



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 1029-2017

SUPPLY & INSTALLATION OF IP SURVEILLANCE CAMERAS

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY & INSTALLATION OF IP SURVEILLANCE CAMERAS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, January 26, 2018.

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., the Bidder shall attend a Site meeting at 9:30 am on January 10, 2018 or at 9:30 am on January 11, 2018. Attendance is mandatory, and the Bid of any Bidder not having attended will be rejected on the basis that it is non-responsive.

B3.2 The Bidder is advised that information on the locations of the IP surveillance cameras and associated communications devices (POE media switches, power supply sources, etc.) will be provided at the Mandatory site meeting.

B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site Meeting unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B3.4 The Bidder is responsible for determining:

- (a) the location of any utility which can be determined from the records or other information available at the offices of any public authority or person, including a municipal corporation and any board or commission thereof, having jurisdiction or control over the utility;
- (b) the nature of the surface and subsurface conditions at the Site;
- (c) the location, nature, quality or quantity of the materials to be removed or to be employed in the performance of the Work;
- (d) the nature, quality or quantity of the Plant needed to perform the Work;
- (e) all matters concerning access to the Site, power supplies, location of existing services, utilities or materials necessary for the completion of the Work; and
- (f) all other matters which could in any way affect his/her Bid or the performance of the Work.

B4. ENQUIRIES

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

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

B4.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B4.4 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.

B4.5 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.

B4.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. CONFIDENTIALITY

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

B6. VIDEO SURVEILLANCE CAMERA LOCATIONS

B6.1 Proposed video surveillance camera locations are shown on the Drawings.

B7. ADDENDA

B7.1 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.

B7.2 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.

B7.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B7.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B7.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B8. SUBSTITUTES

B8.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.

B8.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B8.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.

B8.4 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 material, equipment, method or product 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 Contract;
- (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 Contract.

B8.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B8.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.

B8.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

B8.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B8.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B17.

B8.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B9. BID SUBMISSION

B9.1 The Bid shall consist of the following components:

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

B9.2 Further to B9.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B8.

B9.3 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.

B9.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B9.5 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

B9.5.1 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.

B9.6 Bidders are advised not to include any information/literature except as requested in accordance with B9.1.

B9.7 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 B17.1(a).

B9.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204-949-1178.

B9.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B9.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B10. BID

B10.1 The Bidder shall complete Form A: Bid, making all required entries.

B10.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B10.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B10.2.

B10.3 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.

B10.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B10.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B10.5 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.

B11. PRICES

B11.1 The Bidder shall state the lump sum price in Canadian funds for the Work on Form B: Prices.

B11.1.1 The price on Form B: Prices shall include:

- (a) duty;
- (b) freight and cartage;
- (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

B11.1.2 Prices on Form B: Prices shall not include Environmental Handling Charges (EHC) or fees, which shall be extra where applicable.

B11.2 Payment of the lump sum price will be made to the Contractor in accordance with the payment schedule set out in D16.

B12. DISCLOSURE

B12.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B12.2 The Persons are:

- (a) N/A

B13. QUALIFICATION

B13.1 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, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; 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.
- (d) Provide three references, including contact information (name and telephone number) to verify that the Bidder has completed work of a similar scope and nature within the previous 5 years.

B13.2 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>

- B13.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
 - (d) upon request of the Contract Administrator, provide the Security Clearances as identified in PART F - ;
 - (e) have installation certification through the manufacturer's or equipment supplier's certification program (e.g. Genetec Certified Partner).
- B13.4 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.
- B13.5 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.

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

- B14.1 Bids will not be opened publicly.
- B14.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements or evaluated prices) 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>
- B14.3 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>
- B14.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

B15. IRREVOCABLE BID

- B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Bid.
- B15.2 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 10 of Form A: Bid.

B16. WITHDRAWAL OF BIDS

- B16.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

- B16.1.1 Notwithstanding C21, 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.
- B16.1.2 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 11 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B16.1.3 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 11 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.
- B16.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B15.2 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.

B17. EVALUATION OF BIDS

- B17.1 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 therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B13 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B8.
- B17.2 Further to B17.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.
- B17.3 Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.
- B17.4 Further to B17.1(c), the Total Bid Price shall be the lump sum price shown on Form B: Prices.
- B17.5 This Contract will be awarded as a whole.

B18. AWARD OF CONTRACT

- B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B18.2 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.
- B18.2.1 Without limiting the generality of B18.2, 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.

B18.3 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 B17.

B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

B18.4 Notwithstanding C4 and Paragraph 6 of Form A: Bid, the City may issue a purchase order to the successful Bidder in lieu of the execution of a Contract.

B18.5 The Contract Documents, as defined in C1.1(n) (ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for the Supply of Goods* (Revision 2008 05 26) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for the Supply of Goods* 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 Supply of Goods*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for the Supply of Goods*, 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 supply and installation of IP surveillance cameras throughout the Brady Road Resource Management Facility.

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

- (a) Supply and install interior and exterior video surveillance cameras (building and pole-mounted) at various locations throughout the Brady Road Resource Management Facility site, as identified on the Drawings listed in E1.
- (b) The video surveillance system is an arrangement comprising of a camera and lens with all ancillary equipment required for the surveillance of a specific area.
- (c) The system is required to provide surveillance and monitoring to all areas listed in the Drawings.
- (d) Each component of the system must be non-proprietary and not exclusive to any installing dealer.
- (e) All components must be off the shelf and available through at least one full service dealers.
- (f) Use all new material and conform to the latest editions of applicable codes and standards. In case of a conflict or discrepancy, the most stringent requirement applies.

D2.3 The Owner (Water and Waste IST Services) shall:

- (a) Program the POE switches and test the network to ensure connectivity and assume responsibly for the reliability of the wireless and fiber optic network.
- (b) Provide the Contractor with IP addresses and subnet mask and information regarding the VLAN (virtual local area network).
- (c) Assist the Contractor in setting up the surveillance cameras by providing additional network information as required.

D2.4 The Contractor shall:

- (a) Provide MAC (media access control) addresses for each network appliance.
- (b) Provide As-Built drawings for all infrastructure pertaining to the installed surveillance equipment at BRRMF.
- (c) Provide passwords for all network appliances.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**BRRMF**" means Brady Road Resource Management Facility;
- (b) "**Cat 6**" means Category 6 Ethernet cable;
- (c) "**ePMP**" means enhanced Parallel Master Port;
- (d) "**FOV**" means field of view;
- (e) "**FPS**" means frames per second;
- (f) "**HHW**" means household hazardous waste;

- (g) **"IR"** means Infrared.
- (h) **"MP"** means Mega Pixel.
- (i) **"NEMA"** means National Electrical Manufacturers Association.
- (j) **"POE"** means Power Over Ethernet.
- (k) **"PTZ"** means Pan/Tilt/Zoom.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Ash Raichura, P.Eng.
Project Coordinator, Solid Waste Services, Water and Waste Department
Telephone No.: 204- 986-2962
Email Address: . araichura@winnipeg.ca

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

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

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

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

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

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

D6. NOTICES

D6.1 Notwithstanding C21.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

D7.1 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.

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; such liability policy to also contain a cross-liability clause, non-owned automobile liability and

products and completed operations cover, to remain in place at all times during the performance of the Work;

- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.

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 the date specified in C4 for the return of the executed Contract.

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

D9. SUBCONTRACTOR LIST

D9.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work.

D10. DETAILED WORK SCHEDULE

D10.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: Detailed Work Schedule) at least two (2) Business Days prior to the commencement of any Work.

SCHEDULE OF WORK

D11. COMMENCEMENT

D11.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.

D11.2 The Contractor shall not commence any Work until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in C6.16;
 - (iii) evidence of the insurance specified in D8;
 - (iv) the Subcontractor list specified in D9; and
 - (v) the detailed work schedule specified in D10.
- (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

D11.3 The Contractor shall commence the Work on the Site within thirty (30) Business Days of receipt of the Purchase Order

D12. TOTAL PERFORMANCE

D12.1 The Contractor shall achieve Total Performance within thirty (30) consecutive Working Days of the commencement of the Work as specified in D11.

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

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

D13. LIQUIDATED DAMAGES

D13.1 If the Contractor fails to achieve Total Performance within the time specified in D12.1 the Contractor shall pay the City three hundred dollars (\$300.00) per Working Day for each and every Working Day until Total Performance has been achieved.

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

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

MEASUREMENT AND PAYMENT

D14. INVOICES

D14.1 Further to C10, the Contractor shall submit an invoice for each portion of Work completed 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

D14.2 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 Work completed;
- (e) the amount payable with GST, MRST, and any applicable environmental handling charges/fees identified and shown as separate amounts; and
- (f) the Contractor's GST registration number.

D14.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D14.4 **Bid Submissions must not be submitted to the above facsimile number. Bids must be submitted in accordance with B9.**

D15. PAYMENT

D15.1 Further to C10, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D16. PAYMENT SCHEDULE

- D16.1 Further to C10, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.

WARRANTY

D17. WARRANTY

- D17.1 Notwithstanding C11.2, the warranty period shall begin on the date of Total Performance and shall expire three (3) years thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C11.2 to C11.3, in which case it shall expire when provided for thereunder.
- D17.2 Notwithstanding C11.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D17.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C11.2 for the warranty period to begin.
- D17.3 Warranty Management Plan
- (a) Develop warranty management plan to contain information relevant to Warranties.
 - (b) Submit warranty management plan, 30 Calendar Days before planned pre-warranty conference, to Contract Administrator for approval.
 - (c) Warranty management plan to include required actions and documents to assure that the City receives warranties to which it is entitled.
 - (d) Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
 - (e) Submit, warranty information to Contract Administrator for approval prior to final pay estimate.
 - (f) Assemble approved information in binder and submit upon acceptance of Work. Organize binder as follows:
 - (i) Separate each warranty with index tab sheets keyed to Table of Contents listing.
 - (ii) List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - (iii) Obtain warranties, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten Calendar days after completion of applicable item of work.
 - (iv) Co-execute submittals when required.
 - (v) Retain warranties until time specified for submittal.
 - (g) Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Total Performance is determined.
 - (h) Conduct joint 6 month and 12 month warranty inspection, measured from time of acceptance, by Contract Administrator.
 - (i) Include information contained in warranty management plan as follows:
 - (i) Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - (ii) Listing and status of delivery of Certificates of Warranty for extended warranty items.
 - (iii) Provide list for each warranted equipment, item, feature of construction or system indicating:

- (i) Name of item.
 - (ii) Model and serial numbers.
 - (iii) Location where installed.
 - (iv) Name and phone numbers of manufacturers or suppliers.
 - (v) Names, addresses and telephone numbers of sources of spare parts.
 - (vi) Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - (vii) Cross-reference to warranty certificates as applicable.
 - (viii) Starting point and duration of warranty period.
 - (ix) Summary of maintenance procedures required to continue warranty in force.
 - (x) Cross-Reference to specific pertinent Operation and Maintenance manuals.
 - (xi) Organization, names and phone numbers of persons to call for warranty service.
 - (xii) Typical response time and repair time expected for various warranted equipment.
- (iv) Contractor's plans for attendance at six (6) and twelve (12) month warranty inspections.
 - (v) Procedure and status of tagging of equipment covered by extended warranties.
 - (vi) Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- (j) Respond to oral or written notification of required warranty repair work within two(2) business hours. Warranty repair work is to be resolved within five (5) Business Days.
 - (k) Written verification will follow oral instructions. Failure to respond will be cause for the Contract Administrator to proceed with action against Contractor.

D17.4 Pre-Warranty Conference

- (a) Meet with Contract Administrator, to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by Contract Administrator.
- (b) Contract Administrator will establish communication procedures for:
 - (i) Notification of warranty defects.
 - (ii) Determine priorities for type of defect.
 - (iii) Determine reasonable time for response and resolution.
- (c) Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue warranty work action.
- (d) Ensure contact is located within local service area of the Work, is continuously available, and is responsive to inquiries for warranty work action.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E1.2 The following are applicable to the Work:

Specification No. Specification Title

Division 26

26 05 00	Common Work Results – Electrical
26 05 20	Wire and Box Connectors (0-1000V)
26 05 21	Wires and Cables (0-1000V)
26 05 29	Hangers and Supports for Electrical Systems
26 05 34	Conduits, Conduit Fastenings and Conduit Fittings

Division 28

28 05 00	Common Work Results for Electronic Security Safety
28 23 29	Video Surveillance Remote Devices and Sensors

Drawing No. Drawing Name/Title

C01	Site Plan
C02	Site Entrance – Camera Layout
C03	HHW Building – Camera Layout
C04	Administration Building & Yard – Camera Layout
C05	Equipment Garage – Camera Layout
C06	Contractor Building – Camera Layout

E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B8.

E2. SHOP DRAWINGS

E2.1 Description

E2.1.1 This Specification provides instructions for the preparation and submission of shop drawings.

- (a) The term 'shop drawings' means drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, including system wiring drawings which are to be provided by the Contractor to illustrate details of a portion of the Work; and,
- (b) Submit specified shop drawings to the Contract Administrator for review. All submissions must be in metric units. Where data is in imperial units, the correct metric equivalent shall also be show on all submissions for Contract Administrator review.

E2.2 Shop Drawings

E2.2.1 Original drawings shall be prepared by Contractor, Subcontractor, supplier, distributor or manufacturer to illustrate appropriate portion of Work including fabrication, layout, setting or erection details as specified in appropriate sections.

E2.3 Contractor's Responsibilities

- (a) Review shop drawings, product data and samples prior to submission and stamp and sign drawings indicating conformance to the Contract requirements.
- (b) Verify:
 - (i) Field Measurements;
 - (ii) Field Construction Criteria; and,
 - (iii) Catalogue numbers and similar data.
- (c) Coordinate each submission with requirements of Work and Contract Documents. Individual shop drawings will not be reviewed until all related drawings are available.
- (d) Notify Contract Administrator, in writing at time of submission, of deviations from requirements of Contract Documents.
- (e) Responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator's review of submission, unless Contract Administrator gives written acceptance of specified deviations.
- (f) Responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- (g) Make any corrections required by the Contract Administrator and resubmit the required number of corrected copies of shop drawings. Direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections requested by the Contract Administrator on previous submission.
- (h) After Contract Administrator's review and return of copies, distribute copies to Subcontractors and others as appropriate.
- (i) Maintain one (1) complete set of reviewed shop drawings, filed by Specification Section Number, at the Site of the Work for use and reference of the Contract Administrator and Subcontractors.

E2.4 Submission Requirements

- (a) Schedule submissions at least fourteen (14) Calendar Days before dates reviewed submissions will be needed, and allow for a fourteen (14) Calendar Day period for review by the Contract Administrator of each individual submission and re-submission, unless noted otherwise in the Contract Documents.
- (b) Submit two (2) paper prints of shop drawings. The Contract Administrator will retain one (1) copy of all submittals and return one (1) copy to the Contractor.
- (c) Accompany submissions with transmittal letter containing:
 - (i) Date
 - (ii) Project title and Bid Opportunity number
 - (iii) Contractor's name and address
 - (iv) Number of each shop drawing, product data and sample submitted
 - (v) Specification Section, Title, Number and Clause
 - (vi) Drawing Number and Detail / Section Number
 - (vii) Other pertinent data
- (d) Submissions shall include:
 - (i) Date and revision dates
 - (ii) Project title and Bid Opportunity number
 - (iii) Name of:
 - (i) Contractor
 - (ii) Subcontractor
 - (iii) Supplier
 - (iv) Manufacturer
 - (v) Detailer (if applicable)

- (iv) Identification of product or material
- (v) Relation to adjacent structure or materials
- (vi) Field dimensions, clearly identified as such
- (vii) Specification section name, number and clause number or drawing number and detail / section number
- (viii) Applicable standards, such as CSA or CGSB numbers
- (ix) Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract Documents

E2.5 Other Considerations

- (a) Fabrication, erection, installation or commissioning may require modifications to equipment or systems to conform to the design intent. Revise pertinent shop drawings and resubmit.
- (b) Material and equipment delivered to the Site of the Works will not be paid for at least until pertinent shop drawings have been submitted and reviewed.
- (c) Incomplete shop drawing information will be considered as stipulated deductions for the purposes of progress payment certificates.
- (d) No delay or cost claims will be allowed that arise because of delays in submissions, re-submissions and review of shop drawings.

E3. ADDITIONAL SUBMITTALS

E3.1 Submittals

- (a) Submittals: in accordance with E2.
- (b) Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- (c) Copy will be returned after final inspection, with Contract Administrator comments.
- (d) Revise content of documents as required prior to final submittal.
- (e) Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, two final copies of operating and maintenance manuals in English and French.
- (f) Ensure maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- (g) Furnish evidence, if requested, for type, source and quality of products provided.
- (h) Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- (i) Pay costs of transportation.

E3.2 AS-BUILTS AND SAMPLES

- (a) Maintain, in addition to requirements in General Conditions, at site for Contract Administrator one record copy of:
 - (i) Contract Drawings.
 - (ii) Specifications.
 - (iii) Addenda.
 - (iv) Change Orders and other modifications to Contract.
 - (v) Reviewed shop drawings, product data, and samples.
 - (vi) Field test records.
 - (vii) Inspection certificates.
 - (viii) Manufacturer's certificates.
- (b) Maintain record documents in clean, dry and legible condition. Do not use record

documents for construction purposes.

- (c) Keep record documents and samples available for inspection by Contract Administrator.

E3.3 RECORDING ACTUAL SITE CONDITIONS

- (a) Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- (b) Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - (i) Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
 - (ii) Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
 - (iii) Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - (iv) Field changes of dimension and detail.
 - (v) Changes made by change orders.
 - (vi) Details not on original Contract Drawings.
 - (vii) References to related shop drawings and modifications.
- (c) Specifications: mark each item to record actual construction, including:
 - (i) Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - (ii) Changes made by Addenda and change orders.
- (d) Other Documents: maintain manufacturer's certifications, inspection certifications, and field test records required by individual specifications sections.

E3.4 EQUIPMENT AND SYSTEMS

- (a) Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- (b) Include installed colour coded wiring diagrams.
- (c) Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- (d) Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- (e) Include manufacturer's printed operation and maintenance instructions.
- (f) Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- (g) Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- (h) Additional requirements: as specified in individual specification sections.

E3.5 MATERIALS AND FINISHES

- (a) Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- (b) Moisture-Protection and Weather-Exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

- (c) Additional Requirements: as specified in individual specifications sections.

E3.6 SPECIAL TOOLS

- (a) Provide special tools, as identified as required by manufacturer for manipulation and maintenance of all supplied equipment.
- (b) Provide items with tags identifying their associated function and equipment.
- (c) Deliver to location as directed by Contract Administrator; place and store. Receive and catalogue items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.

E3.7 STORAGE, HANDLING AND PROTECTION

- (a) Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- (b) Store in original and undamaged condition with manufacturer's seal and labels intact.
- (c) Store components subject to damage from weather in weatherproof enclosures.
- (d) Remove and replace damaged products at own expense and to satisfaction of Contract Administrator.

E4. GOODS

E4.1 The Contractor shall supply and install IP surveillance cameras in accordance with the requirements hereinafter specified.

E4.2 IP Surveillance Camera Type 1

- (a) Camera/Optics:
 - (i) Signal Format: NTSC
 - (ii) Scanning System: Progressive
 - (iii) Image Sensor: 1/2.8" PS Exmor 3.2 M CMOS
 - (iv) Total Pixels: 2,065 (H) x 1,565 (V)
 - (v) Effective Pixels:
 - (i) 2,065 (H) x 1,553 (V)
 - (ii) Lens f/1.2 (focal length, 3 – 8.5 mm optical)
 - (iii) Zoom 2.8x optical
 - (vi) Angle of View
 - (i) H: 100.12° (Wide) – 35.38° (Tele)
 - (ii) V: 73.76° (Wide) – 26.58° (Tele)
 - (iii) Simple focus (Motorized V/F) / Manual, Remote control via network (Manual, Simple focus)
 - (vii) Lens Type: DC auto iris, P-Iris / Board-in type
 - (viii) Minimum Illumination (color):
 - (i) 0.1 Lux (f1.2, 50IRE)
 - (ii) 0.06 Lux (f1.2, 30IRE)
 - (ix) Minimum Illumination (B/W):
 - (i) 0 Lux (f1.2, 50IRE)
 - (ii) 0 Lux (f1.2, 30IRE)
 - (x) White Balance ATW/AWC/Manual/Indoor/Outdoor
 - (xi) Electronic Shutter Speed: Minimum/Maximum/Anti-flicker (1-1/12,000 sec)
 - (xii) Gain Control: Off/Low/Middle/High
 - (xiii) S/N Ratio: 50 dB
 - (xiv) Digital Image Stabilization

- (xv) Wide Dynamic Range: 120 dB
- (xvi) IR LED: 12ea
- (xvii) Viewable Length: 25 m
- (xviii) Camera Title: Off/On (Displayed up to 45 characters)
- (xix) Day & Night: Auto (ICR) / Color / B/W / External / Schedule
- (xx) Backlight Compensation: Off / BLC / WDR
- (xxi) Contrast Enhancement: SSSDR (Off/On)
- (xxii) Digital Noise Reduction: SSSNR III (2D+3D noise filter)
- (xxiii) Defog: Off / Auto / Manual
- (xxiv) Motion Detection: Off / On (4 zones with 4-sided polygon)
- (xxv) Privacy Masking: Off / On (32 ea Rectangular zones)
- (xxvi) Flip / Mirror: Off / On
- (xxvii) Alarm I/O: Input 1 ea / Output 1 ea
- (xxviii) Alarm Triggers: Motion detection, Tampering, Audio detection, Face detection, Network disconnection, Video analytics, Alarm input
- (xxix) Resolution: 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x450, 640x480, 640x360, 320x240, 320x180
- (xxx) Video Compression Format: H.264 (MPEG-4 part 10/AVC), MJPEG
- (xxxi) Max. Framerate
 - (i) H.264: Max. 30fps@2048x1536, Max 60fps@the other resolutions
 - (ii) MJPEG: Max. 10fps@2048x1536, Max. 15fps@1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, Max. 30fps@800x600, 800x450, 640x480, 640x360, 320x240, 320x180
- (xxxii) Smart Codec: Manual mode (Area-based: 5ea), Face detection mode
- (xxxiii) Video Quality Adjustment: H.264: Compression level, Target bitrate level control, MJPEG: Quality level control
- (xxxiv) Bitrate Control Method: H.264: CBR or VBR, MJPEG: VBR
- (xxxv) Streaming Capability: Multiple streaming (Up to 10 profiles)
- (xxxvi) IP: IPv4, IPv6
- (xxxvii) Protocol: TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
- (xxxviii) Security: HTTPS(SSL) login authentication, Digest login authentication, IP address filtering, User access log, 802.1x authentication
- (xxxix) Streaming Method: Unicast/ Multicast
 - (xl) Edge Storage: micro SD/SDHC/SDXC – Motion images recorded in the SDXC/SDHC/SD memory card can be downloaded, NAS (Network Attached Storage)
 - (xli) Application Programming Interface: ONVIF profile S, HTTP API (SUNAPI) 2.0, SVN 1.2
 - (xlii) Web Viewer:
 - (i) Supported OS: Windows XP / VISTA / 7 / 8, MAC OS X 10.7
 - (ii) Supported Browser: Microsoft Internet Explorer (ver. 8~10), Mozilla Firefox (Ver. 9~19), Google Chrome (Ver.15~25), Apple Safari (Ver.6.0.2(Mac OS X 10.8, 10.7 only), 5.1.7)
- (b) Electrical:
 - (i) Input Voltage / Current: AC24V, DC12V, PoE (IEEE802.3af,Class3)
 - (ii) Power Consumption: Max. 10.5W (12 V DC), Max. 11.5W (PoE), Max. 12.0W / 15.0W (24V AC, Heater off / on)
- (c) Mechanical:

- (i) Color / Material: Ivory/Aluminum
- (ii) Dimensions: 160.0 x 118.5mm (6.3" x 4.67")
- (d) Environmental:
 - (i) Operating Temperature / Humidity: -40°C ~+55°C (40°F~+131°F) / Less than 90% RH
 - (ii) Storage Temperature / Humidity: -30°C ~+60°C (-22°F~+140°F) / Less than 90% RH
- (e) **Acceptable Product:** Samsung SNV-7084R (or equivalent in accordance with B8) with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome.

E4.3 IP Surveillance Camera Type 2

- (a) General:
 - (i) All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
 - (ii) All systems and components shall have been thoroughly tested and proven in actual use.
 - (iii) All systems and components shall be provided with the availability of a toll-free (U.S. and Canada), 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.
- (b) Hardware (3 Megapixel Network Camera)
 - (i) The camera shall be of a bodied type suitable for installation internally or within an external housing. The camera will accept CS or C mount lenses with a Direct Drive Auto Iris. The camera shall be ivory & black in appearance. A C mount adaptor will be included with the product.
 - (ii) The network camera shall feature up to 3 Mega Pixel resolution in a 16:9 format. 4:3 format shall also be available in smaller resolutions.
 - (iii) The camera should be capable of capturing and transmitting an image size of 1920 x 1080 at 60 images per second.
- (c) Camera
 - (i) Imaging Device: 1/ 2.8" PS Exmor 3.2M CMOS
 - (ii) Total Pixels: 2,065(H) x 1,565(V)
 - (iii) Effective Pixels: 2,065(H) x 1,553(V)
 - (iv) Scanning System: Progressive
 - (v) Min. Illumination:
 - (i) Color 0.1 Lux (F1.2, 50IRE), 0.06Lux (F1.2, 30IRE)
 - (ii) B/W 0.01 Lux (F1.2, 50IRE), 0.006 Lux (F1.2, 30IRE)
 - (vi) S / N Ratio: 50dB
 - (vii) Video Output: CVBS : 1.0 Vp-p / 75Ω composite, 704x480(N), 704x576(P), for installation. DIP connector type
- (d) Lens Type
 - (i) Lens Type: Simple Focus / DC Auto Iris, P-Iris
 - (ii) Mount Type: C/CS
 - (iii) Focus Control: Simple Focus / Manual. Remote control via network ,Button control (Manual, Simple Focus, Day&Night)
- (e) Operation
 - (i) Camera Title: Off / On (Displayed up to 45 characters)
 - (ii) Day & Night: Auto (ICR) / Color / B/W / External / Schedule
 - (iii) Backlight Compensation: Off, BLC, WDR
 - (iv) Wide Dynamic Range: 120dB

- (v) Contrast Enhancement: Off / On
- (vi) Digital Noise Reduction SSNR III (2D + 3D noise filter) (Off / On)
- (vii) Motion Detection Off / On (4ea 4 Points Polygonal zones)
- (viii) Privacy Masking Off / On (32ea Rectangular zones)
- (ix) Gain Control Off / Low / Middle / High
- (x) White Balance ATW / AWC / Manual / Indoor / Outdoor
- (xi) Electronic Shutter Speed Minimum / Maximum / Anti flicker (1 ~ 1/12,000sec)
- (xii) Flip / Mirror Off, On
- (xiii) Intelligent Video Analytics Tampering, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection with metadata
- (xiv) Alarm I/O Input 1ea / Output 1ea
- (xv) Remote Control Interface RS-485
- (xvi) RS-485 Protocol Samsung-T/E, Pelco-P/D, Sungjin, Panasonic, Honeywell, AD, Vicon, GE, Bosch
- (xvii) Alarm Triggers Motion detection, Tampering, Audio Detection, Face Detection, Video Analytics, Alarm Input, Network Disconnection
- (xviii) Alarm Events File upload via FTP and E-Mail Notification via E-Mail, local storage(SD/SDHC/SDXC) recording at Network disconnected & Event (Alarm Triggers) External output
- (xix) Defog Auto/Manual/Off
- (xx) Digital Image Stabilization Off / On
- (f) Network Protocol
 - (i) Ethernet RJ-45 (10/100Base-T)
 - (ii) Video Compression Format H.264 (MPEG-4 part 10/AVC), MJPEG
 - (iii) Resolution 2048 x 1536 / 1920x1080 / 1600x1200 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 / 800x600 / 800x450 / 640x480 / 640x360 / 320x240 / 320x180
 - (iv) Max. Frame rate:
 - (i) H.264: Max 30fps@2048x1536, Max 60fps at all resolutions
 - (ii) Motion JPEG: Max. 10fps@2048 x 1536Max. 15fps@1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768Max. 30fps@800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180
 - (v) Smart Codec Manual mode (Area-based : 5ea), Face detection mode
 - (vi) Video Quality Adjustment
 - (i) H.264: Compression level, Target bit rate level control
 - (ii) MJPEG: Quality level control
 - (vii) Bitrate Control Method
 - (i) H.264: CBR or VBR
 - (ii) MJPEG: VBR
 - (viii) Streaming Capability Multiple Streaming (Up to 10 Profiles)
 - (ix) Audio In:
 - (i) Selectable (Mic in / Line in / Built-in mic),
 - (ii) Supply voltage : 2.5V DC (4mA),
 - (iii) Input impedance : approx. 2K Ohm
 - (x) Audio Out Line out (3.5mm mono jack), Max output level : 1 Vrms
 - (xi) Audio Compression Format:
 - (i) G.711 u-law /G.726 Selectable
 - (ii) G.726 (ADPCM) 8KHz, G.711 8KHz
 - (iii) G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps

- (xii) Audio Communication Bi-directional audio
- (xiii) IP IPv4, IPv6
- (xiv) Protocol TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
- (xv) Security:
 - (i) HTTPS(SSL) Login Authentication
 - (ii) Digest login Authentication
 - (iii) IP Address Filtering
 - (iv) User access Log
 - (v) 802.1x Authentication
- (xvi) Streaming Method: Unicast, Multicast
- (xvii) Max. User Access: 15 users at Unicast mode
- (xviii) Edge Storage: Micro SD/SDHC/SDXC Motion images recorded in the SDXC/SDHC/SD memory card can be downloaded
- (xix) Application Programming interface: ONVIF profile S, SUNAPI (HTTP API) v2.0, SVN 1.2
- (xx) Webpage Language: English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Norwegian, Finnish
- (xxi) Web Viewer:
 - (i) Supported OS Windows XP / VISTA / 7 / 8, MAC OS X 10.7
 - (ii) Supported Browser:
 - ◆ Microsoft Internet Explorer (Ver. 8~10),
 - ◆ Mozilla Firefox (Ver. 9~19),
 - ◆ Google Chrome (Ver. 15~25),
 - ◆ Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 Only), 5.1.7) * Mac OS X Only
 - (iii) Central Management Software: SmartViewer
- (g) Electrical
 - (i) Voltage: AC24V±10%, DC12V±10%,PoE(IEEE802.3af,Class3)
 - (ii) Consumption:
 - (i) Max. 13.1W (AC 24V, 50~60Hz)
 - (ii) Max. 11.1W (DC 12V)
 - (iii) Max. 12.6W (PoE, Class3)
- (h) Environmental Specifications
 - (i) Operating Temperature: -10°C ~ +55°C (14°F ~ 131°F)
 - (ii) Operating Humidity: Less than 90% RH
- (i) Physical Specifications
 - (i) Dimension: W73.1 x H66.6 x D147.8
 - (ii) Weight: 430g(0.95lb)
 - (iii) Color: FRONT (BLACK) , BODY (IVORY) / FRONT(Aluminium), BODY(Plastic)
- (j) Certifications
 - (i) CE mark
 - (ii) FCC mark
- (k) **Acceptable Product:** Samsung **SNB 7004** (or equivalent in accordance with B8) with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome.

E4.4 IP Surveillance Camera Type 3

(a) General:

- (i) All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
- (ii) All systems and components shall have been thoroughly tested and proven in actual use.
- (iii) All systems and components shall be provided with the availability of a toll-free (U.S. and Canada), 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.

(b) 2 Megapixel Full HD 32X Network Zoom Camera:

- (i) The camera shall offer maximum 2 megapixel (1920 x 1080) resolution.
- (ii) The camera shall offer 16:9 Full HD (1080p) resolutions.
- (iii) The cameras shall support minimum illumination of 0.15 Lux at F1.6 when in color mode and 0.015 Lux at F1.6 when in black and white mode.
- (iv) The camera shall offer 4.44 ~ 142.6mm (32x) optical zoom and 16x digital zoom.
- (v) The camera shall provide H.264, MJPEG dual codec, and multiple streaming.
- (vi) The network camera shall feature Day & Night (ICR) and WDR (120dB)
- (vii) The camera shall feature intelligent video analytics.
- (viii) The camera shall provide PoE.
- (ix) The camera shall provide SD/SDHC/SDXC memory slot.
- (x) The camera shall provide Bi-directional audio.

(c) Camera

(i) Imaging Device	1/2.8" 2.38M CMOS
(ii) Total Pixels	1,952(H) x 1,116(V), 2.18M
(iii) Effective Pixels	1,944(H) x 1,104(V) , 2.14M
(iv) Scanning System	Progressive
(v) Min. Illumination	
	1. Color
	0.3Lux (1/30sec, F1.6, 50IRE), 0.15Lux (1/30sec, F1.6, 30IRE)
	2. B/W
	0.03Lux (1/30sec, F1.6, 50IRE), 0.015Lux (1/30sec, F1.6, 30IRE)
(vi) S/N Ratio	50dB
(vii) Video Output	CVBS : 1.0 Vpp / 75Ω composite, 720 x 480(N), 720 x 576(P), for installation DIP connector type

(d) Lens Type

(i) Focal Length (Zoom Ratio)	4.44 ~ 142.6mm (Optical 32x)
(ii) Max. Aperture Ratio	F1.6(Wide) / F4.4(Tele)
(iii) Angular Field of View	H : 62.8°(Wide) ~ 2.23°(Tele) V : 36.80°(Wide) ~ 1.26°(Tele)
(iv) Min. Object Distance	1.5m (4.92ft)
(v) Focus Control	Auto / Manual / One push
(vi) Lens / Mount Type	DC auto iris / Board-in type

(e) Operation

i. Camera Title	Off / On (Displayed up to 45 characters)
ii. Day & Night	Auto (ICR) / Color / B/W / External / Schedule
iii. Backlight Compensation	Off / BLC
iv. Wide Dynamic Range	120dB
v. Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)
vi. Digital Noise Reduction	SSNR III (2D+3D noise filter) (Off / On)
vii. Digital Image Stabilization	Off / On
viii. Defog	Off / Auto / Manual
ix. Motion Detection	Off / On (4ea 4 points polygonal zones)
x. Privacy Masking	Off / On (32 zones with 2 points of rectangle)
xi. Gain Control	Off / Low / Middle / High
xii. White Balance	ATW / AWC / Manual / Indoor / Outdoor / Mercury
xiii. Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
xiv. Digital Zoom	16x
xv. Flip/Mirror	Off/On
xvi. Intelligent Video Analytics	Tampering, Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Face detection
xvii. Alarm I/O	Input 1ea / Output 1ea (Relay)
xviii. Remote Control Interface	RS-485
xix. RS-485 Protocol	Samsung-T/E, Pelco-P/D, Panasonic, Honeywell, AD, Vicon, Bosch, GE
xx. Alarm Triggers	Motion detection, Tampering, Audio detection, Face detection, Video analytics, Alarm input, Network disconnection
xxi. Alarm Events	File upload via FTP and E-mail, Notification via E-mail, Local storage(SD/SDHC/SDXC) or NAS recording at Network disconnected & Event (Alarm Triggers), External output

(f) Network Protocol

(i) Ethernet	RJ-45 (10/100BASE-T)
(ii) Video Compression Format	H.264 (MPEG-4 part 10/AVC), MJPEG
(iii) Resolution	1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 450, 720 x 576, 640 x 480, 640 x 360, 320 x 240, 320 x 180

(iv) Max. Frame rate		
	1. H.264	Max. 60fps at all resolutions
	2. MJPEG	Max. 15fps at 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768 Max. 30fps at 800 x 600, 800 x 450, 720 x 576, 640 x 480, 640 x 360, 320 x 240, 320 x 180
(v) Smart Codec		Manual mode (Area-based : 5ea), Face detection mode
(vi) Video Quality Adjustment		
	1. H.264	Compression level, Target bitrate level control
	2. MJPEG	Quality level control
(vii) Bitrate Control Method		
	1. H.264	CBR or VBR
	2. MJPEG	VBR
(viii) Streaming Capability		Multiple streaming (Up to 10 profiles)
(ix) Audio In		Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
(x) Audio Out		Line out (3.5mm stereo mini jack), Max output level : 1 Vrms
(xi) Audio Compression Format		G.711 u-law/G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps
(xii) Audio Communication		Bi-directional audio
(xiii) IP		IPv4, IPv6
(xiv) Protocol		TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
(xv) Security		HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication
(xvi) Streaming Method		Unicast / Multicast
(xvii) Max. User Access		10 users at unicast mode
(xviii) Edge Storage		SD/SDHC/SDXC - motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage)
(xix) Application Programming interface		ONVIF profile S, SUNAPI 2.0, SVNP 1.2

(xx) Webpage Language		English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Finnish, Norwegian
(xxi) Web Viewer		
	1. Supported OS	Windows XP / VISTA / 7 / 8 / 8.1, MAC OS X 10.7 / 10.8
	2. Supported Browser	Microsoft Internet Explorer (Ver. 8 ~ 11), Mozilla Firefox (Ver. 9 ~ 19), Google Chrome (Ver. 15 ~ 32) Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 only), 5.1.7)* Mac OS X only
(xxii) Central Management Software		SmartViewer, SSM, Mobile viewer

(g) Electrical

- (i) Input Voltage / Current: 12V DC, PoE (IEEE802.3af, Class3)
- (ii) Power Consumption: Max. 9W (12V DC) / Max. 10W (PoE)

(h) Environmental Specifications

- (i) Operating Temperature / Humidity: -10°C ~ +55°C (+14°F ~ +131°F) / Less than 90% RH
- (ii) Storage Temperature / Humidity: -30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH

(i) Physical Specifications

- (i) Dimensions: 72.0 x 59.9 x 135.4mm (2.83" x 2.36" x 5.33")
- (ii) Weight: 540 g (1.19 lb)
- (iii) Color/Material: Dark gray / metal

(j) Certifications

- (i) CE mark
- (ii) FCC mark
- (iii) UL mark

(k) **Acceptable Product:** Samsung **SNZ 6320** (or equivalent in accordance with B8).

E4.5 IP Surveillance Camera Type 4

E4.5.1 Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.

- (a) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously
 - (i) H.265 and H.264 – frame rates to 30 fps
 - (ii) MJPEG – frame rates to 15 fps
- (b) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
- (c) Resolution selections

- (i) 2592 x 1520, 2560 x 1440 (16 : 9), 2304 x 1296, 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
- (d) Simultaneous unicast access by up to 6 users
- (e) Multicast or unicast capable
- (f) Dynamic DNS (DDNS) support.
- (g) WiseStream and Dynamic GOV to efficiently manage bitrate of the video stream.

E4.5.2 Camera – The camera device shall have the following physical and performance properties:

- (a) Imager
 - (i) Sensor: 1/3" 4 MP CMOS
 - (i) pixels per sensor: 2720 (H) x 1536 (V) total; 2688 (H) x 1520 (V) effective
 - (ii) scanning : progressive
 - (ii) Minimum illumination
 - (i) Color mode: 0.4Lux
 - (ii) Black & white mode: 0Lux (IR LED on)
 - (iii) The following features with control settings shall be available:
 - (i) Camera Title Off / On (Displayed up to 20 characters per line)
 - ◆ W/W: English / Numeric / Special characters
 - ◆ China: English / Numeric / Special / Chinese characters
 - ◆ Common: Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
 - (ii) Day/night setting: True Day & Night
 - (iii) Backlight compensation (BLC): Off / BLC / WDR
 - (iv) WDR 120dB
 - (v) Digital Noise Reduction (DNR): Off / On (Samsung Super Noise Reduction)
 - (vi) Motion Detection Off / On (4ea polygonal zones)
 - (vii) Privacy Masking Off / On (6ea rectangular zones)
 - (viii) Gain Control Off / Low / Middle / High
 - (ix) White Balance ATW / AWC / Manual / Indoor / Outdoor
 - (x) LDC Off / On (5 levels with min / max)
 - (xi) Electronic shutter speed:
 - ◆ settings: min, max, anti-flicker
 - (xii) Image flip: Off / On
 - (xiii) Image mirror: Off / On
 - (xiv) Hallway view: Off / On
 - (xv) Alarm I/O Input 1 / Output 1
 - (xvi) Alarm Triggers Motion detection, Tampering detection, SD card error, NAS error, Alarm input, Defocus detection
 - (xvii) Alarm Events File upload via FTP and E-mail, Local storage recording at event, Notification via E-mail, External output
 - (xviii) Pixel Counter Available in the plug-in viewer.
 - (iv) Lens: 3.6 mm, fixed
 - (i) Max. Aperture Ratio F2.2
 - (ii) Angle of view: H: 81.0° / V: 45.0° / D: 95.0°
 - (iii) Lens Type Fixed
 - (iv) Mount Type Board Type

- (v) Manual positional settings:
 - (i) pan: 0° – 350°
 - (ii) tilt: 0° – 67°
 - (iii) rotation 0° ~ 355°
 - (b) IR Viewable Length: 25 m (82.02ft)
 - (c) Dustproof, waterproof, and IP66 rated.
 - (d) IK10 rated for protection against impacts.
 - (e) True day/night operation with removable IR cut filter
 - (i) Low light level operation to 0.4 lux (color) and 0 lux (black and white)
 - (f) 2D and 3D digital noise reduction
 - (g) Integral IR illumination, providing effective visibility of 25m at 0 Lux when activated in Black & White mode.
 - (h) 6 privacy masking regions utilizing a 4 point polygon
- E4.5.3 Intelligence and Analytics – The camera shall have a suite of integral intelligent operations and analytic functions to include:
- (a) Motion detection with four definable detection areas, minimum / maximum object size definition and a learning algorithm that ignores false alarms such as trees and waves on water.
 - (b) Detection of logical events of specified conditions from the camera's video input
 - (i) camera tamper (scene change)
 - (ii) defocus detection
 - (iii) motion detection with metadata
- E4.5.4 Interoperability – The camera shall be ONVIF Profile S and G compliant.
- E4.5.5 The camera shall possess the following further characteristics:
- (a) Built-in web server, accessed via standard browsers including Internet Explorer, Firefox, Chrome & Safari
 - (b) Micro SD/SDHC/SDXC memory card and NAS recording options, with configurable pre-alarm and post-alarm recording intervals
 - (c) Uni-directional audio
 - (d) Alarms and notifications
 - (i) alarm notification triggers:
 - (i) motion detection
 - (ii) tampering detection
 - (iii) SD card error
 - (iv) NAS error
 - (v) alarm input
 - (vi) defocus detection
 - (ii) available notification means upon trigger:
 - (i) file upload via FTP and e-mail
 - (ii) notification via e-mail
 - (iii) record to local storage (SD card)
 - (iv) external output
 - (e) Pixel Counter available in the plug-in viewer.
 - (f) POE capable
- E4.5.6 Network

- (g) Connectivity: 10/100 Base-T Ethernet via RJ-45 connector
- (h) Protocols supported:
 - (i) Transmission Control Protocol (TCP), Internet Protocol (IP) v4 and v6, User Datagram Protocol (UDP)
 - (ii) Configuration: Dynamic Host Configuration Protocol (DHCP)
 - (iii) Web services: Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS)
 - (iv) Network services: Address Resolution Protocol (ARP), Bonjour, Domain Name System (DNS), Internet Control Message Protocol (ICMP), Network Time Protocol (NTP), Protocol Independent Multicast-Sparse Mode (PIM-SM), Simple Network Management Protocol (SNMP v1/2c/3 – MIB-2), Universal Plug and Play (UPnP)
 - (v) Media: Real-Time Transport Protocol (RTP), Real-Time Control Protocol, Real-Time Streaming Protocol (RTSP)
 - (vi) Multicast: Internet Group Management Protocol (IGMP)
 - (vii) Notifications: File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP)
 - (viii) Remote Access: Point-to-Point Protocol over Ethernet (PPPoE)
- (i) DDNS – The camera shall support DDNS services offered by the Manufacturer and other publicly available service offerings.
- (j) Quality of Service (QoS) – Layer 3 DSCP
- (k) Security features:
 - (i) user password protection
 - (ii) IP address filtering - list of allowed or blocked IP addresses
 - (iii) HTTPS(SSL) login authentication
 - (iv) HTTPS(SSL) secured communications
 - (v) Digest login authentication
 - (vi) User access log
 - (vii) 802.1x authentication
- (l) Discovery - Manufacturer shall offer a discovery program to identify all devices of his manufacture on the network.

E4.5.7 Audio

- (a) Direction: uni-directional
- (b) I/O Line-in
- (c) Compression:
 - (i) G.711 u-law/G.726 selectable
 - (i) G.726 (ADPCM) 8KHz, G.711 8KHz
 - (ii) G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps

E4.5.8 Electrical

- (d) Power
 - (i) Input Voltage / Current PoE (IEEE802.3af, Class3), 12V DC
 - (ii) Power Consumption: <6.8 W (PoE), <5.7 W (12V DC)

E4.5.9 Mechanical And Environmental

- (e) Material:
 - (i) Housing: metal, vandal resistant
- (f) Dimensions (W x H): 120.3 x 91.7 mm (4.74 x 3.61 in.).
- (g) Weight 490g (1.08 lb.)
- (h) Temperature:
 - (i) Operating: -30° C to 55° C (-22° F to 131° F)

- (ii) Storage: -30° C to 60° C (-22° F to 140° F)
 - (i) Humidity: 0 - 90%, non-condensing
 - (j) Environmental Rating:
 - (i) Ingress Protection IP66
 - (ii) Mechanical (Vandal) Protection IK10
- E4.5.10 **Acceptable Product:** Hanwha Techwin QNV-7020R (or equivalent in accordance with B8) with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome.
- E4.6 IP Surveillance Camera Lens Type 1
- E4.6.1 Lens/Optics:
 - (a) CD: 1/2.8"
 - (b) Focal Length: 5-50 mm
 - (c) Max. Aperture Ratio: 1:1.4
 - (d) Lens Type: DC Auto Iris
 - (e) Mount: CS-mount
- E4.6.2 **Acceptable Product:** Fujinon5502-221 (or equivalent in accordance with B8) Varifocal Megapixel Lens 5-50 mm.

E5. APPROVED PRODUCTS

- E5.1 The following products are approved. Approved equivalent may be accepted in accordance with B8.
 - (a) Samsung SNV-7084R with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome (IP Surveillance Camera Type 1).
 - (b) Samsung SNB 7004 with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome. (IP Surveillance Camera Type 2)
 - (c) Samsung SNZ 6320 (IP Surveillance Camera Type 3)
 - (d) Hanwha Techwin QNV-7020R with wall mount base, medium cap adaptor, and PTZ wall mount for fixed dome. (IP Surveillance Camera Type 4)
 - (e) Fujinon5502-221 Varifocal Megapixel Lens 5-50 mm. (IP Surveillance Camera Lens Type 1)
 - (f) Samsung SBP-300B (Wall mount base)
 - (g) Samsung SBP-300HM6 (Medium cap adapter for SNV-7084R)
 - (h) Samsung SBP-122HM (Medium cap adapter for QNV-7020R)
 - (i) Samsung SBP-300WM1 (PTZ wall mount for fixed dome)
 - (j) Hammond EJ161410 (NEMA4 Container – 16" x 14" x 10")
 - (k) Samsung SHB-4300H1 (Accessory, indoor/outdoor housing)
 - (l) Hammond MA SKT011419NO-C (Thermostat switch)
 - (m) Hammond MA SHG14005 (Enclosure heater – 5.5" x 2.8" x 2")
 - (n) Hammond MA EJPA (padlock adapter for container)
 - (o) Hammond PMV1216GY (pole mount – vertical)
 - (p) Hammond PMSTRAP40 (pole mount strap)
 - (q) Alpha Novis 017-220-45 (UPS power supply)
 - (r) FLEXPPOWER FP075/75-E2 (power supply – camera)
 - (s) ComNet CLLFE1POEC (Coaxial cable to POE media converter)

- (t) ComNet CLRF1POEC (Remote coaxial cable to POE media converter)
- (u) ComNet CNFE2MC-M (media converter)
- (v) ComNet DINBKT4 (DIN Rail mounting bracket)

E6. COMMUNICATIONS AND SURVEILLANCE CAMERA CONNECTIVITY

- E6.1 A wireless point to point network from 4R Depot Residential Scale Building to Contractor Building, from 4R Depot Residential Scale Building to Compost Building, and from 4R Depot Residential Scale Building to New Equipment Building was installed and commissioned by the City of Winnipeg in August 2017. This network is specifically set up to provide surveillance camera connectivity between their respective installation locations and the location of the Genetec SVP-Pro server (inside the 4R Depot Residential Scale Building).
- E6.2 At each building (HHW Building, 4R Depot Residential Scale Building, New Equipment Building, Contractor Building, and Compost Building), as described in E6.1, a POE media converter and UPS dedicated for the new surveillance cameras (HHW-V01, HHW-V02, HHW-V03, HHW-V04, CB-V04, CB-V05, NES-V06, NES-V07, NES-V08, NES-V09) has been installed by the City. Cameras SB-V10, SB-V11, SB-V12 shall be connected to the POE media converter in the Compost Building.
- E6.3 The two (2) existing analog surveillance cameras (EBL-V14, CSB-V13) mounted on poles at the site entrance are connected via coaxial cable. The existing coaxial cable will remain, and the cameras will be replaced with new IP cameras (as shown on the Drawings) and POE media converters (Cat 6 to coaxial). The connections for these two (2) new surveillance cameras will terminate in the Commercial Scale Building Electrical Room.
- E6.4 There are two (2) existing analog cameras mounted on poles by the Administration Building with a coaxial cable to fiber optic cable connection (AT-V16, EPL-V15). The fiber optic cable connection shall remain; the analog surveillance cameras shall be replaced with new IP surveillance cameras and POE media converters (coaxial cable to fibre optic cable).
- E6.5 Inspect condition of existing cables. If worn, replace with equivalent.
- E6.6 Install a new IP surveillance camera (SGE-V17) and POE media converter (Cat 6 cable to fiber optic cable) on the existing pole in the Administration Building Yard. There is an existing fiber optic cable installed from the Administration Building to the pole. This existing fiber optic cable will need to be connected to the SFP fiber optic cable port on the POE media converter in the Compost Building.
- E6.7 For IP surveillance cameras SGE-V17, AT-V16, and EPL-V15, each camera will terminate at one of three SFP ports on the POE media converter in the Compost Building. There is also a power supply available at each existing pole, which shall be used to power each IP surveillance camera & ancillary equipment. However, a separate power supply (FLEXPOWER FP075/75-E2) is required to supply power to the media converters and outdoor housings.
- E6.8 IP surveillance cameras connecting to the Compost Building POE media converter terminate at the 4R Depot POE media converter.

E7. HOUSEHOLD HAZARDOUS WASTE (HHW) BUILDING CAMERAS (HHW-V01, HHW-V02,HHW-V03, HHW-V04)

- E7.1 Products
- E7.1.1 IP Surveillance Camera Type 1
 - E7.1.2 IP Surveillance Camera Type 4
 - E7.1.3 Wall mount base
 - E7.1.4 Medium cap adapter

E7.1.5 PTZ wall mount for fixed dome

E7.2 Execution

E7.2.1 Locations for the IP surveillance cameras are shown on the attached Drawings.

- (a) Mount IP surveillance cameras with pendant mount (HHW-V01, HHW-V02) ~3m above the final floor elevation, in diagonally opposite corners of the building interior.
- (b) Mount IP surveillance camera (HHW-V03) underneath the southeast corner of the HHW building canopy.
- (c) Mount IP surveillance camera (HHW-V04) under the center of the HHW building canopy.

E7.2.2 Install EMT conduit from each IP surveillance camera location to the existing container housing the POE media converter in the HHW building.

E7.2.3 Install Cat 6 cable to each IP surveillance camera and terminate ends.

E7.2.4 Connect each IP surveillance camera to the POE media converter via Cat 6 cable and check for signal.

E7.2.5 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.

E7.2.6 Install camera licenses on Genetec Omnicast software (Security Center version 5.5) for each camera.

E7.2.7 Set up camera in Genetec Security Center® with the following options:

- (d) WDR on medium setting.
- (e) White balance set to auto
- (f) D/N set to on
- (g) Twenty (20) FPS in alarm state and;
- (h) Three (3) FPS outside of the alarm state.
- (i) Motion detection: some masking will be required.

E8. CONTRACTOR BUILDING CAMERAS (CB-V04, CB-V05)

E8.1 Products

E8.1.1 IP Surveillance Camera Type 1

E8.1.2 Wall mount base

E8.1.3 Medium cap adapter

E8.1.4 PTZ wall mount for fixed dome

E8.2 Execution

E8.2.1 Locations for the IP surveillance cameras are shown on the attached Drawings.

E8.2.2 Mount IP surveillance cameras with pendant mount (CB-V04, CB-V05) ~5m above final floor elevation, in diagonally opposite corners of the building interior.

E8.2.3 Install EMT conduit from each camera location to the container housing the POE media converter.

E8.2.4 Install Cat 6 cable to each camera and terminate end at each camera and each port on the POE media converter.

- E8.2.5 Connect each IP surveillance camera to the POE media converter via Cat 6 cable and check for signal.
- E8.2.6 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.
- E8.2.7 Install camera licenses on Genetec Omnicast software (Security Center version 5.5) for each camera.
- E8.2.8 Set up camera in Genetec Security Center® with the following options:
 - (b) WDR on medium setting.
 - (c) White balance set to auto.
 - (d) D/N set to on.
 - (e) Twenty (20) FPS in alarm state.
 - (f) Three (3) FPS outside of the alarm state.
 - (g) Motion detection: some masking will be required.

E9. NEW EQUIPMENT BUILDING CAMERAS (NES-V06, NES-V07, NES-V08, NES-V09)

E9.1 Products

- E9.1.1 IP Surveillance Camera Type 1
- E9.1.2 Wall mount base
- E9.1.3 Medium cap adapter
- E9.1.4 PTZ wall mount for fixed dome

E9.2 Execution

- E9.2.1 Locations for the IP surveillance cameras are shown on the attached Drawings.
 - (b) Mount internal IP surveillance cameras with pendant mount (NES-V06, NES-V07) ~5m above final floor elevation, in diagonally opposite corners of the building interior.
 - (c) Mount external IP surveillance camera with pendant mount (NES-V08) ~5m above surrounding grade on the exterior south corner of the building, looking northwest.
 - (d) Mount external IP surveillance camera with pendant mount (NES-V09) ~5m above surrounding grade on the exterior east corner of the building, looking northeast.
- E9.2.2 Install EMT conduit from each IP surveillance camera location to the container housing the POE media converter.
- E9.2.3 Install Cat 6 cable to each IP surveillance camera and terminate end at each camera and each port on the POE media converter.
- E9.2.4 Connect each IP surveillance camera to the POE media converter via Cat 6 cable and check for signal.
- E9.2.5 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.
- E9.2.6 Install camera licenses on Genetec Omnicast software (Security Center version 5.5) for each camera.
- E9.2.7 Set up camera in Genetec Security Center with the following options:
 - (e) WDR on medium setting.
 - (f) White balance set to auto.

- (g) D/N set to on.
- (h) Twenty (20) FPS in alarm state.
- (i) Three (3) FPS outside of the alarm state.
- (j) Motion detection: some masking will be required.

E10. SHOP BUILDING CAMERAS (SB-V10, SB-V11, SB-V12)

E10.1 Products

- E10.1.1 IP Surveillance Camera Type 2 (SB-V12)
- E10.1.2 IP Surveillance Camera Type 4
- E10.1.3 IP Surveillance Camera lens Type 1 (SB-V12).
- E10.1.4 Wall mount base
- E10.1.5 Medium cap adapter
- E10.1.6 PTZ wall mount for fixed dome
- E10.1.7 Accessory, indoor/outdoor housing (SB-V12).

E10.2 Execution

- E10.2.1 Locations for the IP surveillance cameras are shown on the attached Drawings.
- E10.2.2 Mount internal IP surveillance cameras with pendant mount (SB-V10, SB-V11) ~3m above final floor elevation, in diagonally opposite corners of the building interior.
- E10.2.3 Mount external IP surveillance camera and lens with pendant mount (SB-V12) on the northwest corner of the building exterior, looking toward the south gate.
- E10.2.4 Install EMT conduit from each IP surveillance camera location to the POE media converter in the Compost Building.
- E10.2.5 Install Cat 6 cable to each IP surveillance camera and terminate end at each camera and each port on the POE media converter.
- E10.2.6 Connect each IP surveillance camera to one the POE media converter via Cat 6 cable and check for signal.
- E10.2.7 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.
- E10.2.8 Install camera licenses on Genetec Omnicast software (Security Center version 5.5) for each camera.
- E10.2.9 Set up camera in Genetec Security Center® with the following options:
 - (b) WDR on medium setting.
 - (c) White balance set to auto.
 - (d) D/N set to on.
 - (e) Twenty (20) FPS in alarm state.
 - (f) Three (3) FPS outside of the alarm state.
 - (g) Motion detection: some masking will be required.

E11. POLE MOUNTED COMMERCIAL SCALE BUILDING CAMERAS (CSB-V13, EBL-V14)

E11.1 Products

- E11.1.1 IP Surveillance Camera Type 3
- E11.1.2 NEMA4 Container – 16" x 14" x 10"
- E11.1.3 Thermostat switch
- E11.1.4 Enclosure heater – 5.5" x 2.8" x 2"
- E11.1.5 Accessory, indoor/outdoor housing
- E11.1.6 Padlock adapter for container
- E11.1.7 Pole mount – vertical
- E11.1.8 Pole mount strap
- E11.1.9 Padlock (Medico)
- E11.1.10 UPS power supply
- E11.1.11 Power supply – camera
- E11.1.12 Coaxial cable to POE media converter
- E11.1.13 Remote coaxial cable to POE media converter
- E11.1.14 DIN Rail mounting bracket

E11.2 Execution

- E11.2.1 Decommission the existing analog camera and container.
- E11.2.2 Install a new NEMA4 container at same height as existing container.
- E11.2.3 Provide two (2) pole mount straps – secure container.
- E11.2.4 Install DIN rail mounting bracket.
- E11.2.5 Install Cat 6 cable to POE media converter.
- E11.2.6 Install outdoor housing for IP surveillance camera; install camera inside housing.
- E11.2.7 Install power supply to camera and outdoor housing.
- E11.2.8 Connect Cat 6 cable from IP surveillance camera to POE media converter.
- E11.2.9 Install UPS unit in a second NEMA4 container below NEMA4 container housing the camera equipment. Secure with two (2) pole-mounting straps.
- E11.2.10 Connect the UPS unit to the IP surveillance camera power supply.
- E11.2.11 Install enclosure heater and thermostat switch in container on DIN rail.
- E11.2.12 Install Medico padlocks on exterior of containers.
- E11.2.13 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.
- E11.2.14 Install POE media converter in Commercial Scale Building electrical room rack unit.
- E11.2.15 Connect Cat 6 cable from POE media converter to City network (CISCO) switch.
- E11.2.16 Install camera license on Genetec Omnicast software (Security Center version 5.5) for each camera.
- E11.2.17 Set up camera in Genetec Security Center® with the following options:
 - (a) WDR on medium setting.
 - (b) White balance set to auto.

- (c) D/N set to on.
- (d) Twenty (20) FPS in alarm state.
- (e) Three (3) FPS outside of the alarm state.
- (f) Motion detection: some masking will be required.

E12. POLE MOUNTED CAMERAS - EMPLOYEE PARKING LOT, ADMINISTRATION BUILDING, AND SOUTH GATE ENTRANCE (EPL-V15, AT-V16, SGE-V17)

E12.1 Products

- E12.1.1 IP Surveillance Camera Type 3
- E12.1.2 NEMA4 Container – 16" x 14" x 10"
- E12.1.3 Thermostat switch
- E12.1.4 Enclosure heater – 5.5" x 2.8" x 2"
- E12.1.5 Accessory, indoor/outdoor housing
- E12.1.6 Padlock adapter for container
- E12.1.7 Pole mount – vertical
- E12.1.8 Pole mount strap
- E12.1.9 Padlock (Medico)
- E12.1.10 UPS power supply
- E12.1.11 Media converter

E12.2 Execution

- E12.2.1 Decommission existing analog cameras (at EPL-V15 and AT-V16).
- E12.2.2 Install a new NEMA4 container at same height as existing container, or 5 metres above existing grade if no existing container.
- E12.2.3 Provide two (2) pole mount straps – secure container
- E12.2.4 Install DIN rail mounting bracket.
- E12.2.5 Install Cat 6 cable to POE media converter.
- E12.2.6 Install outdoor surveillance camera housing; install camera inside housing.
- E12.2.7 Install power supply and POE media converter inside NEMA4 container and connect power supply to IP surveillance camera and outdoor housing.
- E12.2.8 Connect terminated Cat 6 cable from IP surveillance camera to POE media converter.
- E12.2.9 Install UPS unit in a second NEMA4 container below NEMA4 container housing the camera equipment. Secure with two (2) pole-mounting straps.
- E12.2.10 Connect the UPS unit to the power supply.
- E12.2.11 Install enclosure heater and thermostat switch on DIN rail container.
- E12.2.12 Install Medico padlocks on exterior of each container.
- E12.2.13 Adjust each IP surveillance camera FOV as directed by the Contract Administrator.
- E12.2.14 Install one (1) Genetec camera license on Omnicast software (Security Center version 5.5) for each camera.
- E12.2.15 Connect IP surveillance camera to POE media converter in Compost Building.

E12.2.16 Set up camera in Genetec Security Center® with the following options:

- (b) WDR on medium setting.
- (c) White balance set to auto.
- (d) D/N set to on.
- (e) Twenty (20) FPS in alarm state.
- (f) Three (3) FPS outside of the alarm state.

E12.3 Motion detection: some masking will be required.

PART F - SECURITY CLEARANCE

F1. SECURITY CLEARANCE

- F1.1 Each individual proposed to perform Work under this Contract shall be required to obtain a Police Information Check and a Public Safety Verification. The Police Information Check may be obtained from one of the following:
- (a) police service having jurisdiction at his/her place of residence; or
 - (b) Sterling Talent Solutions forms to be completed can be found on the website at: <https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity>; or
 - (c) Commissionaires (Manitoba Division), forms to be completed can be found on the website at: <https://www.commissionaires.ca/en/manitoba/home>.
- F1.2 The original Police Information Check (Form P-612) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner. The applicant shall:
- (a) Provide the original Police Information Check (Form P-612) to the Contract Administrator.
- F1.3 A Sterling Talent Solutions account must be setup prior to requesting individual background checks for any individual. This process should be done 72 hours prior to requesting the first check. The account can be setup using the following link. <https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity>. The Police Information Check must be received by the City directly through Sterling Talent Solutions;
- (a) Bidders shall set up an account with Sterling Talent Solutions under their company name and grant Sterling Talent Solutions permission to share the Police Information Check with the City of Winnipeg;
 - (i) Bidders will then be contacted by Sterling Talent Solutions with instructions on how to complete the Police Information Check; and
 - (ii) if additional assistance is required to obtain the Police Information Check, the Bidder may contact the following Sterling Talent Solutions representative:
Linda Ferens;
email: linda.ferens@sterlingts.com
phone: (204) 999-0912; or
 - (b) Public Safety Verification Checks can be obtained from Sterling Talent Solutions,
 - (i) Bidders will need to setup an account with Sterling Talent Solutions prior to requesting individual background checks.
 - (i) This process should be done 72hrs prior to requesting the first check. Accounts can be setup using the following link.
<https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity>.
 - (ii) Results of the Public Safety Verification Check must be received by the City directly through Sterling Talent Solutions.
 - (iii) Bidders shall set up an account with Sterling Talent Solutions using their company name and grant Sterling Talent Solutions permission to share the Public Safety Verification Check with the City of Winnipeg;
 - (ii) Bidders will then be contacted by Sterling Talent Solutions with instructions on how to complete the Public Safety Verification Check; and
 - (iii) if additional assistance is required to obtain the Public Safety Verification Check, the Bidder may contact the following Sterling Talent Solutions Representative:
Linda Ferens;
email: linda.ferens@sterlingts.com;
phone: (204) 999-0912.

- F1.4 Prior to the award of Contract, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Police Information Check and a Public Safety Verification Check obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform the Work.
- F1.5 Any individual for whom a Police Information Check and/or a Public Safety Verification Check is not provided, or for whom a Police Information Check indicates any convictions or pending charges related to property offences or crimes against another person will not be permitted to perform any Work.
- F1.6 Any Police Information Check and a Public Safety Verification Check obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- F1.7 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated Police Information Check and/or a Public Safety Verification Check. Any individual who fails to provide a satisfactory Police Information Check and/or Public Safety Verification Check as a result of a repeated Police Information Check will not be permitted to continue to perform any Work as specified in F1.1