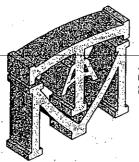
APPENDIX 2C. PRELIMINARY SUBSURFACE INVESTIGATION REPORT



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November 3, 2006

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Gentlemen:

Report Preliminary Subsurface Investigation Proposed Cornwall Commons Residential Development Town of Cornwall, Orange County, New York

Introduction

This report presents the results of a preliminary subsurface investigation performed by Melick-Tully and Associates, P.C. (MTA) for the proposed Cornwall Commons residential development which may be constructed in the Town of Cornwall, Orange County, New York The site is located adjacent to and west of New York State Highway Route 9W, to the south of its intersection with Forge Hill Road, as shown on the Site Location Map, Plate 1. This investigation was conducted in general accordance with the scope of work presented in our confirming proposal dated September 21, 2006.

Proposed Construction

Topographic plans prepared by Lanc & Tully, P.C. indicate that the residential portion of the planned development totals approximately 161 acres. Concept plans provided to us indicate the residential development would contain approximately 316 single family structures and 28 multi-unit buildings. The site will be serviced by parking areas, access roadways and stormwater management facilities. Grading plans have not been prepared at this time, but it is expected that the buildings could contain basements.

Purpose and Scope of Work

The purpose of our services was to:

- 1) explore, on a preliminary basis, the subsurface soil, rock and groundwater conditions throughout the site;
- 2) estimate the relevant geotechnical engineering properties of the encountered materials;
- 3) evaluate the site foundation requirements considering the anticipated structural loads and encountered subsurface conditions;
- 4) recommend an appropriate type of foundation for support of the proposed structures, and provide preliminary geotechnical-related foundation design and installation criteria;
- 5) provide preliminary recommendations for the support and the need for subdrainage of the lowest level floor slabs;
- evaluate the feasibility of installing basements, and provide preliminary drainage criteria for design of below-grade walls;
- 7) provide preliminary geotechnical-related parameters for use in pavement design; and
- 8) discuss preliminary earthwork operations or considerations to assist in the planning and preliminary design of the development

To accomplish these purposes, a subsurface exploration program consisting of 26 test pit explorations was performed at the site. The test pits were excavated using a track mounted excavator (Caterpillar Model 318) and extended to depths of approximately four to thirteen and one half feet below the existing surface grades. The approximate locations of the test pits are shown on the Plot Plan, Plate 2.

All field work was performed under the direct technical supervision of a representative of MTA. Our representative located the test pits in the field, maintained continuous logs of the explorations as the work proceeded, and obtained bulk samples of the encountered materials. Detailed description of the encountered subsurface conditions are shown on the individual Logs of Test Pits, Plates 3A through 3Z.

Representative soil samples obtained from selected test pits were brought to our office where they were further examined in our soil mechanics laboratory. The soils were visually classified in general accordance with the Unified Soil Classification System shown on Plate 4. Eight of the samples were subjected to laboratory testing consisting of grain size analyses and moisture content testing to aid in their evaluation and engineering classification. The results of

the gradation testing are presented on Plates 5A and 5B Gradation Curves, while the moisture content test results are shown on the appropriate test pit logs.

The results of our subsurface exploration and laboratory testing programs, have provided the basis for our engineering analyses and preliminary design recommendations. The following discussions of our findings and recommendations are subject to the limitations attached as an Appendix to this report.

Site Conditions

<u>Surface Features</u>: The site is moderately to heavily wooded with moderately dense brush. Numerous stone walls are present throughout the site. Shale rock outcrops were evident throughout the property and several areas delineated on plans as wetlands are present in the central and western portions of the parcel. A railroad easement is present along the western and northern property limits.

Topographic information shown on plans provided to us indicates that the site slopes gently to moderately downward from the south-central portion of the property towards the north, west, and east. The surface grades vary from a high of approximately Elevation+241 feet to a low of approximately Elevation+152 feet along the northeast property line adjacent to the former New York Ontario and Western Railroad easement.

<u>Subsurface Conditions</u>: The subsurface conditions encountered in the test pits performed for this study consisted of the following generalized strata presented in order of increasing depth:

- 1) <u>Topsoil:</u> A surficial layer of topsoil which ranged from approximately two to twelve inches in thickness, was encountered in all test pits performed for this study. The topsoil was found to be approximately four to eight inches in thickness in most of the explorations.
- Silty Sand: In the majority of the explorations, the topsoil was underlain by silty sands containing varying amounts of gravel, cobbles and boulders. In general, the silty sands were estimated to be medium dense to dense in relative density. Sixteen of the test pits were terminated in the sand layer at depths of approximately ten to thirteen and one half feet below the existing surface grades.
- 3) Silt: A layer of stiff silt was encountered below the surficial topsoil layer in three of the test pits (TP 6, 10, and 13) and below the silty sand layer in Test Pit. 1. The silt layer was approximately 1 to 2 feet in thickness, and extended to depths of approximately two and one half to ten feet below the existing surface grades, where encountered.
- 4) Fractured Shale: In four of the test pits (TP 1, 6, 10 and 26) a layer of highly fractured shale was encountered at depths of approximately two and one half to six feet below the existing surface grades. The fractured shale graded sounder

with depth, and refusal to further excavation was encountered in these four test pits at depths of approximately 6 to 7 feet below grade. In addition, backhoe refusal atop what we believe is sound shale bedrock was encountered in six additional explorations at depths of approximately four to twelve feet below the existing surface grades. In Test Pit 8, refusal at a depth of eleven feet was encountered; however, it was not determined if the refusal was due to an isolated large boulder or sound shale bedrock.

Groundwater seepage was encountered in seven of the explorations at depths of approximately four and one half to twelve feet below the existing surface grades upon completion of the test pits. Mottling, which is often indicative of seasonal high groundwater or seasonally saturated soil conditions, was encountered in eleven of the test pits at depths of approximately one to four feet below grade, and standing water was observed in several of the areas identified as wetlands at the time of our study.

Conclusions and Recommendations

Based on the results of our investigation, it is our opinion that:

- Upon completion of the site preparation procedures described in subsequent sections of this report, the proposed structures may be supported by conventional shallow foundations established on either the undisturbed natural soils, shale, or controlled compacted fill placed to reach the proposed construction subgrade levels. The ground floor slabs, pavements or other site improvements could also derive their support from these materials.
- Groundwater seepage was encountered in only seven of the test pits at depths of approximately four to twelve feet below the existing surface grades at the time of our study. However, the presence of possible wetlands throughout the central portion of the property and the relatively shallow soil mottling observed at depths of approximately one to four feet below grade in eleven of the explorations suggests that shallow perched water seepage could be encountered, at least on a seasonal basis, and some construction dewatering could be required.
- Basements generally appear feasible throughout much of the site, but the presence of rock and the potential for perched seepage needs to be considered in the planning and design of the development.

Discussions of these and other items considered relevant to the preliminary design of the proposed development are presented in the following sections of this report:

Site Preparation and Earthwork: The existing trees and brush should be removed, and stumps, roots and topsoil stripped from within and at least five to ten feet beyond the limits the

proposed building and paved areas. The topsoil would not be suitable for reuse as controlled compacted fill or backfill in structural areas.

The numerous stone walls transecting the site suggest that the property was previously farmed. Although not encountered at the time of our study, the remains of abandoned or demolished structures could be present. If encountered, they should be removed and the resulting demolition debris legally disposed of off-site.

After clearing and removal of topsoil, the undisturbed natural soils are anticipated to consist of silty sand and sandy silt. Prior to placement of fill which may be required, the exposed subgrade soils should be prooffolled using several passes of a heavy vibrating drum compactor with a minimum static drum weight of 12,000 pounds under the observation of a qualified geotechnical engineer from MTA. Any detected soft or unstable subgrade materials should be removed and replaced with granular controlled compacted fill. The silty sands and silts were found to be above their estimated optimum moisture content for compaction purposes, and considered to be susceptible to disturbance when subjected to wet weather conditions and heavy construction equipment traffic. Therefore, some aeration and drying of the subgrade soils should be anticipated, or selective overexcavation of unstable areas may be necessary. During periods of relatively warm/dry weather, the amount of overexcavation of unstable subgrade soil would be reduced.

Following proofrolling of the exposed subgrade materials, controlled compacted fill should be installed as required to reach the desired construction subgrade levels in the proposed building and paved areas. Grading plans have not been provided to us at this time; however, we anticipate that significant cuts and fills would be required at the site.

All fill and backfill placed within the proposed building and pavement areas should consist of controlled compacted fill.

Material obtained from on-site excavations will likely consist of silty sands and sandy silts or fractured shale. The surficial sands and silts are considered only marginally suitable for use as controlled compacted fill, due to their relatively high natural moisture contents and susceptibility to disturbance from exposure to heavy construction equipment traffic. It should be anticipated that some aeration and drying of the on-site soils would be required in order to use them as controlled compacted fill. Shale fragments would provide a good source of controlled compacted fill in structural areas, provided the rock is processed to maximum particle sizes of six inches (+/-) or less, and blended with sufficient quantities of soil to fill void spaces.

Any additional fill required to complete the site grading should consist of imported uncontaminated granular soils which contain less than 15 percent by weight of material passing a U.S. Standard No. 200 Sieve, and a maximum particle size of four inches, or a suitable source of fractured shale. The contractor should provide documentation which certifies that the fill is uncontaminated material from a commercial or non-commercial source.

Any materials placed as controlled fill within building, pavement, or other structural areas should be spread in layers on the order of twelve inches or less in loose thickness and be uniformly compacted to at least 95 percent of maximum dry density as determined by the ASTM D-1557 test procedure. Backfill installed in confined areas such as foundation or utility trench excavations should be spread in layers on the order of six to eight inches in loose thickness and uniformly compacted to the same degree using manually operated vibratory compaction equipment.

All construction excavations should be performed in accordance with the latest OSHA excavation guidelines and any other governing safety regulations. The soils encountered in the excavations performed as part of this investigation would be typically classified as type "C" soils as defined by the current OSHA excavation regulations. Steeper slopes may be feasible in the shale and should be evaluated by a qualified engineer or geologist from MTA familiar with site conditions at the time of construction.

Refusal to further excavation was encountered in ten of the 26 test pits at depths of approximately four to twelve feet below the existing surface grades, atop relatively sound shale bedrock, or in the case of Test Pit No. 8 possibly a large boulder. In addition, shale rock outcrops are present throughout the property. Consequently, it should be anticipated that rock excavation will be required to achieve the site grades and may be a significant concern in deeper confined utility trench or foundation excavations. The shale in the area is usually very sound after a thin weathered, or fractured zone is penetrated and we estimate that mass excavations could only extend a few feet below the refusal levels encountered in the test pits utilizing relatively heavy construction equipment equipped with rock removal features and/or hydraulic jackhammers. Confined foundation and utility excavations which encounter the sound shale could require blasting. Once the grading plans are developed, we recommend that MTA review the plans to determine the amount of additional test pit explorations that will be necessary throughout the property to better delineate the impact that rock removal will have on site grading.

Groundwater seepage was encountered in seven of the 26 test pits at depths of approximately four and one half to twelve feet below the existing surface grades at the time of our study. However, mottling, which is frequently an indication of seasonal high water conditions or seasonally saturated soils was evident in eleven of the test pits at depths of approximately one to four feet below the existing surface grades, and several areas of ponded water in mapped wetlands were observed at the ground surface. Groundwater seepage should be anticipated atop or within fractures of the shale bedrock at least on a seasonal basis. Consequently, we anticipate that dewatering could be required during construction. We recommend that the site be provided, with positive drainage during construction to direct surface runoff away from the exposed, prepared subgrades to minimize disturbance of the subgrade soils. We anticipate that any groundwater seepage or surface runoff encountered in relatively shallow foundation or utility trench excavations could be removed by pumping from sumps located within or adjacent to the excavations.

Foundation Design Criteria: Following the site preparation procedures previously described, the proposed buildings may be supported by conventional shallow foundations which derive their support from the undisturbed natural soils, shale bedrock, or granular controlled compacted fill required to achieve the proposed floor slab levels. For preliminary design purposes, foundations established on these materials may be designed to impose maximum allowable net bearing pressures of up to 4,000 pounds per square foot.

Exterior foundations should be established at least four feet below the lowest adjacent exterior grades, or deeper if required by local ordinance, in order to provide protection from frost penetration. Interior foundations in permanently heated portions of the structures could be established at convenient depths below the floor slabs.

Floor Slab Design Criteria: Following the previously described site preparation procedures, the floor slabs to be constructed on-grade could be supported by the undisturbed competent natural soils or controlled compacted fill. If the buildings do not contain basements, we recommend that the ground floor slab be underlain by a minimum of four inches of clean three quarter inch crushed stone or washed gravel to provide a capillary break between the bottoms of the floor slabs and the underlying soils.

Basement Design Criteria: We believe that basements could generally be constructed throughout much of the site, but will need to consider the presence of rock and the potential for seasonal perched seepage especially near wetlands. Once the grading plans are more fully developed, additional explorations should be performed to better evaluate appropriate drainage measures for basement design.

For preliminary planning purposes, we recommend that a perimeter foundation drain be installed around each basement. The drain should consist of minimum four inch diameter perforated pipe surrounded by a minimum of six inches of clean, three quarter inch crushed stone or washed gravel. The gravel should be wrapped in filter fabric (Mirafi 140M, or equivalent) to prevent migration of the adjacent soils into the gravel. The drainage system should flow by gravity into the storm sewer system or to daylight.

We recommend that a vertical drainage membrane (Miradrain, or equivalent) be installed adjacent to the basement walls to prevent the buildup of hydrostatic pressure behind the walls. The membrane should be hydraulically connected to the foundation drain pipes and should extend to within two feet of the finished ground surface. The basement floor slab will need to be underlain by a porous drainage layer of clean, three quarter inch crushed stone which could be from 6 to 8 inches in thickness depending upon the basement level relative to mottling. A sump should also be provided in the basement area.

Pavement Design Criteria: Immediately prior to pavement construction, the exposed subgrade soils should be compacted to a firm and unyielding consistency, and the upper two feet of the subgrade soils should be compacted to at least 95 percent of maximum dry density as determined by the ASTM D-1557 test procedure. Pavements established on the natural silty sand and sandy silt soils should be designed assuming a "poor" to "fair" subgrade support

condition with an estimated California Bearing Ratio (CBR) value of approximately three to five percent. Pavements established atop a minimum of eighteen inches of granular fill materials could be designed assuming "good" subgrade support conditions with and estimated CBR value of 10 percent.

Existing/Proposed Grades: In 2001, MTA performed a brief, preliminary analysis of existing slopes and slope failure in the extreme northern portions of the site. Our evaluation consisted solely of visual observation of failures which occurred in the steep slopes leading to the former railroad embankment, and did not include physical explorations or global slope stability analysis.

Based on our limited evaluation, it appeared that the slope stability issues, originated on the adjacent parcel, but were impacting the extreme northern portion of the subject site in that the slopes were not stable and additional slope failures to the south (into the subject site) were possible. Therefore, planning of the project site will need to take into consideration the configuration of the perimeter slopes, investigation of their stability, and final grades.

The following Plates and Appendix are attached and complete this report:

Plate 1 – Site Location Map
Plate 2 – Plot Plan
Plates 3A through 3Z – Logs of Test Pits
Plate 4 – Unified Soil Classification System
Plates 5A and 5B – Gradation Curves
Appendix – Limitations

Respectfully submitted,

MELICK-TULLY AND ASSOCIATES, P.C.

James H. Beattie, P.E

Senior Associate

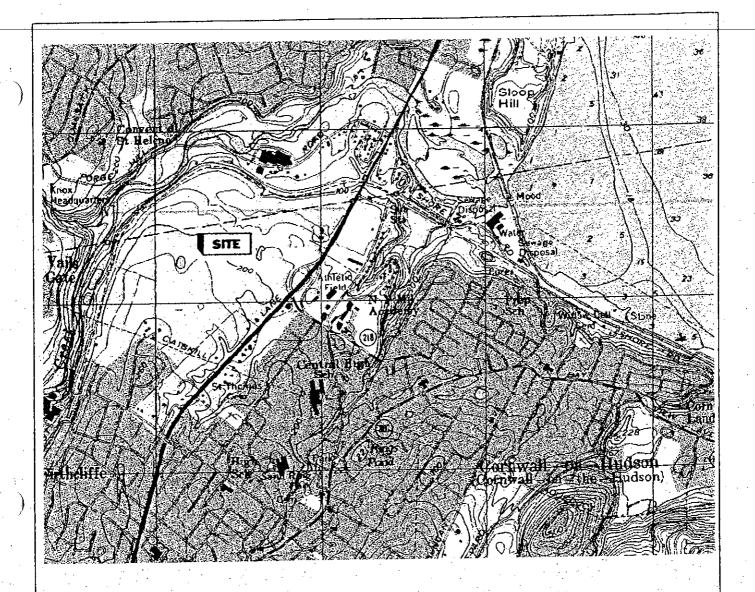
Raymond J. Tully, P.E.

President

JHB:RJT\slb 2600-392*3D

(2 Copies submitted)

cc: Mr Robert Fecso Mr.Gary Hillen



Cornwall On Hudson – Topo Map 2000

MELICK-TULLY AND ASSOCIATES, P.C.

SITE LOCATION MAP



Geotechnical Engineers & Environmental Consultants 324 Route 208 Monroe, New York

Ph. (845) 783-9190 Fax (845) 783-5060

PROPOSED RESIDENTIAL DEVELOPMENT CORNWALL, ORANGE COUNTY, NY

· ·]				
JOB NO. 2600-392*3D	FILE NO. 22459	DR. BY ЛНВ	CHK. BY RJT	DATE 10/10/06	SCALE 1"=25,000'	PLATE 1



TEST PIT NO. 1

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D SURFACE ELEVATION: + 230 ft. +/-

WATER LEVEL: *

READING DATE: 10/03/06

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			T (%)			
			MOISTURE CONTENT (%)		DESCRIPTION	-
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	ОЕРТН	SAMPLES (1)	\$STU!	SYMBOL		DEPTH
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1	_] .			8" Topsoil	1 _
.		SI	19.3	ML	Brown silt, little fine sand (moist) (stiff)	
	. •					↓ -
	-	S2	10.5	SM	Brown fine sand, some silt, (moist) (medium dense)	-
	_	S3	17.0	ML	Brown silt, and fine to medium sand, (moist) (stiff)	
	5-				Highly fractured shale -backhoe refusal encountered @ 7'	5-
			1,			
			:			
	4	·				
	10-				Test pit completed @ 7'	10-
					Mottling observed @ 4'	
					*Groundwater not encountered	
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1	. SAN	MPLE AT AV	ERAGE SAMP	LING DEPTH	TRACE 0 - 10% LITTLE 10 - 20%	
1					SOME 20 - 35%	

OVER 35%

Sheet: 1 of 1

PLATE: 3A

Typist/Date: JHB\slb

TEST PIT NO. 2

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 230 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) DEPTH 8" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel (moist) (medium dense) SM -backhoe refusal atop shale bedrock @ 4' 5 5 10-Test pit completed @ 4' 10-*Groundwater not encountered 15 15-20 20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% AND **OVER 35%** PLATE: 3B Sheet: 1 of 1 Typist/Date: JHB\slb

TEST PIT NO. 3

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 240 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB	NOWBER	: 2600-392*3	31)	READING DATE: 10/03/	UO
ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	рертн
				6" Topsoil	-
-	·			Brown fine to coarse sand, some silt, trace fine gravel (moist) (medium dense)	-
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	' .			Test pit completed @ 11'	
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				Mottling observed @ 3' 6"	
15-		•		*Groundwater not encountered	15-
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1. SAN	S FOR COLUMPLE AT AV	ÆRAGE SAMI	PLING DEPTH	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35% AND OVER 35% Sheet: 1 of 1 PLATE: 3C	

TEST PIT NO. 4

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 235 ft. +/-

WATER LEVEL: *

JOB	NUMBER:	2600-392*3	D	READING DATE: 10/03/0	<u> </u>
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ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL		ОЕРТН
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				Brown fine to coarse sand, some silt, trace fine gravel	-
				(moist) (medium dense to dense)	
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15-		, · ·		Test pit completed @ 11' 6"	15-
				Mottling observed @ 1' 6"	_
1				*Groundwater not encountered	
					-
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					20-
20-	· · · '				<u></u>
	S FOR COL			SOIL DESCRIPTION MODIFIERS:	
1. SA	MPLE AT AV	/ERAGE SAM	PLING DEPTH	LITTLE 10 - 20%	
				SOME 20 - 35%	
Typist	/Date: JHB\s	lb		AND OVER 35% Sheet: 1 of 1 PLATE: 3D	

TEST PIT NO. 5

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 216 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

	JOB	NUMBER:	2600-39213	30	READING DATE: 10/03/0	
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			MOISTURE CONTENT (%)		DESCRIPTION	
		SAMPLES (1)	REC	ļ		_
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	JQ.	S,A	W	Š	Of Tanasil	<u> </u>
	_]			8" Topsoil Brown fine to coarse sand, some silt, little fine to coarse	-
•					gravel (moist) (medium dense)	_
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	10-				-backhoe refusal atop shale bedrock @ 10'	10-
	_					-
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- 1	•					-
	-					-
	15-				Test pit completed @10'	- 15-
-	15-				Test pit completed @10' *Groundwater not encountered	- 15-
-	15-					- 15-
-	15-					15-
-	15					15-
	15				*Groundwater not encountered	-
	15				*Groundwater not encountered	15- - - - 20-
	20-	S FOR COL	UMNS:		*Groundwater not encountered SOIL DESCRIPTION MODIFIERS:	-
	20-	S FOR COL		IPLING DEPTI	*Groundwater not encountered SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10%	-
	20-	S FOR COL		PLING DEPT	*Groundwater not encountered SOIL DESCRIPTION MODIFIERS:	-

Typist/Date: JHB\slb

TEST PIT NO. 6.

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 220 ft. +/-

WATER LEVEL: *

READING DATE: 10/03/06

ОЕРТН	SAMPLES (1)	MOISTUPE CONTENT (%)	SYMBOL	DESCRIPTION	ОЕРТН
	S1	13.6	ML	3" Topsoil Brown silt, some fine to coarse sand, little fine gravel (moist) (stiff)	
-				Highly fractured shale	5-
5-				-backhoe refusal encountered @ 6'	
10-				Test pit completed @ 6' Mottling observed @ 1' *Groundwater not encountered	10-
					-
15-					15-
1 1		·			
20-					20-

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

TRACE 0 - 10% LITTLE 10 - 20%

SOME 20-35%

Typist/Date: JHB\slb

OVER 35% AND

PLATE: 3F Sheet: 1 of 1

TEST PIT NO. 7

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 232 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) 6" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles (moist) (medium dense) SM 10-10-Test pit completed @ 12' 6" 15-Mottling observed @ 4' 15-*Moderate groundwater seepage encountered @ 8' 20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0-10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% **OVER 35%** PLATE: 3G Sheet: 1 of 1 Typist/Date: JHB\slb

TEST PIT NO. 8

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D SURFACE ELEVATION: + 234 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

PLATE: 3H

Sheet: 1 of 1

MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) 6" Topsoil Brown fine to coarse sand, some silt, trace fine gravel (moist) (medium dense to dense) SM -backhoe refusal encountered @ 11' (possible shale, 10 possible boulder) 10-Test pit completed @ 11' 15-*Groundwater not encountered 15 20-20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35%

OVER 35%

Typist/Date: JHB\slb

TEST PIT NO. 9

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 234 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB	NUMBER:	2600-392*3	<u> </u>	READING DATE: 10/03/0	
ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	D ЕРТН
				4" Topsoil Brown fine to medium sand, and silt, little fine gravel (moist) (medium dense)	-
5-	S 1	13.3	SM		5-
10-					10-
				Test pit completed @ 13'	1 1
15-				*Slight groundwater seepage encountered @ 13'	15-
20-					20-
1. S/	ES FOR COL AMPLE AT A st/Date: JHB\	VERAGE SAM	MPLING DEPT	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35% AND OVER 35% Sheet: 1 of 1 PLATE: 31	·

TEST PIT NO. 10

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D SURFACE ELEVATION: + 230 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

		थ (%)			
	<u> </u>	CONTER	·	DESCRIPTION	
рертн	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL		DEPTH
				12" Topsoil	
-	S 1	14.1	ML	Brown silt, some fine to coarse sand, little fine gravel (moist) (stiff)	
				Highly fractured shale	1
5-	S 2			triginy indocated shale	5-
-					
-				-backhoe refusal encountered @ 8' 6"	
10-					10-
-					
4			* 		
1				Test pit completed @ 8' 6"	
15-				Mottling observed @ 2' 6"	15•
ٳ				*Moderate groundwater seepage encountered @ 6'	
4					}
20-					20-
	S FOR COL	UMNS: VERAGE SAM	PLING DEPTI	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35%	

Typist/Date: JHB\slb

AND

OVER 35%

Sheet: 1 of 1

PLATE: 3J

TEST PIT NO. 11

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 224 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB	NUMBER:	2600-392*3	D	READING DATE: 10/03/06	
		ONTENT (%)		DESCRIPTION	
БЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL		ОЕРТН
				4" Topsoil	4
				Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles (moist) (medium dense)	
5-	S1				5-
5			SM		-
			-		4
10-					10-
					-
15				Test pit completed @ 11' *Slight groundwater seepage encountered @ 9'	15-
15-					-
	1				-
20	4				20-
	TES FOR CO	LUMNS: AVERAGE SAM	MPLING DEP1	SOME 20 - 35%	
Турі	ist/Date: JHB	\slb	•	AND OVER 35% Sheet: 1 of 1 PLATE: 3K	

LOG OF TEST PIT TEST PIT NO. 12 SURFACE ELEVATION: + 212 ft. +/-WATER LEVEL: * COMPLETION DATE: 10/03/06 READING DATE: 10/03/06 JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) SYMBOL 2" Topsoil Brown fine to medium sand, and silt, trace fine gravel SM **S**1 (moist) (medium dense) Brown fine to coarse sand, some silt, little fine to coarse S2 gravel (moist) (medium dense) SM 10-Test pit completed @ 10' 15-Mottling observed @ 1'6" 15-*Groundwater not encountered

NOTES FOR COLUMNS:

20

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10% LITTLE 10 - 20%

SOME 20 - 35%

Typist/Date: JHB\slb

OVER 35% AND

PLATE: 3L Sheet: 1 of 1

20-

TEST PIT NO. 14

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 232 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB	NUMBER:	2600-392*3	D	READING DATE: 10/03/06	ᅼ
ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	рертн
				6" Topsoil Brown fine to coarse sand, little silt, some fine to coarse	_
				gravel, occasional cobbles (moist) (medium dense)	5-
5-	S1		SM)
10-				-backhoe refusal atop shale bedrock @12'	0-
15-				Test pit completed @ 12' *Groundwater not encountered 15	5-
1 1 1 1 1					1 1 1
20-				20	0-
NOTE	S FOR COL	VERAGE SAM	PLING DEPTI	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35% AND OVER 35% Sheet: 1 of 1 PLATE: 3N	

TEST PIT NO. 13

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 222 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) SYMBOL DEPTH 8" Topsoil Brown silt, and fine to coarse sand, trace fine gravel (moist) 15.0 S1 -grading with occasional cobbles and boulders @ 5' ML 5 10 10 Test pit completed @ 10' 15-Mottling observed @ 1'6" 15-*Slight groundwater seepage encountered @ 7'

NOTES FOR COLUMNS:

20

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%

LITTLE 10 - 20%

SOME 20.-35%

Typist/Date: JHB\slb AND OVER 35%

Sheet: 1 of 1

PLATE: 3M

20-

LOG OF TEST PIT TEST PIT NO. 15 COMPLETION DATE: 10/03/06 SURFACE ELEVATION: + 238 ft. +/-WATER LEVEL: * JOB NUMBER: 2600-392*3D READING DATE: 10/03/06 MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) DEPTH 6" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles (moist) (medium dense) SM 5 -backhoe refusal atop shale bedrock @ 6' 10. 10-· Test pit completed @ 6' 15-15 *Groundwater not encountered 20. 20-NOTES FOR COLUMNS: SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% **OVER 35%** Typist/Date: JHB\slb Sheet: 1 of 1 PLATE: 30

TEST PIT NO. 16

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 214 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

i	JOB	MOMBELL.	2600-392 3			
			NT (%)			
		(CONTE		DESCRIPTION	
	DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL		DEPTH
	-	<i>s</i>			6" Topsoil	Γ,
					Brown fine to coarse sand, and silt, little fine gravel, occasional cobbles (moist) (medium dense)	-
	4			- -		
	-	S1				
						5-
	5-			SM		, J-
	. 1					
	-					
	10-				-backhoe refusal atop shale bedrock @ 11'	10-
					Test pit completed @ 11'	
.	15-				Mottling observed @ 2'	15-
	-				*Moderate groundwater seepage encountered@ 4' 6"	
	-	• •				
			·			
	20-					20
•	NOTE	S FOR COL	UMNS:		SOIL DESCRIPTION MODIFIERS:	
	1. SA	AMPLE AT A	VERAGE SAM	IPLING DEPT	H TRACE 0-10% LITTLE 10-20%	
	٠.				SOME 20 - 35%	
	Tunio	t/Date: JHB\	elh		AND OVER 35% Sheet: 1 of 1 PLATE: 3P	

Typist/Date: JHB\slb

TEST PIT NO. 17

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 210 ft. +/-

READING DATE: 10/03/06

MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) SYMBOL 6" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist) (medium dense to dense) 5 SM 10-10 Test pit completed @ 11 15-Mottling observed @ 3' 15 *Slight groundwater seepage encountered@ 8' 20-20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% **OVER 35%** AND PLATE: 3Q Sheet: 1 of 1

Typist/Date: JHB\slb

TEST PIT NO. 18

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D SURFACE ELEVATION: + 204 ft. +/-

WATER LEVEL: * READING DATE: 10/03/06

ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	оертн
				6" Topsoil Brown fine to coarse sand, some silt, trace fine gravel,	-
				occasional cobbles (moist) (medium dense to dense)	
					-
	S1				5-
5-	31		SM		-
			Olw.		-
_					-
_					-
10-	•				10-
-		er e			•
_	٠٠.				
-				Test pit completed @ 12'	•
15-				i	15-
13-			, to		
					·
					-
-					
20-					20
1. S/	ES FOR COI	VERAGE SAM	MPLING DEPT	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35% AND OVER 35% Sheet: 1 of 1 PLATE: 3R	

LOG OF TEST PIT TEST PIT NO. 19 SURFACE ELEVATION: + 204 ft. +/-WATER LEVEL: * COMPLETION DATE: 10/03/06 READING DATE: 10/03/06 JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) ОЕРТН 8" Topsoil Brown fine to coarse sand, some silt, trace fine to coarse gravel, occasional cobbles (moist) (medium dense) SM 10-10 Test pit completed @ 11' 15-*Groundwater not encountered 15.

NOTES FOR COLUMNS:

20.

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10% LITTLE 10 - 20%

SOME 20 - 35%

Typist/Date: JHB\slb

ND OVER 35%

Sheet: 1 of 1 PLATE: 3S

20-

TEST PIT NO. 20

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: + 216 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) DEPTH 6" Topsoil Brown fine to coarse sand, some silt, trace fine to coarse gravel, occasional cobbles and boulders (moist) (medium dense to dense) SM 10 Test pit completed @ 12' 15. *Groundwater not encountered 15 20-20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% AND **OVER 35%** Sheet: 1 of 1 PLATE: 3T Typist/Date: JHB\slb

TEST PIT NO. 21

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 184 ft. +/-

WATER LEVEL: *

READING DATE: 10/03/06

ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	ОЕРТН
ă	ςS	W	· S	12" Topsoil	
-	\$1		SM	Brown fine to medium sand, some silt, little fine to coarse gravel, (moist) (medium dense)	. =
	S2	i.	SM	Brown fine to coarse sand, little silt, some fine to coarse gravel (moist) (medium dense)	-
5	\$3		SP	Brown fine to coarse sand, trace silt, trace fine gravel (moist) (medium dense)	5-
1	SM			Brown fine to coarse sand, and silt, little fine gravel (moist) (medium dense)	-
10-			SM		10-
					-
				Test pit completed @ 13'	4
15-				*Groundwater not encountered	15-
-	·				-
					-
20-					20-
	S FOR COL	UMNS: /ERAGE SAMI	PLING DEPTH	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20%	

SOME 20 - 35%

OVER 35%

Sheet: 1 of 1

PLATE: 3U

AND

Typist/Date: JHB\slb

TEST PIT NO. 22

COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D

SURFACE ELEVATION: + 174 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

ОЕРТН	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	ОЕРТН
-			SM	8" Topsoil Brown fine to coarse sand, little silt, little fine to coarse gravel (moist) (medium dense)	-
5-			SP	Brown fine to coarse sand, trace silt, and fine to coarse gravel, occasional cobbles (moist) (medium dense)	5-
15-				Test pit completed @ 11' *Groundwater not encountered	15-
1. SA	S FOR COLUMPLE AT AV	ERAGE SAMI	PLING DEPTH	SOIL DESCRIPTION MODIFIERS:	20-

MELICK-TULLY AND ASSOCIATES, P.C.

Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT TEST PIT NO. 23 COMPLETION DATE: 10/03/06 SURFACE ELEVATION: + 190 ft. +/-WATER LEVEL: * READING DATE: 10/03/06 JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) SYMBOL 4" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel (moist) (medium dense) 5 SM 10 10. Test pit completed @ 13' 6" 15-15 *Groundwater not encountered

NOTES FOR COLUMNS:

20

SOIL DESCRIPTION MODIFIERS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

TRACE 0 - 10%

LITTLE 10 - 20%

SOME 20 - 35%

Typist/Date: JHB\slb

AND OVER 35% Sheet: 1 of 1

PLATE: 3W

20.

TEST PIT NO. 24

SURFACE ELEVATION: + 208 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

PLATE: 3X

Sheet: 1 of 1

COMP	LEI	ION	DA I	E:	10/0)3/U
JOB N	IUM	BER:	260	0-3	392*	3D

	ES (1)	MOISTURE CONTENT (%)		DESCRIPTION	+
ОЕРТН	SAMPLES (1)	MOISTU	SYMBOL		ОЕРТН
				6" Topsoil	1]
1			SM	Brown fine to coarse sand sand, and silt, little fine gravel (moist) (medium dense)	1]
	S 1	8.9	SP	Brown fine to coarse sand, trace silt, some fine to coarse	
-			SM	gravel (moist) (medium dense) Brown fine to coarse sand, and silt, little fine to coarse gravel (moist) (medium dense)	
5					5-
			,		-
10-					10-
		:			-
				Test pit completed @ 12'	
15-				Mottling observed @ 1'	15-
				*Groundwater not encountered	
20-					20-
1 .	S FOR COL		IPLING DEPTI	SOIL DESCRIPTION MODIFIERS: TRACE 0 - 10% LITTLE 10 - 20% SOME 20 - 35%	

Typist/Date: JHB\slb

AND

OVER 35%

TEST PIT NO. 25 WATER LEVEL: * READING DATE: 10/03/06 SURFACE ELEVATION: + 186 ft. +/-COMPLETION DATE: 10/03/06 JOB NUMBER: 2600-392*3D MOISTURE CONTENT (%) DESCRIPTION SAMPLES (1) 6" Topsoil Brown fine to coarse sand, some silt, little fine to coarse gravel (moist) (medium dense) SM -grading w/ shale fragments from 6' to 8' 10 10 Test pit completed @ 12' 15. *Slight groundwater encountered 12' 15-20-20 SOIL DESCRIPTION MODIFIERS: NOTES FOR COLUMNS: TRACE 0 - 10% 1. SAMPLE AT AVERAGE SAMPLING DEPTH LITTLE 10 - 20% SOME 20 - 35% **OVER 35%** Sheet: 1 of 1 PLATE: 3Y Typist/Date: JHB\slb

LOG OF TEST PIT

TEST PIT NO. 26

COMPLETION DATE: 10/03/06

SURFACE ELEVATION: 214 ft. +/-

WATER LEVEL: *
READING DATE: 10/03/06

JOB	NUMBER:	2600-392*3	<u> </u>	READING DATE. 10/03/C	
					. 1
		(%)			
		MOISTURE CONTENT (%)		m = 0 OD IRTION	
-	·	TNC		DESCRIPTION	. 1
	ε	О			_
I	LES	TUR	, 5g		ОЕРТН
DEPTH	SAMPLES (1)	(OIS	SYMBOL		ä
-	S	2		6" Topsoil	
				Brown fine to coarse sand, some silt, trace fine to coarse	
'			,	grave (moist) (medium dense)	
.			100		
1					1 1
1 .	S1		SM		
Ι.			••••		
					5-
5-	1				; i
.				I Lably frostyrod chala	1
				Highly fractured shale -backhoe refusal encountered @ 7'	-
	1	Ì		- padmice relace.	
l.,	i J	ļ			1
	1	1			
	┨				
١.,					.10-
10-	1	j .			
i .	4		· ·		
					-
1	1				
	_]			
		,		Test pit completed @ 7'	[-
	1	i .			1.5
15	_			*Groundwater not encountered	15-
'`		ļ			-
	-	İ			1
]	· ·			'
]				
1	4	,			1
] .				
]				20-
20	4				120
<u> </u>		1	<u> </u>	SOIL DESCRIPTION MODIFIERS:	
ИО	TES FOR CO	LUMNS:	MOLING DEDI		
1. \$	SAMPLE AT	AVERAGE SA	WIPLING DEP	LITTLE 10 - 20%	
	-	•		SOME 20 - 35%	
1	ist/Date: JHB			AND OVER 35% Sheet: 1 of 1 PLATE: 3Z	

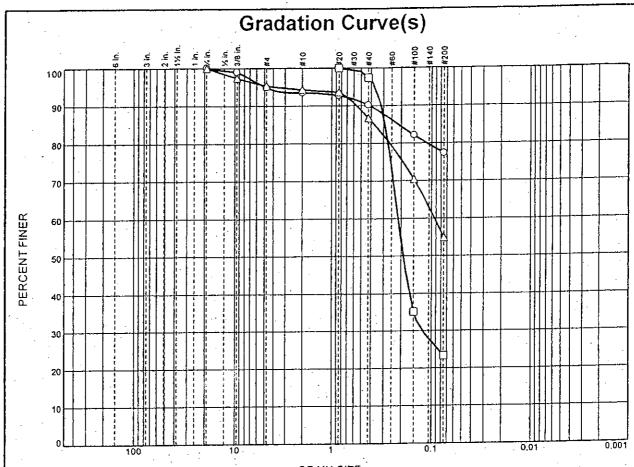
			LETTER SYMBOL	TYPICAL DESCRIPTIONS
. M	AJOR DIVISIONS	STAIRCE	DESCRIPTIONS	
	GRAVEL & GRAVELLY	CLEAN GRAVELS	GW	Well-graded gravels, gravel- sand mixtures, little or no fines.
	SOILS	(Little or no fines)	GP	Poorly-graded gravels, gravel- sand mixtures, little or no fines
COARSE	More than 50% of coarse fraction	GRAVELS WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures.
GRAINED SOILS	RETAINED on No. 4 Sieve	(Appreciable amount of fines)	GC	Clayey gravels, gravel-sand- clay mixtures.
30103	SAND AND	CLEAN SAND	sw	Well-graded sands, gravelly sands, little or no fines.
More than 50% of material	SANDY SOILS	(Little or no fines)	SP	Poorly-graded sands, gravelly sands, little or no fines.
is <u>L.ARGER</u> than No. 200 Sieve	More than 50% of coarse fraction	SANDS WITH FINES	SM	Silty sands, sand-silt mixtures
	PASSING & No. 4 Sieve	(Appreciable amount of fines)	SC	Clayey sands, sand-clay mixtures.
			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
FINE GRAINED SOILS	SILTS AND CLAYS	Liquid limit LESS than 50	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
More than 50% of	,		OL	Organic silts and organic silty clays of low plasticity.
material is <u>SMALLER</u> than No. 200 Sieve.	<u> </u>	Liquid limit	МН	inorganic sitts, micaceous or diatomaceous fine sand or silty soils.
	SILTS AND CLAYS	GREATER than 50	СН	Inorganic clays of high plasticity, fat clays.
			OH:	Organic clays of medium to high plasticity, organic silts.
Н	GHLY ORGANIC SOIL	.S	PT	Peat, humus, swamp soils with high organic contents

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

GR	ADATION*	COMPACTN sand and/or go		clay a	STENCY* ind/or silt
% Fi	ner by Weight	Relative Der		Range of Shearing Strength in Pounds per Square Foot	
			0% to 40%	Very Soft	less than 250
Trace	0% to 10%	Loose		Soft	250 to 500
Little	10% to 20%	Medium Dense	40% to 70%		500 to 100
	20% to 35%	Dense	70% to 90%	Medium	
Corne			90% to 100%	Stiff	1000 to 200
Some	259/ 10 509/	Verv Dense	30 % (O 100 %		
Some And	35% to 50%	Very Dense	90% 10 100%	Very Stiff	2000 to 4000 Greater than 400

^{*}Values are from laboratory or field test data, where applicable. When no testing was performed, values are estimated.

UNIFIED SOIL CLASSIFICATION SYSTEM SOIL CLASSIFICATION CHART



٦		% Gravel			% Sand		% Fines
1	% +3"	Coarse	Fine	Coarse	Medium	Fine	7/11100
51~	0.0	0.0	5.1	1.4	3.4	12.8	77.3
╪	0.0	0.0	0.0	0.0	2.6	74.1	23.3
₹	0.0	0.0	4.7	1.0	7.6	31.8	54.9
+							
+			 .				

SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft)	Material Description	uscs			
0	TP-1	1	1.5	Silt, little fine Sand. (MC=19.3%)	ML			
	TP-1	2	3	Fine Sand, some Silt. (MC=10.5%)	SM			
Δ	TP-1	3	4.5	Silt, and fine to medium Sand. (MC=17.0%)	ML			

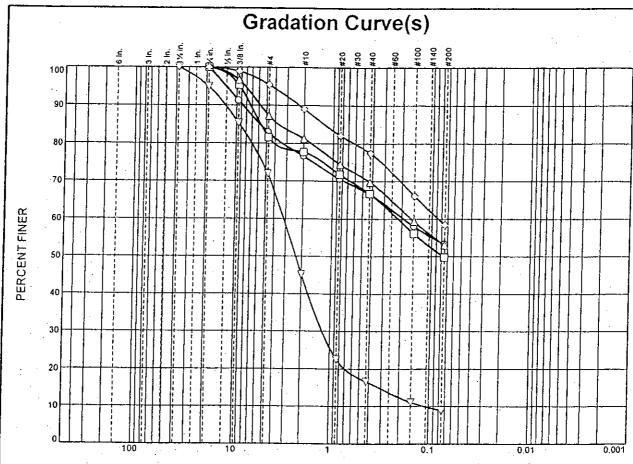
Melick-Tully & Associates, P.C.

Client:

Project: Cornwall Commons, Cornwall, New York

Project No.: 2600-392

Plate 5A



_	····			G	RAIN SIZE -	mm.	
ļ	% +3"	% Gravel			% Sand		A. =:
	/6 T S	Coarse	Fine	Coarse	Medium	Fine	% Fines
0	0.0	0.0	17.2	6.2	10.0	13.4	53.2
	0.0	0.0	18.4	3.9	11.0	. 16.9	49.8
	0.0	0.0	12.7	6.1	11.4	16.7	53.1
	0.0	0.0	4.6	6.4	11.6	19.0	58.4
∇	0.0	5.1	23.0	26.7	28.6	7.7	8.9

	SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	uscs				
0	TP-6	1	1	Silt, some fine to coarse Sand, little fine Gravel. (MC=13.6%)	ML				
	TP-9	1	5	Fine to medium Sand, and Silt, little fine Gravel. (MC=13.3%)	SM				
Δ	TP-10	1	3	Silt,, some fine to coarse Sand, little fine Gravel. (MC=14.1%)	ML				
\Q	TP-13	1	2	Silt, and fine to coarrse Sand, trace fine Gravel. (MC=15.0%)	ML				
∇.	TP-24	1	2	Fine to coarse Sand, some f-c Gravel, trace Silt. (MC=8.9%)	SP-SM				

Melick-Tully & Associates, P.C.

Client:

Project: Comwall Commons, Comwall, New York

Project No.: 2600-392

Plate 5B

APPENDIX

APPENDIX

Limitations

A. Subsurface Information

Locations: The locations of the explorations were approximately determined by tape measurement from a plan entitled "Concept Plan Prepared for Cornwall Commons" prepared by Lanc & Tully Engineering and Surveying, P.C. dated 11/30/05. Elevations of the explorations were approximately determined by interpolation between contours shown on topographic plans provided to us by the owner. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

<u>Interface of Strata</u>: The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types, and the transitions may be gradual. The stratum lines shown on soil profiles are based upon interpolation between explorations and may not represent actual subsurface conditions.

<u>Field Logs/Final Logs</u>: A field log was prepared for each exploration by a member of our staff. The field log contains factual information and interpretation of the soil conditions between samples. Our recommendations are based on the final logs as shown in this report and the information contained therein, and not on the field logs. The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and/or tests of the field samples.

<u>Water Levels</u>: Water level readings have been made in the explorations at times and under conditions stated on the individual logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater will occur due to variations in rainfall, temperature, and other factors.

<u>Pollution/Contamination</u>: Unless specifically indicated to the contrary in this report, the scope of our services was limited only to investigation and evaluation of the geotechnical engineering aspects of the site conditions, and did not include any consideration of potential site pollution or contamination resulting from the presence of chemicals, metals, radioactive elements, etc. This report offers no facts or opinions related to potential pollution/contamination of the site.

Environmental Considerations: Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may affect the site development, e.g., wetlands determinations, flora and fauna, wildlife, etc. The conclusions and recommendations of this report are not intended to supersede any environmental conditions which should be reflected in the site planning.

B. Applicability of Report

This report has been prepared in accordance with generally accepted soils and foundation engineering practices for the exclusive use of Centex Homes, L.L.C. for specific application to the preliminary design of the proposed project. No other warranty, expressed or implied, is made.

A more detailed subsurface investigation should be performed at the site prior to proceeding with final design. This investigation should consider the final locations and design features of the proposed facilities and should serve to confirm and/or further define the subsurface conditions and recommendations discussed in this preliminary study.