

**FINAL GEOTECHNICAL ENGINEERING REPORT**

**42" RIVER ROAD SEWER**

**MIDDLETOWN, CONNECTICUT**

**AUGUST 2014**

**CDR MAGUIRE INC.  
ENGINEERS  
ROCKY HILL, CONNECTICUT**

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FINAL GEOTECHNICAL ENGINEERING REPORT  
42" RIVER ROAD SEWER  
MIDDLETOWN, CONNECTICUT

I. PURPOSE AND SCOPE

This report presents the determination and analysis of the subsurface soil and rock conditions which will affect the design and construction of the 42 inch River Road Sewer in Middletown, Connecticut. Under this project, a 42 inch gravity sewer will be constructed between the existing Middletown WWTF on River Road and the New Francis T. Patnaude Inter Municipal Pumping Station on East Main Street/DeKoven Drive. In addition to the recent borings drilled along the alignment, existing subsurface exploration data, published geological data and field observations were utilized in the analysis of the subsurface conditions and in determining the recommendations for this project. The appendix of this report contains a boring location plan, a generalized soil profile, the engineers boring logs for the borings recently drilled along the alignment and file copies of the logs of borings previously drilled along the project route.

II. FIELD SUBSURFACE INVESTIGATIONS

Three borings (B-11, B-24 and B-25) were drilled along the proposed gravity sewer alignment in February and March 2013. These borings were drilled by Soiltesting, Inc. of Oxford, CT under contract to CDR Maguire Inc. These borings were advanced to depths ranging from 22.0 feet to 51.0 feet below ground surface utilizing 4-1/4" inside diameter hollow stem augers. Soil samples were obtained from the borings by driving a 1-3/8" inside diameter split spoon sampler with a 140 pound weight falling 30 inches.

Additional subsurface data was obtained from seven (7) borings previously drilled along the project route. Borings B-14, B-15 and B-64 through B-68 were drilled in August, September and October 1970 by Connecticut Test Borings, Inc. of Seymour, CT. These borings were drilled to depths ranging from 11.0 to 51.5 feet with hollow stem augers. Soil samples were obtained by driving 1-3/8" inside diameter split spoon samplers with 140 pound weights falling 30 inches.

The locations of all the borings are shown on Figure 1. The boring logs are included in the Appendix of this Report.

### III. SUBSURFACE SOIL AND ROCK CONDITIONS

The subsurface soil and rock conditions along the route of the 42 inch River Road Sewer in Middletown, CT will be discussed below. Reference should be made to the generalized soil profile developed from the results of the subsurface explorations which shows the basic pattern of soil deposits and rock found along the proposed alignment. This profile is shown on Figure 2 in the Appendix of this report. The following proportions are used in all soil descriptions: trace = 1% to 10%; little = 11% to 20%; some = 21% to 35%; and = 36% to 50%.

Three (3) major soil strata are present along the alignment of the proposed gravity sewer. The following is a generalized description of the soils encountered from the surface downward.

- An artificial fill of various depth and composition. Between approximately stations 0+00 and 2+50 the fill is up to 30 feet deep and is composed predominantly of loose cinders mixed with sand. Between approximately stations 2+50 to 5+00 the fill is a roadway embankment composed of gravelly silty sand up to 45 feet thick. Blow counts on the split spoon sampler indicate that the relative density of the roadway embankment varies from loose to dense. The fill along the remainder of the alignment is composed of loose silty sand containing traces of miscellaneous fill material up to 16 feet thick.
- A stratum of loose gray silt containing traces of clay and organic material up to 37 feet thick.
- A stratum of gravelly, silty sand approximately 15 feet thick. The relative density of this stratum varies from loose to very dense with density generally increasing with depth.

Bedrock, consisting of red-brown siltstone, underlies the gravelly, silty sand.

Groundwater was encountered in all of the borings at elevations ranging from El. 0.0 to El. 7.0 feet. These water levels may vary somewhat with the water levels in the Connecticut River and Sumner Creek, which are located to the east and north of the proposed sewer alignment, respectively.

#### IV. FOUNDATION ANALYSIS AND RECOMMENDATIONS

A foundation analysis and recommendations for design and construction of the 42 inch River Road Sewer in Middletown, CT are presented below. Referring to the following analyses, conclusions and recommendations without referring to the several features previously discussed may result in interpreting certain statements out of context with the desired meaning. References to the preceding discussions, knowledge of the field geological conditions and an interpretative judgment based on the actual appearance and behavior of the subsurface soils comprising the foundation materials are all necessary prior to the most beneficial use of these conclusions and recommendations. With respect to the above presumption, the following analyses, conclusions and recommendations are presented for the work within the project limits.

As presently proposed, the 42" gravity sewer will be constructed utilizing standard cut and cover methods between approximately stations 0+00 to 1+10 and 6+95 to 7+90. Between approximately stations 5+00 to 5+80 the pipe will be supported on a bridge structure. The remainder of the pipe will be installed utilizing jacking, directional drilling or micro tunneling methods or a combination thereof. The 42 inch sewer will be installed inside a 60 inch steel sleeve in these areas.

Between approximately stations 0+00 to 5+00 the pipe or sleeve the pipe or sleeve will predominantly bear in the artificial fill although the bottom of the 60 inch sleeve will be close to the top of the silt stratum. Between approximately stations 5+80 to 7+90 the pipe or sleeve will bear either in the bottom of the sandy, fill material or the top of the silt stratum.

The results of the laboratory testing performed on similar soils at the proposed new sewage pump station site indicate that all of the natural soils present along the proposed gravity sewer alignment are incompressible, non plastic soils containing only trace amounts of organic material and clay-size particles. Therefore, with the exception of the artificial fill between stations 0+00 to 1+10, all of these soils will provide suitable foundation support for the proposed pipes and appurtenant structures. The artificial fill between stations 0+00 to 1+10 is of highly variable makeup and density and contains significant amounts of ash, cinder, broken brick and concrete in some locations and is, therefore, considered unsuitable for support of the pipes and appurtenant structures.

As stated above, the artificial fill between approximately stations 0+00 to 1+10 is considered to be unsuitable for support of the proposed pipe. As a result, it is recommended

that the pipe installed in this area be supported on piles driven to refusal on bedrock. It is recommended that concrete filled pipe piles, similar to those to be used to support the new sewage pump station, be utilized. The average pile length is anticipated to be approximately 40 feet.

An alternate method of pipe support suitable for use in this area would be to drive permanent steel sheeting to bearing in the gravelly, silty sand overlying the bedrock along both sides of the pipe. The pipe would then be constructed on a six inch layer of bedding material placed on timber lagging connected to and supported by the sheeting. The average length of the permanent sheeting would be approximately 30 feet below pipe invert. It is recommended that the sheeting be cut off about five feet above pipe invert.

The bridge structure proposed to carry the pipe between approximately stations 5+00 to 5+80 will also require pile foundations. It is recommended that the piles for this structure be driven to refusal on bedrock. It is recommended that concrete filled pipe piles, similar to those to be used to support the new sewage pump station, be utilized. It is anticipated that the average pile length for this structure will be about 50 feet.

Both the artificial fill, composed predominantly of silty sand and the underlying silt will provide suitable bearing for the proposed pipe between approximately stations 6+95 to 7+90. However, if the fill at pipe grade is observed to contain significant quantities of brick, concrete, cinders, ash or other unsuitable material, the fill should be excavated to its full depth and be replaced with compacted granular soil prior to placement of the pipe.

The existing soils at foundation grade are judged to be suitable for support of the 60 inch pipe sleeve in all areas where the pipe is to be installed by jacking, directional drilling or micro tunneling methods. Due to the high water table in the project area, it is recommended that all installation and receiving pits associated with these operations be supported by appropriately braced temporary steel sheeting.

It is recommended that the Contractor be responsible for the design of both the excavation support and dewatering systems utilized on this project since the methods of construction will have a significant bearing on the design of these installations. A minimum factor of safety of 1.25 must be provided in design of all excavation support systems.

While the silts present at or near the pipe grade between approximately stations 6+95 to 7+90 will provide adequate support for the pipes and appurtenant structures, when saturated,

these soils are very sensitive to liquefaction if subjected to vibrations during construction, Therefore, it is extremely important that proper techniques for dewatering of the excavations and compaction of the bedding material and trench backfill be utilized during construction. The groundwater levels observed at the time of completion of the borings indicate that the natural groundwater levels will be near the bottom of excavation during all pipe installation. Therefore, dewatering of the excavations will likely be required during construction. To avoid possible instability of the foundation soils during construction, it is recommended that wellpoints or dewatering wells be installed and pumped to lower the water table in the vicinity of construction operations. Pumping from within the excavation without the use of wellpoints or dewatering wells may be ineffective in obtaining a stable bottom of excavation during placement and compaction of the bedding material and pipe installation. In addition, it is strongly recommended that static compaction methods be utilized when compacting all bedding and trench backfill in this area.

No excavation of bedrock is anticipated during construction of this proposed gravity sewer.

It is recommended that a minimum of 6 inches of bedding material consisting of well graded coarse grained soil be provided beneath the proposed pipes and appurtenant structures in all areas where cut and cover construction methods are to be utilized. A well graded coarse grained soil should also be placed outside the pipes for the full trench width and extending to a minimum of one (1) foot above the pipe in unpaved areas. All of the above referenced bedding and backfill material should be compacted to 95 percent of maximum dry density. In unpaved areas, the remainder of the trench may be backfilled with excavated material compacted to 90 percent of maximum dry density. In all paved areas, the entire trench should be backfilled with well graded granular soil compacted to 95 percent of maximum dry density. Crushed stone is not recommended for use as pipe bedding or trench backfill on this project.

No compressible material or material containing significant amounts of ash, cinder, broken brick, concrete or other objectionable materials should be used as backfill and all waste material must be discarded outside the project limits. In addition, all waste material characterized as controlled material as a result of the environmental investigations completed for this project must be disposed of at an approved disposal/recycling facility. If construction is to take place during the winter months, all ice, snow and frozen material will be considered unsuitable for use as trench backfill.

The Contractor will be required to maintain all existing utilities in their present location and condition during all construction operation. Care should also be taken to prevent pollution and silting of all streams and wetlands adjacent to the project site to the greatest possible extent.

It is recommended that all gravel, crushed stone and pavement materials utilized on this project conform to the City of Middletown specifications referencing State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, including all addenda thereto.

# **APPENDIX**

REVISIONS		
Number	Description	Date

ISSUED FOR:  
DEEP REVIEW



**FRANCIS T. PATNAUDE  
 INTER-MUNICIPAL  
 PUMPING STATION**

MIDDLETOWN, CT

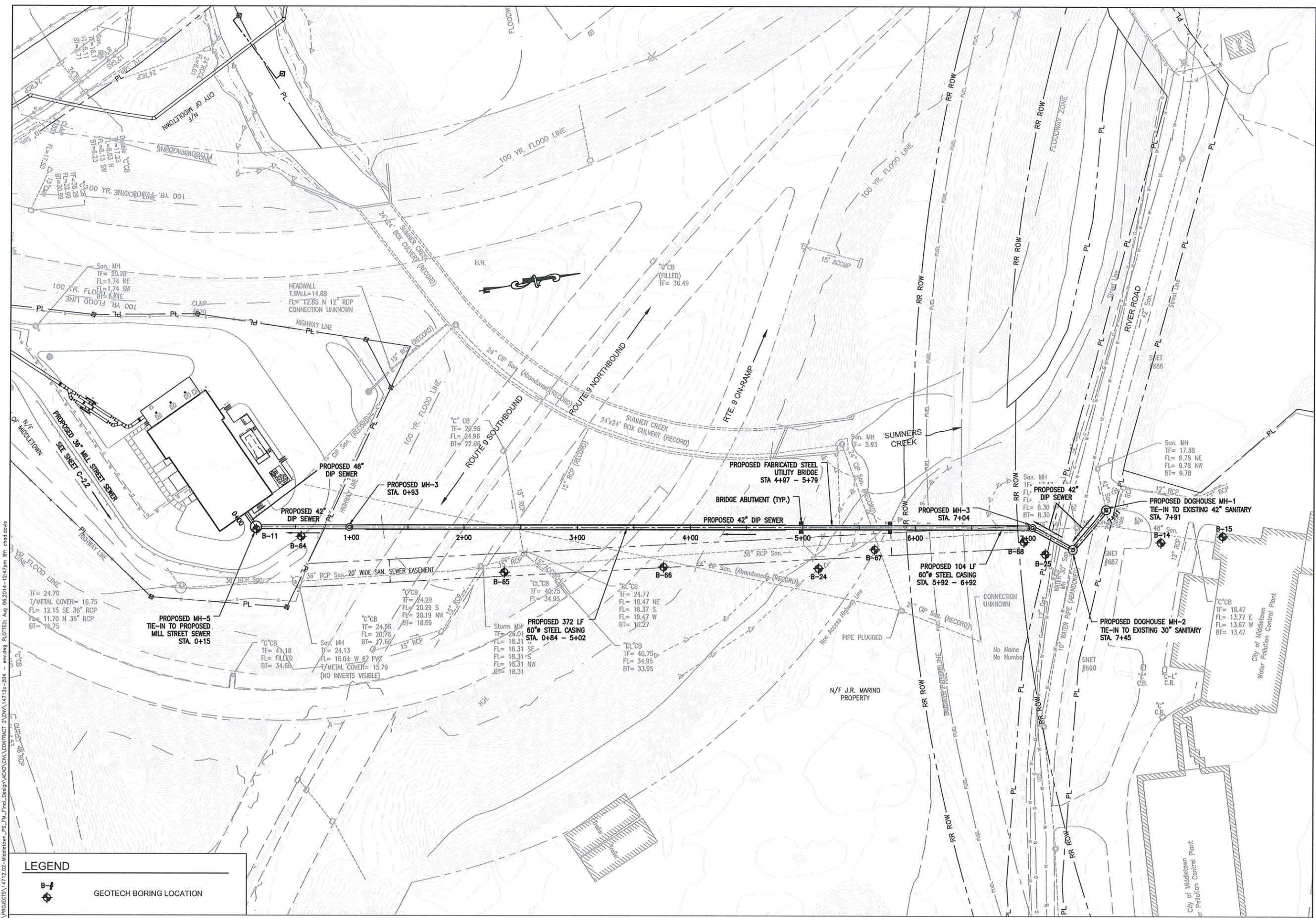
**42" RIVER ROAD  
 SEWER  
 BORING LOCATION  
 PLAN**

PROJECT NUMBER: 14712.02  
 DESIGNED BY: DRS  
 DRAWN BY: CAD  
 DATE: JULY 31, 2014

SHEET NUMBER:

**FIG. 1**

SHEET # OF #



**LEGEND**

	GEOTECH BORING LOCATION
--	-------------------------



DRAWING FILE: G:\PROJECTS\14712.02-Middletown\_PS\_Final\_Design\NVD\CONTRACT\_A\ENVA\14712-204 - env.dwg PLOTTED: Aug 06, 2014 12:47pm BY: chnd.davis

REVISIONS

Number	Description	Date

ISSUED FOR:  
 DEEP REVIEW



FRANCIS T. PATNAUDE  
 INTER-MUNICIPAL  
 PUMPING STATION

MIDDLETOWN, CT

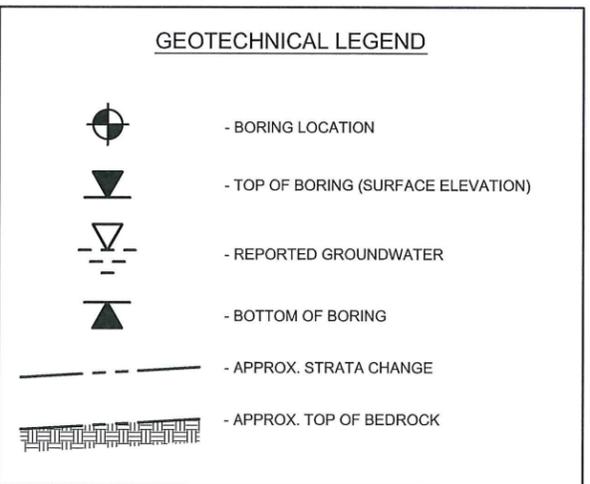
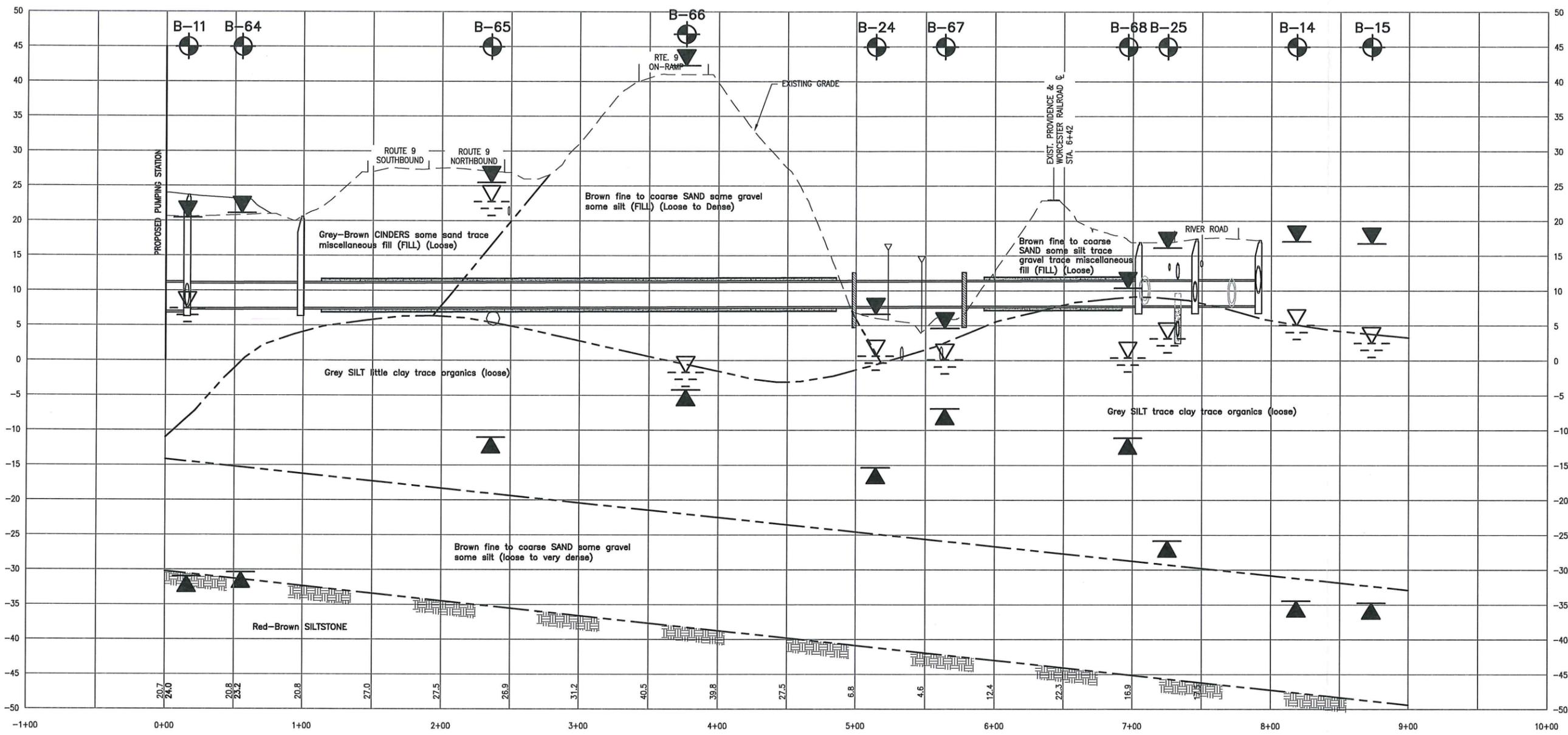
42" RIVER ROAD  
 SEWER  
 GENERALIZED SOIL  
 PROFILE

PROJECT NUMBER: 14712.02  
 DESIGNED BY: TJC  
 DRAWN BY: TJC  
 DATE: JULY 31, 2014

SHEET NUMBER:

**FIG. 2**

SHEET # OF #



DRAWING FILE: G:\PROJECTS\14712.02-Middletown\_PS\_Final\_Design\NCAD\CAD\CONTRACT 2\DWG\14712c-204 - emc.dwg PLOTTED: Aug 06, 2014 - 12:47pm BR: chad.davis

<b>BORING CONTRACTOR:</b> Soiltesting Inc. 90 DONAVAN RD Oxford ct.		<b>CDR MAGUIRE INC. ENGINEERS BORING LOG</b>		SHEET <u>1</u> OF <u>1</u>	
<b>LOG PREPARED BY:</b> CONTR. _____ CDR <u>RL</u>		TOWN, STATE: <u>Middletown Ct.</u>		LOCATION: <u>See Plan</u>	
		PROJECT NAME: <u>Middletown Municipal Force Main Pump Station</u>		HOLE NO: <u>B-11</u>	
		CDR NO. <u>14712.02</u> OFFICE: <u>Rocky Hill Ct.</u>		BORING TYPE: <u>B</u>	
<b>GROUND WATER OBSERVATIONS</b>		SURFACE ELEV. <u>20.45</u>		DATE STARTED-FINISHED: <u>FEB 26 2013</u>	
AT <u>13</u> FT. After <u>0</u> HOURS		BAR. TYPE <u>H.S.A.</u>		BORING FOREMAN: <u>Matt DeAngelis</u>	
AT _____ FT. After _____ HOURS		SIZE I.D. <u>4.25"</u>		INSPECTOR: <u>R. Lindenberger</u>	
		HAMMER WT. _____		SOILS ENGR: <u>D.Stock</u>	
		HAMMER FALL _____			

LOCATION OF BORING: See Plan

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER			STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE		
				FROM 0-6	6-12	TO 12-18			NO.	PEN.	REC.
0		0'-2'	SS	27	14	9	Dry Medium Dense	Br. f-c SAND, little Silt, little f Gravel. (FILL)	1	24"	6"
				11							
5		5'-7'	SS	3	7	9	Dry Medium Dense	Blk. f-c SAND, Cinders, tr. Brick, tr. f Gravel. (FILL)	2	24"	14"
				10							
10		10'-12'	SS	2	2	2	Moist Loose	Br. Gry. CINDERS. (FILL)	3	24"	10"
				2							
15		15'-17'	SS	1	1	1	Wet Loose	Br. Gry. CINDERS. (FILL)	4	24"	24"
				1							
20		20'-22'	SS	3	5	2	18'-29' Wet Loose	Br. CINDERS, f-c SAND, Gravel. (FILL)	5	24"	24"
				2							
25		25'-27'	SS	2	2	5	Wet Loose	Br. CINDERS, f-c SAND, Gravel. (FILL)	6	24"	24"
				2							
30		30'-32'	SS	1	2	3	29'-36' Wet Loose	Br. SILT.	7	24"	24"
				4							
35		35'-37'	SS	2	3	3	35' Wet Loose	Br. f-c SAND, some Gravel, little Silt, tr. Wood.	8	24"	12"
				4							
40		40'-42'	SS	2	3	2	Wet Loose	Drk. Br. SILT, and f-c Sand, little Gravel.	9	24"	10"
				2							
45		45'-47'	SS	10	9	14	Wet Medium Dense	Drk. Br. f-c SAND, and SILT, little Gravel.	10	24"	
				12			47'				
50		50'-50'4"	SS	50/4"			Wet Very Dense	Red Br. f-m SAND, some Silt, little Gravel. (TILL)	11	4"	
							51'				
								Auger Refusal Bottom of boring			

GROUND SURFACE TO <u>56</u> FT. Used <u>H.S.A.</u> " CASING: THEN _____ : CASING TO _____ FT.	FOOTAGE IN EARTH	<u>56</u>
D = DRY W = WASHED C = CORED P = PIT A = AUGER V = VANE TEST	FOOTAGE IN ROCK	<u>5</u>
UP = UNDISTURBED, PISTON UB = UNDISTURBED, BALL CHECK OER = OPEN END ROD	NO. OF SAMPLES	<u>12</u>
PROPORTIONS USED: TRACE=0-10%, LITTLE=10-20%, SOME=20-35%, AND 35-50%	HOLE NO.	<u>B</u>
	TYPE	<u>B</u>

<b>BORING CONTRACTOR:</b> Soiltesting Inc. 90 DONAVAN RD Oxford ct.		<b>CDR MAGUIRE INC.</b> <b>ENGINEERS</b> <b>BORING LOG</b>		SHEET <u>1</u> OF <u>1</u>	
<b>LOG PREPARED BY:</b> CONTR. _____ CDR <u>RL</u>		TOWN, STATE: <u>Middletown Ct.</u>		LOCATION: <u>See Plan</u>	
		PROJECT NAME: <u>Middletown Municipal Force Main Pump Station</u>		HOLE NO: <u>B-24</u>	
		CDR NO. <u>14712.02</u> OFFICE: <u>Rocky Hill Ct.</u>		BORING TYPE: <u>B</u>	
<b>GROUND WATER OBSERVATIONS</b>		AUGER H.S.A.		SURFACE ELEV. <u>6.65</u>	
AT <u>6</u> FT. After <u>0</u> HOURS		BAR. TYPE _____		DATE STARTED-FINISHED: <u>March 4 2013</u>	
AT _____ FT. After _____ HOURS		SIZE I.D. <u>4.25"</u>		BORING FOREMAN: <u>Tom</u>	
		HAMMER WT. _____		INSPECTOR: <u>R. Lindenberger</u>	
		HAMMER FALL _____		SOILS ENGR: <u>D. Stock</u>	

LOCATION OF BORING: See Plan

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER			STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE		
				FROM 0-6	6-12	TO 12-18			NO.	PEN.	REC.
0											
5		5'-7'	SS	5	2	1	Moist Loose 7'	Red Br. f-c SAND, little Gravel, tr. Glass, tr. Silt. (FILL)	1	24"	2"
10		10'-12'	SS	5	5	5	Wet Stiff	Gry. Br. SILT, tr. Clay, tr. Organics.	2	24"	10"
15		15'-17'	SS	2	2	2	Wet Medium Stiff	Gry. clayey SILT.	3	24"	24"
20		20'-22'	SS	1	1	1	Wet Stiff	Gry. clayey SILT.	4	24"	24"
							22'	BOTTOM OF BORING			

GROUND SURFACE TO <u>20</u> FT. Used <u>2.5"</u> CASING: THEN _____ : CASING TO _____ FT.	FOOTAGE IN EARTH	22
D = DRY W = WASHED C = CORED P = PIT A = AUGER V = VANE TEST	FOOTAGE IN ROCK	0
UP = UNDISTURBED, PISTON UB = UNDISTURBED, BALL CHECK OER = OPEN END ROD	NO. OF SAMPLES	4
PROPORTIONS USED: TRACE=0-10%, LITTLE=10-20%, SOME=20-35%, AND 35-50%	HOLE NO.	B
	TYPE	B

<b>BORING CONTRACTOR:</b> Soiltesting Inc. 90 DONAVAN RD Oxford ct.	<b>CDR MAGUIRE INC.</b> <b>ENGINEERS</b> <b>BORING LOG</b>	<b>SHEET</b> 1 <b>OF</b> 1
<b>LOG PREPARED BY:</b> CONTR. _____ CDR RL	<b>TOWN, STATE:</b> Middletown Ct. <b>PROJECT NAME:</b> Middletown Municipal F Main Pump Station <b>CDR NO.</b> 14712.02 <b>OFFICE:</b> Rocky Hill Ct.	<b>LOCATION:</b> See Plan <b>HOLE NO:</b> B-25 <b>BORING TYPE:</b> B <b>LINE &amp; STA:</b> N/A <b>OFFSET:</b> N/A

<b>GROUND WATER OBSERVATIONS</b>	<b>AUGER</b> H.S.A. <b>CASING</b> <b>SAMPLER</b> SS <b>CORE</b> 1 3/8 <b>DATE STARTED-FINISHED:</b> FEB 24/25 2013 <b>BORING FOREMAN:</b> Matt DeAngelis <b>INSPECTOR:</b> R. Lindenberger <b>SOILS ENGR:</b> D.Stock
AT 13 FT. After 0 HOURS	<b>SURFACE ELEV.</b> 16.15
AT _____ FT. After _____ HOURS	<b>BAR.</b> _____ <b>TYPE</b> _____ <b>SIZE I.D.</b> 4.25" <b>HAMMER WT.</b> _____ <b>HAMMER FALL</b> _____

**LOCATION OF BORING:** See Plan

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER			STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE		
				FROM 0-6	6-12	TO 12-18			NO.	PEN.	REC.
0		0'-2'	SS	11	13	11	Med. Dense	Red Br. f-c SAND, little Gravel, little Silt.	1	24"	6"
				14							
5		5'-7'	SS	7	8	6	Med. Dense	Red Br. f-c SAND, little Gravel, little Silt.	2	24"	14"
				8							
							7'				
10		10'-12'	SS	WOH	WOH	WOH	Loose	Br. SILT.	3	24"	10"
				1							
15		15'-17'	SS	1	1	1	Loose	Br. SILT.	4	24"	24"
				1							
20		20'-22'	SS	1	2	1	Loose	Gry. Br. SILT	5	24"	24"
				1							
25		25'-27'	SS	WOH	1	2	Loose	Gry. Br. SILT	6	24"	24"
				3							
30		30'-32'	SS	2	1	2	29' Loose	Gry. SILT.	NR	24"	0"
				1							
35		35'-37'	SS	4	6	6	Med. Dense	Gry. SILT.	7	24"	12"
				9							
40		40'-42'	SS	2	4	5	Med. Dense	Gry. SILT.	8	24"	10"
				6							
							42'				
								BOTTOM OF BORING			

<b>GROUND SURFACE TO</b> 42 <b>FT. Used</b> H.S.A. <b>" CASING: THEN</b> _____ <b>: CASING TO</b> _____ <b>FT.</b>	<b>FOOTAGE IN EARTH</b> 42
<b>D = DRY W = WASHED C = CORED P = PIT A = AUGER V = VANE TEST</b>	<b>FOOTAGE IN ROCK</b> 0
<b>UP = UNDISTURBED, PISTON UB = UNDISTURBED, BALL CHECK OER = OPEN END ROD</b>	<b>NO. OF SAMPLES</b> 8
<b>PROPORTIONS USED: TRACE=0-10%, LITTLE=10-20%, SOME=20-35%, AND 35-50%</b>	<b>HOLE NO.</b> _____ <b>TYPE</b> B

DATE START 9-2-70  
 DATE FINISH 9-2-70  
 WEIGHT OF HAMMER 140 \*\*\*  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE 9-2-70 TIME DEPTH 12'0"  
 SAMPLER O.D. 2" 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET 1 of 2  
 PROJ. NO.  
 Sewerage Treatment Plant  
 LOCATION River Rd.  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION 17.06  
 HOLE NO. B-14  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN	REC.
	0' to 2'0"	SS	4	6	14	Med. Comp. Moist	Br. sand, silt and med. gravel (Fill)	1	24"	17"	
	5' to 6'6"	SS	4	3	4	Loose Moist	Br. silt, bricks, Tr. sand and fine gravel	2	18"	16"	
10	10' to 11'6"	SS	1	2	1	Loose Moist	Br. C-F sand and silt, pieces of wood	3	18"	8"	
	15' to 17'0"	SS PRESSED				Loose Moist	Gray silt mixed with Br. sand and gravel (tube not excepted)	4	24"	4"	
	17' to 19'0"	SS	6	7	5	M. Comp. Wet	Gray silty sand, layers of fibrous silt (Tube not excepted)	5	24"	18"	
20	20' to 22'0"	ST PRESSED				M. Comp. Wet		6	24"	3"	
	23' to 25'0"	ST PRESSED				M. Comp. Wet		7	24"	18"	
	25' to 27'0"	SS	1	1	1	Soft Wet		Gray silt, Tr. fine sand	8	24"	20"
	27' to 29'0"	SS	1	2	2	" " "	Same	9	24"	24"	
30	30' to 32'0"	ST PRESSED				" " "	Gray silt	10	24"	24"	
	32'6" to 34'0"	SS	3	3	4	" " "	Gray silt, Tr. clay	11	18"	18"	
	35' to 37'0"	ST PRESSED				" " "	Slipped sample	-	24"	-	
	37' to 39'0"	SS	4	4	4	Soft Wet	Gray silt, Tr. clay	12	24"	16"	
40	40' to 42'0"	SS	3	4	6	M. Comp. Wet	Gray silt	13	24"	18"	

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

TOTAL FOOTAGE Con't

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DRILLER: \_\_\_\_\_  
 HELPER: \_\_\_\_\_  
 SOILS ENGINEER: \_\_\_\_\_  
 DRILLING INSPECTOR: \_\_\_\_\_

**SAMPLE TYPE**  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

**COHESIONLESS DENSITY**  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

Earth Boring Ft.  
 Rock Coring Ft.  
 HOLE NO.

DATE START **9-2-70**  
 DATE FINISH **9-2-70**  
 WEIGHT OF HAMMER 140 **800\*\***  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE 9-2-70 TIME DEPTH 12'0"  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG **Auger**

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET 2 of 2

PROJ. NO.  
**Sewerage Treatment Plant**  
 LOCATION **River Rd.**  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION **17.06**  
 HOLE NO. **B-14**  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN	REC.
	45' to 47'0"	SS	2	5	7	Med. Comp. Wet			14	24"	20"
	48' to 49'6"	SS	8	11	16	" " "	48'		15	18"	14"
	50' to 51'6"	SS	28	16	13	" " "			16	18"	14"
	Bottom of boring 51'6"										

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: **P. Hicks**  
 HELPER: **Sam**  
 SOILS ENGINEER:  
 DRILLING INSPECTOR:

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE **51'6"**  
 Earth Boring **51'6"** Ft.  
 Rock Coring  
 HOLE NO. **B-14**

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START 8-27-70  
 DATE FINISH 8-27-70  
 WEIGHT OF HAMMER 140  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE 8-27-70 TIME 14:30 DEPTH  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857  
 ESPECIALLY COMPILED FOR  
 CITY OF MIDDLETOWN

SHEET 1 of 2  
 PROJ. NO.  
 Sewerage Treatment Plant  
 LOCATION River Rd.  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION 16.76  
 HOLE NO. B-15  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN.	REC.
	0' to 1'6"	SS	7	17	32	Dense Dry	Br. C-F sand and silt and gravel and fill.	1	18"	7"	
	5' to 6'6"	SS	2	2	3	Loose Moist	Br. F-C sand and silt, Tr. fine gravel	2	18"	16"	
10	10' to 11'6"	SS	2	2	3	Loose Moist	Same	3	18"	14"	
							13'				
	15' to 17'	ST. Pressed				Loose Moist	Gray silt	4	24"	24"	
	17' to 19'	SS 2	4	6	5	M. Comp. Moist	Same	5	24"	18"	
20	20' to 22'	ST. Pressed				" "	Same	6	24"	15"	
	22' to 24'0"	SS	3	4	5	Loose Wet	Gray sand silt	7	24"	18"	
	25' to 27'0"	SS	17	6	8	Med. Comp. Wet	Gray fine sand, pieces of wood	8	24"	16"	
30	30' to 32'0"	SS	1	2	2	Soft Wet	Gray silt, Tr. clay	9	24"	18"	
	32' to 34'0"	SS	2	2	4	Soft Wet	Same	10	24"	17"	
	35' to 37'0"	SS	1	2	3	Soft Wet	Same	11	24"	17"	
40	40' to 42'6"	SS	1	4	4	Soft Wet	Gray silt, little clay	12	24"	18"	

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DRILLER: \_\_\_\_\_  
 HELPER: \_\_\_\_\_  
 SOILS ENGINEER: \_\_\_\_\_  
 DRILLING INSPECTOR: \_\_\_\_\_

**SAMPLE TYPE**  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

**COHESIONLESS DENSITY**  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE: Con't  
 Earth Boring Ft.  
 Rock Coring Ft.  
 HOLE NO. B-15

DATE START **8-27-70**  
 DATE FINISH **8-27-70**  
 WEIGHT OF HAMMER 140 **40\***  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE **8-27-70** TIME DEPTH **14'3"**  
 SAMPLER O.D. **2"** I.D. **1 3/8"**  
 TYPE OF RIG **Auger**

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET **2** of **2**  
 PROJ. NO.  
**Sewerage Treatment Plant**  
 LOCATION **River Rd.**  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION **16.7E**  
 HOLE NO. **B-15**  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 2' ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN.	REC.
								Gr. silt, little clay			
	<b>45' to 47' 10"</b>	<b>SS</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>Med. Comp. Wet</b>		<b>Gr. silt, little clay, Tr. fine sand</b>	<b>13</b>	<b>24</b>	<b>14</b>
10	<b>50' to 51' 6"</b>	<b>SS</b>	<b>17</b>	<b>22</b>	<b>36</b>	<b>Dense Wet</b>		<b>Br. C-F sand and C-F gravel, little silt</b>	<b>14</b>	<b>18</b>	<b>10</b>
								<b>Bottom of boring 51' 6"</b>			

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: **Paul Hicks**  
 HELPER: **Sam**  
 SOILS ENGINEER:  
 DRILLING INSPECTOR:

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE: **51' 6"**  
 Earth Boring **51' 6"**  
 Rock Coring **ft.**  
 HOLE NO. **B-15**

DATE START **9-14-70**  
 DATE FINISH **9-14-70**  
 WEIGHT OF HAMMER 140 **\*\*\***  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE TIME DEPTH  
 SAMPLER O.D. 2" 1.07 3/8"  
 TYPE OF RIG **Auger**

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET **1** of **2**  
 PROJ. NO. \_\_\_\_\_  
**Sewerage Treatment Plant**  
 LOCATION  
 LINE & STA. \_\_\_\_\_  
 OFFSET \_\_\_\_\_  
 GROUND ELEVATION **21.13**  
 HOLE NO. **B-64**  
 CASING SAMPLER CORE BARREL  
 TYPE \_\_\_\_\_  
 SIZE I.D. \_\_\_\_\_

ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN.	REC.
0'	0" to 1'6"	SS	6	8	13	Med. Comp. Dry	(2" Topsoil) Br. C-F sand, some M-F gravel, Tr. silt	1	18	16"	
4'	5' to 6'6"	SS	11	4	4	Loose Moist	Cinders, ashes, glass.	2	18	14"	
10'	10' to 11'6"	SS	2	2	3	Loose Moist	Same	3	18	12"	
15'	15' to 16'6"	SS	1	3	4	Loose Moist	Ashes, etc.	4	18	15"	
20'	20' to 21'6"	SS	16	37	6	Med. Comp. Wet	Gray organic silt, Tr. silt (pieces wood)	5	18	16"	
25'	25' to 26'6"	SS	1	2	2	Loose Wet	Gray silty clay	6	18	14"	
30'	30' to 31'6"	SS	1	2	2	Loose Wet	Same	7	18	15"	
35'	35' to 36'6"	SS	1	1	1	Loose Wet	Gray silt and clay	8	18	16"	
40'	40' to 41'6"	SS	7	7	9	M. Comp. Wet	Br. C-F sand, Tr. silt	9	18	15"	

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%  
 TOTAL FOOTAGE **Con't**

DRILLER: **Emil**  
 HELPER: \_\_\_\_\_  
 SOILS ENGINEER: \_\_\_\_\_  
 DRILLING INSPECTOR: \_\_\_\_\_

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

Earth Boring FI  
 Rock Coring FI  
 HOLE NO. **B-64**

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START 9-14-70  
 DATE FINISH 9-14-70  
 WEIGHT OF HAMMER 140 #  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE TIME DEPTH  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET 2 of 2

PROJ. NO.  
**Sewerage Treatment Plant**  
 LOCATION **River Rd.**  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION **21.13**  
 HOLE NO. **B-64 Con't**  
 CASING \* SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN.	REC.
	45' to 46' 6"	SS	5	6	11	Med. Comp. Wet	Br. C-F sand, Tr. silt	10	18" 15"		
10	50' to 51' 6"	SS	54	48	69	V. Dense Wet	Br. C-F sand, C-F gravel, Tr. silt Bottom of boring 51' 6"	11	18" 14"		
20											
30											
40											

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DRILLER: **Emil**  
 HELPER: \_\_\_\_\_  
 SOILS ENGINEER: \_\_\_\_\_  
 DRILLING INSPECTOR: \_\_\_\_\_

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE: **51' 6"**  
 Earth Boring **51' 6"**  
 Rock Coring \_\_\_\_\_ Ft.  
 HOLE NO. **B-64 Con't**

DATE START 10-19-70  
 DATE FINISH 10-19-70  
 WEIGHT OF HAMMER 140 #  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE 10-19-70 TIME 2:19 PM DEPTH 2.9"  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857

SHEET 1 of 1  
 PROJ. NO. Sewerage & Treatment Plant  
 LOCATION  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION 25.5  
 HOLE NO. B-65  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN.	REC.
	5' to 6' 6"	SS	2	3	3	Loose Dry	Br. C-F sand, Tr. fine gravel	1	18	10"	
10	10' to 11' 6"	SS	4	5	7	Med. Comp. Dry	Same	2	18	14"	
	15' to 16' 6"	SS	2	3	7	Med. Comp. Moist	Br. C-F sand and silt, some M-F gravel	3	18	12"	
20	20' to 21' 6"	SS	5	8	10	Med.. Comp. Moist	Same	4	18	15"	
	25' to 26' 6"	SS	3	3	7	Med. Comp. Moist	24' Gray clayey silt	5	18	6"	
30	30' to 31' 6"	SS	3	4	4	Med. Comp. Moist	Gray clayey silt	6	18	18"	
	35' to 36' 6"	SS	4	5	7	Med. Comp. Moist	Gray clayey silt Bottom of boring 36' 6"	7	18	18"	

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: P. Hicks  
 HELPER:  
 SOILS ENGINEER:  
 DRILLING INSPECTOR:

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE: 36' 6"  
 Earth Boring 36' 6"  
 Rock Coring Ft.  
 HOLE NO. B-65

10-19-70

SOIL SAMPLING LOG

SHEET 1 of 2

CONNECTICUT TEST BORINGS, INC.

NISH 10-19-70

Sub-Surface Specialists

PROJ. NO. Sewerage Treatment Plant

GHT. OF HAMMER 140 \*\*\*

P. O. Box 69

LOCATION

HAMMER FALL 30" 24"

SEYMOUR, CONNECTICUT

LINE & STA.

GROUND WATER OBSERVATIONS

ESPECIALLY COMPILED FOR

OFFSET

DATE 10-19-70 TIME DEPTH 44'

CITY OF MIDDLETOWN

GROUND ELEVATION 42.3

SAMPLER O.D. 2" I.D. 1 3/8"

HOLE NO. B-66

CASING SAMPLER CORE BARREL

TYPE OF RIG Auger

TYPE

SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN.	REC.
	5' to 6' 6"	SS	2	3	5	Loose Moist	Br. C-F sand, some silt, some M-F gravel	1	18"	14'	
10	10' to 11' 6"	SS	4	7	7	Med. Comp. Moist	Same	2	18"	16'	
	15' to 16' 6"	SS	11	14	30	Dense Moist	Same	3	18"	13'	
20	20' to 21' 6"	SS	10	10	19	Dense Moist	Br. C-F sand and C-F gravel, some silt	4	18"	18'	
	25' to 26' 6"	SS	9	16	27	Dense Moist	Same	5	18"	10'	
30	30' to 31' 6"	SS	12	11	15	Med. Comp. Moist	Same	6	18"	14'	
	35' to 36' 6"	SS	10	18	18	Dense Moist	Same	7	18"	16'	
40	40' to 41' 6"	SS	3	6	8	M. Comp. Wet	Same	8	18"	18'	

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

TOTAL FOOTAGE: Con't

DRILLER: P. Hicks  
HELPER:  
SOILS ENGINEER:  
DRILLING INSPECTOR:

SAMPLE TYPE  
C = CORED W = WASHED  
SS = SPLIT SPOON  
UP = UNDISTURBED PISTON  
TP = TEST PIT  
UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
0-10 LOOSE  
10-30 MED. COMP.  
30-50 DENSE  
50+ VERY DENSE

Earth Boring Ft.  
Rock Coring Ft.  
HOLE NO B-66

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START 10-19-70  
 DATE FINISH 10-19-70  
 WEIGHT OF HAMMER 140 30#  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE 10-19-70 TIME TIME DEPTH 44.8  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857  
 ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

SHEET 2 of 2  
 PROJ. NO.  
**Sewerage Treatment Plant**  
 LOCATION  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION 42.3  
 HOLE NO. B-66 Con't.  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN.	REC.
							42.6"				
	45' to 46' 6"	SS	2	4	5	Soft Moist	Gray fibrous silt Bottom of boring 46' 6"	9	18	18"	
10											
20											
30											
40											

NOT RESPONSIBLE FOR SAMPLE STORAGE / TER. 30 DAYS

Proportions used trace 0-10%, little 10-20%, some 20-35%, and 35-50%

DRILLER P. Hicks  
 HELPER:  
 SOILS ENGINEER  
 DRILLING INSPECTOR

SAMPLE TYPE  
 C = CORED W = WASHED  
 SS = SPLIT SPOON  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE 46' 6"  
 Earth Boring 46' 6"  
 Rock Coring ft  
 HOLE NO B-66 Con't

DATE START  
 DATE FINISH  
 WEIGHT OF HAMMER 140  
 HAMMER FALL 30" 24"  
 GROUND WATER OBSERVATIONS  
 DATE TIME DEPTH  
 4'6"

SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857  
 ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

SHEET 1 of 1  
 PROJ. NO  
**Sewerage Treatment Plant**  
 LOCATION **River Rd.**  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION 4.6  
 HOLE NO. B-67  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I D

Depth Below Surface	SAMPLE NO DEPTHS ELEV FT	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST MOISTURE	PROFILE CHANGE DEPTH ELEV	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	4-12	To 12-18				NO	REN	REC
	0' to 1'6"	SS	1	1	2	Loose Dry	2'	Br. gravely loam	1	18'13"	
	5' to 6'6"	SS	1	1	1	Loose Wet		Br. fibrous silt	2	18'16"	
10	10' to 11'6"	SS	1	1	1	Loose Wet		Gray silt Bottom of boring 11'6"	3	18'18"	
20											
30											
40											

Proportions used trace = 0-10%, little = 10-20%, some = 20-30%, and = 30-50%

DRILLER: **P. Hicks**  
 HELPER:  
 SOILS ENGINEER:  
 DRILLING INSPECTOR:

SAMPLE TYPE  
 C = CORE W = WASHED  
 SS = SPLIT MONO  
 UP = UNDISTURBED PISTON  
 TP = TEST PIT  
 UT = UNDISTURBED THINWALL

CONSISTENCY DENSITY  
 0-10 LOOSE  
 10-30 MED. COMP.  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE: 11'6"  
 Earth Boring 11'6"  
 Rock Coring ft.  
 HOLE NO. B-67

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START  
 DATE FINISH  
 WEIGHT OF HAMMER 140  
 HAMMER FALL 30' 24"  
 GROUND WATER OBSERVATIONS  
 DATE TIME DEPTH  
 10'  
 SAMPLER O.D. 2" I.D. 1 3/8"  
 TYPE OF RIG Auger

SOIL SAMPLING LOG  
**CONNECTICUT TEST BORINGS, INC.**  
 Sub-Surface Specialists  
 P. O. Box 69  
 SEYMOUR, CONNECTICUT  
 (203) 888-3857  
 ESPECIALLY COMPILED FOR  
**CITY OF MIDDLETOWN**

SHEET 1 of 1  
 PROJ. NO.  
**Sewerage Treatment Plant**  
 LOCATION **River Rd.**  
 LINE & STA.  
 OFFSET  
 GROUND ELEVATION **10.4**  
 HOLE NO. **B-68**  
 CASING SAMPLER CORE BARREL  
 TYPE  
 SIZE I.D.

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN.	REC.
	0' to 1'6"	SS	1	2	2	Loose Moist		18" Loam	1	18	14
	5' to 6'6"	SS	1	1	1	Loose Wet		Br. fibrous silt	2	18	16
10	10' to 11'6"	SS	1	1	1	Loose Wet		Br. silt	3	18	18
	15' to 16'6"	SS	1	1	1	Loose Wet		Gray silt	4	18	18
20	20' to 21'6"	SS	1	1	1	Loose Wet		Gray silt	5	18	18
								Bottom of boring 21'6"			

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

Proportion used trace 0-10%, lime 10-20%, some 20-33%, and 33-50%

DRILLER **P. Hicks**  
 HELPER  
 SOILS ENGINEER  
 DRILLING INSPECTOR

SAMPLE TYPE  
 C CORED W WASHED  
 SS SPLIT SPOON  
 UP UNDISTURBED PISTON  
 TP TEST PIT  
 UT UNDISTURBED THINWALL

COHESIONLESS DENSITY  
 0-10 LOOSE  
 10-30 M.C. COMP  
 30-50 DENSE  
 50+ VERY DENSE

TOTAL FOOTAGE **21'6"**  
 Earth Boring **21'6"**  
 Rock Coring ft.  
 HOLE NO **B-68**