



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 433-2005

**RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT
BOULEVARD, PHASE 1 – TEMPORARY SHORING**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	3

PART B - BIDDING PROCEDURES

B1. Project Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Addenda	1
B6. Substitutes	2
B7. Bid Submission	3
B8. Bid	3
B9. Prices	4
B10. Qualification	4
B11. Opening of Bids and Release of Information	5
B12. Irrevocable Bid	5
B13. Withdrawal of Bids	6
B14. Evaluation of Bids	6
B15. Award of Contract	7

PART C - GENERAL CONDITIONS

C1. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	1
D5. Contractor's Supervisor	1
D6. Notices	2
D7. Furnishing of Documents	2

Submissions

D8. Safe Work Plan	2
D9. Insurance	2
D10. Performance Security	3
D11. Subcontractor List	3
D12. Equipment List	3
D13. Detailed Work Schedule	4

Schedule of Work

D14. Commencement	4
D15. Restricted Work Hours	4
D16. Substantial Performance	4
D17. Total Performance	5
D18. Liquidated Damages	5
D19. Scheduled Maintenance	5

Control of Work

D20. Job Meetings	5
D21. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	6

Warranty

D22. Warranty	6
Form H1: Performance Bond	7
Form H2: Irrevocable Standby Letter of Credit	9
Form J: Subcontractor List	11
Form K: Equipment	12

PART E - SPECIFICATIONS

General

E1. Applicable Specifications, Standard Details and Drawings	1
E2. Geotechnical Report	1
E3. Office Facilities	1
E4. Protection of Instrumentation	1
E5. Protection Of Existing Trees	2
E6. Traffic Control	2
E7. Traffic Management	2
E8. Pedestrian Safety	3
E9. Water Used By Contractor	3
E10. Surface Restorations	3
E11. Sediment Control	3
E12. Piles	4
E13. Timber Lagging Wall	6
E14. Site Restoration	7
E15. Stockpiling OF Materials	8

Appendix A – Geotechnical Information

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT BOULEVARD, PHASE 1 – TEMPORARY SHORING

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, July 28, 2005.
- B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

- B3.1 Further to GC:3.1, the Contract Administrator will hold a Bidders' meeting at the Site at 10:00 a.m. on July 21, 2005 to review the project with interested Bidders.
- B3.2 The Bidder may view the Site without making an appointment.
- B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Bidders' meeting unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. ADDENDA

- B5.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet website for addenda shortly before submitting his Bid.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID SUBMISSION

- B7.1 The Bid Submission consists of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices.
- B7.2 All components of the Bid Submission shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely in ink, to constitute a responsive Bid.
- B7.3 The Bid Submission shall be submitted enclosed and sealed in an envelope. The envelope shall be clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.3.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B7.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.5 Bid Submissions shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, shall be affixed;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10. QUALIFICATION

- B10.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
 - (c) be financially capable of carrying out the terms of the Contract;
 - (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
 - (e) have successfully carried out work, similar in nature, scope and value to the Work; and

- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);

B10.2 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.3 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

B11.1 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.

B11.1.1 Bidders or their representatives may attend.

B11.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B11.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Bid.

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

- B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B13.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
 - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B14.4.2 Notwithstanding B9.1, the Bidder may, but is not required to, bid on all alternatives.
- B14.4.3 The City shall have the right to choose the alternative that is in its best interests. If the Bidder has not bid on all alternatives, he shall have no claim against the City if his partial

Bid is rejected in favour of an award of the Contract on the basis of an alternative upon which he has not bid.

B15. AWARD OF CONTRACT

- B15.1 The City will give notice of the award of the Contract by way of a letter of intent, or will give notice that no award will be made.
- B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.
- B15.4 An award will not be made until a Waterway Permit has been received by the City for the project.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

- C1.1 The General Conditions for Construction Contracts (Revision 2000 11 09) are applicable to the Work of the Contract.
- C1.2 The *General Conditions for Construction Contracts* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the General Conditions for Construction Contracts, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.4 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.5 The General Conditions are amended by deleting GC:6.16 and GC:6.17. The City of Winnipeg is now within the jurisdiction of the Manitoba Ombudsman pursuant to The Ombudsman Act.

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of construction of about 35 m of temporary shoring between the Red River and Pembina Highway near Grandmont Boulevard.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "ASTM" means American Society for Testing Materials;
 - (b) "CSA" means Canadian Standards Association.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is UMA Engineering Ltd., represented by:
Jeff Tallin, P.Eng.
Senior Geotechnical Engineer
UMA Engineering Ltd.
1479 Buffalo Place, Winnipeg, Manitoba, R3T 1L7
Telephone No. (204) 284-0580
Facsimile No. (204) 475-3646
- D4.2 At the pre-construction meeting, Jeff Tallin, P.Eng. will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

- D5.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.
- D5.2 At least two (2) business days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D5.1 or an alternate can be contacted 24 hours a day to respond to an emergency.

D6. NOTICES

- D6.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.
- D6.3 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:
- The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174
- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:
- The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D7. FURNISHING OF DOCUMENTS

- D7.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him at cost.

SUBMISSIONS

D8. SAFE WORK PLAN

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.
- D8.2 The Safe Work Plan shall be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

D9. INSURANCE

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) all inclusive, with The City of Winnipeg being named as an additional

insured, with a cross-liability clause, such liability policy to also contain a contractual liability, an unlicensed motor vehicle liability and a completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned and non-owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the City Solicitor with a certificate of insurance of each policy, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the GC:4.1 for the return of the executed Contract.

D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
- (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
- (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D11. SUBCONTRACTOR LIST

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the GC:4.1 for the return of the executed Contract.

D12. EQUIPMENT LIST

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment List) at or prior to a pre-construction meeting, or at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the GC:4.1 for the return of the executed Contract.

D13. DETAILED WORK SCHEDULE

D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Gantt chart for Work) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

SCHEDULE OF WORK

D14. COMMENCEMENT

D14.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D14.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in GC:6.14;
 - (iii) the twenty-four (24) hour emergency response phone number specified in D5.2.
 - (iv) the Safe Work Plan specified in D8;
 - (v) evidence of the insurance specified in D9;
 - (vi) the performance security specified in D10;
 - (vii) the subcontractor list specified in D11;
 - (viii) the equipment list specified in D12;
 - (ix) the detailed work schedule specified in D13; and
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D14.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D14.4 The City intends to award this Contract by August 11, 2005.

D15. RESTRICTED WORK HOURS

D15.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission 48 hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

D16. SUBSTANTIAL PERFORMANCE

D16.1 The Contractor shall achieve Substantial Performance by September 15, 2005.

D16.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.

D16.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D17. TOTAL PERFORMANCE

D17.1 The Contractor shall achieve Total Performance by October 30, 2005.

D17.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.

D17.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D18. LIQUIDATED DAMAGES

D18.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City Five Hundred dollars (\$500.00) per Calendar Day for each and every Calendar Day following the day fixed herein for Substantial Performance during which such failure continues.

D18.2 The amount specified for liquidated damages in D18.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D18.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D19. SCHEDULED MAINTENANCE

D19.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Sodded Areas as specified in CW3510-R8

D19.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D20. JOB MEETINGS

D20.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D20.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D21. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D21.1 Further to GC:6.26, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

WARRANTY

D22. WARRANTY

D22.1 The warranty shall be in accordance with GC. 13.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

_____ ,
(hereinafter called the "Principal"), and

_____ ,
(hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

_____ dollars (\$_____.)

of lawful money of Canada to be paid to the Obligee, or its successors or assigns, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee dated the

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 433-2005

RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT BOULEVARD, PHASE 1 –
TEMPORARY SHORING

which is by reference made part hereof and is hereinafter referred to as the "Contract".

NOW THEREFORE the condition of the above obligation is such that if the Principal shall:

- (a) carry out and perform the Contract and every part thereof in the manner and within the times set forth in the Contract and in accordance with the terms and conditions specified in the Contract;
- (b) perform the Work in a good, proper, workmanlike manner;
- (c) make all the payments whether to the Obligee or to others as therein provided;
- (d) in every other respect comply with the conditions and perform the covenants contained in the Contract; and
- (e) indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as set forth in the Contract, and from all penalties, assessments, claims, actions for loss, damages or compensation whether arising under "The Workers Compensation Act", or any other Act or otherwise arising out of or in any way connected with the performance or non-performance of the Contract or any part thereof during the term of the Contract and the warranty period provided for therein;

THEN THIS OBLIGATION SHALL BE VOID, but otherwise shall remain in full force and effect. The Surety shall not, however, be liable for a greater sum than the sum specified above.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D10)

(Date)

The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 433-2005

RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT BOULEVARD, PHASE 1 –
TEMPORARY SHORING

Pursuant to the request of and for the account of our customer,

(Name of Contractor)

(Address of Contractor)

WE HEREBY ESTABLISH in your favour our irrevocable Standby Letter of Credit for a sum not exceeding in the aggregate

_____ Canadian dollars.

This Standby Letter of Credit may be drawn on by you at any time and from time to time upon written demand for payment made upon us by you. It is understood that we are obligated under this Standby Letter of Credit for the payment of monies only and we hereby agree that we shall honour your demand for payment without inquiring whether you have a right as between yourself and our customer to make such demand and without recognizing any claim of our customer or objection by the customer to payment by us.

The amount of this Standby Letter of Credit may be reduced from time to time only by amounts drawn upon it by you or by formal notice in writing given to us by you if you desire such reduction or are willing that it be made.

Partial drawings are permitted.

We engage with you that all demands for payment made within the terms and currency of this Standby Letter of Credit will be duly honoured if presented to us at:

(Address)

and we confirm and hereby undertake to ensure that all demands for payment will be duly honoured by us.

All demands for payment shall specifically state that they are drawn under this Standby Letter of Credit.

Subject to the condition hereinafter set forth, this Standby Letter of Credit will expire on

(Date)

It is a condition of this Standby Letter of Credit that it shall be deemed to be automatically extended from year to year without amendment from the present or any future expiry date, unless at least 30 days prior to the present or any future expiry date, we notify you in writing that we elect not to consider this Standby Letter of Credit to be renewable for any additional period.

This Standby Letter of Credit may not be revoked or amended without your prior written approval.

This credit is subject to the Uniform Customs and Practice for Documentary Credit (1993 Revision), International Chamber of Commerce Publication Number 500.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

FORM K: EQUIPMENT
(See D12)

RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT BOULEVARD, PHASE 1 –
TEMPORARY SHORING

<p>1. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>2. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>3. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

FORM K: EQUIPMENT
(See D12)

RIVERBANK STABILIZATION, PEMBINA HIGHWAY AT GRANDMONT BOULEVARD, PHASE 1 –
TEMPORARY SHORING

<p>4. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>5. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>6. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.3 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
P3262	Riverbank Stabilization Pembina Highway at Grandmont Boulevard, Phase 1 Temporary Shoring	D Size (22" x 34")

E2. GEOTECHNICAL REPORT

- E2.1 Further to GC:3.1, the geotechnical information contained in Appendix A is provided to aid the Contractor's evaluation of the existing soil conditions.

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) shall be conveniently located near the site.
 - (b) shall have a table and chairs and be suitable for conducting job meetings.
 - (c) shall be heated.
 - (d) the Contractor's lunch room facilities may be used for an office.

E3.2 Method of Measurement and Basis of Payment

No separate measurement or payment shall be made for supply of an office facility. This facility shall be considered incidental to the Work.

E4. PROTECTION OF INSTRUMENTATION

- E4.1 The Contractor is advised that instrumentation (slope inclinometers and piezometers) have been installed at the locations shown on the drawing.
- E4.2 The Contractor shall take necessary precautions to prevent damage to the instrumentation as a result of his Work.

E4.3 The Contractor shall repair or replace instrumentation damaged as a result of his Work at no cost to the City.

E5. PROTECTION OF EXISTING TREES

E5.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
- (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (e) Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

E5.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his designate.

E5.3 Elm trees cannot be trimmed between April 1 and July 31, inclusive.

E5.4 No separate measurement or payment will be made for the protection of trees.

E6. TRAFFIC CONTROL

E6.1 Further to clauses 3.6 and 3.7 of CW 1130-R1:

- (a) In accordance with the Manual of Temporary Traffic Control, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Section of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Section of the City of Winnipeg in connection with the works undertaken by the Contractor.

E7. TRAFFIC MANAGEMENT

E7.1 Further to clause 3.7 of CW 1130-R1:

- E7.1.1 Maintain a minimum of one lane of traffic northbound on Pembina Highway at all times.
- E7.1.2 No lane closures of southbound traffic on Pembina Highway will be permitted.
- E7.1.3 The left turn storage lane west of the Work Site shall be maintained at all times.
- E7.1.4 All traffic movements at the intersection of Pembina Highway and Grandmont Boulevard shall be maintained at all times.

E7.1.5 The sidewalk through the work site shall be closed, with barricades and signage.

E7.1.6 Ambulance/emergency vehicle access must be maintained at all times.

E8. PEDESTRIAN SAFETY

E8.1 During the project, a temporary snow fence shall be installed around any excavations, steep drop-offs or other conditions hazardous to pedestrians during non-working hours. The Contractor shall be responsible for maintaining the snow fence in a proper working condition. No measurement for payment shall be made for this work.

E9. WATER USED BY CONTRACTOR

E9.1 Further to clause 3.7 of CW 1120-R1, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

E10. SURFACE RESTORATIONS

E10.1 Further to clause 3.3 of CW 1130-R1, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

E11. SEDIMENT CONTROL

E11.1 Description

E11.1.1 This Specification covers control of sediment releases from the site.

E11.1.2 The Work to be done under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

E11.2 Construction Methods

E11.2.1 Control of Sediment Releases

- (a) All Work shall be planned and carried out in a manner that will mitigate the potential for the release of sediments into the river.
- (b) Sediment control measures shall be implemented to meet the requirements of Fisheries and Oceans Canada.
- (c) The Contractor shall monitor his Work and implement appropriate sediment control measures as site conditions warrant. Such measures may include, but not limited to, installation of silt fences, straw bales or other measures as required.
- (d) As a minimum, silt fences shall be installed between the river and edges of the Work area and all areas where the vegetation has been disturbed or soils are exposed, including the areas disturbed at the stockpile area, and access points from Pembina Highway.
- (e) The silt fences shall be attached to secure stakes and trenched in to the ground or secured with sand bags such that there are no gaps and the fencing will not be undermined. The silt fences shall be inspected, maintained and repaired as required.

- (f) During rain storms the Contractor shall inspect the silt fences at least daily and more frequently if required. Sediments shall be removed from silt fences as required, during or immediately following each rain storm. All trapped sediments shall be removed from the site.
- (g) The contractor shall monitor, maintain, repair, etc. the sediment control measures until disturbed areas are restored and accepted by the Contract Administrator.
- (h) Water and sediments from pile shafts shall not be allowed to enter into the river.

E11.2.2 Flooding

- (a) The Contractor is advised that there is a potential for flooding of the riverbank adjacent to the Work area.
- (b) The weather and river level forecasts shall be monitored by the Contractor.
- (c) No Work shall be undertaken in flooded areas.
- (d) In the event of flooding, the Contractor shall implement measures or precautions to prevent release of sediments into the river from flooded areas of the site or other areas disturbed by the Contractor as a result of his Work.

E11.3 Method of Measurement and Basis of Payment

- E11.3.1 No separate measurement or payment shall be made for sediment control measures, or other Work required controlling sediment releases. This cost of sediment controls and other items included in this Specification shall be consisted incidental to the Work. No additional payment shall be paid for Work interruptions or additional Work related to flooding.

E12. PILES

E12.1 Description

- E12.1.1 This Specification covers the following items relating to construction of concrete caissons:

- (a) Drilling of the pile shafts.
- (b) Use and installation of casing to prevent cave-ins
- (c) Supply and installation of structural steel
- (d) Supply and placement of concrete
- (e) Disposal of water from pile shafts

E12.2 Materials

- E12.2.1 Structural Steel: CSA Standard CAN/CSA-G40.20 and CAN/CSA-G40.21, Grade 300W or 350 W and fabricated in accordance with CSA S16.1
- E12.2.2 Concrete: CW 2160-R6, Mix B for "Pipe foundations, skin coats, base blocks, thrust blocks, buttresses and anchors", Type 50 cement.
- E12.2.3 Sand: "Sand" in accordance with Table CW 2030.1, Specification CW 2030-R9

E12.3 Construction Methods

E12.3.1 Drilling Pile Shafts

- (a) Drill pile shafts to depths and dimensions shown on the drawings unless otherwise directed by the Contract Administrator.

- (b) The Contractor shall not be compensated for drilling larger diameter or deeper holes unless approved by the Contract Administrator.
- (c) The Contractor is advised that pavements and other rubble from the original road may be present below existing grade, and that it may be necessary to excavate these materials prior to or during drilling the piles. Additional payment shall not be paid for rubble removal unless the rubble removal results in additional construction material such as granular fill lagging or concrete.

E12.3.2 Casing

- (a) Cave-ins of the pile shafts shall not be permitted and casing shall be installed as required to prevent cave-ins of shaft walls and to prevent inflows from water bearing soils.
- (b) The Contractor shall not be compensated for drilling oversized shafts to accommodate installation of the casing.
- (c) Casings shall remain in shafts until the concrete has been placed.
- (d) Casings shall be removed by slow even lifting to prevent developing voids in plastic concrete.

E12.3.3 Structural Steel

- (a) Inspect and remove all dirt, oil or other foreign matter from steel prior to placing in caisson shaft.
- (b) Structural steel shall be centered and plumb in pile shafts and held secure during placement of concrete.
- (c) Trim the steel to the proper length if required.

E12.3.4 Placing Concrete

- (a) In caissons with water, concrete shall be tremied or pumped to bottom of caisson to completely displace water.
- (b) Tremie pipe shall have a smooth surface and be kept clean of dirt and concrete.
- (c) The tremie pipe shall be kept below the top of placed concrete and shall be marked to aid in determining depth of pipe.
- (d) Concrete shall not fall through water above placed concrete.
- (e) Interruption in placing concrete shall not exceed 30 minutes.

E12.3.5 Placing Sand

- (a) Sand shall be placed in above the concrete plug to backfill piles were timber lagging is not to be placed.
- (b) Top up sand backfill after sufficient time for settlement.

E12.3.6 Disposal of Water

- (a) The Contractor shall take necessary measures to minimize inflow of water into the caisson shafts.
- (b) Sediment laden water pumped from the caisson shafts shall not be released directly into the river but shall be removed from site and disposed of in accordance with applicable by-laws and regulations.

E12.3.7 Disposal of Excavated Material

- (a) All excavated material, except that which is to be salvaged for restoration, shall be disposed of off site. No materials shall be disposed of on site.

- (b) Depositing materials in the river will not be permitted.
- (c) Stock piles of excavated materials shall be promptly removed from the site. Immediately remove any stock piled material if instructed to do so by the Contract Administrator.

E12.3.8 Testing

- (a) The Contractor shall provide sufficient advance notification of placing concrete so that the Contract Administrator can schedule concrete tests.
- (b) The cost of concrete testing shall be paid by the City of Winnipeg.

E12.4 Method of Measurement and Basis of Payment

E12.4.1 Construction of piles shall be measured and paid for on a unit basis. The number paid for shall be the total number of piles constructed in accordance with this Specification as accepted by the Contract Administrator.

E12.4.2 Payment shall be at the Contract Unit Price for "Piles", which shall be full payment for all operations described herein including drilling shafts, removing and disposing of drill cuttings, supply and installation of steel, concrete and sand, and all other items incidental to the Work included in this Specification.

E13. TIMBER LAGGING WALL

E13.1 Description

E13.1.1 This Specification shall cover the supply and installation of the timber lagging and backfilling of the shoring, including

- (a) Supply and installation of the timber lagging.
- (b) Excavate in front and behind shoring to facilitate installation of lagging.
- (c) Supply and placement of geotextile and granular backfill behind the shoring.
- (d) Supply and installation of the perforated pipe drain behind the shoring.

E13.2 Materials

E13.2.1 Timber Lagging: No. 1 or No. 2 Grade SPF pressure treated with chromated copper arsenate to retention of 6.4 kg/m³ in accordance with CSA 080.2. Field cuts of all pressure treated wood shall be treated with two liberal coats of copper naphthenate preservative.

E13.2.2 Granular backfill: Base Course Material in accordance with table CW 3110.2 specification CW 3110-R6.

E13.2.3 Geotextile:

NON-WOVEN GEOTEXTILE PROPERTIES			
	ASTM Test Method	Units	Minimum Average Roll Values
PHYSICAL			
Grab Tensile Strength	D-4632	N	710
Grab Tensile Elongation	D-4632	%	50
Mullen Burst	D-3786	kPa	2100
Puncture	D-4833	N	420
Trapezoidal Tear	D-4533	N	270

NON-WOVEN GEOTEXTILE PROPERTIES			
	ASTM Test Method	Units	Minimum Average Roll Values
HYDRAULIC			
Apparent Opening Size	D-4751	mm	0.150
Permittivity	D-4491	sec ⁻¹	1.4
Flow Rate	D-4491	L/sec/m ²	54

E13.2.4 Perforated Pipe: Perforated Drain Pipe shall be 100 mm diameter flexible perforated polyethylene pipe with a factory installed geotextile filter fabric wrapping. Big 'O' XTF0425 is an approved product.

E13.2.5 Clean Crushed Limestone, around perforated drain pipe shall be 20 mm crushed limestone meeting all physical and properties of Base Course Material in accordance with CW 3110-R6, with the exception that less than 5 percent by weight shall be finer than 0.080 mm.

E13.3 Construction Methods

E13.3.1 Perforated Pipe: The perforated pipe shall be installed at the bottom of the backfill behind the lagging. It shall be graded to drain toward the river. Clean crushed limestone shall be placed all around the pipe along its entire installed length.

E13.3.2 Lagging: Lagging shall be installed horizontally and shall be fitted tight to the rows of lagging above and below. Geotextile shall be placed behind the bottom rows of lagging and the bottom of excavation, prior to backfilling, as shown on the drawings. The top row of lagging shall be securely spiked to the row below.

E13.3.3 Granular backfill: Granular fill behind the shoring shall be placed in uniform lifts and compacted with small hand operated vibratory compactor to a density of 95 percent of standard Proctor maximum dry density. The compaction effort shall be limited to prevent deflections of the shoring. The Contract Administrator will monitor the backfilling methods to determine that this level of compaction is met and that the shoring is not affected by compaction procedures.

E13.4 Method of Measurement and Basis of Payment

E13.4.1 The Supply and Installation of the Lagging will be measured on a square metre basis. The number of square metres to be paid for shall be the total number of square metres of Lagging supplied and installed in accordance with this Specification and accepted by the Contract Administrator.

E13.4.2 Lagging will be paid for at the Contract Unit Price for "Timber Lagging Wall", measured as specified herein. The price shall include, performing all operations herein described, including excavation and backfilling to install lagging, supply and placement of the perforated pipe, granular materials, and geotextile, and all items incidental to the work included in this Specification.

E14. SITE RESTORATION

E14.1 General

E14.1.1 This Specification covers the following:

- (a) Restoration of areas disturbed in vicinity of the shoring.
- (b) Restoration of other areas disturbed by construction including areas used by Contractor for stockpiling and lay down areas.

E14.1.2 This Specification is supplemental to and amends CW 3510-R8 and CW 3540-R3.

E14.2 Materials

- (a) Topsoil CW 3510-R8
- (b) Sod CW 3540-R3

E14.3 Construction Methods

E14.3.1 All areas disturbed by construction shall be restored with topsoil and sod in accordance with CW 3510-R8 and CW 3540-R3.

E14.3.2 The Contractor shall maintain sediment control measures at the site until all sodded areas are accepted by the City and the risk of sediment releases into the river from areas disturbed by construction have been mitigated.

E14.4 Method of Measurement and Basis of Payment

E14.4.1 The Contractor shall only be paid for restoration in the vicinity of the shoring to the maximum extent shown on the drawings. Restoration will not be paid for restoring, temporary stockpile and lay down areas, access routes into the temporary stockpile area, or other areas disturbed beyond the area shown on the drawings.

E14.4.2 Site restoration shall be measured and paid for in accordance with clauses 12 and 13 of CW 3510-R8.

E15. STOCKPILING OF MATERIALS

E15.1 Description

E15.1.1 This specification covers the locations and procedures for establishing and maintaining stockpiles of materials to facilitate the Work.

E15.2 Construction Methods

E15.2.1 General

- (a) Stockpiling of construction materials, including steel, timber, clay and granular materials, shall only be permitted in quantities, locations and by methods that do not compromise the stability of the riverbank at the Site.
- (b) All stockpiling, materials handling and storage procedures shall be submitted to the Contract Administrator for review and approval prior to construction.
- (c) The rate at which materials are delivered to the site shall be controlled to minimize stockpiling and handling.

E15.2.2 Stockpile and Lay Down Areas

- (a) Subject to approval by the Contract Administrator, the Contractor may use the boulevard or portions of the closed sidewalk as a lay down area and storage of up to 10 cubic meters of clay and granular materials required of backfill.
- (b) The designated stockpile area south of the site may be used for temporary stockpiling of a maximum of 50 cubic meters of material (i.e. clay or granular backfill).
- (c) Stockpiled material shall be handled and maintained in a manner that prevents contamination with other soils and materials, debris, snow, or excess moisture. Contaminated material shall be removed and replaced at the Contractor expense.
- (d) Stockpiles shall be maintained to prevent released of sediments into the river, until the areas have been restored and the sod has been accepted by the City.

- (e) Restoration of lay down areas, stockpile areas, or repairs to pavements due to the Contractor's work shall be at the Contractor's expense.

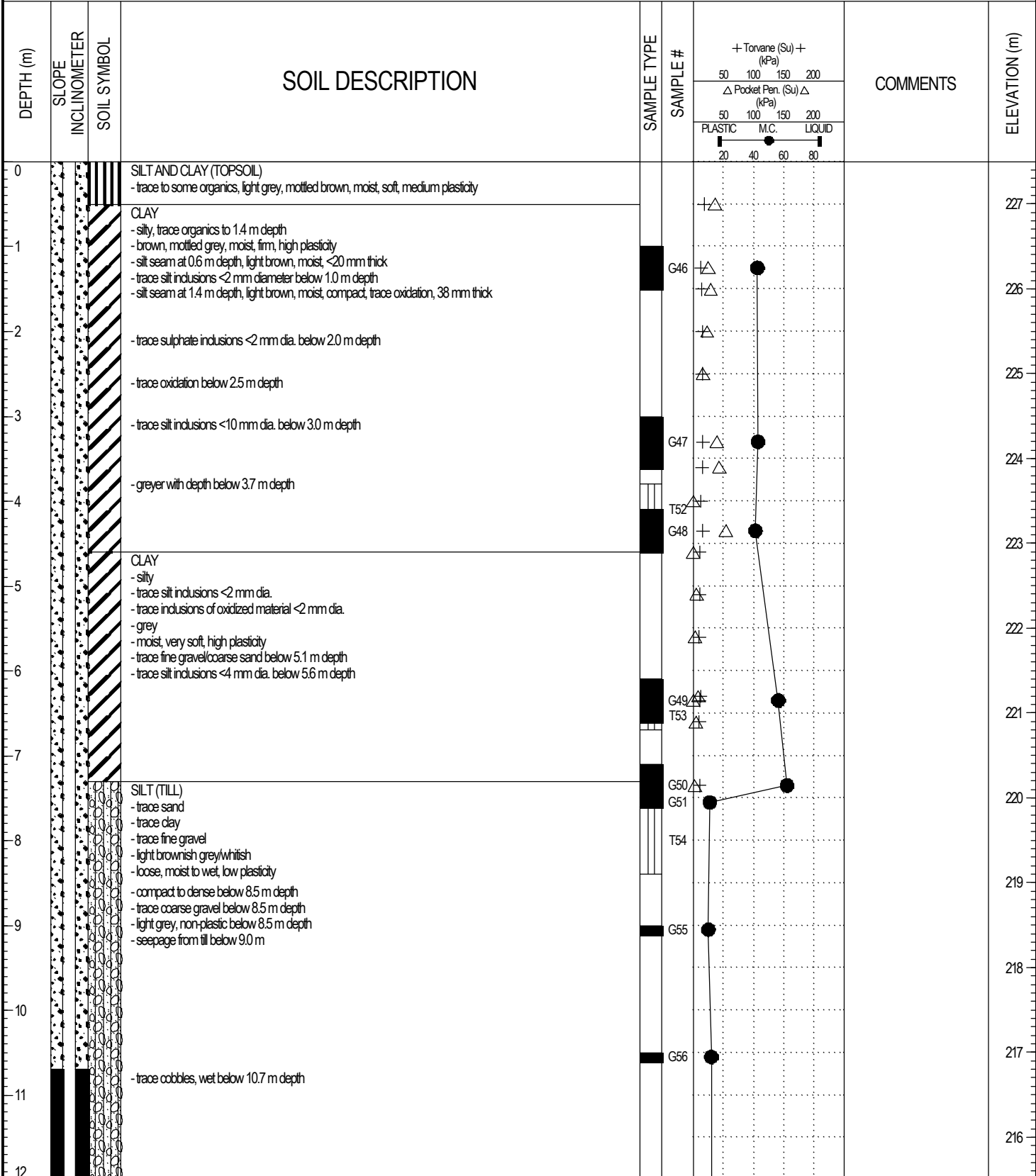
E15.3 Method of Measurement and Basis of Payment

- E15.3.1** No separate measurement or payment shall be made for stockpiling of materials. Stockpiling and handling of material shall be incidental to the cost of the Work.

APPENDIX 'A'

GEOTECHNICAL INFORMATION

PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SI-04-01		
LOCATION: On bench downslope of U-turn north of Grandmont				PROJECT NO.: 0265 371 00		
CONTRACTOR: Paddock Drilling Ltd.		METHOD: Acker, Hollow Stem		ELEVATION (m): 227.496		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



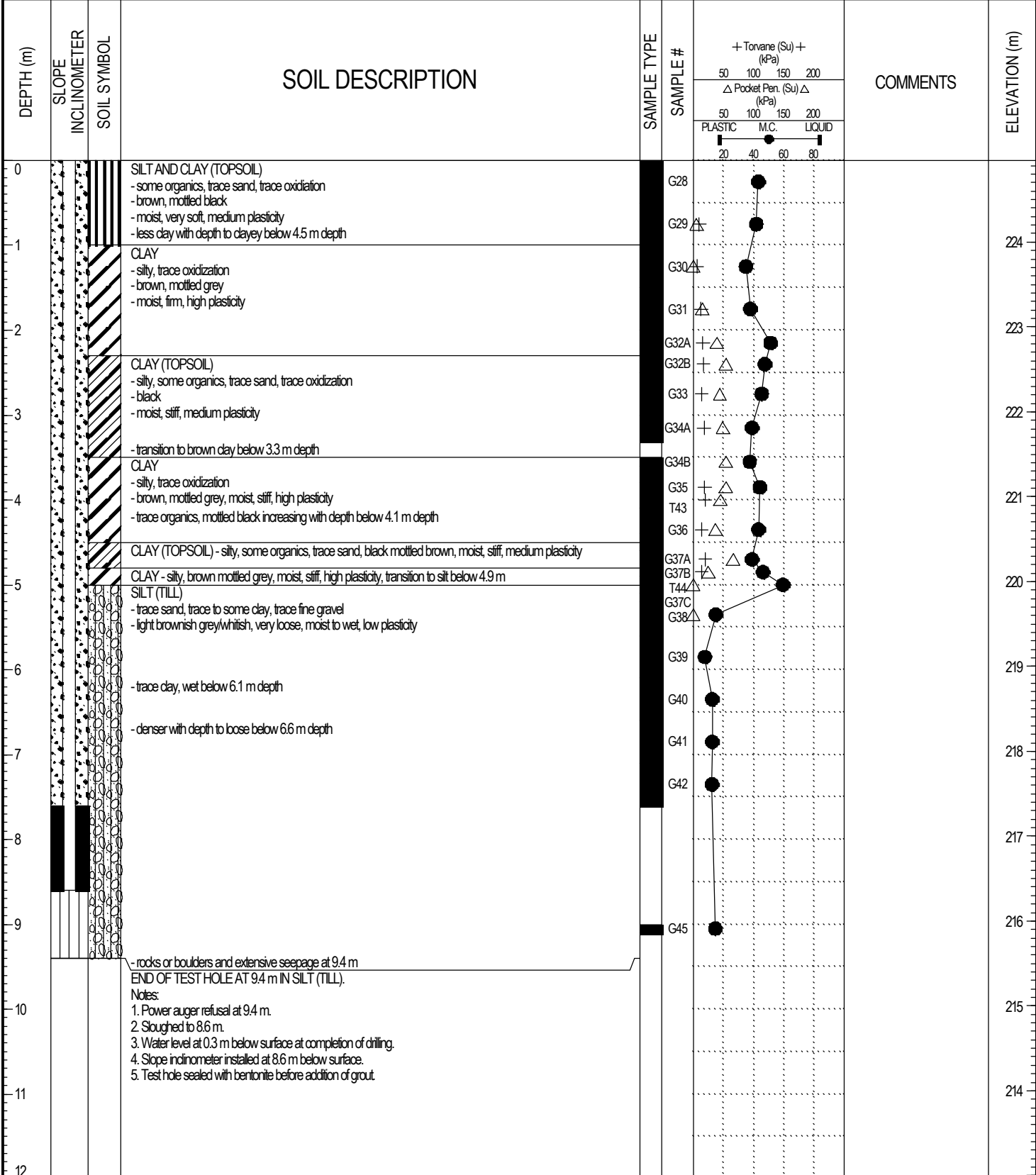
LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05

PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SI-04-01	
LOCATION: On bench downslope of U-turn north of Grandmont				PROJECT NO.: 0265 371 00	
CONTRACTOR: Paddock Drilling Ltd.			METHOD: Acker, Hollow Stem		ELEVATION (m): 227.496
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS
					CORE
					SAND

DEPTH (m)	SLOPE INCLINOMETER	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	+ Torvane (Su) + (kPa)		COMMENTS	ELEVATION (m)
						50	100		
						△ Pocket Pen. (Su) △ (kPa)			
						PLASTIC M.C. LIQUID			
						20	40	60	80
12									215
13									214
14			END OF TEST HOLE AT 13.4 m IN SILT (TILL). Notes: 1. Power auger refusal at 13.4 m. 2. Sloughed to 12.2 m. 3. Water level at 3.4 m below surface at completion of drilling. 4. Slope inclinometer installed at 12.5 m below surface. 5. Test hole sealed with bentonite before addition of grout.		G57				213
15									212
16									211
17									210
18									209
19									208
20									207
21									206
22									205
23									204
24									204

LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05

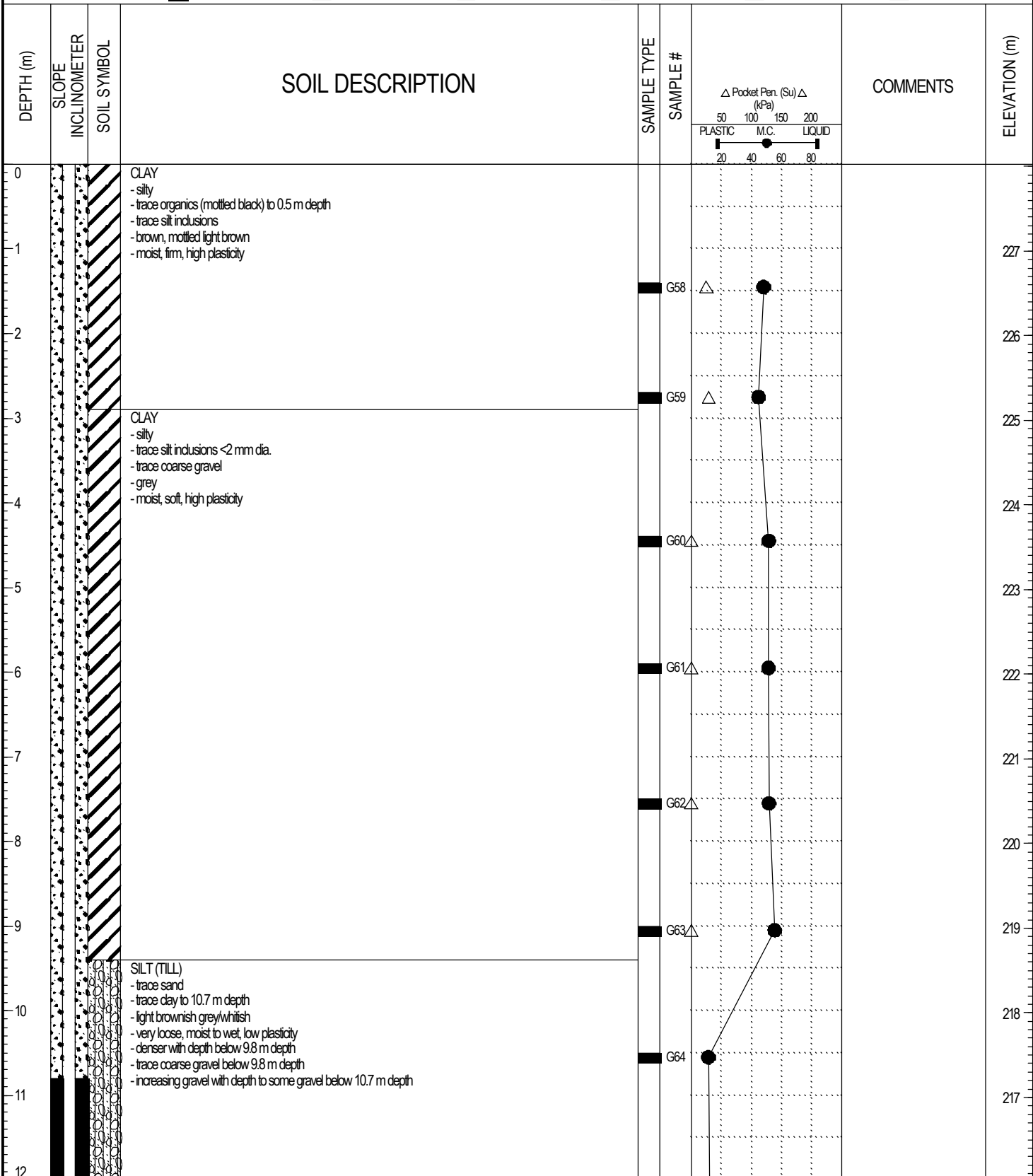
PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SI-04-02		
LOCATION: 5 m from river downslope of U-turn north of Grandmont				PROJECT NO.: 0265 371 00		
CONTRACTOR: Paddock Drilling Ltd.			METHOD: Acker, Hollow Stem		ELEVATION (m): 224.961	
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



- Notes:
1. Power auger refusal at 9.4 m.
 2. Sloughed to 8.6 m.
 3. Water level at 0.3 m below surface at completion of drilling.
 4. Slope inclinometer installed at 8.6 m below surface.
 5. Test hole sealed with bentonite before addition of grout.

LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/17/05

PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SI-04-03	
LOCATION: 10 m downslope and 10 m north of bushes at intersection				PROJECT NO.: 0265 371 00	
CONTRACTOR: Paddock Drilling Ltd.			METHOD: Acker, Solid Stem		ELEVATION (m): 228.025
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS
					CORE
					SAND



LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05

PROJECT: Riverbank Evaluation	CLIENT: City of Winnipeg	TESTHOLE NO: SI-04-03
LOCATION: 10 m downslope and 10 m north of bushes at intersection		PROJECT NO.: 0265 371 00
CONTRACTOR: Paddock Drilling Ltd.	METHOD: Acker, Solid Stem	ELEVATION (m): 228.025
SAMPLE TYPE	<input checked="" type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND	

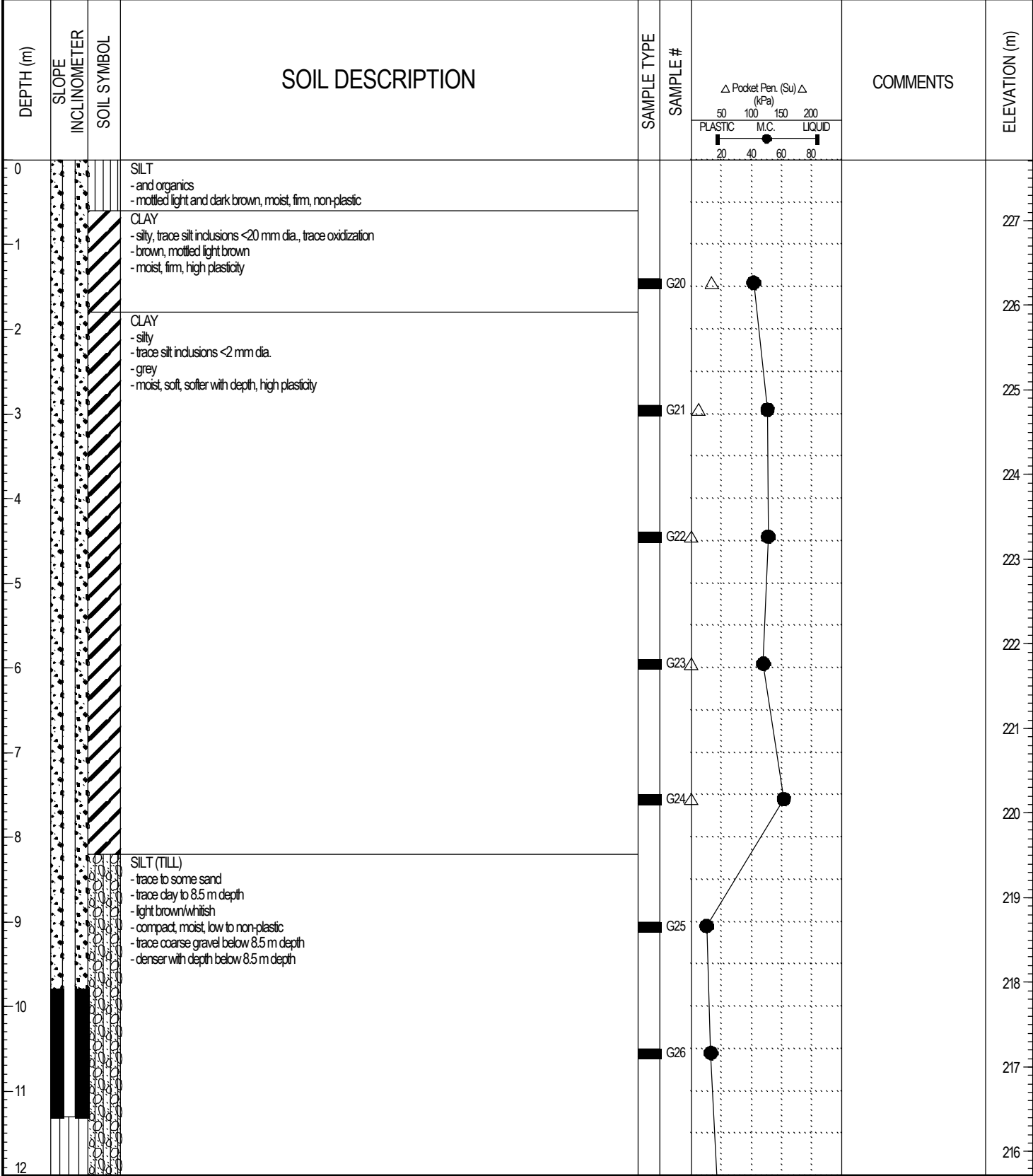
DEPTH (m)	SLOPE INCLINOMETER	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	POCKET PEN. (Su) (kPa)	COMMENTS	ELEVATION (m)
12			- some to and gravel, wet and extensive seepage below 12.5 m depth		G65	20		228.025
13								227.025
14			END OF TEST HOLE AT 13.4 m IN SILT (TILL). Notes: 1. Power auger refusal at 13.4 m. 2. Sloughed to 12.5 m. 3. Water level at 3.5 m below surface at completion of drilling. 4. Slope inclinometer installed at 12.5 m below surface. 5. Test hole sealed with 0.6 m bentonite before addition of grout, but seal was not complete and 40 gallons of grout leaked out (determined by water level in hole). Test hole flushed and another 1.0 m of bentonite sealed the hole prior to the addition of remaining grout.		G66			226.025
15								225.025
16								224.025
17								223.025
18								222.025
19								221.025
20								220.025
21								219.025
22								218.025
23								217.025
24								216.025

LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05



LOGGED BY: Kate Franklin	COMPLETION DEPTH: 13.40 m
REVIEWED BY: Jeff Tallin	COMPLETION DATE: 9/7/04
PROJECT ENGINEER: Jeff Tallin	Page 2 of 2

PROJECT: Riverbank Evaluation	CLIENT: City of Winnipeg	TESTHOLE NO: SI-04-04
LOCATION: On bench north and downslope of Perimeter sign		PROJECT NO.: 0265 371 00
CONTRACTOR: Paddock Drilling Ltd.	METHOD: Acker, Solid Stem	ELEVATION (m): 227.716
SAMPLE TYPE	<input checked="" type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND	



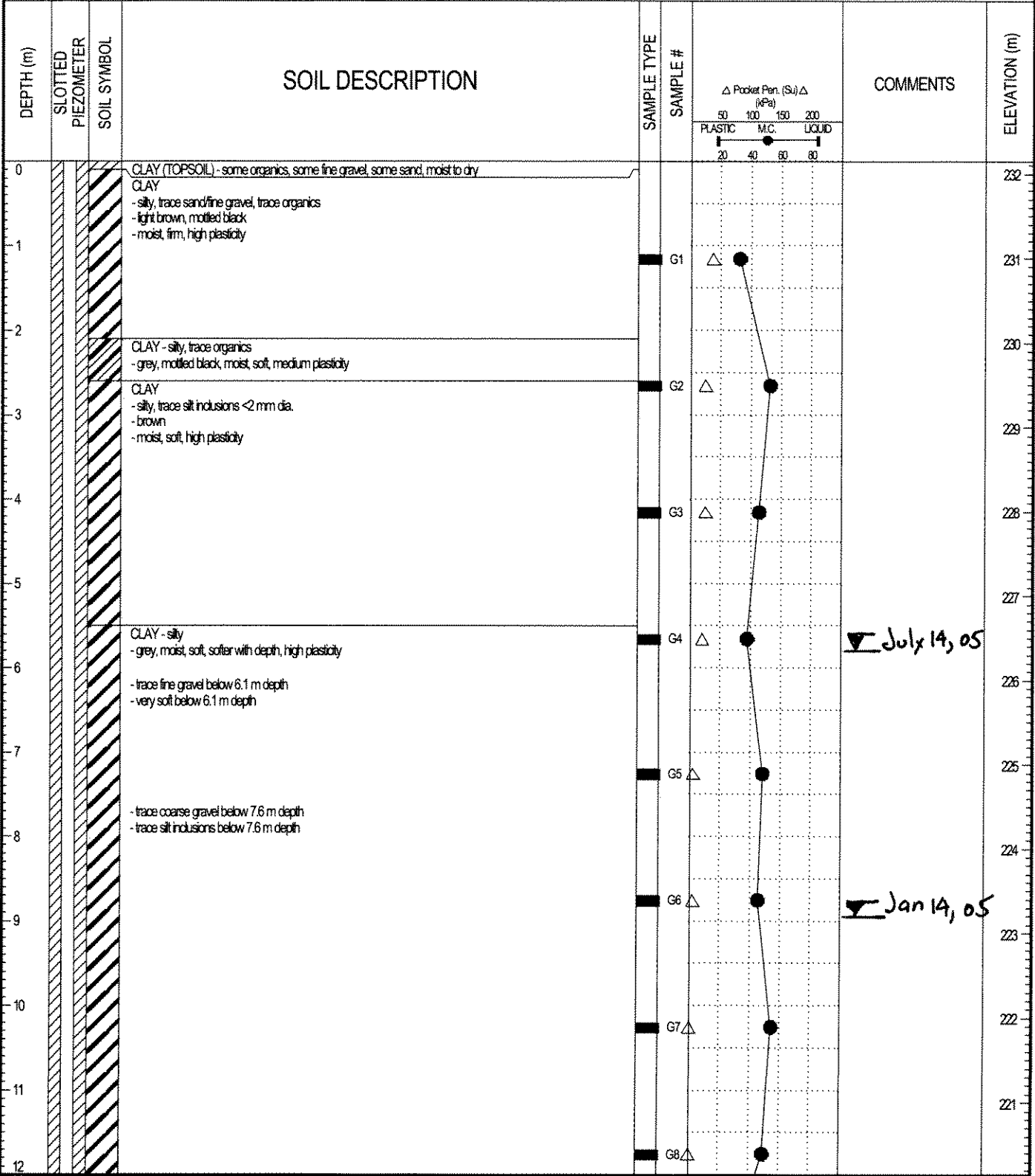
LOGGED BY: Kate Franklin	COMPLETION DEPTH: 13.70 m
REVIEWED BY: Jeff Tallin	COMPLETION DATE: 7/7/04
PROJECT ENGINEER: Jeff Tallin	Page 1 of 2

PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SI-04-04		
LOCATION: On bench north and downslope of Perimeter sign				PROJECT NO.: 0265 371 00		
CONTRACTOR: Paddock Drilling Ltd.			METHOD: Acker, Solid Stem		ELEVATION (m): 227.716	
SAMPLE TYPE	<input checked="" type="checkbox"/> GRAB	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> SPLIT SPOON	<input type="checkbox"/> BULK	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> CUTTINGS	<input type="checkbox"/> SAND

DEPTH (m)	SLOPE INCLINOMETER	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	Pocket Pen. (Su) (kPa)		COMMENTS	ELEVATION (m)
						PLASTIC	LIQUID		
12					G27	20	40		215
13									214
14			END OF TEST HOLE AT 13.7 m IN SILT (TILL). Notes: 1. Power auger refusal at 13.7 m. 2. Sloughed to 10.7 m. 3. Water level at 3.7 m below surface at completion of drilling. 4. Slope inclinometer installed at 11.3 m below surface. 5. Addition of 80 gallons of grout inserted in hole did not alter water level. Test hole was not sealed by grout as determined by the addition of water with no change in ground water level. Test hole sealed with 1.5 m bentonite, prior to addition of remaining grout.						213
15									212
16									211
17									210
18									209
19									208
20									207
21									206
22									205
23									204
24									204

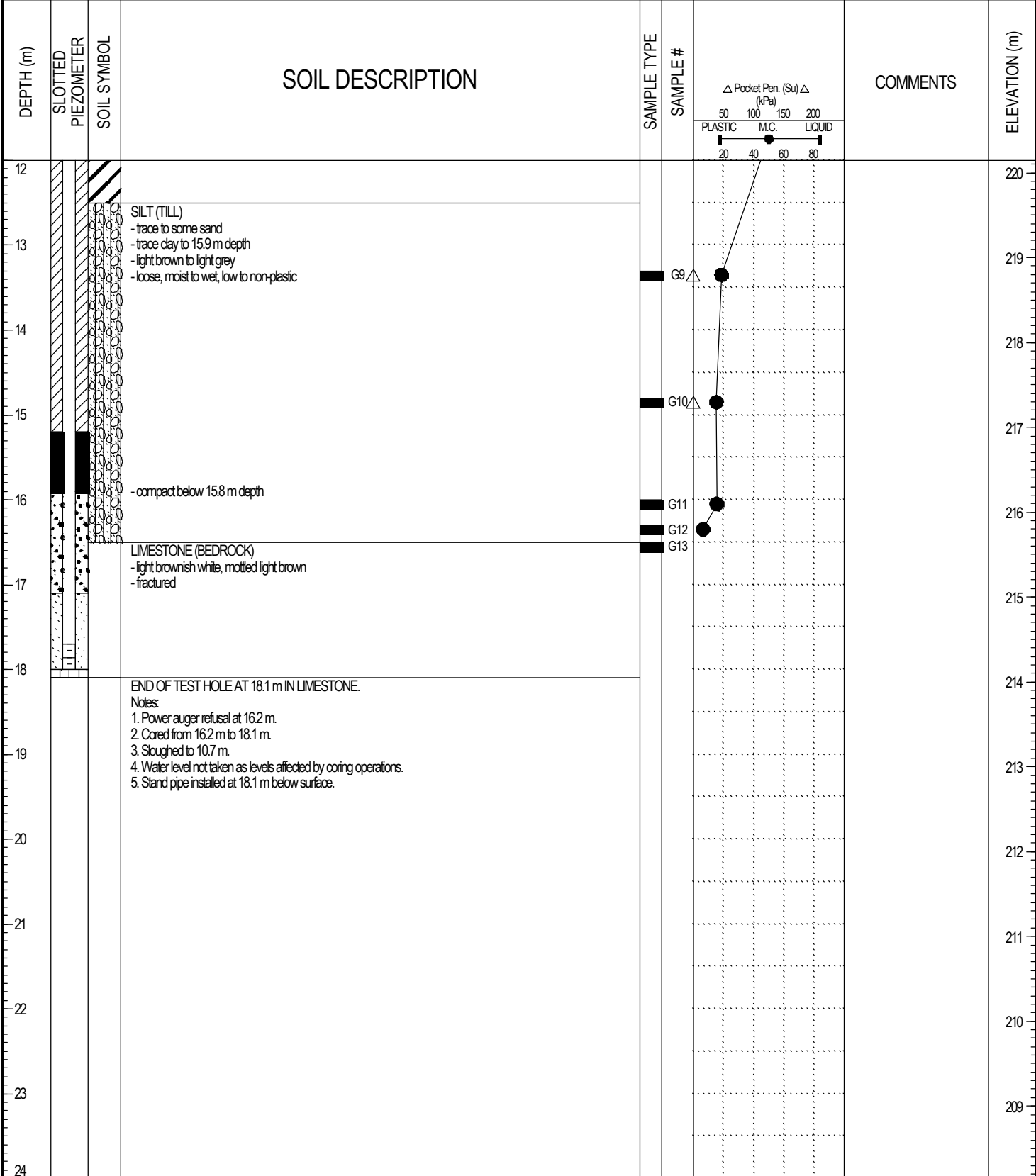
LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05

PROJECT: Riverbank Evaluation	CLIENT: City of Winnipeg	TESTHOLE NO: SP-04-05
LOCATION: 10 m south of Perimeter sign and 10 m downslope of sidewalk		PROJECT NO.: 0265 371 00
CONTRACTOR: Paddock Drilling Ltd.	METHOD: Acker, Solid Stem	ELEVATION (m): 232.146
SAMPLE TYPE	<input type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE	
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND	



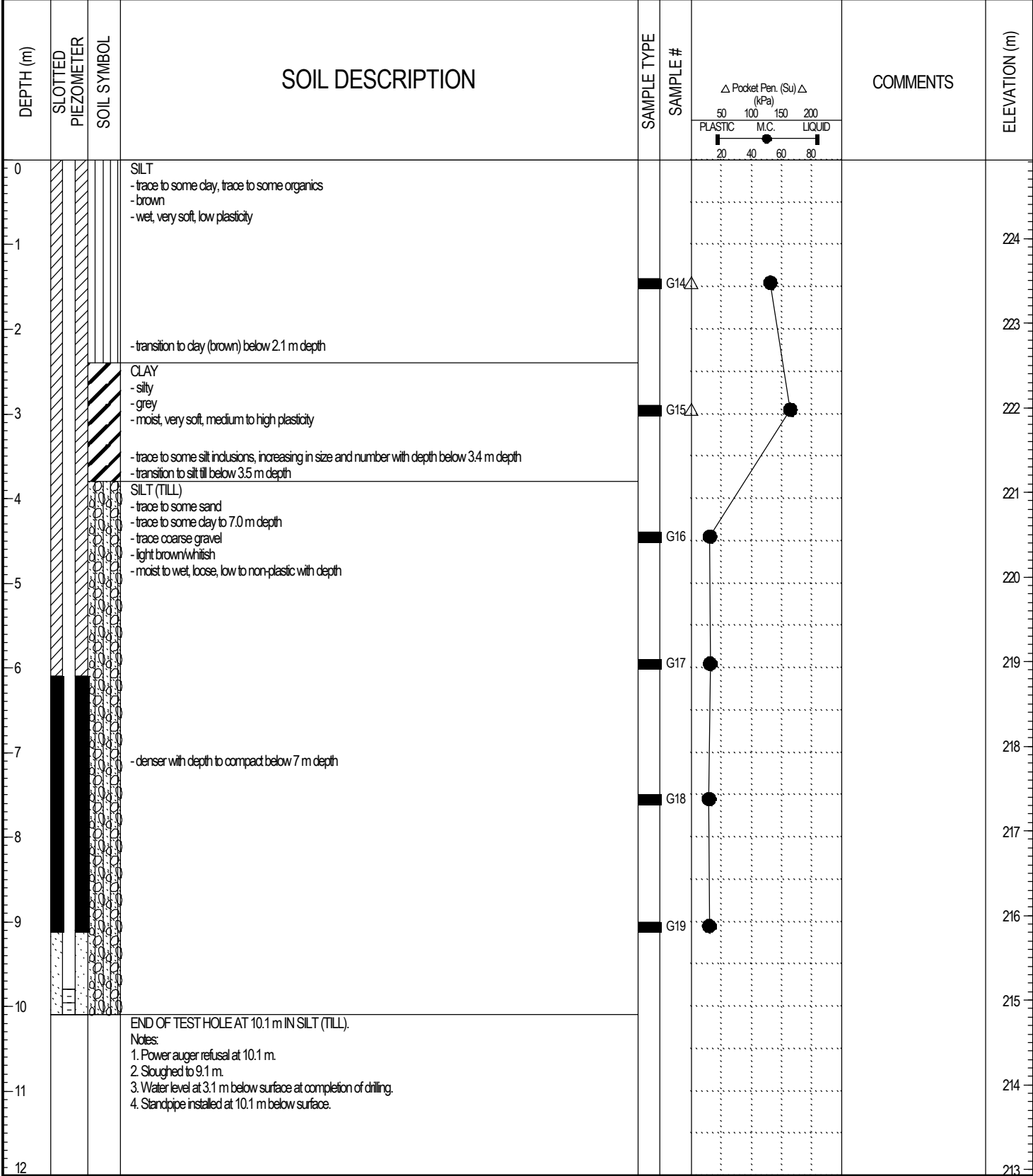
LOGGED BY: Kate Franklin	COMPLETION DEPTH: 18.10 m
REVIEWED BY: Jeff Tallin	COMPLETION DATE: 6/7/04
PROJECT ENGINEER: Jeff Tallin	

PROJECT: Riverbank Evaluation	CLIENT: City of Winnipeg	TESTHOLE NO: SP-04-05
LOCATION: 10 m south of Perimeter sign and 10 m downslope of sidewalk		PROJECT NO.: 0265 371 00
CONTRACTOR: Paddock Drilling Ltd.	METHOD: Acker, Solid Stem	ELEVATION (m): 232.146
SAMPLE TYPE	<input type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE	
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND	



LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05

PROJECT: Riverbank Evaluation		CLIENT: City of Winnipeg		TESTHOLE NO: SP-04-06	
LOCATION: 10 m from river downslope of Perimeter sign				PROJECT NO.: 0265 371 00	
CONTRACTOR: Paddock Drilling Ltd.			METHOD: Acker, Solid Stem		ELEVATION (m): 224.926
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS
					CORE
					SAND



LOG OF TESTHOLE PEMBINA AT GRANDMONT.GPJ UMA.GDT 7/7/05