R·A·M·M

RICKER • ATKINSON • McBEE • MORMAN & ASSOCIATES, INC.

Geotechnical Engineering • Construction Materials Testing

Mr. John Shoecraft
4545 North 30th Street, Suite 101
Phoenix, Arizona 85018

July 12, 2007

Subject: Geotechnical Engineering Report
New Medical Office Building
21st Street and Thomas Road
Phoenix, Arizona

R.A.M. Project No. G12544
Update Letter

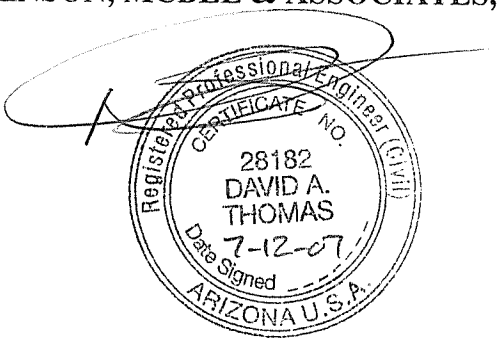
The Geotechnical Engineering Report prepared for the above-referenced site (RAM Project No. G12544, report dated January 18, 2006) remains applicable for the proposed development. Should any changes to the site or to the proposed development occur prior to construction, this firm should be contacted for review.

This letter should be attached to, and be considered part of, our original report for the project.

If you have any questions, please do not hesitate to call.

Respectfully submitted,

RICKER, ATKINSON, MCBEE & ASSOCIATES, INC.



By: David A. Thomas, P.E.

/dat
Copies to: Addressee (1)
P/D Architects; Attn: Kent Dounay (4)

2105 South Hardy Drive, Suite 13, Tempe, AZ 85282-1924 • Telephone (480) 921-8100 • Facsimile (480) 921-4081
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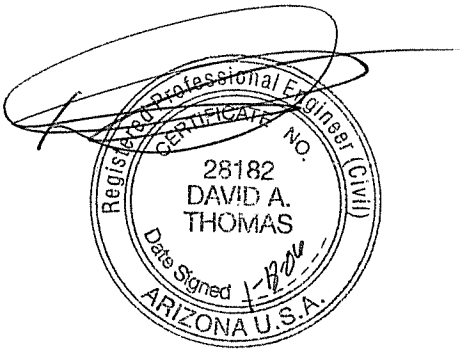
Geotechnical Engineering Report
New Medical Office Building
21st Street and Thomas Road
Phoenix, Arizona
R.A.M. Project No. G12544



For:
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RICKER • ATKINSON • McBEE & ASSOCIATES, INC.

Geotechnical Engineering • Construction Materials Testing

Mr. John Shoecraft
4545 North 30th Street, Suite 101
Phoenix, Arizona 85018

January 18, 2006

Subject: Geotechnical Engineering Report
New Medical Office Building
21st Street and Thomas Road
Phoenix, Arizona

R.A.M. Project No. G12544

Attached to this letter is the Geotechnical Engineering Report for the proposed New Medical Office Building to be located in Phoenix, Arizona.

The proposed Medical Office Building will be a two- and three-story building with adjacent paved parking areas and drives. The results of our field explorations; laboratory testing; and engineering analysis, evaluation and recommendations are presented in the report.

The following is a brief summary of selected recommendations:

A. Foundations:

- Support on undisturbed site soils and/or compacted fill.
- Found at least 2.0 feet below finished grade.
- Design for allowable bearing pressure of 2000 psf.

B. Site Soil:

- Use as fill and backfill in all areas of the development.
- Place and compact at moisture contents of optimum to 3 percent above optimum in building and exterior slab areas.

C. Pavement Sections:

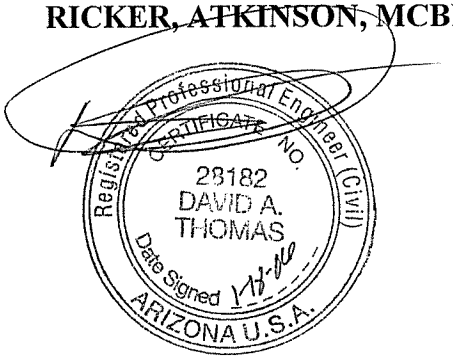
- Auto Parking and Drives -- 2 inches of asphalt concrete on 6 inches of base material, or 5.5 inches of Portland cement concrete.
- Truck Drives -- 3 inches of asphalt concrete on 6 inches of base material; or 6.5 inches of Portland cement concrete.

The attached report was prepared based on project and site data available at this time and was prepared in a manner and to the standards of the local geotechnical engineering practice. Our services did not include evaluations for the presence of hazardous materials, for area subsidence resulting from groundwater withdrawal or other geologic hazards.

If you have any questions, please do not hesitate to call.

Respectfully submitted,

RICKER, ATKINSON, MCBEE & ASSOCIATES, INC.



By: David A. Thomas, P.E. And Kip E. Reese, E.I.T.

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Copies to: Addressee (1)
P/D Architects; Attn: Kent Dounay (4)

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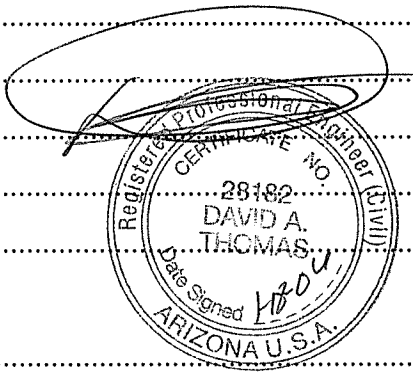
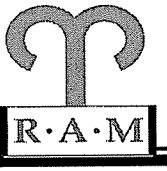


APPENDIX A - FIELD EXPLORATION

APPENDIX B - LABORATORY ANALYSIS

REPORT



INTRODUCTION

This report presents the results of our geotechnical engineering services for the proposed New Medical Office Building to be located in Phoenix, Arizona. The scope of our services included performing a field exploration program, laboratory analysis and geotechnical engineering evaluation, analysis and recommendations. The geotechnical recommendations presented herein consist of foundation design, site development, pavement design, material suitability and requirements, and site preparation and grading procedures. We would be pleased to discuss with you any additional recommendations you may require. In addition, we are available to review project specifications and plans for conformance with our recommendations at no charge to you.

This firm should be notified for additional evaluation and recommendations should the building design parameters (location, type, size, structural loads), site use or conditions encountered during construction differ from those presented herein.

PROPOSED CONSTRUCTION

The proposed Medical Office Building will be a two- and three-story building, probably of masonry and/or frame construction. It is anticipated that maximum structural loads for the building will be on the order of 4 to 6 kips per linear foot for bearing walls and 40 to 150 kips for columns. The building's concrete slab-on-grade, ground-level floor will probably be founded at or slightly above existing site grade. Improvements to the site will also include asphalt and/or rigid concrete paved drives and parking areas.

SITE CONDITIONS

The site of the proposed New Medical Office Building is located on the southwest corner of 21st Street and Thomas Road, in Phoenix, Arizona. At the time of this investigation, the site was vacant. Partially buried concrete curbs and irrigation ditches were observed along the perimeter of the site. Vegetation on-site included mature trees and a sparse cover of grass and weeds.

FIELD EXPLORATIONS

Subsurface conditions at the New Medical Office Building site were explored by drilling two test borings to depths of 20 to 25 feet in the building area, and one test boring to a depth of 3 feet in

the pavement area. The locations of the test borings are shown on the Site Plan in Appendix A. The test borings were drilled with a Diedrich D-50 drill rig using 7-inch diameter, hollow-stem augers. The drilling equipment and crew were provided by D&S Drilling, Inc. The test boring locations were determined in the field by an assistant project engineer from our firm who also directed the drill crew. During the field explorations, representative disturbed and undisturbed samples were obtained, the test borings logged and soils field classified by our assistant project engineer. The relatively undisturbed samples were obtained by driving a 3-inch diameter, ring-lined, open-end sampler into the soil with a 140-pound hammer dropping 30 inches. In addition to drilling and sampling, a continuous penetration test using a 2-inch diameter rod and the 140-pound hammer dropping 30 inches was performed and extended to a depth of 7 feet adjacent to one of the test boring locations in the building area. The results of the field explorations are presented on the Test Boring Logs in Appendix A.

LABORATORY ANALYSIS

Representative samples obtained during the field exploration were subjected to the following laboratory tests.

Type of Test	Type of Sample	Number of Samples Tested
Compression	Undisturbed	2
Swell	Remolded	1
Percent Passing No. 200 Sieve and Atterberg Limits	Representative	2
Moisture Content/Dry Density *	Undisturbed	9

* Reported in the Test Boring Logs

The results of the laboratory tests are presented in Appendix B.

SUBSURFACE CONDITIONS

The subsurface conditions encountered at the test boring locations were only slightly variable. The results of each test boring are presented in Appendix A, in the Test Boring Logs. The surface soils encountered in the test borings in the building and pavement areas, and extending to a depth

of 1.0 feet, consisted of clayey sand fill. The fill was medium dense, had medium plasticity fines, contained a trace to some gravel and cobble-size rubble, and was underlain by natural sandy silty clay. The natural soils were stiff to hard, were medium in plasticity, had intermittent light cementation becoming moderately cemented with depth, and extended to the maximum depths of our exploration (20 to 25 feet). Soil moisture contents were described as slightly damp to damp throughout the depths explored. No groundwater was observed in any of the test borings during the drilling operations.

DISCUSSIONS OF TEST RESULTS

A remolded sample of the surface soils from the site exhibited a moderate swell potential following wetting when tested in the laboratory. Undisturbed samples from anticipated foundation grade were found to undergo a small amount of compression during loading to approximate foundation loads. Upon wetting at approximate foundation loads these soils underwent some to moderate additional compression.

FOUNDATION DESIGN RECOMMENDATIONS

Spread Footings:

The proposed New Medical Office Building can be supported on shallow spread footings. The proposed footings should be founded on undisturbed site soils and/or compacted fill, with the foundations or new fill supporting foundation elements extending through the existing fill. Footings thus founded may be designed using an allowable bearing pressure of 2000 psf, provided the bottom of the footings are at least 2.0 feet below finished grade. Finished grade is defined as the lowest adjacent finished grade within 5 feet of the perimeter of the building. Structural loads should not exceed 8 kips per linear foot for walls and 150 kips for columns. All footing excavations should be reviewed by a representative of the geotechnical engineer prior to placing reinforcing steel or concrete. Any remaining fill and any loose, disturbed or unstable soils should be removed from the bearing surface and replaced with MAG cement/AB slurry or as otherwise directed by the geotechnical engineer.

The allowable bearing capacity should be applied to maximum, design dead plus live loads and may be increased by one-third when considering temporary loads such as transient wind or

seismic loads. A one-third increase may also be used for toe pressures due to eccentric or lateral loadings, assuming the entire footing bearing surface remains in compression. The weight of the footing concrete below grade may be neglected in dead load computations. The recommended minimum footing widths are 2.0 and 1.33 feet for isolated columns and continuous wall footings, respectively. A site coefficient for soil characteristics (S) of 1.2 is recommended for the project site, per Table 16-J, UBC 1994 Edition and a Soil Profile Type S_C for 1997 Edition. A Site Class designation of C should be used for the site per Table 1615.1.1 of the 2000 and 2003 International Building Code (IBC).

The estimated total and differential footing settlements for the loading conditions described above are on the order of 1/2 inch or less if soils below footing level remain at or below the construction moisture content. Additional post-construction, differential settlement of equal or somewhat greater magnitude could occur if bearing soils become wet after construction. Therefore, continuous footings and stem walls should be reinforced and masonry walls constructed with properly designed reinforcement and with frequent expansion/contraction joints. Positive drainage away from the perimeter of the structure is essential to minimize the potential for moisture infiltration into bearing soils. Any long-term saturation of the bearing soils could result in damaging differential foundation settlements.

Lateral Earth Pressures:

The following tabulation presents the recommended lateral earth pressures and base friction values which should be used in the lateral design of footings and retaining walls. The lateral pressures are equivalent fluid pressures for average anticipated conditions.

Backfill Pressures	
Unrestrained walls	40 psf/ft
Restrained walls	60 psf/ft
Passive Pressures:	
Continuous	250 psf/ft
Isolated column footings	350 psf/ft
Coefficient of Base Friction:	
Concrete to soil	0.40
Plastic membrane to soil	0.25

The above equivalent fluid pressures are for vertical walls with horizontal backfills and do not include temporary loads imposed by compaction equipment or permanent loads resulting from backfill swell pressures, hydrostatic pressures or surcharge loads. All retaining walls should contain weep holes to reduce the potential for the buildup of hydrostatic pressures.

SITE DEVELOPMENT RECOMMENDATIONS

Concrete Slab-On-Grade Support:

The near surface soils are of medium plasticity and exhibit moderate swell potentials when compacted and wetted. These soils will provide adequate support for concrete slabs on-grade provided site soils are placed and compacted in building and exterior slab areas at moisture contents at optimum to 3 percent above optimum. Interior slabs should be founded on a minimum 4-inch thickness of base material. Exterior slabs should be founded on a prepared subgrade. All unreinforced slabs-on-grade should be jointed in accordance with ACI (American Concrete Institute) or PCA (Portland Cement Association) guidelines.

Moisture barriers such as plastic membranes are not typically used in Arizona's semi-arid climate and we do not normally recommend the use of such membranes unless moisture-sensitive floor coverings are used. If plastic moisture barriers are used, the barriers should be directly on the aggregate base, be at least 10 mil in thickness and have all seams and penetrations sealed per manufacturers recommendations.

Surface Drainage:

Most soils will undergo some degree of volume change as the result of wetting. The degree of volume change will depend on the type of soil, swell potential, natural soils structure or degree of compaction (if a fill). These volume changes could result in movements in overlying building and non-structure elements including sidewalks, planters, retaining walls, floor slabs, etc. Therefore, good site and surface drainage away from these elements is required. In addition, water should not be allowed to pond within 10 feet of the building or other elements which are sensitive to movements. The exterior footing excavation backfill must be well compacted to minimize the possibility of moisture infiltration through this zone. All joints in the concrete floor slabs and at walls of the building must be sealed with flexible waterproof joint sealer.

Excavatability:

The excavatability of site materials is difficult to evaluate based only on the exploration equipment used during this design report. Therefore, we recommend that the contractor evaluate the excavatability of site materials by performing test excavations with the size and type of equipment the contractor plans on using at the site. For design purposes the following paragraph presents our best analysis as to the excavatability of site soils.

The near surface and underlying soils to depths of 7 to 10 feet can probably be removed with conventional excavating equipment. However, excavating below these depths will be slower and more difficult to accomplish due to cementation. In addition, caving should be expected in excavations where any non-cohesive granular soils are encountered. OSHA requires all excavations over five feet in depth, in which personnel are to enter, be either braced or sloped in accordance with OSHA regulations.

Workability:

Wetting site soils such that moisture contents are at or above optimum could result in some soil pumping under dynamic loadings such as heavy construction equipment driving over the area. In building areas, some pumping is not detrimental to foundation or floor slabs provided the specified percent compaction is achieved. However, in flexible pavement areas where pumping has occurred, and in building areas where severe pumping has damaged subgrade conditions, the area should be allowed to dry until soils are workable without pumping or the wetted areas removed and replaced with drier site soils.

PAVEMENT DESIGN RECOMMENDATIONS

Asphalt Concrete Pavements:

The following asphalt concrete pavement sections are based on anticipated traffic types and frequencies, site soil conditions and a 20-year design life. Therefore, any material imported to the site and placed in pavement areas should have support characteristics the same as or better than the site soils.

	Pavement Section	
Area of Use	Asphalt Concrete	Base Material
Auto Parking and Drives	2.0 inches	6.0 inches
Truck Drives	3.0 inches	6.0 inches

These sections are minimal and will require periodic maintenance (seal coats, overlays or patching) where proper drainage is provided and maintained. Should moisture penetrate to the subgrade soils or ponding occur on or adjacent to the pavement section, a significant reduction in pavement life could occur along with increased maintenance. Therefore, good surface drainage on and adjacent to the pavement is essential to achieving the desired pavement life.

Portland Cement Concrete:

The following Portland cement concrete pavement (PCCP) sections are based on anticipated traffic types and frequencies and site soil conditions. Therefore, any material imported to the site and placed in pavement areas should have support characteristics the same as or better than the site soils.

Area of Use	PCCP Section
Automobile Parking and Drives	5.5 inches
Truck Drives	6.5 inches

Base material is not required below the PCCP sections; however, if construction occurs during the summer months the base material would help reduce the potential for slab curling and shrinkage cracking. A maximum joint spacing of 12 to 15 feet should not be exceeded in either direction and all joints should be designed to provide load transfer. Joint detail, joint layout and concrete batching, placing, curing and observation procedures should be in accordance with the recommendations developed by the Portland Cement Association.

MATERIALS SUITABILITY AND REQUIREMENTS

Site Soils:

The near surface soils are of medium plasticity and exhibit moderate swell potentials when compacted and wetted. These soils may be used as fill in all areas provided the site soils are

placed and compacted at moisture contents of optimum to optimum plus 3 percent in building and exterior slab areas. All materials should be free of organics, debris and rubble.

Imported Soils:

Any additional fill placed in building and exterior slab areas, or for use as retaining wall backfills, should be imported soils meeting the following requirements:

Minimum Passing #4 Sieve ---------- 35%
Maximum Particle Size----------3 inches
Maximum Swell Potential----------1.0%*

* Based on a sample which is remolded to 95% of the ASTM D698 maximum dry density at a moisture content of 2 percent below optimum, placed under a surcharge load of 100 psf and wetted.

Base Material:

Base material used below concrete slabs and pavements should conform to the requirements of Maricopa Association of Governments (MAG) Specifications for Aggregate Base (Section 702).

Asphalt Concrete Pavement:

Asphalt concrete pavement materials should conform to the requirement of MAG Specifications for Asphalt Concrete.

Portland Cement Concrete Pavement:

The PCCP should have a minimum compressive strength of 4000 psi at 28 days and a maximum slump of 4 inches at the time of placement. The PCCP should conform to the requirements of MAG Specifications for Portland Cement Concrete (Section 725, Class AA).

SITE PREPARATION AND GRADING PROCEDURES

Building and Pavement Areas:

Recommendations presented in the previous sections of this report are based upon the following site preparation and grading procedures. Therefore, all earthwork should be accomplished with observation and testing by a qualified technician under the direction of a registered geotechnical/

materials engineer. The following apply to the areas within and extending 5 feet beyond the footprint of the building, below exterior slabs and in pavement areas.

1. Clear and grub the site by removing and disposing of vegetation, any debris, rubble and remnants of former developments.

2. Strip the site of all existing spread fill (roughly 1.0 feet of spread fill was encountered in the test borings), any dumped fill piles, any backfill zones and any unstable soils. During stripping observe the surface for evidence of buried debris, vegetation or disturbed materials which will require additional removal. If encountered, these materials should be removed. Areas steeper than 5H to 1V should be benched and any depressions widened to accommodate compaction equipment.

3. Prepare the ground surface in fill areas and in areas cut to grade by scarifying, moisture conditioning and compacting the exposed surface soils to a depth of 10 inches.

4. Moisture condition and place all fill and backfill materials required to achieve specified grades. Fill materials should be moisture conditioned, placed and compacted in horizontal lifts of thickness compatible with the compaction equipment being used.

5. Compact subgrade, fill, backfill, subbase fill or base material to the following minimum percent compaction of the ASTM D698 maximum dry density for each lift.

Material	Minimum Percent Compaction
Soil:	
Below foundations and pavement sections	95
Below concrete floor slabs (above footings)	90
Base Material:	
Below concrete floor slabs	95
Below pavement sections	100
Backfill:*	90

* Outside of building, exterior slab and pavement areas.

6. The moisture content of soil and base materials at the time of compaction should be:

Type	Area of Use	Moisture Content
On-site	Building, Exterior Slabs	Optimum to optimum plus 3%
On-site	Pavements	2% below optimum or lower
Imported	Building, Exterior Slabs	Optimum plus or minus 3%
Imported	Pavements	2% below optimum or lower
Base Material	Building and Pavements	Optimum plus or minus 3%

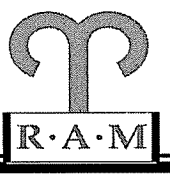
7. Any soils which are disturbed or overexcavated by the contractor outside the limits of the plans or specifications should be replaced with materials compacted as specified above.

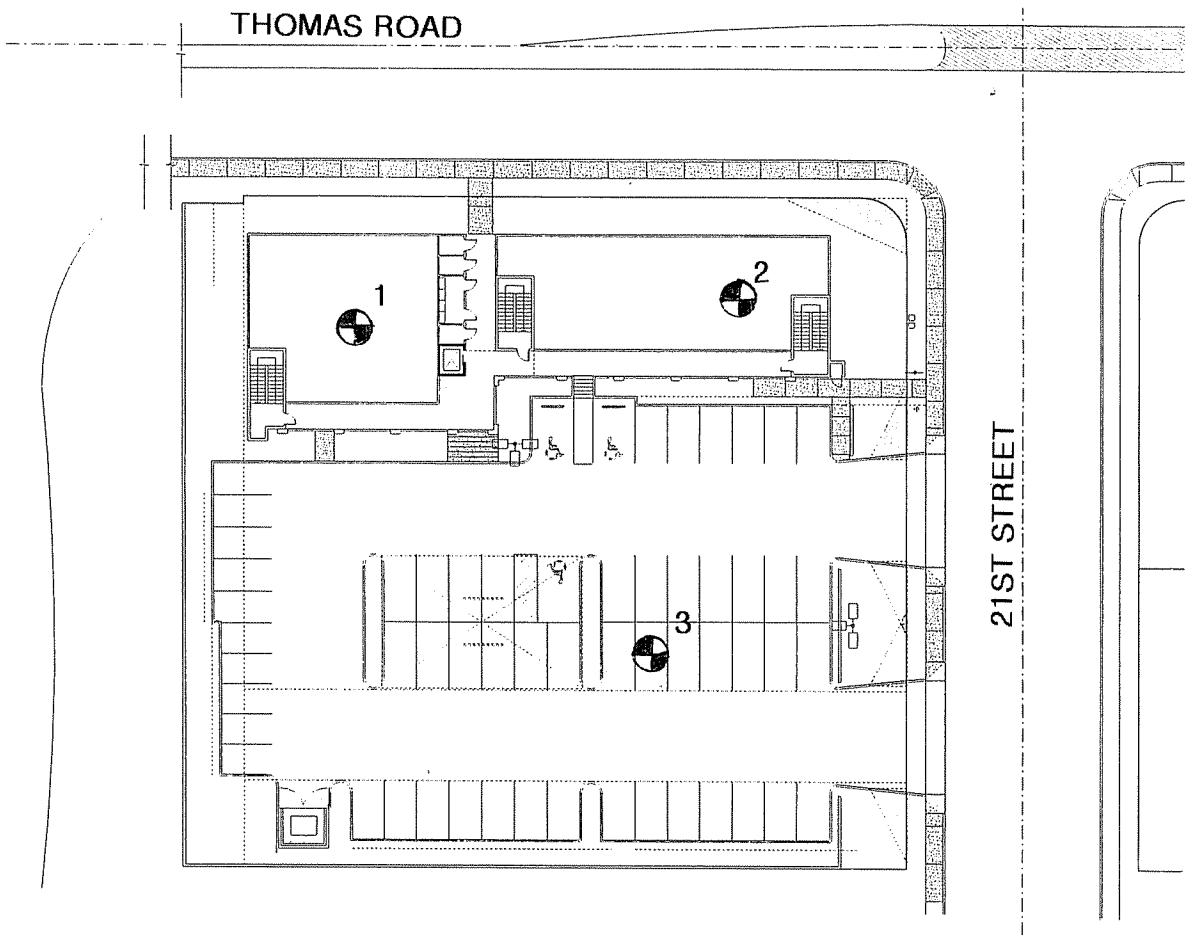
City of Phoenix Special Inspections:

The City of Phoenix Building Safety Division is developing a Special Inspection Manual for use with the 2003 International Building Code (IBC) and the City of Phoenix Construction Code Supplements to the IBC. In accordance with Section 1701 special inspection may be required for various activities related to foundation support. The foundation designer and City plan checker should be consulted to determine if these provisions apply to this project.

If special inspection is required, then the owner/legal agent must retain the engineer of record to be responsible for the special inspection. Both must execute a certificate of special inspection prior to, and following this phase of the work.

APPENDIX A
FIELD EXPLORATIONS





Test Boring Location

Not To Scale

SITE PLAN

R.A.M. Project No. G12544

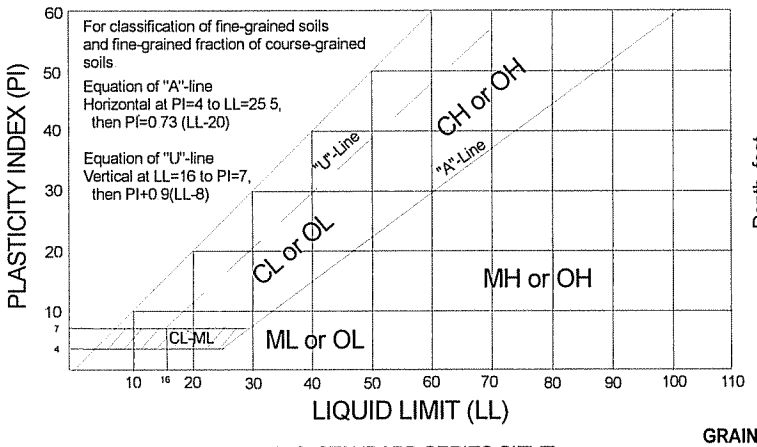
A1

LEGEND

CLASSIFICATION OF SOILS

ASTM Designation: D2487-83
(Based on Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests					Soil Classification	
					Group Symbol	Name
COARSE-GRAINED SOILS More than 50% retained on No. 200 Sieve	Gravels More than 50% coarse fraction retained on No 4 Sieve	Clean Gravels Less than 5% fines	Cu > 4 and 1 < Cc < 3		GW	Well graded gravel
			Cu<4 and/or 1>Cc>3		GP	Poorly graded gravel
		Gravels with Fines More than 12% fines	Fines classify as ML or MH		GM	Silty gravel
			Fines classify as CL or CH		GC	Clayey gravel
	Sands 50% or more of coarse fraction passes No 4 sieve	Clean Sands Less than 5% fines	Cu > 6 and 1 < Cc < 3		SW	Well-graded sand
			Cu<6 and/or 1>Cc>3		SP	Poorly graded sand
		Sands with Fines More than 12% fines	Fines classify as ML or MH		SM	Silty sand
			Fines classify as CL or CH		SC	Clayey sand
FINE-GRAINED SOILS 50% or more passes the No 200 Sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI>7 and plots on or above "A" line		CL	Lean clay
			PI<4 or plots below "A" line		ML	Silt
		Organic	Liquid Limit - oven dried / Liquid limit - not dried	<0.75	OL	Organic clay / Organic silt
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line		CH	Fat clay
			PI plots below "A" line		MH	Elastic silt
		Organic	Liquid limit - oven dried / Liquid limit - not dried	<0.75	OH	Organic clay / Organic silt
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor				PT	Peat



TEST BORING LOG DEFINITIONS

Blows per foot using 140 pound hammer with 30 inch free-fall.

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density pcf	Water Content, %	Unified Classification	Description

C = Continuous Penetration Resistance (2 inch diameter rod)
N = Standard Penetration Resistance (ASTM D1586)
R = Penetration Resistance (3 inch diameter ring line sampler)

GRAIN SIZES

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

200	40	10	4	3/4"	3"	12"

SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

MOISTURE CONDITION (INCREASING MOISTURE ⟶)

DRY — SLIGHTLY DAMP — DAMP — MOIST (Plastic Limit) — VERY MOIST — WET (SATURATED) (Liquid Limit)

CONSISTENCY CORRELATION		RELATIVE DENSITY CORRELATION	
CLAYS & SILTS	BLOWS/FOOT*	SANDS & GRAVELS	BLOWS/FOOT*
VERY SOFT	0-2	VERY LOOSE	0-4
SOFT	2-4	LOOSE	4-10
FIRM	4-8	MEDIUM DENSE	10-30
STIFF	8-16	DENSE	30-50
VERY STIFF	16-32	VERY DENSE	OVER 50
HARD	OVER 32		

*Number of blows of 140 lb hammer falling 30" to drive a 2" O.D. (1-3/8" I.D.) split-spoon sampler (ASTM D1586).

TEST BORING LOG

Project: New Medical Office Building - 21st St. & Thomas Rd. TEST BORING: 1

Elevation: Not Determined Datum: --- Date: 12-15-05

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
						SC	Fill; Clayey Sand, Trace to Some Gravel, Occasional Cobble-Sized Rubble; brown, slightly damp, medium dense, medium plasticity fines.
		21	R	96	6		
						CL	Sandy Silty Clay, Trace Gravel; brown to light brown, slightly damp to damp, very stiff to hard, medium plasticity, intermittent light to moderate cementation.
5		42	R	103	6		
10		50/8"	R	96	11		
15		50	R	109	14		
20		32	R	102	10		
25							Stopped drilling at 25 feet. No groundwater observed.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

Project: New Medical Office Building - 21st St. & Thomas Rd. TEST BORING: 2

Elevation: Not Determined Datum: --- Date: 12-15-05

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	12					SC	Fill; Clayey Sand, Trace to Some Gravel, Occasional Cobble-Sized Rubble; brown, slightly damp, medium dense, medium plasticity fines.
	18						
	23	21	R	102	8		
	25					CL	Sandy Silty Clay, Trace Gravel; brown to light brown, slightly damp to damp, very stiff to hard, medium plasticity, intermittent light to moderate cementation.
5	28						
	32	26	R	103	8		
	47						
10		50/7"	R	97	10		
15		50/10"	R	86	11		
20							Stopped drilling at 20 feet. No groundwater observed.
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

Project: New Medical Office Building - 21st St. & Thomas Rd. TEST BORING: 3

Elevation: Not Determined Datum: --- Date: 12-15-05

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
						SC	Fill; Clayey Sand, Trace to Some Gravel, Occasional Cobble-Sized Rubble; brown, slightly damp, medium dense, medium plasticity fines.
5						CL	Sandy Silty Clay, Trace Gravel; brown to light brown, slightly damp to damp, very stiff to hard, medium plasticity, intermittent light cementation.
							Stopped drilling at 3 feet. No groundwater observed.
10							
15							
20							
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

APPENDIX B
LABORATORY ANALYSIS

R·A·M

LABORATORY TEST RESULTS

Date: 21-Dec-05

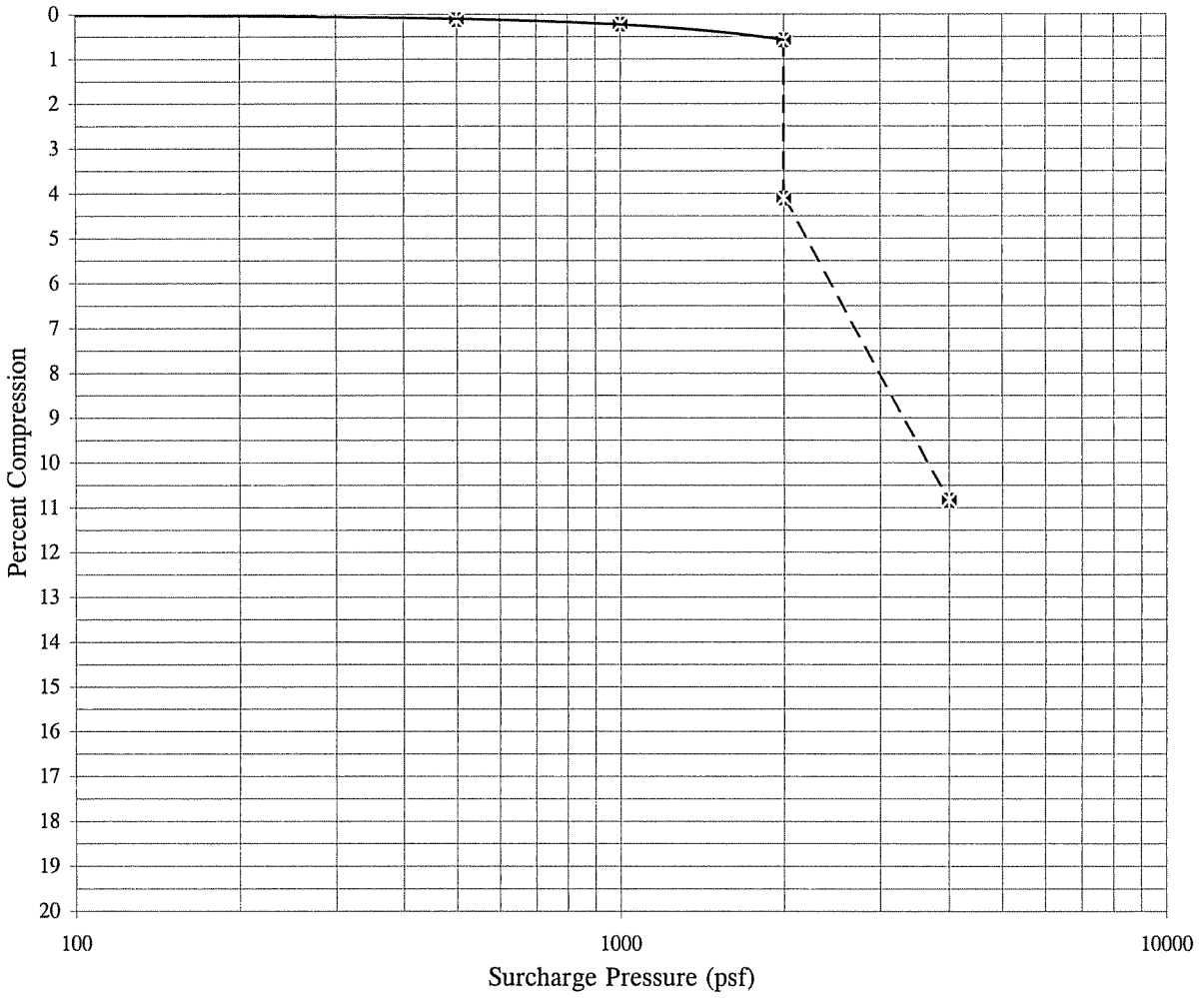
SAMPLE SOURCE: 1 @ 1.5'-2.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 96 Moisture Content (%): 6



REMARKS: Sample submerged at 2000 psf.

LABORATORY TEST RESULTS

Date: 21-Dec-05

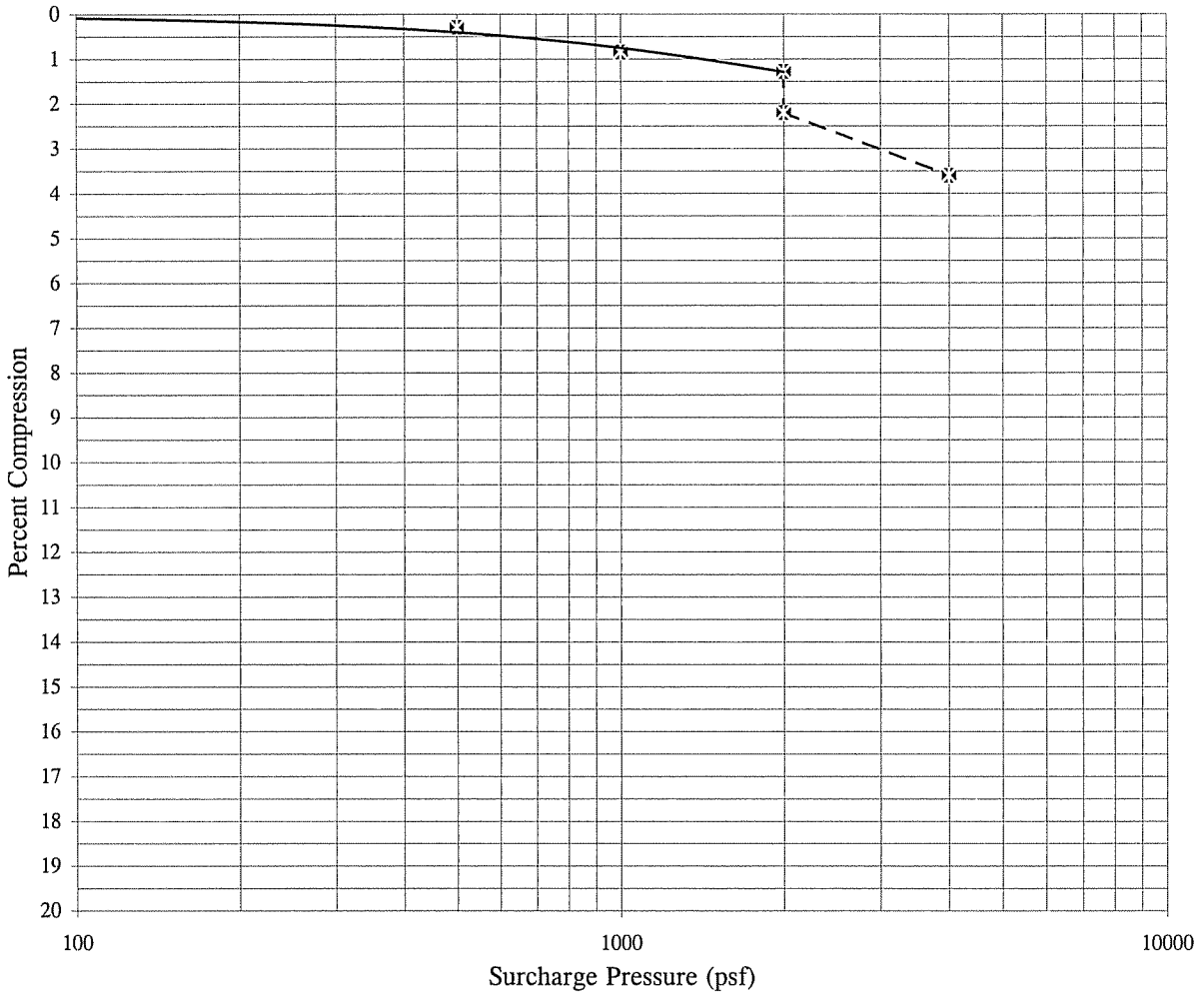
SAMPLE SOURCE: 2 @ 1.5'-2.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 102 Moisture Content (%): 8



REMARKS: Sample submerged at 2000 psf.

LABORATORY TEST RESULTS

Date: 21-Dec-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Percent Passing No. 200 Sieve, Atterberg Limits, Percent Expansion (ASTM D1140, D4318, D4546)

SAMPLED BY: RAM/Reese

RESULTS:

Sample Source	Percent Retained No. 4 Sieve	Percent Passing No. 200 Sieve	Liquid Limit	Plasticity Index	Percent Expansion*	Remolded Dry Density (pcf)	Remolded Moisture Content (%)
2 @ 0'-3'	20	56	35	18			
3 @ 0'-3'	24	49	30	14	1.8	122	7

* Based upon sample remolded to 95% of the estimated maximum dry density at 2% below the estimated optimum moisture content, with a surcharge pressure of 100 psf.