

Appendix I

**PRELIMINARY
WASTEWATER REPORT**

WASTEWATER REPORT

For

**STATELINE RETAIL CENTER
Town of Southeast, New York**

December 11, 2006

Revised November 30, 2007



Prepared by:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, New York 10512

CONTENTS

	PAGE
1.0 INTRODUCTION	1
2.0 DESIGN FLOW.....	1
3.0 WASTEWATER COLLECTION SYSTEM, SEPTIC TANKS AND PUMP STATIONS.....	3
4.0 SUBSURFACE SEWAGE TREATMENT SYSTEM.....	4
4.1 SSTS Area 1.....	4
4.2 SSTS Area 2.....	4
4.3 Mounding Analysis.....	5
5.0 ALTERNATIVES	5

APPENDICES

Appendix A	SSTS Area 1 Field Test Results
Appendix B	SSTS Area 2 Field Test Results

FIGURES

Figure DT-2	Witnessed Test Hole Location Map
-------------	----------------------------------

1.0 INTRODUCTION

The subject project is located on a 44.03± acre parcel along U.S. Route 6 in the Town of Southeast, between Interstate 84 and U.S. Route 6. The site is located in the GC-2 zoning district, is designated as Tax Map Number 68-2-48, and is in the East Branch Reservoir Watershed. The ground cover is characterized as a mixture of woods and meadow throughout the majority of the site. The subject parcel is proposed to be developed as a retail center. The retail center will consist of buildings, access roads, parking and landscaping. Access to the site will be provided off of U.S. Route 6. Water will be supplied to the site by drilled wells that will serve as a public water supply for the project. Wastewater will be disposed of with two subsurface sewage treatment systems (SSTS's). This report is prepared to address the wastewater systems only.

The wastewater systems will be designed in accordance with all applicable codes and regulations, including the Putnam County Department of Health's *Bulletin CS-31, Program Review and Policies, Sewage Treatment and Water Supply Facilities for Commercial and Multifamily Residential Projects*, the New York State Department of Environmental Conservation (NYSDEC)'s 1988 *Design Standards for Wastewater Treatment Works – Intermediate Sized Sewerage Facilities*, and the 2004 *Recommended Standards for Wastewater Facilities* (a.k.a. Ten-State Standards).

Two SSTS areas will be utilized for the proposed action. One large SSTS area in the eastern portion of the site (SSTS 1), and one smaller SSTS area on the western side (SSTS 2). Note that Sections 3.0 and 4.0 (Collection Wastewater System, Septic Tanks and Pump Stations, and Subsurface Sewage Treatment Systems) were written for the Proposed Action (Proposed Retail Configuration), and information regarding the Alternative Configurations can be found in Sections 2.0 and 5.0 (Design Flow and Alternatives).

2.0 DESIGN FLOW

The proposed uses of the subject site include a retail center with multiple retail buildings, community space on the second floor of one retail building, and an office building. The retail users for the proposed center are planned to be dry retail users. Dry retail occupants use limited water resources, and the majority of the water use is limited to primarily restroom usage for employees. The use of water saving plumbing fixtures, as required by the building code, would further limit water usage at the site. Please note that irrigation water will be supplied by a separate system that will collect and store roof runoff for that purpose.

The reference design standards for water and wastewater flows provide general design flows covering a broad range of usage categories. The NYSDEC's Design Standards provides two alternatives for establishing design flows: hydraulic loading rate tables or water usage data. In either case, a daily design flow rate must be calculated. The daily design flow rate is a conservatively high estimate of daily flow used by the engineer in the design of the water and sewer infrastructure when actual water usage data is unavailable.

The design flows for the subject project are based on actual water usage of similar facilities for the representative users. The office building design flows are based on 0.08 GPD/ SF (0.1 GPD/ SF with a 20% reduction as allowed by the NYSDEC's Design Standards). The following is a summary of the wastewater design flows generated for the Proposed Retail (with Office and Community Space) Configuration layout and the Alternative Configuration layouts proposed for the subject project broken down by individual buildings. The design flows are categorized by SSTS area.

PROPOSED ACTION:

SSTS AREA 1

BUILDING	PROPOSED USE	BUILDING SQUARE FOOTAGE (SF)	WASTEWATER DESIGN FLOWS (GPD)
A	DRY RETAIL	134,000	1,500
B	DRY RETAIL	25,000	500
C (1 ST FLOOR)	DRY RETAIL	11,000	400
C (2 ND FLOOR)	COMMUNITY SPACE	11,000	600
D	DRY RETAIL	14,800	700
		SSTS AREA 1 TOTAL	3,700

SSTS AREA 2

BUILDING	PROPOSED USE	BUILDING SQUARE FOOTAGE (SF)	UNIT FLOW RATE	WASTEWATER DESIGN FLOWS (GPD)
E	OFFICE	14,800	0.08 GPD/SF	1,184
		SSTS AREA 2 TOTAL		USE 1,200

TOTAL SITE WASTEWATER DESIGN FLOW = 4,900 GPD

ALTERNATIVE CONFIGURATIONS:

REDUCED SCALE ALTERNATIVE

PROPOSED USE	WASTEWATER DESIGN FLOW
135,000 S.F. (DRY RETAIL)	1,500 GPD
35,000 S.F. (DRY RETAIL)	600 GPD
TOTAL DESIGN FLOW	2,100 GPD

ALTERNATE RETAIL CONFIGURATION

PROPOSED USE	WASTEWATER DESIGN FLOW
70,000 S.F. (DRY RETAIL)	1,000 GPD
65,000 S.F. (SPECIALTY FOOD STORE)	4,000 GPD
35,000 S.F. (DRY RETAIL)	600 GPD
10,000 S.F. (DRY RETAIL)	400 GPD
3,000 S.F. (DRY RETAIL)	200 GPD
TOTAL DESIGN FLOW	6,200 GPD

PERMITTED PRINCIPLE USE ALTERNATIVE – OFFICE

PROPOSED USE	WASTEWATER DESIGN FLOW
210,000 S.F. (OFFICE)	
ASSUME 4 EMPLOYEES PER 1000 S.F. = 840 EMPLOYEES	
840 EMPLOYEES X 12 GPD/EMPLOYEE = 10,080 GPD	
TOTAL DESIGN FLOW	10,080 GPD

3.0 WASTEWATER COLLECTION SYSTEM, SEPTIC TANKS AND PUMP STATIONS

The Proposed Configuration involves three separate groups of buildings on the site. Each building will be served with its own sewer collection system, primary treatment utilizing septic tanks, a pump station, and disposal into an individual or combined SSTS. The wastewater collection system will consist of individual 4" diameter PVC SDR 35 sewer service connections for each building. Each sewer service connection will discharge into a precast concrete concrete septic tank, which will flow by gravity to the one of two proposed pump stations. The sewer lines are proposed to be located generally in the proposed roads, parking areas and landscaped islands. Wastewater flow from all of the proposed buildings will be by gravity to one of the five septic tanks and one of the two pump stations.

The primary treatment for each building will be provided in a precast concrete septic tank (5 septic tanks total). The capacity in gallons for each septic tank will be sized to be 1.5 times the design flow for the contributing buildings. At this time, the septic tank capacities are estimated to vary from 1,000 gallons to

2,500 gallons. All of the septic tanks will discharge to one of two precast concrete duplex pump stations. Each of the two pump stations will convey septic tank effluent through a 2" or 3" diameter PVC SDR21 force main to its respective subsurface sewage treatment system (SSTS) area. An automatic standby emergency backup generator is proposed for the pump station to provide continuous operation of the wastewater systems, even during a power outage.

4.0 SUBSURFACE SEWAGE TREATMENT SYSTEMS (SSTS'S)

The subsurface sewage treatment system (SSTS) areas for the Proposed Configuration are located in the eastern and western portions of the site. The entire property was evaluated during the planning stage, and these areas were deemed the most feasible areas for wastewater treatment based on the preliminary field testing. The SSTS areas are located in either an existing meadow, or wooded area, and slopes gently from a high point in the south to the north. A Town Regulated Wetland surrounds SSTS 1 on the east, west and north. The existing ground slope in the proposed SSTS 1 ranges from 3% to 15% with an average slope of approximately 7%. A Town regulated wetland is located north of SSTS Area 2. The existing ground slopes in the proposed SSTS Area 2 are approximately 14%. Deep test holes were excavated on June 19, 2007 throughout the proposed SSTS areas to a minimum depth of 7 feet, and generally consisted of a mixture of fine sand and gravel. The deep test holes were witnessed by Insite Engineering, Surveying & Landscape Architecture, P.C., the Putnam County Department of Health and New York City Department of Environmental Protection. No groundwater or bedrock was encountered within the minimum regulatory depths of the vast majority of the test pits. At this time, it is not anticipated that the SSTS's will require any run-of-bank gravel fill or a curtain drain. Percolation test holes were performed by Insite Engineering, Surveying & Landscape Architecture, P.C. and witnessed by Putnam County Department of Health on November 27, 2007 for SSTS area 1. The deep test hole and percolation test hole SSTS design data sheets for SSTS Areas 1, and 2 are included in the report as Appendix A.

4.1 SSTS Area 1

The SSTS Area 1 absorption fields will consist of conventional two foot wide absorption trenches. The trenches will be alternately dosed with floating outlet dosing tanks to several absorption trench sub-systems. The preliminary SSTS size for the Proposed Retail Configuration is based on the witnessed percolation rate of 21 to 30 minutes/inch.

$$3,700 \text{ GPD} \div 0.6 \text{ GPD/SF} \div 2 \text{ LF/SF} = 3,084 \text{ LF}$$

It is estimated that approximately 3,084 linear feet of conventional two foot wide absorption trenches will be required for the primary SSTS area, and an equal amount for the 100% expansion area. This results in approximately 2 acres of area required for the entire SSTS area. The primary SSTS will be divided into 6 sub-systems of approximately 1,028 linear feet of conventional two foot wide absorption trenches each (514 linear feet of primary and 514 linear feet of expansion absorption trench will be alternately spaced throughout the sub-systems). These areas will be distributed over the entire SSTS area to evenly disperse the wastewater.

4.2 SSTS Area 2

The SSTS Area 2 absorption fields will consist of conventional two-foot wide absorption trenches. The trenches will be dosed by a septic tank effluent pump pit to an absorption trench system. The preliminary SSTS size for the Proposed Retail Configuration is based on an envisioned percolation rate of 21 to 30 minutes/inch.

$$1,200 \text{ GPD} \div 0.6 \text{ GPD/SF} \div 2 \text{ LF/SF} = 1,000 \text{ LF}$$

It is estimated that approximately 1,000 linear feet of primary and 1,000 linear feet of conventional two foot wide absorption trenches will be required for the primary SSTS area, and an equal amount for the 100% expansion area. This results in approximately 12,000 square feet of area required for the entire SSTS area.

4.3 Mounding Analysis

A mounding analysis is only required by regulatory agencies if the design flow for one contiguous SSTS area is over 5,000 gpd. Although the largest SSTS area design flow is 3,400 gpd, a mounding analysis was prepared in order to study the site's hydrogeology and confirm that the shallow soils (near the trenches) can infiltrate water at a sufficient rate, and that the deeper soils can convey the water without excessive mounding or breakout.

A geotechnical engineer has conducted a groundwater mounding assessment for the project. This assessment indicates the project's design flows can be supported by both of the SSTS area's underlying soils. The final design of the SSTS's will be based on further input from the geotechnical engineer and results from the final witnessed field testing of percolation test holes and deep test holes.

5.0 ALTERNATIVES

The previously mentioned wastewater system components have been developed based on the proposed action (Proposed Retail Configuration). Based on the groundwater mounding assessment and preliminary soil testing, the eastern SSTS area appears to be able to support a design flow of up to 7,000 gpd. As such, the eastern SSTS area would be able to support all of sewage flows for the 3,000 gpd Proposed Retail Configuration, and two of the Alternative Configurations (the 2,100 gpd Reduced Scale Alternative and the 6,200 gpd Alternate Retail Configuration). If the 10,080 gpd Permitted Principal Use Alternative (Office) was chosen, the eastern SSTS area would not be able to support all of the sewage flows, and a portion of the previously mentioned western SSTS area would also be utilized. The western SSTS area appears to be able to support a design flow of the proposed action (1,900 GPD) or the remaining 3,080 gpd of additional flows required for the office alternative. These conclusions are based on the preliminary soil testing and the preliminary groundwater mounding assessment.

APPENDIX A

SSTS Area 1 Field Test Results

PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~COOPER~~ c/o P.L.L., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking 11-26-07 Date of Percolation Test 11-27-07

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
P1	1	1010-1031	21	26	29	3	7
	2	1032-1056	24	26	29	3	8
	3	1056-1120	24	26	29	3	8
	4						
	5						
P2	1	1042-1112	30	24	27	3	10
	2	1112-1142	30	24	26½	2.5	12
	3	1142-1212	30	24	26½	2.5	12
	4						
	5						
P3	1	1127-1143	16	23	26	3	5.3
	2	1144-1201	17	23	26	3	5.7
	3	1201-1218	17	23	26	3	5.7
	4						
	5						

- NOTES:
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.



TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. <u>D1</u>	HOLE NO. <u>D2</u>	HOLE NO. <u>D3</u>
G.L.			
0.5'	0'-6" TOPSOIL	0'-6" TOPSOIL	0'-6" TOPSOIL
1.0'			
1.5'			
2.0'	6"-84" BROWN	6"-96" BROWN	6"-84" BROWN
2.5'	SLIGHTLY	SLIGHTLY	FINE SAND
3.0'	COMPACTED	COMPACTED	AND SOME
3.5'	FINE SAND	FINE SAND	GRAVEL
4.0'	WITH SILT AND	WITH SILT	
4.5'	GRAVEL	AND GRAVEL	
5.0'			
5.5'			
6.0'			
6.5'			
7.0'			
7.5'			
8.0'			
8.5'			
9.0'			
9.5'			
10.0'			

Indicate level at which groundwater is encountered N/A

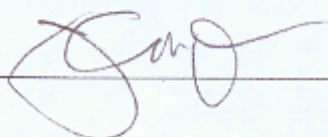
Indicate level at which mottling is observed N/A

Indicate level to which water level rises after being encountered N/A

Deep hole observations made by: John M. Watson, P.E. (Insite)
Joseph Paravati (PCDOH) Date 6/19/07
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:

Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional's Seal



PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~Contract~~ c/o P.L.L., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking 11-26-07 Date of Percolation Test 11-27-07

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
P4	1	1013-1033	20	18	21	3	6.7
	2	1033-1057	24	18	21	3	8
	3	1058-1122	24	18	21	3	8
	4						
	5						
P5	1	1021-1051	30	20	22	2	15
	2	1052-1122	30	20	22	2	15
	3	1123-1153	30	20	22	2	15
	4						
	5						
P6	1	1135-1145	10	24	28	4	2.5
	2	1145-1154	9	24	27	3	3
	3	1154-1203	9	24	27	3	3
	4						
	5						

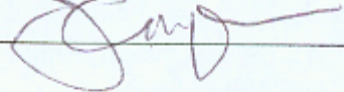
- NOTES:**
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.

TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. <u>D4</u>	HOLE NO. <u>D5</u>	HOLE NO. <u>D6</u>
G.L.			
0.5'	0"-6" TOPSOIL	0"-6" TOPSOIL	0"-6" TOPSOIL
1.0'			
1.5'	6"-92"+ BROWN	6"-84"+ BROWN	6"-84"+ BROWN
2.0'	SLIGHTLY	SLIGHTLY	FINE SAND
2.5'	COMPACTED	COMPACTED	SOME SILT
3.0'	FINE SAND	FINE SAND	AND GRAVEL
3.5'	WITH SILT	WITH SILT	
4.0'	AND GRAVEL	AND GRAVEL	
4.5'			
5.0'			
5.5'			
6.0'	GW		
6.5'	▽ 78"	GW	GW
7.0'	=	▽ 84"	▽ 84"
7.5'	~		
8.0'			
8.5'			
9.0'			
9.5'			
10.0'			

Indicate level at which groundwater is encountered 78" / 84" (D4/D5+D6)
 Indicate level at which mottling is observed N/A
 Indicate level to which water level rises after being encountered 78" / 84" (D4/D5+D6)
 Deep hole observations made by: John M. Watson, P.E. (Insite)
Joseph Paravati (PCDOH) Date 6/19/07
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional Seal



PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~XXXXXXXX~~ c/o P.L.I., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking 11-26-07 Date of Percolation Test 11-27-07

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
P8	1	1014-1044	30	18	19.5	1.5	20
	2	1046-1116	30	18	19.25	1.25	24
	3	1117-1147	30	18	19.25	1.25	24
	4						
	5						
P9	1	1017-1047	30	24	26	2	15
	2	1049-1119	30	24	26	2	15
	3	1120-1150	30	24	26	2	15
	4						
	5						
P10	1	1127-1157	30	22	24	2	15
	2	1158-1228	30	22	24	2	15
	3	1229-1259	30	22	24	2	15
	4						
	5						

- NOTES:**
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.

TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. <u>D8</u>	HOLE NO. <u>D9</u>	HOLE NO. <u>D10</u>
G.L.			
0.5'	0'-6" TOPSOIL	0'-6" TOPSOIL	0'-6" TOPSOIL
1.0'			
1.5'	6"-90"+ BROWN	6"-84"+ BROWN	6"-90"+ BROWN
2.0'	FINE SAND	VERY FINE	MODERATELY
2.5'	SOME SILT	SAND WITH	COMPACT
3.0'	AND GRAVEL	SOME GRAVEL	FINE SAND
3.5'			WITH SOME
4.0'			SILT, GRAVEL
4.5'			AND ROCK
5.0'			TO 1" Ø
5.5'			
6.0'			
6.5'			
7.0'		GW	
7.5'		84"	
8.0'			
8.5'			
9.0'			
9.5'			
10.0'			

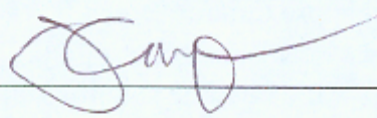
Indicate level at which groundwater is encountered 84" in D9

Indicate level at which mottling is observed N/A

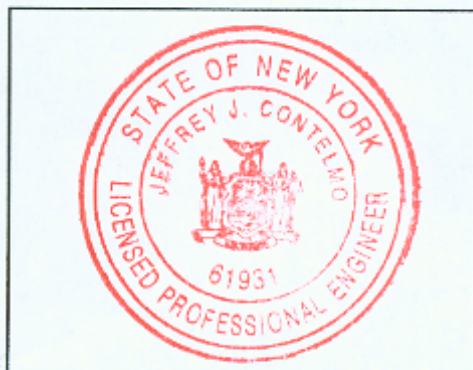
Indicate level to which water level rises after being encountered 84" in D9

Deep hole observations made by: John M. Watson, P.E. (Insite)
Joseph Paravati (RCDDH) Date 6/19/07
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional's Seal



APPENDIX B

SSTS Area 2 Field Test Results

PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~00000000~~ c/o P.L.I., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking N/A Date of Percolation Test N/A

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						

- NOTES:**
- Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 - Depth measurements to be made from top of hole.



**TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES**

DEPTH	HOLE NO. <u>D11</u>	HOLE NO. <u>D12</u>	HOLE NO. <u>D13</u>
G.L.			
0.5'	0"-6" TOPSOIL	0"-6" TOPSOIL	0"-6" TOPSOIL
1.0'			
1.5'	6"-60" BROWN	6"-60" BROWN	6"-36" BROWN FINE
2.0'	SLIGHTLY	SLIGHTLY	SAND AND SILT
2.5'	COMPACTED	COMPACTED	
3.0'	FINE SAND	FINE SAND	
3.5'	w/ some	w/ some	
4.0'	SILT & GRAVEL	SILT & GRAVEL	36"-90"+ BROWN
4.5'			FINE SAND
5.0'			
5.5'	60"-84"+ BROWN	60"-84"+ BROWN	
6.0'	SLIGHTLY	SLIGHTLY	
6.5'	COMPACTED	COMPACTED	
7.0'	FINE SILTY	FINE SILTY	GW
7.5'	SAND	SAND	90"
8.0'			
8.5'			
9.0'			
9.5'			
10.0'			

Indicate level at which groundwater is encountered 90" (D13 ONLY)

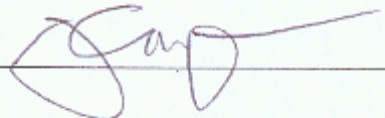
Indicate level at which mottling is observed N/A

Indicate level to which water level rises after being encountered 90" (D13 ONLY)

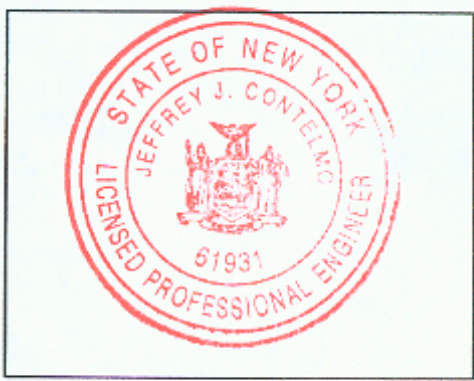
Deep hole observations made by: John M. Watson, P.E. (Insite)
Joseph Paravati (PCDCH) Date 6/19/07
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:

Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional's Seal



PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~00000000~~ c/o P.L.J., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking N/A Date of Percolation Test N/A

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Percolation Rate Min/Inch
				Start	Stop	
	1					
	2					
	3					
	4					
	5					
	1					
	2					
	3					
	4					
	5					
	1					
	2					
	3					
	4					
	5					

- NOTES:**
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.

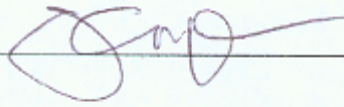


**TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES**

DEPTH	HOLE NO. <u>D14</u>	HOLE NO. <u>D15</u>	HOLE NO. <u>D16</u>
G.L.			
0.5'	0"-6" TOPSOIL	0"-6" TOPSOIL	0"-8" TOPSOIL
1.0'			
1.5'	6"-60" BROWN	6"-60" BROWN	8"-78" BROWN
2.0'	SLIGHTLY	SLIGHTLY	FINE SILTY
2.5'	COMPACTED	COMPACTED	LOAM
3.0'	FINE SAND	FINE SAND	
3.5'			
4.0'			
4.5'	60"-84"+ BROWN	60"-96"+ BROWN	
5.0'	SLIGHTLY	SLIGHTLY	
5.5'	COMPACTED	COMPACTED	
6.0'	FINE SILTY	FINE SILTY	
6.5'	SAND	SAND	
7.0'			78"-96"+
7.5'		GW SEEP	MOTTLED
8.0'		▽ 96"	▽ SILT
8.5'			GW 96"
9.0'		MOTTLING @ 84"	MOTTLING @ 78"
9.5'			
10.0'			

Indicate level at which groundwater is encountered 96" (D15/D16)
 Indicate level at which mottling is observed 84"/78" (D15/D16)
 Indicate level to which water level rises after being encountered 96" (D15/D16)
 Deep hole observations made by: John M. Watson, P.E. (Insite) Date 6/19/07
Joseph Paravati (PCDOH)
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional's Seal



PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~XXXXXXXX~~ c/o P.L.L., LLC

Address 1699 Route 6, Suite 1, Carmel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking NA Date of Percolation Test NA

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						

- NOTES:**
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.

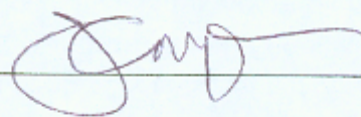


TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

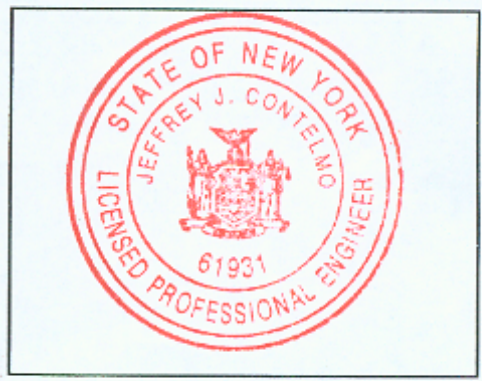
DEPTH	HOLE NO. <u>D17</u>	HOLE NO. <u>D18</u>	HOLE NO. <u>D19</u>
G.L.			
0.5'	0"-6" TOPSOIL	0"-6" TOPSOIL	0"-6" TOPSOIL
1.0'			
1.5'	6"-54" BROWN	6"-60" BROWN	6"-72" BROWN
2.0'	SLIGHTLY	SLIGHTLY	SLIGHTLY
2.5'	COMPACTED	COMPACTED	COMPACTED
3.0'	FINE SAND	FINE SAND	FINE SAND
3.5'	WITH SOME	WITH SOME	WITH SOME
4.0'	SILT AND	SILT AND	SILT AND GRAVEL
4.5'	GRAVEL	GRAVEL	
5.0'			
5.5'	54"-84"+ BROWN		
6.0'	GW FINE SILTY	60"-96"+ BROWN	
6.5'	80" LOAM	FINE SILTY	72"-90" BROWN
7.0'		GW LOAM	GW FINE SILTY
7.5'		92"	90" LOAM
8.0'	MOTTLING @ 72"		
8.5'			
9.0'		MOTTLING @ 78"	MOTTLING @ 72"
9.5'			
10.0'			

Indicate level at which groundwater is encountered 80" (D17) 92" (D18) 90" (D19)
 Indicate level at which mottling is observed 72"/78"/72" (D17/D18/D19)
 Indicate level to which water level rises after being encountered 80" (D17) 92" (D18) 90" (D19)
 Deep hole observations made by: John M. Watson, P.E. (Insite) Date 6/19/07
Joseph Paravati (PCDOH)
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Carmel, New York 10512

Signature: 

Design Professional's Seal



PUTNAM COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICES

DESIGN DATA SHEET - SUBSURFACE SEWAGE TREATMENT SYSTEM

Applicant: Stateline Retail Center

~~Company~~ c/o P.L.I., LLC Address 1699 Route 6, Suite 1, Camel, NY 10512

Located at (Street) US Route 6 Tax Map 68 Block 2 Lot 48
(indicate nearest cross street)

Municipality Southeast Watershed East Branch Reservoir

SOIL PERCOLATION TEST DATA

Date of Pre-soaking N/A Date of Percolation Test N/A

Hole No.	Run No.	Time Start - Stop	Elapse Time (Min.)	Depth to Water From Ground Surface (Inches)		Water Level Drop In Inches	Percolation Rate Min/Inch
				Start	Stop		
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						
	1						
	2						
	3						
	4						
	5						

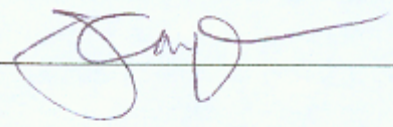
- NOTES:**
1. Tests to be repeated at same depth until approximately equal percolation rates are obtained at each percolation test hole. (i.e. ≤ 1 min for 1-30 min/inch, ≤ 2 min for 31-60 min/inch). All data to be submitted for review.
 2. Depth measurements to be made from top of hole.

**TEST PIT DATA
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES**

DEPTH	HOLE NO. <u>D20</u>	HOLE NO. _____	HOLE NO. _____
G.L.			
0.5'	<u>0"-6" TOPSOIL</u>		
1.0'			
1.5'	<u>6"-78" BROWN</u>		
2.0'	<u>SLIGHTLY</u>		
2.5'	<u>COMPACTED</u>		
3.0'	<u>FINE SAND</u>		
3.5'	<u>WITH SOME</u>		
4.0'	<u>SILT AND</u>		
4.5'	<u>GRAVEL</u>		
5.0'			
5.5'			
6.0'			
6.5'			
7.0'	<u>78"-96" BROWN</u>		
7.5'	<u>FINE SILTY</u>		
8.0'	<u>LOAM</u>		
8.5'			
9.0'			
9.5'	<u>MOTTLING @ 78"</u>		
10.0'			

Indicate level at which groundwater is encountered N/A
 Indicate level at which mottling is observed 78" (D20 ONLY)
 Indicate level to which water level rises after being encountered N/A
 Deep hole observations made by: John M. Watson, P.E. (Insite) Date 6/19/07
Joseph Paravati (PCDOH)
David Alderisio (NYCDEP)

Design Professional Name: Jeffrey J. Contelmo, P.E. Address: _____
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place, Camel, New York 10512

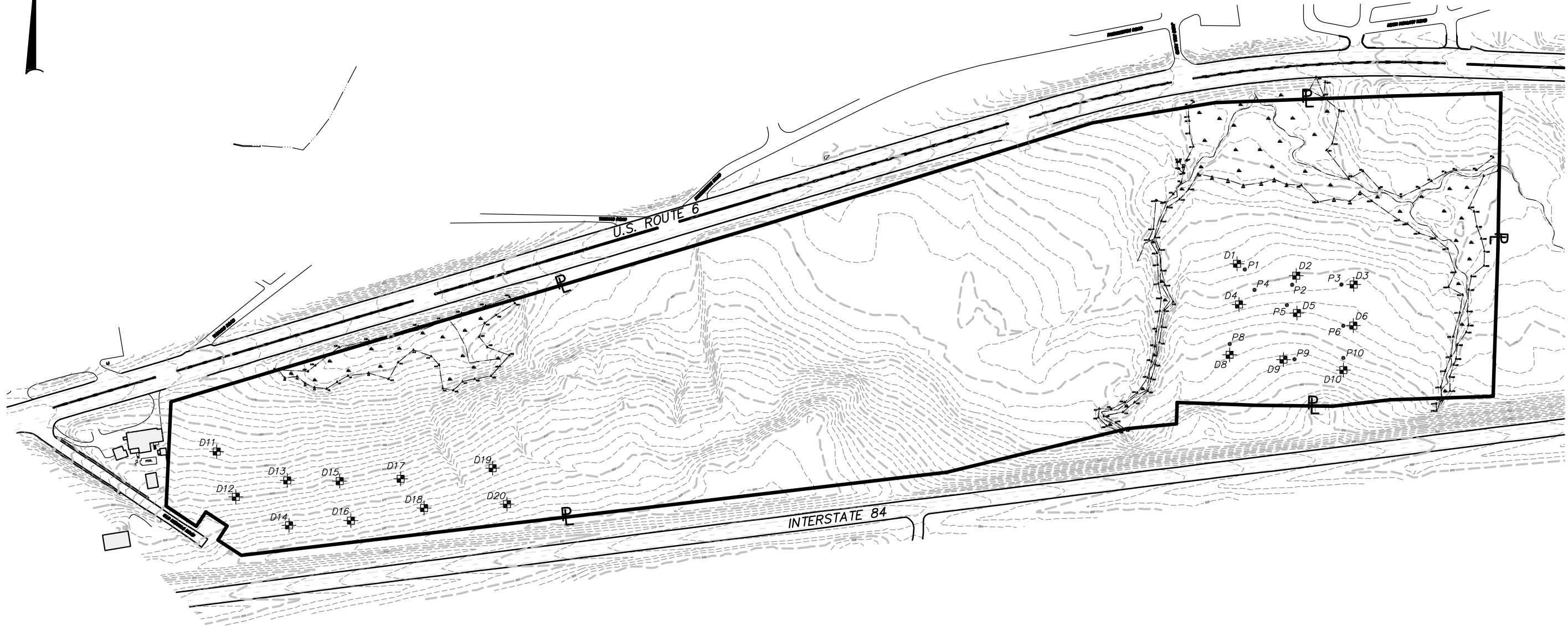
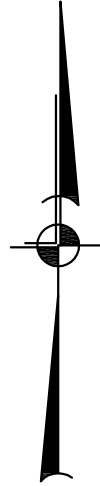
Signature: 

Design Professional's Seal



FIGURES

Z:\E\03157100\DT-2.dwg, 12/4/2007 8:49:41 AM, phil, 1:1



LEGEND	
	Percolation Test Hole Location
	Deep Test Hole Location

NOTES:

1. THE DEEP TEST HOLES SHOWN ON THIS PLAN WERE WITNESSED BY PCDOH AND NYCDEP ON 6-19-07.
2. THE PERCOLATION TEST HOLES SHOWN ON THIS PLAN WERE WITNESSED BY PCDOH AND NYCDEP ON 11-27-07.

DATE: 11-30-07
 SCALE: 1"=250'
 PROJECT NO.: 03157.100
 FIGURE: DT-2

INSITE
 ENGINEERING, SURVEYING &
 LANDSCAPE ARCHITECTURE, P.C.
 3 Garrett Place • Carmel, New York 10512
 Phone (845) 225-9690 • Fax (845) 225-9717
 www.insite-eng.com

PREPARED BY:

PROJECT: **STATELINE RETAIL CENTER**
 U.S. ROUTE 6, TOWN OF SOUTHEAST, PUTNAM COUNTY, NEW YORK
 DRAWING: **WITNESSED TEST HOLE LOCATION MAP**

