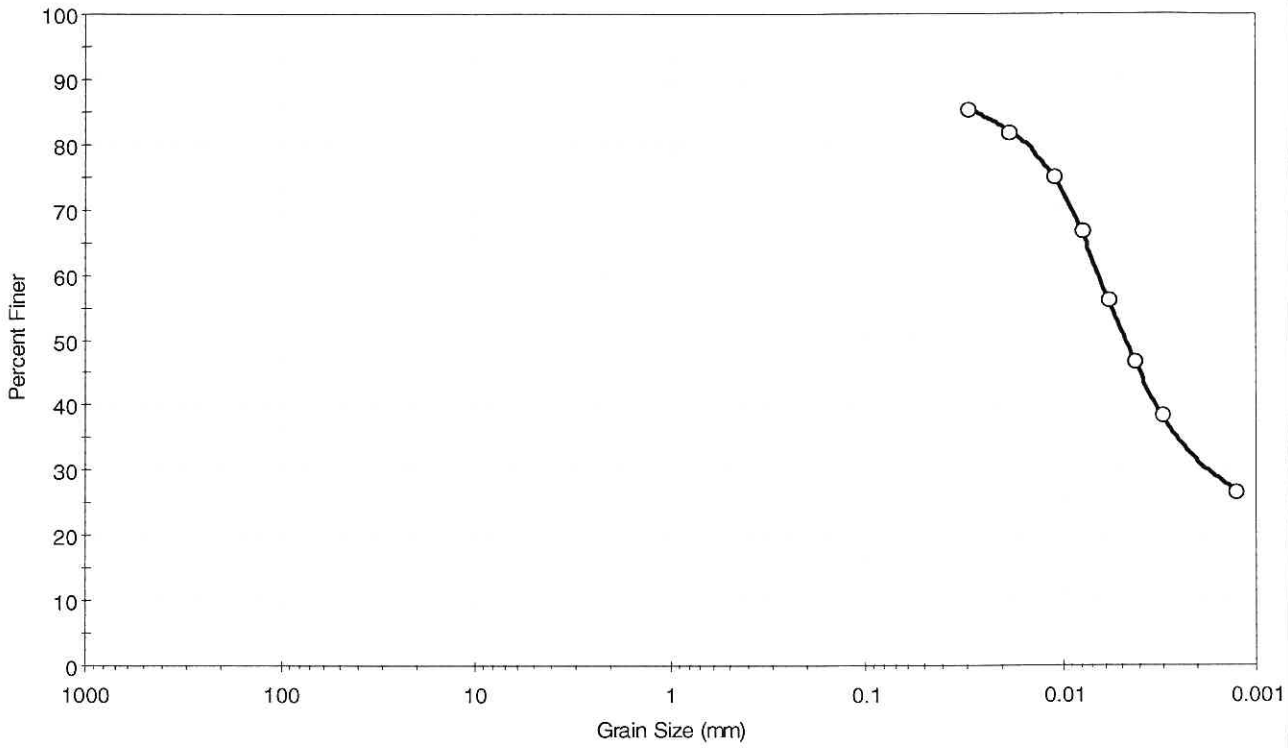
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-103-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-3	Test Date: 04/03/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149760		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	--	--	--

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	86		
---	0.0187	82		
---	0.0111	75		
---	0.0080	67		
---	0.0058	56		
---	0.0043	47		
---	0.0031	39		
---	0.0013	27		

Coefficients

D_{85} = 0.0276 mm D_{30} = 0.0016 mm
D_{60} = 0.0065 mm D_{15} = N/A
D_{50} = 0.0047 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO ()

Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

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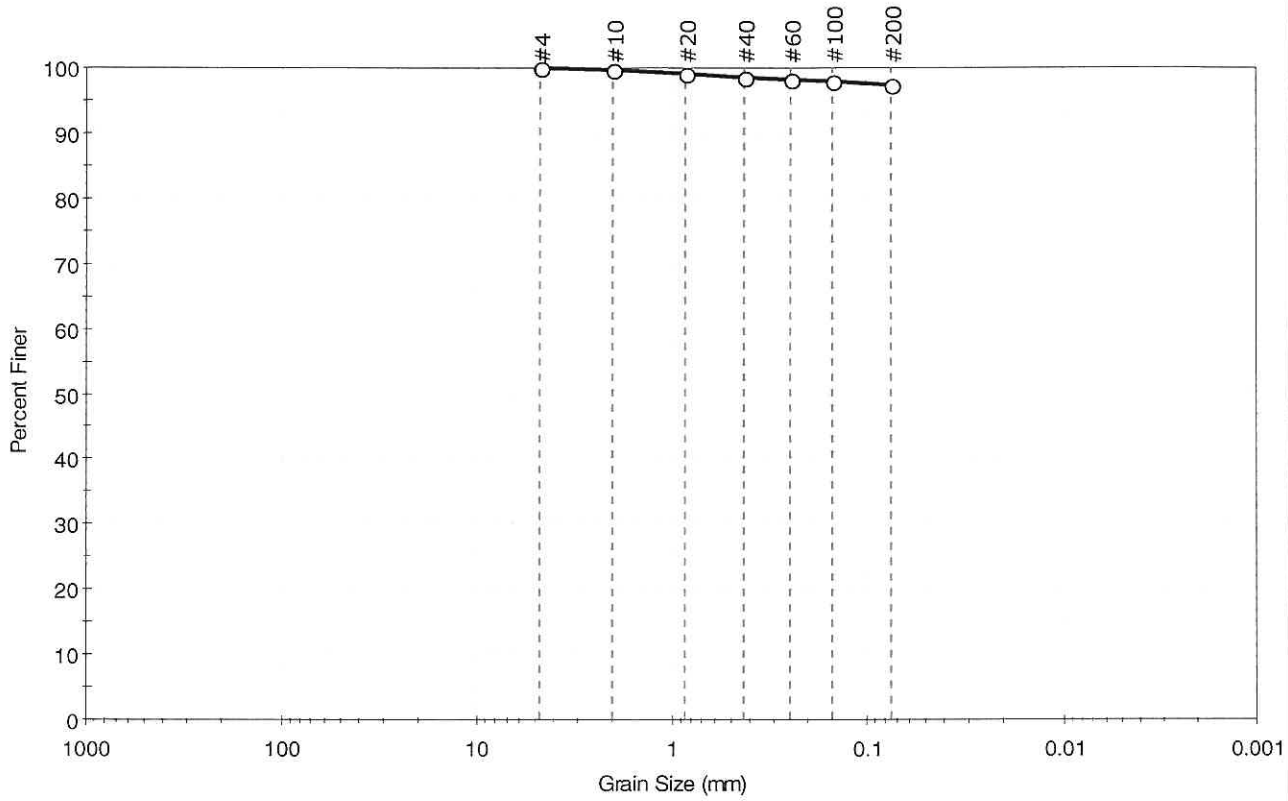
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-103-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-6	Test Date: 03/30/09	Checked By:	jdt
Depth : 15.0-15.5 ft	Test Id: 149728		
Test Comment: ---			
Sample Description:	Moist, reddish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	0.0	2.8	97.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.075	97		

Coefficients

D_{85} = N/A	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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GeoTesting express
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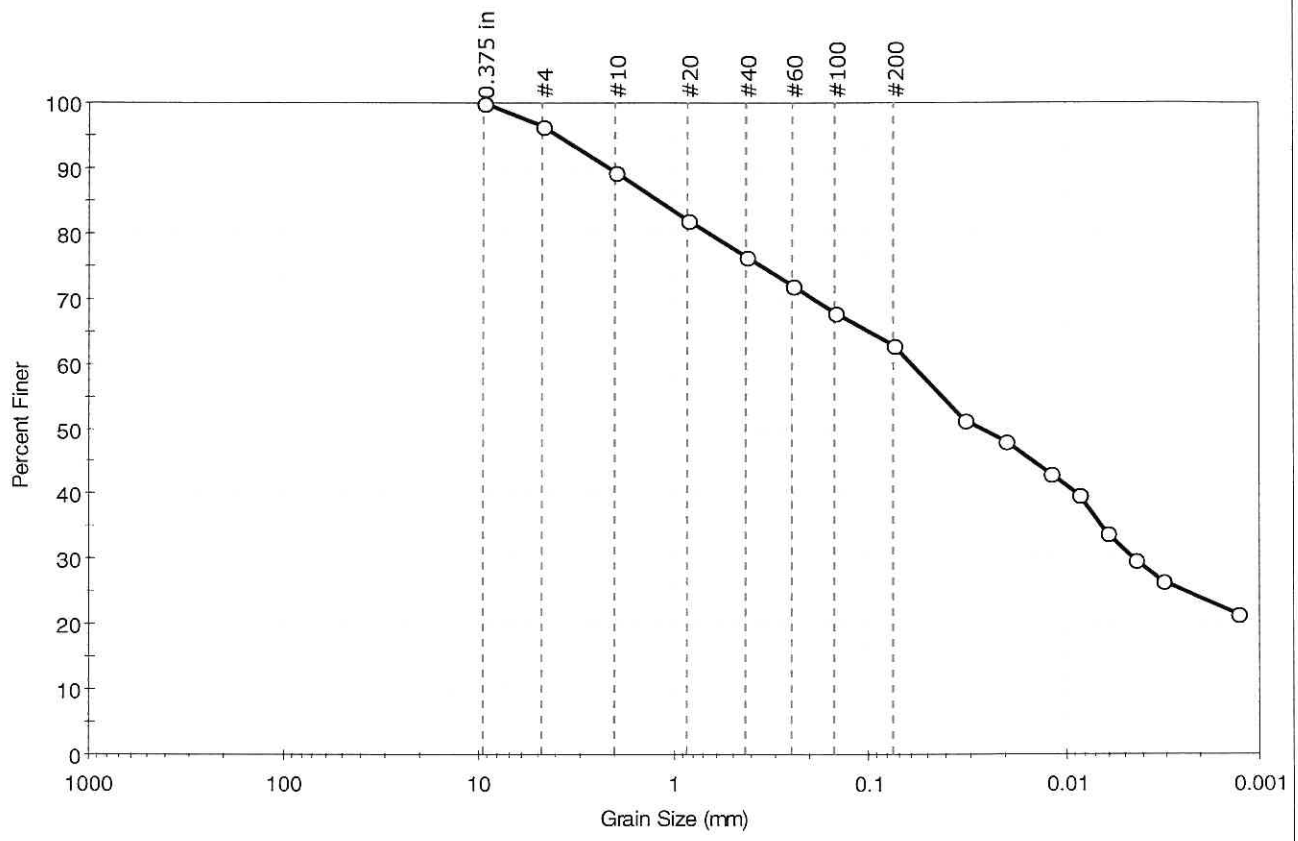
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-105-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0-2.0 ft	Test Id: 149745		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.5	33.7	62.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	96		
#10	2.00	89		
#20	0.85	82		
#40	0.42	76		
#60	0.25	72		
#100	0.15	68		
#200	0.075	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	51		
---	0.0204	48		
---	0.0120	43		
---	0.0086	40		
---	0.0062	34		
---	0.0044	30		
---	0.0031	27		
---	0.0013	22		

Coefficients

D_{85} = 1.2116 mm D_{30} = 0.0045 mm
D_{60} = 0.0613 mm D_{15} = N/A
D_{50} = 0.0271 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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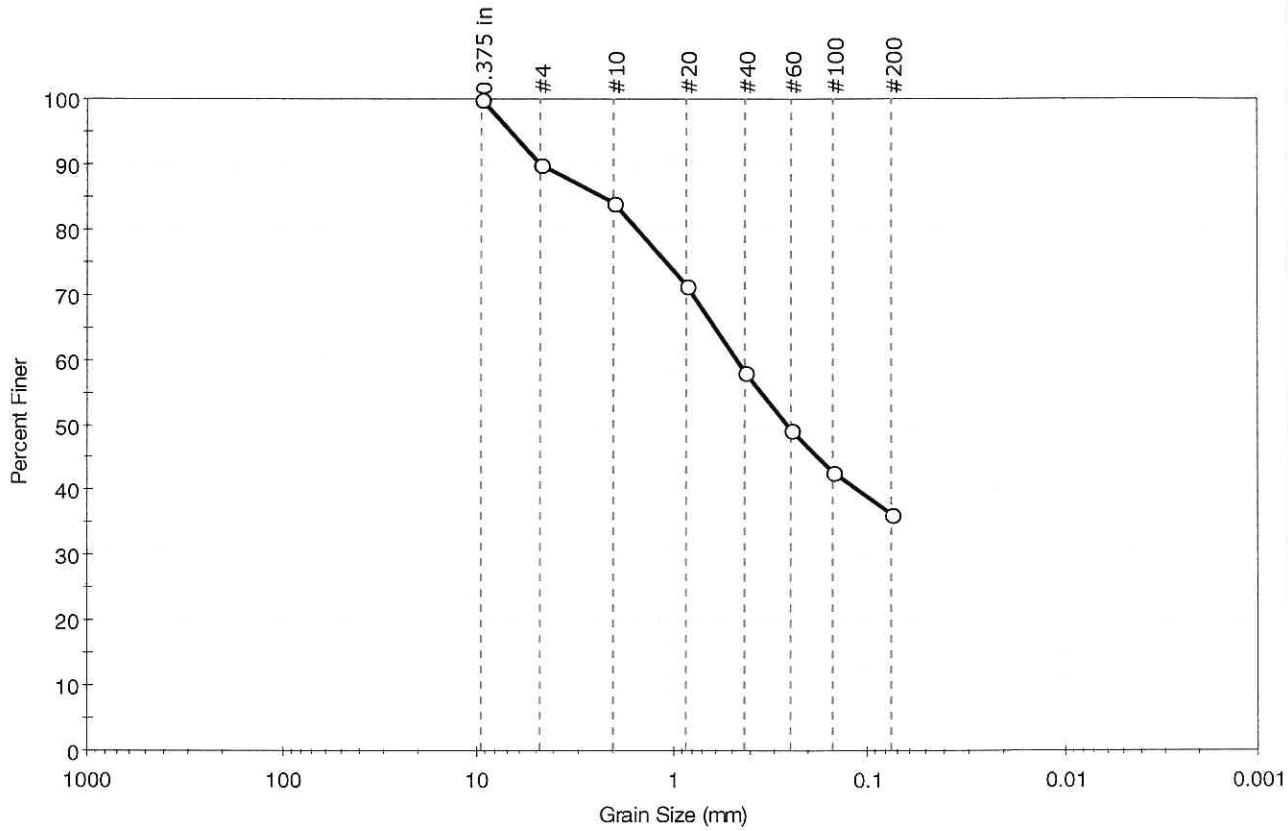
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-106-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 0-2.0 ft	Test Id: 149729		
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.1	53.8	36.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	90		
#10	2.00	84		
#20	0.85	71		
#40	0.42	58		
#60	0.25	49		
#100	0.15	43		
#200	0.075	36		

Coefficients

D_{85} = 2.3164 mm D_{30} = N/A
D_{60} = 0.4692 mm D_{15} = N/A
D_{50} = 0.2602 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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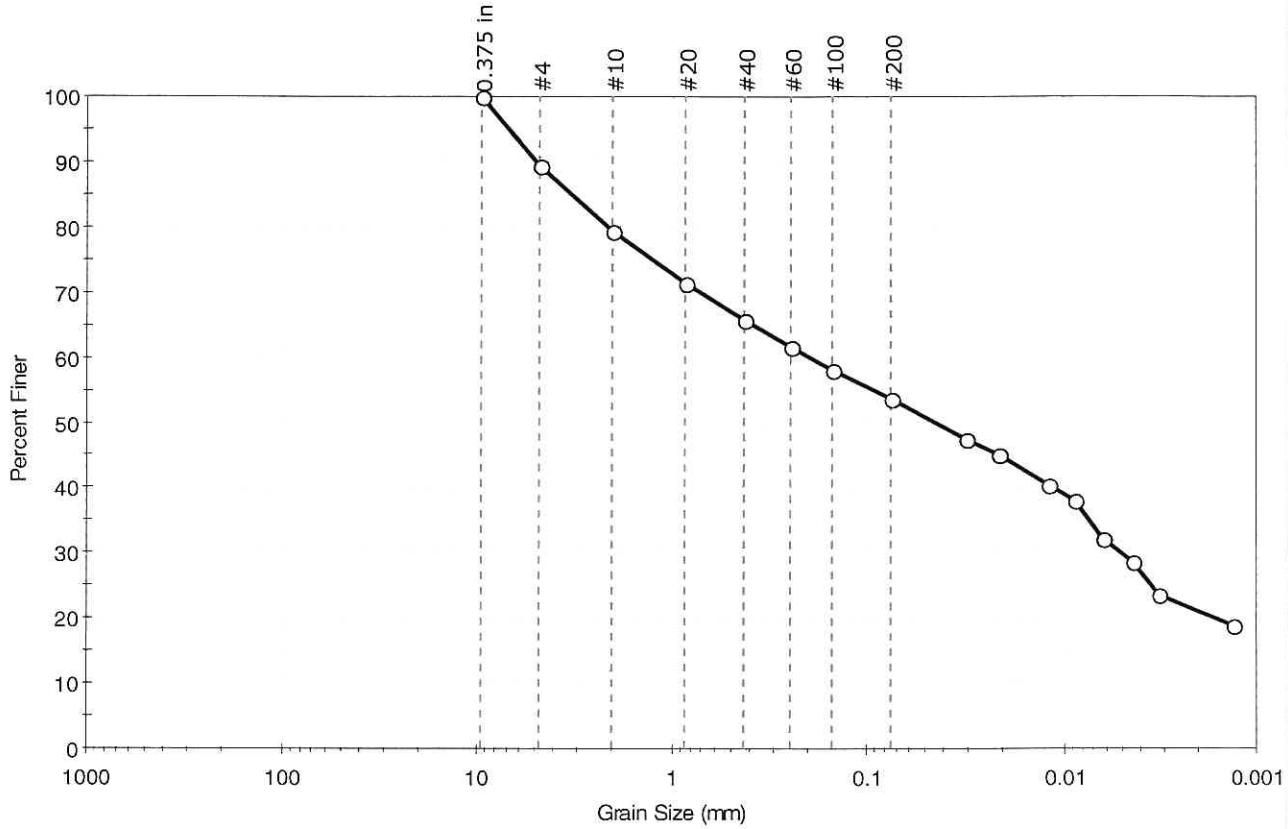
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-106-1	Sample Type: jar	Tested By:	jbr
Sample ID:S-3	Test Date: 04/02/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149746		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.7	35.7	53.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	89		
#10	2.00	79		
#20	0.85	71		
#40	0.42	66		
#60	0.25	62		
#100	0.15	58		
#200	0.075	54		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0308	47		
---	0.0212	45		
---	0.0121	40		
---	0.0087	38		
---	0.0063	32		
---	0.0044	28		
---	0.0032	24		
---	0.0013	19		

Coefficients

D_{85} = 3.2775 mm D_{30} = 0.0051 mm
D_{60} = 0.1979 mm D_{15} = N/A
D_{50} = 0.0443 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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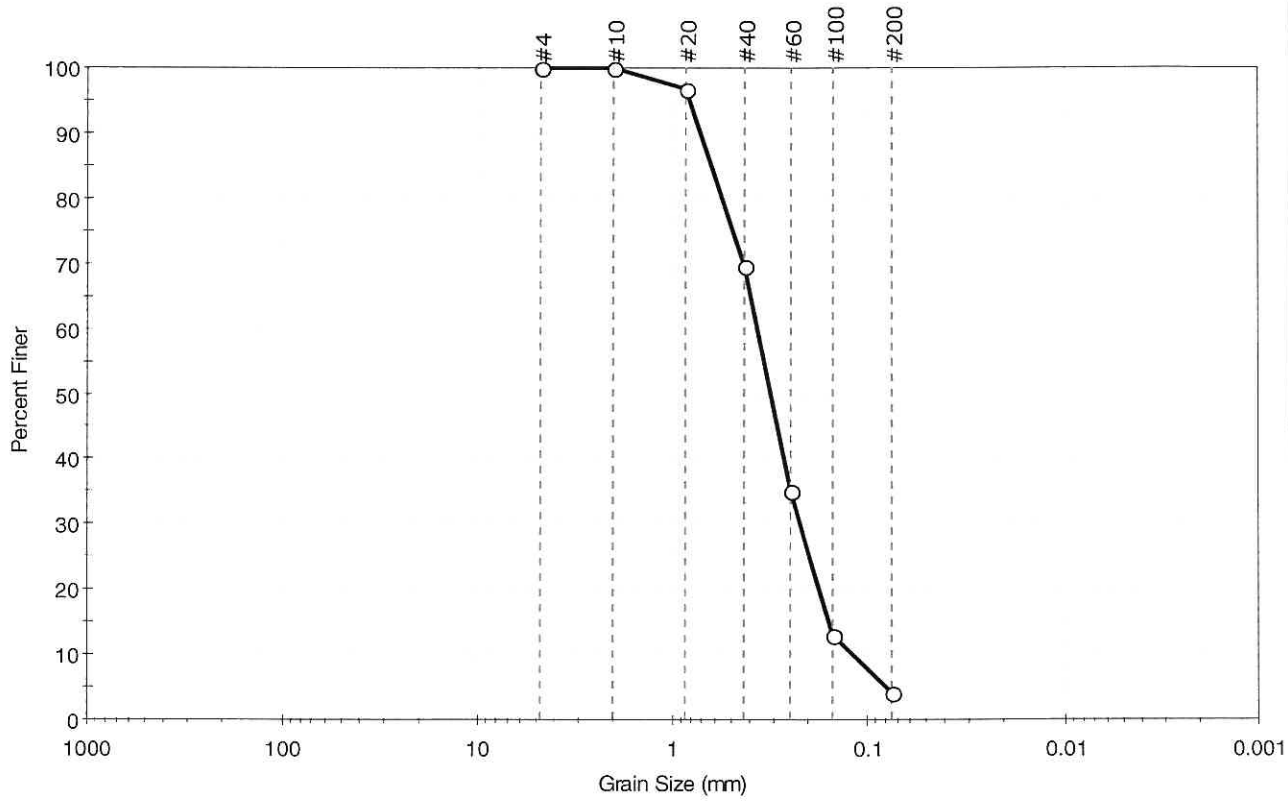
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-106-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/31/09	Checked By:	jdt
Depth : 2.5-4.5 ft	Test Id: 149730		
Test Comment: ---			
Sample Description:	Moist, light yellowish brown sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	95.8	4.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	97		
#40	0.42	70		
#60	0.25	35		
#100	0.15	13		
#200	0.075	4		

Coefficients

D_{85} = 0.6294 mm	D_{30} = 0.2223 mm
D_{60} = 0.3661 mm	D_{15} = 0.1575 mm
D_{50} = 0.3141 mm	D_{10} = 0.1192 mm
C_u = 3.071	C_c = 1.132

Classification

ASTM Poorly graded sand (SP)

AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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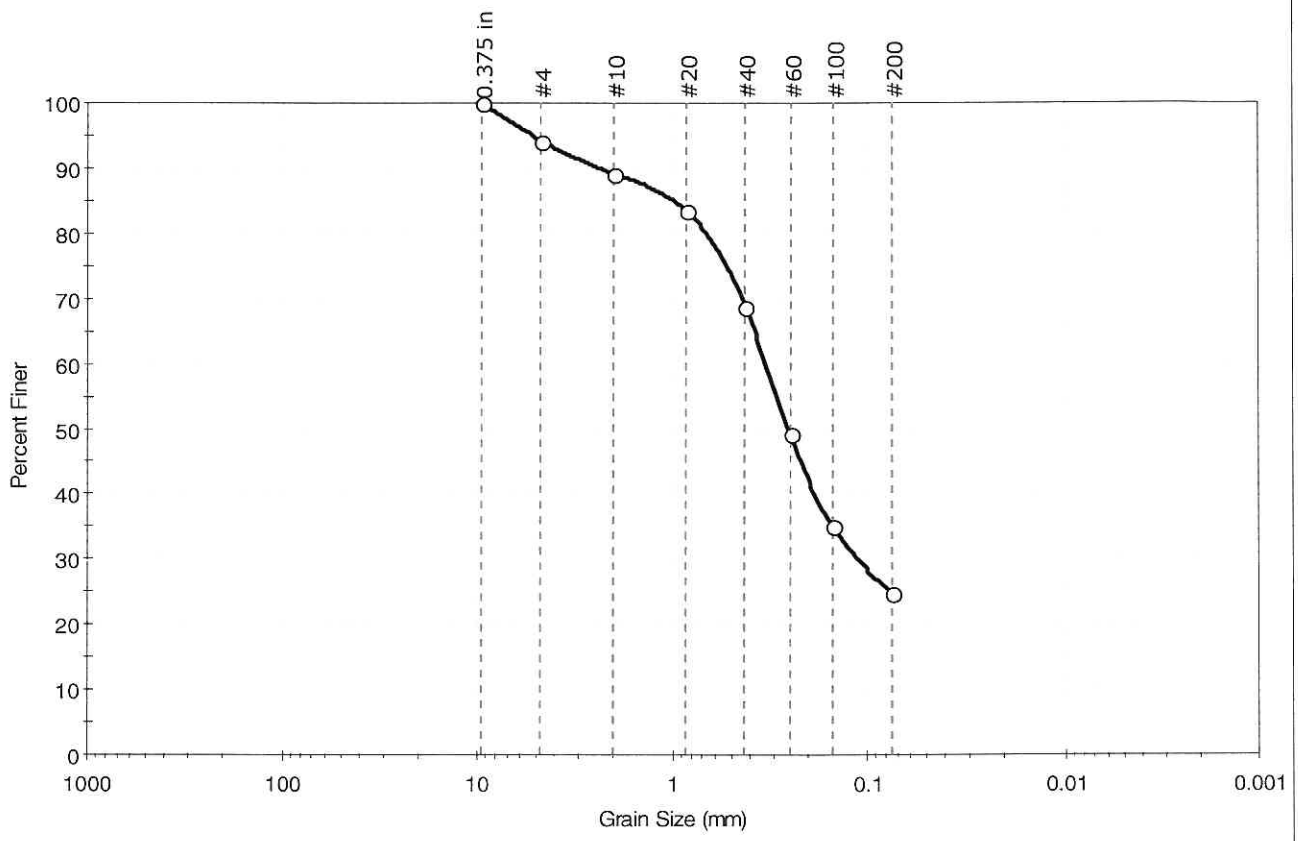
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-106-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-4	Test Date: 03/30/09	Checked By:	jdt
Depth : 7.0-9.0 ft	Test Id: 149731		
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.8	69.4	24.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	94		
#10	2.00	89		
#20	0.85	83		
#40	0.42	69		
#60	0.25	49		
#100	0.15	35		
#200	0.075	25		

Coefficients

D_{85} = 1.0858 mm D_{30} = 0.1064 mm
D_{60} = 0.3355 mm D_{15} = N/A
D_{50} = 0.2560 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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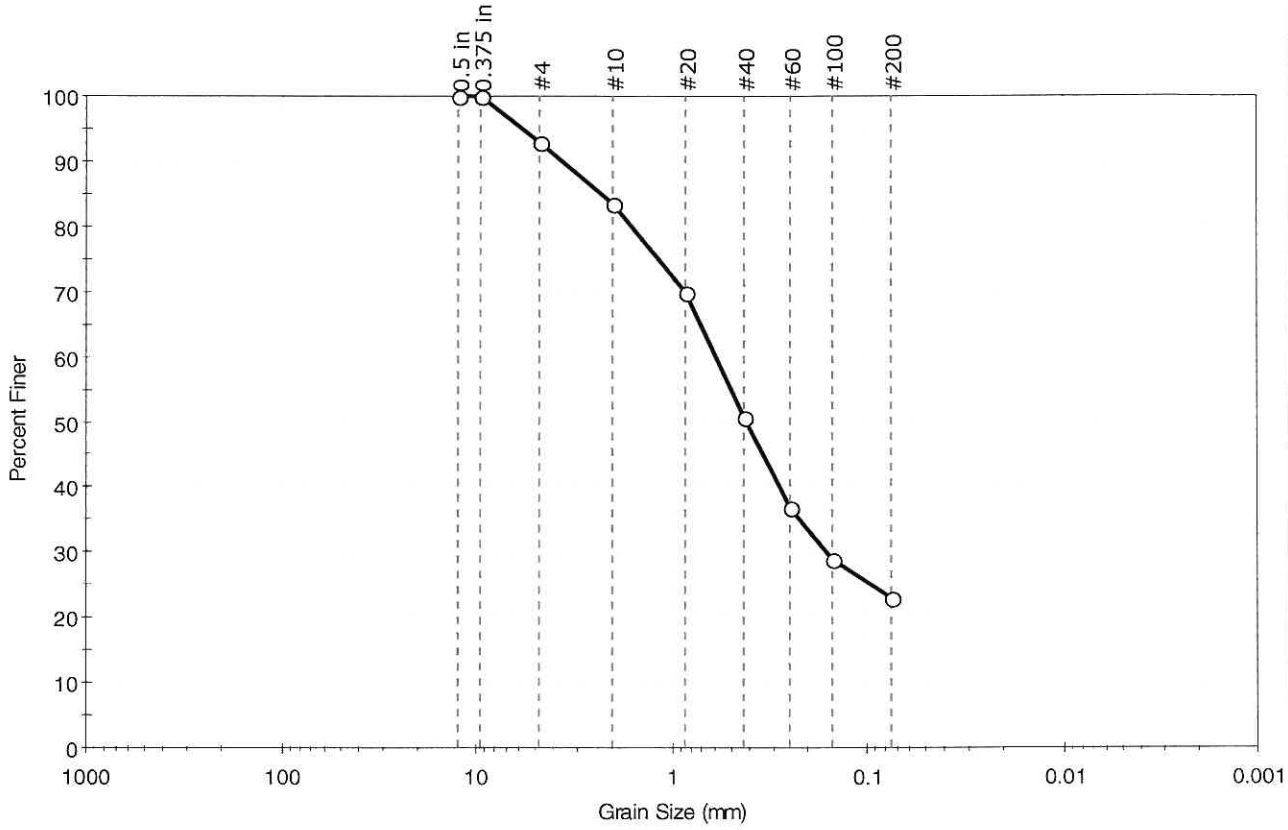
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-107-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-4	Test Date: 03/31/09	Checked By:	jdt
Depth : 7.0-8.0 ft	Test Id: 149732		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	7.2	69.7	23.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	100		
#4	4.75	93		
#10	2.00	83		
#20	0.85	70		
#40	0.42	51		
#60	0.25	37		
#100	0.15	29		
#200	0.075	23		

Coefficients

D_{85} = 2.3226 mm	D_{30} = 0.1613 mm
D_{60} = 0.5926 mm	D_{15} = N/A
D_{50} = 0.4123 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

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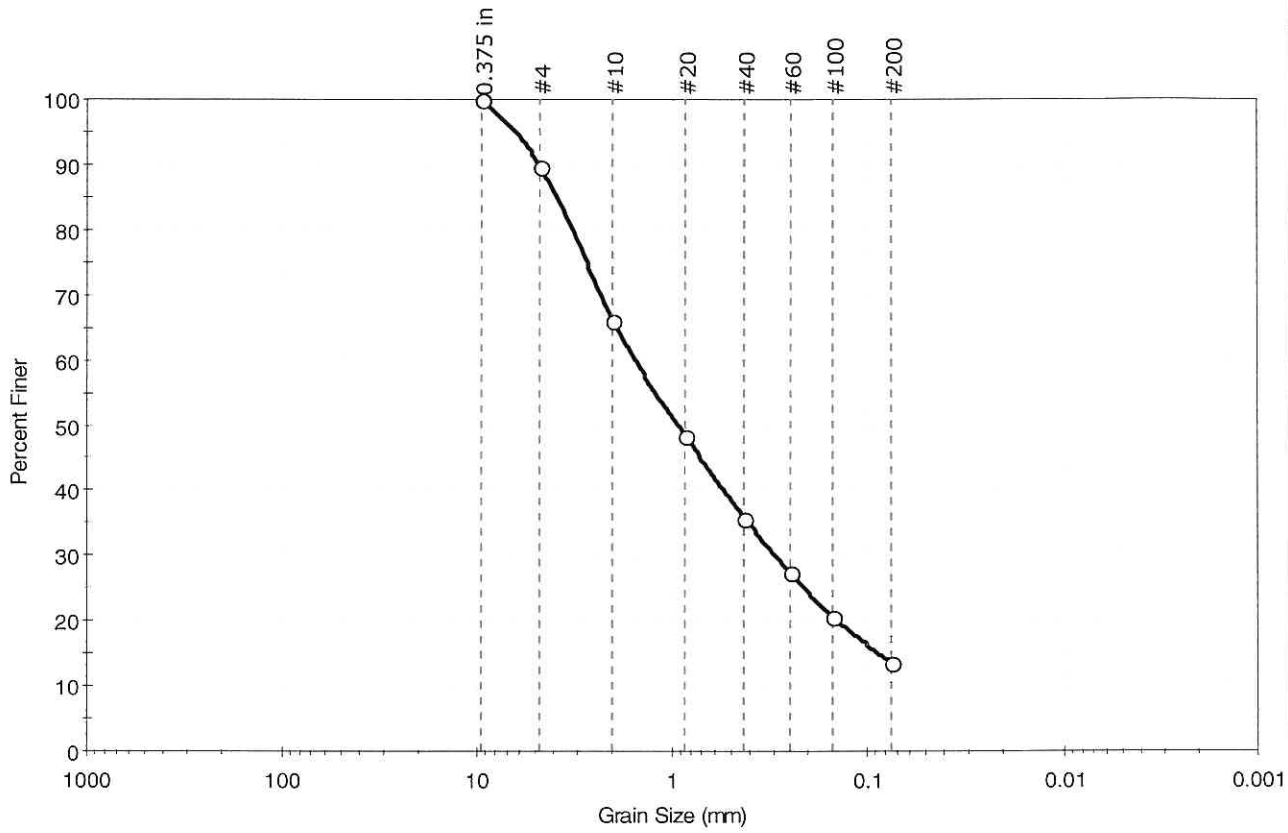
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-108-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149733		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.3	76.1	13.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	90		
#10	2.00	66		
#20	0.85	48		
#40	0.42	36		
#60	0.25	28		
#100	0.15	21		
#200	0.075	14		

Coefficients

D_{85} = 4.0040 mm D_{30} = 0.2936 mm
D_{60} = 1.4940 mm D_{15} = 0.0861 mm
D_{50} = 0.9206 mm D_{10} = 0.0527 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
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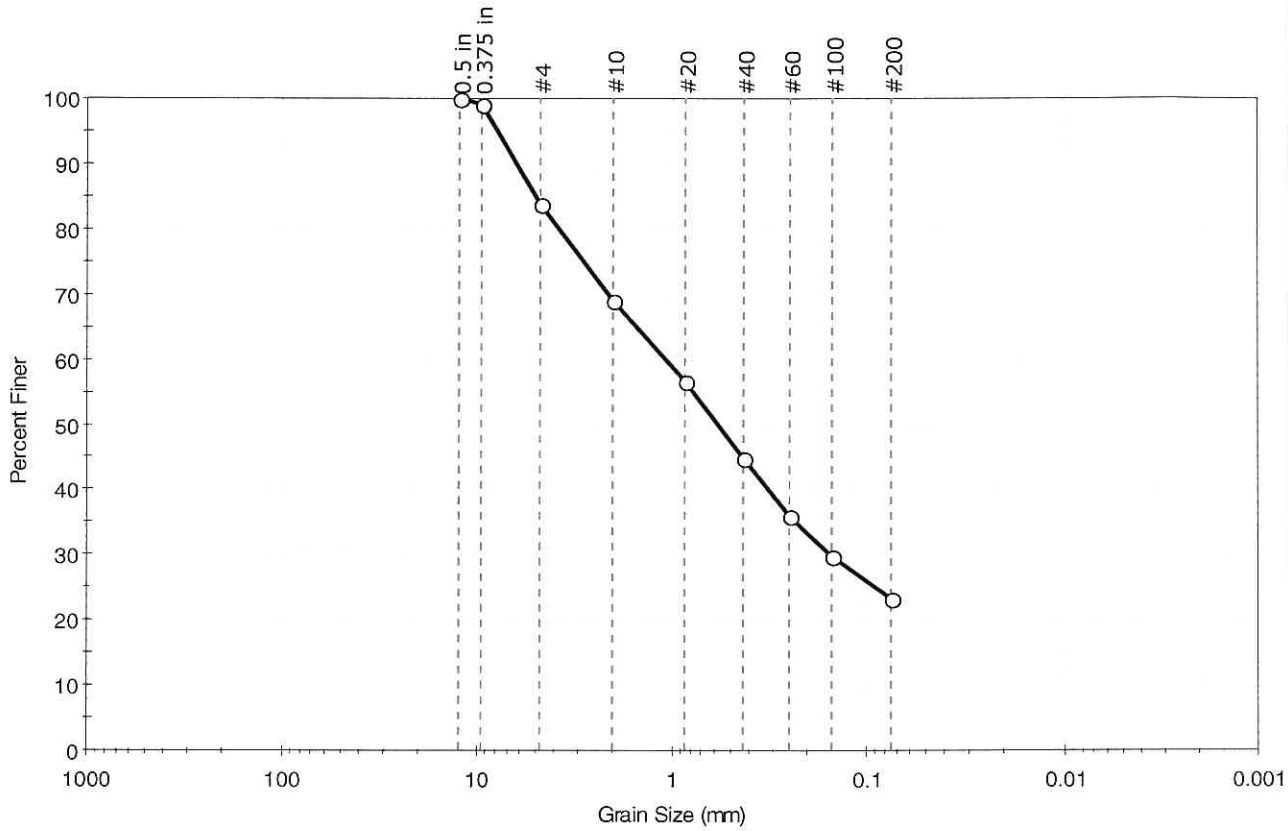
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-108-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/30/09	Checked By:	jdt
Depth : 3.0-5.0 ft	Test Id: 149734		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	16.1	60.7	23.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	99		
#4	4.75	84		
#10	2.00	69		
#20	0.85	57		
#40	0.42	45		
#60	0.25	36		
#100	0.15	30		
#200	0.075	23		

Coefficients

D_{85} = 4.9898 mm D_{30} = 0.1534 mm
D_{60} = 1.0662 mm D_{15} = N/A
D_{50} = 0.5750 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting express
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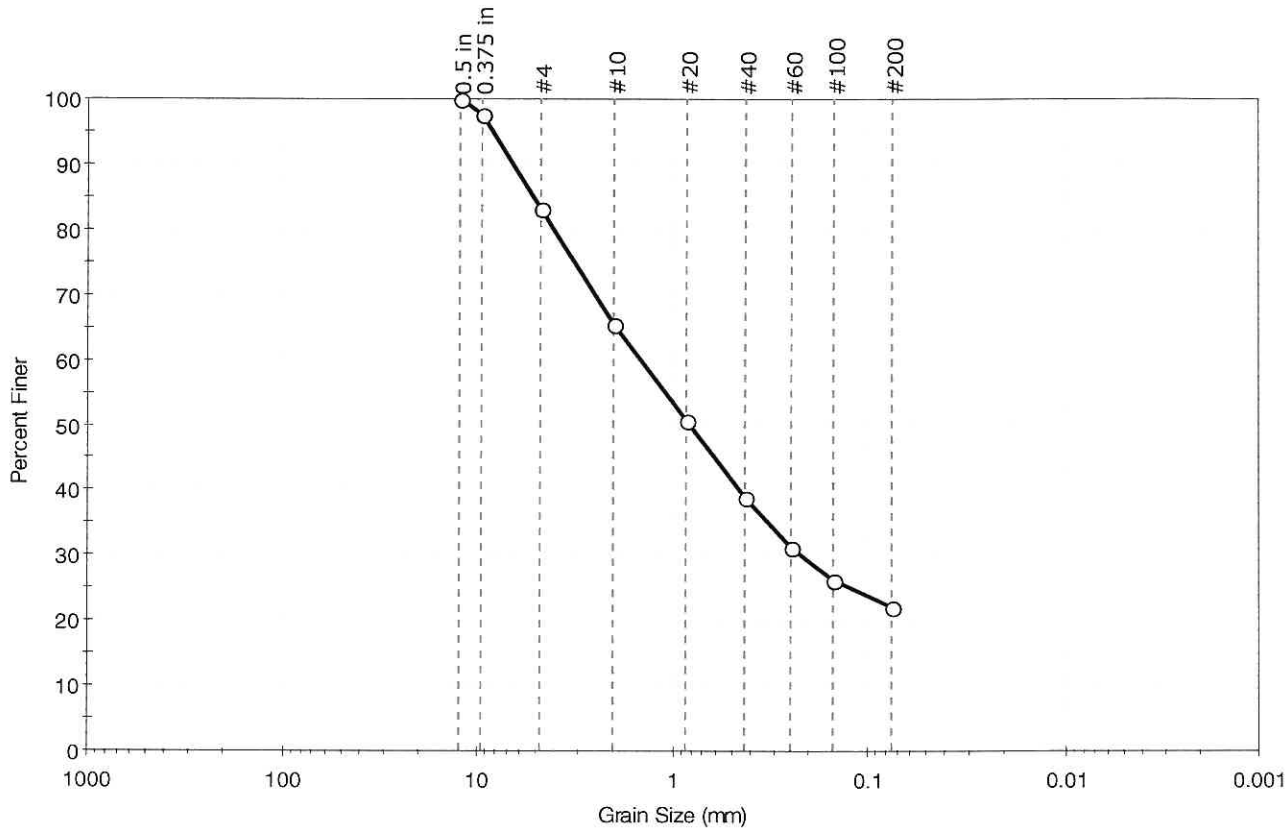
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-108-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149735		
Test Comment:	---		
Sample Description:	Moist, grayish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	16.9	60.9	22.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	83		
#10	2.00	65		
#20	0.85	51		
#40	0.42	39		
#60	0.25	31		
#100	0.15	26		
#200	0.075	22		

Coefficients

D_{85} = 5.1951 mm	D_{30} = 0.2178 mm
D_{60} = 1.4595 mm	D_{15} = N/A
D_{50} = 0.8125 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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GeoTesting express
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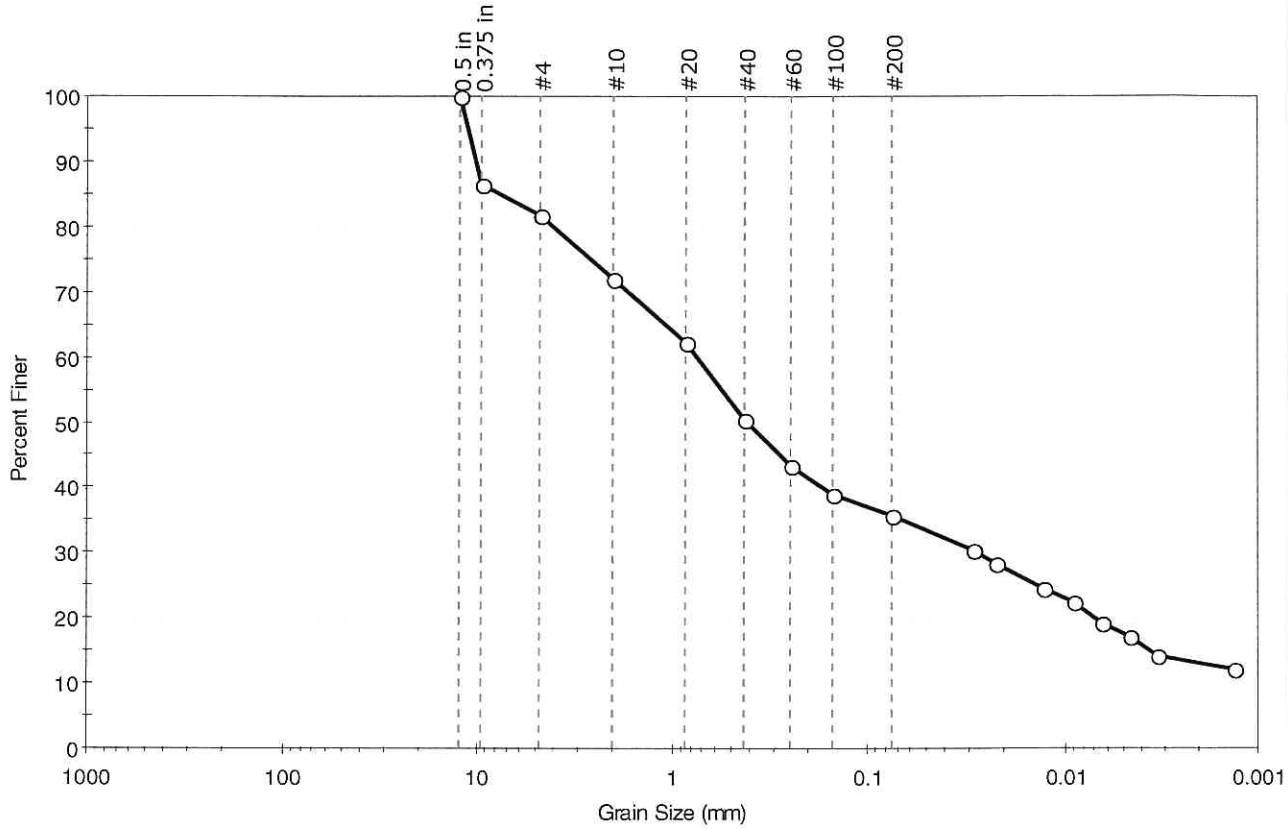
Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-108-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-3 (Top)	Test Date: 04/02/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149747		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	18.5	45.9	35.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	86		
#4	4.75	82		
#10	2.00	72		
#20	0.85	62		
#40	0.42	51		
#60	0.25	43		
#100	0.15	39		
#200	0.075	36		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0291	30		
---	0.0220	28		
---	0.0127	24		
---	0.0091	22		
---	0.0065	19		
---	0.0046	17		
---	0.0033	14		
---	0.0013	12		

Coefficients

D_{85} = 7.7455 mm D_{30} = 0.0275 mm
D_{60} = 0.7463 mm D_{15} = 0.0036 mm
D_{50} = 0.4082 mm D_{10} = 0.0005 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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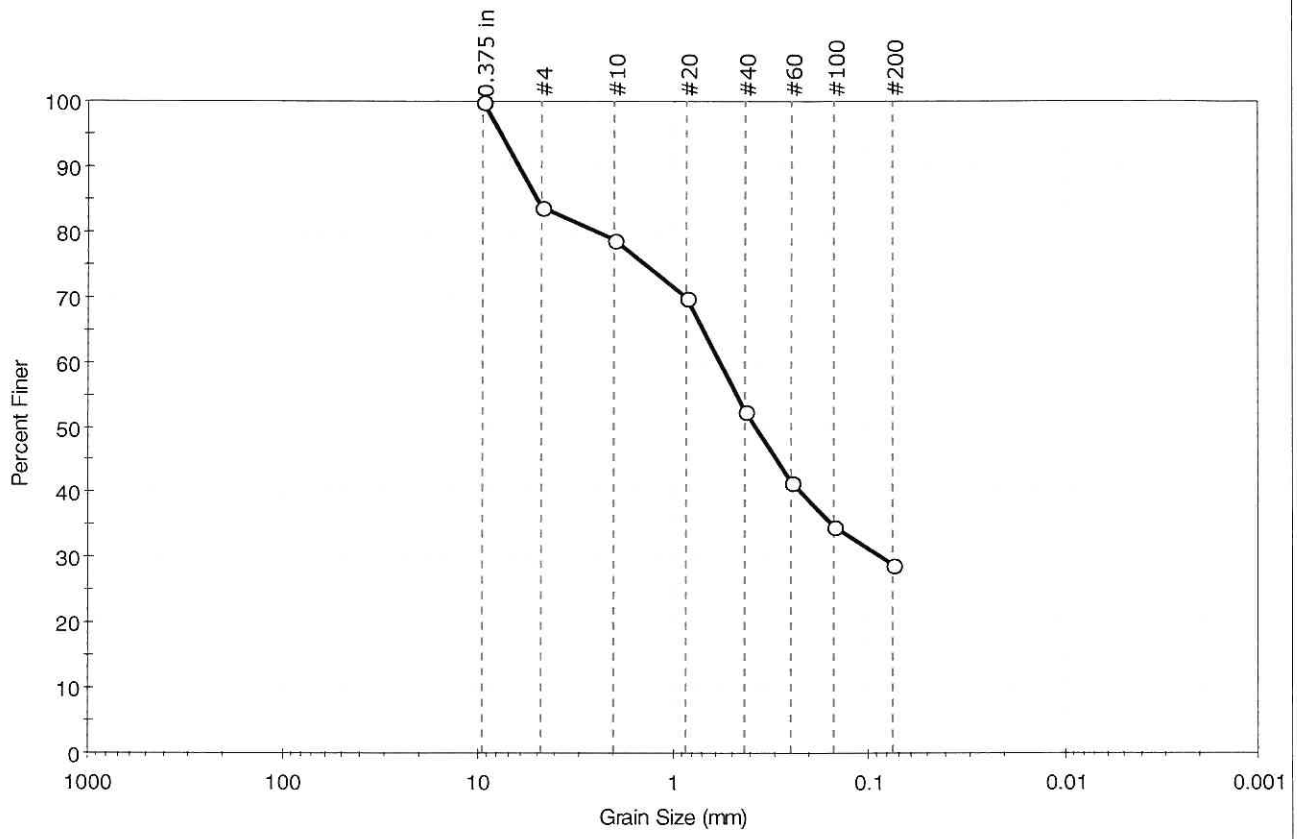
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-110-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149736		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	16.2	55.0	28.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	84		
#10	2.00	79		
#20	0.85	70		
#40	0.42	53		
#60	0.25	42		
#100	0.15	35		
#200	0.075	29		

Coefficients

D_{85} = 5.0078 mm D_{30} = 0.0860 mm
D_{60} = 0.5714 mm D_{15} = N/A
D_{50} = 0.3761 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

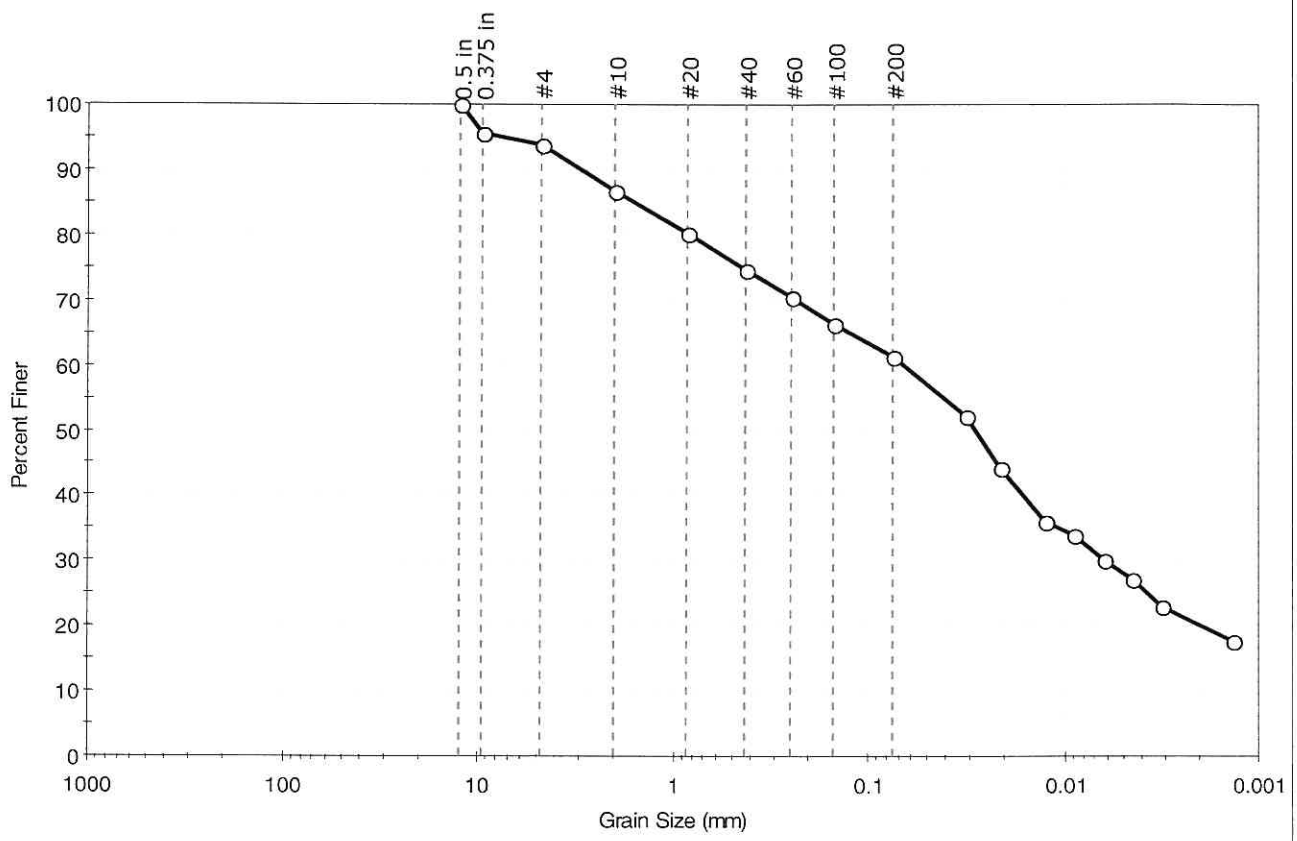
Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-110-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-3	Test Date: 04/01/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149748		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	6.2	32.5	61.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	96		
#4	4.75	94		
#10	2.00	87		
#20	0.85	80		
#40	0.42	75		
#60	0.25	70		
#100	0.15	66		
#200	0.075	61		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0318	52		
---	0.0213	44		
---	0.0125	36		
---	0.0089	34		
---	0.0063	30		
---	0.0045	27		
---	0.0032	23		
---	0.0014	18		

Coefficients

D_{85} = 1.6049 mm D_{30} = 0.0062 mm
D_{60} = 0.0666 mm D_{15} = N/A
D_{50} = 0.0286 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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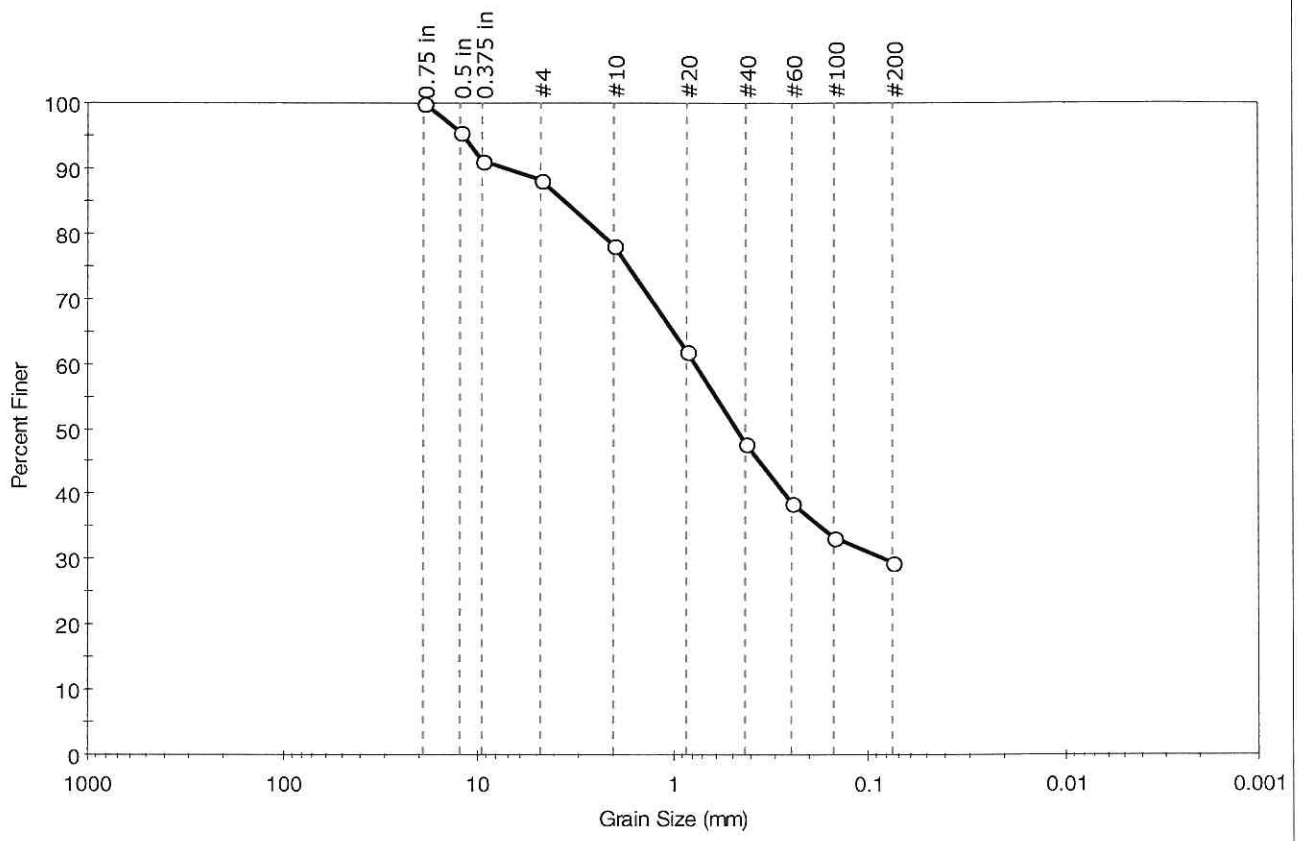
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-110-3	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/31/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149737		
Test Comment:	---		
Sample Description:	Moist, dark reddish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.8	58.8	29.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	96		
0.375 in	9.50	91		
#4	4.75	88		
#10	2.00	78		
#20	0.85	62		
#40	0.42	48		
#60	0.25	39		
#100	0.15	33		
#200	0.075	29		

Coefficients

D_{85} = 3.6118 mm D_{30} = 0.0841 mm
D_{60} = 0.7750 mm D_{15} = N/A
D_{50} = 0.4738 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

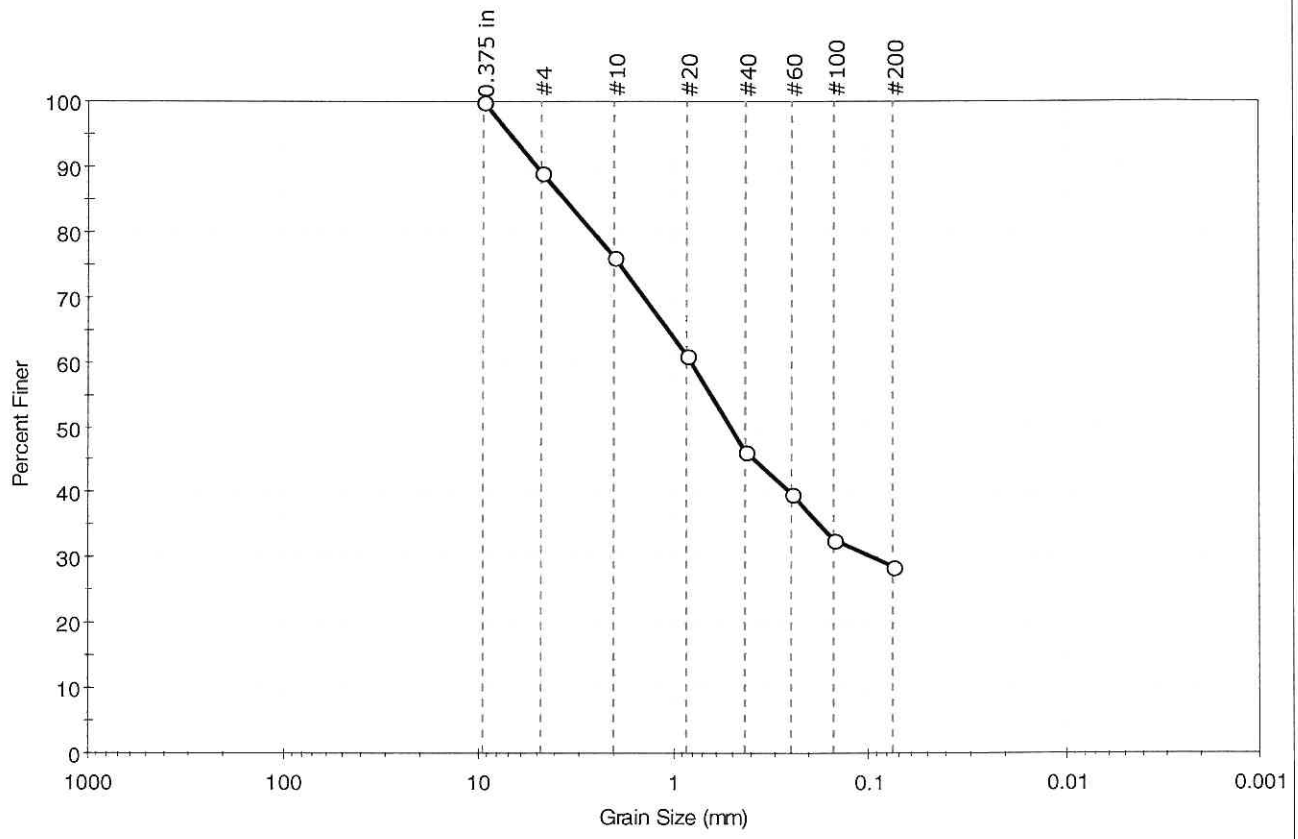
Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-111-4	Sample Type: jar	Tested By:	jbr
Sample ID:S-2	Test Date: 03/26/09	Checked By:	jdt
Depth : 3.0-4.3 ft	Test Id: 149738		
Test Comment: ---			
Sample Description:	Moist, dark yellowish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.8	60.5	28.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	89		
#10	2.00	76		
#20	0.85	61		
#40	0.42	46		
#60	0.25	40		
#100	0.15	33		
#200	0.075	29		

Coefficients

D_{85} = 3.5958 mm D_{30} = 0.0933 mm
D_{60} = 0.8133 mm D_{15} = N/A
D_{50} = 0.5059 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

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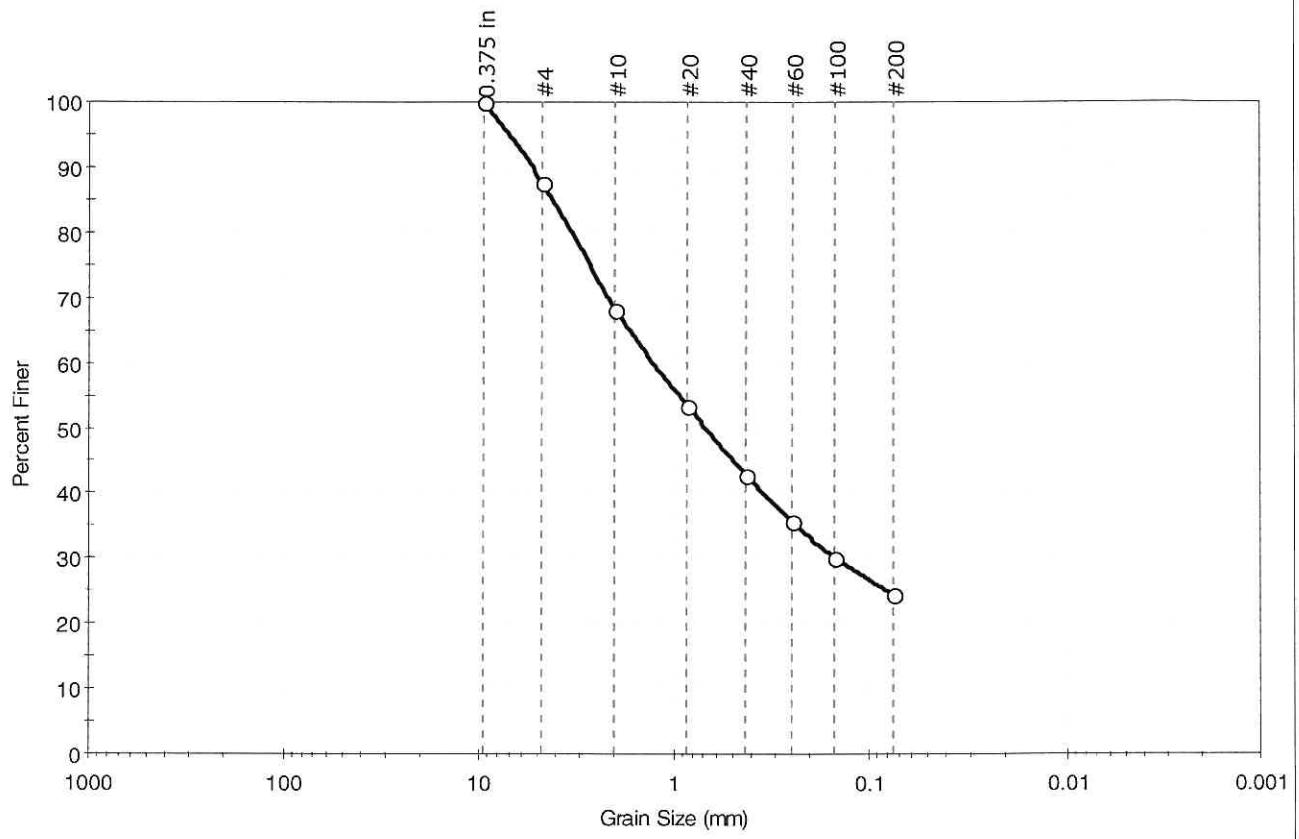
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-112-2	Sample Type: jar	Tested By:	jbr
Sample ID:S-1	Test Date: 03/30/09	Checked By:	jdt
Depth : 1.0-3.0 ft	Test Id: 149740		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	12.5	63.0	24.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	87		
#10	2.00	68		
#20	0.85	53		
#40	0.42	43		
#60	0.25	36		
#100	0.15	30		
#200	0.075	24		

Coefficients

D_{85} = 4.2521 mm	D_{30} = 0.1463 mm
D_{60} = 1.2464 mm	D_{15} = N/A
D_{50} = 0.6826 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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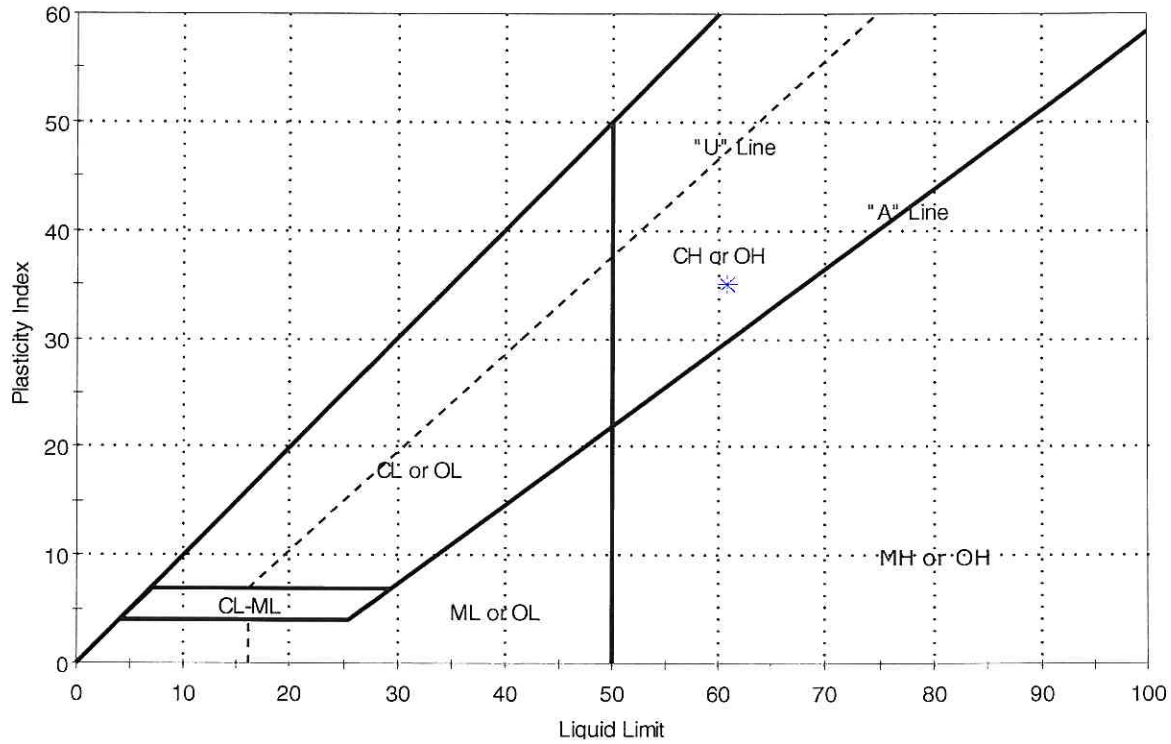
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-101-1	Sample Type: jar	Tested By:	cam
Sample ID:S-5	Test Date: 03/30/09	Checked By:	jdt
Depth : 10.0-12.0 ft	Test Id: 149749		
Test Comment: ---			
Sample Description: Moist, grayish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-5	RW-101-1	10.0-12.0 ft	38	61	26	35	0	

Sample Prepared using the WET method

Dry Strength: VERY HIGH

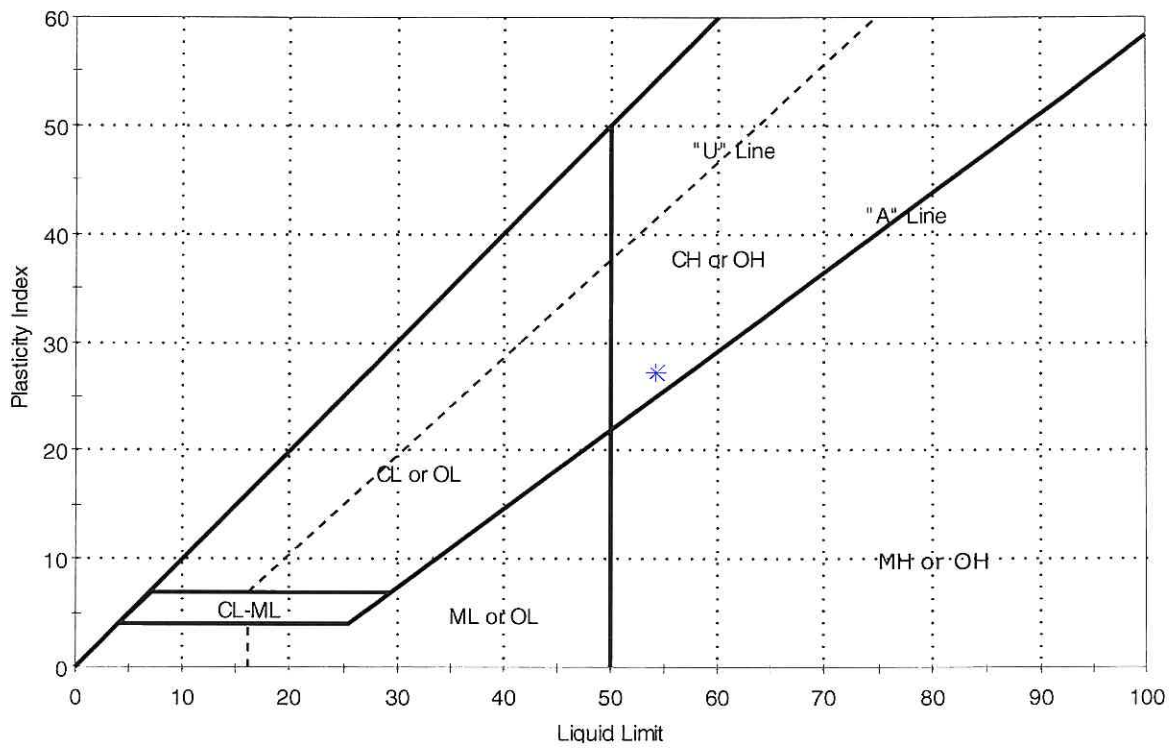
Dilentancy: SLOW

Toughness: n/a

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-1	Sample Type: jar	Tested By:	cam
Sample ID:S-3	Test Date: 03/27/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149750		
Test Comment:	---		
Sample Description:	Moist, dark grayish brown clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-3	RW-102-1	5.0-7.0 ft	51	54	27	27	1	fat clay (CH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: VERY HIGH

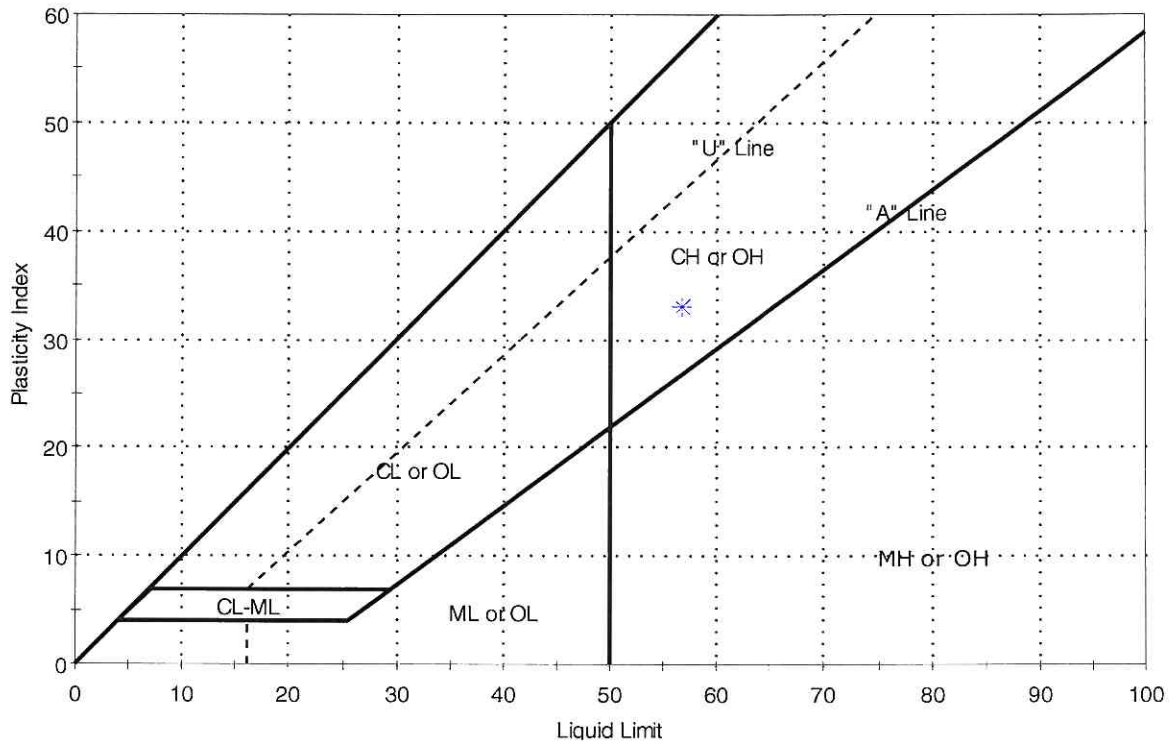
Dilentancy: SLOW

Toughness: LOW

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-1	Sample Type: jar	Tested By:	cam
Sample ID:S-5	Test Date: 03/30/09	Checked By:	jdt
Depth : 15.0-17.0 ft	Test Id: 149751		
Test Comment: ---			
Sample Description: Wet, grayish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-5	RW-102-1	15.0-17.0 ft	64	57	24	33	1	

Sample Prepared using the WET method

Dry Strength: VERY HIGH

Dilentancy: RAPID

Toughness: LOW

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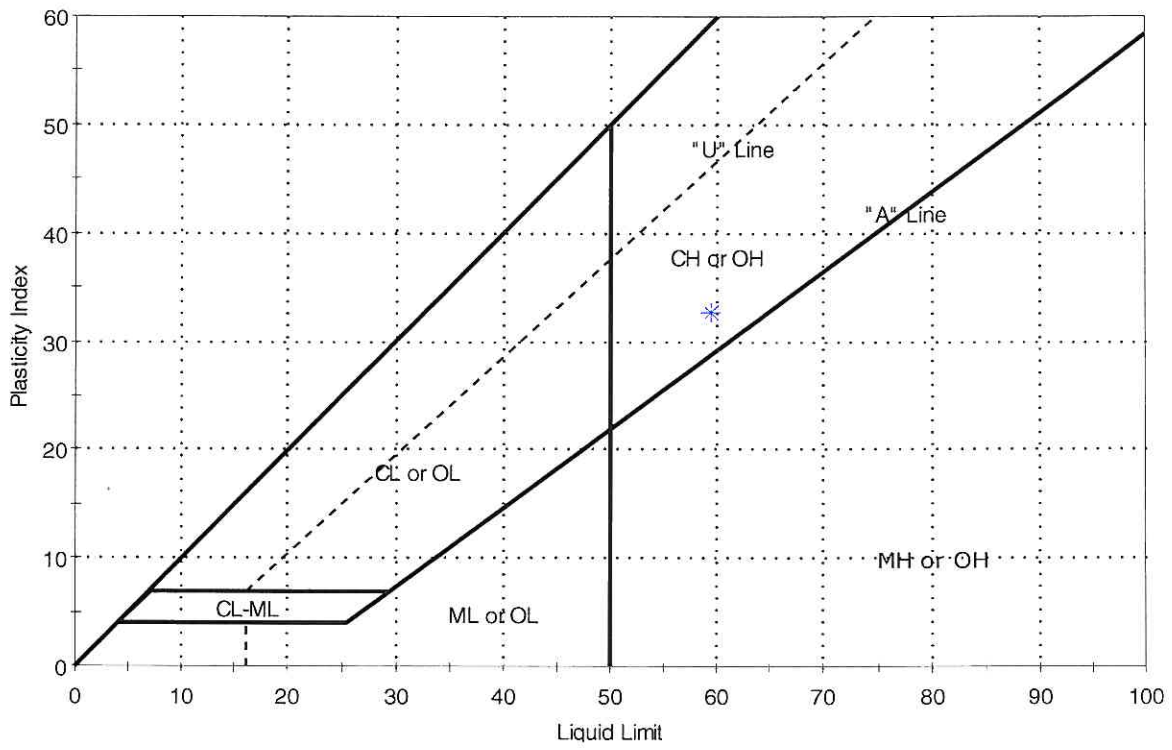
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-3	Sample Type: jar	Tested By:	cam
Sample ID:S-7	Test Date: 03/30/09	Checked By:	jdt
Depth : 20.0-22.0 ft	Test Id: 149752		
Test Comment: ---			
Sample Description: Moist, grayish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-7	RW-102-3	20.0-22.0 ft	60	59	27	32	1	

Sample Prepared using the WET method

Dry Strength: VERY HIGH

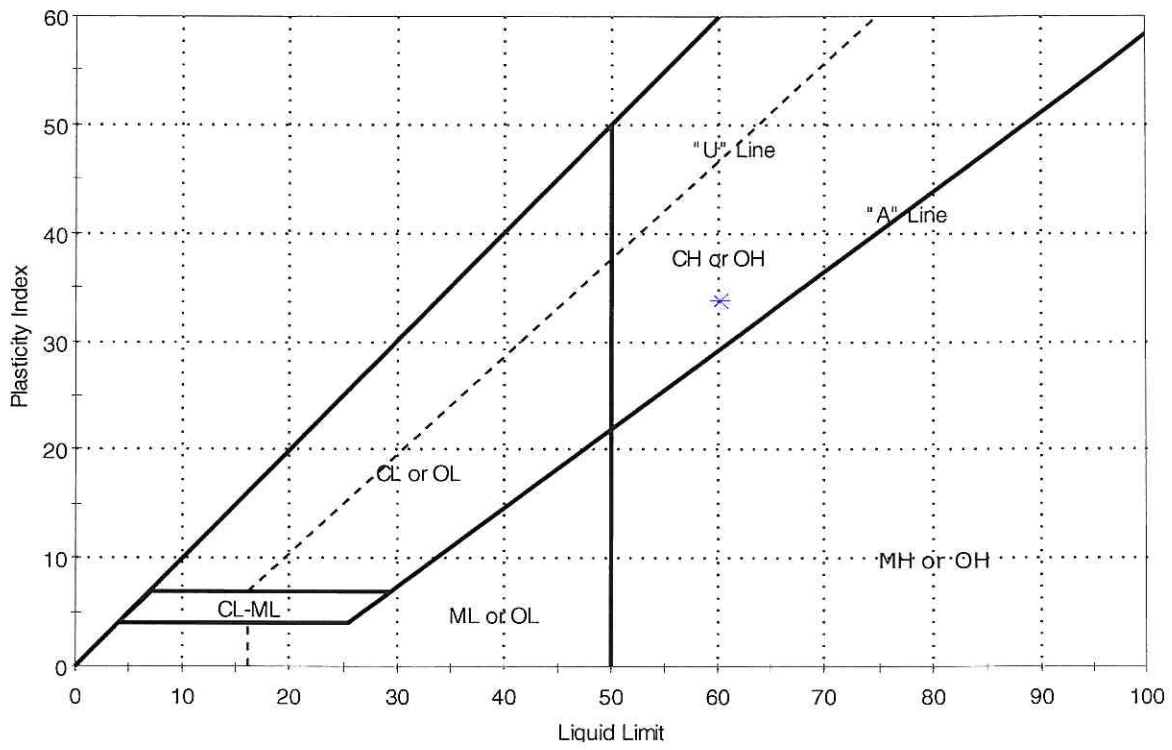
Dilentancy: SLOW

Toughness: LOW

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-5	Sample Type: jar	Tested By:	cam
Sample ID:S-5	Test Date: 03/30/09	Checked By:	jdt
Depth : 15.0-17.0 ft	Test Id: 149753		
Test Comment: ---			
Sample Description: Moist, grayish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-5	RW-102-5	15.0-17.0 ft	47	60	26	34	1	

Sample Prepared using the WET method

Dry Strength: VERY HIGH

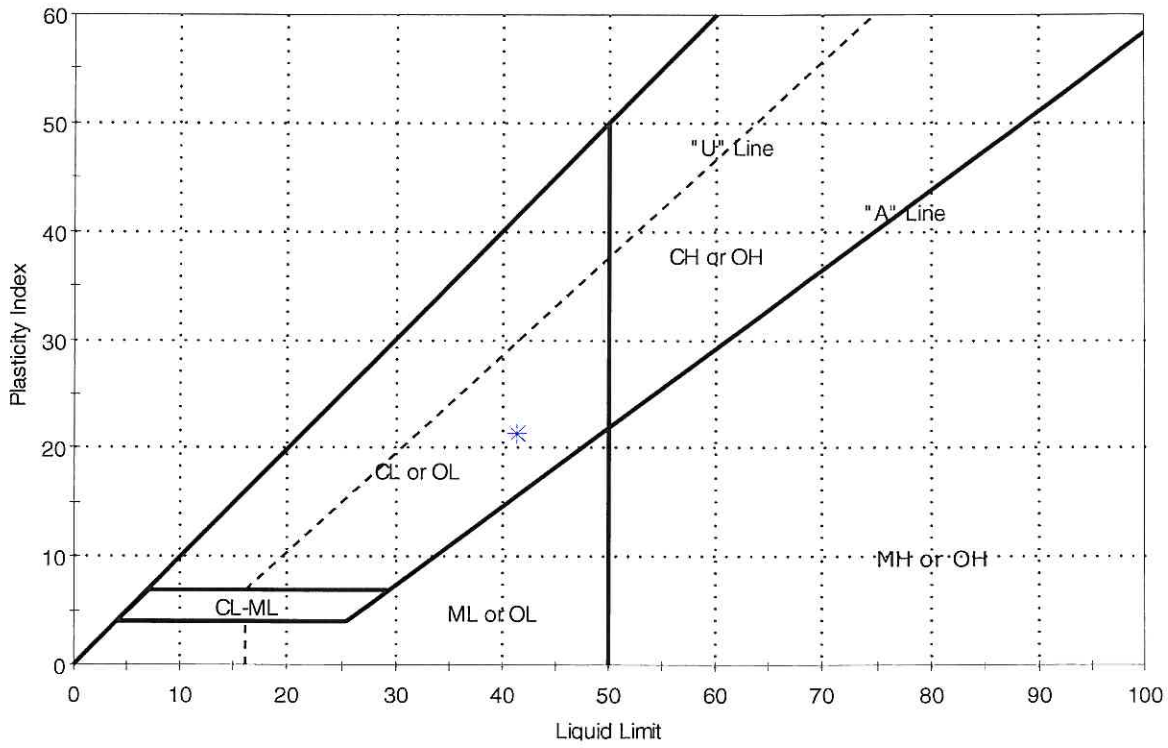
Dilentancy: RAPID

Toughness: LOW

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-102-7	Sample Type: jar	Tested By:	cam
Sample ID:S-4	Test Date: 03/30/09	Checked By:	jdt
Depth : 10.0-12.0 ft	Test Id: 149754		
Test Comment: ---			
Sample Description: Moist, grayish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-4	RW-102-7	10.0-12.0 ft	37	41	20	21	1	lean clay (CL)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilentancy: SLOW

Toughness: LOW

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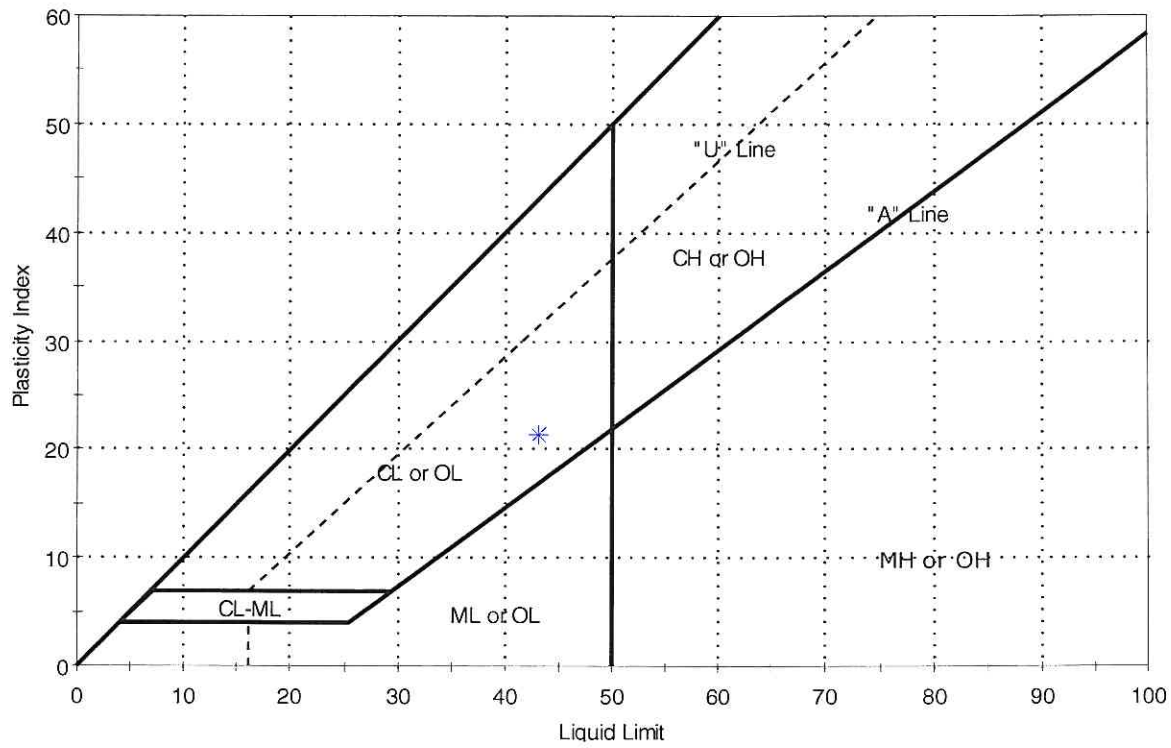
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	GeoDesign, Inc.		
Project:	New Britain-Hartford Busway #63-H137		
Location:	Hartford, CT	Project No:	GTX-8917
Boring ID: RW-103-2	Sample Type: jar	Tested By:	cam
Sample ID:S-3	Test Date: 03/30/09	Checked By:	jdt
Depth : 5.0-7.0 ft	Test Id: 149755		
Test Comment: ---			
Sample Description: Moist, dark reddish brown clay			
Sample Comment: ---			

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-3	RW-103-2	5.0-7.0 ft	36	43	22	21	1	

Sample Prepared using the WET method

Dry Strength: VERY HIGH

Dilentancy: RAPID

Toughness: LOW

INSERT TAB
APPENDIX 5
HERE

Appendix 5

Pre-Existing 2003 Subsurface Data (Boring Logs and Laboratory Data)

SB-88 through SB-99
RB-42

Pre-Existing 2003 Boring Logs

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-88**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839256.1
Start Date: 7/24/03	Route No.:	Easting: 1015099.1
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 53.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.7 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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					53
1–2	S-1	29 17 10	1.5	0.7			SILT WITH SAND (ML) - black silt, little fine sand, trace fine gravel; dry, medium dense, NP; (FILL).	52, 51
2–3	A-N		1.5					50
3–4						4.5'	ELEV. 48.9	49
4–5	S-2	11 20 15	1.5	1.5			WELL GRADED SAND WITH SILT (SW-SM) - brown fine to coarse sand, little silt, trace fine gravel; dry, dense, NP; (FILL).	48
5–6	W-N		1.5					47
6–7						7.5'	ELEV. 45.9	46
7–8	S-3	5 11 11	1.5	0.7			LEAN CLAY (CL) - gray and brown clay, trace very fine sand, trace silt; dry, very stiff, -PL.	45
8–9	W-N		1.0					44
9–10	S-4	9 9 10	1.5	0.8			LEAN CLAY (CL) - gray and brown clay, trace very fine sand, trace silt; moist, very stiff, -PL.	43
10–11								42
11–12	W-N		2.0					41
12–13								40
13–14	S-5	10 11 14	1.5	1.0			LEAN CLAY (CL) - gray and brown clay, some silt, trace very fine sand; dry, very stiff, -PL.	39
14–15	W-N		1.5					38
15–16								37
16–17	S-6	13 12 13	1.5	1.3			LEAN CLAY (CL) - gray and brown clay, some silt, trace very fine sand; dry, very stiff, -PL.	36
17–18	W-N		1.5					35
18–19						19.5'	ELEV. 33.9	34
		11						

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: 95.1' Rock: 0.0' No. of Samples: 22	NOTES:	Sheet **1** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-88**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839256.1
Start Date: 7/24/03	Route No.:	Easting: 1015099.1
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 53.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.7 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	1 1	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, soft, +PL; (GLACIAL LAKE DEPOSIT).	33
21	W-N		1.5					32
22								31
23	S-8	1 2 WOH	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, soft, +PL; (GLACIAL LAKE DEPOSIT).	30
24	W-N		1.5					29
25								28
26	S-9	WOR WOR 1	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	27
27	W-N		1.5					26
28								25
29	S-10	WOR WOR WOR	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	24
30	W-N		5.0					23
31								22
32								21
33								20
34								19
35	S-11	WOR WOH WOH	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	18
36								17
37	W-N		3.5					16
38								15
39								14

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: 95.1' Rock: 0.0' No. of Samples: 22	NOTES:	Sheet **2** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-88**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839256.1
Start Date: 7/24/03	Route No.:	Easting: 1015099.1
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 53.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.7 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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, 41	S-12	WOR WOH WOH	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	13, 12
42, 43, 44	W-N		3.5					11, 10, 9
45, 46	S-13	WOR WOH WOH	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	8, 7
47, 48, 49	W-N		3.5					6, 5, 4
50, 51	S-14	WOR 1 1	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	3, 2
52, 53, 54	W-N		3.5					1, 0, -1
55, 56	S-15	WOR WOR 1	1.5	1.3			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	-2, -3
57, 58, 59	W-N		3.5					-4, -5, -6

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: 95.1' Rock: 0.0' No. of Samples: 22	NOTES:	Sheet **3** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-88**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839256.1
Start Date: 7/24/03	Route No.:	Easting: 1015099.1
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 53.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.7 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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.)
60	S-16	1 WOH WOH	1.5	1.3			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	-7
61								-8
62	W-N		3.5					-9
63								-10
64								-11
65	S-17	1 1 WOH	1.5	1.0			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	-12
66								-13
67	W-N		3.5					-14
68								-15
69								-16
70	S-18	1 1 WOH	1.5	1.5			SILTY CLAY (CL-ML) - gray and brown clay, some silt; wet, very soft, +PL; (GLACIAL LAKE DEPOSIT).	-17
71								-18
72	W-N		3.5					-19
73								-20
74								-21
75	S-19	12 14 38	1.5	0.3		75.0'	ELEV. -21.6 POORLY GRADED GRAVEL (GP) - brown coarse gravel; dry, very dense, NP; (TILL).	-22
76								-23
77	W-N		3.5					-24
78								-25
79								-26

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: 95.1' Rock: 0.0' No. of Samples: 22	NOTES:	Sheet **4** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-88**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839256.1
Start Date: 7/24/03	Route No.:	Easting: 1015099.1
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 53.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.7 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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.)
80	S-20	100/0.1	0.1	0.1	0.0		POORLY GRADED GRAVEL (GP) - brown coarse gravel; dry, very dense, NP; (SHALE COBBLE IN TILL).	-27
81				0.6				-28
82	C-1		4.9					-29
83								-30
84				12%	0%			-31
85								-32
86								-33
87	W-N		5.0					-34
88								-35
89								-36
90	S-21	150/0.1	0.1	0.1		90.0'	ELEV. -36.6	-37
91							SILT WITH SAND (ML) - brown silt, some medium to coarse sand, trace medium gravel; moist, very dense, NP; (TILL).	-38
92	W-N		4.9					-39
93								-40
94								-41
95	S-22	125/0.1	0.1	0.1			SILT WITH SAND (ML) - brown silt, some medium to coarse sand, trace medium gravel; moist, very dense, NP; (TILL).	-42
96							ELEV. -41.7	-43
97							End of Boring at 95.1'	-44
98								-45
99								-46

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: 95.1' Rock: 0.0' No. of Samples: 22	NOTES:	Sheet **5** of **5** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-89**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839601.3
Start Date: 7/24/03	Route No.:	Easting: 1015968.4
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 50.3
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	
Groundwater Obs. @ after: 0 hours, @ after: 24 hours, @2.1 after: 48 hours		

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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					50
1–2	S-1	10 14 9	1.5	0.4			WELL GRADED SAND (SW) - brown fine to coarse sand, trace silt; dry, medium dense, NP; (FILL). Black staining from 1.5'-1.7'.	49, 48
2–3	A-N		1.5					47
3–4	S-2	2 4 7	1.5	0.0			NO RECOVERY ON S-2.	46, 45
4–5	A-N		1.5					44
5–6	S-3	3 6 6	1.5	1.5		7.5'	ELEV. 42.8 SILTY CLAY (CL-ML) - reddish brown and gray silt and clay; moist, stiff, -PL; (GLACIAL LAKE DEPOSIT).	43, 42
6–7	W-N		1.0					41
7–8	S-4	2 4 7	1.5	0.0			NO RECOVERY ON S-4.	40, 39
8–9	W-N		2.0					38
9–10	S-5	3 4 4	1.5	1.3			SILTY CLAY (CL-ML) - reddish brown and gray clay, some silt, little fine sand, trace fine gravel; moist, stiff, +PL; (GLACIAL LAKE DEPOSIT).	37, 36
10–11	W-N		1.5					35
11–12	S-6	2 3 3	1.5	1.2			SILTY CLAY (CL-ML) - reddish brown and gray clay, some silt, little fine sand, trace fine gravel; moist, medium stiff, +PL; (GLACIAL LAKE DEPOSIT).	34, 33
12–13	W-N		1.5					32
13–14		1					SILTY CLAY (CL-ML) - reddish brown and gray clay,	31

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: 25.0' Rock: 10.0' No. of Samples: 8	NOTES:	Sheet 1 of 2 SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-89**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839601.3
Start Date: 7/24/03	Route No.:	Easting: 1015968.4
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 50.3
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ after: 0 hours, @ after: 24 hours, @2.1 after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	1 1	1.5	0.5			some silt, little fine sand, trace fine gravel; moist, soft, +PL; (GLACIAL LAKE DEPOSIT).	30
21								29
22	W-N		1.5					28
						22.5'	ELEV. 27.8	
23	S-8	150	0.5	0.2			POORLY GRADED GRAVEL (GP) - dark gray coarse gravel, little clay; dry, very dense, NP; (DECOMPOSED ROCK).	27
24	W-N		2.0					26
25						25.0'	ELEV. 25.3	
26				5.0	2.4		SILTSTONE; reddish brown, soft, moderately weathered, with calcite inclusions.	25
27	C-1		5.0					24
28								23
29				100%	48%			22
30				4.9	2.5		SILTSTONE; reddish brown, soft, moderately weathered, with calcite inclusions.	21
31								20
32	C-2		5.0					19
33								18
34				98%	50%			17
35							ELEV. 15.3	16
36							End of Boring at 35.0'	15
37								14
38								13
39								12
								11

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: 25.0' Rock: 10.0' No. of Samples: 8	NOTES:	Sheet **2** of **2** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-90**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839422.3
Start Date: 8-08-03	Route No.:	Easting: 1015394.4
Finish Date: 8-10-03	Bridge No.:	Surface Elevation: 57.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW 4" ID	Sampler Type/Size: SS/ 1-3/8 " ID	Core Barrel Type: NQ/1 7/8" ID
Hammer Wt.: 300 Fall: 24	Hammer Wt.: 140 Fall: 30	

Groundwater Obs. @ 7.0 after: 0 hours, @7.2 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		1.5					57
1							SANDY SILT (ML) - medium brown silt, some fine to coarse sand, trace gravel; dry, dense, NP; (FILL).	56
2	S-1	3 11 34	1.5	0.8				55
3								54
4	A-N		1.5					53
5	S-2	11 11 19	1.5	1.0			SANDY SILT (ML) - medium brown silt, some fine to coarse sand, trace gravel; dry, dense, NP; (FILL).	52
6								51
7	W-N		1.5					50
						7.5'	ELEV. 49.9	
8	S-3	5 6 6	1.5	1.0			SILTY SAND (SM) - dark gray to black fine to medium sand, some silt, little gravel, trace clay; moist, medium dense, NP; (FILL).	49
9	W-N		1.5					48
10						10.5'	ELEV. 46.9	47
11	S-4	7 10 13	1.5	0.8			CLAYEY SAND (SC) - medium brown fine to coarse sand, some dark gray to black clay, little silt; moist, very stiff, @ PL (FILL).	46
12								45
13	W-N		1.5					44
						13.5'	ELEV. 43.9	
14	S-5	4 4 5	1.5	1.5			CLAY (CL) - dark gray clay, little very fine sand, trace silt; moist, stiff, +PL.	43
15								42
16	W-N		1.5					41
						16.5'	ELEV. 40.9	
17	S-6	6 11 14	1.5	1.0			SILT (ML) - medium gray silt, trace very fine sand; moist, very stiff, -PL, brown mottling.	40
18								39
19	W-N		1.5					38
		7				19.5'	ELEV. 37.9	

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: 85.0' Rock: 10.0' No. of Samples: 20	NOTES:	Sheet **1** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-90**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839422.3
Start Date: 8-08-03	Route No.:	Easting: 1015394.4
Finish Date: 8-10-03	Bridge No.:	Surface Elevation: 57.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW 4" ID	Sampler Type/Size: SS/ 1-3/8 " ID	Core Barrel Type: NQ/1 7/8" ID
Hammer Wt.: 300 Fall: 24	Hammer Wt.: 140 Fall: 30	

Groundwater Obs. @ 7.0 after: 0 hours, @7.2 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	4 3	1.5	1.5			SILTY CLAY (ML/CL) - reddish brown to gray clay and silt, trace very fine sand; moist, medium stiff, @ PL (GLACIAL LAKE DEPOSIT).	37
21	W-N		1.5					36
22								35
23	S-8	4 6 7	1.5	1.3			SILTY CLAY (ML/CL) - reddish brown to gray clay and silt, trace very fine sand; moist, medium stiff, @ PL (GLACIAL LAKE DEPOSIT).	34
24	W-N		1.5					33
25						25.5'	ELEV. 31.9	32
26	S-9	1 1 1	1.5	1.3			CLAY WITH SILT (CL) - reddish brown to gray clay, some silt; moist, soft, +PL; (GLACIAL LAKE DEPOSIT).	31
27	W-N		1.5					30
28								29
29	S-10	1 1 WOH	1.5	1.5			CLAY WITH SILT (CL) - reddish brown to gray clay, some silt; moist, soft, +PL; (GLACIAL LAKE DEPOSIT).	28
30								27
31								26
32	W-N		5.0					25
33								24
34								23
35	S-11	1 WOH WOH	1.5	1.5			CLAY WITH SILT (CL) - reddish brown to gray clay, some silt; moist, very soft, +PL; (GLACIAL LAKE DEPOSIT).	22
36								21
37								20
38	W-N		3.5					19
39								18

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: 85.0' Rock: 10.0' No. of Samples: 20	NOTES:	Sheet **2** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-90**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839422.3
Start Date: 8-08-03	Route No.:	Easting: 1015394.4
Finish Date: 8-10-03	Bridge No.:	Surface Elevation: 57.4

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW 4" ID	Sampler Type/Size: SS/ 1-3/8 " ID	Core Barrel Type: NQ/1 7/8" ID
Hammer Wt.: 300 Fall: 24	Hammer Wt.: 140 Fall: 30	

Groundwater Obs. @ 7.0 after: 0 hours, @7.2 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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.)
40–41	S-12	1 1 WOH	1.5	1.5			CLAY WITH SILT (CL) - reddish brown to gray clay, some silt; moist, very soft, +PL; (GLACIAL LAKE DEPOSIT).	17–16
42–44	W-N		3.5					15–13
45–46	S-13	1 1 6	1.5	1.5		46.0'	CLAY WITH SILT (CL) - reddish brown to gray clay, some silt; moist, soft, +PL; (GLACIAL LAKE DEPOSIT). ELEV. 11.4	12–11
47–49	W-N		3.5				SILTY CLAY WITH SAND (CL-ML) - reddish brown clay, some silt, some fine to coarse sand, trace gravel; moist, medium stiff, +PL.	10–8
50–51	S-14	25 37 42	1.5	1.0			SILTY CLAY WITH SAND (CL) - reddish brown clay, some silt, some fine to coarse sand, trace gravel; moist, hard, +PL.	7–6
52–54	W-N		3.5					5–3
55–56	S-15	22 37 39	1.5	0.8		55.0'	ELEV. 2.4 SILT WITH SAND AND GRAVEL (ML) - reddish brown silt, some fine to coarse sand, some fine to medium gravel; moist, very dense, NP; (TILL).	2–1
57–59	W-N		3.5					0–-2

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: 85.0' Rock: 10.0' No. of Samples: 20	NOTES:	Sheet **3** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-90**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839422.3
Start Date: 8-08-03	Route No.:	Easting: 1015394.4
Finish Date: 8-10-03	Bridge No.:	Surface Elevation: 57.4

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW 4" ID	Sampler Type/Size: SS/ 1-3/8 " ID	Core Barrel Type: NQ/1 7/8" ID
Hammer Wt.: 300 Fall: 24	Hammer Wt.: 140 Fall: 30	

Groundwater Obs. @ 7.0 after: 0 hours, @7.2 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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.)
60	S-16	100/0.1	0.1	0.1		60.0'	ELEV. -2.6 8" COBBLE AND SOME BOULDERS.	-3
61								-4
62	W-N		4.9					-5
63								-6
64								-7
65	S-17	100/0.1	0.1	0			COBBLES AND BOULDERS.	-8
66								-9
67	W-N		4.9					-10
68								-11
69								-12
70	S-18	100/0.2	0.2	0.2			COBBLES AND BOULDERS.	-13
71								-14
72	W-N		4.8					-15
73								-16
74								-17
75	S-19	100/0.2	0.2	0.2			COBBLES AND BOULDERS.	-18
76								-19
77	W-N		4.8					-20
78								-21
79								-22

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: 85.0' Rock: 10.0' No. of Samples: 20	NOTES:	Sheet **4** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-90**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839422.3
Start Date: 8-08-03	Route No.:	Easting: 1015394.4
Finish Date: 8-10-03	Bridge No.:	Surface Elevation: 57.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW 4" ID	Sampler Type/Size: SS/ 1-3/8 " ID	Core Barrel Type: NQ/1 7/8" ID
Hammer Wt.: 300 Fall: 24	Hammer Wt.: 140 Fall: 30	
Groundwater Obs. @ 7.0 after: 0 hours, @7.2 after: 24 hours, @ after: hours		

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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.)
80	S-20	100/0.0	0.0	0			COBBLES AND BOULDERS.	-23
81								-24
82	W-N		5.0					-25
83								-26
84								-27
85						85.0'	ELEV. -27.6	-28
86				5.0	1.2		SILTSTONE; reddish brown, soft, moderately weathered, high horizontal fractures, moderate vertical fractures, calcite inclusions present.	-29
87	C-1		5.0					-30
88								-31
89				100%	24%			-32
90				5.0	2.35		SILTSTONE; reddish brown, soft, moderately weathered, high horizontal fractures, moderate vertical fractures, calcite inclusions present.	-33
91								-34
92	C-2		5.0					-35
93								-36
94								-37
95				100%	47%		ELEV. -37.6	-38
96							END OF BORING AT 95.0 FEET.	-39
97								-40
98								-41
99								-42

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: 85.0' Rock: 10.0' No. of Samples: 20	NOTES:	Sheet **5** of **5** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-91**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839694.6
Start Date: 7/30/03	Route No.:	Easting: 1016377.9
Finish Date: 7/30/03	Bridge No.:	Surface Elevation: 48.8
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @10.9 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		0.5				SILT WITH GRAVEL (ML) - brown and black silt, some fine to coarse gravel; moist, medium dense, NP; (FILL).	48
1	S-1	13 13 16	1.5	0.6				47
2						2.0'	ELEV. 46.8	
3	W-N		2.5				CONCRETE (Railroad Crash Wall Footing)	46
4						4.0'	ELEV. 44.8	45
5	S-2	16 20 26	1.5	0.8			SILT (ML) - brown silt, little fine gravel, little clay; moist, dense, NP.	44
6								43
7	W-N		1.5					42
8	S-3	21 23 23	1.5	1.0			SILT (ML) - brown silt, little fine gravel, little clay; moist, dense, NP.	41
9								40
10	W-N		1.5					39
11	S-4	41 67 100/0.1	1.1	0.5			SILT (ML) - brown silt, little fine gravel, little clay; moist, very dense, NP.	38
12	W-N		1.9					37
13								36
14	S-5	72 100/0.0	0.5	0.3			SILT (ML) - brown silt, little fine gravel, little clay; moist, very dense, NP.	35
15	W-N		2.5					34
16						16.0'	ELEV. 32.8	33
17	S-6	78 100	1.0	0.5			WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM) - brown fine to coarse gravel, some fine to coarse sand, some silt; wet, very dense, NP; (TILL).	32
18	W-N		2.0					31
19								30
	S-7	100	0.5	0.5			WELL GRADED GRAVEL WITH SILT AND SAND	29

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: 34.0' Rock: 10.0' No. of Samples: 10	NOTES: Encountered 2.0' of concrete from abandoned CNS electric lines.	Sheet 1 of 3 SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-91**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839694.6
Start Date: 7/30/03	Route No.:	Easting: 1016377.9
Finish Date: 7/30/03	Bridge No.:	Surface Elevation: 48.8
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @10.9 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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							(GW-GM) - brown fine to coarse gravel, some fine to coarse sand, some silt; wet, very dense, NP; (TILL).	
21	W-N		2.5					28
22								27
23	S-8	100/0.0	0.0	0.0				26
24	W-N		3.0					25
25								24
26	S-9	100/0.1	0.1	0.1			WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM) - brown fine to coarse gravel, some fine to coarse sand, some silt; wet, very dense, NP; (TILL).	23
27	W-N		2.9					22
28								21
29	S-10	100/0.0	0.0	0.0				20
30								19
31	W-N		5.5					18
32								17
33								16
34				4.6	0.0	34.0'	ELEV. 14.8	15
35							SILTSTONE; reddish brown, soft, moderately weathered.	14
36						36.0'	ELEV. 12.8	13
37	C-1		5.0				SANDSTONE, fine grained; reddish brown, medium hard, moderately weathered.	12
38								11
39				92% / 4.0	0% / 0.0	39.0'	ELEV. 9.8	10
							SILTSTONE; reddish brown, soft to medium hard,	9

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: 34.0' Rock: 10.0' No. of Samples: 10	NOTES: Encountered 2.0' of concrete from abandoned CNS electric lines.	Sheet **2** of **3**

SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-91**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839694.6
Start Date: 7/30/03	Route No.:	Easting: 1016377.9
Finish Date: 7/30/03	Bridge No.:	Surface Elevation: 48.8
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @10.9 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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							slightly weathered.	
41	C-2		5.0					8
42								7
43								6
44				80%	0%			5
							ELEV. 4.8	
							End of Boring at 44.0'	
45								4
46								3
47								2
48								1
49								0
50								-1
51								-2
52								-3
53								-4
54								-5
55								-6
56								-7
57								-8
58								-9
59								-10
								-11

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: 34.0' Rock: 10.0' No. of Samples: 10	NOTES: Encountered 2.0' of concrete from abandoned CNS electric lines.	Sheet **3** of **3** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-92**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839739.5
Start Date: 7/30/03	Route No.:	Easting: 1016730.3
Finish Date: 7/31/03	Bridge No.:	Surface Elevation: 47.5
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @9.4 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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				SILT WITH GRAVEL (ML) - brown to black silt, some fine gravel, some fine to coarse sand; dry, loose, NP; (FILL).	47
1.5'							ELEV. 46.0	46
2	S-1	2 3 5	1.5	0.8			SANDY CLAY (CL-ML) - dark brown clay, some sand; moist, medium stiff, -PL; (FILL).	45
3–4	A-N		1.5					44
4.5'							ELEV. 43.0	43
5	S-2	7 12 13	1.5	1.5			SILTY CLAY (CL-ML) - dark brown silt and clay; moist, very stiff, -PL (GLACIAL LAKE DEPOSIT).	42
6–7	W-N		1.5					41
8	S-3	13 13 14	1.5	1.0			SILTY CLAY (CL-ML) - dark brown silt and clay; moist, very stiff, -PL (GLACIAL LAKE DEPOSIT).	40
9	W-N		1.5					39
10								38
11	S-4	5 7 9	1.5	0.0			NO RECOVERY ON S-4.	37
12–13	W-N		1.5					36
13.5'							ELEV. 34.0	35
14	S-5	13 15 27	1.5	0.3			SANDY SILT (ML) - reddish brown silt, some coarse sand, little fine to medium gravel; moist, dense, NP; (TILL).	34
15–16	W-N		1.5					33
17	S-6	26 40 67	1.5	0.8			SANDY SILT (ML) - reddish brown silt, some coarse sand, little fine to medium gravel; moist, very dense, NP; (TILL).	32
18–19	W-N		1.5					31
19.5'							ELEV. 28.0	30
		31						29
								28

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: 36.0' Rock: 10.0'
No. of Samples: 11

NOTES:

SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-92**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839739.5
Start Date: 7/30/03	Route No.:	Easting: 1016730.3
Finish Date: 7/31/03	Bridge No.:	Surface Elevation: 47.5
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @9.4 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	37 55	1.5	1.0			WELL GRADED GRAVEL WITH SAND AND SILT (GW-GM) - red, brown and black fine to medium gravel, some fine to coarse sand, little silt; moist, very dense, NP; (TILL).	27
21								26
22	W-N		1.5					
22.5'							ELEV. 25.0	25
23	S-8	100/0.0	0.0	0.0			COBBLES AT 22.5	24
24	W-N		3.0					
24.0'							ELEV. 23.5	23
25								22
26	S-9	100/0.3	0.3	0.3			WELL GRADED GRAVEL WITH SAND AND SILT (GW-GM) - red, brown and black fine to medium gravel, some fine to coarse sand, little silt; moist, very dense, NP; (TILL).	21
27	W-N		2.7					20
28								
28.5'							ELEV. 19.0	19
29	S-10	100/0.2	0.2	0.2			SILT (ML) - reddish brown silt, little fine to coarse sand, trace coarse gravel; moist, very dense, NP; (TILL).	18
30								17
31								16
32	W-N		6.3					15
33								14
34								13
35								
35.0'							ELEV. 12.5	12
	S-11	100/0.2	0.2	0.2			WELL GRADED GRAVEL WITH SILT (GW-GM) - reddish brown and black fine to coarse gravel, some silt; wet, very dense, NP; (TILL).	
	W-N		0.8					
36				3.2	0.0			11
36.0'							ELEV. 11.5	
37							SILTSTONE; reddish brown, medium hard, slightly weathered.	10
38	C-1		5.0					9
39								8

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: 36.0' Rock: 10.0' No. of Samples: 11	NOTES:	Sheet **2** of **3**

SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-92**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839739.5
Start Date: 7/30/03	Route No.:	Easting: 1016730.3
Finish Date: 7/31/03	Bridge No.:	Surface Elevation: 47.5
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 23.0 after: 0 hours, @9.4 after: 24 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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				64%	0%			7
41	C-2		5.0	4.0	0.0		SILTSTONE; reddish brown, medium hard, slightly weathered.	6
42								5
43								4
44								3
45				80%	0%			2
46							ELEV. 1.5 End of Boring at 46.0'	1
47								0
48								-1
49								-2
50								-3
51								-4
52								-5
53								-6
54								-7
55								-8
56								-9
57								-10
58								-11
59								-12

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: 36.0' Rock: 10.0' No. of Samples: 11	NOTES:	Sheet 3 of 3 SM-001-M REV. 1/02

Driller: Al Augustine/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-93**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839772.6
Start Date: 7/25/03	Route No.:	Easting: 1017386.8
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 45.9

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 8.1 after: 0 hours, @ after: 24 hours, @ after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		1.5					45
1							POORLY GRADED SAND WITH SILT (SP-SM) - brown and black fine sand, trace silt; moist, loose, NP; (FILL).	44
2	S-1	4 4 4	1.5	0.7				43
3	A-N		1.5					42
4							POORLY GRADED SAND WITH SILT (SP-SM) - brown and black fine sand, trace silt, trace clay; moist, loose, NP; (FILL).	41
5	S-2	4 2 6	1.5	0.7				40
6	W-N		1.5					39
7						7.5'	ELEV. 38.4	
8	S-3	17 26 37	1.5	1.3			SILT WITH SAND (ML) - brown silt, some fine sand, trace fine to medium gravel; moist, hard, -PL (TILL).	38
9	W-N		1.0					37
10								36
11	S-4	16 23 30	1.5	1.5			SILT WITH SAND (ML) - brown silt, little fine to coarse sand, little fine to coarse gravel; moist, hard, -PL; (TILL).	35
12	W-N		2.0					34
13								33
14	S-5	12 11 15	1.5	1.4			SILT WITH SAND (ML) - brown silt, little fine to coarse sand, little fine to coarse gravel; moist, very stiff, -PL; (TILL).	32
15								31
16	W-N		1.5					30
17	S-6	17 23 30	1.5	0.8			SILT WITH SAND (ML) - brown silt, little fine to coarse sand, little fine to coarse gravel; moist, hard, -PL; (TILL).	29
18								28
19	W-N		1.5					27
		13					SILT WITH SAND (ML) - brown silt, little fine to coarse	26

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: 27.0' Rock: 10.0' No. of Samples: 9	NOTES:	Sheet **1** of **2** SM-001-M REV. 1/02

Driller: Al Augustine/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-93**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839772.6
Start Date: 7/25/03	Route No.:	Easting: 1017386.8
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 45.9
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	
Groundwater Obs. @ 8.1 after: 0 hours, @	after: 24 hours, @	after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	17 27	1.5	1.4			sand, little fine to coarse gravel; moist, hard, -PL; (TILL).	25
21								
22	W-N		1.5					24
23	S-8	13 20 23	1.5	0.8			SILT WITH SAND (ML) - brown silt, little fine to coarse sand, little fine to coarse gravel; moist, hard, -PL; (TILL).	23
24	W-N		1.0					22
25	S-9	100/0.1	0.1	0.0			NO RECOVERY ON S-9	21
26	W-N		1.9					20
27						27.0'	ELEV. 18.9	19
28	C-1		5.0	5.0 / 100%	2.0 / 40%		SHALE; gray, medium hard, moderately to slightly weathered.	18
29								17
30								16
31								15
32	C-2		5.0	4.8 / 96%	4.8 / 96%		SHALE; gray, medium hard, moderately to slightly weathered.	14
33								13
34								12
35								11
36								10
37							ELEV. 8.9	9
38							End of Boring at 37.0'	8
39								7
								6

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: 27.0' Rock: 10.0' No. of Samples: 9	NOTES:	Sheet **2** of **2** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-94**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839838.3
Start Date: 7/31/03	Route No.:	Easting: 1017492.7
Finish Date: 8/1/03	Bridge No.:	Surface Elevation: 63.6
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.0 after: 0 hours, @6.5 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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					63
1–2	S-1	7 6 6	1.5	1.0			SILTY CLAY (CL-ML) - dark reddish brown silt and clay, trace very fine to coarse sand; moist, stiff, -PL; (TOPSOIL/FILL).	62, 61
2–3	A-N		1.5					60
3–4	S-2	7 7 9	1.5	0.8			SILTY CLAY (CL-ML) - dark reddish brown silt and clay, trace very fine to coarse sand, trace brick fragments; moist, stiff, -PL; (FILL).	59, 58
4–5	W-N		1.5					57
5–6	S-3	7 16 15	1.5	0.7			SILTY CLAY (CL-ML) - dark reddish brown silt and clay, trace very fine to coarse sand, trace brick fragments; moist, stiff, -PL; (FILL).	56, 55
6–7	W-N		1.5					54
7–8	S-4	100/0.4	0.4	0.2		10.5'	ELEV. 53.1	53
8–9	W-N		2.6				WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM) - red, brown and black fine to medium gravel, some silt, some fine to coarse sand; moist, very dense, NP; (FILL).	52, 51
9–10	S-5	100/0.4	0.4	0.2		13.5'	ELEV. 50.1	50
10–11	W-N		2.6				SANDY SILT (ML) - reddish brown silt, some fine to coarse sand, little fine gravel; moist, very dense, NP; (TILL).	49, 48
11–12	S-6	100/0.1	0.1	0.0		16.5'	ELEV. 47.1	47
						17.0'	NO RECOVERY ON S-6, COBBLE.	
							ELEV. 46.6	46
12–13	W-N		2.9					45
13–14	S-7	100/0.3	0.3	0.2			SANDY SILT (ML) - reddish brown silt, some fine to	44

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: 37.0' Rock: 10.0'
No. of Samples: 11

NOTES:

SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-94**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839838.3
Start Date: 7/31/03	Route No.:	Easting: 1017492.7
Finish Date: 8/1/03	Bridge No.:	Surface Elevation: 63.6
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.0 after: 0 hours, @6.5 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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							coarse sand, little fine gravel; moist, very dense, NP; (TILL).	43
21	W-N		2.7					42
22								
23	S-8	100/0.1	0.1	0.0			NO RECOVERY ON S-8	41
24	W-N		2.9					40
25								39
26	S-9	100/0.3	0.3	0.1			SANDY SILT (ML) - reddish brown silt, some fine to coarse sand, little fine gravel; moist, very dense, NP; (TILL).	38
27	W-N		2.7					37
28								36
29	S-10	100/0.1	0.1	0.0			NO RECOVERY ON S-10	35
30								34
31								33
32	W-N		6.4					32
33								31
34								30
35	S-11	100/0.0	0.0	0.0			NO RECOVERY ON S-11	29
36	W-N		2.0					28
37				4.5	0.0	37.0'	ELEV. 26.6	27
38							SILTSTONE; reddish brown, medium hard, highly weathered.	26
39	C-1		5.0					25
								24

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: 37.0' Rock: 10.0' No. of Samples: 11	NOTES:	Sheet **2** of **3** SM-001-M REV. 1/02

Driller: Jeff Leavitt/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-94**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839838.3
Start Date: 7/31/03	Route No.:	Easting: 1017492.7
Finish Date: 8/1/03	Bridge No.:	Surface Elevation: 63.6
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.0 after: 0 hours, @6.5 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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								23
41				90%	0%			22
42				4.5	0.0		SILTSTONE; reddish brown, medium hard, highly weathered.	21
43								20
44	C-2		5.0					19
45								18
46				90%	0%			17
47							ELEV. 16.6 End of Boring at 47.0'	16
48								15
49								14
50								13
51								12
52								11
53								10
54								9
55								8
56								7
57								6
58								5
59								4

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: 37.0' Rock: 10.0' No. of Samples: 11	NOTES:	Sheet **3** of **3** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-95**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839720.3
Start Date: 7/28/03	Route No.:	Easting: 1017723.5
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 49.2

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 6.0 after: 0 hours, @6.5 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		1.5				TOPSOIL	49
1						1.5'	ELEV. 47.7	48
2	S-1	9 11 9	1.5	1.0			SANDY SILT (ML) - black silt, some fine to coarse sand; moist, medium dense, NP; (FILL).	47
3	A-N		1.5					46
4								45
5	S-2	2 3 5	1.5	1.5			SANDY SILT (ML) - black silt, some fine to coarse sand; moist, loose, NP; (FILL).	44
6	A-N		1.5					43
7						7.5'	ELEV. 41.7	42
8	S-3	5 8 10	1.5	0.8			SILTY SAND (SM) - brown fine to coarse sand, some silt; moist, medium dense, NP; (FILL).	41
9	W-N		1.0					40
10	S-4	49 100	1.0	0.6		10.0'	ELEV. 39.2	39
11							SANDY SILT (ML) - reddish brown silt and fine to coarse sand, trace fine to medium gravel; moist, very dense, NP; (TILL).	38
12	W-N		2.5					37
13								36
14	S-5	100/0.1	0.1	0.1			SANDY SILT (ML) - reddish brown silt and fine to coarse sand, trace fine to medium gravel; moist, very dense, NP; (TILL).	35
	W-N		1.4					
15						15.0'	ELEV. 34.2	34
16	C-1		5.0	5.0	3.1		SILTSTONE, sandy; reddish brown, medium hard to hard, moderately to slightly weathered.	33
17								32
18								31
19								30

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: 15.0' Rock: 10.0'
No. of Samples: 5

NOTES:

SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-95**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839720.3
Start Date: 7/28/03	Route No.:	Easting: 1017723.5
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 49.2
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 6.0 after: 0 hours, @6.5 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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				100%	62%		SILTSTONE, sandy; reddish brown, medium hard to hard, moderately to slightly weathered.	29
21				5.0	2.2			28
22	C-2		5.0					27
23								26
24				100%	44%			25
25							ELEV. 24.2 End of Boring at 25.0'	24
26								23
27								22
28								21
29								20
30								19
31								18
32								17
33								16
34								15
35								14
36								13
37								12
38								11
39								10

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: 15.0' Rock: 10.0' No. of Samples: 5	NOTES:	Sheet **2** of **2** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-96**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839791.8
Start Date: 7/25/03	Route No.:	Easting: 1017674.8
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 48.2
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 4.0 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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					48–47
1–2	S-1	3 4 7	1.5	1.0			WELL GRADED SAND (SW) - brown fine to coarse sand, trace silt; dry, medium dense, NP; (FILL).	47–46
2–3	A-N		1.5					46–45
3–4	S-2	3 4 5	1.5	1.5			WELL GRADED SAND (SW) - brown fine to coarse sand, trace silt; wet, loose, NP; (FILL).	45–44
4–5	W-N		1.5					44–43
5–6	S-3	14 28 45	1.5	0.3			WELL GRADED SAND (SW) - brown fine to coarse sand, trace silt; dry, very dense, NP; (FILL).	43–42
6–7	W-N		1.5					42–41
7–8	S-4	100	0.5	0.5		10.5'	ELEV. 37.7	41–40
8–9	W-N		4.0				SILT WITH GRAVEL (ML) - reddish brown silt, some fine to medium gravel; moist, very dense, NP; (TILL).	40–39
9–10								39–38
10–11								38–37
11–12								37–36
12–13								36–35
13–14								35–34
14–15						15.0'	ELEV. 33.2	34–33
15–16	C-1		5.0	4.8	3.3		SILTSTONE; reddish brown, soft, slightly weathered.	33–32
16–17								32–31
17–18								31–30
18–19								30–29

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: 15.0' Rock: 10.0' No. of Samples: 4	NOTES:	Sheet **1** of **2** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-96**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839791.8
Start Date: 7/25/03	Route No.:	Easting: 1017674.8
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 48.2

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 4.0 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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				96%	66%	20.0'	ELEV. 28.2	28
				5.0	0.3		SANDSTONE, very fine grained; dark reddish brown, medium hard, slightly weathered.	
21								27
22								26
	C-2		5.0					
23								25
24								24
				100%	6%			
25							ELEV. 23.2	23
							End of Boring at 25.0'	
26								22
27								21
28								20
29								19
30								18
31								17
32								16
33								15
34								14
35								13
36								12
37								11
38								10
39								9

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: 15.0' Rock: 10.0' No. of Samples: 4	NOTES:	Sheet **2** of **2** SM-001-M REV. 1/02

Driller: Seth Murkette/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-97**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839863.9
Start Date: 7/25/03	Route No.:	Easting: 1017922.6
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 49.1
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 29.9 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		1.5					49
1								48
2	S-1	14 14 16	1.5	0.3			SILT WITH SAND (ML) - dark gray silt, some fine sand, trace clay, trace gravel; moist, dense, NP; (FILL).	47
3	A-N		1.5					46
4						4.5'	ELEV. 44.6	45
5	S-2	7 9 14	1.5	0.3			WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) - brown fine to coarse sand, some silt, some fine gravel; moist, medium dense, NP; (FILL).	44
6								43
7								42
8	W-N		4.0				NO SAMPLE AT 7.5' - CASING PLUGGED	41
9								40
10						10.0'	ELEV. 39.1	39
11	S-3	7 12 17	1.5	0.4			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand; moist, medium dense, NP.	38
12	W-N		2.0					37
13								36
14	S-4	16 20 24	1.5	1.0			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand; moist, dense, NP.	35
15								34
16	W-N		1.5					33
17	S-5	9 17 22	1.5	0.9			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand; moist, dense, NP.	32
18								31
19	W-N		1.5					30
		8				19.5'	ELEV. 29.6	

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: 39.0' Rock: 10.0' No. of Samples: 10	NOTES:	Sheet 1 of 3 SM-001-M REV. 1/02

Driller: Seth Murkette/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-97**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839863.9
Start Date: 7/25/03	Route No.:	Easting: 1017922.6
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 49.1
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 29.9 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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-6	20 24	1.5	0.9			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand, some fine to medium gravel; moist, dense, NP; (TILL).	29
21								28
22	W-N		1.5					27
23	S-7	14 23 32	1.5	0.0			NO RECOVERY ON S-8	26
24	W-N		1.0					25
25	S-8	14 21 27	1.5	1.5			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand, trace fine gravel; moist, dense, NP; (TILL).	24
26								23
27	W-N		2.0					22
28								21
29	S-9	27 6 50	1.5	0.5			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand, some fine gravel; moist, very dense, NP; (TILL).	20
30	W-N		5.0					19
31								18
32								17
33								16
34								15
35	S-10	16 31 70	1.5	1.0			SILT WITH SAND (ML) - reddish brown silt, some fine to coarse sand, some fine gravel; moist, very dense, NP; (TILL).	14
36								13
37	W-N		2.5					12
38								11
39				4.0	0.35	39.0'	ELEV. 10.1 SHALE; gray, soft, highly weathered, with calcite	10

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: 39.0' Rock: 10.0' No. of Samples: 10	NOTES:	Sheet **2** of **3** SM-001-M REV. 1/02

Driller: Seth Murkette/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-97**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839863.9
Start Date: 7/25/03	Route No.:	Easting: 1017922.6
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 49.1

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 29.9 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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							inclusions and slickensides.	9
41	C-1		5.0					8
42								7
43								6
44				80%	7%			5
				5.0	0.0		SHALE; gray, soft, highly weathered, with calcite inclusions and many slickensides.	
45								4
46	C-2		5.0					3
47								2
						47.5'	ELEV. 1.6	
48							SILTSTONE; reddish brown, soft, fresh, with slickensides.	1
				100%	0%			
49							ELEV. 0.1	0
							End of Boring at 49.0'	
50								-1
51								-2
52								-3
53								-4
54								-5
55								-6
56								-7
57								-8
58								-9
59								-10

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: 39.0' Rock: 10.0' No. of Samples: 10	NOTES:	Sheet **3** of **3** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-98**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839986.4
Start Date: 7/25/03	Route No.:	Easting: 1018157.9
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 50.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 12.0 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	A-N		1.5					50
1							WELL GRADED SAND (SW) - brown fine to medium sand, trace silt; moist, loose, NP.	49
2	S-1	2 3 3	1.5	1.0				48
3	A-N		1.5					47
4								46
5	S-2	4 5 6	1.5	1.3			WELL GRADED SAND (SW) - brown fine to medium sand, trace silt; moist, medium dense, NP.	45
6	A-N		1.5					44
7								43
8	S-3	5 7 7	1.5	1.0			WELL GRADED SAND (SW) - brown fine to medium sand, trace silt; moist, medium dense, NP.	42
9	A-N		1.5					41
10								40
11	S-4	8 10 15	1.5	0.8			WELL GRADED SAND (SW) - brown fine to medium sand, trace silt; moist, medium dense, NP.	39
12	W-N		1.5					38
13								37
14	S-5	15 16 19	1.5	0.3			WELL GRADED SAND (SW) - brown fine to medium sand, trace silt; moist, dense, NP.	36
15	W-N		1.5					35
16						16.5'	ELEV. 33.9	34
17	S-6	24 28 45	1.5	1.3			GRAVELLY SILT WITH SAND (ML) - reddish brown silt, some fine to coarse gravel, some fine to coarse sand; moist, very dense, NP; (TILL).	33
18								32
19	W-N		2.0					31

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: 20.0' Rock: 10.0' No. of Samples: 6	NOTES:	Sheet **1** of **2** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **SB-98**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839986.4
Start Date: 7/25/03	Route No.:	Easting: 1018157.9
Finish Date: 7/25/03	Bridge No.:	Surface Elevation: 50.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 12.0 after: 0 hours, @6.0 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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						20.0'	ELEV. 30.4	30
21							SILTSTONE; reddish brown, medium hard to hard, slightly weathered.	29
22	C-1		5.0					28
23								27
24				88%	56%			26
25				5.0	1.8		SILTSTONE; reddish brown, medium hard to hard, slightly weathered.	25
26								24
27	C-2		5.0					23
28								22
29				100%	36%			21
30							ELEV. 20.4 End of Boring at 30.0'	20
31								19
32								18
33								17
34								16
35								15
36								14
37								13
38								12
39								11

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: 20.0' Rock: 10.0' No. of Samples: 6	NOTES:	Sheet **2** of **2** SM-001-M REV. 1/02

Driller: Al Augustine/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-99**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 840441.6
Start Date: 7/25/03	Route No.:	Easting: 1018510.0
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 54.4

Project Description: New Britain to Hartford Busway

Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.2 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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					54
1–2	S-1	3 8 1	1.5	0.8			GRAVELLY SILT WITH SAND (ML) - reddish brown silt, little medium gravel, little fine to medium sand; dry, loose, NP; (FILL).	53, 52
2–3	A-N		1.5					51
3–4	S-2	2 2 4	1.5	0.8			SANDY SILT WITH GRAVEL (ML) - reddish brown silt, some fine sand, little medium gravel; dry, loose, NP; (FILL).	50, 49
4–5	W-N		1.5					48
5–6	S-3	8 3 2	1.5	0.3		7.5'	ELEV. 46.9 POORLY GRADED SAND WITH SILT (SP-SM) - brown fine sand, little silt, trace fine gravel; moist, loose, NP; (FILL).	47, 46
6–7	W-N		1.0					45
7–8	S-4	8 6 4	1.5	0.2		10.0'	ELEV. 44.4 POORLY GRADED GRAVEL (GP) - brown coarse gravel, trace silt, trace fine sand; moist, loose, NP; (FILL).	44, 43
8–9	W-N		2.0				NO RECOVERY ON S-5.	42, 41
9–10	S-5	7 6 3	1.5	0.0				40
10–11	W-N		1.5					39
11–12	S-6	9 6 4	1.5	0.8		16.5'	ELEV. 37.9 SILTY SAND (SM) - brown fine to coarse sand, little silt, trace fine to coarse gravel; moist, loose, NP; (FILL).	38, 37
12–13	W-N		1.5			19.5'	ELEV. 34.9	36, 35
13		2						

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: 34.0' Rock: 10.0'
No. of Samples: 10

NOTES:

SM-001-M REV. 1/02

Driller: Al Augustine/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-99**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 840441.6
Start Date: 7/25/03	Route No.:	Easting: 1018510.0
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 54.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 25.0 after: 0 hours, @25.2 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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	4 7	1.5	1.5			LEAN CLAY (CL) - gray and brown clay, trace silt; moist, stiff, +PL; (BEACH DEPOSIT).	34
21								33
22	W-N		1.5					32
23	S-8	6 5 7	1.5	1.5			LEAN CLAY (CL) - gray and brown clay, trace silt; moist, stiff, +PL; (GLACIAL LAKE DEPOSIT).	31
24	W-N		1.0					30
25						25.0'	ELEV. 29.4	
26	S-9	3 1 4	1.5	1.5			SILTY CLAY (CL-ML) - brown and gray silt, some clay; moist, medium stiff, +PL; (GLACIAL LAKE DEPOSIT).	29 28
27	W-N		2.0					27
28						28.5'	ELEV. 25.9	26
29	S-10	3 5 10	1.5	1.0			SILT WITH GRAVEL (ML) - brown silt, little fine to coarse gravel; moist, medium dense, NP: (TILL).	25
30								24
31								23
32	W-N		4.0					22
33						33.0'	ELEV. 21.4	21
34				5.0	2.0		SILTSTONE; reddish brown, medium hard, slightly weathered.	20
35								19
36	C-1		5.0					18
37								17
38				100%	40%			16
39				4.1	0.35		SILTSTONE; reddish brown, medium hard, slightly weathered.	15

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: 34.0' Rock: 10.0'
No. of Samples: 10

NOTES:

SM-001-M REV. 1/02

Driller: Al Augustine/GZA	**Connecticut DOT Boring Report**	Hole No.: **SB-99**
Inspector: Josh Colella	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 840441.6
Start Date: 7/25/03	Route No.:	Easting: 1018510.0
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 54.4
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type: NQ/1-7/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	
Groundwater Obs. @ 25.0 after: 0 hours, @25.2 after: 48 hours, @ after: hours		

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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								14
41	C-2		5.0					13
42								12
43				82%	7%	42.8'	ELEV. 11.6 SHALE; gray, medium hard, slightly weathered, with clay seams present.	11
44							ELEV. 10.4 End of Boring at 44.0'	10
45								9
46								8
47								7
48								6
49								5
50								4
51								3
52								2
53								1
54								0
55								-1
56								-2
57								-3
58								-4
59								-5

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: 34.0' Rock: 10.0' No. of Samples: 10	NOTES:	Sheet **3** of **3** SM-001-M REV. 1/02

Driller: Mike St. John/NEBC	**Connecticut DOT Boring Report**	Hole No.: **RB-42**
Inspector: Rachael Marks	Town: West Hartford / Hartford, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 839512.1
Start Date: 7/28/03	Route No.:	Easting: 1015689.3
Finish Date: 7/28/03	Bridge No.:	Surface Elevation: 51.1
Project Description: New Britain to Hartford Busway		
Casing Type/Size: HW/4"	Sampler Type/Size: SS/1-3/8"	Core Barrel Type:
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 10.0 after: 0 hours, @7.8 after: 48 hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: northern 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								51
1	A-N		1.5					50
2	S-1	21 60	1.0	0.0			NO RECOVERY ON S-1	49
3	A-N		2.0					48
4								47
5	S-2	4 4 2	1.5	1.3			WELL GRADED SAND WITH SILT (SW-SM) - gray fine to coarse sand, some silt, little fine gravel; dry, loose, NP; (FILL).	46
6								45
7	A-N		1.5					44
8	S-3	3 3 3	1.5	1.5			WELL GRADED SAND WITH SILT (SW-SM) - gray to brown fine to coarse sand, some silt, little fine gravel; dry, loose, NP; (FILL).	43
9								42
10	A-N		1.5					41
						10.5'	ELEV. 40.6	
11	S-4	5 7 10	1.5	0.5			SANDY CLAY (CL) - gray to brown clay, some fine to medium sand; moist, very stiff, -PL.	40
12								39
13	W-N		1.5					38
						13.5'	ELEV. 37.6	
14	S-5	3 4 6	1.5	1.5			SILTY CLAY (CL-ML) - brown to gray silt, some clay; moist, stiff, +PL; (GLACIAL LAKE DEPOSIT).	37
15								36
16	W-N		1.5					35
						16.5'	ELEV. 34.6	
17	S-6	3 3 5	1.5	1.5			LEAN CLAY (CL) - reddish brown clay, trace very fine sand; moist, stiff, +PL; (GLACIAL LAKE DEPOSIT).	34
18								33
19	W-N		1.5					32
		6					LEAN CLAY (CL) - reddish brown clay, trace very fine	

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: 0.0' No. of Samples: 10	NOTES:	Sheet **1** of **2** SM-001-M REV. 1/02

INSERT
GREEN SHEET
HERE

Pre-Existing 2003 Laboratory Data

LABORATORY TESTING DATA SHEET

Project Name: NEW BRITAIN-HARTFORD BUSWAY CONNECTICUT
Project No.: L17828
Project Engineer: D. SCHULZE
Assigned By: D. GAFFNEY
Date: NOV.03
Reviewed By: [signature]
Date Reviewed: 11/11/03

Boring/ Test Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests: Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	Density: γ_d MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Strength Tests: Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	Consol. $\frac{\Delta e}{1 + e_0}$	Laboratory Log and Soil Description
RB-36	S-4	10.0-11.5	263	38.7																
RB-36	S-9	25.0-26.5	264	58.9																
RB-37	S-5	13.5-15.0	265	40.1																
RB-37	S-10	28.5-30.0	266	59.7																
RB-38	S-8	22.5-24.0	267	49.6																
RB-39	S-6	16.5-18.0	268	35.8																
RB-40	S-2	4.5-6.0	269	33.0																
RB-40	S-9	25.0-26.5	270	46.8																
RB-41	S-2	4.5-6.0	271	59.4																
RB-41	S-6	16.5-18.0	272	66.1																
RB-41	S-9	25.0-26.5	273	50.9																
RB-42	S-6	16.5-18.0	274	40.8																

LABORATORY TESTING DATA SHEET

ject Name: NEW BRITAIN-HARTFORD BUSWAY
CONNECTICUT

ject No.: L17828 — Assigned By: D. GAFFNEY — Reviewed By: Dee Schulze

ject Engineer: D. SCHULZE — Date: DEC.03 — Date Reviewed: 12/20/03

oring/ est Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests: Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	Density: γ_d MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Strength Tests: Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	Consol.: $\frac{\Delta e}{1 + e_0}$	Laboratory Log and Soil Description
SB-83	S-10	28.5-30.0	365	44.8																
SB-85	S-6	16.5-18.0	366	23.3																
SB-87	S-8	22.5-24.0	367	59.1																
SB-88	S-3	7.5-9.0	368	23.6																
SB-88	S-10	28.5-30.0	369	54.2																
SB-90	S-4	10.5-12.0	370	40.3																
SB-93	S-7	19.5-21.0	371	14.1																
SB-97	S-4	13.5-15.0	372	9.7																
SB-98	S-6	16.5-18.0	373	11.1																
SB-99	S-6	16.5-18.0	374	11.6																
SB-99	S-7	19.5-21.0	375	23.2																
SB-99	S-8	22.5-24.0	376	30.3																
SB-99	S-10	28.5-30.0	377	11.0																

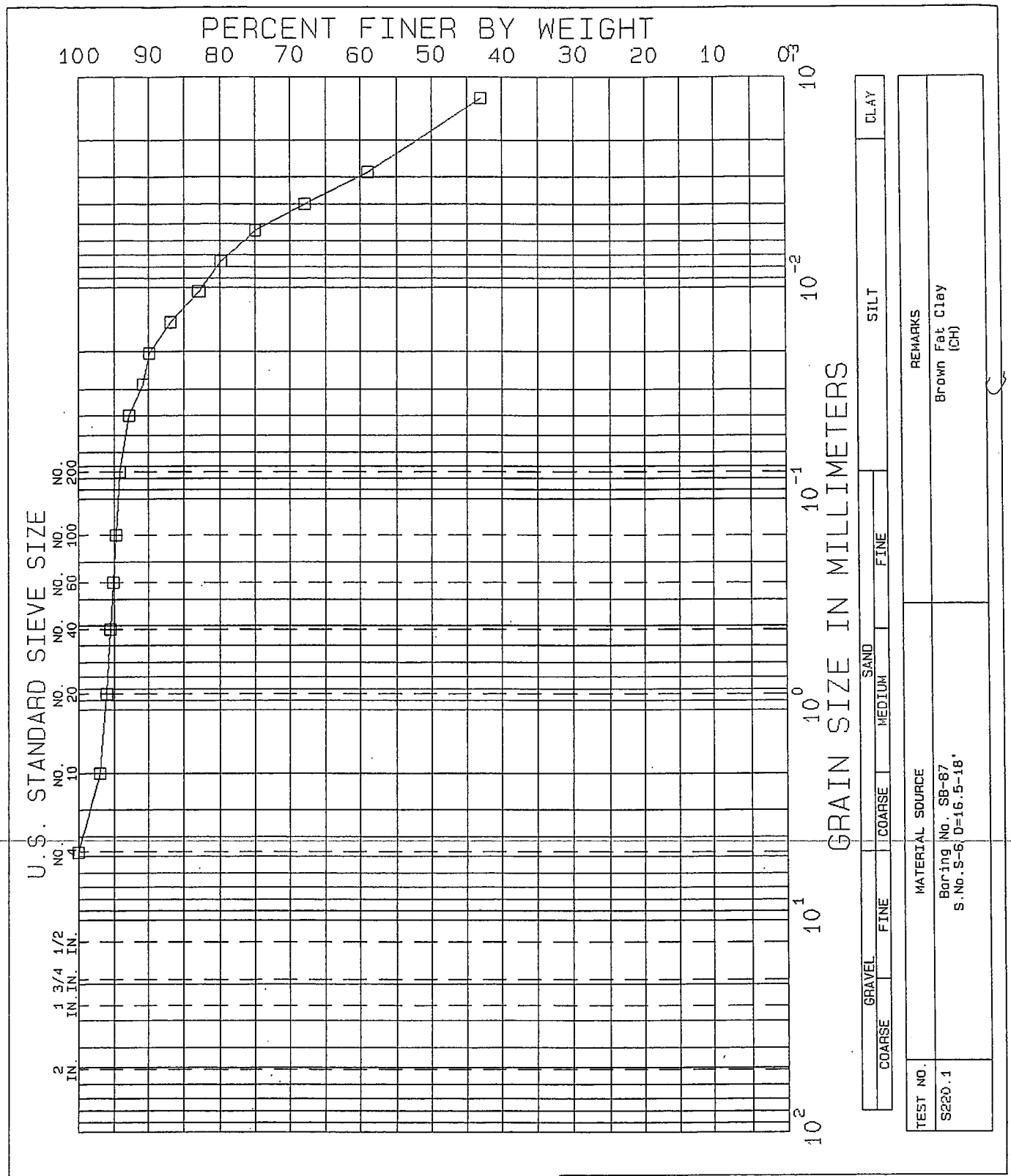
LABORATORY TESTING DATA SHEET

roject Name: NEW BRITAIN-HARTFORD BUSWAY
CONNECTICUT

roject No.: L17828 — Assigned By: D. GAFFNEY — Reviewed By: [signature]

roject Engineer: D. SCHULZE — Date: DEC.03 — Date Reviewed: 1/5/04

Boring/ Test Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests: Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	Density: γ_d MAX (pcf) W_{opt} (%)	Perme-ability cm/sec	Strength Tests: Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	Consol.: $\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
SB-87	S-6	16.5-18.0	220	55.7	54	26	94	52												Brown Fat clay (CH)
SB-87	S-15	55.0-56.5	221	57.4	55	26	100	65												Brown Fat clay (CH)
SB-88	S-6	16.5-18.0	222	33.9	57	28	99	60												Brown Fat clay (CH)
SB-88	S-12	40.0-41.5	223	49.7	36	24	100	32												Brown Lean clay (CL)
SB-88	S-18	70.0-71.5	224	26.3	28	19	88	29												Brown Lean clay (CL)
SB-89	S-5	13.5-15.0	225	35.2	42	25	94	37												Brown Lean clay (CL)
SB-90	S-6	16.5-18.0	226	22.6	51	24	85	43												Brown Fat clay (CH)
SB-90	S-11	35.0-36.5	227	47.0	43	25	100	44												Brown Lean clay (CL)
SB-91	S-3	7.5-9.0	228	8.5	18	15	42	10												Brown Silty sand with gravel (SM)
SB-91	S-6 S-7	16.5-20.0	229	11.7	23	17	18													Brown Silty clayey sand with gravel (SC-SM)

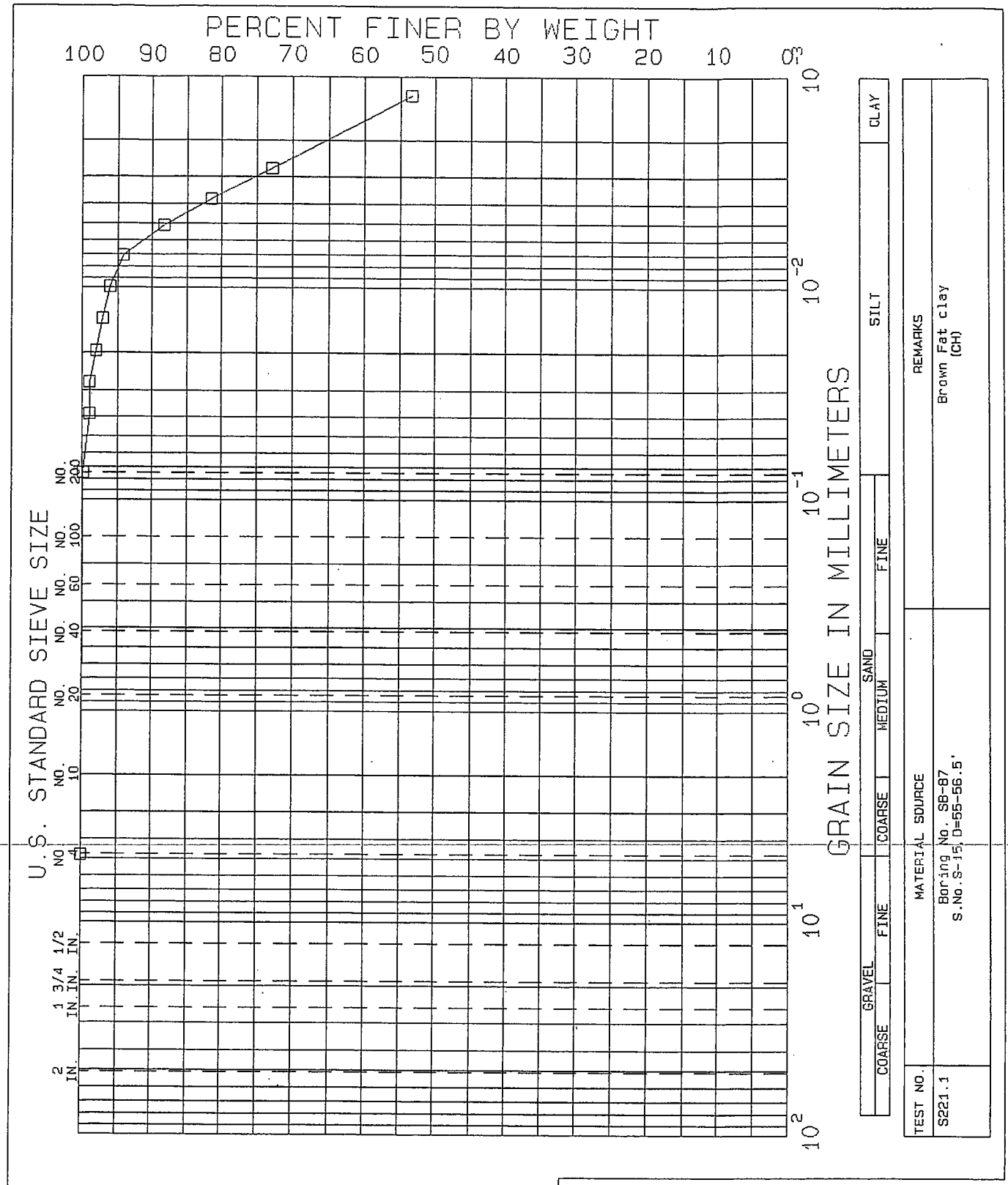


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-87	TEST SERIES	
SAMPLE	S-6	NO.	220
DEPTH	16.5-18'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

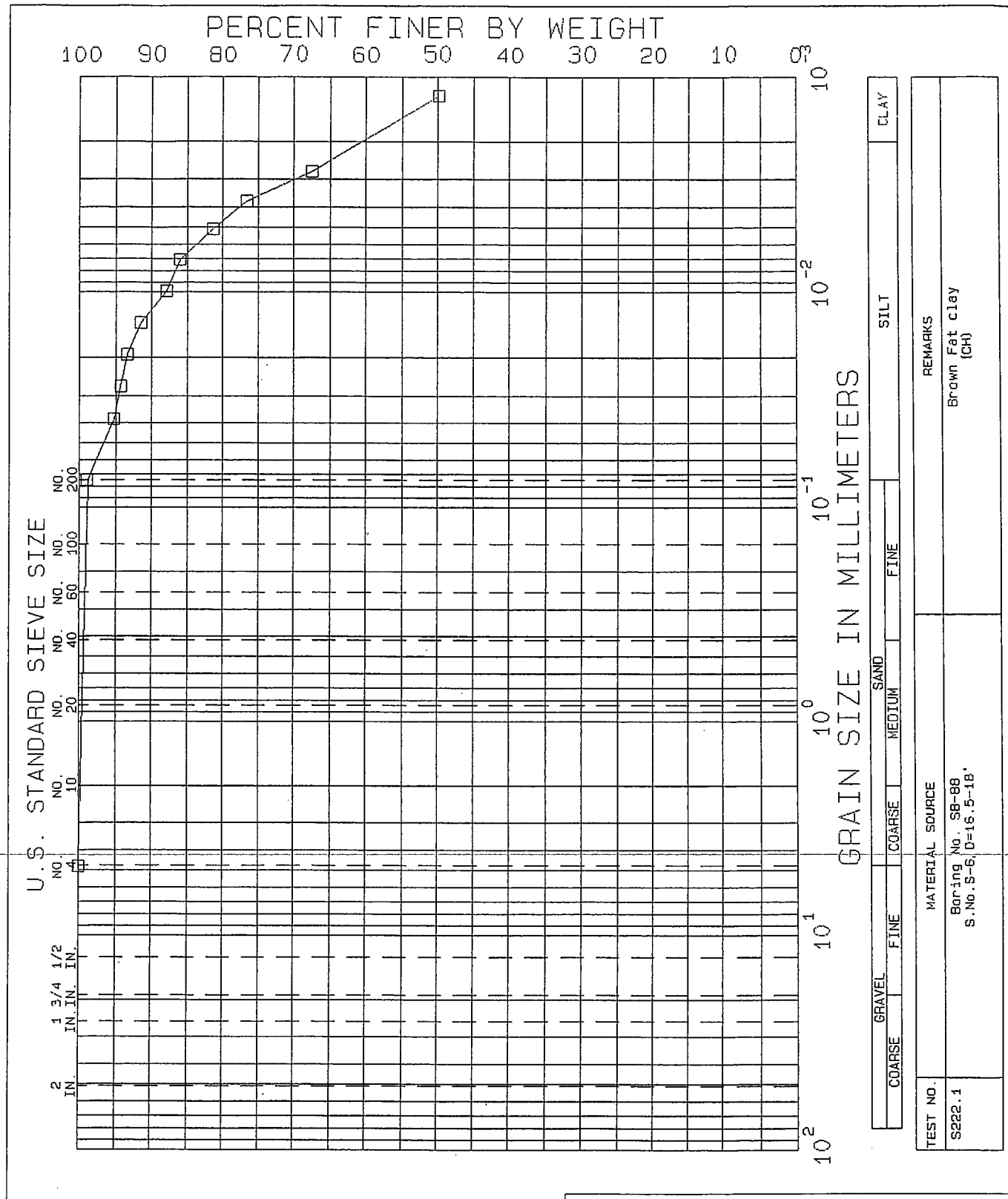


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-87	TEST SERIES	
SAMPLE	S-15	NO.	221
DEPTH	55-56.5'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

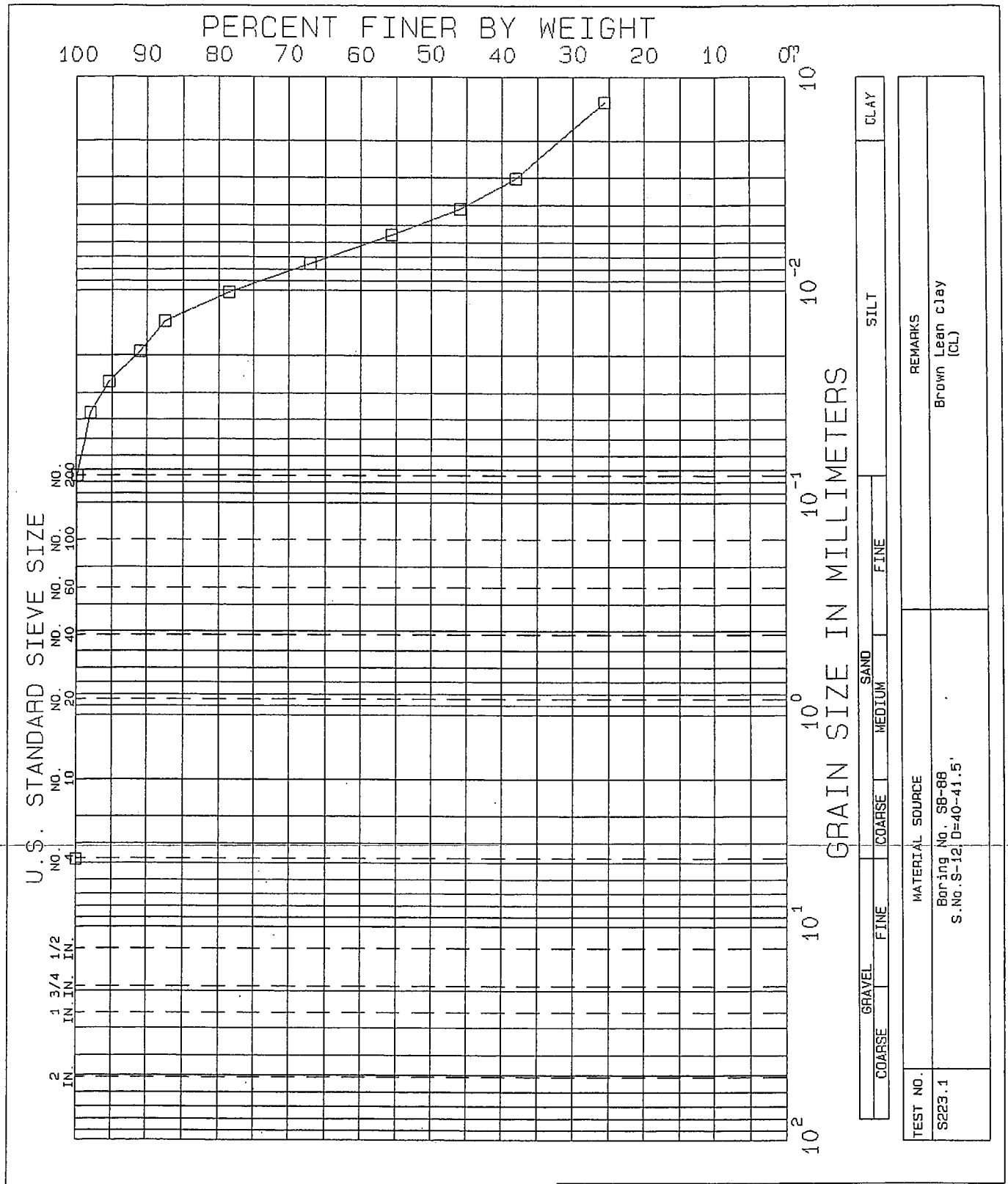


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-88	TEST SERIES	
SAMPLE	S-6	NO.	222
DEPTH	16.5-18'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

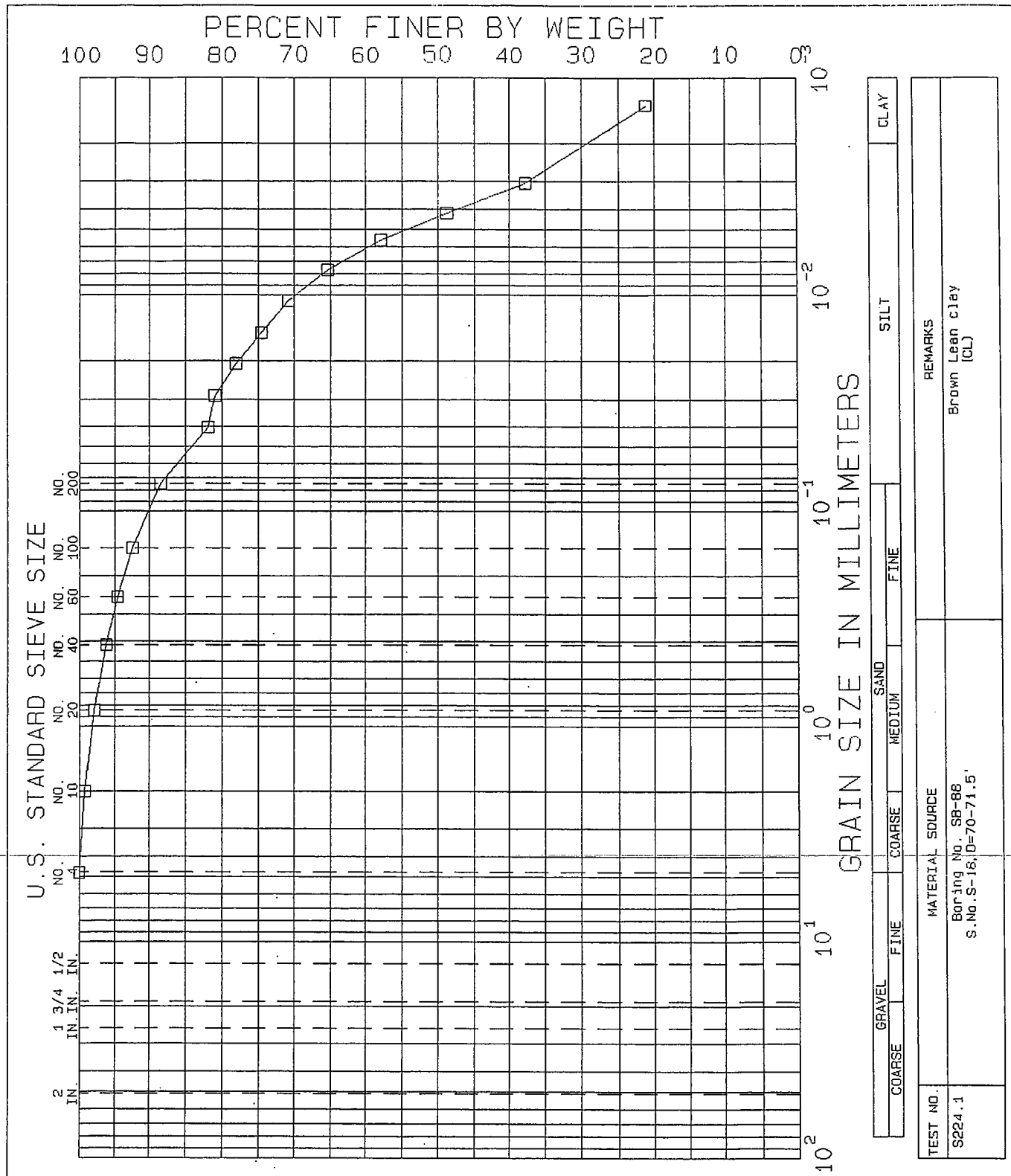


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-88	TEST SERIES	
SAMPLE	S-12	NO.	223
DEPTH	40-41.5'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

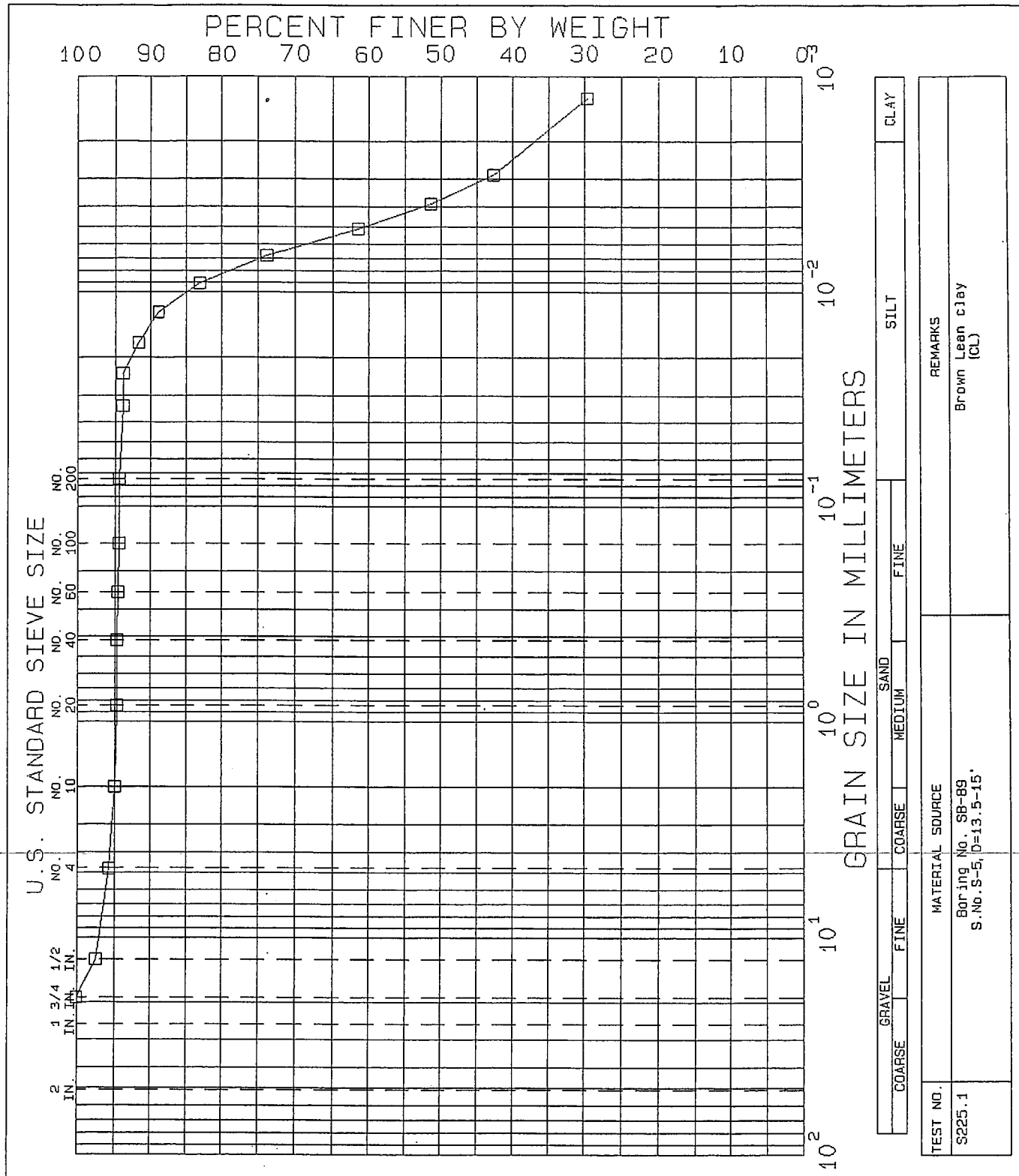


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO	SB-88	TEST SERIES	
SAMPLE	S-18	NO.	224
DEPTH	70-71.5'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

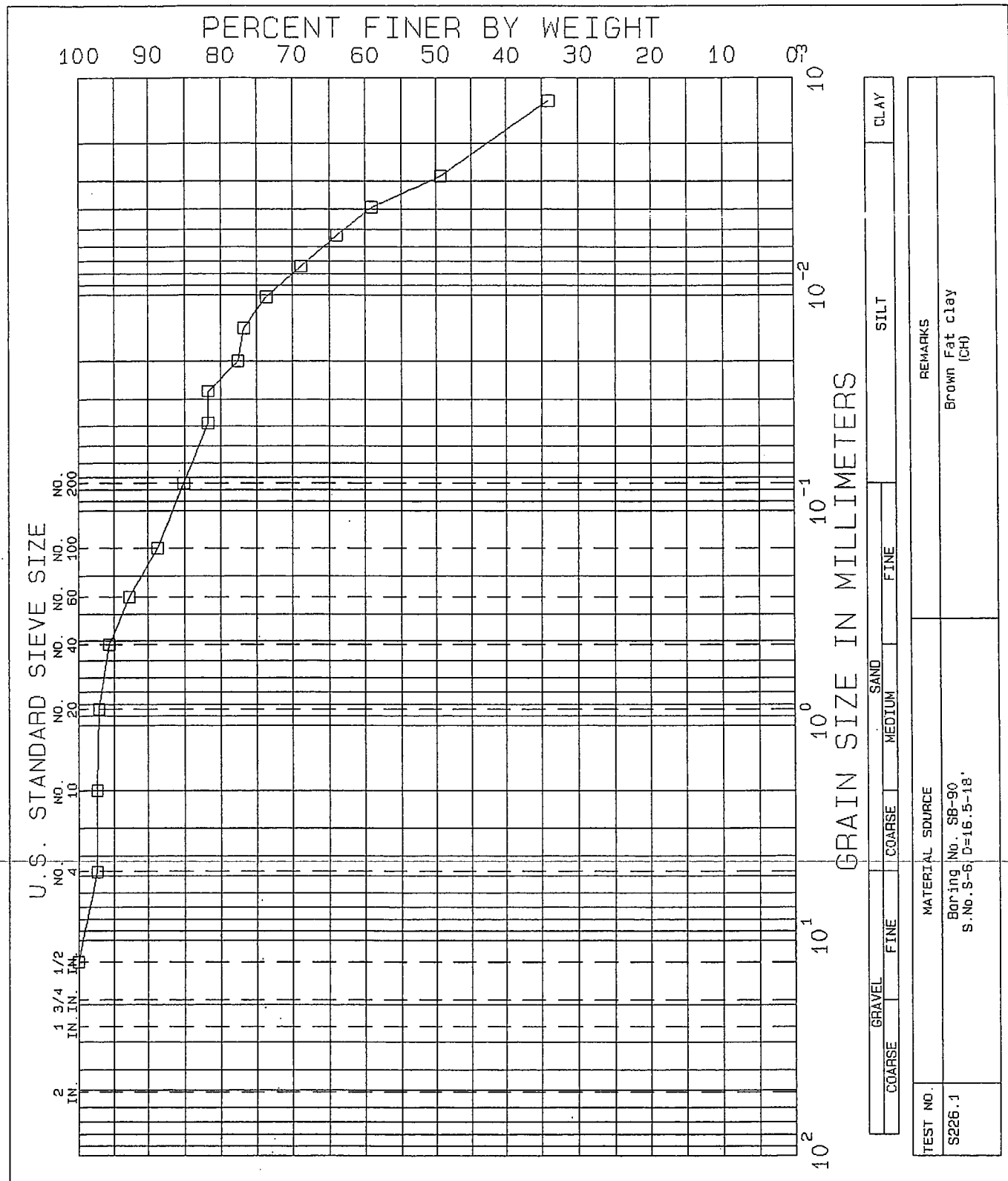


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-89	TEST SERIES	
SAMPLE	S-5	NO.	225
DEPTH	13.5-15'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

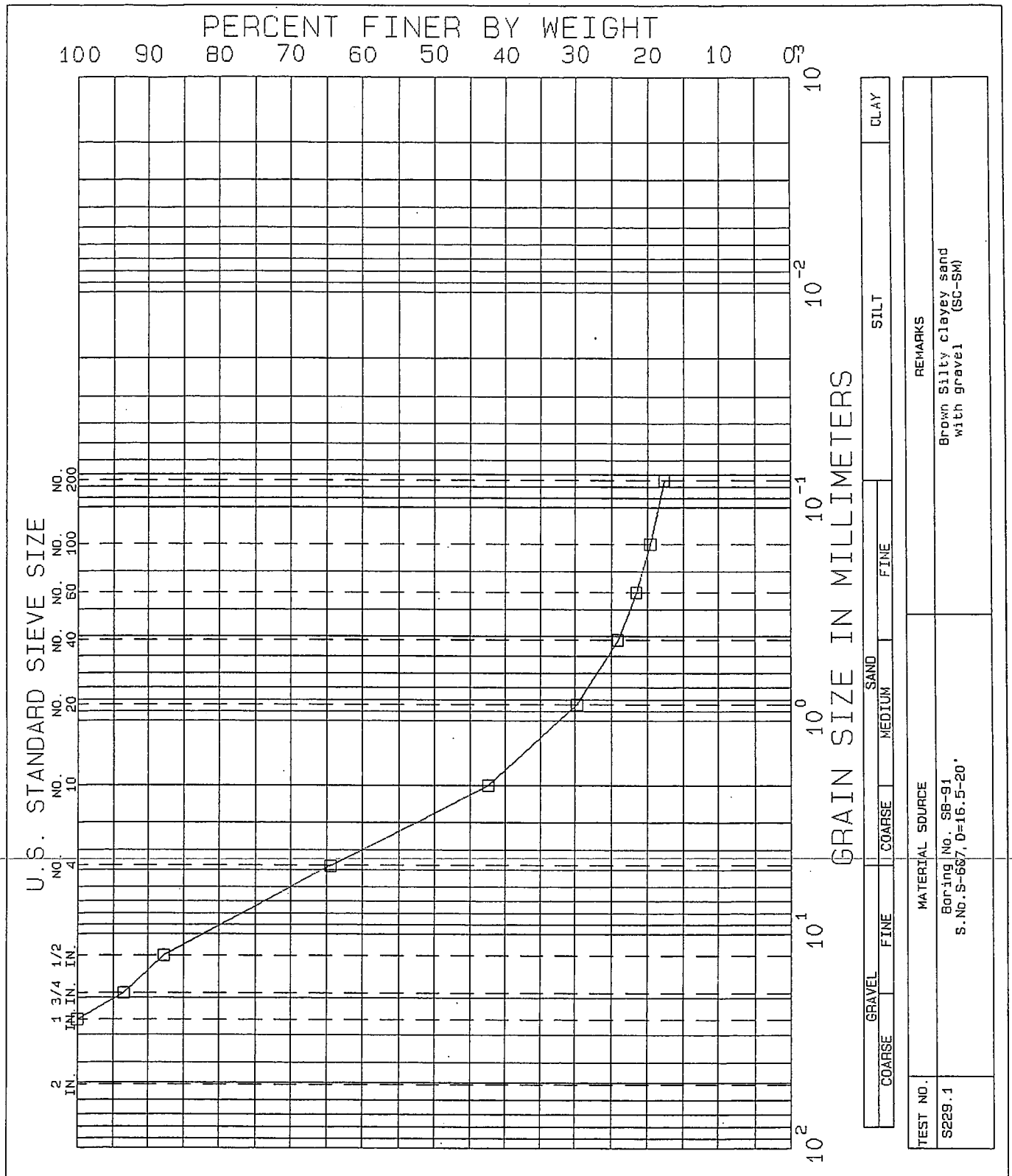


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-90	TEST SERIES	
SAMPLE	S-6	NO.	226
DEPTH	16.5-18'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

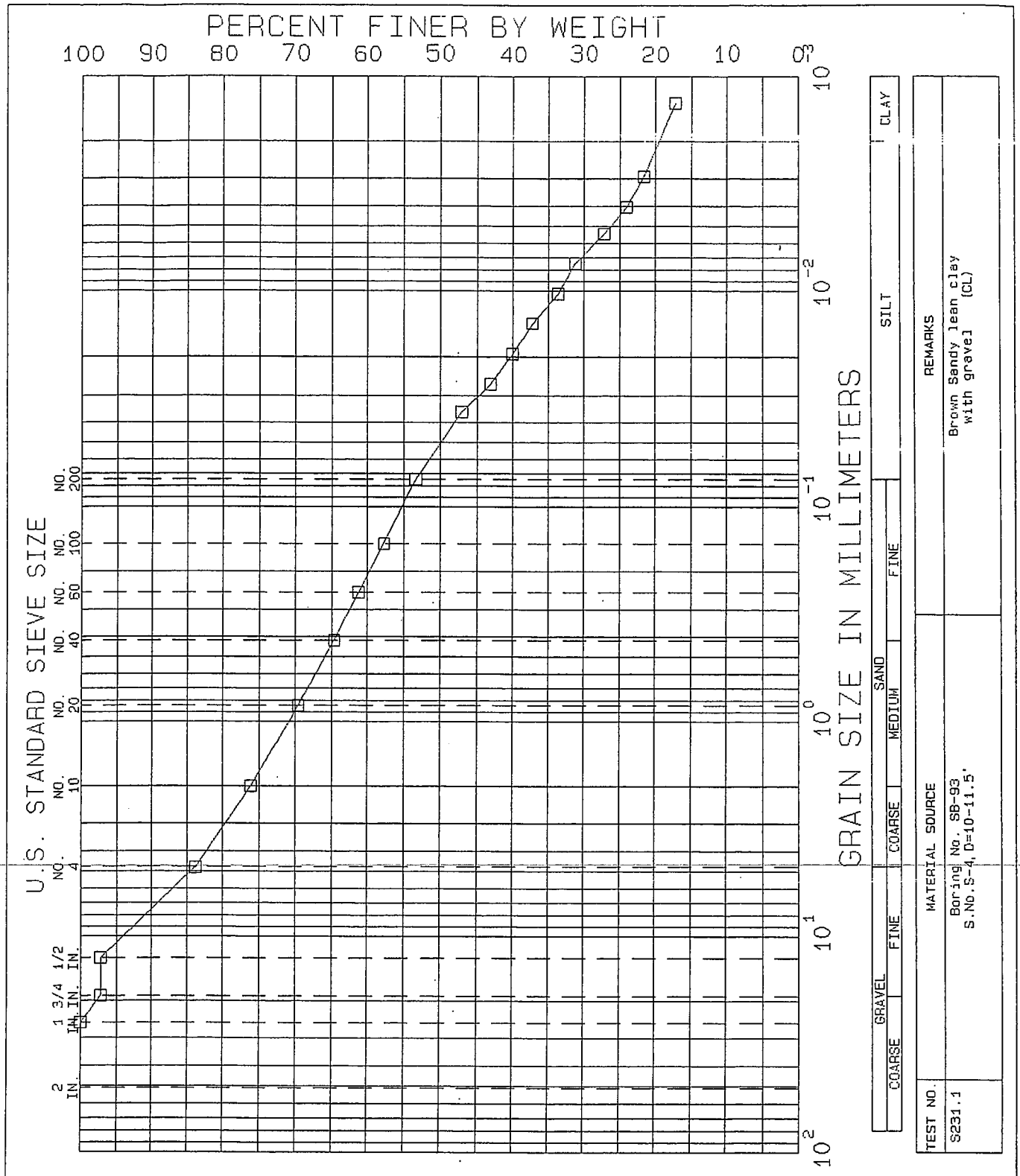


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO	SB-91	TEST SERIES	
SAMPLE	S-687	NO.	229
DEPTH	16.5-20'	DATE	Dec.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

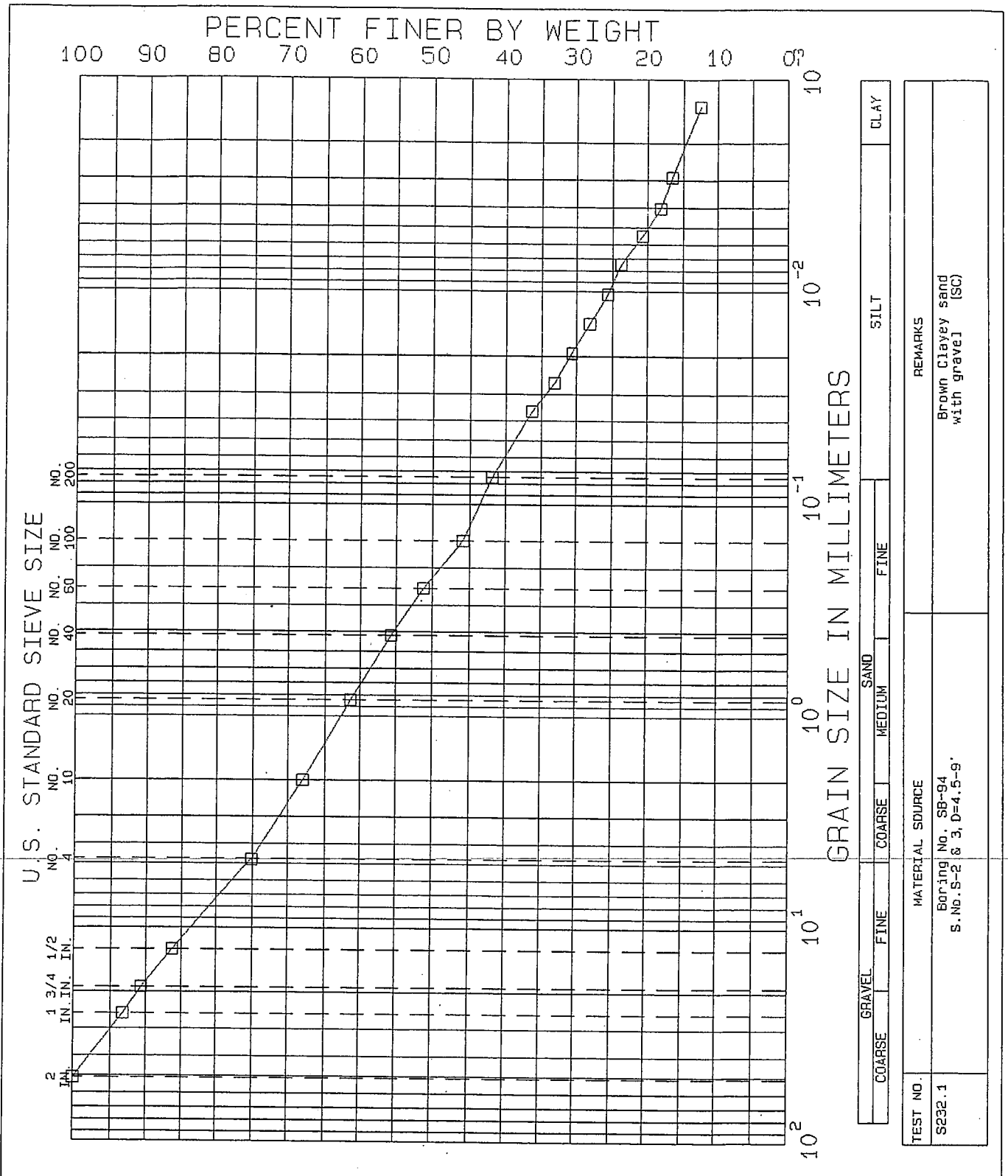


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-93	TEST SERIES	
SAMPLE	S-4	NO.	231
DEPTH	10-11.5'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

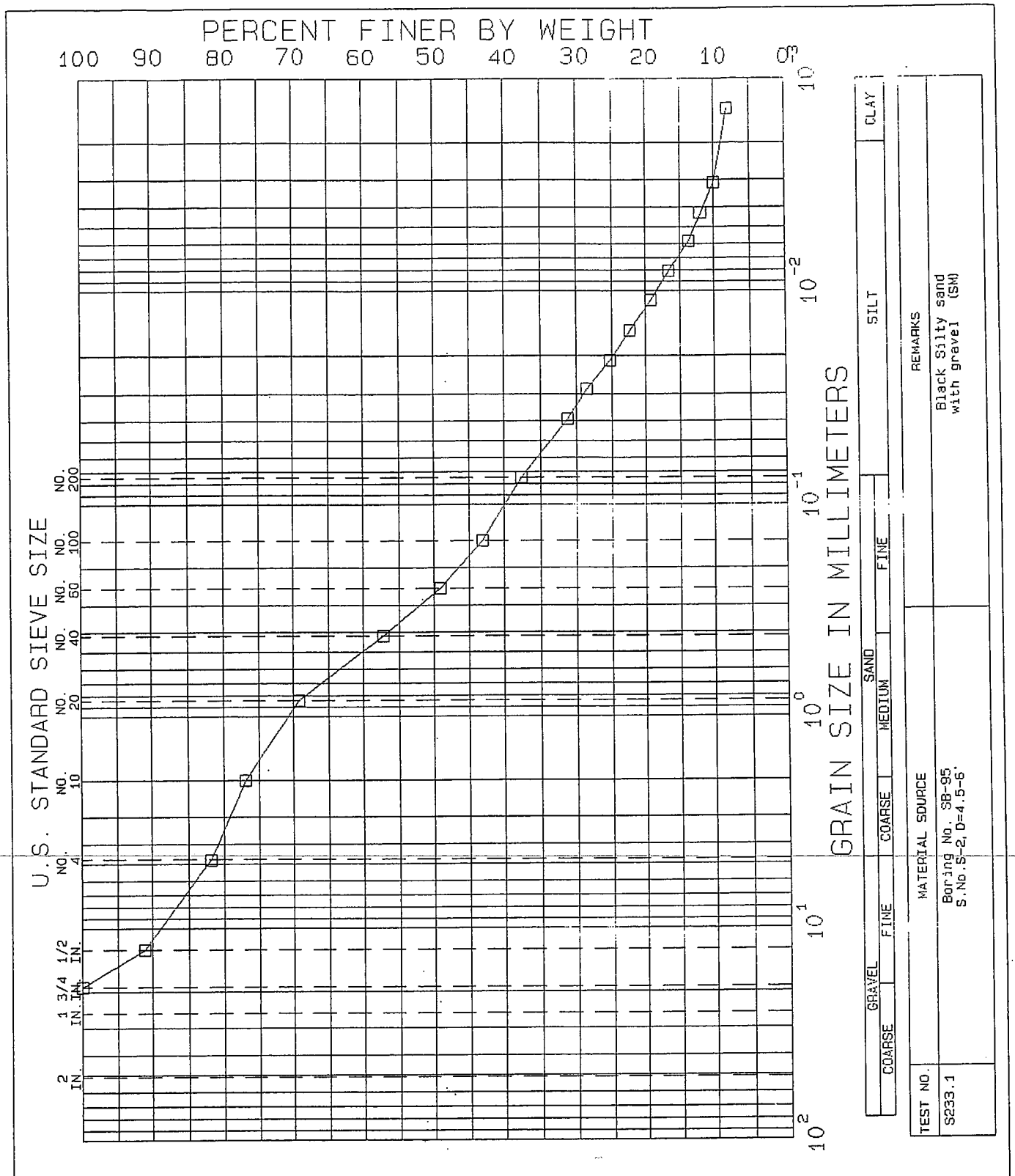


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

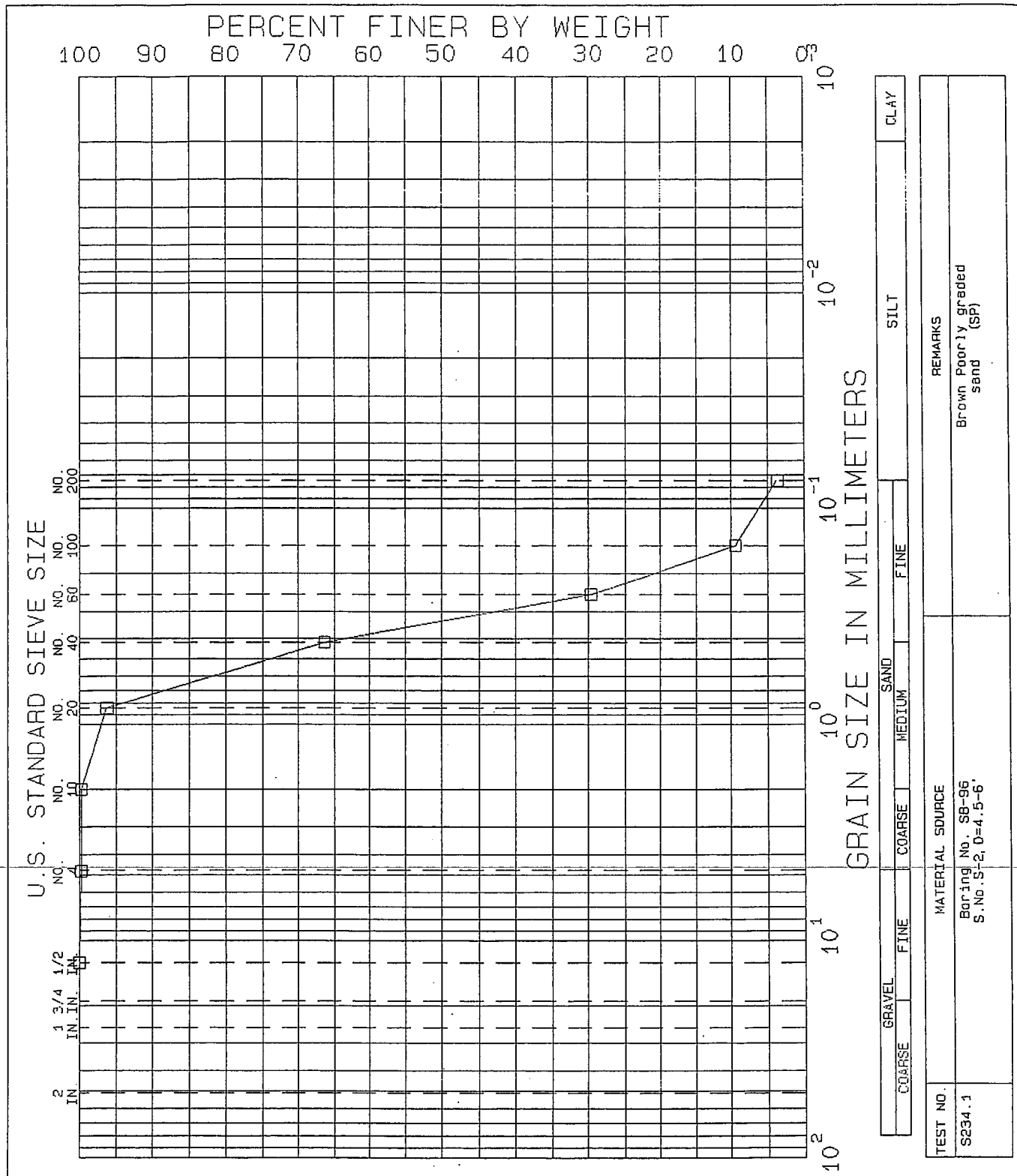
GRADATION TESTS

BORING NO.	SB-94	TEST SERIES	
SAMPLE	S-2&3	NO.	232
DEPTH	4.5-9'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828



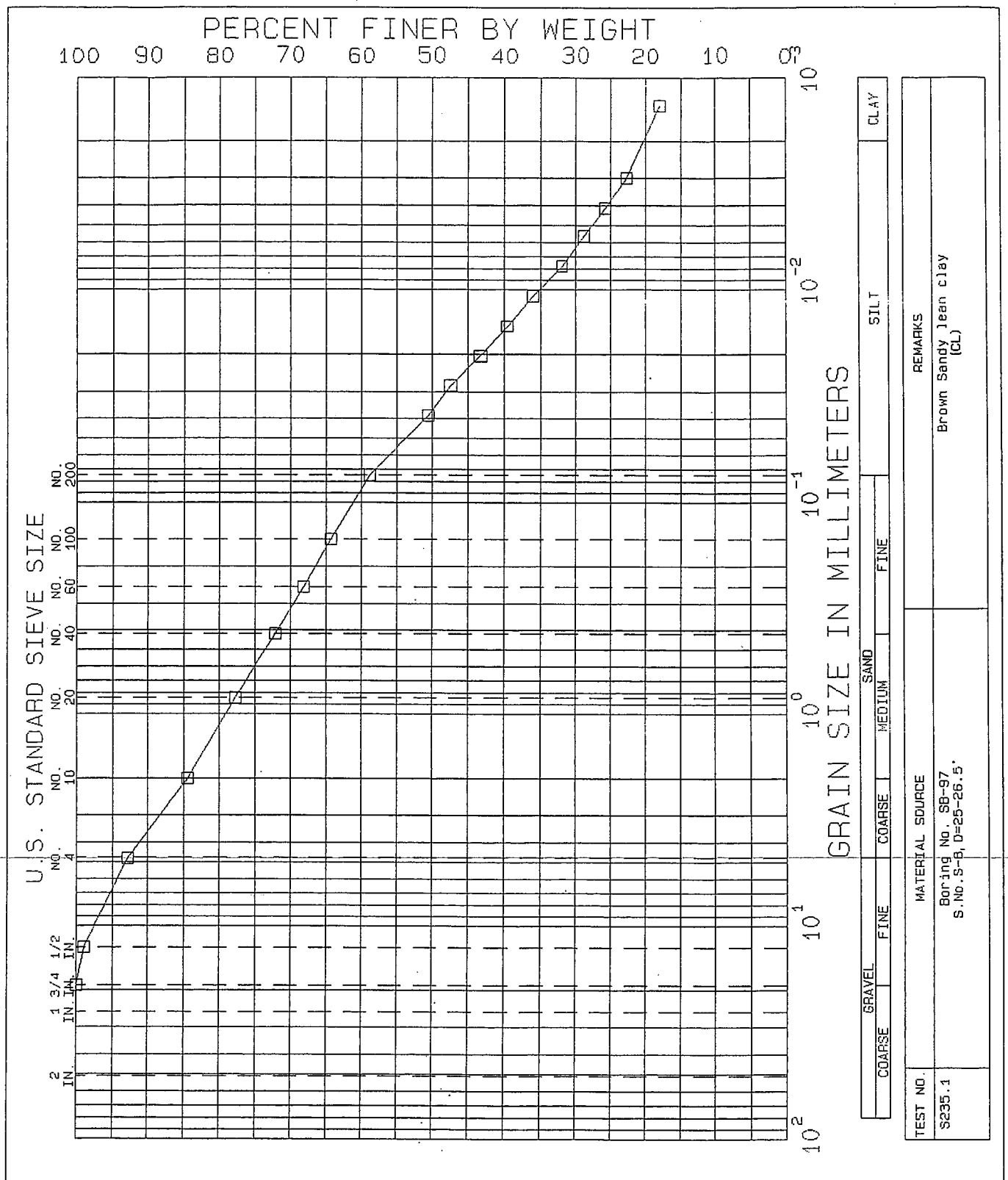
NEW BRITAIN-HARTFORD BUSWAY
CONNECTICUT
GRADATION TESTS

BORING NO.	SB-95	TEST SERIES	
SAMPLE	S-2	NO.	233
DEPTH	4.5-6'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828



NEW BRITAIN-HARTFORD BUSWAY
CONNECTICUT
GRADATION TESTS

BORING NO.	SB-96	TEST SERIES	
SAMPLE	S-2	NO.	234
DEPTH	4.5-6'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

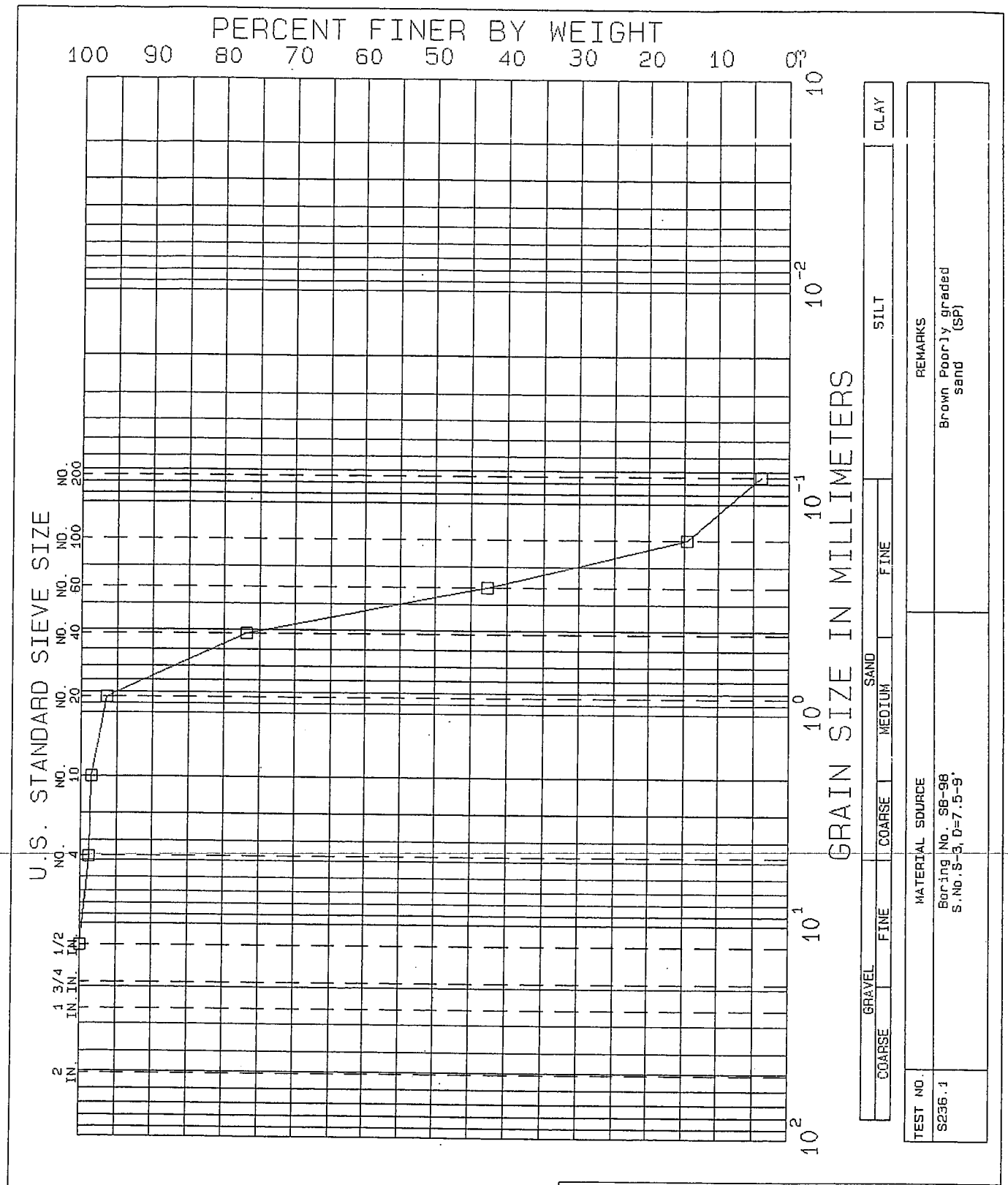


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-97	TEST SERIES	
SAMPLE	S-8	NO.	235
DEPTH	25-26.5'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

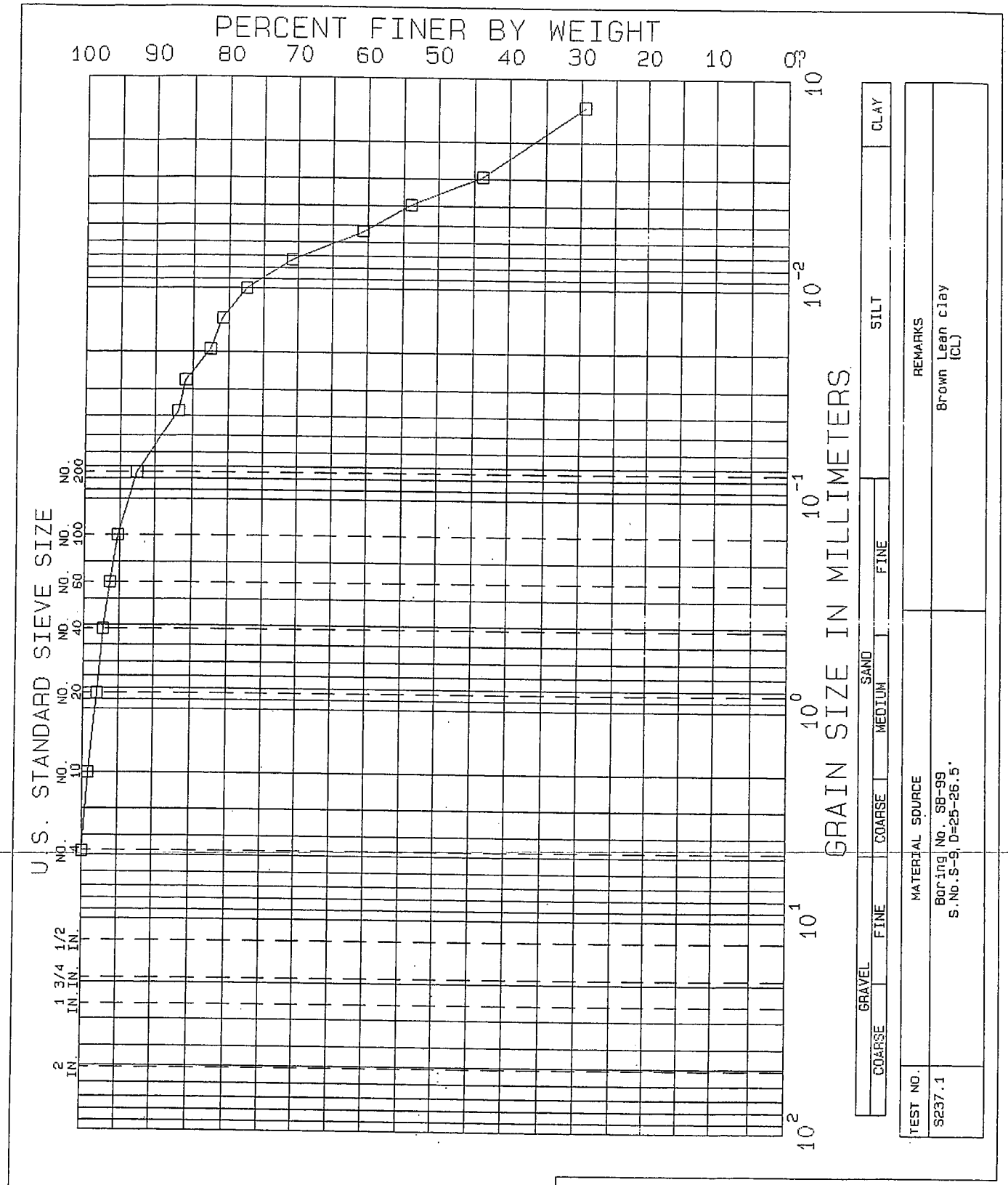


NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-98	TEST SERIES	
SAMPLE	S-3	NO.	236
DEPTH	7.5-9'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828



NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	SB-99	TEST SERIES	
SAMPLE	S-9	NO.	237
DEPTH	25-26.5'	DATE	Jan.04
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

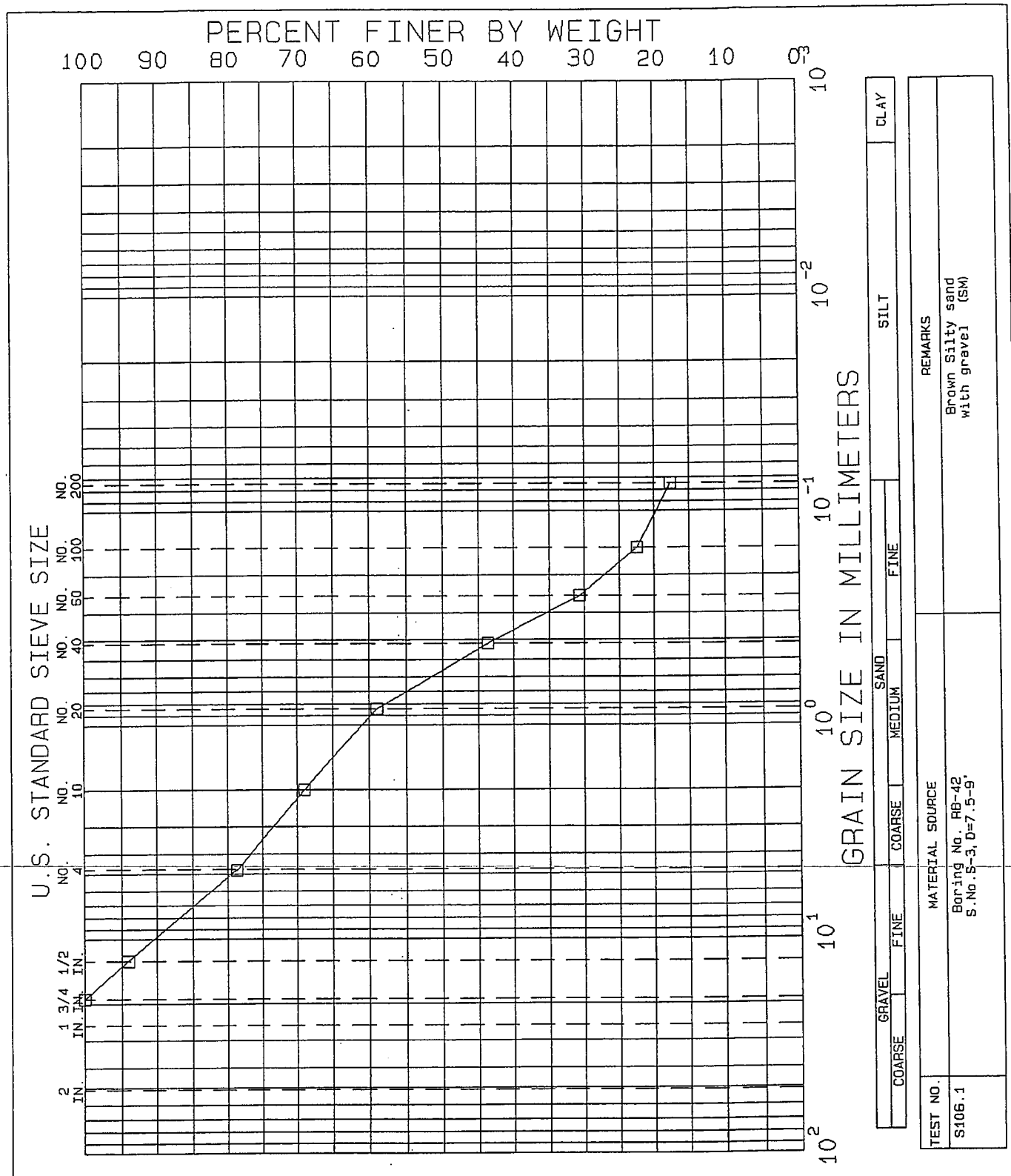
LABORATORY TESTING DATA SHEET

Project Name: NEW BRITAIN-HARTFORD BUSWAY
CONNECTICUT

Project No.: L17828 | Assigned By: D. GAFFNEY | Reviewed By: Alan Schulze

Project Engineer: D. SCHULZE | Date: NOV.03 | Date Reviewed: 11/6/03

Boring/ Test Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests: Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	Density: γ_d MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Strength Tests: Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	Consol.: $\frac{C_c}{1+e_0}$	Laboratory Log and Soil Description
RB-34	S-1	1.5-3.0	96	27.4	*	*	20		* Insufficient sample for limit test											Dark gray Silty sand with gravel (SM) Fill: slag & cinders
RB-34	S-4	10-11.5	97	41.6	39	23	99	34												Red-brown Lean clay (CL)
RB-35	S-5	13.5-15.0	98	36.1	36	21	98	27												Gray-brown Lean clay (CL)
RB-36	S-2	4.5-6.0	99	31.0	34	24	98	17												Brown Lean clay (CL)
RB-37	S-3	7.5-9.0	100	32.0	26	26	97	14												Gray-brown Silt (ML)
RB-38	S-1	1.5-3.0	101	5.2	NP	NP	10													Gray-brown Poorly-graded sand with silt and gravel (SP-SM)
RB-38	S-5	13.5-15.0	102	35.3	29	22	99	27												Gray-brown Silty clay (CL-ML)
RB-39	S-2	4.5-6.0	103	31.5	NP	NP	56													Brown Sandy silt (ML)
RB-40	S-5	13.5-15.0	104	43.0	49	24	99	38												Gray-brown Lean clay (CL)
RB-41	S-4	10.0-11.5	105	65.7	62	26	97	63												Brown Fat clay (CH)
RB-42	S-3	7.5-9.0	106	10.6	NP	NP	18													Brown Silty sand with gravel (SM)
RB-42	S-8 S-9	22.5-28.5	107	10.4	25	14	48	17												Red-brown Clayey sand with gravel (SC)



NEW BRITAIN-HARTFORD BUSWAY

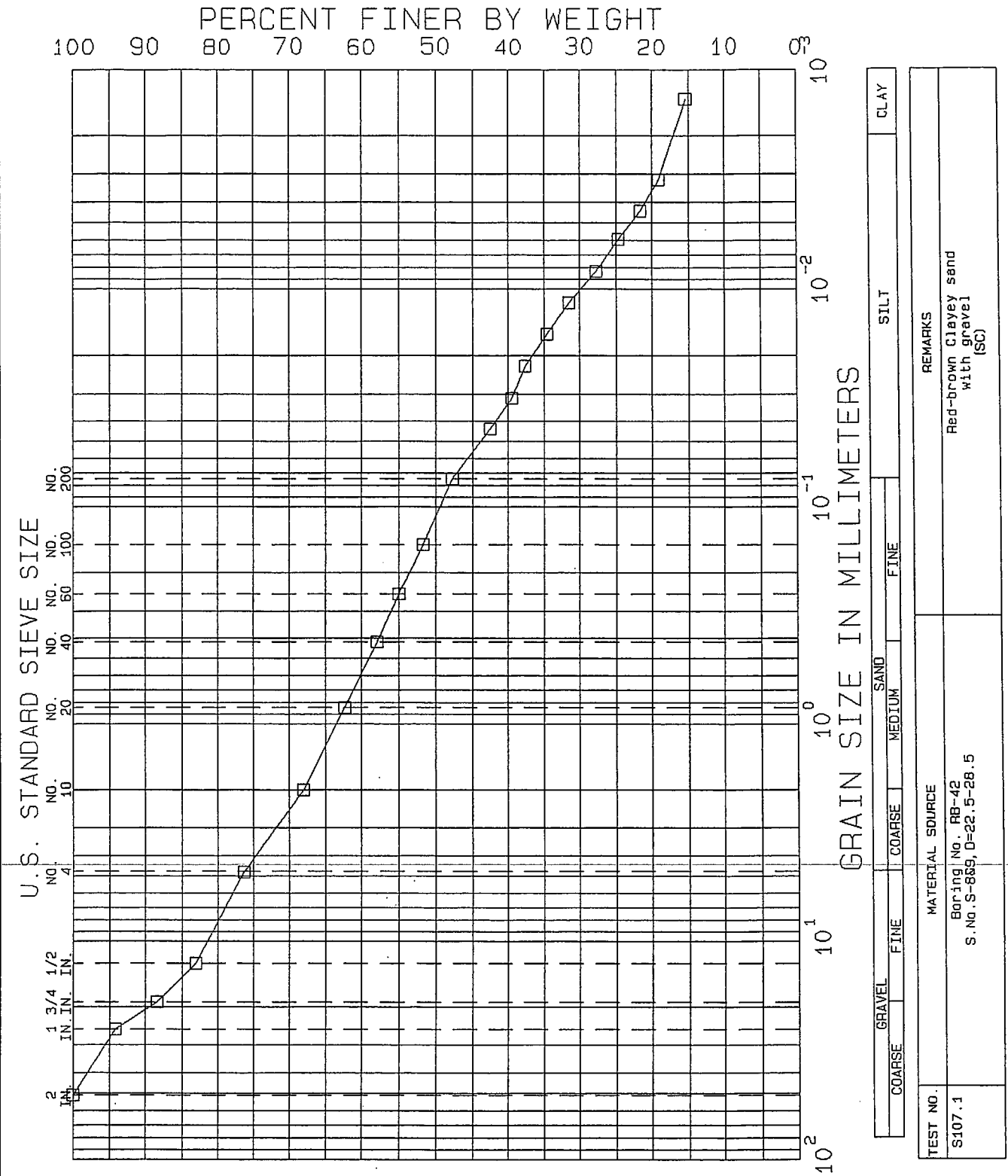
CONNECTICUT

GRADATION TESTS

BORING NO. RB-42
SAMPLE S-3
DEPTH 7.5-9'
TECH. MCM
REVIEWER MBP

TEST SERIES
NO. 106
DATE Nov.03

FILE L17828



NEW BRITAIN-HARTFORD BUSWAY

CONNECTICUT

GRADATION TESTS

BORING NO.	RB-42	TEST SERIES	
SAMPLE	S-8&9	NO.	107
DEPTH	22.5-28.5'	DATE	Nov.03
TECH.	CAG		
REVIEWER	MBP	FILE	L17828

LABORATORY TESTING DATA SHEET

Project Name: NEW BRITAIN-HARTFORD BUSWAY CONNECTICUT
Project No.: 1.17828 — Assigned By: D. Gaffney — Reviewed By: Don Schulze
Project Engineer: D. SCHULZE — Date: Mar.04 — Date Reviewed: 3/11/04

Boring/ Test Pit No.	Sample No.	Depth Ft.	Lab No.	Sample Data: Water Content %	Do in.	L in.	(1) Unit Wt. PCF	(2) Wet Density PCF	Bulk Gs.	(3) Other Tests	Compression Tests: (4) Strength KSI	(5) Strain %	(6) Conf. Stress	(7) E tan PSI EE+06	(8) E sec PSI EE+06	(9) Poisson's Ratio	σT KSI	Is_{50} KSI	Rock Formation or Description or Remarks
SB-44		65.0-65.5	439		1.965	4.394	156.9			U	* 4.45								* Sample failed on joint plane
SB-89		27.3-27.7	440		1.961	4.365	159.2			U	7.45								
SB-90		90.8-91.2	441																Sample not testable due to fracture along bedding plane
SB-92		42.0-42.4	442		1.941	3.846	158.7			U	4.73								
SB-95		16.8-17.4	443		1.981	4.314	161.6			U	10.06								
SB-96		16.8-17.3	444																Sample not testable due to fracture along bedding plane
SB-98		21.0-21.5	445		1.971	4.036	160.9			U	6.23								* Sample failed on joint plane
SB-99		37.6-38.0	446																Sample not testable due to fracture along bedding plane
SB-31		43.5-43.9	447		1.974	4.255	161.5			U	6.05								
SB-16		48.3-48.9	448		1.961	4.092	159.5			U	4.47								

(1) Volume Determined By Measuring Dimensions
(2) Determined by Measuring Dimensions and Weight of Saturated Sample
(3) P=Petrographic PLD=Point Load (diametrical). PLA= Point Load (Axial) RST= Splitting Tensile U= Unconfined Compressive Strength

(4) Taken at Peak Deviator Stress
(5) Strain at Deviator Stress
(6) Represents Confining Stress on Triaxial Tests
(7) Represents Tangent Modulus at 50% of Total Failure Stress
(8) Represents Secant Modulus at 50% of Total Failure Stress
(9) Represents Secant Poisson's Ratio at 50% of Total Failure Stress