



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 990-2013**

**FERRY ROAD RIVERBEND COMBINED SEWER RELIEF CONTRACT NO. 2**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 FERRY ROAD RIVERBEND COMBINED SEWER RELIEF CONTRACT NO. 2

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, December 18, 2013.

B2.2 Bids 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 C3.1, the Bidder may view the Site without making an appointment.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

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 on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B5.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 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/her 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/she 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 may base his/her 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 B15.
- 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.
- B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B15.1(a).

## **B7. BID COMPONENTS**

- B7.1 The Bid shall consist of the following components:

- (a) Form A: Bid;
  - (b) Form B: Prices;
  - (c) Bid Security
    - (i) Form G1: Bid Bond and Agreement to Bond, or  
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or  
a certified cheque or draft;
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid 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, to constitute a responsive Bid.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid 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.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:  
The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
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/her own name, his/her 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/her 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 12 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/her 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, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her 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 should be printed below such signatures.

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 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.

B9.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **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; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations 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 Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

- (d) upon request of the Contract Administrator, obtain Security Clearances in accordance with PART F -

B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>)

B10.5 The Bidder shall 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.

B10.6 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. BID SECURITY**

B11.1 The Bidder shall provide bid security in the form of:

- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking 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 included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B11.1.2 All signatures on bid securities shall be original.

B11.1.3 The Bidder shall sign the Bid Bond.

B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.



- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

## **B12. OPENING OF BIDS AND RELEASE OF INFORMATION**

- B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B11 will not be read out.
- B12.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (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 Division website at <http://www.winnipeg.ca/matmgt/>
- B12.3 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 Division website at <http://www.winnipeg.ca/matmgt/>
- B12.4 The Bidder is advised that any information contained in any Bid 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.

## **B13. IRREVOCABLE BID**

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 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 11 of Form A: Bid.

## **B14. WITHDRAWAL OF BIDS**

- B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C23.3, 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.
- B14.1.2 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 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
  - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.

B14.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B13.2 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, including the right to retain the Bidder's bid security.

## **B15. EVALUATION OF BIDS**

B15.1 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, or acceptable deviation there from (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.

B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid 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 or minor informalities or irregularities, if the interests of the City so require.

B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B15.4 Further to B15.1(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.

B15.4.1 Further to B15.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

## **B16. AWARD OF CONTRACT**

B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B16.2 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.

B16.2.1 Without limiting the generality of B16.2, 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.

B16.3 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, in accordance with B15.

B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

## **PART C - GENERAL CONDITIONS**

### **C0. GENERAL CONDITIONS**

C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.

C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)

C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

D1.1 In addition to the *General Conditions for Construction*, these Supplemental Conditions are applicable to the Work of the Contract.

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of land drainage sewers in accordance with the applicable Specifications and Drawings.

D2.2 The major components of the Work are as follows:

- (a) Construction of land drainage sewers ranging in size from 375mm to 750mm diameter by trenchless methods.
- (b) Abandonment of existing catchbasin connections to combined sewers.
- (c) Rehabilitation of existing catchbasins and installation of new catchbasins and connections to the land drainage sewers.
- (d) Surface restorations and related works

#### **D3. CONTRACT ADMINISTRATOR**

D3.1 The Contract Administrator is Tetra Tech WEI Inc., represented by:

Gord Steiss  
Project Coordinator  
Telephone: No.204 954-6800  
Facsimile: No.204 988-0546  
Email gsteiss@tetrattech.com

D3.2 At the pre-construction meeting, Gord Steiss will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D3.3 Bids Submissions must be submitted to the address in B7.8

#### **D4. CONTRACTOR'S SUPERVISOR**

D4.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

#### **D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D5.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;

- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

## **D6. NOTICES**

D6.1 Except as provided for in C23.2.2, 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 facsimile number identified in D3.1.

D6.3 Notwithstanding C21, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:

The City of Winnipeg  
Chief Financial Officer  
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 facsimile number:

The City of Winnipeg  
Legal Services Department  
Attn: Director of Legal Services  
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/her at cost.

## **SUBMISSIONS**

### **D8. AUTHORITY TO CARRY ON BUSINESS**

D8.1 The Contractor shall 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, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

### **D9. SAFE WORK PLAN**

D9.1 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 C4.1 for the return of the executed Contract.

D9.2 The Safe Work Plan should 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 Division website at  
<http://www.winnipeg.ca/matmgt/Safety/default.stm>

## **D10. INSURANCE**

D10.1 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) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.

D10.2 Deductibles shall be borne by the Contractor.

D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.

D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

## **D11. PERFORMANCE SECURITY**

D11.1 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.

D11.1.1 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.

D11.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

## **D12. SUBCONTRACTOR LIST**

D12.1 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 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.

### **D13. DETAIL WORK SCHEDULE**

- D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule 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 C4.1 for the return of the executed Contract.
- D13.2 The detailed work schedule shall consist of the following:
- (a) a critical path method (C.P.M.) schedule for the Work; and
  - (b) a Gantt chart for the Work based on the C.P.M. schedule;
  - (c) all acceptable to the Contract Administrator.
- D13.3 Further to D13.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- (a) Commencement Date
  - (b) Major shaft construction
  - (c) Installation of Land Drainage Sewers on a street by street basis
  - (d) Surface restoration
  - (e) Substantial Performance
  - (f) Total Performance
- D13.4 Further to D13.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.
- D13.5 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 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/she 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 of authority to carry on business specified in D8;
    - (ii) evidence of the workers compensation coverage specified in C6.15;
    - (iii) the Safe Work Plan specified in D9;
    - (iv) evidence of the insurance specified in D10;
    - (v) the performance security specified in D11; and
    - (vi) the Subcontractor list specified in D12.
    - (vii) the detailed work schedule specified in D13
  - (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.

#### **D15. WORKING DAYS**

D15.1 Further to C1.1(gg), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.

D15.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.

D15.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.

D15.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

#### **D16. SUBSTANTIAL PERFORMANCE**

D16.1 The Contractor shall achieve Substantial Performance within Seventy Five (75) consecutive Working Days of the commencement of the Work as specified in D14.

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 reinspected.

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 within Ninety (90) consecutive Working Days of the commencement of the Work as specified in D14.

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 reinspected.

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 or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the



following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) Substantial Performance – two thousand dollars (\$2,000.00);
- (b) Total Performance – one thousand dollars (\$1,000.00).

D18.2 The amount specified for liquidated damages in D18.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Substantial Performance or Total 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) Maintenance of Temporary Concrete Surface Restoration as specified in E8 ;
- (b) Sodding as specified in CW 3510;

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/she deems it necessary.

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

D21.1 Further to C6.24, 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).

##### **D22. TRAFFIC CONTROL MANAGEMENT**

D22.1 Further to Section 3.7 of CW 1130 of the Site Requirements the Contractor shall be responsible to redirect and maintain traffic with appropriate signing in accordance with The City of Winnipeg, "Manual of Temporary Traffic Control in Work Areas on City Streets" at all times during construction.

- (a) Residential Streets: Maintain one lane of traffic at all times
- (b) Intersection street, private approach and lane access shall be maintained at all times.

- D22.2 The Contractor shall be responsible for all signage including but not limited to lane diversions, lane divisions, and general construction barricades.
- D22.3 Further to Section 3.6 of CW 1130 of the Site Requirements, the Contractor shall maintain safe pedestrian crossing at intersections at all times. If possible, only one pedestrian crossing at an intersection is to be blocked by construction at any one time. If more than one pedestrian crossing is blocked by construction at an intersection at the same time the Contractor shall provide flag persons to safely escort pedestrians across the intersection. The Contractor shall leave pedestrian crossing locations safe and free of equipment that may hamper pedestrians when no construction activities are being performed at a particular crossing location.

### **D23. WATER USED ON CITY OF WINNIPEG**

- D23.1 Charges incurred for the permits and water meters shall be paid for by the Contractor when taken out. The Contractor shall forward the invoice to the Contract Administrator for reimbursement. The billing for water usage sent to the Contractor shall be forwarded to the Contract Administrator for payment. The Bid Opportunity number shall be noted on each permit.

### **D24. CONFINED SPACE ENTRY**

- D24.1 The Contractor's attention is drawn to the Province of Manitoba Workplace Safety and Health Act ("the Act"), and the Regulations and Guidelines there-under pertaining to Confined Entry Work, and in particular the requirements for conducting hazard/risk assessment and providing personal protective equipment (PPE).
- D24.2 The Contractor shall provide Supplied Air Breathing Apparatus conforming to the requirements of the Act, Regulations and Guidelines for the use of the Contract Administrator where confined entry is required to allow for inspection of the Work.

### **D25. OFFICE FACILITIES**

- D25.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) The field office shall be conveniently located near the Site of the Work.
  - (b) The building shall have a minimum floor area of 20 square metres, with window area of 3 square metres and a door entrance with suitable lock satisfactory to the Contract Administrator.
  - (c) The Building shall be suitable for all-weather use. It shall be capable of maintaining a temperature range between 16 C and 25 C.
  - (d) The building shall be supplied with fluorescent lights and electrical wall outlets, add satisfactory to the Consultant.
  - (e) The building shall be supplied with a high speed internet connection.
  - (f) The building shall be furnished with one desk, one meeting table, one drafting table, one filing cabinet and six chairs, all satisfactory to the Contract Administrator.
  - (g) One holding type toilet shall be provided for the exclusive use of the Contract Administrator.
  - (h) The field office shall be cleaned weekly immediately prior to the Job Site Meetings to the satisfaction of the Contract Administrator.
  - (i) The provision of the field office with the aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs and any service installation costs.

## **MEASUREMENT AND PAYMENT**

### **D26. PAYMENT**

D26.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D27. WARRANTY**

D27.1 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

D27.1.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

**FORM H1: PERFORMANCE BOND**  
(See D11)

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 for

BID OPPORTUNITY NO. 990-2013

FERRY ROAD RIVERBEND COMBINED SEWER RELIEF CONTRACT NO. 2

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 as to Principal if no seal)

\_\_\_\_\_  
(Name of Principal)

Per: \_\_\_\_\_ (Seal)

Per: \_\_\_\_\_

\_\_\_\_\_  
(Name of Surety)

By: \_\_\_\_\_ (Seal)  
(Attorney-in-Fact)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)**  
(See D11)

\_\_\_\_\_  
(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 990-2013  
FERRY ROAD RIVERBEND COMBINED SEWER RELIEF CONTRACT NO. 2

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 (2007 Revision), International Chamber of Commerce Publication Number 600.

\_\_\_\_\_  
(Name of bank or financial institution)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

Per: \_\_\_\_\_  
(Authorized Signing Officer)





## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
LD-10677	King Edward Street – 101m North of Portage Avenue to 221m North of Portage Avenue
LD-10679	King Edward Street – 221m North of Portage Avenue to 160m South of Ness Avenue
LD-10680	King Edward Street – 160m South of Ness Avenue to 40m South of Ness Avenue
LD-10681	King Edward Street – 40m South of Ness Avenue to 57m North of Ness Avenue
LD-10682	King Edward Street – 57m North of Ness Avenue to 177m North of Ness Avenue
LD-10683	King Edward Street – 177m North of Ness Avenue to 107m South of Silver Avenue
LD-10684	King Edward Street – 107m South of Silver Avenue to Silver Avenue
LD-10685	Queen Street – 96m North of Portage Avenue to 216m North of Portage Avenue
LD-10686	Queen Street – 216m North of Portage Avenue to 138m South of Ness Avenue
LD-10687	Queen Street – 138m South of Ness Avenue to 18m South of Ness Avenue
LD-10688	Queen Street – 18m South of Ness Avenue to 70m North of Ness Avenue
LD-10689	Queen Street – 70m North of Ness Avenue to 190m North of Ness Avenue
LD-10690	Queen Street – 190m North of Ness Avenue to 94m South of Silver Avenue
LD-10691	Queen Street – 94m South of Silver Avenue to Silver Avenue
LD-7113	Kensington Street – 60m North of Ness Avenue to 185m North of Ness Avenue
LD-7114	Kensington Street – 185m North of Ness Avenue to 85m South of Silver Avenue
LD-7115	Kensington Street – 85m South of Silver Avenue to Silver Avenue

#### E2. SOILS INVESTIGATION REPORT

- E2.1 Further to C3.1, Test Hole logs compiled during the design process are provided in Appendix A. Test Hole Logs are provided to supplement the Contractors evaluation of the Site conditions within the Work area. The information is considered accurate at the locations indicated and at the time of the investigation. However, considerable variations in soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally

### GENERAL REQUIREMENTS

#### E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) The field office shall be conveniently located near the Site of the Work.

- (b) The building shall have a minimum floor area of 20 square metres, with window area of 3 square metres and a door entrance with suitable lock satisfactory to the Contract Administrator.
- (c) The Building shall be suitable for all-weather use. It shall be capable of maintaining a temperature range between 16 C and 25 C.
- (d) The building shall be supplied with fluorescent lights and electrical wall outlets, add satisfactory to the Consultant.
- (e) The building shall be supplied with a high speed internet connection.
- (f) The building shall be furnished with one desk, one meeting table, one drafting table, one filing cabinet and six chairs, all satisfactory to the Contract Administrator.
- (g) One holding type toilet shall be provided for the exclusive use of the Contract Administrator.
- (h) The field office shall be cleaned weekly immediately prior to the Job Site Meetings to the satisfaction of the Contract Administrator.
- (i) The provision of the field office with the aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs and any service installation costs.

#### **E4. EXCAVATION, BEDDING AND BACKFILL**

##### **E4.1 Disposal of Unsuitable or Surplus Excavated Material**

- (a) If the Contractor has not arranged for an approved disposal site, the City shall provide an optional disposal site for all surplus clean clay from the construction site. The material is not to include any refuse, concrete, metals, wood, organics, construction waste or any other deleterious materials. Any surplus soil material not meeting these requirements shall not be considered clean clay and shall not be permitted
- (b) The disposal location provided by the City will be at the Summit Road Landfill Site. The Contract Administrator will make arrangements with Mark Kinsley (204-986-4463) at the landfill site for the disposal of the surplus soil material.
- (c) There will be no tipping fees charged at the landfill sites to the Contractor for the disposal of surplus soil material meeting the requirements of clean clay as specified.
- (d) Surplus material not meeting the requirements of clean clay may be disposed of at the Brady Road Landfill Site although tipping fees will be charged.
- (e) There shall be no measurement of surplus soil material disposed of at any disposal site. No additional payment will be made for disposal of surplus soil materials. It shall be considered incidental to the cost of the Work.

##### **E4.2 Foundation and Bedding**

- (a) Class A Bedding shall be used in all shafts with concrete pipe with Type 3 material for remainder of initial backfill.
- (b) Class B Bedding with Type 3 material shall be used in all shafts with PVC piping.

##### **E4.3 Backfilling and Surface Restoration**

###### **E4.3.1 Backfilling of all excavations, and boulevards shall be carried out by the following methods:**

- (a) Backfill shall be placed and compacted in lifts not to exceed 500 mm. Compaction methods shall remove all voids from the backfill and shall be approved by the Contract Administrator.
- (b) The Contractor shall place and compact 300 mm of crushed granular material and 100 mm of cold mix asphalt to match the existing pavement grade.
- (c) The Contractor shall have personnel available for immediate repairs of settlement at shaft locations from the start of construction until final restoration is complete.

E4.3.2 Final surface restoration shall be as follows:

- (a) The excavation shall be jetted and tamped twice, as per CW 2030.
- (b) After the second jetting operation is completed, the excavation is to be subcut to 1.5 m below top of existing pavement and recompacted in 300 mm lifts to the subgrade level using vibratory compaction methods in accordance with CW 2030 Class 2 Backfill.
- (c) Pavement shall be completed in accordance with CW 3310 or CW 3410, depending on type of existing pavement surface and in accordance with the street cut permit, if applicable.
- (d) Boulevard restoration shall be completed in accordance with CW 3510.

E4.3.3 Further to CW 2130, all costs associated with backfilling and surface restorations shall be incidental to the Work.

## **E5. MAINTAINING EXISTING SEWER FLOWS, FLOW CONTROL, DIVERSIONS AND BYPASS PUMPING**

E5.1 Maintaining Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping required to complete the Works in the Contract shall be incidental to the Contract as per Clause 4.16.1 of CW 2130.

## **E6. TRENCHLESS EXCAVATION**

E6.1 Further to Clause 3.4.1 of CW 2130, all sewers shall be installed by trenchless methods.

E6.2 Selection of excavation equipment for installation of sewers by trenchless methods shall be the responsibility of the Contractor and shall be made based on expected soil conditions as detailed on the test hole logs. The Contractor shall make allowances in the choice of equipment to account for reasonable and minor deviations in ground conditions and shall have contingency plans for the removal of boulders and other minor changes in ground conditions.

E6.3 In the event that there is a substantial change in the character or nature of the subsurface conditions or that obstructions are encountered, which adversely impact the Contractor's production or construction procedure, the Contractor shall immediately notify the Contract Administrator.

- (a) The notice shall provide details of the change in subsurface soil conditions or obstructions encountered, any proposed construction procedure revision that the Contractor intends to undertake, as well as any other relevant supporting information.
- (b) The Contract Administrator shall review the notice as expeditiously as possible to assess whether the change in conditions and revised construction procedures amount to a Change in Work.

E6.4 Where the Contract Administration deems that a Change in Work is necessary, it shall be valued in accordance with the provisions of GC:7 and the supplementary requirements of E7.

## **E7. TRENCHLESS EXCAVATION OBSTRUCTIONS**

E7.1 Contingency plans for removal of the obstructions encountered in trenchless excavations must be approved by the Contract Administrator and may consist of but not limited to one of the following:

- (a) Drill or excavate a shaft at the location of the obstruction and remove the obstruction.
- (b) Remove the obstruction through the jacking head or core hole following drilling, splitting or breaking the obstruction into smaller components as required.
- (c) Other removal methods.

- (a) The first four (4) hours of handling obstructions for each occurrence shall be the responsibility of the Contractor.
- (b) Equipment rates for equipment required in support of the obstruction removal shall be compensated at the MHCA rental rates. Equipment not listed in the MHCA rate schedule shall have their rates established by the Contractor prior to the commencement of Work in accordance with the procedure documented in the MHCA rental guide for establishing equipment rental rates and shall be subject to the approval of the Contract Administrator.
- (c) Standby equipment that cannot reasonably be deployed elsewhere during the duration of the obstruction removal shall be compensated at 50% of its established rate as noted in E7.2(b) above.
- (d) Labour rates and material costs associated with obstruction removal shall be compensated as per GC:7.4 (c) and 7.4.1 with the provision that any removal and replacement of pavements shall be compensated at the Contract Unit Price for such Work.

## **E8. TEMPORARY PAVEMENT RESTORATIONS**

- E8.1 If the weather will not permit final road pavement restorations to be completed in a timely manner after the underground work, temporary surface restorations for shafts or excavations within the pavement shall be made by installing Temporary Pavement Restorations until such a time as final restorations are complete.
- E8.2 Concrete Surface Restorations shall conform to CW 2130 with the following exception:
  - (a) No tie bars, dowels or reinforcing steel shall be required.
- E8.3 All shafts and excavations shall be flooded and jetted prior to installing temporary surface restorations.
- E8.4 Construction of temporary pavement restorations will only be permitted due to weather and shall entail a 600mm thickness of cement stabilizing fill (CW 2160) and 150mm of sacrificial concrete pavement.
- E8.5 Temporary pavement restorations must be completed and continuously maintained until final surface restoration can be completed.
  - (a) Any temporary concrete or cement stabilized fill placed during winter construction shall be completely removed and the remaining backfill shall be flooded, tamped and topped up prior to performing permanent pavement restorations.

## **E9. EXISTING ABANDONED GAS MAINS**

- E9.1 Should it become necessary for an existing abandoned gas main to be removed to facilitate construction of the sewer, it shall be the responsibility of the Contractor to notify the Gas Company prior to removing the main. After obtaining an acknowledgement from the Gas Company that the main is abandoned, the necessary length may be removed and the open ends of the abandoned gas main plugged and sealed in accordance with CW2130. No separate payment shall be made for this Work. It shall be incidental to the price bid for installation of the sewers.

## **E10. EXPLORATION OF EXISTING SERVICES**

- E10.1 Where approved by the Contract Administrator, the Contractor will perform excavation by soft dig method to locate existing services. It is intended to complete this work prior to installation of the sewer. The information obtained will help determine if an alternate vertical or horizontal alignment of the proposed sewer may be required.
- E10.2 Exploration of existing services by soft dig method will be measured on a unit basis of each service excavated by soft dig method and paid for at the Contract Unit Price for "Exploration of Existing Services" The number of units paid for will be the total number of services excavated by

soft dig method in accordance with this specification and accepted and measured by the Contract Administrator.

## **E11. PROTECTION OF EXISTING TREES**

- E11.1 The Contractor shall take the following precautionary steps to avoid damage from his construction activities to existing boulevard trees within and adjacent to the limits of construction:
- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of any tree.
  - (b) Mature tree trunks shall be strapped with 25 x 150 x 2400 (1" x 6" x 8') wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
  - (c) Excavations shall be carried out in such a manner so as to minimize damage to existing root systems. Roots over 50mm in diameter which must be cut to facilitate an excavation shall be neatly pruned with a saw prior to excavation and coated with an appropriate wound dressing to prevent infection.
  - (d) Work on Site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.
  - (e) American elm trees are not to be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.
- E11.2 All damages to existing trees caused by the Contractor's construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Public Works Department, Urban Forestry Branch.
- E11.3 Notwithstanding GC:7, the City reserves the right to diminish all or any portion of the items of work listed in the Provisional Items and no claim shall be made for damages on the grounds of loss of anticipated profit or for any other reason.

## **E12. PROVISIONAL ITEMS**

- E12.1 The Provisional Items listed on Form B: Prices are part of the Contract.
- E12.2 The Contractor shall not perform Work included in the Provisional Items without prior authorization from the Contract Administrator. All Work included in the Provisional Items will be carried out within the construction areas shown on the Drawings.
- E12.3 Notwithstanding GC:7, the City reserves the right to diminish all or any portion of the items of work listed in the Provisional Items and no claim shall be made for damages on the grounds of loss of anticipated profit or for any other reason.

## **E13. VIDEO INSPECTION OF COMBINED SEWERS**

- E13.1 Further to CW 2130, Clause 3.19 no payment shall be made for CCTV video inspection of combined sewer following catch basin lead abandonment.

## **E14. CONCRETE FOR EARLY OPENING OF PAVEMENT RESTORATIONS**

- E14.1 Further to CW 2130, all concrete used for final and temporary pavement restoration shall have a minimum compressive strength of 20 Mpa 24 hours after placement.

## **E15. PROVISIONAL ITEM ALLOWANCES**

- E15.1 The Contractor is advised that allowances have been included in Form B: Prices to account for asphalt pavement milling and asphalt pavement installation (\$230,000.00 Part D, item 18, 20).

- E15.1.1 In the event that asphalt milling and replacement is required on street lanes affected by construction, unit rates for milling and asphalt pavement in accordance with CW 3410 will be negotiated with the Contractor once the scope of the work has been defined.

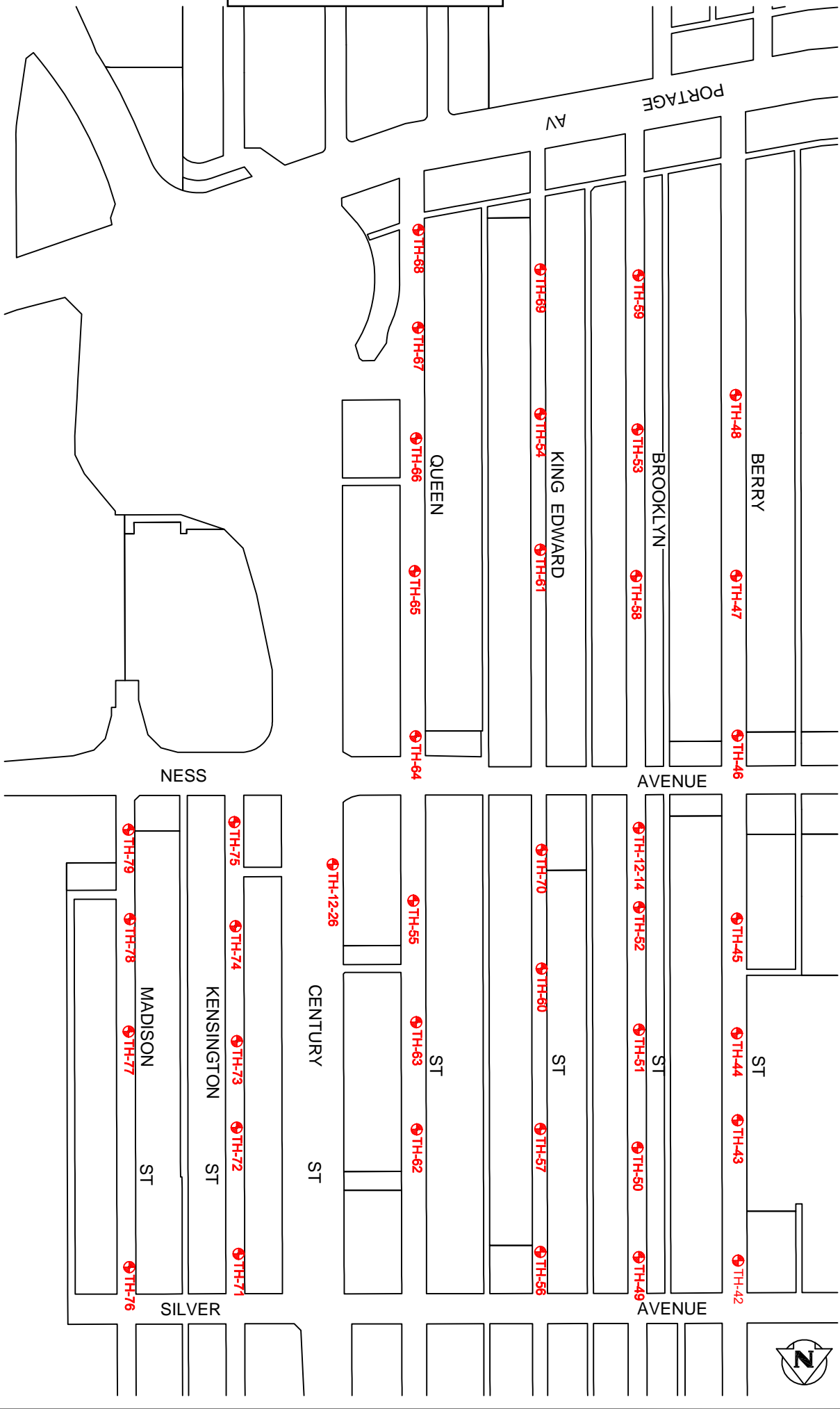
## **PART F - SECURITY CLEARANCE**

### **F1. SECURITY CLEARANCE**

- F1.1 Each individual proposed to perform the following portions of the Work:
- (a) any Work on private property;
  - (b) any Work within City facilities other than:
    - (i) an underground structure such as a manhole;
    - (ii) in areas and at times normally open to the public;
  - (c) communicating with residents and homeowners in person or by telephone;
- F1.1.1 Each Individual shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his/her place of residence. Or
- (a) BackCheck, forms to be completed can be found on the website at: <http://www.backcheck.net/> ; or
  - (b) Commissionaires (Manitoba Division), forms to be completed can be found on the website at: <http://www.commissionaires.mb.ca/> .
- F1.2 Prior to the commencement of any Work specified in F1.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- F1.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person will not be permitted to perform any Work specified in F1.1.
- F1.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- F1.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in F1.1.

APPENDIX A - TEST HOLE LOGS

X:\4-0707 OF 048820 - WATER & WASTE TREATMENT - 0012\1001231010 - FERRY ROAD AND RIVERBEND C&S WORKS DESIGN AND CONSTRUCTION\WORKS\FERRY ROAD TEST HOLE LOCATIONS DWG 1 & 2.DWG 13/04/23 10:06



DESIGNED BY: [ ]  
 DRAWN BY: GMD  
 CHECKED BY: [ ]  
 APPROVED BY: [ ]

**THE CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT

DATE: [ ]  
 HORIZ. SCALE: [ ]  
 VERTICAL: [ ]

CONSULTANT DRAWING NO. 1000120300/SKI/2000B/A

FERRY ROAD AND RIVERBEND COMBINED SEWER RELIEF WORKS  
 TEST HOLE LOCATIONS  
 CONTRACTS 1 & 2

CITY DRAWING NUMBER  
 SHEET 1 OF 1



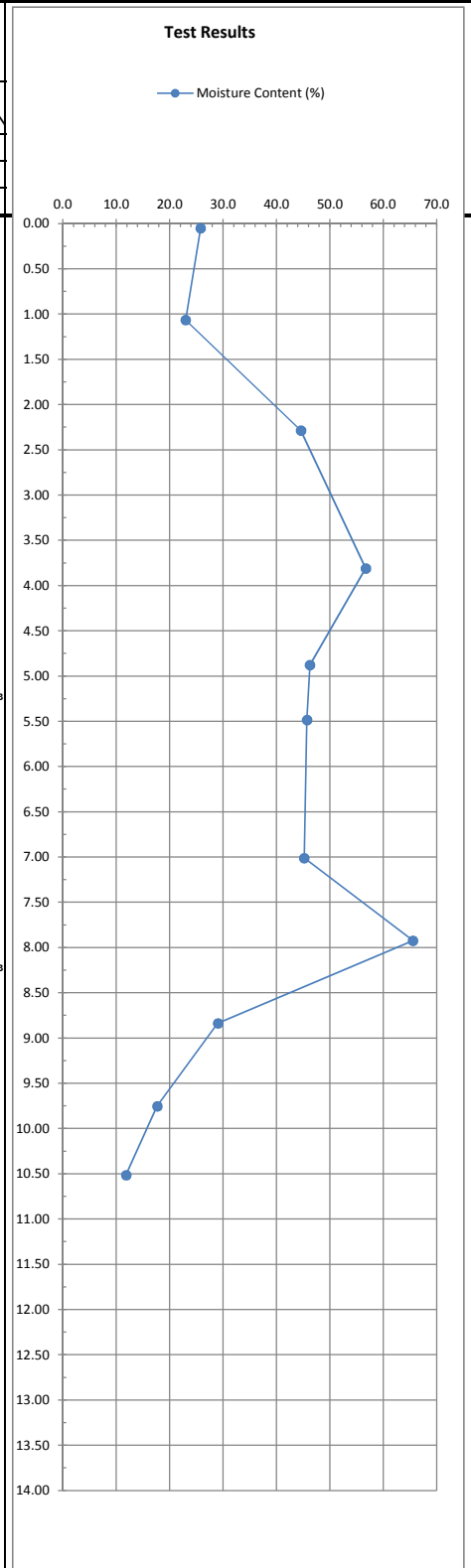
**APPENDIX A - TEST HOLE LOGS**

<b>DYREGROV ROBINSON INC.</b> CONSULTING GEOTECHNICAL ENGINEERS			PROJECT # 113324	TEST HOLE NO. 12-14		
<b>PROJECT:</b> Ferry Road LDS		<b>LOGGED BY:</b> RB				
<b>LOCATION:</b> Brooklyn St. at Ness Ave.		<b>REVIEWED BY:</b> AOD				
<b>CONTRACTOR:</b> Paddock Drilling Ltd.		<b>DRILL DATE:</b> April 30, 2012				
<b>METHOD:</b> Acker MP8 - 125 mm SSA		<b>DRILL DEPTH (m):</b> 14.0				
DEPTH (m)	ELEVATION (m)	SOIL SYMBOL	SOIL DESCRIPTION	UNDRAINED SHEAR STRENGTH Su		<div style="text-align: right; margin-bottom: 5px;">Test Results</div>
				QU	UNCONFINED COMPRESSION	
				TV	TORVANE	
				PP	POCKET PEN.	
				γ	UNIT WEIGHT	
0.00	235.00		0 - 0.15 m CONCRETE			
0.50	234.50		0.15 - 0.6 m CLAY (Fill) - silty, sandy, some gravel - dark grey to black, stiff, moist, intermediate plasticity	PP = 78 kPa		
1.00	234.00		0.6 - 1.2 m CLAY - silty - mottled brown and grey, stiff, moist, high plasticity			
1.50	233.50		1.2 - 1.8 m SILT - some sand - tan, compact, moist			
2.00	233.00		1.8 - 4.6 m CLAY - silty - brown - firm, moist - high plasticity	TV = 39 kPa PP = 29 kPa		
2.50	232.50					
3.00	232.00		- some till inclusions, some sand, some gravel below 3.0 m			
3.50	231.50					
4.00	231.00					
4.50	230.50					
5.00	230.00		4.6 - 11.3 m SILT (Till) - some sand, some cobbles - trace gravel - tan, compact, moist			
5.50	229.50					
6.00	229.00		- light grey, dense, dry below 5.8 m			
6.50	228.50		- cobbly, bouldery below 6.1 m			
7.00	228.00					
7.50	227.50					
8.00	227.00					
8.50	226.50					
9.00	226.00					
9.50	225.50					
10.00	225.00					
10.50	224.50					
11.00	224.00		- auger refusal, HQ coring below 11.3 m			
11.50	223.50		11.3 - 14.0 m LIMESTONE (Bedrock) - yellowish white - R3 medium strong			
12.00	223.00		- very close to moderately close spacing (0.04 - 0.36 m) - Class 2 gapped aperture			
12.50	222.50		- class 1 filling - good quality RQD (82%)			
13.00	222.00					
13.50	221.50					
14.00	221.00		- thin clay seam (< 5 mm thick) at 14.0 m			
14.50	220.50		14.0 m END OF TEST HOLE AT 14.0 m IN LIMESTONE BEDROCK Notes: 1. Squeezing below 3.0 m in clay 2. Auger refusal at 11.3 m, switched to HQ coring. 3. Test hole backfilled with auger cuttings, capped with concrete core and coldpatch.			

**APPENDIX A - TEST HOLE LOGS**

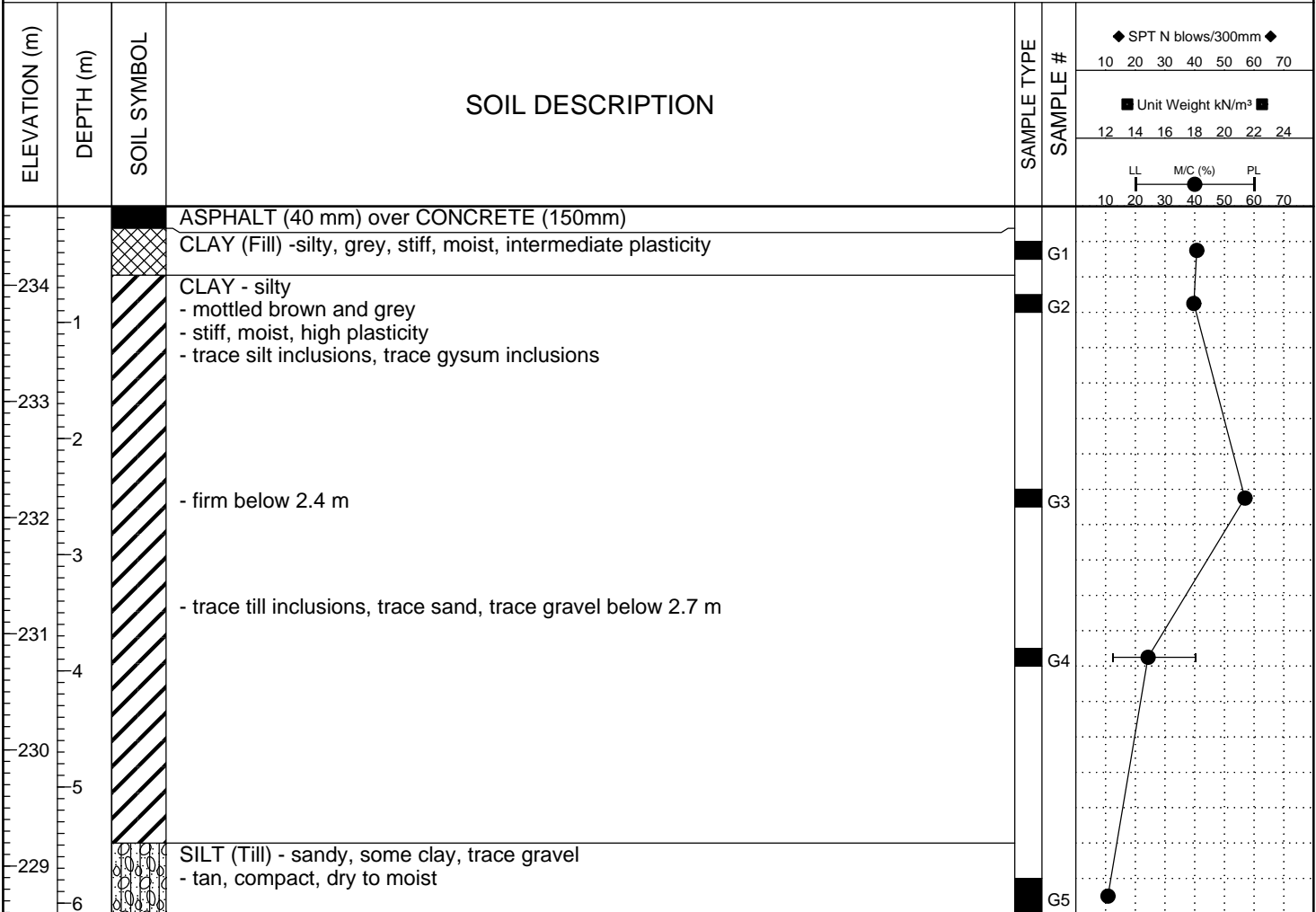
<b>DYREGROV ROBINSON INC.</b> CONSULTING GEOTECHNICAL ENGINEERS		<b>PROJECT #</b> 113324	<b>TEST HOLE NO.</b> 12-26
<b>PROJECT:</b> Ferry Road LDS		<b>LOGGED BY:</b> RB	
<b>LOCATION:</b> Century St. at Ness Ave.		<b>REVIEWED BY:</b> AOD	
<b>CONTRACTOR:</b> Paddock Drilling Ltd.		<b>DRILL DATE:</b> May 16, 2012	
<b>METHOD:</b> Acker MP8 - 125 mm SSA, HQ Core Barrel		<b>DRILL DEPTH (m):</b> 13.7	

DEPTH (m)	ELEVATION (m)	SOIL SYMBOL	SOIL DESCRIPTION	PIEZOMETER	UNDRAINED SHEAR STRENGTH Su		MOISTURE CONTENT (%)
					QU UNCONFINED COMPRESSION	TV TORVANE	
0.00	235.04		0 - 0.76 m CLAY (Fill) - silty, trace sand, trace gravel - black - stiff, moist, high plasticity				
0.50	234.54						
1.00	234.04		0.76 - 1.7 m SILT - tan - loose, moist				
1.50	233.54						
2.00	233.04		1.7 - 9.1 m CLAY - silty - brown - stiff, moist, high plasticity				
2.50	232.54				TV = 61 kPa PP = 37 kPa		
3.00	232.04		- mottled brown and grey, trace silt inclusions below 3.0 m				
3.50	231.54						
4.00	231.04				TV = 52 kPa PP = 32 kPa		
4.50	230.54						
5.00	230.04				Qu = 61 kPa TV = 55 kPa PP = 92 kPa γ = 17.3 kN/m³		
5.50	229.54						
6.00	229.04		- grey, firm, trace sand, trace gravel below 6.1 m		TV = 42 kPa PP = 27 kPa		
6.50	228.54						
7.00	228.04						
7.50	227.54		- some till inclusions, wet, trace cobbles below 7.2 m				
8.00	227.04		▼				
8.50	226.54		8.5 - 11.4 m SILT (Till) - clayey, some sand, trace gravel - light grey - loose, wet, intermediate plasticity - trace clay, low plasticity below 9.1 m				
9.00	226.04						
9.50	225.54						
10.00	225.04						
10.50	224.54						
11.00	224.04		- auger refusal on boulder, HQ coring below 11.0 m				
11.50	223.54		11.4 - 13.7 m LIMESTONE (Bedrock) - yellowish white - R3 medium strong - extremely close to moderately close spacing (0.01 - 0.27 m) - Class 2 gapped aperture - class 1 filling - fair quality RQD (52%)				
12.00	223.04						
12.50	222.54						
13.00	222.04						
13.50	221.54						
14.00	221.04		13.7 m END OF TEST HOLE AT 13.7 m IN LIMESTONE BEDROCK Notes: 1. Sloughing in silt till layer. 2. Standpipe piezometer with Casagrande tip installed to 12.2 m. 3. Water level measured at 8.01 m below ground surface on June 12, 2012. 4. Test hole backfilled with sand to 11.4 m, bentonite chips to 10.1 m and auger cuttings to ground surface. Piezometer protected with a flushmount cover.				



**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-42		
LOCATION: Berry St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling Ltd.		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.835		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

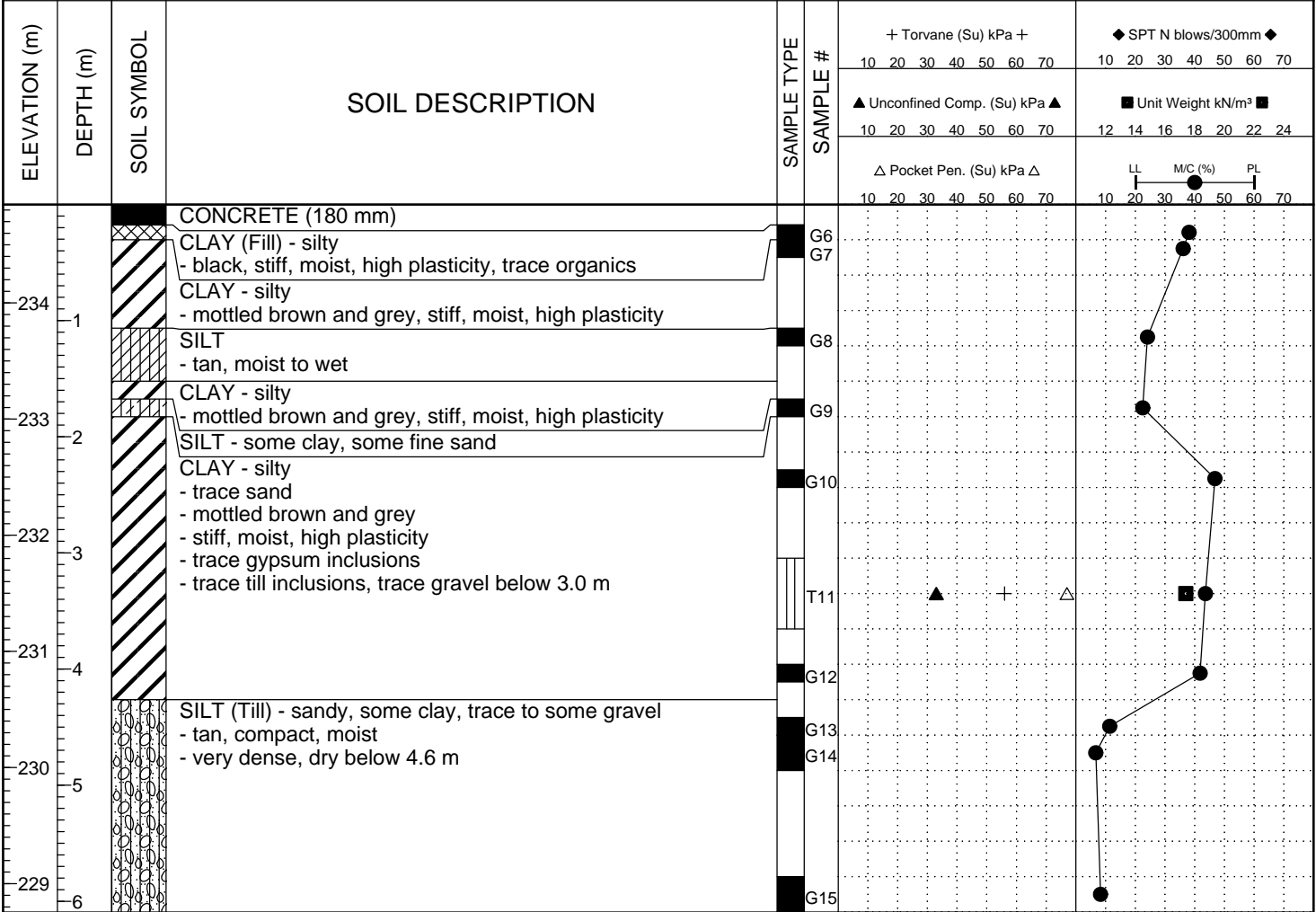


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-43		
LOCATION: Berry St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.003		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

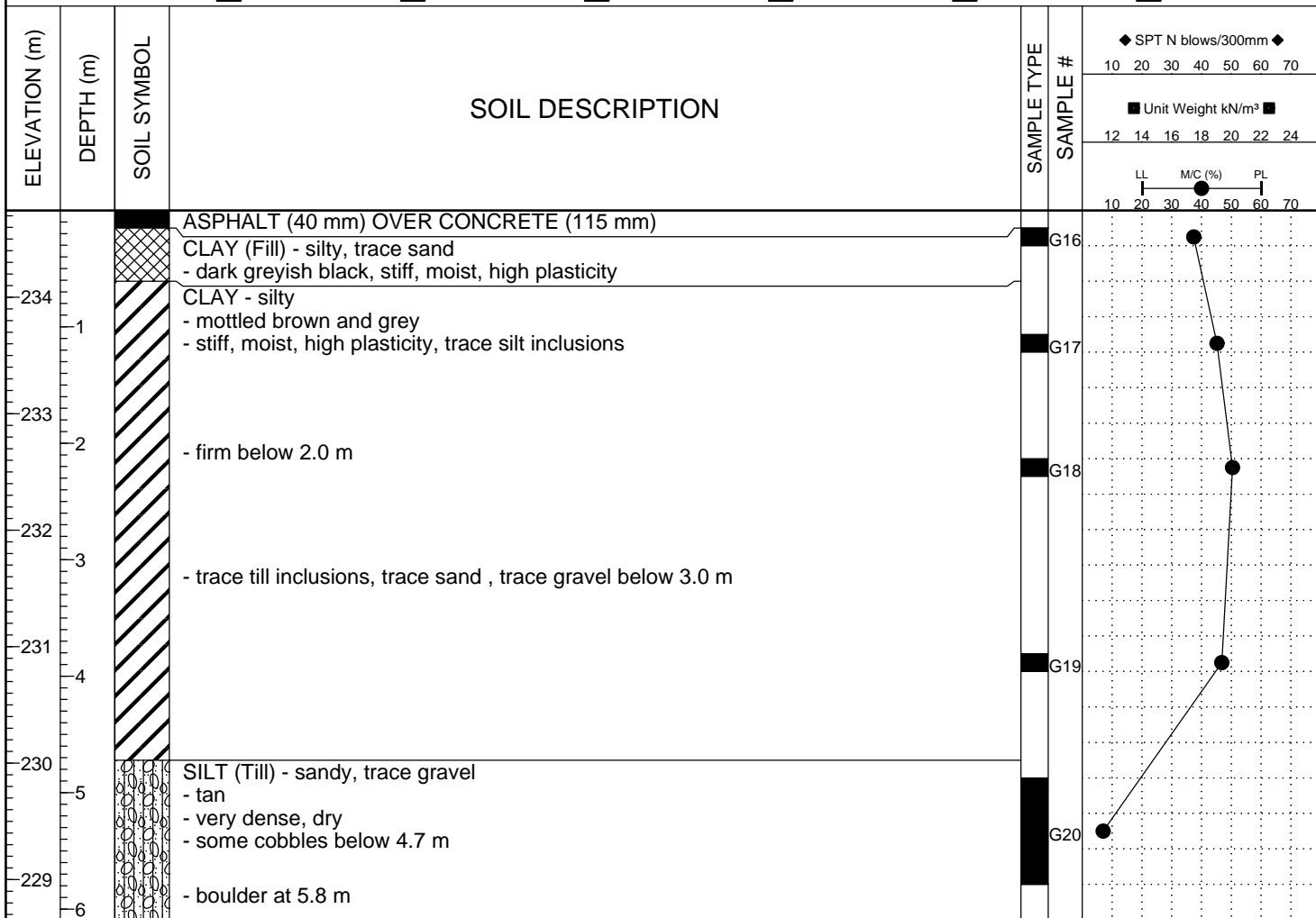


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-44		
LOCATION: Berry St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.901		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

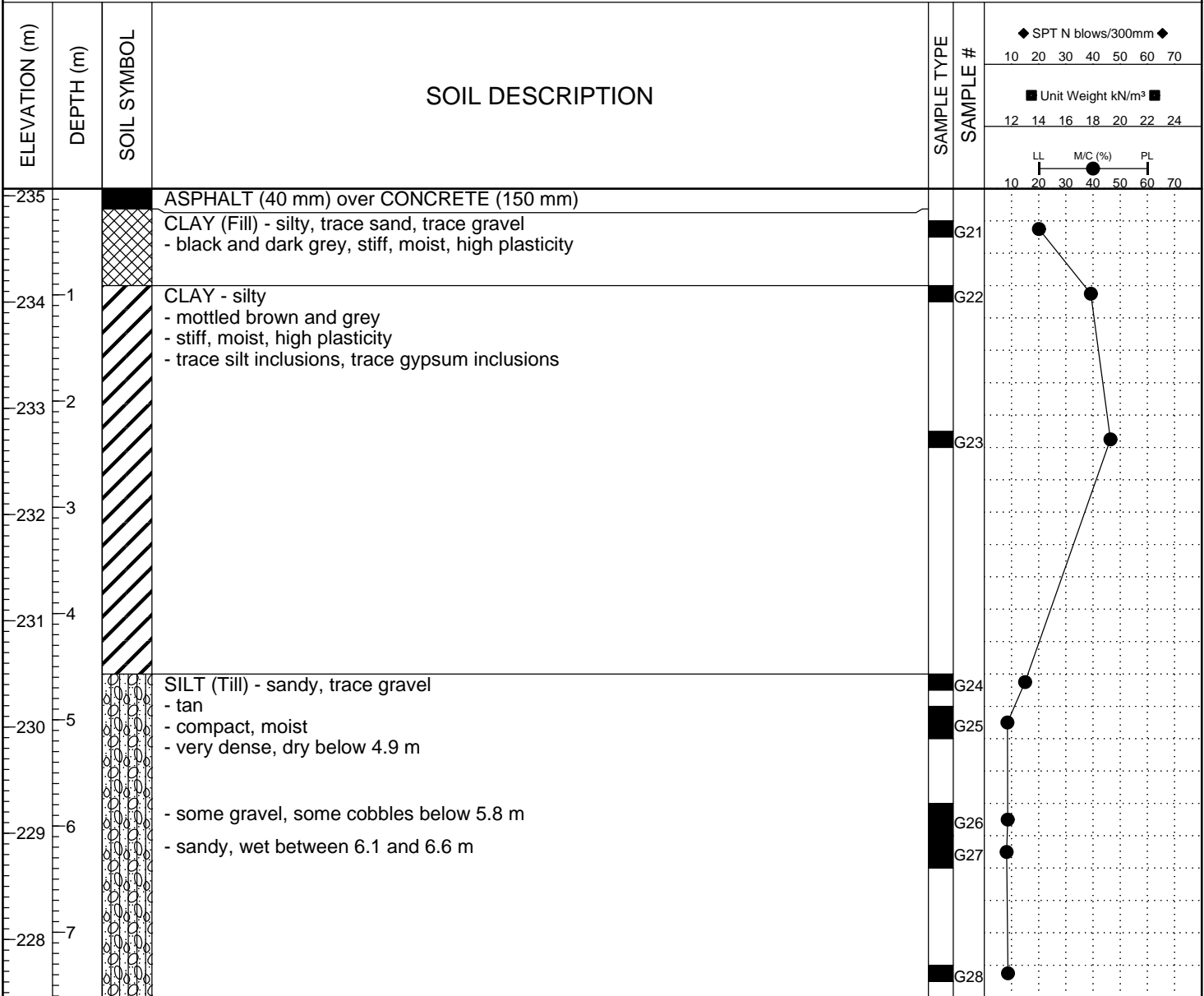


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 NOTES:  
 1. Auger refusal at 4.7 m. Bullit bit used to advance to 6.1 m (no refusal)  
 2. No sloughing or seepage observed.  
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-45
LOCATION: Berry St. Approx. 300 m South of Silver Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 235.223
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



END OF TESET HOLE AT 7.6 m IN SILT TILL

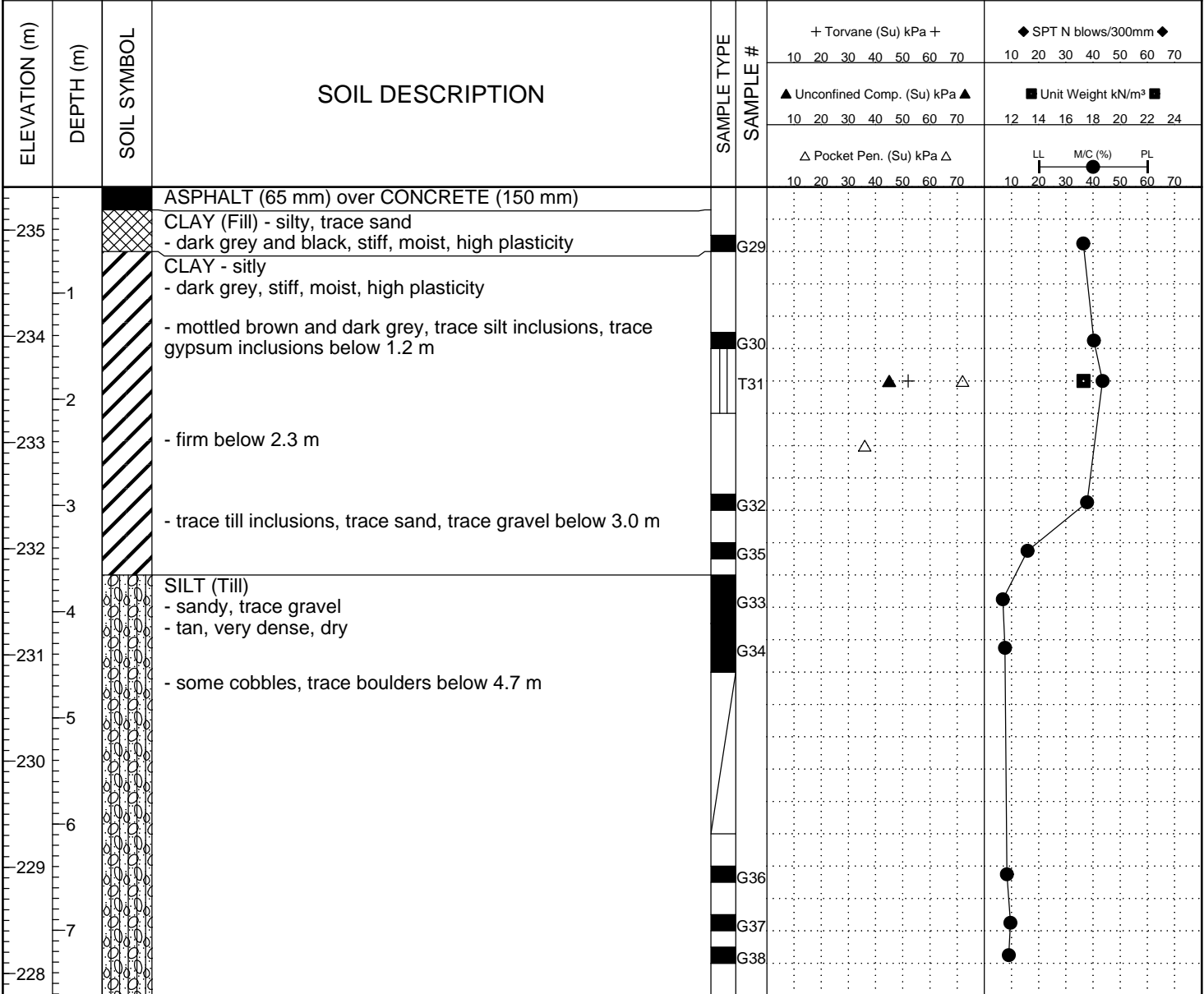
Notes:

- Trace seepage between 6.1 and 6.6 m.
- No sloughing observed.
- Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-46		
LOCATION: Berry St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.562		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

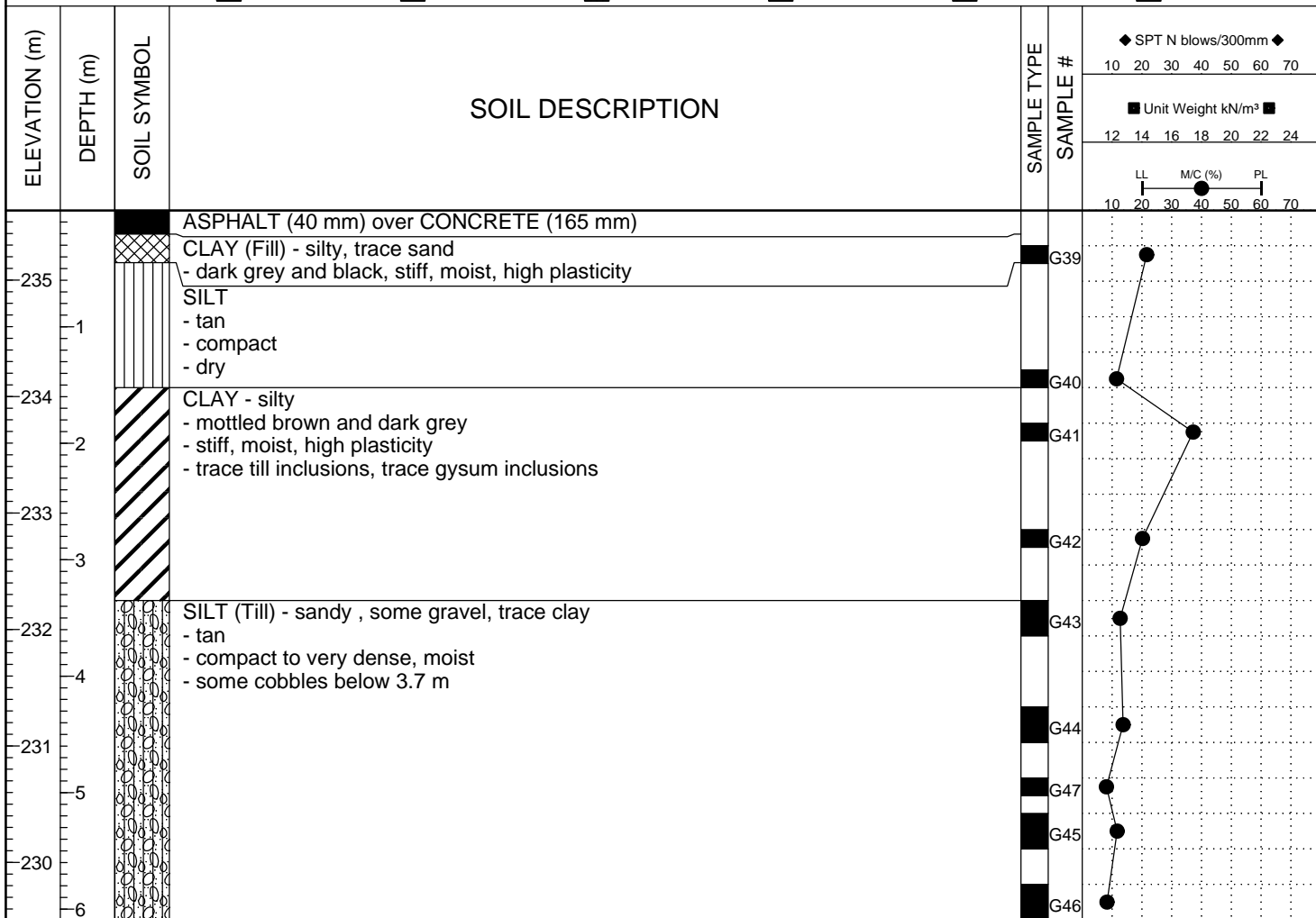


END OF TEST HOLE AT 7.6 m IN SILT TILL  
 NOTES:  
 1. Auger refusal at 5.8 m. Bullit bit used to advance to 7.6 m (no refusal)  
 2. No soil recovery between 4.7 and 6.1 m.  
 3. No sloughing or seepage observed.  
 4. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-47		
LOCATION: Berry St. Approx. 100 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.754		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



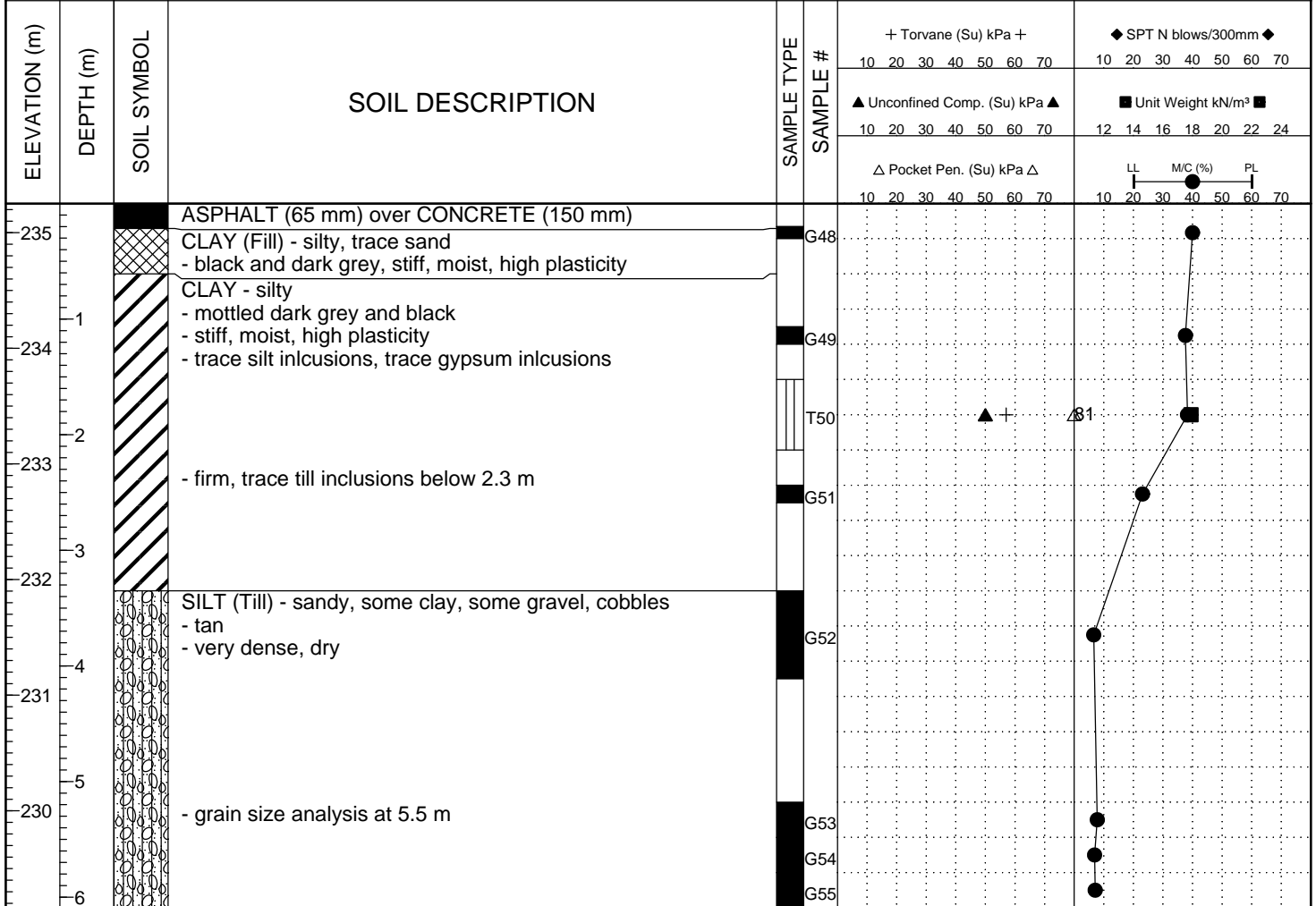
END OF TEST HOLE AT 6.1 m IN SILT TILL  
 NOTES:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12



**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-48		
LOCATION: Berry St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.408		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

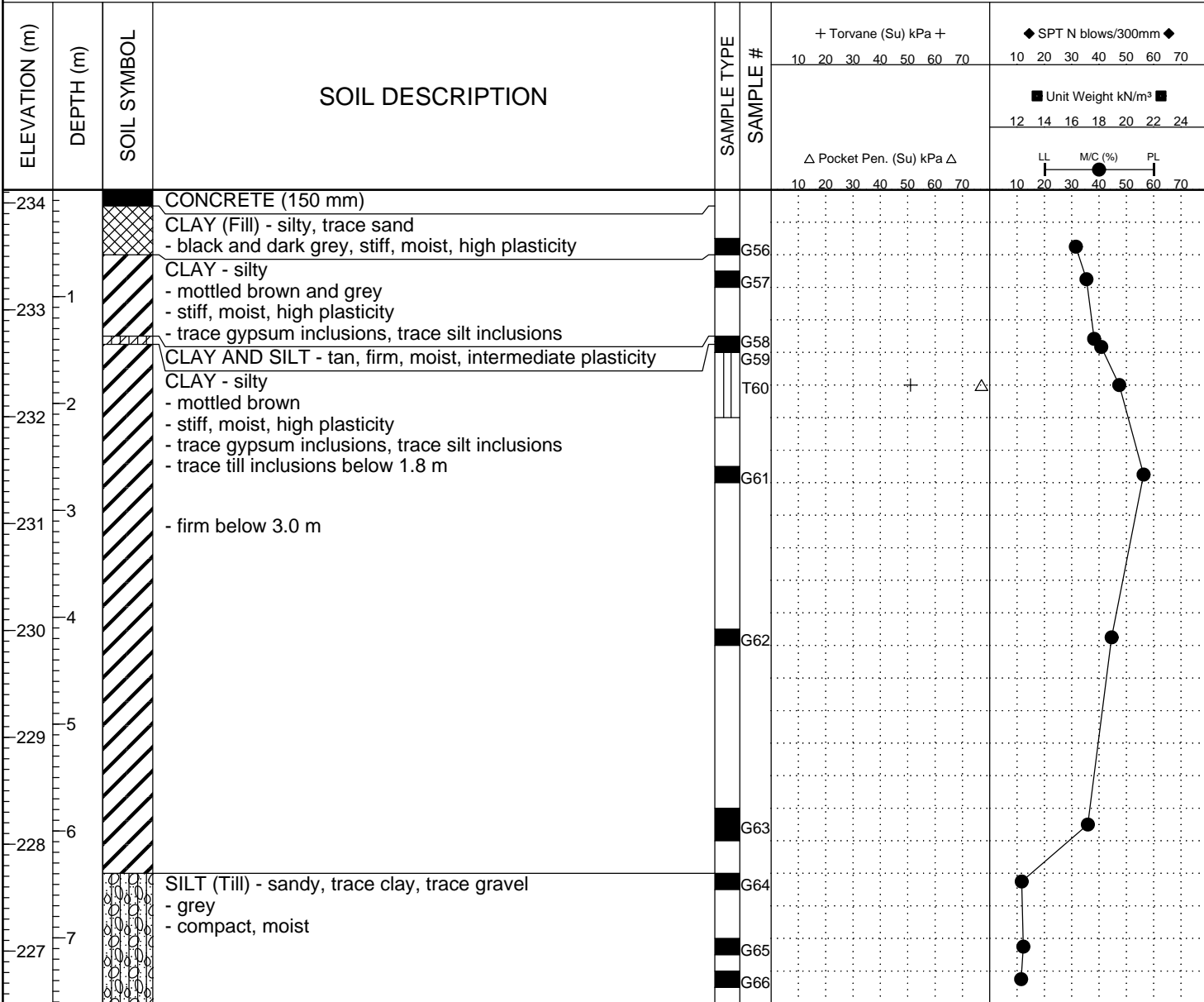


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

# APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-49
LOCATION: Brooklyn St. at Silver Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 234.278
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	



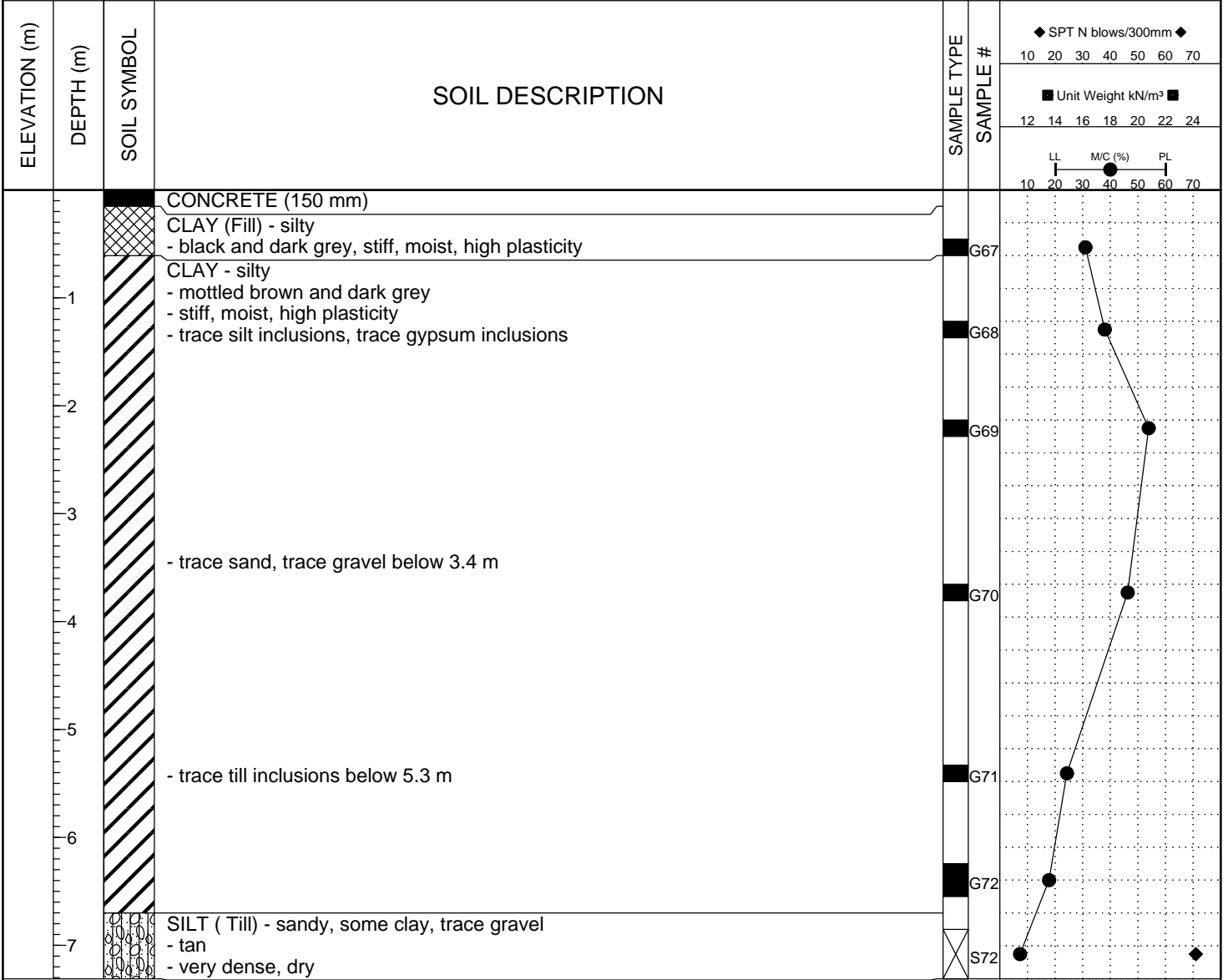
END OF TEST HOLE AT 7.6 m IN SILT TILL

- Notes:
1. No sloughing or seepage observed.
  2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-50		
LOCATION: Brooklyn St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m):		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

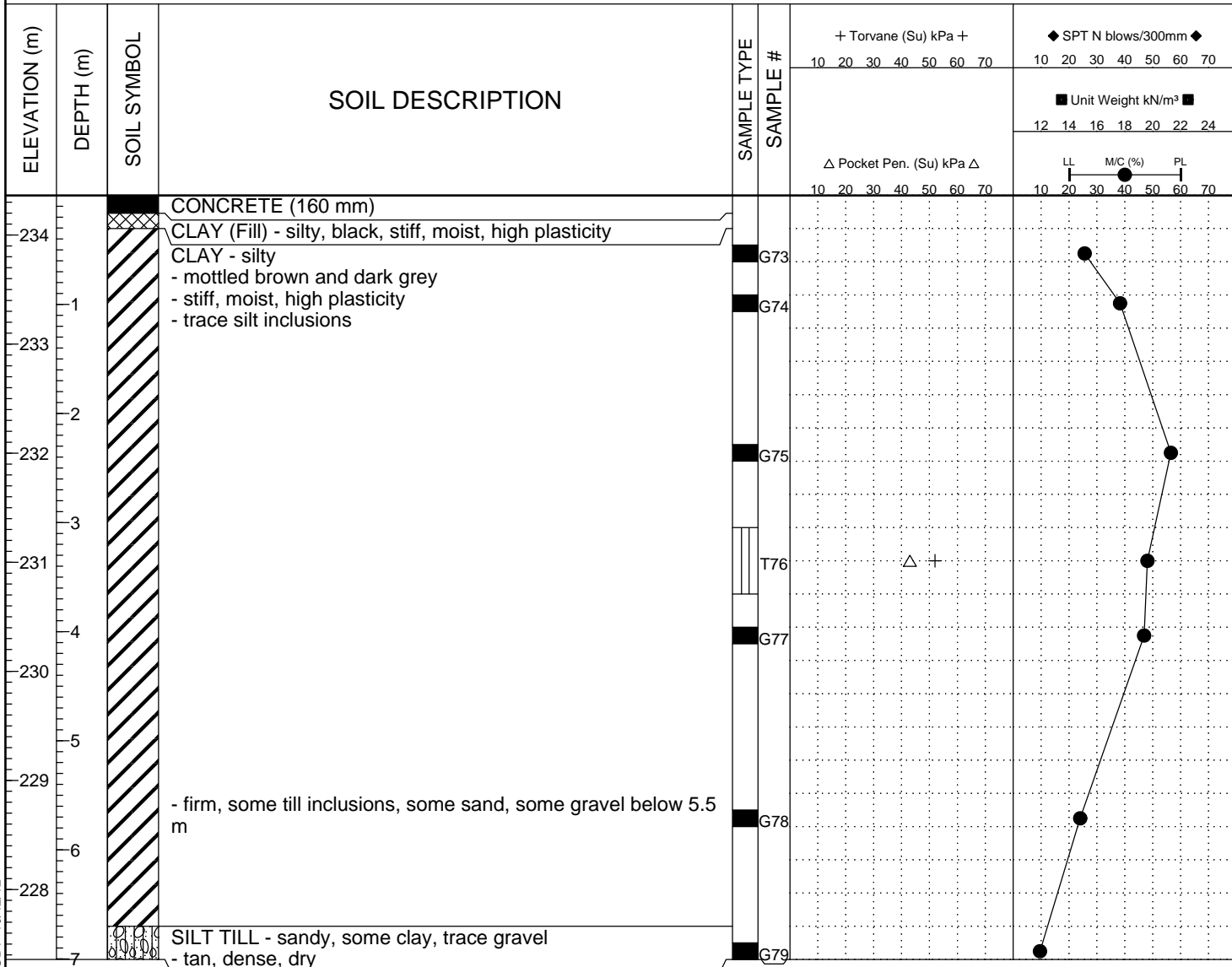


END OF TEST HOLE AT 7.3 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-51	
LOCATION: Brooklyn St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499	
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.518	
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
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"/> CORE
					<input type="checkbox"/> SAND



END OF TEST HOLE AT 7 m IN SILT TILL

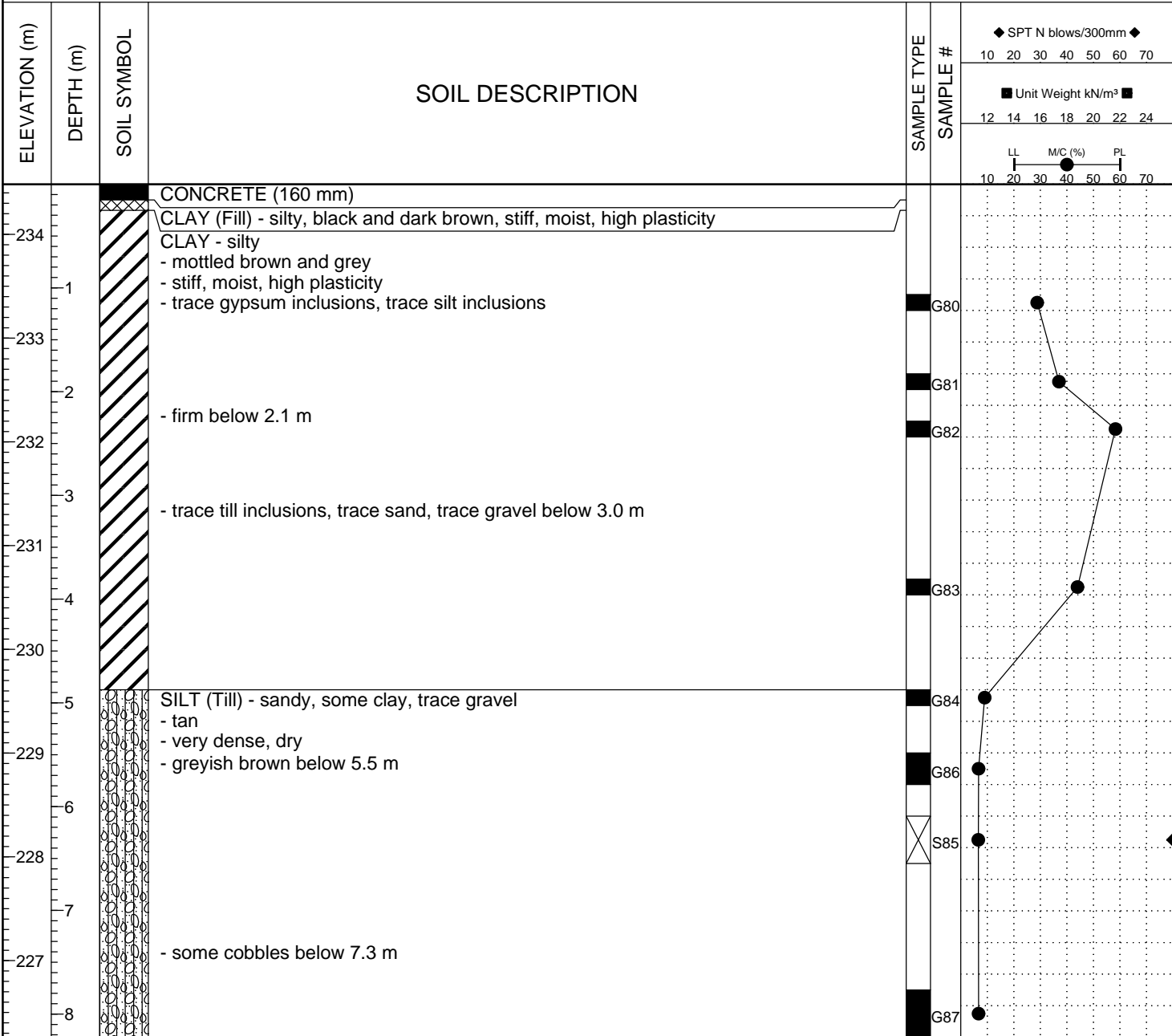
Notes:

1. Trace seepage below 3.6 m from clay layer.
2. No sloughing observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-52		
LOCATION: Brooklyn St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.639		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

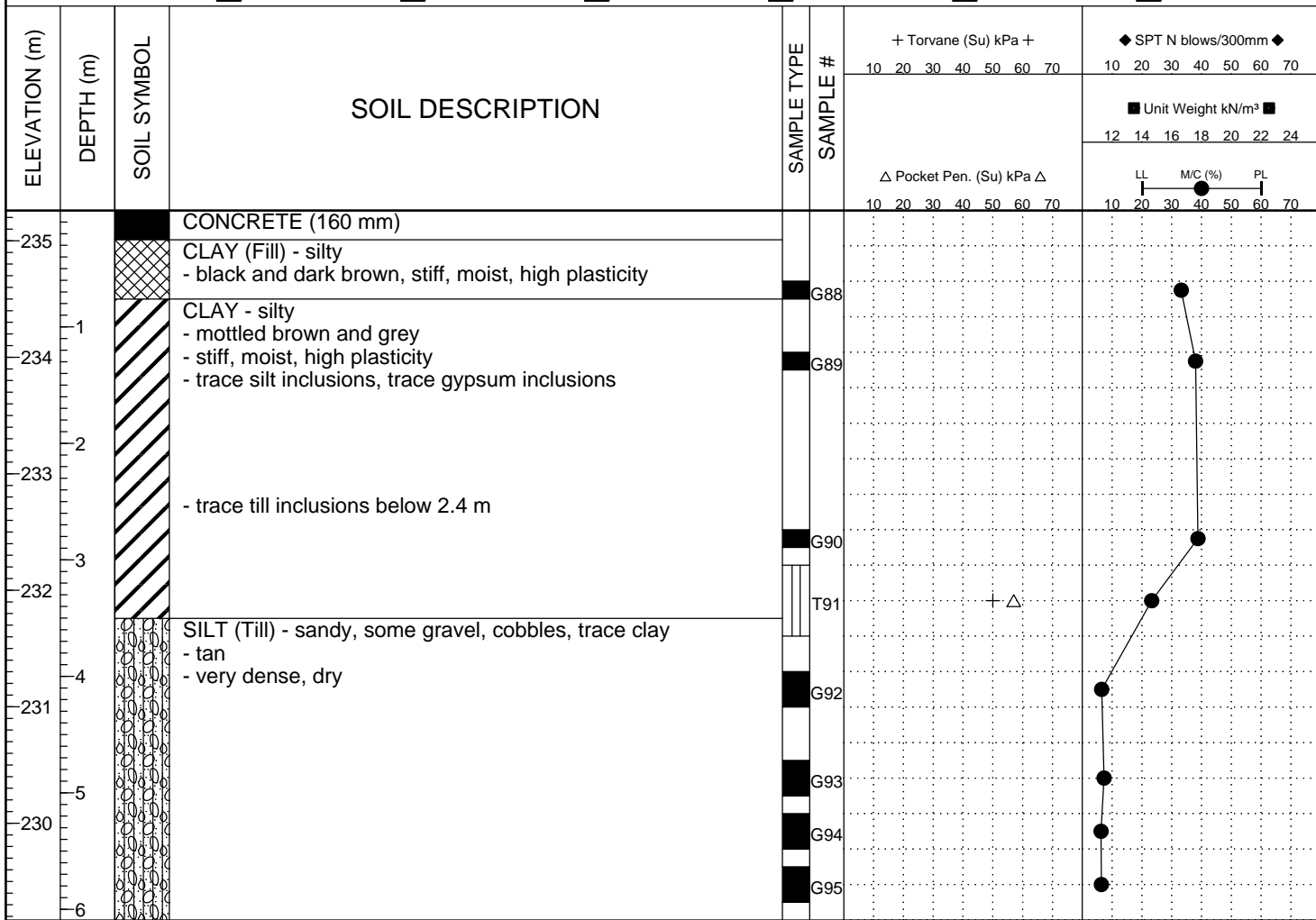


END OF TEST HOLE AT 8.2 m IN SILT (Till)  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-53	
LOCATION: Brooklyn St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499	
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.416	
SAMPLE TYPE	■ GRAB	▧ SHELBY TUBE	⊗ SPLIT SPOON	≡ BULK	☒ NO RECOVERY
BACKFILL TYPE	■ BENTONITE	□ GRAVEL	▨ SLOUGH	● GROUT	☒ CUTTINGS



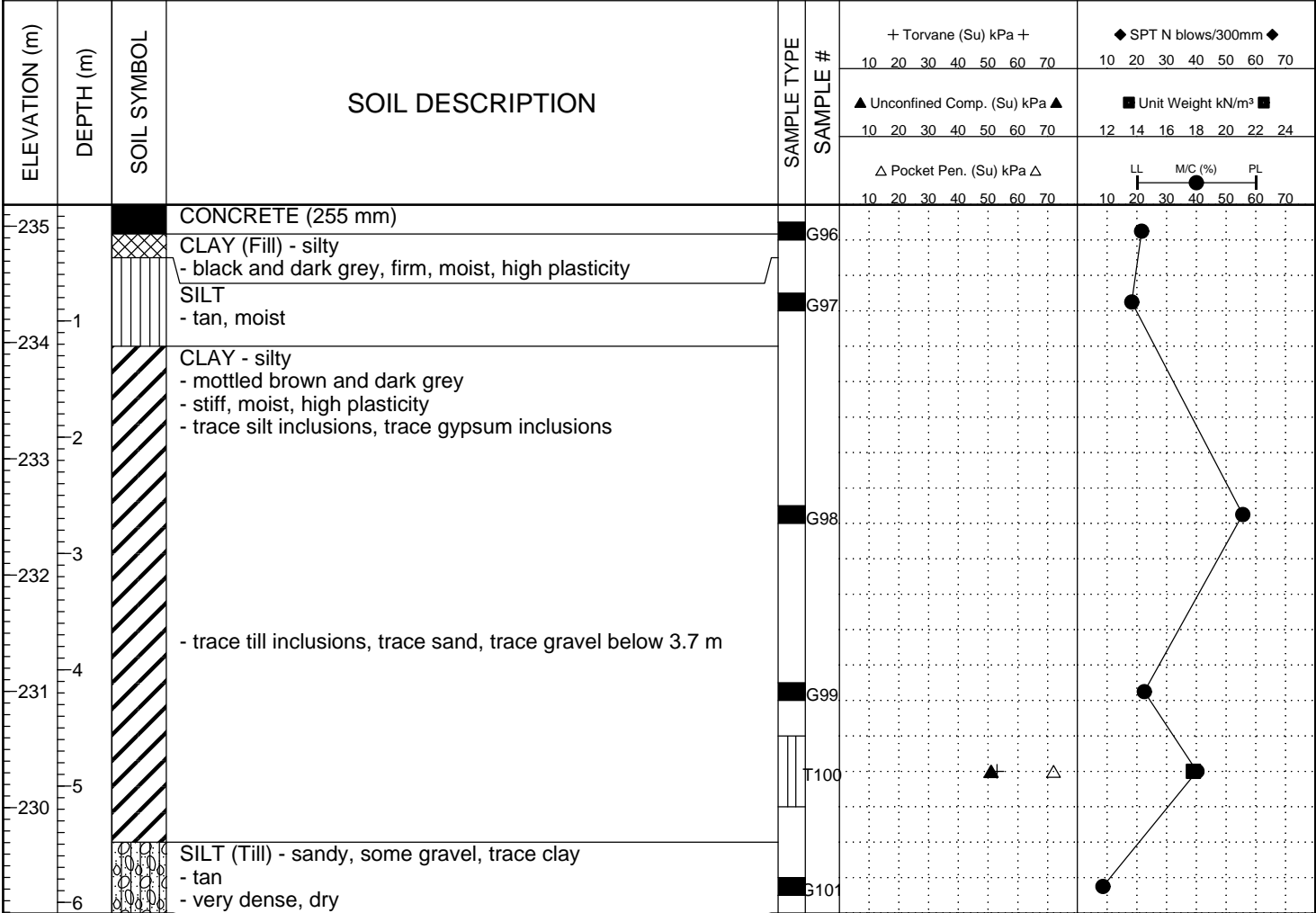
END OF TEST HOLE AT 6.1 m IN SILT TILL

- Notes:
- 1. No sloughing or seepage observed.
  - 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-54
LOCATION: King Edward St. Approx. 200 m South of Ness Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 235.341
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		

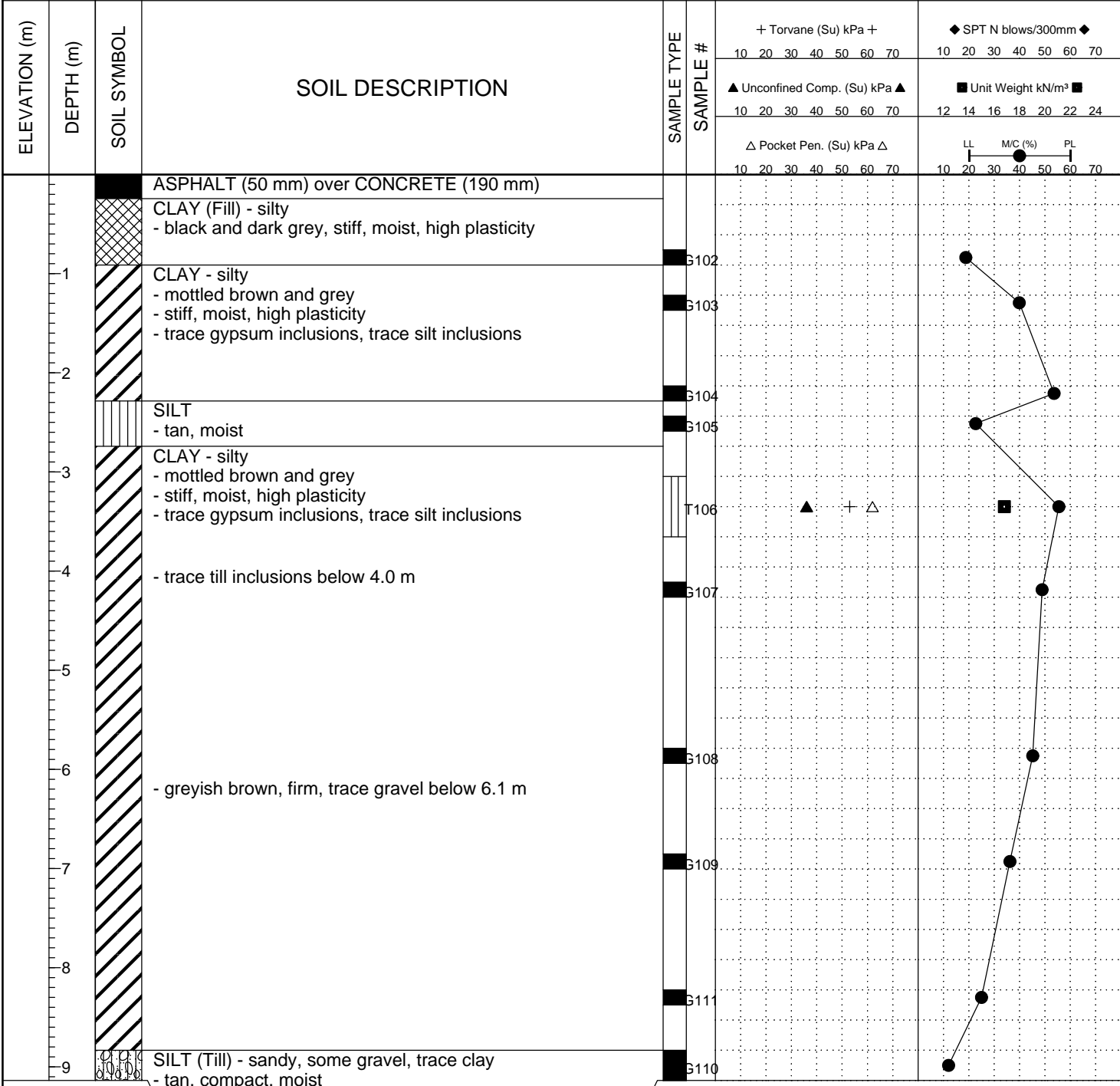


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-55
LOCATION: Queen St. Approx. 300 m South of Silver Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m):
SAMPLE TYPE <span style="display: inline-block; width: 10px; height: 10px; background-color: black; margin-right: 5px;"></span> GRAB	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> SHELBY TUBE	<span style="display: inline-block; width: 10px; height: 10px; border: 1px dashed black; margin-right: 5px;"></span> SPLIT SPOON
<span style="display: inline-block; width: 10px; height: 10px; background-color: black; border: 1px solid black; margin-right: 5px;"></span> BULK		<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> NO RECOVERY
BACKFILL TYPE <span style="display: inline-block; width: 10px; height: 10px; background-color: black; margin-right: 5px;"></span> BENTONITE	<span style="display: inline-block; width: 10px; height: 10px; border: 1px dotted black; margin-right: 5px;"></span> GRAVEL	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> SLOUGH
<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> GROUT		<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> CUTTINGS
<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> SAND		



END OF TEST HOLE AT 9.1 m IN SILT TILL

Notes:

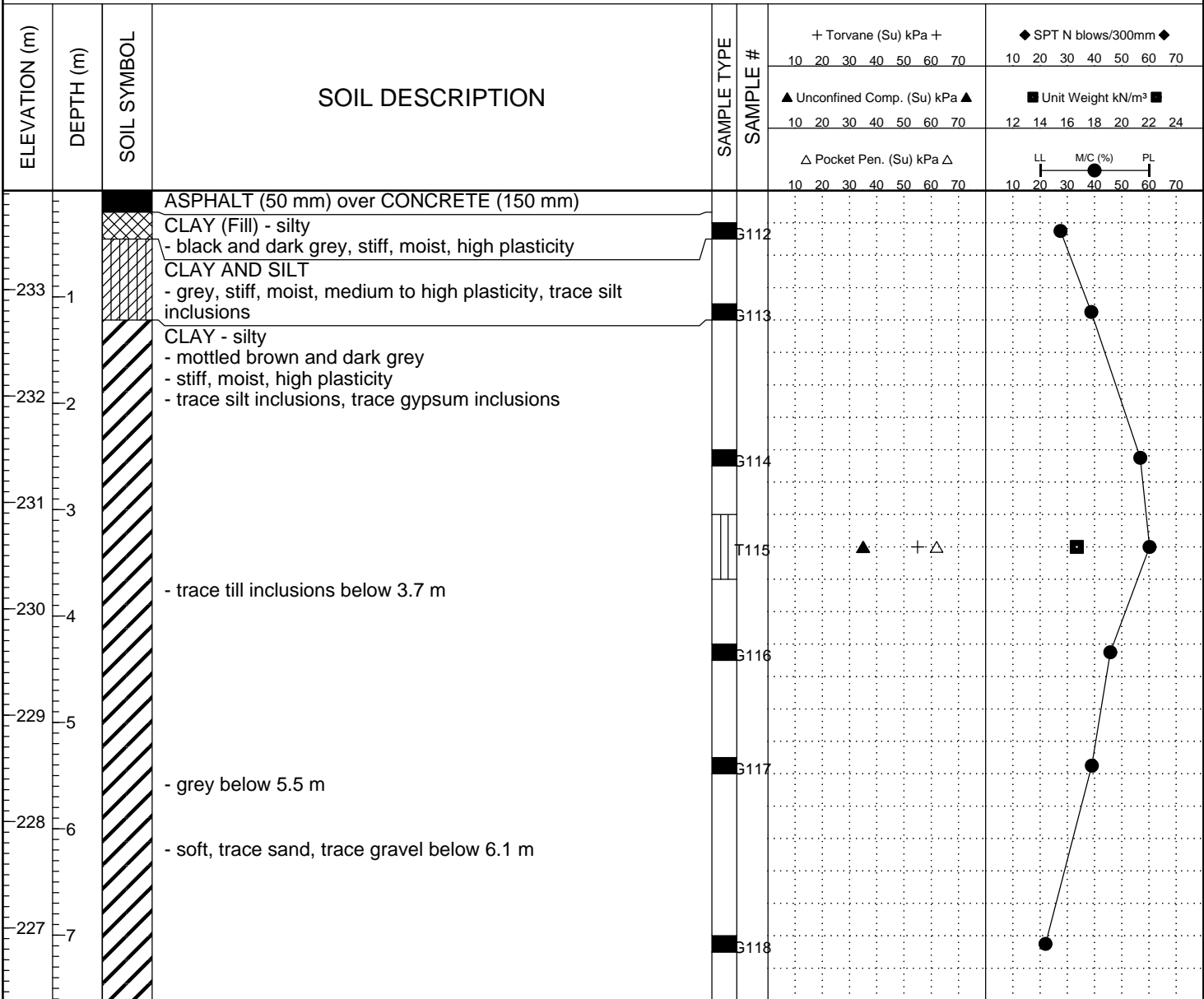
1. Trace seepage from silt layer at 2.3 m.
2. No sloughing observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT 1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12



**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-56		
LOCATION: King Edward St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.086		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

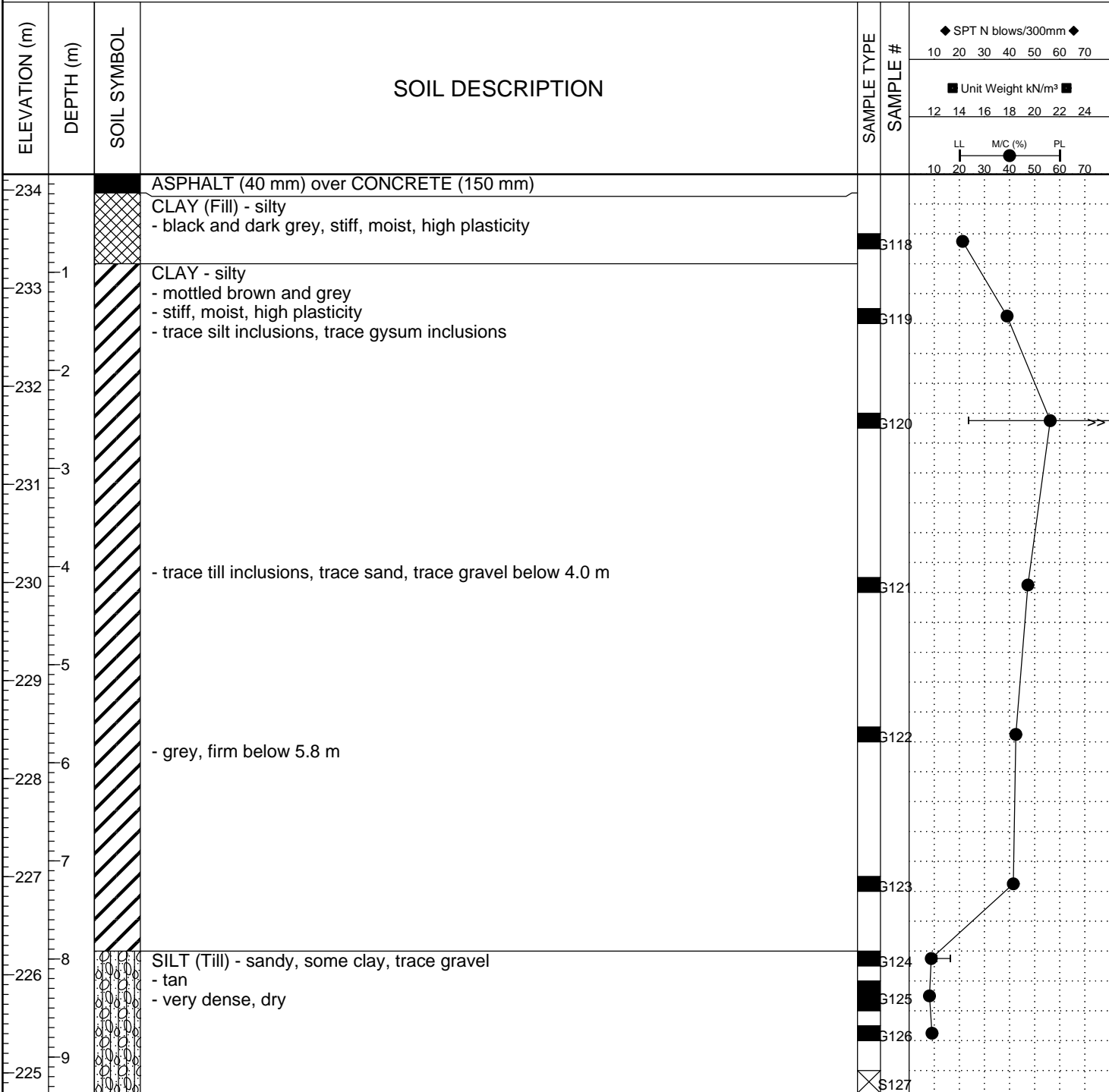


END OF TEST HOLE AT 7.6 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-57		
LOCATION: King Edward St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.316		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 9.4 m IN SILT TILL

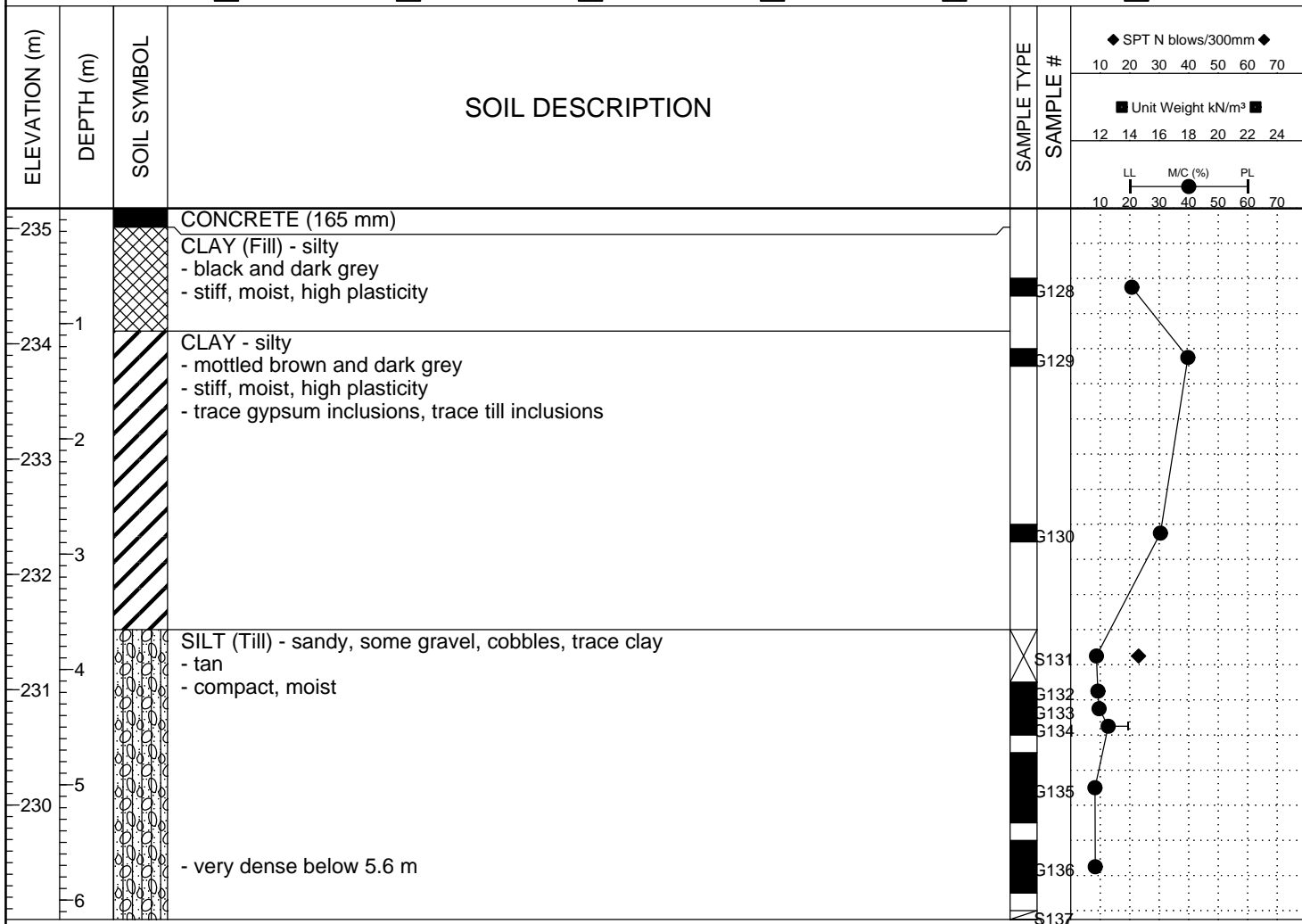
Notes:

1. SPT terminated at 9.4 m. Refused on suspected cobble.
2. No sloughing or seepage observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS-NEWAL T1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-58
LOCATION: Brooklyn St. Approx. of Ness Ave. 150 m South of Ness Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 235.331
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		



END OF TEST HOLE AT 6.2 m IN SILT TILL

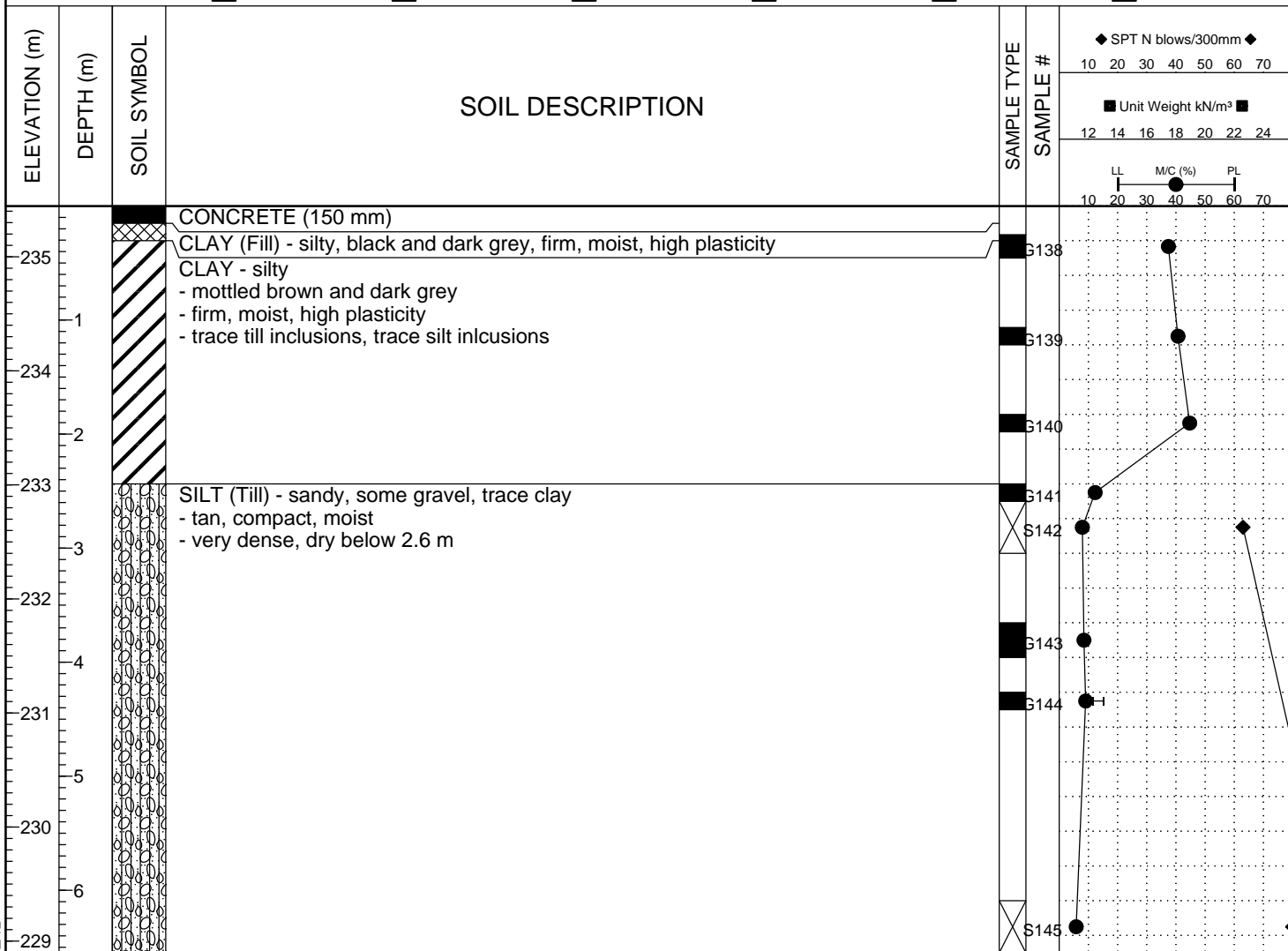
Notes:

1. SPT terminated at 6.2 m. Refusal on suspected cobble.
2. No sloughing or seepage observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-59		
LOCATION: Brooklyn St. Approx. 300 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.601		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

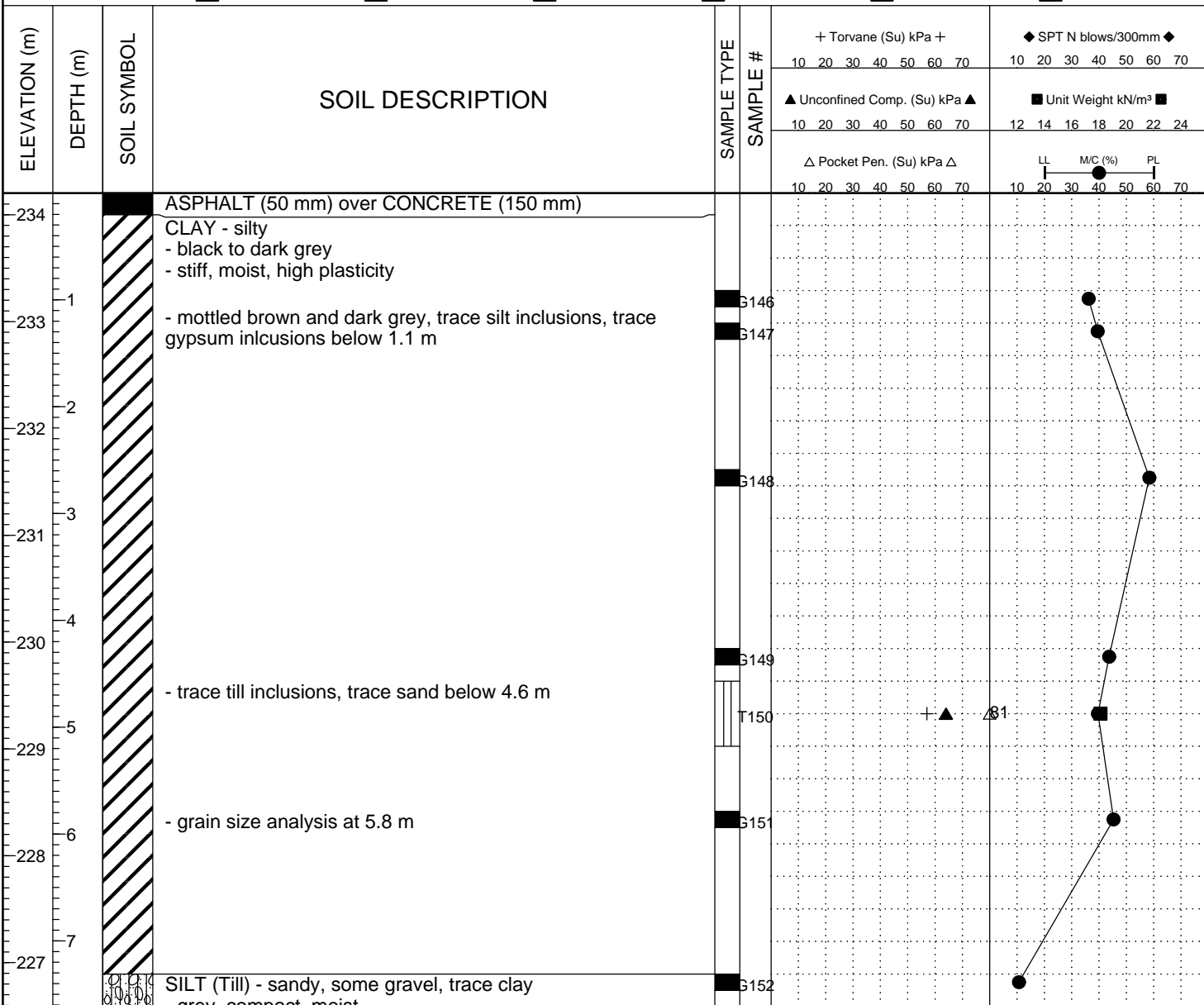


END OF TEST HOLE AT 6.5 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-60		
LOCATION: King Edward St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.358		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



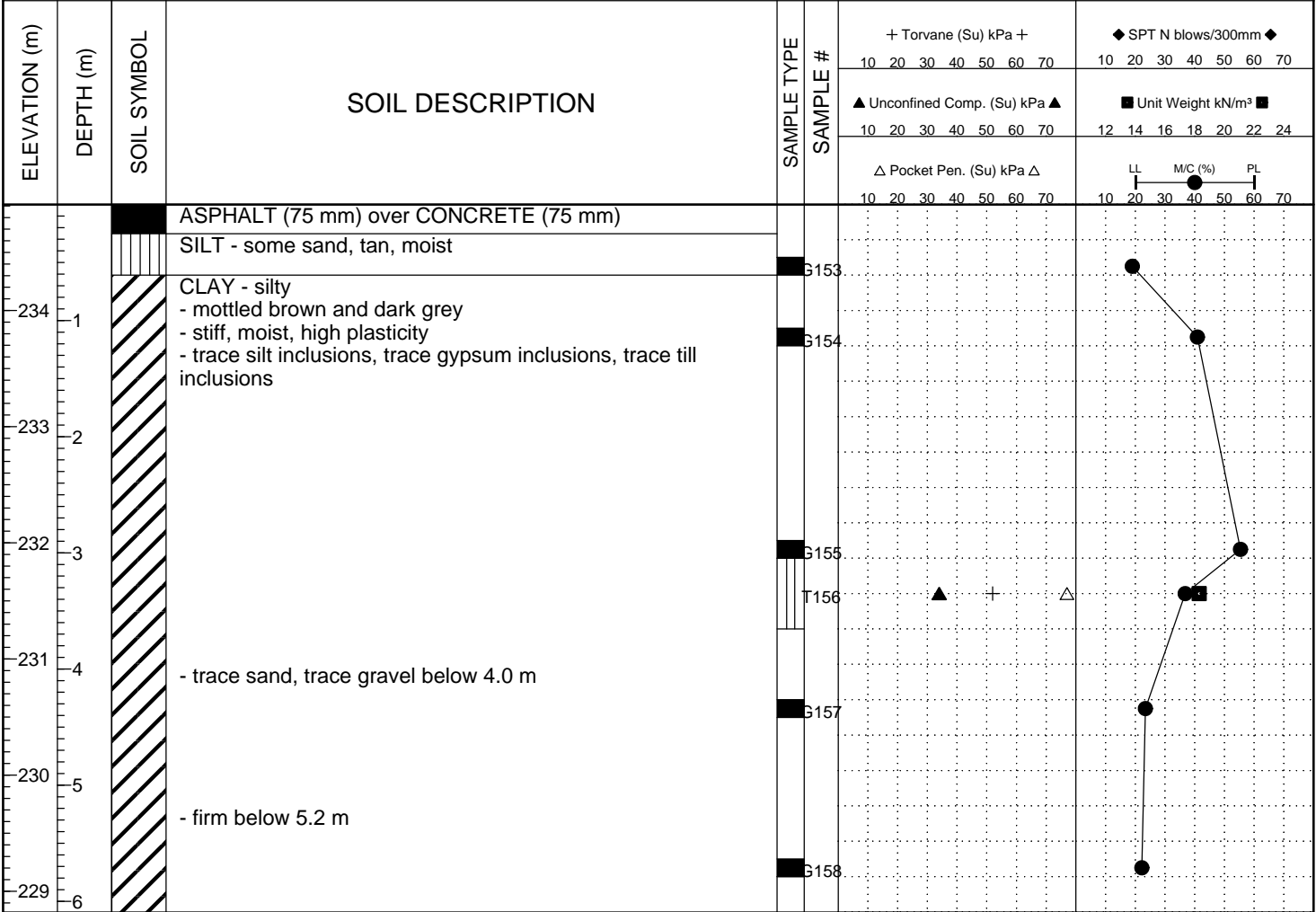
END OF TEST HOLE AT 7.6 m IN SILT TILL

- Notes:
1. No sloughing or seepage observed.
  2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-61		
LOCATION: King Edward St. Approx. 100 m South of Silver Ave. Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.068		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

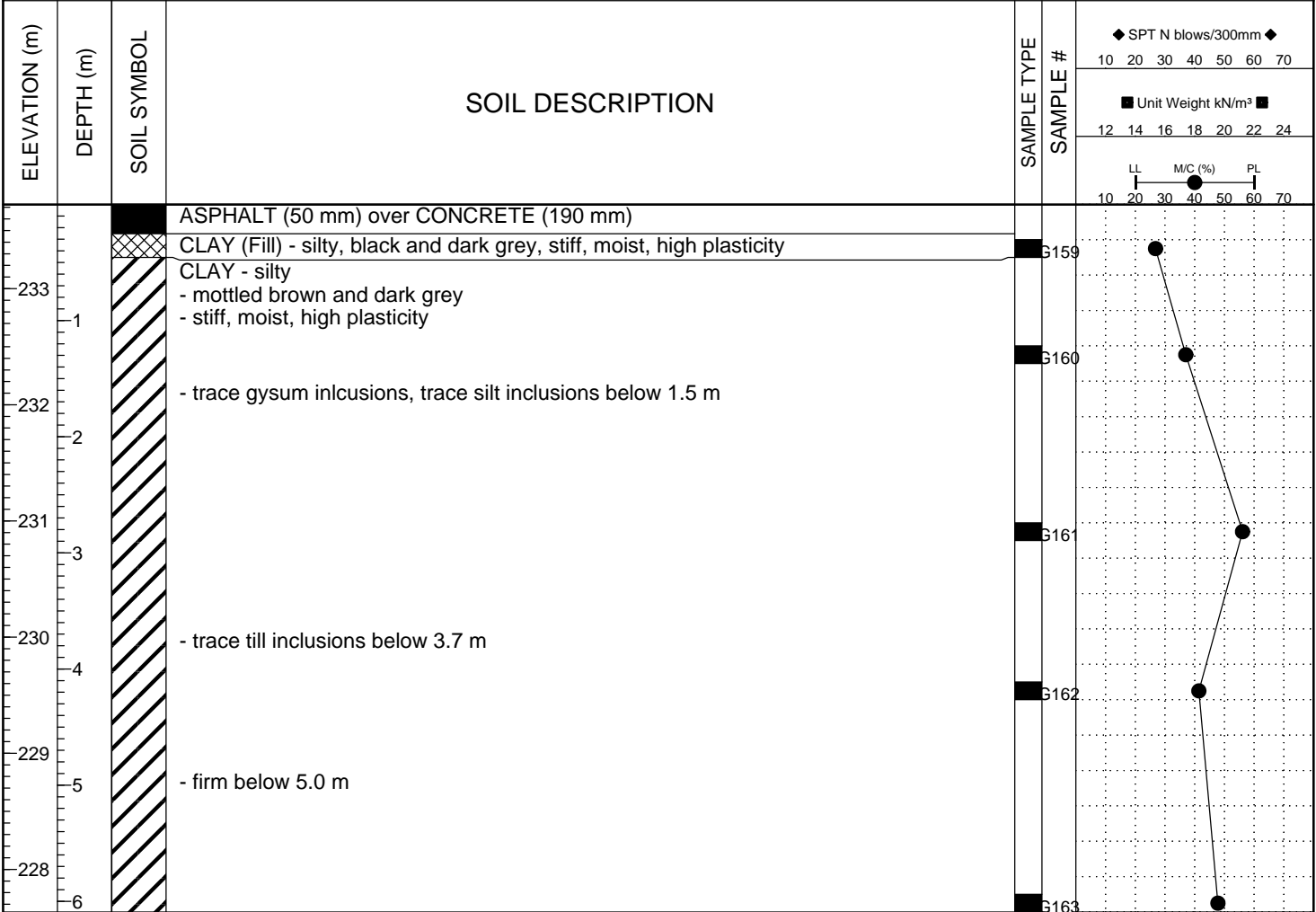


END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-62		
LOCATION: Queen St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.879		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

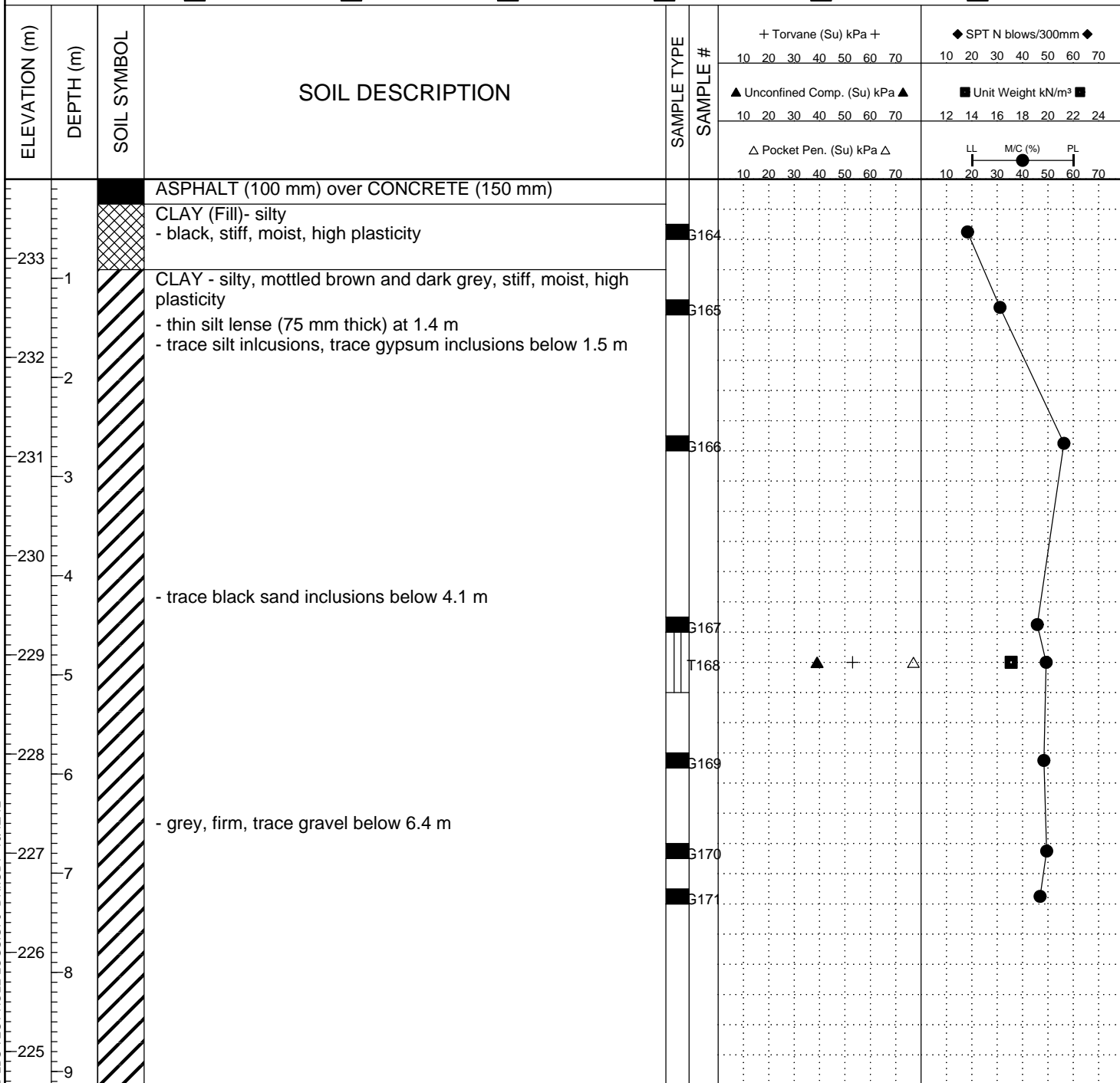


END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-63		
LOCATION: Queen St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.952		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



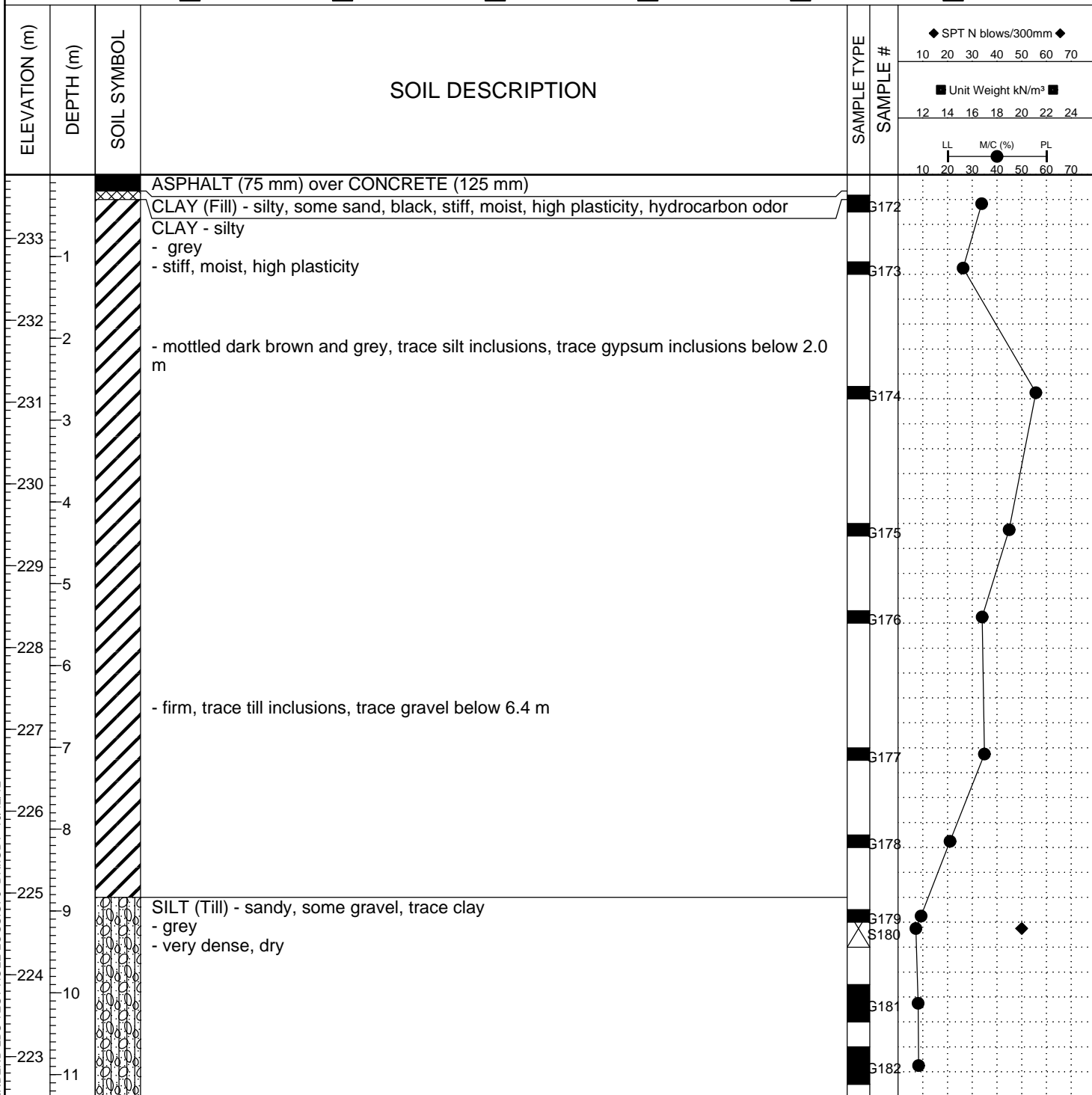
END OF TEST HOLE AT 9.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12



**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-64		
LOCATION: Queen St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.934		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



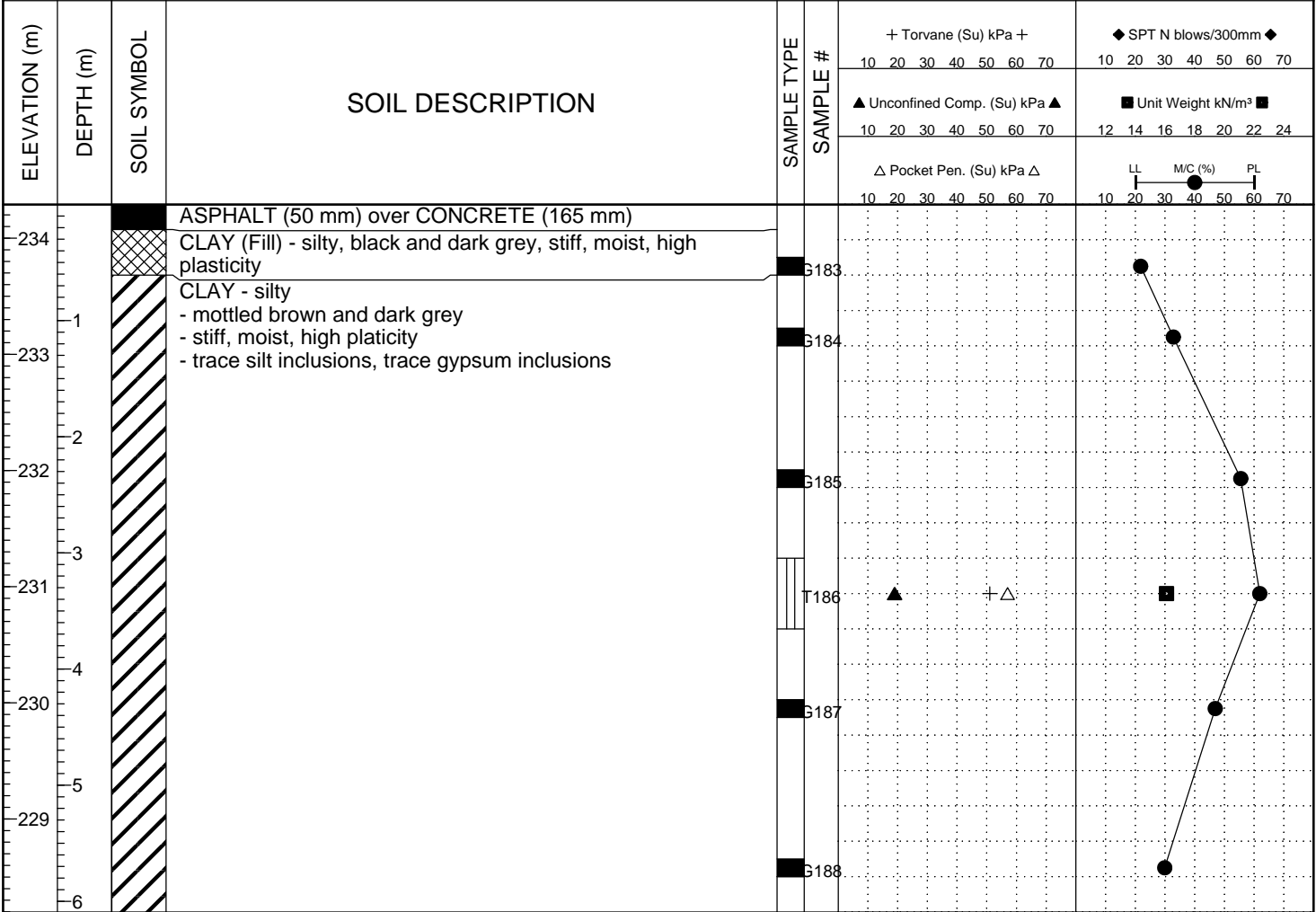
END OF TEST HOLE AT AUGER REFUSAL AT 11.3 m IN SILT TILL

- Notes:
1. Refusal on suspected bedrock.
  2. No sloughing or seepage observed.
  3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-65		
LOCATION: Queen St. Approx. 100 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.445		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 6.1 m IN CLAY

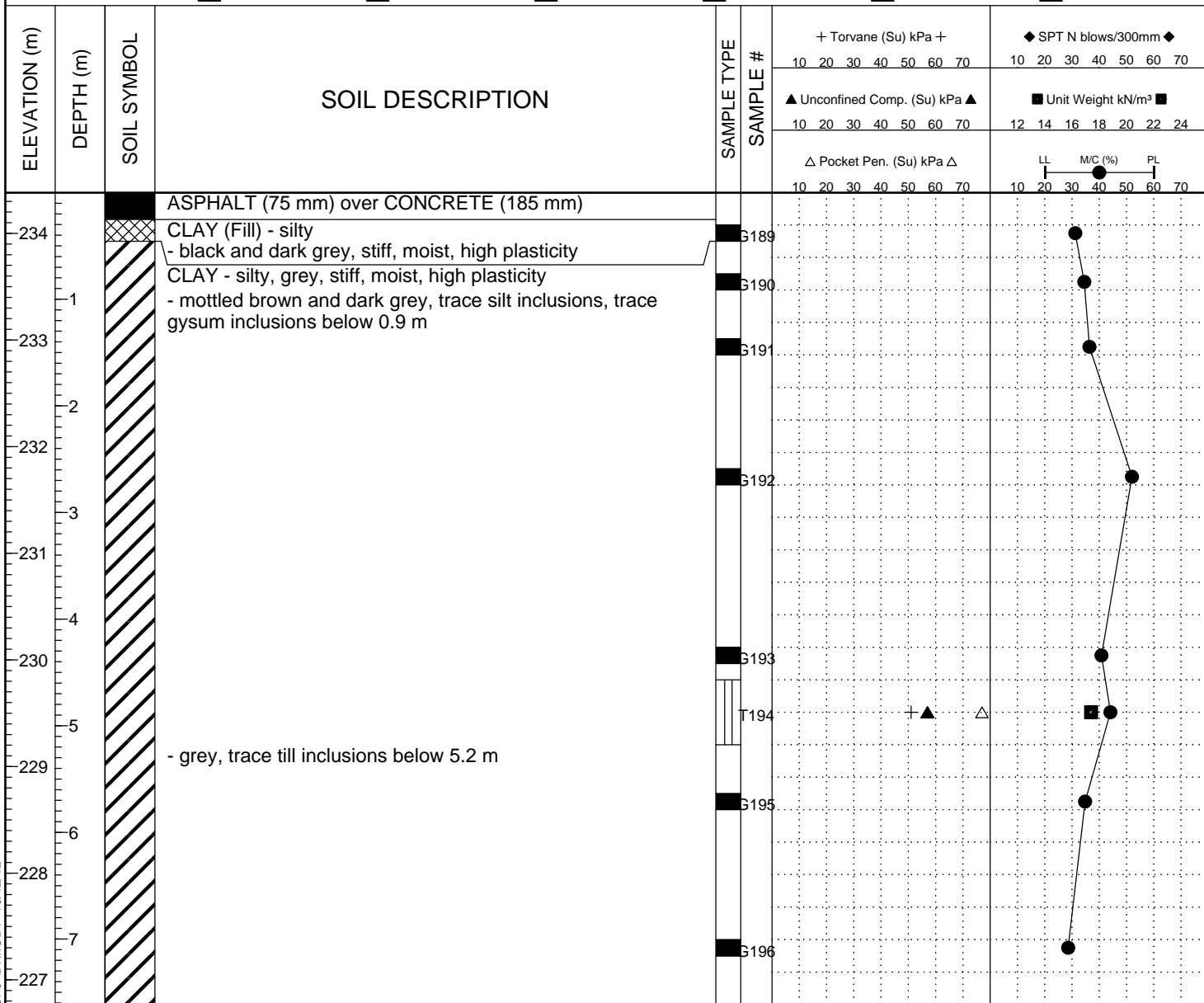
Notes:

1. No sloughing or seepage observed.
2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-66		
LOCATION: Queen St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.537		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



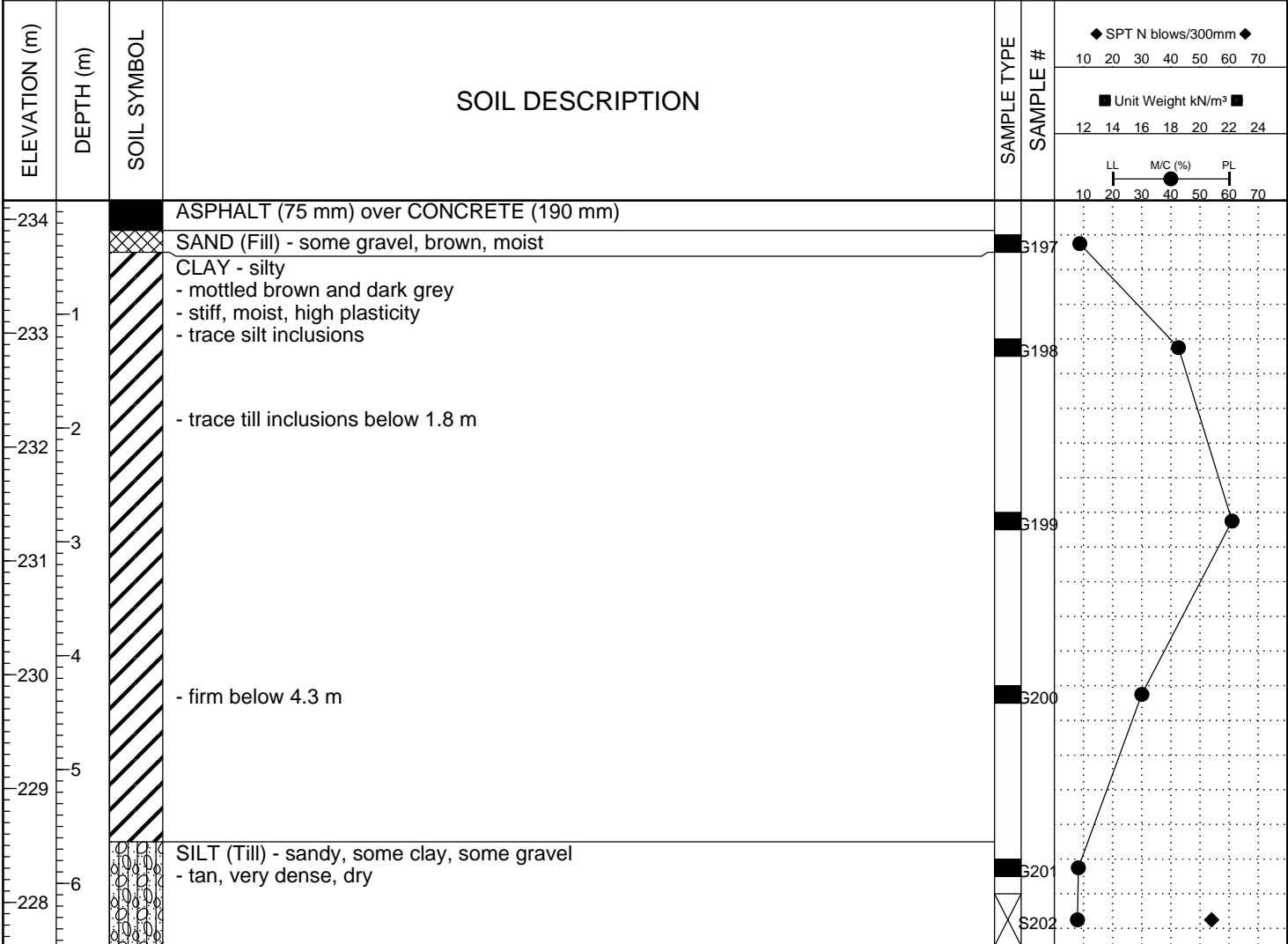
END OF TEST HOLE AT 7.6 m IN CLAY

- Notes:
1. No sloughing or seepage observed.
  2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-67
LOCATION: Queen St. Approx. 300 m South of Ness Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 234.321
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

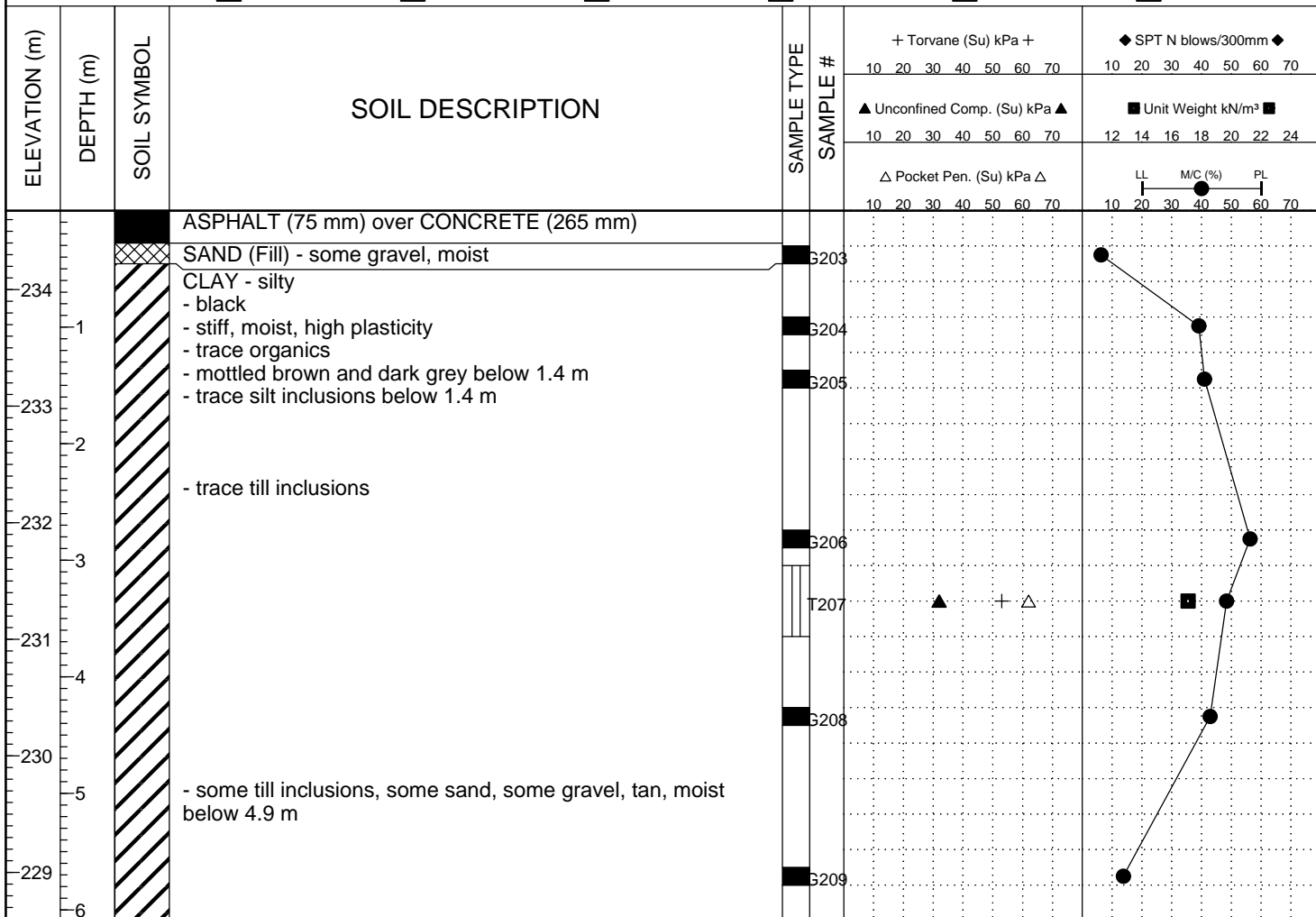


END OF TEST HOLE AT 6.6 m IN SILT TILL  
 Notes:  
 1. Trace seepage below 0.3 m from sand fill layer.  
 2. No sloughing observed.  
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-68		
LOCATION: Queen St. Approx. 400 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.833		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

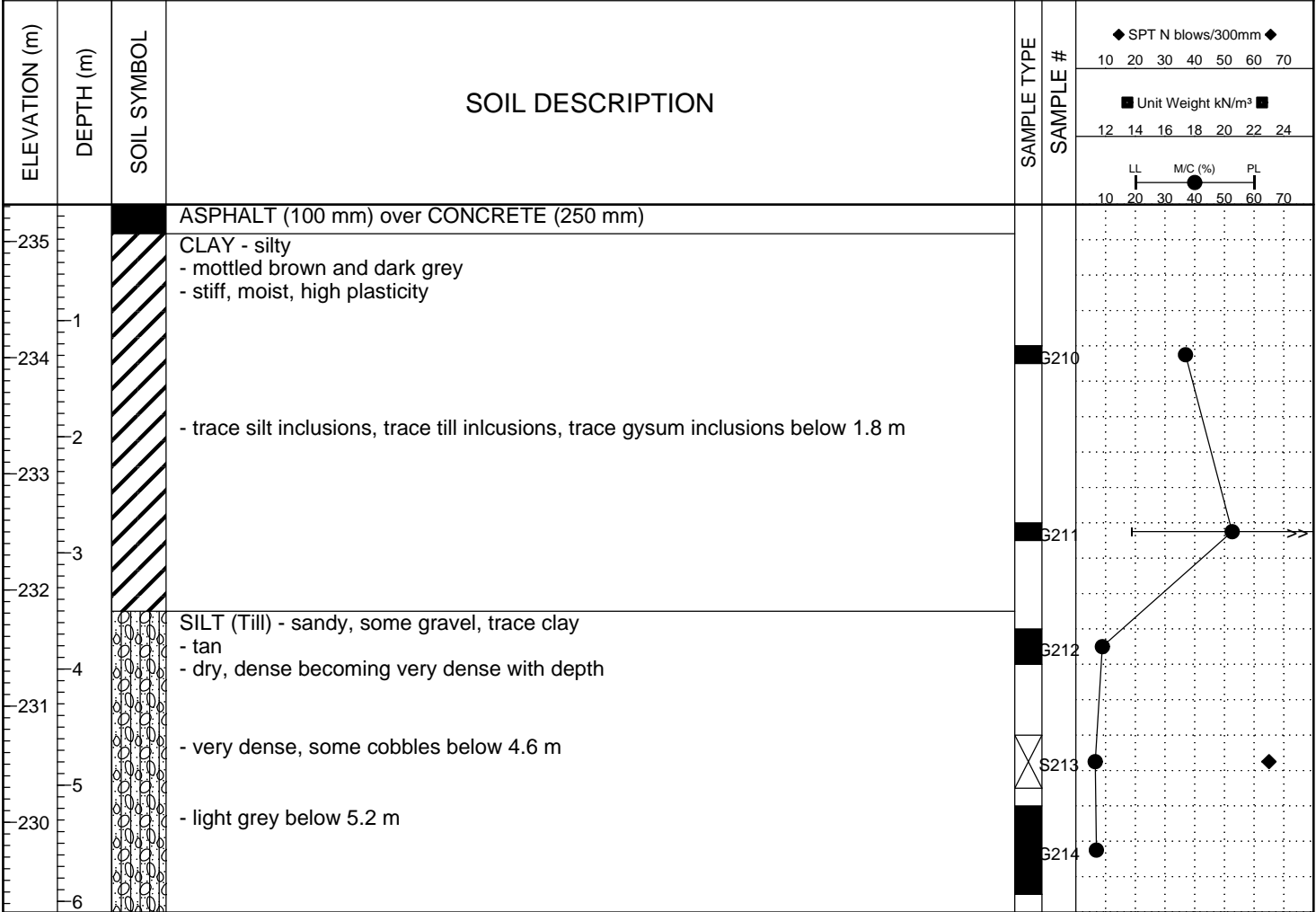


END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-69	
LOCATION: King Edward St. Approx. 300 m South of Ness Ave.				PROJECT NO.: 123499	
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.474	
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
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"/> CORE
					<input type="checkbox"/> SAND

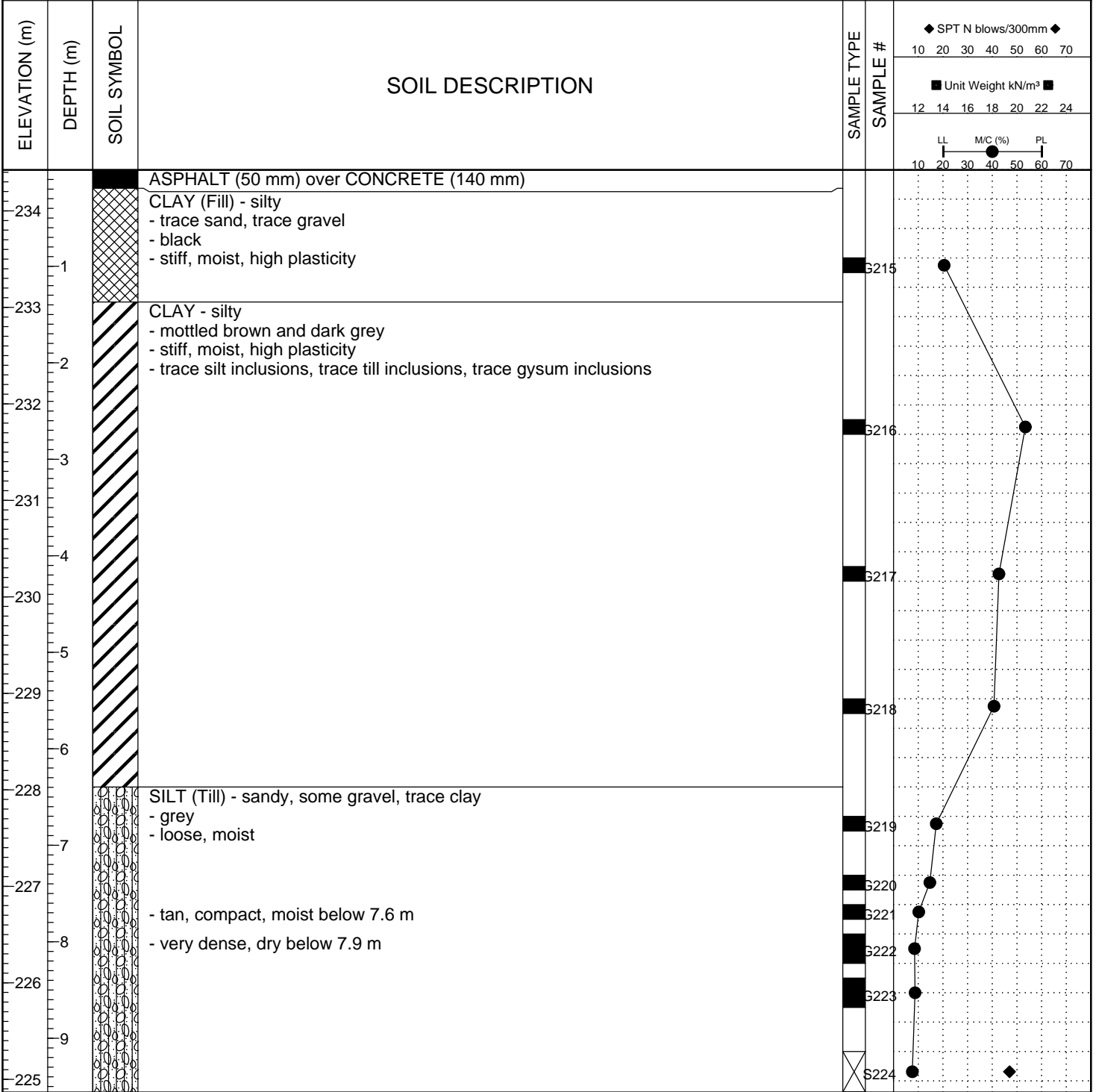


END OF TEST HOLE AT 6.1 m IN SILT TILL  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-70		
LOCATION: King Edward St. Approx. 350 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.58		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

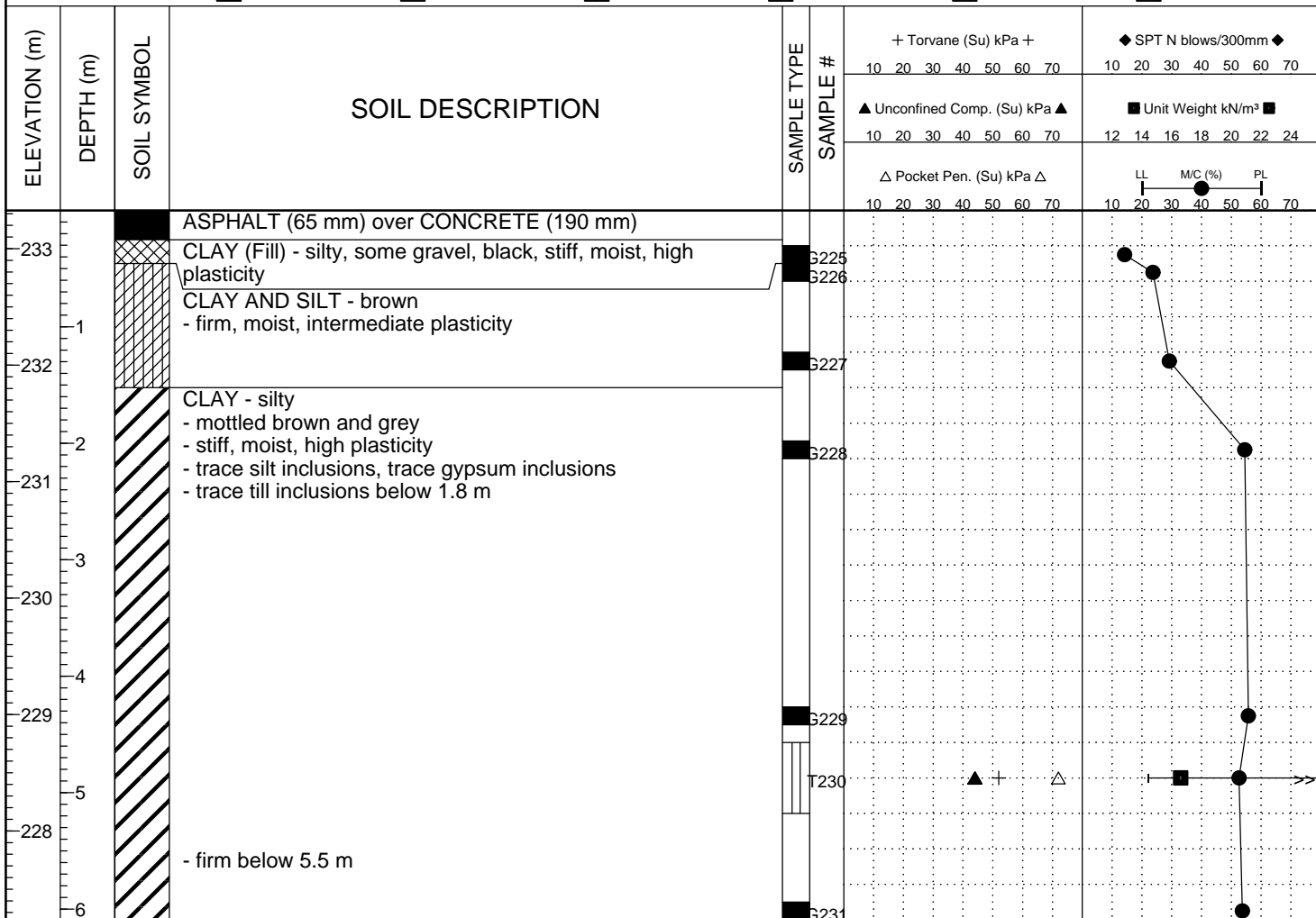


END OF TEST HOLE AT 9.6 m IN SILT TILL  
 Notes:  
 1. SPT terminated at 9.6 m. Refused on suspected cobble.  
 2. No sloughing or seepage observed.  
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS-NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-71		
LOCATION: Kensington St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.483		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



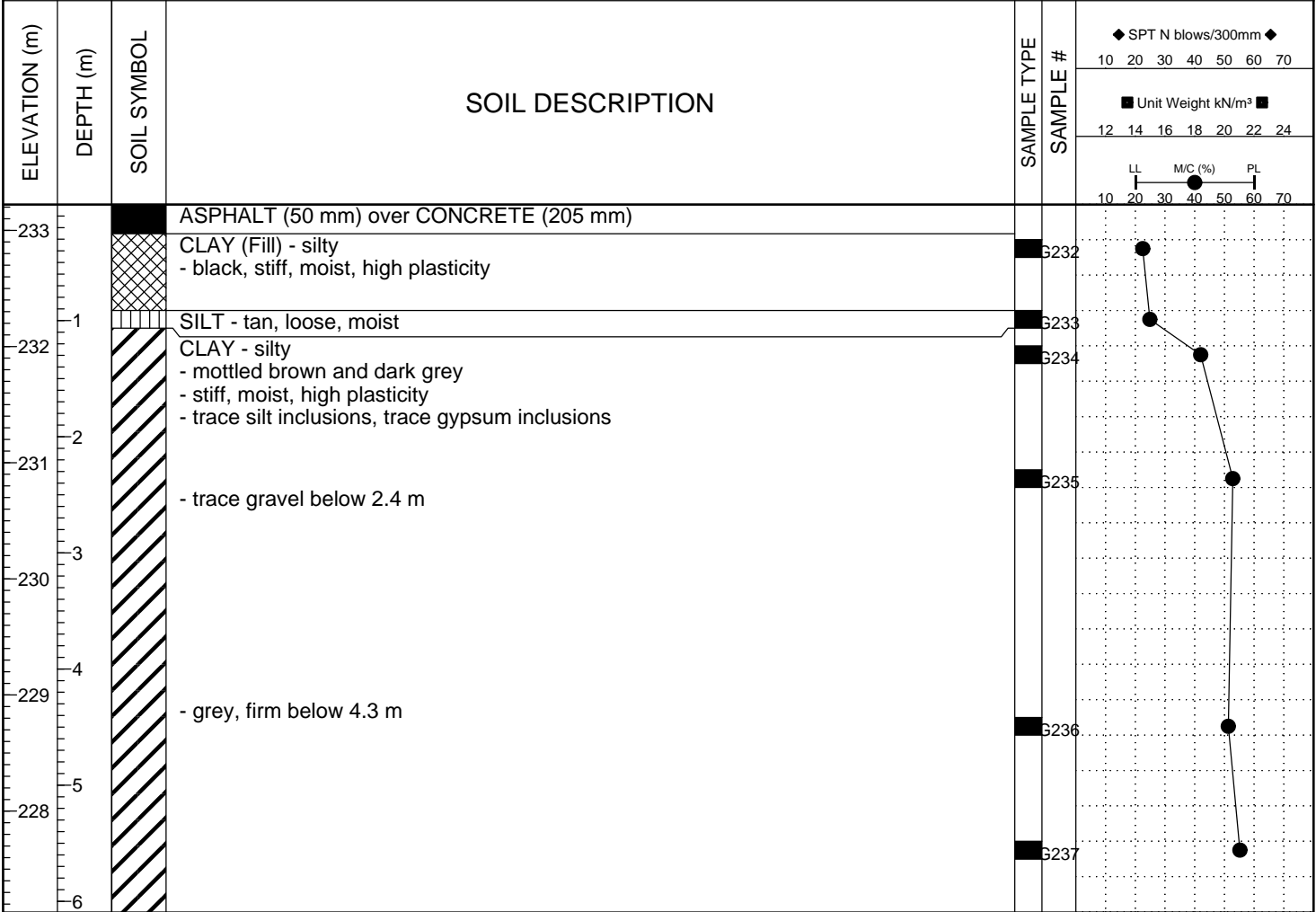
END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12



**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-72	
LOCATION: Kensington St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499	
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.377	
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
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"/> CORE	<input type="checkbox"/> SAND

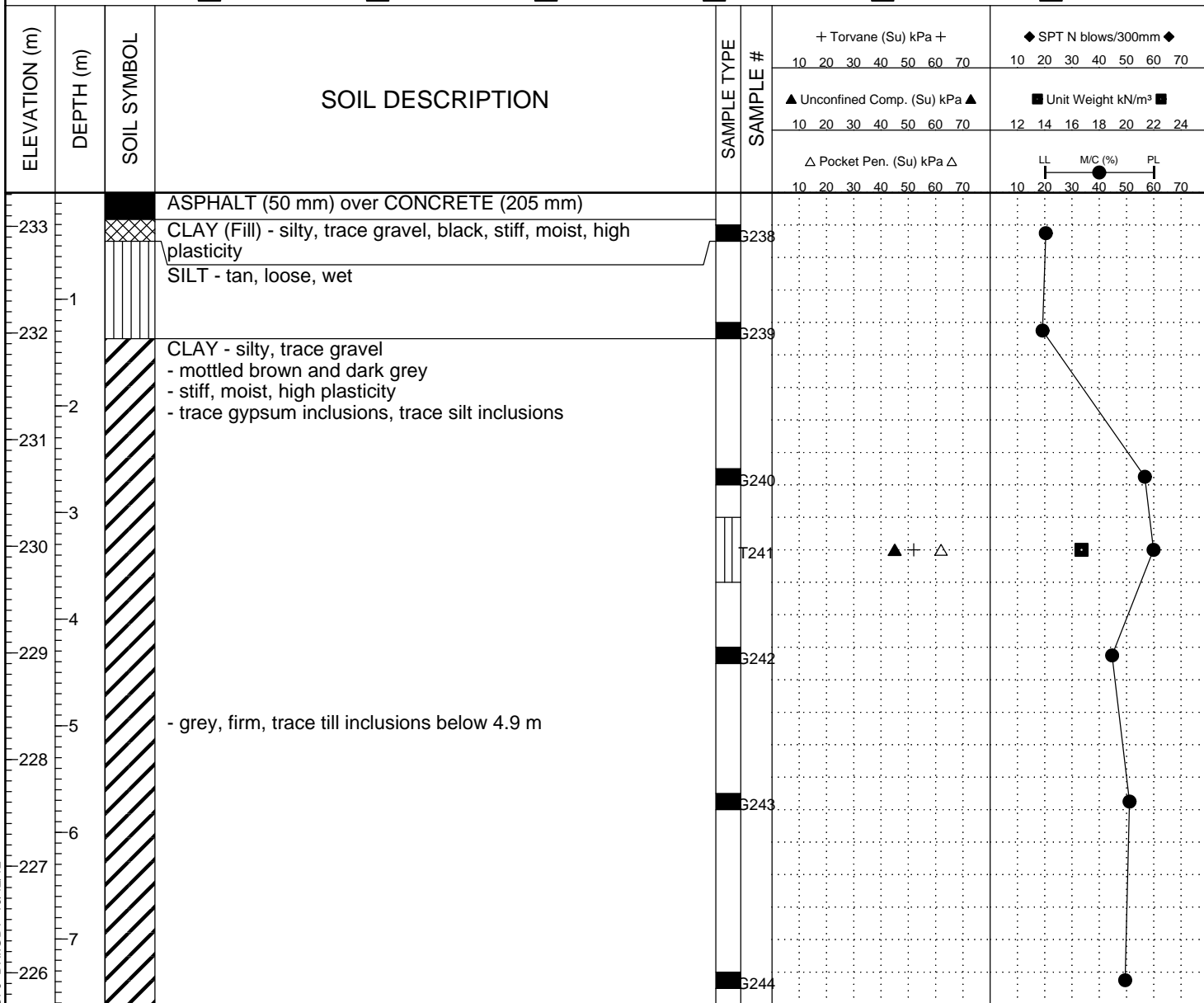


END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-73		
LOCATION: Kensington St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.471		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

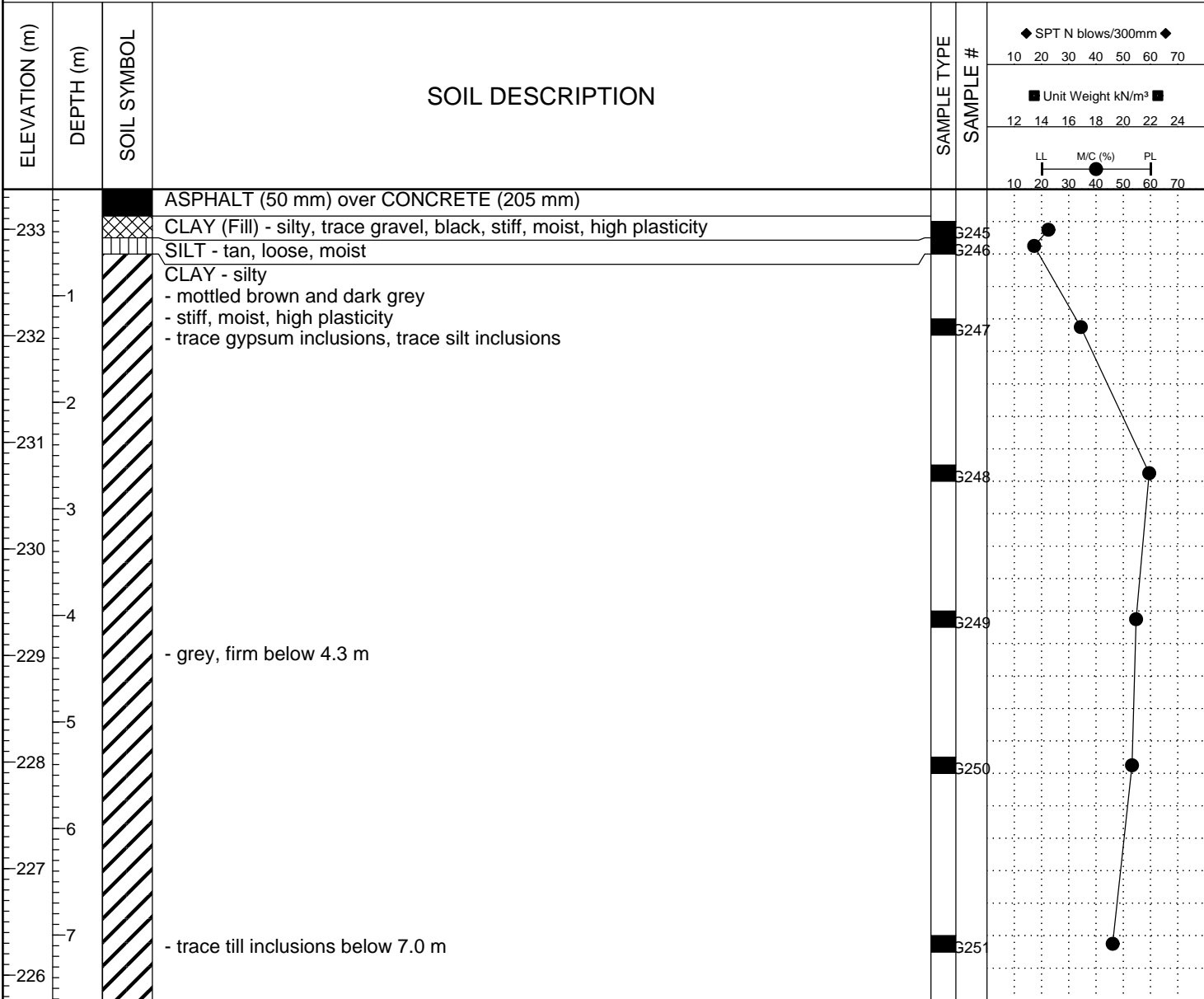


END OF TEST HOLE AT 7.6 m IN CLAY  
 Notes:  
 1. Trace seepage below 0.5 m from silt layer.  
 2. No sloughing observed.  
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-74		
LOCATION: Kensington St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.53		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 7.6 m IN CLAY

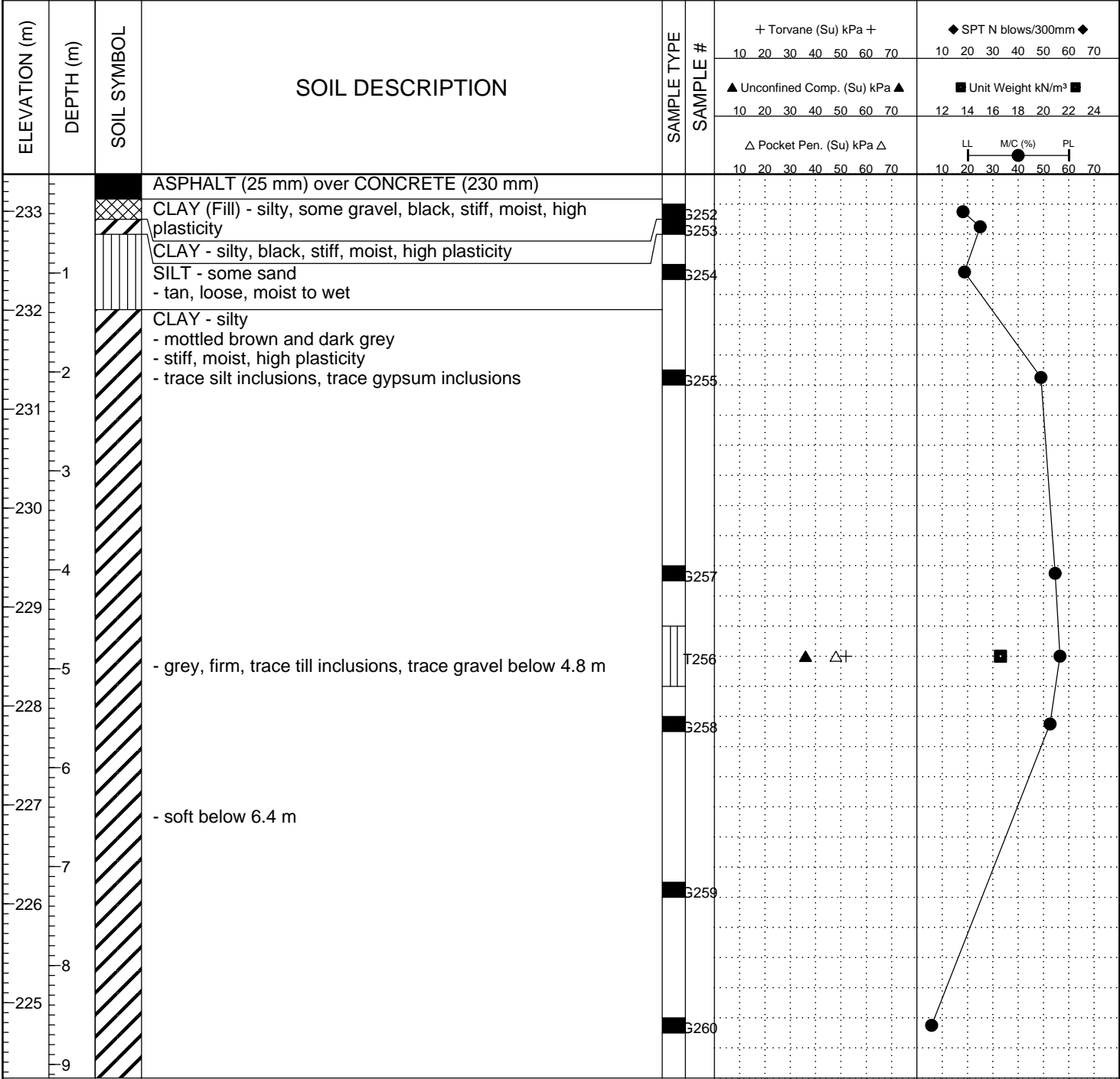
Notes:

1. No sloughing or seepage observed.
2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-75		
LOCATION: Kensington St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.53		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

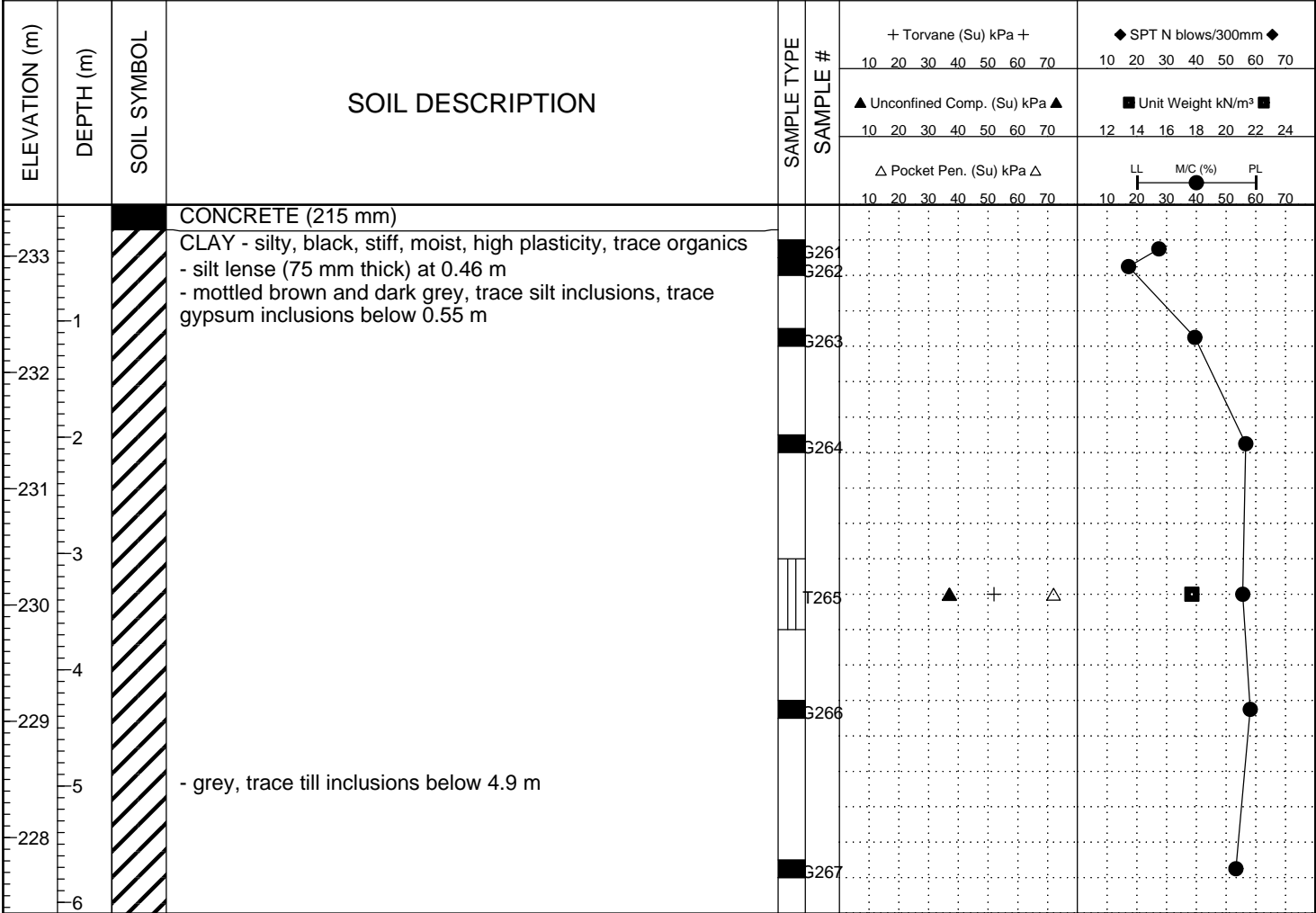


END OF TEST HOLE AT 9.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-76		
LOCATION: Madison St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.597		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

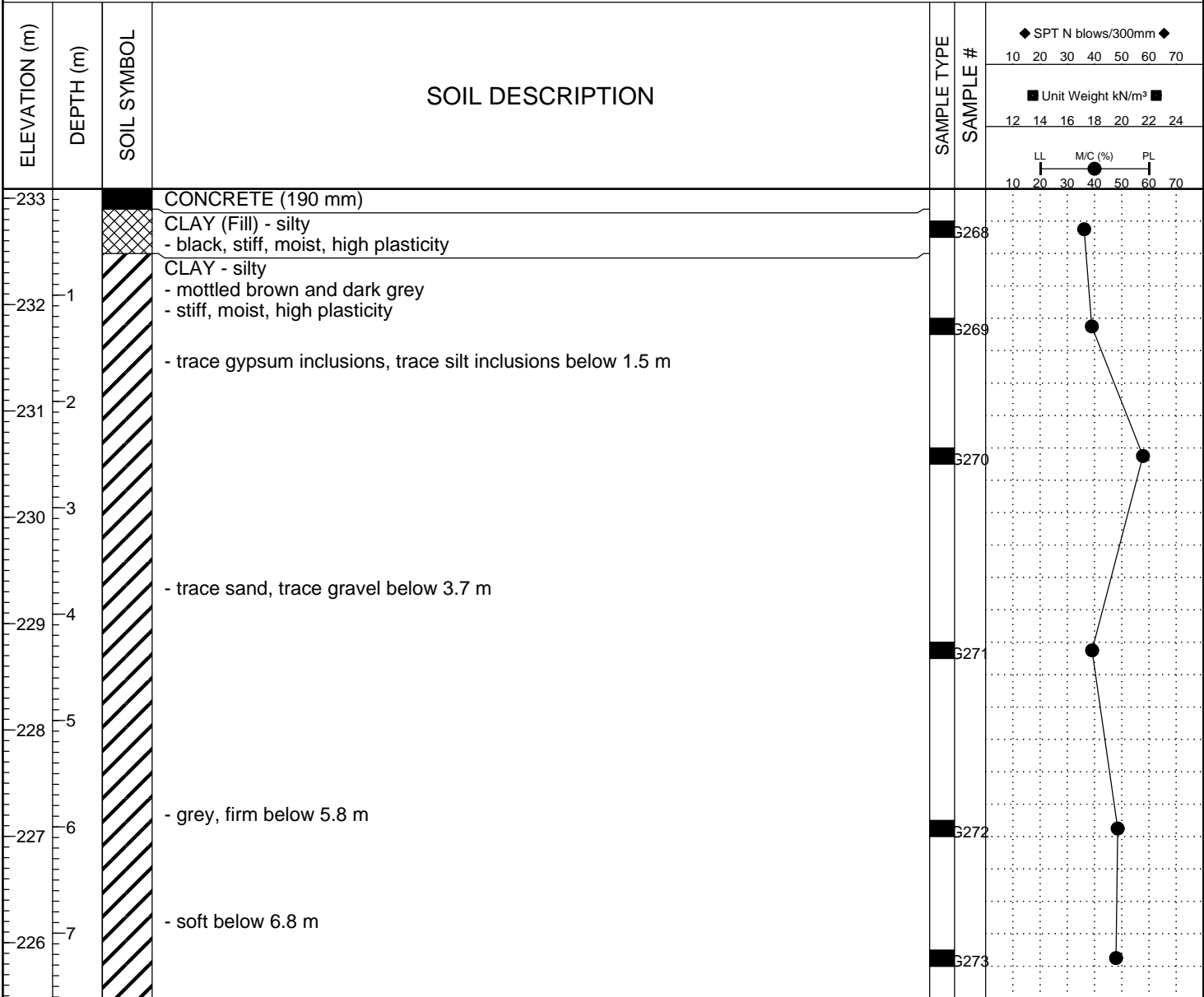


END OF TEST HOLE AT 6.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-77		
LOCATION: Madison St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.243		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 7.6 m IN CLAY

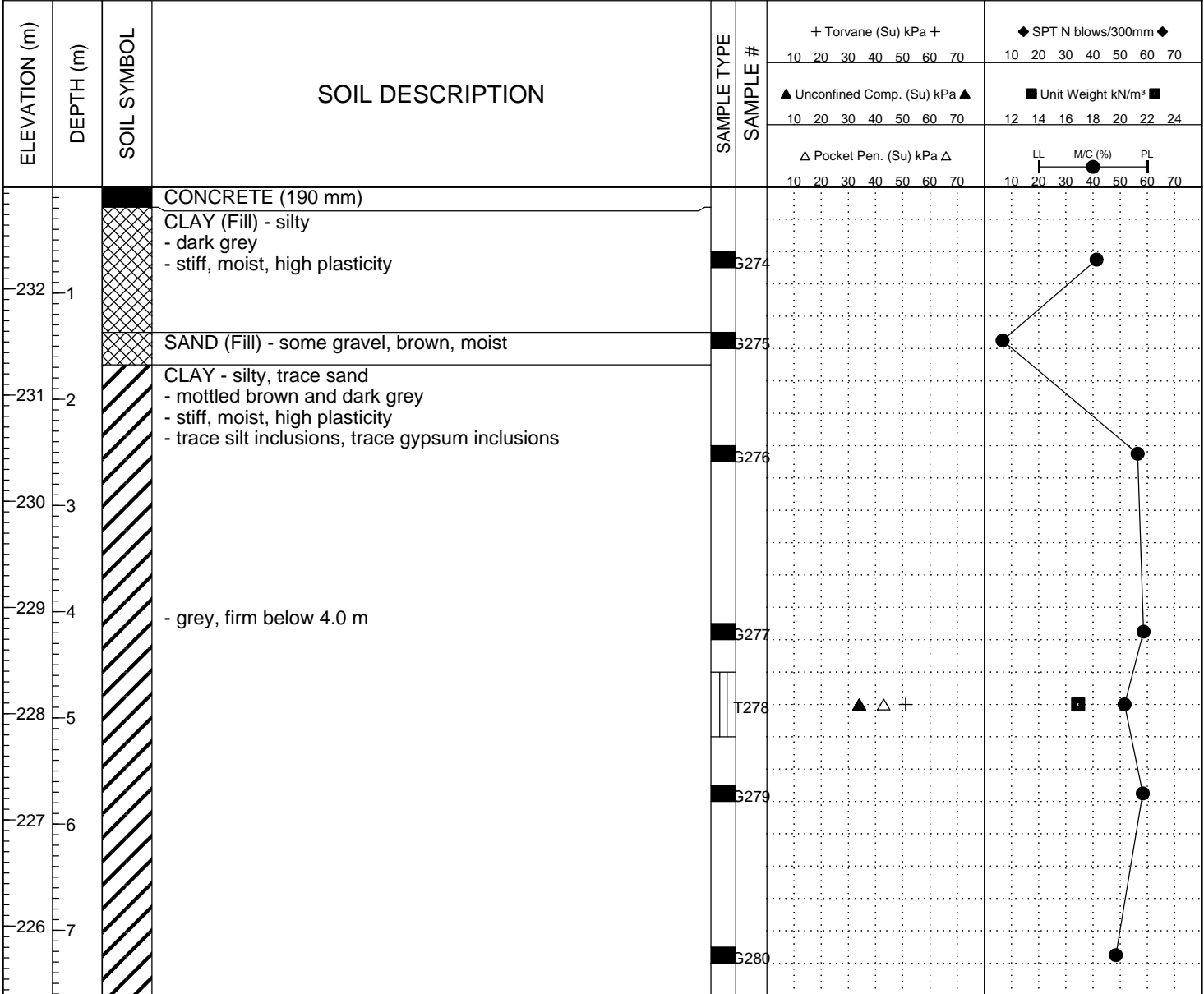
Notes:

1. No sloughing or seepage observed.
2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-78		
LOCATION: Madison St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.114		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

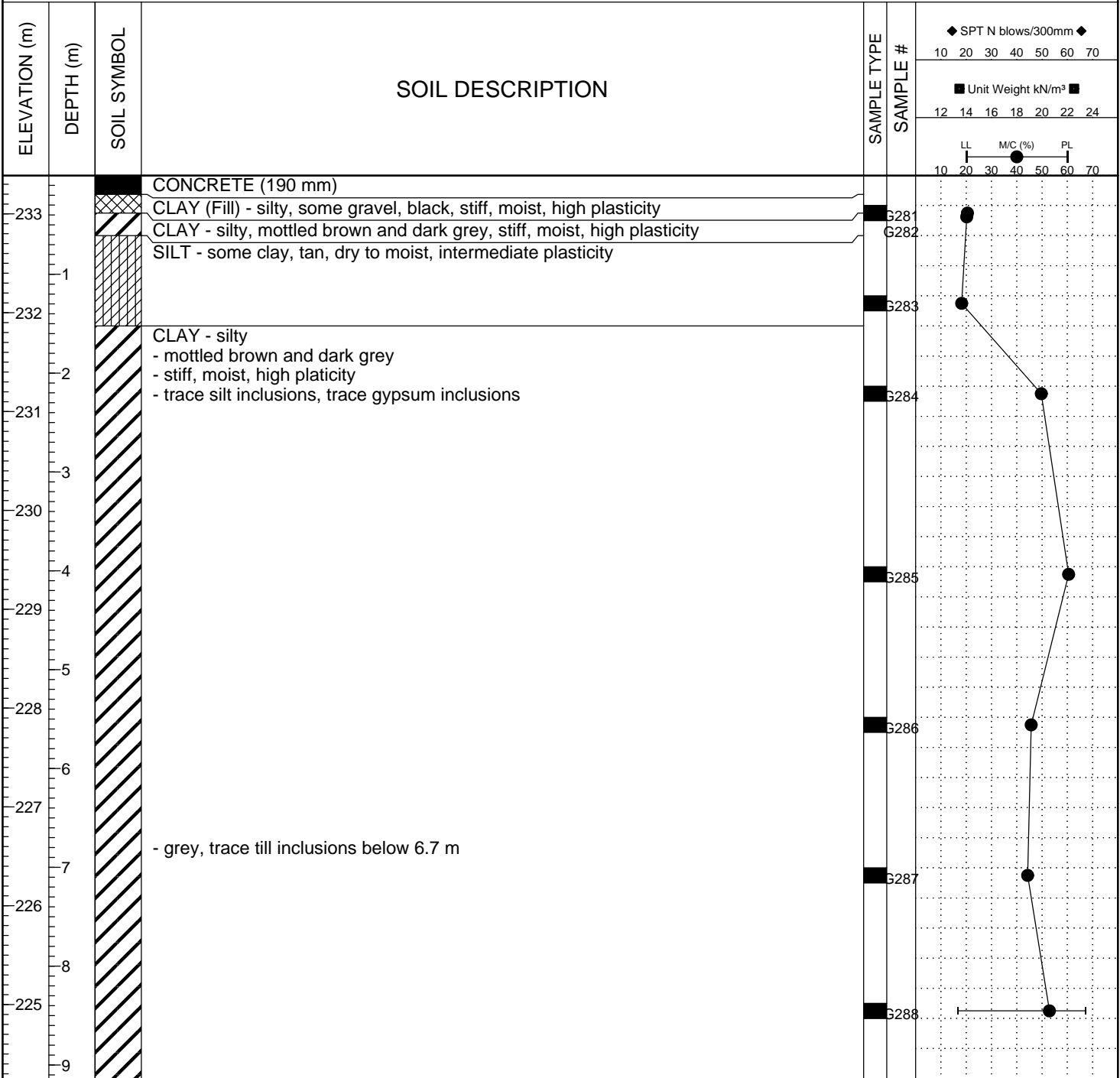


END OF TEST HOLE AT 7.6 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

**APPENDIX A - TEST HOLE LOGS**

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-79		
LOCATION: Madison St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.543		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 9.1 m IN CLAY  
 Notes:  
 1. No sloughing or seepage observed.  
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12