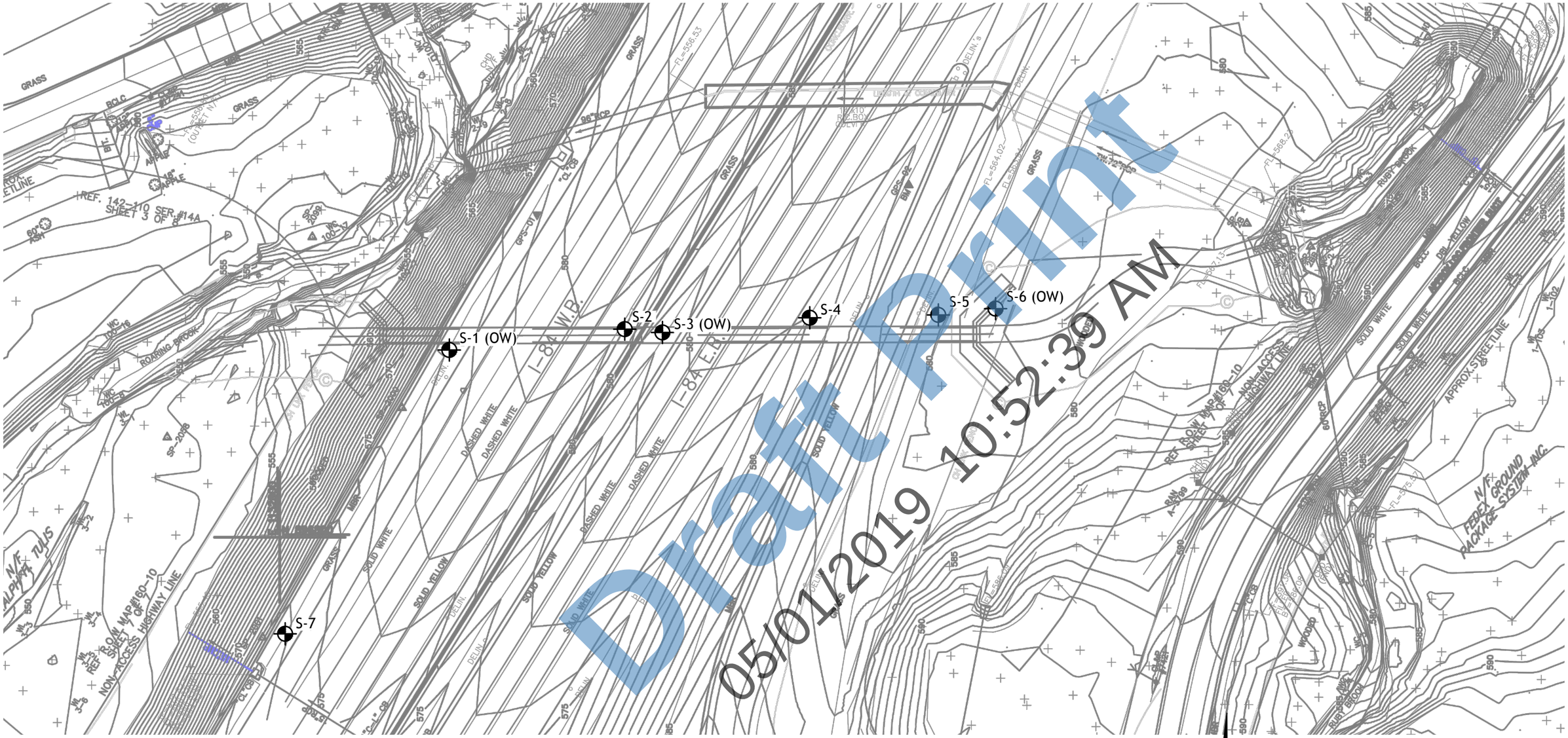

LEGEND:

B-1 TEST BORINGS

NOTES:

1. BASE PLAN PREPARED BY BL COMPANIES
2. EXPLORATION LOCATIONS WERE SURVEYED
3. REFER TO THE TEXT AND APPENDICES FOR ADDITIONAL INFORMATION

GRAPHIC SCALE
60 30 0 60
SCALE IN FEET

SUBSURFACE EXPLORATION LOCATION PLAN

REPLACEMENT OF CULVERT 02169,
I-84 AND RAMP OVER LOWER RUBY BROOK
STATE PROJECT No. 0160-0150
WILLINGTON, CONNECTICUT

FREEMAN COMPANIES
LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES
FREEMAN COMPANIES, LLC
36 JOHN STREET
HARTFORD, CT 06106
WWW.FREEMANCOS.COM
TEL:(860)251-9550
TOLL FREE:(800)604-5141
FAX:(860)986-7161
ELEVATE YOUR EXPECTATIONS

No.	Date	Description
–	–	–

REVISIONS

DRAWN:	T.T.
CHECKED:	C.T.
APPROVED:	N.W.
SCALE:	1"=60'
PROJECT NO.:	2017-0515
DATE:	02/12/2017

SHEET NO.

FIGURE 2

APPENDIX A

TEST BORING LOGS

Driller: M. St. John	**Connecticut DOT Boring Report**	Hole No.: S-1 (OW)
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-8-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-8-18	Bridge No.: 02169	Surface Elevation: 577.2
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @21ft after 5 days, 22.5 ft after 16 days 1/24/18, @22.2 ft. after 38 days		

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	66	6	4		Topsoil / Fill	Brown c-f SAND, some silt, trace c-f gravel Concrete encountered at 0.5ft	
							Concrete encountered at 3.5ft	575
5	S-2	10 14 13 32	24	10			Brown c-f SAND, some c-f gravel, some silt	570
10	S-3	28 45 35 45	24	8			Brown c-f SAND, some silt, trace c-f gravel	565
15	S-4	15 40 50 20	24	4			Brown c-f SAND and c-f GRAVEL, trace silt	560
20	S-5	51 100	12	6		Glacial Till	Orange brown c-f SAND, some silt, trace m-f gravel, with inferred cobbles/boulders	555
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: 55ft Rock: 10ft	NOTES: Installed Observation Well	Sheet 1 of 3
No. of Soil Samples: 11 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller: M. St. John	**Connecticut DOT Boring Report**	Hole No.: S-1 (OW)
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-8-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-8-18	Bridge No.: 02169	Surface Elevation: 577.2
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @21ft after 5 days, 22.5 ft after 16 days 1/24/18, @22.2 ft. after 38 days		

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-6	115	6	3		Glacial Till *(con't)*	Brown c-f SAND, some c-f gravel, trace silt, with inferred cobbles/boulders	550
30	S-7	41 80 50/3"	15	4			Brown c-f SAND and SILT, trace c-f gravel, with inferred cobbles/boulders	545
35	S-8	48 50/2"	8	6			Gray c-f SAND and SILT, trace c-f gravel, with inferred cobbles/boulders	540
40	S-9	67 50/4"	10	8			Gray c-f SAND, some silt, little c-f gravel, seam of coarse sand interbedded, with inferred cobbles/boulders	535
45	S-10	20 22 30 39	24	4			Easier drilling from 42ft to 45ft Brown to gray f SAND, some silt, little c-f gravel	530
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: 55ft Rock: 10ft	NOTES: Installed Observation Well	Sheet 2 of 3
No. of Soil Samples: 11 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller:	M. St. John	**Connecticut DOT Boring Report**		Hole No.:	S-1 (OW)
Inspector:	T. Ta	Town:	Willington	Stat./Offset:	
Engineer:	N. Whetten	Project No.:	0160-0150	Northing:	
Start Date:	1-8-18	Route No.:	I-84 West Bound	Easting:	
Finish Date:	1-8-18	Bridge No.:	02169	Surface Elevation:	577.2
Project Description:	Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	140lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	@21ft after 5 days, 22.5 ft after 16 days 1/24/18, @22.2 ft. after 38 days				

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)
50	S-11	60 50/5"	11	0		Glacial Till *(con't)*	No recovery. Inferred cobbles/boulders	
								525
						Weathered Bedrock	Weathered bedrock	
55						Bedrock		
	C-1		60	26	0		Strong to weak, moderately to highly weathered, brownish gray, medium grained GNEISS w quartz seams, foliation shallow dipping & very thin, primary joints shallow dipping parallel to foliation, open, weathered, 1-2 in spaced Several vert to high angle joints perpendicular to foliation	520
60	C-2		60	39	0		Very strong to moderately strong, fresh to moderately weathered, gray, fine to medium grained GNEISS, foliation shallow to moderately dipping, primary joints moderately dipping parallel to foliation, tight to open, fresh, 1-3 in spaced.	515
65							END OF BORING 65ft	
								510
70								
								505
75								

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: 55ft Rock: 10ft	NOTES: Installed Observation Well	Sheet 3 of 3
No. of Soil Samples: 11 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller: T. Roe	**Connecticut DOT Boring Report**	Hole No.: S-2
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-10-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-11-18	Bridge No.: 02169	Surface Elevation: 579.3
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @20ft ATD		

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	25 25 16 26	24	16		Topsoil / Fill	Topsoil (3") Brown c-f SAND some c-f gravel, little silt	
	S-2	29 100/4"	10	5			Brown to gray c-f SAND and c-f GRAVEL, some silt	575
5	S-3	37 16 100/4"	16	16			Brown to gray c-f SAND, some m-f gravel, some silt	
	S-4	27 47 50/2"	14	10			Brown to gray c-f SAND, some c-f gravel, little silt	570
10	S-5	17 12 17 39	24	18			Brown/tan c-f GRAVEL and c-f SAND, little silt	
								565
15	S-6	10 7 12 32	24	16			Brown c-f SAND, some m-f gravel, little silt	
								560
20	S-7	16 15 17 24	24	12			Brown c-f SAND, some c-f gravel, some silt	
						Glacial Till	Change drilling effort at 23 ft	555
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: 28ft Rock: 10ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller: T. Roe	**Connecticut DOT Boring Report**	Hole No.: S-2
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-10-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-11-18	Bridge No.: 02169	Surface Elevation: 579.3
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @20ft ATD		

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	S-8	70 75 60/3"	15	10		Glacial Till *(con't)*	Brown c-f SAND, some silt, trace m-f gravel, with inferred cobbles/boulders	
						Weathered Bedrock	Top of rock	
						Bedrock		
30	C-1		60	33	17		Strong to moderately strong, slightly to highly weathered, brownish gray, medium grained GNEISS, foliation steeply dipping & very thin, primary joints steeply dipping parallel to foliation, planar, open, moderately weathered, 2-8 in spaced, one steep joint, open, slightly weathered, dipping opposite direction to foliation	550
35	C-2		60	60	80		Very strong, fresh, medium grained GNEISS, foliation steeply dipping & very thin, primary joint set steeply dipping parallel to foliation, planar, tight, slightly to moderately weathered, 8-10 in spaced several secondary joints, moderately dipping in opposite direction to foliation, planar, open, moderately weathered, 14 to 24 inch spacing	545
40							END OF BORING 38ft	540
45								535
50								530

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: 28ft Rock: 10ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller:	T. Roe	**Connecticut DOT Boring Report**		Hole No.:	S-3 (OW)
Inspector:	T. Ta	Town:	Willington	Stat./Offset:	
Engineer:	N. Whetten	Project No.:	0160-0150	Northing:	
Start Date:	1-11-18	Route No.:	I-84 East Bound	Easting:	
Finish Date:	1-19-18	Bridge No.:	02169	Surface Elevation:	579.5
Project Description:	Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	@17.2 ft, after 5 days 1/24/18, @19.5 ft. after 27 days				

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 11 12 23	24	18		Topsoil / Fill	Topsoil (6") / Brown c-f SAND, little c-f gravel, little silt	
	S-2	28 32 24 19	24	12			Brown c-f SAND and c-f GRAVEL, little silt	
5	S-3	13 10 24 29	24	20			Brown c-f SAND, some c-f gravel, little silt	575
	S-4	37 70 50/3"	15	12			Brown c-f SAND, some silt, little c-f gravel, with inferred cobbles	
10	S-5	18 15 12 15	24	16			Brown c-f SAND, some c-f gravel, little silt	570
15	S-6	12 29 60 61	24	10		Glacial Till	Brown c-f SAND, some c-f gravel, little silt	565
	C-1a		18	6	NA		Cored from 17.5ft to 21.5 ft. in two runs; cored through boulder from 17.5 ft to 19 ft. Encountered weathered bedrock at 19ft.	
20	C-1b		30	18	0	Weathered Bedrock	Moderately strong to weak, moderately to completely weathered, medium grained brown GNEISS, foliation steeply dipping, extremely fractured	560
						Bedrock	Roller bitted ahead to 22ft to continue coring.	
25	C-2		60	38	0		Moderately strong to weak, moderately to completely weathered, medium grained brown	555

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: 5ft	NOTES: Installed Observation Well	Sheet 1 of 2
No. of Soil Samples: 6 No. of Core Runs: 3		SM-001-M REV. 1/02

Driller: T. Roe	**Connecticut DOT Boring Report**	Hole No.: S-3 (OW)
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-11-18	Route No.: I-84 East Bound	Easting:
Finish Date: 1-19-18	Bridge No.: 02169	Surface Elevation: 579.5
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @17.2 ft, after 5 days 1/24/18, @19.5 ft. after 27 days		

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						Bedrock *(con't)*	GNEISS, foliation steeply dipping, extremely fractured	
							END OF BORING 27ft	
30								550
35								545
40								540
45								535
50								530

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: 5ft	NOTES: Installed Observation Well	Sheet 2 of 2
No. of Soil Samples: 6 No. of Core Runs: 3		SM-001-M REV. 1/02

Driller:	T. Roe	**Connecticut DOT Boring Report**		Hole No.:	S-4
Inspector:	T. Ta	Town:	Willington	Stat./Offset:	
Engineer:	N. Whetten	Project No.:	0160-0150	Northing:	
Start Date:	1-9-18	Route No.:	I-84 East Bound	Easting:	
Finish Date:	1-9-18	Bridge No.:	02169	Surface Elevation:	580
Project Description:	Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:					

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	41 31 32 35	24	18		Topsoil	Topsoil (3")	580
						Fill	Brown c-f SAND, some c-f gravel, little silt	
	S-2	32 45 100/2"	14	10			Brown white c-f SAND, some c-f gravel, little silt, with inferred cobbles	
5	S-3	100/4"	4	4			Gray c-f SAND and SILT, trace m-f gravel	575
						Weathered Bedrock		
	C-1		60	42	19	Bedrock	Strong to moderately strong, moderately to highly weathered, brownish gray, medium grained GNEISS, foliation moderately dipping, v thin, primary joint set mod dipping parallel to foliation, planar, tight to open, slightly to mod weathered 1-6 in spacing	
10							Several joints moderately dipping, planar, perpendicular to foliation, tight to healed, fresh 2-6 in spacing where present, several vertical joints, planar, open, mod weathered, rust staining	570
	C-2		60	53	27		Very strong, slightly weathered to fresh, gray, medium grained GNEISS, foliation similar to above, primary joint set moderately dipping, planar, tight, fresh to slightly weathered, 1-8 inch spacing.	
15								565
							END OF BORING 16ft	
20								560
25								555

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: 10ft	NOTES: Offset 4 times and met with auger refusal at similar depths	Sheet 1 of 1
No. of Soil Samples: 3 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller:	M. St. John	**Connecticut DOT Boring Report**		Hole No.:	S-5
Inspector:	T. Ta	Town:	Willington	Stat./Offset:	
Engineer:	N. Whetten	Project No.:	0160-0150	Northing:	
Start Date:	1-9-18	Route No.:	I-84 East Bound On Ramp	Easting:	
Finish Date:	1-9-18	Bridge No.:	02169	Surface Elevation:	580.4
Project Description:	Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:					

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	68 31 30 27	24	6		Topsoil / Fill	Topsoil (4") Brown c-f SAND and c-f GRAVEL, little silt	580
	S-2	30 32 41 45	24	8			Brown to tan c-f SAND and SILT, trace m-f gravel	
5	S-3	44 100	12	5			Brown to tan c-f SAND, some silt, trace m-f gravel	575
	S-4	53 50/3" 50/3"	9	6		Glaciofluvial	Brown to tan c-f SAND, some m-f gravel, little silt, with inferred cobbles/boulders	
10	S-5	55 50/1"	7	6			Brown c-f SAND and SILT, with inferred cobbles/boulders	570
15	S-6	100/2"	2	2		Glacial Till	Brown to tan c-f SAND and SILT, little m-f gravel, with inferred cobbles/boulders	565
20	S-7	55 95	12	8			Brown c-f SAND, some silt, little m-f gravel	560
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 No. of Soil Samples: 8 No. of Core Runs: 2	NOTES:	Sheet 1 of 2 SM-001-M REV. 1/02

Driller: M. St. John	**Connecticut DOT Boring Report**	Hole No.: S-5
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-9-18	Route No.: I-84 East Bound On Ramp	Easting:
Finish Date: 1-9-18	Bridge No.: 02169	Surface Elevation: 580.4
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations:		

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	60 100/1"	7	0		Glacial Till *(con't)*	No recovery. Inferred cobbles/boulders	555
						Weathered Bedrock	Weathered bedrock	
30						Bedrock		550
	C-1		60	47	33		Very strong to mod strong, slightly weathered, gray, fine to medium grained GNEISS, foliation moderately dipping, very thin, primary joints moderately dipping parallel to foliation, tight to open, fresh to moderately weathered, 2-8 inch spacing. several high angle joints, moderately weathered, tight to partially healed perpendicular to foliation	
35								545
	C-2		60	59	71		Very strong to mod strong, fresh, gray, fine to medium grained GNEISS, foliation moderately dipping, very thin, primary joints moderately dipping parallel to foliation, tight to open, fresh to moderately weathered, 3-10 inch spacing.	
40							END OF BORING 40ft	540
45								535
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: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Driller: M. St. John	**Connecticut DOT Boring Report**	Hole No.: S-6 (OW)
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-9-18	Route No.: I-84 East Bound On Ramp	Easting:
Finish Date: 1-11-18	Bridge No.: 02169	Surface Elevation: 579.9
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @6.8 ft after 13 days 1/24/18, @6.1 ft after 35 days		

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						Topsoil	Topsoil (4")	
						Fill		
	S-1	30 14 18 41	24	10			Brown c-f SAND, some silt, little c-f gravel	
	S-2	50/4"	4	3			Brown c-f SAND, some silt, trace c-f gravel	
5	S-3	36 50/3"	9	5			Brown to gray c-f SAND, some silt, little c-f gravel	575
						Glaciofluvial		
	C-1		60	24	20		Multiple refusals, tried coring. Cored boulder from 6 ft to 11 ft	
10								570
	C-2		24	22	21		Cored from 11 ft to 13 ft. Core barrel jammed 2 times. Roller bitted to 13 ft	
15	C-3		48	8	0		Core barrel dropped multiple times. Cored through suspected cobbles and boulders from 13 ft to 18 ft	565
						Glacial Till		
20	S-4	21 43 50/4"	16	6			Brown c-f SAND and SILT, trace m-f gravel, with Inferred cobbles/boulders. Recovered m-f gravel from wash at top portion of spoon.	560
25								555

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: 35ft Rock: 10ft	NOTES: Installed Observation Well	Sheet 1 of 2
No. of Soil Samples: 6 No. of Core Runs: 5		SM-001-M REV. 1/02

Driller: M. St. John	**Connecticut DOT Boring Report**	Hole No.: S-6 (OW)
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-9-18	Route No.: I-84 East Bound On Ramp	Easting:
Finish Date: 1-11-18	Bridge No.: 02169	Surface Elevation: 579.9
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @6.8 ft after 13 days 1/24/18, @6.1 ft after 35 days		

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-5	28 63	12	10		Glacial Till *(con't)*	Gray c-f SAND and SILT	
30	S-6	31 66 50/1"	13	12			Gray SILT, some f-sand	550
35						Weathered Bedrock	Weathered bedrock at 35ft	545
						Bedrock		
	C-4		60	3	0		Cored 35 ft to 40 ft, minimal recovery. Roller-bit to 40 ft to continue core run. Recovered core does not appear as highly weathered as other locations.	
40								540
	C-5		60	12	0		Cored from 40 ft to 45 ft. Low recovery. Extremely fractured bedrock caused core barrel to jam multiple times	
45								535
							END OF BORING 45ft	
50								530

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: 35ft Rock: 10ft	NOTES: Installed Observation Well	Sheet 2 of 2
No. of Soil Samples: 6 No. of Core Runs: 5		SM-001-M REV. 1/02

Driller: T. Roe	**Connecticut DOT Boring Report**	Hole No.: S-7
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-3-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-8-18	Bridge No.: 02169	Surface Elevation: 573.8
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @21.5ft after 5 days		

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	51 41 21 1	24	20		Topsoil Fill	Topsoil (4") Brown c-f SAND, little c-f gravel, little silt	
	S-2	18 56 58 55	24	12			Brown c-f SAND, some c-f gravel, little silt	570
5	S-3	16 13 14 17	24	18			Brown to c-f SAND, little c-f gravel, little silt	
	S-4	34 41 74 85	24	16			Brown c-f SAND, little c-f gravel, little silt	565
10	S-5	15 16 19 12	24	14			Brown c-f SAND, little c-f gravel, little silt Orange brown c-f SAND, little m-f gravel, trace silt	
								560
15	S-6	5 6 6 8	24	6			Orange brown c-f SAND, little m-f gravel, trace silt	
								555
20	S-7	1 0 1 4	24	0			No recovery; c-f Sand, little m-f sand from wash	
						Glacial Till	Lost water at 22 ft.	550
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: 42ft Rock: 0ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 10 No. of Core Runs: 0		SM-001-M REV. 1/02

Driller: T. Roe	**Connecticut DOT Boring Report**	Hole No.: S-7
Inspector: T. Ta	Town: Willington	Stat./Offset:
Engineer: N. Whetten	Project No.: 0160-0150	Northing:
Start Date: 1-3-18	Route No.: I-84 West Bound	Easting:
Finish Date: 1-8-18	Bridge No.: 02169	Surface Elevation: 573.8
Project Description: Replacement of Bridge No. 02169, I-84 and Ramp over Lower Ruby Brook		
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	
Groundwater Observations: @21.5ft after 5 days		

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	S-8	100/5"	5	2		Glacial Till *(con't)*	Brown c-f SAND and c-f GRAVEL, little silt, with inferred cobbles/boulders	
								545
30	S-6	100/3"	3	2			Brown c-f SAND, some c-f gravel, some silt, with inferred cobbles/boulders	
								540
35	S-10	100/4"	4	3			Orange brown c-f SAND, little c-f gravel, little silt, with inferred cobbles/boulders	
						Weathered Bedrock	Weathered bedrock	535
40								
							END OF BORING 42ft	
45								530
								525
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: 42ft Rock: 0ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 10 No. of Core Runs: 0		SM-001-M REV. 1/02