



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

October 27, 2010

SUBJECT: SHORT STREET

Project BRM-8003(676)
Section 03-00050-00-BR (Lisle)
DuPage County
Contract No. 63468
Item 004
November 5, 2010 Letting
Addendum (B)

TO PROSPECTIVE BIDDERS:

Due to clarify information necessary to revise the following:

Proposal – Revised Index of Special Provisions. Added Soils Report.

Plans – Revised sheets 9, 11 & 16.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Scott Stitt
Acting Engineer of Design and Environment

A handwritten signature in cursive script, appearing to read 'Ted B. Walschleger', followed by the initials 'DE'.

By: Ted B. Walschleger
Engineer of Project Development
and Implementation

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SOILS REPORT

164-185

Revised 10-27-10

Soils Exploration

Bridge Replacement

**Short Street over E. Br.
DuPage River**

DuPage County

**Bollinger, Lach &
Associates, Inc.**

Added 10-27-10

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Local Office
October 31, 2008

Mr. Scott R. Threewitt
Bollinger, Lach & Associates, Inc.
333 Pierce Road, Suite 200
Lisle, Illinois 60532

Re: L-72,343
Bridge Replacement
Short Street over E. Br. DuPage River
DuPage County

Dear Mr. Threewitt:

This report presents results of a soils investigation performed for the proposed Bridge Replacement of Short Street over the East Branch of the DuPage River in DuPage County, Illinois. These geotechnical services have been provided in accordance with TSC Proposal No. 40,108 (Revised) dated April 16, 2008 and the attached General Conditions, which are incorporated herein by reference.

The existing Short Street Bridge is located east of Illinois Routes 53 in south central DuPage County. The project site falls within Section 10 of Lisle (T 38 N, R. 10 SE). The existing bridge structure consists of a two-span structure which has a total length of approximately 95 feet and width of about 37 feet. The abutments are supported on steel and wood piles with the pier supported on a spread footing.

Short Street consists of a two-lane asphalt pavement roadway with shoulders on both sides and a sidewalk along the north side. The East Branch of the DuPage River runs through the site in nearly a north-south direction. A project location map showing limits of the project and surrounding area is included.

It is our understanding improvements will consist of the removal of the entire bridge superstructure and pier stem. It will be replaced with a new three-span bridge structure having a total length of approximately 100 feet and width of about 44 feet.

Field Investigation and Laboratory Testing

Structure Borings 1 and 2 were performed for the new bridge structure. They were located as close as possible to the proposed abutment locations shown on the plan. Two (2) hand auger borings were also performed along the waters edge to help evaluate stream bed scour potential. The staked boring locations and ground surface elevations at them were determined by TSC. A Boring Location Plan is included with this report.

Two-inch diameter pavement cores were obtained at C-1 and C-2 using an electric drill and core barrel containing diamond cutting bits. The bituminous concrete pavement cores samples were examined by a materials technician in the laboratory. They were then sent to TEM Incorporated in Glen Ellyn, Illinois (NVLAP Lab ID 101130-0) for asbestos testing.



SB-1 and SB-2 were drilled and samples tested in accordance with IDOT structure boring criteria. Soil samples were taken in accordance with the Standard Penetration Test, for which driving resistance to a 2" split-spoon sampler (in blows per 6" interval) provides an indication of the relative density of granular soils and consistency of cohesive soils. Both borings were extended to the rock surface with a 10 foot rock core being taken at Boring 1. It should be noted that an automatic hammer was used to obtain the SPT samples in these borings, which has relatively high energy. Unconfined compressive strength values were determined while drilling using a modified Rimac spring tester.

Borings HA-1 and HA-2 were hand-augered along the side of the river bed. Soil sampling was performed at 2½-foot intervals and samples taken by driving a 2" split-spoon sampler with a sledgehammer (no N-values). Water level readings were taken during and following completion of hand-auger and drilling operations.

Reference is made to the attached boring logs 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 may be more gradual.

Discussion of Test Data

Deck Cores for Asbestos Determination:

Two (2) pavement cores were taken over the existing Short Street Bridge crossing the East Branch of the DuPage River. The cores encountered on the order of 4 inches of bituminous concrete overlying the top of the existing P.C. concrete bridge structure.

The core samples of bituminous concrete were analyzed following the procedures contained in EPA Method 600/R-93/116, July 1993. The material was analyzed by using Polarized Light Microscopy (PLM) to determine if asbestos fibers were present. TEM Incorporated in Glen Ellyn, Illinois (NVLAP Lab ID 101130-0) performed the asbestos testing. Appended to this report is a copy of their test results. The test results did not detect any asbestos containing material in the asphalt core samples.

Structure Borings (SB-1 & SB-2):

Boring SB-1 encountered about 6 inches of black topsoil fill at the surface. Variable Fill materials were otherwise found extending 10 to 13 feet below existing grade in Borings SB-1 and SB-2. They consisted of crushed limestone, Sand/Gravel, clayey Sand/Gravel, Clay and Clay Loam materials. Samples of the granular Fill exhibited SPT blow counts between 10 and 22 blows per foot (bpf), (indicative of medium dense conditions). The cohesive Fill sampled was typically found in a stiff to very stiff condition (Qp between 1.0 and 1.5 tsf) at moisture contents from 11 to 22 percent.

A layer of soft black Clay Fill was found in SB-2 extending from 10.5 to 13 feet in depth. Although a low strength value was obtained (0.5 tsf), the SPT blow counts were indicative of a firmer condition. This soil also revealed a high moisture content (32%).



Underlying soils in each structure boring otherwise consisted of Sandy Loam, Silt Loam and Sand / Gravel materials which occasionally included cobbles and/or boulders. These granular soils were usually saturated below a depth of 13 to 15 feet. They had SPT blow counts typically ranging from 10 to 45 blows per foot (bpf), which is indicative of a medium dense to dense condition. Blow counts were occasionally higher where apparent cobble and/or boulders were encountered. Silty Loam was found in SB-1, between 28 and 35 feet below existing grade, exhibited relatively low blow counts between 4 and 9 bpf.

A very stiff Clay layer was encountered in SB-2, between 20 and 23 feet in depth. The Clay had a moisture content of 12 percent and unconfined compressive strength 1.8 tons per square foot (tsf).

Hard drilling on the apparent top of rock was encountered at a depth of 37.5 feet (Elev. 626.5) in SB-1 and at 44 feet (Elev. 620.1) in SB-2. A 10-foot rock core was taken of the Dolomite at SB-1 using NX core barrel and equipment. The core runs resulted in 94 to 100 percent recovery with Rock Quality Designation (RQD) values ranging from 58 to 90 percent.

Free water was initially encountered at 13 to 16 feet below existing grade in SB-1 and SB-2 (i.e. between Elevation 652.5 and 655.0). SB-1 had drilling mud and/or gel introduced into the borehole at a depth of 20 feet. The water level in SB-2 remained constant upon completion of drilling operations. The water level in the East Branch of the DuPage River was at approximate Elevation 655.0.

Riverbed Scour Borings (HA-1 & HA-2):

Hand Auger Borings 1 and 2 were performed on the north and south sides of Short Street Bridge. They encountered Clay Fill in the upper 3 feet, having dry unit weights in the range of 99 to 112 pound per cubic foot (pcf) at moisture contents on the order of 20 percent. Sand and Gravel Fill materials were found below the Clay Fill, extending approximately 9 feet below existing grade. These granular materials were in a saturated state.

Very stiff native Clay was found below the Gravel Fill at the bottom of the hand-auger borings (9 to 10 feet deep). The cohesive soils exhibited unconfined compressive strengths ranging from 1.5 to 2.5 tons per square foot (tsf) at moisture contents of 14 to 16 percent.

Free water was initially encountered at approximately 3 feet below existing grade in HA-1 and HA-2 (i.e. between Elevation 653 and 654.5). Upon completion of drilling operations the water levels remained constant. They are close to the water level in the adjoining river.

Recommendations for Foundation Support

Pile Foundations:

It is our understanding that the existing Short Street Bridge abutments are supported on steel and timber piles. The exact locations of these piles is unknown. It is possible that some of the old pilings may be encountered during driving of new piles. In addition, the installation of new piles must be able to penetrate occasional layers of dense stratigraphy and occasional cobbles or boulders which may



also be encountered. It is our opinion that steel H-piles are best suited to deal with these conditions. It is recommended that the pile foundations consist of point bearing steel H-piles which are driven to refusal.

The Nominal Required Bearing for H-piles driven to refusal is determined by multiplying the cross sectional area of the pile by 27.0 kips per square inch (ksi). A factor of safety of 3.0 is then used to determine the Allowable Resistance Available for each pile.

Structure Borings 1 and 2 were drilled on the southwest and northeast corners of the bridge, respectively. SB-1 encountered rock at approximate Elevation 626.5 and SB-2 at 620.1. It is estimated that these are the approximate elevations where refusal will occur for driven H-piles. It should be expected that the refusal elevations will vary due to variations in cobbles, boulders and the weathered rock surface. Test piles should be driven at each substructure unit prior to ordering piles for production driving. It is recommended that the steel H-piles be provided with metal pile shoes (pile points) due to the presence of cobbles and possible boulders which overlie the Dolomite rock.

Each of the borings encountered Clay Fill overlying wet to saturated Sand or Sand/Gravel materials below the stream bed elevation. Free water was encountered between Elevation 652 and 655, with the water level in East Branch of the DuPage River at about Elevation 655. The use of a cofferdam in conjunction with continuous pumping will likely be needed to control groundwater seepage during construction.

Scour Potential:

The hand auger borings (HA-1 and HA-2) indicate the streambed at approximate Elevation 654 lying within the Sand and Gravel materials. There may be potential for streambed scour at this bridge site which could impact the pier foundation design. It is recommended that a scour analysis be performed to assess the potential risk for undermining at the pier locations. As a minimum, use of stone rip-rap or other measures may be required for scour protection.

Grain size analysis were performed on representative samples from these borings for the purpose of assisting in a more detailed scour analysis. The following table summarizes the locations, sample depth and D50 particle size from these samples.

Grain Size Analysis Results

Boring No.	Sample Depth	D50 Particle Size	Soil Classification
HA-1	3.5 - 5.0	9.5 mm	Gray Gravel, some sand A-1-a
HA-2	6.0 - 7.5	5.5 mm	Gray Sand and Gravel, trace silt and clay A-1



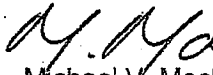
Closure


The analysis and recommendations submitted in this report are based upon the data obtained from the four (4) soil borings and two (2) pavement cores performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings, the nature and extent of which may not become evident until during the course of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,


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


Timothy R. Peceniak, E.I.
Staff Engineer

MVM:TRP:tp
Enc. (3 reports)



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. 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 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. 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.

8. 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.

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.

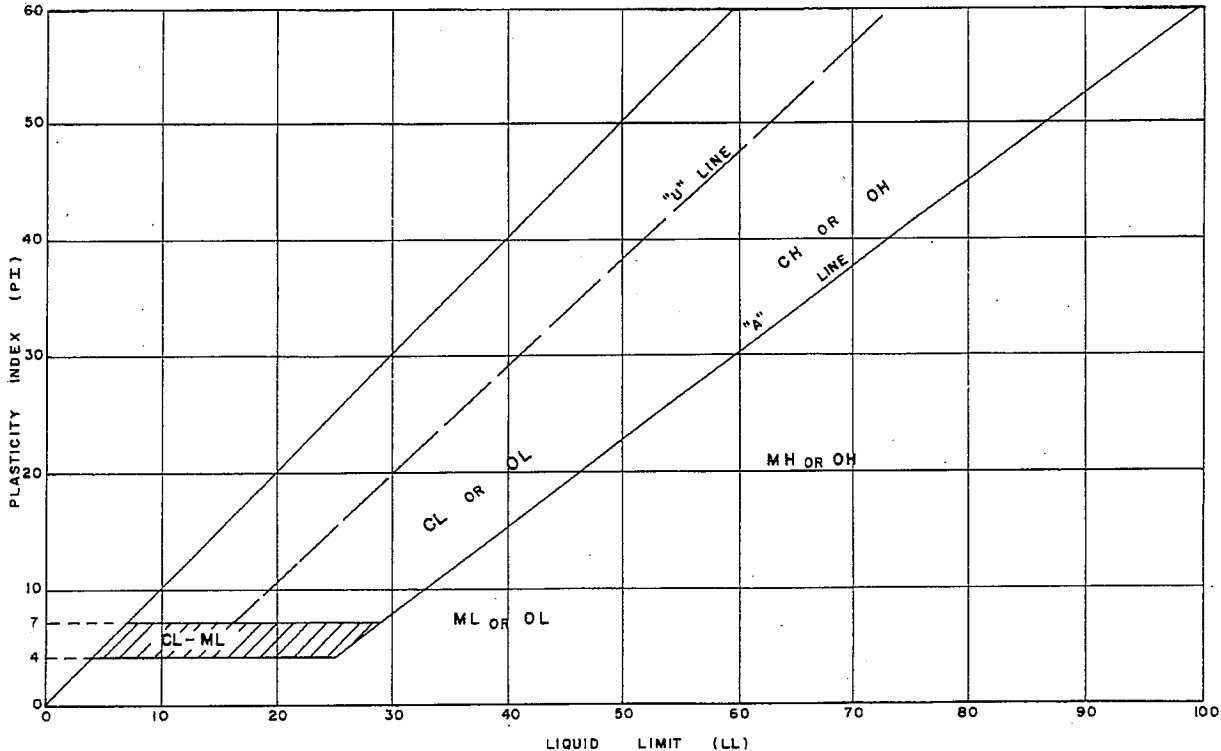
12. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

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. 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.

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

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

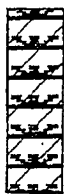


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LEGEND FOR BORING LOGS



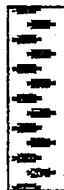
FILL



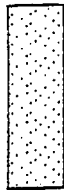
TOPSOIL



PEAT



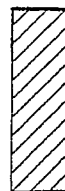
GRAVEL



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
 γ_D = 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

<u>CONSISTENCY</u>	<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

<u>RELATIVE DENSITY</u>	<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

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 10/14/08

Date Completed 10/15/08

ROUTE _____ DESCRIPTION Short St. Bridge over E. Br. DuPage River

SECT. _____ STRUCT. NO. _____ DRILLED BY TSC/L-72.343

COUNTY DuPage LOCATION SW Corner of Bridge S. 10 E 1/2, TWP. 38N, RNG. 10SE

Boring No. <u>SB-1</u>	D	B	L	O	Qu	W	Surface Water Elev. _____	D	B	L	O	Qu	W	
Station _____	E	P	O	S	tsf	%	Groundwater Elev.: _____	E	P	O	S	tsf	%	
Offset _____ ft	P	T	H	S			when drilling <u>654.9</u>	H	H	H	H			
Surface Elev. <u>667.90</u> ft	H	S					at Completion <u>Rotary Wash</u>							
							after _____ Hrs. _____							
FILL - Black clayey TOPSOIL <u>667.40</u>							<u>642.40</u>							
FILL - Brown and gray Sand and Crushed Limestone, moist <u>666.40</u>		5			P	4.5	Very dense brown and gray SAND and GRAVEL, occasional Cobbles and Boulders, saturated A-1			13				
		5			1.5			50/4"						
FILL - Brown CLAY LOAM, little gravel, moist A-6 <u>664.90</u>		7				11.0		<u>639.90</u>						
		8					Loose gray SILTY LOAM, little gravel, very moist A-4			5				
		10				7.3		<u>-30</u>			3			
FILL - Brown and gray Sand and Crushed Limestone, occasional clay pieces, moist <u>-5</u>		12									2			
		6					Med. dense gray SAND and GRAVEL, occasional Cobbles and Boulders, saturated A-1			2				
		6				6.7		<u>659.90</u>			4			
		9						<u>-10</u>			5			
FILL - Brown and gray CLAY LOAM, trace gravel, trace organic, moist A-6/A-7-6 <u>657.40</u>		6			P	17.5	<u>632.90</u>			8				
		7			1.5		Probable weathered and fractured Dolomite Rock, hard drilling			9				
		7						<u>630.40</u>			11			
		10						<u>628.40</u>			20			16.5
		8					Core Run-1: 39.5 to 43.5 ft. Recovery = 94% RQD = 58%			5/5"				
		12						<u>-15</u>						
		4												
		6					Light gray to white Dolomite, thick bedded, mottled, contains 5-10% small pinpoint vugs, fractured at 41.5' <u>624.40</u>							
		8						<u>-40</u>						
Med. dense brown and gray SAND and GRAVEL, moist to saturated A-1 <u>-20</u>		5												
		10					Core Run-2: 43.5 to 49.5 ft. Recovery = 100% RQD = 90%							
		8						<u>-45</u>						
		4												
		10					Light gray Dolomite, thick bedded, relatively pure, mottled dark gray, contains 10-15% small pinpoint vugs, slight hairline fractured throughout, occasional fossil <u>618.40</u>							
		7						<u>-25</u>						
		6												
		5					End of Boring at 49.5'							
		12					<u>-50</u>							
		17												

IDOT BORING 72343 IDOT.GPJ IDOT.GDT 10/20/08

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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PROJECT Bridge Replacement, Short Street Bridge over E. Br. DuPage River, Lisle, IL

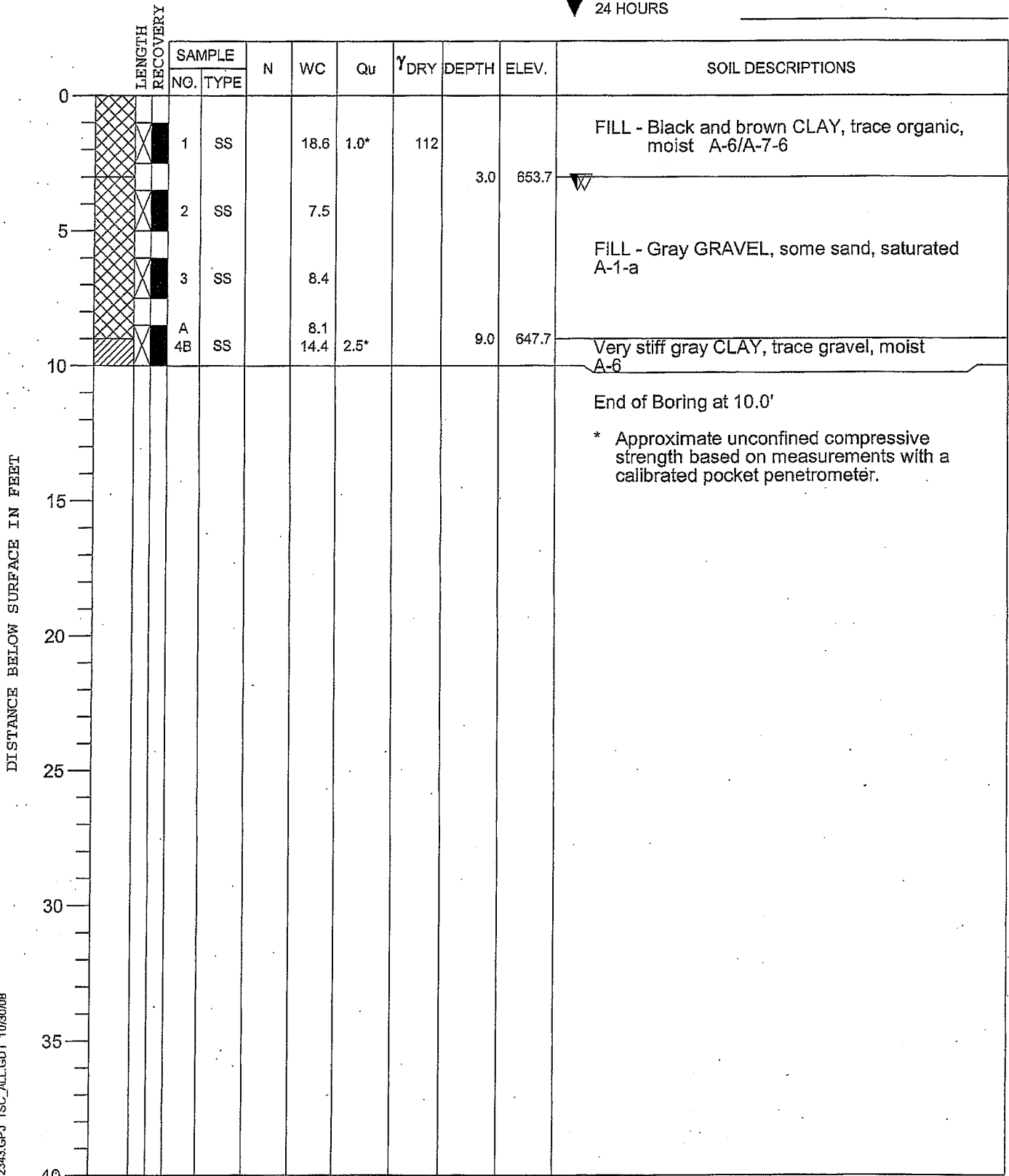
CLIENT Bollinger, Lach & Associates, Inc., Itasca, Illinois



BORING HA-1 DATE STARTED 10-16-08 DATE COMPLETED 10-16-08 JOB L-72,343

ELEVATIONS
 GROUND SURFACE 656.7
 END OF BORING 646.7

WATER LEVEL OBSERVATIONS
 ▼ WHILE DRILLING 3.5'
 ▼ AT END OF BORING 3.5'
 ▼ 24 HOURS _____



* 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.

TSC2 72343.GPJ TSC_ALL.GDT 10/30/08

DRILL RIG NO: HA

175

PROJECT Bridge Replacement, Short Street Bridge over E. Br. DuPage River, Lisle, IL

CLIENT Bollinger, Lach & Associates, Inc., Itasca, Illinois



BORING HA-2 DATE STARTED 10-16-08 DATE COMPLETED 10-16-08 JOB L-72,343

ELEVATIONS
 GROUND SURFACE 657.4
 END OF BORING 647.4

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING 3.0'
 ▽ AT END OF BORING 3.0'
 ▽ 24 HOURS _____

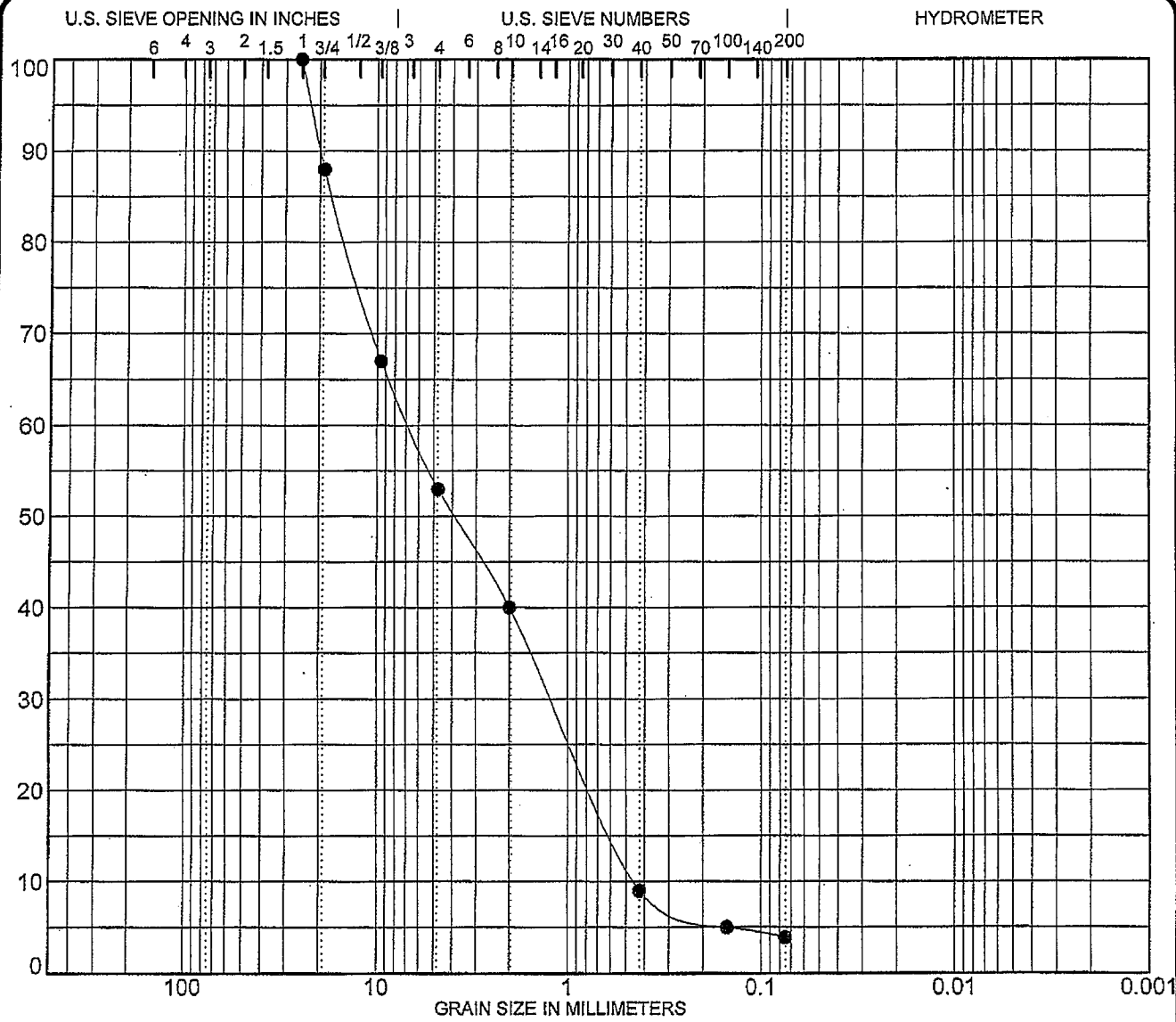
LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	NO.	TYPE							
0									
	1	SS		20.3	1.0*	99	3.0	654.4	FILL - Black and brown CLAY, trace organic, moist A-6/A-7-6
	2	SS		7.4					
	3	SS		11.1					FILL - Gray SAND and GRAVEL, trace silt and clay, saturated A-1
	A	SS		8.9	1.5*				
	4B	SS		15.6			9.0	648.4	Stiff gray CLAY, trace gravel, moist A-6
10									End of Boring at 10.0'
15									* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
20									
25									
30									
35									
40									

DISTANCE BELOW SURFACE IN FEET

TSC2 72343.GPJ TSC_ALL.GDT 10/30/08

DRILL RIG NO. HA

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



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: SB-1	3 inch	100	Gray SAND and GRAVEL A-1			
Sample: 7	2	100				
	1 1/2	100				
	1	100	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:	3/4	88	47	49	(4% Combined)	
	3/8	67				
	# 4	53				
	# 10	40				
	# 40	9				
	# 100	5				
	# 200	4				

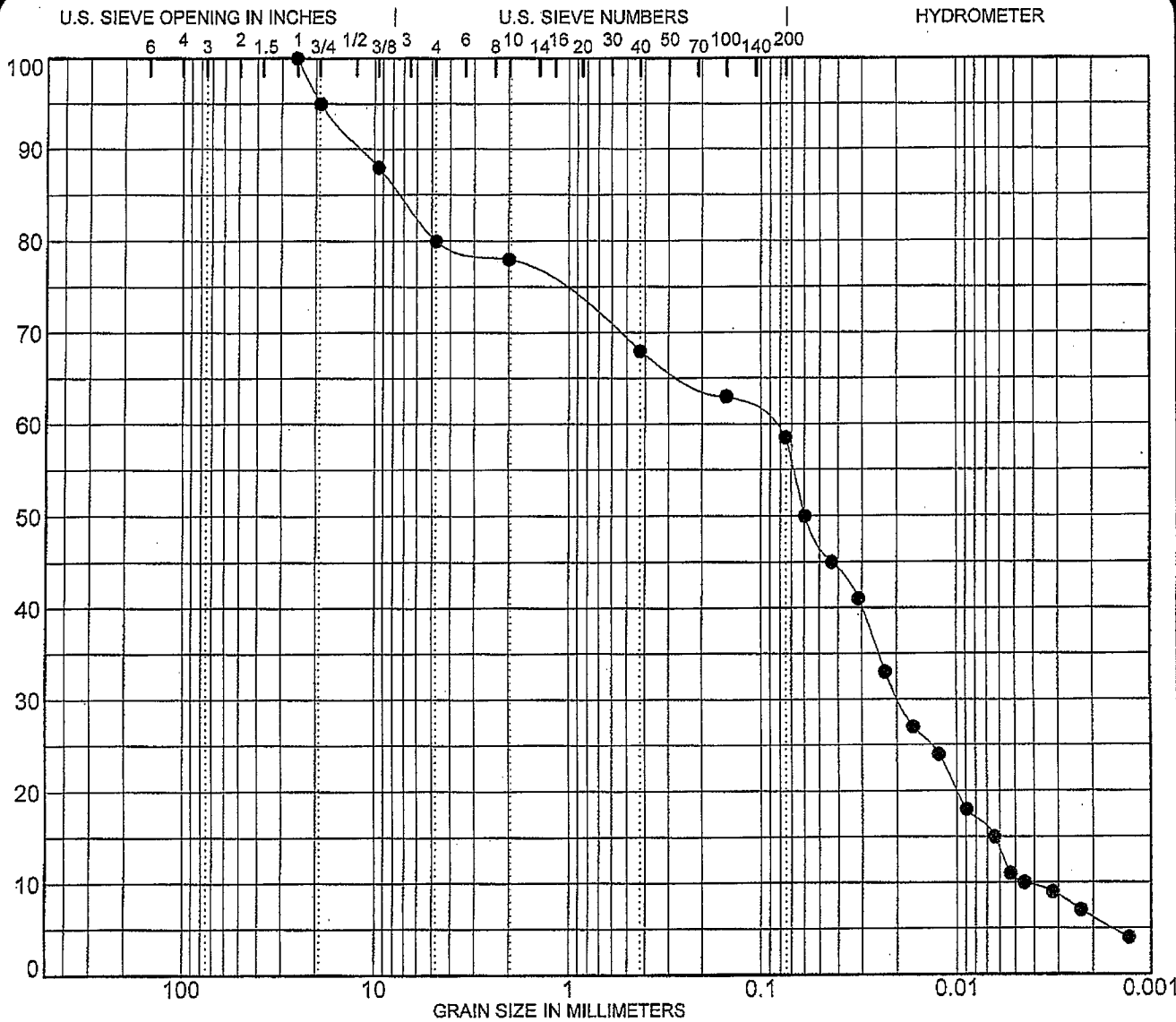
PROJECT Short Street Bridge Replacement
 LOCATION DuPage County, Illinois

JOB NO. L-72,343
 DATE October 29, 2008

SOIL DATA SHEET
 Testing Service Corporation
 Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL GDT 10/30/08

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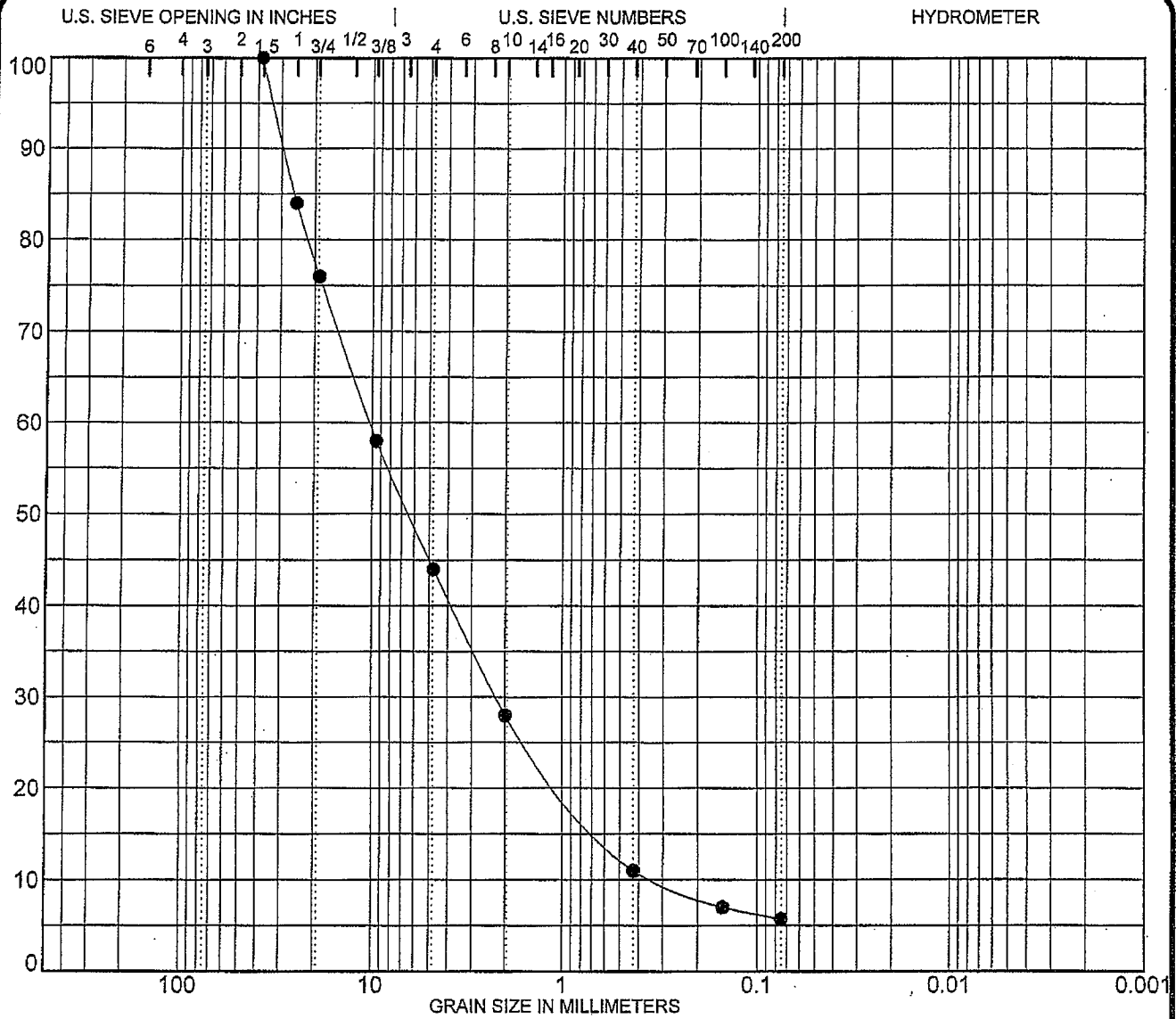
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: SB-1	3 inch	100	Gray clayey SILT, some sand, little gravel			
Sample: 13	2	100	A-4			
	1 1/2	100				
	1	100	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:	3/4	95	20	22	52	6
	3/8	88				
	# 4	80				
	# 10	78				
	# 40	68				
	# 100	63				
	# 200	59				

PROJECT Short Street Bridge Replacement JOB NO. L-72,343
LOCATION DuPage County, Illinois DATE October 29, 2008

SOIL DATA SHEET
Testing Service Corporation
Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL.GDT 10/30/08



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION		SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: SB-2		3 inch	100	Gray SAND and GRAVEL A-1			
Sample: 11		2	100				
		1 1/2	100				
		1	84	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:		3/4	76	56	38	(6% Combined)	
		3/8	58				
		#4	44				
		#10	28				
		#40	11				
		#100	7				
		#200	6				

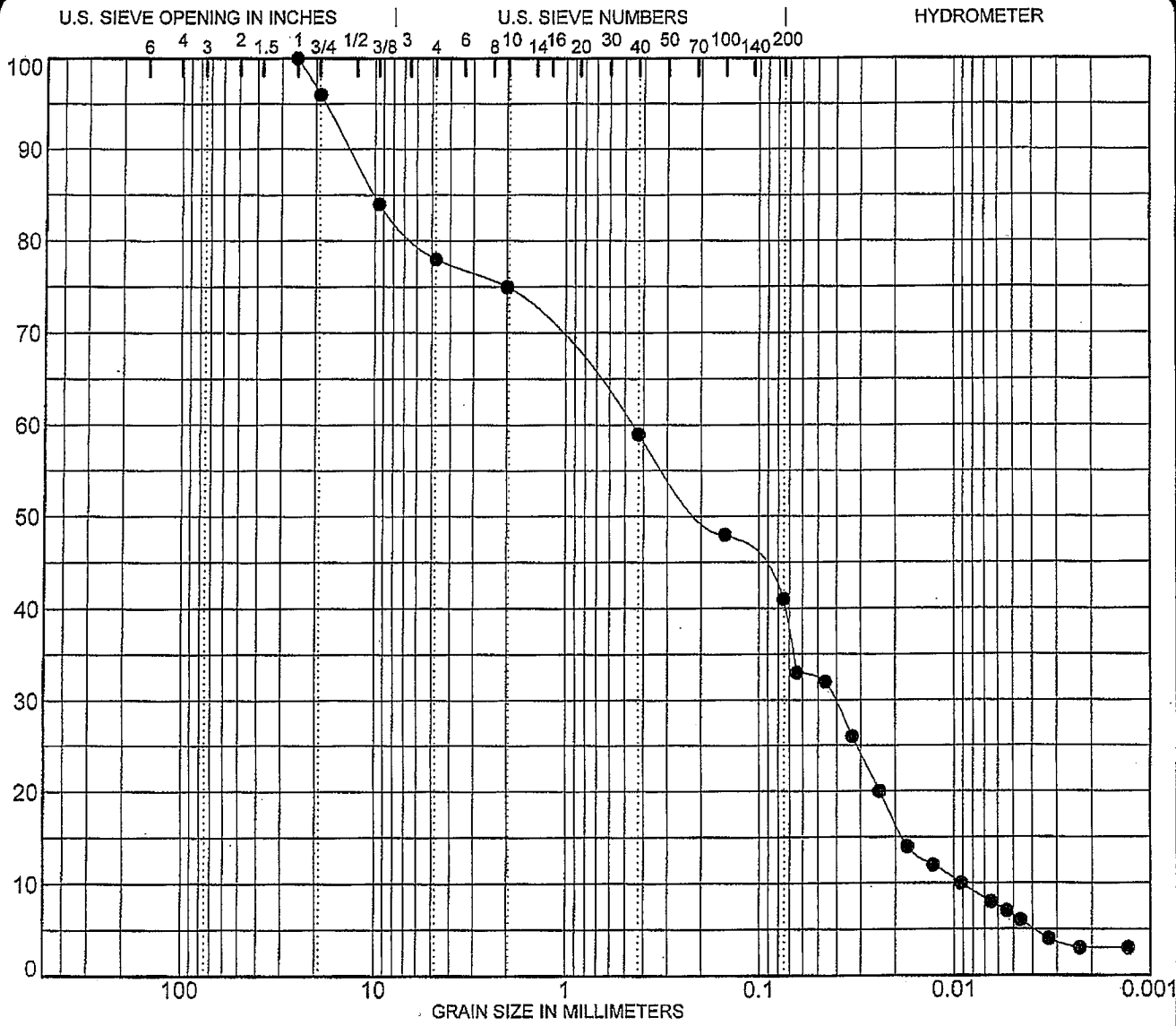
PROJECT Short Street Bridge Replacement
 LOCATION DuPage County, Illinois

JOB NO. L-72,343
 DATE October 29, 2008

SOIL DATA SHEET
 Testing Service Corporation
 Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL.GDT 10/30/08

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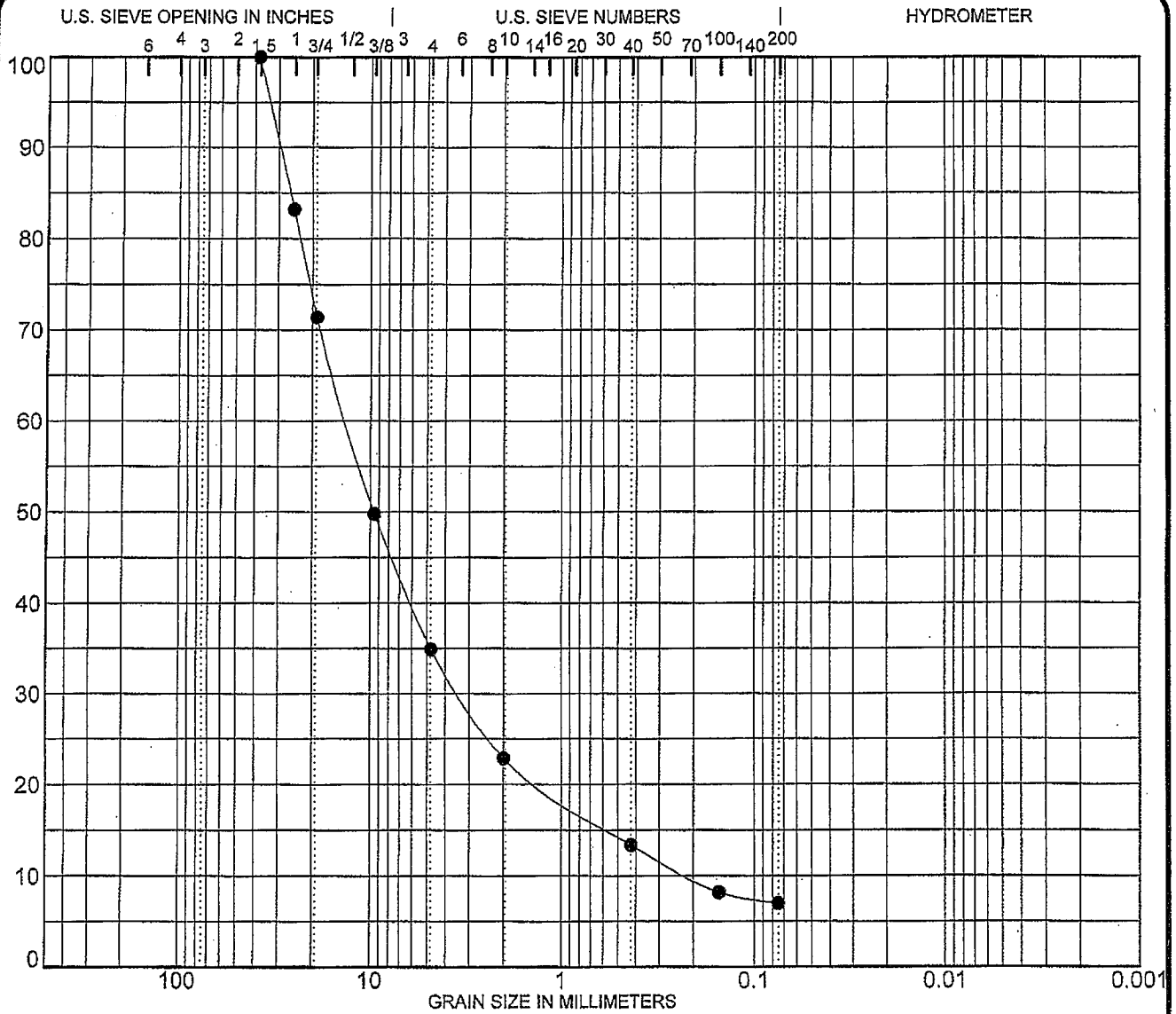
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: SB-2	3 inch	100	Gray silty SAND, some gravel A-2-4			
Sample: 13	2	100				
	1 1/2	100				
	1	100	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:	3/4	96	22	37	38	3
	3/8	84				
	#4	78				
	#10	75				
	#40	59				
	#100	48				
	#200	41				

PROJECT Short Street Bridge Replacement JOB NO. L-72,343
 LOCATION DuPage County, Illinois DATE October 29, 2008

SOIL DATA SHEET
 Testing Service Corporation
 Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL.EDT 10/30/08



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

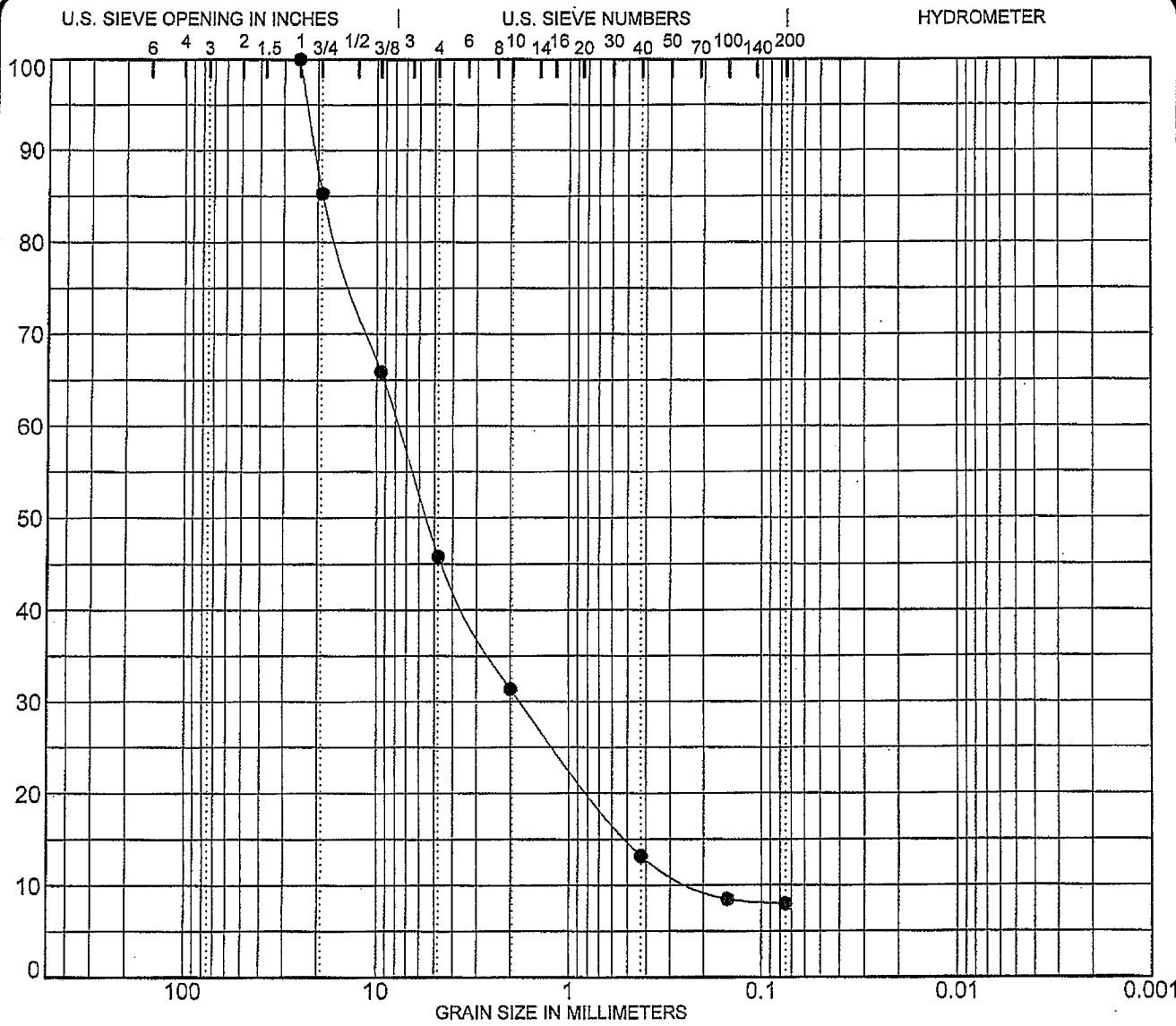
SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: HA-1	3 inch	100	Gray GRAVEL, some sand, A-1-a			
Sample: 2	2	100				
	1 1/2	100				
	1	83	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:	3/4	71	65	28	(7% Combined)	
	3/8	50				
	# 4	35				
	# 10	23				
	# 40	13				
	# 100	8				
	# 200	7				

PROJECT Short Street Bridge Replacement
 LOCATION DuPage County, Illinois
 HA-1

JOB NO. L-72,343
 DATE October 29, 2008

SOIL DATA SHEET
 Testing Service Corporation
 Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL.GDT 10/30/08



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION			
Boring: HA-2	3 inch	100	Gray SAND and GRAVEL, trace silt and			
Sample: 3	2	100	clay A-1			
	1 1/2	100				
	1	100	%GRAVEL	%SAND	%SILT	%CLAY
NOTES:	3/4	85	54	38	(8% Combined)	
	3/8	66				
	#4	46				
	#10	31				
	#40	13				
	#100	9				
	#200	8				

PROJECT Short Street Bridge Replacement JOB NO. L-72,343
 LOCATION DuPage County, Illinois DATE October 29, 2008
 HA-2

SOIL DATA SHEET
 Testing Service Corporation
 Carol Stream, IL 60188

SOILGENR 72343.GPJ TSC ALL.GDT 10/30/08

**BULK ASBESTOS SAMPLE EVALUATION - ASPHALT SAMPLES
POLARIZED LIGHT MICROSCOPY (PLM) TECHNIQUE**

GRAVIMETRIC REDUCTION

NVEAP LAB ID 101130-0

Company Name:	Testing Service Corporation	Client Project Ref:	TSC # L-72,343
Contact:	Timothy R. Peceniak	Project Location:	Short St. over E. Br. DuPage River
Address:	360 South Main Place	TEM Project:	42218
	Carol Stream IL 60188-2404	Analyzed by:	Lori Boersma
		Date Analyzed:	10/15/2008

Sample Information		Fibrous Materials		Non-Fibrous Materials	
Client Sample ID	TEM ID	ACM COLOR	Asbestos Fibers Type	Asbestos Fibers Percent	Non-Asbestos Fibers Type
Description					

C-1	198867	Gray	N/D	Chrysotile Amosite	12.92 85.58	Organic Mtl. Acid Soluble	1.50	
C-2	198868	Gray	N/D	Chrysotile Amosite	17.81 80.91	Organic Mtl. Acid Soluble	1.28	

Samples were analyzed following the procedures contained in the EPA Method 600/R-93/116, July 1993, including the use of gravimetric reduction to enhance the ability to observe asbestos fibers in the sample. This report applies only to samples tested.

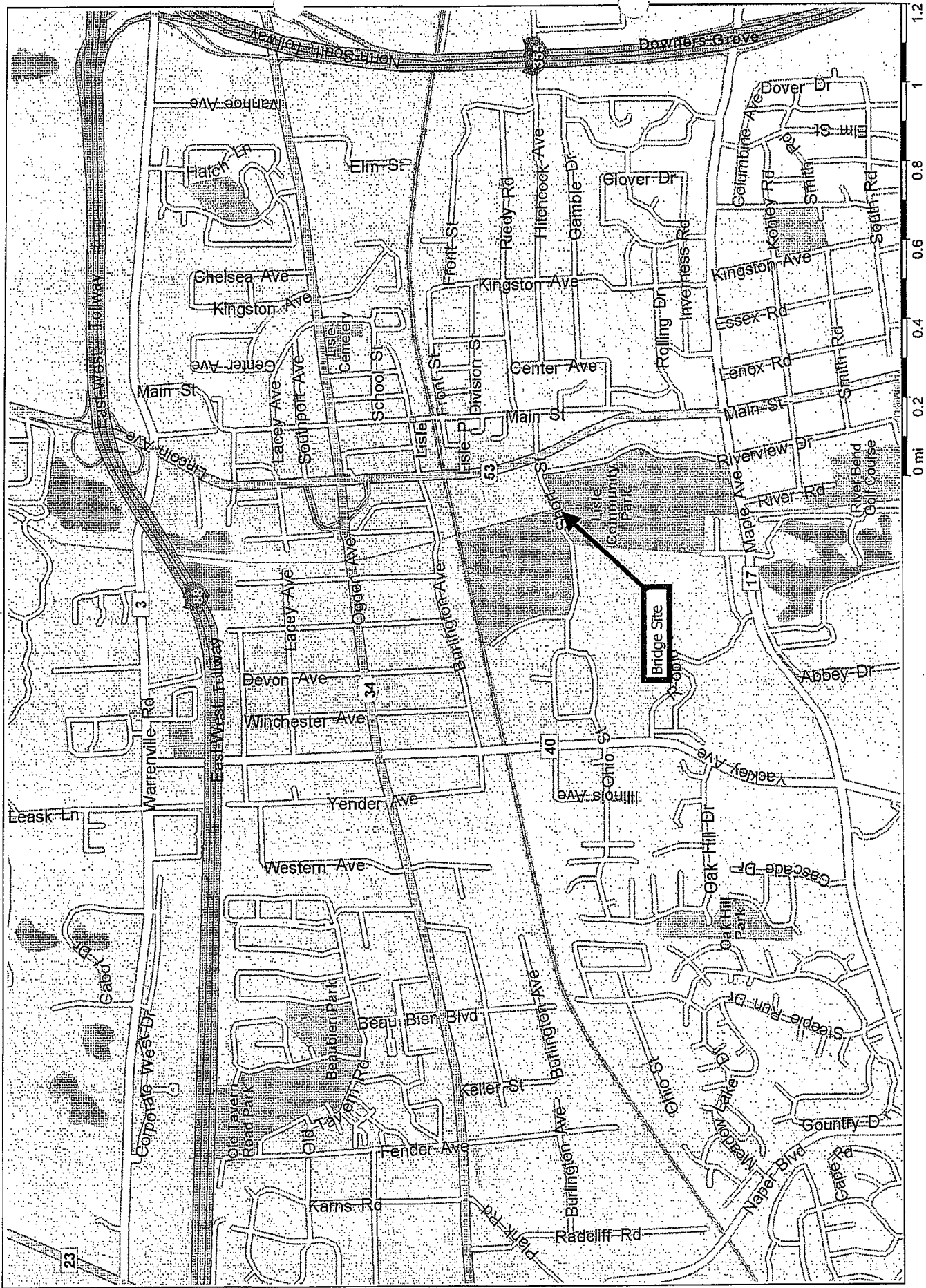
SLM: The optical resolution of polarized light microscopy limits the size of fibers that are visible. In samples where very small fibers may be present, the asbestos fibers may be smaller than the resolution limit of a polarized light microscope. In those cases, the result of the PLM analysis is not conclusive where the sample is reported as non-asbestos. Samples that are expected to contain small fibers (such as floor tile samples) and that are reported as non-asbestos by PLM should be further analyzed by transmission electron microscopy.

Key: ACM = Asbestos Containing Material as defined in USEPA NESHAP Regulation; TR = Trace; N/D = None Detected

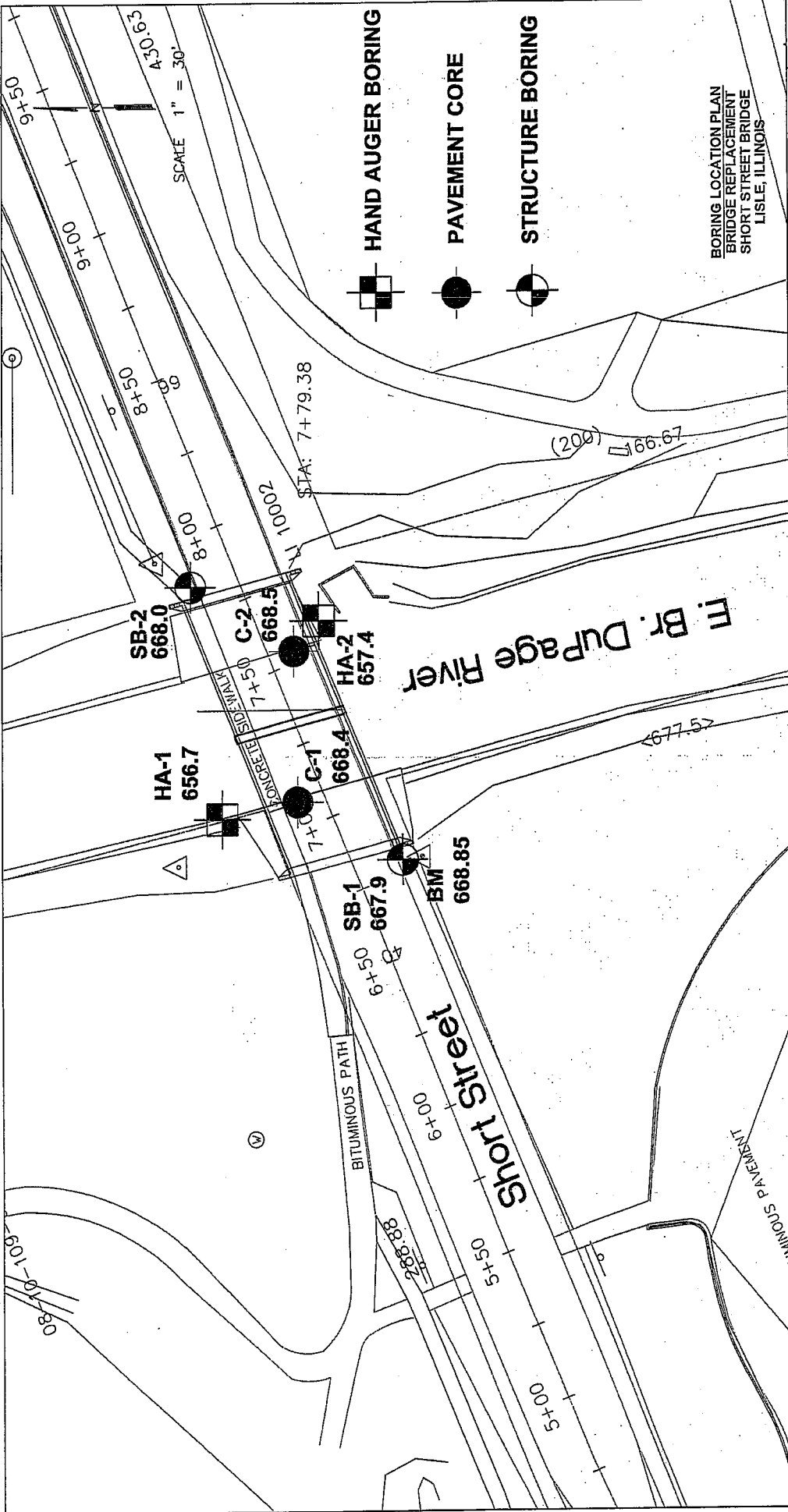
Page 1 of 1




Signature of Analyst





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-  **HAND AUGER BORING**
-  **PAVEMENT CORE**
-  **STRUCTURE BORING**

BORING LOCATION PLAN
 BRIDGE REPLACEMENT
 SHORT STREET BRIDGE
 LISLE, ILLINOIS

DRAWN BY: RSK	PAGE NO.
CHECKED BY:	1 OF 1
JOB NO.: L-72,343	
DATE: 10-24-08	

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



BENCHMARK: DISK SET IN SOUTHEAST HEADWALL OF
 BRIDGE ELEVATION 668.85 (DUPAGE COUNTY)

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