



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 195-2005

**FAIRFIELD PARK LOCAL IMPROVEMENT DISTRICT STAGES II, III AND IV – 2005
SEWER, WATER, ROAD CONSTRUCTION AND ASSOCIATED WORKS**

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

B1.1 FAIRFIELD PARK LOCAL IMPROVEMENT DISTRICT STAGES II, III AND IV – 2005 SEWER, WATER, ROAD CONSTRUCTION AND ASSOCIATED WORKS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 28, 2005.

B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 Further to GC:3.1, the Bidder may view the Site without making an appointment.

B3.2 Soil Test Logs:

B3.2.1 Soil test logs are included for the Bidders use during the bidding period.

B3.2.2 These soil logs were prepared to the use of the Contract Administrator during design.

B3.2.3 The information contained within the soil logs is not guaranteed to be accurate or all inclusive and is not to be considered as part of the project Drawings.

B3.2.4 Before submitting a Bid, the Bidder shall satisfy himself as to the nature of the subsurface materials and conditions. The Bidder shall contact the Contract Administrator to conduct any subsurface exploratory or soils testing.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. ADDENDA

- B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.
- 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 sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.

- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with 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.

B7. BID SUBMISSION

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

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 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 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 own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.1.1 Notwithstanding GC.12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10. QUALIFICATION

B10.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
- (c) be financially capable of carrying out the terms of the Contract;
- (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- (e) have successfully carried out work, similar in nature, scope and value to the Work;
- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);

B10.2 Further to B10.1(g), the Bidder shall, within three (3) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder 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 - Option 1 administered by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association; or
- (c) 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.)

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

B10.4 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.

B11.2 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 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.

B12.1.1 Bidders or their representatives may attend.

B12.1.2 Bid Submissions determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.

B12.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B12.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

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 Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B14.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

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 shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
- (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 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 Bid after the Submission Deadline but before his 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 (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 Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.
- B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- 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 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract by way of a letter of intent, or will give notice that no award will be made.
- 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.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for Construction Contracts* (Revision 2000 11 09) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for Construction Contracts* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall approximately consist of:
- (a) Construction of 2400 m of watermains.
 - (b) Construction of 2200 m of wastewater sewers.
 - (c) Construction of 1850 m of land drainage sewers.
 - (d) Construction of 15700 sq.m. of 7.5 m wide reinforced concrete pavement.
 - (e) Construction of 3800 sq.m. of 10.0 m wide reinforced concrete pavement.
 - (f) Construction of sewer and water building services to 215 lots.
- D2.1.1 Further to CG:7.1, if notice of sufficient funding is not received, the City shall have the right to eliminate all or any portion of the work and the Contract Price will be reduced accordingly.
- D2.1.2 Further to CG:7.5, CG: 7.5.1 and CG:7.6, a reduction in the Contract Price pursuant to D.2.1 shall not be considered in calculating the aggregate reduction in the Contract Price for purposes of CG:7.5.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**WWS**" means Wastewater Sewer;
 - (b) "**LDS**" means Land Drainage Sewer.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is Wardrop Engineering Inc., represented by:
Mr. Gord Steiss, C.E.T.
Wardrop Engineering Inc.
400 – 386 Broadway, Winnipeg, MB R3C 4M8
Telephone No. (204) 956-0980 Facsimile No.(204) 957-5389

D4.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

D5.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D6. NOTICES

D6.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.

D6.3 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D7. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D8. SAFE WORK PLAN

D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

D8.2 The Safe Work Plan 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

D9. INSURANCE

D9.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) all inclusive, with The City of Winnipeg being added as an additional insured, with a cross-liability clause, such liability policy to also contain a contractual liability, an unlicensed motor vehicle liability and a products and completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) automobile liability insurance for owned and non-owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D9.2 Deductibles shall be borne by the Contractor.

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

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

D10. PERFORMANCE SECURITY

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

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

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

D10.2 If the bid security provided in his Bid Submission 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 GC:4.1 for the return of the executed Contract.

D11. SUBCONTRACTOR LIST

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at 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.

D12. SECURITY CLEARANCE

D12.1 Each individual proposed to perform Work under the Contract shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D12.1 Each individual proposed to perform Work:

- (a) on private property;
- (b) within City facilities other than:
 - (i) an underground structure such as a manhole;
 - (ii) in areas and times normally open to the public.

shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D12.2 Prior to the commencement of any Work, 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 Work within City facilities or on private property.

D12.3 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 within City facilities or on private property.

D12.4 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.

D12.5 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 Work under the Contract within City facilities or on private property.

SCHEDULE OF WORK

D13. COMMENCEMENT

- D13.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D13.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in GC:6.14;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11; and
 - (vii) the security clearances specified in D12.
 - (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.
- D13.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D14. WORKING DAYS

- D14.1 Further to GC: 1.1(gg) should the Contractor choose to Work on a Saturday, Sunday or statutory or civic holiday, then that day will be considered to be a Working Day. The day will not be considered as a Working Day if the Contract Administrator determines atmospheric and Site conditions are such that the Contractor is not able to Work at least seven (7) hours during the period between 7:00 A.M. Winnipeg time or the time the Contractor's operation normally commence, whichever is earlier and 7:00 P.M. Winnipeg time.
- D14.2 Further to GC:1.1(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.
- D14.3 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.
- D14.4 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. SUBSTANTIAL PERFORMANCE

- D15.1 The Contractor shall achieve Substantial Performance within ninety (90) Working Days of the commencement of the Work as specified in D13.
- D15.2 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.
- D15.3 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.

D16. TOTAL PERFORMANCE

- D16.1 The Contractor shall achieve Total Performance within one hundred and five (105) Working Days of the commencement of the Work as specified in D13.
- D16.2 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.
- D16.3 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.

D17. LIQUIDATED DAMAGES

- D17.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City One Thousand, Five Hundred dollars (\$1,500) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.
- D17.2 The amount specified for liquidated damages in D17.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.
- D17.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D18. SCHEDULED MAINTENANCE

- D18.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications.
- D18.2 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

D19. JOB MEETINGS

- D19.1 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.
- D19.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D20. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D20.1 Further to GC:6.26, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D21. OFFICE FACILITIES

- D21.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) Conveniently located near the Site of Work.
 - (b) Have a minimum floor area of 20 sq.m., with window area and a door entrance with suitable lock satisfactory to the Contract Administrator.
 - (c) Suitable for all-weather use. It shall be capable of maintaining a temperature range between 16 and 25°C.
 - (d) Equipped with fluorescent lights and electrical wall outlets, all satisfactory to the Contract Administrator.
 - (e) One holding type toilet shall be provided.
 - (f) Furnished with one desk, one drafting table, one filing cabinet, and six chairs, all satisfactory to the Contract Administrator.
 - (g) Telephone, which shall be available from the first day of Work.
 - (h) All of the Contractor's temporary structures located at the site shall be stabilized in a manner sufficient to prevent such temporary structures from being overturned by wind forces as defined in the National Building Code of Canada (NBC). The stabilization provided shall be designed by a Professional Engineer registered in the Province of Manitoba. Detailed drawings and design notes for the structure stabilization works, bearing the Professional Engineers seal, shall be submitted to the Contract Administrator for review.
- D21.2 The provision of the field office with aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs, and any service installation costs, but excluding long distance telephone charges.

D22. LAYOUT SUPPLIES

- D22.1 The Contractor shall supply supplies for layout as required by the Contract Administrator. Supplies shall include stakes, markers, flagging, paint and any other supplies necessary to layout the Work.

WARRANTY

D23. WARRANTY

- D23.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter for all underground work and two (2) years thereafter for all pavement works unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.
- D23.2 Notwithstanding GC:13.2 or D23.1, 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.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____.)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 195-2005

FAIRFIELD PARK LOCAL IMPROVEMENT DISTRICT STAGES II, III AND IV – 2005 SEWER, WATER,
ROAD CONSTRUCTION AND ASSOCIATED WORKS

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 195-2005

FAIRFIELD PARK LOCAL IMPROVEMENT DISTRICT STAGES II, III AND IV – 2005 SEWER,
WATER, ROAD CONSTRUCTION AND ASSOCIATED WORKS

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Page
D-8699	General Plan
LD-3136	Lot Grading Plan
D-8700	Lee Boulevard – 170 m West of Raphael Street to 100 m West of Barnes Street
D-8701	Lee Boulevard – 100 m West of Barnes Street to 130 m East of Barnes Street
D-8702	Lee Boulevard – 130 m East of Shore Street to Shore Street
D-8703	Raphael Street – 40 m North of Fairfield Avenue to Comdale Avenue
D-8704	Colby Avenue – 80 m West of Shore Street to Shore Street
D-8705	Barnes Street – Colebrook Avenue to 30 m North of Fairfield Avenue
D-8706	Barnes Street – 30 m North of Fairfield Avenue to Lee Boulevard
D-8707	Fairfield Avenue – Raphael Street to 30 m East of Barnes Street
D-8708	Fairfield Avenue – 30 m East of Barnes Street to Shore Street
D-8709	Comdale Avenue – Raphael Street to 180 m East of Raphael Street
D-8710	Comdale Avenue – 180 m East of Raphael Street to Shore Street
D-8711	Shore Street – Comdale Avenue to 82 m North of Fairfield Avenue
D-8712	Shore Street – 82 m North of Fairfield Avenue to 55 m North of Lee Boulevard
LD-3137	Typical Cross Sections and Details

E2. CLEARING AND GRUBBING

- E2.1 Description
- (a) This Specification shall amend and supplement Specification CW 3010-R4.
- E2.2 Clearing and grubbing shall be carried out as directed by the Contract Administrator. The following applies to all trees outside the clearing and grubbing limits:
- E2.2.1 The Contractor shall not stockpile materials and soil or park vehicles on boulevards within 2 m of trees.
- E2.2.2 Mature tree trunks shall be strapped with 25 x 150 x 2400 mm (1" x 6" x 8') wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
- E2.2.3 Where roots must be cut to facilitate an excavation, they shall be neatly pruned at the face of the excavation.

- E2.2.4 Equipment shall not be parked, repaired or refuelled within the driplines of trees. Construction materials shall not be stored and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- E2.2.5 Work on Site shall be carried out in such a manner so as to minimize damage to existing tree branches. The Contractor shall be responsible for all costs incurred for the pruning of the trees.
- E2.2.6 All damages to existing trees caused by the Contractor's construction activities shall be repaired at the Contractors expense.
- E2.2.7 No separate measurement or payment will be made for protection of trees outside of the debris and grubbing limits. It shall be considered incidental to the Works.

E3. WATERMAINS

E3.1 Description

- (a) This Specification shall amend and supplement Standard Specification CW 2110-R7 and CW 2125.

E3.2 Materials

E3.2.1 Watermains

- (a) The following pipe materials shall be considered approved for watermains:
- (i) Polyvinyl Chloride Class 150 conforming to American Water Works Association (AWWA) Standard C 900, ASTM Specification D-1784 shall be Bell & Spigot with gaskets conforming to ASTM Specification F 477.
 - (b) The following pipe material shall be considered approved for 20 mm to 50 mm diameter watermain:
 - (i) Annealed copper type "K" conforming to ASTM Specification B88.

E3.2.2 Hydrants

- (a) All hydrants shall be of a type approved for use in the City of Winnipeg.

E3.2.3 Valves

- (a) All gate valves shall conform to American Water Works Association Standard C 509 and shall be of a type approved for use in the City of Winnipeg.

E3.2.4 Fittings

- (a) All bends, crosses, tees, reducers and specials shall conform to AWWA Standard C-110 and shall be of a type approved for use in the City of Winnipeg.
- (b) All fasteners, tie rods, clamps, nuts, and bolts used to prevent movement shall be stainless steel conforming to ANSI Specification 303 and ASTM Specification A320 (AISI Type 316).
- (c) Pipe couplers for watermains shall be Dresser Style 38, Rockwell (Smith-Blair), ROBAR, or approved equal.
- (d) All couplers shall be supplied complete with a fusion bonded epoxy coating, in accordance with AWWA C 213.
- (e) All fittings (including couplers) shall be wrapped with 8 mil thick polyethylene in conformance with AWWA Standard C105.

E3.3 Construction Methods

E3.3.1 Bedding and Backfill

- (a) The bedding and backfill for watermains installed in open trenches shall be Class 4 as shown in Standard Drawing SD-001 and specified in Section CW 2110-R7, Clause 3.2 and Section CW 2030-R8, Clause 3.3. Governed by his compaction equipment and the type and strength of pipe, the Contractor shall ensure that there is adequate cover on the pipe to prevent damage during compaction operations.

E3.3.2 Cored Sections

- (a) The watermain shall be installed by coring at all existing and proposed road crossings, including existing driveways adjacent to existing hydro poles, and at locations shown on the Construction Drawings. Coring shall be as specified in Section CW 2110-R7, Clause 3.4.

E3.3.3 Installation in Open Trench with Class 2 Backfill as an Alternate to Installation in Cored Hole

- (a) Where field conditions are such that a cored hole cannot be made, the Contractor, after receiving written approval from the Contract Administrator, shall install the pipe in an open trench with Class 2 backfill.

E3.3.4 Connection to Existing Plugs

- (a) Connections are to be made to existing plugs as shown on the Drawings. The Contractor shall remove any existing plugs in tees, crosses, and stubs; as shown on the Drawings and connect the proposed watermain. No extra payment will be made for the connection to existing plugs.
- (b) Upon receipt of adequate notice, City Work forces shall turn existing watermains off and on as required for the Contractor, at no cost to the Contractor. At no time shall the Contractor operate the valves on the existing watermain system or new valves tied into the existing system.

E3.3.5 Installation of Valves

- (a) Valves shall be installed in the locations shown on the Construction Drawings and shall be installed in accordance with Section CW 2110-R7. Where possible, valves are not to be installed in pavement.
- (b) The top of the false valve spindle shall extend to between 150 mm and 450 mm below the top of the valve box. Direction to open and close shall conform to Standard Drawing SD-008.

E3.3.6 Installation of Hydrants

- (a) Hydrants shall be installed at the locations shown on the Construction Drawings. The Work shall be performed in accordance with Specification CW 2110-R7, and as shown in Standard Drawing SD-006 or SD-007. Depth of bury shall be to suit the watermain profile and the hydrant shall be placed so that the pumper nozzle faces the street. The finished flange elevation shall be between 50 mm and 150 mm above proposed finished grade. No extra payment will be made for any extensions or adjustments required to meet this grade. Hydrant leads greater than 2.0 m will be paid for at the unit price for 150 mm watermain, Class 4 backfill.

E3.3.7 Plugs

- (a) Plugs shall be supplied and installed complete with blocking at the locations shown on the Construction Drawings.

E4. WASTEWATER SEWERS

E4.1 Description

- (a) This Specification shall amend and supplement Standard Specification CW 2130-R8 and CW 2145-R1.

E4.2 Material

- (a) All concrete pipe shall be the class specified on the Construction Drawings. Classes shall conform to ASTM Specification C14 and C76.
- (b) All PVC pipe shall be SDR-35 conforming to ASTM Specification D3034.
- (c) All risers shall be 150 mm diameter, PVC.

E4.3 Construction Methods

E4.3.1 Bedding and Backfilling

- (a) The bedding and backfilling for wastewater sewers installed in open trenches shall be Class 4 as shown in Standard Drawing SD-001 and specified in Section CW 2030-R6, Clause 3.8.4.
- (b) Governed by his compaction equipment and the type and strength of pipe, the Contractor shall ensure that there is adequate cover on the pipe to prevent damage during compaction operations.
- (c) In locations where the vertical separation between the wastewater sewer and land drainage sewer exceeds 1.0 m and the wastewater sewer trench undermines the trench bottom of the land drainage sewer, the bedding and backfilling for the wastewater sewer shall be as CW 2030-R6, Clause 3.11.2, Installation of Parallel Mains. The lower trench is to be backfilled with granular material to the invert of the higher pipe.

E4.3.2 Cored Sections

- (a) All sewer pipe 375 mm diameter and smaller crossing existing or proposed pavement and at locations shown on the Construction Drawings shall be installed by coring. Coring shall be as specified in Section CW 2130, Clause 3.4.

E4.3.3 Installation in Open Trench with Class 2 Backfill as an Alternate to Installation in Cored Hole

- (a) Where field conditions are such that a cored hole cannot be made, the Contractor, after receiving written approval from the Contract Administrator, shall install the pipe in an open trench with Class 2 backfill.

E4.3.4 Sewer Stubs and Plugs

- (a) The Contractor shall install sewer stubs and plugs where noted on the Construction Drawings. No additional payment will be made for short stubs and plugs. A short stub will be considered as one pipe length. Payment shall be allowed for longer stubs to be plugged for future connections.

E4.3.5 Connecting to Existing Stubs

- (a) The Contractor shall remove existing plugs and connect to existing sewers where shown on the Construction Drawings. The Contractor shall note that the existing wastewater sewer may be surcharged. The Contractor shall plug and dewater the stub ends as necessary to complete the required corrections. Where required by the Contract Administrator, trench shoring shall be used to protect existing pavement. No additional payment will be made for connecting to existing stubs.

E4.3.6 Connections to Existing Manholes/Sewers

- (a) The Contractor shall connect to existing manholes or sewers as shown on the Construction Drawings. This Work shall be performed in a workmanlike manner according to the dictates of good practice. Existing manhole floors shall be rechanneled and properly benched, the junction area shall be grouted to form a smooth joint, all debris including concrete and excavated material, shall be removed and the vicinity of the connection shall be left in a tidy condition.
- (b) The Contractor shall plug all proposed sewer mains at the point of connection to existing sewer mains until the proposed system has been inspected and accepted by the Contract Administrator and the City.

E4.3.7 Sewer Connection Risers

- (a) Risers shall be installed on wastewater sewers at the locations necessary for lot servicing as directed by the Contract Administrator, in accordance with Standard Drawing SD-015.

E4.4 Depth Classification

- (a) Further to Clause CW 2130, Clause 4.1.6 delete all references to depth classifications.

E5. LAND DRAINAGE SEWERS

E5.1 Description

- (a) This Specification shall amend and supplement Standard Specification CW 2130-R8 and CW 2145-R1.

E5.2 Material

- (a) All concrete pipe shall be the class specified on the Construction Drawings. Classes shall conform to ASTM Specification C 14 and C 76.
- (b) All PVC pipe shall be SDR-35 conforming to ASTM D3034.

E5.3 Construction Methods

E5.3.1 Bedding and Backfilling

- (a) The bedding and backfilling for land drainage sewers installed in open trenches in the boulevard areas shall be Class 4 as shown in Standard Drawing SD-001 and specified in Section CW 2030-R6, Clause 3.8.4.
- (b) Governed by his compaction equipment and the diameter and class of pipe, the Contractor shall ensure that there is adequate cover on the pipe to prevent damage during compaction operations.

E5.3.2 Cored Sections

- (a) All sewer pipe and catchbasin leads 3600 mm diameter and smaller crossing existing or proposed pavement and at locations shown on the Construction Drawings shall be installed by coring. Coring shall be as specified in Section CW 2130-R8, Clause 3.4.

E5.3.3 Installation in Open Trench with Class 2 Backfill as an Alternate to Installation in Cored Hole

- (a) Where field conditions are such that a cored hole cannot be made, the Contractor, after receiving written approval from the Contract Administrator, shall install the pipe in an open trench with Class 2 backfill.

E5.3.4 Sewer Stubs and Plugs

- (a) The Contractor shall install sewer stubs and plugs where noted on the Construction Drawings. No additional payment will be made for short stubs and plugs. A short stub will be considered as one pipe length. Payment shall be allowed for longer stubs to be plugged for future connections.

E5.3.5 Connections to Existing Stubs

- (a) The Contractor shall remove existing plugs and connect to existing sewers where shown on the Construction Drawings. Where required by the Contract Administrator, trench shoring shall be used to protect existing pavement. The Contractor shall note that land drainage sewer connections are generally below the normal water level of the lake. The Contractor shall plug and dewater the stub ends as necessary to complete the required connections. No additional payment will be made for connecting to existing stubs unless otherwise noted.

E5.3.6 Connections to Existing Manholes/Catchbasins/Sewers

- (a) The Contractor shall connect to existing manholes, catchbasins or sewers as shown on the Construction Drawings. The Work shall be performed in a workmanlike manner according to the dictates of good practice. Existing manhole floors shall be rechanneled and properly benched, the junction area shall be grouted to form a smooth joint, all debris including concrete and excavated material shall be removed and the vicinity of the connection shall be left in a tidy condition.
- (b) The Contractor shall plug all proposed sewer mains at the point of connection to existing sewer mains until the proposed system has been inspected and accepted by the Contract Administrator and the City.
- (c) The Contractor shall note that many connections are below the normal water level of the lake (Normal water level = 228.750). The Contractor shall plug and dewater the manhole/catchbasin/sewer as necessary to complete the required connections.

E6. SEWER MANHOLES

E6.1 Description

- (a) This Specification shall amend and supplement Standard Specification CW 2130-R8, CW 2140-R1 and CW 2145-R1.

E6.2 Materials

- (a) Manhole frames and covers shall have machined seating surfaces and shall be in accordance with Standard Drawings SD-010 and SD-011.
- (b) All manholes shall be constructed with a 750 mm x 150 mm ring immediately below the frame and cover.

E6.3 Construction Methods

E6.3.1 Bedding and Backfill

- (a) The manhole base section shall be bedded on a thoroughly compacted 100 mm thick bed of sand. This bedding shall be fully compacted and leveled throughout the full trench width to the exact grade specified so that the base section is uniformly and fully supported and the floor is level.
- (b) The space between the outside of the manhole and the wall of the excavated area shall be backfilled to Class 3 standards. No extra payment will be made for this Work, it shall be considered incidental to the price paid for manholes.

- (c) The last two (2) linear metres of all pipes connecting to manholes shall be backfilled to Class 2 standards. This Work shall be paid for as Class 2 backfill for each particular pipe.
- (d) The Contractor shall pay particular attention to backfilling around the manhole to ensure that the required backfill compaction is achieved.

E6.3.2 Connecting PVC Pipe to Manholes

- (a) Where PVC pipe is used, at the entrance to manholes, the pipe end shall be coated with an approved cementing agent to which sand has been added, and shall be allowed to harden prior to grouting the pipe into the manhole. This practice shall promote a suitable bond between PVC pipe and the concrete.
- (b) A pre-treated PVC gasketed "horsecollar" manhole insert conforming generally to the above and providing a watertight bond and joint, shall be considered approved.
- (c) This treatment of PVC pipe at manholes shall be considered incidental to the installation of sewer main. No separate measurement or payment shall be made for this item.

E6.3.3 Curb Clearance

- (a) A minimum clearance of 300 mm shall be maintained between manhole frame and back of curb at all times.

E7. SUBGRADE, SUBBASE AND BASE COURSE CONSTRUCTION

E7.1 Description

- (a) This Specification shall amend and supplement Specification CW 3110-R7.

E7.2 Construction Methods

E7.2.1 Excavation

- (a) Excavation shall consist of street excavation, boulevard excavation, lot excavation and associated works as herein specified.

E7.2.2 Street Pavement Excavation

- (a) This shall be done in accordance with Specification CW 3110-R7.
- (b) Fill from the lake excavation has been placed on the Raphael Street right-of-way, between Fairfield and Comdale Avenues. At this location excavate to original ground elevation. Build up to subgrade level with suitable site material, placed in maximum 150 mm lifts and compacted to 95% of Standard Proctor Density.
- (c) Excavate 1200 LDS trench backfill (along Lee Boulevard) under proposed pavement to minimum depth of 1.0 metre below subgrade. Build up to subgrade level using suitable site material placed in maximum 150 mm lifts and compacted to 95% of Standard Proctor Density.

E7.2.3 Ditching

- (a) Where shown on the Drawings, ditching shall be excavated to provide a runoff channel away from paved roads.

E7.2.4 Excavation for Boulevards

- (a) Boulevards are defined as areas between the back of the curb and the property line (flankage streets) and from the back of curb to the limit of the utility corridor for frontage streets. Excavation for boulevards shall be to the lines and grades shown on the Drawings and/or as required.

- (b) The Contractor shall remove and dispose of erosion control devices as part of excavation.
- (c) Excavation for boulevards shall be done in conjunction with, and at the same time as, the excavation for pavement. The Contractor will ensure that a windrow of sufficient volume of subgrade material is left on the boulevard for backfilling behind the curb. There shall be no separate measurement of quantities for boulevard excavation and fill. In cut sections, the excavation quantity shall be calculated from cross sections. In fill sections, the approved material placed shall be classified as disposal of excavation and no measurement shall be made. For fills greater than 300 mm (ditches) fill shall be placed in maximum 150 mm lifts and compacted to a minimum of 95% of Standard Proctor Density. Boulevards shall be filled with earth, free from broken concrete, cinders, gravel or other foreign material. The boulevard shall be graded from the top of the curb to the proposed elevation at the property line so as to allow drainage from the property over the adjoining curb. The finished surface shall not vary more than 25 mm from a straight grade between the above limits.
- (d) Payment for sloping and grading of boulevards shall be included in the price for excavation.

E7.2.5 Lot Grading

- (a) The lots shall be graded to the lines and grades as shown on the lot grading plan with an allowance made for future basement excavation. A blade grader shall be employed to shape the final grade to within 25 mm of the grades staked by the Contract Administrator.
- (b) Excavation shall be paid for at the unit price bid for "Excavation". The fill sections shall be considered as disposal areas for excavated material and no measurement or payment will be made for this item.
- (c) Payment for the shaping and grading of the fill and excavation areas of the lots will be measured on an area basis at the Contract Unit Price bid for site grading. The area to be paid is the total number of square meters of the lots accepted and measured by the Contract Administrator.

E7.2.6 Utility Trenches

- (a) The contractor shall install all conduits for utility crossings in the right of ways. The conduit shall be 1.5 m below the finished gutter elevation of the road. End caps and planks to be placed at each end. The conduit shall be installed by trenchless methods under pavement areas and as per CW 2030-R6, Clause 3.8.4 under all other areas.
- (b) Utility crossings shall be laid out at the time of construction by the Contract Administrator.
- (c) If utility crossings are missed or installed incorrectly by the Contractor, the utilities will reinstall the crossing at the Contractor's expense with no liability to the utility.
- (d) The utility shall supply all conduit, end caps and marking planks.

E7.2.7 Base Course

- (a) All granular base course for reinforced concrete pavement or plain dowelled concrete pavement shall be placed and compacted as specified to a finished thickness of 100 mm.

E7.3 Method of Measurement and Basis of Payment

E7.3.1 Excavation

- (a) Excavation limits shall be in accordance with CW 3110-R7, Clause 3.2.5.
- (b) Removal and disposal of erosion control devices shall not be measured for payment. The removal and disposal will be considered incidental to excavation.

- E7.3.2 Ditching
- (a) Ditching shall be measured in linear metres.
- E7.3.3 Existing Culverts
- (a) Measurement of removing and disposing of existing culverts shall be paid for at the contract unit price.
- E7.3.4 Payment for suitable site subbase material for street pavements shall be in accordance with CW 3110-R7.

E8. PORTLAND CEMENT CONCRETE PAVEMENT WORKS

- E8.1 Description
- (a) This Specification shall amend and supplement Specification CW 3310-R7.
- E8.2 Construction Procedures
- E8.2.1 Reinforced Concrete Pavement
- (a) Reinforced concrete pavement shall be 150 mm thick for 7.5 metre wide streets, for lanes, for lane approaches and for residential approaches.
 - (b) Reinforced concrete pavement shall be 200 mm thick for 10.0 metre wide streets and for all approaches abutting a 10.0 metre wide street excluding residential approaches.
- E8.2.2 Concrete Lip Curb
- (a) Lip curb is to be placed as noted on the Construction Drawing. Lip curb shall be constructed in accordance with the Standard Drawing SD-202.
- E8.2.3 Concrete Modified Barrier Curb
- (a) Modified barrier curb is to be placed on all radii greater than 10.00 m, on all streets greater than 7.5 m wide and at locations shown on the Construction Drawings in accordance with Standard Detail SD 203B.
- E8.2.4 Transition Curb
- (a) 3.0 metre transitions will be constructed to change between lip curb and modified barrier curb, in accordance with the Construction Drawings.
- E8.2.5 Sawcut Existing Pavement
- (a) The existing edge of pavement shall be sawcut at the terminus of existing pavements. If the edge of pavement is chipped or fractured, 150 mm of pavements shall be sawed off to provide a clean tie in.
 - (b) Removal and disposal of the sawed off pavement will be considered incidental to saw cutting existing pavement. The sawcut of existing pavement shall be paid for on a lineal metre basis.
- E8.2.6 Dead end Barricades
- (a) Barricades shall be installed at the locations shown on the construction drawings. Barricades are to be installed by others.
- E8.2.7 Cul-de-sac Islands
- (a) All cul-de-sac islands are to be back filled with compacted suitable site material to curb level, in accordance with CW 3110-R7.

E8.3 Measurement and Payment:

- (a) The removal and disposal of the sawed off pavement will be considered incidental to saw cutting existing pavement. The sawcut of existing pavement shall be paid for on a lineal metre basis.

E9. EXISTING SEWER UTILITIES AND STRUCTURES

E9.1 Description:

- (a) This specification shall amend and supplement standard specification CW 1120-R1.

E9.2 Construction Methods:

- (a) The Contractor is responsible for locating existing services, utilities and structures at time of construction.

E10. TRAFFIC CONTROL AND RESIDENTIAL ACCESS

E10.1 Traffic Control and Maintenance of Access

- (a) It will be the responsibility of the Contractor under the Contract to maintain traffic during the entire period of the Contract and to ensure that maximum protection is afforded to the road user and that the Contractor's operations in no way interfere with the safe operation of traffic.
- (b) Where deemed necessary by the Consultant a temporary access roadway shall be provided by the Contractor for any residence or building that does not have an alternate means of vehicular access. The access roadway shall also be maintained, removed and the site thoroughly cleaned up on completion by the Contractor. The cost of this Work shall be borne by the Contractor.
- (c) The Contractor shall supply, erect and maintain all applicable traffic control devices in accordance with the provisions contained in the latest edition of the "Manual of Temporary Traffic Control in Work Areas on City Streets" issued by the City of Winnipeg. The manual is available from the City of Winnipeg, internet site <http://www.winnipeg.ca/publicworks/transportation/services.asp>.
- (d) The Contractor shall provide and maintain flagmen in accordance with the above mentioned manual.
- (e) The Contractor shall take all other safety measures necessary to cope with any peculiar or unusual circumstances which have not been set out in the above mentioned manual.
- (f) Improper signing will be sufficient reason for the Consultant to immediately shut down the entire job.
- (g) Barricades supplied and installed by the Contractor in the performance of the Work must clearly show the name of the Contractor and the telephone number(s) at which he can be reached twenty-four (24) hours a day, seven (7) days a week.

E10.2 The Contractor shall prepare a schedule based on completing Stage II as a priority. Underground work and surface work must be completed first in Stage II.

E10.3 Prior to construction the Contractor will submit a Construction Sequence Plan for the work for the Contract Administrators review and approval. The plan will include traffic control as well as a plan to maintain one way vehicular access to existing residences during construction.

E10.3.1 The plan is to be reviewed with area residents and the Contractor will be required to attend a meeting with the residents to discuss access during construction.

E11. BUILDING CONNECTIONS

E11.1 Description

- (a) This Specification shall amend and supplement Standard Specification CW 2110-R7 and CW 2130-R8.

E11.2 Material

E11.2.1 Sewer Service

- (a) The following pipe is approved for sewer service:
 - (i) PVC pipe SDR 35 conforming to ASTM Specification D 3034.

E11.2.2 Pipe Joints

- (a) All sewer pipe joints shall be the rubber gasket type.

E11.2.3 Water Connection

- (a) The following pipes are approved for water connection:
 - (i) Annealed copper type "K" conforming to ASTM Specification B 88.
- (b) All Fittings shall be the standard brass compression or flared type.

E11.2.4 Pipe Size

- (a) All sewer service pipe shall be 150 mm diameter.
- (b) Water service pipe shall be 20 mm diameter.

E11.2.5 Sand

- (a) Sand for bedding and backfill shall be in accordance with Specification CW 2030-R6.

E11.2.6 Wooden Service Markers

- (a) Wooden markers for curb stops shall be 100 mm x 100 mm x 3000 mm minimum size.

E11.3 Construction Methods

E11.3.1 Bedding and Backfilling

- (a) The bedding and backfilling for building connections installed in an open trench shall be Class 4 as shown in Standard Drawing SD-001 and specified in Section CW 2030, Clause 3.8.4.

E11.3.2 Pipe Installation

- (a) Where possible sewer and water connections shall be installed in the same trench or cored hole.
- (b) Where building connections are laid across recently excavated trenches, particular care shall be taken to compact the backfill under the building service.

E11.3.3 Cored Sections

- (a) All building connections crossing existing or proposed pavement shall be installed by coring. Coring shall be as specified in Section CW 2130-R8, Clause 3.4.

E11.3.4 Installation in Open Trench with Class 2 Backfill as an Alternate to Installation in Cored Hole

- (a) Where field conditions are such that a cored hole cannot be made, the Contractor, after receiving written approval from the Contract Administrator; shall install the pipe in an open trench with Class 2 backfill.

E11.3.5 Curb Stops

- (a) Curb stops shall be installed in accordance with CW 2110-R7 including the curb stop box. A 100 mm x 100 mm x 3000 mm wooden marker shall be placed adjacent to the curb stop and shall extend from the invert of the service to a minimum of 0.5 m above the ground level. Curb stops shall be installed such that the stop is aligned perpendicular to the property line.

E12. CONTROL OF WATER

- E12.1 The Contractor is advised that the existing land drainage sewer system in the Fairfield Park area is connected to the existing stormwater retention pond west of Raphael Street. Accordingly, the system is surcharged to the normal water level of the pond, or elevation 228.75. Note that higher levels are possible after significant rainfall events. Connecting to the existing system, at elevations lower than the pond level, will require controls to prevent flooding the work area. All costs associated with the control of water, including placing and removal of plugs, pumping, etc. shall be included with the unit price bid for connecting to existing manholes or sewers.

E13. MAINTAINING WASTEWATER SERVICE

- E13.1 The Contractor is advised that the existing 150 sewage forcemain in the north boulevard of Lee Boulevard provides wastewater service to the existing school and four homes between Barnes Street and Shore Street. The forcemain is to be abandoned under this Contractor, and the services connected to the new wastewater sewer; however, wastewater service to all the above noted sites is to be maintained during construction. No separate payment will be made for maintaining wastewater service to the affected properties. Costs associated with this item of Work are to be included with the unit price bid for "Connections to existing wastewater services".

E14. EXISTING WATER SERVICES

- E14.1 The Contractor is advised that the existing businesses and residences along Lee Boulevard are connected to the existing watermain. A temporary pressurized water system in accordance with CW 2110-R7 is to be provided during the watermain renewal works. No additional payment will be made for this item of Work.

E15. SIDEWALK CONSTRUCTION

- E15.1 The Contractor is advised that the sidewalk construction will be delayed until the spring of 2006. This item of Work is to be completed by June 15, 2006.

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-1

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

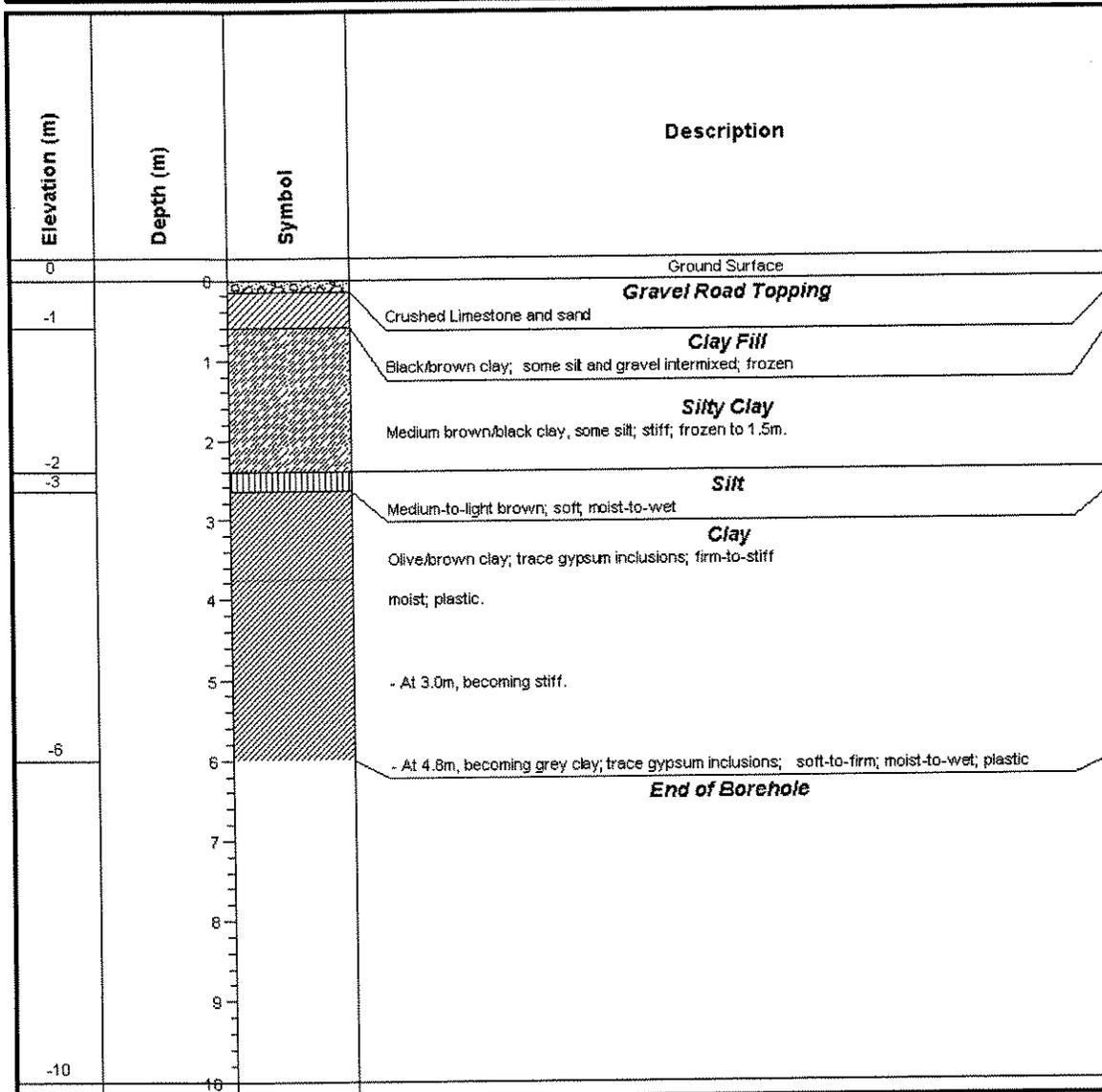
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation: N/A

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum: N/A

Well Materials: N/A

Well Casing Elevation: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-2

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

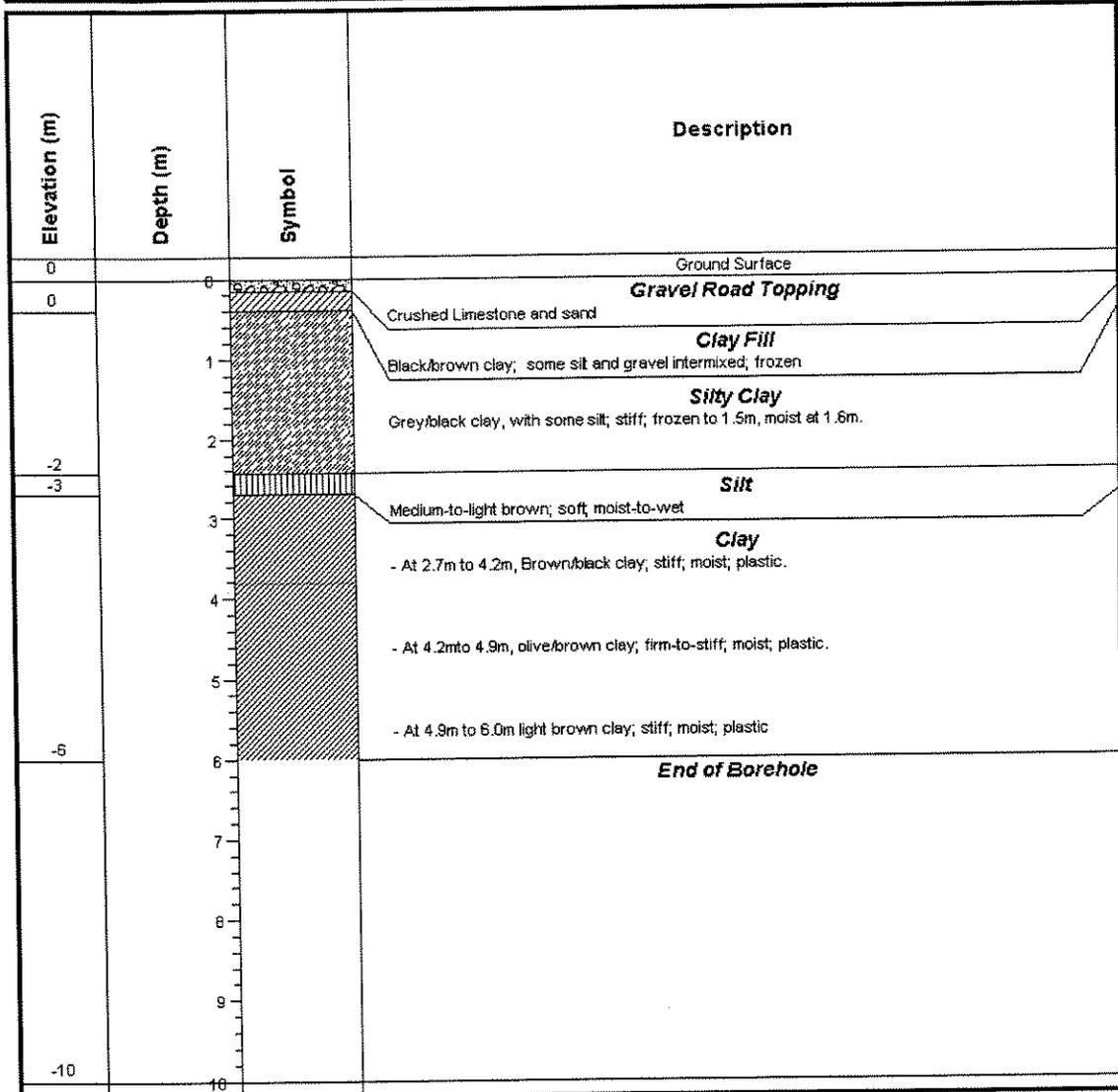
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation: N/A

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum: N/A

Well Materials: N/A

Well Casing Elevation: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-3

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

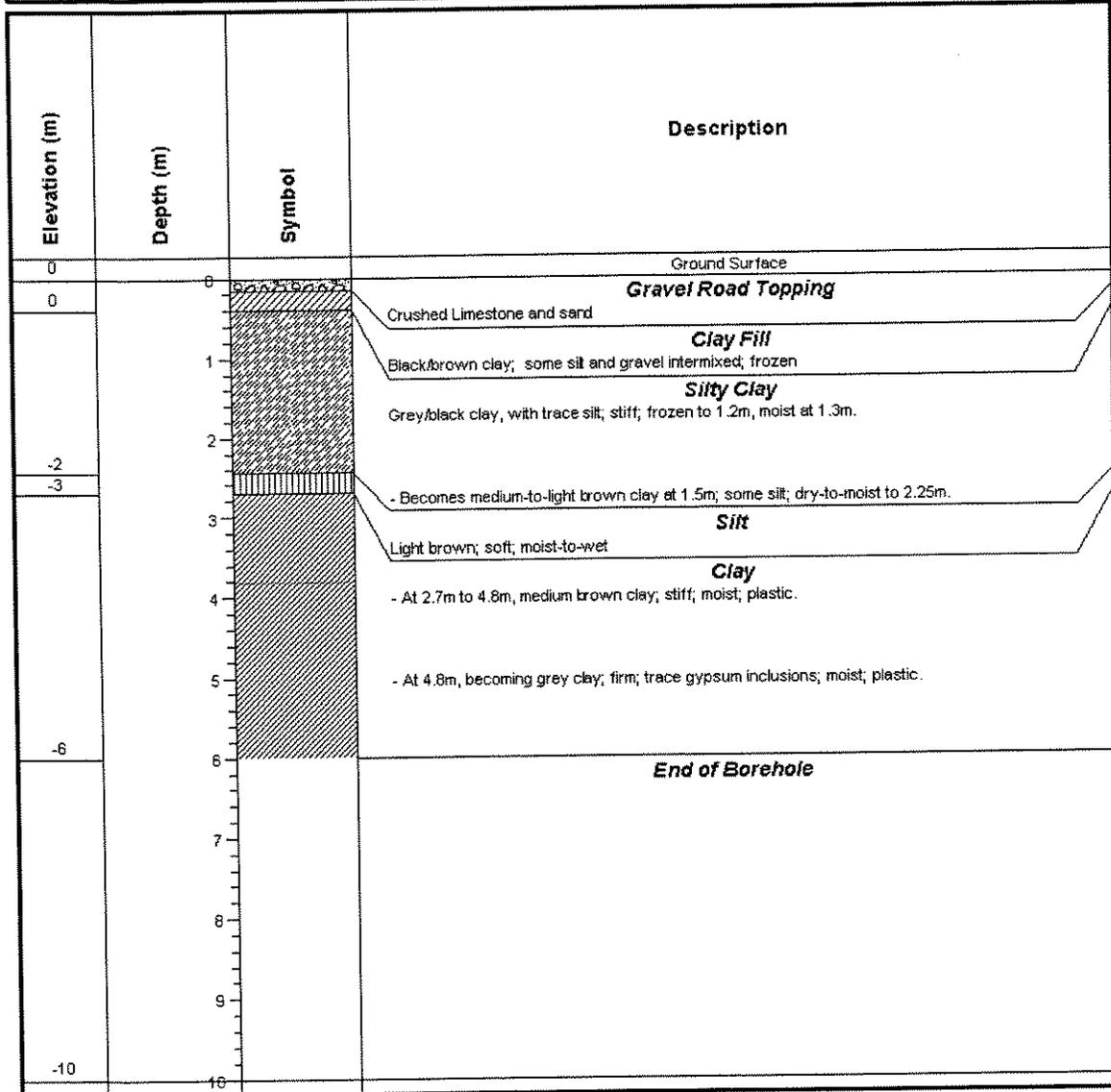
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-4

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

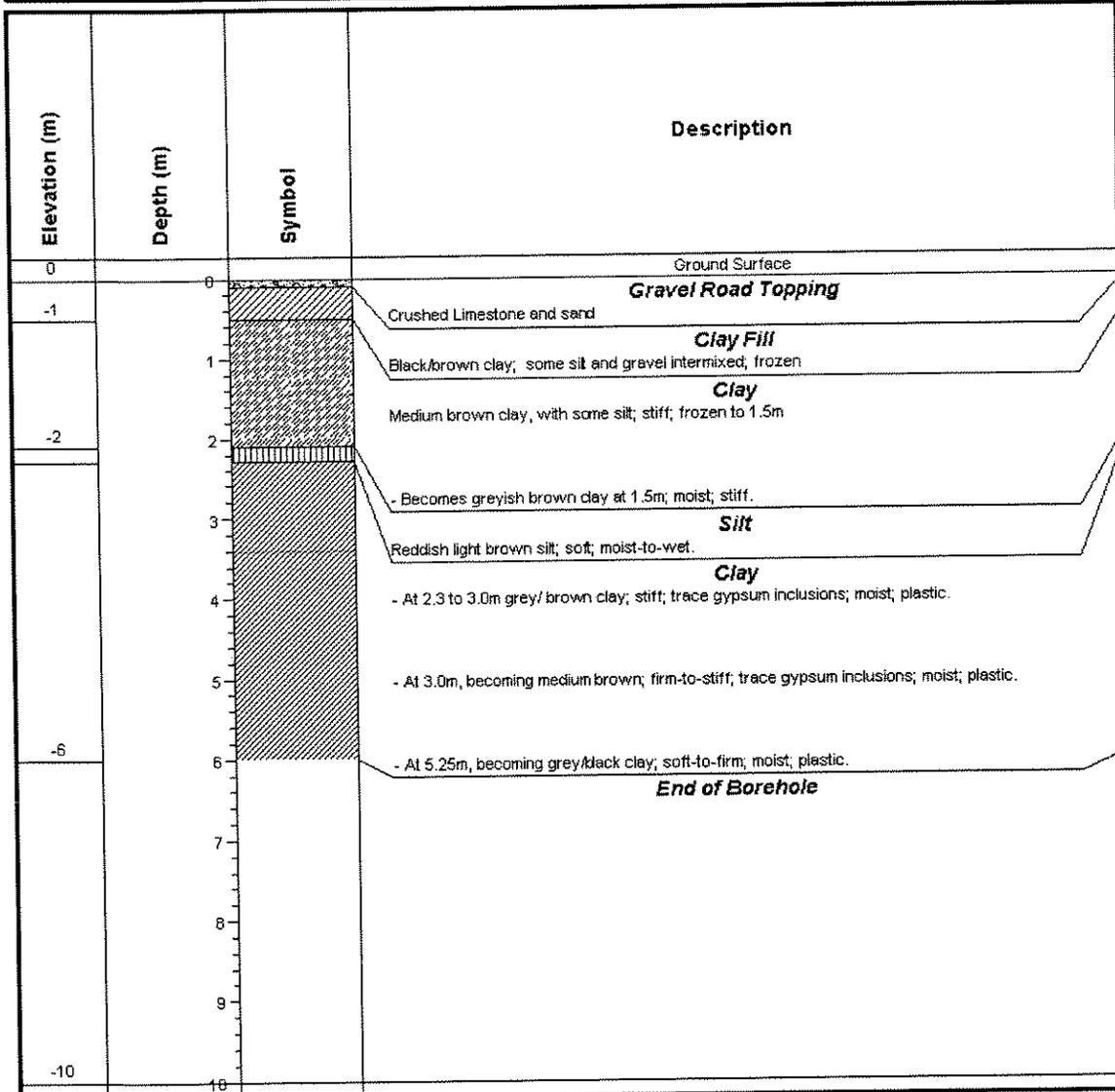
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-5

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

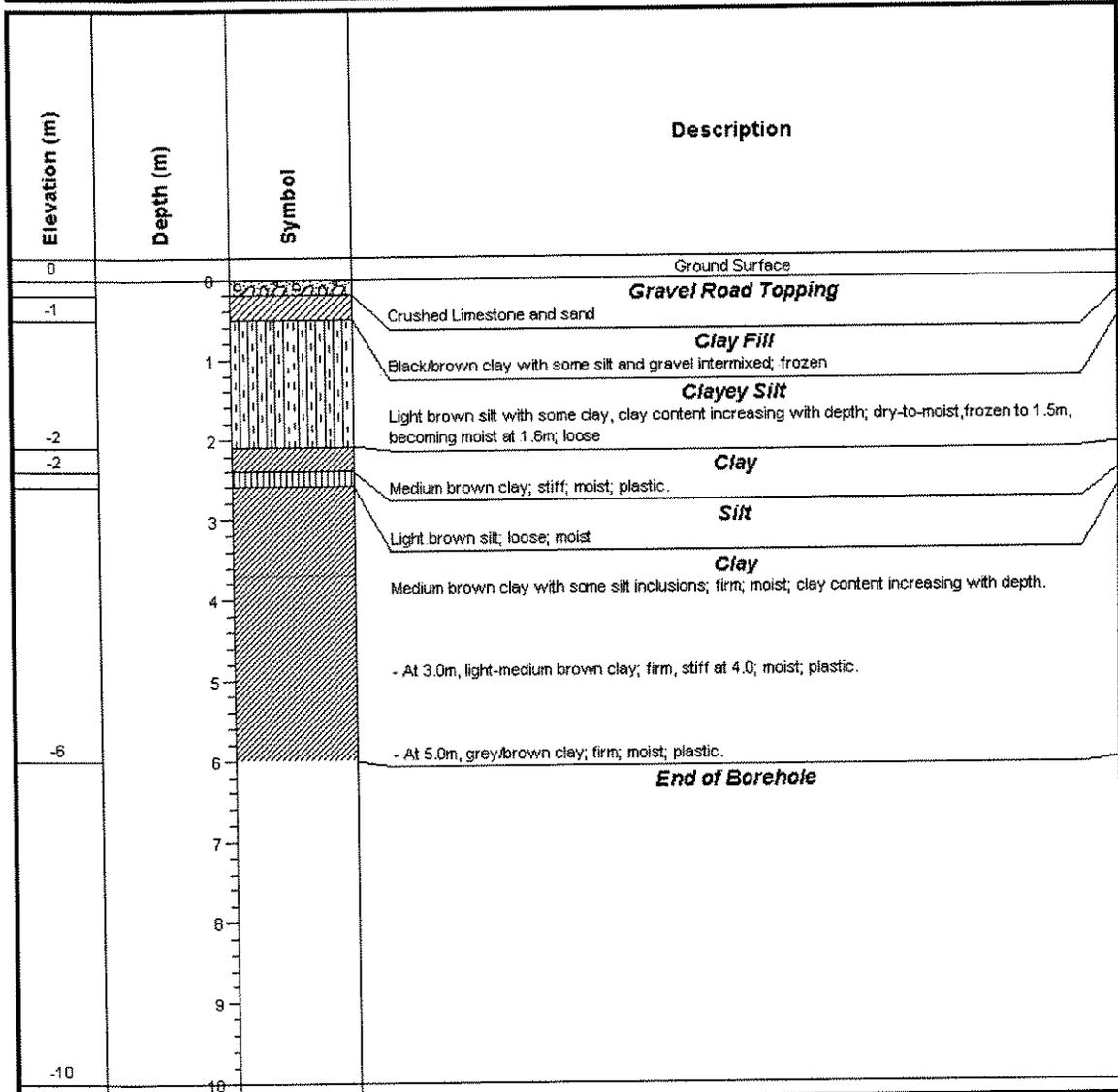
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-6

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

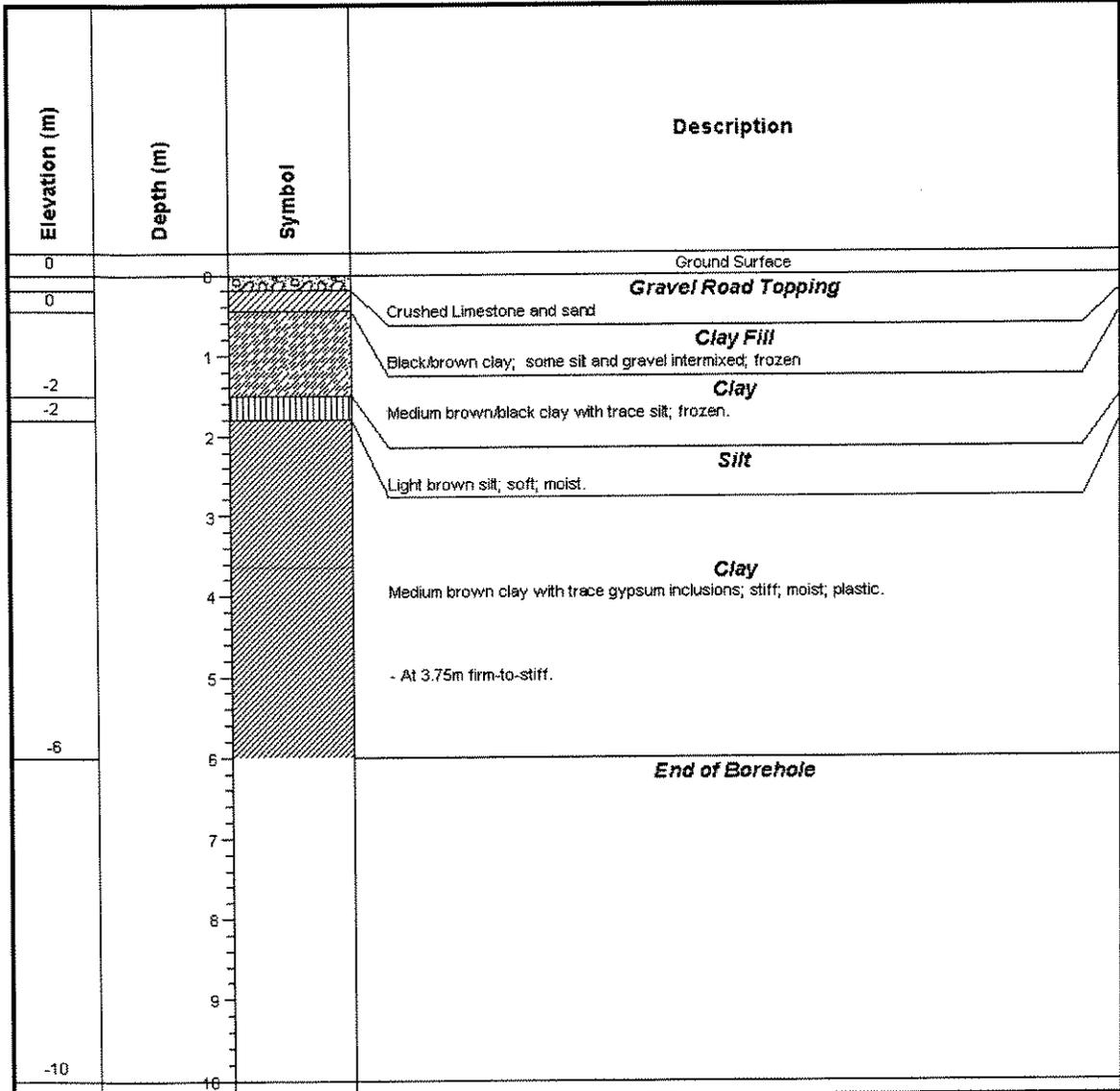
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type:

Datum:

Well Casing Elevation:

Water Table Elevation:

Date Measured:

Well Materials:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-7

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

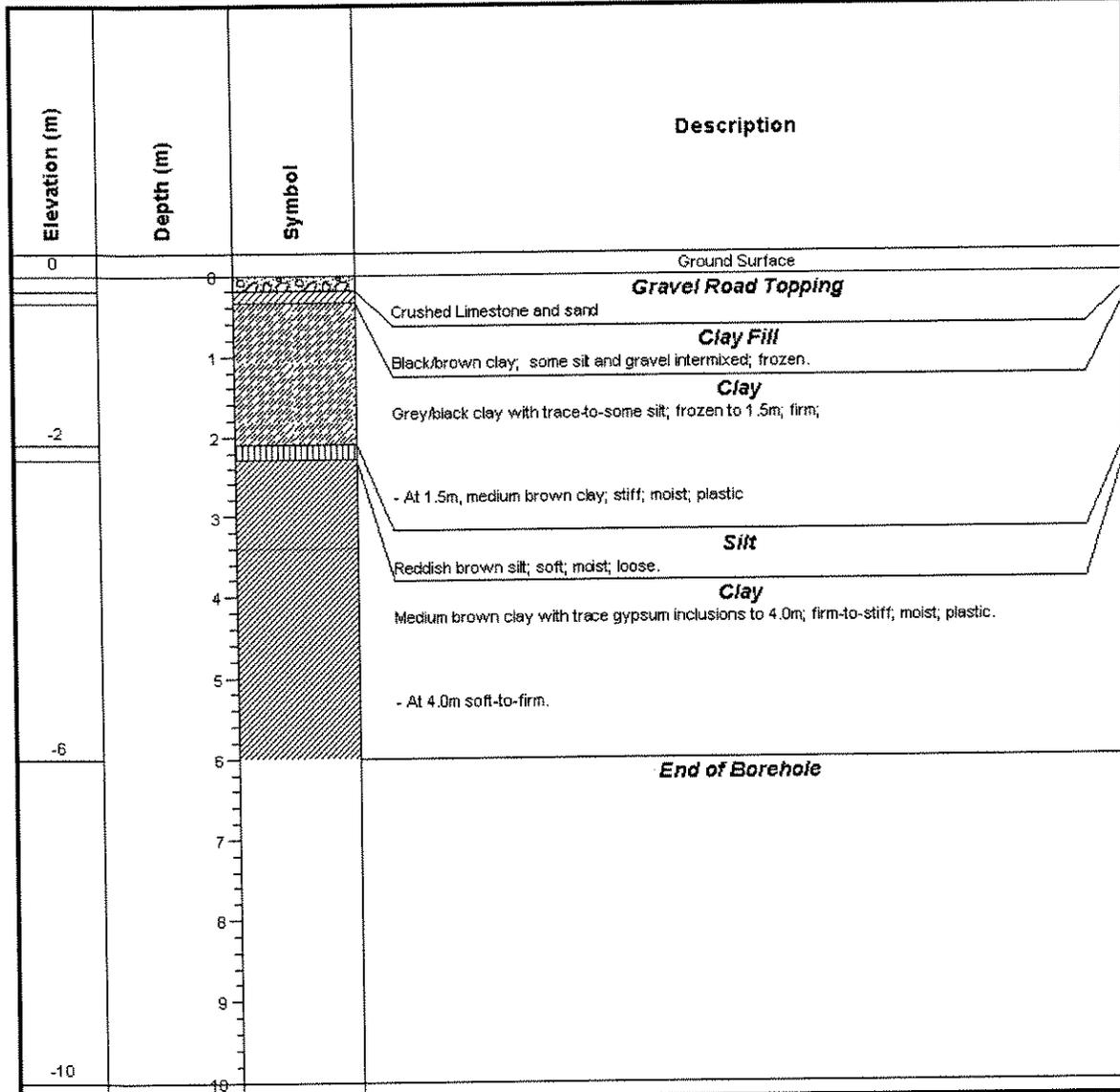
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation: N/A

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum: N/A

Well Materials: N/A

Well Casing Elevation: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-8

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

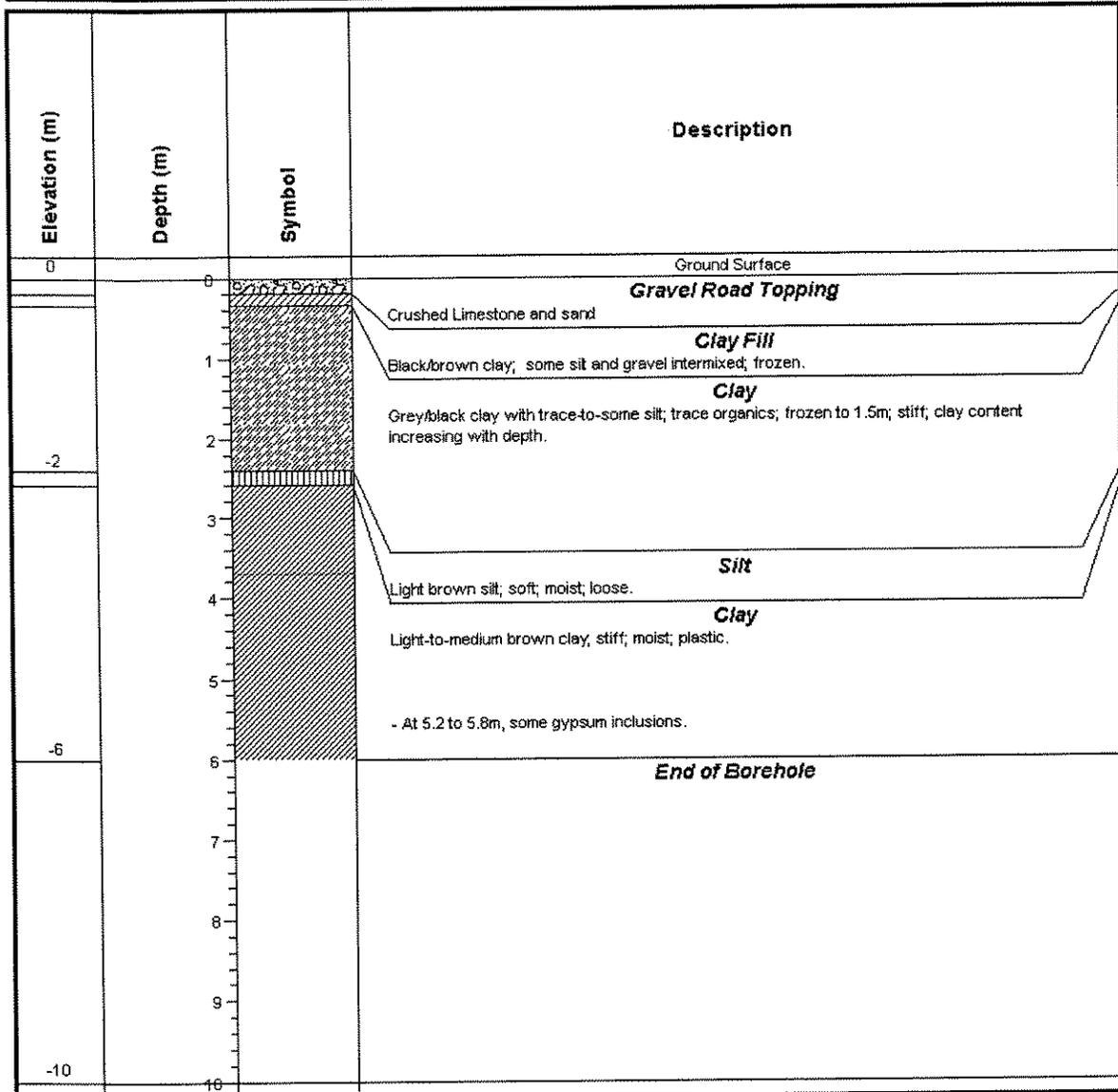
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-9

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

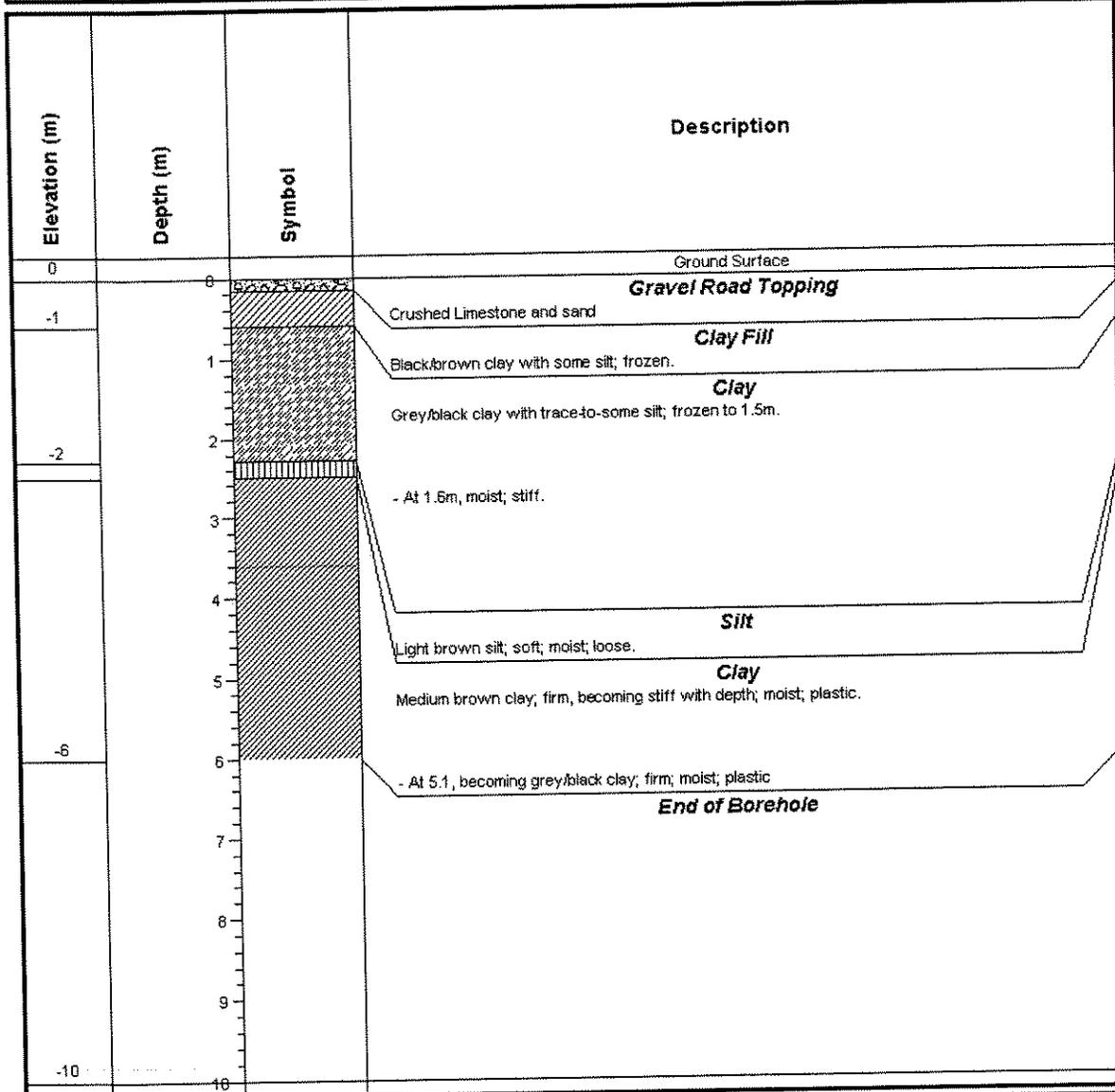
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Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

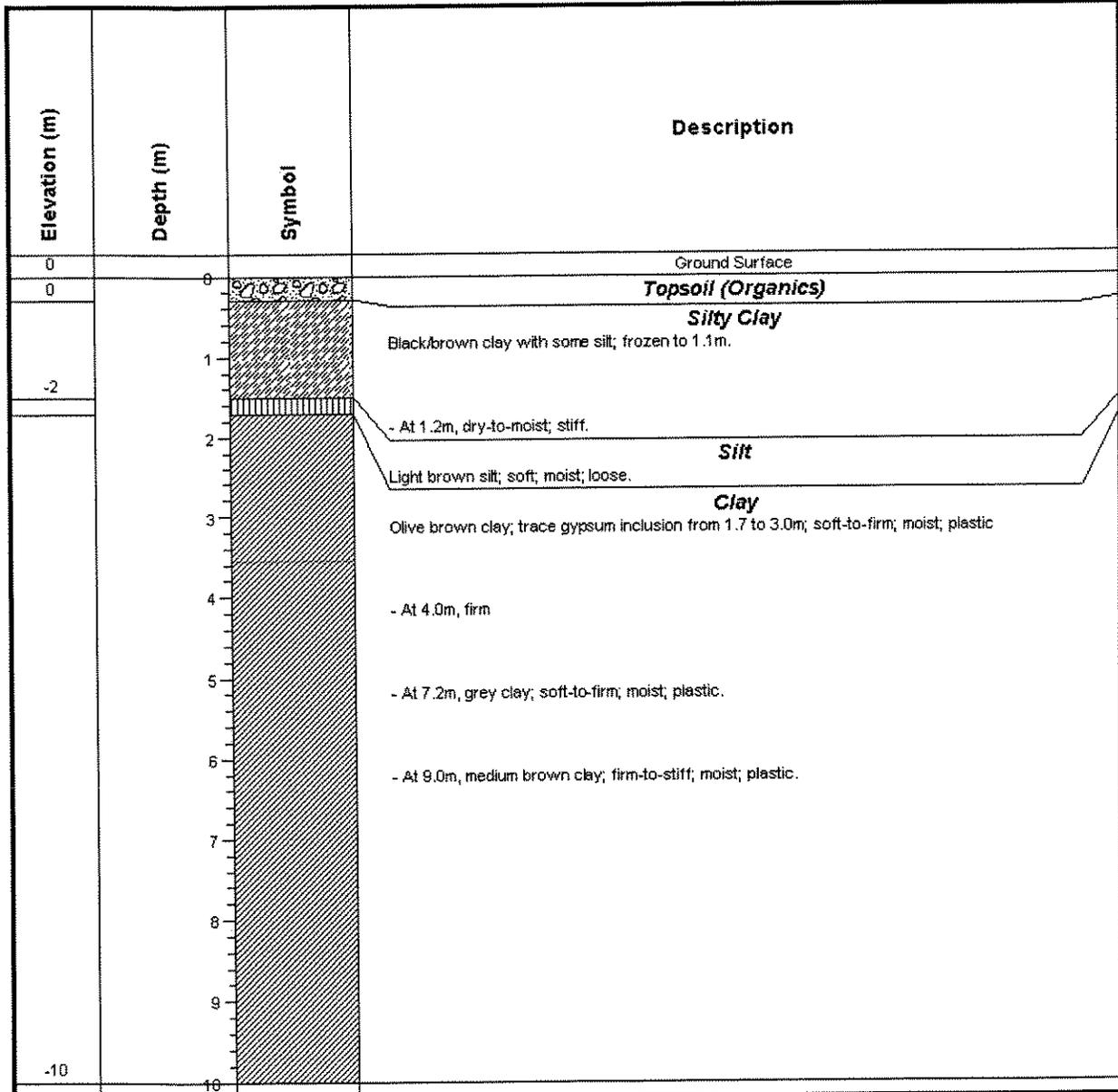
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-11

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

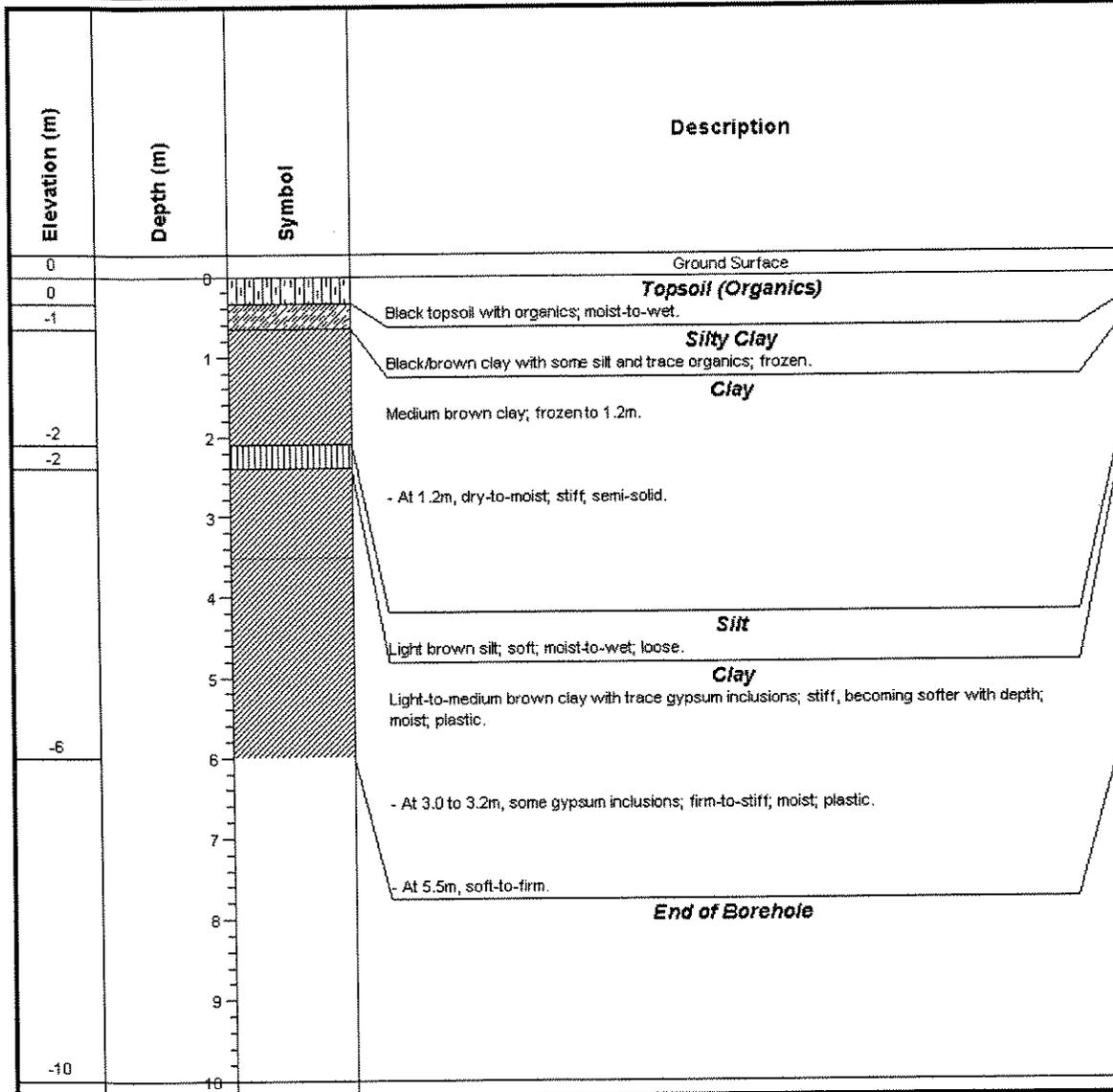
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-12

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

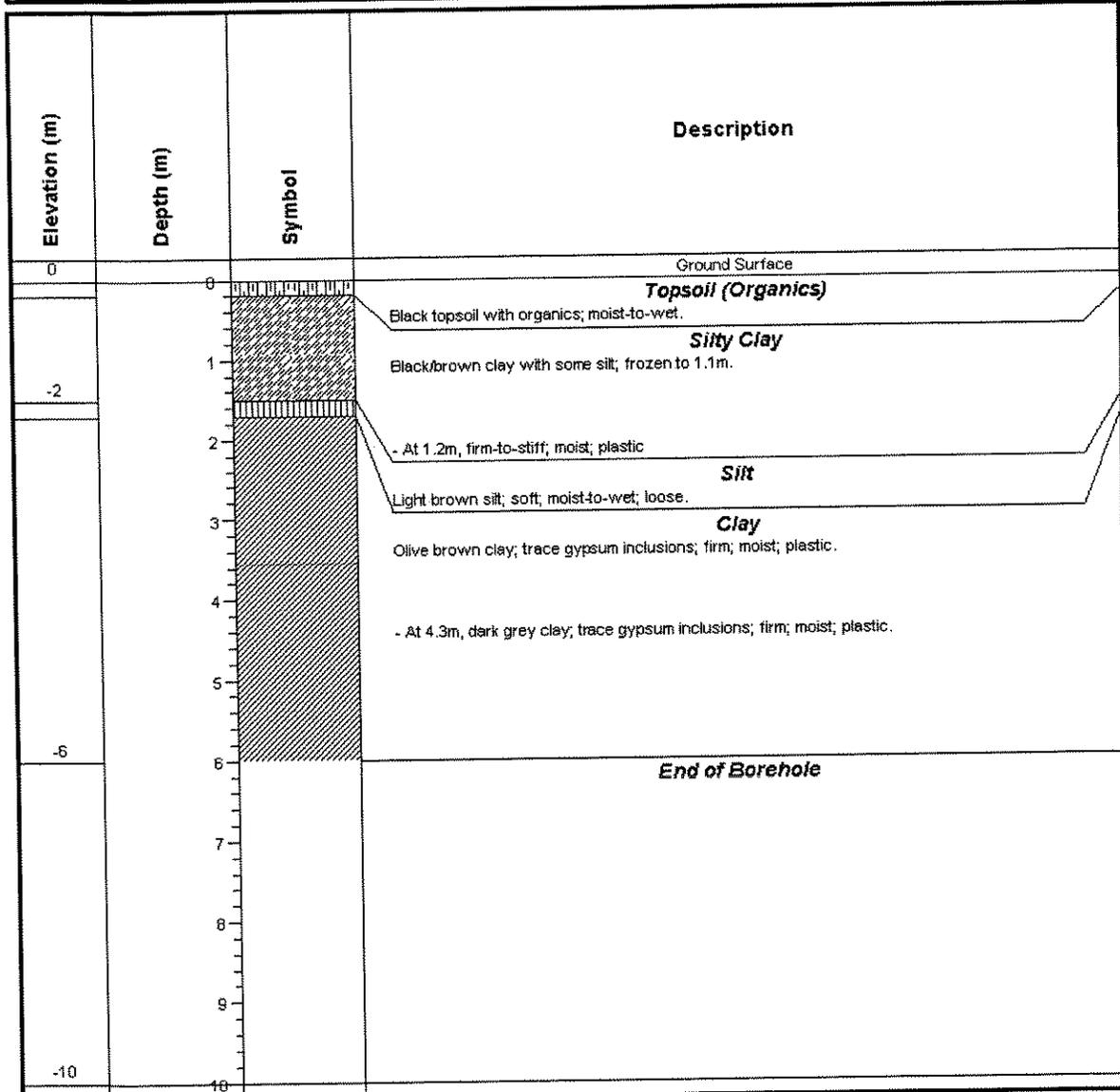
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-13

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

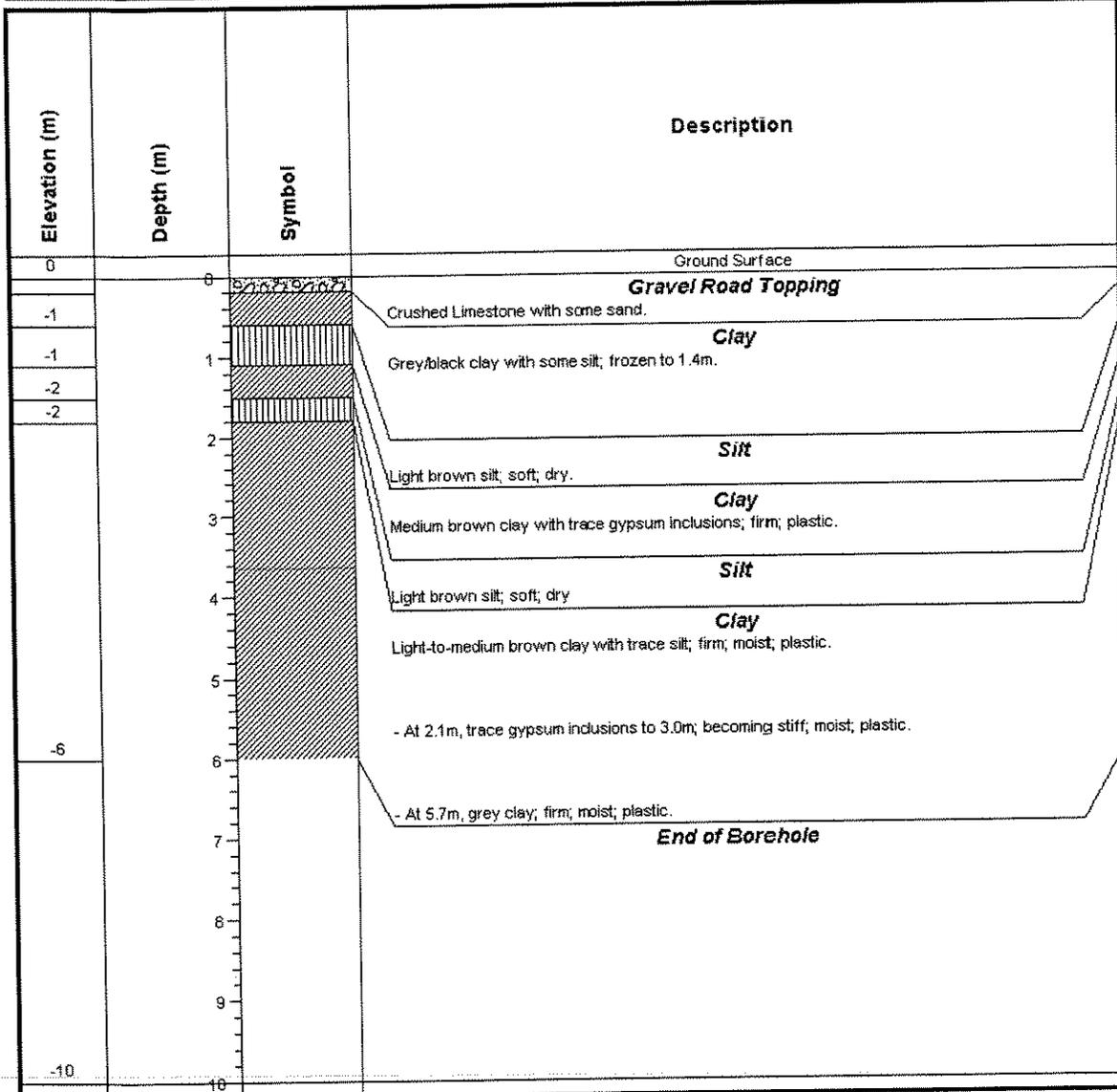
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-14

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

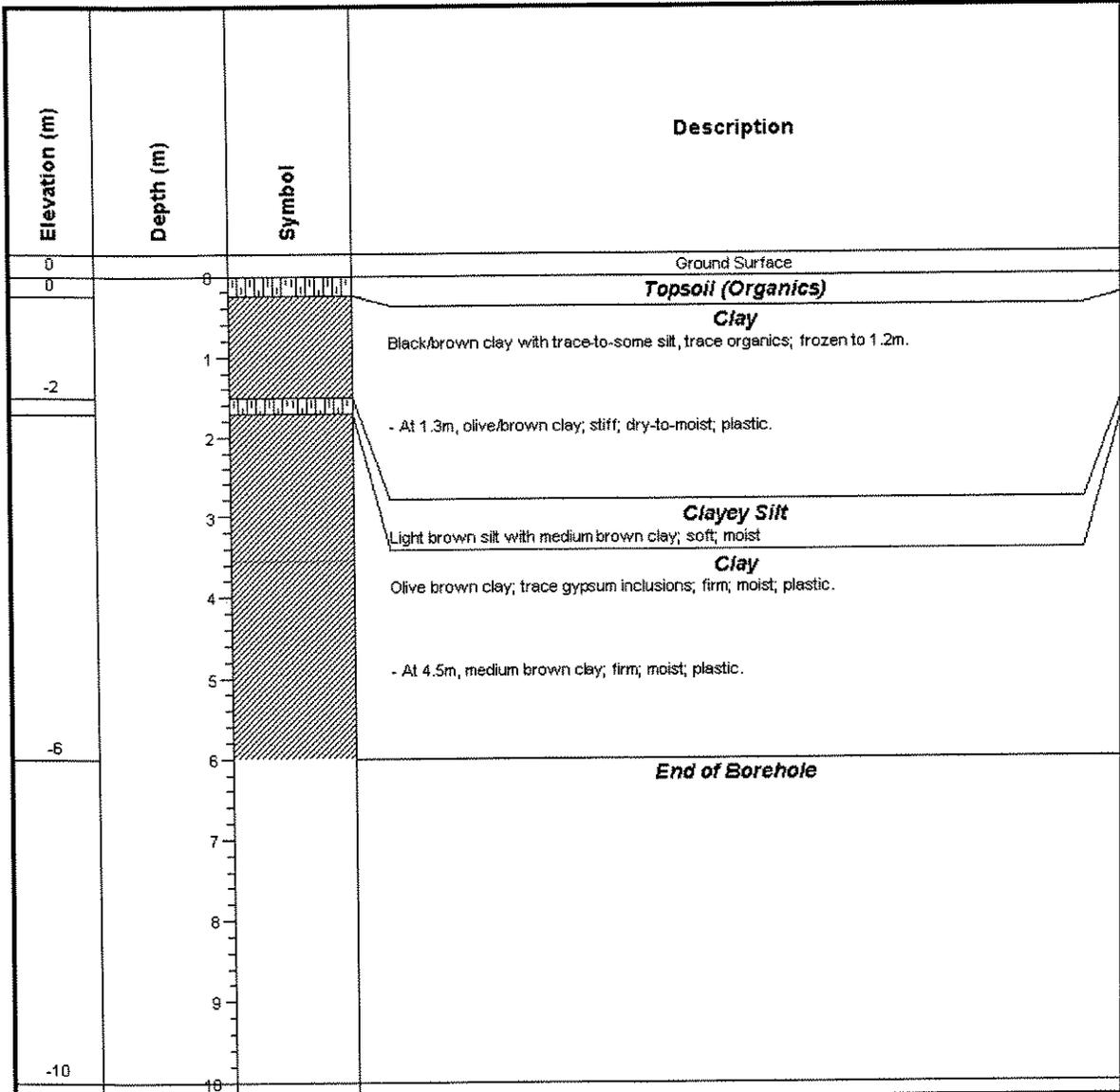
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Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-15

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

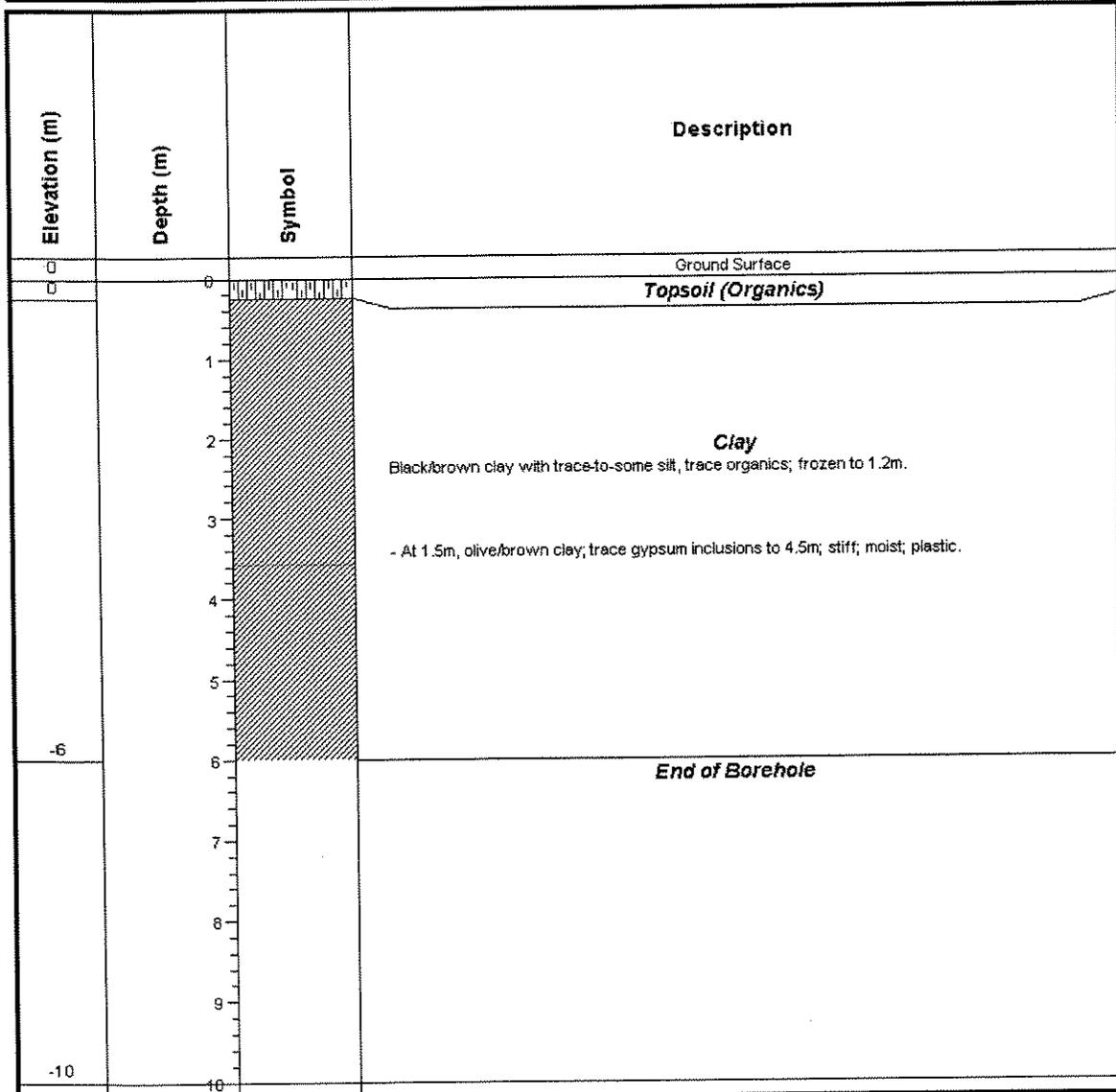
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Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-16

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

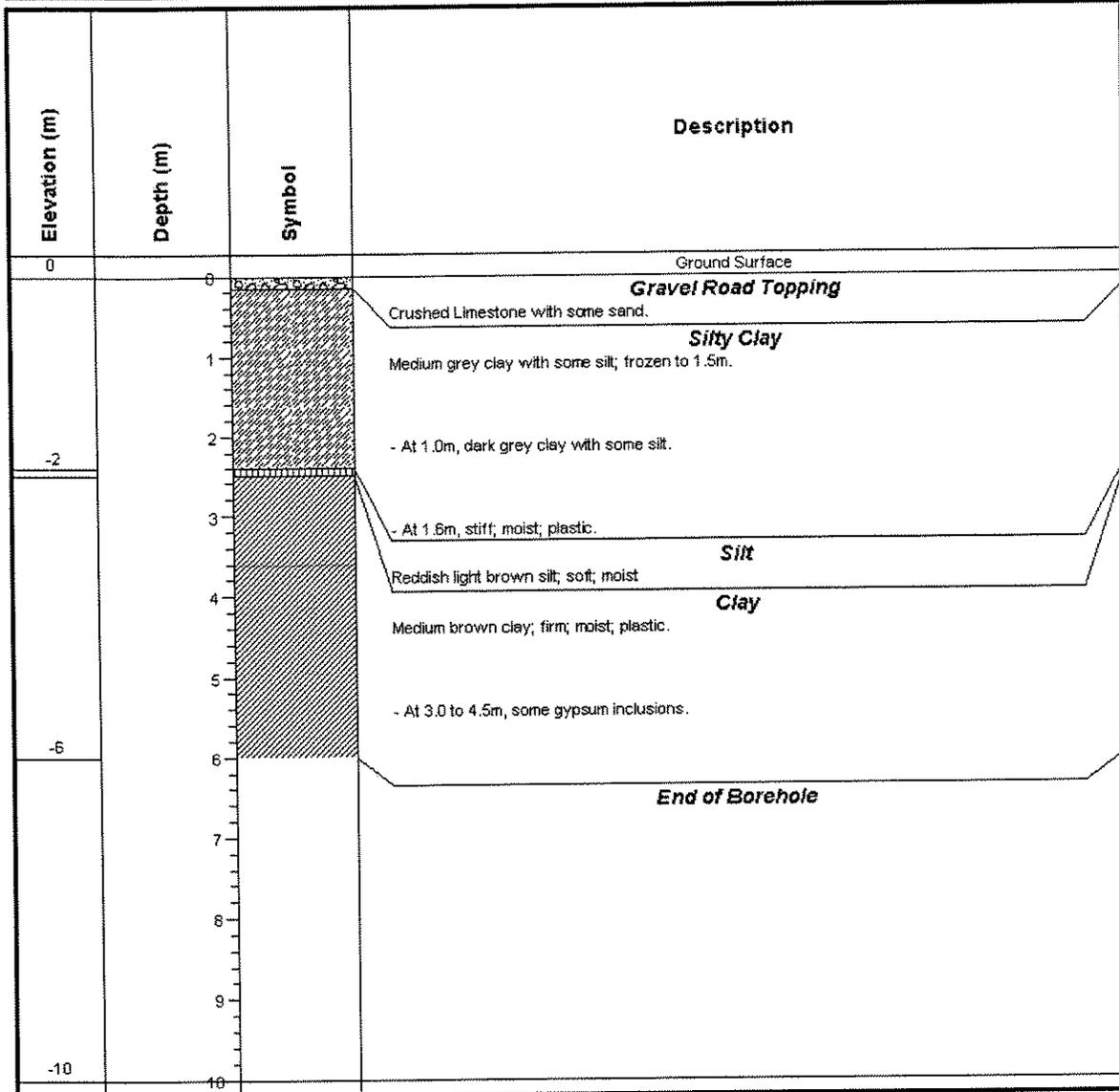
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-17

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

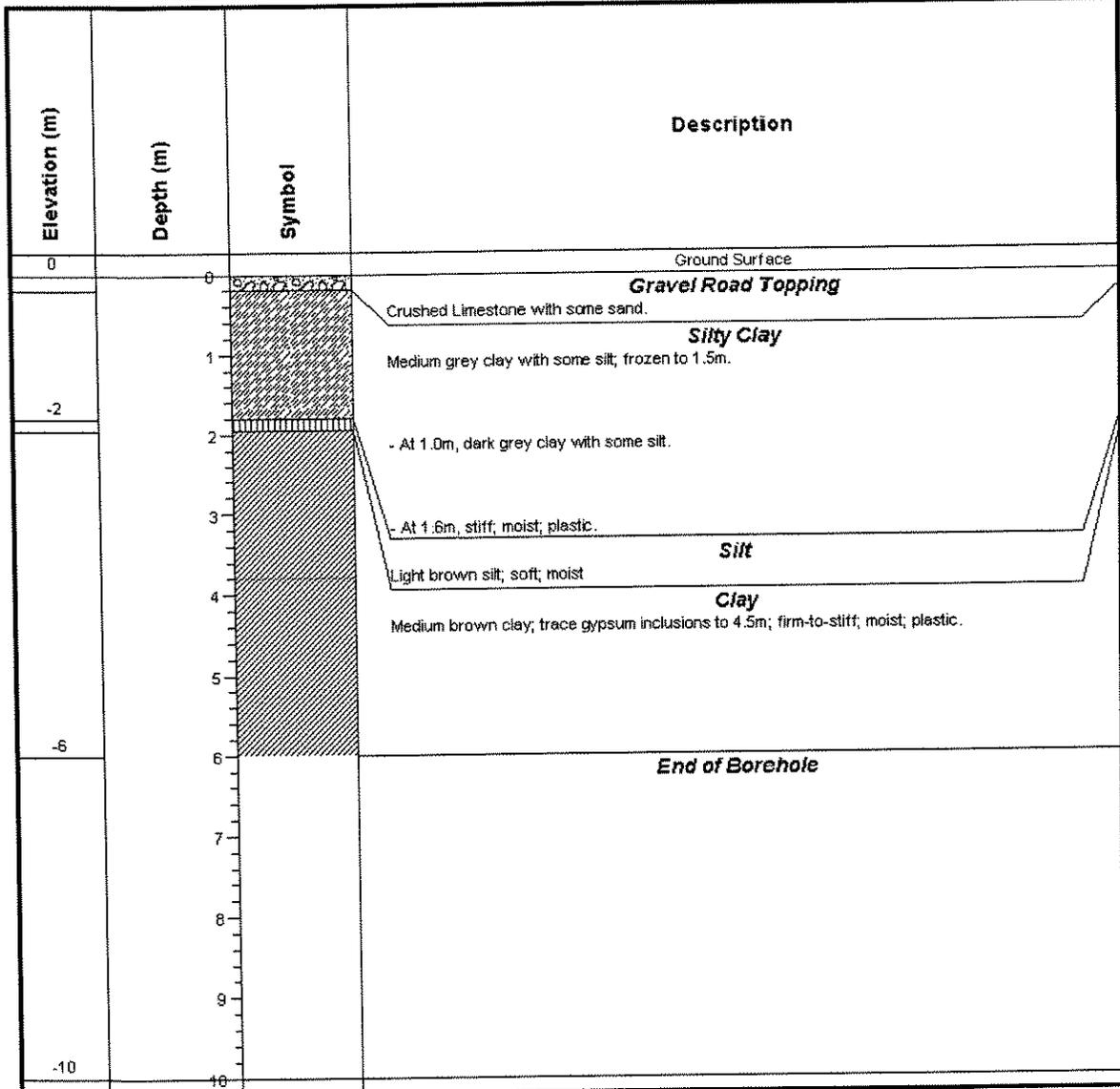
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-18

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

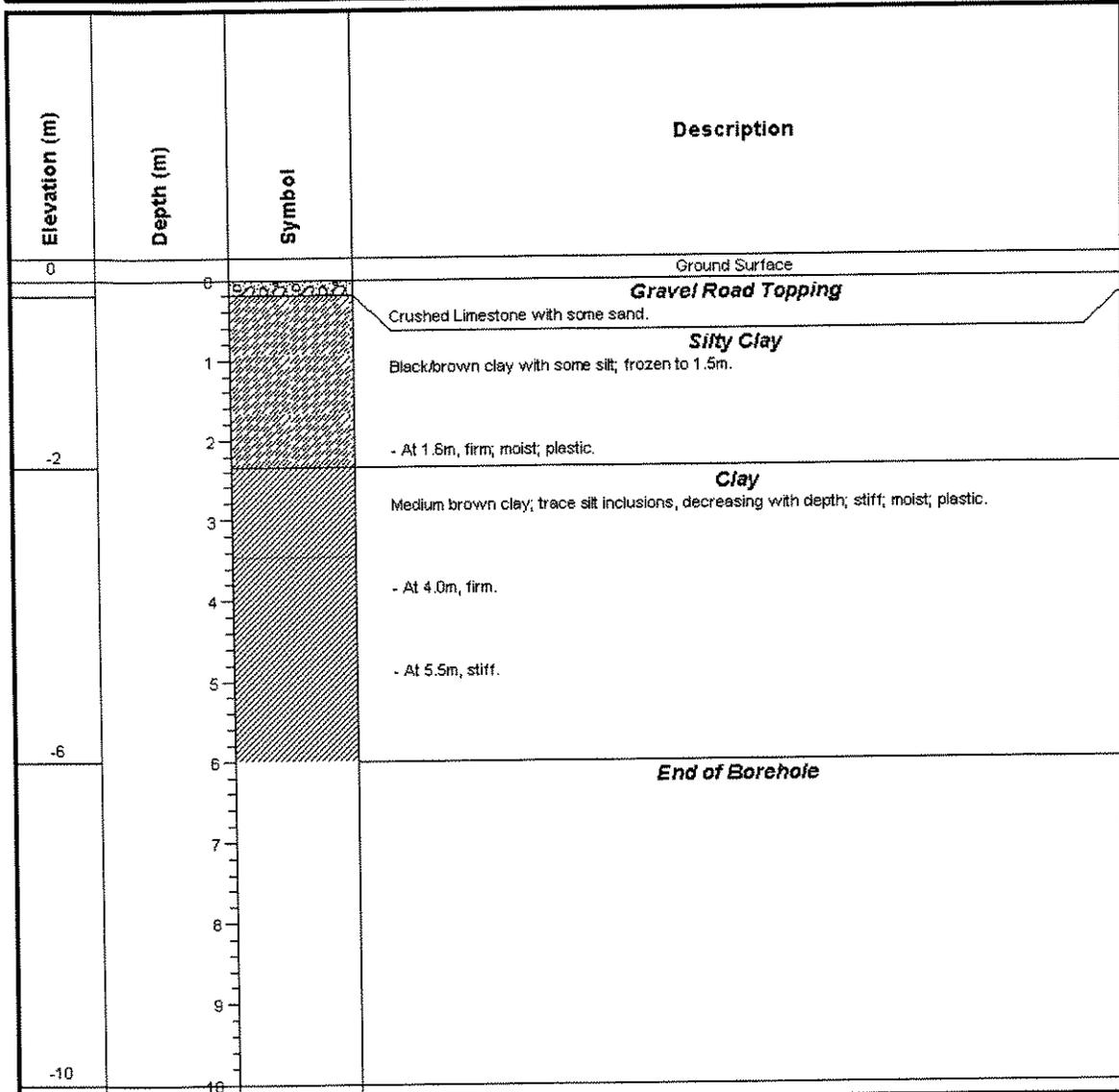
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-19

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

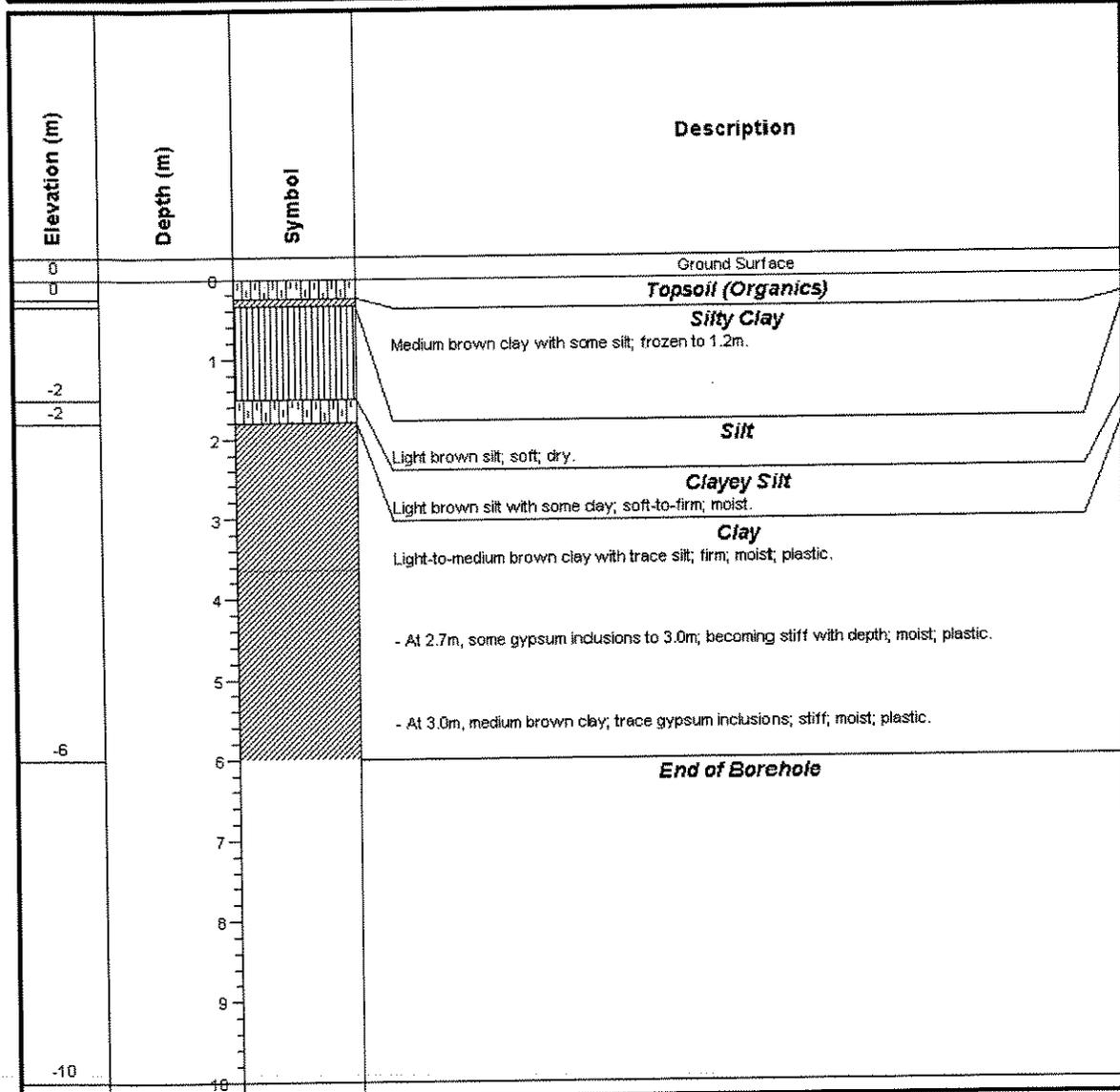
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-20

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

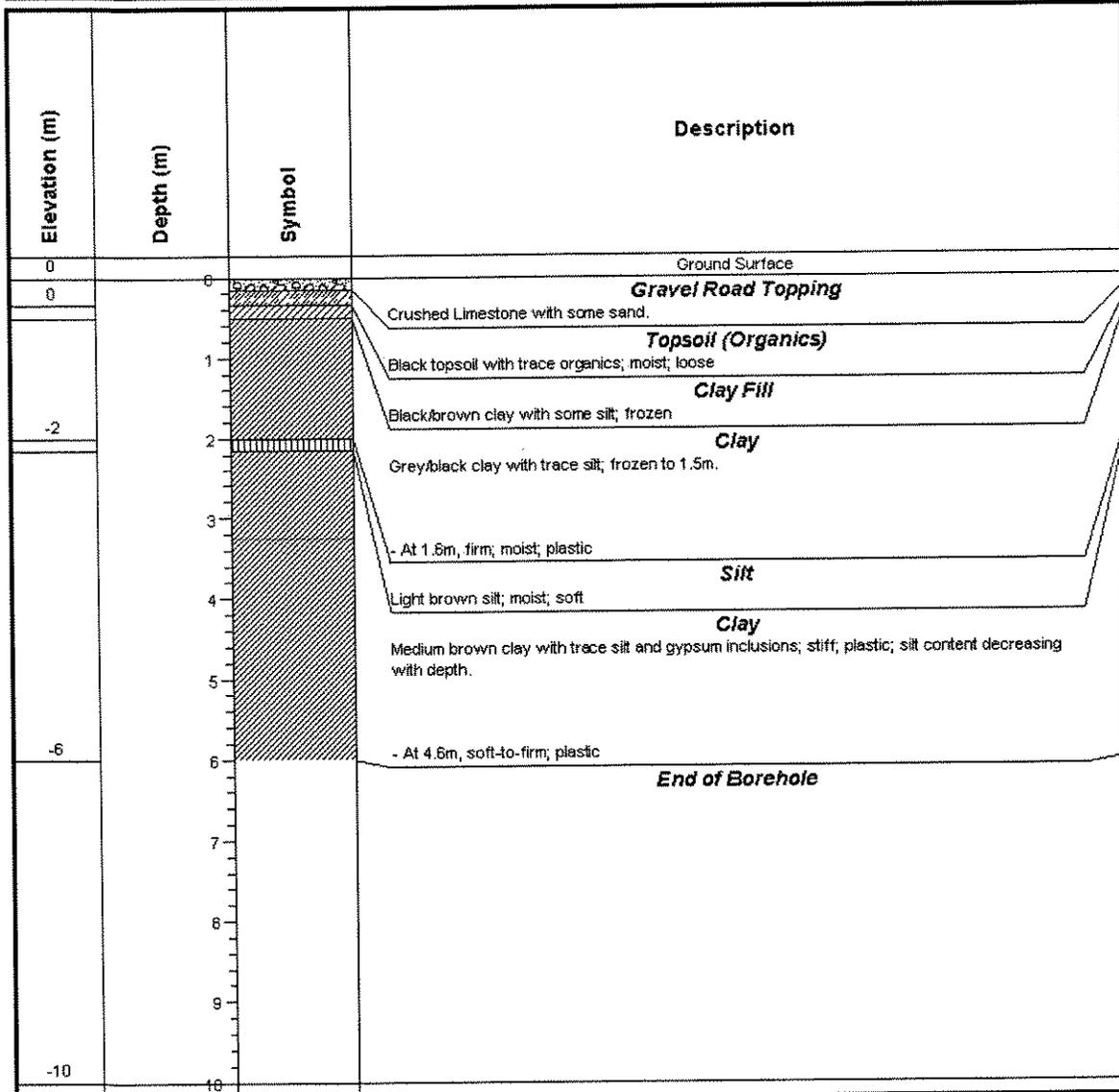
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-21

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

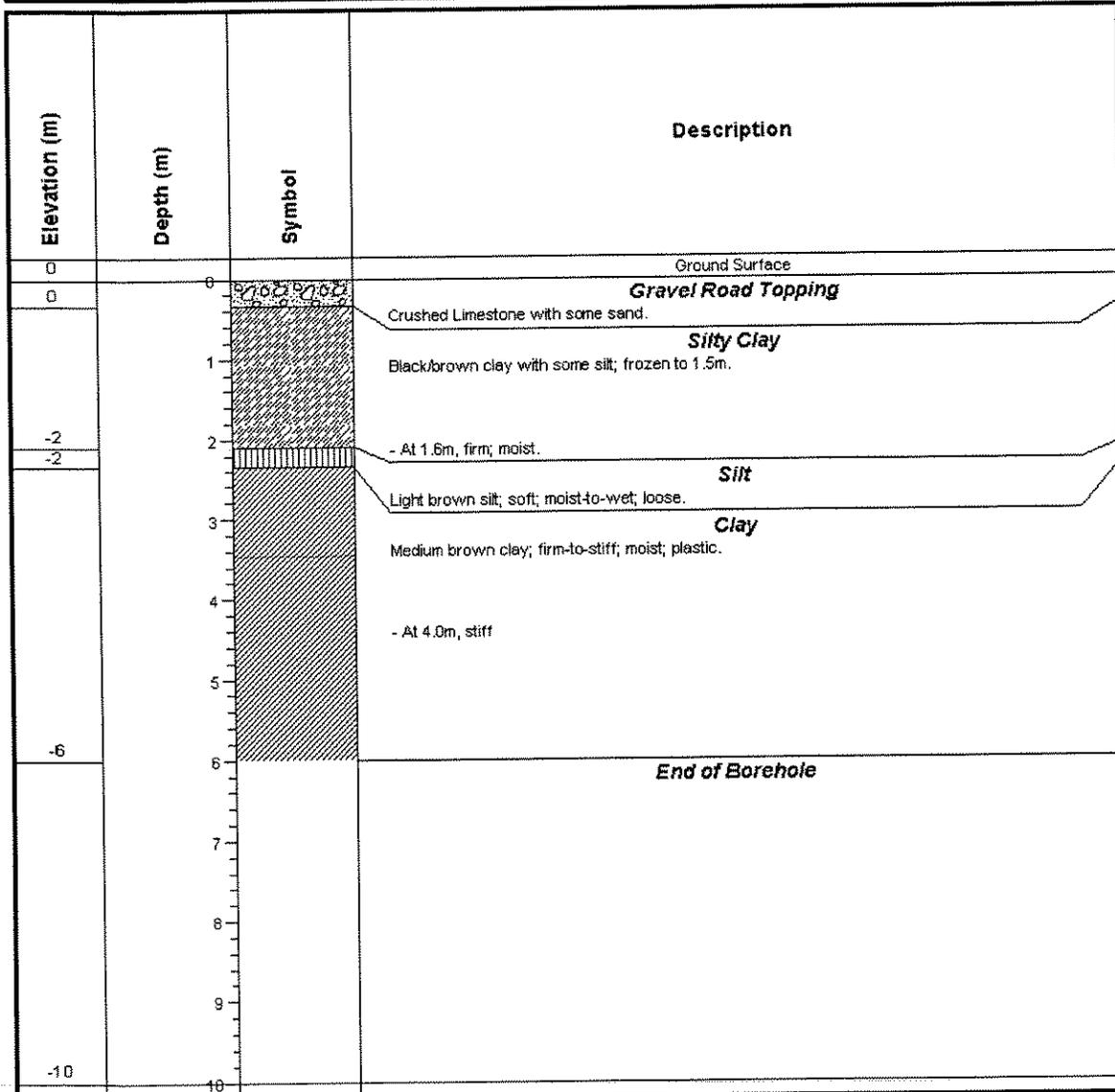
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation: N/A

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum: N/A

Well Materials: N/A

Well Casing Elevation: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-22

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

Elevation (m)	Depth (m)	Symbol	Description
0	0		Ground Surface
0	0	97102 97102	Sand and Gravel Fill Crushed Limestone with sand and some organics.
-2	1		Silty Clay Black/brown clay with some silt and trace organics; frozen to 1.5m.
	2		Silt Light brown silt; soft; moist-to-wet; loose.
	2		Clay Light-to-medium brown clay with trace gypsum inclusions; soft-to-firm; moist; plastic. - At 4.3m, stiff - At 5.0m, becoming grey clay; firm-to-stiff.
-6	6		End of Borehole
	7		
	8		
	9		
-10	10		

Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-23

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

SUBSURFACE PROFILE			SAMPLE INFORMATION			
Elevation (m)	Depth (m)	Symbol	Description	Sample Type	Lab Analysis	Well Data
0.00	0		Ground Surface			
-0.20	0.20		Sand and Gravel Fill Crushed Limestone with sand and some organics.			
	1		Silty Clay Black/brown clay with some silt; frozen to 1.4m.			
-1.50	1.50		Clay Grey/Brown clay; trace gypsum inclusions; firm; moist; plastic.			
-2.10	2.10		Silt Light brown silt; soft; moist; loose.			
-2.40	2.40		Clay Olive brown clay; firm-to-stiff; moist; plastic. - At 3.0 to 4.5m, trace gypsum inclusions. - At 7.4m, becoming grey clay; firm; moist; plastic			
	3					
	4					
	5					
	6					
	7					

Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum (m):

Well Casing Elevation (m):

Water Table Elevation (m):

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-23

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

SUBSURFACE PROFILE			SAMPLE INFORMATION								
Elevation (m)	Depth (m)	Symbol	Description	Sample Type	Lab Analysis	Combustible Vapour Concentration					Well Data
						100	300	500	700	900	
						%LEL					
						20	40	60	80	100	
	8										
	9										
10.00	10		End of Borehole End of borehole at 10 m.								
	11										
	12										
	13										
	14										

Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation (m):

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum (m):

Well Materials: N/A

Well Casing Elevation (m):

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-24

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

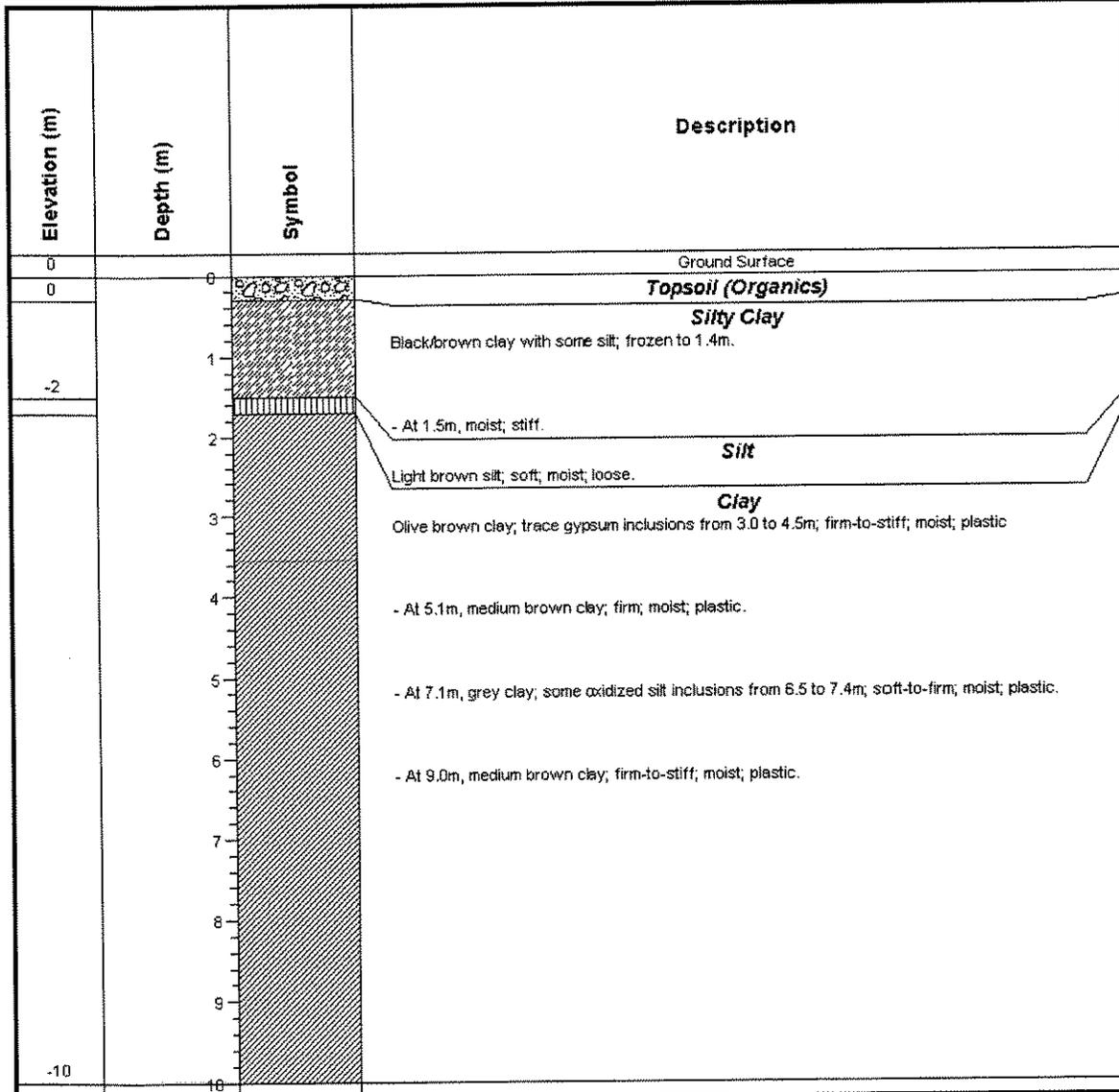
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-25

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

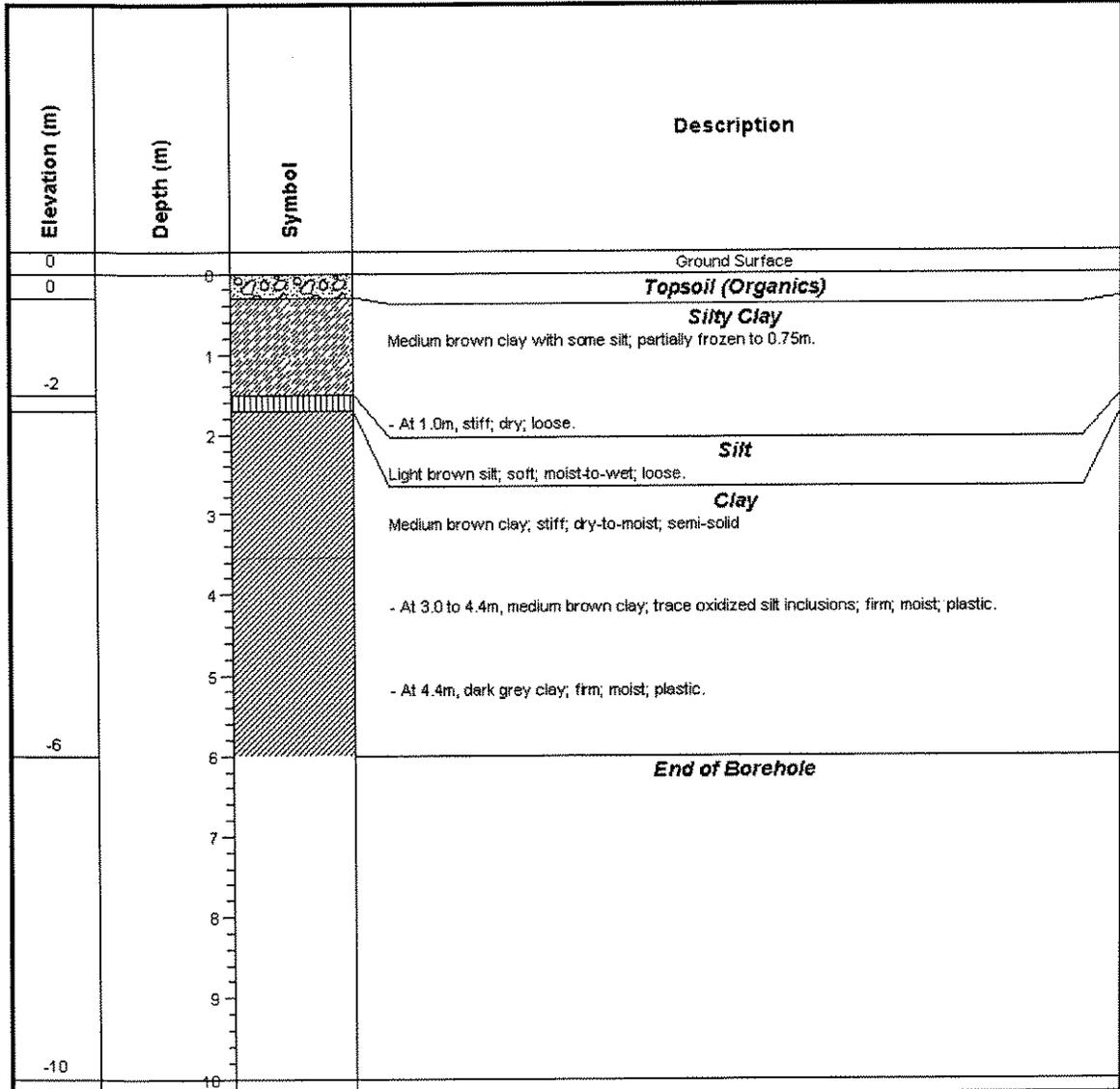
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation: N/A

Drill Type: 127 mm Solid Stem

Date Measured: N/A

Datum: N/A

Well Materials: N/A

Well Casing Elevation: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-26

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

Elevation (m)	Depth (m)	Symbol	Description
0	0		Ground Surface
			Topsoil (Organics)
			Silty Clay Grey/black clay with some silt; partially frozen to 1.1m.
	1		
-2			- At 1.2m, firm-to-stiff; moist; plastic.
	2		Silt Light brown silt; soft; moist-to-wet; loose.
			Clay Olive brown clay; stiff; dry-to-moist, becoming moist with depth; plastic; trace silt inclusions to 2.5m.
	3		
	4		- At 3.0 to 4.4m, medium brown clay; trace gypsum inclusions; firm; moist; plastic.
	5		- At 4.4m, light-to-medium brown clay; firm-to-stiff; moist; plastic.
-6			End of Borehole
	6		
	7		
	8		
	9		
-10			
	10		

Drilling Contractor: Maple Leaf Enterprises Ltd.

Water Table Elevation:

Drill Type:

Date Measured:

Datum:

Well Materials:

Well Casing Elevation:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-27

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

Elevation (m)	Depth (m)	Symbol	Description
0	0		Ground Surface
	0		Topsoil (Organics)
	0		Silty Clay Black/brown clay with trace-to-some silt; partially frozen to 1.0m.
	1		
-2	2		- At 1.1m, firm; moist-to-wet; plastic.
	2		Clay
	2		Olive brown clay; stiff; moist; plastic.
	3		
	3		- At 3.5 to 5.5m, medium brown clay; trace oxidized silt inclusions from 4.8 to 5.5m; firm; moist; plastic.
	4		
	4		- At 5.5m, dark grey clay; firm-to-stiff; moist; plastic.
	5		
	5		
-6	6		End of Borehole
	6		
	7		
	7		
	8		
	8		
	9		
	9		
-10	10		
	10		

Drilling Contractor: Maple Leaf Enterprises Ltd.**Water Table Elevation:** N/A**Drill Type:** 127 mm Solid Stem**Date Measured:** N/A**Datum:** N/A**Well Materials:** N/A**Well Casing Elevation:** N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-28

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

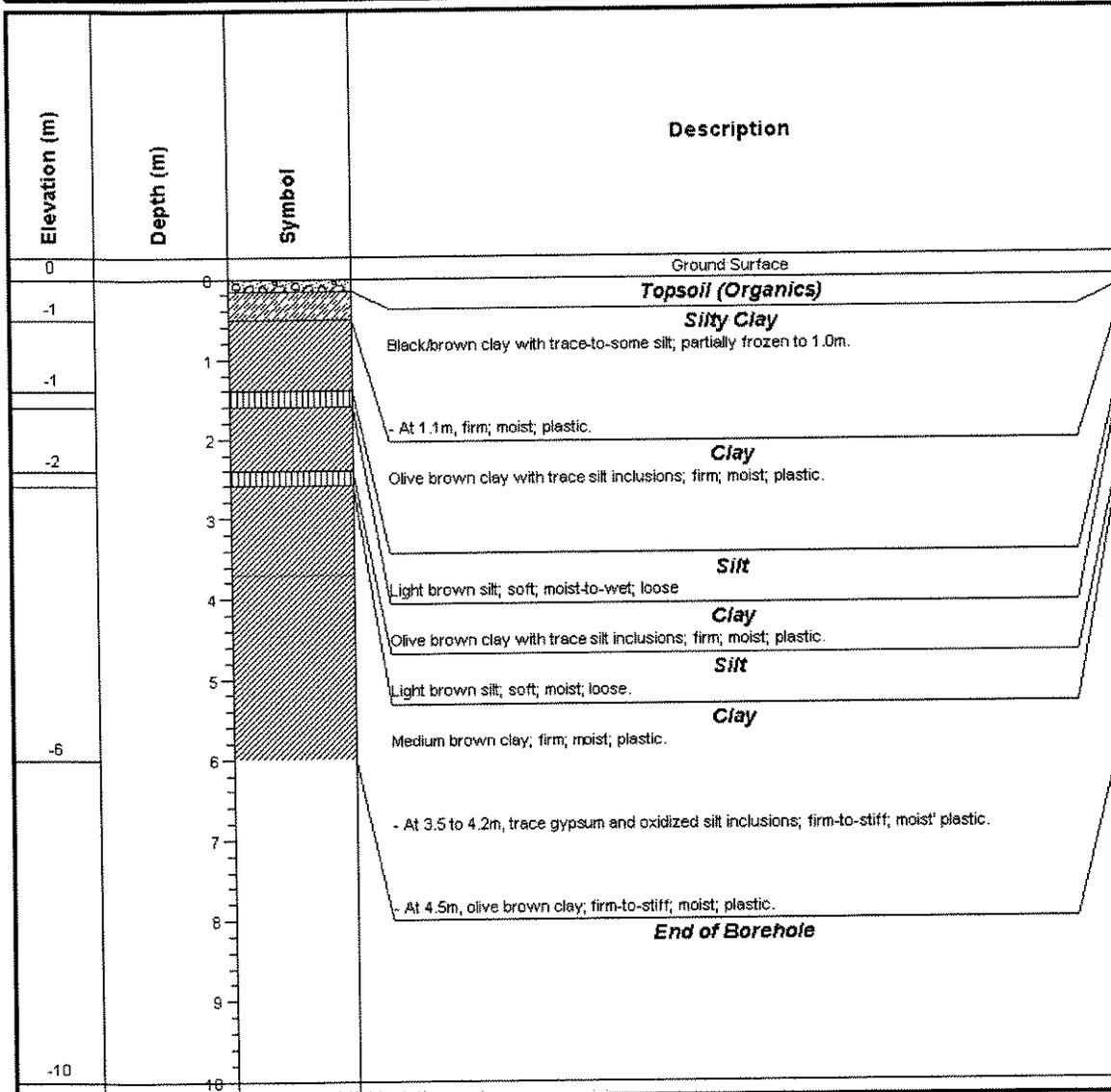
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type:

Datum:

Well Casing Elevation:

Water Table Elevation:

Date Measured:

Well Materials:

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-29

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

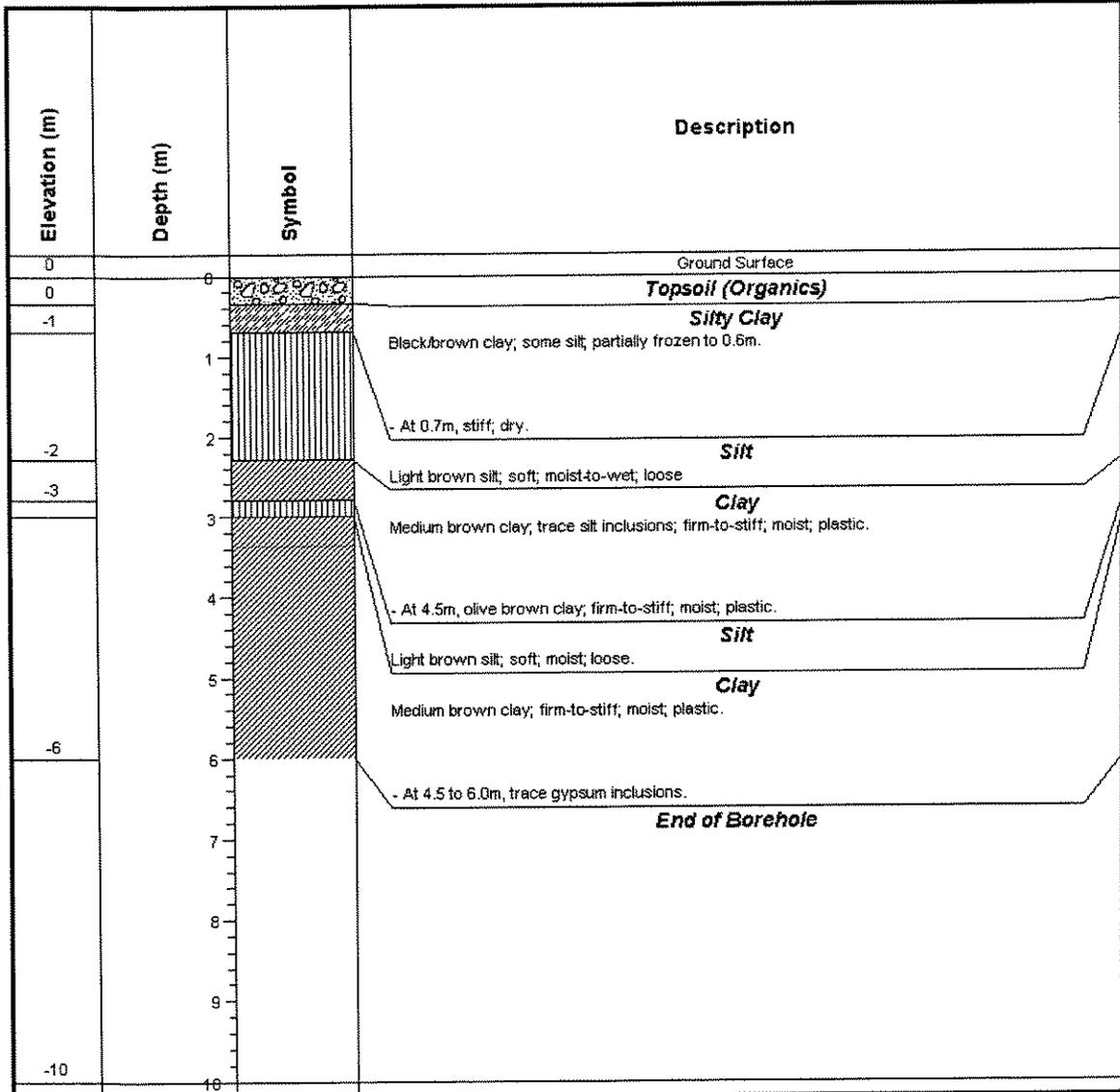
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 28, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN



Drilling Contractor: Maple Leaf Enterprises Ltd.

Drill Type: 127 mm Solid Stem

Datum: N/A

Well Casing Elevation: N/A

Water Table Elevation: N/A

Date Measured: N/A

Well Materials: N/A

WARDROP

Engineering Inc.

BOREHOLE LOG: TH-30

Logged By: P.C.F.

Client: CITY OF WINNIPEG

Project: GEOTECHNICAL INVESTIGATION

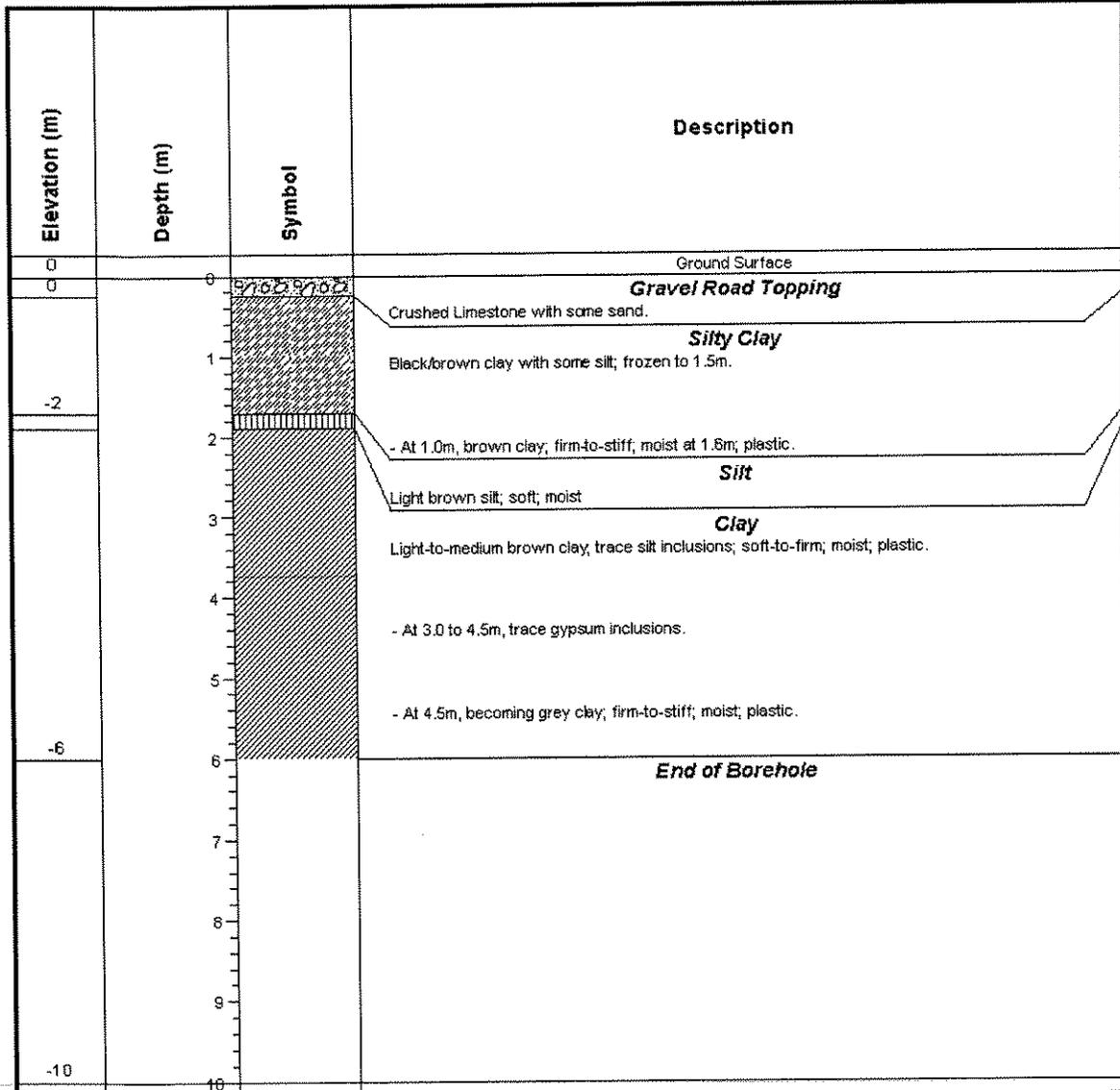
Drawn By: P.C.F.

Project No.: 001294-01-00

Date Drilled: MARCH 27, 2000

Checked By: K.L.M.

Borehole Location: SEE ATTACHED SITE PLAN

**Drilling Contractor:** Maple Leaf Enterprises Ltd.**Drill Type:** 127 mm Solid Stem**Datum:** N/A**Well Casing Elevation:** N/A**Water Table Elevation:** N/A**Date Measured:** N/A**Well Materials:** N/A

