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Geotechnical & Environmental Engineering

Construction Materials Engineering & Testing

Laboratory Testing of Soils, Concrete & Asphalt

Geo-Environmental Drilling & Sampling

Soils Exploration

Proposed Additions to The Chateau Bu-Sche'

11535 S. Cicero Avenue

Alsip, Illinois

The Chateau Bu-Sche'

GEOTECHNICAL GROUP
CAROL STREAM

TESTING SERVICE CORPORATION

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May 16, 2002

The Chateau Bu-Sche'
c/o Mr. Stanley B. Tomala
Tomala Associates, Inc.
15790 E. New Avenue
Lemont, IL 60439

Re: L-55,177
Proposed Additions to
The Chateau Bu-Sche'
11535 S. Cicero Avenue
Alsip, Illinois

Dear Mr. Tomala:

This report presents results of the soils exploration performed for the proposed additions to The Chateau Bu-Sche' facility in Alsip, Illinois. These geotechnical services have been provided in accordance with TSC Proposal No. 26,957 dated May 3, 2002 and the attached General Conditions, incorporated herein by reference.

The existing Chateau Bu-Sche' building is located at 11535 S. Cicero Avenue. Current plans call for the construction of three separate (3) additions to be attached to the north, east (rear) and south sides of the existing building. The existing facility consists of a 2-story brick and stone building. Based on a Proposed Site Plan by Group Design Associates, Inc. (GDA), the north, east and south building additions will have plan dimensions of approximately 40' x 60', 20' x 110' and 40' x 60', respectively. The proposed project also includes the construction of an approximate 85' long pedestrian bridge over an existing creek (Calumet Feeder) that runs parallel to the west side of the site, and a pavilion on a parcel located on the west side of the creek.

FIELD INVESTIGATION AND LABORATORY TESTING

A total of ten (10) soil borings were drilled as part of this study. Reference is made to the enclosed Boring Location Plan for the drilling layout. Ground surface elevations at the borings are also shown on the Boring Plan. They were referenced to a convenient local benchmark with an assumed elevation of 100.0 as indicated on this plan. The following table summarizes the general location and depth of the borings.

Boring No.	General Location	Depth
1 & 2	North Addition	25'
3 & 4	East Addition	25'
5 & 6	South Addition	25'

7 & 8	Pedestrian Bridge	20'
9 & 10	Pavilion	20'

The borings were drilled and samples tested according to currently recommended American Society for Testing and Materials specifications. Soil sampling was performed at 2½-foot intervals to a depth of 15 feet and every 5 feet thereafter. The samples were taken in conjunction with the Standard Penetration Test, for which driving resistance to a 2" split-spoon sampler (N value in blows per foot) provides an indication of the relative density of granular materials and consistency of cohesive soils. Water level readings were taken during and following completion of drilling operations.

Soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the Unified Soil Classification System. Laboratory testing included moisture content determinations for all cohesive and intermediate (silt or loamy) soil types. An estimate of unconfined compressive strength was obtained for all inorganic native clay soils using a calibrated pocket penetrometer, with actual measurements of unconfined compressive strength performed on representative samples. Dry unit weight tests were also run on specimens of cohesive fill.

Reference is made to the boring logs in the Appendix which indicate subsurface stratigraphy and soil descriptions, results of field and laboratory tests, as well as water level observations. Definitions of descriptive terminology are also included. While strata changes are shown as a definite line on the boring logs, the actual transition between soil layers will probably be more gradual.

DISCUSSION OF TEST DATA

Borings 2 - 4, 6 and 7 were drilled on existing pavement areas. They encountered approximately 3 inches of bituminous concrete, underlain by about 8 to 12 inches of granular base materials. Pavement thicknesses were estimated from the sides of the augered boreholes and should be considered approximate; cores may be taken if more exact measurements are required.

Fill materials were encountered below the pavement section in Borings 2 - 4, 6 and 7 and at the surface of the remainder of the borings, extending to depths ranging from about 3 to 11 feet below existing grade. The fill consisted predominantly of silty clay soils, layers of clay/topsoil mixtures and clayey sand and gravel being encountered in a couple of borings. The fill materials exhibited extremely variable moisture content, dry unit weight and pocket penetrometer values ranging from 10 to 36 percent, 73 to 131 pounds per cubic foot (pcf) and 0.25 to 4.5+ tons per square foot (tsf), respectively. These data represent fill materials that were not placed under controlled conditions. Poorly compacted fill materials were especially encountered at B-5 (south addition), B-8 (pedestrian bridge) and B-9 (pavilion).

A stratum of apparent native topsoil was found buried beneath fill materials in Borings 1 and 2, extending to depths of about 8 and 6 feet below existing grade, respectively. Deposits of organic clay were encountered underlying the fill materials in Borings 6 - 8 and 10, extending to depths ranging from

approximately 8 feet at Boring 6 to as deep as 18 feet at Boring 8. Samples of the organic clay exhibited high moisture contents ranging from 54 to 134 percent.

Deposits of relatively soft/very moist silty clay were found underlying the buried topsoil layer in Boring 1, the fill materials in Boring 5, the organic clay stratum in Boring 7 and a stiffer clay crust in Boring 9, extending to depths of about 11 to 13 feet below existing grade. A layer of loose/very moist silt underlies the organic clay stratum in Boring 6, extending to 11 feet. The soft to stiff clays had unconfined compressive strengths ranging from 0.5 to 1.0 tsf at moisture contents between 22 and 29 percent. Native soils below the fill and buried topsoil deposits and extending to a depth of about 8 feet in Borings 2 and 3 consisted of tough silty clay and firm silty sand.

Underlying native soils otherwise consisted of hard silty/very silty clay and firm to dense silt/clayey silt, generally extending to the bottom of the boreholes. The exceptions included Borings 4 and 5 which terminated in deposits of very tough very silty clay and dense sand/clayey sand. The hard silty clay soils exhibited unconfined compressive strengths of 4.0+ tsf at moisture contents typically between 10 and 15 percent. The silt deposits had Standard Penetration Test (N) values ranging from 11 to 50 blows per foot (bpf), typically exceeding 20 bpf.

Boring 4 was "dry" during and at the completion of drilling operations. Free water was encountered in the remainder of the borings at depths ranging from 3.5 to 18 feet below existing grade during drilling operations. Upon completion of drilling, the water levels were in the range of 3 to 22 feet below existing grade, typically between 5 and 11 feet.

ANALYSIS AND RECOMMENDATIONS

Building Additions

Borings 1 - 6 were performed for the proposed building additions. Existing fill, buried topsoil, relatively soft clay, loose/very moist silt and/or organic clay was encountered in these borings, extending to as deep as approximately 11 feet below existing grade. These materials are not considered suitable for the support of foundations. Considering the relatively deep undercutting that would be required in connection with footing foundations, it is recommended that the proposed building additions be supported on drilled piers ("caissons").

Based on the soil stratigraphy revealed by the borings, belled caissons are not considered feasible. Therefore, the use of straight-shaft caissons is recommended. Straight-shaft caissons bearing on the firm to dense silt/clayey silt or hard very silty clay soils encountered typically at a depth of approximately 11 feet below existing grade at the boring locations may be proportioned based on a net allowable bearing pressure of 10,000 pounds per square foot (psf).

Temporary casing will be required to prevent sloughing or squeezing of fill and compressible soil deposits into the caisson excavation, as well as to seal against groundwater inflow from water-bearing strata. The temporary casing may be withdrawn during concrete placement, as long as the concrete within the casing is maintained at an adequate level (or head) to balance squeezing and/or hydrostatic

pressures in surrounding soils. Drilling operations should be terminated as soon as the bearing soils are encountered to minimize the possibility of water infiltration problems.

In regards to slab-on-grade support, the floor slabs may be supported ("floated") on the existing fill materials at the locations of Borings 1 - 4, i.e. the north and east additions. This recommendation is made with the assumption that relatively low floor loads and that the existing grade will not be significantly raised. However, slab-on-grade construction utilized without removal of existing fill, buried topsoil and underlying soft soils may result in some relatively minor settlement and cracking of concrete floors. The following construction procedures will help to minimize any distress. Floor loads should be limited to between 100 and 250 psf with this alternate.

The building areas should be cleared of vegetation, surficial topsoil, existing pavements as well as highly organic fill materials. The pads should then be proof-rolled using a loaded dump truck other approved piece of heavy construction equipment, in order to detect the presence of other unsuitable soil types. All soft or unstable materials determined by proof-rolling should be removed and replaced with a properly compacted fill.

Existing subgrade soils to be left in-place should be recompacted to at least 95 percent Modified Proctor density. It is also recommended that the concrete floors rest on a thickened base course layer; 8 to 10 inches of well-graded granular material such as IDOT gradation CA-6 will serve this purpose, to be compacted to 95 percent Modified Proctor density. The concrete slabs should be reinforced with heavy mesh as a minimum. The concrete floors should be isolated from foundation elements, i.e. jointed around columns and foundation walls, to permit minor differential settlement to occur without causing undue cracking or other distress.

New fill should consist of approved granular materials or inorganic silty clays of medium plasticity. It is recommended that compaction for the building pads be to a minimum of 95 percent of maximum dry density as determined by the Modified Proctor test (ASTM D 1557). The fill should be placed in approximate 9-inch lifts loose measure for cohesive soils and up to 12 inches for granular materials, with each lift to be compacted to the specified density prior to the placement of additional fill.

At the locations of Borings 5 and 6 (south addition), significant slab settlement may occur due to the presence of high moisture content/low dry unit weight fill (B-5) and organic clay (B-6). If the risk of some slab settlement and associated cracking is not acceptable, consideration should be given to using a structural slab for the south addition. The slab may be poured using subgrade soils as a bottom form; however, it should bear on the outer walls and/or grade beams, floor loads being distributed to the caissons. If a structural slab is not utilized, a properly reinforced thicker slab should be used as a minimum to control slab cracking and facilitate any future remedial procedure that may be required.

Pedestrian Bridge

Borings 7 and 8 were performed for the proposed pedestrian bridge. Based on Sheet C1.2 (Details) by GDA, the proposed bridge will be 10'-6" wide and 85'-6" long. It will have a central span of 50 feet. Based on the soil conditions revealed by the borings, it is recommended that the proposed bridge be supported on drilled piers. Caissons bearing on the hard very silty clay soils encountered underlying

organic clay and soft clay soils at depths of approximately 12 and 18 feet below existing grade at Borings 7 and 8, respectively, may be proportioned based on a net allowable bearing pressure of 10,000 psf. If belled caissons are required, the borings should be extended at least 10 to 15 feet deeper in order to determine the thickness of the very silty clay stratum so that the feasibility of excavating and installing the bells could be evaluated.

Temporary casing will be required to prevent sloughing or squeezing of fill and compressible soil deposits into the caisson excavation, as well as to seal against groundwater inflow from water-bearing strata. The temporary casing may be withdrawn during concrete placement, as long as the concrete within the casing is maintained at an adequate level (or head) to balance squeezing and/or hydrostatic pressures in surrounding soils.

Pavilion

Borings 9 and 10 were drilled in connection with the proposed pavilion. They encountered approximately 6 to 8 feet of existing fill at the surface. The fill was underlain by an organic clay stratum in Boring 10 that extended to a depth of about 11 feet below existing grade. Footing foundations design on the basis of a net allowable bearing pressure of 3000 psf may be utilized for the support of the proposed pavilion. However, the footing excavations need to be extended below the fill materials and in the case of Boring 10 below the organic clay deposit as well. This will, therefore, require undercuts on the order of about 6 and 11 feet below existing grade at Borings 9 and 10, respectively. Foundation overexcavations should be backfilled and footings constructed at design elevations as described below.

The base of foundations undercuts should exceed footing dimensions by at least 12 inches along each side as measured at the base of the excavation, 6 inches for every foot of overdig where the undercut exceeds 2.0 feet in depth. Replacement materials should consist of crushed stone or crushed gravel between 1/4 and 3 inches in size and containing no fines; IDOT gradation CA-1 and CA-7 materials meet these criteria. This "structural" fill should be spread in 12 inch layers loose thickness, each lift to be densified using vibratory compaction equipment or by tamping with a backhoe bucket. Footings constructed on crushed stone or crushed gravel backfill may be proportioned for 3000 psf bearing.

In order to preclude disproportionately small footing sizes, it is recommended that all continuous wall footings be made at least 20 inches wide and isolated foundations at least 3.0 feet square, regardless of calculated dimensions. For frost considerations, all exterior footings should be constructed at least 3.5 feet below outside finished grade and 4.0 feet for foundations located outside of heated building limits. Interior footings may be constructed at higher elevations as long as they are protected against frost heave in the event of winter construction.

The accumulation of run-off water or seepage may occur during foundation overexcavation. The contractor should be prepared to remove these accumulations by dewatering procedures, as a minimum to include pumping from strategically placed sumps.

Alternatively, the proposed pavilion may be supported on drilled piers. The hard very silty clay soils encountered at depths of about 11 and 13 feet below existing grade in Borings 9 and 10, respectively,

are considered capable of supporting a net allowable bearing pressure of 10,000 psf in connection with caisson design and construction.

Temporary casing will be required to prevent sloughing or squeezing of fill and compressible soil deposits into the caisson excavation, as well as to seal against groundwater inflow from water-bearing strata. The temporary casing may be withdrawn during concrete placement, as long as the concrete within the casing is maintained at an adequate level (or head) to balance squeezing and/or hydrostatic pressures in surrounding soils.

CLOSURE

It is recommended that Testing Service Corporation personnel be present during caisson construction, to verify soil bearing capacity as well as to monitor installation procedures. Also, placement of reinforcing steel in foundation walls, grade beams and structural slab should be checked.

It is recommended that full-time inspection be provided by Testing Service Corporation personnel during footing construction (pavilion), so that the soils at undercut and foundation levels can be observed and tested. In addition, approval of building materials, stripping and undercutting, fill placement and compaction as well as slab-on-grade construction should be monitored for compliance with the recommended procedures and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the ten (10) soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings, the nature and extent of which may not become evident until during the course of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

It has been a pleasure to assist you with this work. Please call if there are any questions or if we may be of further service.

Respectfully submitted,

TESTING SERVICE CORPORATION

Alfredo J. Bermudez
Registered Professional Engineer
Illinois No. 062-046608

AJB:cn
Enc. (3 reports)

TSC

TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: "This Agreement" consists of Testing Service Corporation's ("TSC") proposal, TSC's Schedule of Fees and Services, Client's written acceptance thereof, if accepted by TSC, and these General Conditions. The terms contained in these General Conditions are intended to prevail over any conflicting terms in this Agreement. "Client" refers to the person or entity ordering the work to be done or professional services to be rendered by TSC (except where distinction is necessary, either work or professional services are referred to as "services" herein). If Client is ordering the services on behalf of another, Client represents and warrants that Client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "Client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by Client are adequate and sufficient for Client's intended purpose. Client shall communicate these General Conditions to each and every third party to whom the Client transmits any report prepared by TSC. Unless otherwise expressly assumed in writing, TSC shall have no duty to any third party, and in no event shall TSC have any duty or obligation other than those duties and obligations expressly set forth in this Agreement. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

2. SCHEDULING OF SERVICES: The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of Client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, Client agrees to pay such additional charges, if any, as may be applicable.

3. ACCESS TO SITE: Client will arrange and provide such access to the site as is necessary for TSC to perform its services. TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If Client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and Client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

4. CLIENT'S DUTY TO NOTIFY ENGINEER: Client represents and warrants that Client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this Agreement.

5. DISCOVERY OF POLLUTANTS: TSC's services shall not include investigation for hazardous materials as defined by the Resource Conservation Recovery Act, 42 U.S.C.§ 6901, et, seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials are discovered and identified by TSC, TSC's sole duty shall be to notify Client.

6. MONITORING: If this Agreement includes testing construction materials or observing any aspect of construction of improvements, TSC will report its test results and observations as more specifically set forth elsewhere in this Agreement. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

7. ROOF INVESTIGATIONS: Should it be necessary to make roof cuts, Client agrees to provide a roofing contractor of Client's choice to make such cuts, to remove samples as directed by TSC personnel and to promptly make necessary patches or repairs. In the event that a roof contractor is not so provided by Client, Client agrees that TSC may make and remove such cuts as TSC deems necessary in the course of the investigation and Client assumes all risks of damage to the roof system and the building which may arise as a result thereof.

8. LIMITATIONS OF PROCEDURES, EQUIPMENT AND TESTS: Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

9. SAMPLE DISPOSAL: Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

10. TERMINATION: This Agreement may be terminated by either party upon seven days prior written notice. In the event of termination, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses.

11. PAYMENT: Client shall be invoiced periodically for services performed. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.

12. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with this Agreement and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

Should TSC or any of its employees be found to have been negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, Client, all parties claiming through Client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to $50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project, whichever amount is greater.

In the event Client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of Client received within five days of Client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit damages shall be increased to $500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.

13. INDEMNITY: Subject to the provisions set forth herein, TSC and Client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suites, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees. In the event both are negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and Client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement.

14. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

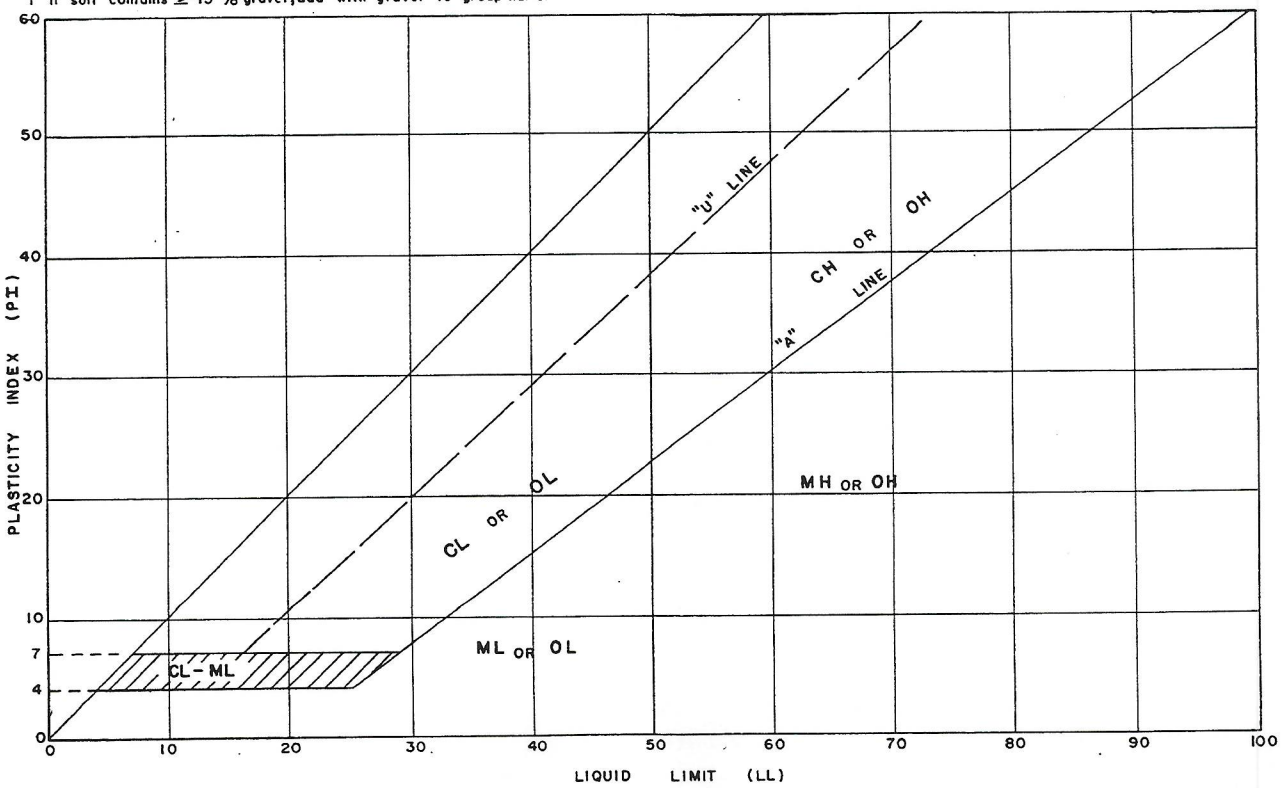
15. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement, (ii) wherein TSC waives any rights to a mechanics lien or (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party. These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Should litigation be necessary, the parties consent to jurisdiction and venue in an appropriate Illinois State Court in and for the County of DuPage, Wheaton, Illinois or the Federal District Court for the Northern District of Illinois. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.

rev. 6/97

TESTING SERVICE CORPORATION
UNIFIED CLASSIFICATION CHART

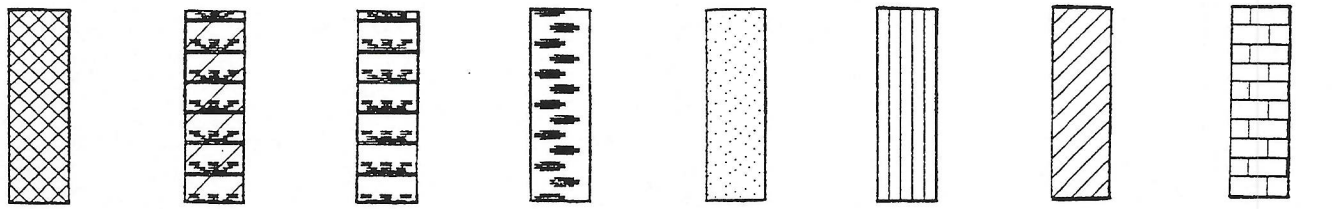
CRITERIA FOR ASSIGNING GROUP SYMBOLS AND GROUP NAMES USING LABORATORY TESTS [a]				SOIL CLASSIFICATION	
				GROUP SYMBOL	GROUP NAME [b]
COARSE-GRAINED SOILS more than 50 % retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS Less than 5% fines [c]	$C_u \geq 4$ and $1 \leq C_c \leq 3$ [e]	GW	Well graded gravel [f]
			$C_u < 4$ and/or $1 > C_c > 3$ [e]	GP	Poorly graded gravel [f]
		GRAVELS WITH FINES More than 12% fines [c]	Fines classify as ML or MH	GM	Silty gravel f,g,h
			Fines classify as CL or CH	GC	Clayey gravel f,g,h
	SANDS 50 % or more of coarse fraction passes No. 4 sieve	CLEAN SANDS Less than 5 % fines [d]	$C_u \geq 6$ and $1 \leq C_c \leq 3$ [e]	SW	Well-graded sand [i]
			$C_u < 6$ and/or $1 > C_c > 3$ [e]	SP	Poorly graded sand [i]
		SANDS WITH FINES More than 12 % fines [d]	Fines classify as ML or MH	SM	Silty sand g,h,f
			Fines classify as CL or CH	SC	Clayey sand g,h,f
FINE-GRAINED SOILS 50 % or more passed the No. 200 sieve	SILTS & CLAYS Liquid limit less than 50 %	Inorganic	PI > 7 and plots on or above "A" line j	CL	Lean clay k,l,m
			PI < 4 or plots below "A" line j	ML	Silt k,l,m
		Organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$	OL	Organic clay k,l,m,n Organic silt k,l,m,o
	SILTS & CLAYS Liquid limit 50 % or more	Inorganic	PI plots on or above "A" line	CH	Fat clay k,l,m
			PI plots below "A" line	MH	Elastic silt k,l,m
		Organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$	OH	Organic clay k,l,m,p Organic silt k,l,m,q
Highly organic soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

a. Based on the material passing the 3-in (75-mm) sieve.
b. If field sample contained cobbles and/or boulders, add "with cobbles and/or boulders" to group name.
c. Gravels with 5 to 12 % fines require dual symbols
GW-GM well graded gravel with silt
GW-GC well graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
d. Sands with 5 % to 12 % fines require dual symbols
SW-SM well graded sand with silt
SW-SC well graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
e. $C_u = D_{60}/D_{10}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
f. If soil contains $\geq$ 15 % sand, add "with sand" to group name.
g. If fines classify as CL-ML, use dual symbol GC-GM, SC-SM.
h. If fines are organic, add "with organic fines" to group name.
i. If soil contains $\geq$ 15 % gravel, add "with gravel" to group name.
j. If Atterberg Limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 15 to 29 % plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains $\geq$ 30 % plus No. 200, predominantly sand, add "sandy" to group name.
m. If soil contains $\geq$ 30 % plus No. 200, predominantly gravel, add "gravelly" to group name.
n. PI $\geq$ 4 and plots on or above "A" line.
o. PI $\geq$ 4 or plots below "A" line.
p. PI plots on or above "A" line.
q. PI plots below "A" line.



TESTING SERVICE CORPORATION

LEGEND FOR BORING LOGS



FILL TOPSOIL PEAT GRAVEL SAND SILT CLAY DOLOMITE

SAMPLE TYPE:

SS = Split Spoon
ST = Thin-Walled Tube
A = Auger

FIELD AND LABORATORY TEST DATA:

N = Standard Penetration Resistance in Blows per Foot
Wc = In-Situ Water Content
Qu = Unconfined Compressive Strength in Tons per Square Foot
* Pocket Penetrometer Measurement; Maximum Reading = 4.5 tsf
γD = Dry Unit Weight in Pounds per Cubic Foot

WATER LEVELS:

▼ While Drilling
▽ End of Boring
▼ 24 Hours

SOIL DESCRIPTION:

MATERIAL	PARTICLE SIZE RANGE
BOULDER	Over 12 inches
COBBLE	12 inches to 3 inches
Coarse GRAVEL	3 inches to ¾ inch
Small GRAVEL	¾ inch to No. 4 Sieve
Coarse SAND	No. 4 Sieve to No. 10 Sieve
Medium SAND	No. 10 Sieve to No. 40 Sieve
Fine SAND	No. 40 Sieve to No. 200 Sieve
SILT and CLAY	Passing No. 200 Sieve

COHESIVE SOILS

CONSISTENCY	Qu
Very Soft	Less than 0.3
Soft	0.3 to 0.6
Stiff	0.6 to 1.0
Tough	1.0 to 2.0
Very Tough	2.0 to 4.0
Hard	4.0 and over

COHESIONLESS SOILS

RELATIVE DENSITY	N
Very Loose	0 - 4
Loose	4 - 10
Firm	10 - 30
Dense	30 - 50
Very Dense	50 and over

MODIFYING TERM	PERCENT BY WEIGHT
Trace	1 - 10
Little	10 - 20
Some	20 - 35

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **1** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **98.5**

END OF BORING **73.5**

WATER LEVEL OBSERVATIONS

WHILE DRILLING **8.5 '**

AT END OF BORING **5.0 '**

24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0		
1	SS		19	16.7	4.5+*	116			FILL - Brown and gray silty CLAY, little sand, trace gravel, trace brick, moist (CL)
							3.0	95.5	
2	SS		9	19.2	2.0*	111			FILL - Gray silty CLAY, little sand, trace gravel, moist (CL)
							5.5	93.0	
3	SS		16	27.1					Black clayey TOPSOIL, moist (OL)
							8.0	90.5	
4	SS		3	27.4	0.63 0.25*				Soft brown, gray and black silty CLAY, little sand, trace organic, very moist (CL)
							10.5	88.0	
5	SS		35	16.3					Dense gray clayey SILT, little sand, moist (ML)
6	SS		40	16.4					
							16.0	82.5	
7	SS		35	9.9	5.42 4.5*				Hard gray very silty CLAY, little sand, trace gravel, moist (CL-ML)
							21.0	77.5	
8	SS		33	19.0					Dense gray clayey SILT, little sand, moist (ML)
									End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **54**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **2** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **98.6**

END OF BORING **73.6**

WATER LEVEL OBSERVATIONS

WHILE DRILLING **8.0 '**

AT END OF BORING **11.0 '**

24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.3	98.3	Bituminous Concrete
A 1 B	SS		6	17.0	2.5*	116	1.3	97.3	Crushed Stone Base FILL - Brown and gray silty CLAY, little sand and gravel, trace cinders, moist (CL)
2	SS		8	23.7			3.0	95.6	Black clayey TOPSOIL, moist (OL)
3	SS		6	23.8	1.16 1.25*		5.5	93.1	Tough brown silty CLAY, little sand, trace organic, very moist (CL)
4	SS		11	20.1			8.0	90.6	Firm brownish-gray clayey SILT, trace sand, very moist (ML)
5	SS		31	19.1			10.5	88.1	Dense gray SILT, little sand, trace clay, moist (ML)
6	SS		39	18.2					
7	SS		39	16.6			21.0	77.6	Dense gray SILT, little sand with clay layers, moist ML/CL)
8	SS		30	15.1					End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **144**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **3** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **97.5**

END OF BORING **72.5**

WATER LEVEL OBSERVATIONS

WHILE DRILLING **8.0 '**

AT END OF BORING **22.0 '**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.3	97.2	Bituminous Concrete
	A						1.0	96.5	Crushed Stone Base
	1	SS	14						FILL - Brown silty CLAY, little sand, trace gravel, little brick, moist (CL)
	B			16.0	4.5+*	118			
							3.0	94.5	
	2	SS	6	22.6	1.49 2.0*				Tough brownish-gray silty CLAY, little sand, trace gravel, moist (CL)
							5.5	92.0	
	3	SS	15	16.6					Firm brownish-gray silty SAND, trace gravel, trace clay, moist (SM)
							8.0	89.5	▼
	4	SS	34	9.2	4.5+*				Hard gray very silty CLAY, little sand, trace gravel, damp (CL-ML)
							10.5	87.0	
	5	SS	49	9.2					Dense gray SILT, little sand, trace gravel, trace clay, damp to moist (ML)
	6	SS	50	9.9					
	7	SS	46	17.9					
							22.0	75.5	▽
	8	SS	26	23.0					Firm gray SILT, little sand, trace clay, very moist (ML)
									End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **144**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **4** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **98.3**

END OF BORING **73.3**

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.3	98.0	Bituminous Concrete
A 1	SS		12				1.2	97.1	Crushed Stone Base
B				16.6	2.25*	116			FILL - Brown and gray silty CLAY, little sand, trace gravel, trace brick, moist (CL)
2	SS		9	19.7	2.0*	110			
							5.5	92.8	
3	SS		17	9.6					FILL - Dark brown, gray and brown silty CLAY, some sand and gravel, trace slag, damp (CL)
4	SS		26	10.6	4.5+*	131			
							10.5	87.8	
5	SS		27	9.5	4.5+*				Hard gray very silty CLAY, some sand, trace gravel, damp (CL-ML)
							13.0	85.3	
6	SS		27	15.5	4.5+*				Hard gray silty CLAY, little sand with silt layers, moist (CL/ML)
							15.5	82.8	
7	SS		28	18.8					Firm gray SILT, trace sand, trace clay, moist (ML)
							22.0	76.3	
8	SS		21	16.8	3.08 3.5*				Very tough gray very silty CLAY, little sand, little silt seams, moist (CL)
									End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **144**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **5** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **98.3**

END OF BORING **73.3**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **12.5 '**

▽ AT END OF BORING **8.0 '**

▼ 24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
1	SS		8	29.9	0.5*	91			FILL - Brown, gray and black silty CLAY, little sand, trace gravel, trace organic, very moist (CL)
2	SS		12	36.3	0.25*	85			
							5.5	92.8	
A 3 B	SS		19	26.2 21.7	3.0* 3.0*				FILL - Black and dark gray TOPSOIL and silty CLAY, little sand, very moist to moist (OL/CL) ▽
							8.0	90.3	
4	SS		5	28.6	0.73 1.0*				Stiff to tough brown and gray silty CLAY, little sand, trace organic, very moist (CL)
							10.5	87.8	
5	SS		20	11.0	4.5*				Hard gray very silty CLAY, little sand and gravel, moist (CL) ▼
							13.0	85.3	
6	SS		19	12.3	4.5*				Hard gray silty CLAY, some sand, trace gravel, moist (CL)
							16.0	82.3	
7	SS		37						Dense gray SAND, some gravel, trace clay and silt, occasional Cobbles, wet (SP)
							22.0	76.3	
8	SS		47	12.2					Dense gray clayey SAND, trace gravel, very moist (SC)
									End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **54**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **6** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **97.1**

END OF BORING **72.1**

WATER LEVEL OBSERVATIONS

WHILE DRILLING **10.5 '**

AT END OF BORING **21.0 '**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.3	96.8	Bituminous Concrete
							0.9	96.2	Sand and Gravel Base
	A 1 B	SS	10	19.8	1.5*	110			FILL - Brown and gray silty CLAY, little sand and gravel, trace brick and topsoil, very moist to moist (CL)
	2	SS	6	19.3	2.0*	111			
							5.5	91.6	
	3	SS	6	53.7	1.0*				Stiff to tough black ORGANIC CLAY, trace sand, very moist (OH) (Possible Fill)
							8.0	89.1	
	4	SS	4	23.4					Loose brown-gray SILT, little sand, trace clay, very moist (ML) (Possible Fill)
							10.5	86.6	
	5	SS	20	14.9					Firm gray SILT, little sand, trace clay, moist (ML)
	6	SS	27	14.9					
							16.0	81.1	
	7	SS	42	10.0	4.5+*				Hard gray very silty CLAY, some sand, trace gravel, damp (CL-ML)
							21.0	76.1	
	8	SS	24	17.8					Firm gray SILT, little sand, trace to little clay, moist (ML)
									End of Boring at 25.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **144**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **7** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **96.6**

END OF BORING **76.6**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **8.0 '**

▽ AT END OF BORING **10.0 '**

▼ 24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.3	96.3	Bituminous Concrete
							1.0	95.6	Crushed Stone Base
1	SS		8	18.2	2.5*	113			FILL - Brown silty CLAY, little to some sand, trace gravel, little sand layers, moist (CL)
							3.0	93.6	
2	SS		4	10.8	1.25*	126			FILL - Brown silty CLAY, some sand, trace gravel, moist (CL)
							5.5	91.1	
3	SS		8	20.0	2.25*				FILL - Brown silty CLAY, little sand, trace gravel, moist (CL)
							8.0	88.6	
4	SS		2	71.3	0.25*				Very soft black ORGANIC CLAY, very moist (OH)
							10.5	86.1	
5	SS		5	21.9	0.5*				Soft gray silty CLAY, some sand, trace gravel, occasional sand seams, very moist (CL)
							13.0	83.6	
6	SS		24	15.2	4.5+*				Hard gray very silty CLAY, little to some sand and gravel, occasional Cobbles, moist to damp (CL/CL-ML)
7	SS		49	9.6	4.5+*				

End of Boring at 20.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35

7.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **8** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **98.4**

END OF BORING **78.4**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **18.0 '**

▽ AT END OF BORING **11.0 '**

▼ 24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
1	SS		11	19.0	1.0*	109			FILL - Brown and gray silty CLAY, some sand, trace gravel, trace organic, very moist (CL)
2	SS		12	14.6	2.5*	114			
3	SS		10	14.9	0.75*	113			
							8.0	90.4	
4	SS		5	33.2	0.75*	73			FILL - Black and gray silty CLAY, little sand, trace gravel, little organic, very moist (OL)
							10.5	87.9	▽
5	SS		6	114	0.5*				Soft black ORGANIC CLAY, very moist (OH)
							13.0	85.4	
A 6 B	SS		12	18.2 / 80.7	0.5*		14.0	84.4	Firm gray clayey SAND, trace gravel, very moist (SC)
									Soft gray ORGANIC CLAY, very moist (OH)
							18.0	80.4	▼
7	SS		40	16.8	5.07 4.5+*				Hard gray very silty CLAY, little sand, trace gravel, moist (CL)
									End of Boring at 20.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25 30 35 40

DRILL RIG NO. **54**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **9** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **97.3**

END OF BORING **77.3**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **3.5 '**

▽ AT END OF BORING **6.0 '**

▼ 24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
1	SS		22	22.6	3.0*	99			FILL - Black and brown silty CLAY, little sand, trace gravel, trace organic, moist to very moist (CL)
2	SS		5	26.7	0.5*	89			
							5.5	91.8	
3	SS		6	24.7	1.69 2.5*				Tough to very tough brown and gray silty CLAY, little sand, trace organic, moist (CL/CH)
							8.0	89.3	
4	SS		3	25.4	0.90 0.75*				Stiff gray very silty CLAY, little sand, very moist (CL)
							10.5	86.8	
5	SS		34	11.8	4.5+*				Hard gray very silty CLAY, little sand, trace gravel, damp (CL)
							13.0	84.3	
6	SS		45	11.4					Dense gray clayey SILT, little sand, trace gravel, moist (ML)
							16.0	81.3	
7	SS		22	10.5	4.13 4.5+*				Hard gray very silty CLAY, little sand, trace gravel, damp (CL-ML)
									End of Boring at 20.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0, 5, 10, 15, 20, 25, 30, 35, 40

DRILL RIG NO. **54**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02

PROJECT **Chateau Bu-Sche' Additions, 11535 S. Cicero Ave., Alsip, Illinois**

CLIENT **The Chateau Bu-Sche', c/o Tomala Associates, Inc., Lemont, Illinois**

BORING **10** DATE STARTED **5-13-02** DATE COMPLETED **5-13-02** JOB **L-55,177**

ELEVATIONS

GROUND SURFACE **97.9**

END OF BORING **77.9**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **6.0 '**

▽ AT END OF BORING **3.0 '**

▼ 24 HOURS

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
1	SS		9	20.3	2.25*	106			▽ FILL - Brown, gray and black silty CLAY, little to some sand and gravel, trace organic, moist (CL)
2	SS		15	19.9	2.0*	104			
							5.5	92.4	▼
3	SS		19	44.7					FILL - Brown and gray clayey SAND and GRAVEL, little concrete, very moist
							8.0	89.9	
4	SS		6	134	0.25*				Very soft black ORGANIC CLAY, very moist (OH)
							10.5	87.4	
5	SS		22	17.1					Firm dark gray SAND, trace to little clay, trace organic, very moist (SP-SC)
							13.0	84.9	
6	SS		40	11.2	4.5+*				Hard gray very silty CLAY, little sand, trace gravel, moist to damp (CL-ML)
7	SS		40	10.6	4.33 4.5+*				
									End of Boring at 20.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0, 5, 10, 15, 20, 25, 30, 35, 40

DRILL RIG NO. **54**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC 55177.GPJ TSC_ALL.GDT 5/16/02