APPENDIX F

GEOTECHNICAL REPORT

Contents:

ROJECT SCOPING REPORT

CODDINGTON ROAD
(COUNTY ROUTE 119)

DANBY TOWN LINE TO CITY OF ITHACA LINE

TOWN OF ITHACA
TOMPKINS COUNTY, NEW YORK

NYSDOT PIN 3753.24

DECEMBER 2005

EMPIRE GEO SERVICES, INC.

January 26, 2006
Project No. CE-05-025

Mr. David Askinazi, P.E.
Dewberry-Goodkind, Inc.
183 East Main Street
Suite 700
Rochester, New York 14604-1617

Re: Revised Pavement Section
Coddington Road Improvements
Tompkins County, New York

Dear Mr. Askinazi:

The following letter presents an addendum to the geotechnical report prepared by Empire Geo-Services, Inc. (Empire), dated November 21, 2005, for the above referenced project. At the time our original geotechnical report was prepared, information regarding the percent of heavy truck traffic (i.e. FHWA Class 4 or higher) included in the average daily traffic (ADT) volumes, provided by Dewberry-Goodkind, Inc. (Dewberry), was not available. As stated in our original geotechnical report, the recommended pavement section was based on the assumption that the ADT volumes consisted of approximately 25 percent heavy truck traffic.

Based on our recent phone conversation, we understand the actual percent heavy truck traffic included in the ADT volumes is approximately 12 percent. As you requested, we have re-evaluated the design pavement section based on the revised heavy truck traffic of 12 percent. The following addendum presents a "Revised Pavement Design Considerations and Recommendations" section, which supercedes the "Pavement Design Considerations and Recommendations" section presented in our original geotechnical report.

REVISED PAVEMENT DESIGN CONSIDERATIONS AND RECOMMENDATIONS

The existing asphalt pavement should be removed in the areas to be reconstructed. Existing subbase stone material, where present beneath existing pavements, may be stockpiled and re-used provided the material complies with NYSDOT Standard Specifications, Item No. 304.14 M - Type 4 Subbase. In addition, the asphalt

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concrete can also be milled and reused as reclaimed asphalt pavement (RAP) Subbase in accordance with NYSDOT Standard Specifications, Section 304-2.02. If existing pavement materials are used for subbase in the new pavement construction, they should be placed in the lower 8-inches of the recommended subbase course, as presented below. The remaining portion of the subbase course should be new subbase material conforming to NYSDOT Standard Specifications, Item No. 304.12 M - Type 2 Subbase.

Based on the relatively shallow auger refusal depths (apparent top of bedrock), encountered at some of the boring locations, it is anticipated that some bedrock excavation may be required. The Shale bedrock sampled in the borings was generally weathered with a "very poor" to "poor" rock mass quality indicating that the upper zone of bedrock may be partially rippable, however, in general it appears it will be necessary to loosen the bedrock prior to excavation, using hydraulic/pneumatic breakers, rock grinders or through stringently controlled blasting methods. Upon removal of existing pavement materials and excavation to design subgrade elevations, the subgrade surface should be prepared in accordance with the guidelines detailed in this report. The final subgrade surfaces should be sloped and sealed with a steel drum roller to promote runoff to interceptor trenches or drainage swales along the pavement edges.

Accumulation of water on pavement subgrades should be avoided by grading the subgrade to a slope of at least 2 percent. Continuous under drains along the roadway shoulders are recommended to drain the pavement subbase course and subgrades and limit the potential for frost action. The underdrains should include a geotextile, selected considering drainage and filtration, installed around drainage stone surrounding a slotted or perforated drain pipe. The underdrains should discharge to a suitable oulet approximately every 75 meters. The drainage stone should be sized in accordance with the pipe slotting or perforations. A crushed aggregate conforming to NYSDOT Standard Specifications Section 703-02, Size Designation No. 2 (1 inch washed gravel or stone) is generally acceptable. The underdrain pipes should be set below the top of the soil subgrade elevation. The drainage stone and surrounding geotextile should extend above the underdrain pipe to the top of the subbase course elevation.

The pavement sections recommended below are based on the assumption that the subgrades will be prepared as discussed below. A stabilization/separation geotextile is recommended beneath the subbase course of both heavy duty and light duty pavement sections.

Recommended Asphalt Concrete Pavement Section:

- 2 inches (50 mm) – Top Course
- 3.5 inches (88 mm) – Binder Course
- 4 inches (100 mm) – Asphalt-Treated Permeable Base
- 12 to 14 inches (300 to 350 mm)– Subbase Course*
- Geotextile

* A subbase stone thickness of 12 inches may be used in areas where the average daily traffic (ADT) volume is less than 1,000 vehicles/day. It is recommended that the subbase stone thickness should be increased to 14 inches in areas where the ADT volume is between 1,000 and 1,700 vehicles/day. In addition, it may be necessary to increase the subbase course thickness in some areas to improve subgrade conditions and to promote drainage to underdrains, etc. as discussed above.

Materials for the above pavement structure components should consist of the following:

A. Asphalt Concrete Top Course - NYSDOT Standard Specifications, Item No. 403.198202 M or 403.198302 M - Hot Mix Asphalt, Type 7F Top Course.

B. Asphalt Concrete Binder Course - NYSDOT Standard Specifications, Item No. 403.138902 M - Hot Mix Asphalt, Type 3 Binder Course.

C. Subbase Course – Should comply with NYSDOT Standard Specifications, Item No. 304.12 M - Type 2 Subbase. As stated above, existing pavement materials may be reused in the lower 8-inches of the subbase course, provided they are suitable and comply with NYSDOT Standard Specifications, Section 304-2.02.

D. Asphalt-Treated Permeable Base – Should comply with NYSDOT Standard Specifications, Item No. 402.010901 M – Type 1 F9 Asphalt-Treated Permeable Base Course.

E. Geotextile - Woven polypropylene stabilization/separation geotextile (i.e., Mirafi 500X or approved equivalent).

The above pavement sections were developed using the NYSDOT Thickness Design Manual for New and Reconstructed Pavement, along with American

Association of State Highway and Transportation Officials (AASHTO) "Interim Guide Method for Design of Flexible Pavements".

The pavement section was developed based on the following design conditions and assumptions:

- A fifty-year design life was used for the pavement structure life and assumes that proper drainage of the pavement structure and subgrades will be maintained throughout this duration.

- About 3,300,000 18 kip (80 kN) equivalent axle loads (EAL's) have been assumed over the design life where the ADT volume is between 1,000 and 1,700 vehicles/day.

- About 2,000,000 18 kip (80 kN) equivalent axle loads (EAL's) have been assumed over the design life where the ADT volume is less than 1,000 vehicles/day.

- Based on the information provided by Dewberry, we understand the ADT volumes include approximately 12 percent heavy truck traffic (i.e. FHWA Class 4 or higher).

- A design Soil Resilient Modulus (M_r) of about 28 MPa (4,100 psi) was assumed to be appropriate for the existing pavement subgrade conditions, provided the subgrades are proof-rolled and prepared as discussed below.

CONCLUDING REMARKS

This letter has been prepared for the exclusive use of Dewberry-Goodkind, Inc. and other members of the design team, for specific application to this site and this project only.

The recommendations were prepared based on Empire Geo-Services, Inc.'s understanding of the proposed project, as described herein, and through the application of generally accepted soils and foundation engineering practices. No warranties, expressed or inferred, are made by the conclusions, opinions, recommendations or services provided.

Empire Geo-Services, Inc. should be informed of any changes to the planned construction so that it may be determined if any changes to the recommendations presented in this letter are necessary. Empire Geo-Services, Inc. should also

review final plans and specifications to verify that the recommendations were properly interpreted and implemented.

Please contact the undersigned should you have any questions or wish to discuss this information and our recommendations.

Sincerely,

EMPIRE GEO-SERVICES, INC.

Tod Kobik
Tod M. Kobik, P.E.
Geotechnical Engineer
Project Manager

EMPIRE GEO SERVICES, INC.
A SUBSIDIARY OF SJB SERVICES, INC.

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November 21, 2005
Project No. CE-05-025

Mr. David Askinazi, P.E.
Dewberry-Goodkind, Inc.
183 East Main Street
Suite 700
Rochester, New York 14604-1617

Re: Geotechnical Evaluation for
Coddington Road Improvements
Tompkins County, New York

Dear Mr. Askinazi:

Pursuant to your request and authorization, Empire Geo-Services, Inc. (Empire) completed a subsurface investigation and geotechnical evaluation of the soil conditions at the above referenced site. The purpose of our investigation was to evaluate the subsurface conditions and provide geotechnical recommendations related to the proposed Coddington Road reconstruction/rehabilitation project planned in the Town of Ithaca, New York. The approximate location of the project site is shown on Figure 1.

This letter summarizes the results of our subsurface exploration and presents geotechnical recommendations for the pavement reconstruction.

PROJECT DESCRIPTION

Based on the information provided by Dewberry-Goodkind, Inc. (Dewberry), we understand the project will include reconstruction or rehabilitation of an approximate 3 mile section of Coddington Road in the Town of Ithaca, New York between the Danby Town line (south limit) and the City of Ithaca City line (north limit). Coddington Road is a 2 lane Urban/Rural Collector with 2 foot gravel shoulders. The project is planned to include minor profile adjustments along the Coddington Road alignment with maximum cut and fill depths on the order of 5 to 6 feet. The roadway profile adjustments will also require reconstruction of various intersections along Coddington Road.

Traffic information for the project area was provided by Dewberry and included the following:

- Average Daily Traffic (ADT) Volume:

1625 feet south of the Updike Road intersection	799 vehicles/day
500 feet south of the Burns Road intersection	965 vehicles/day
230 feet south of the Ithaca College entrance road	1,467 vehicles/day

- Assumed growth rate of 0.5 percent per year non-compounded.

SUBSURFACE EXPLORATION

The subsurface exploration program consisted of seventy-six (76) test borings and one (1) soil probe boring drilled between October 11th and 25th, 2005. The test borings were performed by SJB Services, Inc. (SJB), our affiliated subsurface drilling company. The borings are designated as B-1 through B-69, B-46A and RB-1 through RB-7, and their approximate locations are shown on Figures 2 through 12. Dewberry established the test boring locations on a site plan provided to Empire. The test borings were then located in the field by SJB and were referenced from existing site features.

Test borings B-1 through B-57, B-46A, B-69 and RB-1 through RB-7 were performed in generally alternating travel lanes of Coddington Road along the length of the project work area. Test boring B-58 was performed in the eastbound travel lane of Hudson Street near the intersection with Coddington Road. Test boring B-59 was performed in the southbound travel lane of Updike Road near the intersection with Coddington Road. Test borings B-60 and B-61 were performed in the westbound and eastbound travel lanes of Burns Road, respectively, near the intersection with Coddington Road. Test boring B-62 was performed in the eastbound travel lane of East King Road near the intersection with Coddington Road. Test boring B-63 was performed in the southbound travel lane of Troy Road near the intersection with Coddington Road. Test boring B-64 was performed in the northbound travel lane of Rich Road near the intersection with Coddington Road. Test boring B-65 was performed in the northbound travel lane of West Northview Road near the intersection with Coddington Road. Test boring B-66 was performed in the northbound travel lane of Northview Road near the intersection with Coddington Road. Test boring B-67 was performed in the westbound travel lane of Juniper Drive near the intersection with Coddington Road. Test boring B-68 was performed in the eastbound travel lane of Spruce Way near the intersection with Coddington Road.

The test borings were advanced to depths ranging from 1.0 to 16.3 feet below the existing ground surface (bgs). The test borings were made using a Central Mine Equipment (CME) model 850 all-terrain vehicle mounted drill rig, and a CME

model 75 truck mounted drill rig, using hollow stem auger techniques. Split spoon samples and Standard Penetration Tests (SPTs) were generally taken continuously from the ground surface to the boring termination depth at each location. The split spoon sampling and SPTs were completed in general accordance with *ASTM D 1586 - "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils"*.

Test borings RB-1 through RB-7 were advanced through overburden soils to bedrock. The bedrock encountered in the test borings was cored using an NQ size double tube core barrel in accordance with *ASTM D 2113 – "Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation"*. The core sampling was advanced 3.0 feet into bedrock.

A geotechnical engineer prepared the test boring logs based on visual observation of the recovered soil and pavement samples and review of the driller's field notes. The soil samples were described based on visual/manual estimation of the grain size distribution, along with characteristics such as color, relative density, consistency, moisture, etc. The rock cores were also described, including characteristics such as color, rock type, hardness, weathering, bedding thickness, core recovery and rock quality designation (RQD). The test boring logs are included in Appendix A, along with general information and a key of terms and symbols used to prepare the logs.

LABORATORY TESTING

Selected recovered soil samples were tested by SJB as part of the subsurface exploration program. The laboratory testing included the following tests:

- Ductile Iron Pipe Research Association (DIPRA) 10 point test including soil resistivity, redox potential, pH, sulfides and natural moisture content.

The laboratory test results are included in Appendix B.

SUMMARY OF SUBSURFACE CONDITIONS

The general stratigraphy encountered in the test borings typically consisted of a surficial asphalt pavement layer underlain by a layer of subbase stone and/or granular fill overlying indigenous soils or fill type soils. The asphalt pavement thicknesses ranged from approximately 2.5 to 18 inches, and are presented in Appendix C, Table I. The thickness of the subbase stone/granular fill layer, where encountered, ranged from approximately 6 to 18 inches. The underlying fill type soils generally consisted of brown, dark brown, black and gray sandy and clayey

silt, silty gravelly sand, and sandy gravel soils extending to depths ranging from 2.5 to 9 feet. The consistency of the cohesive fill type soils was "stiff" as evidenced by Standard Penetration Test (SPT) "N" values of 10. SPT "N" values in the cohesionless indigenous soils ranged from 6 to greater than 50 indicating a "loose" to "very compact" relative density.

The indigenous soils generally consisted of brown, dark brown to gray silty clay, clayey silt, sandy silt, silty sand, gravelly sand and sandy gravel soils. Weathered shale rock fragments and cobbles were encountered at various depths and locations. The indigenous soils encountered are generally classified as CL, ML, SM, SP and GP group soils, using the Unified Soil Classification System (USCS). SPT "N" values in the cohesive indigenous soils ranged from 4 to greater than 50 indicating a "soft" to "hard" consistency. SPT "N" values in the cohesionless indigenous soils ranged from 5 to greater than 50 indicating a "loose" to "very compact" relative density.

Auger and/or sample spoon refusal was encountered in test borings B-40, B-42, B-47, B-49, B-51, B-52, B-53, B-55 through B-59 and RB-1 through RB-7 at depths ranging from 1.0 to 13.3 feet bgs. The depth of auger or sample spoon refusal is presented in Appendix C, Table II.

Bedrock core samples were obtained at test boring locations RB-1 through RB-7, after reaching auger refusal. The bedrock cores recovered generally consisted of gray, medium hard to hard, weathered, Shale Rock. The core recoveries ranged from 76% to 100%. The rock quality designation (RQD) values ranged from 0% to 30% indicating the recovered rock cores had a "very poor" to "poor" rock mass quality. It is possible the refusal material encountered in the remaining test borings was due to bedrock, however, rock coring was not performed to verify the nature of the refusal material.

Water level measurements were made in the test borings following the completion of overburden drilling and sampling. These measurements are noted on the subsurface exploration logs in Appendix A. Freestanding water was encountered upon completion of overburden drilling and sampling in test borings B-6, B-10, B-21, B-42 and B-44 at depths ranging from 0.8 to 5.0 feet bgs. Freestanding water measurements were also obtained in test borings RB-1 through RB-7 upon completion of rock coring, however these measurements are likely not indicative of the natural groundwater conditions as water was added to the bore holes to facilitate coring operations. Freestanding water was not encountered in the remaining test borings. It should be understood that adequate time may not have

passed after completion of drilling of the borings for groundwater to enter the augers and achieve a static level.

It is possible that some localized perched or trapped groundwater may be encountered at various times and locations in some of the upper more permeable fill and indigenous soils, which overlie less permeable silty clay and clayey silt soils or bedrock. Perched groundwater conditions, if present, can be more prevalent following heavy or extended periods of rain and during seasonally wet periods.

It should be expected that both permanent and perched groundwater conditions could vary with location and with changes in soil conditions, precipitation and seasonal conditions.

PAVEMENT DESIGN CONSIDERATIONS AND RECOMMENDATIONS

The existing asphalt pavement should be removed in the areas to be reconstructed. Existing subbase stone material, where present beneath existing pavements, may be stockpiled and re-used provided the material complies with NYSDOT Standard Specifications, Item No. 304.14 M - Type 4 Subbase. In addition, the asphalt concrete can also be milled and reused as reclaimed asphalt pavement (RAP) Subbase in accordance with NYSDOT Standard Specifications, Section 304-2.02. If existing pavement materials are used for subbase in the new pavement construction, they should be placed in the lower 8-inches of the recommended subbase course, as presented below. The remaining portion of the subbase course should be new subbase material conforming to NYSDOT Standard Specifications, Item No. 304.12 M - Type 2 Subbase.

Based on the relatively shallow auger refusal depths (apparent top of bedrock), encountered at some of the boring locations, it is anticipated that some bedrock excavation may be required. The Shale bedrock sampled in the borings was generally weathered with a "very poor" to "poor" rock mass quality indicating that the upper zone of bedrock may be partially rippable, however, in general it appears it will be necessary to loosen the bedrock prior to excavation, using hydraulic/pneumatic breakers, rock grinders or through stringently controlled blasting methods. Upon removal of existing pavement materials and excavation to design subgrade elevations, the subgrade surface should be prepared in accordance with the guidelines detailed in this report. The final subgrade surfaces should be sloped and sealed with a steel drum roller to promote runoff to interceptor trenches or drainage swales along the pavement edges.

Accumulation of water on pavement subgrades should be avoided by grading the subgrade to a slope of at least 2 percent. Continuous under drains along the roadway shoulders are recommended to drain the pavement subbase course and subgrades and limit the potential for frost action. The underdrains should include a geotextile, selected considering drainage and filtration, installed around drainage stone surrounding a slotted or perforated drain pipe. The underdrains should discharge to a suitable oulet approximately every 75 meters. The drainage stone should be sized in accordance with the pipe slotting or perforations. A crushed aggregate conforming to NYSDOT Standard Specifications Section 703-02, Size Designation No. 2 (1 inch washed gravel or stone) is generally acceptable. The underdrain pipes should be set below the top of the soil subgrade elevation. The drainage stone and surrounding geotextile should extend above the underdrain pipe to the top of the subbase course elevation.

The pavement sections recommended below are based on the assumption that the subgrades will be prepared as discussed below. A stabilization/separation geotextile is recommended beneath the subbase course of both heavy duty and light duty pavement sections.

Recommended Asphalt Concrete Pavement Section:

- 2 inches (50 mm) – Top Course
- 4 inches (100 mm) – Binder Course
- 4 inches (100 mm) – Asphalt-Treated Permeable Base
- 12 to 15 inches (300 to 375 mm)– Subbase Course*
- Geotextile

* A subbase stone thickness of 12 inches may be used in areas where the average daily traffic (ADT) volume is less than 1,000 vehicles/day. It is recommended that the subbase stone thickness should be increased to 15 inches in areas where the ADT volume is between 1,000 and 1,700 vehicles/day. In addition, it may be necessary to increase the subbase course thickness in some areas to improve subgrade conditions and to promote drainage to underdrains, etc. as discussed above.

Materials for the above pavement structure components should consist of the following:

A. Asphalt Concrete Top Course - NYSDOT Standard Specifications, Item No. 403.198202 M or 403.198302 M - Hot Mix Asphalt, Type 7F Top Course.

B. Asphalt Concrete Binder Course - NYSDOT Standard Specifications, Item No. 403.138902 M - Hot Mix Asphalt, Type 3 Binder Course.

C. Subbase Course – Should comply with NYSDOT Standard Specifications, Item No. 304.12 M - Type 2 Subbase. As stated above, existing pavement materials may be reused in the lower 8-inches of the subbase course, provided they are suitable and comply with NYSDOT Standard Specifications, Section 304-2.02.

D. Asphalt-Treated Permeable Base – Should comply with NYSDOT Standard Specifications, Item No. 402.010901 M – Type 1 F9 Asphalt-Treated Permeable Base Course.

E. Geotextile - Woven polypropylene stabilization/separation geotextile (i.e., Mirafi 500X or approved equivalent).

The above pavement sections were developed using the NYSDOT Thickness Design Manual for New and Reconstructed Pavement, along with American Association of State Highway and Transportation Officials (AASHTO) "Interim Guide Method for Design of Flexible Pavements".

The pavement section was developed based on the following design conditions and assumptions:

- A fifty-year design life was used for the pavement structure life and assumes that proper drainage of the pavement structure and subgrades will be maintained throughout this duration.

- About 6,800,000 18 kip (80 kN) equivalent axle loads (EAL's) have been assumed over the design life where the ADT volume is between 1,000 and 1,700 vehicles/day.

- About 4,000,000 18 kip (80 kN) equivalent axle loads (EAL's) have been assumed over the design life where the ADT volume is less than 1,000 vehicles/day.

- The ADT volumes provided by Dewberry were assumed to include approximately 25 percent heavy truck traffic (i.e. FHWA Class 4 or higher). It is recommended that the actual percent heavy truck traffic be verified prior to final design.

- A design Soil Resilient Modulus (M_r) of about 28 MPa was assumed to be appropriate for the existing pavement subgrade conditions, provided the subgrades are proof-rolled and prepared as discussed below.

SUBGRADE PREPARATION FOR PAVEMENT AREAS

Existing pavement and subbase stone materials should be removed. Following removal of the pavement and subbase materials and excavation to the proposed subgrades, the exposed subgrades should be thoroughly proof-rolled. The proof-rolling should be performed, prior to any required fill placement, using a smooth drum roller weighing at least 7 tons. The roller should be operated in the static mode and complete at least two (2) passes over the exposed subgrades.

The subgrade proof-rolling should be observed by a representative of Empire. Any areas, which appear wet, loose, soft, unstable or otherwise unsuitable, should be undercut. Over excavation, which may be required as the result of the evaluation, should be performed based on guidance provided by Empire. Undercut excavations, which are required to stabilize existing subgrades, should be backfilled with a controlled Structural Fill, as described in Appendix D.

Suitable Granular Fill, as described in Appendix D, should be used to raise the site grades, beneath the subbase course for the pavement construction. Placement of subgrade fill (Suitable Granular Fill), to raise site grades, should be observed and tested by a representative of Empire.

During construction the contractor should take precautions to limit construction traffic over the subgrades for pavement construction. Any subgrades, including existing soil subgrades or fill subgrades, which become damaged, rutted or unstable should be undercut and repaired as necessary prior to placement of subsequent fill courses or surface materials.

Placement of the pavement Subbase stone can proceed, following proper subgrade preparation, proof-rolling and subgrade filling as described above. Installation of adjacent geotextile panels should have minimum overlap of 18 inches. The subbase stone should be placed and compacted in accordance with the recommendations presented in Appendix D. Construction of the asphaltic concrete courses (i.e. asphalt treated permeable base, binder and top) should be performed in accordance with NYSDOT Standard Specification Section 400.

CONCLUDING REMARKS

This report was prepared to assist in planning the design and construction of the proposed Coddington Road reconstruction/rehabilitation project planned in the Town of Ithaca, New York. The report has been prepared for the exclusive use of Dewberry-Goodkind, Inc. and other members of the design team, for specific application to this site and this project only.

The recommendations were prepared based on Empire Geo-Services, Inc.'s understanding of the proposed project, as described herein, and through the application of generally accepted soils and foundation engineering practices. No warranties, expressed or inferred, are made by the conclusions, opinions, recommendations or services provided.

Empire Geo-Services, Inc. should be informed of any changes to the planned construction so that it may be determined if any changes to the recommendations presented in this report are necessary. Empire Geo-Services, Inc. should also review final plans and specifications to verify that the recommendations were properly interpreted and implemented.

Important information regarding the use and interpretation of this report is presented in Appendix E.

Please contact the undersigned should you have any questions or wish to discuss this information and our recommendations.

Sincerely,

EMPIRE GEO-SERVICES, INC.

Tod Kobik

Tod M. Kobik, P.E.
Geotechnical Engineer
Project Manager

Tompkins County

Coddington Road Improvements Project

Dewberry-Goodkind Inc.

Boring Locations

Identification	Station	Asphalt Thickness (in)	Subbase Thickness (in)	Gravel Fill Thickness (in)	Depth of Boring (ft)	Comments
B-1	1+010	10	14.5		4	No Groundwater
B-2	1+075	9.5	8.5		5.5	No Groundwater
B-3	1+130	9.5	8.5		7.5	No Groundwater
B-4	1+225	9.5	8.5		5.5	No Groundwater
B-5	1+300	8.5	9.5		5.5	No Groundwater
B-6	1+375	9.5	8.5		7.5	Groundwater @ 4.5'
B-7, DIPRA-1	1+450	9	8.5		9.5	No Groundwater
B-8	1+525	8.5	6		5.5	No Groundwater
B-9, DIPRA-2	1+590	7.2	8.4	8.4	8	No Groundwater
B-10, DIPRA-3	1+675	7.2	8.4	8.4	8	No Groundwater
B-11, DIPRA-4	1+750	9.6	9.6	8.4	11	No Groundwater
B-12, DIPRA-5	1+950	7.2	9.6	7.2	8	No Groundwater
B-13	2+050	7.2	7.2	9.6	4	No Groundwater
B-14, DIPRA-6	2+150	7.2	8.4	8.4	8	No Groundwater
B-15, DIPRA-7	2+220	8.4	8.4	7.2	11	Groundwater @ 11'
B-16, DIPRA-8	2+275	7.2	7.2	9.6	12	No Groundwater
B-17, DIPRA-9	2+300	7.2	9.6	7.2	10	No Groundwater
B-18	2+425	18	6		6	No Groundwater
B-19	2+525	6	12		5.5	No Groundwater
B-20	2+650	7	0		4.5	No Groundwater
B-21	2+725	3.5	6		4.5	Groundwater @ 10"
B-22, DIPRA-10	2+875	8	12		9	No Groundwater
B-23, DIPRA-11	3+025	7	0		10.5	No Groundwater
B-24	3+100	3.5	3.5		4.5	No Groundwater
B-25	3+180	3.5	3		4.5	No Groundwater
B-26, DIPRA-12	3+260	6	6		7	Groundwater @ 6"
B-27	3+350	6	0		4	No Groundwater
B-28	3+455	6	0		4	No Groundwater
B-29	3+555	6	0		4	No Groundwater
B-30	3+650	4	0		4	No Groundwater
B-31	3+750	6	0		4	No Groundwater
B-32	3+850	6	6		4	No Groundwater
B-33	3+950	6	6		4	No Groundwater

Average Depths (in)	
Asphalt	4.80
Subbase	9.78

12/14/2005

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Boring Locations

Identification	Station	Asphalt Thickness (in)	Subbase Thickness (in)	Gravel Fill Thickness (in)	Depth of Boring (ft)	Comments
B-34	4+050	6	0	0	4	No Groundwater
B-35	4+150	3.5	6		4	No Groundwater
B-36	4+250	6	1.2	18	4	Groundwater @ 4'
B-37	4+325	6	6	18	4	No Groundwater
B-38	4+375	3.5	0		7	No Groundwater
B-39, DIPRA-13	4+450	1.5	2	0	7	No Groundwater
B-40, DIPRA-14	4+525	3	0	6	5.6	No Groundwater
B-41	4+600	3.5	0	30	4.5	No Groundwater
B-42, DIPRA-15	4+660	3.5	16		7.7	Groundwater @ 5.0'
B-43	4+825	3.5	18		4	No Groundwater
B-44, DIPRA-16	4+900	3.5	18		8	Groundwater @ 2.0'
B-45	4+975	5	12		4	No Groundwater
B-46	5+040	3.5	24		4	No Groundwater
B-46A	5+040					Unsampled to 7' - Siltstone Pieces from 5' to 7'
B-47, DIPRA-17	5+090	3.5	0	24	4	No Groundwater
B-48	5+180	3.5	14		6.5	No Groundwater
B-49, DIPRA-18	5+270	3.5	8.5		1	No Groundwater
B-50	5+350	3.5	12		4.5	No Groundwater
B-51, DIPRA-19	5+425	3.5	12		2.8	Weathered Shale @ 2.8'
B-52, DIPRA-20	5+500	2.5	8		3.7	No Groundwater
B-53, DIPRA-21	5+575	3.5	12		4.8	No Groundwater
B-54	5+660	3.5	9.5		4.5	No Groundwater
B-55	5+755	3.5	6		2.6	No Groundwater
B-56	5+850	3.5	6	15	2.1	No Groundwater
B-57	5+950	3.5	15.5		3.5	No Groundwater
B-58	6+050	3.5	12		2.5	No Groundwater
B-59	Updike Rd	5	13		4.1	No Groundwater
B-60	Burns Rd	12	0		4	No Groundwater
B-61	Burns Rd	3.5	6		4	No Groundwater
B-62	King Rd	3.5	8		4	No Groundwater
B-63	Troy Rd	2.5	6		4	No Groundwater
B-64	Rich Rd	3.5	12		4	No Groundwater

Boring Locations

Identification	Station	Asphalt Thickness (in)	Subbase Thickness (in)	Gravel Fill Thickness (in)	Depth of Boring (ft)	Comments
B-65	W.NorthView Rd	3.5	0		4	No Groundwater
B-66	North View Rd	3.5	0		4	No Groundwater
B-67	Juniper Dr	3.5	6		4	No Groundwater
B-68	Spruce Way	3.5	6		4	No Groundwater
B-69	Coddington Rd	3.5	18		4	No Groundwater
RB-1	1+840	3.5	6		16.3	Groundwater @ 11.2', Rock @ 13.3'
RB-2	1+890	3.5	0		12.5	Groundwater @ 8.2', Rock @ 6.5'
RB-3	2+340	3.5	12		13	Groundwater @ 3.4', Rock @ 10'
RB-4	2+565	6	6		16.3	Groundwater @ 5.6', Rock @ 13.3'
RB-5	2+790	3.5	6		14	Groundwater @ 4.1', Rock @ 11'
RB-6	2+970	3.5	12		13	Groundwater @ 3.6', Rock @ 10'
RB-7	4+727	3.5	12		12.5	Groundwater @ 5.7', Rock @ 9.5'

DATE

STARTED _____

FINISHED _____

SHEET ____ OF ____

SJB SERVICES, INC. SUBSURFACE LOG

PROJ. No. _____

HOLE No. _____

SURF. ELEV. _____

G.W. DEPTH _____

PROJECT _____ LOCATION _____

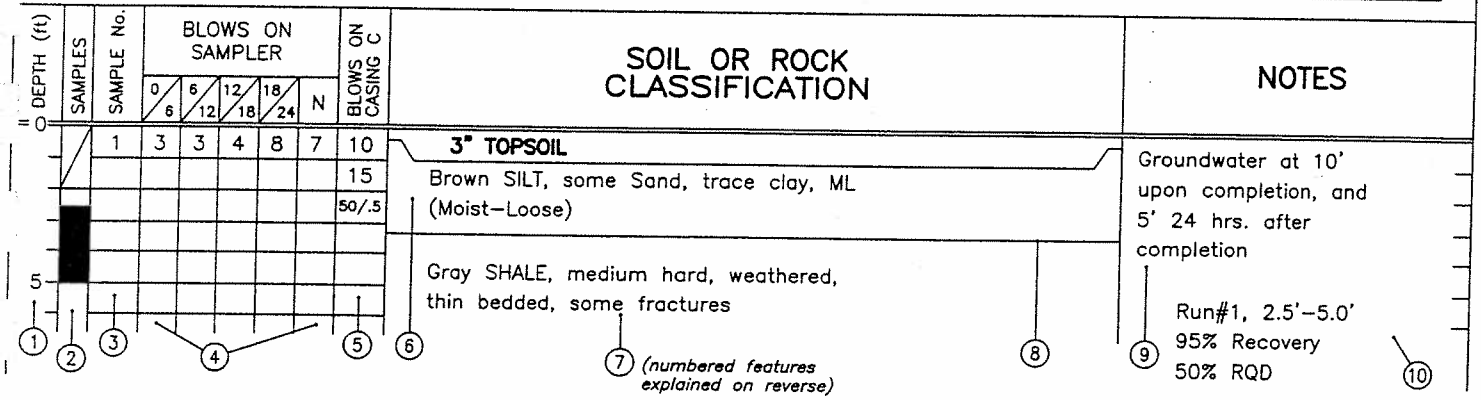

TABLE I

- Split Spoon Sample
- Shelby Tube Sample
- Geoprobe Macro–Core
- Auger or Test Pit Sample
- Rock Core

TABLE II

Identification of soil type is made on basis of an estimate of particle sizes, and in the case of fine grained soils also on basis of plasticity.

Soil Type	Soil Particle Size	
Boulder	>12"	Coarse Grained (Granular)
Cobble	3" – 12"	
Gravel – Coarse	3" – 3/4"	
– Fine	3/4" – #4	
Sand – Coarse	#4 – #10	
– Medium	#10 – #40	
– Fine	#40 – #200	
Silt – Non Plastic (Granular) Clay – Plastic (Cohesive)	<#200	Fine Grained

TABLE III

The following terms are used in classifying soils consisting of mixtures of two or more soil types. The estimate is based on weight of total sample.

Term	Percent of Total Sample
"and"	35 – 50
"some"	20 – 35
"little"	10 – 20
"trace"	less than 10

(When sampling gravelly soils with a standard split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter.)

TABLE IV

The relative compactness or consistency is described in accordance with the following terms:

Granular Soils		Cohesive Soils	
Term	**Blows per Foot, N**	**Term**	**Blows per Foot, N**
Very Loose	0 – 4	Very Soft	0 – 2
Loose	4 – 10	Soft	2 – 4
Firm	10 – 30	Medium	4 – 8
Compact	30 – 50	Stiff	8 – 15
Very Compact	>50	Very Stiff	15 – 30
		Hard	>30

(Large particles in the soils will often significantly influence the blows per foot recorded during the penetration test)

TABLE V

Varved	Horizontal uniform layers or seams of soil(s).
Layer	Soil deposit more than 6" thick.
Seam	Soil deposit less than 6" thick.
Parting	Soil deposit less than 1/8" thick.
Laminated	Irregular, horizontal and angled seams and partings of soil(s).

TABLE VI

Rock Classification Term		Meaning
Hardness	– Soft	Scratched by fingernail
	– Medium Hard	Scratched easily by penknife
	– Hard	Scratched with difficulty by penknife
	– Very Hard	Cannot be scratched by penknife
Weathering	– Very Weathered	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
	– Weathered	
	– Sound	

Rock Classification Term			
Bedding	– Laminated	(<1")	Natural breaks in Rock Layers
	– Thin Bedded	(1" – 4")	
	– Bedded	(4" – 12")	
	– Thick Bedded	(12" – 36")	
	– Massive	(>36")	

(Fracturing refers to natural breaks in the rock oriented at some angle to the rock layers)

GENERAL INFORMATION & KEY TO SUBSURFACE LOGS

The Subsurface Logs attached to this report present the observations and mechanical data collected by the driller at the site, supplemented by classification of the material removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Subsurface Logs together with the recovered samples provide a basis for evaluating the character of the subsurface conditions relative to the project. The evaluation must consider all the recorded details and their significance relative to each other. Often analyses of standard boring data indicate the need for additional testing or sampling procedures to more accurately evaluate the subsurface conditions. Any evaluation of the contents of this report and recovered samples must be performed by qualified professionals. The following information defines some of the procedures and terms used on the Subsurface Logs to describe the conditions encountered, consistent with the numbered identifiers shown on the Key opposite this page.

1. The figures in the Depth column define the scale of the Subsurface Log.

2. The Samples column shows, graphically, the depth range from which a sample was recovered. See Table I for descriptions of the symbols used to represent the various types of samples.

3. The Sample No. is used for identification on sample containers and/or Laboratory Test Reports.

4. Blows on Sampler - shows the results of the "Penetration Test", recording the number of blows required to drive a split spoon sampler into the soil. The number of blows required for each six inches is recorded. The first 6 inches of penetration is considered a seating drive. The number of blows required for the second and third 6 inches of penetration is termed the penetration resistance, N.

5. Blows on Casing - Shows the number of blows required to advance the casing a distance of 12 inches. The casing size, hammer weight, and length of drop are noted at the bottom of the Subsurface Log. If the casing is advanced by means other than driving, the method of advancement will be indicated in the Notes column or under the Method of Investigation at the bottom of the Subsurface Log. Alternatively, sample recovery may be shown in this column, or other data consistent with the column heading.

6. All recovered soil samples are reviewed in the laboratory by an engineering technician, geologist or geotechnical engineer, unless noted otherwise. Visual descriptions are made on the basis of a combination of the driller's field descriptions and noted observations together with the sample as received in the laboratory. The method of visual classification is based primarily on the Unified Soil Classification System (ASTM D 2487) with regard to the particle size and plasticity (See Table No. II), and the Unified Soil Classification System group symbols for the soil types are sometimes included with the soil classification. Additionally, the relative portion, by weight, of two or more soil types is described for granular soils in accordance with "Suggested Methods of Test for Identification of Soils" by D.M. Burmister, ASTM Special Technical Publication 479, June 1970. (See Table No. III). Description of the relative soil density or consistency is based upon the penetration records as defined in Table No. IV. The description of the soil moisture is based upon the relative wetness of the soil as recovered and is described as dry, moist, wet and saturated. Water introduced into the boring either naturally or during drilling may have affected the moisture condition of the recovered sample. Special terms are used as required to describe soil deposition in greater detail; several such terms are listed in Table V. When sampling gravelly soils with a standard two inch diameter split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

7. Rock description is based on review of the recovered rock core and the driller's notes. Frequently used rock classification terms are included in Table VI.

8. The stratification lines represent the approximate boundary between soil types and the transition may be gradual. Solid stratification lines delineate apparent changes in soil type, based upon review of recovered soil samples and the driller's notes. Dashed lines convey a lesser degree of certainty with respect to either a change in soil type or where such change may occur.

9. Miscellaneous observations and procedures noted by the driller are shown in this column, including water level observations. It is important to realize the reliability of the water level observations depends upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that any drill water used to advance the boring may have influenced the observations. The ground water level will fluctuate seasonally, typically. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or groundwater observation wells.

10. The length of core run is defined as the length of penetration of the core barrel. Core recovery is the length of core recovered divided by the core run. The RQD (Rock Quality Designation) is the total length of pieces of NX core exceeding 4 inches divided by the core run. The size core barrel used is also noted in the Method of Investigation at the bottom of the Subsurface Log.

DATE: 10/28/2005
STARTED: 10/11/2005
FINISHED: 10/11/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-1
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									1" Top Course, 9" Binder, 14.5" Subbase	Pavement Core: 1" Top Course, 9" Binder Course, 14.5" Subbase
		S-1	50/.2			Ref.	0			
2		S-2	10	10	6	5	16		Brown SILT, little Sand, trace gravel (ML) (moist, firm)	
4									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
DRILL RIG: CME-850
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/11/2005
FINISHED: 10/11/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-2
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									9.5" Asphalt, 8.5" Subbase Gravel	
2		S-1	6	8	10	15	18		Brown SILT, little Sand, little Gravel (ML) (moist, firm)	
4		S-2	44	45	35	34	80		TILL: Brownish gray SILT, little Clay, little Shale fragments (ML) (moist, very compact)	
6									Test boring terminated at depth of 5.5 feet.	Free standing water was not encountered upon completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/11/2005
FINISHED: 10/11/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-3
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									9.5" Asphalt, 8.5" Subbase Gravel	
2		S-1	4	5	6	10	11		Brown SAND, little Gravel, little Silt (SM) (moist, firm)	
4		S-2	12	8	12	8	20		Brown GRAVEL and SAND, little Silt (GP) (moist, firm)	
6		S-3	8	7	9	9	16		(Grades to "little" Shale fragments) (moist to very moist)	
8									Test boring terminated at depth of 7.5 feet.	Free standing water was not encountered upon completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-4
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									9.5" Asphalt, 8.5" Subbase Gravel	
2		S-1	4	5	5	6	10		Brown SILT, some Sand, little Gravel (ML) (moist, loose)	
4		S-2	14	14	16	10	30		Brownish gray SAND, some Silt, some Gravel (SM) (moist, firm)	
6									Test boring terminated at depth of 5.5 feet.	Free standing water was not encountered upon completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-5
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									8.5" Asphalt, 9.5" Subbase Gravel	
2		S-1	6	8	8	9	16		Brown SILT, some Sand, little Gravel (ML) (moist, loose)	
4		S-2	8	9	7	6	16		Brown SAND, little Silt, some Gravel (SM) (moist, firm)	
6									Test boring terminated at depth of 5.5 feet.	Free standing water was not encountered upon completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-6
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									9.5" Asphalt, 8.5" Subbase Gravel	
2		S-1	6	6	6	9	12		Brown SAND, little Gravel, little Silt (SM) (moist, firm)	
4		S-2	10	10	5	5	15		(Grades to "and" GRAVEL) (wet)	
6		S-3	3	3	2	3	5		(loose)	
8									Test boring terminated at depth of 7.5 feet.	Free standing water was encountered at depth 4.5' upon boring completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-7
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									1" Top Course, 8" Binder, 8.5" Subbase Gravel	Pavement Core: 1" Top Course, 8" Binder Course, 8.5" Subbase
2		S-1	14	24	10	10	34		Brown SILT, some Sand, little Gravel (ML) (moist, compact)	
4		S-2	6	7	8	5	15		Brown GRAVEL, little Sand, little Silt (GP) (moist, firm)	Angular to sub-rounded gravel
6		S-3	4	6	7	14	13			
8		S-4	7	8	10	10	18			Obtained sample DIPRA # 1
10									Test boring terminated at depth of 9.5 feet.	Free standing water was not encountered upon completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-8
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									8.5" Asphalt, 6" Subbase	
2		S-1	6	6	6	8	12		Brown SAND, some Gravel, some Silt (SM) (moist, firm)	
4		S-2	8	8	9	8	17		(Grades to "little" Clay) (very moist)	seam of dark brown organic clay
6									Test boring terminated at depth of 5.5 feet.	Free standing water was not encountered upon completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-9
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 8.5" Subbase Gravel	
2		S-1	6	7	8	11	15		Brown to gray SAND, some Gravel, little Silt (SM) (moist, firm)	
4		S-2	21	48	41	44	89		(Grades to "and" GRAVEL) (very compact)	
6		S-3	21	14	10	10	24		(Grades to "little" Gravel) (very moist, firm)	Obtained sample DIPRA # 2
8									Test boring terminated at depth of 8.0 feet.	Free standing water was not encountered upon completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
DRILL RIG: CME-850
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-10
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 8.5" Subbase Gravel	
2	/	S-1	7	8	8	8	16		Brownish gray SAND, some Gravel, little Silt (SM) (moist, firm)	
4	/	S-2	10	7	12	7	19		Brown GRAVEL, little Sand, little Silt (GP) (moist, firm)	
6	/	S-3	8	7	6	6	13			
8	/	S-4	8	10	14	20	24			Angular to sub-rounded gravel
10	/	S-5	17	16						Obtained sample DIPRA # 3
									Test boring terminated at depth of 11.0 feet.	Free standing water was encountered at depth 4.1' upon boring completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-11
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6" Asphalt, 18" Subbase and Gravel FILL	
2	/	S-1	5	5	5	8	10		Brown SILT, little to some Sand, little Gravel (ML) (moist, loose)	
4	/	S-2	10	12	8	6	20		Brownish gray SAND and GRAVEL, little Silt (SM) (moist, firm)	Angular to sub-rounded gravel
6	/	S-3	6	12	24	39	36		(compact)	
8	/	S-4	21	18	18	17	36		(Grades to "some" Gravel) (wet)	
10	/	S-5	15	49			-			Obtained sample DIPRA # 4
									Test boring terminated at depth of 11.0 feet.	Free standing water was not encountered upon the boring completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-12
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 8.5" Subbase, 8.5" Gravel FILL	
2	/	S-1	2	3	4	5	7		Brown CLAY, little to some Silt, little Sand, little Gravel (CL) (moist, medium)	
4	/	S-2	5	5	5	8	10		(Grades to "trace" embedded gravel) (stiff)	
6	/	S-3	11	12	13	13	25		Brown Fine SAND, little to some Silt, trace clay (SP) (very moist to wet, firm)	Obtained sample DIPRA # 5
8									Test boring terminated at depth of 8.0 feet.	Free standing water was not encountered upon completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/07/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-13
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 7" Subbase, 9.5" Gravel	
2		S-1	3	8	11	16	19		Brown SAND, some Silt, trace to little Gravel (SM) (moist, firm)	
4									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon test boring completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-14
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7.5" Asphalt, 8.5" Subbase, 8" Gravel FILL	
2		S-1	8	7	6	5	13		Grayish brown SAND, little to some Gravel, little Silt (SM) (moist, firm)	
4		S-2	6	5	4	4	9		(very moist, loose)	
6		S-3	8	16	29	30	45		Brown SAND, little Silt, trace gravel (SP) (wet, compact)	Driller noted cobbles Obtained sample DIPRA # 6
8									Test boring terminated at depth of 8.0 feet.	Free standing water was not encountered upon completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-16
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 7" Subbase, 9.5" Gravel FILL	
2		S-1	4	6	6	5	12		Brown SAND, little Gravel, little Silt (SM) (moist, firm)	
4		S-2	4	3	5	6	8		(Grades to "trace" clay) (loose)	
6		S-3	4	6	6	5	12		(firm)	Clay seams
8		S-4	4	4	6	6	10		(Grades to "fine" SAND, "trace" fine gravel (wet, loose)	
10		S-5	6	5	6	5	11		Brown SILT, little to some Clay, little fine Sand (ML) (wet, stiff)	Obtained sample DIPRA # 8
									Test boring terminated at depth of 12.0 feet.	Free standing water was not encountered upon test boring completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/13/2005
FINISHED: 10/13/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-17
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									7" Asphalt, 9.5" Subbase, 7" Gravel FILL	
2	/	S-1	4	4	5	3	9		Brown SAND, little Gravel, little Silt (SM) (moist, loose)	
4	/	S-2	5	6	6	7	12		Brown CLAY, trace silt, trace fine sand, trace embedded gravel (CL) (moist, stiff)	
6	/	S-3	7	12	13	11	25		(very stiff)	
8	/	S-4	6	5	6	5	11		(Grades to "some" SILT, "little" fine Sand, trace gravel (wet, stiff)	Obtained sample DIPRA # 9
10									Test boring terminated at depth of 10.0 feet.	Free standing water was not encountered upon test boring completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-18
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									18" Asphalt, 6" Subbase	
2	/	S-1	10	8	5	5	13		Brown SAND, some fine Gravel, little Silt (SM) (moist, firm)	
4	/	S-2	6	7	12	14	19			
6									Test boring terminated at depth of 6.0 feet.	Free standing water was not encountered upon test boring completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-19
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6" Asphalt, 12" Subbase	
2		S-1	6	6	6	8	12		Brown SAND, some Silt, little Gravel (SM) (moist, firm)	
4		S-2	8	8	9	8	17		(Grades to "some" Gravel)	Angular to sub-rounded gravel
6									Test boring terminated at depth of 5.5 feet.	Free standing water was not encountered upon boring completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/12/2005
FINISHED: 10/12/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-20
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									3.5 " Top Course, 3.5" Binder Course	
2		S-1	19	14	7	6			Gray SILT, some fine Sand, little Gravel, little Clay (ML) (moist, firm)	S-1) Bag sample, 3" spoon
4		S-2	8	9	16	17	25			Drillers noted Shale fragments
6									Test boring terminated at depth of 4.5 feet.	Free standing water was not encountered upon boring completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-75
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-21
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									3.5 " Top Course, 6" Binder Course (oil and stone)	
2		S-1	17	26	20	15			Grayish brown SAND, some Gravel, little Silt, little Clay (SM) (wet)	S-1) Bag sample, 3" spoon Water seeping in at 1.3'
4		S-2	7	8	8	12	16		Brown SILT, some Clay, little Sand, trace gravel (ML) (moist, stiff)	Drillers noted Shale fragments
6									Test boring terminated at depth of 4.5 feet.	Free standing water was encountered at depth 0.8'.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-75
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/20/2005
FINISHED: 10/20/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-22
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									1.25" Top Course, 6.75" Binder, 12" Subbase	Pavement Core:
		S-1	31	22	18	19			Brown and gray SAND, some Silt, some Gravel	1.75" Top Course, 6.75" Binder Course
2									(SM) (moist)	
		S-2	8	6	4	4	10		Brown SILT and fine SAND, trace fine gravel, trace clay	S-1) Bag sample, 3" spoon
4									(ML) (moist, loose)	
		S-3	3	4	4	4	8			
6										
		S-4	3	4	3	4	7			
8										Obtained sample DIPRA # 10
10									Test boring terminated at depth of 9.0 feet.	Free standing water was not encountered upon test boring completion.
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-23
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									3.5 " Top Course, 3.5" Binder Course	
		S-1	20	20	14	9			Gray SAND, some Silt, little Gravel, little Clay (SM) (moist)	S-1) Bag sample, 3" spoon
2										
		S-2	4	6	5	8	11		Brown CLAY, little Silt, trace sand, trace gravel (CL) (moist, stiff)	
4										
		S-3	4	7	7	8	14			
6										
		S-4	11	12	5	52	17		Gray SAND, little Gravel/Shale fragments, little Clay (SM) (moist, firm)	Drillers noted cobbles
8										
		S-5	5	6	2	4	8		Brown SILT, little Clay, little Sand, trace gravel (ML) (moist, loose)	Sand seams within S-3/S-4 Obtained sample DIPRA # 11
10									Test boring terminated at depth of 10.5 feet.	Free standing water was not encountered upon completion.
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-75
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-24
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									3.5 " Top Course, 3.5" Binder Course (oil and stone)	
2		S-1	30	28	19	19			Grayish brown SAND, some Silt, little Gravel, little Shale (SM) (moist, firm)	S-1) Bag sample, 3" spoon
4		S-2	6	11	9	10	20			Drillers noted Shale fragments
6									Test boring terminated at depth of 4.5 feet.	Free standing water was not encountered upon boring completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-75
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/7/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-25
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									3.5 " Top Course, 3" Binder Course (oil and stone)	
2		S-1	17	13	9	11			Grayish brown CLAY, some Silt, little Sand, little Gravel (CL) (moist, medium)	S-1) Bag sample, 3" spoon
4		S-2	7	3	4	7	7		(Grades to "trace" sand, "trace" gravel)	
6									Test boring terminated at depth of 4.5 feet.	Free standing water was not encountered upon boring completion.
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
DRILL RIG: CME-75
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-26
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6" Asphalt, 6" Subbase Course	
2		S-1	25	20	18	19			Dark brown to gray CLAY, little Silt, little Sand, little Gravel (CL) (moist, stiff)	S-1) Bag sample, 3" spoon Water seeping into the bore hole below blacktop.
4		S-2	4	6	8	7	14			
6		S-3	4	6	4	5	10		Brown SILT, little Clay, trace sand, trace gravel (ML) (wet, loose)	Obtained sample DIPRA # 12
8									Test boring terminated at depth of 7.0 feet.	Free standing water was encountered upon test boring completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/14/2005
FINISHED: 10/14/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-27
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	
		S-1	-	22	18	9			Brown SAND, some Silt, little Gravel	S-1) Bag sample, 3" spoon
2									(SM) (moist)	
		S-2	3	3	4	3	7		Brown SILT, some Clay,little sand, trace gravel	
4									(ML) (moist, medium)	Free standing water was not encountered upon boring completion.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-75
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-28
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	
		S-1	43	19	10	-			Brown to gray CLAY, little Silt, little Sand, trace gravel	S-1) Bag sample, 3" spoon
2									(CL) (moist, stiff)	
		S-2	4	5	7	9	12		(Grades to "and" SILT)	
4									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon boring completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: J. Warner
DRILL RIG: CME-75
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-29
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	
		S-1	10	10	22	-			Grayish brown SILT, some Sand, little to some Gravel	S-1) Bag sample, 3" spoon
2									(ML) (moist)	
		S-2	5	4	7	9	11		Brown to gray CLAY, little Silt, trace sand, trace gravel	
4									(CL) (moist, stiff)	Free standing water was not encountered upon boring completion.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-31
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	
		S-1	12	10	10	-			Brown SILT, some Sand, little Gravel	S-1) Bag sample, 3" spoon
2									(ML) (moist)	
		S-2	3	4	4	4	8		Brown CLAY, some Silt, trace fine sand	
4									(CL) (moist, medium)	Free standing water was not encountered upon boring completion.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-32
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	S-1) Bag sample, 3" spoon
		S-1	16	15	11	-			6" Subbase: Brown SAND, little Silt, little Gravel	
2									Brownish gray SILT, some Sand, little Clay, little Gravel	
		S-2	4	4	6	7	10		(ML) (moist, loose)	
4									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon boring completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-33
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	S-1) Bag sample, 3" spoon
		S-1	17	18	15	-			6" Subbase: Dark brown SAND, some Gravel, little Silt	
2									Brown CLAY, little to some Silt, trace sand, trace gravel	
		S-2	8	7	6	5	13		(CL) (moist, stiff)	
4									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon boring completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
DRILL RIG: CME-850
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-34
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.

LOCATION: Coddington Road
Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt	
		S-1	33	27	16	-			Dark brown SAND, some Gravel, little Silt	S-1) Bag sample, 3" spoon
2									(SM) (moist)	Possible cobbles
		S-2	5	5	4	5	9		Brown to gray CLAY, little Silt, trace sand	
4									(CL) (moist, stiff)	
									Test boring terminated at depth of 4.0 feet.	Free standing water was not encountered upon boring completion.
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-35
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									1" Top Course, 2.5" Binder, 6" Subbase	Pavement Core:
		S-1	31	16	11	-			Brownish gray SAND, some Gravel, little Silt	1" Top Course, 2.5" Binder
2									(SM) (moist)	S-1) Bag sample, 3" spoon
		S-2	3	3	4	5	7		Brownish gray SILT, little Clay, little Sand	Possible cobbles
4									(ML) (moist, medium)	Free standing water was not encountered upon boring completion.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:

DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-36
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt, 1.2' Subbase	S-1) Bag sample, 3" spoon
		S-1	18	22	12	-			Gray GRAVEL, some Sand, trace silt	
2									(GP) (moist)	
		S-2	2	5	4	5	9		Gray CLAY, little Silt, little Sand, trace gravel	wet spoon
4									(CL) (moist, stiff)	Free standing water was encountered upon completion at the bottom of spoon.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/8/2005
STARTED: 10/17/2005
FINISHED: 10/17/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-37
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0									6 " Asphalt, 6" Subbase	S-1) Bag sample, 3" spoon
		S-1	18	10	7	-			Brown GRAVEL and SAND, little Silt	
2									(GP) (moist)	
		S-2	3	3	4	4	7		Brown SILT, little Clay, trace fine sand	
4									(ML) (wet, loose)	Free standing water was not encountered upon boring completion.
									Test boring terminated at depth of 4.0 feet.	
6										
8										
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
JOB NUMBER: CE-05-025
TEMPERATURE:
DRILL RIG: CME-850
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/18/2005
FINISHED: 10/18/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-38
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0		S-1	30						1.5" Top Course, 2" Binder, subbase	Pavement Core: 1.5" Top Course, 2" Binder
2		S-2	32	37	37	17	74		Brownish gray SILT, little to some Clay, little Sand, trace gravel (ML) (moist, very compact)	S-1) Bag sample, 3" spoon
4		S-3	5	5	6	6	11		(Grades to "little" Gravel) (firm)	
6		S-4	5	6	8	6	14		(Grades to "little" Clay, "trace" sand) (wet)	
8									Test boring terminated at depth of 7.0 feet.	Free standing water was not encountered upon boring completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
DRILL RIG: CME-850
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer

DATE: 11/1/2005
STARTED: 10/18/2005
FINISHED: 10/18/2005

SJB SERVICES, INC.

SUBSURFACE LOG

Boring No.: B-39
SURF. ELEV. G. S.
G.W. DEPTH (See Notes)
SHEET 1 of 1

PROJECT: Coddington Road Improvement
CLIENT: Dewberry-Goodkind, Inc.
LOCATION: Coddington Road, Tompkins County, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	Rec (ft)	SOIL OR ROCK CLASSIFICATION	NOTES
0		S-1							1.5" Top Course, 2" Binder, Subbase	
2		S-2	20	16	10	7	26		Brown CLAY, little Silt, trace sand, trace gravel (CL) (moist, very stiff)	S-1) Bag sample, 3" spoon
4		S-3	6	6	7	10	13		(stiff)	
6		S-4	14	18	22	23	40		Brown SILT, some fine Sand, little Gravel, trace clay (ML) (moist, compact)	Obtained sample DIPRA # 13
8									Test boring terminated at depth of 7.0 feet.	Free standing water was not encountered upon boring completion.
10										
15										
20										
25										
30										
35										
40										

DRILLER: K. Swinnich
METHOD OF INVESTIGATION: 4 1/4" I.D. Hollow Stem Augers, 2" Split Spoon Sampler (ASTM D1586)
DRILL RIG: CME-850
JOB NUMBER: CE-05-025
TEMPERATURE:
CLASSIFIED BY: Geotechnical Engineer