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Geotechnical & Environmental Engineering



Construction Materials Engineering & Testing



Laboratory Testing of Soils, Concrete & Asphalt



Geo-Environmental Drilling & Sampling

**Report of Soils
Exploration**

Center Street Parking Structure

Sherman Hospital

Elgin, Illinois

Sherman Hospital

GEOTECHNICAL GROUP

CAROL STREAM

September 28, 2001

L - 53,483

REPORT OF SOILS EXPLORATION
CENTER STREET PARKING STRUCTURE
SHERMAN HOSPITAL
ELGIN, ILLINOIS

PREPARED FOR:
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September 28, 2001

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REPORT OF SOILS EXPLORATION
CENTER STREET PARKING STRUCTURE
SHERMAN HOSPITAL
ELGIN, ILLINOIS

1.0 INTRODUCTION

This report presents results of the soils exploration performed for the proposed Center Street Parking Structure in Elgin, Illinois. These geotechnical services were provided in general accordance with TSC Proposal No. 25,544 dated August 1, 2001 and the attached General Conditions, incorporated herein by reference. The number of soil borings, locations and depths were changed during the course of the drilling operations based on discussions with Walker Parking Consultants. As a related matter, the footprint area of the proposed parking garage was increased to the west by one bay.

Current plans call for the construction of a 3-level parking deck with plan dimensions of approximately 362' x 263'. It is understood that the slab-on-grade for the lower level (or ground floor) will be located about 1 foot above of the existing grade at the north end of site. It is also understood that the structural system will be precast concrete with approximate 60' x 36' bays. Based on information provided by Walker Parking Consultants, typical exterior and interior column loads for the parking garage on the order of 570 and 1050 kips, respectively, have been estimated.

The proposed parking structure will be constructed in portions of existing at-grade asphalt parking lots located on the south side of Slade Avenue and on the east and west sides of

Center Street, i.e., the parking garage footprint encompasses Center Street which runs in a north-south direction along the approximate middle of the proposed parking structure. Ground surface elevations at the borings range from a low of Elevation 784.5 at Boring 1 drilled near the southwest corner of the proposed parking garage to a high of Elevation 788.6 at Boring 12 drilled near the northeast corner - a grade differential of about 4 feet.

The results of field and laboratory testing and recommendations based upon these data are included in this report. Specifically addressed are structure foundations, site grading/slab-on-grade support and groundwater management.

2.0 FIELD INVESTIGATION AND LABORATORY TESTING

A total of twelve (12) soil borings, numbered 1 - 12, were drilled as part of the subsurface exploration for this project. The borings were laid out in the field and ground surface elevations determined by TSC. Reference is made to the attached Boring Location Plan which indicates the drilling layout as well as ground surface elevations at the borings. The elevations were referenced to a convenient local benchmark with a known elevation of 790.36 as indicated on the Boring Location Plan.

The borings were extended to depths of 60 and 75 feet below existing grade. They were drilled and samples tested according to currently recommended American Society for Testing and Materials specifications. Soil sampling was performed at 2.5 foot intervals to a depth of 20 feet and every 5 feet thereafter. The majority of 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. Thin-walled tube samples were also obtained representative of native cohesive materials. 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 cohesive samples.

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.

3.0 DISCUSSION OF TEST DATA

Except for Boring 6, bituminous concrete was encountered at the surface of the borings ranging from 3 to 6 inches in thickness. The pavement was underlain by about 7 to 13 inches of granular base materials in most of the borings. These thicknesses should be considered highly approximate, as they were estimated from the disturbed side of the augered holes. Pavement cores should be taken if more exact measurements are required.

Fill deposits were found at the surface of Boring 6 and below the pavement materials in Borings 1 - 3, 5 - 6, 11 and 12, extending to depths ranging from approximately 3 to 7 feet below existing grade, typically to a depth of 3 feet. The fill was variable in composition, consisting of a mixture of silty clay, sand and cinders in Boring 1, sand and gravel in Borings 2, 6 and 7, clayey sand in Boring 5 and silty/sandy clay in Borings 11 and 12 with some inclusions of roots, topsoil and asphalt also being noted. At Boring 3, the fill consisted of strata of sand and gravel, silty clay, P.C. concrete and a sand/topsoil mixture.

Native soils underlying the pavement section and/or fill materials and extending to depths of about 13 to 28 feet below existing grade at the majority of the boring locations consisted predominantly of firm to very dense sand and gravel deposits. The exceptions included Borings 1 and 3 drilled near the southwest corner of the proposed parking structure where interbedded strata of tough to hard silty clay, very loose to loose clayey sand and gravel, firm to very dense sand and gravel were encountered in this uppermost zone. The predominant firm to very dense sand and gravel deposits had N values ranging from 12 to 97 blows per foot (bpf). A stratum of very loose to loose clayey sand gravel was encountered between depths of approximately 8 and 13 feet in Boring 3 (N values of 3 to 6 bpf).

Variable soil conditions were encountered below the above-described uppermost native granular soils. They were underlain by strata of intermediate and cohesive soil types of variable consistency, consisting of loose to dense clayey silt, clayey sand and silty sand,

and stiff to hard silty/very silty clay and sandy clay, extending to depths ranging from approximately 31 to 40 feet below existing grade. The clay soils had unconfined compressive strengths generally between 0.7 and 3.0 tons per square foot (tsf) at water contents of 10 to 16 percent, indicative of low plasticity cohesive materials. The intermediate soil types exhibited N values in the range of 6 to 33 bpf.

"Hardpan"-type materials consisting of hard sandy clays were found below the aforementioned intermediate and cohesive soils, generally extending to the bottom of the borings. These relatively incompressible materials exhibited unconfined compressive strengths typically ranging from 6.0 to 13.0+ tsf at moisture contents between 8 and 12 percent. Boring 3 terminated in a deposit of dense clayey silt.

Boring 10 was "dry" both during and upon completion of drilling operations. Borings 1, 2, 4, 6 - 9, 11 and 12, which were also advanced using hollow-stem augers, first encountered free water during drilling and sampling at depths ranging from about 12½ to 50 feet below existing grade. Upon completion of drilling operations the water levels dropped and were in range of approximately 25 to 60 feet below existing grade.

Boring 3 encountered free water at a depth of 12½ feet during drilling operations, with Boring 5 being dry to a depth of 15 feet. Further groundwater observations were not performed in these two borings as they were advanced using rotary wash drilling methods below these depths.

4.0 ANALYSIS AND RECOMMENDATIONS

4.1 Foundation Support

Based on the results of the borings, the proposed parking structure may be supported on footing foundations. As previously discussed, the ground floor elevation will be located just above the existing grade, i.e., minor grade changes would be performed. On this basis, footing grades are anticipated to be in the range of about 3 to 5 feet below existing grade. At these elevations, footings would generally bear on firm to very dense sand and gravel deposits at the boring locations. These granular soils are considered suitable for the support of the proposed structure. At Boring 3 drilled near the southwest corner of the proposed parking garage footprint area, relatively deep foundation undercutting would be

required as suitable bearing soils were encountered at a depth of approximately 13 feet below existing grade.

Assuming a footing level not lower than 5 to 6 feet below existing grade, the proposed parking garage may be supported on spread footings proportioned for a net allowable soil bearing pressure of 6000 pounds per square foot (psf), subject to the following recommendations.

The 6000 psf bearing soils consist of firm to very dense native sand and gravel. Foundation excavation should extend below existing fill, uppermost native cohesive soils as encountered in some of the borings as well as any loose/very moist intermediate/granular deposit (Boring 3) to penetrate the firm to very dense native sand and gravel materials. Except for Boring 3, the granular bearing soils were encountered at depths ranging from approximately 1 to 5½ feet below existing grade at the boring locations. Summarized in the following table is the shallowest depth at which in-situ soils considered suitable of supporting a design bearing stress of 6000 psf were encountered at each boring. Ground surface elevations and depths of existing fill are also shown.

BORING NUMBER	GROUND SURFACE ELEVATION	DEPTH OF EXISTING FILL (FEET)	6000 PSF BEARING	
			DEPTH BELOW EXISTING GRADE (FEET)	ELEVATION
1	784.5	3.0	5.5	779.0
2	785.8	3.0	3.0	782.5
3	785.1	6.5	13.0	772.0
4	786.3	Pavement Section	3.0	783.0
5	786.2	3.0	5.5	780.5
6	786.6	3.0	3.0	783.5
7	788.0	3.0	3.0	785.0
8	787.9	Pavement Section	1.0	786.5
9	785.9	Pavement Section	1.0	784.5
10	785.8	Pavement Section	5.5	780.0
11	788.6	3.5	3.5	785.0
12	788.6	3.0	3.0	785.5

If foundation overexcavations are required to reach the native bearing soils, they should be backfilled and footings constructed at the higher design elevations. Backfill procedures for foundation undercuts are outlined below.

The base of the overexcavations should exceed footing dimensions by at least 12 inches along each side, 6 inches for every foot of overdig where the undercut exceeds 2.0 feet in depth. Replacement materials should consist of a well-graded sand and gravel mixture. The recommended well-graded granular mixture may consist of bank-run sand and gravel, crushed stone or crushed gravel meeting IDOT gradation CA-6. On-site excavated clean sand and gravel materials may potentially be used as undercut replacement backfill subject to their gradation being checked at the time of construction.

It is recommended that compaction for undercut replacement backfill 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 maximum 8 inch lifts loose measure, each layer to be compacted to the specified density prior to the placement of additional fill.

It is recommended that all continuous wall footings be made at least 24 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. Footings should be protected against frost heave in the event of winter construction.

Considering the relatively great depth of unsuitable soils encountered at Boring 3, it is suggested that close-out borings be drilled at specific column locations in the vicinity of this boring so that the footing areas requiring deep undercutting could be determined in advance of the construction activities.

Alternatively, the proposed structure may be supported on deep foundations such as drilled piers (caissons) or augered cast-in-place (ACIP) piles. The use of driven piling is not recommended due to the noise and vibrations associated with pile driving operations that could adversely affect occupants of nearby buildings. In regards to caisson foundations, the hard sandy clay soils first found at depths ranging from approximately 31 to 40 feet below existing grade at the boring locations are considered capable of supporting a net allowable bearing pressure of 30,000 psf. However, it should be noted

that the presence of sand and gravel and clayey sand strata above the bearing materials will complicate caisson installation, especially if they prove to be in a wet/saturated condition. Special caisson installation procedures will have to be utilized in the event that significant shaft instability and water seepage problems occur. As a minimum, temporary casing socketed 1 to 2 feet into the bearing clay soils is anticipated to be required at several locations.

In connection with augered cast-in-place piles, we estimate an allowable load of 105 tons for 16" and 18" diameter piles embedded approximately 20 and 15 feet into the hard sandy clay soils, respectively. A pile load test would have to be performed to verify pile capacity.

4.2 Site Grading/Slab-On-Grade Support

It is understood that relatively minor grade changes will be performed in connection with the ground floor slab/pavement subgrade. It is assumed that the existing bituminous pavement will be removed. Prior to placement of any new fill or subbase materials, the parking garage footprint area should be proof-rolled. This should be performed in order to detect the presence of unsuitable or unstable soil types. The proof-roll should be performed using a loaded dump truck or other approved piece of heavy construction equipment. All soft or unstable materials determined by proof-rolling should be removed and replaced. Solutions to such instability problems would likely consist of undercutting the unstable soils at least one to two feet and replacement with coarse granular material such as IDOT gradation CA-1 or CA-7.

Any new fill under floor slabs/pavements should otherwise consist of approved granular materials or inorganic silty clays of medium plasticity. It is recommended that compaction 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, each lift to be compacted to the specified density prior to the placement of additional fill.

Moisture control is important in the compaction of most soil types, and it is recommended that the water content of new fill be within 3 percentage points of optimum moisture as established by its laboratory compaction curve. If the soil is compacted too dry, it will

have an apparent stability which will be lost if it later becomes saturated. If the soil is too wet, the Contractor will not be able to achieve proper compaction.

A subgrade modulus of 100 pci is recommended assuming that above recommendations for subgrade preparation and fill placement are followed.

4.3 Groundwater Management

Based on the proposed grades and groundwater measurements made in the borings, serious groundwater problems are not anticipated. However, problems associated with the accumulation of groundwater seepage may be encountered in the areas where deep foundation undercutting is performed. The Contractor should be prepared to remove these accumulations by dewatering procedures, as a minimum to include pumping from strategically placed sumps.

5.0 CLOSURE

It is recommended that full-time inspection be provided by Testing Service Corporation personnel during foundation construction, 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/pavement construction should be closely supervised to insure compliance with the recommended procedures and specifications.


The analyses and recommendations submitted in this report are based upon the data obtained from the twelve (12) soil borings performed at the locations shown on the Boring Location Plan. This report does not reflect and variations which may occur between these borings or elsewhere on the site, 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. Close-out borings are recommended at specific footing locations in the vicinity of Boring 3 drilled near the southwest corner of the proposed parking garage due to the relatively deep foundation undercutting that is indicated at this location.

We are available to review this report with you at your convenience.

Prepared by,

M. Machalinski

Michael V. Machalinski, P.E.
Vice President


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

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

As the client of a consulting geotechnical engineer, you should know that site subsurface conditions cause more construction problems than any other factor. ASFE/The Association of Engineering Firms Practicing in the Geosciences offers the following suggestions and observations to help you manage your risks.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Your geotechnical engineering report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. These factors typically include: the general nature of the structure involved, its size, and configuration; the location of the structure on the site; other improvements, such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask your geotechnical engineer to evaluate how factors that change subsequent to the date of the report may affect the report's recommendations.

Unless your geotechnical engineer indicates otherwise, do not use your geotechnical engineering report:

- when the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size, elevation, or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership; or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems that may occur if they are not consulted after factors considered in their report's development have changed.

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time of subsurface exploration. Do not base construction decisions on a geotechnical engineering report whose adequacy may have been affected by time. Speak with your geotechnical consultant to learn if additional tests are advisable before construction starts. Note, too, that additional tests may be required when subsurface conditions are affected by construction operations at or adjacent to the site, or by natural events such as floods, earthquakes, or ground water fluctuations. Keep your geotechnical consultant apprised of any such events.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL JUDGMENTS

Site exploration identifies actual subsurface conditions only at those points where samples are taken. The data were extrapolated by your geotechnical engineer who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your geotechnical engineer can work together to help minimize their impact. Retaining your geotechnical engineer to observe construction can be particularly beneficial in this respect.

A REPORT'S RECOMMENDATIONS CAN ONLY BE PRELIMINARY

The construction recommendations included in your geotechnical engineer's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize recommendations. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your geotechnical engineer prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the geotechnical engineer. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.

GEOENVIRONMENTAL CONCERNS ARE NOT AT ISSUE

Your geotechnical engineering report is not likely to relate any findings, conclusions, or recommendations



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.

APPENDIX

UNIFIED CLASSIFICATION CHART

LEGEND FOR BORING LOGS

BORING LOGS

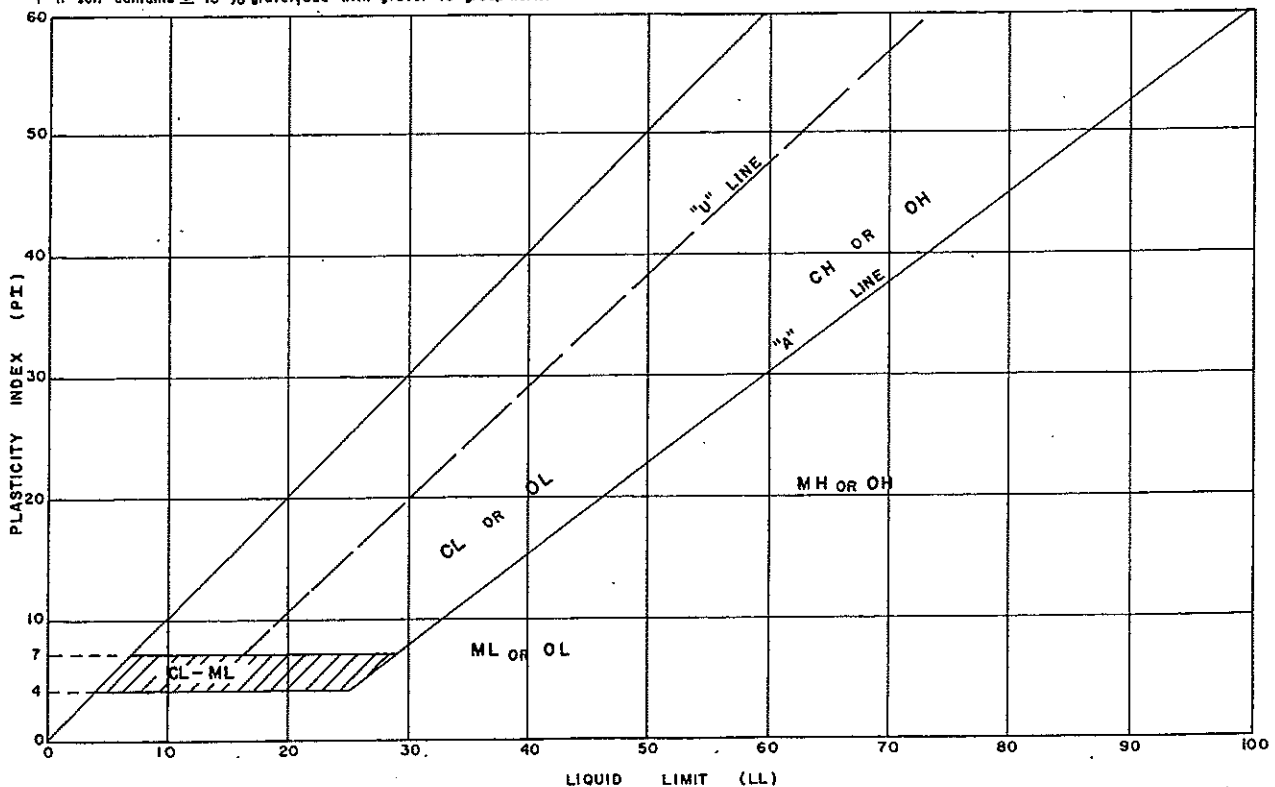
BORING LOCATION PLAN

**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.

1. 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 ≥ 4 and plots on or above "A" line.
 o. PI ≥ 4 or plots below "A" line.
 p. PI plots on or above "A" line.
 q. PI plots below "A" line.



PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **1** DATE STARTED **9-14-01** DATE COMPLETED **9-14-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **784.5**
 END OF BORING **724.5**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **24.0'**
 ▽ AT END OF BORING **55.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	784.2	Bituminous Concrete
								1.3	783.2	Crushed Stone Base
		1	SS	38	17.5		114	3.0	781.5	FILL - Brown and black silty Clay, Sand and Cinders, moist
5		2	SS	13	18.1	1.5*		5.5	779.0	Tough brown silty CLAY, some sand, trace gravel, very moist (CL) (Possible Fill)
		3	SS	53						Dense to very dense brown SAND and GRAVEL, trace clay, damp (SP/GP)
		4	SS	47				10.5	774.0	
		5	SS	19	16.1	4.26 4.5*		13.0	771.5	
15		6	SS	26	13.6	1.25*				Tough brownish-gray silty CLAY, some sand, trace gravel, very moist to moist (CL)
		7	SS	24	13.9	1.69 1.5*		18.0	766.5	
20		8	SS	27						Firm gray SAND, trace silt, damp (SP)
		9	SS	6	13.7			23.0	761.5	▽ Loose to firm brown clayey SAND, trace gravel, very moist (SC)
30		10	SS	10	12.9					Hard brown sandy CLAY, trace gravel, damp (CL-ML)
		11	SS	24	10.7	5.32 7.0*		33.0	751.5	
35		12	SS	29	9.1	13.0+*				

Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

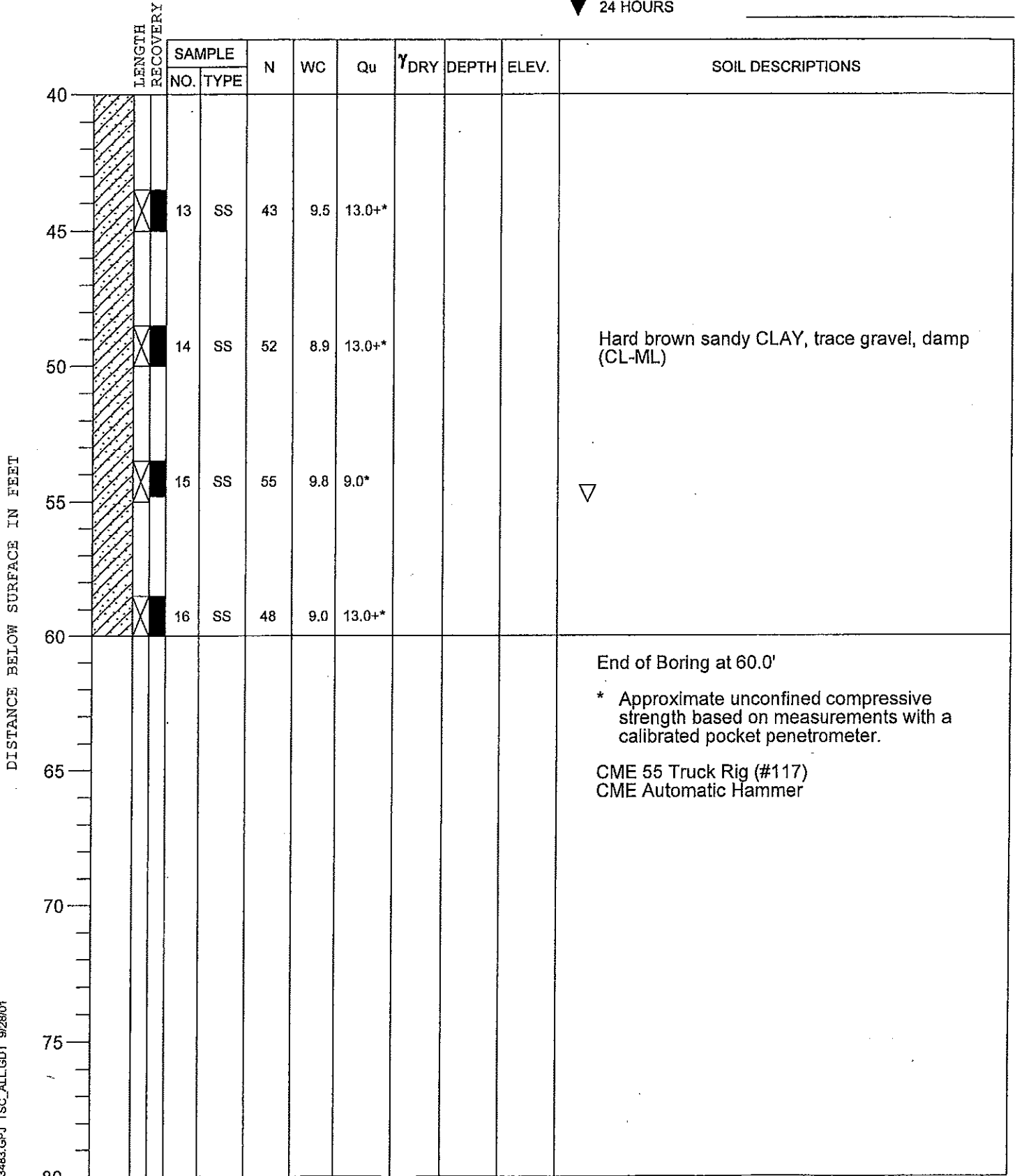


CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**

BORING **1** DATE STARTED **9-14-01** DATE COMPLETED **9-14-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **784.5**
 END OF BORING **724.5**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **24.0'**
 ▽ AT END OF BORING **55.0'**
 ▽ 24 HOURS



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PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **2** DATE STARTED **9-17-01** DATE COMPLETED **9-17-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **785.8**
 END OF BORING **725.8**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **16.0'**
 ▽ AT END OF BORING **32.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	785.5	Bituminous Concrete
								0.8	785.0	Crushed Stone Base
		1	SS	30	14.7					FILL - Brown SAND, little gravel, trace to little clay, moist (SP-SC)
		2	SS	12				3.0	782.8	
		3	SS	24						Firm to dense brown SAND, some gravel, damp (SP)
		4	SS	43						
		5	SS	39				10.5	775.3	
		6	SS	28						Firm to dense brown SAND and GRAVEL, damp (SP/GP)
		7	SS	22	15.8	1.62 1.75*		15.5	770.3	▽ Tough brown silty CLAY, little sand and gravel, moist (CL)
		8	SS	10	14.9	0.75*		18.0	767.8	
		9	SS	8	12.4	0.75*				Stiff brown sandy CLAY, trace gravel, very moist (CL-ML)
		10	SS	35	10.9	3.0*		28.0	757.8	▽ Very tough brown sandy CLAY, trace gravel, moist (CL-ML)
		11	SS	35	10.5	9.5*				
		12	SS	42	12.2	6.0*		33.0	752.8	Hard brown sandy CLAY, trace gravel, damp to moist (CL-ML)

Division lines between deposits represent approximate boundaries between soil types;

PROJECT Center Street Parking Structure, Elgin, Illinois

CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 2 DATE STARTED 9-17-01 DATE COMPLETED 9-17-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 785.8
 END OF BORING 725.8

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 16.0'
 ▽ AT END OF BORING 32.0'
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										
45		13	SS	41	10.3	9.0*				Hard brown sandy CLAY, trace gravel, damp to moist (CL-ML)
50		14	SS	47	10.0	6.23 7.5*				
55		15	SS	45	10.3	6.25*				
60		16	SS	37	12.4	8.5*				
65										End of Boring at 60.0'
70										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
75										CME 55 Truck Rig (#117) CME Automatic Hammer
80										

Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **3** DATE STARTED **9-5-01** DATE COMPLETED **9-6-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **785.1**
 END OF BORING **710.1**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **12.5'**
 ▽ AT END OF BORING **N/A - Rotary Wash**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	784.8	Bituminous Concrete
		1	SS	44						FILL - Gray SAND and GRAVEL, moist
								2.5	782.6	FILL - Black silty CLAY, trace sand and gravel (Driller's Observation) P. C. Concrete (Driller's Observation) FILL - Brown and black SAND and clayey TOPSOIL, very moist (SP/OL)
								3.0	782.1	
		2	SS	17	15.7			3.7	781.4	
		A			17.4	3.25*				Very tough brown silty CLAY, little sand, trace gravel, trace organic, moist (CL) (Possible Fill)
		3	SS	23				6.5	778.6	
		B			14.0	3.25*				Loose to very loose brown clayey SAND and GRAVEL, very moist (SC/GC) (Possible Fill)
		4	SS	6				8.0	777.1	
										Very dense brown SAND and GRAVEL, occasional Cobbles, wet (SP/GP)
		5	SS	3				13.0	772.1	
		6	SS	17-50/5"				15.5	769.6	Hard brown and gray silty CLAY, some sand, trace gravel, moist (CL)
		7	SS	44	12.4	6.5*		18.0	767.1	
		8	SS	21	12.6	1.5*				Tough gray very silty CLAY, some sand, trace gravel, very moist (CL-ML)
		9	ST	Push	11.7	1.25*		33.0	752.1	
		10	ST	Push	11.8	1.25*				Hard gray sandy CLAY, trace to little gravel, moist to damp (CL-ML)
		11	SS	14	10.3	6.0*				
		12	SS	28	9.5	5.75*				

Division lines between deposits represent approximate boundaries between soil types;

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PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **3** DATE STARTED **9-5-01** DATE COMPLETED **9-6-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **785.1**
 END OF BORING **710.1**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **12.5'**
 ▽ AT END OF BORING **N/A - Rotary Wash**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										
45		13	SS	30	9.9	8.5*				Hard gray sandy CLAY, trace to little gravel, moist to damp (CL-ML)
50		14	SS	44	8.5	12.0*				
55		15	SS	40	9.7	10.0*				
60		16	SS	34	8.7	10.05 13.0*				
65		17	SS	31	9.3	11.0*				
70		18	SS	44	9.2	12.25*				
72.0								713.1		Dense gray clayey SILT, some sand, trace gravel, damp (ML)
75		19	SS	42	8.8					End of Boring at 75.0'
80										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

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PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **4** DATE STARTED **9-18-01** DATE COMPLETED **9-18-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **786.3**
 END OF BORING **726.3**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **16.5'**
 ▽ AT END OF BORING **30.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	786.0	Bituminous Concrete
								0.8	785.5	Crushed Stone Base
		1	SS	15	12.0	2.0*				Tough to very tough brown sandy CLAY, trace gravel, moist (CL)
5		2	SS	12						
		3	SS	24						
		4	SS	27						
		5	SS	28						
10		6	SS	31						
		7	SS	31						Firm to dense brown SAND and GRAVEL, damp to very moist (SP/GP)
		8	SS	33						
20										
		9	SS	10	12.8	0.75*		23.0	763.3	
25										
		10	SS	11	11.6	1.29 1.0*				Stiff to tough brownish-gray sandy CLAY, trace gravel, very moist (CL-ML)
30										
		11	SS	5	12.9	0.75*				
35										
		12	SS	27	8.9	6.57 8.25*		38.0	748.3	Hard brownish-gray sandy CLAY, trace gravel, damp to moist (CL-ML)
40										

Division lines between deposits represent approximate boundaries between soil types;

PROJECT Center Street Parking Structure, Elgin, Illinois

CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 4 DATE STARTED 9-18-01 DATE COMPLETED 9-18-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 786.3
 END OF BORING 726.3

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 16.5'
 ▽ AT END OF BORING 30.0'
 ▽ 24 HOURS _____

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										
45		13	SS	33	10.8	7.0*				Hard brownish-gray sandy CLAY, trace gravel, damp to moist (CL-ML)
50		14	SS	37	12.4					
55		15	SS	52	10.2	8.0*				
60		16	SS	51	10.5	11.0*				
65										End of Boring at 60.0'
70										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
75										CME 55 Truck Rig (#117) CME Automatic Hammer
80										

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PROJECT **Center Street Parking Structure, Elgin, Illinois**

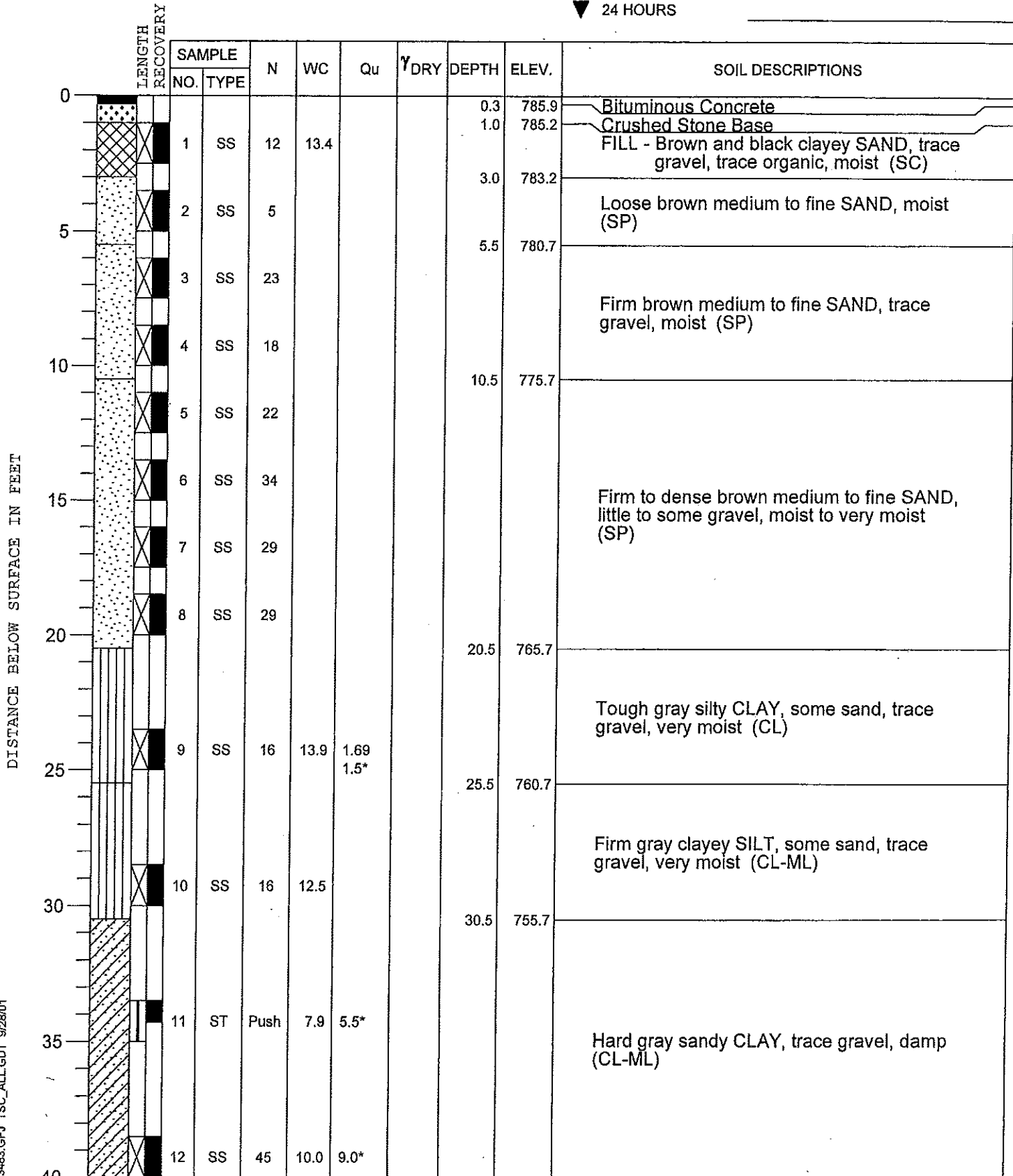
CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **5** DATE STARTED **9-7-01** DATE COMPLETED **9-7-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **786.2**
 END OF BORING **711.2**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry to 15.0'**
 ▽ AT END OF BORING **N/A - Rotary Wash**
 ▽ 24 HOURS



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PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **5** DATE STARTED **9-7-01** DATE COMPLETED **9-7-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **786.2**
 END OF BORING **711.2**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry to 15.0'**
 ▽ AT END OF BORING **N/A - Rotary Wash**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										
45		13	SS	33	9.0	10.38 11.75*				
50		14	SS	39	8.5	13.0+*				
55		15	SS	44	9.3	8.22 7.0*				
60		16	SS	35	10.0	11.5*				
65		17	SS	39	8.8	13.5*				
70		18	SS	32	10.1	9.0*				
75		19	SS	37	10.0	9.75*				
80										End of Boring at 75.0' Mobile B-61 Truck Rig (#144) Mobile Automatic Hammer

Hard gray sandy CLAY, trace gravel, damp (CL-ML)

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

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PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **6** DATE STARTED **9-10-01** DATE COMPLETED **9-10-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **786.6**
 END OF BORING **726.6**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **50.0'**
 ▽ AT END OF BORING **58.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0		1	SS	12	7.5			3.0	783.6	FILL - Brown medium to fine SAND, some gravel, trace clay, roots and asphalt pieces, moist (SP)
5		2	SS	12				5.5	781.1	Firm brown SAND and GRAVEL, damp (SP/GP)
		3	SS	48						Dense brown SAND and GRAVEL, damp (SP/GP)
10		4	SS	45						
		5	SS	45				13.0	773.6	
15		A	SS	24						Very tough brown silty CLAY, little sand, trace gravel, moist (CL)
		B			13.6	3.21 2.5*		15.5	771.1	
20		7	SS	14	13.5					Firm brown clayey SAND, trace gravel, very moist (SC)
		8	SS	16	16.0					
25		9	SS	12	12.5					
30		10	ST	Push	10.9	3.0*		27.0	759.6	Very tough brown sandy CLAY, trace gravel, occasional Cobbles, moist (CL-ML)
		11	SS	48	9.6	12.5*		33.0	753.6	
35		12	SS	75/5"	10.7	**				Hard brown sandy CLAY, trace to little gravel, occasional Cobbles, damp (CL-ML)

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Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

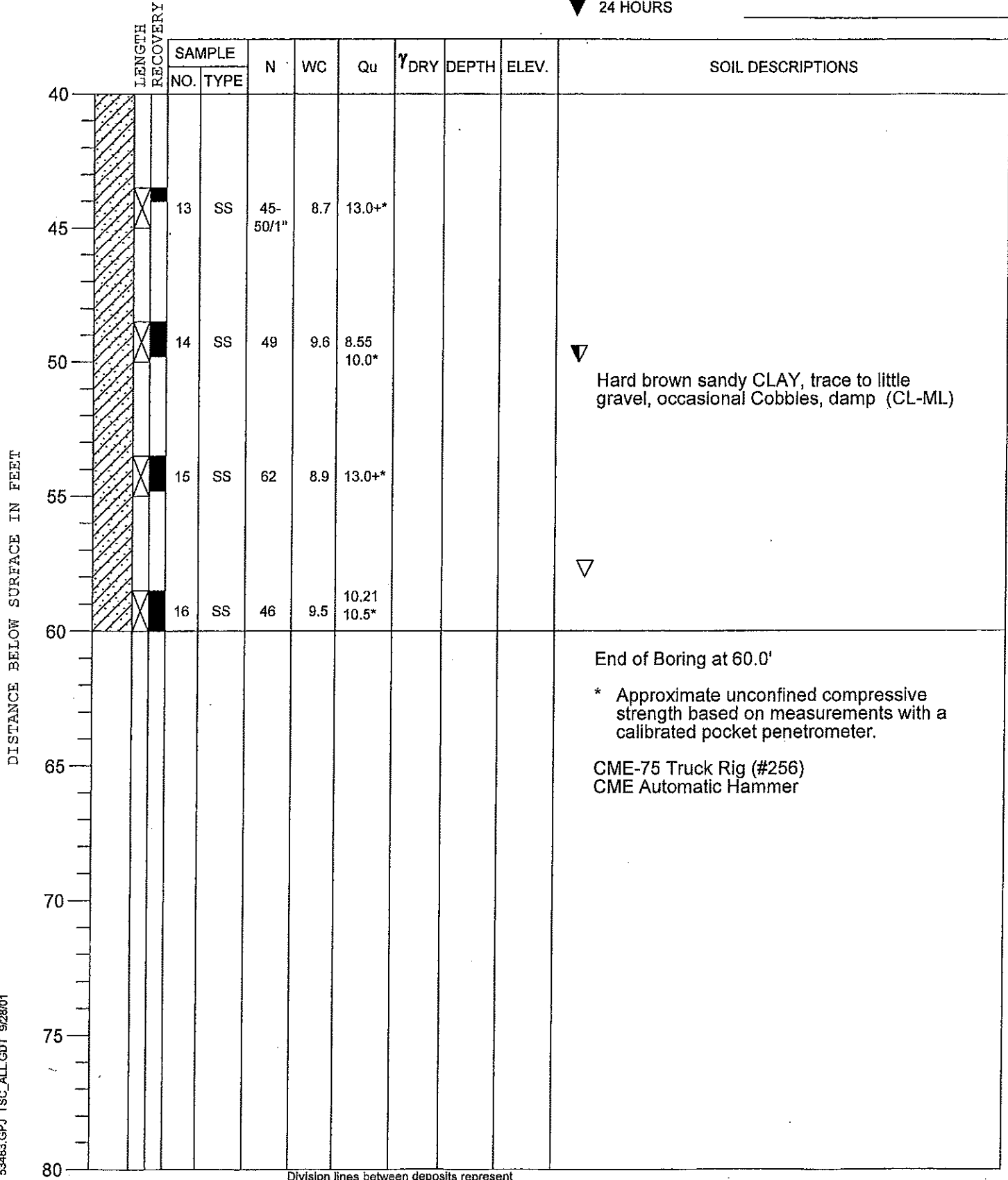
CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **6** DATE STARTED **9-10-01** DATE COMPLETED **9-10-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **786.6**
 END OF BORING **726.6**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **50.0'**
 ▽ AT END OF BORING **58.0'**
 ▽ 24 HOURS



Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **7** DATE STARTED **9-13-01** DATE COMPLETED **9-13-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **788.0**
 END OF BORING **728.0**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **24.5'**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	787.7	Bituminous Concrete
		1	SS	57	11.5					FILL - Brown SAND and GRAVEL, little topsoil, moist
		2	SS	25				3.0	785.0	
		3	SS	32						
		4	SS	33						
		5	SS	39						Firm to dense brown SAND and GRAVEL, moist (SP/GP)
		6	SS	34						
		7	SS	45						
		A			14.8	4.25*		18.0	770.0	
		8	SS	34				19.0	769.0	Hard brown silty CLAY, little sand and gravel, moist (CL)
		B			11.6	1.5*				
										Tough gray sandy CLAY, little to some gravel, very moist (CL-ML)
		9	SS	20	11.2			23.0	765.0	▽ Firm brown and gray silty fine SAND, trace gravel, trace clay, very moist (SM)
		10	SS	13	11.7			28.0	760.0	Firm gray clayey SILT, some sand, trace gravel, very moist (ML)
		11	SS	26	10.3	3.80 4.0*		33.0	755.0	Very tough gray sandy CLAY, trace gravel, moist (CL-ML)
		12	SS	33	9.4	12.0*		38.0	750.0	Hard gray sandy CLAY, trace to little gravel, damp (CL-ML)

Division lines between deposits represent approximate boundaries between soil types;

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PROJECT Center Street Parking Structure, Elgin, Illinois

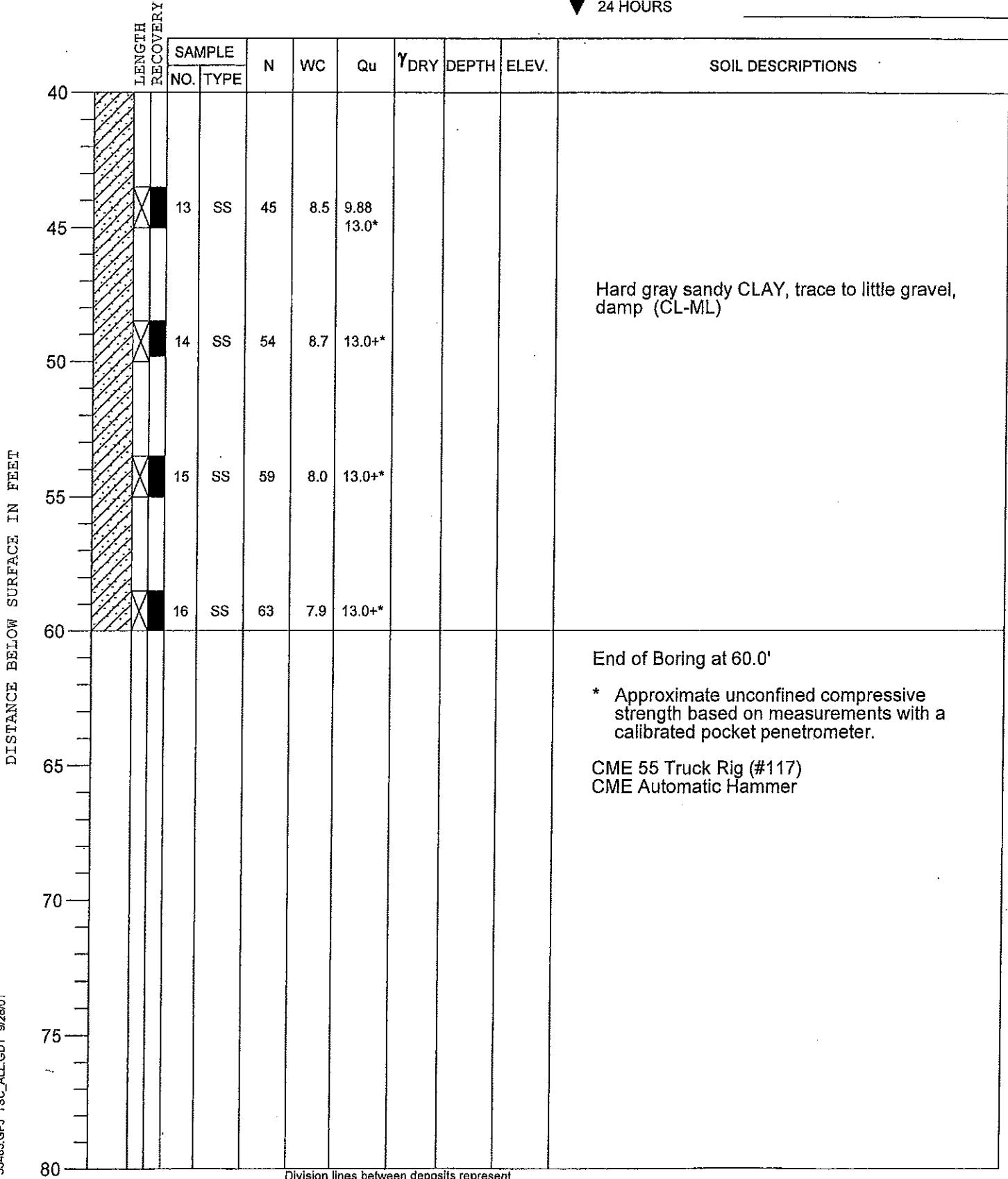


CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois

BORING 7 DATE STARTED 9-13-01 DATE COMPLETED 9-13-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 788.0
 END OF BORING 728.0

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 24.5'
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____



302 56483.GPJ TSC_ALL.GDT 9/28/01

PROJECT **Center Street Parking Structure, Elgin, Illinois**

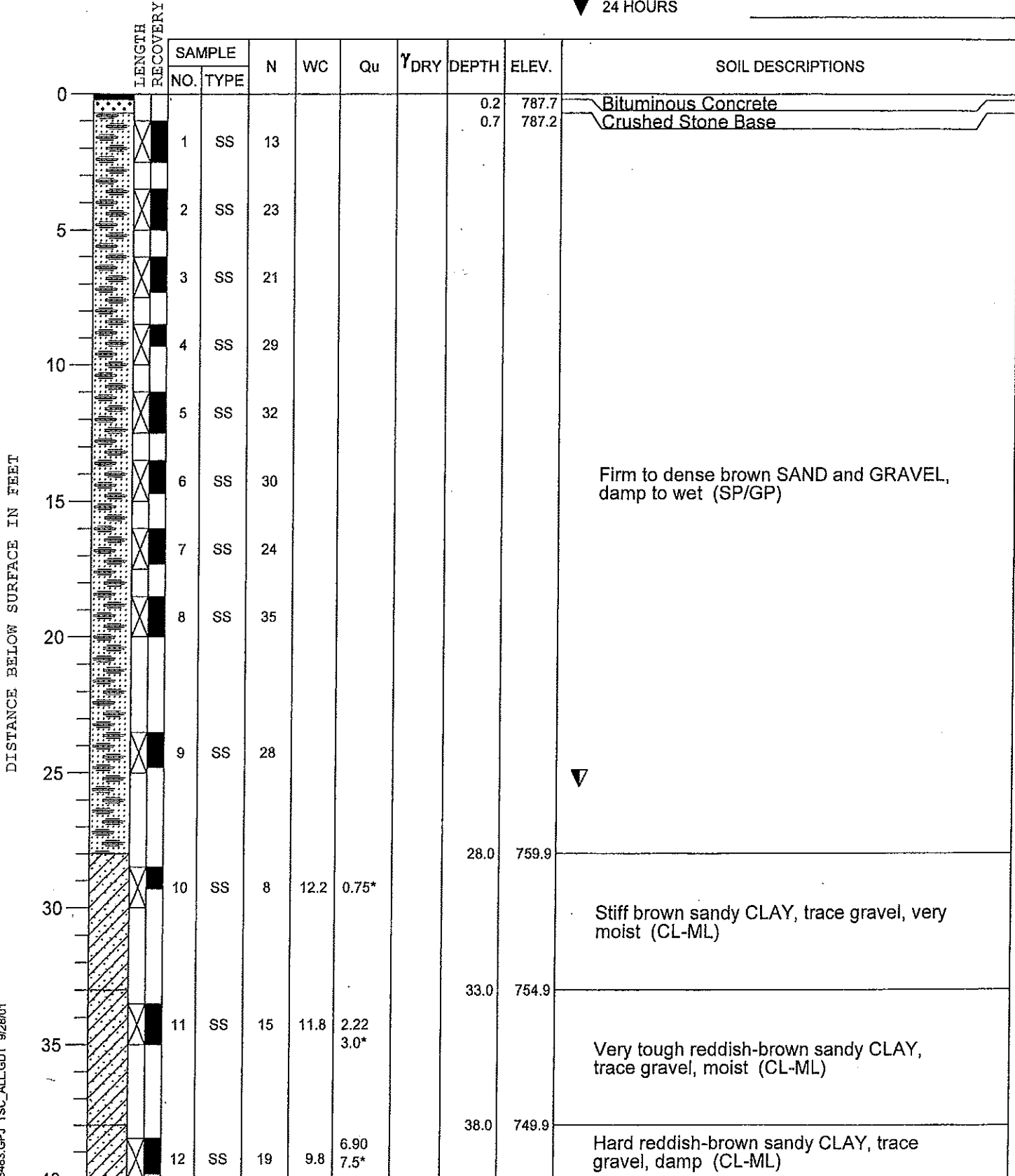


CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**

BORING **8** DATE STARTED **9-20-01** DATE COMPLETED **9-20-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **787.9**
 END OF BORING **727.9**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **25.5'**
 ▽ AT END OF BORING **55.0'**
 ▽ 24 HOURS



SC2 53483.GPJ TSC_ALL.GDT 9/28/01

PROJECT Center Street Parking Structure, Elgin, Illinois

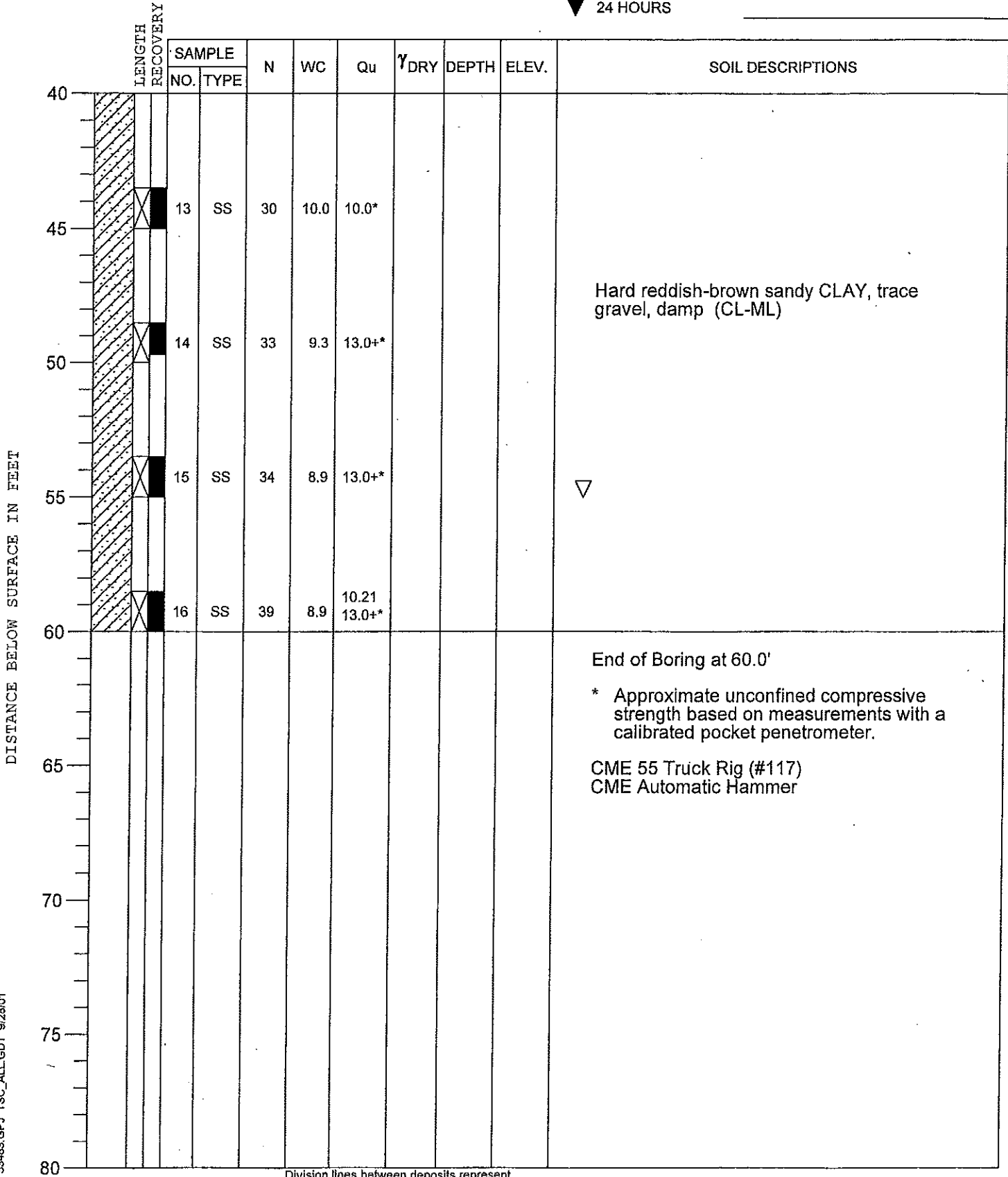
CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 8 DATE STARTED 9-20-01 DATE COMPLETED 9-20-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 787.9
 END OF BORING 727.9

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 25.5'
 ▽ AT END OF BORING 55.0'
 ▽ 24 HOURS



C2 53483.GPJ TSC_ALL.GDT 9/28/01

Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **9** DATE STARTED **9-13-01** DATE COMPLETED **9-13-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **785.9**
 END OF BORING **725.9**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **19.5'**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	785.6	Bituminous Concrete
		1	SS	38						Dense brown SAND and GRAVEL, trace clay, moist (SP/GP)
		2	SS	34				3.0	782.9	Dense to very dense brown SAND and GRAVEL, moist (SP/GP)
5		3	SS	46						
		4	SS	41						
		5	SS	41						
10		6	SS	57						
		7	SS	42						
		A	SS		12.9	5.57		18.0	767.9	
		8	SS	42		6.0*		19.5	766.4	
20		B			18.1					Dense brown silty SAND, trace gravel, very moist to wet (SM)
		9	SS	17	10.1	2.94 3.25*		23.0	762.9	Very tough brown sandy CLAY, trace gravel, moist (CL-ML)
25		10	SS	16	11.0			28.0	757.9	
		11	SS	32	10.8	7.5*				Firm brown clayey SAND, trace gravel, moist (SC)
30		12	SS	39	10.8	13.0*		33.0	752.9	
35										Hard brown sandy CLAY, trace gravel, damp to moist (CL-ML)
40										

Division lines between deposits represent approximate boundaries between soil types;

PROJECT Center Street Parking Structure, Elgin, Illinois

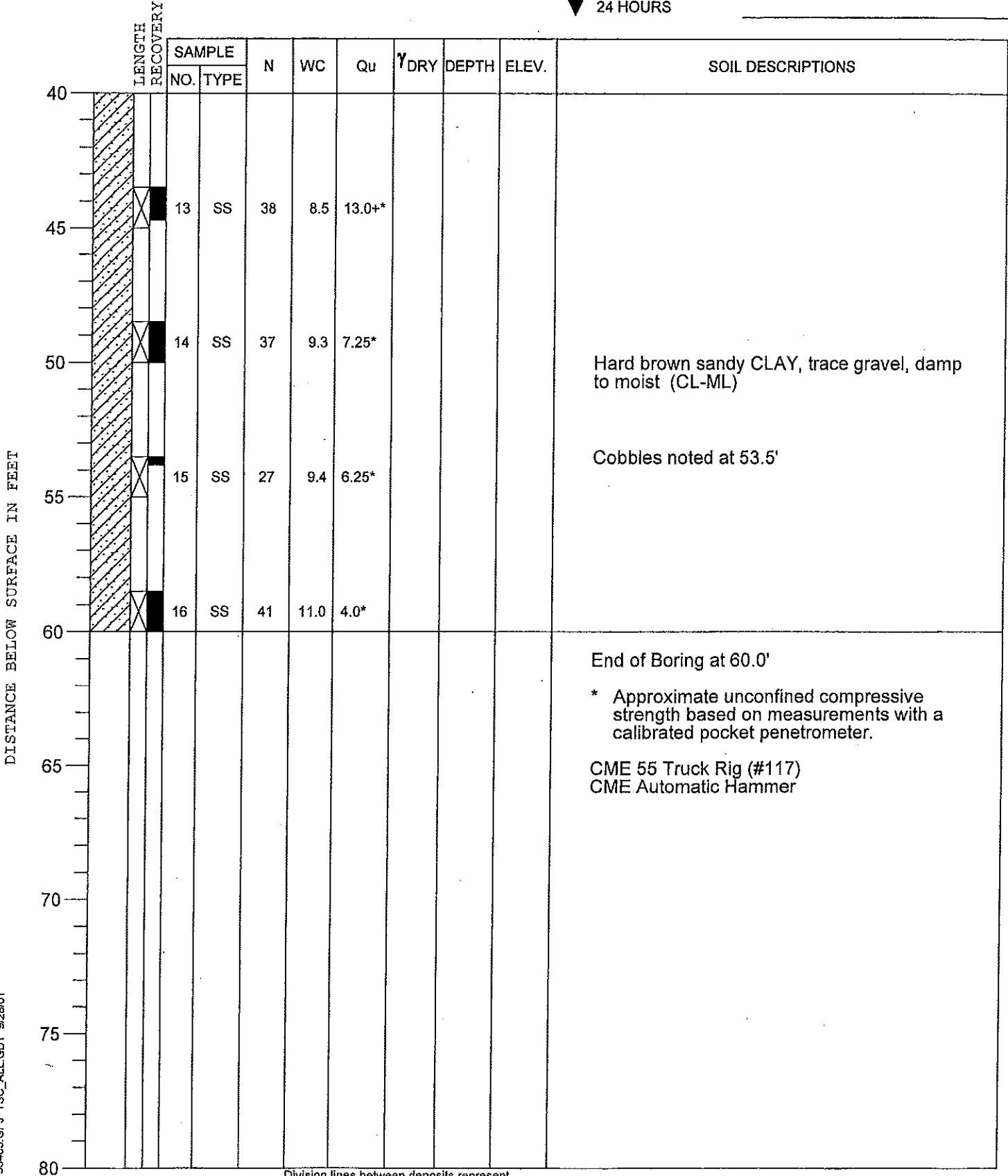
CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 9 DATE STARTED 9-13-01 DATE COMPLETED 9-13-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 785.9
 END OF BORING 725.9

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 19.5'
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS



IC2 53483.GPJ TSC_ALL.GDT 9/28/01

Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **10** DATE STARTED **9-10-01** DATE COMPLETED **9-10-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **785.8**
 END OF BORING **725.8**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	785.5	Bituminous Concrete
								1.3	784.5	Brown Sand and Gravel Base
		1	SS	9	11.4	2.5*				Very tough to tough brown sandy CLAY, trace gravel, occasional Cobbles, moist to very moist (CL)
		2	SS	12	16.6	1.25*				
5		3	SS	30				5.5	780.3	
		4	SS	45						
		5	SS	95						
		6	SS	43						
		7	SS	38						
		8	SS	27-50/3"						
		9	SS	12	12.9	2.0*		23.0	762.8	Tough to very tough brown sandy CLAY, trace gravel, moist (CL)
		10	SS	11	12.4	0.76 0.75*		28.0	757.8	Stiff brown sandy CLAY, trace gravel, very moist (CL-ML)
		11	SS	16	10.4	2.5*		33.0	752.8	Very tough brown sandy CLAY, trace gravel, moist (CL-ML)
		12	SS	38	9.0	10.21 11.0*		38.0	747.8	Hard brown sandy CLAY, trace to little gravel, damp (CL-ML)

Division lines between deposits represent approximate boundaries between soil types;

PROJECT Center Street Parking Structure, Elgin, Illinois

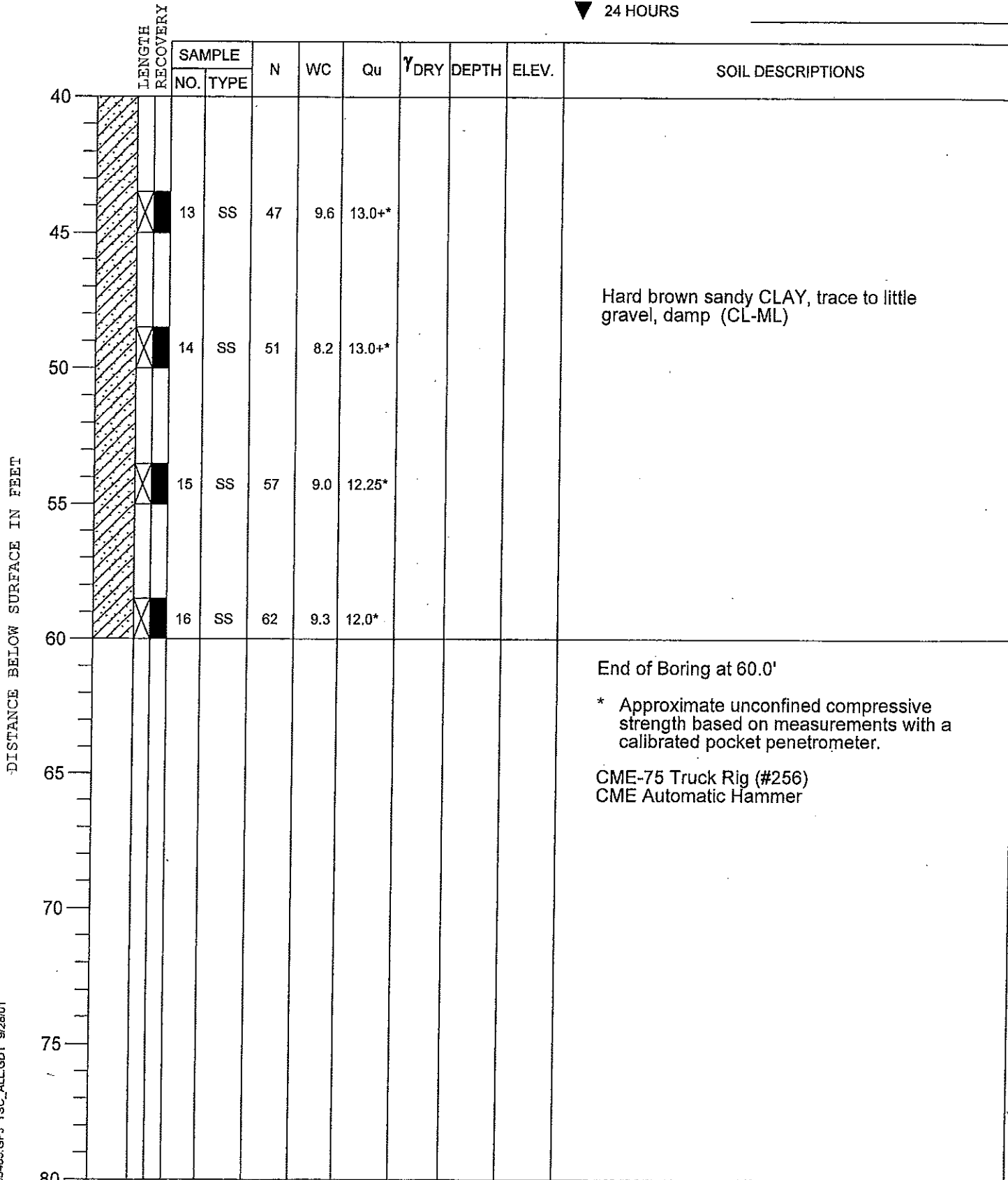
CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 10 DATE STARTED 9-10-01 DATE COMPLETED 9-10-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 785.8
 END OF BORING 725.8

WATER LEVEL OBSERVATIONS
 ▼ WHILE DRILLING Dry
 ▼ AT END OF BORING Dry
 ▼ 24 HOURS _____



C2 53483.GPJ TSC_ALL.GDT 9/28/01

Division lines between deposits represent approximate boundaries between soil types.

PROJECT **Center Street Parking Structure, Elgin, Illinois**

CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**



BORING **11** DATE STARTED **9-10-01** DATE COMPLETED **9-10-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **788.6**
 END OF BORING **713.6**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **38.0'**
 ▽ AT END OF BORING **60.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.2	788.4	Bituminous Concrete
		1	SS	24	23.2	3.0*				FILL - Brown silty CLAY, some sand and gravel, trace organic, moist (CL)
5		2	SS	19-34-50/4"				3.5	785.1	Dense to very dense brown SAND and GRAVEL, occasional Cobbles, damp (SP/GP)
		3	SS	97						
		4	SS	89						
		5	SS	86						
		6	SS	88						
		7	SS	44						
		8	SS	80						
		A 9 B	SS	41	13.7	2.25*		24.0	764.6	
		10	SS	33	11.0			28.0	760.6	Dense gray clayey SILT, some sand, trace gravel, moist (ML)
		11	SS	38	10.9	2.35 3.5*		32.0	756.6	Very tough brown and gray sandy CLAY, trace gravel, moist (CL-ML)
		A 12B	SS	65	10.4	4.5*		38.0	750.6	Dense gray SAND and GRAVEL, trace clay, wet (SP/GP)
40								39.5	749.1	

Division lines between deposits represent approximate boundaries between soil types:

PROJECT Center Street Parking Structure, Elgin, Illinois

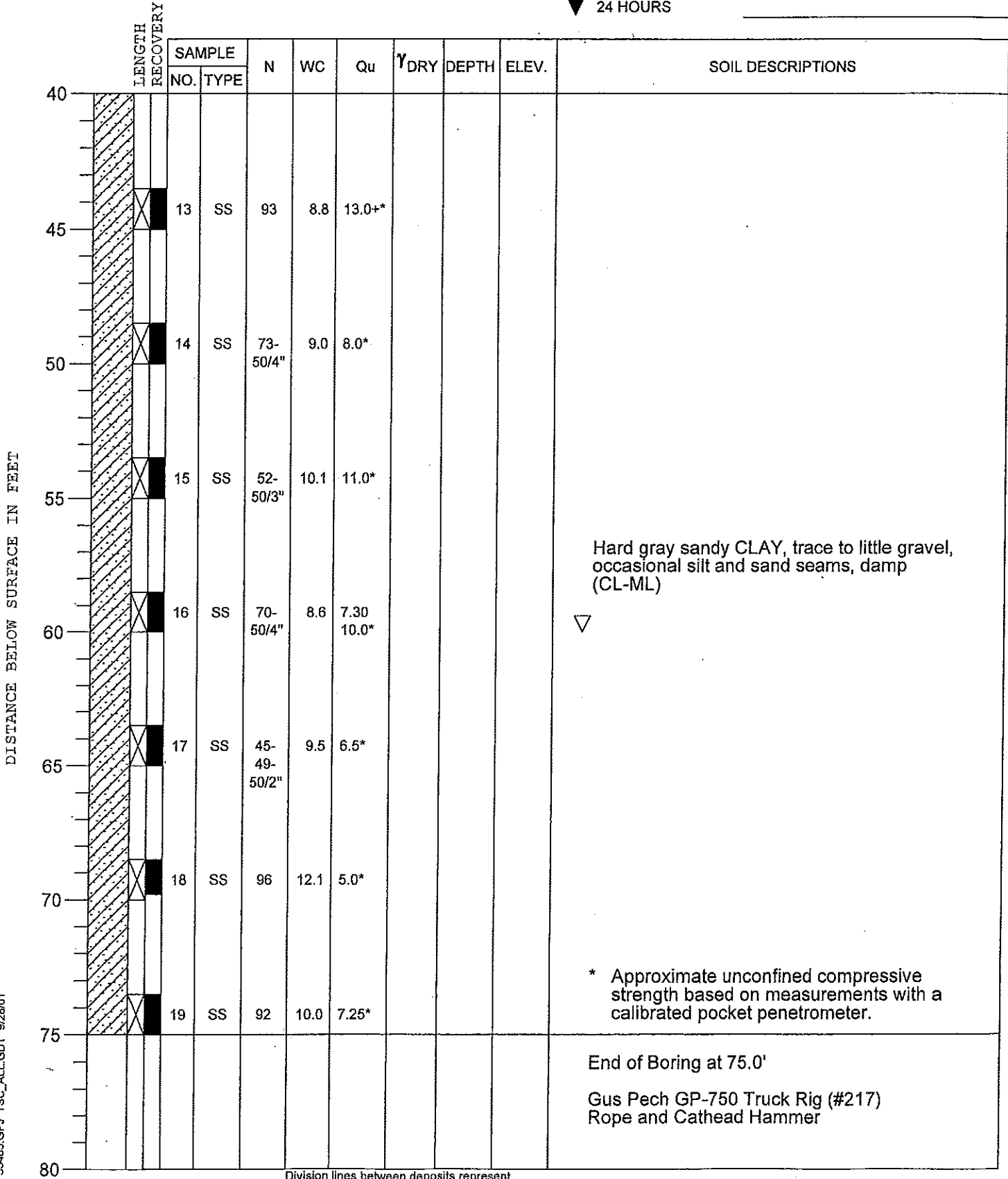
CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 11 DATE STARTED 9-10-01 DATE COMPLETED 9-10-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 788.6
 END OF BORING 713.6

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 38.0'
 ▽ AT END OF BORING 60.0'
 ▽ 24 HOURS



102 53483.GPJ TSC_ALL.GDT 9/28/01

Division lines between deposits represent approximate boundaries between soil types;

PROJECT **Center Street Parking Structure, Elgin, Illinois**

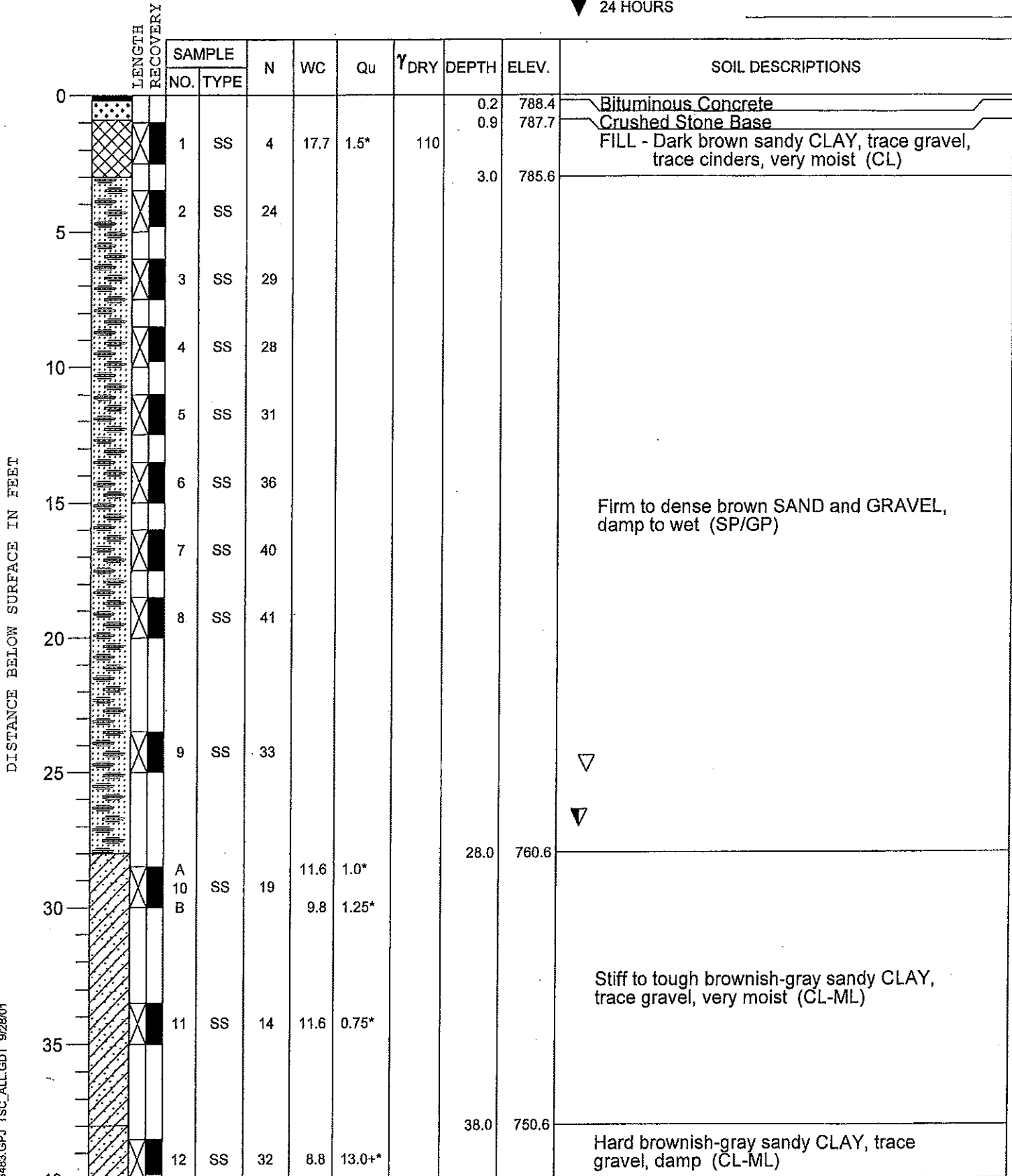


CLIENT **Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois**

BORING **12** DATE STARTED **9-18-01** DATE COMPLETED **9-18-01** JOB **L-53,483**

ELEVATIONS
 GROUND SURFACE **788.6**
 END OF BORING **728.6**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **27.0'**
 ▽ AT END OF BORING **25.0'**
 ▽ 24 HOURS



Division lines between deposits represent approximate boundaries between soil types;

PROJECT Center Street Parking Structure, Elgin, Illinois

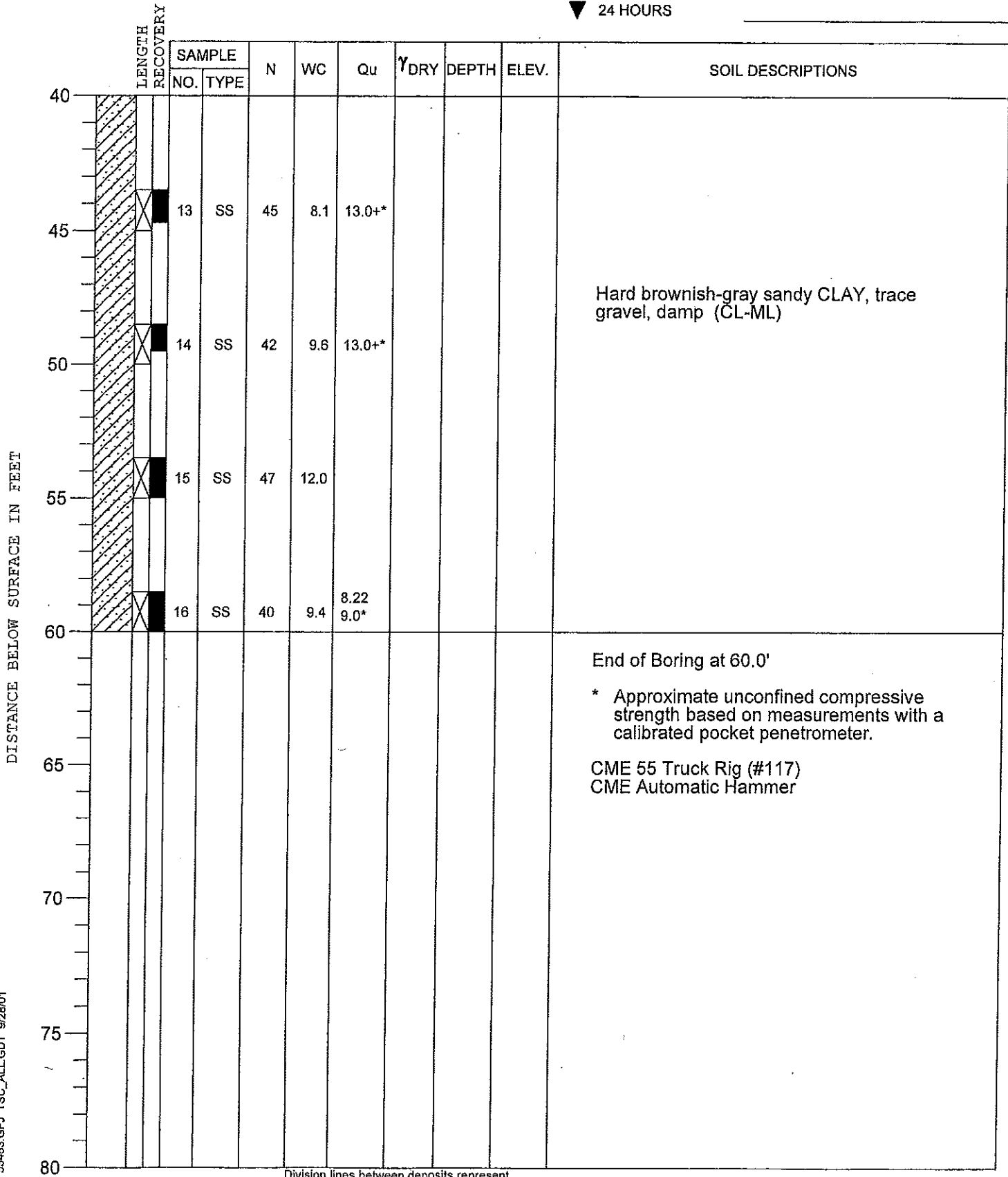
CLIENT Sherman Hospital, c/o Walker Parking Consultants, Elgin, Illinois



BORING 12 DATE STARTED 9-18-01 DATE COMPLETED 9-18-01 JOB L-53,483

ELEVATIONS
 GROUND SURFACE 788.6
 END OF BORING 728.6

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 27.0'
 ▽ AT END OF BORING 25.0'
 ▽ 24 HOURS



Division lines between deposits represent approximate boundaries between soil types;

SC2 58483.GPJ TSC_ALL.GDT 9/28/01

SCALE: 1" = 50'

BORING LOCATION PLAN
CENTER STREET PARKING STRUCTURE
ELGIN, ILLINOIS

BENCHMARK: TOP OF FIRE HYDRANT, AT SOUTHEAST CORNER OF
CENTER STREET AND SLADE AVENUE, ELEVATION: 790.36'

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188

DESIGN BY:	DJM	PAGE NO.
CHECKED BY:	SKK	
JOB NO.:	L-53,443	
DATE:	SEPTEMBER 2001	

