THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 63-2009

CONSTRUCTION OF AN IRRIGATION PUMPHOUSE, AT THE JOHN BLUMBERG RECREATIONAL COMPLEX

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 CONSTRUCTION OF AN IRRIGATION PUMPHOUSE, AT THE JOHN BLUMBERG RECREATIONAL COMPLEX

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, February 26, 2009.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that the location of the proposed pumphouse building is approx. 650 metres south of Portage Avenue, and the Contractor may have to walk from Portage Avenue to view the Site. Since this is off season, the road system may not be plowed, and the vehicle gate by Portage Avenue may be locked.

B3.3 Should the Bidder wish to see photos of the site area, they are to contact the Contract Administrator.

B4. ENQUIRIES

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

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

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

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

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

B5. ADDENDA

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

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt

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

B5.2.3 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 may 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.

B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.7, deviations in consistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B7. BID COMPONENTS

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

(a) Form A: Bid;

(b) Form B: Prices;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the **BIDDER**'s name and address, and shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1

B7.5.1 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.

B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B14.1(a).

B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.

B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B7.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

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 should 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 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 C12.2.3(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.

B9.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

B10.1 The Bidder shall:

(a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and

(b) be financially capable of carrying out the terms of the Contract; and

(c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

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

(a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/debar.stm

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

(a) have successfully carried out work similar in nature, scope and value to the Work; and

(b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and

(c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

B10.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.5 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 Bids will not be opened publicly.

B11.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/bidopp.asp

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 Division website at http://www.winnipeg.ca/matmgt

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

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 C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

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 will:

(a) retain the Bid until after the Submission Deadline has elapsed;

(b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 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 or acceptable deviation there from (pass/fail);

(b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);

(c) Total Bid Price;

(d) economic analysis of any approved alternative pursuant to B6.

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

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 or in other information required to be submitted, that he is responsible and qualified.

B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B14.4.2 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

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, in accordance with B14.

B15.3.1 Following the award of Contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

B15.4 Notwithstanding C4, 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 C1.1, 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

C0. GENERAL CONDITIONS

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

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

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the construction of an irrigation pumphouse at the John Blumberg Recreation Complex, located in Headingley Manitoba.

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

(a) Construction of a small wood frame, metal clad shed.

(b) Electrical service to the irrigation pump house.

(c) The supply and installation of electrical and mechanical equipment.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is Ken Rech Landscape Architects Inc., represented by:

Ken Rech
Landscape Architect
1480 Wellington Crescent, Winnipeg, Manitoba, R3N 0B3

Telephone No. (204) 489-6616
Facsimile No. (204) 489-6852

D3.2 At the pre-construction meeting, Ken Rech 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 C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

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

The City of Winnipeg
Chief Financial Officer
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
Internal Services Department
Legal Services Division
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1

Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

D6.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D7. SAFE WORK PLAN

D7.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D7.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/Safety/default.stm

D8. INSURANCE

D8.1 The Contractor shall provide and maintain the following insurance coverage:

(a) commercial general liability insurance, in the amount of at least two million dollars ($2,000,000.00) inclusive, with The City of Winnipeg and Ken Rech Landscape Architects Inc. added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

(b) automobile liability insurance for 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.

D8.2 Deductibles shall be borne by the Contractor.

D8.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.

D8.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D9. PERFORMANCE SECURITY

D9.1 If the Contract Price exceeds one hundred thousand dollars ($100,000.00), 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.

D9.1.1 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.

D9.2 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.

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 of authority to carry on business specified in D6;
  (ii) evidence of the workers compensation coverage specified in C6.15;
  (iii) the Safe Work Plan specified inD7;
  (iv) evidence of the insurance specified in D8;
  (v) the performance security 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 not commence the Work on the Site before May 15, 2009. unless the frost is completely out of the ground.

D11. SUBSTANTIAL PERFORMANCE

D11.1 The Contractor shall achieve Substantial Performance within 20 (twenty) 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 re-inspected.

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 24 (twenty four) 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 re-inspected.

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 four hundred dollars ($400.00) per Calendar Day for each and every Calendar 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 damages 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. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D14.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D15. PAYMENT

D15.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor’s banking institution.

WARRANTY

D16. WARRANTY

D16.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the

respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D16.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D16.2 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a 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.

D16.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D9)

KNOW ALL MEN BY THESE PRESENTS THAT

_____
(hereinafter called the "Principal"), and

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

_____

_____ dollars ($_____.____)

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

WHEREAS the Principal has entered into a written Contract with the Obligee for

BID OPPORTUNITY NO. 63-2009

CONSTRUCTION OF AN IRRIGATION PUMPHOUSE, AT THE JOHN BLUMBERG RECREATIONAL COMPLEX

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

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

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

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

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

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

_____ day of _____ , 20____ .

SIGNED AND SEALED
in the presence of:

_____
(Witness as to Principal if no seal)

_____
(Name of Principal)

Per: _____ (Seal)

Per: _____

_____
(Name of Surety)

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

Form H2: Irrevocable Standby Letter of Credit
(PERFORMANCE SECURITY)
(See D9)

_____
(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 63-2009

CONSTRUCTION OF AN IRRIGATION PUMPHOUSE, AT THE JOHN BLUMBERG RECREATIONAL COMPLEX

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 AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/Spec/Default.stm

E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.

E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.3 The following are applicable to the Work:

Specification No.	Specification Title
CW 3170-R3	Earthwork and Grading

Drawing No.	Drawing Name/Title
L1	New Irrigation Pumphouse Site Plan
A1	New Irrigation Pumphouse Building
E2.0	New Irrigation Electrical Layout

E2. PERMITS

E2.1 The Contractor is responsible to apply and pay for all permits.

E2.2 The Contractor shall include all Work shown on the drawings and outlined in the specification in their Total Bid Price, unless the Work is clearly shown to be not included in the Contract.

E2.3 Measurement and Payment. The cost for permits will be paid based on a lump sum basis and shall be included in Unit Price Item No: 1 “Permit Costs” Form B: Prices. The price shall include all costs associated with the submission of the permit application, costs and obtaining an Occupancy Permit.

E3. SITE ACCESS

E3.1 The Site is located on the Assiniboine River at the John Blumberg Recreation Complex in Headingley Manitoba, and as shown on drawing detail 1-L1.

E3.2 The access to the Site will be via the existing asphalt and gravel road systems to a point ending at the golf coursed maintenance yards. From the maintenance yard to the Site, the Contractor will have to cross over approx. 70 lineal metres of existing mowed grass, which grass is to be protected. Any damage to this grass as a result of the Contractor’s operations, must be restored to prior condition, at no further cost to the City.

E3.3 The Contractor may wish to consider accessing the Work area via the existing light duty gravel walkway system, however this walk route is probably only suitable for a track type Bobcat machinery. Track type Bobcat equipment should be considered when removing fill or hauling concrete to the Site, to protect the grass and existing granular walkways.

E3.4 The Contractor is made aware they must keep all equipment, stockpiled materials and excavated soil clear of the Assiniboine River, and must not stockpile materials that may wash/

erode, or contaminate the Assiniboine River and any fines levied by the Department of Fisheries and Oceans shall be paid by the Contractor including any fines levied against the City or Contract Administrator as a result of the Contractor's operations.

E4. CO-ORDINATION WITH OTHERS

E4.1 The Contractor is made aware the City will be issuing a minimum of two (2) other separate Contracts for Work on this Site, and some of this Work will be located immediately around the Contractor's Work area. The two other contracts are as indicated below:

(i) Granular roadway ramp down to the Assiniboine River: construction of a new granular roadway ramp is expected to be completed almost at a point of time the pumphouse building will commence construction. The Contractor may use the gravel roadway to temporary store building materials, provided the roadwork and Site restoration is complete.

(ii) Irrigation System contract: this Work will be mainly away from the pumphouse building, however the irrigation contractor will have to hook up their new irrigation supply and intake lines, to the pumphouse contractor's mechanical system.

(iii) The City of Winnipeg, Naturalist Services Branch will also be working in the area, providing seeding and restoration work of the road building Contractor's road embankments. The City is to be allowed access to the Work area as required.

E4.2 The Contractor is expected to co-ordinate and cooperate with all other of the City's contractors and shall co-ordinate all Work through the Contract Administrator.

E5. LIMIT OF WORK AND SITE RESTORATION

E5.1 The Contractor is to limit their Work to the immediate area required around the pumphouse building, except for the underground trenching of the new electrical service, and for the trenching of the conduit between the two pumphouse buildings.

E5.2 All areas where trenching occurs shall be backfilled with compacted clay or soil fill and any surplus debris removed from Site. Where existing grass is damaged, it shall be restored by installing a 100 mm depth of topsoil and seeded. For areas disturbed around the pumphouse building and the trenches between the two pump house buildings, the Contractor shall install a 150 mm depth of topsoil, and the seed restoration of these areas will be by the City of Winnipeg.

E5.3 The Contractor shall grade the area around the pumphouse building to a maximum 10% slope down from the main concrete floor of the pumphouse, as shown in detail 4-A1.

E5.4 Any damage to the remaining Site as a result of the Contractor's operations shall be restored to prior construction condition, at no cost to the City.

E6. DEMOLITION/ROUGH GRADING

E6.1 All demolition Work shall be legally disposed of off Site.

E6.2 In general terms demolition involves the rough grading and minor removal of existing grade/fill, and possible tree stumps or roots, from the below the building foundation.

E6.3 The Contractor shall rough grade the Site to permit the establishment of the top of the building's concrete floor to elevation 232.50 metres geodetic. Local geodetic bench mark is top of exterior concrete door landing on existing pumphouse building, elevation 232.477, as shown on drawing detail 4-L1. The Contractor shall grade the area around the pumphouse building to a maximum 10% slope down from the main concrete floor of the pumphouse, as shown in detail 4-A1.

E6.4 Compaction of the sub grade under the building foundation is to be to 100% Modified Proctor density.

E6.5 Measurement and Payment. The cost for demolition and rough grading will be paid based on a lump sum basis and shall be included in Unit Price Item No: 2 “Demolition and Rough Grading” Form B: Prices. The price shall include all costs associated with the excavating, loading and hauling of all excavated materials, as well as the grading and placement of all other Site materials, required to meet the sub-grade elevations.

E7. GRANULAR BASE

E7.1 This Specification shall amend and supplement City Specification CW 3110-R10 and CW 3150-R4. The Work to be done by the Contractor under this Specification shall cover all phases of supply and placement of crushed limestone base course under the building concrete floor slab.

E7.2 The new granular base shall be 19 mm diameter crushed limestone down, installed to the depths noted on drawing detail 4-A1. Install granular base in 150 mm thick lifts and compact to 100% Modified Proctor Density.

E7.3 The cost for the supply and installation of Granular Base is to be included in the overall building cost, as indicated in the Unit Prices for Item No: 3 “Building Construction including Foundation Work” Form B: Prices.

E8. PRECAST CONCRETE PAVERS

E8.1 The Contractor shall install 4 Barkman Diamond-face precast concrete slabs, size 610 mm x 750 mm.

E8.2 Levelling base shall be 6 mm diameter crushed limestone down.

E8.3 Install 4 pavers tight against one another to the shape and location shown on drawing detail 1-A1. Install pavers on a 50 mm depth of limestone levelling base, sloped to drain away from the building.

E8.4 The cost for the supply and installation of four (4) precast concrete pavers will be paid for on a lump sum basis and is to be included in the Site Restoration Costs, as indicated in the Unit Prices Item No: 6b “Four Precast Concrete Pavers” Form B: Prices.

E9. TOPSOIL AND FINISH GRADING

E9.1 The Contractor is responsible to restore all Site damage around the new pumphouse building as a result of their operations, with topsoil. The topsoil will be seeded by the City of Winnipeg, Naturalist Services Branch.

E9.2 Topsoil shall be in accordance with CW 3540-R5 Topsoil and Finish Grading for the Establishment of Turf Areas.

E9.3 Where the Site has been disturbed around the building the Contractor shall install a 150 mm depth of topsoil, graded to meet the new grade elevations, and sloped down from the building foundation at a maximum 10% slope. All topsoil shall be raked and rolled after spreading to provide a smooth surface for seeding.

E9.4 The cost for the supply and installation of topsoil and finish grading will be paid for on a lump sum basis and is to be included in the Site Restoration Costs, as indicated in the Unit Prices Item No: 6a “Topsoil and Finish Grading” Form B: Prices.

SECTION NO.	– TITLE
03300	– CAST IN PLACE CONCRETE
05500	– METAL FABRICATIONS
06100	– ROUGH CARPENTRY
06200	– FINISH CARPENTRY
07450	– METAL ROOF & SIDING SYSTEMS
07900	– SEALANTS
08100	– HOLLOW STEEL DOORS & FRAMES
08710	– FINISH HARDWARE
09900	– PAINTING
15000	– MECHANICAL SPECIFICATION
16000	– ELECTRICAL SPECIFICATION

PART 1 - GENERAL

1.1 CONCRETE PROCEDURES

.1 The content of the Work encompassed within this Division of the specifications shall be in accordance with the National Building Code, 1995 & MBC 98, C.S.A. Standard CAN3-A23.1-94 and CAN3-A23.2-94 all provincial safety codes and municipal bylaws.

1.2 COLD WEATHER CONCRETING PROCEDURES:

This section applies whenever the outdoor temperature drops below 5 degrees C. Follow requirements as outlined in ACI (most current edition)

.1 All concrete shall be supplied, heated, to the forms, at a temperature not greater than 25 C, when mixed and shall be at least 18 C when placed. Protect against freezing by the use of enclosures and heating units for the period shown below. The use of non - vented heaters will not be permitted. Calcium chloride additives shall not be used.

.2 Enclosures shall be heated to a temperature of 18 C for a period of at least 24 hours before pouring concrete and after pouring shall be kept heated to 15 C for 4 days.

.3 In no case shall the basement or crawl space temperature drop below 4 C during cold weather construction.

1.3 TESTING PROCEDURES

.1 The Contract Administrator shall engage an approved independent testing and inspection laboratory to perform concrete tests.

.2 Tests shall be in accordance with C.S.A. Specification CAN3-A23.2-94. Samples shall be taken and handled only by the inspection firm. At least three cylinder tests shall be taken from each concrete pour or from each 115 cubic metres of concrete, whichever is less. One cylinder shall be tested at the age of seven days and the remaining two at the age of twenty-eight days.

1.4 SITE LAYOUT

.1 The Contractor shall be responsible for complete Site layout, pile staking, excavation layout, and setting of all geodetic elevations of various building components as indicated on the drawings.

1.5 EXCAVATION AND BACKFILL

.1 Strip off and store on Site, in a location approved by the City, reuseable topsoil material.

.2 Excavate to elevations and dimensions required by the work, to clean lines, allowing not less than 450 mm clear of grade beams, etc. Make excavation at the natural angle of repose of soil material.

.3 Make bearing areas level, free of soft loose, and organic material.

.4 Maintain water-free excavations.

.5 Where necessary, brace and shore to withhold earth banks properly in position until permanent work has been completed, inspected, and approved for backfill.

.6 Over-excavations shall be filled as follows:
- .1 Bearing areas - not less than 7MPa concrete
- .2 Non-bearing areas - clean earth or gravel unless otherwise noted.

.7 Notify the Contract Administrator when work is ready for inspection. No backfilling against foundation walls shall be done until the Contract Administrator as approved same, and all work below grade including drains, sewers, weeping drains, waterproofing and dampproofing have been inspected and approved.

.8 No backfill shall be placed until first floor beams, slabs and/or joists are in place.

.9 All fill shall be clean earth. No frozen material shall be used.

.10 Rocks, blocks or concrete and masonry materials no greater in size than 0.03 m^3, but no debris, may be used for fill if well distributed in the earth. Such materials shall not be placed against foundation walls or within 450 mm of the top of subgrade level.

.11 Remove construction debris and rubbish from excavation before backfilling.

.12 Place earth fill in layers not exceeding 300 mm in depth, compacted to prevent future settlement, to required

elevations.

.13 Avoid damage to the walls and to any dampproofing or waterproofing.

1.6 CONCRETE REINFORCEMENT: Refer to Structural drawings for additional specifications.

.1 Unless otherwise specified herein or called for on drawings, this section of Work shall conform to C.S.A. Specification CAN3-A23.3-94, Code for the Design of Concrete Structures for Buildings.

.2 Reinforcing steel shall be fabricated in accordance with ACI Standard 315-74.

.3 Bar reinforcing steel shall be deformed intermediate grade new billet steel or high strength new billet steel in accordance with C.S.A. Specification CAN CSA - G30.18 400 MPA - M92 (R1998). Except for stirrups which may be 300 MPA.

.4 Reinforcing bars shall be free from flaws, cracks or other defects of rolling, shall be true to size and shape and shall be free of loose scales of rust, dirt, grease or other destroyers of bond. Bars shall be bent cold and accurately shaped to required detail.

.5 All the necessary accessories for the proper spacing, support and fastening of reinforcement shall be included.

.6 Steel reinforcement shall be accurately positioned and rigidly held in place prior to placing concrete.

.7 All reinforcing steel shall be thoroughly cleaned of loose rust, mill scale, and other foreign coating liable to reduce or destroy the bond to concrete.

.8 Concrete cover to main reinforcing steel shall be 50 mm (minimum).

1.7 CONCRETE MATERIALS

.1 All structural concrete shall meet following specifications.

Concrete	Cement	28 Day Strength	Max. Aggregate	Air	Slump	Steel Cover
Belled Piles	50	32 MPa	20 mm	5-8%	80 +/- 30 mm	75 mm
Grade Beams	10	30MPa	20mm	5-8%	80 +/- 30mm	50 mm
Exterior Slabs	10	30MPa	20 mm	5-8%	80 +/_ 30mm	50 mm

.2 All form ties shall be of the snap back variety, such that when removed, no metal shall be within 19 mm of any finished concrete surface.

.3 Walls and beams not continuously supported shall have bottoms formed with 150 mm poly wrapped shearmat.

.4 All concrete in contact with soil and not protected by dampproofing to be made with sulphate resistant cement.

.5 All concrete shall be delivered to the job by an approved transit-mix company. Job mixed concrete shall not be used.

.6 Anchor bolts shall be supplied and set by the concrete contractor. Refer to architectural and structural drawings for size and locations. Each anchor bolt shall be supplied c/w flat washers and

1.8 CONCRETE PLACEMENT

.1 The Contractor shall notify the Contract Administrator at least two full days in advance of closing the formwork and placing of concrete, for inspection of the formwork and reinforcing steel as well as all inserts. For the inspection of the wall reinforcing, interior forms shall be left open. Prior to pouring of concrete the Contractor shall submit in writing to the Contract Administrator that all precautions have been taken, arrangements made, formwork and steel properly and securely placed, and that all inserts relating to all trades have been accurately located. Deficiencies shall be rectified to the satisfaction of the Contract Administrator prior to placing concrete.

.2 Notify the appointed concrete testing laboratory in order that personnel may be present when concreting begins to carry out concrete tests.

.3 Forms shall be thoroughly oiled or wetted before placing concrete. Forms shall not be wetted during freezing weather.

.4 Concrete shall be placed in the forms with care and in a continuous operation. In no case shall the wet concrete be allowed to fall freely from a height in excess of 1.5 metres. Where the forms are of a depth greater than 1.5 metres or in heavily reinforced areas placing shall be done by means of "elephant trunks" or other approved aids. Concrete shall be placed in horizontal layers at a rate which will ensure satisfactory compaction, without forming voids or honeycombing.

.5 Concrete in walls, piers, or columns shall be poured at a rate of not more than 2.5 metres per hour in 0.5 metres lifts. Where it is necessary to pour walls, columns and supporting beams and slabs monolithically, intervals of four hours shall elapse between the vertical pour and the horizontal pour to ensure that the slump and compaction of the vertical pour is complete. A cement sand slurry shall be deposited in the base of all columns before concrete is placed. A minimum of .03 m3 of this slurry shall be used per column.

.6 All concrete shall be thoroughly compacted during placing by means of hand-tamping and vibrating, to ensure a dense homogenous structure of close bond with reinforcing and smooth form surfaces.

1.9 CONSTRUCTION JOINTS

.1 The location of construction joints shall be approved by the Contract Administrator.

.2 All construction joints shall be cleaned before pouring new concrete.

1.10 HONEYCOMBING

.1 The Contractor shall do no repair work to honeycombing until all surfaces have been inspected by Contract Administrator and approval given for such work.

.2 The Contract Administrator shall, at his discretion, condemn any work which shows signs of serious honeycombing. The Contractor shall remove and replace any such condemned work at no cost to the City.

.3 Where mild honeycombing has occurred, and the Contract Administrator approves, the Contractor shall chip out all areas of honeycombing until sound concrete is exposed. The edges of these areas must be chipped so that they are at right angles to the surface. Areas shall then be wire brushed, thoroughly wetted and covered with a thin coat of neat cement mortar. Immediately following this, the areas shall be patched with retempered stiff mortar of sand. Retempering shall be accomplished by mixing and remixing for about 20 minutes before using. Mortar shall be packed as tightly as possible and the surface struck off slightly above the surrounding surface. The patch shall then be finished with a wood float flush with the surrounding surface and cured for not less than five (5) days.

1.11 CONCRETE SLAB FINISHES

.1 Slabs to receive resilient flooring materials or to remain exposed shall receive a monolithic steel trowel finish. Trowelling shall not be started until the moisture film and shine have disappeared from the surface and the concrete has set enough to prevent an excess of fine material and water being worked to the surface. Steel trowels shall be vigorously used at an angle of 45 degrees, under pressure until the final trowelling produces a hard dense surface, free of defects marring its appearance. This work shall be done by experienced concrete finishing personnel.

.2 Exterior slabs, sidewalks and ramps for wheeled traffic shall be given a broom finish with grooves running perpendicular to traffic flow, using a 900 mm concrete broom.

1.12 INSERTS, EMBEDDED PARTS AND OPENINGS

.1 The concrete contractor shall accurately locate and set in place items which are to be cast directly into concrete. Install all components straight, level and plumb, ensure items are not disturbed during concrete placement.

1.13 CONCRETE CURING

.1 Concrete curing and protection shall be in accordance with C.S.A. CAN3-A23.1-94.

.2 All exposed surfaces of concrete shall be prevented from drying out for seven days after placing. Surfaces shall be kept damp by application of water or by the use of forming curing compounds, where no additional finish or topping is required.

1.14 SAWCUT CONCRETE CONTROL JOINTS

.1 Within 24 hours of finishing troweling slab sawcut slab into equal panels, refer to “Foundation Slab Plan” for location of sawcuts.

.2 Sawcuts are to be minimum of 20 mm deep x 3mm wide

.3 Sawcuts are to be cleaned of all accumulated debris and caulked with appropriate type of caulking prior to installation of finished flooring materials.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

.1 Do welding work in accordance with C.S.A. W-59-1989 (R2001) unless specified otherwise.

.2 Do structural steel work in accordance with CSA S16.1 - 94 (R2000) except where specified otherwise.

.3 Refer to Structural drawings for additional specification notes.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Steel sections and plates: to C.S.A. G40.21- 98, type 300W.

.2 Steel pipe to C.S.A. B63-1966 (R1971).

.3 Welding materials: to C.S.A. W59-1989.

.4 Bolts and anchor bolts: To ASTM A325M-79.

.5 Galvanizing: Hot dipped galvanizing with minimum zinc coating of 600 g/m to C.S.A. G164-M92.

.6 Galvanized primer: zinc rich, ready mix to C.G.S.B. 1-GP-181m+Amdt-Mar-78.

2.2 FABRICATION

.1 Build work square, true straight and accurate to required size, with joints closely fitted and properly secured.

.2 Fabricate items from steel unless otherwise noted.

.3 Use self-tapping shake-proof countersunk flat headed screws on items requiring assembly by screws or as indicated.

.4 Where possible, fit and shop assemble work, ready for erection.

.5 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 REFINISHING

.1 Apply one shop coat of primer to metal items, with exception of stainless steel, aluminum, galvanized or concrete encased items.

.2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 C.

.3 Clean surfaces to be field welded; do not paint.

PART 3 - EXECUTION

3.1 ERECTION

.1 Erect metal work square, plumb, straight, and true, accurately fitted with tight joints and intersections.

.2 Provide suitable means of anchorage such as dowels, anchor clips, bar anchors, expansion bolts and shields, toggles.

.3 Make field connections with high tensile bolts, or weld to C.S.A. W59 - 1989 and C.S.A. S16.1 - 94.

.4 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.5 Touch-up rivets, field welds, bolt and burnt or scratched surfaces after completion of erection.

.6 Touch-up galvanized surfaces with zinc primer where burned by field welding.

END OF SECTION

PART 1 - GENERAL

.1 The requirements of Residential Standards Canada, NBC95 & MBC98 Ammendments shall apply to this specification section. If more stringent specifications are indicated on drawings, they shall supersede the Residential Standards requirements.

.2 Notes indicated on architectural and structural drawings are to be read in conjunction with this specification section.

.3 Wood design in accordance with NBC – 95, PART 4,CSA 086.1-94 & TPIC-96. Nailing to NBC 95 Table 9.23.3.4.& 9.23.3.5.

PART 2 - MATERIALS

2.1 **Lumber shall be the following grades unless noted otherwise: (Items listed below form a complete general list, therefore some items may not be applicable to this project - Refer to drawings)**

BUILT-UP WOOD BEAM - No. 2 SPF or LVL lumber
JOISTS AND HEADERS - No. 2 SPF or LVL lumber
BRIDGING -38mm x38mm (minimum) cross bridging
SILL GASKET – 6mm thick by wall plate width closed cell foam
SILL PLATES (in contact with concrete) - No.2 construction grade spruce – PWF ACQ treated
WALL PLATES - No. 2 construction grade Spruce - PWF ACQ treated
WALL STUDS - No. 1 Kiln dried construction grade Spruce - PWF ACQ treated
EXTERIOR & INTERIOR WALL SHEATHING – 16mm thick PWF –ACQ spruce plywood
FLOOR SHEATHING – 16 mm T & G Standard grade Spruce plywood
SUBFLOOR ADHESIVE - B.F. GOODRICH PL400
FLOOR UNDERLAY – 9 mm (minimum) select grade Fir plywood
UNDERLAY ADHESIVE - White glue
ROOF SHEATHING - 16mm thick PWF –ACQ spruce plywood
FASCIA SHEATHING - 16mm thick PWF –ACQ spruce plywood
SOFFIT – 9 mm GIS Fir plywood
PLYWOOD TRIM BOARDS – 19 mmGIS Crezon plywood
INTERIOR STAIRS - No. 1 Douglas Fir or 2 layers of 19mm Fir Ply with No. 1 Douglas Fir exposed stringers
BASEMENT STAIRS - No. 1 Douglas Fir
EXTERIOR WOOD STAIRS - No. 2 Spruce PWF treated, stringers and treads
ROOF CURBS AND MECHNICAL ROOF MOUNTED EQUIPMENT SLEEPERS – No. 2 Spruce treated to PWF ACQ standards

2.2 Engineered wood products, beams, columns and I-joists shall be designed by a Structural Engineer licensed to practice in Manitoba, and detailed shop and layout drawings shall be provided to Contract Administrator for review prior to manufacture. Provide complete system design and supply including, hangers, blocking, fasteners and bridging etc. Wood I-joist are to be designed to accommodate applied loading from Rooftop mounted equipment and drift snow loading and deflection criteria.

2.3 Glulam shall be manufactured and supplied by a plant approved CSA under CSA 0177. Glulam columns to be minimum Spruce- Pine 12C-E. Glulam beams to be a minimum Spruce – Pine 20f-E Westlam. All connection s (hangers, shoes etc.) shall be designed and supplied by Glulam supplier. Provide fully detailed shop drawings for review prior to manufacture.

PART 3 - APPLICATION

3.1 FLOOR AND ROOF FRAMING

.1 All joists, rafters and beams shall be set with crown up.

.2 Joists shall be set into forms in such a way as to provide positive embedment in concrete work and care shall be taken so that upon completion of concrete work, joist tops shall protrude a minimum of 1" above the level of the concrete to allow for wood shrinkage.

.3 Double all joists and rafters to form required trimmer joists and provide double header joists at the following locations, unless otherwise noted: piping, stairs, dormers, shafts for soil and waste vents, bulkheads, trapdoors, etc. Any header joists over 2m (6 ft.) in length shall be tripled. Trimmer joists supporting triple header joists shall also be tripled.

.4 All joists terminated at header joists and trimmer joists around openings must be supported by metal

joist hangers.

.5 Joists resting on wood sills or plates shall be toenailed to the bearing with a minimum 3 1/2" nails per joist.

.6 Cutting joists or beams for piping or any other reason shall be done only upon Engineers approval and only if suitable alternate means is provided to carry the load for which the joists were intended.

3.2 BRIDGING

.1 Provide bridging in all spans of 2.5 m (8 ft.) or more.

.2 Bridging shall be spaced not more than 2 m (7 ft.) apart.

.3 Cross bridging shall be nailed with two 60 mm (2 1/4") nails each end.

3.3 SHEATHING

.1 Apply in full sheets and nail as recommended by the Manufacturer.

.2 Roof sheathing shall be nailed as recommended by the Manufacturer. Set all panels with joints staggered and leave a 3 mm (1/8") space between panels for expansion.

3.4 SUBFLOORING

.1 Subfloor shall be nailed and glued to joists. Alternately, the subfloor may be screwed to joists at 200 mm o.c. with 45 mm (1 3/4") drywall screws.

3.5 UNDERLAY

.1 Underlay is required under all resilient type flooring in wood frame structures.

.2 Underlay shall be glued, as per manufacturer's instructions, to subfloor.

.3 Plywood underlay shall be nailed with power driven or ring nails of adequate length are allowed for fastening.

3.6 FURRING

.1 All furring shall be 38 mm (1 1/2") material (minimum) spaced 400 mm (16") o.c.

.2 Furring attached to wood framing shall be nailed at every bearing.

.3 Furring shall be set plumb, square and true to dimension.

.4 Ceiling furring shall be securely attached to beams or joists and well braced to form a rigid ceiling.

3.7 BACKING AND BLOCKING

.1 Provide adequate backing for all edges of exterior sheathing, metal siding and roofing and mechanical and electrical equipment mounting.

.2 For the following items, install adequate blocking (in accordance with the instructions supplied by the Manufacturer of each item) - exact heights to be determined on site.

.3 Provide adequate solid blocking, for cant strips, flashings, expansion joints, fascias, copings, trim, vents and grilles, curbs, mechanical equipment curbs and sleepers, plumbing equipment, light fixtures, electrical boxes, etc.

.4 Nail, screw or bolt blockings to securely fix in position.

.5 Consult mechanical and electrical sub-contractors for locations of items not specifically dimensioned.

.6 In the case of recessed fixtures, blocking shall completely surround and support fixtures.

3.8 VAPOUR BARRIER INTEGRITY

.1 Rough carpentry contractor shall install 6 mil poly strips at the top of all interior wall plates. Width of poly striping is to be wide enough to ensure a minimum 300mm (12") overlap to the wall vapour barrier. All rips and tears shall be repaired prior to final acceptance of rough carpentry work.

3.9 WOOD TRUSSES

.1 Design and fabrication criteria of wood trusses shall meet Code requirements and TPIC - 96. Refer to structural drawings for additional specification notes.

.2 The lumber used in all wood trusses shall meet published stress ratings for species and grades as setout in official grading rules of appropriate lumber association; except that wherever truss engineering design calls for lumber which exceeds minimums set forth therein, the truss engineering designs shall be applicable.

.3 The moisture content of lumber used in wood trusses shall be not more than 19% nor less than 7% at time of fabrication.

.4 The lumber used in all wood trusses shall meet species and fully recognized nominal sizes shown on truss engineering designs. Members shall be cut from lumber which bears proper grade mark stamp of a recognized grading association or licensed lumber inspection agency.

.5 Supply prefabricated truss shop drawings stamped by a Manitoba licensed engineer prior to fabrication. Prefabricated wood trusses to be manufactured by a member of the Western Wood Truss Association (MB), who is enrolled in a Quality Control Program, administered by an independent third party.

3.10 FASCIA & EXTERIOR TRIM BOARDS

.1 Fascia boards shall be scribed to fit with 45 degree bevel cut butt joints fastened securely to backing, ready to receive pre finished metal cladding by siding trade. Co-ordinate with the siding - roofing contractor as to appropriate sizing and assembly to ensure clean accurate fit.

3.11 WINDOW AND EXTERIOR DOOR FRAME INSTALLATION

.1 Set window units and door frames into prepared opening plumb, square and level, free from warp, twist or superimposed loads.

.2 Secure window units into rough openings according to manufacturer's instructions, in a manner not restricting normal movement.

.3 Infill space between rough framed opening and window unit frame with “low expansive type “ urethane foam insulation, also lap and seal wall vapour barrier into foam insulation.

END OF SECTION

PART 1 - GENERAL

1.1 PROTECTION

.1 All work under this section shall be adequately protected against damage until the date of substantial performance.

PART 2 - MATERIALS

2.1 INTERIOR TRIM

.1 Interior Door Casings: 19mm X 89mm PWF ACQ spruce – hand selected for minimum knots and splits

2.2 FASTENERS

.1 Galvanized finishing nails for exterior work. Nails shall be long enough that at least half their length penetrates into the substrate material.

PART 3 - APPLICATION

.1 All work shall be installed straight, neat and securely nailed.

.2 Work shall be scribed, mitred, and fitted in the best first class finishing manner with all nails set, or screws countersunk.

.3 All moldings shall be united at external corners with 45 deg. mitres and at internal corners with butt joints.

.4 Splices in wood trim pieces shall be cut at 45 deg., not butted square ends.

.5 Exterior wood finish members shall be back primed before fixing.

.6 Baseboards shall be attached with nails or trim screws.

.7 Trim or other finish wood surfaces attached to masonry or concrete shall be installed using expansion bolts or toggle bolts. Fibre plugs or concrete nails are not acceptable.

.8 As required, install all door and all misc. hardware. Lubricate, adjust and leave in perfect operating condition. Provide all hardware required for a first class job and complete with screws and fittings to match hardware finish.

.9 Sand exposed faces smooth and even, suitable for finishes as specified.

.10 The finish carpentry contractor shall install all interior windows, doors, frames, c/w hardware as supplied by Hollow Metal Contractor. (Section 08100) Ensure exterior door frames are fully insulated before installing. Install hollow metal frames and glazed screen plumb and square with a maximum diagonal distortion of 1.5 mm. Ensure frames are securely and rigidly anchored to adjacent construction.

.11 The Finish Carpentry contractor shall install all washroom accessories as supplied by other trades. Exact location of accessories is to be confirmed with the Contract Administrator on site.

END OF SECTION

Part 1 -- General

1.1 RELATED WORK
.1 Rough Carpentry: Section 06100

1.2 STANDARDS AND DESIGN CRITERIA

.1 Design roof – siding system in accordance with:
.1 Canadian Sheet Steel Building Institute Standards.
.2 National Building Code of Canada

.2 Design roof and wall cladding system to accommodate thermal movement of the roof and wall panelling sheet caused by ambient temperature range of + 30 C to -30C, without causing deterioration of the roof – siding system.

.3 Design roof system to withstand dead loads, snow loads, snow build-up and rain load. Design fastener systems to withstand wind uplift on the roof, and sliding forces induced by sliding snow and ice loads.

1.3 QUALITY ASSURANCE AND SUBSTITUTIONS

.1 Manufacturer of roof - siding system, and installer shall demonstrate at least five years experience in projects similar in scope.

.2 This section establishes the standard of quality required for the complete metal roof system. Proposed substitutions must meet B6.

1.4 SUBMITTALS

.1 Submit shop drawings in accordance with General Requirements of this specification, to the Contract Administrator for review prior to fabrication.

.1 Indicate arrangement of pre-finished Roof – Siding Sheet, including joints, types and locations of supports, fasteners, flashing, gutters, mitres, and all metal components related to the roof installation.

.2 Each shop drawing shall be stamped by a Professional Engineer.

.3 Submit samples of coloured metal roof - siding sheet for review by the Contract Administrator, prior to fabrication.

1.5 HANDLING AND PROTECTION

.1 Store roofing products in accordance with manufacturer's recommendations, and protected from elements.
.2 Protect prefinished steel during fabrication, transportation, site storage and erection, in accordance with CSSBI Standards.

Part 2 -- Products

2.1 PREFINISHED METAL ROOFING + SIDING

.1 Prefinished Roof Sheet, exposed to exterior:
Accepted Product: CL – 622 - R Roof Cladding by VICWEST

.2 Prefinished Wall Sheet, exposed to exterior:
Accepted Product: CL – 5022 – R Wall Cladding by VICWEST

.3 Panel: Galvanized (zinc coated), sheet steel conforming to ASTM A653 SS grade 80 with designation Z180 or Z275, Nominal core thickness : 24 guage

.4 Coating: Prepainted with Colorite Series, one side. Colour to be – QC 6071 Stone Grey

2.2 FASTENING SYSTEMS

.1 Roof – Siding Fasteners: As specified by manufacturer, to resist wind uplift and sliding snow forces.

2.3 ACCESSORIES

.1 Flashing: Formed from same materials as the roof - siding sheet. Custom fabricated to suit architectural details, as required.

.2 Closures: Foam and metal closures to suit profile, to manufacturer's recommendations.

.3 Sealants: In accordance with Metal Cladding manufacturer's recommendations. Colour to match siding.

.4 Water Barrier: Barrier shall be Lastobond Shield by Soprema Inc. or an approved equivalent in accordance with B6.

.5 Fasteners: Coloured nylon head screws , #10 x 9mm diameter x 38 mm long c/w skirt flange and neoprene washer suitable for installation into wood framing.

2.4 FABRICATION

.1 Fabricate roof components to comply with dimensions, profiles, gauges and details as shown on the shop drawings, including fascia and soffit panels and all companion flashings.

.2 Fabricate all components of the system in the factory, ready for field installation.

.3 Provide roof sheet and all accessories in longest practicable length to minimize field lapping of joints.

Part 3 -- Execution

3.1 EXAMINATION

.1 Examine work of other trades over which roof - siding system will be applied, for conformity to drawings. Report all discrepancies to Contract Administrator before beginning work on the roof - siding system.

3.2 INSTALLATION

.1 Roof Panel Installation:

.1 Install water barrier over smooth, solid substrate, overlap sheet laps as recommended by water barrier manufacturer.

.2 Install exterior prefinished roof panels on solid substrate, using manufacturer's proper construction procedure. Ensure proper sheet overlap is positively locked for full length of roof slope and sealed with a continuous strip of metal building caulking tape.

.3 Provide notched and formed closures, sealed against weather penetration, at changes in pitch, and at ridges and eaves, where required.

.4 Install all companion flashing, gutters, ridge vents c/w insect barriers and fascia covers and vented soffits as shown on the drawings. Use concealed fasteners when possible.

.5 Exposed fasteners to match colour of roof sheet and be installed with variable torque power driver with torque set to not overdrive the fastener.

.6 Fasten and seal all end joints to provide a weather resistant seal.

.2 Wall Cladding Installation:

.1 Install spun olefin air barrier over smooth, solid substrate, overlap sheet laps and fastening as recommended by manufacturer.

.2 Install exterior prefinished wall cladding panels on solid substrate, using manufacturer's proper construction procedure. Ensure proper sheet overlap is positively locked for full height of wall and sealed with a continuous strip of metal building caulking tape.

.3 Provide notched and formed closures, sealed against weather penetration at corners and framed wall openings, confer with mechanical and electrical sub trades to ensure continuity of exterior wall finish

.4 Install all companion flashings, c/w insect barriers and fascia covers and vented soffits as shown on the drawings. Use concealed fasteners when possible.

.5 Exposed fasteners to match colour of roof sheet and be installed with variable torque power driver with torque set to not overdrive the fastener.

.6 Fasten and seal all end joints to provide a weather resistant seal.

3.3 TOUCH-UP AND CLEANING

.1 Remove and replace damaged wall and roof cladding panels and flashings and touch up minor paint abrasions with touch-up paint, prior to final inspection.

.2 Clean roof and wall panels by dry wiping, prior to final inspection.

PART 1 - GENERAL

1.1 GUARANTEE

.1 Provide the City with a written guarantee to cover material and workmanship of this section against failure within a 5 year period.

.2 Guarantee period shall begin on the date of substantial performance.

.3 Any evidence in the completed job that the proper preparatory work for any portion has not been done will render the Contractor responsible for the complete removal of all caulking and redoing the entire job.

PART 2 - MATERIALS

2.1 Joint backing shall be round section closed cell compressible foam rod, compatible with sealant to be used, of a diameter 6 mm greater than the opening receiving it.

2.2 Caulking compound shall be in accordance with the following:

.1 For use in cases where joint movement will not occur, C.G.S.B. Specification 19-GP-5b.

.2 For use in all other cases, C.G.S.B. Specifications 19-GP-3a and 19-GP-9b.

.3 Only Silicone or Acrylic (Elastomeric) sealants will be allowed.

2.3 See Section 07190, for acoustical sealant.

2.4 To seal exterior wood joints use BALKEM #116 (polyurethane) or approved equal. Caulking used on any one building shall be same colour.

PART 3 - APPLICATION

3.1 PREPARATION

.1 The Contractor shall clean all surfaces receiving caulking compound of all wood shavings, sawdust, dirt, dust, grease, mortar, oil or other materials.

.2 Joints and spaces to receive caulking shall in no case be less than 5 mm wide and 6 mm deep unless specifically recommended otherwise by sealant manufacturer. Joints deeper than 12 mm shall be packed out to within 6 mm of surface with compressible foam rod.

.3 DO NOT apply caulking or sealant at temperatures below 5^{o}C. or when surfaces are wet or frost covered.

3.2 PROCEDURE

.1 In all cases, the joint backing shall be tightly hand packed into the joints, allowing sufficient space for application of the caulking compound.

.2 Caulking compound shall be applied with a hand gun, having a nozzle of the proper size to fit the joint and shall be driven with sufficient pressure to fill and seal the joint completely.

.3 Apply sealant as a full bead, smooth, free from ridges, wrinkles, sags, air pockets and imbedded impurities.

.4 All interior and exterior openings that may allow transfer of heat, cold and moisture that are not sealed by other trades shall be caulked.

.5 Joints in flush surfaces shall be made flush with adjoining materials. Joints in internal angles shall be cove finished. Tool all joints to a smooth even finish.

3.3 FINISH

.1 All excess caulking material shall be removed immediately from adjoining work.

END OF SECTION

PART 1 - GENERAL

1.1 REQUIREMENTS OF REGULATORY AGENCIES

.1 Fabricate and install labelled steel fire rated doors and frames to NFPA 80-1975 except where specified otherwise.

1.2 SHOP DRAWINGS

.1 Submit shop drawings; indicate each type of door and frame, material core thickness, reinforcements, glazing, location of exposed fasteners, U.L.C. fire rating, and arrangement of hardware.

1.3 FABRICATION STANDARDS

.1 Fabricate doors and frames to "Canadian Manufacturing Specifications for Steel Doors and Frames", latest edition, except where specified otherwise.

.2 Latest U.L.C. standards for fire door and frame construction.

PART 2 - PRODUCTS

2.1 MATERIALS

Note that the following is a generic list of products, review drawings to confirm exact requirements.

.1 Sheet steel shall be commercial grade steel to ASTM A-366-70 Class 1 and ASTM A525-80a exterior doors: 14 gauge finished to ASTM (1975) WR5, wiped interior door 20 gauge zinc finish.

.2 Door frames: 14 gauge, (1.6 mm) welded for public doors.

.3 Doors: Face sheets 14 gauge (1.2 mm) for all exterior and public doors complete with interior ribs at (150 mm) 6" o.c.

.4 Honeycomb (Hollow) Core Doors: "Honeycomb" core material, laminated under pressure to face sheets. Reinforce for hardware as specified. Top and bottom of door closed with recessed spot-welded channel end closures. Longitudinal edges mechanically interlocked and ground, etc. as required to form a neat smooth product capable of withstanding normal usage without deformation or collapse.

.5 Glazed Doors: Opening reinforced with 20 gauge, (0.9 mm) channel, before stops and trim applied.

.6 Exterior Doors: apply waterproof filler at top channel. Omit honeycomb core and provide insulated core to "R: factor of 11 (R.S.I. of 2.11) using polyurethane sprayed insulation. Fill all door and frame cavities including specially reinforced areas.

.7 Glazing: Wire glass shall confirm to CAN2-12.11-M76 Type 1 wire mesh Style 3, 6 mm thick.

1. Wire glass shall conform to Cane-12-11-in 76 Type 1 wire mesh, style 3, 6 mm thick.

2. Exteriior entry glazing sealed unit to be: Exterior lite to be 3/8" thick lexan, interior lite to be mm. tempered one way vision glass.

.8 Glazing Tape: Tremco 800 preformed tape (Tremco Poly Shim) may be used where by of outer stop returns more than 4.5 mm.

.9 Setting blocks: Neoprene, Shore "A" dorometer hardness 80, 10 mm thick x 100 mm long x 6 mm high.

.10 Glazing Splines: Neoprene or polyvinyl-chloride manufacturer's standard dry glazing splines to suit hollow metal frames.

2.2 DOOR FRAME CONSTRUCTION

.1 Generally, frames shall be one-piece, welded construction throughout.

.2 Retrofit frames (Applied after wall construction is completed) may be Standard 16 gauge, knock-down frames.

.3 In light traffic areas, use of knock-down frames may be used on written authorization of Contract Administrator prior to Bid closing date.

.4 Insulate frame with polyise or urethane insulation where latter is called for.

.5 Thermally-broken frames shall be fabricated in accordance with CMSSDF standards and recommendation or shall have industry-wide acceptance.

2.3 LABELLED FIRE DOORS

.1 Provide labelled doors and frames for openings requiring fire protection ratings as per door schedule.

2.4 DOOR GRILLES

.1 If indicated on Door Schedule, grilles shall be AIROLITE 685M or equal. Number, sizes and locations as shown on drawings and schedules. Supply primed ready for painting or in wipe-coat galvanized finish.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Label each door, frame and hardware item with door code as indicated on architectural drawings. Deliver frames, doors and hardware as requested by Contractor.

.2 Provide complete installation instruction to the finish carpentry contractor with all materials supplied.

END OF SECTION

PART 1 - GENERAL

1.1 REQUIREMENTS OF REGULATORY AGENCIES

.1 Use ULC listed and labelled hardware for doors in fire separations and exit doors.

1.2 SAMPLES

.1 Submit samples of each type hardware specified, when requested by Contract Administrator.

.2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.

1.3 HARDWARE LIST

.1 Clearly indicate hardware proposed, including make, model, material, function, finish and all other pertinent information for each door or pair of doors.

1.4 MAINTENANCE DATA

.1 Provide maintenance data, parts list, and manufacturer's instructions for each type door closers, locksets, door holders and panic hardware for incorporation into maintenance manual specified in Section 01730.

.2 Brief maintenance staff regarding proper care of hardware such as lubrication of locksets, adjustments of door closers, cleaning and general maintenance.

1.5 DELIVERY & STORAGE

.1 Store finishing hardware in locked, clean and dry area.

.2 Package each item of hardware separately or in like groups of hardware, label each package as to item definition and location.

PART 2 - PRODUCTS

2.1 DOOR HARDWARE MATERIALS

.1 Refer to Door & Hardware Schedule as indicated on drawings.

2.2 FASTENINGS

.1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation.

.2 Exposed fastening devices to match finish of hardware.

.3 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

2.3 KEYING

.1 Keying shall be under Master Key System. Prior to keying, check with Contract Administrator as to type of keyway section to supply.

.2 Supply three keys for each independent lock and each independent group. Supply three keys of each Sub-master Group.

PART 3 - EXECUTION

3.1 INSTALLATION INSTRUCTIONS

.1 Furnish wood & metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware and for hardware installation.

.2 Furnish manufacturer's instructions to Finish Carpentry contractor (Section 06200) for proper installation of each hardware component.

.3 Install 1 1/2 pair of butts for doors up to 914 wide x 2200 high and 2 pair of butts for doors over 914 wide or 2200 high.

.4 Install hardware at following heights from finished floor to centre line of item:

Door pull:	1140 mm
Push plate:	1140 mm
Door bar:	1070 mm
Door knob:	1015 mm
Dead lock:	1350 mm
Panic bolt:	1015 mm

.5 Where door stop contacts, door pulls, mount stop to strike bottom of pull.

END OF SECTION

PART 1 - GENERAL

1.1 ENVIRONMENTAL REQUIREMENTS

.1 Do not apply paint finish in areas where dust is being generated.

PART 2 - MATERIALS

2.1 MATERIALS

.1 Paint materials: To CGSB Standards listed herein. Paint materials for each coating formula to be products of a single manufacturer.

2.2 ACCEPTABLE PRODUCTS

.1 Benjamin – Moore, & Pratt & Lambert.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACES

.1 Prepare wood surfaces to CGSB-85-GP-1M.

.1 Use CGSB 1-GP-126M vinyl sealer over knots and resinous areas.

.2 Apply wood paste filler to nail holes and cracks.

.3 Tint filler to match stains for stained woodwork.

.2 Touch up shop paint primer on steel with CGSB 1-GP-40M to CGSB 85-GP-14M.

.3 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16..

.4 Prepare masonry, cementitious surfaces to CGSB 85-GP-31M.

.5 Prepare wallboard surfaces to CGSB-GP-33a. Fill minor cracks with plaster patching compound.

3.2 APPLICATION

The following is a generic specification and therefore all items mentioned may not apply to this project, refer to drawings for exact scope of work.

.1 Sand and dust between coats to remove defects visible from distance up to 1.5 m.

.2 Finish bottoms, edges, tops and cutouts of doors after fitting as specified for door surfaces.

.3 Finish tops of cabinets and projecting ledges, both above and below sight lines as specified for surrounding surfaces.

.4 Finish closets and alcoves as specified for adjoining rooms.

.5 Painting coats as specified are intended to cover surfaces perfectly. If surfaces are not properly covered, apply additional coats as necessary to properly finish work.

.6 Paint back face of all exterior wood with exterior primer to prevent warping.

.7 Spray application is acceptable but only if followed immediately by rolling entire area of sprayed surface. Overspray onto adjacent items must be fully wiped off for acceptance by Contract Administrator.

.8 Generally, allow for painting of all unfinished surfaces in finished areas (areas where room finish schedule calls for paint or other wall finish) and on exterior of building. Unless specifically noted, do not paint glass, aluminum, brick, stone & pre-finished materials.

3.3 MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Paint exposed conduits, pipes and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces.

.2 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

.3 Paint both sides and edges of plywood backboards for equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.4 INTERIOR FINISHES

.1 Drywall walls and ceilings in public areas: 1 coat P.V.A. primer sealer, sand smooth after drying. 2 coats alkyd low lustre enamel.

.2 Interior window frames, sashes and grills: 1 coat enamel undercoat, 2 coats alkyd-semi gloss finish.

.3 Metals unprimed and pre-primed: 1 coat of metal primer (as required), 2 coats alkyd enamel-semi gloss finish.

3.5 EXTERIOR FINISHES

.1 Wood trims: 1 coat grade latex primer, 2 coats exterior grade latex paint - semi gloss finish.

.2 Preprimed metals: 2 coats exterior grade alkyd enamel - semi gloss finish.

.3 Unprimed metals: 2 coat metal primer, 2 coats exterior alkyd - semi gloss finish.

.4 Galvanized Iron: 1 coat galvanized iron primer undercoat, 1 coats exterior grade acrylic latex - semi gloss finish.

3.6 COLOUR SELECTION

.1 Colour selections will be made by the Contract Administrator at a later date. Contractors shall allow for a minimum of 3 three accent colours to be selected at no additional cost to the City.

END OF SECTION

Part 1 -- General

1.1 RELATED WORK

.1 Electrical Specification Section 16000

1.2 SCOPE

.1 Provide all materials, labour, plant and equipment required fro a complete and working installation as herein specified and as shown on the drawings.
.2 The mechanical installation shall be accordance with current Electrical, Mechanical, Provincial and Municipal codes and regulation.
.3 Obtain all permits, approvals and pay all related fees required for the installation.
.4 All equipment supplied under this Contract shall be new and be C.S.A. approved.
.5 Arrange and co-ordinate all rough in and openings with the building sub-trade, and electrical sub-trades.

1.3 TEST

.1 The mechanical system shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.
,2 City Site instruction on all systems shall be done and confirmation sheet sent to the Contract Administrator.

Part 2 -- Products

2.1 The following equipment is reference to drawing Mechanical Legend shown on drawing detail 2-L1.

1.0 Pump, Motor and Fittings

1.1 Provide a Gruvlok #7097 4"grv x 3"mpt eccentric reducer, and thread into the pump's inlet. Use IPS white seal or Teflon tape to seal all threaded connections in the pump house.
1.2 Centre the pump's intake piping and discharge piping to line up between building framing studs. Adjust the spacer to a length that lines up the intake and discharge piping to be centered between studs (see section 1.7).
1.3 Provide a Berkeley Model #B2½ZPL threaded close coupled pump with a 7.25"trimed impeller. The pump manufacture to provide and assemble to the pump a totally enclosed, fan cooled and high efficiency electric motor. The motor to be rated for 20 horsepower, 575 volts, 3 phases, 19.2 full load amperage with a 1.15 service factor.
1.4 Provide a steel base to mount the pumping unit off the floor. The steel base shall be fabricated from standard structural 6" x 10.5#/ft channels welded into a frame (254T motor frame size). The frame is to be coated with Rustoleum machine gray industrial paint. The frame shall be bolted to the motor but not bolted to the floor.
1.5 The pump volute case shall remain in the horizontal position as shipped from the pump factory. The threaded plugs shall be removed from the volute case and replaced with ¼" brass drain valves.
1.6 Provide a Gruvlok #7078 3"grv x 2½"mpt swaged nipple to be threaded into the pump discharge outlet.
1.7 Using two Gruvlok #7001 3" couplings, connect a 3" x (length to suit) grooved galvanized spacer. Adjust the spacer length to facilitate lining up the intake and discharge piping with the exit holes in the building. The spacer is to be assembled between the swage nipple and the check valve (see section 2.1).

2.0 Check Valve

2.1 Provide a Gruvlok #7800 3"grv x 3"grv check valve, to be a minimum of 12" downstream of the pump to reduce turbulence.
2.2 Use a Gruvlok #7001 3" coupling for connecting directly to the wye strainer (see section 3.1).

3.0 Wye Strainer

3.1 Provide a Gruvlok #758G 3"grv x 3"grv wye strainer, to be used so that debris can be trapped in the screen and flushed out on a regular scheduled time.

3.2 Provide a Hunter ICV-101-FS solenoid valve; this will facilitate automatic or manual flushing of the strainer. Connect the solenoid valve directly to the wye strainer with a 1" x 3" brass nipple. Use 1" aluminum Cam-Lok fittings to attach a 1" x 50' rubber discharge hose form the solenoid valve to the outside of the building. Route the hose along the suction line to outside of building and extend as far as possible. Stake hose so that the water trajectory shoots into river, preventing shore line erosion. Wire the IDC-100 decoder from the system controller to the solenoid valve using IDWIRE1 #14-2 twisted pair color coded wire. Use flexible electrical conduit mounted to the wall and piping for wiring protection. Program the solenoid valve into the system controller as station #1.

3.3 Use a Gruvlok #7001 3" coupling to connect directly to the butterfly isolation valve (see section 4.1).

4.0 Isolation Valve

4.1 Provide a Gruvlok #7600 3"grv x 3"grv butterfly valve, to be used for isolation purposes during start-up, winterizing and maintenance.

4.2 Use a Gruvlok #7001 3" coupling for connecting directly to the manifold (see section 5.1).

5.0 Manifold, Porting and Connections

5.1 Fabricate a 3" x 18" grooved pipe manifold with four (4) 1½" Thread-O-Let ports. Weld the Threads-O-Lets to the middle of the pipe at 90 degrees to each other around the circumference. The manifold is to be coated with Rustoleum machine gray industrial paint.

5.2 Provide four (4) 1½" bronze gate valves (200 psi wog) and thread into the ports using a 1½" x close brass nipples. Orientate the manifold so that the porting is vertical and horizontal.

5.3 In one of the side ports provide a Dixon 1½"mpt air clasp.

5.4 In the other side-port provide a 1½"mpt x ½"fpt galvanized bushing. Use ½" copper flared fittings and L type copper tube to connect to the pressure and safety switches. Construction administrator to approve wire and pipe routing. Wire the 110 volt control circuit cable from the switches to the programmable relay (see section 6.4). Use flexible electrical conduit mounted to the wall and piping for cable protection.

5.5 In the bottom port provide an aluminum 1½" mpt x male Cam-Loc to facilitate pressure tank connections (see section 7.0).

5.6 In the top port provide an ICV-151-AS (set point 40 psi) solenoid valve with a 1½"mpt x male Cam-Loc outlet to feed the self-cleaning screen (screen and piping supplied by others). Wire the solenoid valve to the programmable relay. Use flexible electrical conduit mounted to the wall and piping for wire protection.

5.7 Support the manifold with an adjustable pipe stand. The pipe stand is to be coated with Rustoleum machine gray industrial paint.

6.0 Pressure/Safety Switches and Programmable Relay

6.1 Provide two (2) Murphy OPLC-A-160-6P for pressure/safety switches. The switches are used to control the starting/stopping of the pumping system. Construction administrator to approve mounting locations.

6.2 One of the switches is to be wired as a pumping system start/stop (set points are 60/90 psi). Provide control circuiting to the new pump house equipment as well as the 5 horsepower floating river pump (5 horsepower floating river pump supplied by others).

6.3 The other switch to be wired as a low/high pressure safety (set points are 35/95 psi). The low pressure safety is to be wired through the start/run bypass switch. Provide control circuiting to the new pump house equipment as well as the 5 horsepower floating river pump (5 horsepower floating river pump supplied by others).

6.4 Provide a Zelio Programmable Relay SR2-B201FU and wire the pressure/safety switches to the input terminals. Wire the programmable relay outputs to the 20 horsepower pump's start relay, 5 horsepower pump's start relay and the self-cleaning screen's solenoid valve.

6.5 Provide a 110 volt control circuit cable with four (4) spare conductors in the 1 1/2" conduit between the old and new pump house. Wire the baseball pumping system's pressure and safety switches to the programmable relay. Use flexible electrical conduits mounted to the wall for cable protection.

6.6 Program the programmable relay to operate (start/stop) the 5 horsepower river pump, the 20 horsepower soccer booster pump and the self-cleaning solenoid valve simultaneously. The programmable relay also needs to be programmed to operate (start/stop) the 5 horsepower river pump, 25HP baseball booster pump (located in the old pump house) and the self-cleaning solenoid valve simultaneously. As well as if required, run simultaneously the 5 horsepower river pump, the 20 horsepower pump, the 25 horsepower pump and the self-cleaning solenoid valve simultaneously.

6.7 Program the programmable relay to have an adjustable time delay (set at 15 seconds) between the river pump start/stop, booster pumps start/stop and the self-cleaning screen start/stop signals.

7.0 Pressure Tanks

7.1 Provide two (2) Well Mate #35WB pressure tanks for supplying constant pressure to the master control valve. The tanks will also provide a water supply for back washing the wye strainer. Both pressure tanks should be charged with 60 psi of air pressure, measure when not connected to the pumping system.

7.2 Use two (2) 1¼" Bronze Gate Valves (200 psi wog) for providing individual tank isolation. Thread directly to the pressure tank and use an aluminum Cam-Loc for connecting the 1¼" rubber hose.

7.3 Use two (2) 1¼" rubber discharge hoses with aluminum Cam-Locs for connecting the twin pressure tanks.

7.4 Provide a 1¼" x 1¼" x 1½" galvanized manifold with aluminum Cam-Locs for connecting between the 1½" bronze gate valve (bottom port on the manifold) and the 1¼" rubber discharge hoses.

8.0 Master Control Valve and System Controller

8.1 Provide a Hunter ICV-301-FS-AS 3" angle configuration master control valve, to maintain constant downstream pressure (70 psi) for operation watering devices i.e. sprinklers, quick coupler valves or hoses. Also to depressurize the mainline during non-watering times. The master control valves inlet and outlet are to have a 3"mpt x 3"grv galvanized adapter threaded in with IPS white seal (do not over tighten).

8.2 Provide a Hunter ACC-99 wall mount system controller, used to control the mainline pressurization during field equipment operations and depressurization during non-water times. Also to provide irrigation system control. Construction administrator to pick the mounting location. Wire the system controller with a power supply plug-in cable to a 110 volt duplex receptacle and grounded in accordance with the manufacturer's recommendations.

8.3 Use an IDC-100 decoder to be wired from the controller (program as master valve) to the master control valve using IDWIRE1 #14-2 twisted pair color coded wire. Use flexible electrical conduit mounted to the wall and piping for wire protection.

8.4 Use a Smart Port SRR-SCWH wiring harness to be mounted outside the building, location to be determined by the construction administrator. Use flexible electrical conduit mounted to the wall for wire protection.

9.0 Discharge Piping with Blowout

9.1 Use a Gruvlok #7001 3" coupling to connect directly to a Gruvlok #7072 concentric reducer 4" grv x 3" grv.

9.2 Using a Gruvlok #7001 4" coupling, to connect a 4" x (length to suit) grooved galvanized pipe to outside of the building. Support pipe with an adjustable pipe stand. The pipe stand is to be coated with Rustoleum machine gray industrial paint.

9.3 Provide a Gruvlok #7045 4"ips x 2"mpt saddle, for a winterizing blowout connection. Provide a 2" galvanized threaded plug and a loose Dixon 2" air clasp to be used in the saddle. Construction administrator to pick the location and orientation of the saddle along piping.

9.4 Provide a Gruvlok #7001 4" coupler and a Gruvlok #7074 4" Cap, to prevent contamination.

END OF SECTION

PART 1ELECTRICAL GENERAL CONDITIONS

1.1 GENERAL

1. The specification covering the General Conditions of the Contract, General Specifications, Instructions to Contractor and all associated sections form an integral part of this specification and shall be read in conjunction herewith.

1.2 SCOPE

1. Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as shown on the drawings.
2. The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.
3. Obtain all permits, approvals and pay all related fees required for this installation.
4. All equipment supplied under this Contract shall be new and be C.S.A. approved.
5. Co-ordinate all telephone conduit runs with telephone utility before installation begins.
6. Arrange for, and co-ordinate, rough-in and final inspections with inspection authority, and Contract Administrator.

1.3 DEFINITIONS

1. The following are definitions of terms and expressions used in the specification:

   - INSPECTION AUTHORITY means agent of any authority having jurisdiction over construction standards associated with any part of electrical work on site.

   - SUPPLY AUTHORITY means electrical power utility company responsible for delivery of electrical power to project.

   - ELECTRICAL CODE means as shown on contract drawings or noted in Contract Documents.

   - TYPE TESTED means that each piece of equipment produced by Manufacturer is not fully tested. An original piece with similar arrangement has been fully tested and results of that test are available.

   - PROVIDE means to supply, install and leave in working order all materials and necessary wiring, supports, access panels, etc., as necessary for equipment indicated.

1.4 EXAMINATION

1. Examine the architectural, interior design, structural and mechanical drawings to ensure that the work under this Contract can be satisfactorily carried out. Report any discrepancies to the Contract Administrator prior to submission of Bid.
2. Examine the site, local conditions and all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

1.5 SUPERVISION

1. Supervise the work at all times through a responsible and competent supervisor.
2. Full co-operation shall be shown with other trades to facilitate installations and to avoid delays in carrying out the work.

1.6 ACCURACY OF DATA

1. Drawings are schematic; exact locations, distances, levels and other dimensions shall be governed by the building as constructed.
2. Outlets or equipment shall be moved to any point within a 10’ radius when the Contract Administrator requests relocation before the work has been substantially completed, without additional cost.
3. Branch circuit wiring shall be installed with circuits arranged exactly as shown on the drawings. Conduit and cable runs may be modified to suit the installation.
4. Contractor shall provide a typical mock-up of one area if requested prior to complete rough-in.

1.7 SHOP DRAWINGS

1. Submit shop drawings of electrical equipment to the Contract Administrator for review. Fabrication of equipment shall not commence until the Contract Administrator has reviewed shop drawings of such equipment. Two sets shall be submitted with local Inspection Department approval where required.
2. Shop drawings may be transmitted electronically providing Contractors include their review confirmation.

1.8 "AS-BUILT" DRAWINGS

1. Keep a record set of drawings on the site at all times recording any changes that may occur. Submit these drawings to the Contract Administrator upon completion of the work. As-builts shall include circuiting of new and existing equipment to remain. Transfer changes to electronic disc AutoCAD file. Submit disc and hard copy for final review and submission to City.
2. Submit a Certificate of Inspection from the local Inspection Authority upon completion of work and include with As-builts.
3. The Contract Administrator reserves the right to recommend that a portion of the Contract funds be withheld pending submission of acceptable as-built drawings.

1.9 TEST

1. The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

1.10 GUARANTEE

1. The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building. Longer guaranteed periods from manufacturers shall be identified and submitted to City in O&M Manuals.

1.11 REQUEST FOR CHANGE

1. All quotations in response to request for change shall be submitted complete with an itemized cost breakdown of all materials and labour required in the change.

1.12 GROUNDING

1. The entire installation shall be grounded in accordance with the Canadian Electrical Code.
2. Isolated ground conductor for panels shall be minimum #6 (green insulation) and be in one continuous, separate run integral to panel main feeder to the building main grounding electrode or the neutral point of transformer secondary (as appropriate). Where required, panels shall be equipped with a separate isolated ground bus connected to the aforementioned ground conductor.

1.13 WORKMANSHIP

1. Install equipment, conduit and cables in a workmanlike manner to present a neat appearance to the satisfaction of the Contract Administrator. Install conduit and cable runs parallel and perpendicular in chases, behind furring or above ceilings. In areas where systems are to be exposed (electrical room only), install neatly and group to present a tidy appearance.
2. Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with adequate clearances and accessibility for same.
3. Include, in the work, all requirements shown on the shop drawings or manufacturers' installation instructions.
4. Replace work unsatisfactory to the Contract Administrator without extra cost.
5. All conduit must be clipped to structure by means of anchors or supported by Unistrut hangers as close to U/S as possible.
6. All support material for all luminaires, outlet boxes, junction boxes, etc. in a non-combustible building shall be of non-combustible material. Wood is not acceptable.

PART 2 MATERIALS AND INSTALLATION

2.1 OUTLET BOXES

1. Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit each individual application.
2. Outlets shall not be located anywhere on the outside curtain wall. Outlets shown thus shall be mounted on the nearest dividing wall 2' from outside wall, or nearest furred out column.

2.2 WIRING METHODS

1. Unless otherwise shown on the drawings, all wires shall be copper, minimum #12 AWG with 90°C x-link insulation. Wiring to be installed in conduit.
2. Wiring in concrete or masonry construction shall be in steel electrical metallic tubing (EMT). Provide a separate grounding conductor in EMT conduit runs embedded in concrete slabs. Conduits installed in areas exposed to moisture shall have watertight fittings.
3. All wiring in finished areas shall be concealed. Conduits shall be run at right angles to the building lines.
4. Conduit and wiring shall be grouped where possible and clipped in a neat and workmanlike manner.

2.3 IDENTIFICATION OF EQUIPMENT

1. All equipment, including receptacles, shall be identified with engraved lamacoid nameplates either screwed or riveted in place. Where Phenolic plastic cover plates are utilized, the circuit identification to be attached to the outlet box, visible when the cover plate is removed.
2. The utilization of Dynamo 6000 or equal is acceptable.
3. Wording for cover plates shall be confirmed by Contract Administrator.

2.4 MECHANICAL EQUIPMENT WIRING

1. Provide starters and wiring for all heating, ventilating and plumbing equipment unless specified otherwise.
2. Control wiring for mechanical equipment shall be performed by Div. 16 Electrical Contractor shall provide 120V circuit in location designated by Controls Contractor.
3. Electrical Contractor to provide all control wiring for mechanically supplied equipment and as designed on drawing.
4. Refer to the mechanical drawings and mechanical equipment schedule for the exact location of mechanical equipment and requirements for an electrical connection.
5. Electrical Contractor to report any discrepancies in voltage and control wiring specifications.

2.5 LUMINAIRES

1. Supply and install all luminaires complete with lamps.

2.6 PANELBOARDS

1. New panelboards shall match the existing. Load centres are not acceptable. Panels shall be complete with panel trim having concealed hinges and trim mounting screws, locking door with flush catch. Provide two keys for each panel.
2. Circuit breakers shall be bolt on moulded case thermal breakers rated at 10,000A symmetrical.
3. Affix typewritten directory to the inside of the panelboard indicating loads controlled by each circuit.
4. Panelboards to be surface or recessed mounted as indicated.
5. Revise the directory in existing panels to suit revised circuiting (typewritten). Place existing directory behind new directory for verification by Contract Administrator.

2.7 CUTTING AND PATCHING

1. Arrange and pay for all cutting and patching as required for the electrical installation.

2.8 DISTRIBUTION (WHERE DISTRIBUTION IS EXISTING TO REMAIN)

1. Arrangement and size of components shall be as shown on drawing.

2.9 DEVICES

1. Colours of receptacles, switches, outlets and cover plates shall be confirmed with the Contract Administrator.
2. Switches shall be totally enclosed in moulded housing, 15AC1 or 20AC1 series, 15 amps or 20 amps, 125 VAC as indicated equal to Hubbell No. 1201, P & S No. 15AC1, or Bryant No. 4801. Mount switches 48” A.F.F. unless otherwise noted.
3. Receptacles shall be 15 ampere, 125 VAC, ivory, parallel slot, U-ground, side and back wiring screw terminate. Approved manufacturers are: Hubbell No. 5262, Arrow Hart No. 5262, Bryant No. 5262. Mount receptacles 16” A.F.F. unless noted otherwise.
4. Isolated ground receptacles shall be Pass & Seymour IG6200 pr Bryant No. GF-5262-I with orange face. Mount receptacle 16” A.F.F. unless noted otherwise.
5. Incandescent lighting dimmer controls shall be Lutron Nova T rated at 1500, 1000 or 600 watts as indicated on drawing. Colour of dimmer snap-on cover shall be ivory colour or shall match existing, unless indicated otherwise on drawing. Mount dimmers 48” A.F.F. unless otherwise noted.
6. Provide stainless steel cover plates for recessed devices.

END OF SECTION