



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 181-2005

**CLASSROOM ADDITION & RENOVATION TO THE LIVING PRAIRIE MUSEUM AT
2795 NESS AVENUE**

TABLE OF CONTENTS

PART A - BID SUBMISSION

| | |
|-------------|---|
| Form A: Bid | 1 |
|-------------|---|

PART B - BIDDING PROCEDURES

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

PART C - GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

General

| | |
|-----------------------------|---|
| D1. General Conditions | 1 |
| D2. Scope of Work | 1 |
| D3. Contract Administrator | 1 |
| D4. Contractor's Supervisor | 1 |
| D5. Notices | 1 |

Submissions

| | |
|--------------------------|---|
| D6. Insurance | 2 |
| D7. Performance Security | 3 |
| D8. Subcontractor List | 3 |
| D9. Security Clearance | 3 |

Schedule of Work

| | |
|------------------------------|---|
| D10. Commencement | 4 |
| D11. Substantial Performance | 4 |
| D12. Total Performance | 4 |
| D13. Liquidated Damages | 5 |

Control of Work

| | |
|--|---|
| D14. Job Meetings | 5 |
| D15. Prime Contractor – The Workplace Safety and Health Act (Manitoba) | 5 |

Measurement and Payment

| | |
|-----------------------|---|
| D16. Payment Schedule | 5 |
|-----------------------|---|

Warranty

| | |
|---------------|---|
| D17. Warranty | 6 |
|---------------|---|

| | |
|---------------------------|---|
| Form H1: Performance Bond | 7 |
|---------------------------|---|

| | |
|---|---|
| Form H2: Irrevocable Standby Letter of Credit | 9 |
|---|---|

| | |
|----------------------------|----|
| Form J: Subcontractor List | 11 |
|----------------------------|----|

PART E - SPECIFICATIONS

General

| | |
|--|---|
| E1. Applicable Specifications, Standard Details and Drawings | 1 |
| E2. General Provisions Section 01000 | 1 |
| E3. Project Coordination Section 01040 | 5 |
| E4. Field Measurement Section 01055 | 6 |
| E5. Cutting & Patching Section 01045 | 7 |
| E6. NMS-Specifications Section | 9 |

DIVISION 2 SITEWORK

DIVISION 5 METALS

DIVISION 6 WOOD AND PLASTICS

DIVISION 7 THERMAL AND MOISTURE PROTECTION

DIVISION 8 DOORS & WINDOWS

DIVISION 9 FINISHES

DIVISION 10 MISCELLANEOUS SPECIALTIES

DIVISION 15 MECHANICAL

DIVISION 16 ELECTRICAL

ELECTRICAL SCHEDULES

PART B

BIDDING PROCEDURES

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 CLASSROOM ADDITION & RENOVATION TO THE LIVING PRAIRIE MUSEUM AT 2795 NESS AVENUE

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, May 10, 2005.
- B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

- B3.1 Further to GC:3.1, the Contract Administrator or an authorized representative will be available at the Site from 1:00 p.m. to 3:00 p.m. on Tuesday, May 3, 2005 and Thursday, May 5, 2005 to provide Bidders access to the Site.
- B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. ADDENDA

- B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management 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 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.

B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID SUBMISSION

B7.1 The Bid Submission consists of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices;

B7.2 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.

B7.2.1 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.

B7.3 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.4 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 10 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;
- (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.

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 the lump sum price in Canadian funds for the Work on Form B: Prices.

B9.2 The Bidder shall state a separate price in Canadian funds for each of the following items of Work on Form B: Prices:

- (a) Separate Price - Item No. 1 shall be the amount to be deducted from the lump sum price if the renovation work of Store Area Room 106 is deleted.
- (b) Separate Price – Item No. 2 shall be the amount to be deducted from the lump sum price if the renovation work of the Men's W/C, Room 110 is deleted.

B9.3 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.

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

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

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

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

B11.1.1 Bidders or their representatives may attend.

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

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

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

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B13.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

- B13.1.3** If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
 - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.

B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B14. EVALUATION OF BIDS

B14.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B6.

B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.

B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.

B14.3.1 If there is any discrepancy between the lump sum price written in figures and the lump sum price written in words, the price written in words shall take precedence.

B14.4 Further to B14.1(c), the Total Bid Price shall be the lump sum price shown on Form B: Prices adjusted, if necessary, as follows:

- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the lump sum price bid; or
- (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the lump sum prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting separate prices in the order listed in B9.2 until a Total Bid Price within the budgetary provision is achieved, i.e., Total Bid Price = Lump Sum Price - Separate Price No. 1 - Separate Price No. 2

B14.4.1 If there is any discrepancy between the lump sum price written in figures and the lump sum price written in words, the price written in words shall take precedence.

B15. AWARD OF CONTRACT

- B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.
- B15.4 Notwithstanding GC:4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B15.5 The Contract, as defined in GC:1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

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 consist of the enclosure of the outdoor classroom area and the renovation of portions of the interior space of the Living Prairie Museum located at 2795 Ness Avenue

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is Gerald A. Korzeniowski, Architect Inc., represented by:
Gerald A. Korzeniowski
BES, M. Arch, MAA, MRSAIC
218 Overdale Street
Winnipeg, Manitoba R3J 2G3
Telephone No. (204) 832-8666
Facsimile No. (204) 889-1030
- D3.2 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.

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

- D5.1 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.

- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 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
- D5.4 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

SUBMISSIONS

D6. INSURANCE

- D6.1 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.
- D6.2 Deductibles shall be borne by the Contractor.
- D6.3 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 seven (7) Calendar Days from notification of the award of Contract.
- D6.3.1 The certificate of insurance for the commercial general liability insurance must clearly state "operations to include demolition work".

D6.4 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.

D7. PERFORMANCE SECURITY

D7.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), 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.

D7.1.1 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.

D7.2 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 Purchase Order and prior to the commencement of any Work on the Site.

D8. SUBCONTRACTOR LIST

D8.1 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 seven (7) Calendar Days from notification of the award of Contract.

D9. SECURITY CLEARANCE

D9.1 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.

D9.2 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.

D9.3 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.

D9.4 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.

- D9.5 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

D10. COMMENCEMENT

- D10.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.
- D10.2 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) evidence of the insurance specified in D6;
 - (iv) the performance security specified in D7;
 - (v) the Subcontractor list specified in D8; and
 - (vi) the security clearances specified in D9.
 - (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.
- D10.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D11. SUBSTANTIAL PERFORMANCE

- D11.1 The Contractor shall achieve Substantial Performance within forty-five (45) consecutive Working Days of the commencement of the Work as specified in D10.
- D11.2 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.
- D11.3 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.

D12. TOTAL PERFORMANCE

- D12.1 The Contractor shall achieve Total Performance within sixty (60) consecutive Working Days of the commencement of the Work as specified in D10.
- D12.2 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.

- D12.3 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.

D13. LIQUIDATED DAMAGES

- D13.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City two-hundred & fifty dollars (\$250.00) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

- D13.2 The amount specified for liquidated damages in D13.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.

- D13.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D14. JOB MEETINGS

- D14.1 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.

- D14.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D15. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D15.1 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).

MEASUREMENT AND PAYMENT

D16. PAYMENT SCHEDULE

- D16.1 Further to GC:12.1, payment for the project shall be in accordance with monthly progress claims. The City shall only be required to pay the Contractor for material and equipment required for the work upon the installation and total incorporation of same permanently into the work.

WARRANTY

D17. WARRANTY

- D17.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Substantial Performance and shall expire one (1) year thereafter unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.
- D17.2 Notwithstanding GC:13.2 or D17.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Substantial 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; or
- D17.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D7)

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. 181-2005

CLASSROOM ADDITION & RENOVATION TO THE LIVING PRAIRIE MUSEUM AT 2795 NESS AVENUE

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 D7)**

(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. 181-2005

CLASSROOM ADDITION & RENOVATION TO THE LIVING PRAIRIE MUSEUM AT 2795 NESS AVENUE

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 July 11, 2005.

(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> |
|--------------------|------------------------------------|
| A-1 | Title Sheet & Site Plan |
| A-2 | Demolition Plan |
| A-3 | Floor Plan |
| A-4 | Exterior Elevations |
| A-5 | Classroom Plan |
| A-6 | Classroom Section & Details |
| A-7 | Classroom Details |
| A-8 | Classroom Details |
| A-9 | Classroom Interior Elevations |
| A-10 | Foyer Plan |
| A-11 | Foyer Sections & Details |
| A-12 | Foyer Interior Elevations |
| A-13 | Store Plan |
| A-14 | Store Interior Elevations |
| A-15 | Reflected Ceiling Plan |
| A-16 | Building Code |
| M-1 | Floor Plan – Mechanical Demolition |
| M-2 | Floor Plan – Mechanical |
| E-1 | Floor Plan – Electrical Demolition |
| E-2 | Floor Plan – Lighting |
| E-3 | Floor Plan – Power & Systems |

E2. GENERAL PROVISIONS SECTION 01000

E2.1 COORDINATION AND COOPERATION:

E2.1.1 OTHER TRADES

- a) Further to GC:6.1, Specifications shall be read by all trades to acquaint them with the nature of the Work required. Failure to do so will not relieve them of any responsibilities

for cooperation in coordinating the Work and preventing delay and for the supply and installation of materials required for this Work.

E2.1.2 CUTTING AND PATCHING

- a) Each trade shall do all necessary cutting and patching required for their Work. Existing adjacent surfaces shall be accurately matched. Cutting through any structural member shall only be done with the prior approval of the Contract Administrator.
- b) Perform all cutting and patching required to make the several parts of the Work come together properly.

E2.2 MATERIALS

E2.2.1 C.S.A.

- a) All materials, where applicable, shall be CSA approved.

E2.3 SUBMITTALS

E2.3.1 SHOP DRAWINGS

- a) Further to GC:6.9, the Contractor shall submit for approval, at least five (5) sets of detailed shop drawings for all Work as requested by the Contract Administrator at the initial site meeting and as required thereafter.

E2.4 QUALITY CONTROL

E2.4.1 INSPECTING AND TESTING MATERIAL

- a) The City reserves the right to inspect and test all materials at its own expense and to reject any materials which are not in accordance with the requirements of the specifications. The Contractor shall furnish, at the Contractor's expense, such specimens and samples of materials as may be required for testing.
- b) The Contractor shall allow the City to test any equipment, and shall provide power, fuel or material required for these standard performance tests on the equipment.

E2.5 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS:

E2.5.1 SITE PROTECTION

- a) The Contractor shall provide adequate protection to prevent any damage to existing structures, furnishings, finishes, etc. during construction. Temporary ramps, barricades, hoardings as required shall be provided to the approval of the Contract Administrator.
- b) The Contractor shall exercise care in the operations relative to the site. Any unnecessary destruction of the site will not be permitted. The Contractor shall exercise care in the movement of equipment and materials especially during wet weather. The Contractor shall be held responsible for the repair of damages to the site, boulevards, roads, other pavements, etc. in the surrounding area of the immediate site.

E2.5.2 LAYOUT OF WORK

- a) The Contractor shall verify all dimensions on the drawings and report any discrepancies to the Contract Administrator before starting the Work.

E2.5.3 EXISTING SERVICES AND UTILITIES

- a) Further to GC.3. (3.1) of the General Conditions, it shall be the responsibility of the Contractor to verify the location of all existing utilities, pipes and other objects and, if encountered, to adequately protect them during the construction period, and if disturbed or damaged by the Contractor, to have them replaced or reset in their original position after construction has been completed at the Contractor's cost.

E2.6 CONTRACTOR TO NOTIFY UTILITIES AND OTHER AUTHORITIES

E2.6.1 UTILITIES

- a) Whenever the Work requires that a public street or lane be cut for underground works, the Contractor shall before entering on the Work Site, make application to each utility, or other authorities, and shall give to the Superintendent of Traffic Services, Traffic Operations Section of the Streets and Traffic Branch in the Streets and Transportation Department of the City of Winnipeg, not less than 48 hours written notice of the date on which Work is to commence. A copy of the application and of all notices are to be given to the Contract Administrator.
- b) The Contractor shall be responsible for all costs of the Work to be done in the cut, the Work to restore all underground structures to their "as found condition", and to restore the surface area to its original condition, or better.
- c) The Contractor shall supply, erect and maintain all applicable traffic control devices in accordance with the provisions of 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 Public Works Department, Customer Services Division, 1155 Pacific Avenue, of the City of Winnipeg.

E2.7 PROJECT INFORMATION SIGNS

E2.7.1 SIGNS

- a) No project information signs shall be allowed without the written approval of the Contract Administrator. Any project information signs approved during construction are to be removed by the Contractor upon completion of the project.

E2.8 REQUIREMENTS FOR SUBSTANTIAL PERFORMANCE:

E2.8.1 INSTRUCTION MANUALS

- a) The Contractor shall provide the Contract Administrator with four copies of all manuals showing:
 - i. Service Instruction - including a list of spare parts and replacement parts and the names and addresses of all suppliers.
 - ii. Maintenance Instructions.
 - iii. Installation Instructions.

iv. Operating Instructions.

v. Electric Schematics.

- b) Detailed electrical and electronic circuit diagrams (wiring and schematic) showing all wiring connections; all electrical component values; all component parts manufacturers; and servicing procedure for all electrical and electronic equipment utilized to approval of the City. Substantial Performance of the equipment is contingent on the provision of the above information.

E2.8.2 OCCUPANCY PERMIT

- a) The Contractor shall obtain the Occupancy Permit required under the Building By-Law, along with the mechanical and electrical Certificate of Inspection from the City of Winnipeg Environmental Building Inspection Department.

E2.8.3 APPLICATION FOR SUBSTANTIAL PERFORMANCE

- a) Upon completion of the Work or upon reaching substantial performance the Contractor shall complete form (to be supplied) C.P.10 Contractors Application for Substantial Performance.

E3. PROJECT COORDINATION SECTION 01040

E3.1 General

E3.1.1 REQUIREMENTS INCLUDED

- a) Coordination of Work with Contract Administrator and all Sub-trades.

E3.1.2 DESCRIPTION

- a) Coordination of submittals, use of site, temporary utilities, construction facilities and use of elevators.

E3.1.3 EXISTING CONDITIONS

- a) The operation of this facility is to remain uninterrupted during the duration of this project. The Contractor is to minimize interference to the staff of this building.
- b) All procedures involving existing building, or staff must be coordinated with the Contract Administrator.
- c) Construction hours of operation shall be approved by the Contract Administrator to reduce disturbance of the staff.
- d) Power actuated fastening devices or other noise generating equipment shall not be used without approval of the Contract Administrator.
- e) Only elevators designated by the Contract Administrator shall be used for the transporting of equipment and materials to and from the Worksite. The Contractor shall take precautions to protect the elevators used in the progress of the Work. Damages to the elevators due to construction use shall be corrected at no expense to the City.
- f) Only one elevator may be taken off service at any one time for both loading or unloading equipment and materials or for performing elevator Work as required in the Contract documents. Contract Administrator shall be notified 24 hours in advance of any elevator to be taken off service. Removal of more than one elevator from service shall require written permission from the Contract Administrator.

E4. FIELD MEASUREMENT SECTION 01055

E4.1 General

E4.1.1 REQUIREMENTS INCLUDED

- a) Verification of building dimensions.
- b) Site measurement for new construction.

E4.1.2 RELATED REQUIREMENTS

- a) Section 01000 – General Provisions
- b) Individual Sections – site measurements prior to fabrication.

E4.1.3 PROJECT CONDITIONS

- a) The drawings in these bid documents are based on drawings of existing facility, actual site dimensions may vary.

E4.2 Products

E4.2.1 Not Used

E4.3 Execution

E4.3.1 SITE MEASUREMENT

- a) Verify all fixed dimensions prior to commencing with Work.
- b) Site check all dimensions prior to fabrication.
- c) Notify Contract Administrator of any discrepancies between site checked dimensions and drawing dimensions.

E5. CUTTING & PATCHING SECTION 01045

E5.1 General

E5.1.1 REQUIREMENTS INCLUDED

- a) Requirements and limitations for cutting and patching the Work.

E5.1.2 RELATED REQUIREMENTS

- a) Individual Sections: cutting and patching incidental to Work of the section.

E5.1.3 SUBMITTALS

- a) Submit written request in advance of cutting or alteration which affects:
 - i. Structural integrity of any element of Projects.
 - ii. Integrity of weather-exposed or moisture resistant elements.
 - iii. Efficiency, maintenance, or safety of any operational element.
 - iv. Visual qualities of sight-exposed elements.
- b) Include in request:
 - i. Identification of project.
 - ii. Location and description of affected Work.
 - iii. Statement on necessity for cutting or alteration.
 - iv. Description of proposed Work and products to be used.
 - v. Alternatives to cutting and patching.
 - vi. Effect of Work on the City.
 - vii. Date and time Work will be executed.

E5.2 Products

E5.2.1 MATERIALS

- a) Required for original installation.

E5.3 Execution

E5.3.1 GENERAL

- a) Execute cutting, fitting and patching to complete the Work.
- b) Fit the several parts together, to integrate with other Work.

- c) Uncover Work to install ill-timed Work.
- d) Remove and replace defective and non-conforming Work.
- e) Provide openings for penetrations of mechanical and electrical Work.

E5.3.2 INSPECTION

- a) Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- b) After uncovering, inspect conditions affecting performance of Work.
- c) Beginning of cutting or patching means acceptance of existing conditions.

E5.3.3 PREPARATION

- a) Provide supports to assure structural integrity of surroundings; devices and methods to protect other portions of project from damage.
- b) Provide protection from elements for areas which may be exposed by uncovering Work.
- c) Conduct Work to minimize interference with operation of existing facility.

E5.3.4 PERFORMANCE

- a) Execute Work by methods to avoid damage to other Work and which will provide proper surfaces to receive patching and finishing.
- b) Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed without prior written approval.
- c) Restore Work with new products in accordance with requirements of Contract Documents.
- d) Fit Work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- e) At penetration of fire-rated wall, ceiling or floor construction, completely seal voids with fire-rated material, full thickness of the construction element. Refer to Section 07270.
- f) Refinish surfaces to match adjacent finishes: for continuous surfaces refinish to nearest intersection or as indicated on schedule and drawings; for equipment refinish entire unit.
- g) Provide and install steel lintels for new openings in existing masonry construction.
- h) Restore surfaces and finishes in areas of electrical and mechanical Work to match surrounding substrate as per above notes.
- i) Revise existing elevator openings to accommodate new floor heights match to adjacent materials. Patch elevator sill to match existing.

E6. NMS-SPECIFICATIONS SECTION

E6.1 These specifications apply to the Work:

DIVISION 2 SITEWORK

DIVISION 5 METALS

DIVISION 6 WOOD AND PLASTICS

DIVISION 7 THERMAL AND MOISTURE PROTECTION

DIVISION 8 DOORS & WINDOWS

DIVISION 9 FINISHES

DIVISION 10 MISCELLANEOUS SPECIALTIES

DIVISION 15 MECHANICAL

DIVISION 16 ELECTRICAL

ELECTRICAL SCHEDULES