Correctional Service of Canada
Technical Services
Quebec Region

250 Montée St-François
Laval (Quebec) H7C 1S5

Fire Alarm system replacement
at CCC Sherbrooke
2190 rue Sherbrooke East
Montreal, Qc, H2K 1C7
Project No: 550-2-301-2702 A

Tender documents

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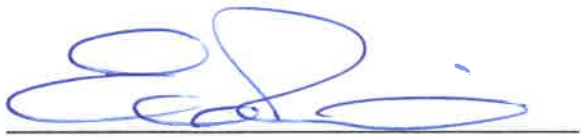

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PART 1 – GENERAL

1.1 RÉFÉRENCES

.1 National Building Code of Canada (NBC) 2015, including all amendments up to the date of bid closing.

1.2 DESCRIPTION OF THE WORK

.1 The project includes the following work: The list below is not necessarily exhaustive and in no way releases the Contractor from the obligation of carrying out the project in its entirety according to generally accepted practices as well as the intentions and general principles as described in these specifications and drawings.

.1 Fire alarm system replacement.

.2 Add Fire alarm devices.

.3 New cabling including raceways.

.4 Demolition including removal of the existing fire alarm system (panel, devices and components, cabling and conductors, etc., as indicated on the drawings and specifications.

.5 Architectural walls and ceiling repairs for the fire alarm system works involved.

.2 Works excluded for the present contract are the energy cost for the electrical power required during this construction.

1.3 SECURITY SCREENING

.1 All workers shall undergo security screening in order to be granted a security classification as required by the Correctional Service of Canada and Public Work and Government Services Canada.

.2 Section 01 35 13 provides a detailed description of the procedures involved in security screening.

.3 At the start of work, a job-site special meeting will be held with institution representatives to define the instructions governing security and site operation in a correctional environment.

1.4 CODES

.1 The specifications will require that the work and materials comply with the National Building Code of Canada (NBC) and all other applicable provincial or local codes. The strictest requirements shall apply in case of contradiction or discrepancy.

.2 The work shall be performed in a manner that meets or exceeds the following requirements:

.1 Contract documents
.2 Specified standards and codes as well as other documents cited as references.

1.5 REQUIRED DOCUMENTS

.1 A copy of the following documents shall be kept at the job site:

.1 Contract drawings;
.2 Specifications;
.3 Amendments;
.4 Amended shop drawings;
.5 Modification orders;
.6 Other contract amendments;
.7 On-site test reports;
.8 Approved work schedule;
.9 Manufacturer installation and start-up instructions;
10. License of occupation of public space.

1.6 WORK SCHEDULE

.1 The successful bidder shall initiate work immediately upon receiving notice that the contract has been awarded. The work covered by this document, including measures to correct construction deficiencies, must be completed within the schedule specified herein. Failure to comply with the schedule shall be dealt with as provided for in the Standard Acquisition Clauses and Conditions (SACC) Manual.

.2 Within **5** business days of contract award, submit a work schedule for the various project phases and the completion date, **which must be within 4** weeks of contract award.

.3 Within **5** business days of contract award, submit security screening applications for approval.

.4 The work sequence is as follows:

.1 Start-up meeting and schedule submission, shop drawings, technical data sheets, and security screening applications for approval.
.2 Approval of documents submitted.
.3 Construction start-up.
.4 Order of works:
  .1 Replacement of main panel devices and cabling.
  .2 The existing fire alarm system shall remain in function full time during the construction period.
.5 Submission of operating and maintenance manuals for approval.
.6 Provisional acceptance.
.7 Staff formation

.8 Correction of deficiencies
.9 Final approval

.5 Within five (5) business days of contract award, the Contractor shall provide, in a format acceptable to the Project Manager, a work schedule indicating:

.1 Dates for submitting shop drawings, lists of materials, and samples.
.2 Delivery dates for the equipment and materials : fire alarm system.
.3 Start-up and completion dates for the work described in each section of the specifications.
.4 Final completion date with respect to the completion date stipulated in the contract documents.

.6 Changes to milestones in the submitted schedule shall be at the discretion of the CSC Project Manager. The schedule shall be updated by the Contractor with the cooperation and approval of the CSC Project Manager.

.7 The existing fire alarm system will be maintained in operation during works. The residents are permanent 24 hours a day.

1.7 ACCEPTANCE OF EQUIVALENTS

.1 Firms suggesting substitutes or replacements for the products given in the specifications, plans, or other contractual clauses must include to relevant technical data sheets for approval by the assessment committee. These substitutes or replacements must be equal or superior to those in the specifications or the bid will be rejected. The financial proposal must reflect the substitutions and replacements.

.2 The Contractor shall be responsible for providing supporting data of equivalence. The substitution request must be presented clearly and include all the details required to analyze it properly.

.3 The main criteria for accepting substitutions are: construction, performance, capacity, dimensions, arrangement of connections, availability of replacement parts, ease of maintenance, delivery times, the existence of similar equipment in service for some time.

.4 If a proposed substitution requires changes to installations shown on plans or in specifications, the General Contractor shall be responsible for such changes and shall also assume responsibility for the ensuing modifications that may be required to the work of specialized subcontractors.

1.8 COST BREAKDOWN

.1 With the bid, the Contractor shall present an itemized breakdown of the costs related to this contract, including the overall contract value, on the bid summary provided as an

attachment. Once approved, the cost breakdown will be used as a baseline for calculating progress payments.

1.9 PAYMENTS

.1 Payments shall be made monthly on a pro rata basis according to work progress. Before submitting an invoice, the Contractor shall submit an itemized request for payment, as per the bid summary, for approval with the percent of progress for each item. Ten percent of the total amount of the request for payment, before tax deductions, will be held back. The hold back is payable upon final acceptance of the work.

1.10 MEASUREMENTS FOR PAYMENT PURPOSES

.1 The Project engineer and/or the consultant must be informed and have received at least (5) days in advance for payment demand so that he can make the measurements required for payment purposes.

1.11 CONTRACTOR'S USE OF THE SITE

.1 The institution must remain fully operational during construction. With this end in view, the CSC Project Manager or the institution's head of security can require the Contractor to halt work immediately on a temporary basis to prevent institution activities from being compromised.

.2 Use of premises: limited access to the job site. Work and affected layout inside the construction site must be carried out by a crew accompanied by an escort provided by CSC see section 01 35 13.

.3 The license of occupation of public space is contractor's responsibility.

.4 The Contractor shall perform the work so as to disturb the occupants as little as possible and, to the degree possible, ensure that normal use can be made of the facilities. The Contractor shall also cooperate with the CSC Project Manager to facilitate performance of the work. The work schedule shall be previously planned and authorized.

.5 Existing services in the buildings must be maintained during the project.

.6 No parking area for vehicles is available for the Contractor and his employees.

1.12 NOISY ENVIRONMENT AND CELL-PHONE USE

.1 No radios or "boom boxes" shall be tolerated at the job site.

.2 Cell telephones are prohibited within the perimeter of the penitentiary.

1.13 JOB-SITE MEETINGS

.1 Job-site meetings shall be held at times and places subject to the approval of the CSC Project Manager.

.2 The Project Engineer/Consultant shall organize job-site meetings, set their dates and times and ensure that minutes are drafted and distributed.

1.14 LOCATION OF EQUIPMENT AND VARIOUS PIECES OF EQUIPMENT

.1 The location of various devices and pieces of equipment as well as the electrical outlets indicated on the drawings and in the specifications must be considered approximate.

.2 The Contractor shall install equipment and devices as well as distribution networks so as to limit hindrances and keep the largest amount of useful space possible while complying with manufacturer recommendations related to safety, access, and maintenance.

1.15 CONCEALED WORK

.1 Unless indicated otherwise, pipes, conduits, ducts, and wiring in floors, walls, and ceilings in finished areas shall be concealed.

1.16 DRILLING AND SEALING

.1 The Engineer's approval shall be obtained before cutting or drilling in bearing members or inserting sleeves.

.2 Drilling and sealing shall be performed so as to ensure that connections are exact and with no play.

.3 Holes and openings must be clean, straight, and smooth.

.4 When the addition of a new structure requires modifications to an existing one, all required drilling, sealing, and other repairs shall be carried out to restore the existing structure to its condition prior to the work.

1.17 EXISTING SYSTEMS

.1 When connections must be made to existing systems, the work shall be carried out at times determined by local authorities and performed so as to minimize disruption of pedestrian and vehicular traffic.

.2 Should installations be discovered during the course of work; the Engineer shall be immediately informed and a written report containing the observations provided to him.

1.18 MODIFICATIONS, ADDITIONS OR RENOVATION OF EXISTING BUILDINGS

.1 The Contractor shall perform the work so as to disturb the occupants as little as possible and, to the degree possible, ensure that normal use can be made of the facilities. The Contractor shall also cooperate with the CSC Project Manager to facilitate performance of the work.

.2 At no time shall the safety measures be relaxed because of the work to be carried out under this contract. The Contractor shall take the steps required to ensure the level of safety required.

.3 The Contractor shall use only those elevators, freight elevators, conveyors, and escalators reserved for his or her use to move materials and personnel. Before the Contractor uses an elevator, the cabin walls shall be protected as directed by the Engineer. The Contractor accepts liability for any damage to such devices, for their safe and proper use, and for any overloading of the existing equipment.

.4 When work is to be carried out in occupied spaces, the Contractor shall provide and install whatever is required to protect the furnishings, equipment, and finish work; install dust barriers, partitions, and temporary notices; and clean the area at the end of each work day.

1.19 SUPPLMENTAL DRAWINGS

.1 The Consultant may provide supplemental drawings for clarification. Such supplemental drawings shall be considered to have the same meaning and scope as the contract documents.

1.20 RESTRICTIONS RELATED TO TOBACCO USE

.1 Restrictions regarding the use of tobacco inside buildings shall be complied with. Smoking inside the buildings is prohibited.

1.21 ASBESTOS

.1 Removing sprayed or troweled-on asbestos can be a health risk. If, during the course of the work, the Contractor encounters materials that appear to be sprayed or troweled-on asbestos, he shall halt work and immediately inform CSC Project Manager. Work shall not be resumed unless so authorized in writing by the Project Manager.

1.22 OPERATING MANUAL

1. The Contractor shall submit, for approval, one (1) copy of an operating manual containing the following items:
   - .1 Table of contents
   - .2 List of suppliers and their contact information
   - .3 Warranties
   - .4 Approved shop drawings
   - .5 Operating and maintenance guides
   - .6 As-built drawings noted in red

.2 After the operating manual approval supply: three (3) paper copies in rigid cover binders and one (1) PDF copy on CD. In addition, supply also one PDF version of as-built drawings noted in red in the operating manual.

.3 The consultants will supply one CAD copy on CD, to a SCC representative, final drawings "as built".

1.23 FORMATION AND INSTRUCTIONS TO PERSONNEL, OPERATING GUIDELINES

.1 The contractor shall provide a formation period and instructions to personnel including operating guidelines as precise requirements stipulated in section 28 31 00.01, article 3.07.

PART 2 – PRODUCTS
Not used

PART 3 – EXECUTION
Not used

END OF SECTION

PART 1- GENERAL

1.1 PURPOSE

.1 To ensure that both the construction project and the institutional operations may proceed without undue disruption or hindrance and that the security of the Institution is maintained at all times.

1.2 DEFINITIONS

.1 "Contraband" means:
- .1 an intoxicant, including alcoholic beverages, drugs and narcotics;
- .2 a weapon or a component thereof, ammunition for a weapon, and anything that is designed to kill, injure or disable a person or that is altered so as to be capable of killing, injuring or disabling a person, when possessed without prior authorization;
- .3 an explosive or a bomb or a component thereof;
- .4 currency over any applicable prescribed limit $50.00;
- .5 any item not described in paragraphs .1 to .4 that could jeopardize the security of a Penitentiary or the safety of persons, when that item is possessed without prior authorization.

.2 "Unauthorized Smoking Items" means all smoking items including, but not limited to, cigarettes, cigars, tobacco, chewing or snuffing tobacco, cigarette making machines, matches and lighters.

.3 "Commercial Vehicle" means any motor vehicle used for the shipment of material, equipment and tools required for the construction project.

.4 "CSC" means Correctional Service Canada.

.5 "Director" means Director or Warden of the Institution as applicable or their representative.

.6 "Construction employees" mean persons working for the general contractor, the sub-contractors, equipment operators, material suppliers, testing and inspection companies and regulatory agencies.

.7 "Departmental Representative" means the Public Works and Government Services Canada (PWGSC) or the Correctional Service Canada (CSC) project manager depending on project.

.8 "Perimeter" means the fenced or walled area of the institution that restrains the movement of the inmates.

.9 Construction zone" means the area as shown on the contract drawings where the contractor will be allowed to work. This area may or may not be isolated from the security area of the institution.

1.3 PRELIMINARY PROCEEDINGS

.1 Prior to the commencement of work, the contractor shall meet with the Director to:
- .1 Discuss the nature and extent of all activities involved in the Project.
- .2 Establish mutually acceptable security procedures in accordance with this instruction and the institution's particular requirements.

.2 The contractor will:
- .1 Ensure that all construction employees are aware of the CSC security requirements.
- .2 Ensure that a copy of the CSC security requirements is always prominently on display at the job site.
- .3 Co-operate with institutional personnel in ensuring that security requirements are observed by all construction employees.

1.4 CONSTRUCTION EMPLOYEES

.1 Submit to the Director a list of the names with date of birth of all construction employees to be employed on the construction site and a security clearance form for each employee license permit copy or identification card with photo.

.2 Allow two (2) weeks for processing of security clearances. Employees will not be admitted to the Institution without a valid security clearance in place and a recent picture identification such as a provincial driver's license. Security clearances obtained from other CSC institutions are not valid at the institution where the project is taking place.

.3 The Director may require that facial photographs may be taken of construction employees and these photographs may be displayed at appropriate locations in the institution or in an electronic database for identification purposes. The Director may require that Photo ID cards be provided for all construction workers. ID cards will then be left at the designated entrance to be picked upon arrival at the institution and shall be displayed prominently on the construction employees clothing at all time while employees are at the institution.

.4 Entry to Institutional Property will be refused to any person there may be reason to believe may be a security risk.

.5 Any person employed on the construction site will be subject to immediate removal from Institutional Property if they:
- appear to be under the influence of alcohol, drugs or narcotics
- behave in an unusual or disorderly manner
- are in possession of contraband

1.5 VEHICLES

.1 Drivers of delivery vehicles for material required by the project shall not require security clearances but must remain with their vehicle the entire time that the vehicle is at the Institution. The director may require that these vehicles be escorted by Institutional staff or Commissionaires while in the Institution.

.2 All unattended vehicles on CSC property shall have windows closed; doors and trunks shall be locked, and keys removed. The keys shall be securely in the possession of the owner or an employee of the company that owns the vehicle.

.3 No trailer shall be permitted to be left outside the hours of work.

1.6 PARKING

.1 The parking area(s) used by the construction employees will be designated by the director. Parking in other locations will be prohibited and vehicles may be subject to removal.

1.7 SHIPMENTS

.1 All shipments of project material, equipment and tools shall be addressed in the Contractor's name to avoid confusion with the institution's own shipments. The contractor must have his own employees on site to receive any deliveries or shipments. CSC staff will NOT accept receipt of deliveries or shipments of any material equipment or tools for the contractor.

1.8 WORK HOURS

.1 Work hours within the Institution are: Monday to Friday 07:30 AM to 4:00 PM.

.2 Work will not be permitted during weekends and statutory holidays without the permission of the Director. A minimum of three days advance notice will be required to obtain the required permission. In case of emergencies or other special circumstances, this advance notice may be waved by the Director.

1.9 OVERTIME WORK

.1 No overtime work will be allowed without permission of the Director. Give a minimum forty-eight (48) hours advance notice when overtime work on the construction project is necessary and approved. If overtime work is required because of an emergency such the completion of a concrete pour or work to make the construction safe and secure, the contractor shall advise the Director as soon as this condition is known and follow the directions given by the Director. Costs to Canada for such events may be attributed to the contractor.

.2 When overtime work, weekend statutory holiday work is required and approved by the Director, extra staff members may be posted by the Director or his designate, to maintain the security surveillance. The actual cost of this extra staff may be attributed to the contractor.

1.10 TOOLS AND EQUIPMENT

.1 Maintain on site a complete list of all tools and equipment to be used during the construction project. Make this inventory available for inspection when required.

.2 Throughout the construction project maintain an up-to-date list of tools and equipment specified above.

.3 Keep all tools and equipment under constant supervision, particularly power-driven and cartridge-driven tools, cartridges, files, saw blades, rod saws, wire, rope, ladders and any sort of jacking device.

.4 Store all tools and equipment in approved secure locations.

.5 Lock all tool boxes when not in use. Keys to remain in the possession of the employees of the contractor.

.6 Scaffolding shall be secured and locked when not erected and when erected, shall be secured in a manner agreed upon with the director.

.7 All missing or lost tools or equipment shall be reported immediately to the Director.

.8 The Director will ensure that the security staff members carry out checks of the Contractor's tools and equipment against the list provided by the Contractor. These checks may be carried out at the following intervals:

.1 At the beginning and conclusion of every construction project.

.2 As per Director’s requirement.

1.11 PRESCRIPTION DRUGS

.1 Employees of the contractor who are required to take prescription drugs during the workday shall obtain approval of the Director to bring a one-day supply only into the Institution.

1.12 SMOKING RESTRICTIONS

.1 Contractors and construction employees are not permitted to smoke inside correctional facilities or outdoors within the perimeter of a correctional facility and must not possess unauthorized smoking items within the perimeter of a correctional facility.

.2 Contractors and construction employees who are in violation of this policy will be requested to immediately cease smoking or dispose of any unauthorized smoking items and, if they persist, will be directed to leave the institution.

.3 Smoking is only permitted outside the perimeter of a correctional facility in an area to be designated by the Director.

1.13 CONTRABAND

.1 Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are prohibited on institutional property.

.2 The discovery of contraband on the construction site and the identification of the person(s) responsible for the contraband shall be reported immediately to the Director.

.3 Contractors should be vigilant with both their staff and the staff of their sub-contractors and suppliers that the discovery of contraband may result in cancellation of the security clearance of the affected employee. Serious infractions may result in the removal of the company from the Institution for the duration of the construction.

.4 Presence of arms and ammunition in vehicles of contractors, sub-contractors and suppliers or employees of these will result in the immediate cancellation of security clearances for the driver of the vehicle.

1.14 ELECTRONIC APPLIANCES

.1 Cell phones, laptops, USG flash drives and other electronic appliances are not permitted within the perimeter of the institution unless prior approval of the Director is received.

1.15 SEARCHES

.1 All vehicles and persons entering institutional property may be subject to search.

.2 When the Director suspects, on reasonable grounds, that an employee of the Contractor is in possession of contraband or unauthorized items, he may order that person to be searched.

.3 All employees entering the Institution may be subject to screening of personal effects for traces of contraband drug residue.

1.16 ACCESS TO AND REMOVAL FROM INSTITUTIONAL PROPERTY

.1 Construction personnel and commercial vehicles will not be admitted to the institution after normal working hours, unless approved by the Director.

1.17 MOVEMENT OF VEHICLES

.1 The contractor shall advise the Director twenty-four (24) hours in advance of the arrival on the site of heavy equipment such as concrete trucks, cranes etc.

.2 Vehicles being loaded with soil or other debris, or any vehicle considered impossible to search, must be under continuous supervision by CSC staff or Commissionaires working under the authority of the Director.

.3 Vehicles shall be refused access to institutional property if, in the opinion of the Director, they contain any article which may jeopardize the security of the institution.

.4 Private vehicles of construction employees will not be allowed within the security perimeter of medium or maximum institutions without the authorizations of the Director.

1.18 MOVEMENT OF CONSTRUCTION EMPLOYEES ON INSTITUTIONAL PROPERTY

.1 Subject to the requirements of good security, the Director will permit the Contractor and his employees as much freedom of action and movement as is possible.

.2 However, notwithstanding paragraph above, the Director may:
- .1 Prohibit or restrict access to any part of the institution.
- .2 Require that in certain areas of the institution, either during the entire construction project or at certain intervals, construction employees only be allowed access when escorted by a member of the CSC security staff or a commissionaire.

.3 Construction employees are not permitted to eat in the officer's lounge or the dining room of the institution.

1.19 SURVEILLANCE AND INSPECTION

.1 Construction activities and all related movement of personnel and vehicles will be subject to surveillance and inspection by CSC security staff members to ensure that established security requirements are met.

.2 CSC staff members will ensure that an understanding of the need to carry out surveillance and inspections, as specified above, is established among construction employees and maintained throughout the construction project.

1.20 STOPPAGE OF WORK

.1 The director may order at any time that the contractor, his employees, sub-contractors and their employees to not enter or to leave the work site immediately due to a security situation occurring within the Institution. The contractor's site supervisor shall note the name of the CSC staff member giving this instruction, the time of the request and obey the order as quickly as possible.

.2 The contractor shall advise the Departmental Representative of this interruption of the work within 24 hours.

1.21 CONTACT WITH INMATES

.1 Unless specifically authorized, it is forbidden to come into contact with inmates, to talk with them, to receive objects from them or to give them objects. Any construction employee doing any of the above will be removed from the site and his security clearance revoked.

.2 It is to be noted that cameras are not allowed on CSC property.

.3 Notwithstanding the above paragraph, if the director approves of the usage of cameras, it is strictly forbidden to take pictures of inmates, of CSC staff members or of any part of the Institution other than those required as part of this contract.

1.22 COMPLETION OF CONSTRUCTION PROJECT

.1 Upon completion of the construction project or, when applicable, the takeover of a facility, the Contractor shall remove all remaining construction material, tools and equipment that are not specified to remain in the Institution as part of the construction contract.

PART 2 – PRODUCTS

Not used

PART 3 – EXECUTION

Not used

END OF SECTION

PART 1 - GENERAL

1.1 CONTENT

1. The general contractor must make sure that during his activities, the public and his employees' health and safety and the protection of the environment will always prevail on cost or schedule issues.

1.2 REFERENCES

.1 Working Canadian Code, part II, Canada Occupational Safety and Health Regulations.

.2 Canadian Standard Association (CSA)

.3 Workplace Hazardous Materials Information System (SIMDUT) /Health Canada.
.1 Data sheet

.4 Act respecting Occupational health and safety, L.R.Q. Chapitre S-2.1.

.5 Safety Code for the construction industry, S-2.1, r.6.

1.3 DOCUMENTS/SAMPLES

.1 Submit all documents and samples in conformity with the section 01 33 00-Submittal Procedures.

.2 10 days before construction start, transmit to the CSC representative and to the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) the health and safety program specific to the construction activity as described in the section 1.8. If necessary, the contractor must update his prevention program to reflect any changes to the initial plans. Following the reception of the prevention program and at any time during the work, the CSC representative can ask for its modifications before work start.

.3 Transmit to the CSC representative a copy of any federal or provincial inspector's inspection reports notice of corrections or recommendations within 24 hours of their reception.

.4 Transmit to the CSC representative any investigation report concerning any accident with injury or pointing out any potential hazard for health and safety within 24 hours of their reception.

.5 Transmit to the CSC representative the data sheet for all controlled product at least three (3) days before they are used on site.

.6 Transmit to the CSC representative a copy of the formation certificates required for the application of the prevention program including:

.1 General health and safety course on work site;
.2 Security agent certificate;
.3 First-aid and CPR on work sites;
.4 Work subject to asbestos conditions;
.5 Work in enclosed spaces;
.6 Locking/securing procedures;
.7 Wearing and adjustment of individual protection equipment;
.8 Forklift truck safe use;
.9 Working platform lift;
.10 and any other formation required by regulations or by the prevention program.

.7 Medical examinations: when required by law, regulation, directive, specification or by a prevention program, the general contractor must:
.1 Before mobilisation, transmit to the CSC representative the medical examination certificate for all surveillance employees and any other employee attending the first site meeting concerned by this article`s first paragraph.
.2 Afterwards, transmit as one goes along and without any delays all medical examination certificates of any new incoming worker concerned by this article's first paragraph.

.8 Emergency plan: the emergency plan, as described in article 1.7.3, must be transmitted to the CSC representative with the prevention program.

.9 Notice of work start: the notice of work start must be transmitted to Commission des normes, de l'équité, de la santé et de la sécurité du travail before the work start and copied to the CSC representative. A copy of this notice must be available and visible on site at all time. During demobilization, the notice of end of work must be transmitted to the CNESST with a copy to the CSC representative.

.10 Engineer's plans and notice of conformity: the general contractor must transmit to the CNESST and to the CSC representative an engineer 'signed and sealed copy of all the plans and notice of conformity required in virtue of the Safety Code for the construction industry (s-2.1, r. 6), of any other law, rules or any clause from the specifications or the contract. A copy of those documents must be available at all time on work site.

.11 Certificate of conformity delivered by the CNESST: the certificate of conformity is a document delivered by the CNESST and confirms that the general contractor complies with the CNESST requirements, that he has paid all amount due in relation with the awarded contract. This document must be transmitted to the CSC representative at the end of work.

1.4 EVALUATION OF THE RISKS

.1 The general contractor must identify all related risks to the various tasks on site.

.2 The general contractor must plan and organize his work in order to favour the elimination of the danger at the source or the collective protection and minimize the use of individual protection equipment. When the use of individual protection equipment is required in situations of falling hazards, the workers must use a safety harness in conformity with the norm CAN/CSA-Z-259.10-M90. The safety belt must not be used as a falling protection.

.3 Any equipment, tool or mean of protection that cannot be installed or used without compromising the health and safety of the workers is considered inadequate for the work.

.4 All mechanical equipment must be inspected before their delivery on site. Before using a mechanical equipment, the general contractor must transmit to the CSC representative a certificate of conformity signed by an approved mechanic. At any time, if the CSC representative suspects a defect or a risk of accident, he can order the immediate shutdown of the machine and require a second inspection performed by a specialist of his choice.

1.5 MEETINGS

.1 A decision-making representative of the general contractor must attend all meetings about job site health and safety issues.

1.6 RULING AGENCY REQUIREMENTS

.1 Comply with all rules, regulations and applicable norms for the execution of the work.

.2 Follow the prescribed norms and rules in order to assure a normal course of events in the work progress in situations of contaminated grounds by toxic products.

.3 Despite the publication date of the indicated norms in the Safety Code for the construction industry, always use its most recent and applicable version during work.

1.7 LOCAL CONDITIONS

.1 The Contractor shall take account of the following particularities on site:
  .1 The work take place in in a detention building in a transition house facility where security constraints are low.

1.8 HEALTH AND SAFETY MANAGEMENT

.1 Accept and assume all tasks and obligations normally assigned to the master-builder in accordance with the Loi sur la santé et la sécurité du travail (L.R.Q., chapitre S-2.1)and the Safety Code for the construction industry (S-2.1, r.6).

.2 Develop a prevention program specific for the work based on identification of the risks and put this program in application from the beginning of work to its demobilization. The prevention program must take into account the information in the article 1.7. It must be transmitted to all person involved in conformity with the article 1.2. The prevention program must include:
- .1 The business policy regarding health and safety;
- .2 The description of the work, the total cost of the work, the schedule with its workforce chart;
- .3 A flowchart of the health and safety`s responsibilities;
- .4 The physical and material organization of the job site;
- .5 The first-aid norms;
- .6 The identified risks on the job site;
- .7 The identification of the risks related to the work to be executed, including the prevention program and their applicability modality;
- .8 The required information ;
- .9 The procedures in situation of accidents/injuries;
- .10 A written commitment from all stakeholders to comply with this prevention program;
- .11 A job site inspection schedule based on the prevention measures.

.3 The general contractor must develop an efficient plan, in reaction with the job site characteristics and conditions. The emergency plan must be transmitted to all involved stakeholders, in conformity with the article 1.2. The emergency plan must include:
- .1 The evacuation procedure;
- .2 The identification of the resources (police, firefighter, ambulance, etc.);
- .3 The identification of the persons in charge of the job site;
- .4 The identification of the first;
- .5 The required formation for the persons in charge of its application;
- .6 And any other information necessary related to the job characteristics.

1.9 RESPONSABILITIES

.1 No matter what is the size of the job site or the number of workers on site, always have an identified competent supervisor responsible of the health and safety. Take all necessary measures to assure the health and safety of peoples and goods on and in the proximity of the job site that could be affected by the execution of the work.

.2 Take all necessary measures to assure the application and the respect of all health and safety requirements indicated in the contractual documents, the federal and provincial regulations, the applicable norms and the prevention program specific for the job site and comply immediately to any prescription or notice of correction issued by the CNESST.

.3 Take all necessary measures to maintain the job site clean and in good order during the work.

1.10 COMMUNICATION AND SIGNAGE

.1 Take all necessary measures to assure an efficient communication of the health and safety information on the job site. As soon as they arrive on the job site, all workers must be informed of the particularities of the prevention program, of their obligations and rights. The general contractor must insist on the worker's right to refuse to execute a work if they believe this work could imperil their health, their safety, their own physical integrity or the one of the other persons on the job site. The general contractor must maintain on the job site an updated register with the information transmitted and the signature of all the workers who received this formation.

.2 The following information and documents must be displayed in an easily accessible place for the workers:

.1 Notice of work start;
.2 Identification of the master-builder;
.3 The business policy regarding health and safety at work;
.4 The prevention program specific to the job site;
.5 The emergency plan;
.6 Data sheet of all controlled products used on the job site;
.7 Minutes of meeting of the construction site committee;
.8 Name of the first-aiders;
.9 Intervention and correction reports published by the CNESST.

1.11 UNFORSEENS

.1 When a source of danger not specified in the specifications and not identified during the preliminary inspection of the job site occurs during the execution of the work, the contractor must immediately stop the work, set up temporary protection measures for the workers and the public and warn the CSC representative verbally and by writing.

.2 The contractor must afterwards proceed with the necessary modifications to the prevention program for the work to resume safely.

1.12 BLASTING

.1 Blasting and any other use of explosives is prohibited unless authorized in writing by the Ministerial Representative.

.2 Any operation involving explosives must be carried out under the immediate supervision of a qualified blaster.

.3 The purchase, transportation, storage and use of explosives must comply with applicable federal and provincial laws:

.1 Canada: Explosives Act (E-17), Explosives Regulations (C.R.C CH.599), Explosive storage and Detonation standards Act, and Transportation of Dangerous Goods Regulations.

.2 Quebec: Explosives Act (E-22) Explosives Regulations (E-22, r.1). Safety Code for the Construction Industry (S-21, r.6), Transportation of Dangerous Goods.

.4 The Contractor must obtain all required permits under the above-mentioned laws and regulations and keep a copy easily accessible at the site of work.

1.13 CAULKING GUNS AND OTHER CARTRIDGE DEVICES

.1 Caulking guns or any other cartridge devices are forbidden on the CSC property. Refer to section 01 35 13.

END OF SECTION

1. SCOPE OF WORK

.1 Preform all cutting, fitting and patching work for the entire project involving the installation of a new fire alarm system including: panel, annunciator, audible and visual devices and alarm devices and detection.

.2 Cutting work includes debiting, sawing and stripping of materials during demolitions while preserving adjacent materials in the sectors and sections concerned.

.3 Smoothing, leveling, sandblasting and painting of finishes and materials should be carried out in continuity with exiting materials and conditions.

2. EXECUTION REQUEST

.1 Submit a written request prior to proceeding with work that may impact structural integrity, water repellency, maintenance and the safety of any functional element. The aesthetic qualities of the apparent elements.

3. MATERIALS

.1 The materials must allow for an identical and compatible installation.

.2 Use new and approved materials for the designated use.

4. PREPARATORY WORK

.1 Inspect and examine existing conditions and repair items likely to be damaged or displaced during cutting and patching work.

.2 After uncovering the items, inspect them for any condition that may affect the performance of the work.

.3 The beginning of the patching work means the acceptance of the existing conditions.

.4 Provide and install live supports to ensure the structural integrity of the adjacent elements. Provide devices and consider methods to protect other elements of the structure against damage.

5. WORK EXECUTION

.1 Perform the cutting, fitting and patching work necessary to complete the work.

.2 Adjust the different elements together so that they fit in well with the rest of the work.

.3 Remove and replace defective or non-compliant items.

.4 Use methods that will not damage other parts of the structure and provide surfaces suitable for patching and finishing.

.5 It is forbidden to use pneumatic or percussions on masonry structures.

.6 Restore the structure with new products.

.7 Align the work around the electrical conduits, sleeves, and cables as well through other traversing elements.

.8 Through the crossings of walls, floors and fire ceilings, obstruct complete voids around openings with fireproof material, over the entire thickness of the element crossed.

.9 Finish surfaces to ensure uniformity with adjacent finishes. In the case of continuous surfaces finish up to the nearest intersection between two elements; in the case of an assembly of elements redo the complete finish.

.10 Unless otherwise specified, conceal ducting and wiring in walls and ceilings of premises and finished areas.

.11 In unfinished rooms with exposed concrete ceilings, the pipes shall be installed on the surface with the required supports and anchors.

.12 Work in the finished and permanently occupied premises must be carried out in the same day (8h00@16h00) start of cutting, installation of piping and patching of surfaces. Finishes (sanding, painting, etc.) will be carried out in a subsequent day.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 28 31 00.01

1.2 REFERENCES

. 1 Canadian Standards Association CSA
.1 CSA C22.10.10, and Quebec modifications-2010. Canadian Electrical Code, Part 1.

1.3 SHOP DRAWINGS

.1 Provide shop drawings as product data in PDF file.

.2 Product Data:
.1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

2 PRODUCTS

2.01 JUNCTION AND PULL BOXES

.1 Construction: welded steel enclosure.

.2 Covers Flush Mounted: 25 mm minimum extension all around.

.3 Covers for surface mounted junction boxes: screw-on flat covers.

.4 Covers for surface mounted pull boxes: cover turned edge with cover, hinge and vandal-proof locked device.

3 EXECUTION

3.01 JUNCTION, AND PULL BOXES INSTALLATION

.1 Install pull boxes as indicated on drawings but accessible locations.

.2 Mount boxes with top not higher than 750 mm above finished floor except where indicated otherwise.

.3 Only main junction and pull boxes are indicated. Install additional boxes as required by CSA C22.10.10.

3.02 IDENTIFICATION

.1 Equipment Identification: pull boxes.

.2 Identification Labels: size 2 indicating system name and identify according to drawings.

.3 Identify pull boxes with red “P TOUCH” and white letter “FIRE ALARM”.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 28 31 00.1

1.02 REFERENCES

.1 Canadian Standards Association CSA
  .1 CSA C22.10.10 Canadian Electrical Code, Part 1and Quebec modifications-2010.

1.03 SHOP DRAWINGS SUBMITTALS

.1 Provide shop drawings as product data in PDF file.

.2 Product Data:
  .1 Provide manufacturers printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

2 PRODUCTS

2.01 OUTLET AND CONDUIT BOXES GENERAL

.1 Size boxes in accordance with CSA C22.10.10

.2 102 mm square or larger outlet boxes as required.

.3 Gang boxes where wiring devices are grouped.

.4 Blank cover plates for boxes without wiring devices.

.5 Combination boxes with barriers where outlets for more than one system are grouped.

2.02 GALVANIZED STEEL OUTLET BOXES

.1 One-piece electro-galvanized construction.

.2 Single and multi-gang flush device boxes for flush installation, minimum size 76 x 50 x 38 mm or as indicated. 102 mm square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.

.3 Utility boxes for outlets connected to surface-mounted EMT conduit, minimum size [102 x 54 x 48] mm.

.4 102 mm square or octagonal outlet boxes for devices outlets.

.5 Extension and plaster rings for flush mounting devices in finished plaster or tile walls.

2.03 MASONRY BOXES

.1 Electro-galvanized steel masonry single and multi-gang boxes for devices flush mounted in exposed block walls.

2.04 CONDUIT BOXES

.1 Cast FS or FD aluminum boxes with factory-threaded hubs and mounting feet for surface wiring of devices.

2.05 FITTINGS - GENERAL

.1 Bushing and connectors with nylon insulated throats.

.2 Knock-out fillers to prevent entry of debris.

.3 Conduit outlet bodies for conduit up to 35mm and pull boxes for larger conduits.

.4 Double locknuts and insulated bushings on sheet metal boxes.

3 EXECUTION

3.01 INSTALLATION

.1 Support boxes independently of connecting conduits.

.2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.

.3 For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm of opening.

4 Provide correct size of openings in boxes for conduit, and cable connections. Do not install reducing washers.

.5 Vacuum clean interior of outlet boxes before installation of wiring devices.

.6 Identify systems for outlet boxes as required.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

.1 Sections 26 05 31, 26 05 32.

1.02 REFERENCES

.1 Treasury Board of Canada Secretariat (TBS), Occupational Safety and Health (OSH)
- .1 Fire Protection Standard.

.2 Underwriter's Laboratories of Canada (ULC), last edition in force.
- .1 CAN/ULC-S524-, Standard for the Installation of Fire Alarm Systems.
- .2 CAN/ULC-S526-, Visible Signal Devices for Fire Alarm Systems, Including Accessories.
- .3 CAN/ULC-S527-, Standard for Control Units for Fire Alarm Systems.
- .4 CAN/ULC-S528-, Manual Stations for Fire Alarm Systems, Including Accessories.
- .5 CAN/ULC-S529-, Smoke Detectors for Fire Alarm Systems.
- .6 CAN/ULC-S530-, Heat Actuated Fire Detectors for Fire Alarm Systems.
- .7 CAN/ULC-S531-, Standard for Smoke Alarms.
- .8 CAN/ULC-S537-, Standard for the Verification of Fire Alarm Systems.

1.03 SHOP DRAWINGS SUBMITTALS

.1 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for multiplex fire alarm system product data shall include product characteristics, performance criteria, physical size, finish and limitations.

.2 Shop Drawings:
- .1 Indicate on shop drawings:
- .2 Detail assembly and internal wiring diagrams for control unit.
- .3 Overall system riser wiring diagram identifying control equipment initiating zones, signaling circuits, indicating conductors, terminations, terminal numbers, conductors and raceways.
- .4 Details for devices.
- .5 Details and performance specifications for control, annunciation with item by item cross reference to specification for compliance.
- .6 Step-by-step operating sequence, cross referenced to logic flow diagram.

1.04 CLOSEOUT SUBMITTALS

.1 Submit in accordance as required at the end of execution.

.2 Operation and Maintenance Data: submit operation and maintenance data for fire alarm system for incorporation into manual.

.3 Include:
- .1 Instructions for complete fire alarm system to permit effective operation and maintenance.
- .2 Technical data - illustrated parts lists with parts catalogue numbers.
- .3 Copy of approved shop drawings with corrections completed and marks removed except review stamps.
- .4 List of recommended spare parts for system.

1.05 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
- .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect materials from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove and dispose packaging material, recycling.

2 PRODUCTS

2.01 DESCRIPTION

.1 Fully supervised, microprocessor-based, fire alarm system, utilizing digital techniques for data control and digital, and multiplexing techniques for data transmission.

.2 System to carry out fire alarm and protection functions; including receiving alarm signals; initiating alarm as required; supervising components and wiring; actuating annunciators and auxiliary functions; initiating trouble signals and signaling.

.3 Addressable, single stage system.

.4 Modular in design to allow for future expansion.

.5 Operation of system shall not require personnel with special computer skills

.6 Smoke detectors in bedrooms shall include an integrated audible signal. In one (1) room as indicated on drawing, the smoke detector will include an audible signal and a visual indicating integrated strobe lamp. Also, the smoke detectors in the bedrooms shall be programmed to give an alert signal to the main panel and annunciator without a general alarm in the building. If required, security personnel could emit the general alarm by activating a manual station nearby, annunciator or main panel.

.7 System to include:

.1 Central Control Unit in separate enclosure with power supply, stand-by batteries, central processor with microprocessor and logic interface, main system memory, input-output interfaces for alarm receiving, annunciation/display, and program control/signaling.

.2 Power supplies.

.3 Initiating/input circuits.

.4 Output circuits.

.5 Auxiliary circuits.

.6 Wiring.

.7 Manual and automatic initiating devices.

.8 Audible [and visual] signaling devices.

.9 End-of-line resistors.

.10 Remote, annunciator.

.11 [Historic event recorder].

.8 Equipment and devices: ULC listed and labelled and supplied by single manufacturer.

.9 Power supply: to CAN/ULC-S524.

.10 Audible signal devices: to CAN/ULC-S524.

.11 Visual signal devices: to CAN/ULC-S526.

.12 Control unit: to CAN/ULC-S527.

.13 Manual pull stations: to CAN/ULC-S528.

.14 Thermal detectors: to CAN/ULC-S530.

.15 Smoke detectors: to CAN/ULC-S529.

.16 Smoke alarms: to CAN/ULC-S531.

.17 Regulatory Requirements:

.1 To TBS Fire Protection Standard.

.2 Subject to Fire Commissioner of Canada (FC) approval.

.3 Subject to FC inspection for final acceptance.

.4 To Canadian Forces Fire Marshal approval.

.5 System components: listed by ULC and comply with applicable provisions of NBC Local Provincial Building Code and meet requirements of local authority having jurisdiction.

2.02 SYSTEM OPERATION: SINGLE STAGE - SIGNALS ONLY

.1 Actuation of any alarm initiating device to:
- .1 Cause electronic latch to lock-in alarm state at central control unit.
- .2 Indicate zone of alarm at central control unit and remote annunciator.
- .3 Cause audible signaling devices to sound continuously [throughout building] and at central control unit.
- .4 Transmit signal to security service and remote supervision.
- .5 Cause air conditioning and ventilation fans to shut down or to function to provide required control of smoke movement.
- .6 Cause fire doors and smoke control doors, if normally held open, to close automatically.

.2 Acknowledging alarm: indicated at central control unit.

.3 Ensure that it is possible to silence signals by "alarm silence" switch at control unit, after 60 seconds period of operation.

.4 Subsequent alarm received after previous alarm has been silenced, to re-activate signals.

.5 Actuation of supervisory devices to:
- .1 Cause electronic latch to lock-in supervisory state at central control unit [and data gathering panel/transponder].
- .2 Indicate respective supervisory zone at central control unit and at [remote annunciator] [display].
- .3 Cause audible signal at central control unit to sound.
- .4 Activate common supervisory sequence.

.6 Resetting alarm supervisory device not to return system indications/functions back to normal until control unit has been reset.

.7 Trouble on system to:
- .1 Indicate circuit in trouble at central control unit.
- .2 Activate "system trouble" indication, buzzer and common trouble sequence. Acknowledging trouble condition to silence audible indication; whereas visual indication to remain until trouble is cleared and system is back to normal.

.8 Trouble on system: suppressed during course of alarm.

.9 Trouble condition on any circuit in system not to initiate alarm conditions.

2.03 CONTROL PANEL

.1 Central control unit. The central unit shall be a two-stage control.
- .1 Suitable for communication style: to CAN/ULC-S524.
- .2 Features specified are minimum requirements for microprocessor-based system with digital data control and digital multiplexing techniques for data transmission.
- .3 Capacity of addressable monitoring and control/signal points. Points may be divided between 2 communication channels in distributed system, each channel operating independently of other. Faults on one communication channel not to affect operation of another channel.
- .4 System to provide for priority reporting levels, with fire alarm points assigned highest priority, supervisory and monitoring lower priority, and third priority for troubles. Possible to assign control priorities to control points in system to guarantee operation or allow emergency override as required.
- .5 Integral power supply, battery charger and standby batteries.
- .6 Basic life safety software: retained in nonvolatile Erasable Programmable Read-Only-Memory (EPROM). Extra memory chips: easily field-installed. Random-Access-Memory (RAM) chips in panel to facilitate password-protected field editing of simple software functions (i.e. zone labels, priorities) [and changing of system operation software].
- .7 Circuitry to continuously monitor communications and data processing cycles of microprocessor. Upon failure, audible and visual trouble indication to activate.
- .8 Communication between control panel and remote to be supervised. Should communications fail between control panel and remote units, audible and visual trouble to be indicated at CCU. Data communication to be binary DC, baseband, time-division multiplex, half-duplex. Each data channel: capable of communicating up to distance of 3,000 m.
  - .1 Communication between nodes in networked system to be supervised. Should communications fail between any 2 nodes, other nodes on loop to continue to communicate with each other and programmed functions on communicating nodes to continue operating.
- .9 Support up to RS-232-C I/O ports. CCU output: parallel ASCII with adjustable baud rates to allow interface of any commercially available printer, terminal or PC.
- .10 Equipped with software routines to provide Event-Initiated-Programs; change is status of one or more monitor points, may be programmed to operate any or all of system's control points.
- .11 Software and hardware to maintain time of day, day of week, day of month, month and year.
- .12 Software to operate variable sensitivity addressable smoke detectors and annunciate their status and sensitivity settings at control panel.

2.04 POWER SUPPLIES

.1 120 V, 60 Hz as primary source of power for system.

.2 Voltage regulated, current limited distributed system power.

.3 Primary power failure or power loss (less than 102 V) will activate common trouble sequence.

.4 Interface with battery charger and battery to provide uninterruptible transfer of power to standby source during primary power failure or loss.

.5 During normal operating conditions fault in battery charging circuit, short or open in battery leads to activate common trouble sequence and standby power trouble indicator.

.6 Standby batteries: sealed, maintenance free.

.7 Continuous supervision of wiring for external initiating and alarm circuits to be maintained during power failure.

2.05 INITIATING/INPUT CIRCUITS

.1 Receiving circuits for alarm initiating devices such as manual pull stations, smoke detectors, heat detectors and water flow switches, wired in configuration to central control unit.

.2 Alarm receiving circuits (active and spare): compatible with smoke detectors and open contact devices.

.3 Actuation of alarm initiating device: cause system to operate as specified in "System Operation".

2.06 ALARM OUTPUT CIRCUITS

.1 Alarm output circuit: connected to signals, wired in configuration to central control unit.

.1 Signal circuits' operation to follow system programming; capable of sounding horns continuously. Each signal circuit: rated at [2] A, 24 VDC; fuse-protected from overloading/overcurrent].

.2 Manual alarm silence, automatic alarm silence and alarm silence inhibit to be provided by system's common control.

2.07 AUXILIARY CIRCUITS

.1 Auxiliary contacts for control functions.

.2 Actual status indication (positive feedback) from controlled device.

.3 Alarm on system to cause operation of programmed auxiliary output circuits.

.4 Upon resetting system, auxiliary contacts to return to normal or to operate as pre-programmed.

.5 Auxiliary circuits: rated at 2 A, 24 Vdc or 120 Vac, fuse-protected

2.08 WIRING

.1 Twisted copper conductors: rated 120V.

.2 To initiating circuits: 18 AWG minimum, and in accordance with manufacturer's requirements.

.3 To signal circuits: 16 AWG minimum, and in accordance with manufacturer's requirements, FT-4 type.

.4 To control circuits: 14 AWG minimum, and in accordance with manufacturer's requirements, FT-4 type.

2.09 MANUAL ALARM STATIONS

.1 Addressable manual pull station.
- .1 Pull lever, surface semi-flush wall mounted type, single action, single stage, electronics to communicate station's status to addressable module over 2 wires and to supply power to station. Station address to be set on station in field.

2.10 AUTOMATIC ALARM INITIATING DEVICES

.1 Addressable thermal fire detectors, combination fixed temperature and rate of rise, non-restorable fixed temperature element, self-restoring rate of rise, fixed temperature 57 or 88 degrees C, rate of rise 8.3 degrees C per minute.
- .1 Electronics to communicate detector's status to addressable module.
- .2 Detector address to be set on detector base in field.

.2 Addressable smoke detector.
- .1 Photo-electric type.
- .2 Electronics to communicate detector's status to addressable module.
- .3 Detector address to be set on detector base in field.

.3 Addressable variable-sensitivity smoke detectors in rooms.
- .1 Photo-electric type.
- .2 Electronics to communicate detector's status to addressable module.
- .3 Detector address to be set on detector base in field.
- .4 Sensitivity settings: 3 settings, determined and operated by control panel. No shifting in detector sensitivity due to atmospheric conditions (dust, dirt) within certain parameters.

.5 Ability to annunciate minimum of 2 levels of detector contamination automatically with trouble condition at control panel.

2.11 AUDIBLE SIGNAL DEVICES

.1 Horns: db, 24 V dc, red color with integrated strobe.

2.12 VISUAL ALARM SIGNAL DEVICES

.1 Strobe type: flashing, white, 24 V dc.

.2 Designed for surface mounting on ceiling or walls as indicated.

2.13 REMOTE ANNUNCIATOR

.1 Remote alphanumeric type, with designation cards to indicate zones.

.2 Display:
- .1 Alarms and troubles for alarm initiating circuits.
- .2 Supervisory alarms and troubles for supervisory initiating circuits.
- .3 Common system trouble.

.3 Trouble buzzer:
- .1 Acknowledging trouble at main panel to silence trouble buzzers in system.

.4 Supervised, with LED test button for the alarm and trouble acknowledge button.

.5 Minimum wiring configuration with main panel and remote annunciator.

2.14 AS-BUILT RISER DIAGRAM

.1 Fire alarm system riser diagram: in glazed frame on black lamicoid sheet with bevelled edges, white lettering and designations, minimum size 600 x 600 mm.

2.15 ANCILLARY DEVICES

.1 Remote relay unit to initiate fan shutdown.

3 EXECUTION

3.01 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for fire alarm installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of DCC Representative and Consultant.

.2 Inform DCC Representative and Consultant of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from DCC Representative and Consultant.

3.02 INSTALLATION

.1 Install systems in accordance with CAN/ULC-S524.

.2 Install central control unit and connect to ac power supply, dc standby power.

.3 Install manual alarm stations and connect to alarm circuit wiring.

.4 Locate and install detectors and connect to alarm circuit wiring. Mount detectors more than 1 m from air outlets. Maintain at least 600 mm radius clear space on ceiling, below and around detectors.

.5 Connect alarm circuits to main control panel.

.6 Install horns and visual signal devices and connect to signaling circuits.

.7 Connect signaling circuits to main control panel.

.8 Install end-of-line devices [at end of alarm and signaling circuits].

.9 Install remote annunciator panels and connect to annunciator circuit wiring.

.10 Install door releasing devices.

.11 Install remote relay units to control fan shut down.

.12 Sprinkler system: wire alarm and supervisory switches and connect to control panel.

.13 Splices are not permitted.

.14 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.

.15 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.

.16 Identify circuits and other related wiring at central control unit, annunciator, and terminal boxes.

3.03 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Common Work Results for Electrical and CAN/ULC-S537.

.2 Fire alarm system:

.1 Test such device and alarm circuit to ensure manual stations, thermal and smoke detectors transmit an alarm to the control panel and actuate the alarm required as the function mode prescribed.

.2 Check annunciator panel to ensure zones are shown correctly.

.3 Simulate grounds and breaks on alarm and signaling circuits to ensure proper operation of systems.

.4 Addressable circuits system:

.1 Test each conductor on all addressable links for capability of providing 3 or more subsequent alarm signals on each side of single open-circuit fault condition imposed near midmost point of each link. Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.

.2 Test each conductor on all addressable links for capability of providing 3 or more subsequent alarm signals during ground-fault condition imposed near midmost point of each link. Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.

.3 Provide final PROM program re-burn for system to DCC Representative and Consultant incorporating program changes made during construction.

3.04 CLEANING

.1 Progress Cleaning: clean work areas as required.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

.3 Waste Management: separate waste materials for recycling.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.05 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by fire alarm system installation.

3.06 MAINTENANCE

.1 Provide individual price on tender form for subsequent PROM re-burns. Price: good for one (1) year from date of project completion.

.2 Provide individual price on tender form for temporary program changes during construction period, to include zone labels, control functions, system operation.

3.07 FORMATION AND INSTRUCTIONS TO PERSONNEL, OPERATING GUIDELINES

.1 Staff training and instructions.

.1 The contractor and the manufacturer/supplier of the fire alarm system must provide a four (4) hour training period.

.2 Training will take place after the audit, but before proceeding with the substantial acceptance visit, the day on which the CCS will take possession of the equipment and the guarantee .

.3 Training must include on site demonstrations to train staff in use and maintenance.

.4 Training materials must include a manual for staff of at least six (6) copies.

.5 It is essential that personnel manipulate the components to become familiar with the new fire alarm system involving the use and maintenance of equipment.

.2 Users Guide

.1 The User or Maintenance guides should include:

- title page and table of contents.
- guarantee with the duration and explanation of the content.
- introduction, description of the hardware system.
- detailed synoptic diagram.
- description of operations and explanations of circuits and component parts
- test and adjustment method
- complete list of parts
- data of the type of wiring
- drawings, details, and diagrams
- drawings, “as built” dimensions of 28cm x 43cm.

.2 End of project documents must be completed and submitted prior to substantial acceptance, at which time CCS will take possession of the equipment and the warranty will commence.

END OF SECTION