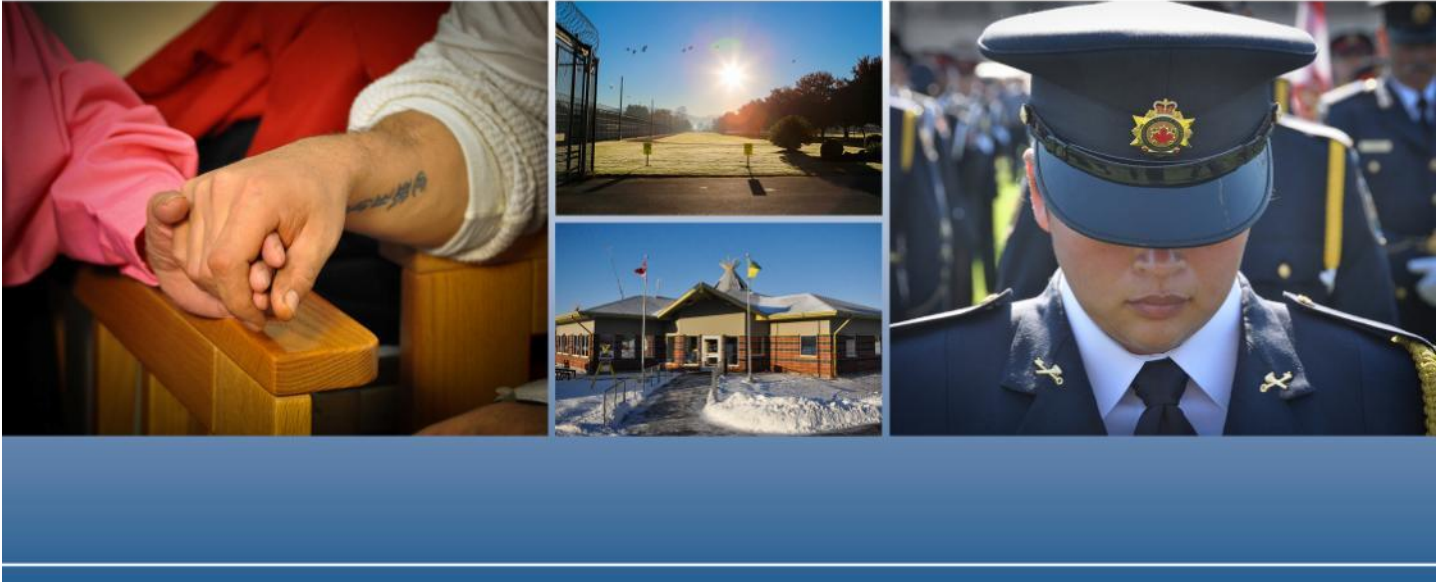


SERVICE CORRECTIONNEL CANADA

TRANSFORMONS DES VIES. PROTÉGEONS LES CANADIENS.

CORRECTIONAL SERVICE CANADA

CHANGING LIVES. PROTECTING CANADIANS.



CALL FOR TENDER DOCUMENT

TECHNICAL SPECIFICATIONS

CSC file name and number:

550-2-343-3905

FENCE INSTALLATION FOR THE REGIONAL RECEPTION CENTER



Service correctionnel
Canada

Correctional Service
Canada

Canada



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01 00 50

GENERAL REQUIREMENTS

General Requirements

PART 1 - GENERALITIES

1.1 REFERENCES

- .1 2005 National Building Code of Canada (NBC), including all amendments up to the bid closing date.

1.2 WORK DESCRIPTION

.1 The project includes the following points. The list below is not necessarily complete and does not detract from the obligation of the contractor to complete the entire project in accordance with good engineering practice, general intentions and principles, as described further in this quote and drawings.

- a. Provide and install a new fence section,
- b. Provide and install a single pivoting barrier (manual) for pedestrians;
- c. Provide and install a dual pivoting barrier for vehicles or equipment (manual).

1.3 SECURITY CONTROL

- .1 All workers will be required to undergo a security check in order to be accredited to a level of security as required by the Correctional Service of Canada and Public Works & Government Services Canada.
- .2 Section 01 35 13 describes the detailed procedures for the security investigation
- .3 At the beginning of the project, a special assembly for the construction site will be held in the presence of the representatives of the establishment to define the instructions of security and work on the building site in the prison.

1.4 CODES

- .1 Perform work in accordance with the National Building Code of Canada (NB) and any applicable provincial or local codes. In case of discrepancy or contradiction, the most stringent requirements will prevail.
- .2 Execute work to meet all requirements :
 - .1 Contractual documents;
 - .2 Specified standards and codes as well as other documents referenced.

1.5 REQUIRED DOCUMENTS

- .1 Keep a copy of each of the following documents on site:
 - .1 Contractual drawings
 - .2 Quotations;
 - .3 Addendum;
 - .4 Revised shop drawings;
 - .5 Orders of amendment
 - .6 Other amendments to contracts;
 - .7 Field test reports;
 - .8 Approved work schedule;
 - .9 Installation and operating instructions provided by the manufacturers.

1.6 WORK CALENDAR

- .1 A estimated work schedule in Annex D must be completed by the contractor and submitted at the same time as their quotation.
- .2 Begin the planned work schedule immediately after receiving notification of acceptance of your offer.
The work that is subject to this document, including repairs to construction defects, must be completed within the time frame specified in this document. Measures will be taken in failure to adhere to the schedule in

GENERAL REQUIREMENTS

accordance with Standard Procurement Terms and Conditions for Public Works and Government Services Canada (PWGSC).

- .3 Within five (5) business days of contract award, submit a detailed schedule of work indicating the progress of the various stages of the project and the date of completion of the work that will be fixed as expected with CSC.
- .4 Within ten (10) business days of contract award, submit shop drawings, technical data sheets, samples, and security clearance forms for approval.
- .5 The sequence of work is defined as follows:
 - .2 Approval of submitted documents;
 - .3 Start of construction;
 - .4 Submit operating and maintenance manuals;
- .6 Within five (5) business days of contract award, the Contractor must provide, in a form accepted by project manager, a schedule of work indicating:
 - .1 Submission dates for shop drawings, material lists and samples;
 - .2 Delivery dates for the following equipment and materials: fencing and swing gate materials.
 - .3 The start and end dates of the work described in each section of the specifications;
 - .1 Define the different steps of the work to separate them into zones.
See Appendix D for the proposed site plan.
 - .2 Set the dates for these different steps.
 - .4 The final date of completion of the work in relation to the completion time stipulated in the contract documents.
- .7 Provisional revisions to the status of the work, based on the submitted schedule, will be made at the discretion of the CSC project manager. The schedule will be updated by the Contractor, with the cooperation and approval of the CSC project manager.

1.7 ACCEPTANTS OF EQUIVALENTS

- .1 No equivalence or substitution will be accepted.

1.8 AMBIANT NOISE ON THE JOB SITE

- .1 No radio or loud equipment is allowed on the job site.

1.9 JOB SITE MEETING

- .1 Hold site meetings at times and locations approved by the CSC project manager.
- .2 Notify all participants of a job site meeting.
- .3 The contractor organizes the jobsite meetings, by setting the date and time, and must prepare and distribute the reports.
- .4 Provide the required materials, such as regulations and templates, to facilitate the task of inspecting staking work.
- .5 Provide the stakes and other survey posts required for staking work.

1.10 EXISTING NETWORKS

- .1 In the event that unidentified facilities are discovered throughout the construction, notify the departmental representative immediately and provide a written report on the findings.

GENERAL REQUIREMENTS

1.11 ADDITIONAL DRAWINGS

- .1 The department representative may provide the contractor with additional drawings for clarification. These additional drawings will have the same meaning and scope as if they were part of the contract documents.

1.12 OPERATING MANUAL

- .1 The Contractor must provide, for approval, three (3) copies of an Operating Manual that include the following items:
 - .1 Table of contents
 - .2 A list of their suppliers, sub-contractors and their contact details.
 - .3 Letters of guarantee
 - .4 Approved shop drawings
 - .5 Maintenance and operation manuals

PART 2 - PRODUCTS

2.1 NOT APPLICABLE

PART 3 - EXECUTION

3.1 NOT APPLICABLE

END OF SECTION

01 35 13

CSC SECURITY
REQUIREMENTS

PARTIE 1 - GENERAL

1.1 SECTION CONTENTS

.1 Ensure that the construction project and the activities of the institution are carried out without interruption or undue hindrance and that the security of the establishment is maintained at all times.

1.2 DEFINITIONS

- .1 "Prohibited objects" means:
 - .1 Intoxicating substances, including alcoholic beverages, drugs or narcotics;
 - .2 Weapons, ammunition and any object designed to kill, injure or incapacitate a person, or any object modified or assembled for such purposes, the possession of which has not been previously authorized;
 - .3 Explosives or bombs, or their components;
 - .4 Amounts of money, exceeding regulatory limits \$ 25.00;
 - .5 Any other article not described in paragraphs 1) to 4), possessed without prior authorization, and may endanger the safety of persons or the penitentiary.
- .2 "Unauthorized smoking items" means tobacco products including, but not limited to, cigarettes, cigars, tobacco, chewing tobacco and snuff, cigarette rollers, matches and lighters that are considered unauthorized items.
- .3 "Commercial vehicle" means any motorized vehicle intended for the transportation of equipment, equipment or tools required for the construction project.
- .4 "CSC" means Correctional Service Canada.
- .5 "Director" means the director of the institution, as the case may be, or their authorized representative.
- .6 "Construction Employees" means the employees of the prime contractor, of the sub-contractors, equipment operators, equipment suppliers, testing and inspection laboratories, and regulatory agencies .
- .7 "Department Representative" means the project manager of Public Works, Government Services Canada (PWGSC) or Correctional Service Canada (CSC) depending on the project.
- .8 "Perimeter" means the area of the facility surrounded by secure fences or walls limiting the movement of inmates.
- .9 "Construction Zone" means the area where, as indicated in the Contract Documents, the Contractor will be permitted to work. It may or may not be isolated from the security enclosure of the institution.
- .10 The construction zone is located outside the secure perimeter of the inmates and includes building C15 (electrical room and diesel tank room) and the outdoor area on the north side of building C15.

1.3 REFERENCES

- .1 Quebec laws, regulations and standards in force:
 - .1 Occupational Health and Safety Act
 - .2 Safety Code for Construction Work (L.R.Q., S-2.1, r.6)
 - .3 Occupational Health and Safety Regulations.

1.4 PRELIMINARY MESURES

- .1 Prior to commencing work, the Contractor must meet with the Department Representative to:
 - .1 Discuss the nature and scope of all activities related to the project;
 - .2 Establish acceptable security measures on both sides in accordance with this directive and the specific needs of the institution.
- .2 The Contractor must:
 - .1 Ensure all construction employees are aware of CSC security requirements;
 - .2 Ensure that CSC's security requirements are always prominently posted on the job site;
 - .3 Work with facility staff to ensure construction employees meet all safety requirements.

1.5 CONSTRUCTION EMPLOYEES

- .1 The Contractor must provide the Departmental Representative with a list of names with dates of birth for all employees to work on the construction site, as well as a completed security check form for each employee.
- .2 Allow two (2) weeks for processing security clearance requests. No employee will be admitted to the institution without a duly approved security clearance or a recent photo ID, such as a provincial driver's license. Security clearances are unique to each CSC institution and any authorization obtained from another institution is not valid for the institution where this project will be conducted.
- .3 The Director may require the faces of construction employees to be photographed and photographs to be posted at appropriate locations in the establishment or transferred to a database for identification purposes. The Director may require that photo ID cards be produced for all construction employees. These cards must be left at the designated entrance where they will be given to the cardholder upon arrival at the establishment. They must be worn prominently on their clothing at all times while at the institution.
- .4 Access to the property of the establishment is prohibited to anyone who has reason to believe that could pose a security risk.
- .5 Anyone employed on the construction site will be immediately removed from the property of the establishment if:
 - .1 He appears to be under the influence of alcohol, drugs or narcotics;
 - .2 He has abnormal or disorderly behavior;
 - .3 He is in possession of a forbidden object.

1.6 VEHICLES

- .1 Anyone leaving an unattended vehicle on the CSC property must close the windows, lock the doors and trunks and remove the keys. The owner of the vehicle or the employee of the company owning the vehicle must ensure that the keys are kept secure on his person.
- .2 At any time, the director may limit the number and type of vehicles allowed on the premises of the establishment.
- .3 Equipment deliverers for the project may be subject to a security check and must not move away from their vehicle for the duration of their stay in the facility. The director may require that they be accompanied by an employee of the establishment or a security guard.
- .4 If the Director permits trailers to be left inside the institution's security perimeter, the doors must remain securely locked at all times, as must the windows, when trailers are left unoccupied.

The windows will be protected by an expanded metal lattice. All trailers used for contractor storage, both inside and outside the perimeter, must be securely locked when not in use.

1.7 PARKING

.1 The manager will identify the authorized parking areas for vehicles of construction employees. Parking in other locations will be prohibited and offending vehicles may be towed.

1.8 DELIVERIES

.1 Any delivery of materials, equipment or tools for the project must be addressed to the Contractor to distinguish it from shipments intended for the establishment. The Contractor must ensure that his employees are on site to receive shipments as CSC staff will not accept any deliveries of materials, equipment or tools for the Contractor.

1.9 TELEPHONES

.1 No telephone, fax or computer facilities connected to the Internet will be permitted within the security perimeter of the establishment without the prior authorization of the Director.

.2 The Director will ensure that telephones, fax machines and computers with an Internet connection are not installed in a place accessible to inmates. Access to each computer will be protected by a password, thus prohibiting any Internet connection by unauthorized personnel.

.3 Unless expressly authorized by the Director, cellular or digital cordless telephones, including but not limited to messaging devices, pagers, BlackBerries, telephones used as two-way radios, are prohibited in the establishment. If allowed their user will not allow the use by the inmates.

.4 The director may authorize but restrict the use of two-way radios.

1.10 WORKING HOURS

.1 The working week at the establishment runs from Monday to Friday, from 7:00 to 16:00 p.m.

.2 Work is not permitted on weekends or statutory holidays without the permission of the Director, which must be requested at least seven days in advance. In the event of an emergency, or in any other circumstance, this period may be canceled by the Director.

.3 In the event that the contractor must cancel one or more working days, he must notify the representative of the Ministry at least 24 hours in advance. Costs incurred by Canada as a result of this situation could be charged to the contractor. See table below for rates.

CSC SECURITY REQUIREMENTS

FIRM ALL INCLUSIVE HOURLY BILLING RATES/TAUX HORAIRES FERMES TOUT COMPRIS À FACTURER						
Level/Niveau	Unranked/ Non Gradés	Supervisor/Surveillant				
		Supervisory Premium Included/la prime de surveillance a inclus				
		1	2	3	4	5
Basic Level/ Niveau de base	23.67	24.74	25.81	27.95	30.09	32.23
Overtime/ Temps Supplé	34.42	35.96	37.52	40.64	43.75	46.86
Stat Worked/Stat Travaillé	45.16	47.21	49.25	53.33	57.41	61.50
Level 1/Niveau 1	24.10	25.18	26.24	28.38	30.52	32.67
Overtime/ Temps Supplé	35.04	36.58	38.14	41.26	44.37	47.47
Stat Worked/Stat Travaillé	45.98	48.02	50.06	54.15	58.22	62.30
Level 2/Niveau 2	24.38	25.45	26.51	28.66	30.80	32.94
Overtime/ Temps Supplé	35.45	37.01	38.56	41.69	44.79	47.90
Stat Worked/Stat Travaillé	46.52	48.58	50.61	54.69	58.77	62.86
Level 3/Niveau 3	25.09	26.16	27.22	29.37	31.51	33.65
Overtime/ Temps Supplé	36.49	38.05	39.59	42.71	45.83	48.94
Stat Worked/Stat Travaillé	47.89	49.93	51.97	56.05	60.13	64.21
Level 4/Niveau 4	25.81	26.88	27.94	30.09	32.22	34.37
Overtime/ Temps Supplé	37.53	39.08	40.64	43.76	46.87	49.97
Stat Worked/Stat Travaillé	49.25	51.30	53.33	57.41	61.50	65.58
Level 5/Niveau 5	26.52	27.60	28.66	30.81	32.94	35.09
Overtime/ Temps Supplé	38.56	40.12	41.68	44.79	47.90	51.01
Stat Worked/Stat Travaillé	50.61	52.66	54.69	58.77	62.86	66.94
Level 6/Niveau 6	27.23	28.31	29.37	31.52	33.65	35.80
Overtime/ Temps Supplé	39.60	41.16	42.71	45.84	48.95	52.05
Stat Worked/Stat Travaillé	51.97	54.01	56.05	60.13	64.21	68.29
Level 7/Niveau 7	27.95	29.02	30.09	32.23	34.37	36.52
Overtime/ Temps Supplé	40.64	42.19	43.75	46.87	49.97	53.09
Stat Worked/Stat Travaillé	53.33	55.37	57.41	61.50	65.58	69.65
Level 8/Niveau 8	29.37	30.44	31.51	33.65	35.79	37.93
Overtime/ Temps Supplé	42.71	44.27	45.83	48.95	52.05	55.16
Stat Worked/Stat Travaillé	56.05	58.09	60.13	64.21	68.29	72.38

1.11 WORK OUTSIDE NORMAL WORKING HOURS

.1 Director's permission is required for any work performed outside normal working hours. The Contractor must give at least 48 hours notice when it is necessary to perform approved work outside normal working hours. If overtime is required to complete an urgent task, for example, to pour concrete or to ensure construction safety, the Contractor must notify the Departmental Representative as soon as he or she is on duty, and as soon as he is aware of such need, then follow the directions given by the director. Costs incurred by Canada as a result of this situation could be charged to the contractor.

.2 When performing work outside normal hours, or working on a weekend or statutory holiday, and such additional work is authorized by the Director, the Director or the person designated by the Director may assign additional security personnel. The costs associated with this assignment may be billed to the contractor.

CSC SECURITY REQUIREMENTS

1.12 TOOLS AND EQUIPEMENT

- .1 Maintain on site a complete list of tools and equipment that will be used during the building project. Make this list available for inspection when required.
- .2 "Prohibited" tools:
 - a. The use of RAMSET cartridge hammers is strictly forbidden in institutions.
 - b. Oxyacetylene torches must be stored in a locked place at all times. Oxygen cylinders must be stored in a place separate from torches and must be locked at all times. The inventory must be done at the end of the day.
 - c. Percussion hammers, cables or ropes and ladders are prohibited except in a location to which detainees have no access.
- .3 Maintain the list of tools and equipment specified above throughout the construction project.
- .4 Never leave tools unattended, especially power tools, cartridge tools, cartridges, files, saw blades, carbide saws, wires, ropes, ladders, and any type of lifting equipment.
- .5 Store tools and equipment in approved safe locations.
- .6 Lock all toolboxes after use. Contractor's employees must keep the keys with them at all times.
- .7 Secure and lock un-erected scaffolds; when erected, the scaffolding must be securely fixed to the satisfaction of the director.
- .8 Immediately notify the ministry official of any loss or disappearance of any tool or equipment.
- .9 The Director will ensure that security personnel perform controls of the Contractor's tools and equipment, based on the list provided by the Contractor:
 - a. At the beginning and end of each construction project;
 - b. Every week, if the project lasts more than a week.
- .10 The Contractor shall ensure that tools and equipment are removed daily from the job.
- .11 Some tools / equipment, such as cartridges and hacksaw blades, are very stringent items. The contractor will be given at the beginning of the day a sufficient quantity for the work of the day. The blades / cartridges used will be delivered to the representative at the end of each working day.
- .12 When propane or natural gas is used to heat the project, the establishment will require an employee of the contractor to supervise the construction site outside of working hours.

1.13 LOCKS AND KEYS

- .1 All locks required to lock the areas affected by the work will be provided by CSC and the keys required to open them, will be in the possession of security guard responsible for monitoring the site.
- .2 The supply of locks and keys required to lock the new fence sections is to be provided by the contractor.

1.14 PRESCRIBED MEDICATION

- .1 Contractor employees who are required to take prescription medication during the work day are required to obtain authorization from the Director to be allowed to bring the daily dosage with them.

1.15 RESTRICTION ON THE USE OF TOBACCO

- .1 Contractors and construction employees are not permitted to smoke inside correctional facilities or outdoors in the perimeter of a correctional facility. They must not, within the perimeter, have in their possession unauthorized tobacco products.
- .2 Contractors and construction employees who violate this policy will be asked to immediately stop smoking or dispose of any unauthorized tobacco products. If they refuse to obey, they will be ordered to leave the establishment.
- .3 Smoking will only be allowed outside the perimeter of the correctional facility at a location designated by the Director.

1.16 PROHIBITED ITEMS

- .1 Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are prohibited on the premises of the establishment.
- .2 The discovery of prohibited object (s) on the construction site and the identification of the person (s) responsible for the presence of these objects must be immediately reported to the Director.
- .3 Contractors must be vigilant with respect to their employees and the employees of their sub-contractors, since the discovery of a prohibited object may result in the cancellation of the employee's security clearance. A serious offense could result in the eviction from the site of the establishment of the company in question, for the duration of the construction project.
- .4 If weapons or ammunition are found in the vehicle of a contractor, subcontractor, supplier or an employee, the security clearance of the driver of the vehicle will be revoked immediately.

1.17 SEARCHES

- .1 Any person and vehicle accessing the property of the establishment may be searched.
- .2 Where the Director has reasonable grounds to believe that an employee of the Contractor is in possession of contraband or prohibited object, he may require that person to be searched.
- .3 The personal effects of any employee arriving at the establishment may be checked for the presence of prohibited drug residues.

1.18 ACCESS TO THE ESTABLISHMENT

.1 Except as expressly authorized by the Director, construction employees and commercial vehicles will not be admitted to the establishment outside normal working hours.

1.19 CIRCULATION OF VEHICLES

.1 Vehicles may enter and exit the facility, under escort, through the vehicle barrier at the following times:

- .1 from 07 h 45 to 11 h 45
- .2 from 12 h 30 to 15 h 15.

- .2 The Contractor must notify the Departmental Representative twenty-four (24) hours in advance of the arrival of heavy equipment such as concrete mixers, cranes, etc.
- .3 Vehicles loaded with soil or garbage, or any other vehicle deemed impossible to search, must be constantly monitored by CSC employees or the security guard reporting to the Director.
- .4 Before a commercial vehicle is admitted into the premises of the establishment, the contractor or his representative must certify that the contents of the vehicle are definitely necessary for the construction project.
- .5 Access to CSC property will be refused to any vehicle whose contents, in the opinion of the director, represent a risk to the security of the establishment.
- .6 Private vehicles of construction employees are not allowed inside the security perimeter of medium or maximum security institutions without the expressed authorization of the director.
- .7 Subject to the prior authorization of the Director, a vehicle may be used in the morning to bring a group of employees to the site and in the evening to bring them back. This vehicle will not be able to stay on the premises during the day.
- .8 With the authorization of the director, some equipment may be left on the building site at night or on weekends. These must be locked and their battery must be removed. The Director may require equipment to be tied with a chain and padlock to another fixed object.

1.20 CIRCULATION OF CONSTRUCTION EMPLOYEES ON THE PROPERTY OF THE ESTABLISHMENT

- .1 Subject to the need to maintain adequate security, the Director will allow the Contractor and his employees as much freedom of action and movement as possible.
- .2 However, notwithstanding the previous paragraph, the Director may:
 - .1 Prohibit or limit access to any part of the establishment;
 - .2 Require that throughout the construction project, or at certain times, construction employees be accompanied by a CSC safety officer or commissioner in certain areas of the establishment.
- .3 All construction employees must remain on site during coffee / health breaks and lunch. They are not allowed to eat in the correctional officers' rest room or in the institution's dining room.

1.21 MONITORING AND INSPECTION

- .1 Construction activities and movements of personnel and vehicles will be monitored and inspected by CSC security personnel to ensure that established security standards are met.
- .2 CSC staff will ensure that construction workers fully understand the need for monitoring and inspections, and that this understanding is maintained throughout the project.

1.22 WORK STOPPAGE

- .1 The Director may at any time order the Contractor, its employees, sub-contractors or their employees not to enter or leave the site immediately due to an ongoing security incident at the site. The site contractor's foreman must then note the name of the CSC employee transmitting the order, the time of the instruction, and comply with the order received as soon as possible.
- .2 The Contractor must notify the Departmental Representative of the situation within twenty-four hours of the work stoppage.

1.23 CONTACT WITH INMATES

- .1 It is forbidden, without specific authorization, to be in contact with the prisoners, to speak with them, to give them objects or to receive something from them. Failure to comply with this directive will result in the expulsion of the employee's site and the revocation of his / her security clearance.
- .2 It should be noted that cameras are prohibited on the property of CSC.
- .3 Notwithstanding the foregoing, if the Director authorizes the use of cameras, it shall remain strictly forbidden to photograph CSC inmates or employees or any part of the establishment whose photographing is not necessary for the use of cameras in the execution of this contract.

1.24 COMPLETION OF THE CONSTRUCTION PROJECT

- .1 At the completion of the construction project when, if applicable, the assumption of the facilities, the contractor shall remove all materials, tools and equipment that are not identified in the construction contract as to be left at the establishment.

PART 2 - PRODUCTS

2.1 NOT APPLICABLE

PART 3 - EXECUTION

3.1 NOT APPLICABLE

END OF SECTION

01 56 00

Access and
temporary protection

PARTIE 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 74 21 – Management and disposal of construction / demolition waste
- .2 Section 03 30 00 – Poured concrete in place
- .3 Section 31 23 33 – Excavation, trenching and backfilling
- .4 Section 32 31 13 – Fences and chain linked barriers

1.2 REFERENCES

- .1 Quebec laws, regulations and standards in force:
 - .1 Occupational Health and Safety Act
 - .2 Safety Code for Construction Work (L.R.Q., S-2.1, r.6)
 - .3 Occupational Health and Safety Regulations.

1.3 PLACEMENT AND REMOVAL OF EQUIPMENT

- .1 Provide, set up or arrange the temporary access and protection works necessary to allow the work to be carried out as quickly as possible.
- .2 Three (3) days prior to installation of the protective elements, confirm with the Departmental Representative their location and installation schedule.
- .3 The jobs can be planned according to the different zones concerned in order to reduce the quantity of zone to delimit.
- .4 Minimize the length of time each section is isolated, particularly where a constant flow of staff or inmates is required. Consult with the Departmental Representative which site closure sections will be required for limited periods.

1.4 ROADWAY ACCESS TO JOB SITE

- .1 Arrange the lanes, paths, ramps and pedestrian crossings required to access each site area.
 - .1 Minimum width of 1200 mm for pedestrian walkway.
 - .2 Minimum width of 3600 mm for vehicle access.

1.5 ROAD TRAFFIC

- .1 To retain the services of competent signalers and to provide the signaling and the barriers necessary for the execution of the works and the protection of the public.
- .2 Ensure the proper functioning of the traffic areas located nearby outside the work areas.

1.6 PROTECTION OF BUILDINGS AND NEARBY FACILITIES

- .1 Protect nearby buildings and installations against any damage that may result from the execution of the construction.
- .2 If applicable, assume full responsibility for any damage caused.

ACCESS AND TEMPORARY PROTECTION

1.7 SECURITY

- .1 The Contractor must ensure that all tools and equipment outside isolated construction sites are constantly monitored with special attention to power tools, files, saw blades, wires, cables and ladders.
- .2 Remove equipment, machinery and materials from the facility at the end of each working day.
- .3 Immediately report the disappearance or loss of tools or equipment to the security department of the institution.
- .4 "Ramset" or "Hilti" are not accepted, nor are the percussive tools with bullets.

1.8 WORK HOURS AND ACCESS TO THE WORKSHOP

- .1 The hours of operations will be restricted for the jobs that take place inside the walls of the establishment.
- .2 Access to the site can be done by the gatehouse located at 246 Montée Gagnon, for company vehicles only.
 - .1 Opening hours of the gatehouse are from 7h45 to 11h45 and from 12h30 to 15h15.
- .3 By the main entrance at 246 Montée Gagnon, for employees on foot. Their vehicles may be left at the visitor parking.
 - .1 Regular operating hours are from 7h00 to 16h00.
- .4 Plan the drive to and from the job site and optimize travel to minimize the time involved.

PART 2 - PRODUCTS

2.1 NOT APPLICABLE

PART 3 - EXECUTION

3.1 NOT APPLICABLE

END OF SECTION

01 74 21 Management and disposal of construction
and demolition waste

PART 1 - GENERAL

1.1 OBJECTIVES ON WASTE MANAGEMENT

- .1 Control solid construction waste.
- .2 Protect the environment and prevent pollution and environmental impacts.

1.2 RELATED SECTIONS

- .1 Section 03 30 00 - Poured concrete in place
- .2 Section 31 23 33 - Excavation, Trenching and Backfilling
- .3 Section 32 31 13 - Fences and Chain-link Fences

1.3 DOCUMENTS/SAMPLES FOR SUBMISSION

- .1 At the end of the work, send a copy of the waste disposal report sheets to the Departmental Representative.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Send unused metal components to an appropriate recycling facility approved by the Departmental Representative.
- .2 The contractor is responsible for the selection of waste treatment sites.
- .4 It is forbidden to bury waste.
- .5 Disposal of waste, volatile materials, mineral spirits, hydrocarbons, paint thinner or any other waste is prohibited in a sanitary sewer or in a watercourse. These must be disposed of in accordance with the Canadian Environmental Protection Act and the Québec Residual Materials Management Policy (1998-2008).

PART 2 - PRODUCTS

2.1 NOT APPLICABLE

PART 3 - EXECUTION

3.1 CLEANING

- .1 When work is complete, remove tools and dispose of waste. Leave the premises clean and tidy.
- .2 Clean the work area as and when required.
- .3 Sort source materials for reuse / recycling and place in designated areas.

END OF SECTION

03 30 00

POURED CONTRETE ON SITE

PARTIE 1 - GENERAL

1.1 SECTION CONTENTS

- .1 This section specifies requirements for the supply, placement, finishing, protection and cure of cast concrete in place for the concrete bases of fence posts.

1.2 RELATED SECTIONS

- .1 Section 01 56 00 – Access and temporary protection
- .2 Section 01 74 21 – Management and disposal of construction / demolition waste
- .4 Section 31 23 33 – Excavation, trenching and backfilling
- .5 Section 32 31 13 – Fences and Chain-link Fences

1.3 REFERENCES

- .1 Quebec laws, regulations and standards in force:
 - .1 Occupational Health and Safety Act
 - .2 Safety code for construction work (L.R.Q., S-2.1, r.6)
 - .3 Occupational Health and Safety Regulations
- .2 Canadian Standards Association (CSA)
 - .1 CSA-A23.1/A23.2, Concrete - Components and Execution of Work / Test Methods and Standard Practices for Concrete

1.4 DOCUMENTS/SAMPLES FOR SUBMISSION

- .2 Submit two (2) copies of Material Safety Data Sheets required under the Workplace Hazardous Materials Information System (WHMIS), which must comply with this system.

1.5 QUALITY ASSURANCE

- .1 At least 2 weeks prior to commencing concrete work, submit for the approval of the Departmental Representative the proposed methods for quality control of the following:
 - 1. Concreting in hot weather;
 - 2. Concreting in cold weather;
 - 3. Cure.

1.6 TEMPORARY PROTECTION

- .1 Take the necessary measures to prevent any damage to adjacent structures, pipes, sidewalks, road surfaces, earthworks and adjacent buildings.
- .2 Close a temporary protection zone around the site to prevent the presence of unauthorized individuals.

PART 2 - PRODUCTS

2.1 MATERIAL

- .1 Concrete mixes and concrete materials: to CAN / CSA-A23.1-04 class F-1.
- .2 Fine aggregate: of normal density, in accordance with clause 4.2.3 of CSA-A23.1-04 / A23.2-04. It may be either natural sand, or manufactured sand with a proportion of at least 20% natural sand.
- .3 Large aggregate: of normal density, in accordance with clause 4.2.3 of CSA-A23.1-04 / A23.2-04, the particles are clean, durable, free of dust and deleterious material, and containing less than 10% of flat or elongated particles. Aggregates should not consist of fine-grained limestone and crystalline limestone. Size of the particles corresponding to 20 mm.
- .4 Compressive strength: at least 30 MPa at 28 days.
- .5 Air entrained and admixtures in accordance with CAN / CSA-A23.1.
- .6 Mixing water complies with CAN / CSA-A23.1-04 / A23.2-04.

2.2 DOSAGE FORMULA

- .1 Concrete mixes and fence materials must comply with CAN / CSA-A23.1-04 F-1 exposure class (30 MPa at 28 days) and coarse aggregate size of 20 mm.
- .2 Assume responsibility for the determination of each type of concrete required, taking into account the requirements described in section 2.1 of this specification and the following criteria in accordance with CSA-A23.1-04 / A23 Variant # 1 of Table 5.2-04 (Article 4.1.2).
- .3 Obtain approval from the Departmental Representative for any admixtures used in concrete mixes (superplasticizer and required air entraining agent or other adjuvants required by the Specialty Contractor for a specific purpose). The use of calcium chloride is prohibited.
- .5 In the use of admixtures, follow the manufacturer's instructions. The specialized contractor is responsible for ensuring the compatibility of the admixtures with each other and with the materials used in the composition of the mixture.
- .7 Enter the type and quantity of admixture (s) used on the concrete delivery slip.
- .8 The use of an admixture must not in any way reduce the durability of the concrete as well as its resistance to freezing and thawing.

2.5 REINFORCING STEEL

- .1 Crenellated bars to CSA G30.18, 400 MPa grade.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Obtain the written permission of the Departmental Representative prior to concreting and advise him at least 24 hours in advance.
- .2 Concrete pumping shall be approved by the Departmental Representative and will only be permitted once the material and mix is approved.
- .3 Make sure the reinforcement and the drowned parts are correctly positioned as indicated in the plan and specifications and make sure that they are not displaced during the placement of the concrete.
- .4 It is prohibited to concretize when it is raining or snowing, unless the Departmental Representative, satisfied with the arrangements made to house the concrete during transportation and installation, has given permission to do so.

.5 The authorization granted by the Departmental Representative to concretize when the outside temperature is below 5 ° C or above 25 ° C in no way relieves the Specialized Contractor of his entire responsibility for the resistance and durability of the concrete that will be implemented.

3.2 MANUFACTURING AND DELIVERY OF CONCRETE

.1 Provide ready-mix concrete manufactured in a concrete plant, transported and unloaded to site in accordance with section 5.2 of /CSA-A23.1-04/A23.2-04, or provide a concrete manufactured on the job in accordance with all the requirements of this same section. If the second alternative is selected, submit the entire process for approval by the Departmental Representative.

.2 The manufacturer of ready-mixed concrete is solely responsible for the dosage of the concrete and must himself and at his own expense take all necessary steps to ensure the quality and consistency of its product. .

.3 Require the concrete supplier to send a delivery slip for each concrete load and provide a copy of this slip to the Departmental Representative. The following information will appear on the form: name of the supplier and address, truck number, name of the specialized contractor, designation and location of the project, grade of concrete, cumulative quantity, start of unloading, end of unloading, maximum size of Aggregate, slump and entrained air required, types of admixtures used, amount and type of cement and amount of water.

.4 The addition of water to the mixture after initial mixing can only be done in strict compliance with article 5.2.4.3.2 of standard CAN-A23.1-04 / A23.2-04, but the maximum quantity that may be to be used will be 6 l / m³. Submit any planned addition for the approval and control of the Departmental Representative. Indicate on the delivery note the quantity of water added at the unloading.

.5 Plan the concrete production and stagger deliveries to the site so that each casting can be carried out without any interruption. Each batch of concrete must be fully dumped into the formwork less than two (2) hours after the start of the assay.

.6 Never ruin the concrete or mortar that has started to set.

.7 The temperature of the concrete at unloading must be within the limits of Table 14 of CSA-A23.1-04 / A23.2-04 and be controlled according to Clause 5.2.4.4 of the same standard. Use all means of protection required for this purpose.

.8 The use of aluminum is prohibited for any material intended for mixing, transporting or placing concrete.

3.3 IMPLEMENTATION

.1 Carry out concrete placement in accordance with the requirements of CSA-A23.1-04 / A23.2-04.

.2 Conduct concrete consolidation using mechanical vibrators from a model and the dimensions approved by the Departmental Representative.

.3 Select an appropriate type and number of vibrators and use them in accordance with section 7.2.5 of CSA-A23.1-04 / A23.2-04.

.4 Saturate hardened concrete surfaces immediately before concreting on these surfaces.

.5 Deposit the concrete continuously or in layers of such a thickness so that each new layer will integrate with the underlying layers before the concrete has hardened to the point of causing the formation of cold joints " .

.6 For the concrete bases of the fence posts, bring the concrete to a height of 100 mm below ground level and finish the surface sloping approximately 1 degree to divert the water from the posts.

3.4 CURE OF CONCRETE

.1 The cure of the concrete is carried out according to the requirements of the standard CSAA23.1- 04 / A23.2-04, section 7.4.

.2 The use of cures is prohibited.

POURED CONCRETE ON SITE

- .3 Slabs and other unformed surfaces are to be kept moist for a period of at least 7 days.
- .4 In cold weather, the water cure ends 12 hours before the end of the protection.
- .5 Ensure that, during the entire cure, the concrete will not be overloaded and will be adequately protected against severe impacts, excessive vibration, weather and other disturbances.
- .6 The supply, installation and maintenance of all temporary works and apparatus required for the cure and protection of concrete in hot or cold weather, as well as the supply of these devices, are part of the contract work, assume all the costs.

3.5 PROTECTION DU BÉTON

- .1 In hot weather, concrete is protected according to Clause 7.4.2.4 of CSA A23.1-04 / A23.2-04.
- .2 Concrete elements containing silica fume are protected against drying in accordance with Clause 7.4.2.2 of CSA A23.1-04 / A23.2-04.
- .3 The protection of the other elements against drying is established in accordance with Annex D of CSA A23.1-04 / A23.2-04.
- .4 In cold weather, the concrete is protected in accordance with Clause 7.4.2.5 of CSA A23.1-04 / A23.2-04.
- .5 Cold weather concrete protection methods are those detailed in the "Specifications and general specifications", 2003 edition, chapter 15.4.3.13. The payment methods described in this chapter of the CCDG do not apply to this contract.

3.6 QUALITY CONTROL ON THE JOB SITE

- .1 The inspection and testing of the concrete and its components will be performed by the designated testing laboratory and engaged by the Contractor in accordance with CSA-A23.1-04 / A23.2-04. The Contractor must provide a copy of the certificate to the Departmental Representative.

End of Section

31 23 33

EXCAVATION

PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 The work in this section includes the following:
 - .1 Digging for concrete fence bases described in Section 32 31 13. See plans.

1.2 RELATED SECTIONS

- .1 Section 01 56 00 – Access and temporary protection
- .2 Section 01 74 21 – Management and disposal of construction / demolition waste
- .3 Section 03 30 00 – Poured concrete in place
- .4 Section 32 31 13 – Fence and chain-linked barriers

1.3 DEFINITIONS

- .1 Types of excavation :
 - .1 Ordinary excavation: Excavation of all excavation materials of any kind not considered rock, including dense erratic soils, compact clays, frozen and partially cemented materials, foundations and structures. Existing roadways that can be cleared with heavy construction equipment.
 - .2 Rock Excavation: Rock of igneous, sedimentary or metamorphic origin which before being excavated was part of the solid rock, and rock or rock fragments with an individual volume greater than 1 m³ and whose extraction can not be properly done, only after they have been previously broken either by the use of explosives or percussion
Compact clay, hardened clay, till, frozen soils and stony soils are excluded from this class.
 - .2 Topsoil: Any material that is suitable for growing vegetation and can be used as top soil for landscaping and seeding.
 - .3 Waste materials: surplus materials or excavation materials that are unusable for this work.

1.4 REFERENCES

- .1 Quebec laws, regulations and standards in force:
 - .1 Act respecting occupational health and safety;
 - .2 Safety code for construction work (L.R.Q., S-2.1, r.6);
 - .3 Regulation respecting occupational health and safety;

1.5 TEMPORARY PROTECTION

- .1 Take the necessary measures to prevent any damage to adjacent structures, pipes, sidewalks, road surfaces, earthworks and adjacent buildings.
- .2 Close a temporary protection zone around the site to prevent the presence of unauthorized individuals on the site.
- .3 See 01 56 00 Temporary access and protection of job site and plans for specifications for temporary construction site fencing. See Appendix D.

1.6 PROTECTION OF EXISTING WORKS

- .1 Protect the bottom of the excavations against softening, if this occurs, then remove the softened soil and replace with a compacted type 2 fill.
- .2 Protect the bottom of the excavations against freezing.
- .3 Take the necessary measures to eliminate the dust produced.
- .4 Adequately protect existing facilities, buildings and services and existing equipment located on site so that they are not damaged during construction.
- .5 Do not stack excavated material in a place where it could interfere with the work, drainage, or operations of the facility.
- .6 Underground utility structures and networks:
 - .1 The details of the dimensions, location and depth of buried structures and utilities shown on the drawings are for illustrative purposes only and are not necessarily accurate or complete. .
 - .2 Confirm the location of all underground installations described on the detection expertise document provided by the Departmental Representative prior to the start of the excavation. The Contractor will be responsible for any damage to existing installations and any resulting complications.
 - .3 Before commencing trenching, notify interested utility companies and the Departmental Representative and determine the location and condition of underground structures and networks. Clearly mark locations to avoid any interruption of service during the execution of the work.
 - .4 Maintain and protect against water damage, sewer, gas, electricity and telephone lines as well as other networks or works that may be in areas to be excavated.
- .7 Buildings and existing structures on site:
 - .1 In the presence of the Departmental Representative, verify the condition of buildings, trees and other vegetation, lawns, fences, utility poles, cables, pavement surfaces to remain in place and likely to be damaged during the work.
 - .2 During the execution of the excavation, protect against damage any existing buildings and structures on the ground likely to be damaged. In the event of damage, immediately notify the Departmental Representative, repair the affected items at his request. Damage repair may be done internally but the contractor will be responsible for the value of the repairs.
 - .3 If it is necessary to cut roots or branches for excavation work, do not perform this task until it is approved by the Departmental Representative.
- .8 Protect well markers and geodetic monuments on site.
- .9 Take all necessary precautions to prevent property damage and personal injury.
- .10 Set up protective barricades around the entire excavation area.

1.7 SANTÉ ET SÉCURITÉ

- .1 Comply with municipal requirements and the Safety Code for Construction, S-2.1, r.6 Province of Quebec, regarding safety standards for excavation and worker protection.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Comply with the criteria described in section 01 74 21.

1.9 CHOICE OF EXCAVATION METHODS

- .1 The Contractor is solely responsible for the choice of excavation methods used. Submit these methods in advance to the Departmental Representative for approval.

PART 2 - PRODUCTS

2.1 MATERIAL

- .1 Embankment type 1: crushed stone 20-0

Crushed stone or gravel clean, hard, resistant and free of shale, clay and loose, organic or deleterious materials;

- .2 Backfill Type 2: Class "A" Granular Soils Compactable soils consisting mainly of granular, hard and strong, non-plastic materials, such as MG-112 sand, gravel or crushed stone. These soils must be free from shale, clay, loose, organic or deleterious materials and contaminated materials. These soils must be non-freezing. These floors must not contain blocks greater than 100mm in diameter.

- .3 Type 3 embankment: Class "B" ordinary soil:

All compactable and unfrozen materials can be used except organic soils. Soil components must be mineral, free of rocks greater than 150 mm in size, clinker, ash, refuse, sod or other harmful material.

PART 3 - EXECUTION

3.1 PREPARATORY WORK

- .1 At the beginning of the work, clear the surfaces of the excavation and backfilling area of any obstacles, snow or ice found within the limits indicated and / or necessary for the execution of the work.
- .2 Cut saws, pavements and sidewalks carefully along the lines delineating the proposed excavation so that the surface breaks cleanly and evenly.
- .3 If necessary, the Contractor must build an appropriate work platform to ensure the movement of heavy machinery to the work site.

3.2 SETTING

- .1 Heap embankment materials at locations designated by the Departmental Representative and dispose of granular materials to prevent segregation.
- .2 Protect backfill materials from contamination.

3.3 DRYING OF EXCAVATIONS AND PREVENTION OF UPLIFTING

- .1 Keep the excavations dry throughout the job.
- .2 Protect open pit excavations from flooding and damage caused by runoff.

3.4 EXCAVATION

- .1 Notify Departmental Representative at least one week prior to commencing excavations and take Natural Terrain Profiles where required.
- .2 Carry out excavation work according to the layouts, profiles, levels, cuts and dimensions indicated to allow the installation and construction of the required structures.
- .3 Pay particular attention to buried infrastructure (existing tunnels, existing aqueduct and stormwater system, abutments and other conduits).
 - .1 See Appendix B for the detection report for approximate locations of underground obstacles that may be encountered.
 - .2 See Appendix C for details and photos of existing trenches to know the specifications and to protect them during excavation in their vicinity.
 - .3 When excavating trenches and digging for concrete bases near critical locations, the Contractor shall take all necessary measures to maintain the integrity of existing conduits. He will have to modify his method of excavation and digging in order to keep to a minimum the risk of breakage.
- .4 Dig to precise lines and levels to minimize the amount of backfill needed.
- .5 Excavation work shall in no way affect the bearing capacity of adjacent foundations.
- .6 Unless authorized by the Departmental Representative in writing, it is prohibited to dig more than 30 meters of trench before proceeding with the installation of the landfill.
- .7 Cuttings and heaped material must be removed at a sufficient distance from the trenches.
- .8 Limit work done with construction equipment in the immediate vicinity of un-filled trenches.
- .9 The bottom of the excavations must be free of loose, soft or organic substances.
- .10 Once the excavations have been completed in one area, have them approved by the Departmental Representative.
- .11 When digging has been too deep, backfill unauthorized excavations with Type 2 backfill material.

3.5 EVACUATION OF EXCAVATED MATERIALS

- .1 The Contractor shall load, transport and dispose of all waste materials in accordance with Specification 01 74 21 Construction and Demolition Waste Management and Disposal. These include materials from the demolition of pavement or old fences to be removed.

3.6 FILLING AND COMPACTION MATERIALS

- .1 Compaction densities are percentages of maximum densities calculated according to ASTM D698 and ASTM D1557.
- .2 Use backfill material in accordance with the types defined in section 2.1. The contractor must first have his choice of fill material approved before proceeding.
- .3 The limits prescribed in the drawings for the different layers of fill material are the minimum limits of backfill after compaction.
- .4 Around built areas backfill up to the levels shown on the plans with the different layers of backfill material specified therein.
- .5 After backfilling, perform rough grading on the entire lot respecting the levels and gradients required for surface water dripping away from the posts and laying of the soil. Plant and turf can be done respecting the slopes and levels required.

3.7 FILLING

- .1 Surfaces to be backfilled must be free of debris, snow, ice, water or frozen earth. The backfill material must not contain frozen elements, ice, snow or debris.
- .2 Do not place backfill material around or above cast-in-place concrete within 24 hours of placing the concrete.
- .3 Spread backfill material in uniform layers not exceeding 150 mm thick after compaction to the indicated levels. Compact each layer before spreading the next layer.

3.8 CLEANING

- .1 Upon completion, remove surplus materials and debris, trim slopes and correct defects determined by the Departmental Representative.
- .2 Replace topsoil as directed by Departmental Representative.
- .3 Return affected road pavements during work in the condition and level they were in before the beginning of excavations, taking care to respect the original thickness of these structures.
- .4 Clean and repair damaged areas during the work as directed by the Departmental Representative.

End of Section

32 31 13

FENCES AND BARRIERS

PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 This section includes, among other things, the supply and installation of the following:
 - .1 The construction of new fencing and chain link barriers with new materials. The types of fences and barriers concerned are:
 - .1 Type of fence :
 - .1 Interior fences of zone or yard 2.4 meters
 - .2 Inner fences of areas or yard of 3.6 meters
 - .2 Types of fencing barriers:
 - .1 Pedestrian barriers for pedestrians 1200 mm wide;
 - .2 Swivel gates for vehicles, 2 x 2000 mm for a total width of 4000 mm.
 - .2 The scope of work is described in the bid package.
 - .3 The exact type of foundation required will be established following the purchase order, depending on the type of soil encountered.

1.2 RELATED DOCUMENT

- .1 Quotation folder
- .2 Special requirements from the Client.
- .3 Technical Criteria for Correctional Facilities by the Correctional Service of Canada.

1.3 RELATED SECTIONS

- .1 Section 01 56 00 – Access and temporary protection
- .2 Section 01 74 21 – Management and disposal of construction / demolition waste
- .3 Section 03 30 00 – Poured concrete on site
- .4 Section 31 23 33 – Excavation, trenching and backfilling

1.4 REFERENCES

- .1 Quebec laws, regulations and standards in force:
 - .1 Occupational Health and Safety Act;
 - .2 Safety code for construction work (L.R.Q., S-2.1, r.6);
 - .3 Occupational health and safety; regulations
- .2 American Society for Testing and Materials International, (ASTM) latest revisions.
 - .1 ASTM A53/A53M, Specifications of Pipe, Steel, Black and Hot-Dipped, Zinc-Coated welded and Seamless.
 - .2 ASTM A90/A90M, Standard Test Method for Weight of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
 - .3 ASTM A121-99, Standard Specification for Zinc-Coated (Galvanized) Steel Barbed Wire.
 - .4 ASTM C 618-03, Standard specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Concrete.
 - .5 ASTM F1664-01, Standard Specification for Poly(Vinyl Chloride) (PVC) – Coated Steel Tension Wire used with Chain-Link Fence.
- .3 Canadian General Standards Board (CGSB), latest revisions.
 - .1 CAN/CGSB-138.1, Wire mesh for fence.
 - .2 CAN/CGSB-138.2, Galvanized steel frame for wire fence.

Fences and chain linked barriers

- .3 CAN / CGSB-138.3, Installation of Wire Fencing.
- .4 CAN / CGSB-138.4, Gate fence.
- .5 CAN / CGSB-1.181-99, Zinc Rich Coating, Organic, Prepared.

- .4 Canadian Standards Association (CSA) / CSA International
 - .1 CAN / CSA-A23.1 / A23.2, Concrete: Constituents and Performance of Concrete Work / Tests.
 - .2 CAN / CSA-C49.1, Round Wire, Concentric Lay, Overhead Electrical Conductors.
 - .3 CAN / CSA-G164, Hot Galvanizing Irregular Shaped Objects.
 - .4 CAN / CSA-A3000-F98, Compendium of Cementitious Materials.
- .5 Health Canada - Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .6 The Master Painters Institute (MPI) - Architectural Painting Specification Manual.
 - .1 MPI # 8, Alkyd, Exterior Flat.
 - .2 MPI # 18, Organic Zinc Rich Primer.
 - .3 MPI # 134, Primer, Galvanized, Water Based.

1.5 DESIGN CRITERIA

- .1 The fence fence shall be installed on the post establishment side.
- .2 Avoid acute angles of less than 120 ° except at the intersection of fences.
- .3 Special attention must be paid to the unevenness to ensure that there are no gaps between the surface of the ground and the bottom of the fence. If a pronounced longitudinal elevation of the terrain exists, the fence may be stepped, but the minimum height of the fence must be maintained at all times. The slope of the ground below the perimeter fence line must be minimized to prevent erosion under the fence.
- .4 A barbed tape concertina (barbed spirals) must be installed to prevent the passage of a prisoner between the spirals
- .5 The network of intermediate posts, corner posts and barrier posts must be installed to withstand local conditions, especially with respect to winds and wet snowfall. To this end, perform calculations on the type of foundation that will meet the wind and snow performance requirements for that lot and show these foundations to the required shop drawings.
- .6 The interior fences of security establishments must be 3.6m high and be surmounted by steel arms, barbed wire and concertina.

1.6 DOCUMENTS / SAMPLES TO SUBMIT

- .1 Submit required documents and samples in accordance with general requirements.
- .2 Submit shop drawings clearly showing the layout and size of fences and gates, the position of columns, the dimensions of foundations and the details of constituent elements and materials, including all special devices.
- .3 The shop drawings must indicate the materials to be used as well as the methods of construction, fixing or anchoring to be used, and they must contain the diagrams, the details of the connections, the relevant explanatory notes and any other information, the relevant explanatory notes and any other information necessary for the execution of the work. Refer to specifications and draft drawings.
- .4 Submitted documents must show or indicate the following:
 - .1 The date;
 - .2 Project designation and number;
 - .3 The names and addresses of the following persons:

Fences and chain linked barriers

- .1 The sub-contractor
- .2 The supplier
- .3 The manufacturer
- .4 The Contractor's stamp, signed by the authorized representative of the Contractor, certifying that the submitted document is approved, that the measures taken on site have been verified and that the assembly complies with the requirements of the contract documents;
- .5 Relevant details for the portions of work involved:
 - .1 Materials and manufacturing details;
 - .2 Layout or configuration, including dimensions, including those taken on site, as well as games and clearances;
 - .3 Details regarding assembly or adjustment;
 - .4 Performance characteristics;
 - .5 Reference standards;
 - .6 Operational mass;
 - .7 Wiring diagrams;
 - .8 Single-line diagrams and schematic diagrams;
 - .9 Links to adjacent structures
 - .10 Control sequences for barriers.
- .6 Submit one (1) electronic copy of the shop drawings specified in the technical sections of the specifications and according to the reasonable requirements of the Departmental Representative.
- .7 If no shop drawing is required due to the use of a standard work product, submit one (1) electronic copy of the manufacturer's data sheets or documentation as specified in the technical sections of the specification and required by the Departmental Representative.
- .8 Submit one (1) electronic copy of the required test reports in the technical section of the specifications and / or as requested by the Departmental Representative.
- .9 Submit one (1) electronic copy of the operating and maintenance sheets specified in the technical sections of the specifications and required by the Departmental Representative.
- .10 Submit two copies of Material Safety Data Sheets required under the Workplace Hazardous Materials Information System (WHMIS), which must comply with this system.
- .11 Submit, in duplicate, samples of each material or component required for the performance of the job.

1.7 PERFORMANCE CRITERIA

- .1 Fences should be erected in a straight line from a corner post to another to ensure a good field of view on both sides of the fence.

1.8 TRANSPORT, STORAGE AND HANDLING

- .1 Transport and store materials to avoid scratches and other damage to the galvanized finish of the components.

1.9 TEMPORARY PROTECTION

- .1 Take necessary measures to prevent damage to adjacent structures, pipes, sidewalks, road surfaces, earthworks and adjacent buildings.
- .2 Fence a temporary protection zone around the site to prevent the presence of unauthorized individuals.
- .3 See 01 61 00 Temporary access and protection of the job site and plans for specifications for temporary construction site fencing. See Appendix D.

1.10 HEALTH AND SAFETY

- .1 Respect the rules of health and safety in construction according to the general conditions.

1.11 WASTE MANAGEMENT AND DISPOSAL

- .1 Route unused metal components to a metal recycling facility approved by the Departmental Representative.
- .2 Route other unused materials to a local facility approved by the Departmental Representative.

1.12 GUARANTEE

- .1 Pour les travaux faisant l'objet de la présente section, la période de garantie de 12 mois prévue aux conditions générales s'applique.

PART 2 - PRODUCTS

2.1 MATERIAL

- .1 Use new materials that comply with the following characteristics:
 - .1 Any stainless steel component must contain 17% chromium.
 - .2 All galvanized steel components must have 610 g / m² of zinc.
 - .3 See 2.3 Dimensions for heights of various elements.

2.1 METAL WIRING

- .1 Galvanized diamond mesh grids:
 - .1 Conforms to CAN / CGSB-138.1, category 2.
 - .2 The mesh must comply with the following characteristics:
 - .1 **Diameter of the wire:** 4.8 mm minimum (6 gauge);
 - .2 **Mesh size:** 50.8 mm;
 - .3 **Height of the grid:** 3600 mm;
 - .4 **Average mass of zinc coating:** 610 g / m² minimum;
 - .5 **Breaking strength:** 10,000 N minimum;
 - .6 **Upper edges:** twisted end 3 turns;
 - .7 **Lower edges:** folded.
 - .3 The grid shall be continuous over its entire height, without joints and placed on the side of the posts facing the establishment.
 - .4 The mesh must be tensioned before being laid. See 3.2 Fence Installation for Traction Verification Following Installation.

2.1 METAL FRAME

- .1 The metal framing shall be in accordance with CAN / CGSB-138.2-96 and shall comply with the following:

Fences and chain linked barriers**.1 Poles and tubular sleepers:**

- .1 "Schedule 40" steel pipe with zinc coating, minimum mass 610 g / m².
- .2 Posts must be spaced 2500 mm maximum.
- .3 Intermediate columns shall have a minimum outside diameter of 73 mm and a density of 8.6 kg / m.
- .4 Traction posts must have a minimum outside diameter of 114.3 mm and a density of 15.92 kg / m.
They must not be spaced more than 60 m apart.
- .5 Corner and barrier posts must have a minimum outside diameter of 143.3 mm and a density of 21 kg / m.
- .6 Upper and lower sleepers shall have a minimum outside diameter of 42.2 mm and a linear density of 3.4 kg / m.
- .7 Intermediate ties shall not be used.

.2 Pole heads:

- .1 300 MPa hollow sections of a diameter adapted to that of the columns.
- .2 Watertight post caps, securely attached to studs and carrying the top rail.

.3 Voltage bar:

- .1 Galvanized steel bars minimum 5 mm x 20 mm with rounded edges and to cover the total height of the fence.

.4 Voltage bar clamps:

- .1 Galvanized steel, semi-oval in shape with a minimum cross-section of 3 mm x 20 mm, formed to the post diameter with galvanized fastener bolts 10 mm in diameter. The nuts must face the outside of the prisoners' courtyards and be firmly tightened and welded. The spacing between the flanges must be at most 300 mm.
- .2 Press-forged turnbuckles.

.5 Barbed concertina:

- .1 Complies with CAN / CGSB-138.2.
- .2 20 mm x 0.5 mm galvanized steel tape around galvanized spring steel core 2.5 mm in diameter.
- .3 Having a nominal outside diameter of 710 mm and a minimum outside diameter of 635 mm once installed.
- .4 Must have blades measuring 20 mm from one end to the other.
The barbed wire bundles should be spaced approximately 45 mm oc / sec.
- .5 Consists of helical coil loops secured together by means of galvanized clamps, at three points of their circumference.
- .6 The space between loops must not exceed 230 mm.
- .7 Attached to the top of the fences by two barbed wire drawn and attached to the arms of the posts.
Barbed wire consisting of two 12-gauge galvanized wire strands with 4-point barbs spaced 130 mm apart.
- .8 The concertinas must be turned to a secondary internal fence for a distance of 2.5 m
when this type of fence joins the perimeter fence.
- .9 Submit product data sheet and have approved by authorized Departmental Representative.
- .10 When conditions require increased resistance to cutting, the following material may be used to secure the spiral, instead of barbed wire. A strand of ACSR galvanized carbon wire with a diameter of 4.53 mm ACNOR C49.1.
The wire clamps should be attached to the wires at each post arm, to prevent the wire from slipping into the post arm if it is cut or breaks.
- .11 The barbed tape concertina must be attached and attached to each barbed wire.
An additional barbed tape concertina may be installed when the need warrants.

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- .6 Support arms for barbed wire rolls:
 - .1 Galvanized steel arms shall be mounted to watertight posts and used to secure top rails and protruding extensions where a barbed spiral must be installed.
 - .2 300 MPa galvanized steel tubes of a diameter adapted to the poles. Close the end with a cap welded to the support arm and weld the base to the head cap of the posts or anchor plates.

- .7 Fixing device:
 - .1 Hinges, hinges, latches, chins, etc. : galvanized steel with zinc coating of at least 610 g / m².

- .8 Where tensile cords are used with corner, end, barrier or pull posts, the gaskets shall be galvanized steel.

- .9 Barriers of any type, shall correspond to the following characteristics:
 - .1 Complies with CAN / CGSB-138.4.
 - .2 Fabricate barriers in the factory as specified.
 - .3 Manufactured with electrically welded joints, hot dip galvanized after welding.
 - .4 All components must be galvanized.
 - .5 The fencing of the barrier must be identical to that of the fences.
 - .6 Build square, plumb and water proof frames.
 - .7 Extend wire mesh and attach to frame using appropriate tension bars and flanges, and 3.7mm (9 gauge) wire spaced every 300 mm. Once installed, the flange bolts will be welded and coated with high zinc paint (cold galvanizing). Ties of fasteners must be twisted on at least 2 turns at each end.
 - .8 Fencing fences attached to barriers so that the twisted border is at the top.
 - .9 See 2.3 Dimensions for barrier widths.
 - .10 The space between the bottom rail of a barrier and the ground must not exceed 125 mm. When the barriers are located on a fence with a fence, this barrier must be uninterrupted.
 - .11 Safety equipment must be of industrial construction and commercial grade 1 and must be designed to provide the appropriate level of protection and longevity.
 - .12 Gates with hinges, latches and galvanized malleable cast iron mounts that can be padlocked must be manoeuvrable from both inside and outside.
 - .13 A central support with vertical latch will be installed to keep the doors in the closed position. For doors over 2,000 mm in height, the lock should hold the top and bottom of the barriers. The locks must lock with a padlock.

- .10 Pedestrian barriers for pedestrians:
 - .1 Barriers with one leaf of 1200 mm.
 - .2 The size of the barriers must provide a free space of 1200 mm wide and 2100 mm high.
 - .3 Frames consisting of galvanized pipes of 73 mm outer diameter weighing 3.4 kg / m, welded and drained.
 - .4 Galvanized pipe spacers 42.2 mm OD placed diagonally from corner to corner of barrier section.
 - .5 When used daily, swing gates shall operate manually and be equipped with key locks. The doors of the main entrance must be unlocked remotely and have automatic closing devices. Doors that are not used regularly must be locked with a safety lock.

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- .6 The direction of pivoting of the barriers shall be determined after consideration of operating conditions and snow conditions.
- .7 The space between the bottom rail of a barrier and the ground must not exceed 115mm (design criteria in 125mm).
When the barriers are located on a fence with a fence, this barrier must be uninterrupted.
- .8 The space between the frame of the barriers and the posts or sleepers must not exceed 115mm.
- .9 All components must be galvanized.

.11 Pivoting Pedestrian Barriers with Sheet Metal Coating:

- .1 Barriers with one leaf of 1200 mm.
- .2 The size of the barriers must provide a free space of 1200 mm wide and 2100 mm high.
- .3 Frames consisting of galvanized pipes of 73 mm outer diameter weighing 3.4 kg / m, welded and drained.
- .4 Galvanized pipe spacers 42.2 mm OD placed diagonally from corner to corner of barrier section.
- .5 When used daily, swing gates shall operate manually and be equipped with key locks. The doors of the main entrance must be unlocked remotely and have automatic closing devices. Doors that are not used regularly must be locked with a safety lock.
- .6 The direction of pivoting of the barriers shall be determined after consideration of operating conditions and snow conditions.
- .7 The space between the bottom rail of a barrier and the ground must not exceed 115mm (design criteria indicate 125mm).
When the barriers are located on a fence with a fence, this barrier must be uninterrupted.
- .8 The space between the frame of the barriers and the posts or sleepers must not exceed 115mm.
- .9 Corrugated steel sheet of 0.5mm (24 gauge) pattern such as the existing. Fixed using 73mm x 73mm square pipes weighing 3.4kg / m welded to circular pipes of 73mm outside diameter weighing 3.4kg / m to create the same space as the existing one. The circular pipes will be welded to the frame of the door.
- .9 All components must be galvanized.

.12 Double pivoting barriers for vehicle or equipment:

- .1 2000 mm double-leaf gates equipped with a central support with vertical latch to keep them in the closed position.
- .2 The size of the barriers must provide a free space of 4000 mm wide and 4500 mm high.
- .3 Frames consisting of galvanized pipes 73 mm in external diameter, weighing 8.6 kg / m, welded and drained.
- .4 Galvanized pipe spacers 42.2 mm OD placed diagonally from corner to corner of barrier section.
- .5 The pivoting direction of the barriers shall be determined after consideration of operating conditions and snow conditions.
See plans for intended pivoting direction.
- .6 The barrier must have three hinges of standard quality. Locking in the middle will be done with safety locks.
- .7 The space between the bottom rail of a barrier and the ground must not exceed 115mm (design criteria in 125mm).
When the barriers are located on a fence with a fence, this barrier must be uninterrupted.

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- .8 The space between the frame of the barriers and the posts or sleepers must not exceed 115mm.
- .9 All components must be galvanized.

2.3 DIMENSIONS

- .1 Height of fences:
 - .1 2400 mm for anti-vision fencing.
 - .2 3600 mm for interior zone fences
- .2 Width of barriers:
 - .1 1200 mm for pedestrian swing gate;
 - .2 2000 mm for each wing of the double pivoting barrier for vehicles;
- .3 Minimum outside diameter of steel framing members:
 - .1 143.3 mm for corner, end and barrier posts;
 - .2 114.3 mm for tensors;
 - .3 73 mm for intermediate columns;
 - .4 42.2 mm for sleepers, and spacers.
- .4 Dimension of concrete bases:
 - .1 1800 mm deep and 400 mm in diameter for line, voltage, angle or terminal posts;
 - .2 2100 mm deep and 400 mm in diameter for end posts at gates only.

2.4 CONCRETE

- .1 Concrete mix and fence materials: to CAN / CSA-A23.1-04 F-1 exposure class.
- .2 Size of coarse aggregate: 20 mm.
- .3 Compressive strength: at least 30 MPa at 28 days.
- .3 Air entrained and admixtures in accordance with CAN / CSA-A23.1.
- .4 Mixing water compliant with CAN / CSA-A23.1-04 / A23.2-04.

2.5 REINFORCEMENT STEEL

- .1 Crenellated bars to CSA G30.18, grade 400 MPa.

2.6 ANCHORING ON PLATE

- .1 For the fixing of poles being located above an existing tunnel. Manufactured and installed according to the rules of art.
- .2 Must be in accordance with CAN / CGSB-138.2-96.
- .3 Manufactured with electrically welded joints, hot dipped galvanized after welding.
- .4 Made of steel with proper gauge to withstand pole loads.
- .5 Fastening of the plate to the tunnel will be done with the appropriate concrete anchors.

2.7 ACCESSORIES AND HARDWARE

- .1 Assembly and hardware parts in accordance with CAN / CGSB-138.2, galvanized steel.
- .2 All accessories will be for "ultra rugged" use.

2.8 BRACING

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- .1 Install all bracing necessary to ensure the stability of the fence, particularly at the ends and on both sides of the barriers.

2.9 FINISHING

- .1 In general, all steel will be hot dipped galvanized after fabrication and shop welding. However, on-site welding will be allowed for the assembly of the studs to anchor plates and in this case the surfaces will be retouched at Galvicon.
- .2 Chain link grids: to CAN / CGSB-138.1, category 2
- .3 Pipes: galvanizing of at least 600 g / m² according to ASTM A90.
- .4 Barbed Wire: to CAN / CGSB-138.2
- .5 Other assembly parts: to CAN / CSA-G164.

PART 3 - EXECUTION**3.1 CONDITIONS OF IMPLEMENTATION**

- .1 Pay particular attention to buried infrastructure (existing tunnels, existing aqueduct, abutments and other conduits).
- .2 Mount fences at right angles, plumb, level and even alignment in accordance with the details shown in the drawings.
- .3 Erect the fence along the route designated by the plans.
- .4 Special attention shall be paid to the unevenness to ensure that there are no gaps between the lot surface and the bottom of the fence. If a pronounced longitudinal elevation of the terrain exists, the fence may be stepped, but the minimum height of the fence must be maintained at all times.
- .5 Barbed spirals must be installed in such a way as to prevent the passage of a prisoner between the spirals as shown in the plans.
- .6 The concertina is supported and fixed on the barbed wire, 230 mm from it.
- .7 If the conditions so require, a second concertina may be placed at the top of the fence, with the approval of the competent authority.
- .8 3.7mm (9 gauge) galvanized steel tie-down wires shall be installed every 300mm to attach the wire to the bottom rail, top rail and intermediate posts.
- .9 Where fasteners require bolts and nuts, they must face the outside of the facility, must be tight and must be secured with a weld spot.
- .10 All posts that do not require barbed wire must have galvanized steel caps.
- .11 All materials and equipment must be installed to withstand local conditions, especially with respect to winds and wet snow.

3.2 INSTALLATION OF THE FENCE

- .1 Wire mesh fencing shall be installed in accordance with Section 32 31 13 of the National Master Specification (DDN) and CAN / CGSB-138.3-96.
- .2 For posts, drill holes of dimensions as indicated in Section 2.3 Dimensions and Shop Drawings.
- .3 Pour concrete into the post holes and insert the holes at the depth indicated in article 2.3.4. - Dimensions.
 - .1 Bring concrete to a height of 100 mm below ground level and finish sloping surface to divert water from posts.

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- .2 Base posts to maintain plumb, in alignment and at prescribed level, until concrete is set.
- .3 Concrete bases with apparent top must be either rounded and trowelled or flush under paving.
- .4 Install overhangs and post caps.
- .4 Allow concrete to cure at least 5 days before placing fence wire.
- .5 Install a corner post when the change of direction exceeds 10 degrees.
- .6 Install end posts at end of fence and near buildings.
- .7 Install barrier posts on both sides of openings for gates.
- .9 Install top and bottom sleepers between posts and securely fasten to posts; attach overhanging fittings and hats.
- .10 Install spacers diagonally from corner to corner of fence section.
The spacers are used to counteract the main columns (corners, barriers, end).
Corner posts must be braced in both directions.
- .11 Extend fence wire, tension tightly to manufacturer's recommended tension, and attach to end, corner, barrier and reinforcement posts, with a tension bar attached to each post using flanges laid at a maximum of 300 mm apart. The tension must be established by tensile tests.
A perpendicular traction of 12 kg applied to the midpoint of a grid panel (midpoint of the posts / sleepers) shall not show a displacement of more than 30 mm from the vertical plane.
 - .1 The folded edge must be at the bottom;
 - .2 The border must be twisted at the top.
- .12 Fasten mesh to upper and lower rails with tie wire at 300 mm intervals (every 6 meshes).
The fence will be installed on the side of the prisoners.
 - .1 The tie wire must be twisted for at least two turns.
 - .2 Flange bolts should be facing out of the facility.
- .13 Lay barbed wire and attach securely to each extension as described above.
- .14 The barbed spiral must be fixed and attached to form 230 mm turns on each barbed wire.
- .15 Take the barriers and position the hinges so that when they are in the open position, they will fall back against the fence where the hinges are located.
- .16 Install additional reinforcement posts to appreciable elevations.

3.3 INSTALLATION OF BARRIERS

- .1 Install gates at designated locations on the plan and Departmental Representative.
- .2 Level the ground between the barrier posts and place the lower end of the barrier to meet the design criteria.
- .3 Provide padlock latch barriers accessible from both sides of fence.

3.4 GRADING

- .1 Remove debris and level the ground along the course of the fence to be installed to obtain a smooth and uniform slope between the posts.
- .2 Refer to Article 1.5 - Design Criteria

3.5 TOUCH

- .1 Clean damaged surfaces with a wire brush to remove layers of loose or cracked coating. Apply two layers of zinc-rich organic paint to damaged surfaces.
- .1 Before painting damaged surfaces, treat in accordance with manufacturer's instructions for the application of zinc-rich paint.

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3.6 CLEANING

- .1 Clean and restore areas where soil has been disturbed during construction.
- .1 Discard surplus materials and replace grass patches with grass patches that have been damaged as directed by Departmental Representative.

END OF SECTION