THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 916-2011

INSTALL AND INTEGRATE CARD ACCESS SYSTEMS AT 185 KING STREET, 395 MAIN STREET AND 457 MAIN STREET

TABLE OF CONTENTS

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 INSTALL AND INTEGRATE CARD ACCESS SYSTEMS AT 185 KING STREET, 395 MAIN STREET AND 457 MAIN STREET

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, November 17, 2011.

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 Contract Administrator or an authorized representative will be available at the Site at 9:00 A.M. on November 8, 2011 to provide Bidders access to the Site. The site investigation will start at 185 King Street.

B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

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

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

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

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

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

B5. ADDENDA

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

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

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management 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 inconsistent 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 the lump sum price in Canadian funds for the Work on Form B: Prices.

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

(a) Separate Price - Item No. 1 shall be the amount to be deducted from the lump sum price if Installation of card access on the seventh floor door at 395 Main Street is deleted in accordance with E14 of the Specifications.

(b) Separate Price - Item No. 2 shall be the amount to be deducted from the lump sum price if Installation of card access on the sixth floor door at 395 Main Street is deleted in accordance with E13 of the Specifications.

(c) Separate Price - Item No. 3 shall be the amount to be deducted from the lump sum price if Installation of card access on the third floor door at 395 Main Street is deleted in accordance with E12 of the Specifications.

(d) Separate Price - Item No. 4 shall be the amount to be deducted from the lump sum price if Installation of card access on the fourth floor door at 395 Main Street is deleted in accordance with E11 of the Specifications.

(e) Separate Price - Item No. 5 shall be the amount to be deducted from the lump sum price if Installation of card access on the second floor doors at 395 Main Street is deleted in accordance with E10 of the Specifications.

(f) Separate Price - Item No. 6 shall be the amount to be deducted from the lump sum price if Installation of card access on the rear doors at 395 Main Street is deleted in accordance with E9 of the Specifications.

(g) Separate Price - Item No. 7 shall be the amount to be deducted from the lump sum price if Installation of card access controllers for the service elevator at 395 Main Street is deleted in accordance with E8 of the Specifications.

(h) Separate Price - Item No. 8 shall be the amount to be deducted from the lump sum price if Installation of card access controllers for the main elevator at 395 Main Street is deleted in accordance with E7 of the Specifications.

B9.3 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.

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

B10. QUALIFICATION

B10.1 The Bidder shall:

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

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

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

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

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

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

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

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

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

(d) supply equipment, which is SCA approved and serviceable in Canada; and

(e) participate in COR or equivalent safety program;

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 lump sum price shown on Form B: Prices adjusted, if necessary, as follows:

(a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the lump sum price bid; or

(b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the lump sum prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting separate prices in the order listed in B9.2 until a Total Bid Price within the budgetary provision is achieved, i.e., Total Bid Price = Lump Sum Price - Separate Price No. 1 - Separate Price No. 2 - ... - Separate Price No. 8.

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 Installation and Integration of Johnson Controls' CardKey Card Access Systems at 185 King Street, 395 Main Street, and 457 Main Street.

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

(a) Installation of the electronic controllers, network signal enhancement components, and power supplies listed in the specifications;

(b) Installation of the cabling infrastructure connecting the above listed components;

(c) Installation, and integration of field controllers, sensors, electronic locks, and controller panels; and

(d) Integration, adjustment, and testing the integrated systems.

D2.3 Contractor shall be responsible for the safe and secure storage of this equipment in accordance with E17:

(a) Johnson Controls card access enclosures and controllers

(b) Indala card readers

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Michael Kupchin
Project Officer II
Planning, Property & Development

Telephone No. (204) 803-3891

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

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

D5.1 Except as provided for in 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 facsimile number:

The City of Winnipeg
Chief Financial Officer

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
Legal Services Department
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 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;

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 twenty-five thousand dollars ($25,000.00), the Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

(a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or

(b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or

(c) a certified cheque or draft payable to “The City of Winnipeg”, drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

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 commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D10.4 The City intends to award this Contract by November 23, 2011.

D11. SUBSTANTIAL PERFORMANCE

D11.1 The Contractor shall achieve Substantial Performance by January 17, 2012.

D11.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D11.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D12. TOTAL PERFORMANCE

D12.1 The Contractor shall achieve Total Performance by January 31, 2012.

D12.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D12.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

CONTROL OF WORK

D13. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D13.1 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).

D14. RESPONSIBILITY FOR PLANT AND MATERIALS

D14.1 The following equipment will be supplied by others:

(a) Johnson Controls card access enclosures and controllers

(b) Indala Card Readers

D14.2 The equipment will be delivered on job sites by the City of Winnipeg and stored at secure locked equipment rooms.

D14.3 Contractor shall be responsible for the safe and secure storage of all equipment in connection with this Contract, including the equipment supplied by others in accordance with E17.

D14.4 The Contractor shall be liable to the City for any loss of or damage to Plant or Material that is supplied to or placed in the care, custody and control of the Contractor by the City in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control, from the commencement of the Work until:

(a) Material is incorporated into the Work; or

(b) Plant or Material is returned, in its original condition, to the City.

MEASUREMENT AND PAYMENT

D15. INVOICES

D15.1 Further to C12, the Contractor shall submit an invoice for each order delivered to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: (204) 949-0864
Email: CityWpgAP@winnipeg.ca

D15.2 Invoices must clearly indicate, as a minimum:

(a) the City's purchase order number;

(b) date of delivery;

(c) delivery address;

(d) type and quantity of goods delivered;

(e) the amount payable with GST and MRST shown as separate amounts; and

(f) the Contractor's GST registration number.

D15.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D15.4 Bids Submissions must be submitted to the address in B7.5.

D16. PAYMENT

D16.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D17. WARRANTY

D17.1 Warranty is as stated in C13.

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. 916-2011

INSTALL AND INTEGRATE CARD ACCESS SYSTEMS AT 185 KING STREET, 395 MAIN STREET AND 457 MAIN STREET

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 916-2011

INSTALL AND INTEGRATE CARD ACCESS SYSTEMS AT 185 KING STREET, 395 MAIN STREET AND 457 MAIN STREET

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:

Schedules
Door Modification Schedule 185 King Street
Door Modification Schedule 395 Main Street
Door Modification Schedule 457 Main Street
Electronic Security Installation Requirements
Replacement of Automated Doors Actuators
Picture of 457 Main Street Summit System Report

Drawing Name/Title
A01 Floor Plan: 185 King Street, Main Floor
A02 Floor Plan: 185 King Street, Second Floor
A03 Floor Plan: 185 King Street, Third Floor
A04 Floor Plan: 185 King Street, Fourth Floor
A07 Floor Plan: 395 Main Street, Basement Floor, Inset – Work Area A
A05 Floor Plan: 395 Main Street, Main Floor, Inset – Work Area A
A06 Floor Plan: 395 Main Street, Main Floor, Inset – Work Area B
A08 Floor Plan: 395 Main Street, Mezzanine Floor, Inset – Work Area A
A09 Floor Plan: 395 Main Street, Second Floor
A10 Floor Plan: 395 Main Street, Third Floor
A11 Floor Plan: 395 Main Street, Fourth Floor
A12 Floor Plan: 395 Main Street, Sixth Floor
A13 Floor Plan: 395 Main Street, Seventh Floor
A14 Floor Plan: 457 Main Street, Basement Floor
A15 Floor Plan: 457 Main Street, Main Floor
A16 Floor Plan: 457 Main Street, Second Floor
A17 Floor Plan: 457 Main Street, Third Floor
A18 Floor Plan: 457 Main Street, Fourth Floor
A19 Floor Plan: 457 Main Street, Fifth Floor
A20 Floor Plan: 457 Main Street, Sixth Floor
A21 Floor Plan: 457 Main Street, Seventh Floor
A22 Floor Plan: 457 Main Street, Eighth Floor
A23 Floor Plan: 457 Main Street, Ninth Floor
A24 Floor Plan: 457 Main Street, Tenth Floor
A25 Floor Plan: 457 Main Street, Eleventh Floor

E2. HAZARDOUS MATERIALS

E2.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

E3. WORK

E3.1 The installation includes the following independent components:

(a) Installation of card access system at 185 King Street
(b) Modification of automated doors at 185 King Street
(c) Installation of card access on the front doors at 395 Main Street
(d) Installation of card access controllers for the main elevator at 395 Main Street
(e) Installation of card access controllers for the service elevator at 395 Main Street
(f) Installation of card access on the rear doors at 395 Main Street
(g) Installation of card access on the second floor doors at 395 Main Street
(h) Installation of card access on the fourth floor door at 395 Main Street
(i) Installation of card access on the third floor door at 395 Main Street
(j) Installation of card access on the sixth floor door at 395 Main Street
(k) Installation of card access on the seventh floor door at 395 Main Street
(l) Installation of card access and modification of intrusion alarm system at 457 Main Street

E4. CARD ACCESS SYSTEM AT 185 KING STREET

E4.1 The following actions are to be performed by the Contractor:

E4.1.1 Main floor North card access panel (node 1.01)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL1024ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
6. Supply and install the following Belden control cables into the card access controlled doors 1.03, 1.06, and 1.08:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
7. Supply and install the following Belden control cables into the card access controlled intrusion alarm arming stations at nodes 1.04 and 1.07:
    a. 22AWG – 6c shielded card reader
    b. 22AWG – 4c arm and disarm signal

Supply and replace an existing intrusion alarm keypads at nodes 1.04 and 1.07 with a new DSC intrusion alarm keypads model #LCD-4501TZ. Coordinate the replacement with the Contract Administrator

8. Connect all RDR2SA door controllers with RS485 “CK16 COMBUS” bus cable (see E4.1.6) to CK16 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 2 and 3
12. Terminate the cables travelling from the doors and arming stations at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK16, RDR2SA address 2, Terminal 1 – Door 1.08
    b. CK16, RDR2SA address 2, Terminal 2 – Door 1.06
    c. CK16, RDR2SA address 3, Terminal 1 – Door 1.03
    d. CK16, RDR2SA address 3, Terminal 2 – Arming station 1.04 and 1.07 connected in parallel
13. Label the terminal as follows:
    a. CK16-T05
    b. CK16-T06
    c. CK16-T07
    d. CK16-T08

E4.1.2 Main floor South card access panel (node 1.02)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Install supplied by the City 24”x30” JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL1024ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Interlock the new and existing card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures.
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
6. Supply and install the following Belden control cables into the card access controlled doors 1.05, 1.09, 1.10, 1.11, 1.13, 2.03, and 2.04:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
7. Supply and install the following Belden control cables into the card access controlled intrusion alarm arming station at node 1.12:
    a. 22AWG – 6c shielded card reader
    b. 22AWG – 4c arm and disarm signal

    Supply and replace an existing intrusion alarm keypad at node 1.12 with a new DSC intrusion alarm keypad model #LCD-4501TZ. Coordinate the replacement with the Contract Administrator
8. Connect all RDR2SA door controllers with RS485 “CK16 COMBUS” bus cable (see E4.1.6) to CK16 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 4, 5, 6, and 7

12. Terminate the cables travelling from the doors and arming stations at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK16, RDR2SA address 4, Terminal 1 – Door 1.05
    b. CK16, RDR2SA address 4, Terminal 2 – Door 1.11
    c. CK16, RDR2SA address 5, Terminal 1 – Arming station 1.12
    d. CK16, RDR2SA address 6, Terminal 1 – Door 2.03 (do not terminate card reader and request-to-exit cables)
    e. CK16, RDR2SA address 6, Terminal 2 – Door 2.04
    f. CK16, RDR2SA address 7, Terminal 1 – Door 1.13
    g. CK16, RDR2SA address 7, Terminal 2 – Doors 1.09 and 1.10 (do not terminate card reader and request-to-exit cables. Connect strike power cables in parallel and door switch position cables in series)
13. Label the terminal as follows:
    a. CK16-T09
    b. CK16-T10
    c. CK16-T11
    d. CK16-T13
    e. CK16-T14
    f. CK16-T15
    g. CK16-T16

E4.1.3 Third floor card access panel (node 3.01)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Install supplied by the City 30”x42” JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL1024ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures.
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
6. Supply and install the following Belden control cables into the card access controlled doors 2.02, 3.03, 3.04, 3.05, 3.06, and 3.07:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
7. Supply and install the following Belden control cables into the card access controlled intrusion alarm arming stations at nodes 3.02 and 3.08:
    c. 22AWG – 6c shielded card reader
    d. 22AWG – 4c arm and disarm signal

    Supply and replace an existing intrusion alarm keypads at nodes 3.02 and 3.08 with a new DSC intrusion alarm keypads model #LCD-4501TZ. Coordinate the replacement with the Contract Administrator
8. Supply and install Belden 22AWG – 4c control cable from the card access panel (node 3.01) to the front reception desk location (node 3.09). Supply and install a momentary action Potter HUB-M hold-up button (HUB-M STOCK NO. 2020130) under the reception desk at the specified by the City location. Terminate the above mentioned 22AWG – 4c cable at the hold-up button using C and NO terminals. Label the cable “3.06 AUX REX” and bundle it with four cables travelling from door 3.06. Terminate cable “3.06 AUX REX” at “Reader 1Spare” and “Reader 1Com” input terminals of door controller CK34-T09
9. Verify that all RDR2SA door controllers are connected with pre-installed RS485 bus cable to CK34 network controller. Connect RS485 “CK34 COMBUS” bus cable (see E4.1.6) to pre-

installed RS485 bus cable according to the JCI installation manual, cut sheets, and instructions provided by the City
10. Supply the power to all locking devices from the Altronix power supply
11. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
12. Label CK721 controllers as “CK34”
13. Install a network CAT5e cable from an identified by the City of Winnipeg network switch located on the network rack (node 4.11) to CK721 network controller. Terminate the network cable at the ends of the cable run. The Contractor is responsible for leaving sufficient length of cable to accommodate any possible equipment relocations within the fourth floor network room.
14. Address the door controllers as 3, 4, 5 and 6
15. Terminate the cables travelling from the doors and arming stations at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK34, RDR2SA address 3, Terminal 1 – Door 3.03
    b. CK34, RDR2SA address 3, Terminal 2 – Door 3.04
    c. CK34, RDR2SA address 4, Terminal 1 – Door 3.06
    d. CK34, RDR2SA address 4, Terminal 2 – Door 2.02
    e. CK34, RDR2SA address 5, Terminal 1 – Door 3.05
    f. CK34, RDR2SA address 5, Terminal 2 – Door 3.07
    g. CK34, RDR2SA address 6, Terminal 1 – Arming station 3.02
    h. CK34, RDR2SA address 6, Terminal 2 – Arming station 3.08
16. Label the terminal as follows:
    a. CK34-T07
    b. CK34-T08
    c. CK34-T09
    d. CK34-T10
    e. CK34-T11
    f. CK34-T12
    g. CK34-T13
    h. CK34-T14

E4.1.4 Fourth floor card access panel (node 4.01)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL1024ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
6. Supply and install the following Belden control cables into the card access controlled doors 4.03, 4.05, 4.06, 4.07, and 4.08:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
7. Supply and install the following Belden control cables into the card access controlled intrusion alarm arming station at node 4.09:
    a. 22AWG – 6c shielded card reader
    b. 22AWG – 4c arm and disarm signal

Supply and replace an existing intrusion alarm keypad at node 4.09 with a new DSC intrusion alarm keypad model #LCD-4501TZ. Coordinate the replacement with the Contract Administrator

8. Supply and install Belden 22AWG – 4c control cable from the card access panel (node 4.01) to the front reception desk location (node 4.15). Supply and install two momentary action Potter HUB-M hold-up buttons (HUB-M STOCK NO. 2020130) under the reception desk at two specified by the City locations. Terminate the above mentioned 22AWG – 4c cable at the hold-up buttons in parallel using C and NO terminals. Label the cable “4.07 AUX REX” and bundle it with four cables travelling from door 4.07. Terminate cable “4.07 AUX REX” at “Reader 1Spare” and “Reader 1Com” input terminals of door controller CK34-T03
9. Connect all RDR2SA door controllers with RS485 “CK34 COMBUS” bus cable (see E4.1.6) to CK34 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
10. Supply the power to all locking devices from the Altronix power supply
11. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
12. Address the door controllers as 0, 1 and 2
13. Terminate the cables travelling from the doors and arming stations at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK34, RDR2SA address 0, Terminal 1 – Door 4.03
    b. CK34, RDR2SA address 0, Terminal 2 – Door 4.05
    c. CK34, RDR2SA address 1, Terminal 1 – Door 4.07
    d. CK34, RDR2SA address 1, Terminal 2 – Arming station 4.09
    e. CK34, RDR2SA address 2, Terminal 1 – Door 4.06
    f. CK34, RDR2SA address 2, Terminal 2 –Door 4.08
14. Label the terminal as follows:
    a. CK34-T01
    b. CK34-T02
    c. CK34-T03
    d. CK34-T04
    e. CK34-T05
    f. CK34-T06

E4.1.5 RS485 Communication Buses Infrastructure

1. Supply and install two Belden 18AWG – 4c cables to connect each of the following card access panels:
    a. Existing panel at node 4.10
    b. New panel at node 4.01
    c. New panel at node 3.01
    d. New panel at node 1.01, and
    e. New panel at node 1.02
2. Leave a 3 feet cable service loop in each of the above listed panels
3. In each panel label the end of the run of the first cable as “CK16 COMBUS” and the second cable as “CK34 COMBUS”
4. Use the installed cable as a backbone RS485 communication bus for the door controllers to network controllers

E4.1.6 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of RDR2SA door controllers as follows:
    a. Panel at node 4.01 to CK34, RDR2SA address 0
    b. Panel at node 3.01 to CK34, RDR2SA address 3
    c. Panel at node 1.01 to CK16, RDR2SA address 2
    d. Panel at node 1.02 to CK16, RDR2SA address 4

E4.1.7 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
    a. STR – strike power
    b. DPS – door position switch
    c. REX – request-to-exit motion detector
    d. RDR – card reader
    e. ARM – arm and disarm signal

   For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Label CAT5e network cable using the following network convention: “CARD ACCESS CK(number)”
   For example, network cable of CK34 should be labelled as “CARD ACCESS CK34”
3. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E4.1.8 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Install and connect supplied by the City mullion mounted Indala card readers (model # FP3511A-10200) at 36” from the floor at the following door locations 1.08, 1.13, 2.04, 3.03, 3.06, and 4.07. Confirm the placing of the card readers with the Contract Administrator
2. A mullion mountable card reader at node 1.13 should be mounted on the wall (see Appendix “185 King. Door Upgrade Schedule v1”, explanations for node 1.15). The Contractor should supply and install an Indala Wallswitch Black Bezel (part # FPZ-3521A) for this card reader
3. Install and connect supplied by the City wall mounted Indala card readers (model FP3521A-10200) at 36” from the floor at the following door locations 1.03, 1.05, 1.06, 1.11, 2.02, 3.04, 3.05, 3.07, 4.03, 4.05, 4.06, and 4.14 (for door 4.08). Confirm the placing of the card readers with the Contract Administrator.
4. Supply, install and connect a wall mounted Indala card reader (model FP3521A-10200) at 36” from the floor at the location 4.12. Install Belden 22AWG – 6c shielded card reader cable to the existing card access enclosure at location 4.10 and connect in parallel with the existing card reader cable (CK16, RDR2S address 1, Terminal 1) according to the JCI installation manual, cut sheets, and instructions provided by the City of Winnipeg
5. Card readers on doors 1.06 and 1.11 should be installed on the vestibule side (staircase and the garage are the protected sides). Card readers on doors 2.02, 3.04, and 4.05 should be installed on the staircase side (the floor vestibules are the protected sides)
6. Supply stainless steel blank electrical plates and install supplied by the City HID wall mounted card readers (model FP3521A-10200) to replace the existing key switches at the following intrusion alarm arming station locations 1.04, 1.07, 1.12, 3.02, 3.08, and 4.09. Connect wires, which are currently connected to the normally open contacts of the key switches, to normally open contacts of the card access door controllers designated to provide the arming and disarming functionality. Re-attach tamper switch magnets, currently attached to the key-switches plates, to the replacing them card reader mounting plates. Verify that the tamper loop is closed.
7. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
8. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors except doors 1.09, 1.10, and 2.03. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using

1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)

9. Terminate and connect the electric locking hardware described in E4.1.9 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.
10. Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:
    a. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
    b. Actuator buttons are set to function as follows:
        (i) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel
        (ii) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

    The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator's warranty.
11. Do not install card readers and Request to exit motion detectors on doors 1.09, 1.10, and 2.03. Leave a sufficient length of card reader and request to exit cables in the conduits or wire trays to allow for installation of the cables into the door frames in the future.
12. Remove the existing key switch from the intrusion alarm arming station at Node 4.04. Isolate the terminals of the signal cable and leave it in the electrical box. Cover the existing key switch location electrical box with a stainless steel cover plate. Confirm the plate style with the Contract Administrator.

E4.1.9 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 1.03
    a. Supply, install and connect Von Duprin 6300-24-630 Electric Strike
2. Door at node 1.05
    a. Supply, install and connect Von Duprin 6211-24-630 Electric Strike
3. Door at node 1.06
    a. Supply, install and connect Von Duprin 6300-24-630 Electric Strike
    b. Remove existing Unican lock
    c. Supply and install 990NL R/V US26D Trim, 1E72-S2-RP-626 Cylinder housing, and install existing Best Core cylinder
4. Doors at nodes1.09, 1.10, and 1.13
    a. Supply, install and connect Von Duprin RUAS65-B6-08-32D Electric Strikes at each door location
    b. Supply and install DR386-32D Latch Protector at each door location
5. Door at node 1.11
    a. Supply, install and connect Von Duprin 6211-24-630 Electric Strike
    b. Remove existing Passage Set
    c. Supply and install ND80BD RHO 626 5" Leverset, LELP-208-SL Latch Protector, and supplied by the City of Winnipeg Best Core cylinder
6. Door at node 1.14
    a. Remove one existing 210NL exit device Outer Trim
    b. Supply and install one 230L Von Duprin Exit Device Outer Trim

c. Supply and install one 1E74 Best Mortise Cylinder Housing
d. Reinstall the existing Best Core cylinder and adjust the hardware to allow the door to close and latch but remain unlocked and accessible from both sides

7. Door at node 2.02
   a. Supply, install and connect Von Duprin 6300-24-630 Electric Strike
8. Doors at nodes 2.03 and 2.04
   a. Supply, install and connect Von Duprin RUAS65-B6-08-32D Electric Strike at each door location
9. Door at node 3.03
   a. Supply, install and connect Von Duprin RUAS65-B6-08-32D Electric Strike
   b. Supply and install DR386-32D Latch Protector
   c. Remove existing Unican lock
   d. Remove CYL.&TT from M/S
   e. Supply and install two Dummy Cylinders-626, two Custom Conversion Plates, and install existing Best Core cylinder
10. Door at node 3.04
    a. Supply, install and connect Von Duprin 6300-24-630 Electric Strike
11. Doors at nodes 3.05 and 3.07. For each door do the following:
    a. Supply, install and connect Von Duprin 5100-3FP-689 Electric Strike
    b. Remove existing Unican lock
    c. Supply and install two Custom Push Plates, ND80BD RHO 626 5" Leverset, and install existing Best Core cylinder
12. Door at node 4.03
    a. Supply, install and connect Von Duprin 5100-3FP-689 Electric Strike
    b. Supply and install LELP-208-SL Latch Protector
    c. Remove existing Unican lock
    d. Supply and install two Custom Conversion Plates, ND80BD RHO 626 5" Leverset, and install existing Best Core cylinder
13. Door at node 4.05
    a. Supply, install and connect Von Duprin 6300-24-630 Electric Strike
14. Door at node 4.06
    a. Supply, install and connect Von Duprin 5100-3FP-689 Electric Strike
    b. Remove existing Unican lock
    c. Supply and install two Custom Push Plates, ND80BD RHO 626 5" Leverset, and install existing Best Core cylinder
15. Door at node 4.07
    a. Supply, install and connect Von Duprin RUAS65-B6-08-32D Electric Strike
    b. Supply and install ELP-208-SL Latch Protector
    c. Remove M/S lock
    d. Supply and install a latch lock and a Paddle handle
16. Door at node 4.08
    a. Remove existing Unican lock
    b. Supply and install two Custom Push Plates, ND80BD RHO 626 5" Leverset, and install existing Best Core cylinder

E5. AUTOMATED DOORS MODIFICATION AT 185 KING STREET

E5.1 The Contractor should supply all devices and necessary materials and perform the actions described in Appendix “185 King. Door Upgrade Schedule v1”

E5.2 Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:

a. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
b. Actuator buttons are set to function as follows:
   (i) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel.

(ii) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator's warranty.

E6. CARD ACCESS SYSTEM AT 395 MAIN STREET. FRONT DOORS

E6.1 The following actions are to be performed by the Contractor:

E6.1.1 Basement card access panel (node 0.01 and node 0.02)

1. To install the card access panels the Contractor may use limited wall space in the electrical room (node 0.01) and wall space in the maintenance area (node 0.02)
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24"x30" JCI Cardkey controller enclosure on the plywood background
4. Supply an Altronix AL1024ULXPD16CB power supply to energize electromagnetic locks on doors 1.05, 1.07 and 1.08. Supply a Von Duprin PS914 power supply to energize Von Duprin 3327A Exit devices on door 1.02. Install the power supply enclosures on the plywood background. If the power supply enclosures are not supplied with a factory installed locks, supply and install a panel camlocks with a standard key cylinder specific for the project.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in "ON" position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
7. Supply and install the following Belden control cables into the card access controlled doors 1.02, 1.05, 1.07 and 1.08:
    a. 18AWG – 2c — each of door electromagnetic locks
    b. 12AWG – 2c (or bigger) — each Von Duprin 3327A Exit device (refer to the manual)
    c. 22AWG – 6c shielded — card reader
    d. 22AWG – 4c — door position switch
    e. 22AWG – 4c — each request to exit device (e.g. panic exit bar)
8. Supply two DSC intrusion alarm keypads model #LCD-4501TZ and a Honeywell thermostat covers model #TG511A 1000 (7 ½ "x 6 ½ " x 2 ⅞ ") and install two new arming station at node 1.03 (see Appendix "395 Main St. Door upgrade schedule v2", explanations for node 1.03). Install one Belden 22AWG – 4c cable from the existing intrusion alarm panel located at node 0.03 to each new alarm keypad at node 1.03. Connect the new keypads according to the City of Winnipeg instructions
9. Supply and install the following Belden control cables into each of the card access controlled intrusion alarm arming stations at node 1.03:
    a. 22AWG – 6c shielded — card reader
    b. 22AWG – 4c — arm and disarm signal
10. Supply and install Belden 22AWG – 4c control cable from the card access panel (nodes 0.01 or 0.02) to the front reception desk location (node 1.14). Supply and install three momentary action Potter HUB-M hold-up buttons (HUB-M STOCK NO. 2020130) under each reception desk at the specified by the City locations. Terminate the above mentioned 22AWG – 4c cable at the hold-up buttons in parallel using C and NO terminals. Label the cable "1.08 AUX REX" and bundle it with four cables travelling from door 1.08. Terminate cable "1.08 AUX REX" at "Reader 2Spare" and "Reader 2Com" input terminals of door controller CK35-T04
11. Supply the power to all locking devices from the Altronix and Von Duprin power supplies
12. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI, Von Duprin and Altronix enclosures
13. Label CK721 controller as "CK35"

14. Install a network CAT5e cable from an identified by the City of Winnipeg network switch located on the network rack (node M.01) to CK721 network controller. Terminate the network cable at the ends of the cable run. The Contractor is responsible for leaving sufficient length of cable to accommodate any possible equipment relocations within the fourth floor network room.
    There are two network cables currently installed from the network rack (node M.01) to the CCTV and Building Automation panels (node 0.02). The Contractor may choose to follow the existing cable installation path.
15. Ensure that all RDR2SA door controllers are connected with RS485 communication bus to CK35 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
16. Address door controllers as 0, 1, and 2
17. Terminate the cables travelling from the doors and arming stations at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK35, RDR2SA address 0, Terminal 1 – Door 1.02
    b. CK35, RDR2SA address 0, Terminal 2 – Door 1.05
    c. CK35, RDR2SA address 1, Terminal 1 – Door 1.07
    d. CK35, RDR2SA address 1, Terminal 2 – Door 1.08
    e. CK35, RDR2SA address 2, Terminal 1 – Arming station 1.03 (Perimeter devices)
    f. CK35, RDR2SA address 2, Terminal 2 – Arming station 1.03 (Interior devices)
18. Label the terminal as follows:
    a. CK35-T01
    b. CK35-T02
    c. CK35-T03
    d. CK35-T04
    e. CK35-T05
    f. CK35-T06

E6.1.2 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of CK35-RDR2SA door controller address 0

E6.1.3 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
    a. LRD – latch retractable device
    b. EML – electromagnetic lock
    c. DPS – door position switch
    d. REX – request-to-exit device
    e. RDR – card reader
    f. ARM – arm and disarm signal

    For example, a card reader cable for door 1.08 should be labelled as “1.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E6.1.4 Electromagnetic locks interface

The Contractor is responsible for design and installation of the interface between the electromagnetic locks and the card access controller, so that the system operation meets the requirements of Manitoba Building Code Sentence 3.4.6.16.(4) (www.winnipeg.ca/ppd/electrical_info.stm).

1. The Contractor is responsible for obtaining a City of Winnipeg permit for the installation of electromagnetic locks on doors 1.05, 1.07, and 1.08

2. The Contractor should install the interface devices and a manually operated disconnect switch into separate lockable enclosures interlocked with the card access enclosure EMT conduit or PVC wire trays. The interface may be built, for example, by using series of latching relays (an example of wiring diagram is available)

E6.1.5 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electromagnetic locks and latch retractable hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected across the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. The Contractor should supply all devices and necessary materials and perform the actions described in Appendix “395 Main St. Door Upgrade Schedule v2”

2. Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:
   a. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
   b. Actuator buttons are set to function as follows:
      (i) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel.
      (ii) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator’s warranty

E6.1.6 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Install and connect supplied by the City wall mounted Indala card readers (model FP4521A-10200) at 36” from the floor at the following door locations 1.01, 1.04, 1.06, and 1.10. Confirm the placing of the card readers with the Contract Administrator.
2. Supply stainless steel blank electrical plates and install supplied by the City HID wall mounted card readers (model FP4521A-10200) to replace the existing key switches at the intrusion alarm arming station locations at node 1.03
   Connect wires, which are currently connected to the normally open contacts of the key switches, to normally open contacts of the card access door controllers designated to provide the arming and disarming functionality. Re-attach tamper switch magnets, currently attached to the key-switches plates, to the replacing them card reader mounting plates. Verify that the tamper loop is closed.
3. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. If installation of recessed door position switches is not possible, use brown surface mountable door switches. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed). Install one set of door position switches on each leaf of double doors at nodes 1.02, 1.05, 1.07, and 1.08

4. Terminate and connect the electric locking hardware described in E6.1.5 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.
5. Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:
    c. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
    d. Actuator buttons are set to function as follows:
        (iii) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel
        (iv) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator's warranty.

E7. CARD ACCESS SYSTEM AT 395 MAIN STREET. MAIN ELEVATOR CONTROL

E7.1 The following actions are performed by the Contractor:

E7.1.1 Main Elevator card access panel

1. Supply and attach to the wall or painted plywood background for controller enclosures installation at the specified by the City location
2. Supply a Johnson Controls Security Control Panel Assembly mounted in a 24"x30". The security assembly should contain a CK721-A network controller, one S300-DIN-RDR2SA door controller, three S300-DIN-I8O4 input/output modules, two S300-DIN-L-PS power supplies, and four battery brackets. The enclosure should be preassembled by Johnson Controls and CSA approved.
   Mount the JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL400ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Supply eighteen (18) SPDT DIN rail base mountable screw terminal interface relays (Coil voltage 24V DC, Coil type – non-latching, Switching voltage 250V AC, Contact rating 10A). Mount the relays into a separate lockable enclosure, mounted on the plywood background. Label the relays according to the elevator car letter (A or B) and floor number (BSMNT, 2FL, 3FL, 4FL, 5FL, 6FL, 7FL, 8FL, and 9FL) they control. For example, the relay dedicated to control fourth floor of elevator car A should be labelled "CAR A – 4FL"
   If the interface relay enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
5. Interlock the card access, relay and power supply enclosures with a preinstalled by Winnipeg Elevator control enclosure using EMT conduit
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in "ON" position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
7. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
8. Label CK721 controller as "CK36"
9. Install a network CAT5e cable from an identified by the City of Winnipeg network switch located on the network rack (node M.01) to CK721 network controller. Terminate the network cable at the ends of the cable run. The Contractor is responsible for leaving sufficient length of cable to accommodate any possible equipment relocations within the fourth floor network room.

10. Ensure that all RDR2SA door controllers are connected with RS485 communication bus to CK36 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
11. Address door controller as 0 and input/output controllers as 1, 2, and 3
12. Terminate the cables travelling from the card readers installed in elevator cars A and B at the RDR2SA door controller modules according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK36, RDR2SA address 0, Terminal 1 – Elevator car A
    b. CK36, RDR2SA address 0, Terminal 2 – Elevator car B
13. Supply, install, and terminate 22AWG – 4c Belden control cables to connect the outputs of S300-DIN-I8O4 modules to the coils of the interface relays through the Altronix power supply according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK36, I8O4 address 1, Terminal 1, Output 1 – Car A, Basement floor
    b. CK36, I8O4 address 1, Terminal 1, Output 2 – Car A, Second floor
    c. CK36, I8O4 address 1, Terminal 1, Output 3 (NO and COM) - Car A, Third floor
    d. CK36, I8O4 address 1, Terminal 1, Output 5 (NO and COM) – Car A, Fourth floor
    e. CK36, I8O4 address 1, Terminal 2, Output 1 – Car A, Fifth floor
    f. CK36, I8O4 address 1, Terminal 2, Output 2 – Car A, Sixth floor
    g. CK36, I8O4 address 1, Terminal 2, Output 3 (NO and COM) – Car A, Seventh floor
    h. CK36, I8O4 address 1, Terminal 2, Output 5 (NO and COM) – Car A, Eights floor
    i. CK36, I8O4 address 2, Terminal 1, Output 1 – Car A, Ninth floor
    j. CK36, I8O4 address 2, Terminal 1, Output 2 – Car B, Basement floor
    k. CK36, I8O4 address 2, Terminal 1, Output 3 (NO and COM) – Car B, Second floor
    l. CK36, I8O4 address 2, Terminal 1, Output 5 (NO and COM) – Car B, Third floor
    m. CK36, I8O4 address 2, Terminal 2, Output 1 – Car B, Fourth floor
    n. CK36, I8O4 address 2, Terminal 2, Output 2 – Car B, Fifth floor
    o. CK36, I8O4 address 2, Terminal 2, Output 3 (NO and COM) – Car B, Sixth floor
    p. CK36, I8O4 address 2, Terminal 2, Output 5 (NO and COM) – Car B, Seventh floor
    q. CK36, I8O4 address 3, Terminal 1, Output 1 – Car B, Eights floor
    r. CK36, I8O4 address 3, Terminal 1, Output 2 – Car B Ninth floor
14. Supply, install, and terminate 22AWG – 4c Belden control cables to connect the outputs COM (common) and NC (normally closed) of interface relays to the coils of the elevator control relays (installed by Winnipeg Elevator) through the Altronix power supply according to instructions provided by the City
15. Label the terminals as follows:
    a. CK36-T01
    b. CK36-T02
    c. CK36-T03
    d. CK36-T04
    e. CK36-T05
    f. CK36-T06
    g. CK36-T07
    h. CK36-T08

E7.1.2 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of RDR2SA door controller CK36 – RDR2SA, Address 0.

E7.1.3 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “CAR# – FLOOR# ”.
   For example, the relay dedicated to control fourth floor of elevator car A should be labelled “CAR A – 4FL”
2. Label CAT5e network cable using the following network convention: “CARD ACCESS CK(number)”

For example, network cable of CK34 should be labelled as “CARD ACCESS CK34”

3. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E8. CARD ACCESS SYSTEM AT 395 MAIN STREET. SERVICE ELEVATOR CONTROL

E8.1 The following actions are to be performed by the Contractor:

E8.1.1 Main Elevator card access panel

1. Supply and attach to the wall or painted plywood background for controller enclosures installation at the specified by the City location or mount the below listed enclosures on top of the elevator control enclosure
2. Supply a Johnson Controls Security Control Panel Assembly mounted in a 24”x24” enclosure. The security assembly should contain one S300-DIN-RDR2SA door controller, two S300-DIN-I8O4 input/output modules, two S300-DIN-L-PS power supplies, and four battery brackets. The enclosure should be preassembled by Johnson Controls and CSA approved. Mount the JCI Cardkey controller enclosure on the plywood background or on top of the elevator control enclosure
3. Supply and install an Altronix AL400ULXPD16CB power supply enclosure on the plywood background or on top of the elevator control enclosure. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Supply ten (10) SPDT DIN rail base mountable screw terminal interface relays (Coil voltage 24V DC, Coil type – non-latching, Switching voltage 250V AC, Contact rating 10A). Mount the relays into a separate lockable enclosure, mounted on the plywood background or on top of the elevator control enclosure
   Label the relays according to the floor number (BSMNT, 2FL, 3FL, 4FL, 5FL, 6FL, 7FL, 8FL, 9FL and 10FL) they control.
   If the interface relay enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
5. Interlock the card access, relay and power supply enclosures with a preinstalled by Winnipeg Elevator control enclosure using EMT conduit
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
7. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
8. Connect all RDR2SA door controllers with RS485 “CK36 COMBUS” bus cable (see E8.1.2) to CK36 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Address door controller as 4 and input/output controllers as 5 and 6
10. Terminate the cables travelling from the card readers installed in elevator car at the RDR2SA door controller modules according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK36, RDR2SA address 4, Terminal 1 – Service elevator car
11. Supply, install, and terminate 22AWG – 4c Belden control cables to connect the outputs of S300-DIN-I8O4 modules to the coils of the interface relays through the Altronix power supply according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK36, I8O4 address 5, Terminal 1, Output 1 – Basement floor
    b. CK36, I8O4 address 5, Terminal 1, Output 2 – Second floor
    c. CK36, I8O4 address 5, Terminal 1, Output 3 (NO and COM) - Third floor
    d. CK36, I8O4 address 5, Terminal 1, Output 5 (NO and COM) – Fourth floor
    e. CK36, I8O4 address 5, Terminal 2, Output 1 – Fifth floor
    f. CK36, I8O4 address 5, Terminal 2, Output 2 – Sixth floor

g. CK36, I8O4 address 5, Terminal 2, Output 3 (NO and COM) – Seventh floor
h. CK36, I8O4 address 5, Terminal 2, Output 5 (NO and COM) – Eights floor
i. CK36, I8O4 address 6, Terminal 1, Output 1 – Ninth floor
j. CK36, I8O4 address 6, Terminal 1, Output 2 – Tenth floor

12. Supply, install, and terminate 22AWG – 4c Belden control cables to connect the outputs COM (common) and NC (normally closed) of interface relays to the coils of the elevator control relays (installed by Winnipeg Elevator) through the Altronix power supply according to instructions provided by the City
13. Label the terminals as follows:
    a. CK36-T09
    b. CK36-T11
    c. CK36-T12
    d. CK36-T13

E8.1.2 RS485 Communication Buses Infrastructure

1. Supply and install one Belden 18AWG – 4c cable to connect the Main Elevator card and Service Elevator access panels
2. Leave a 3 feet cable service loop in each of the above listed panels
3. In each panel label the end of the run of the cable as “CK36 COMBUS”
4. Use the installed cable as a backbone RS485 communication bus for the door controllers to network controllers

E8.1.3 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of RDR2SA door controller CK36 – RDR2SA, Address 4.

E8.1.4 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “FLOOR# ”.
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E9. CARD ACCESS SYSTEM AT 395 MAIN STREET. REAR DOORS

E9.1 The following actions are to be performed by the Contractor:

E9.1.1 Basement card access panel (node 0.01 and node 0.02)

1. Supply and install in the new card access enclosure, described in E6.1.1.3, a Johnson Controls door controller module S300-DIN-RDR2SA.
2. Supply the power to the module from on of the preinstalled Johnson Controls power supplies S300-DIN-L-PS, which has less then three devices connected to it
3. Connect the RDR2SA door controller with Belden AWG18 – 4c shielded cable to CK35 network controller infrastructure according to the JCI installation manual, cut sheets, and instructions provided by the City
4. Supply and install the following Belden control cables into the card access controlled doors 1.12 and 1.13:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
5. Supply the power to all locking devices from the new Altronix power supply, described in E6.1.1.4
6. Address the door controller as 3
7. Terminate the cables travelling from the doors at the RDR2SA door controller according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK35, RDR2SA address 3, Terminal 1 – Door 1.12

   b. CK35, RDR2SA address 3, Terminal 2 – Door 1.13
8. Label the terminal as follows:
   a. CK35-T07
   b. CK35-T08

E9.1.2 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
   a. STR – strike power
   b. DPS – door position switch
   c. REX – request-to-exit motion detector
   d. RDR – card reader

   For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E9.1.3 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card readers (model # FP4511A-10200) on the doors at nodes 1.12 and 1.13.
   On the door at node 1.12 the reader should be installed on the elevator vestibule side (unprotected side) and on the door at node 1.13 the reader should be installed on the staircase side (unprotected side)
2. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
3. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
4. Terminate and connect the electric locking hardware described in E9.1.4 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E9.1.4 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 1.12
   a. Supply, install and connect Von Duprin 6300-12/24 Electric Strike
2. Door at node 1.13

a. Remove existing exit device. Patch the mounting holes
b. Supply and install AL80LD JUP 606 Schlage Lever Set and a Sargent Cylinder
c. Supply, install and connect Von Duprin 5100-3FP-689 Electric Strike

E10. CARD ACCESS SYSTEM AT 395 MAIN STREET. SECOND FLOOR DOORS

E10.1 The following actions are to be performed by the Contractor:

E10.1.1 Fourth floor access panel (node 4.02)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Supply a Johnson Controls Security Control Panel Assembly mounted in a 24”x30”. The security assembly should contain one S300-DIN-RDR2SA door controller, two S300-DIN-L-PS power supplies, and four battery brackets. The enclosure should be preassembled by Johnson Controls and CSA approved.
   Mount the JCI Cardkey controller enclosure on the plywood background
3. Supply and install an Altronix AL1024ULXPD16CB power supply enclosure on the plywood background. If the power supply enclosure is not supplied with a factory installed lock, supply and install a panel camlock with a standard key cylinder specific for the project.
4. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive.
6. Supply and install the following Belden control cables into the card access controlled doors 2.01 and 2.02:
   a. 18AWG – 2c door electric strike
   b. 22AWG – 6c shielded card reader
   c. 22AWG – 4c door position switch
   d. 22AWG – 4c request to exit motion detector
7. Connect all RDR2SA door controllers with RS485 “CK35 COMBUS” bus cable (see E10.1.2) to CK35 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
8. Supply the power to all locking devices from the Altronix power supply
9. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
10. Address the door controller as 4
11. Terminate the cables travelling from the doors at the RDR2SA door controller according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK35, RDR2SA address 4, Terminal 1 – Door 2.01
    b. CK35, RDR2SA address 4, Terminal 2 – Door 2.02
12. Label the terminal as follows:
    a. CK35-T09
    b. CK35-T10

E10.1.2 RS485 Communication Buses Infrastructure

1. Supply and install a Belden 18AWG – 4c cable to connect the card access panel at node 4.02 with panels at nodes 0.01 and 0.02
2. Leave a 3 feet cable service loop in each of the above listed panels
3. In each panel label the end of the run of the cable as “CK35 COMBUS”
4. Use the installed cable as a backbone RS485 communication bus for the door controllers to network controllers

E10.1.3 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of CK35 - RDR2SA address 4 door controller

E10.1.4 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
    a. STR – strike power
    b. DPS – door position switch
    c. REX – request-to-exit motion detector
    d. RDR – card reader

   For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E10.1.5 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card readers (model # FP4511A-10200) on the doors at nodes 2.01 and 2.02.
   On both doors the readers should be installed on the elevator vestibule side (unprotected side)
2. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
3. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
4. Terminate and connect the electric locking hardware described in E10.1.6 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E10.1.6 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 2.01
    a. Supply, install and connect 6212WF-24-630 Von Duprin Electric Strike
    b. Supply and install 1461-695 LCN Door Closer
2. Door at node 2.02
    a. Supply, install and connect 6300-12/24 Von Duprin Electric Strike

E11. CARD ACCESS SYSTEM AT 395 MAIN STREET. FOURTH FLOOR DOORS

E11.1 The following actions are to be performed by the Contractor:

E11.1.1 Fourth floor access panel (node 4.02)

1. Supply and install in the new card access enclosure, described in E10.1.1.2, a Johnson Controls door controller module S300-DIN-RDR2SA.
2. Supply the power to the module from on of the preinstalled Johnson Controls power supplies S300-DIN-L-PS, which has less then three devices connected to it
3. Connect the RDR2SA door controller with Belden AWG18 – 4c shielded cable to CK35 network controller infrastructure according to the JCI installation manual, cut sheets, and instructions provided by the City
4. Supply and install the following Belden control cables into the card access controlled door 4.01:
    a. 18AWG – 2c door electric strike
    b. 22AWG – 6c shielded card reader
    c. 22AWG – 4c door position switch
    d. 22AWG – 4c request to exit motion detector
5. Connect all RDR2SA door controllers with RS485 “CK35 COMBUS” bus cable (see E10.1.2) to CK35 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
6. Supply the power to all locking devices from the new Altronix power supply, described in E10.1.1.3
7. Address the door controller as 5
8. Terminate the cables travelling from the doors at the RDR2SA door controller according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK35, RDR2SA address 5, Terminal 1 – Door 4.01
9. Label the terminal as follows:
    a. CK35-T11

E11.1.2 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
    a. STR – strike power
    b. DPS – door position switch
    c. REX – request-to-exit motion detector
    d. RDR – card reader

    For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E11.1.3 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card readers (model # FP4511A-10200) on the door at node 4.01.
    On both doors the readers should be installed on the elevator vestibule side (unprotected side)
2. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL

monitoring using normally-closed set of contacts (the contact is closed when the door is closed)

3. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
4. Terminate and connect the electric locking hardware described in E11.1.4 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E11.1.4 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 4.01
   b. Supply, install and connect 6300-12/24 Von Duprin Electric Strike

E12. CARD ACCESS SYSTEM AT 395 MAIN STREET. THIRD FLOOR DOORS

E12.1 The following actions are to be performed by the Contractor:

E12.1.1 Fourth floor access panel (node 4.02)

1. Supply and install the following Belden control cables into the card access controlled door at node 3.01:
   a. 18AWG – 2c door electric strike
   b. 22AWG – 6c shielded card reader
   c. 22AWG – 4c door position switch
   d. 22AWG – 4c request to exit motion detector
2. Supply the power to all locking devices from the new Altronix power supply, described in E10.1.1.3
3. Terminate the cables travelling from the doors at the RDR2SA door controller address 5 described in E10.1.1.2 according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
   a. CK35, RDR2SA address 5, Terminal 2 – Door 3.01
4. Label the terminal as follows:
   a. CK35-T12

E12.1.2 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
   e. STR – strike power
   f. DPS – door position switch
   g. REX – request-to-exit motion detector
   h. RDR – card reader

   For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”

2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E12.1.3 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card reader (model # FP4511A-10200) on the door at node 3.01.
   On door 3.01 the reader should be installed on the staircase side (unprotected side)
2. Supply, install and connect GE Security 1076-N 1" door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
3. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
4. Terminate and connect the electric locking hardware described in E12.1.4 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E12.1.4 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 3.01
   a. Supply, install and connect 6300-12/24 Von Duprin Electric Strike

E13. CARD ACCESS SYSTEM AT 395 MAIN STREET. SIXTH FLOOR DOORS

E13.1 The following actions are to be performed by the Contractor:

E13.1.1 Fourth floor access panel (node 4.02)

1. Supply and install in the new card access enclosure, described in E10.1.1.2, a Johnson Controls door controller module S300-DIN-RDR2SA.
2. Supply the power to the module from on of the preinstalled Johnson Controls power supplies S300-DIN-L-PS, which has less then three devices connected to it
3. Connect the RDR2SA door controller with Belden AWG18 – 4c shielded cable to CK35 network controller infrastructure according to the JCI installation manual, cut sheets, and instructions provided by the City
4. Supply and install the following Belden control cables into the card access controlled door 6.01:
   a. 18AWG – 2c door electric strike
   b. 22AWG – 6c shielded card reader

c. 22AWG – 4c door position switch
d. 22AWG – 4c request to exit motion detector

5. Connect all RDR2SA door controllers with RS485 “CK35 COMBUS” bus cable (See E410.1.2) to CK35 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
6. Supply the power to all locking devices from the new Altronix power supply, described in E10.1.1.3
7. Address the door controller as 6
8. Terminate the cables travelling from the doors at the RDR2SA door controller according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK35, RDR2SA address 6, Terminal 1 – Door 6.01
9. Label the terminal as follows:
    a. CK35-T13

E13.1.2 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
    a. STR – strike power
    b. DPS – door position switch
    c. REX – request-to-exit motion detector
    d. RDR – card reader

    For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E13.1.3 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card readers (model # FP4511A-10200) on the doors at nodes 6.01
    On both doors the readers should be installed on the elevator vestibule side (unprotected side)
2. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
3. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
4. Terminate and connect the electric locking hardware described in E13.1.4 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E13.1.4 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in

parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 6.01
   a. Supply, install and connect 6300-12/24 Von Duprin Electric Strike

E14. CARD ACCESS SYSTEM AT 395 MAIN STREET. SEVENTH FLOOR DOORS

E14.1 The following actions are to be performed by the Contractor:

E14.1.1 Fourth floor access panel (node 4.02)

1. Supply and install the following Belden control cables into the card access controlled door at node 7.01:
   a. 18AWG – 2c door electric strike
   b. 22AWG – 6c shielded card reader
   c. 22AWG – 4c door position switch
   d. 22AWG – 4c request to exit motion detector
2. Supply the power to all locking devices from the new Altronix power supply, described in E10.1.1.3
3. Terminate the cables travelling from the doors at the RDR2SA door controller address 6 described in E10.1.1.2 according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
   a. CK35, RDR2SA address 6, Terminal 2 – Door 7.01
4. Label the terminal as follows:
   b. CK35-T14

E14.1.2 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
   a. STR – strike power
   b. DPS – door position switch
   c. REX – request-to-exit motion detector
   d. RDR – card reader

   For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”
2. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E14.1.3 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

5. Supply, install and connect Indala mullion mounted Indala card reader (model # FP4511A-10200) on the door at node 3.01.
   On door 3.01 the reader should be installed on the staircase side (unprotected side)
6. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL

monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
7. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
8. Terminate and connect the electric locking hardware described in E14.1.6 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.

E14.1.4 Locking hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. Door at node 7.01
   a. Supply, install and connect 6300-12/24 Von Duprin Electric Strike

E15. CARD ACCESS SYSTEM AT 457 MAIN STREET

At 457 Main Street the Contractor will be replacing the existing card access system with the City of Winnipeg Corporate card access system. The City will require the Contractor to maintain the functionality of the existing card access system during the conversion process and limit the system's downtime by the doors and controllers, which are converted at the moment. Therefore, the City recommends the following conversion sequence:

1. Install and supply power to the main card access cabinet (Node 0.6)
2. Install network cables from the network switch (Node 0.7) to the main card access cabinet
3. Establish communication with network controllers CK37 and CK38
4. Supply and install new electric locking hardware on all affected by the project doors
5. Start extending and relocating existing card access cables ran from the basement and main floor doors to the existing card access cabinets (Node 0.5) to the new main card access cabinet. Reconnect the basement and main floor doors to the new system one by one
6. Supply 120V AC power to the location of the new card access cabinet on the 2nd floor (Node 2.4)
7. Install a network cable from the network switch (Node 0.7) to the location of the new card access cabinet on the 2nd floor (Node 2.4)
8. Identify and label existing cables, disable card access doors on the 2nd floor, remove existing card access cabinets, and install and supply power to the 2nd floor new card access cabinet.
9. Establish communication with network controller CK39
10. Extend and relocate existing card access cables, connected to the 2nd floor doors, to the new 2nd floor card access cabinet. Reconnect the 2nd floor doors to the new system
11. Supply 120V AC power to the location of the new card access cabinets on the 3rd – 7th floors
12. Connect card access network controllers CK37, CK38, and CK39 with back-bone network cable infrastructure system (See E15.1.9)
13. Working at one floor at a time, identify and label existing cables, disable card access doors on each floor, remove existing card access cabinets, and install and supply power to the new card access cabinets.
14. Establish communication with network controllers

15. Extend and relocate existing card access cables to the new card access cabinet. Reconnect the card access doors to the new system one by one
16. Perform final modifications of the locking hardware as per hardware schedule specifications

E15.1 The following actions are to be performed by the Contractor:

E15.1.1 Cable extension, relocation, and splicing

The Contractor will need to make cable splices to extend the cable run from the existing to the new card access enclosures. The following rules should apply to the cable splices:

1. The connections between the existing and extension cables should be soldered and soldering joints should be insulated with heat-shrink tubing. Usage of marettes, crimps, terminal blocks, etc. will not be allowed

2. If connections cannot be made inside the new card access enclosures, a new enclosure or junction box should be installed to make the soldering joints accessible for troubleshooting and servicing. All connections must be made exclusively inside the new card access enclosures or designated junction enclosures

3. All connected cables should be labelled according to the labelling protocol (See E15.1.11) before and after the connection point. The labels should be visible and accessible within the enclosure. Cables, which are not being spliced within a specific enclosure but routed through it, should also be labelled

4. The quality of soldering connections will be selectively tested by the Contract Administrator.

E15.1.2 Basement card access panel (node 0.6)

1. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
2. Install supplied by the City 30”x42” JCI Cardkey controller enclosure on the plywood background
3. Supply and install two Altronix AL1024ULXPD16CB power supply enclosures on the plywood background.
4. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
5. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
6. Identify cables connected to the existing card access enclosures (Node 0.5) using the attached existing programming summary (See Appendix “457 Main St. Summit system report”) and empiric testing methods
   Disconnect existing card access doors one at a time. Remove the cables from the existing cabinets. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
7. Connect all RDR2SA door controllers with RS485 “CK37 COMBUS” bus cable (see E15.1.9) to CK37 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
8. Supply the power to all locking devices from the Altronix power supplies. Energize locking hardware on the doors at nodes 0.1, 0.2, 0.3, and 0.4 from the power supply #1, and locking hardware on the doors at nodes 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.9, and 1.17 from the power supply #2
9. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures

10. Supply and install three Belden 22AWG – 4c control cables from the card access panel (node 0.8) to the front reception desk location (node 1.18). Supply and install two momentary action Potter HUB-M hold-up buttons (HUB-M STOCK NO. 2020130) under the reception desk at two specified by the City locations. Terminate one of the above mentioned 22AWG – 4c cables at the hold-up buttons in parallel using C and NO terminals. Label the cable “1.2 AUX REX” and bundle it with four cables travelling from door 1.2. Terminate cable “1.2 AUX REX” at “Reader 1Spare” and “Reader 1Com” input terminals of door controller CK37-T06
    Label second and third cables as “AUX REX Spare #1” and “AUX REX Spare #1”. Secure the cables under the reception desk, leaving enough cable length for the future termination at an additional Request-to-Exit button. In the card access enclosure leave 6’ cable length for future cable termination
11. Label CK721 controllers as “CK37” and “CK38”
12. Install two CAT5e network cables from an identified by the City of Winnipeg network switch located on the network rack (node 0.7) to CK721 network controllers. Terminate the network cable at the ends of the cable run. The Contractor is responsible for leaving sufficient length of cable to accommodate any possible equipment relocations within the basement network room.
13. Address the door controllers as 0, 1, 2, 3, 4, and 5
14. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK37, RDR2SA address 0, Terminal 1 – Door 0.1
    b. CK37, RDR2SA address 0, Terminal 2 – Door 0.2
    c. CK37, RDR2SA address 1, Terminal 1 – Door 0.3
    d. CK37, RDR2SA address 1, Terminal 2 – Door 0.4
    e. CK37, RDR2SA address 2, Terminal 1 – Door 1.1
    f. CK37, RDR2SA address 2, Terminal 2 – Door 1.2
    g. CK37, RDR2SA address 3, Terminal 1 – Door 1.3
    h. CK37, RDR2SA address 3, Terminal 2 – Door 1.4
    i. CK37, RDR2SA address 4, Terminal 1 – Door 1.5
    j. CK37, RDR2SA address 4, Terminal 2 – Door 1.7
    k. CK37, RDR2SA address 5, Terminal 1 – Door 1.9
    l. CK37, RDR2SA address 5, Terminal 2 – Door 1.17
15. Label the terminal as follows:
    a. CK37-T01
    b. CK37-T02
    c. CK37-T03
    d. CK37-T04
    e. CK37-T05
    f. CK37-T06
    g. CK37-T07
    h. CK37-T08
    i. CK37-T09
    j. CK37-T10
    k. CK37-T11
    l. CK37-T12

E15.1.3 Second floor card access panel (node 2.4)

1. Identify cables connected to the existing card access doors 2.1, 2.2, 2.3, and 2.5 using the attached existing programming summary (See Appendix “457 Main St. Summit system report”) and empiric testing methods
    Disconnect existing card access doors. Remove the cables from the existing cabinets.
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.

5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 “CK39 COMBUS” bus cable (see E15.1.9) to CK37 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Label CK721 controller as “CK39”
12. Install a CAT5e network cables from an identified by the City of Winnipeg network switch located on the network rack (node 0.7) to CK721 network controller. Terminate the network cable at the ends of the cable run. The Contractor is responsible for leaving sufficient length of cable to accommodate any possible equipment relocations within the basement network room.
13. Address the door controllers as 0 and 1
14. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK39, RDR2SA address 0, Terminal 1 – Door 2.1
    b. CK39, RDR2SA address 0, Terminal 2 – Door 2.2
    c. CK39, RDR2SA address 1, Terminal 1 – Door 2.3
    d. CK39, RDR2SA address 1, Terminal 2 – Door 2.5
15. Label the terminal as follows:
    a. CK39-T01
    b. CK39-T02
    c. CK39-T03
    d. CK39-T04

E15.1.4 Third floor card access panel (node 3.4)

1. Identify cables connected to the existing card access doors 3.1, 3.2, and 3.3 using the attached existing programming summary (See Appendix “457 Main St. Summit system report”)and empiric testing methods
   Disconnect existing card access doors. Remove the cables from the existing cabinets.
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure

The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 “CK39 COMBUS” bus cable (see E15.1.9) to CK39 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 2 and 3
12. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
   a. CK39, RDR2SA address 2, Terminal 1 – Door 3.1
   b. CK39, RDR2SA address 2, Terminal 2 – Door 3.2
   c. CK39, RDR2SA address 3, Terminal 1 – Door 3.3
13. Label the terminal as follows:
   a. CK39-T05
   b. CK39-T06
   c. CK39-T07

E15.1.5 Fourth floor card access panel (node 4.6)

1. Identify cables connected to the existing card access doors 4.1, 4.2, 4.3 and 4.4 using the attached existing programming summary (See Appendix “457 Main St. Summit system report”) and empiric testing methods
   Disconnect existing card access doors. Remove the cables from the existing cabinets.
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 “CK39 COMBUS” bus cable (see E15.1.9) to CK39 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 4 and 5
12. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
   a. CK39, RDR2SA address 4, Terminal 1 – Door 4.1

b. CK39, RDR2SA address 4, Terminal 2 – Door 4.2
c. CK39, RDR2SA address 5, Terminal 1 – Door 4.3
d. CK39, RDR2SA address 5, Terminal 2 – Door 4.4

13. Label the terminal as follows:
    a. CK39-T09
    b. CK39-T10
    c. CK39-T11
    d. CK39-T12

E15.1.6 Fifth floor card access panel (node 5.4)

1. Identify cables connected to the existing card access doors 5.1, 5.2, and 5.3 using the attached existing programming summary (See Appendix "457 Main St. Summit system report") and empiric testing methods
   Disconnect existing card access doors. Remove the cables from the existing cabinets.
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24"x24" JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in "ON" position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 "CK38 COMBUS" bus cable (see E15.1.9) to CK38 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 0 and 1
12. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK38, RDR2SA address 0, Terminal 1 – Door 5.1
    b. CK38, RDR2SA address 0, Terminal 2 – Door 5.2
    c. CK38, RDR2SA address 1, Terminal 1 – Door 5.3
13. Label the terminal as follows:
    a. CK38-T01
    b. CK38-T02
    c. CK38-T03

E15.1.7 Sixth floor card access panel (node 6.4)

1. Identify cables connected to the existing card access doors 6.1, 6.2, and 6.3 using the attached existing programming summary (See Appendix "457 Main St. Summit system report") and empiric testing methods
   Disconnect existing card access doors. Remove the cables from the existing cabinets.

2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader
   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 “CK38 COMBUS” bus cable (see E15.1.9) to CK38 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 2 and 3
12. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
    a. CK38, RDR2SA address 2, Terminal 1 – Door 6.1
    b. CK38, RDR2SA address 2, Terminal 2 – Door 6.2
    c. CK38, RDR2SA address 3, Terminal 1 – Door 6.3
13. Label the terminal as follows:
    a. CK38-T05
    b. CK38-T06
    c. CK38-T07

E15.1.8 Sixth floor card access panel (node 7.4)

1. Identify cables connected to the existing card access doors 7.1, 7.2, and 7.3 using the attached existing programming summary (See Appendix “457 Main St. Summit system report”) and empiric testing methods
   Disconnect existing card access doors. Remove the cables from the existing cabinets.
2. Supply and attach to the wall painted plywood background for controller enclosures installation at the specified by the City location
3. Install supplied by the City 24”x24” JCI Cardkey controller enclosure on the plywood background
4. Supply and install an Altronix AL600ULXPD16CB power supply enclosure on the plywood background.
5. Interlock the card access and power supply enclosures using EMT conduit or PVC wire trays to conceal the cables travelling between the enclosures
6. Supply a 120V AC power source to the enclosures, installed through a central disconnect switch from a dedicated circuit. Central disconnect switch should have padlock brackets for locking the switch in “ON” position. Padlock brackets should be attached to the electrical box cover with an industrial adhesive
7. Extend the cables to the new cabinets leaving enough cable length for terminations of the cables inside the new card access enclosure
   The existing cables should be reused according to the following scheme:
   a. Existing exterior (Unprotected) side card reader – New card reader

   b. Existing interior (protected) side card reader – Request-to-exit motion detector power and data
   c. Existing electro-magnetic lock power – New electric strike
   d. Existing door position switch (if exists) – New door position switch
8. Connect all RDR2SA door controllers with RS485 “CK38 COMBUS” bus cable (see E15.1.9) to CK38 network controller according to the JCI installation manual, cut sheets, and instructions provided by the City
9. Supply the power to all locking devices from the Altronix power supply.
10. Supply, connect, and wire ENE Genesis NP7-12 backup batteries to the JCI and Altronix enclosures
11. Address the door controllers as 4 and 5
12. Terminate the cables travelling from the doors at the RDR2SA door controllers according to the JCI installation manual, cut sheets, and instructions provided by the City as follows:
   a. CK38, RDR2SA address 4, Terminal 1 – Door 7.1
   b. CK38, RDR2SA address 4, Terminal 2 – Door 7.2
   c. CK38, RDR2SA address 5, Terminal 1 – Door 7.3
13. Label the terminal as follows:
   a. CK38-T09
   b. CK38-T10
   c. CK38-T11

E15.1.9 RS485 Communication Buses Infrastructure

1. Supply and install three Belden 18AWG – 4c cables to connect each of the following new card access panels:
   a. New panel at node 0.6
   b. New panel at node 2.4
   c. New panel at node 3.4
   d. New panel at node 4.6
   e. New panel at node 5.4
   f. New panel at node 6.4, and
   g. New panel at node 7.4
2. Leave a 3 feet service loop at each of the above listed panels
3. Label the first cable as “CK37 COMBUS”, the second cable as “CK38 COMBUS”, and the third cable as “CK39 COMBUS”
4. Use the installed cables as a backbone RS485 communication bus for the door controllers to network controllers

E15.1.10 Panel Tamper

1. Connect the factory installed panel tamper switch leads to the “Panel - COM” and “Panel – TAMP” input terminals of RDR2SA door controllers as follows:
   a. Panel at node 0.6 to CK37, RDR2SA address 0
   b. Panel at node 2.4 to CK39, RDR2SA address 0
   c. Panel at node 3.4 to CK39, RDR2SA address 2
   d. Panel at node 4.6 to CK39, RDR2SA address 4
   e. Panel at node 5.4 to CK38, RDR2SA address 0
   f. Panel at node 6.4 to CK38, RDR2SA address 2
   g. Panel at node 7.4 to CK38, RDR2SA address 4

E15.1.11 Cable Labelling

1. Label all installed cables at each end of the cable run (controller and field device sides) the following naming convention: “NODE – CABLE TYPE”. The following cable type abbreviations should be used:
   a. STR – strike power
   b. DPS – door position switch
   c. REX – request-to-exit motion detector

d. RDR – card reader
e. ARM – arm and disarm signal

For example, a card reader cable for door 3.08 should be labelled as “3.08 - RDR”

2. Label CAT5e network cable using the following network convention: “CARD ACCESS CK(number)”
   For example, network cable of CK34 should be labelled as “CARD ACCESS CK34”
3. Use a label printer and self-laminating labels exclusively. No hand-written and not laminated labels will be accepted

E15.1.12 Field devices

The Contractor is responsible for the installation of the cables to the location where field devices are mounted and installed – into a door frame, wall, plenum space, etc – and for connection of the devices according to the manufactures specifications and City of Winnipeg requirements

1. Supply, install and connect Indala mullion mounted Indala card readers (model # FP4511A-10200) replacing the existing card readers at the following door locations 1.1, 1.3, 1.5, 1.7, and 1.17. Patch the mounting holes of the removed existing readers.
   Connect the wire, currently connected to the existing card reader “BEEPER” output, to the “BEEPER” output of the new Indala card reader (Blue wire). In the panel do not cut the wire, connected to the “BEEPER” output of the reader, insulate it, and label it as “BEEPER”
2. Supply, install and connect Indala wall mounted card readers (model FP4521A-10200) replacing the existing card readers at the following door locations 0.1, 0.2, 0.3, 0.4, 1.2, 1.4, 1.9, 2.1, 2.2, 2.3, 2.5, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 7.1, 7.2, and 7.3. Patch the mounting holes of the removed existing readers
   Connect the wire, currently connected to the existing card reader “BEEPER” output, to the “BEEPER” output of the new Indala card reader (Blue wire). In the panel do not cut the wire, connected to the “BEEPER” output of the reader, insulate it, and label it as “BEEPER”
3. Supply, install and connect GE Security 1076-N 1” door position switches and door magnets on all card access controlled doors. Terminate using 1.2K Ohm resistors connected for DEOL monitoring using normally-closed set of contacts (the contact is closed when the door is closed)
4. Supply, install and connect Kantech KAN-TREX XL BLK Request to exit motion detectors on all card access controlled doors. Verify the locations of the REX sensors with the Contract Administrator. Engage the tamper circuit and terminate using 1.2K Ohm resistors connected for DEOL monitoring using the normally-open set of contacts (the contact is open when the motion detector is in stand-by mode)
5. Terminate and connect the electric locking hardware described in E15.1.13 to the card access controllers and power supplies. Supply Littlefuse Metal Oxide Varistors (MOV) model #V47ZA7and install them in parallel with each electric locking hardware unit.
6. Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:
   a. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
   b. Actuator buttons are set to function as follows:
      (i) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel
      (ii) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

   The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator’s warranty.
7. Remove the interior (protected side) card readers on all card access controlled doors. Supply stainless steel blank electrical plates and install them to cover the installation holes. Patch the holes, which can not be covered by the blank plates

8. Remove the existing electro-magnetic locks from all card access controlled doors. Patch and plug the mounting holes
9. Remove all card access devices (electro-magnetic locks, interior and exterior card readers) on doors at nodes 1.6 and 1.8. Supply stainless steel blank electrical plates and install them to cover the card reader installation holes. Insulate but not cut or remove existing cables attached to the door devices. Patch and plug the mounting holes, which can not be covered by the blank plates

E15.1.13 Locking Hardware

The following sequence must be followed for the locking hardware installation and modification:

Stage 1: The Contractor supplies, installs, and connects electric strikes and latch protector hardware. One Littlefuse V47ZA7 metal oxide varistor should be supplied and connected in parallel with the power source wires at each electric strike location. The varistor and connection terminals should be insulated using heat-shrink tubing.

Stage 2: The Contractor removes the existing specified hardware and modifies the locksets after the system is commissioned and programmed by the City of Winnipeg. The Contractor must receive a formal permission from the Contract Administrator to proceed with Stage 2.

1. The Contractor should supply all devices and necessary materials and perform the actions described in Appendix “457 Main St. Door upgrade schedule Rev1” and Appendix “457 Main St. Door upgrade schedule. Addendum 1 - actuators”

2. Interlock any automated door operators with the card access system to allow for the synchronized operation, which meets the following requirements:
    a. Power to the electric locking devices (electric strikes, electro-magnetic locks) is supplied by the card access system
    b. Actuator buttons are set to function as follows:
        (i) Interior button (protected side of the door) is always active and sends a request-to-exit signal to card access panel.
        (ii) Exterior button (unprotected side of the door) is active only when an electric locking device is energized by card access system. All wireless actuator devises should be considered as Exterior (unprotected side) buttons

The Contractor is responsible for the coordination of any work on the door operators with the company, which originally installed and maintains the devices, in order not to damage or void the door operator’s warranty

The Contractor should perform the following actions:

1. Door at node 0.1, 4.4, 5.1, and 6.1
    a. Remove existing electromagnetic lock
    b. Supply and install Von Duprin 5100 electric strike or equivalent
    c. Supply and install Schlage AL80 SAT leverset in 626 finish with Everest Restricted keyway

2. Doors at nodes 0.2, 0.3, and 0.4
    a. Remove existing electromagnetic lock
    b. Supply and install Von Duprin 5100 electric strike or equivalent
    c. Supply and install Schlage AL80 SAT leverset in 626 finish with Everest Restricted keyway
    d. Supply and install Magnakrom DR385AL or LP211 or equivalent latch protector in 626 finish
    e. Supply and install a Hole Filler Kit

3. Doors at nodes 1.1, 1.2, 1.3, 1.4, and 1.5 – refer to Appendix “457 Main St. Door upgrade schedule Rev1” and Appendix “457 Main St. Door upgrade schedule. Addendum 1 - actuators”

4. Door at node 1.7 and 1.9

a. Remove existing electromagnetic lock
b. Supply and install Von Duprin 5100 electric strike or equivalent
c. Supply and install Best Storeroom leverset in 605 finish with existing cylinder
d. Supply and install Magnakrom DR385AL or LP211 or equivalent latch protector in 605 finish

5. Doors at nodes 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.2, 5.3, 6.2, 6.3, 7.1, 7.2, and 7.3
    a. Remove existing electromagnetic lock
    b. Supply and install Von Duprin 5100 electric strike or equivalent
    c. Supply and install Schlage AL80 SAT leverset in 626 finish with Everest Restricted keyway
    d. Supply and install Magnakrom DR385AL or LP211 or equivalent latch protector in 626 finish
6. Repair or replace door closers on doors at nodes 3.3 and 7.3
7. Supply an LCN 1261 door closer and replace the existing device on door at node 6.1
8. Supply and replace the existing lock on door at node 4.5
9. Supply and install a 4.5x4 Spring Hinge on the door at node 4.4
10. Deactivate deadbolts on all doors controlled by card access system

E15.1.14 Local door alarm devices

The Contractor shall install the following local door alarm devices, power supplies, and necessary hardware and cabling on the doors at nodes 1.6, 1.8, 1.10, 1.11, 1.16:

1. Door at node 1.11
    a. Supply, install, and connect a 22ALK-SP28 Alarm Kit
    b. Supply, install, and connect a PS9-K Power Supply
    c. Supply and install a Door Loop
    d. Supply and install a Best Mortise Cylinder
2. Door at node 1.8
    a. Supply, install, and connect a EAX500 Detex Alarm
    b. Supply, install, and connect a BE961-1 Power Supply
    c. Supply and install a Door Loop
    d. Supply and install a Best Mortise Cylinder and Best Rim Cylinder
3. Door at node 1.16
    a. Supply and install 22EO 689 Von Duprin Exit Device
    b. Supply, install, and connect a 22ALK-SP28 Alarm Kit
    c. Supply, install, and connect a PS9-K Power Supply
    d. Supply and install a Door Loop
    e. Supply and install a Best Mortise Cylinder
4. Door at node 1.10
    a. Supply and install 22-230NL-689 Von Duprin Exit Device
    b. Supply, install, and connect a 22ALK-SP28 Alarm Kit
    c. Supply, install, and connect a PS9-K Power Supply
    d. Supply and install a Door Loop
    e. Supply and install a Best Mortise Cylinder and Best Rim Cylinder
5. Door at node 1.6
    a. Supply and install 22EO 689 Von Duprin Exit Device
    b. Supply, install, and connect a 22ALK-SP28 Alarm Kit
    c. Supply, install, and connect a PS9-K Power Supply
    d. Supply and install a Door Loop
    e. Supply and install a Best Mortise Cylinder

Each alarm device's Best key cylinder should be set up to work with Best key of the door, on which the alarm device is installed

All power supplies should be connected to a dedicated power circuit, or card access/intrusion alarm devices power circuit.

E15.1.15 Intrusion Alarm Devices

1. The following intrusion alarm devices are currently connected and energized by the existing card access system:

   a. Glass Break sensors at nodes 1.3, 1.4, 1.17, 1.20, 1.21, 1.22, 1.23, 1.24, 2.6, 2.7, 3.5, 3.6, 4.7, 4.8, 5.5, 5.6, 6.5, 6.6, 7.5, 7.6, 8.1, 8.2, 9.1, 9.2, 10.1, 10.2, 11.1, 11.2

   b. Door position switches at nodes 0.9, 1.1, 1.6, 1.8, 1.10, 1.11, 1.16, 1.19, 11.3 and 11.4

   c. Eight intrusion alarm points connected to a stand-alone DSC panel at node 10.3

2. The contractor is responsible for disconnecting the cables from the above listed input points from the existing card access panel, extending the cables and reconnecting them to the following inputs of Metasys Building Automation system (node 0.8):

   DX controller #30:

10 FL Security System Permit #103381	– Digital Input #1
10 FL Security Common Alarm	– Digital Input #2
10 FL North East Door	– Digital Input #3
10 FL South West Door	– Digital Input #4
10 FL South Glassbreak	– Digital Input #5
10 FL North Area MD	– Digital Input #6
10 FL South Area MD	– Digital Input #7
10 FL Security Panel Trouble	– Digital Input #6

   Expansion Module #31 XT-3:

Glassbreak at node 1.3	– Digital Input #1
Glassbreak at node 1.17	– Digital Input #2
Glassbreak at node 1.4	– Digital Input #3
Glassbreak at node 1.23	– Digital Input #4
Glassbreak at nodes 1.20 – 1.22	– Digital Input #5 (in series)
Glassbreak at node 1.24	– Digital Input #6
Glassbreak at nodes 2.6 – 2.7	– Digital Input #7 (in series)
Glassbreak at nodes 3.5 – 3.6	– Digital Input #8 (in series)

   Expansion Module #31 XT-4:

Glassbreak at nodes 4.7 – 4.8	– Digital Input #1 (in series)
Glassbreak at nodes 5.5 – 5.6	– Digital Input #2 (in series)
Glassbreak at nodes 6.5 – 6.6	– Digital Input #3 (in series)
Glassbreak at nodes 7.5 – 7.6	– Digital Input #4 (in series)
Glassbreak at nodes 8.1 – 8.2	– Digital Input #5 (in series)
Glassbreak at nodes 9.1 – 9.2	– Digital Input #6 (in series)
Glassbreak at nodes 10.1 – 10.2	– Digital Input #7 (in series)
Glassbreak at nodes 11.1 – 11.2	– Digital Input #8 (in series)

   Expansion Module #32 XT-3:

Door Switch at node 11.3	– Digital Input #1
Door Switch at node 11.4	– Digital Input #2
Security System Trouble	– Digital Input #3
Security System Permit#94561	– Digital Input #4
Fire Alarm	– Digital Input #5

FAS Panel Trouble	– Digital Input #6
Door Switch at node 1.11	– Digital Input #7
Door Switch at node 1.10	– Digital Input #8

Expansion Module #32 XT-4:

Door Switch at node 1.16	– Digital Input #1
Door Switch at node 0.9	– Digital Input #2
Door Switch at node 1.1	– Digital Input #5
Door Switch at node 1.19	– Digital Input #6
Door Switch at node 1.6	– Digital Input #7
Door Switch at node 1.8	– Digital Input #8

3. The Contractor should supply and install an Altronix power supply with PTC protected outputs to energize the above listed Glass Break sensors. The power supply should be interlocked by ETM conduit with the existing Building Automation system enclosure (node 0.8)
4. The Contractor is responsible for testing the functionality of the field intrusion alarm devices after splicing the cable and re-applying the power from the new power supply. Prior to replacement of any defective devices the Contractor shall notify the Contract Administrator.

E16. POST INSTALLATION DAMAGES

E16.1 The Contractor is responsible for any damages to the building structure or elements of interior design occurred during the installation.

E17. STORAGE OF EQUIPMENT SUPPLIED BY OTHERS

E17.1 The following materials are supplied and stored in the Main Floor electrical room (node 1.01) at 185 King Street:

1. One (1) Johnson Controls 30”x42” pre-assembled card access enclosure containing:
   a. One (1) CK721A network controller
   b. Six (6) S300-DIN-RDR2SA door controllers
   c. Three (3) S300-DIN-PS-L power supplies
   d. Six (6) S300-DIN-BRK battery brackets
2. One (1) Johnson Controls 24”x30” pre-assembled card access enclosure containing:
   a. Two (2) S300-DIN-RDR2SA door controllers
   b. Two (2) S300-DIN-PS-L power supplies
   c. Four (4) S300-DIN-BRK battery brackets
3. Three (3) Johnson Controls 24”x24” pre-assembled card access enclosures containing:
   a. Two (2) S300-DIN-RDR2SA door controllers
   b. Two (2) S300-DIN-PS-L power supplies
   c. Four (4) S300-DIN-BRK battery brackets
4. Nineteen (19) Indala Arch wall mountable card readers
5. Six (6) Indala Arch mullion mountable card readers

E17.2 The following materials are supplied and stored in the Basement maintenance room (node 0.02) at 395 Main Street:

1. One (1) Johnson Controls 24”x30” pre-assembled card access enclosure containing:
   a. One (1) CK721A network controller
   b. Three (3) S300-DIN-RDR2SA door controllers
   c. Two (2) S300-DIN-PS-L power supplies
   d. Four (4) S300-DIN-BRK battery brackets
2. Six (6) Indala Linear wall mountable card readers

E17.3 The following materials are supplied and stored in the Basement electrical room (node 0.8) at 457 Main Street:

1. One (1) Johnson Controls 30”x42” pre-assembled card access enclosure containing:
   a. One (1) CK721A network controller
   b. Six (6) S300-DIN-RDR2SA door controllers
   c. Three (3) S300-DIN-PS-L power supplies
   d. Six (6) S300-DIN-BRK battery brackets
2. One (1) Johnson Controls 24”x24” pre-assembled card access enclosure containing:
   a. One (1) CK721A network controller
   b. Two (2) S300-DIN-RDR2SA door controllers
   c. Two (2) S300-DIN-PS-L power supplies
   d. Four (4) S300-DIN-BRK battery brackets
3. Five (5) Johnson Controls 24”x24” pre-assembled card access enclosures containing:
   a. Two (2) S300-DIN-RDR2SA door controllers
   b. Two (2) S300-DIN-PS-L power supplies
   c. Four (4) S300-DIN-BRK battery brackets
4. One (1) Johnson Controls CK721A network controller.