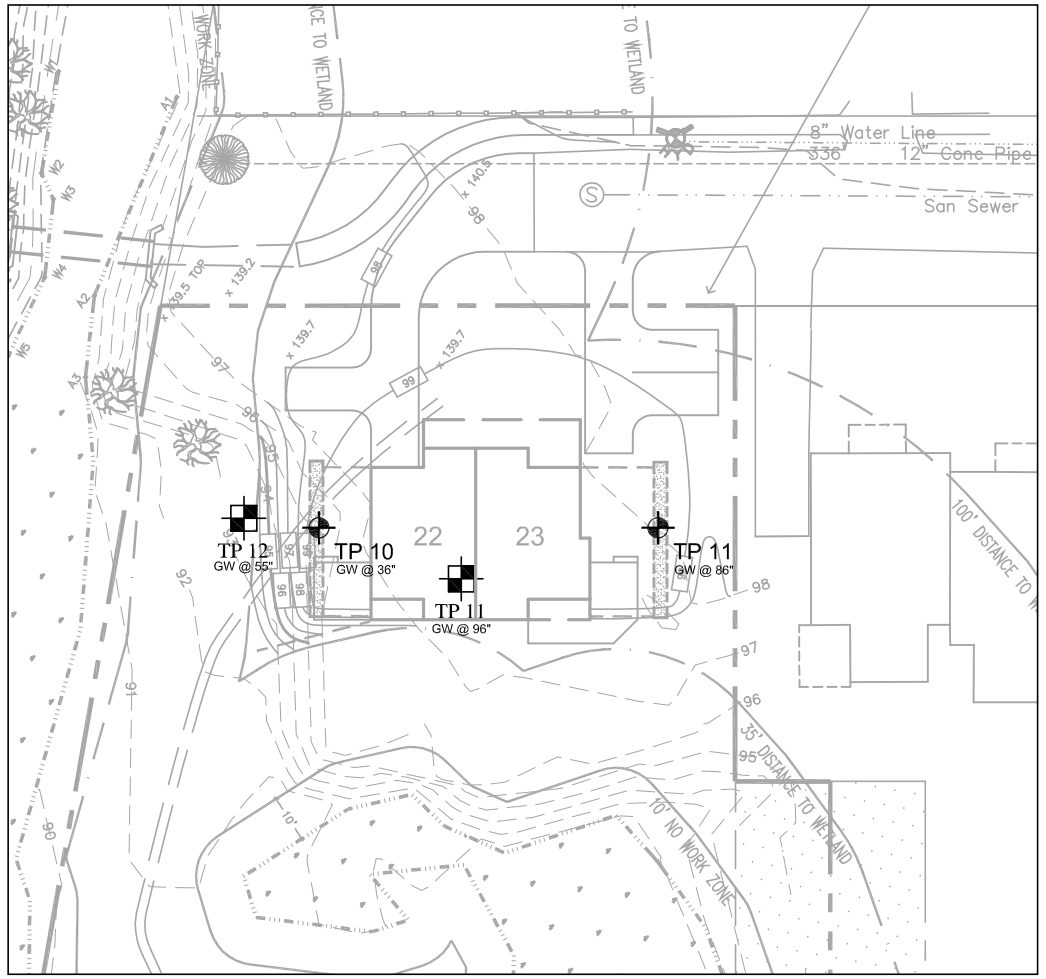
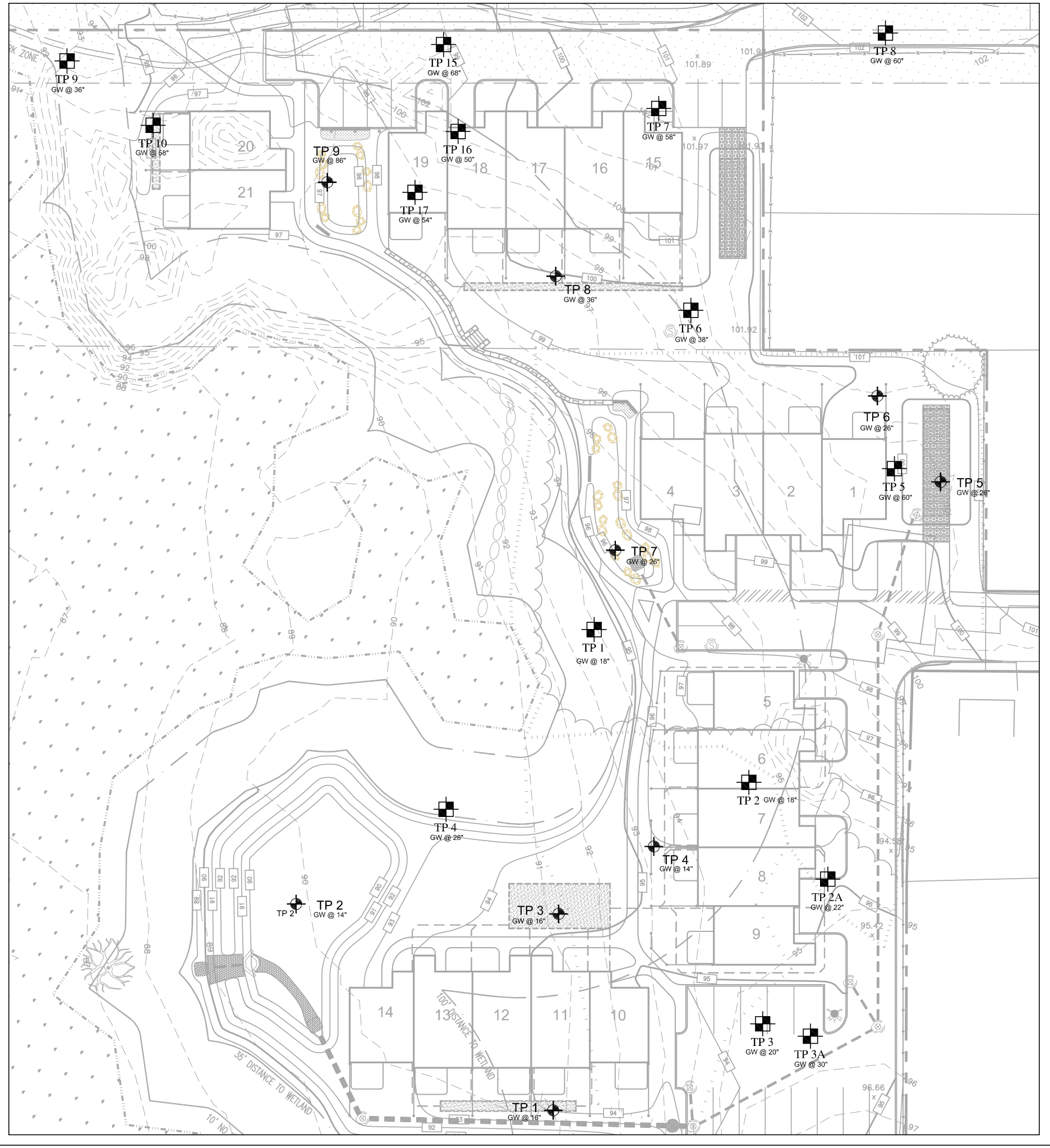
Appendix B – Soil Test Pit Information





TP # — TEST PIT PERFORMED BY THE BERKSHIRE DESIGN GROUP, INC. ON 01/05/07, 01/06/07, and 10/31/07

TP # — TEST PIT PERFORMED BY COLD SPRING ENVIRONMENTALCONSULTANTS INC. ON 03/09/09 and 03/10/09

Sheet Number: TP1

Reference:

Scale: 1"=80'

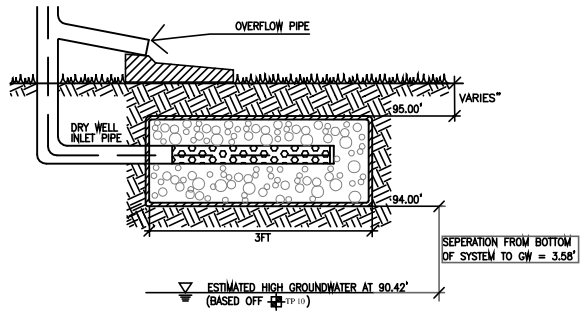
Date: (04/14/09

Sheet Title: Test Pit Locations

North Street Condominiums

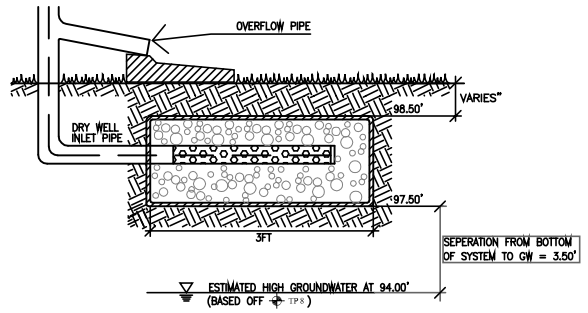
NORTHAMPTON MASSACHUSETTS

The Berkshire Design Group, Inc.
4 Allen Place Northampton, Massachusetts 01060
(413) 582-7000 • FAX (413) 582-7005



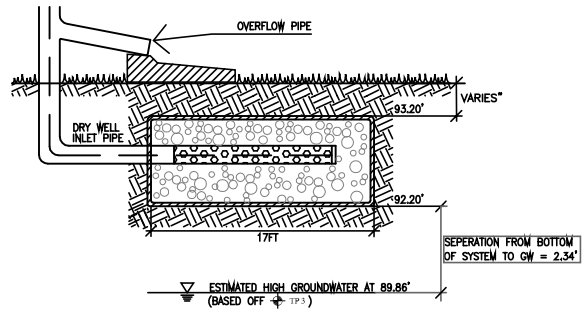
1 TP2 — Dry Well 1

Not to Scale



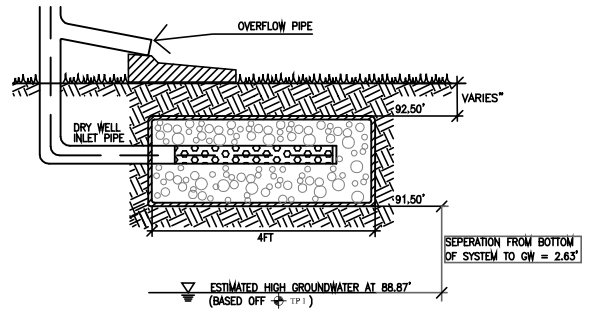
2 TP2 — Dry Well 2

Not to Scale



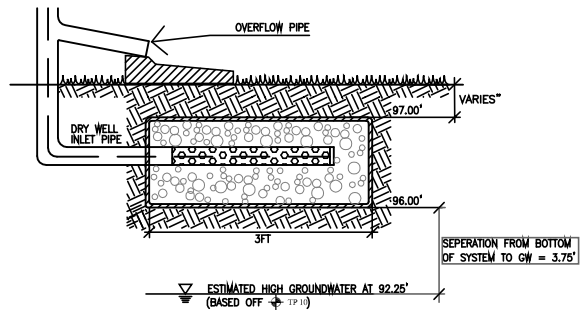
3 TP2 — Dry Well 3

Not to Scale



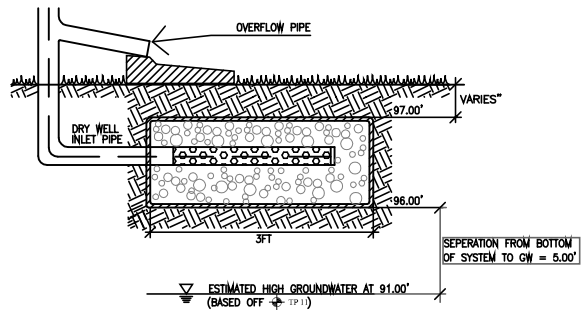
4 TP2 — Dry Well 4

Not to Scale



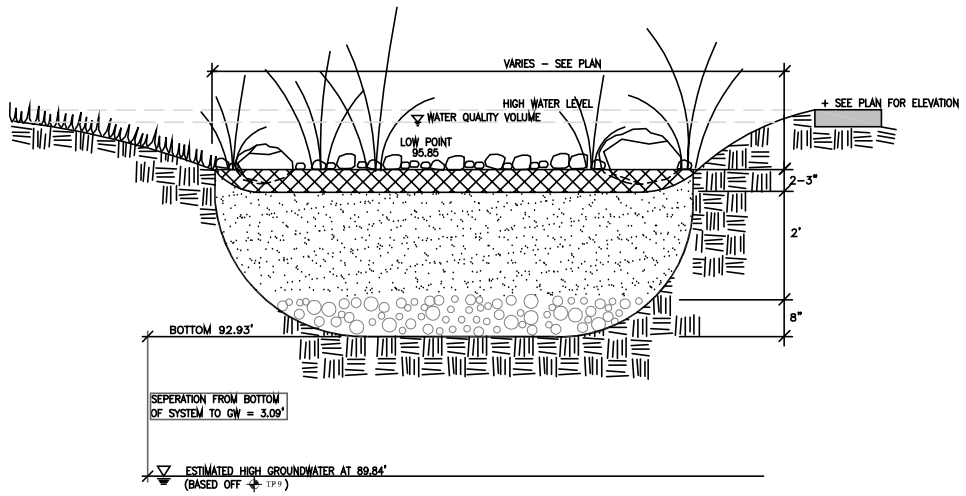
5 TP2 — Dry Well 5

Not to Scale



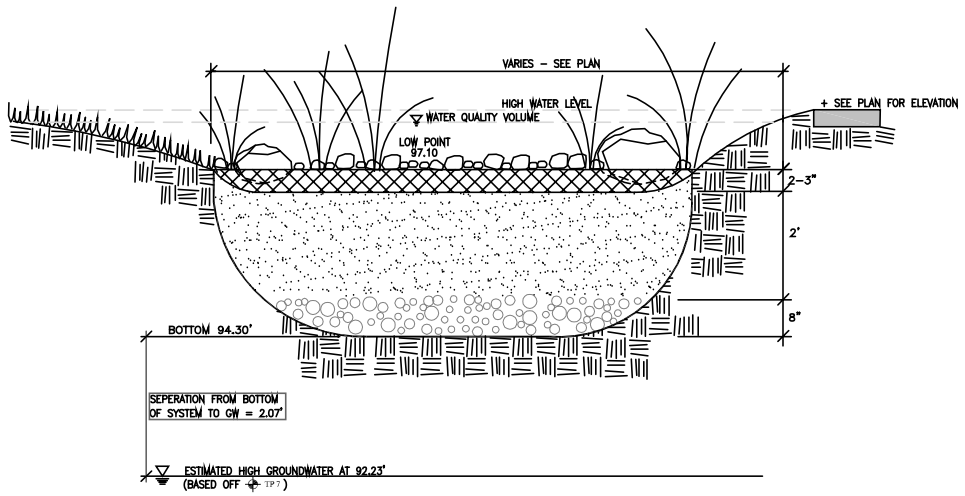
6 TP2 — Dry Well 6

Not to Scale



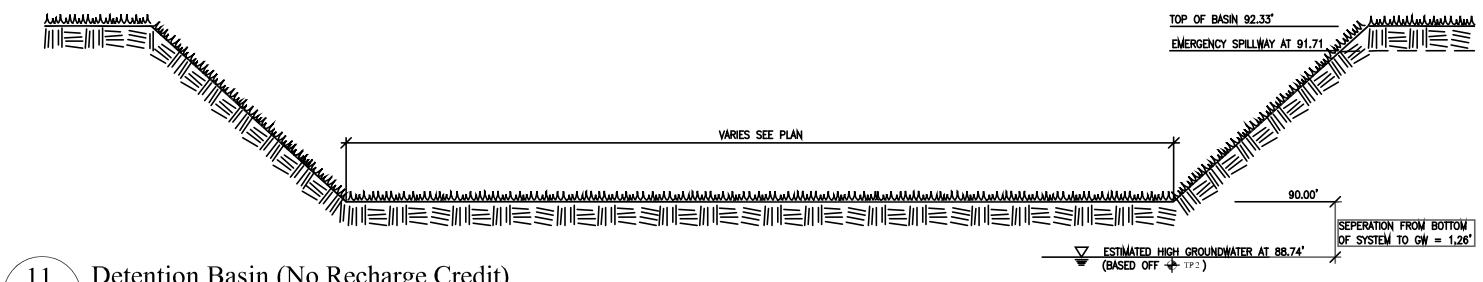
9 TP2 — Rain Garden 1

Not to Scale



10 TP2 — Rain Garden 2

Not to Scale



11 TP2 — Detention Basin (No Recharge Credit)

Not to Scale

Sheet Number: TP2

Reference: | Scale: NTS | Date: (04/14/09)

Sheet Title: Stormwater BMP Groundwater Profiles

North Street Condominiums

NORTHAMPTON MASSACHUSETTS

The Berkshire Design Group, Inc.
4 Allen Place Northampton, Massachusetts 01060
(413) 582-7000 • FAX (413) 582-7005

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 1 Date: 01/05/07 Time: 9:15am Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Lawn Area Slope (%) See Plan Surface Stones n/o

Vegetation grass & some trees

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body		Feet	Drainage way		Feet
Possible Wet Area		Feet	Property Line		Feet
Drinking Water Well		Feet	Other		

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-9"	A	VFSL	10YR3/3	5Y 4/6 <5%	Massive, Friable, roots
9"-21"	B_w	VFSL	2.5Y4/4	5YR4/6 >10% @18"	Massive, Friable
21"-53"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >35%	Massive, friable, stratified FS & Loam, some smearing, somewhat firm
53"-80"	C_2	SL	10YR4/4	2.5YR3/6 >35% throughout	Massive, friable, sloughing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 80"

Depth to Groundwater: Standing Water in the Hole: 57" @ 15 minutes Weeping from Pit Face: 55"

Estimated Seasonal High Ground Water: 18"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 2 Date: 01/05/07 Time: 9:40am Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Norway Spruce

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12"	A	VFSL	10YR3/3	5Y 4/6 <5%	Massive, Friable, some roots, apparent fill at south end of TP down to 36"
12"-19"	B_w	VFSL	2.5Y4/4	5YR4/6 >10% @18"	Massive, Friable
19"-45"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >35%	Massive, friable, some smearing, somewhat firm, excavation collapsed

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 45"

Depth to Groundwater: Standing Water in the Hole: 40" Weeping from Pit Face:

Estimated Seasonal High Ground Water: 18"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 2A Date: 10/31/07 Time: 9:00am Weather P-Cloudy 40 F
Location (identify on site plan) See Plan
Land Use Wooded Slope (%) See Plan Surface Stones n/o
Vegetation Norway Spruce
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-10"	A	VFSL	10YR3/3	5Y 4/6 <5%	Massive, Friable, some roots
10"-30"	B_w	VFSL	2.5Y4/4	5YR4/6 >10% @22"	Massive, Friable, roots to 21"
30"-70"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >35%	Massive, friable, some smearing, somewhat firm, excavation collapsed, fine sand in lower 12"

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 70"
Depth to Groundwater: Standing Water in the Hole: 66" @ 10 minutes Weeping from Pit Face: 66" (rapid)
Estimated Seasonal High Ground Water: 22"

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 3 Date: 01/05/07 Time: 10:10am Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Norway Spruce

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-9"	A	VFSL	10YR3/3		Massive, Friable, roots
9"-15"	B_w	VFSL	2.5Y4/4		Massive, Friable, roots
15"-50"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >15% @ 20"	Massive, friable, sloughing, stratified FSL & Fine Sand
50"-65"	C_2	Fine Sand	10YR4/4	2.5YR3/6 >35% throughout	Massive, friable, sloughing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 65"

Depth to Groundwater: Standing Water in the Hole: 61" Weeping from Pit Face: 55"

Estimated Seasonal High Ground Water: 20"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 3A Date: 10/31/08 Time: 9:30am Weather Clear 10 F
Location (identify on site plan) See Plan
Land Use Wooded Slope (%) See Plan Surface Stones n/o
Vegetation Norway Spruce
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-7"	A	VFSL	10YR3/3		Massive, Friable, roots
7"-15"	B_w	VFSL	2.5Y4/4		Massive, Friable, roots
15"-70"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >15% @ 30"	Massive, friable, roots down to 20", sloughing, stratified FSL & Fine Sand, fine sand at pit bottom, excavation collapsed

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 70"
Depth to Groundwater: Standing Water in the Hole: 67" @ 5 minutes Weeping from Pit Face: 64" (moderate)
Estimated Seasonal High Ground Water: 30"

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 4 Date: 01/05/07 Time: 4:00pm Weather Cloudy 10 F
Location (identify on site plan) See Plan
Land Use Wooded Slope (%) See Plan Surface Stones n/o
Vegetation Norway Spruce
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-5"	A	VFSL	10YR3/3	5Y 4/6 <5%	Massive, Friable, roots
5"-15"	B_w	VFSL	2.5Y4/4	5YR4/6 <5% @18"	Massive, Friable, Roots down to 18"
15"-65"	C_1	FSL	5Y5/2	5YR4/6 >10% @28"	Massive, friable, stratified FSL & Fine Sand, some smearing, somewhat firm

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 65"
Depth to Groundwater: Standing Water in the Hole: 51" Weeping from Pit Face: 48"
Estimated Seasonal High Ground Water: 28"

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 5 Date: 01/05/07 Time: 3:00pm Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Lawn Area Slope (%) See Plan Surface Stones n/o

Vegetation grass

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body		Feet	Drainage way		Feet
Possible Wet Area		Feet	Property Line		Feet
Drinking Water Well		Feet	Other		

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-9"	A	VFSL	10YR3/3		Massive, Friable, roots
9"-21"	B_w	VFSL	2.5Y4/4		Massive, Friable
21"-107"	C_1	VFSL/ Loam	5Y5/2	5YR4/6 >10% @60"	Massive, friable, no cobbles or gravel, stratified VFSL & Fine Sand, some smearing,

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) glaciolacustrine Depth to Bedrock: > 107"

Depth to Groundwater: Standing Water in the Hole: 92" Weeping from Pit Face: 92"

Estimated Seasonal High Ground Water: 60"

Percolation Test:

Depth to Perc: 45"
Start Pre-Soak 12": 3:14
End Pre-Soak 12": 3:36 (8 gals used)
Time at 12": 3:36
Time at 9": 3:42
Time at 6": 4:00
Time (9"-6"): 18 minutes
Rate: 6 min/inch

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 6 Date: 01/05/07 Time: 11:10am Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body		Feet	Drainage way		Feet
Possible Wet Area		Feet	Property Line		Feet
Drinking Water Well		Feet	Other		

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-8"	A	Forest Mat	10YR3/3		Massive, Friable, roots
8"-29"	B_w	VFSL	2.5Y4/4		Massive, Friable
29"-88"	C_1	FSL	5Y5/2	5YR4/6 Distinct >5% @38"	Massive, friable, stratified FSL and Fine Sand, roots throughout, sloughing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 88"

Depth to Groundwater: Standing Water in the Hole: 79" Weeping from Pit Face: 67" (slow)

Estimated Seasonal High Ground Water: 38"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 7 Date: 01/05/07 Time: 11:45am Weather Clear 10 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-8"	A	Forest Mat	10YR3/3		Massive, Friable, roots
8"-19"	B_w	VFSL	2.5Y4/4		Massive, Friable
19"-90"	C_1	FSL	2.5Y5/3	5YR4/6 Distinct >5% @58"	Massive, friable, stratified FSL and Fine Sand, roots down to 31", sloughing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 90"

Depth to Groundwater: Standing Water in the Hole: 84" Weeping from Pit Face: 84" (slow)

Estimated Seasonal High Ground Water: 58"

Percolation Test:

Depth to Perc: 46"
Start Pre-Soak 12": 12:18
End Pre-Soak 12": 12:33 (18 gals used)
Time at 12": 12:33
Time at 9": 12:36
Time at 6": 12:41
Time (9"-6"): 5 minutes
Rate: < 2 min/inch

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 8 Date: 01/05/07 Time: 1:45pm Weather P-cloudy 10 F
Location (identify on site plan) See Plan
Land Use Old roadway Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body		Feet	Drainage way		Feet
Possible Wet Area		Feet	Property Line		Feet
Drinking Water Well		Feet	Other		

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-15"	Fill				Roadway bed, strong staining at fill/C1 interface (variegated colors)
15"-95"	C_1	VFSL	2.5Y4/4	5YR4/6 Distinct >5% @60"	Massive, Friable, stratified FSL and Fine Sand

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 108"
Depth to Groundwater: Standing Water in the Hole: 90" Weeping from Pit Face: 69" (slow)
Estimated Seasonal High Ground Water: 60"

Percolation Test:

Depth to Perc: 49"
Start Pre-Soak 12": 2:10
End Pre-Soak 12": 2:25 (10 gals used)
Time at 12": 2:25
Time at 9": 2:30
Time at 6": 2:36
Time (9"-6"): 6 minutes
Rate: 2 min/inch

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 9 Date: 01/05/07 Time: 1:20pm Weather P-cloudy 10 F

Location (identify on site plan) See Plan

Land Use Old roadway Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-42"	Fill				Silty sand, debris, concrete, brick

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Depth to Bedrock: > 42"

Depth to Groundwater: Standing Water in the Hole: 36" Weeping from Pit Face:

Estimated Seasonal High Ground Water: 36"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 10 Date: 01/05/07 Time: 1:30pm Weather P-cloudy 10 F
Location (identify on site plan) See Plan
Land Use wooded Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-65"	Fill				Silty sand, debris, concrete, brick

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Depth to Bedrock: > 65"
Depth to Groundwater: Standing Water in the Hole: 60" Weeping from Pit Face: 58"
Estimated Seasonal High Ground Water: 58"

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 11 Date: 01/06/07 Time: 9:00am Weather P-cloudy 10 F
Location (identify on site plan) See Plan
Land Use wooded Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-25"	$Fill_1$	FSL	Brwn		Massive, Friable, roots
25"-105"	$Fill_2$	FSL	Drk. Brwn		10% cobbles and gravel, some glass and debris @ 100"

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Depth to Bedrock: > 105"
Depth to Groundwater: Standing Water in the Hole: 96" Weeping from Pit Face: 92" (rapid)
Estimated Seasonal High Ground Water:

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 12 Date: 01/06/07 Time: 9:00am Weather P-cloudy 10 F
Location (identify on site plan) See Plan
Land Use wooded Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body		Feet	Drainage way		Feet
Possible Wet Area		Feet	Property Line		Feet
Drinking Water Well		Feet	Other		

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-36"	Fill	FSL	Brwn		Loose, Friable, some stones, asphalt
36"-46"	Ap/Bw	FSL	Drk. Brwn/ Brown		10% cobbles and gravel, some glass and debris @ 100"
46"-64"	C_1	FSL	5Y5/2	5YR4/6 Distinct >5% @38"	Massive, friable, stratified FSL and Fine Sand, roots throughout, sloughing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Depth to Bedrock: > 64"
Depth to Groundwater: Standing Water in the Hole: 55" Weeping from Pit Face: 50"
Estimated Seasonal High Ground Water:

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 13 Date: 10/31/07 Time: 11:50am Weather P-Cloudy 45 F
Location (identify on site plan) See Plan
Land Use Wooded Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-4"	A	FSL			Topsoil, Grass, roots
4"-15"	B_w	VFSL	2.5Y4/4		Massive, Friable
15"-68"	C_1	LS	2.5Y5/3	5YR4/6 Distinct >5% @54"	Massive, friable, some stratified FSL and Fine Sand, roots down to 24", sloughing
68"-108"	C_2	LS	5Y4/2	7.5YR5/6 >10% throughout	Mass, firm, some smearing
108"-114"	C_3	SL	5Y4/2	7.5YR5/6 >10% throughout	Mass, firm, smearing, wet, pockets of loam

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 114"
Depth to Groundwater: Standing Water in the Hole: n/o Weeping from Pit Face: 96"
Estimated Seasonal High Ground Water: 54"

Percolation Test:
Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 14 Date: 10/31/07 Time: 10:45am Weather P-Cloudy 45 F
Location (identify on site plan) See Plan
Land Use Wooded Slope (%) See Plan Surface Stones n/o
Vegetation Mixed deciduous and evergreen
Landform
Position on Landscape (sketch on back)
Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-8"	A	Forest Mat	10YR3/3		Massive, Friable, roots
8"-19"	B_w	VFSL	2.5Y4/4		Massive, Friable
19"-87"	C_1	FLS	2.5Y5/3	5YR4/6 Distinct >5% @75"	Massive, friable, some stratified FSL and Fine Sand, roots down to 24", sloughing
87-112"	C_2	FLS	5Y4/2	7.5YR5/6 >10% (from excavator bucket)	Mass, firmer than C1, Wet, smearing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 112"
Depth to Groundwater: Standing Water in the Hole: n/o Weeping from Pit Face: n/o
Estimated Seasonal High Ground Water: 75"

Percolation Test:

Depth to Perc: 42"
Start Pre-Soak 12": 11:01
End Pre-Soak 12": 11:16 (18 gals used)
Time at 12": 11:16
Time at 9": 11:18
Time at 6": 11:21
Time (9"-6"): 3 minutes
Rate: < 2 min/inch

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:
Deep Hole Number TP 15 Date: 10/31/07 Time: 1:00pm Weather P-Cloudy 45 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-20"	Fill				Massive, Friable, roots
20"-64"	C_1	FLS	2.5Y5/3	5YR4/6 Distinct >5% @68"	Massive, friable, some stratified FSL and Fine Sand, roots down to 24", sloughing
64"-106"	C_2	FLS	5Y4/2	7.5YR5/6 >10% (from excavator bucket)	Mass, firmer than C1, Wet, smearing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 106"

Depth to Groundwater: Standing Water in the Hole: n/o Weeping from Pit Face: n/o

Estimated Seasonal High Ground Water: 68"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:

Deep Hole Number TP 16 Date: 10/31/07 Time: 12:50am Weather P-Cloudy 45 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-31"	Fill				Fill over 2" thick macadam layer @ 31"
31"-50"	C_1	FSL	10YR5/8		Massive, friable, some stratified FSL and Fine Sand, roots down to 24", sloughing
50"-90"	C_2	LS	5Y4/2	7.5YR5/6 >10% throughout	Mass, firm, some smearing

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 90"

Depth to Groundwater: Standing Water in the Hole: n/o Weeping from Pit Face: n/o

Estimated Seasonal High Ground Water: 50"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

Location Address or Lot No. Northern Avenue, Northampton, MA

Test Pits

Performed By M.D'Urso, The Berkshire Design Group Witnessed By:

Deep Hole Number TP 17 Date: 10/31/07 Time: 1:30pm Weather P-Cloudy 45 F

Location (identify on site plan) See Plan

Land Use Wooded Slope (%) See Plan Surface Stones n/o

Vegetation Mixed deciduous and evergreen

Landform

Position on Landscape (sketch on back)

Distances from: ***See Plan***

Open Water Body	Feet	Drainage way	Feet
Possible Wet Area	Feet	Property Line	Feet
Drinking Water Well	Feet	Other	

DEEP OBSERVATION HOLE LOG *

Depth from Surface(Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-46"	Fill	Silty Sand			Few bricks, cobbles, plastic, roots (new growth)
46"-59"	C_1	LS	2.5Y5/3	5YR4/6 Distinct >10% throughout	Massive, friable, some stratified FSL and Fine Sand, roots down to 24", sloughing
59"-108"	C_2	SL	5Y4/2	7.5YR5/6 >35% throughout	Massive, firm, some pockets of loam, smearing, wet @ bottom

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Glaciolacustrine Depth to Bedrock: > 108"

Depth to Groundwater: Standing Water in the Hole: 6" @ 30 minutes Weeping from Pit Face: 95"

Estimated Seasonal High Ground Water: 54"

Percolation Test:

Depth to Perc:
Start Pre-Soak 12":
End Pre-Soak 12":
Time at 12":
Time at 9":
Time at 6":
Time (9"-6"):
Rate:

Note: This test pit was performed for investigation of general soil conditions and should not be used for purposes related to Title 5 and/or soil suitability assessments for on-site sewage disposal.

COLD SPRING ENVIRONMENTAL CONSULTANTS INC.

- 21E Site Investigations
- Subsurface Investigations
- Pollution Remediation
- LSP on Staff
- Forensic Septic Investigations

- Percolation Tests
- Septic Designs
- Regulatory Compliance
- Recycling and Solid Waste
- Second Opinions

March 10, 2009

Mr. Doug Kohl
Kohl Construction
33 Campus Plaza
Hadley, MA 01035

RE: Test Pit & Soil Evaluation Results
North Street Property, Northampton, MA
CSEC Reference File #109-3106-0309

Dear Mr. Kohl:

Background:

Cold Spring Environmental, Inc. was contracted to install test pits and perform soil evaluations (to evaluate development/drainage soil characteristics) at the above referenced property. This work, contracted by you, was to attempt to estimate the suitability of soils at the site for drainage, structural interpretation and review the layout of the parcels relative to the above. A Site Locus Map (Figure I) is attached with your layout. Location map as Attachment I. The approximate test pit locations are pinned on the plot (Figure 2) to be picked up by your surveyor.

On Site Field Investigation:

Test Pit locations were excavated by truck mounted back hoe and track mounted mini excavator at the locations your engineer determined on March 9 & 10, 2009.

Soils were generally either typical lower valley A, B horizons over lacustrine (glacial lake bottom), varved Fine sands and silts or filled areas, stripped of A and B horizons, descending directly into the lacustrine varved fine sands and silts. Soil strata are broken detailed on the Test Pit logs attached with noted Estimated Season High Groundwater (ESHGW) elevations from relative surface datum and summarized for the appropriate locations with some select photos in Attachments II and III.

Please feel free to contact us with any questions you may have.

Sincerely,

Cold Spring Environmental Consultants, Inc.

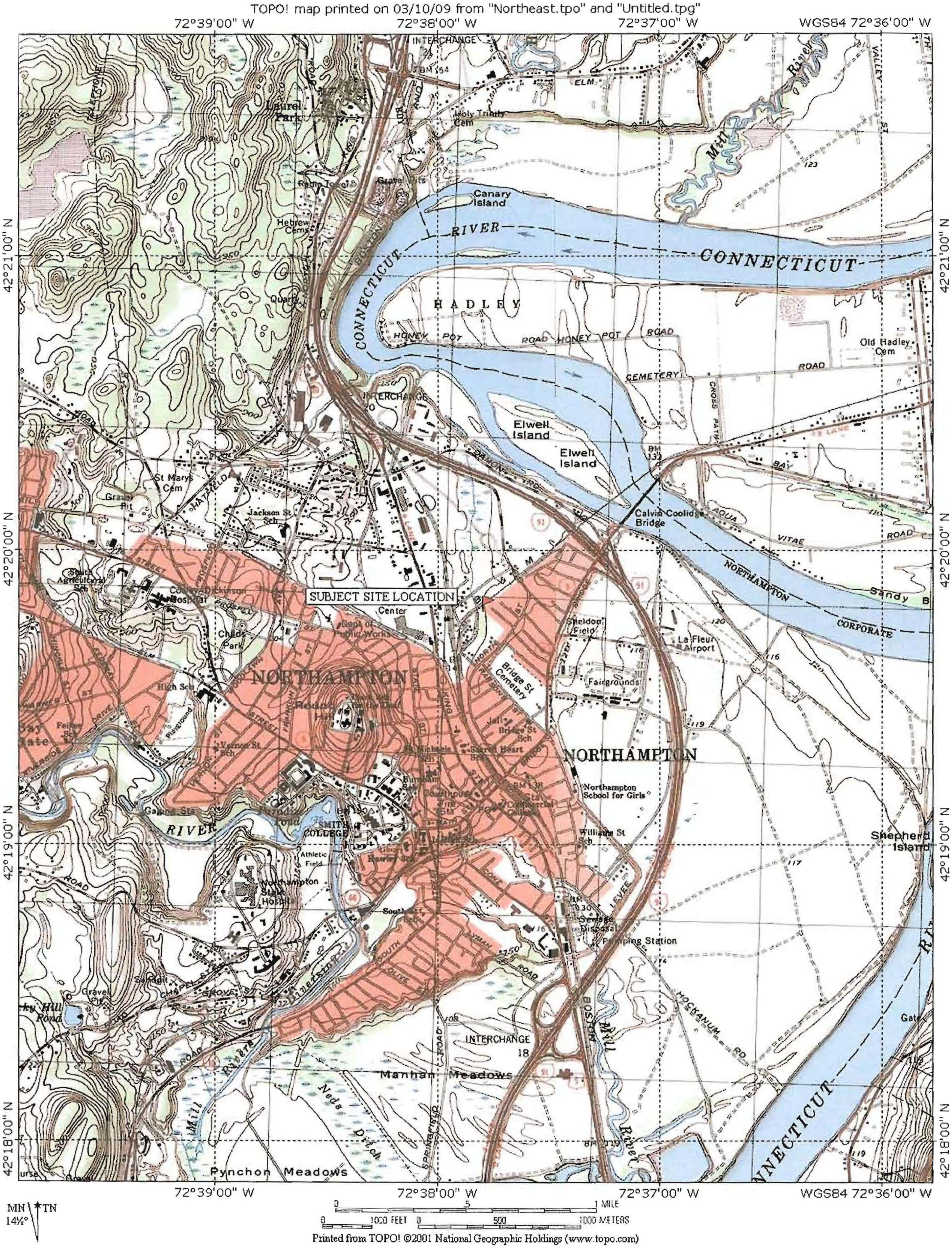
Alan E. Weiss, M.S.,
Principal Hydrogeologist
Licensed Site Professional
Registered Sanitarian
MA Soil Evaluator

350 Old Enfield Road ▪ Belchertown, MA. 01007 ▪ Phone: 413.323.5957 Fax 413.323.4916
email: aeweiss@charter.net www.coldspringenvironmental.com

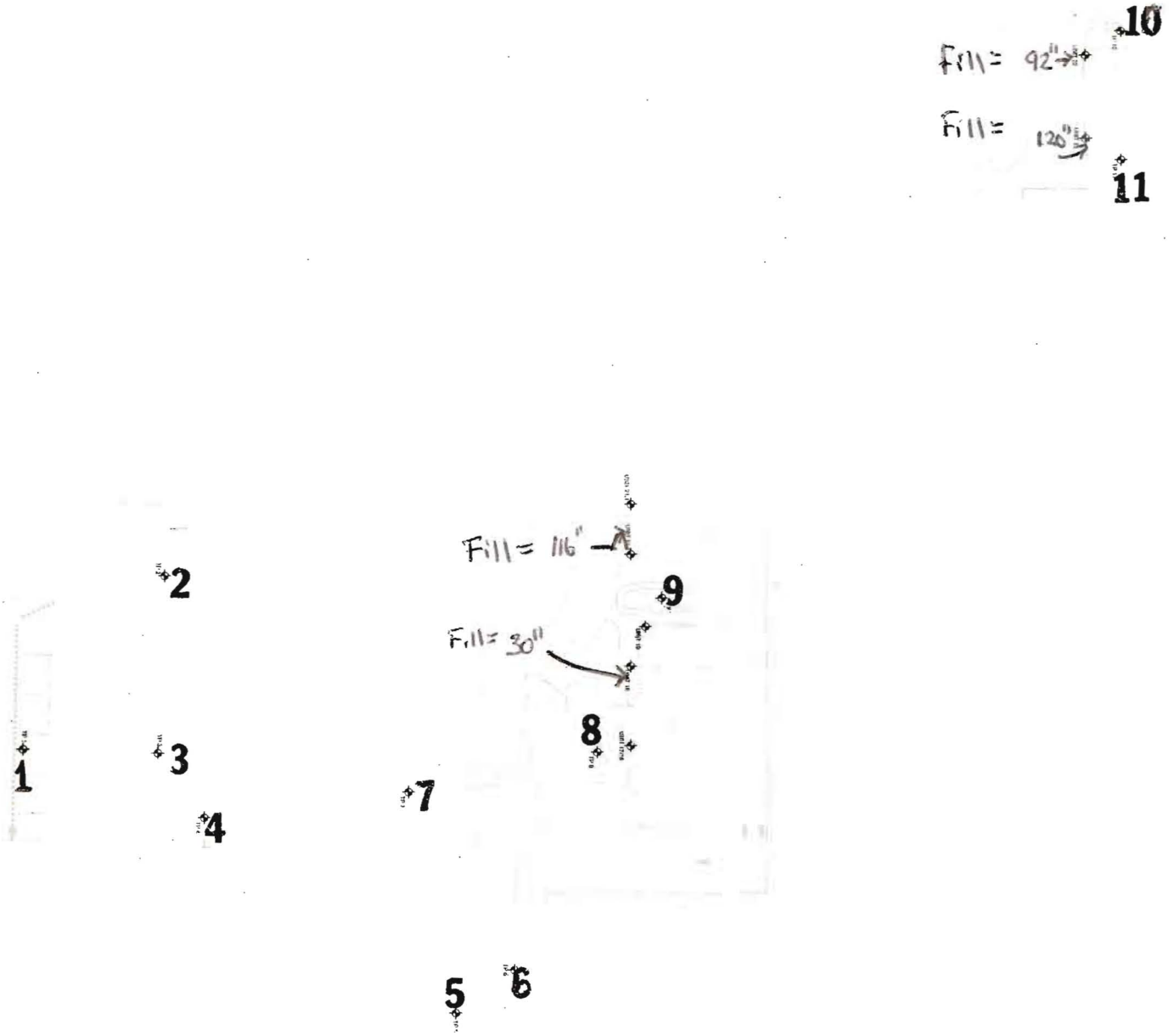
ATTACHMENT I

Figure 1 Site Locus (USGS), Figure 2: Site Test Pit Plot

TOPO! map printed on 03/10/09 from "Northeast.tpo" and "Untitled.tpg"



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)


10
Fill = 92"
Fill = 120"
11
Fill = 116"
2
9
Fill = 30"
8
1
3
7
4
5
6

ATTACHMENT II

Test Pit Logs

TEST PIT LOGS,
NORTHERN AVE., NORTHAMPTON
03.09&10.2009, AE Weiss, MA Soil Evaluator, MS Hydrogeology
(In order of excavation)

Test Pit #:				
#5	*0-8"*	*Af*	*Sandy Loam 10 yr 2.2*	*Friable f. sand, fibrous*
	8-22"	*Bw*	*Loamy Sand 2.5 y 5.6*	*F. sand, mod loose & silt*
	22-112"	*C1*	*Loamy Sand 2.5y 4.4*	*F. sand, Little silt, w. sorted*
				Varved, slightly massive

ESHWT = 26" (10% prominent, 2.5y 4.1&7.5 yr 5.8) Weeping=45"-48"

#6	*0-7"*	*Af*	*Sandy Loam 10 yr 2.2*	*Friable f. sand, fibrous*
	7-20"	*Bw*	*Loamy Sand 2.5 y 5.6*	*F. sand, mod loose & silt*
	20-116"	*C1*	*Loamy Sand 2.5y 4.4*	*F. sand, Little silt, w. sorted*
				Varved, slightly massive

ESHWT = 26" (10% strong, 2.5y 4.1&7.5 yr 5.8) Weeping=45"-48"

#7	*0-6"*	*Af*	*Sandy Loam 10 yr 2.2*	*Friable f. sand, fibrous*
Photo	*6-20"*	*Bw*	*Loamy Sand 2.5 y 5.6*	*F. sand, mod loose & silt*
	20-110"	*C1*	*Loamy Sand 2.5y 4.4*	*F. sand, Little silt, w. sorted*
				Varved, slightly massive
	110-120"	*C2*	*C. Sand 2.5y 4.6*	*C. Sand, lense, well sorted.*

ESHWT = 26" (>10% strong, 2.5y 4.1&7.5 yr 5.8) Weeping=30"

#4	*0-4"*	*A*	*Fine Sandy Loam 10 yr 2.2*	*Friable f. sand, fibrous*
	4-14"	*Bw*	*Loamy Sand 2.5 y 5.6*	*F. sand, mod loose & silt*
	14-60+"	*C1*	*Loamy Sand 2.5y 4.3*	*F. sand, little silt, varved*
				slightly massive

ESHWT =14-16" (>10% strong, 2.5y 4.1&7.5 yr 5.8) Weeping=30"

#3	*0-16"*	*A*	*Fine Sandy Loam 10 yr 2.2*	*Moist, fibrous*
photo	*16-29"*	*Bw*	*Loamy Sand 2.5 y 4.3*	*F. sand, & silt, massive*
	29-100"	*Cg*	*Silt Loam 5Gy 5.1*	*Silt, Little Clay*
				Varved, massive

ESHWT = 16" (>10% strong, 5Gy 5.1& 7.5 yr 5.8) Weeping=30"

#1	0-10	A	Fine Sandy Loam 10 yr 2.2	Moist f. sandy, fibrous
	10-16"	Bw	Loamy Sand 2.5 y 4.3	F. sand, & silt
	16-40"	C1	Loamy Sand 2.5y 4.4	F. sand & silt, Varved, massive
	40-80"	Cg	Fine Silt Loam 5Gy 5.1	Silt, Massive.Varved

ESHWT = 16" (>10%,strong.5Gy5.1 & 7.5 yr 5.8) Weeping=30"

#9	0-90"	Af	Fill, sandy, Loose	Mixed gravel, brick asphalt
	90"-100"	Cg	Fine Silt Loam 5Gy 5.1	Silt, Massive.Varved

ESHWT =86" (strong, 5 Gy 4.1& 7.5 yr 5.8) Weeping=90"

#8	0-24"	Af	Fill, sandy, Loose	Mixed gravel, brick asphalt
	24"-106"	Cg	L. Sand 5Gy 5.1	F. Sand, trace Silt, Varved

ESHWT =36" (strong,2.5 y .4.2& 7.5 yr 5.8) Weeping=90"

#11	0-142"	Af	Fill, Loose, caving	Mixed gravel, brick asphalt
	142"+	Cg	Fine Silt Loam 5Gy 5.1	Silt, Massive.Varved

ESHWT =86",. Weeping=90"

#10	0-70"	Af	Fill, loose caving	Mixed gravel, brick asphalt
photo	70"-110"	C1	L. Sand 2.4 y 3.2	F. Sand, Well Sorted Varved

ESHWT =36" (strong, 5 Gy 4.1& 7.5 yr 5.8) Weeping=48"

#2	0-10	A	Fine Sandy Loam 10 yr 2.2	Moist f. sandy, fibrous
	10-14"	Bw	Loamy Sand 2.5 y 4.3	F. sand, & silt
	16-40"	C1	Loamy Sand 2.5y 4.1	F. sand & Little silt, Varved Somewhat massive

ESHWT =14-16" (10% prominent, 2.5 y 4.1& 7.5 yr 5.8) Weeping=30"

ATTACHMENT III

Excavation Photos

Test Pit #7
march 9, 2009
North street
Northampton, MA

Test Pit #3
march 9, 2009
North street
Northampton, MA