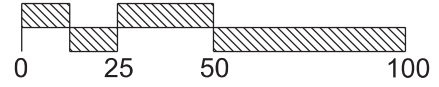
 Indicates Area of Existing Asphalt Removal and Replacement
 7,208 SY - REMOVE 4"; PLACE 2½" BINDER, 1½" SURFACE



Paving Plan for;
Police Department Parking Lot

Orland Park, Illinois



CHRISTOPHER B. BURKE ENGINEERING, LTD.
 9575 W. Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500

5/1/14

N:\ORLANDPARK\140127\Civil



TESTING SERVICE CORPORATION

Corporate Office:

360 S. Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

Local Office:

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.653.3920 • Fax 630.653.2726

Local Office
April 25, 2014

Mr. Jason G. Souden
Christopher B. Burke Engineering, Ltd.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018

Re: L-81,408
Parking Lot Investigation
Orland Park Police Station
15100 S. Ravinia Avenue
Orland Park, Illinois

Dear Mr. Souden:

This report presents results of soils investigation performed for the asphalt parking lot at the Police Station in Orland Park, Illinois. These geotechnical engineering services have been provided in accordance with TSC Proposal No. 52,269 dated March 5, 2014 and the attached General Conditions (as modified for CBBEL), incorporated herein by reference.

The Orland Park Police Station is located at 15100 S. Ravinia Avenue, approximately one-eighth mile west of the intersection of La Grange Road and 151st Street. Borings were performed in the existing west and south parking lots surrounding the building. Photographs taken of the site reveal the existing pavement consists of bituminous concrete and appears to be in relatively poor condition, i.e. fatigue cracking and potholes are present.

Field Investigation and Laboratory Testing

A total of eight (8) soil borings were performed as a part of this exploration. The boring locations were selected and laid out in the field by TSC. Reference is made to the Boring Location Plan included with this report for the drilling layout, ground surface elevations at the borings also being shown. The elevations were acquired by TSC using a Trimble R10 GNSS receiver which uses the North American Vertical Datum of 1988 (NAVD88).

The borings were all extended 10 feet below top of pavement. They were drilled and samples tested in accordance with currently recommended American Society for Testing and Materials specifications. Soil sampling was performed at 2½-foot intervals to boring completion depths. The soil 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, with the boreholes immediately backfilled and patched at the surface to preclude possible hazards to the public.



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 cohesive soils using a calibrated pocket penetrometer. Dry unit weight tests were also performed on samples of cohesive fill.

Reference is made to the attached boring logs included with this report indicating 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

All of the borings were drilled on existing asphalt pavement, revealing 1 to 3 inches bituminous concrete overlying 9 to 13 inches of crushed stone base course materials. The pavement thicknesses were estimated from the disturbed sides of the augered boreholes and should be considered approximate; pavement cores may be taken if more accurate measurements are required.

Silty clay fill was found underlying the pavement sections in all borings, typically extending 3 to 6 feet below top of pavement and as much as 8 feet deep in Borings 7 and 8. Samples of cohesive fill had moisture contents between 10 and 22 percent and pocket penetrometer readings of 1.5 to 4.5+ tons per square foot (tsf.)

Tough to hard native silty clay soils otherwise predominated to boring completion depths. They exhibited pocket penetrometer readings typically ranging from 1.5 to 4.5+ tsf at moisture contents between 18 and 26 percent. Very moist silty clay was encountered near the boring completion depth in Boring 4, having a moisture content of 33 percent and pocket penetrometer reading of 0.75 tsf.

The majority of the borings were noted as being "dry" both during and following completion of drilling operations. Free water was initially encountered during boring operations in Borings 4 and 7 occurring at 10 feet and 5½ feet below existing grade. Upon completion of drilling operations water levels had generally remained within one-half foot of initial readings.

Analysis and Recommendations

Eight (8) borings were drilled in the existing west and south parking lots surrounding the Orland Park Police Station. Photographs taken of the site revealed the existing pavement consists of distressed bituminous concrete with large portions exhibiting fatigue cracking and potholes.

The borings revealed 1 to 3 inches of bituminous concrete, thicknesses being approximated from the sides of the disturbed augered boreholes. This thin layer of bituminous pavement is considered inadequate for normal vehicle traffic and will continue to deteriorate if left in place. It is recommended that the asphalt be completely removed to subbase depth and new pavement placed.

It should be noted that adjustments in pavement thicknesses may need to be made based on existing grade of curb, inlets and other adjacent structures. This difference in pavement thickness may need to be adjusted for in the base course.



The crushed stone subbase underlying the asphalt was 9 to 13 inches thick and appears to be suitable for pavement support. Once the existing asphalt has been milled and the final subbase elevation has been achieved, the exposed subbase should be proof-rolled to determine the presence and extent of unstable or unsuitable soil types. This is typically performed using a loaded 6-wheel dump truck or other piece of heavy rubber-tired construction equipment. Areas where the rutting depths of the granular subbase are greater than 1/2-inch are generally best treated by undercutting and placing 1 to 2 feet of a coarse graded crushed aggregate such as CA-1 or CA-7. This "structural" fill should be placed in maximum 12-inch layers loose thickness, each lift to be densified using vibratory compaction equipment or by tamping with a backhoe bucket. It should be capped with IDOT gradation CA-6 (well-graded sand and gravel with fines) and compacted to 95 percent Modified Proctor density.

Following are minimum pavement sections recommended for standard duty and heavy duty pavements:

Asphalt Pavement

	<u>Standard-Duty</u>	<u>Heavy Duty</u>
Bituminous Surface	1½"	2"
Bituminous Binder	2¼"	3"
CA-6 Base Course	8"	10"

P.C. Concrete Pavement

	<u>Standard Duty</u>	<u>Heavy Duty</u>
P.C. Concrete	6"	8"
CA-6 Subbase	4"	4"

Bituminous materials should conform to an approved IDOT Superpave mix design (N50 typical for light duty streets), as well as Standard Specifications for Road and Bridge Construction, Sections 406 and 1032. They should be compacted to between 93 and 97 percent of their theoretical maximum density, as determined by the supplier.

Closure

The analysis and recommendations submitted in this report are based upon the data obtained from the eight (8) borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur, 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.

Please call if there are any questions in regard to this matter or if we may be of further service.

Christopher B. Burke Engineering, Ltd.
Orland Park Police Station - Orland Park, IL
L-81,408 - April 24, 2014




Please call if there are any questions in regard to this matter or if we may be of further service.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,


Timothy M. Muszynsky
Engineering Intern *by MVM*


Michael V. Machalinski
Vice President
Registered Professional Engineer
Illinois No. 062-038559

MVM:TMM



TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: 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. Unless otherwise expressly assumed in writing, TSC's services are provided exclusively for Client. TSC shall have no duty or obligation other than those duties and obligations expressly set forth in this Agreement. TSC shall have no duty to any third party. Client shall communicate these General Conditions to each and every party to whom the Client transmits any report prepared by TSC. 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: 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, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. 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.

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.

7. DOCUMENTS AND SAMPLES: Client is granted an exclusive license to use findings and reports prepared and issued by TSC and any sub-consultants pursuant to this Agreement for the purpose set forth in TSC's proposal provided that TSC has received payment in full for its services. TSC and, if applicable, its sub-consultant, retain all copyright and ownership interests in the reports, boring logs, maps, field data, field notes, laboratory test data and similar documents, and the ownership and freedom to use all data generated by it for any purpose. 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.

8. TERMINATION: TSC's obligation to provide services may be terminated by either party upon (7) seven days prior written notice. In the event of termination of TSC's services, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses. The terms and conditions of these General Conditions shall survive the termination of TSC's obligation to provide services.

9. 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.

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions 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 on 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.

11. 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, suits, 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 or independent contractors. In the event both TSC and Client are found to be 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 liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. 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.

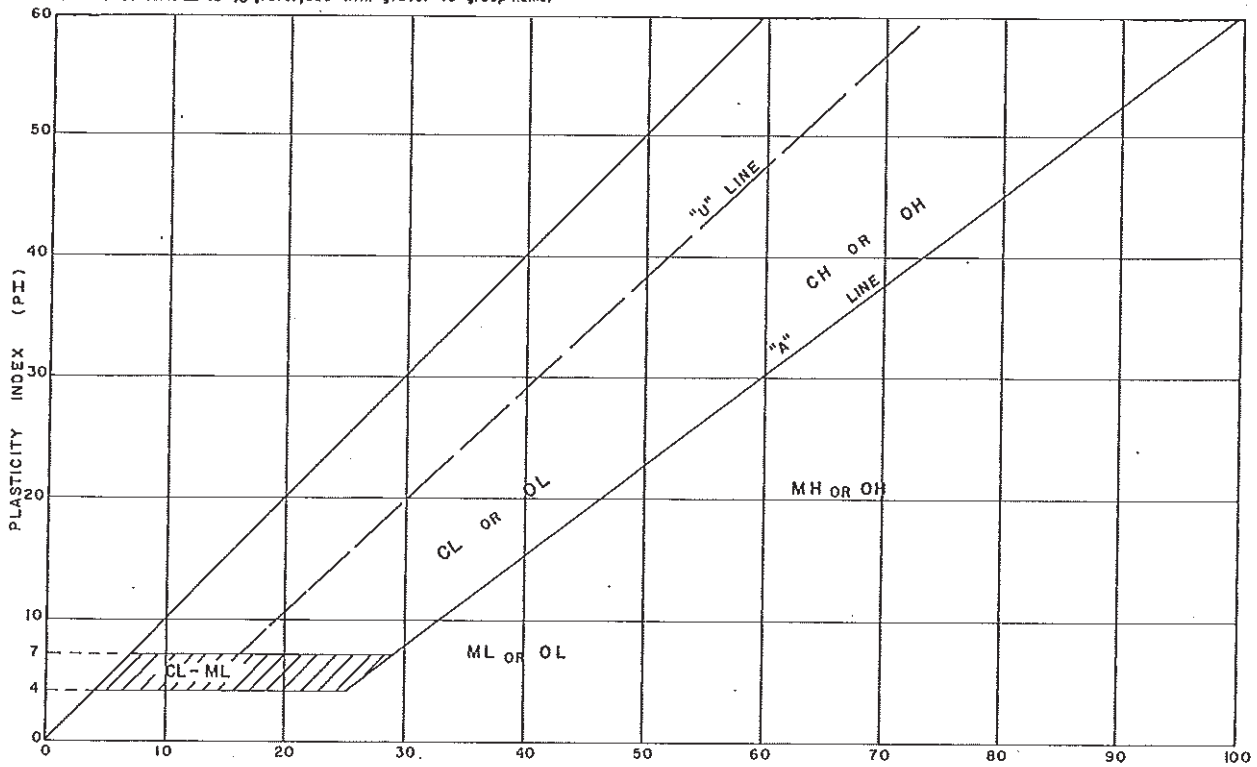
13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. 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. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.

**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}
	SILTS & CLAYS Liquid limit 50% or more	Organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} \leq 0.75$	OL	Organic clay ^{k,l,m,n} Organic silt ^{k,l,m,o}
			Inorganic	PI plots on or above "A" line	CH
	Organic	PI plots below "A" line		MH	Elastic silt ^{k,l,m}
		Highly organic soils	Primarily organic matter, dark in color, and organic odor	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OH
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 ≥ 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.



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

BOULDER
 COBBLE
 Coarse GRAVEL
 Small GRAVEL
 Coarse SAND
 Medium SAND
 Fine SAND
 SILT and CLAY

PARTICLE SIZE RANGE

Over 12 inches
 12 inches to 3 inches
 3 inches to ¾ inch
 ¾ inch to No. 4 Sieve
 No. 4 Sieve to No. 10 Sieve
 No. 10 Sieve to No. 40 Sieve
 No. 40 Sieve to No. 200 Sieve
 Passing No. 200 Sieve

COHESIVE SOILS

CONSISTENCY

	<u>Qu</u>
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

	<u>N</u>
Very Loose	0 - 4
Loose	4 - 10
Firm	10 - 30
Dense	30 - 50
Very Dense	50 and over

MODIFYING TERM

Trace
 Little
 Some

PERCENT BY WEIGHT

1 - 10
 10 - 20
 20 - 35

PROJECT Orland Park Police Station, Orland Park, IL

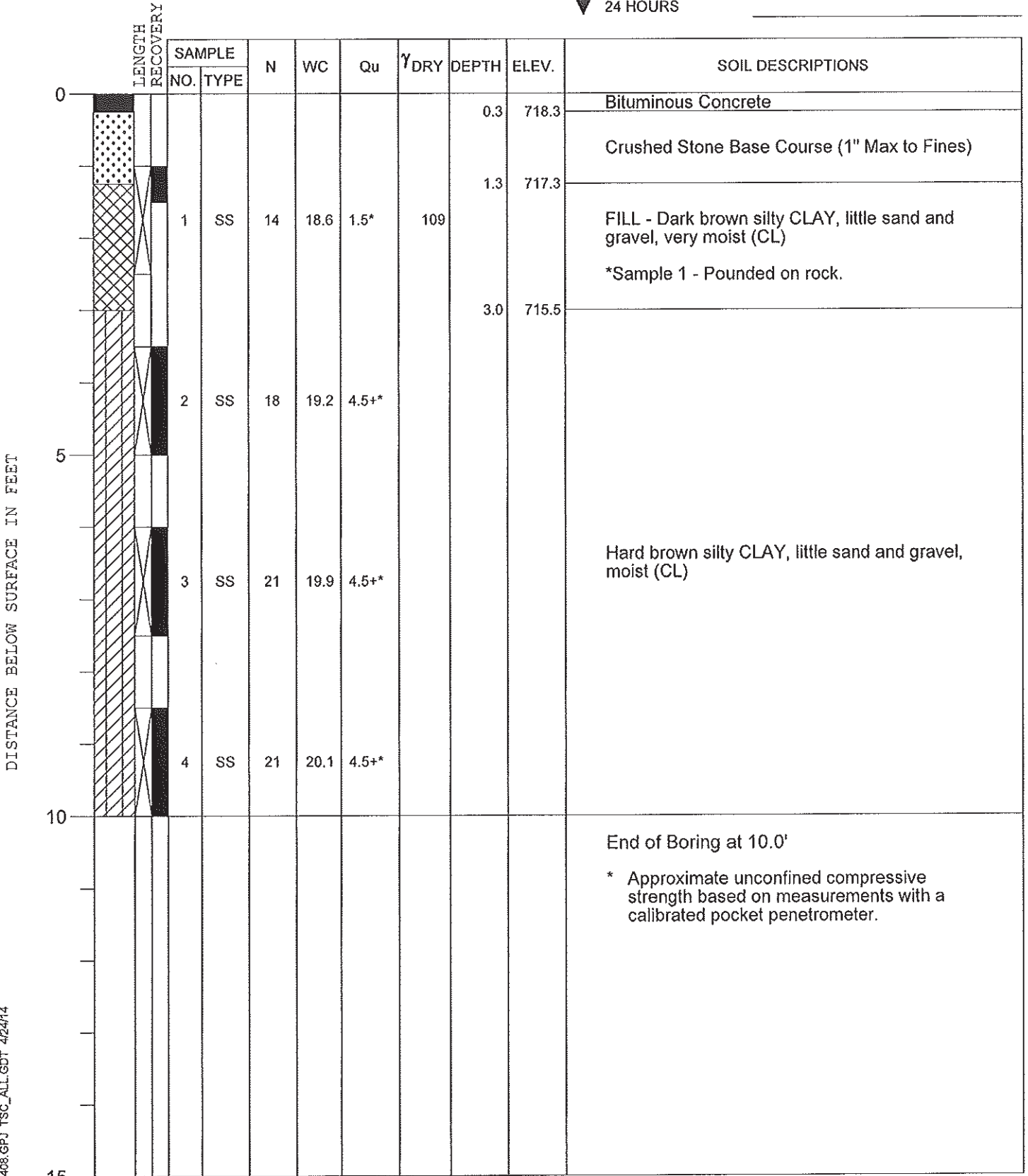


CLIENT Christopher B. Burke Engineering, Ltd., Rosemont, IL

BORING B-1 DATE STARTED 4-16-14 DATE COMPLETED 4-16-14 JOB L-81,408

ELEVATIONS
 GROUND SURFACE 718.5
 END OF BORING 708.5

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



TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____
 Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Orland Park Police Station, Orland Park, IL



CLIENT Christopher B. Burke Engineering, Ltd., Rosemont, IL

BORING B-2

DATE STARTED 4-16-14

DATE COMPLETED 4-16-14

JOB L-81,408

ELEVATIONS

GROUND SURFACE 714.8

END OF BORING 704.8

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING DRY

▽ AT END OF BORING DRY

▽ 24 HOURS _____

* Offset 5' to NE

LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	NO.	TYPE							
0							0.1	714.7	Bituminous Concrete
									Crushed Stone Base Course (1" Max to Fines)
	1	SS	8	21.2	2.0*	105	1.2	713.6	FILL - Dark brown silty CLAY, little sand, trace gravel, moist (CL)
	2	SS	14	14.9	4.5+*		3.0	711.8	Hard brown silty CLAY, little sand and gravel, moist (CL)
	3	SS	18	16.2	3.5*		5.5	709.3	Very tough brown silty CLAY, little sand and gravel, moist (CL)
	4	SS	16	12.8	1.5		8.0	706.8	Tough brown silty CLAY, little sand and gravel, very moist (CL)
									End of Boring at 10.0'

DISTANCE BELOW SURFACE IN FEET

TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____

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

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

PROJECT Orland Park Police Station, Orland Park, IL

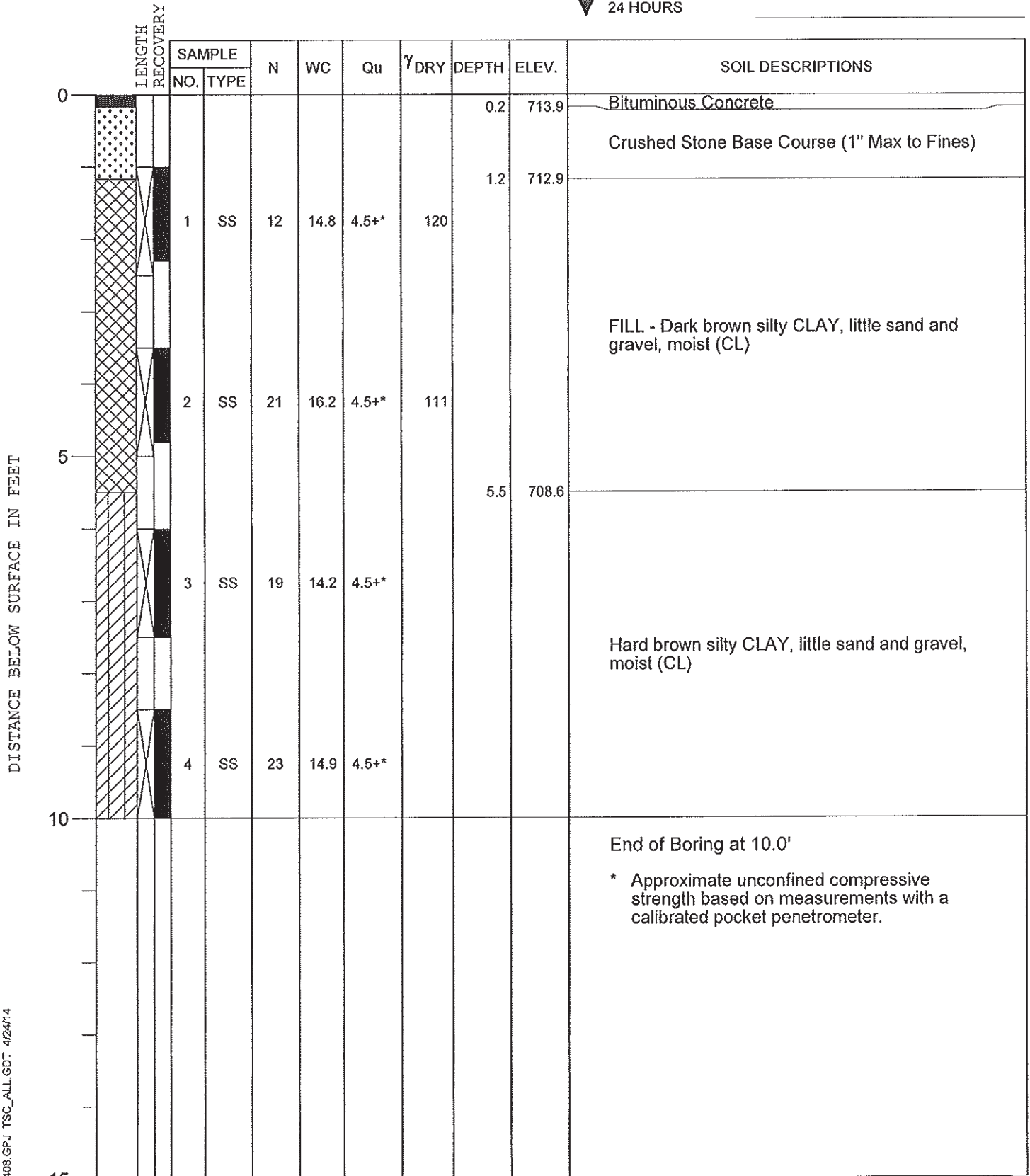


CLIENT Christopher B. Burke Engineering, Ltd., Rosemont, IL

BORING B-3 DATE STARTED 4-16-14 DATE COMPLETED 4-16-14 JOB L-81,408

ELEVATIONS
 GROUND SURFACE 714.1
 END OF BORING 704.1

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING DRY
 ▽ AT END OF BORING DRY
 ▽ 24 HOURS _____



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

DRILL RIG NO. _____

PROJECT Orland Park Police Station, Orland Park, IL



CLIENT Christopher B. Burke Engineering, Ltd., Rosemont, IL

BORING B-4 DATE STARTED 4-16-14 DATE COMPLETED 4-16-14 JOB L-81,408

ELEVATIONS
 GROUND SURFACE 711.5
 END OF BORING 701.5

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 10'
 ▽ AT END OF BORING 10'
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.2	711.3	Bituminous Concrete
								1.0	710.5	Crushed Stone Base Course (1" Max to Fines)
		1	SS	7	14.7	4.5+*	121			FILL - Dark brown silty CLAY, little sand and gravel, moist (CL)
		2	SS	12	23.6	2.75*		3.0	708.5	Very tough dark brown silty CLAY, little sand, trace gravel, moist (CL)
5		3	SS	28	24.0	2.5*		5.5	706.0	Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
		4	SS	7	32.3	0.75*		8.0	703.5	Stiff brown and gray silty CLAY, trace sand, very moist (CL)
10										▽ End of Boring at 10.0' * Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
15										

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

DRILL RIG NO. _____

PROJECT **Orland Park Police Station, Orland Park, IL**



CLIENT **Christopher B. Burke Engineering, Ltd., Rosemont, IL**

BORING **B-5** DATE STARTED **4-16-14** DATE COMPLETED **4-16-14** JOB **L-81,408**

ELEVATIONS
 GROUND SURFACE **713.8**
 END OF BORING **703.8**

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								0.2	713.6	Bituminous Concrete
										Crushed Stone Base Course (1" Max to Fines)
		1	SS	12	18.7	4.5+*	112	1.3	712.6	FILL - Dark brown silty CLAY, little sand and gravel, moist (CL)
5		2	SS	19	17.9	4.5+*				
		3	SS	23	16.7	4.5+*				Hard brown and gray silty CLAY, little sand and gravel, moist (CL)
10		4	SS	28	18.5	4.5+*				
										End of Boring at 10.0'

TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____

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

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

PROJECT **Orland Park Police Station, Orland Park, IL**



CLIENT **Christopher B. Burke Engineering, Ltd., Rosemont, IL**

BORING **B-6** DATE STARTED **4-16-14** DATE COMPLETED **4-16-14** JOB **L-81,408**

ELEVATIONS

GROUND SURFACE **712.6**
 END OF BORING **702.6**

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								0.1	712.5	Bituminous Concrete
										Crushed Stone Base Course (1" Max to Fines)
		1	SS	8	16.7	4.5+*	116	1.2	711.4	FILL - Brown and dark brown silty CLAY, little sand and gravel, moist (CL)
		2	SS	12	17.9	4.5+*	114			
5		3	SS	26	24.7	4.5+*		5.5	707.1	Hard brown silty CLAY, little sand, trace gravel, moist (CL)
		4	SS	20	18.3	4.5+*		8.0	704.6	Hard brown silty CLAY, little sand and gravel, moist (CL)
10		End of Boring at 10.0'								
		* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.								
15										

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

TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____

PROJECT Orland Park Police Station, Orland Park, IL



CLIENT Christopher B. Burke Engineering, Ltd., Rosemont, IL

BORING B-7 DATE STARTED 4-16-14 DATE COMPLETED 4-16-14 JOB L-81,408

ELEVATIONS
 GROUND SURFACE 711.1
 END OF BORING 701.1

WATER LEVEL OBSERVATIONS
 ▼ WHILE DRILLING 5.5'
 ▼ AT END OF BORING 6'
 ▼ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.1	711.0	Bituminous Concrete
										Crushed Stone Base Course (1" Max to Fines)
								1.2	709.9	
		1	SS	10	15.1	4.5+*	120			FILL - Brown and dark brown silty CLAY, little sand and gravel, moist (CL)
								3.0	708.1	
		2	SS	10	20.9	4.5+*	107			
5										▼ FILL - Dark brown silty CLAY, little sand and gravel, moist (CL)
										▼
		3	SS	3	26.3					* Sample 3 - Hit Rock, Disturbed Sample
								8.0	703.1	
		4	SS	27	18.2	4.5+*				Hard brown silty CLAY, little sand and gravel, moist (CL)
10										End of Boring at 10.0'
										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
15										

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

TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____

PROJECT **Orland Park Police Station, Orland Park, IL**



CLIENT **Christopher B. Burke Engineering, Ltd., Rosemont, IL**

BORING **B-8** DATE STARTED **4-16-14** DATE COMPLETED **4-16-14** JOB **L-81,408**

ELEVATIONS
 GROUND SURFACE **714.0**
 END OF BORING **704.0**

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								0.2	713.8	Bituminous Concrete
								1.1	712.9	Crushed Stone Base Course (1" Max to Fines)
		1	SS	6	20.7	2.0*	108			FILL - Gray and dark brown silty CLAY, little sand and gravel, moist (CL)
		2	SS	9	10.3	4.5+*	132			FILL - Brown and gray silty CLAY, little sand and gravel, moist (CL)
		3	SS	19	18.8	3.0*	112			FILL - Brown and gray silty CLAY, little sand and gravel, moist (CL)
		4	SS	9	25.4	2.5*		8.0	706.0	Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
10										End of Boring at 10.0'

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

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

TSC 81408.GPJ TSC_ALL.GDT 4/24/14

DRILL RIG NO. _____