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April 22, 2009

Mr. Hank Perkins
Town of North Wilkesboro
832 Main Street
North Wilkesboro, NC 28659

Ref: **LIMITED GEOTECHNICAL REPORT**
and Engineering Analysis of Subsurface Exploration,
North Wilkesboro Industrial Park
River Road / Liberty Grove Road
North Wilkesboro, NC
Job #8002

PURPOSE:

We performed subsurface exploration at the above referenced project to determine if rock was present within the proposed area to be graded. Subsurface conditions were evaluated at twelve locations (See attached Boring Location Exhibit). Drilling was performed by an ATV drilling machine using hollow stem continuous flight augers.

SUBSURFACE CONDITIONS:

Boring locations were determined by Blue Ridge Engineering PLLC based on preliminary drawings of the proposed entrance drive and building pads. Borings B-10, B-11, and B-12 locations were determined on-site during drilling operations based on rock being encountered in borings B-1 and B-2. Boring samples typically indicated residual sandy silt material. Rock was encountered within five of the twelve borings. The following table illustrates boring depths:

Boring #	Depth of Boring (ft. BGS)		Boring #	Depth of Boring (ft. BGS)
B-1	Rock at 6.0’		B-7	40.0’
B-2	Rock at 2.5’		B-8	25.0’
B-3	30.0’		B-9	35.0’
B-4	30.0’		B-10	Rock at 17.0’
B-5	40.0’		B-11	Rock at 6.0’
B-6	50.0’		B-12	Rock at 17.0’

Rock was not encountered within borings B-3, B-4, B-5, B-6, B-7, B-8, and B-9. Based on the location and depth of rock, substantial rock excavation will be necessary to achieve proposed finished grades of the entrance drive and building pads. No groundwater was encountered within any of the borings. We do not anticipate groundwater will be a major factor for construction of the proposed entrance drive.

EARTHWORK/GRADING OPERATIONS:

We recommend removal of any existing vegetation to an average stripping depth of six inches in all vegetated areas. We recommend a "proof-roll" test of the existing subgrade after it has been stripped of all vegetation and asphalt. We recommend a shrinking factor of 10% to 15% be used when determining earthwork quantities. We recommend maximum slopes of 2:1 in cut sections, and maximum slopes of 2.5:1 in fill sections. We recommend building foundations be located at a distance of at least one third of the height of a slope from the top of the slope, and at least one third the height of a slope from the toe of the slope. Excavated material containing rock fragments no larger than four inches in its largest dimension and free of organic material may be mixed with suitable material and utilized for structural fill if approved by our on-site representative. Substantial rock excavation is anticipated based on depth of partially weathered rock and bedrock encountered in five of the borings. We recommend that a representative from Blue Ridge Engineering PLLC be on-site each day grading operations are performed. After acceptance of existing subgrade, as described above, controlled fill should be placed in uniform lifts and compacted using large self-propelled compaction equipment. Maximum loose lift thickness should not exceed 8" in depth, prior to compaction. We recommend that controlled fill placed meet the following compaction requirements, based on the Standard Proctor (ASTM D-698):

	Minimum Density	
Location	Fills < 15'	Fills > 15'
Lawns and Planted Areas	92%	95%
Retaining Walls and Trenches	95%	98%
Pavement Subgrades	95%	98%
Building Subgrades	95%	98%
Pavement Subgrades, top 18"	100%	100%
Building Subgrades, top 18"	100%	100%

We recommend the moisture content of controlled fill at time of placement be within five percent (5%) of optimum moisture. Existing soils to be used as controlled fill may require wetting or drying

to achieve this specification. We recommend the following moisture and density testing frequencies for each lift of material placed:

Location	1 test per
Lawns and Planted Areas	5,000 sf
Building Subgrades	3,000 sf
Pavement Subgrades	3,000 sf
Retaining Walls	50 LF
Trenches	50 LF

We recommend that density testing be performed in accordance with ASTM D-2937 or ASTM D-1556. We recommend that the site be maintained to provide positive drainage at all times. If it is necessary to import borrow fill material to the site, we recommend the material be inspected and tested by Blue Ridge Engineering PLLC to determine its suitability for use as fill material. We do not recommend material with a USCS classification of CL be used as fill material. We recommend earthwork operations be scheduled during late spring, summer or fall if practical.

PAVEMENTS:

We recommend that proposed pavements be supported by a stone base bearing on a compacted soil subgrade which has passed a "proof-roll" test. We recommend that all methods and materials used comply with North Carolina Department of Transportation (NCDOT) Standard Specifications, latest edition. No pavement design was performed for this project. A typical asphalt pavement section for a roadway such as this is:

Heavy Duty
8" ABC Stone
2.5" Asphalt Binder Course, Type I-19.0B
1.5" Asphalt Surface Course, Type S-9.5B

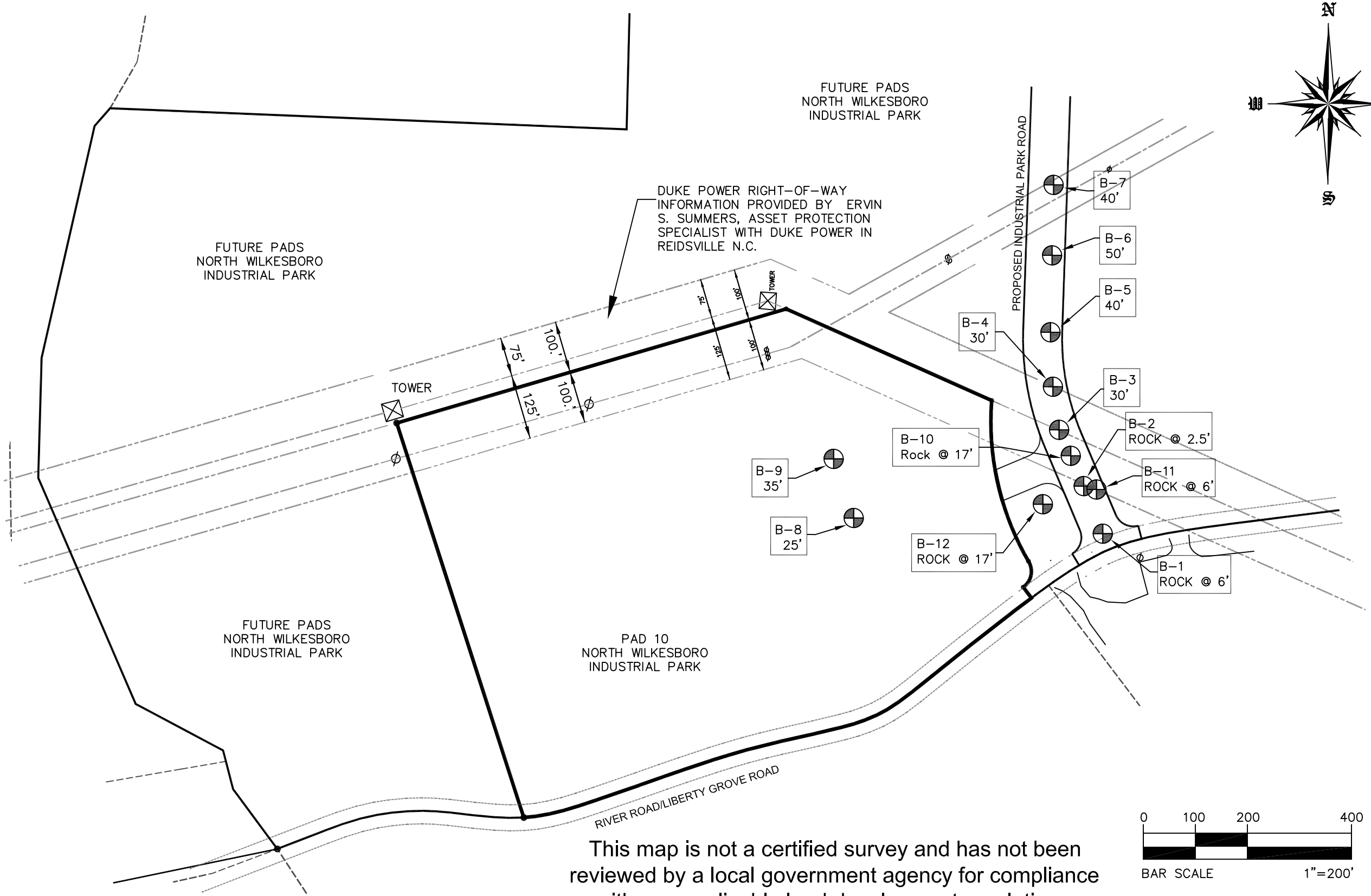
CLOSING:

This report has been prepared for the sole benefit of the client to identify the geotechnical parameters to be considered during planning, design, and construction of the proposed project. Our recommendations are based on observations made on site, past experience, and information obtained from outside sources. Additional exploration or construction activities may yield differing

conditions than those shown in this report. However, it is our professional opinion that the conditions reported and recommendations made within this report are appropriate for this project.

Laura L. Shepherd
Environmental Scientist

C. Neil Shepherd, PE, PLS
Principal



This map is not a certified survey and has not been reviewed by a local government agency for compliance with any applicable land development regulations.

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PREPARED FOR:

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BORING LOCATION EXHIBIT

North Wilkesboro Industrial Park
BRE # 8002
North Wilkesboro, North Carolina

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