

## SPECIFICATION

### SECURITY AND FENCE GATE REPAIRS/REPLACEMENT

Project No. R.051161.002  
Stony Mountain Institution  
Stony Mountain, Manitoba

Solicitation No. ET025-15-1424



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1.1 WORK COVERED BY  
CONTRACT DOCUMENT

- .1 Work of this Contract at Stony Mountain Institution, Stony Mountain, Manitoba includes the works to Unit 5, Inmate Exercise yards and the North Gate replacements. The work includes all work delineated in the construction drawings and specifications .
- .2 Maintain integrity of security systems and security gates at all times .
- .3 Relocate and reinstall adjacent existing site elements if and as necessary and approved by the Departmental Representative to perform the work, and upon completion of each day's work return everything back to its original location .
- .4 Execute work with least possible interference or disturbance to occupants and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .5 Provide temporary barriers, warning signs in locations where renovation and alteration work is adjacent to areas used by SMI and which will be operative during such work .
- .6 Existing operations must remain in service without interruption during construction period.
- .7 Make good any damage to existing finishes, fittings, and/or gate and lor fence components caused by work under the contract. Ensure all work is in full compliance with project requirements.
- .8 Plan, design, and coordinate the works utilizing engineering consultants; prepare design, shop drawings, and as-built drawings .
- .9 Make good fence fabric, ties, connections and other gate components as required to comply with CSC Technical Criteria for fences and gates.

1.4 PERFORMRMANCE OF  
THE WORK AND COMPLETION

- .1 Work under this Contract is to be performed in a timely manner. Commence planning and preparatory work immediately upon receipt of official notification of acceptance of Contract and complete the Work within time stipulated in the Contract.

END OF SECTION

1 ACCESS AND  
EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

2 SPECIAL  
REQUIREMENTS

- .1 Perform Work in accordance with CSC Stony Mountain Institution Technical Requirements and Institutional Requirements for Contractors.
- .1 Perform Work during normal working hours from 07:30 to 16:30 hours Monday to Friday.
- .2 Service Entrance closed between 11:00 to 13:00 hours unless arrangements are made in advance.
- .3 Carry out noise generating Work Monday to Friday from 07:30 to 16:00 hours including Saturdays, Sundays and statutory holidays.
- .4 Deliver materials from 07:30 to 16:00 hours unless otherwise approved by Departmental Representative.
- .5 Allow for delays due to security protocol when Work:
  - .1 Interferes with Institution security operations and,
  - .2 Entering and exiting the Institution.
- .6 Access into Institution:
  - .1 Ingress and egress of Contractor's vehicles and personnel at site are limited to the Institution's check point.
- .7 Construction Escort
  - .1 Departmental Representative will provide construction escort as required.
  - .2 Notify Departmental Representative 24 hours in advance of escort requirement.
- .8 Submit schedule in accordance with Section 01 32 16.
- .9 Ensure Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .10 Keep within Limits of Work and ingress and egress

access.

.11 Keep within Limits of Site.

3 BUILDING  
SMOKING ENVIRONMENT

.1 Comply with smoking restrictions. Smoking is not allowed.

END OF SECTION

- 1 INTRODUCTION .1 To carry out an efficient operation of a penitentiary, it is absolutely necessary for civilian personnel, who are employed on the penitentiary property, to observe established rules and procedures.
- 2 ESTABLISHMENT OF REQUIREMENTS .1 Prior to commencing work, the Contractor shall meet with the Warden or his designate to discuss the nature and extent of all activities involved, and to establish mutually acceptable requirements to ensure that both the project and institution operation may proceed without undue disruption or hindrance except where unavoidable.
- 3 WORKING CONDITIONS .1 Subject to Institutional Security requirements, the Warden or designate shall permit the contractor as much freedom of action and movement as is reasonably possible, and the Contractor in turn shall be expected to cooperate with institutional personnel in ensuring that security requirements are observed by construction workers.
- 4 OBSERVATION AND INSPECTION .1 Construction activity and all related movement of personnel & vehicles shall be subject to observation & inspection by institutional staff to ensure that security requirements are met, and understanding of the need for this action is established and maintained throughout.
- 5 PERSONNEL SECURITY .1 The names of all construction personnel to be employed on the site shall be submitted in writing via SMI form #85 (Security Clearance Request) which may be obtained from Security Intelligence Officer (SID), Correctional Supervisor In Charge of Construction and/or Public Works Supervisor.
- .2 All contractors and their employees, including subcontractors and their employees, involved in the contract, must report to the SIO or CS I/C of Construction prior to the first day of employment for the purpose of obtaining a "pass" (photo identification card) and receiving a security briefing. This will only be done after a Security Clearance Request form is completed

and approved by the Warden.

- .3 Warden or designate may require close-up facial photographs to be taken of construction personnel, and may have such photographs displayed at appropriate locations in the institution for identification purposes.
- .4 When the contractors and employees are required to work on the prison property, they will enter and exit the premises via the Service Entrance (Sally Port) if authorized by the CS IIC Construction or designated due to job requirements.
- .5 Warden or designate has the right to refuse permission to enter institutional property to any person whom he has reason to believe may be a security risk.

#### 6 PARKING

- .1 Warden or designate shall assign the parking area or areas to be used by the construction personnel and indiscriminate parking in other locations shall not be permitted.
- .2 All unattended vehicles must have windows closed, doors and trunks locked, and keys removed.
- .3 Vehicles must not contain any type of weapons, ammunition or spirits (empty, partial or full).

#### 7 SHIPPING AND ACCESS TO THE SITE

- .1 Contractor shall verify with the Warden or designate the hours during which vehicles will be allowed to enter or leave the institution. Vehicles or personnel will not be admitted to the institution after normal working hours or on weekends/holidays without prior arrangement with the Warden or his designate. Normal construction Work hours are 07:30 to 16:30 hours Monday thru Friday.
- .2 Note: Service Entrance is closed between 11:00 to 13:00 hours unless arrangements are made in advance.
- .3 Contractor shall have all project material and equipment addressed in his name to avoid confusion with the institutions own shipments.

- .4 Contractor shall, when overtime work is necessary, inform the Warden or his designate at least 24 hours in advance so that extra staff may be arranged to maintain the institution's observation inspection of construction activity.
- .5 Warden his designate may prohibit or restrict access to any part of the institution. He may require that, in certain areas or at certain times, no civilian is allowed unless accompanied by an officer of the Correctional Service of Canada.
- .6 Private vehicles will not be allowed within the institution's security wall or fence without special permission of the Warden or his designate. All vehicles entering the institution's security wall or fence must comply with institution's security requirements (i.e. lockable gas caps or wheel covers, no wheel hub caps, lockable doors and windows, tools in a lockable container and locked when not in use).
- .7 Trucks delivering materials, equipment and tools to the job will be allowed access when the contents are certified by the Contractor or representative as being strictly necessary for the execution of the work. Security requirements such as wheel covers, lockable fuel caps, lockable doors and windows are still required unless special provisions are made thru the CS I/C Construction. Trucks or vehicles, after being unloaded, are to be parked in the designated area outside the security wall or fence.
- .8 All vehicles are subject to search and will be refused access if, in the opinion of the Warden or his designate, they contain any article that may jeopardize the security of the institution. Examples: weapons, alcohol, cell phones, drugs or narcotics.

8 TOOLS & EQUIPMENT

- .1 Commissioner's Directive 573 Control of Items Critical to the Security" Safety of the Institution under section I0 and Institutional Standing Order 573.
- .2 Contractor shall maintain an inventory of all tools and equipment, including the number of

cartridges for power-driven tools brought on site, and a record of every shot fired. (Empty cartridges to taken out after completion of work and counted with live cartridges. Total cartridges taken in must add up to those taken out, counting those that have been fired.) A copy of these tool lists shall be kept in the Security Construction Trailer when manned or with the officer in charge of the service entrance.

- .3 Contractor shall keep all tools and equipment under constant supervision and not leave them unattended, paying particular attention to power-driven tools, files, saw blades, rod saw, wire, rope, extension cords and ladders.
- .4 Contractor shall store all tools and equipment in places and under conditions approved by the Warden or his designate and locks all toolboxes when not in use. He shall report immediately all missing or lost tools or equipment to the Warden or his designate and complete Missing Tool Report form. This form is available to the General Contractor.
- .5 Contractor shall provide permanent identification (engraving) to all tools indicating that they are the personal property of the employee/tradesperson or employing company. Negligence in this regard may result in confiscation of tools.

9 TELEPHONES &  
INSTALLATIONS

- .1 Contractor shall obtain approval from the Warden or his designate for the installation of telephones that shall be located so that they are not accessible to inmates.
- .2 Cell phones are NOT allowed inside the security wall or fence.

10 TWO-WAY  
RADIO COMMUNICATIONS

- .1 Warden or designate must approve all two-way radio communication devices.
- .2 All radio devices requested for use on job site must be checked with institutional ADGA technicians to ensure no interference with institution equipment.
- .3 All radio devices brought into SMI are not to be accessible to inmates.

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- 11 ALCOHOL & NARCOTICS .1 Stony Mountain Institution has a Zero tolerance for alcohol beverages and narcotics on site. These items are not permitted on institutional property. Discovery of such items on site, and identification of the person or persons responsible for them, shall be reported immediately to the Warden or his designate. Any persons employed in the project that appear to be intoxicated or under the influence of any drug or narcotic, or who behaves in an unusual manner, shall be subject to immediate removal from institutional property.
- 12 CONTROL OF CONTRABAND - GENERAL .1 Contractor is responsible for ensuring that all persons employed directly or indirectly upon the project are familiar with Correctional and Conditional Release Act section 45 Summary Convictions as follows;
- .1 CCRA Summary Conviction Offences 45. Every person commits a summary conviction offence who;
- (a) is in possession of contraband beyond the visitor control point in a penitentiary;
  - (b) is in possession of anything referred to in paragraph (b) or (c) of the definition "contraband" in section 2 before the visitor control point at a penitentiary;
  - (c) delivers contraband to, or receives contraband from, an inmate;
  - (d) without prior authorization, delivers jewellery to, or receives jewellery from, an inmate; or
- Search:  
Where the Warden or his designate suspects, on reasonable grounds, that an employee of the contractor is in possession of contraband, he may order that person to be searched, under, Correctional Conditional Release Regulations Section 42.1 Contraband, Sections 43-46, 54.1-2, 55.1 Search and Seizure and Section 57 Seizure, Commissioner's Directives 566-8 section 9-16 ".
- 13 KEY CONTROL .1 Commissioner's Directive 573 Control of Items Critical to the Security" Safety of the

Institution under section 3 C & E and  
Institutional Standing Order 573

- .2 The general contractor shall maintain control of all new keys as follows:
  - .1 Upon receipt of keys from the security hardware supplier/installer;
    - .1 Provide a receipt to the security hardware supplier, listing all keys and quantity of each, by key code.
    - .2 Provide a copy of the receipt to the appropriate Correctional Service of Canada representative at the site (Security Maintenance Officer Wm. Phelan).
    - .3 Locks are to be handed over to SMO Officer Wm. Phelan ext: 5808 for the purpose of repining of lock to CSC standards. Once locks have been repined, locks will be returned to General Contractor for installation.
  - .4 Keys for locks will be made available to the Security Construction Gate to maintain CSC regulation control.
- .3 Upon putting operational keys into use:
  - .1 Keys will be issued thru the Security personnel at the East Security Construction Trailer as per CSC standards and to ensure that keys are issued to responsible personnel only and the keys are turned in at the end of the day's work. No keys are to be retained by an employee for any period longer than that for which the key is required.
  - .2 The issue and receipt of all keys is recorded, showing the date, time, key code number, issued to, including the name of the recipient and employer. The time of return should be signed in by the key control officer (Gate Security) and witnessed by CSC site representative at the end of each working day.
  - .3 Report, in writing, any untoward circumstances, such as loss, disfigurement, misuse, or mishandling, etc., to the security hardware supplier or CSC/SMO, identifying keys by code and/or number, so that appropriate action may be taken to effect replacement or abandonment of that particular code as circumstances may warrant. Send a copy of these reports to the CSC site representative.

- .4 Misuse or improper control of CSC keys can result in that employee being denied access to keys or removal from CSC property.
- .5 No inmates are allowed to handle or be given access to CSC keys.
- .4 Upon completion of the contract and takeover of the buildings:
  - .1 Provide a list of all keys, by number and/or key code, with space for the signature of recipients (both Public Works & Government Services Canada representative and CSC representative) and the date of receipt.
  - .2 Provide certification to Public Works & Government Services Canada that all reasonable caution and care has been exercised in accordance with these instructions, and include a copy for CSC.
  - .3 Once locks have been installed on new installation, all keys pertaining to that lock and code shall immediately be turned over to the CSC/SMO.
  - .4 All locks removed during demolition must immediately be turned over to CSC/SMO.
  - .5 No inmates are allowed to handle or be given access to CSC keys.

14 WORK AREAS

- .1 Contractors and their employees shall be confined to their work area. All other buildings and grounds shall be considered "Out of Bounds".
- .2 Contractors and their employees shall not contact or attempt to contact or deal in any way with inmates.

15 CONFINED SPACE ENTRY

- .1 Confined Space Entry Regulations are now in effect. Personnel entering confined space areas must have passed the required Confined Space Training Course to enter Class "A" or "B" areas at SMI or Rockwood Institution.
  - .1 Confined Spaces Area "A" are typically areas below grade within the duct areas of the Stony Mountain Institution and some areas within Rockwood Institution and farm annex. Confined Space Area "A" requires the issue of a permit from the SMI Works Department prior to entry of area or issue of keys. This includes all necessary equipment and safety personnel.

- .2 Confined Spaces Area "B" are all areas above grade within a confined space area such as attics, mechanical rooms and ducts. This does not require a permit from Works Department, but does require that you sign a waiver form. This form is for you to indicate that you have had the Confined Space Training. To enter Confined Spaces you are required to have all necessary equipment. The waiver form must be completed prior to entry or before the issuance of any keys.

END OF SECTION

1 Applications  
for Progress  
Payment

- .1 Submit to Department Representative, at least 14 days before first application for payment, Cost Breakdown, in detail as directed by Department Representative, for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment. After approval by Department Representative, Cost Breakdown will be used as basis for progress payments.
- .2 Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Department Representative may reasonably require to establish value and delivery of products.

END OF SECTION

1 APPOINTMENT AND  
PAYMENT

- .1 Obtain and pay for services of inspection/testing laboratory for:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
  - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
  - .4 Commissioning performance testing and verification.
  - .5 Mill tests and certificates of compliance.
  - .6 Tests specified to be carried out by Contractor.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.
- .3 Inspection/testing agencies engaged by Contractor shall be reviewed by and be acceptable to Departmental Representative.
- .4 Departmental Representative, at Departmental Representative's expense, may also engage inspection/testing agencies as may be deemed required.

2 CONTRACTOR'S  
RESPONSIBILITIES

- .1 Provide, for Contractor's and Departmental Representative's inspection/testing agencies, labour, equipment and facilities to:
  - .1 Provide access to Work to be inspected and tested.
  - .2 Facilitate inspections and tests.
- .2 Make good Work disturbed by inspection and test.
- .3 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .4 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .5 Where materials are specified to be tested,

deliver representative samples in required quantity to testing laboratory.

- .6 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

END OF SECTION

1 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting 4 days in advance of meeting date to Departmental Representative.
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7 Reproduce and distribute copies of meeting minutes within 3 days after meetings and transmit to meeting participants and, affected parties not in attendance and Departmental Representative.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

2 PRECONSTRUCTION  
MEETING

- .1 Within 7 days after each Contract award, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
  - .1 Appointment of official representative of participants in the Work.

- .2 Schedule of Work: in accordance with Section 01 32 16.
- .3 Schedule of submission of shop drawings, colour samples, product data. Submit submittals in accordance with Section 01 33 00.
- .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00.
- .5 Delivery schedule of specified equipment in accordance with Section 01 14 00.
- .6 Site security in accordance with Section 01 56 00.
- .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .8 Departmental Representative provided products.
- .9 Record drawings in accordance with Section 01 33 00.
- .10 Maintenance manuals in accordance with Section 01 78 00.
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

3 PROGRESS  
MEETINGS

- .1 During course of Work schedule progress meetings every 2 weeks.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .3 Notify parties minimum 5 days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 2 days after meeting.
- .5 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede construction

schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Review proposed changes for affect on construction schedule and on completion date.

.12 Health and Safety.

.13 Other business.

END OF SECTION

1 GENERAL

- .1 Use a project management control system based Bar (GANTT) Chart technique.
- .2 Schedule reviews by Departmental Representative shall not mean approval of detail inherent in schedule, responsibility for which lies with Contractor.
- .3 Accept sole responsible for coordinating, scheduling of work, and the sequencing of work components and tasks.

2 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing

activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

- .9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

### 3 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

### 4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within 14 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

### 5 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule include.
  - .1 Initial Detailed Inspection
  - .2 Building Envelope Assessment
  - .3 Shop Drawings / Building Envelope Work

- Plan
- .4 Site Mobilization.
- .5 Demolition, Hoarding.
- .6 Work
- .7 Interim Certificate (Substantial Completion) date.
- .8 Final Certificate Completion.

6 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

7 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
  - .1 Inspection reports
  - .2 Shop drawings.
  - .3 Samples.
  - .4 Approvals.
  - .5 Demolition
  - .6 Installation.
  - .7 Testing.
- .3 Relate Detail Schedule activities to basic activities and milestones developed and approved in Master Plan.
- .4 Insert Change Orders in appropriate and logical location of Detail Schedule. After analysis, clearly state and report to Departmental Representative for review effects created by insertion of new Change Order.

8 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.

- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

9 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

10 QUALITY ASSURANCE

- .1 Use experienced personnel, fully qualified in planning and scheduling to provide services from start of construction to Final Certificate, including Commissioning.

11 PROJECT MEETING

- .1 Meet with Departmental Representative within 5 working days of each Award of Sub-Contract or Own Forces date, to establish Work requirements and approach to project construction operations.

END OF SECTION

1 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .11 Unless otherwise stated, ensure 4 reviewed

copies of all submissions are available to be retained by the Departmental Representative.

2 SHOP DRAWINGS  
AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other product data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit shop drawings bearing stamp and signature of qualified professional registered or licensed in Province or Territory of project location in Canada.
  - .1 Submit in addition to specified number of hard copies in electronic pdf version.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 10 working days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop

- drawing, product data and sample.
- .5 Other pertinent data.
- .8 Submissions include:
- .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Contractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit electronic pdf prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit electronic pdf copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit electronic pdf copies of test reports for requirements requested in specification Sections and as Departmental Representative may reasonably request.
- .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with

specified requirements.

- .13 Submit electronic pdf of certificates for requirements requested in specification Sections and as Departmental Representative may reasonably request.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic pdf of manufacturers instructions for requirements requested in specification Sections and as Departmental Representative may reasonably request.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic pdf of Manufacturer's Field Reports for requirements requested in specification Sections and as Departmental Representative may reasonably request.
  - .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .16 Submit electronic pdf of Operation and Maintenance Data for requirements requested in specification Sections and as Departmental Representative may reasonably request.
- .17 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before

fabrication and installation of Work may proceed.

- .20 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

### 3 SAMPLES

- .1 Submit for review samples as requested by the Departmental Representative. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's site office.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of the specifications.
- .4 Where colour, pattern or texture is criterion, submit manufacturer's full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contractor's shop drawings and specifications.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

4 PROGRESS  
PHOTOGRAPHS

- .1 Submit labeled progress photographs.
- .2 Each submission
  - .1 Prints sizes from electronic format, 200 x 300 mm.
  - .2 Electronic format on CD.
- .3 Print Type: semi-matt colour with binding margin at one end.
- .4 Paper: single weight, not mounted.
- .5 Number of prints required: 3 sets.
- .6 Identification, print copy and electronic format: name and project number, viewpoint and date of photograph.
- .7 Viewpoints: interior and exterior locations: viewpoints determined by Departmental Representative.
- .8 Frequency: weekly and with each progress statement.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Manitoba
  - .1 The Workers Compensation Act RSM 1987 - Updated 2013.

1.2 ACTION AND INFORMATION SUBMITTALS

- .1 Submit in accordance with Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Sustainable Requirements: Construction and Hazardous Materials.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 2 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.4 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.5 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with Regulatory Requirements.

1.6 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.7 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 COMPLIANCE

- .1 Comply with The Workers Compensation Act,

REQUIREMENTS

Workplace Safety Regulation, Manitoba Reg..

- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.9 UNFORSEEN  
HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator and or Safety Officer and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.10 HEALTH AND  
SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
  - .1 Have working knowledge of occupational safety and health regulations.
  - .2 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  - .3 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.11 POSTING OF  
DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.

1.12 CORRECTION OF  
NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.13 BLASTING .1 Blasting or other similar work is not permitted.

1.14 POWER  
ACTUATED DEVICES .1 Use of powder actuated devices is not  
permissible.

1.15 WORK STOPPAGE .1 Give precedence to safety and health of public and  
site personnel and protection of environment over  
cost and schedule considerations for Work.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 2 - PRODUCTS

3.1 NOT USED .1 Not used.

END OF SECTION

1 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
  - .1 Name of person responsible for ensuring adherence to Environmental Protection Plan.
  - .2 Name and qualifications of person responsible for manifesting hazardous waste to be removed from site.
  - .3 Name and qualifications of person responsible for training site personnel.
  - .4 Descriptions of environmental protection personnel training program.
  - .5 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
  - .6 Non-Hazardous solid waste disposal plan identifying methods and locations for solid

waste disposal including clearing debris.

.7 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project site.

.8 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

.9 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

3 FIRES

.1 Fires and burning of rubbish on site not permitted.

4 DISPOSAL OF WASTES

.1 Do not bury rubbish and waste materials on site.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

5 SITE CLEARING AND PLANT PROTECTION

- NOT APPLICABLE -

6 POLLUTION CONTROL

.1 Control emissions from equipment and plant to local authorities' emission requirements.

.2 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.

.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

7 NOTIFICATION

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

1 REFERENCES AND  
CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.

2 HAZARDOUS  
MATERIAL DISCOVERY

- .1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Departmental Representative.
- .2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.
- .3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

3 BUILDING  
SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

END OF SECTION

1 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .3 Departmental Representative will inspect the work in progress with internal to PWGSC staff. Contractor to coordinate such site visits with Departmental Representative.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

2 INSPECTION AGENCIES

- .1 Provide equipment required for executing inspection and testing by appointed agencies.
- .2 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .3 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

3 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

- .2 Co-operate to provide reasonable facilities for such access.

4 PROCEDURES

- .1 Coordinate inspections on weekly basis or more frequently if necessary. Notify appropriate agency and Departmental Representative in advance of inspector's site visit, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

6 REPORTS

- .1 Submit copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

7 Submittals

- .1 Submit building envelope specialist's report to Departmental Representative prior to commencing work.
- .2 Submit shop drawings and details to Departmental Representative prior to commencing work.
- .3 Submit weekly building envelope and work progress reports to Departmental Representative prior as work progresses.

END OF SECTION

1 INSTALLATION  
AND REMOVAL

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

2 TEMPORARY  
COMMUNICATION  
FACILITIES

- .1 Provide and pay for temporary telephone, fax, data, e-mail, internet access hook up, lines, equipment necessary for own use.

3 FIRE  
PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

- 
- 1 GENERAL .1 Provide Construction Office Trailer on site designated by the Departmental Representative
- 2 SUBMITTALS .1 Provide submittals in accordance with Section 01 33 00.
- 3 INSTALLATION AND REMOVAL .1 Prepare site plan indicating proposed location and dimensions of area to be used by Contractor number of trailers to be used
- .2 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.
- 4 SCAFFOLDING .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs.
- 5 HOISTING .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists cranes to be operated by qualified operator.
- 6 SITE STORAGE/LOADING .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.
- 7 CONSTRUCTION PARKING .1 Parking:  
1. Parking is limited and restricted to designated Laydown Area and areas designed by the Departmental Representative.  
2. Make good damage to roads used for project site access.
- .2 Provide and maintain adequate access to project site.
- .3 Clean site access areas/routes where used by

Contractor's equipment.

9 EQUIPMENT,  
TOOL AND MATERIALS  
STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

10 SANITARY  
FACILITIES

.1 Provide sanitary facilities for work force and Departmental Representative in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

11 CONSTRUCTION  
SIGNAGE

.1 No construction advertisement signs, other than health and safety, warning and instructional signs, are permitted on site.

.2 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

12 PROTECTION AND  
MAINTENANCE OF  
TRAFFIC

.1 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.

.2 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

.3 Protect traveling public from damage to person and property.

.4 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.5 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

14 CLEAN-UP

- .6 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .7 Dust control: adequate to ensure safe operation at all times.
- .8 Provide snow removal during period of Work at project site.
- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.

END OF SECTION

PART 1 - GENERAL

- 1.1 GENERAL .1 Enclose and shelter the work areas as required to protect the existing building, the existing building components, building occupants and contents, as well as the work in progress from damage due to weather, vermin, wind or other risks.
- 1.3 INSTALLATION AND REMOVAL .1 Provide temporary measures in order to execute Work expeditiously and prevent damage to the work and/to to the Building.
- .2 Remove from site all such work after use.
- 1.4 TEMPORARY CONSTRUCTION FENCES .1 During North Yard Exercise Gate replacement, Contractor is responsible for securing gate openings with a gate that meets or exceeds Type 2 of the CSC Technical Criteria SP-6 Site Temporary Construction Fences. This Type 2 fence in this area is required to be topped with barbed tape concertina meeting CSC Technical Criteria. The fence detection system must also remain active throughout the construction area. Any modification to the fence detection system must be completed by a licensed Electrician and be approved by the Departmental Representative. A work plan must be submitted and approved by the Departmental Representative prior to proceeding with any of the work.
- .2 For Unit 5, Inmate Exercise Yards, the Contractor is responsible for securing the work area with a temporary fence that meets or exceeds Type 2 of the CSC Technical Criteria SP-6 Site Temporary Construction Fences. This Type 2 fence in this area is not required to be topped with barbed tape concertina. A minimum of one half of the exercise yards are to be utilized by the Institution during the construction period. A work plan must be submitted and approved by the Departmental Representative prior to proceeding with any of the work.
- 1.4 TEMPORARY CONSTRUCTION FENCES .1 Provide protection for existing, finished and partially finished building finishes and equipment during performance of Work .

- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation .
- .4 Be responsible for damage incurred due to lack of or improper protection.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END OF SECTION

1 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 Reference shop drawings and engineering design, securely fasten materials and building components in place to resist high winds in Stony Mountain geographic area.

2 AVAILABILITY

- .1 Immediately upon signing Contract(s), review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character,

at no increase in Contract Price or Contract Time.

3 STORAGE,  
HANDLING AND  
PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store sheet materials, lumber and on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .5 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .6 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .7 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

4 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Departmental Representative will pay for transportation cost of products supplied by Departmental Representative. Unload, handle and store such products.

5 MANUFACTURER'S  
INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, to allow for Departmental Representative's review of the next course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

6 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative whose decision is final.

7 CO-ORDINATION

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

8 CONCEALMENT

- .1 Before installation inform Departmental Representative if there is interference. Install as directed by Departmental Representative.

9 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to

neither damage nor put at risk any portion of Work.

10 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- .7 Situate and locate flashings, membranes, and materials carefully in accordance with good practice for installation. Ensure materials are lapped in correct sequence to ensure water flows away from building envelop. Fasten components securely in place to resist high winds in Stony Mountain geographic area.

11 FASTENINGS -  
EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Ensure components and fasteners are compatible. Do not utilize components that will create galvanic action between components.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with

stainless steel.

12 PROTECTION OF  
WORK IN PROGRESS

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

13 EXISTING  
UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

END OF SECTION

1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00.
- .2 Submit written request in advance of cutting or alteration which affects:
  - .1 Structural integrity of elements of project.
  - .2 Integrity of weather-exposed or moisture-resistant elements.
  - .3 Efficiency, maintenance, or safety of operational elements.
  - .4 Visual qualities of sight-exposed elements.
- .3 Include in request:
  - .1 Identification of project.
  - .2 Location and description of affected Work.
  - .3 Statement on necessity for cutting or alteration.
  - .4 Description of proposed Work, and products to be used.
  - .5 Alternatives to cutting and patching.
  - .6 Effect on Work of Owner or separate

2 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00.
- .3 Match existing style and color and finishes for flashings and trim work where practical.

3 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work;

4 EXECUTION

- .1 Execute cutting, fitting, and patching including excavation and fill to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .9 Restore work with new products in accordance with requirements of Contract Documents.
- .10 Seal and Fit Work weather tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .12 Tie down and fasten components on or adjacent to roof securely anticipating potential risk of high wind.

5 EXCESS MATERIAL

- .1 Remove all excess other material to off-site.

END OF SECTION

1 PROJECT  
CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Design Builders.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 21.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

2 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of

remaining Work.

- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds affected by the Work.
- .7 Remove dirt and other disfiguration from exterior surfaces.
- .8 Clean and sweep roofs, areaways and clean drainage system
- .9 Sweep and wash clean paved areas affected by the Work.
- .10 Remove snow and ice from access to building affected by the Work.

END OF SECTION

1 WASTE  
MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss PWGSC's waste management goals.
- .2 PWGSC's waste management goal 75 percent of total project waste to be diverted from landfill sites. Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

2 DEFINITIONS

- .1 Demolition Waste Audit (DWA): relates to actual waste generated from project.
- .2 Inert Fill: inert waste - exclusively asphalt and concrete.
- .3 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .4 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .5 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .6 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .7 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage,

for resale, reuse on current project or for storage for use on future projects.

.2 Returning reusable items including pallets or unused products to vendors.

- .8 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .9 Separate Condition: refers to waste sorted into individual types.
- .10 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.
- .11 Waste Management Co-ordinator (WMC): Contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .12 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials.

### 3 DOCUMENTS

- .1 Maintain at job site, one copy of following documents:
  - .1 Demolition Waste Audit.
  - .2 Waste Reduction Workplan.
  - .3 Material Source Separation Plan.
  - .4 Schedules completed for project.

### 4 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00.
- .2 Prepare and submit following prior to project start-up:
  - .1 Submit 2 copies of completed Waste Reduction Workplan (WRW): Schedule B.
  - .2 Submit 2 copies of completed Demolition Waste Audit (DWA): Schedule C.
- .3 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
  - .1 Failure to submit could result in hold back of final payment.

.2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled or disposed of.

.3 For each material reused, sold or recycled from project, include amount in tones or quantities by number, type and size of items and the destination.

.4 For each material land filled or incinerated from project, include amount of material and identity of landfill, incinerator or transfer station.

5 WASTE REDUCTION  
WORKPLAN (WRW)

.1 Prepare WRW prior to project start-up.

.2 WRW should include but not limited to:

.1 Destination of materials listed.

.2 Deconstruction/disassembly techniques and sequencing.

.3 Schedule for deconstruction/disassembly.

.4 Location.

.5 Security.

.6 Protection.

.7 Clear labeling of storage areas.

.8 Details on materials handling and removal procedures.

.9 Quantities for materials to be salvaged for reuse or recycled and materials sent to landfill.

.3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.

.4 Describe management of waste.

.5 Identify opportunities for reduction, reuse, and recycling of materials.

.6 Post WRW or summary where workers at site are able to review content.

.7 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.

.8 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.

6 DEMOLITION  
WASTE AUDIT (DWA)

- .1 Prepare DWA prior to project start-up.
- .2 Complete DWA: Schedule A.
- .3 Provide inventory of quantities of materials to be salvaged for reuse, recycling, or disposal.

7 MATERIALS  
SOURCE SEPARATION  
PROGRAM (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.
- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
  - .1 Transport to approved and authorized recycling facility or to users of material for recycling.

8 WASTE  
PROCESSING SITES

- .1 Use Provincial Ministry Office recognized and listed processing sites pertaining to reuse and recycle centres and waste processing sites.

9 STORAGE,  
HANDLING AND  
PROTECTION

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal

facility.

- .4 Protect structural components not removed for demolition from movement or damage.
- .5 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .6 Protect surface drainage, mechanical and electrical from damage and blockage.
- .7 Separate and store materials produced during dismantling of structures in designated areas.
- .8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

#### 10 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil, paint thinner into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
  - .1 Number and size of bins.
  - .2 Waste type of each bin.
  - .3 Total tonnage generated.
  - .4 Tonnage reused or recycled.
  - .5 Reused or recycled waste destination.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

#### 11 USE OF SITE AND FACILITIES

- .1 Execute Work with least possible interference or disturbance to normal use of premises.

#### 12 SCHEDULING

- .1 Co-ordinate Work with other activities at site

to ensure timely and orderly progress of Work.

13 APPLICATION

- .1 Do Work in compliance with WRW.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

14 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up Work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

15 DEMOLITION  
WASTE AUDIT (DWA)

- .1 Schedule C - Demolition Waste Audit (DWA):

(1) Material Description	(2) Quantity	(3) Unit	(4) Total	(5) Volume (cum)	(6) Weight (cum)	(7) Remarks and
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END OF SECTION

PART 1 - GENERAL

1.1 ADMINISTRATIVE  
REQUIREMENTS

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2 Request Departmental Representative inspection.
  - .2 Departmental Representative Inspection:
    - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
    - .1 Work: completed and inspected for compliance with Contract Documents.
    - .2 Defects: corrected and deficiencies completed.
    - .3 Mechanical HVAC Equipment and systems affected by duct louver works: tested, adjusted and balanced and fully operational.
    - .8 Work: complete and ready for final inspection.
  - .4 Final Inspection:
    - .1 When completion tasks are done, request final inspection of Work by Departmental Representative and Contractor.
    - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

1.4 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 11
- .2 Waste Management as per 01 74 21

PART 2 - PRODUCTS

- 1. Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00.
- .2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .3 Copy will be returned after final inspection, with Departmental Representative's comments.
- .4 Revise content of documents as required prior to final submittal.
- .5 Two (2) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative;
  - .1 Two (2) final copies plus electronic copies of operating and maintenance manuals in English.
- .6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or non-defective, and of same quality and manufacture as products provided in Work.
- .7 Furnish evidence, if requested, for type, source and quality of products provided.
- .8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .9 Pay costs of transportation.

2 ELECTRONIC  
SUBMITTALS

- .1 Submit number of hard copies specified for each type and format of submittal and in also submit in electronic format as pdf files and also in MS Word, Excel, Project as may be appropriate and in Autocad DWG files all on CD R/W or USB.

3 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.

- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by components, systems, integrated systems, process flow, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9 Provide drawings in pdf and DWG format.
- 10 On project completion submit to Departmental Representative 1 electronic pdf copy and 4 paper copies in binders of Operations and Maintenance Manual.
  - .1 Organize manuals into industry standard maintenance manual tabs with links in index to each descriptive section describing the component or maintenance procedure.
  - .2 Organize files into Masterformat 2010 numbering system.
  - .3 Label disk "Operational and Maintenance Data", project name, date, names of Contractor, subcontractors, consultants and subconsultants.
  - .4 Include scanned guarantees, bonds, diagrams and drawings.
  - .5 Organize contents into applicable sections of work to parallel specification break-down. Mark each section by labeled tabs (navigation buttons).
  - .6 Ensure all content is legible.

4 CONTENTS - EACH  
VOLUME

- .1 Table of Contents: provide title of project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of Department Representative and Contractor with name of responsible parties.
  - .3 Schedule of products and systems, indexed to content of volume.

- .2 For each product or system:
  - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.

5 AS-BUILTS SPECIFICATIONS.1  
AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for

inspection by Departmental Representative.

- .6 Departmental Representative may furnish additional drawings and specifications to clarify Work.
  - .1 Such documents become part of Contract Document.
  - .2 Include such documents in As Built submission.
- .7 Turn over, at completion, with all as-built information:
- .8 Submit to Departmental Representative one copy of drawings and specifications for review prior to final submission.

6 RECORDING  
ACTUAL SITE  
CONDITIONS

- .1 As work progresses record information on set of black line opaque shop drawings, and in copy of Specifications Documents.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Marked Up Contract Drawings and Shop Drawings: mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Field changes of dimension and detail.
  - .5 Changes made by change orders.
  - .6 Details not on original Contract Drawings.
  - .7 References to related shop drawings and modifications.
- .5 Prepare Autocad drawings modifying shop drawings to show information recorded as per item .4 above, "Marked Up Contract Drawings and Shop Drawings".
- .6 Specifications: mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

- .2 Changes made by Addenda and change orders.
  - .7 Other Documents: maintain manufacturer's certifications, guarantees, inspection certifications, field test records, required by individual specifications sections.
  - .8 Submit binder and electronic pdf file containing all the weekly construction photographs.
- 7 MATERIALS AND FINISHES
- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
  - .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  - .3 Moisture-Protection and Weather-Exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  - .4 Additional Requirements: as specified in individual specifications sections.
- 8 SPARE PARTS
- .1 Provide spare parts, in quantities specified in individual specification sections.
  - .2 Provide items of same manufacture and quality as items in Work.
  - .3 Deliver to site as directed; place and store.
  - .4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
  - .5 Obtain receipt for delivered products and submit prior to final payment.
- 9 MAINTENANCE MATERIALS
- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to site as directed; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

10 SPECIAL TOOLS

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to site as directed; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

11 STORAGE,  
HANDLING AND  
PROTECTION

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

12 WARRANTIES AND  
BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties Manufacturers' Guarantees and Bonds.
- .2 Submit warranty management plan, 60 days before planned pre-warranty conference, to

Departmental Representative approval.

- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties, manufacturers' guarantees and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of work.
  - .4 Verify that documents are in proper form, contain full information, and are notarized.
  - .5 Co-execute submittals when required.
  - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Departmental Representative permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Include information contained in warranty management plan as follows:
  - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
  - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items.

.3 Provide list for each warranted equipment, item, feature of construction or system indicating:

- .1 Name of item.
- .2 Model and serial numbers.
- .3 Location where installed.
- .4 Name and phone numbers of manufacturers or suppliers.
- .5 Names, addresses and telephone numbers of sources of spare parts.
- .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
- .7 Cross-reference to warranty certificates as applicable.
- .8 Starting point and duration of warranty period.
- .9 Summary of maintenance procedures required to continue warranty in force.
- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.

.4 Contractor's plans for attendance of the various required post-construction warranty inspections.

.5 Procedure and status of tagging of equipment covered by extended warranties.

.6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.9 Respond in a timely manner to oral or written notification of required construction warranty repair work.

.10 Written verification will follow oral instructions. Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

.1 Meet with Departmental Representative, to develop understanding of requirements of this section. Schedule meeting prior to contract

completion, and at time designated by  
Departmental Representative.

- .2 Departmental Representative will establish communication procedures for:
  - .1 Notification of construction warranty defects.
  - .2 Determine priorities for type of defect.
  - .3 Determine reasonable time for response.
- .3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.
- .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

END OF SECTION

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PART 1 - GENERAL

## 1.1 SCOPE

- .1 This section supplements the "GENERAL REQUIREMENTS"; Section 01 11 00 and "CHAIN LINK FENCES AND GATES"; Section 32 31 13.
- .2 The scope of electrical work in this contract includes:
  - .1 Prior to performing the work, inspect, list, itemize, and assess condition of all existing electrical conduits, controls, fixtures, fittings, Fence Detection Systems (F.D.S.), and components attached to and/or associated with the existing fences and gates.
  - .2 Provide schedule of electrical component work and Communicate salient details of electrical work to the Departmental Representative prior to commencing works on site.
    - .1 Identify existing electrical elements identified above affected by the work of this contract in a schedule format.
    - 2. Utilize Schedule format, define work methodology to protect existing electrical components, equipment, fittings, fixtures where feasible, replace where required, and make good all electrical components.
    - 3. Breakdown itemized assessment to include electrical components which are assessed to be in good condition. Note where requiring work to patch, repair, replace, and/or otherwise make good.
  - .3 After review of electrical assessment by Departmental Representative, implement work to maintain patch, repair, replace, and make good all electrical conduits, controls, fixtures, fittings, and components attached to and/or associated with the existing fences and gates.
  - .4 Comply with General Requirement sections.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
  - .1 CSA C22.1-06, Canadian Electrical Code, Part 1 20th Edition, Safety Standard for

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Electrical Installations.

- .2 CSA C22.2; Canadian Electrical Code, Part II - Wiring Products
- .3 CAN/CSA-C22.3 No. 1-2010,

.2 Other references listed in General Requirements

### 1.3 DEFINITIONS

.1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SP1122.

### 1.4 DESIGN REQUIREMENTS

.1 Assess, Itemize and verify electrical requirements of all existing systems connected to the fences and gates.

.2 Implement work in accordance with CSC Technical Criteria and other Stony Mountain Specific / CSC project requirements identified within this contract.

.3 Fence Disturbance Detection System:  
1. Implement works in a manner that will protect the existing FDS System components from damage.  
2. Coordinate works that will be adjacent to FDS System Components with Departmental Representative.  
3. Protect, maintain, patch repair and make good all components affected by and/or adjacent to the fence works, as required to ensure all components are completely operational and durable.

### 1.5 SUBMITTALS

.1 Submittals: in accordance with 01 11 00

.2 Shop drawings:  
.1 Submit drawings stamped and signed by professional engineer registered or licensed in Manitoba.

.2 Submit wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure co-ordinated installation.

.3 Identify on wiring diagrams circuit

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terminals and indicate internal wiring for each item of equipment and interconnection between each item of equipment.

.4 If changes are required, notify Departmental Representative of these changes before they are made.

.5 Identify with shop drawings indicating locations of existing cables, conduits, and electrical components, identify existing components to remain, identify scope of electrical work on site, identify locations of existing elements including buried and/or otherwise concealed electrical elements.

.3 Quality Control

.1 Provide CSA certified equipment.

.2 verify system design requirements with Project Manager prior to commencing work.

.3 Test equipment prior to completion as per Division 1.

.4 Warrantee work as per Division 1.

.4 Contractor's Field Reports: submit to Departmental Representative written report, within fourteen days of completion of work, verifying compliance of Work and electrical system testing.

1.6 QUALITY  
ASSURANCE

.1 Qualifications: electrical Work to be carried out by qualified, licensed electricians who hold valid Master Electrical Contractor, or apprentice certification in accordance with authorities having jurisdiction as per the conditions of Province of Manitoba Legislation respecting manpower vocational training and qualification.

.1 Employees registered in provincial apprentice program: permitted, under direct supervision of qualified licensed electrician, to perform specific tasks.

.2 In accordance with Division 1.

.3 Document existing electrical components and equipment, panels, conduits, boxes and other elements with digital time stamped dated jpeg format photographs prior to commencement of the work. Utilize photographs as a means to document repairs and functionality of components upon

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completion of the work.

1.7 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Material Delivery Schedule: Coordinate delivery of materials and equipment on site with Departmental Representative as required to maintain schedule; ensure security of materials; and ensure site security.
- .2 Ensure construction waste materials are removed from work area on regular basis and disposed in accordance with applicable environmental regulations. Ensure construction waste materials are not accessible to prison inmates at any time.

1.8 SYSTEM STARTUP  
WARANTEE

- .1 Instruct operating personnel; and Departmental Representative in operation, care and maintenance of systems, system equipment and components.
- .2 Arrange and pay for services of manufacturer's factory service engineer to supervise start-up of installation, check, adjust, balance and calibrate components and instruct operating personnel.
- .3 Provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant will aspects of its care and operation.
- .4 Provide Warrantee services for one year commencing upon substantial completion of the project, and provide as many visits as necessary to maintain equipment in operation.

1.9 OPERATING  
INSTRUCTIONS

- .1 Provide Operating Instructions in accordance with Division 1.

1.10 SITE  
EXAMINATION

- .1 During site visit examine all local and existing conditions on which the work is dependent.
- .2 No consideration will be granted for any misunderstanding of work to be done resulting from failure to visit the site.
- .3 Provide for avoidance of damage, minimize interference to existing fence and sally port gate

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components, and rectify any damage due to work.

- .4 Disconnect; make good; remove and/or replace existing electrical components and systems on site as required to implement the work. Remove, relocate, repair, make good and/or replace electrical equipment as required.
- .5 Prior to tendering, examine the Fence Disturbance Detection System (FDS) and define circumstances where the work will require services of CSC approved specialty trades ensuring a complete and functioning FDS system.
- .6 Engage services of CSC approved specialty trades ensuring a complete and functioning FDS system
  - 1. Identify circumstances where the work to the fence and gates will affect the FDS system. Throughout the work endeavor to protect the FDS System from damage.
  - 2. Services of CSC approved specialty trades ensuring a complete and functioning FDS system are in the scope of this project.

## PART 2 - PRODUCTS

### 2.1 MATERIALS AND EQUIPMENT

- .1 Provide new material and equipment as required to implement the work and ensure electrical fence and gate systems and components are fully operational and functioning in accordance with CSC Technical Requirements.
- .2 Material and equipment to be CSA certified.
- .3 Conductors: Copper.
- .4 All conductors must be weatherproof / waterproof, complete with weather-resistant outside jacket, suitable for outside installation.
- .5 Insulation shall be rated for 90 degree Celsius.
- .6 Insulation and Conductors: Match existing unless otherwise required by Codes or Standards.
- .7 Material and equipment to be CSA certified.

### 2.2 ELECTRIC MOTORS, EQUIPMENT

- .1 Verify installation and co-ordination

AND CONTROLS

responsibilities related to motors, equipment and controls, as indicated.

- .2 Control wiring and conduit: Ensure wiring and control systems are durable; reliable; and secure.

2.3 WIRING  
TERMINATIONS

- .1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.4 CONDUIT;  
WIRING AND  
EQUIPMENT  
IDENTIFICATION

- .1 Identify electrical equipment with nameplates and labels as required. Coordinate information in operational manual with equipment on site.
- .2 Identify wiring with permanent indelible identifying markings, coloured plastic tapes, on both ends of control and power circuit wiring.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Do complete installation in accordance with CSA C22.1 except where specified otherwise.
- .2 Do overhead and underground systems in accordance with CSA C22.3 No.1 except where specified otherwise.
- .3 Prior to commencing works, coordinate and schedule shut-down of FDS system with Departmental Representative.
- .4 Situate electrical boxes, cabinets and Sally port Gate opening devices / control elements on secure side of fence.
- .5 Ensure existing and new electrical system elements comply with Canadian Electrical Code.
- .6 Confirm locations of new cabinets, gate opening system elements with Departmental Representative prior to commencing work.
- .7 Provide robust hot dip galvanized for cabinet and boxes similar to existing if and as required.
- .8 Confirm mounting heights and locations in locations as approved by Departmental Representative.

- 
- 3.2 NAMEPLATES AND LABELS .1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed.
- 3.3 CONDUIT, OUTLET, JUNCTION BOX, ELECTRICAL BOX, CABINETS, AND CABLE INSTALLATION
- .1 Review existing wiring, conduits, and electrical boxes; design system to utilize existing fittings and fixtures including conduits and cabling if electrical assessment verifies such existing equipment will be durable and reliably function over the warrantee period.
- .2 Prior to tender visually inspect existing electrical system components. Scope of work will include making good and/or replacing worn, weathered, unsafe or deteriorated electrical components identified by contractor during the pre-tender site review.
- .3 Prior to commencing work, test and verify performance of existing concealed cabling and existing electrical components / system elements that are associated with the fencing and sally port gates. Advise Departmental Representative of the condition of such concealed existing electrical components / system elements.
- .4 Wires, grounding, and Terminations:  
.1 Make good shielding of existing wires  
.2 Ensure all existing wires and wire terminations are safe, grounded, and code compliant. Make good deficient existing electrical works connecting with fence, sally-port gate, and sally port gate opening systems. Ensure continuity of grounding network.
- .5 Junction, Bull boxes, cabinets  
.1 If new junction boxes required provide fiberglass, gasketed, Nema 4X corrosion resistant, complete with cover-plate affixed to box using tamper resistant screws. Install boxes if and as required.  
.2 If new electrical cabinet required provide fiberglass, gasketed, Nema 4X corrosion resistant, complete with hinged door c/w padlock hasp. Install cabinet(s) if and as required.

3.7 FIELD QUALITY  
CONTROL

- .1 Conduct and pay for following tests.
  - .1 Verify control and operating system is fully operational upon completion of the work. Make good any operational deficiencies and retest system. Provide commissioning report upon completion of the work.
- .2 Provide instruments, meters, equipment and personnel required to conduct tests to Sally Port gate electrical components if and as required by the Departmental Representative during and at conclusion of project.
- .3 Verify that electrical equipment is on secure side of fence. Verify that all gate system components are safe, Canadian Electrical Code Compliant, secure, robust, and durable.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Provide materials and installation works for the construction, repair and maintenance of existing Unit 5, Inmate Exercise Yards fences and gates and North Gate gates as required, upgrading components and systems to meet Correctional Service Canada design, performance, durability, and service standards.
- .2 Provide materials and installation works for the re-construction, repair as required to provide durable, reliable, secure fences and gates. Re-build meeting Correctional Service Canada design, performance, durability, and service standards.
- .4 Provide mechanical and electrical trades; materials, repair components; and service works to electrical powered gate equipment, remote gate operating controls, gate latching devices.
- .5 Examine the security fencing system components in the area defined by the Unit 5 and North Gate. Identify conditions where existing gate and fence components are not in accordance with defined CSC Standards and "Technical Criteria" and implement subsequent works bringing the designated fences and gates up to standard.
- .6 Provide rigorous attention to quality assurance, meeting the requirements outlined within this contract
- .7 Utilize design solutions based on shop drawings prepared by an engineer licensed to practice engineering in the province of Manitoba
- .8 The scope of work of this contract does not include creation of new anti-tunneling concrete walls.

1.4 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM A 53/A 53M-10, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - .2 ASTM A 90/A 90M-09, Standard Test Method for Weight Mass of Coating on Iron and Steel

Articles with Zinc or Zinc-Alloy Coatings.  
.3 ASTM A 121-07, Standard Specification for Zinc-Coated (Galvanized) Steel Barbed Wire.  
.4 A653/A653M-10, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

- .2 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-138.1- 96 Fabric for Chain Link Fence.
  - .2 CAN/CGSB-138.2- 96 Steel Framework for Chain Link Fence.
  - .3 CAN/CGSB-138.3- 96, Installation of Chain Link Fence.
  - .4 CAN/CGSB-138.4- 96 Gates for Chain Link Fence.
  - .5 CAN/CGSB-1.181-99 Ready-Mixed Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA International).
  - .1 CAN/CSA-A23.1/A23.2-August 2001, Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.
  - .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CAN/CSA-A3000-98(R2002), Cementitious Materials Compendium. Includes:
    - .1 CAN/CSA-A23.5-98, Supplementary Cementing Materials
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .5 The Master Painters Institute (MPI) - Architectural Painting Specification Manual - current edition
  - .1 MPI # 18, Organic Zinc Rich Primer.

1.4 APPENDIX  
REFERENCE

- .1 CSC Technical Criteria Document, part SP-2 Fence, Sp-3 Gates, and SP-6 Temporary Construction Fences; Attached as Appendix 1 to this contract.

1.5 SUBMITTALS

- .1 Submittals in accordance with General Requirements; Submittals in accordance with CSC Requirements. Ensure all required submittals are accepted by Departmental Representative prior to mobilization on site.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets in

accordance with General requirements 01 11 00

- .3 Submit Shop Drawings to indicate:
  1. Existing and proposed elevations.
  2. Roadway sections indicating new roadway base, roadway structure, roadway composition.
  3. Separate drawings for all gates indicating:
    - a. Plan view,
    - b. Elevation views
    - c. Sections, and detail sections
    - d. Details of the gate mechanisms
    - e. Wiring diagrams for all gate electrical systems,
  4. As existing as-found drawing showing the location of all of the fence and gate posts.
    - a. Identify the location of new posts to be installed as part of the work.
  5. As-found elevations describing all the fence Panels surrounding the areas.
    - a. Identify areas where the concertina wire, fence fabric, tension bars, horizontal rails and other fence and gate components require remedial work as required to upgrade the fence panels to meet the CSC Technical Criteria.
- .4 Provide a one Year Warranty for gate systems for all materials and labour required to make good gate systems.
- .5 Provide product data describing fence components; gate system components identifying manufacturer, materials, finishes, design standards, and other data necessary to confirm adherence with contract requirements.
- .6 Provide product and component descriptions, manufacturers' data sheet and any other information required by the Departmental Representative to conform adherence with contract requirements.
- .7 Upon completion of the work, submit As-build drawings and operational manual for gates systems to document components used, operational instructions, circuit diagrams for power and control systems.

1.6 HEALTH AND  
SAFETY AND SECURITY

- .1 Do construction Occupational Health And Safety in accordance with General Conditions. Meet Security requirements defined within General Requirements 01 11 00.

1.7 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Store and manage hazardous materials in accordance with Section Occupational Health And Safety in accordance with General Conditions and in accordance with Stony Mountain Institution's and/or the Departmental Representative's Requirements.

1.8 WASTE  
MANAGEMENT AND  
DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with General Requirements.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with Regional and Municipal regulations.
- .7 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Departmental Representative.
- .8 Do not dispose of unused paint material into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .9 Fold up metal banding, flatten and place in designated area for recycling.

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PART 2 - PRODUCTS

2.1 MATERIALS

- .1 If existing fence fabric requires replacement provide new chain-link fence fabric: to CAN/CGSB-138.1
  - .1 Match existing fabric
  - .1.1 Wire size 4.8mm minimum - six gauge
  - .1.2 Size of mesh: 50.8mm
  - .2 Height of fabric to meet CSC Requirements
  - .2.2 Height 3600mm
  - .3 Barbed edges top and bottom
  - .4 Average mass of zinc coating to be not less than 610g/m<sup>2</sup> of uncoated wire
  - .5 Breaking Strength to be 10,000N minimum
  - .6 galvanization: heavy duty commercial; 25 - 35year durability
- .2 Posts, braces and rails: to CAN/CGSB-138.2, galvanized steel pipe. Dimensions to meet CSC Requirements.
  - .1 Inspect posts and rails, identify where post assembles meet concrete base in a manner that is not durable. IE identify post base conditions that are rusted or that will allow water to leak into pipe and footing assemblies.
  - .2 Make good post base conditions by welding joints to eliminate gaps where water can penetrate into assembly finish welds with zinc rich coatings.
- .3 Top and bottom and side tension wire: to CAN/CGSB-138.2, single strand, galvanized steel wire.
- .4 Replacement Tie wire fasteners: 9 gauge galvanized steel wire
- .5 Tension bar: to ASTM A 653/A 653M, 5 x 20 mm minimum galvanized steel.
  - .1 Tension Bars to be at least 5mm thick and 20mm wide.
- .6 Gates: to CAN/CGSB-138.4 and to CSC standard requirements.
- .7 Fittings and hardware: to CAN/CGSB-138.2, galvanized steel
  - .1 Tension bar bands: 5 x 20 mm minimum galvanized steel.
  - .2 Post caps to provide waterproof fit, to fasten securely over posts and to carry top rail.
  - .3 Overhang tops to provide waterproof fit, to

hold top rails and an projection to hold barbed wire overhang to CSC standard details.

.4 Modify projection with clips or recesses to hold strands of concertina barbed tape wire spaced apart.

.5 Maintain existing projections projecting from fence at 45 degrees above horizontal holding Concertina Barbed Wire.

.6 Turnbuckles; all fixtures; accessories to be drop forged steel, designed to fit and fasten without bending or distortion.

.8 Organic zinc rich coating: to CAN/CGSB-1.181.

.9 Concertina Barbed wire: to CAN/CGSB-138.2, 20 x 2.5 mm diameter. Concertina wire to feature:

.1 spring steel galvanized core wire.

.2 to form a concertina coil with a nominal exterior coil of 710mm.

.3 concertina coil to have a minimum diameter of 635mm.

.4 concertina coils shall be spaced in loops spaced no more than 230mm on centre.

.5 Define concertina coils clipping adjacent loops of single helical coils together at a minimum of three (3) points on the circumference.

.6 concertina wire fabricated with 20 mm barb dimension measured tip to tip of concertina blade barbs

.7 concertina wire barb clusters spaced 45mm on centre

### 2.3 FINISHES

.1 Galvanizing:

.1 For chain link fabric: to CAN/CGSB-138.1 Grade

.2 For pipe: reference CSC Standards

.3 For barbed wire: reference CSC Standards

.4 For other fittings: to CAN/CSA-G164

.5 Performance requirement: All products galvanization: heavy duty commercial grade; 25 - 35 year durability

### PART 3 - EXECUTION

#### 3.1 REVIEW OF EXISTING GATES, & FENCE PREPARE DETAIL SUBMISSIONS / DESIGN

.1 Reference Appendix containing the CSC Technical Criteria Document defining technical performance and detail design requirements for fences and gates. Prepare Shop Drawings describing:

1. Identify for removal and replacement all existing aluminum ties on the fences surrounding the Sally Port with 9 gauge galvanized steel ties.
2. Identify for removal and replacement all rusted barbed wire
3. Identify for removal and replacement all concertina wire that is not strung in the manner defined within the CSC Technical Criteria.

3.2 EXECUTION OF WORK-  
IMPLEMENTATION

1. Proceed with work upon Departmental Representative acceptance of shop drawing, and design, and schedule submissions
2. Implement work in accordance with shop drawing submissions. Stage work in a manner that minimizes the impact of the work on CSC Ongoing operations.
3. Execute works to make good the existing fencing panels and fence components enclosing the Sally Port
  - 3.1 Reference CSC Technical Standards and existing conditions, make good existing fencing, concertina wire and fence fabric.
  - 3.2 Ensure tension wire is stretched tightly and fastened securely to end, corner, gate and straining posts with turnbuckles and tension bar bands.
  - 3.3 Verify and correct lay out of fence fabric. Wire mesh fabric shall be continuous from top to bottom. Wire Mesh shall be applied to the institutional compound side of the post. Stretch tightly to tension recommended by fabric manufacturer and fasten to end, corner, gate and straining posts with tension bar secured to post with tension bar bands spaced at 300 mm intervals. Ensure correct placement of
    - .1 Knuckled selvedge at bottom.
    - .2 Twisted selvedge at top
  - 3.4 Secure existing fabric to top rails, line posts and bottom tension wire with galvanized steel tie wires at 450 mm intervals.
    - .1 Give tie wires minimum two twists.

3.3 REPAIR EXISTING GATES.1  
AND SALLY PORT  
GATE COMPONENTS

- Schedule works to each of the Gate works with the Departmental Representative.
- .1 plan work to minimize disruption to

operation of secure gate systems  
.2 plan and schedule delivery of parts, materials and trades implementing works in an expedient manner as required ensuring constant security.

- .2 Present Departmental Representative with Gant Chart describing scheduling of gate works.
- .3 Implement works; present Departmental Representative with warranty of gate operation and gate components upon completion of works
- .4 Implement works; present Departmental Representative with warranty of gate operation and gate components upon completion of works.

### 3.5 TOUCH UP

- .1 Visually inspect existing fence for damaged areas where water exposed to metal has created rust or will cause rusting. Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas
- .2 Pre-treat damaged surfaces according to manufacturers' instructions for zinc-rich paint.
- .3 Ensure all nut connectors face exterior side of fence away from Institution. Verify that all nut connections are torque tight.

### 3.6 CLEANING

- .1 Clean and trim areas disturbed by operations.
  - .1 Dispose of surplus material Make good existing exterior grade as directed by Departmental Representative.

### 3.7 REPLACEMENT PARTS

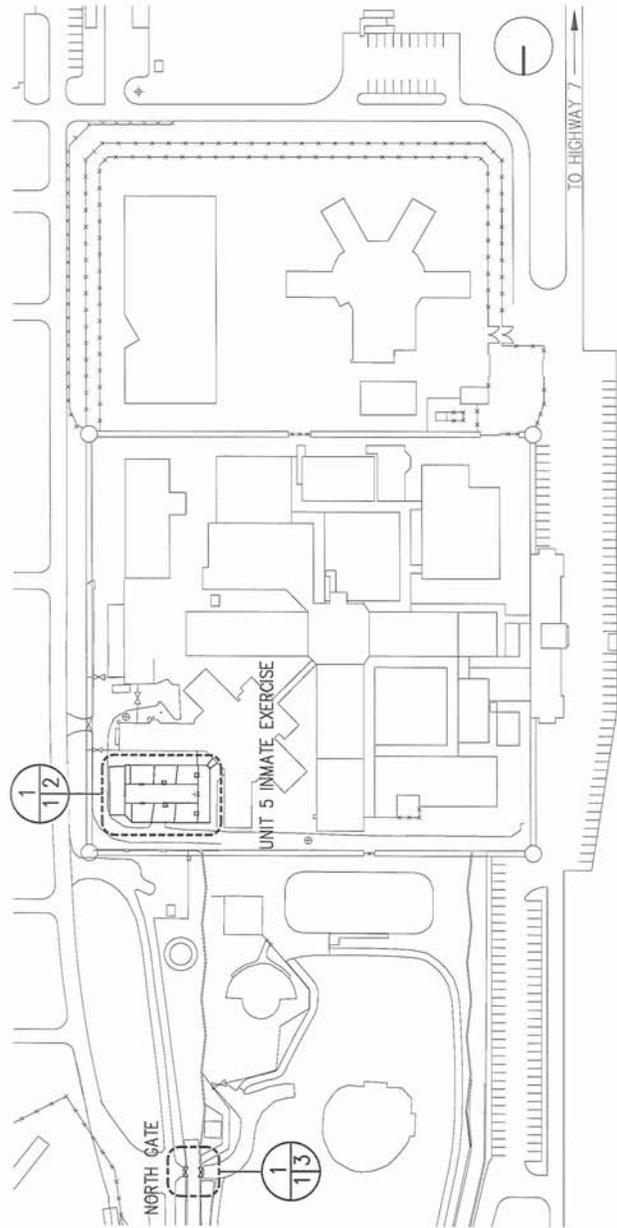
- 1. Provide replacement parts and/or ensure that replacement parts are available over the next one year.

### 3.8 COMPLETION

- 1. Commission system, ensuring all sally port gate moving, electronic, and fixed components are functioning and in full compliance with CSC requirements. Provide CSC with operational manuals and a list of all component parts.
- 2. Provide training to CSC on gate operation and maintenance.

3. Warrantee gate operating components and system for a one year period. Warrantee period shall commence upon Departmental Representative Acceptance of final completion of project work.

END OF SECTION



1 STONY MOUNTAIN INSTITUTION KEY PLAN  
1:2000

**GENERAL NOTES:**

- CONTRACTOR SHALL CHECK ALL DIMENSIONS AND OTHER DATA FROM THE JOB AND REPORT ANY DISCREPANCIES TO THE DEPARTMENTAL REPRESENTATIVE BEFORE PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL PERMITS AND REQUIRED CLEARANCES FROM THE INSTITUTION.
- THE CONTRACTOR IS RESPONSIBLE TO OBSERVE AND MAINTAIN ALL SAFETY STANDARDS, EQUIPMENT AND SUPERVISION AS OUTLINED IN GENERAL REQUIREMENTS OF THE PROJECT SPECIFICATION.
- CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE FULL EXTENT OF THE WORK AND BID ACCORDINGLY.
- AT THE TIME OF TENDER, THE CONTRACTOR SHALL SURVEY THE EXISTING FENCE AND GATE COMPONENTS AND RECOMMEND A LIST OF COMPONENTS THAT ARE SUITABLE FOR REUSE. THIS LIST SHOULD BE SUBMITTED ALONG WITH THE SUBMITTAL REQUIREMENTS OUTLINED IN THE INVITATION TO BID.
- PROTECT, MAINTAIN, PATCH, REPAIR AND MAKE GOOD ANY EXISTING ELECTRICAL COMPONENTS INCLUDING CONDUITS, CONTROLS, FIXTURES, FITTINGS, FENCE DETECTION SYSTEM AND COMPONENTS ATTACHED TO AND/OR ASSOCIATED WITH THE FENCES AND GATES AS REQUIRED TO COMPLY WITH CSC TECHNICAL CRITERIA.
- SUBMISSION OF A BID ACKNOWLEDGES THAT THE CONTRACTORS BID INCORPORATES ALL WORK NECESSARY TO BE COMPLETE IN MEETING THE PROJECT REQUIREMENTS INDICATED.
- THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER FOR THE DESIGN AND SIZING OF ALL FENCE COMPONENTS IN ACCORDANCE WITH NATIONAL BUILDING CODE OF CANADA (NBC) AND THE CORRECTONAL SERVICE CANADA (CSC) TECHNICAL CRITERIA FOR CORRECTONAL INSTITUTIONS.

**SYMBOLS:**  
 GATE  
 SECURITY FENCE

Public Works and  
Government Services  
Canada  
Travaux publics et  
Services gouvernementaux  
Canada

**REAL PROPERTY SERVICES**  
Western Region  
**SERVICES IMMOBILIERS**  
Région de l'ouest

Professional Engineer  
No. 1254  
Approved  
Professional Architect  
No. 1254  
Approved

GEORGE  
CIBINEL  
ARCHITECTS  
LTD.

GEORGE  
CIBINEL  
REGISTERED PROFESSIONAL  
ENGINEER

**DO NOT SCALE DRAWINGS**

Issued For	Date
ISSUED FOR CONSTRUCTION	14/1/08
ISSUED FOR USER REVIEW	14/7/08
ISSUED FOR COST REVIEW	14/7/08
Project/Client	Date
Stony Mountain Institution	14/7/08

**Correctional Service Canada**

Project No./Nbre du projet  
Stony Mountain Institution  
Stony Mountain, Manitoba

**Stony Mountain Institution  
Security Fence Repairs**

Approved by/Approuvé par G.C.
Designed by/Conçue par M.A.
Drawn by/Dessiné par T.B.
Project Manager/Administrateur de Projet T. LODGE
Professional Engineer/Ingénieur B. SCHELLENBERG
Client/Client STONY MOUNTAIN INSTITUTION
Drawing No./Nbre de dessin

**STONY MOUNTAIN INSTITUTION  
UNIT 5 EXERCISE YARDS AND  
NORTH SWING GATE KEY PLAN**

Project No./Nbre de projet R.051161.002	Sheet/Feuille A1 OF 3	Revision No./ La Révision n.o. 0
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**DO NOT SCALE DRAWINGS**

Revised / Révisé	Description / Description	Date / Date
0	ISSUED FOR CONSTRUCTION	14/1/11
0	ISSUED FOR TENDER REVIEW	14/7/03
0	ISSUED FOR 50% REVIEW	14/7/06

**Correctional Service Canada**

Project No./Nbre de projet  
**Stony Mountain Institution  
Stony Mountain, Manitoba**

**Stony Mountain Institution  
Security Fence Repairs**

Approved by/Apprové par  
G.C.  
Designed by/Conçu par  
M.A.  
Drawn by/Dessiné par  
T.LL.  
PWSO Project Manager/Administrateur de Projet PWSO  
T. LODGE

PWSO Architectural and Engineering Resources Manager/Le  
Gérant des Ressources Architecturales et d'Ingénierie, PWSO  
B. SCHELLENBERG  
Client/Client  
STONY MOUNTAIN INSTITUTION  
Drawing No./Nbre de dessin

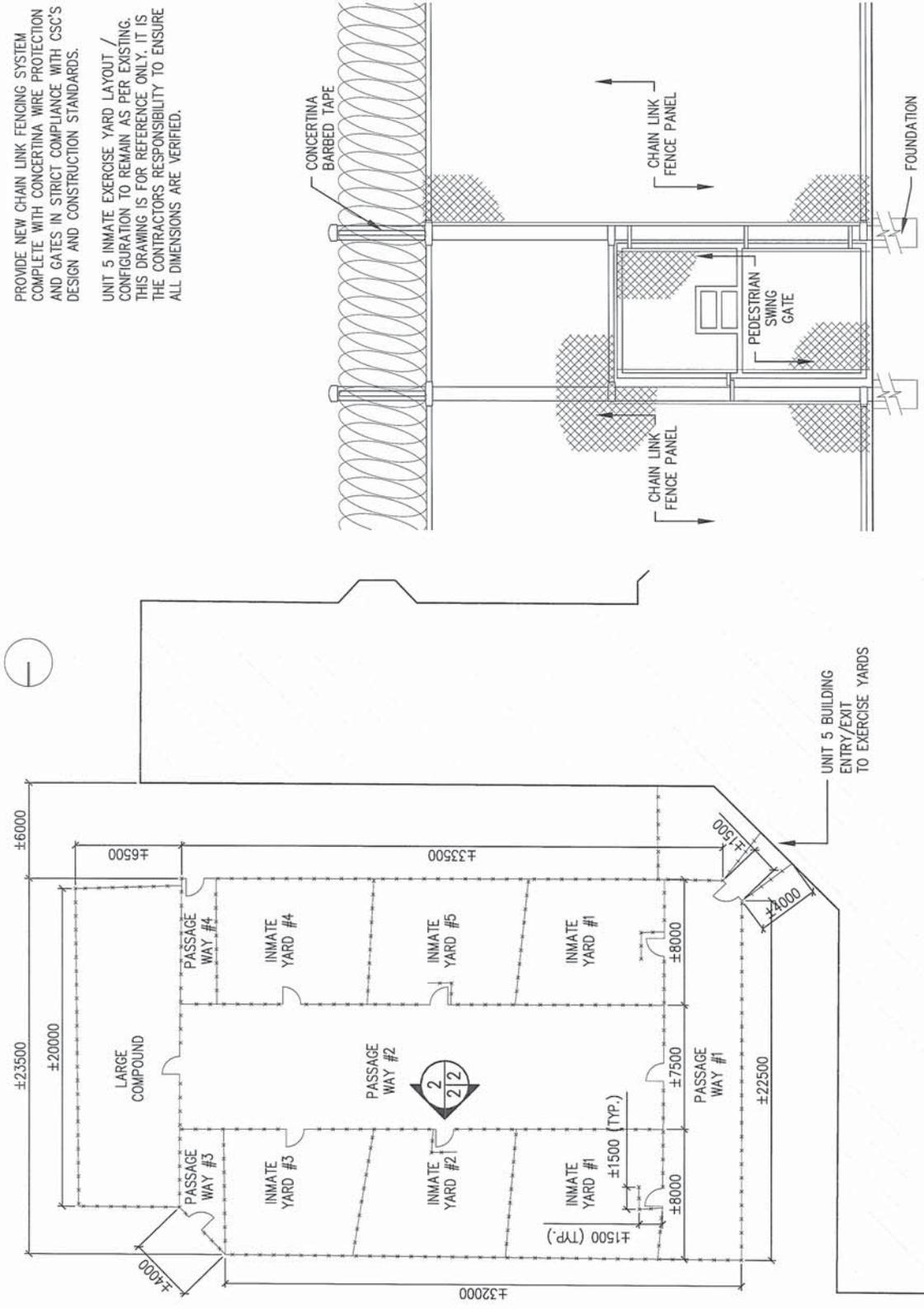
**UNIT 5 EXERCISE YARD PLAN  
AND GATE ELEVATION**

Project No./Nbre de projet <b>R.051161.002</b>	Sheet/Feuille <b>A2</b>	Revision No./ Le Numéro de <b>0</b>
	OF <b>3</b>	

**GENERAL NOTES:**

PROVIDE NEW CHAIN LINK FENCING SYSTEM COMPLETE WITH CONCERTINA WIRE PROTECTION AND GATES IN STRICT COMPLIANCE WITH CSC'S DESIGN AND CONSTRUCTION STANDARDS.

UNIT 5 INMATE EXERCISE YARD LAYOUT / CONFIGURATION TO REMAIN AS PER EXISTING. THIS DRAWING IS FOR REFERENCE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL DIMENSIONS ARE VERIFIED.

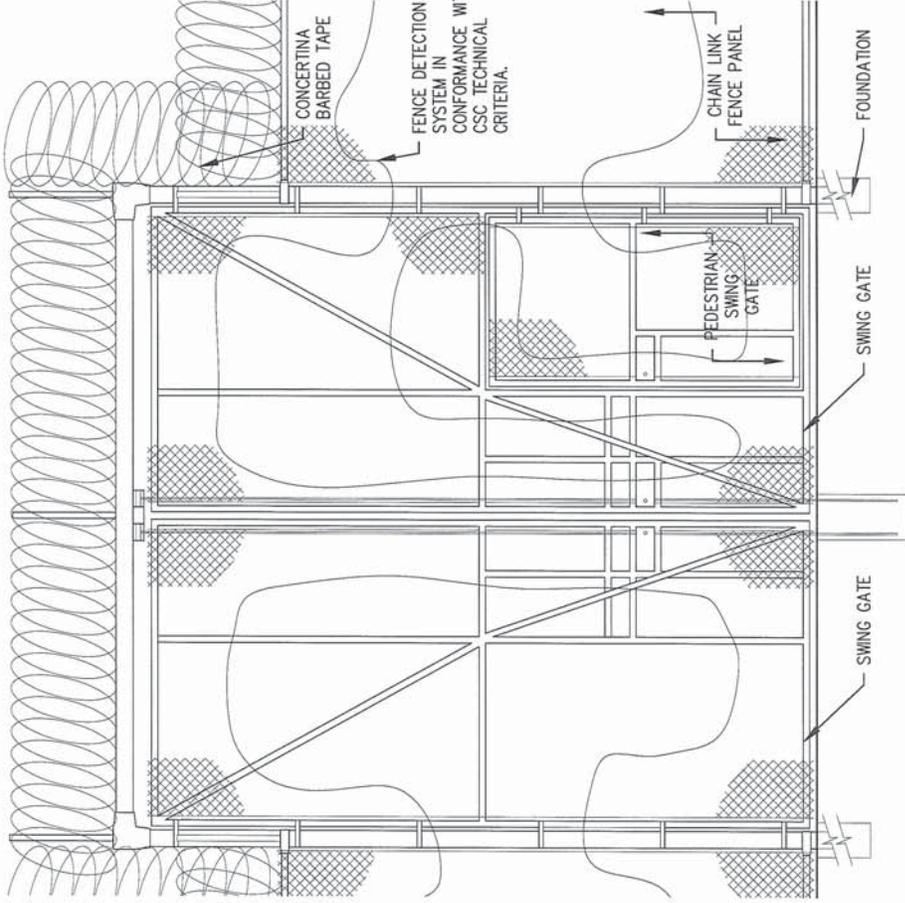
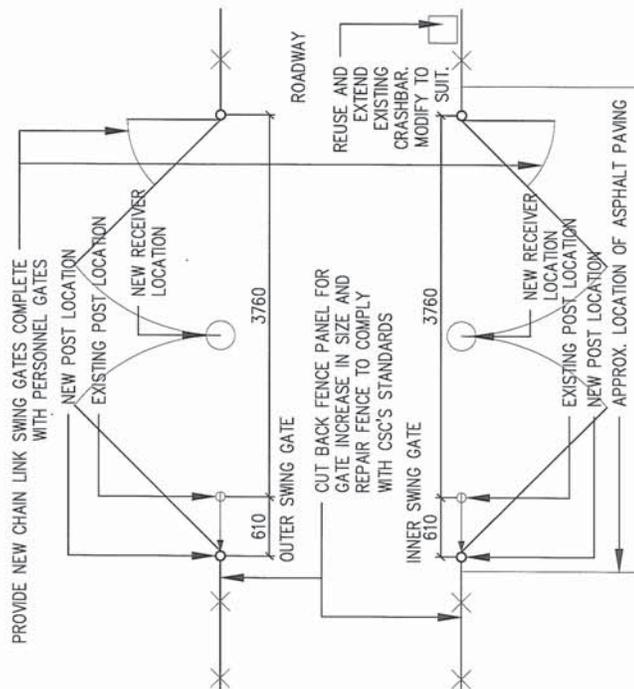
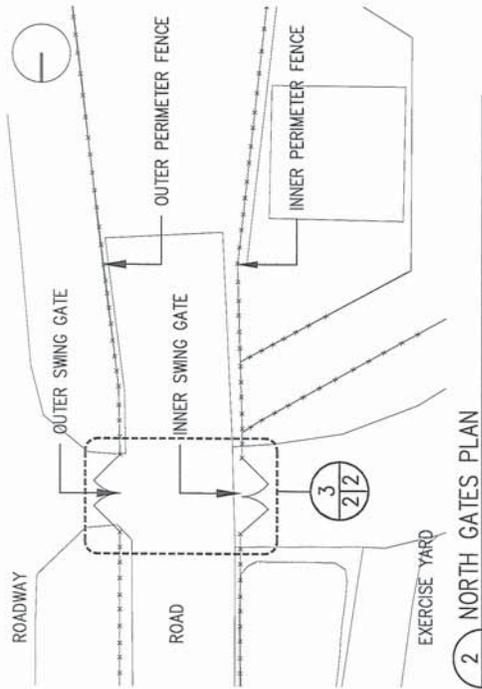


**2 EXERCISE YARD TYPICAL GATE ELEVATION**  
1/2 NTS

**1 UNIT 5 INMATE EXERCISE YARD PLAN**  
1/2 1:250

**GENERAL NOTES:**

PROVIDE NEW CHAIN LINK SWING GATES COMPLETE WITH PERSONNEL GATES SIMILAR TO EXISTING GATES. FENCING SYSTEM COMPLETE WITH CONCERTINA WIRE PROTECTION IN STRICT COMPLIANCE WITH CSC'S DESIGN AND CONSTRUCTION STANDARDS.



Public Works and Government Services Canada  
 REAL PROPERTY SERVICES  
 Western Region  
 SERVICES IMMOBILIERS  
 Région de l'ouest



**DO NOT SCALE DRAWINGS**

Rev/Date	Description/Description	Drawn/Date
0	ISSUED FOR CONSTRUCTION	14/1/13
0	ISSUED FOR LODG REVIEW	14/1/13
0	ISSUED FOR SITE REVIEW	14/1/13

**Correctional Service Canada**

Project No./Nbre de projet  
 Stony Mountain Institution  
 Stony Mountain, Manitoba

**Stony Mountain Institution  
 Security Fence Repairs**

Approved by/Approved par  
 G.C.

Designed by/Concept par  
 M.A.

Drawn by/Dessiné par  
 T.B.

Project Manager/Administrateur de Projet  
 T. LODGE

Project Architectural and Engineering Resources Manager/  
 B. SCHELLENBERG

Client/Client  
 STONY MOUNTAIN INSTITUTION

Drawing No./Nbre de feuille  
**NORTH SWING GATE  
 PLANS AND ELEVATION**

Project No./Nbre de projet <b>R.051161.002</b>	Sheet/feuille <b>A3</b> OF 3	Revision no./ La Révision n. <b>0</b>
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## SP-2 SITE - FENCE

### 1. SCOPE

This section provides performance criteria and conforming specifications for all fences associated with institutions of security levels medium, maximum and multi-level inclusive. There are no special requirements for fences at minimum institutions.

### 2. RELATED SECTIONS

#### 2.1 *Technical Criteria Document sections:*

SP-1 – Site Development  
SP-3 – Gates/Sallyports  
SP-5 – Traffic Circulation and Parking  
SP-6 – Site Lighting  
SP-7 – Double Fence Lighting  
ST-1 – Guard Towers  
& any sub-section referring to the Perimeter Intrusion Detection System (P.I.D.S.)

#### 2.2 *National Master Specification Section*

01 35 13.16 – Special Project Procedures for Detention Facilities  
28 01 10 – Operation & Maintenance of Electronic Access Control & Intrusion Detection  
28 16 00 (13705) – Intrusion Detection  
32 31 13 – Chain Link Fences and Gates  
32 31 13.53 – High-Security Chain Link Fences and Gates

### 3. EXTERNAL BOUNDARY FENCES

External boundary (property) lines shall normally not be fenced unless specific site conditions warrant it. The type of fence in such locations will be project specific.

### 4. PERIMETER SECURITY FENCES

#### 4.1 *Performance Criteria*

- 4.1.1 The institution will be enclosed by a double chain link fence perimeter supported by intrusion detection and camera system, and mobile patrol on the exterior of the perimeter. The perimeter fences form the last physical obstacle to escape from the institution. The design of the fence system shall be such that an escapee shall not be able to breach the perimeter in less than 45 seconds. This time duration is based on a maximum time for the perimeter security mobile patrol to respond after the first signal following a detected disturbance of the fence at the Main communication control post (MCCP). The optimal reaction time for the mobile patrol is 30 seconds.
- 4.1.2 Fences shall be erected in straight lines from corner to corner for direct viewing by camera. The corners of the perimeter shall be truncated at 45° to allow suitable placement of camera poles and cameras to afford optimal viewing

between the fences and on the interior of the Inner Perimeter Fence. In addition, the truncated corners allow for a gentler curve of the patrol road.

- 4.1.3 To render climbing more difficult, the fence fabric shall be installed on the institution side of the fence posts. Sharp corners of less than 120°, shall be avoided except where fences intersect.
- 4.1.4 For fences equipped with a Fence Detection System (FDS), the fence shall balance fabric tension to ensure fabric vibration travel across posts while not causing excessive false alarms. Fabric vibration terminates at strain post locations where the fence fabric ends thus allowing zone separations for the PIDS.
- 4.1.5 Special attention shall be paid to sloped sites to ensure that gaps do not develop between the ground surface and the lower fence rail. Where necessary, due to severe ground slope longitudinally, fencing may be stepped, but the minimum height of the fence shall be maintained at all times. Ground slope across the fence line shall be minimized to prevent erosion under the perimeter fences
- 4.1.6 Water shall be prevented from pooling between the perimeter fences, as this could affect the operation of the Motion Detection System (MDS). For special underground drainage requirements relating to perimeter fences, see sections SU-1 Storm and Sanitary Sewers.
- 4.1.7 Barbed tape concertina (BTC) wire shall be installed in such a manner that it prevents the passage of a person across the barbed coils. (See plates SP-2-2 and SP-2-3).
- 4.1.8 For interior fences intersecting the Inner Perimeter Fence, the interior fence shall be designed to prevent it from being used to aid in crossing the Inner Perimeter Fence. To achieve this, the interior fence shall be equipped with:
  - a Fence detection system (FDS) for a length of 2.5 meters. The fence fabric shall extend for that length and be connected to a strain post so that the vibration does not travel beyond.
  - and BTC on both sides on the fence No gap between posts or fabric shall exceed 125 mm.
- 4.1.9 To inhibit tunnelling under the Inner Perimeter Fence, a ground barrier shall be provided by installing either a continuous concrete footing or a concrete sidewalk on the institution side. (See Plate SP-2-1). Roadways crossing perimeter fence lines shall be topped with asphalt which also serves as a ground barrier.
- 4.1.10 The system of line, strain, corner and gate posts shall be installed to meet local environmental conditions, particularly those of wind and wet snow storms. To respond to these conditions, foundation calculations demonstrating performance which will meet site wind and snow conditions must be carried out.
- 4.1.11 Where a building or other structure interrupts the perimeter fence run, the design to ensure perimeter integrity shall be approved by the issuing authority.

- 4.1.12 Where a perimeter comprises or integrates a wall, the design to ensure perimeter integrity shall be approved by the issuing authority.

#### **4.2 Conforming Specifications**

- 4.2.1 Perimeter fences shall consist of two (2) parallel fences, erected in straight lines, with a 7.5-m gravel strip between the fence lines. For retrofit installations, where it has been proven that a lesser separation has been effective, the existing spacing shall be maintained. Height of both fences, excluding overhang arms, shall be 3.6 m. Corners shall be truncated and the maximum length of the interior fence on the truncated line shall be 25 m.
- 4.2.2 No structure, with the exception of the Gatehouse and guard towers, shall be closer than 12 m to the Inner Perimeter Fence.
- 4.2.3 The area between the perimeter security fences shall be free of topsoil and be graded to a slope of 2% from the interior to the Outer Perimeter Fence. The surface will then be covered with a filter fabric and topped with a mix of 0 mm to 20 mm crushed stone to a depth of 200 mm. For the Outer Perimeter Fence an area of 500 mm on each side of the fence shall be stabilized to a depth of 300 mm with a compaction of 95% corrected maximum dry density to hinder run off erosion and tunnelling by inmates.
- 4.2.4 All chain link fencing shall be installed in accordance with the *National Master Specification (NMS) 32 31 13*<sup>6</sup> and *CAN/CGSB-138.3-96* standard<sup>7</sup>. Where there is a conflict between the NMS and this criterion, the TCD shall prevail.
- 4.2.5 Chain link fence fabric shall conform to the following specifications<sup>8</sup>:
- 4.2.5.1 Wire Size: 4.8 mm (min) (6 Gauge)
  - 4.2.5.2 Size of mesh: 50.8 mm
  - 4.2.5.3 Height of fence fabric: 3600 mm
  - 4.2.5.4 Barbed edges top and bottom
  - 4.2.5.5 Average mass of zinc coating to be not less than 610 g/m<sup>2</sup> of uncoated wire
  - 4.2.5.6 Breaking tensile strength to be 10,000 N·min.
- 4.2.6 Wire mesh shall be continuous from top to bottom and shall be applied on the institutional compound side of the posts.
- 4.2.7 Fence fabric shall be pulled taut before fixing in place. Tautness, when fixed in place, is to be established by pull tests. The application of a 12 kg perpendicular pull at the midpoint of the mesh panel (midpoint of posts/rails) shall show a displacement of no more than 30 mm from the fence at rest plane.
- 4.2.8 Posts, (corner, gate, strain, line) shall conform to *CAN/CGSB-138.2-96*<sup>9</sup>, galvanized steel pipe.

<sup>6</sup> National Master Specification 32 31 13 – Chain Link Fences and Gates (2004/12/31), there is also specifically Masterformat reference number 32 31 13.53 for High-Security Chain Link Fences And Gates

<sup>7</sup> CAN/CGSB-138.3-96 – Installation of Chain Link Fence

<sup>8</sup> Refer also to: CAN/CGSB-138.1-96 – Fabric for Chain Link Fence

- 4.2.8.1 Posts shall be spaced a maximum of 2.5 m apart.
- 4.2.8.2 Line post minimal size shall be 73 mm O.D. 8.6 kg/m.
- 4.2.8.3 Strain post minimum size shall be 114.3 mm O.D. 15.92 kg/m. Strain posts shall be spaced not more than 60 m apart.
- 4.2.8.4 Corner and gate post minimum size shall be 150 mm O.D. 21.0 kg/m.
- 4.2.9 Galvanized steel arms shall be provided on all posts where barbed concertina is to be installed, as shown on Plate SP-2-2 and SP-2-3.
- 4.2.10 Bottom and top rails shall be 42.2 mm O.D. minimum, 3.4 kg/m.
- 4.2.11 Tie wires shall be 3.7 mm diameter (9 gauge) galvanized steel wire to secure chain link fabric to bottom rail, top rail and line posts at 300 mm spacing.
- 4.2.12 An intermediate galvanized anchor shall be used to secure the bottom rail to the ground barrier, where such a barrier is installed. This anchor shall limit vertical movement of the bottom rail to a maximum of 125 mm.
- 4.2.13 Intermediate rails shall not be used.
- 4.2.14 Tension bars used for holding the ends of the fence fabric at the location of strain posts and corner posts shall be 5 mm x 20 mm minimum x 3600 mm galvanized steel.
- 4.2.15 Tension bar bands shall be 3 mm x 20 mm minimum galvanized steel and spaced vertically at 300 mm o.c..
- 4.2.16 Where nuts and bolts are required for fastening, nuts shall face compound exterior and be torqued tight.
- 4.2.17 Where tension cables are used at corner, end, gate, strain posts, and fittings shall be of galvanized steel.
- 4.2.18 Barbed tape concertina (B.T.C.) shall be galvanized tape 20 x 0.5 mm clenched around a 2.5 mm diameter spring steel galvanized core wire to form a concertina coil with a nominal exterior coil diameter of 710 mm. The coil, when installed, shall have a minimum diameter of 635 mm. The barbed concertina shall have 20 mm long blade type barbs measured from tip to tip of the blade, and barb clusters shall be spaced approximately 45 mm on centre (see Plate SP-2-3). The concertina shall be formed by clipping adjacent loops of single helical coils together at a minimum of three (3) points on the circumference. Clips shall be galvanized. The resulting coil, when stretched, shall form a cylindrical pattern. The loop spacing shall not exceed 230 mm.
- 4.2.19 For concertina coil support at fence top, two barbed wires stretched and fixed to post arms shall be provided. Barbed wire shall consist of two strands of 12 gauge wire with 4 point barbs at 130 mm spacing, all galvanized.
- 4.2.20 Concertina coils are to be turned onto a secondary internal fence for a distance of 2.5 m when such a fence meets the perimeter fence. (See plate SP-2-6).

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<sup>9</sup> CAN/CGSB-138.2-96 -- Steel Framework for Chain Link Fence

4.2.21 Installation of barbed tape coils shall be as follows:

4.2.21.1 The barbed tape concertina is to be supported and tied at 230 mm spacing onto each of the barbed wire. Additional coils that are required on fences are to be tied as shown on Plate SP-2-3.

4.2.21.2 A second row of BTC may be installed on fence tops at existing sites due to local conditions with the approval of the issuing authority (see plate SP-2-3)

## 5. INTERIOR FENCES

### 5.1 *Area and Yard Fences*

#### 5.1.1 Performance Criteria

5.1.1.1 Interior fences located at Maximum security institutions and those defining segregation yards at Mediums and Maximums shall be a maximum of 3.6 m in height topped with steel arms, barbed wire, and BTC. Other fenced areas at Medium Institutions may be topped with BTC where the fence separates inmate high activity and circulation areas from routine vehicle traffic movement. The use of BTC on top fences for any other location must be submitted for approval to the issuing authority.

5.1.1.2 Posts shall be provided with post caps where post arms are not provided.

5.1.1.3 Where interior fences intersect the Inner Perimeter Fence, refer to item 4.1.8 above and plate SP-2-6

5.1.1.4 Tunnelling barriers are not required on interior fences except where they are topped with BTC. Barrier type shall be compacted gravel to 500 mm on either side except where the yard is asphalted.

5.1.1.5 Fences shall not be used to demarcate the buffer zone.

#### 5.1.2 Conforming Specifications

5.1.2.1 Materials shall be similar to those specified for the perimeter fences (see item 4.2).

5.1.2.2 Two coils of BTC shall be installed on the top of Segregation exercise yard fence as indicated on Plate SP-2-3. A flat solid wall shall be provided where visibility and contact is at issue with approval of the issuing authority.

## 6. SEPARATION OF DISTINCT POPULATIONS IN ONE INSTITUTION (MULTI-LEVEL)

### 6.1 *Types of Multi-level and Fencing Needs*

Multi-level institutions vary in the type of populations they accommodate. Two populations such as minimum and medium may be fully integrated with no physical separation or fencing required. Control and supervision is managed through operational means.

A second type of multi-level institution accommodates several populations, short term and assigned to a specialized program. Inmates here have limited access to the institution at large and have restricted movement. The housing units accommodating these populations are generally self-contained integrating staff and related program areas including yards. These units do not require fenced separation as movement outside of the units are under escort and limited to individual or small groups. Yards for these units are fenced and topped with BTC.

A third type of multi-level is where a distinct smaller population as part of a specialized program remains largely in their unit and does not mix with the general population which has normal movement to program and activity areas. The specialized program unit is also self-contained which includes yards. The yards of this unit are fenced and topped with BTC while the complete unit is separated from the rest of the institution by a fence but without BTC topping. The fenced yards here do not form part of the separation fence.

#### **6.2 *Conforming Specification***

Specifications are similar to those for the Inner Perimeter Fence (item 4), including the requirement for a single concertina on top of the fence. The steel arms for yards where one roll of BTC is used are always oriented toward the yard it encloses.

### **7. EXTERIOR SERVICE COMPOUND FENCE**

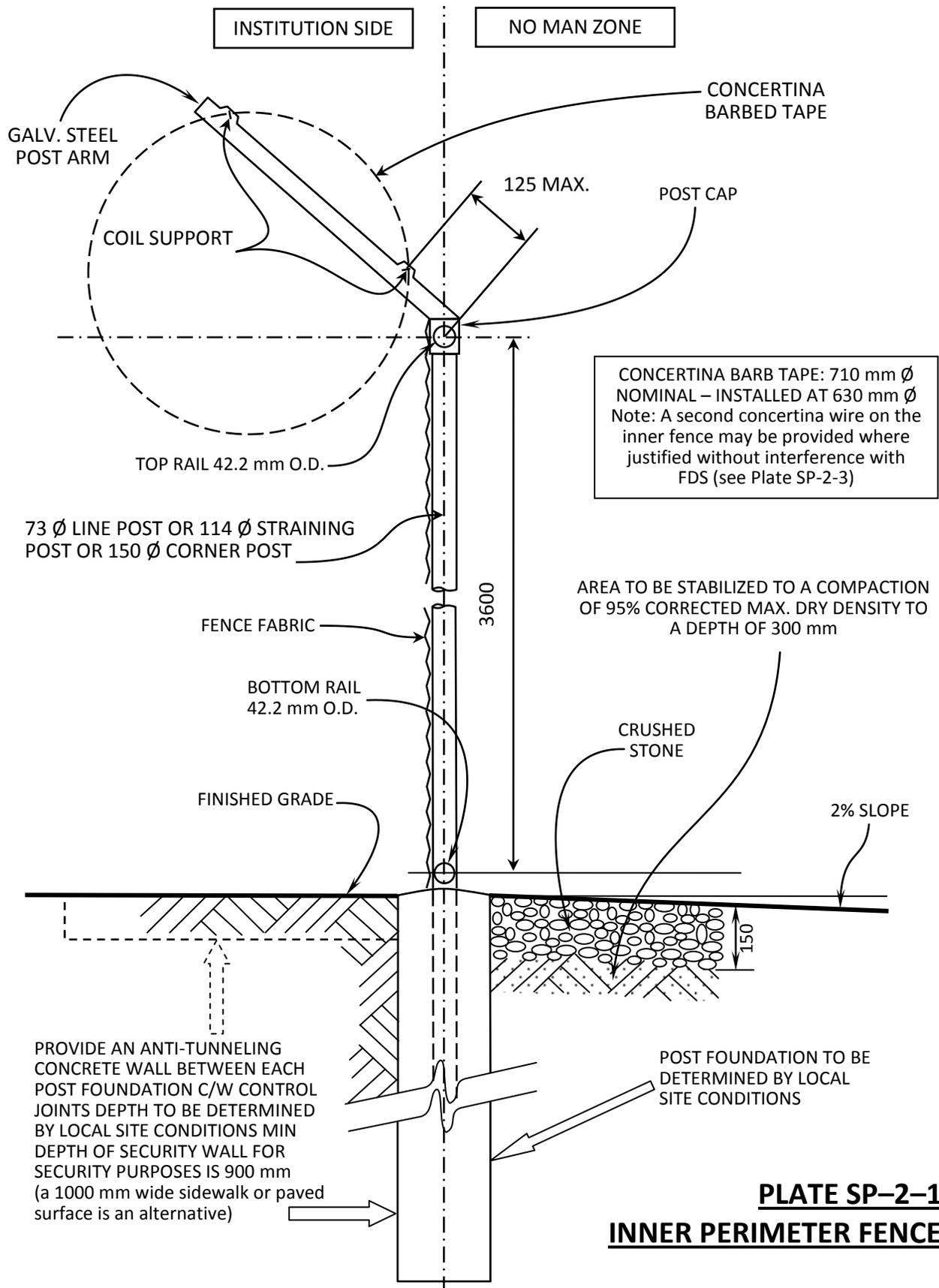
#### **7.1 *Performance Criteria***

Where bulk fuel storage (propane and gasoline) is provided, the storage area shall be fenced (see section SP-5, Traffic Circulation and Parking).

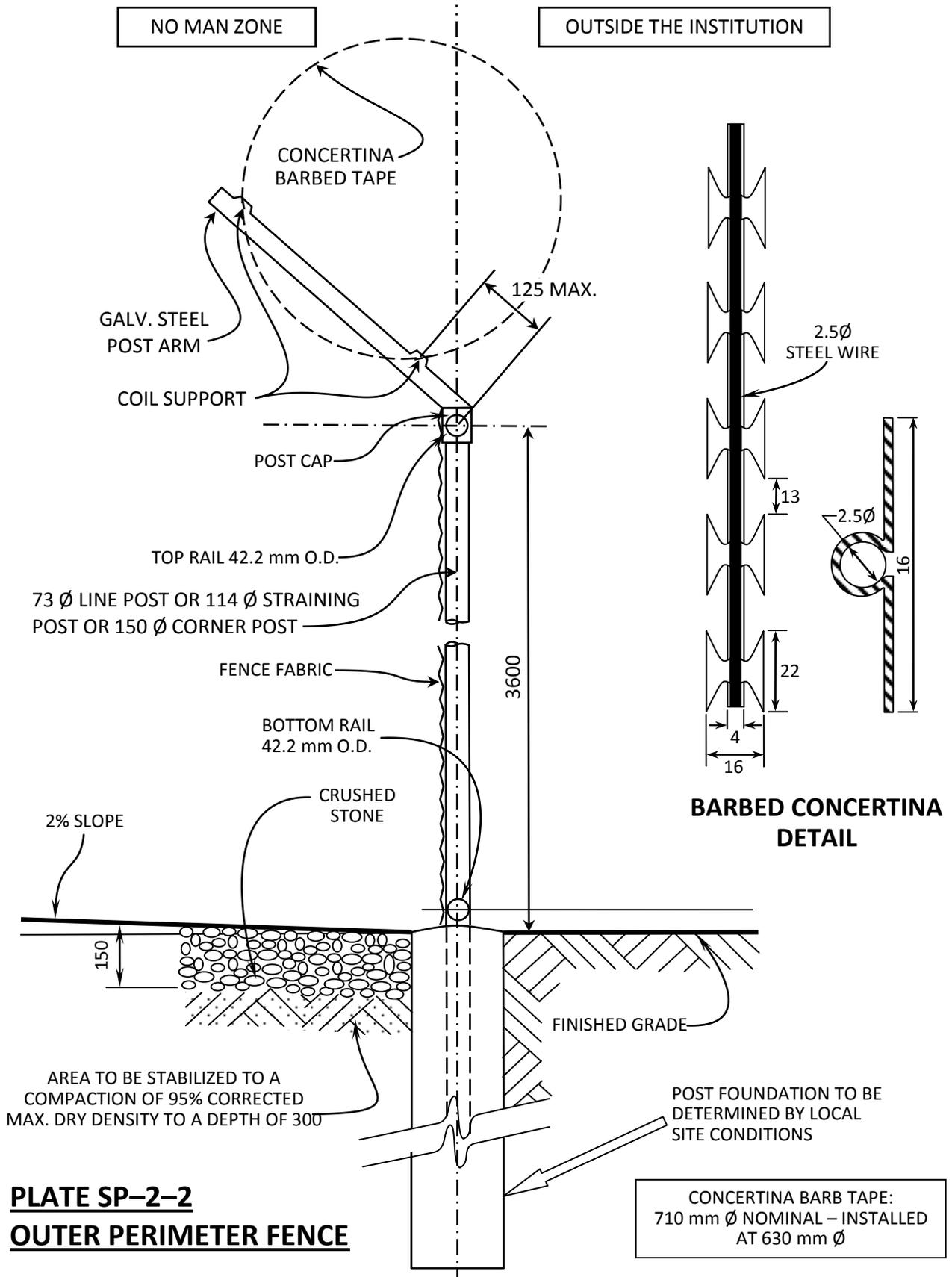
#### **7.2 *Conforming Specifications***

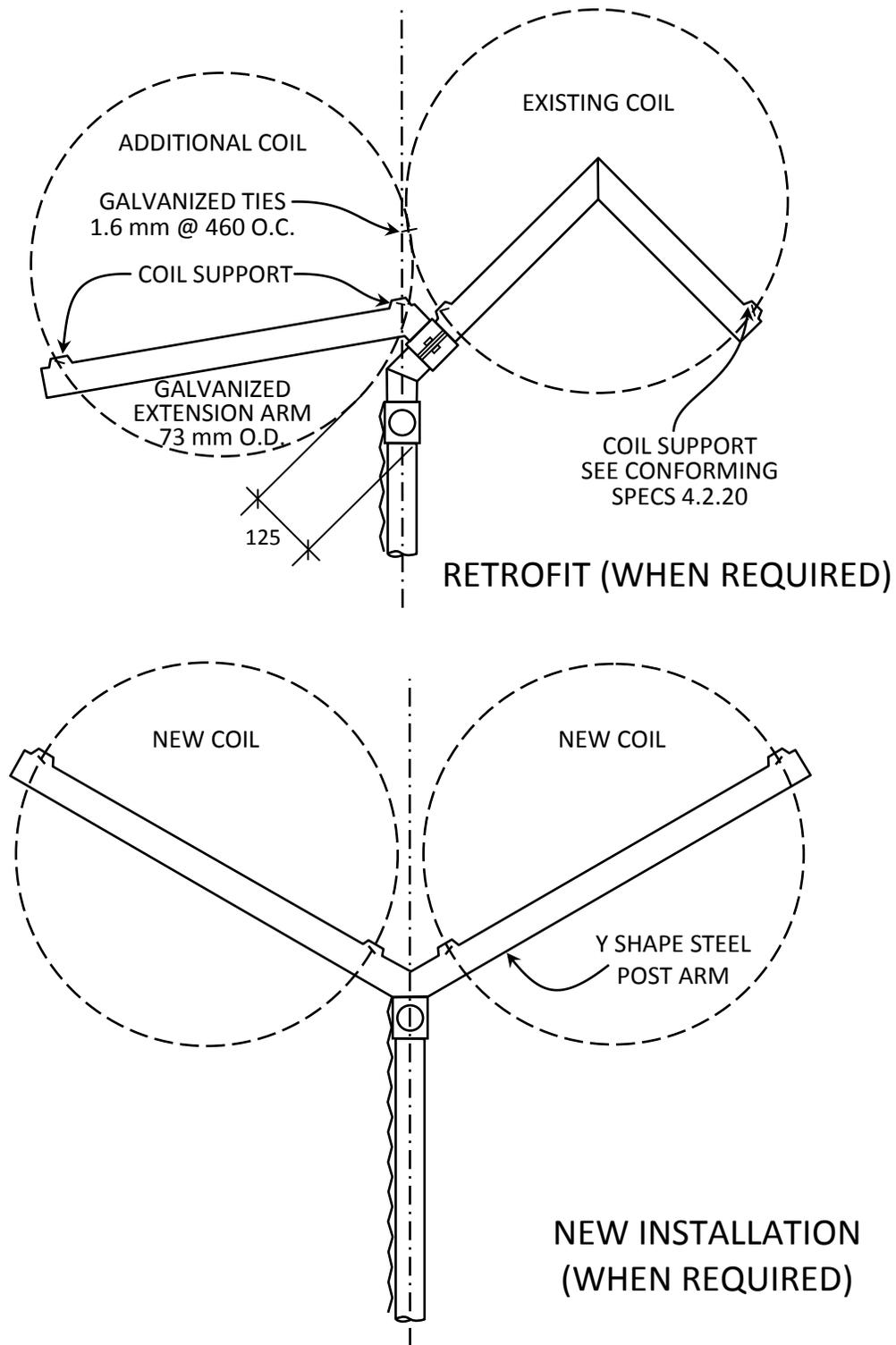
7.2.1 Materials will be similar to those specified for the perimeter fences (item 4).

7.2.2 Fence height shall be 2.5 m.



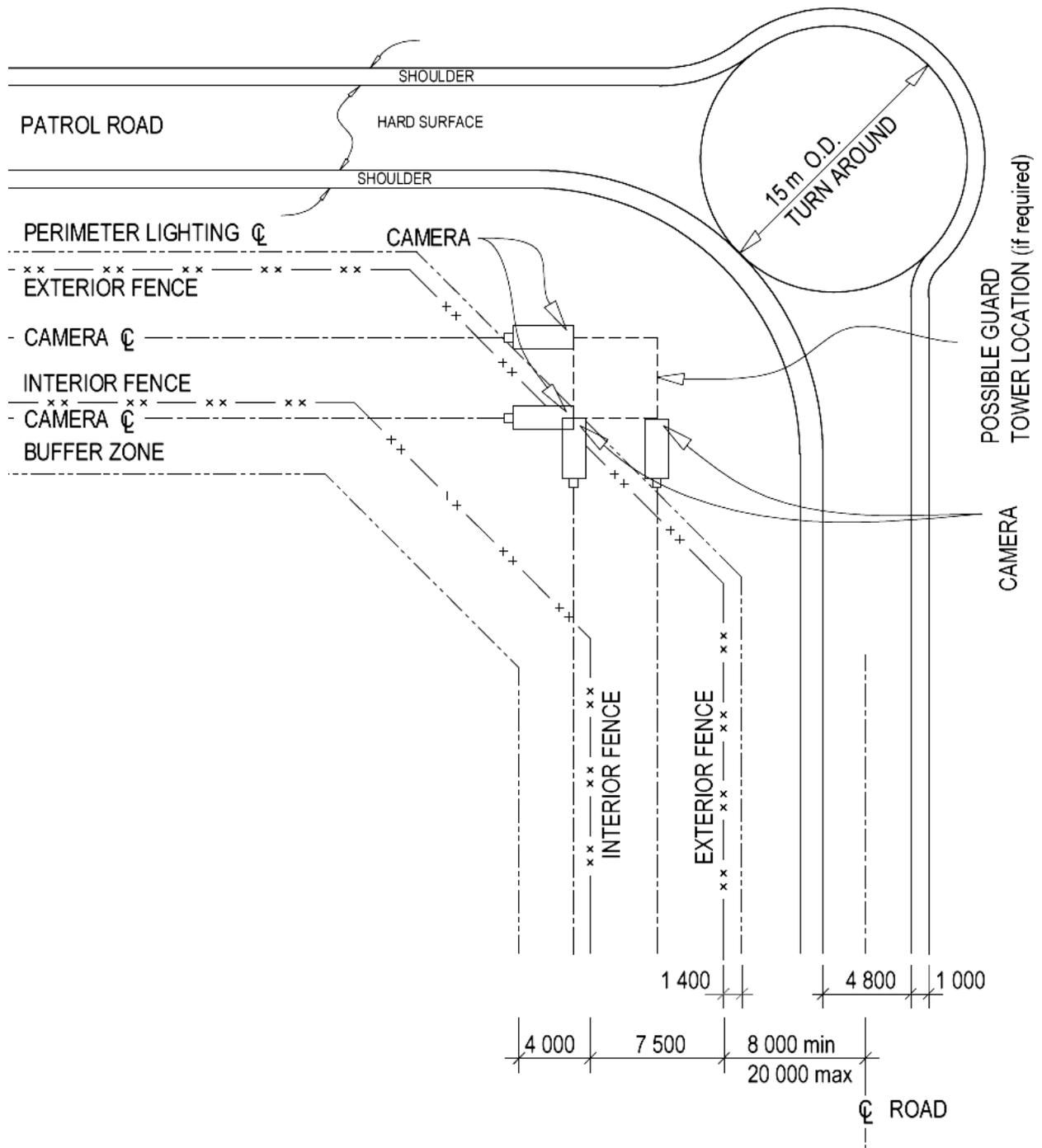
**PLATE SP-2-1**  
**INNER PERIMETER FENCE**





**PLATE SP-2-3 – INNER FENCE WITH A SECOND CONCERTINA TAPE**

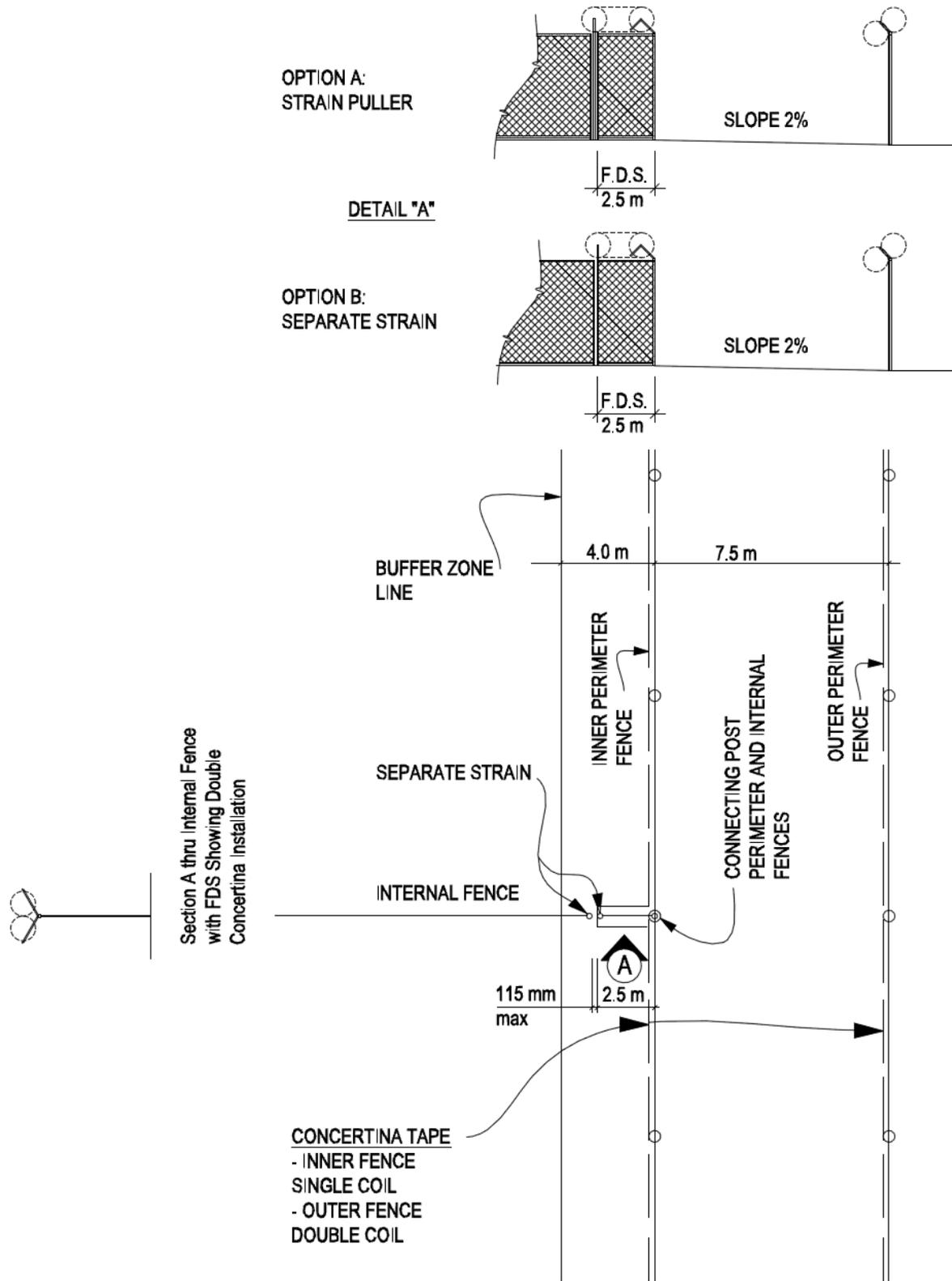
**CONCERTINA BARB TAPE: 710 mm Ø NOMINAL – INSTALLED AT 630 mm Ø**



**PLATE SP-2-4 – TYPICAL PERIMETER FENCE CORNER WITH TOWER**

**Note: Camera lines are for information purpose only**





**PLATE SP-2-6 – INTERNAL FENCES INTERSECTING WITH THE PERIFERAL FENCES – DETAILS**

## SP-3 SITE – GATES/SALLYPORT

### 1. SCOPE

This section outlines requirements for vehicle and pedestrian access and egress control for institutions with a secure perimeter as at medium, maximum and multi-level institutions.

Access and egress control for open minimum institutions involves signage and reporting to a 24 hr Duty office but does not include fencing and gates. Refer to A-12 Control posts for functional requirements as well as the CSC Accommodation Guidelines.

### 2. RELATED SECTIONS

#### **7.3 Technical Criteria Document sections:**

SP-1 – Site Development

SP-2 – Fences

A-6 – Hardware

A-10 – Contraband Control Systems

A-12 – Control Posts and Dedicated Security Routes

#### **2.1 National Master Specification Section**

01 35 13.16 – Special Project Procedures for Detention Facilities

08 34 56 – Security Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.53 – High-Security Chain Link Fences and Gates

34 71 13 – Vehicle Barriers

34 71 13.16 – Vehicle Crash Barriers

34 75 13.13 – Active Vehicle Barriers

#### **2.2 ASTM Standards**

F2656-07 – Standard Test Method for Vehicle Crash Testing of Perimeter Barriers

### 3. ACCESS CONTROL SECURITY REQUIREMENTS

**3.1** All new institutions equipped with a fenced perimeter shall have one entrance point for pedestrian and vehicle traffic, referred to as the Principal Entrance.

**3.2** Because the Principal Entrance may at some time be inoperable, one Emergency Vehicle Entrance shall be provided, to be located at a point convenient for vehicle access. This Emergency Vehicle Entrance can have either a Sliding Gate (Section 5.1) or a Swing Gate (Section 5.2).

**3.3** Vehicle access shall be provided into the area between the inner and Outer Perimeter Fences for snow clearing and maintenance of the Motion Detection System (MDS). Snow build up between the fences can adversely affect the operation of the MDS.

## **4. PRINCIPAL ENTRANCE**

### **4.1 Definition**

The Principal Entrance is formed by a Gatehouse for pedestrian traffic control and an open air chain-link fence compound with inter locking gates for vehicle traffic control (vehicle sallyport). The Gatehouse contains the Principal Entrance Control Post and a reception station from which staff supervise all traffic in and out of the institution and operate by remote control all gates and doors. For detailed requirements see A-12 Control Posts and Dedicated Security Routes. At institutions where a separate vehicle service entrance sallyport exists, sallyport gates are remote operated from an adjacent tower or a post within the sallyport. The tower or ground post officer also observes the inspection of vehicles and assures the safety of the vehicle inspection officer.

- 4.1.1 All vehicle sallyports shall be equipped with sliding gates. The sliding gates shall be remote controlled from the Principal Entrance control post and interlocked to prevent simultaneous unlocking. The sliding gates control must provide for the opening of one of the gate only when the other gate is in its latched position. Both gates shall be also capable of manual unlocking and opening.
- 4.1.2 Vehicle sallyports shall be sized to include an inspection area, to facilitate a thorough inspection of vehicles, which can hold in width two van type trucks (8.5 m min.), and hold one semi trailer truck in length (23 m min.).
- 4.1.3 In order to prevent forced drive through of vehicles, the exterior gate of the vehicle sallyport shall be equipped with a crash barrier (see section 4.4 and Plates SP-3-6 to SP-3-8).
- 4.1.4 All Principal Entrance pedestrian traffic shall be physically separated from vehicular traffic.
- 4.1.5 Where vehicle access into the area between the perimeter fences is provided from the vehicle sallyport, the gates shall be swing type, manually operated and lockable.
- 4.1.6 All pedestrian traffic through the Principal Entrance, including traffic between the vehicle sallyport and the pedestrian sallyport, shall be through swing gates. Principal Entrance pedestrian gates shall be remote unlocking, self closing and locking, and capable of manual unlocking.
- 4.1.7 To allow continuous CCTV coverage of the area between the perimeter fences while maintaining a minimum number of cameras, the Gatehouse building shall be sited on the outside of the Outer Perimeter Fence with one face of the building flush with that Outer Perimeter Fence.
- 4.1.8 See Plate SP-3-1 for a typical Principal Entrance layout.

## 4.2 *Crash Barriers*

- 4.2.1 Crash barriers for sallyport sliding gates shall be connected to the interior side of the exterior gate and shall be operated simultaneously with the remote operation of the gate.
- 4.2.2 In order to resist vehicle impact, crash barriers shall be made of an I-beam or rectangular tubing supported on anti friction rollers with a minimum of three (3) heavy uprights. In a test equivalent to the US Department of State K4 certification<sup>1</sup> (6 804 kg @ 48.3 km/hr or 15,000 lbs @ 30 mph) the vehicle must be inoperable after hitting the crash bar. The main purpose of the beam is to cause maximum damage to ramming vehicle.
- 4.2.3 The first heavy upright supports the crash barrier extension opposed to the opening, the second upright supports the crash barrier extension on the side of the opening and acts as a protection bollard for the inside post of the opening and for the gate operator when a rack and pinion system is in use. The third upright supports the crash barrier only in its closed position and acts as a protection bollard for the outside post of the opening. At any time the crash barrier is supported by the first and second uprights.
- 4.2.4 If crash barriers are used for emergency gates on the perimeter, they shall be made of a simple beam or rectangular tubing with a counter weight mechanically lifted and lockable in closed position with the use of a security padlock.
- 4.2.5 Gate having integrated crash bar or crash cables system are acceptable if they meet M30 designation of *ASTM F2656-07*<sup>2</sup>, K4 certification of the US Department of State (see footnote 1) or the European equivalent<sup>3</sup>.
- 4.2.6 See Plates SP-3-3 to SP-3-6 for typical sallyport crash barrier.

## 5. FENCE GATES

### 5.1 *Vehicle Sliding Gates*

- 5.1.1 The size of each gate shall provide for a 4 m wide x 4.5 m high clear opening.
- 5.1.2 Gate chain link fabric shall match perimeter fence. (See section SP-2, Fences).
- 5.1.3 Gate framing members shall be 73 mm O.D. pipe weighing 8.6 kg/m welded and drained.
- 5.1.4 Motorized gates shall be capable of moving at a speed of 150 mm/s.
- 5.1.5 Gate shall have three point locking (top, bottom and middle).
- 5.1.6 Locking column shall be equipped with an emergency manual control mechanism located for easy access.

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<sup>1</sup> US Department of State SD–STD–02.01, Revision A , March 2003, Test Method for Vehicle Crash Gate Testing of Perimeter Barriers and Gates

<sup>2</sup> ASTM F2656–07, Standard Test Method for Vehicle Crash Testing of Perimeter Barriers, M30 Designation: Medium-duty truck (M) 6800 kg @ 50 km/h

<sup>3</sup> BSI – PAS68:2010 – Impact test specifications for vehicle security barriers, January 2010. Most of the British manufacturers refers primarily to this standard, but in general also mention the USDS equivalent

- 5.1.7 Operator and track shall be protected and electrically heated to ensure all weather operation. In rack and pinion system (or “drive rail” operator) the teeth of the rack can be unprotected provided that they are on the lower side of the rack and visible to the operator. Where crash beams are installed on a sliding gate, the additional weight shall be taken into account.
- 5.1.8 For gates operated by an overhead chain drive system, a guide shall be provided at the bottom of the gate running in a channel.
- 5.1.9 Motors shall be located low to the ground to facilitate maintenance
- 5.1.10 All gate components shall be galvanized.
- 5.1.11 All security hardware shall be in accordance with chapter A-6, Hardware of the present document. All other components shall be in accordance with the Fences section of this criterion.
- 5.1.12 See Plates SP-3-2 and SP-3-3 for a typical gate installation.

## **5.2 Vehicle Swing Gates (Perimeter and Internal Fences)**

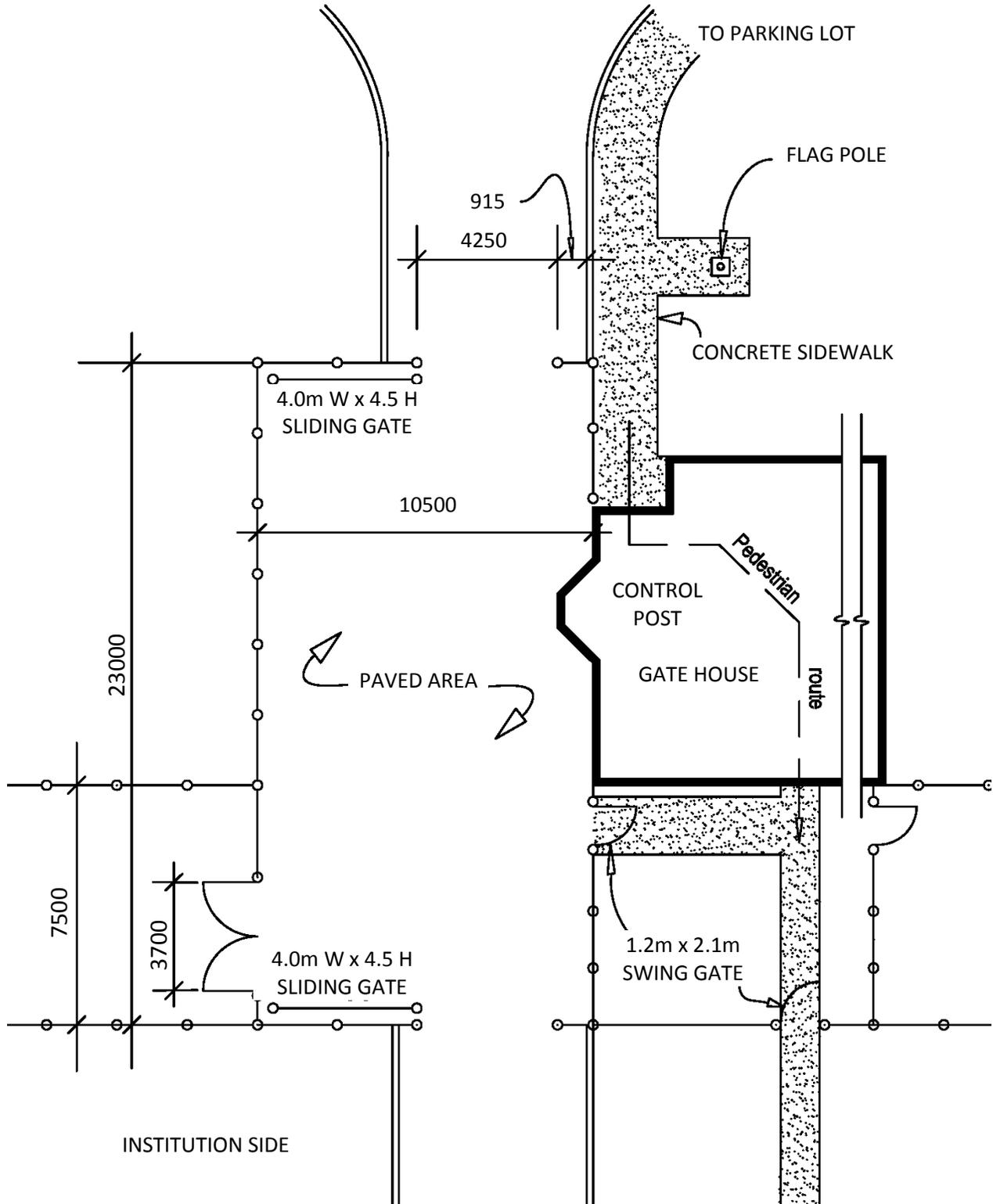
- 5.2.1 Gates shall consist of a pair of 2 m wide by 4.5 m high sections, for an opening of 4 m wide X 4.5 m high, except where municipal by law or sufficient height and width for local emergency vehicles (fire trucks) dictate otherwise<sup>4</sup>.
- 5.2.2 The swing direction of gates shall be determined after consideration of operational and snow conditions.
- 5.2.3 Any gap between the bottom rail of a gate and the ground shall not exceed 125 mm. Where gates are located on a fence equipped with a ground barrier, this barrier shall be continuous.
- 5.2.4 The chain link fabric for gates shall match the fence on which it is mounted (see section SP-2, Fences).
- 5.2.5 Gate framing shall be as per item 5.1.3 above.
- 5.2.6 There shall be three gate hinges and they shall be of standard quality. Foot and mid height locking shall be accomplished with Southern Folger detention grade locks or equivalent.
- 5.2.7 Plate SP-3-7 illustrates a typical design for vehicle swing gate.

## **5.3 Pedestrian Gates (Perimeter and Internal Fences)**

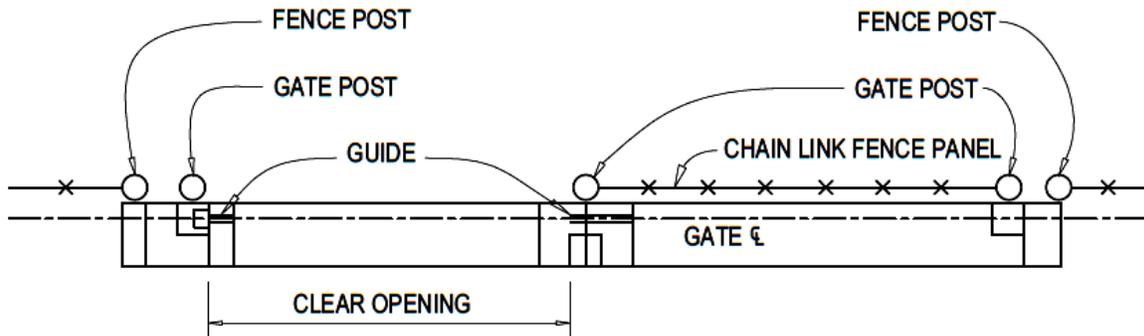
- 5.3.1 The size of each swing gate shall provide for a 1.2 m wide x 2.1 m high clear opening.
- 5.3.2 Items 5.2.2, 5.2.3 and 5.2.4 noted above for vehicle swing gates shall apply.
- 5.3.3 Swing gate framing members shall be 43 mm O.D. pipe weighing 3.4 kg/m.
- 5.3.4 Swing gates shall be manually operated with security key locks when gates are used daily. Principal Entrance gates shall be remote unlocked and equipped with closers. Infrequently used gates shall be security padlocked.

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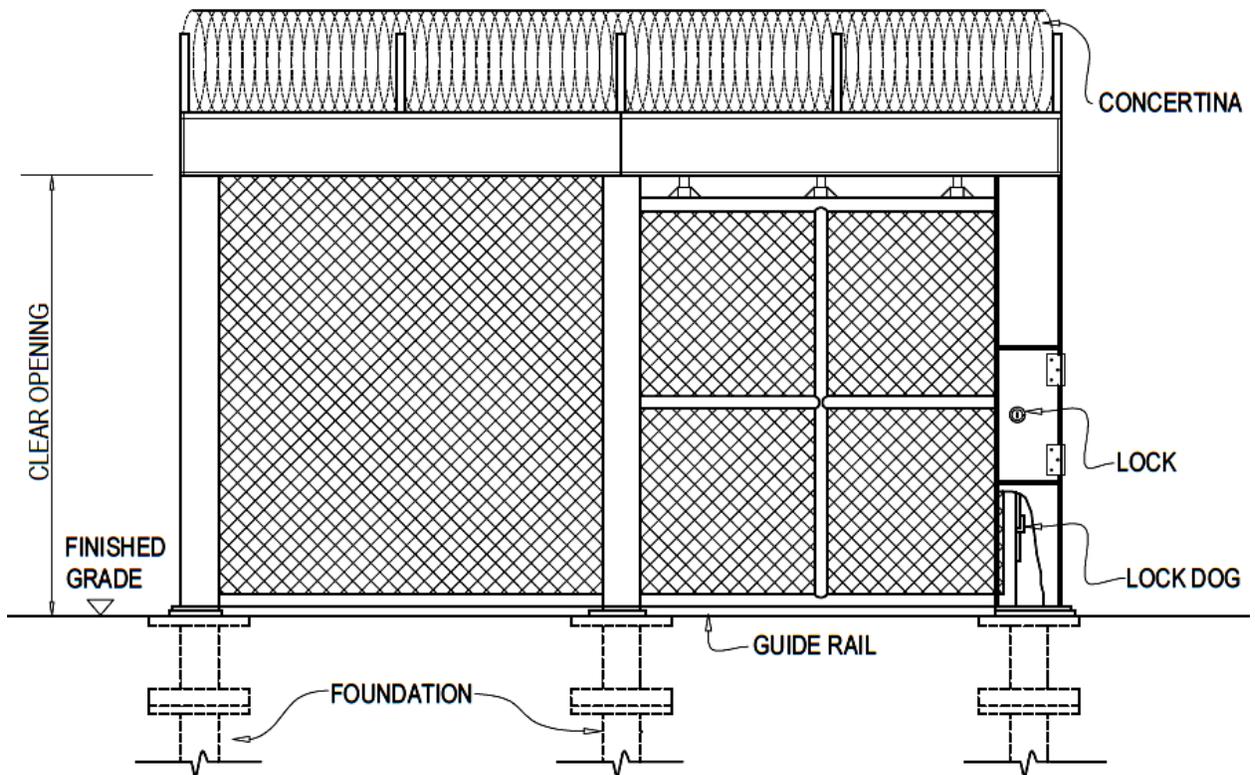
<sup>4</sup> For example, in Ontario the *Highway Traffic Act* Section 109 stipulate a maximum height of 4.15 m by a width of 2.6 m, which is similar to the 13'-6" (4.12 m) by 8 (2.43 m) in USA.



**PLATE SP-3-1 – TYPICAL SALLY PORT ARRANGEMENT**

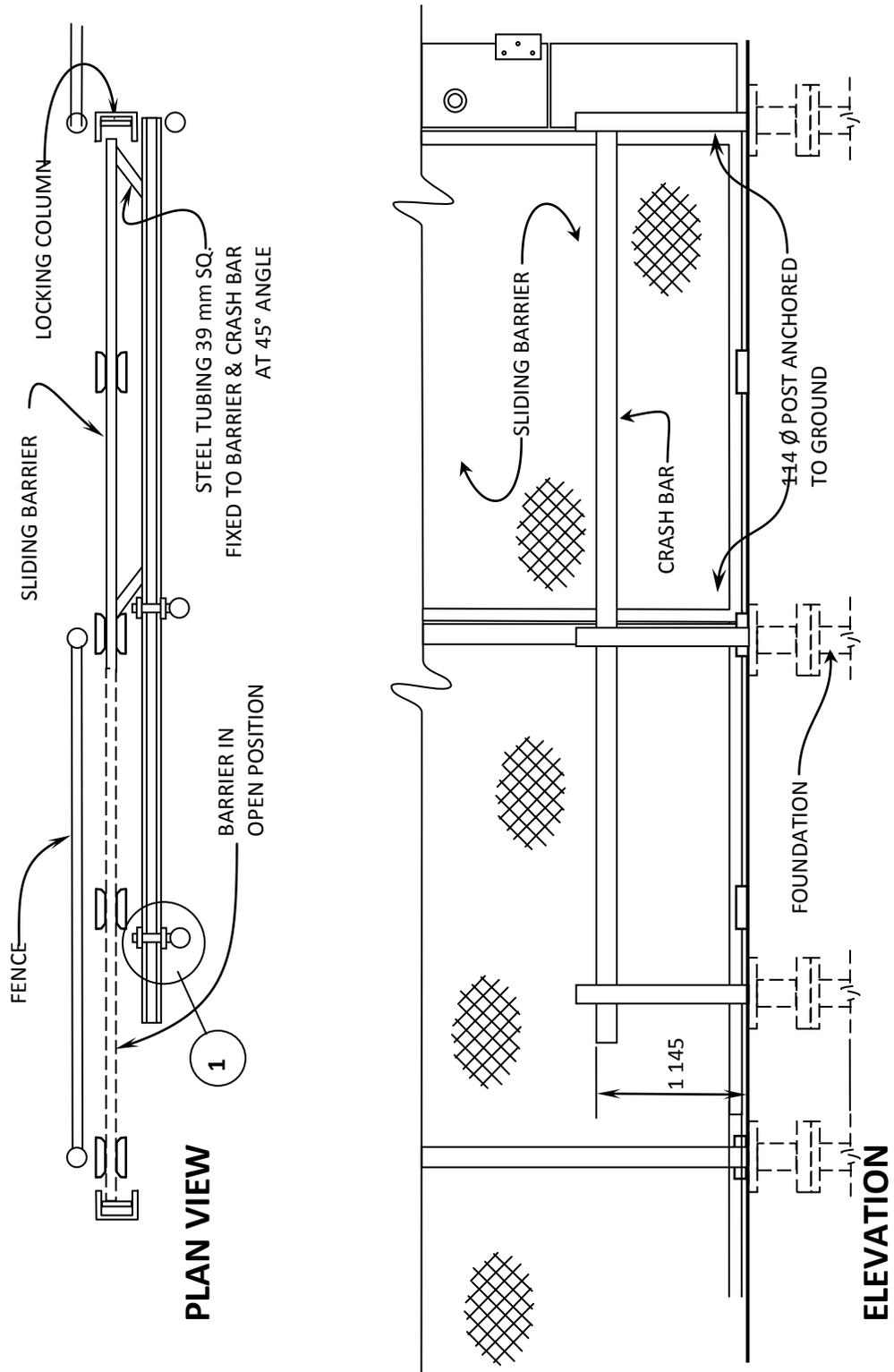


TOP VIEW

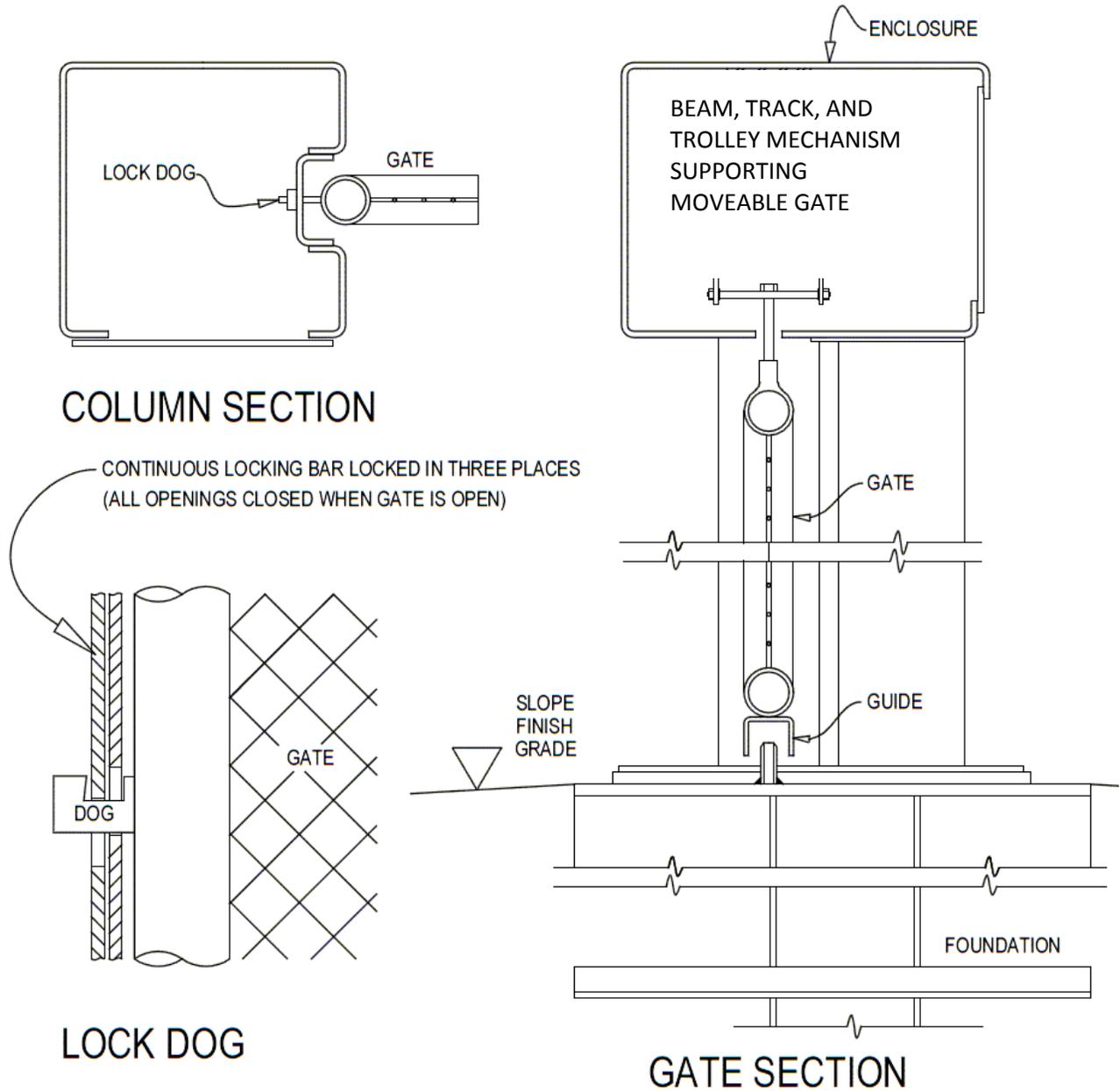


FRONT VIEW

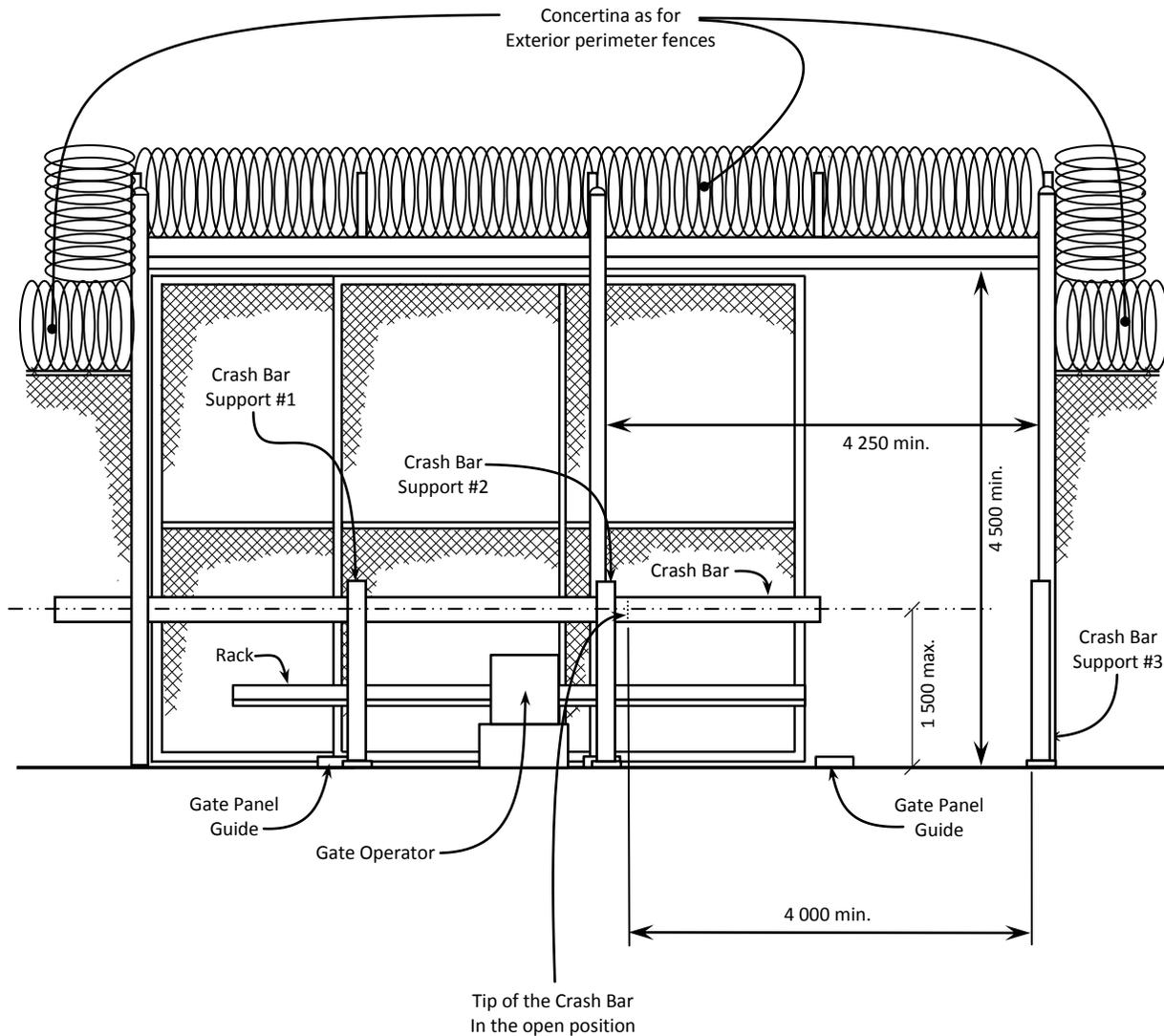
**PLATE SP-3-2 – FENCE GATE WITH OVERHEAD CHAIN DRIVE**  
**INNER PERIMETER FENCE**



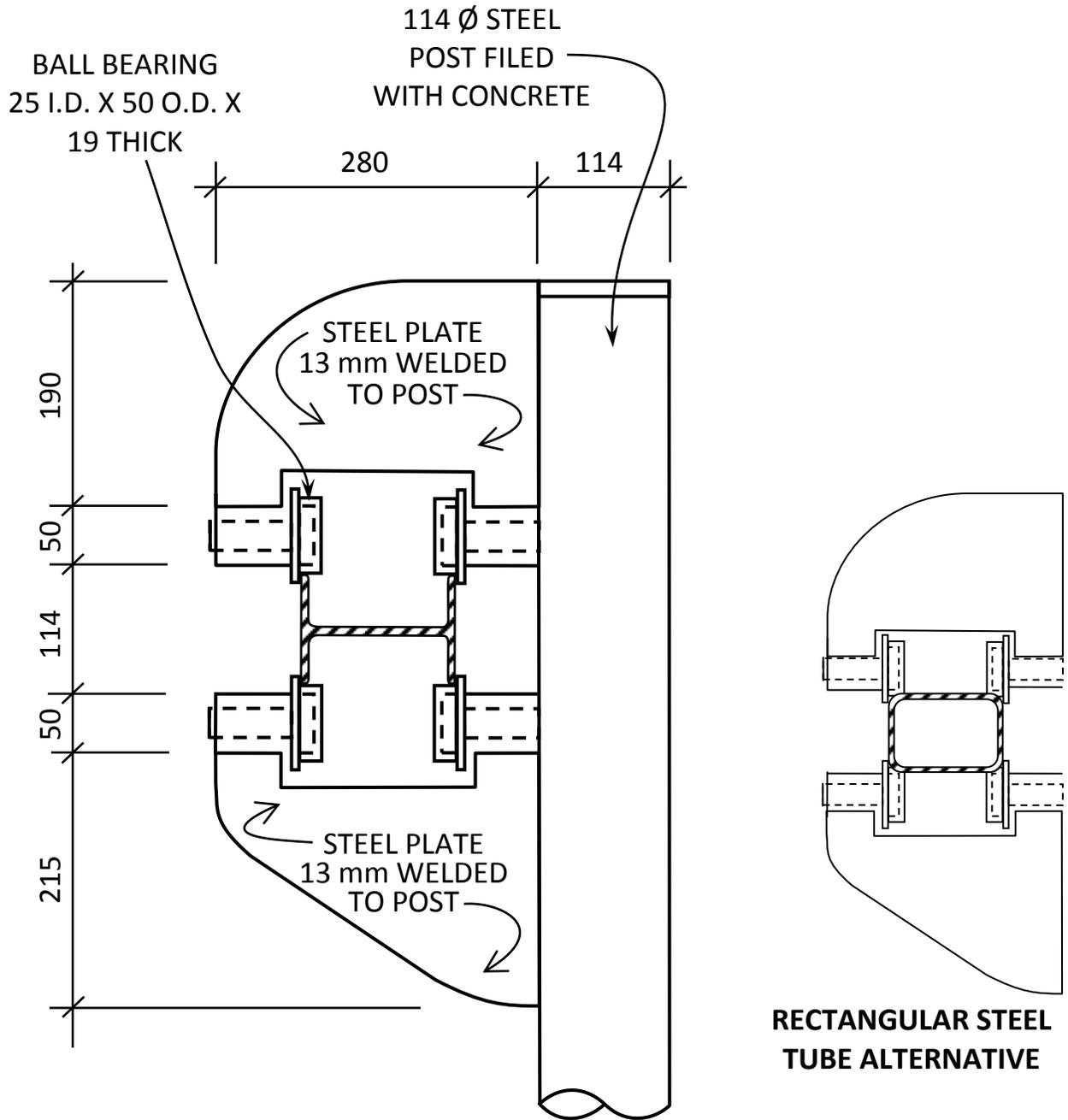
**SP-3-3 – FENCE GATE WITH OVERHEAD CHAIN DRIVE EXTERIOR PERIMETER FENCE**



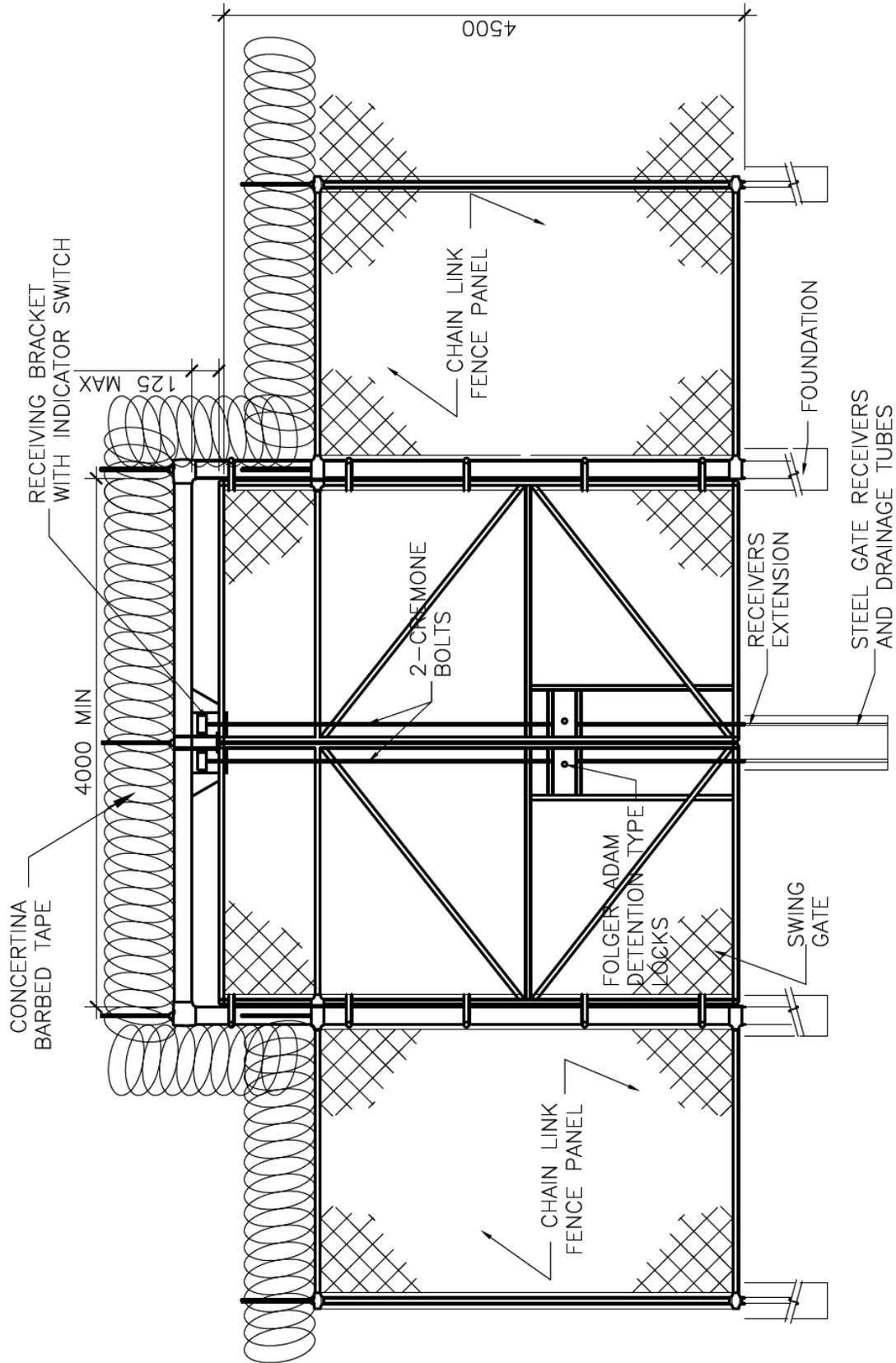
**PLATE SP-3-4 – FENCE GATE WITH OVERHEAD CHAIN DRIVE – DETAILS**



**PLATE SP-3-5 – FENCE GATE WITH RACK & PINION –**  
**INSIDE ELEVATION OUTER PERIMETER FENCE**



**PLATE SP-3-6 – CRASH BAR DETAILS**



**PLATE SP-3-7 – VEHICLE SWING GATE (EMERGENCY GATE)**

## SP-6 SITE – TEMPORARY CONSTRUCTION FENCES

### 1. SCOPE AND DEFENITIONS

This section provides performance criteria and relevant specifications for all temporary construction fences for minimum, medium, maximum and multi-level Institutions.

Several options for temporary fences are available. Their selection must weigh the following factors: location of construction, the risk of breach, and the duration of construction. Fence types include:

**Type 1** Minimum institution construction fence is used primarily as a physical barrier to prevent unauthorized persons access to the site for reasons of safety and to protect the contractor's assets. This fence is no different than what may be used in any community.

**Type 2** Fences in restricted and highly controlled inmate areas such as where routine vehicle movement takes place for deliveries at medium and higher level institutions and therefore the likelihood of breach is minimal. The fence here also serves to prevent unauthorized person access for similar reasons as above. This fence too is no different than what may be used in the community. Construction truck traffic is via the main entrance vehicle sallyport where it is inspected for contraband. Type 2 Fence shall also be used where construction duration is short term as for a repair or replacement of existing systems or the work site shifts by phase from building to building. The institution in this case will schedule inmate movement and activities so as to mitigate risk of breach. Truck traffic to the site will be escorted from the main entrance. Type 2 fence may be used as an alternative to Type 3 assuring adequate security where required by being topped with BTC.

**Type 3** Fences in inmate movement and activity areas at medium and higher level institutions and where breach is possible. Construction truck traffic is via the main entrance vehicle sallyport where it is inspected for contraband. Trucks are escorted to the construction site. This fence is used for long term projects which have a substantial scope and cost. Fences here must assure appropriate security based on assessed risk.

**Type 4** For long term projects which are in proximity to the perimeter fence, a secured fence compound shall be constructed which is integrated with the perimeter effectively forming an extension of the inner perimeter fence. This fence will be fitted with a Fence detection system and covered by camera and lighting integrated with the PIDS. A dedicated sallyport will be constructed on the perimeter fence line for construction truck traffic to be controlled by contracted commissionaires.

### 2. RELATED SECTIONS

#### 2.1 *Technical Criteria Document sections:*

- SP-1 - Site Development
- SP-2 - Fences
- SP-3 - Gates/Sallyports
- SP-4 - Site Lighting
- SP-5 - Traffic Circulation and Parking

#### 2.2 *Other CSC document*

Statement of Technical Requirements – Temporary Construction Fences at Medium and Maximum Security Institutions, Correctional Service Canada, Technical Services Branch – Electronic Systems, Issue 3, April 8, 2011.

**2.3 National Master Specification section:**

01 35 13 – Security Requirements (prior to 2004: 01003 – Security Requirements)

01 56 26 – Temporary Fencing

01 56 36 – Temporary Security Enclosures

**3. PERFORMANCE CRITERIA****3.1 Type 1 Fence**

This fence type shall be a self supporting welded mesh sectional fence typically available by rental ('Modu-loc' or similar). The height of the fence shall be no less than 1800 mm high but may be higher depending on local availability. The fence must be stable and self supporting. Welded wire mesh is considered to be non-climbable due to its mesh size which inhibits the insertion of toes to aid climbing. The top of the fence also has the vertical wire projecting up discouraging breach. Matching vehicle gates are padlocked after work hours. The temporary construction fence shall be removed from the institution by the contractor after construction is completed.

**3.2 Type 2 Fence**

This fence type shall be similar to the above but with a height of 2400 mm. This fence must not come in contact with the perimeter fence nor be closer than 12m to the perimeter fence so as not to interfere with PIDS camera viewing on the interior side of the institution. The temporary construction fence shall be removed from the institution by the contractor after construction is completed. Type 2 fence security can be enhanced by topping it with BTC. This alternative to Type 3 fence shall be considered as a measure to reduce cost of the project.

**3.3 Type 3 Fence**

This fence type shall be similar to a standard woven mesh interior fence, be 3.6m high and, be topped with BTC where required. This fence shall be installed on site with all posts set in concrete and the ground surfaced with compacted gravel. Matching swing type vehicle gates shall be padlock after hours. As for type 2 fence, this fence must not come in contact with the perimeter fence nor be closer than 12m. Truck access to this compound shall be via the Main entrance with all vehicles escorted. The temporary construction fence shall be dismantled by the contractor after construction is completed but parts such as the fabric may be left at the institution in accordance with the contract documents.

**3.4 Type 4 Fence**

This type of fence forms part of the perimeter and as such requires special provisions as follows:

3.4.1 This is a single fence of the same design as an Inner Perimeter Fence (see Plate SP-6-6) and conforms to Chapter SP-2 - Fences, performance criteria 4.1 except for anti-tunnelling which is achieved by compacted gravel surface for 1m distance on each side of the fence.

3.4.2 A Fence Detection System (FDS) is required and connected to the Main Communication Control Post (MCCP).

3.4.3 Cameras are required to monitor the fence line and connected to the MCCP and lighting may be required to enhance viewing.

3.4.4 A dedicated vehicular entrance is required similar to the main entrance sallyport comprising three (3) gates (see Plate Sp-6-7, Detail 1):

- a) Gate 1: Temporary gate for the outer perimeter fence,
- b) Gate 2: Temporary gate for the inner perimeter fence,
- c) Gate 3: Temporary gate in a temporary fence to form a vehicle sallyport.

At any time, at least two gates of the temporary vehicular sallyport are secured, with padlocks and keys under the control of a Commissionaire. A commissionaire's temporary hut is required within the sallyport.

- 3.4.5 The fence must be clear of any building by 12 m but a shorter clearance may be considered since the compound is always protected by a double fence between it and the exterior of the institution.
- 3.4.6 The fence and systems must be dismantled and handed to the institution in accordance with the contract documents after the construction is completed. All systems must be reinstated to the original state and function.

## 4 RELEVANT SPECIFICATIONS

### 4.1 *Type 1 Fence*

Rental construction protection fence comes with welded wire mesh and components conforming to ASTM F2919 Welded Mesh Fence specification. Mesh is galvanized steel no larger than 50X150mm (vertically long rectangle) with vertical wire projecting and exposed at top. Fence must be at least 1800mm high and secured with pins inserted in the ground through the 'T' base support. Sections of fence must be securely clamped together to ensure that the each fence run acts as a continuous barrier which will resist lateral forces and separation. Sloped runs must be protected by mesh panels to ensure continuity of barrier from ground up.

### 4.2 *Type 2 Fence*

This fence is similar to Type 1 above but shall be 2400mm high. Ground along the fence run shall be surfaced with compacted gravel. 'Barbed tape concertina' (BTC) where required and used as an alternative to Type 3 fence shall be as per SP-2-4.2 except that it could be directly attached with galvanized twist ties or clips to the top rail or wire resting against the mesh on the threat side. Use of steel arms fastened to the posts may also be considered for the support of 2 barbed wires and BTC.

### 4.3 *Type 3 Fence*

This fence conforms to the criteria set out in SP-2 for perimeter fences. It shall be topped by steel arms supporting 2 strands of barbed wire and BTC. The arms shall have 2 strands of barbed wire with the BTC cradled between. Steel arms lean towards the threat side.

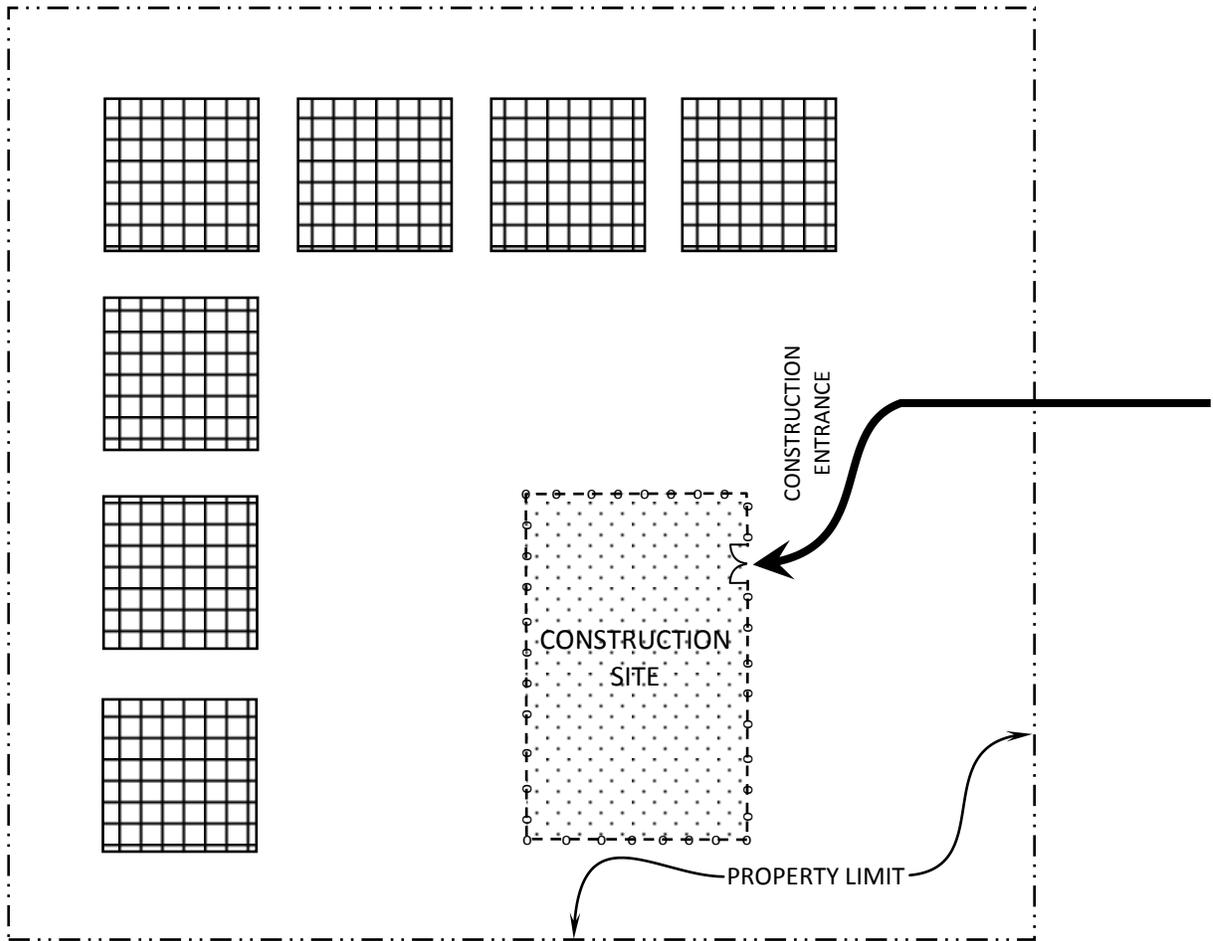
### 4.4 *Type 4 Fence*

The following pertains to a single fence extension of the inner perimeter fence:

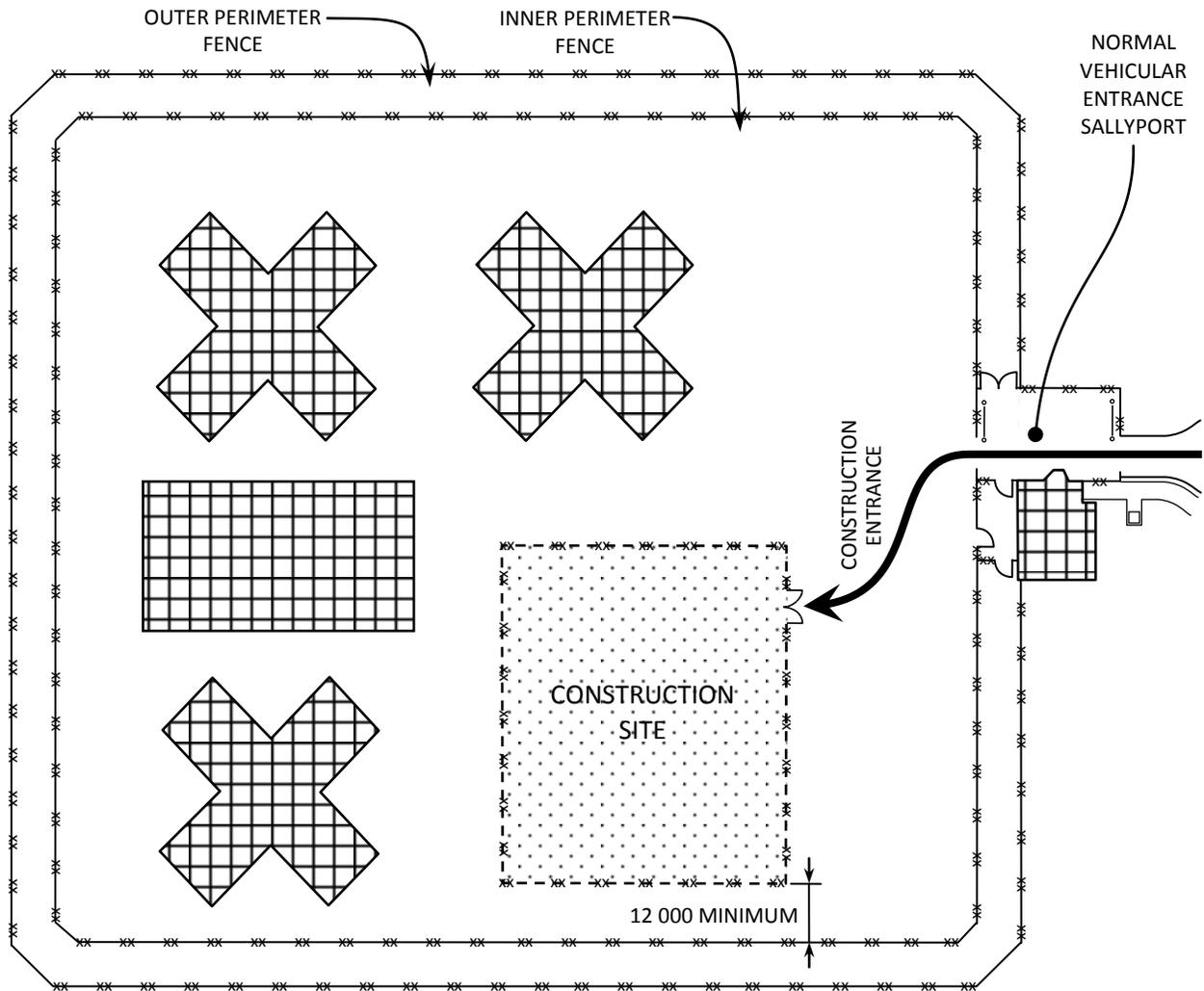
- 4.4.1 This fence is a continuous connected to the inner perimeter fence at each end. It shall conform to the specification for an interior fence as in "Chapter SP-2 – Fences, Conforming Specifications 4.1.8 and 4.2." and relevant plates; only exception being that the BTC needs to be installed only on the threat side at the first intersecting panel.
- 4.4.2 The three temporary construction gates must conform to "Chapter SP-3 - Gates and Sallyport, 5. – Fence Gates, 5.2 Vehicle Swing gates". Gate 2 (the gate on the Inner Perimeter Fence) requires FDS that can be masked during construction

hours and unmasked for all other times. The gate FDS must connect to the MCCP.

- 4.4.3 Motion Detection System (MDS) cable exists within the No Man Zone between the fences. This cable has to be protected from heavy trucks and machinery at the crossing by installing an asphalt pad of 150 mm thick without disturbing the gravel surface over the MDS cables (see Plate SP-6-7). This material can be removed following construction. It is also important to limit the use of salt during winter months. Excess salt will drain to the sides and seep into the surrounding surface adversely effecting the MDS cable's RF field.
- 4.4.4 A temporary microwave system covers the vehicle crossing area within the No Man Zone.
- 4.4.5 Temporary gates may be installed between the perimeter fences at the sallyport crossing to allow maintenance vehicles to circulate, these gates must be designed to not interfere with both the MDS and the temporary microwave systems.

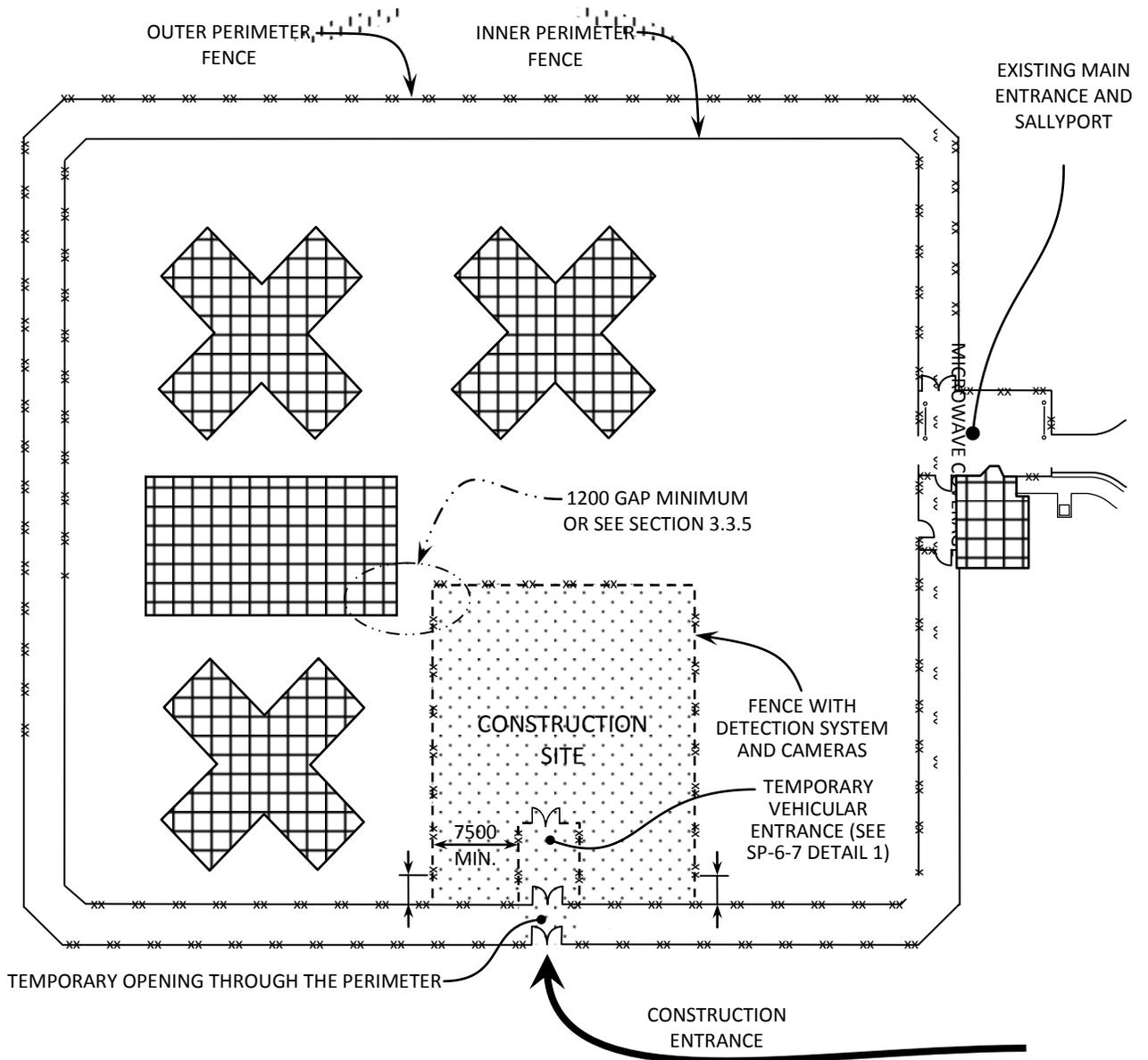


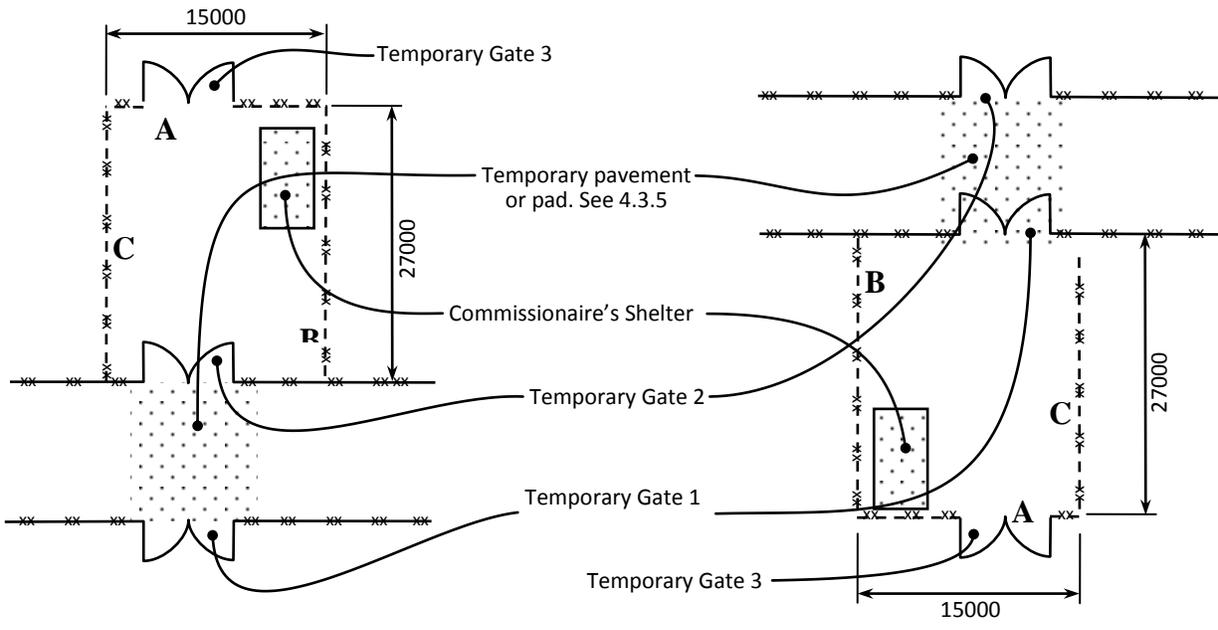
**PLATE SP-6-1 – TYPE 1 FENCE**



**PLATE SP-6-2 – TYPE 2 AND 3 FENCE**

### PLATE SP-6-3 – TYPE 4 FENCE

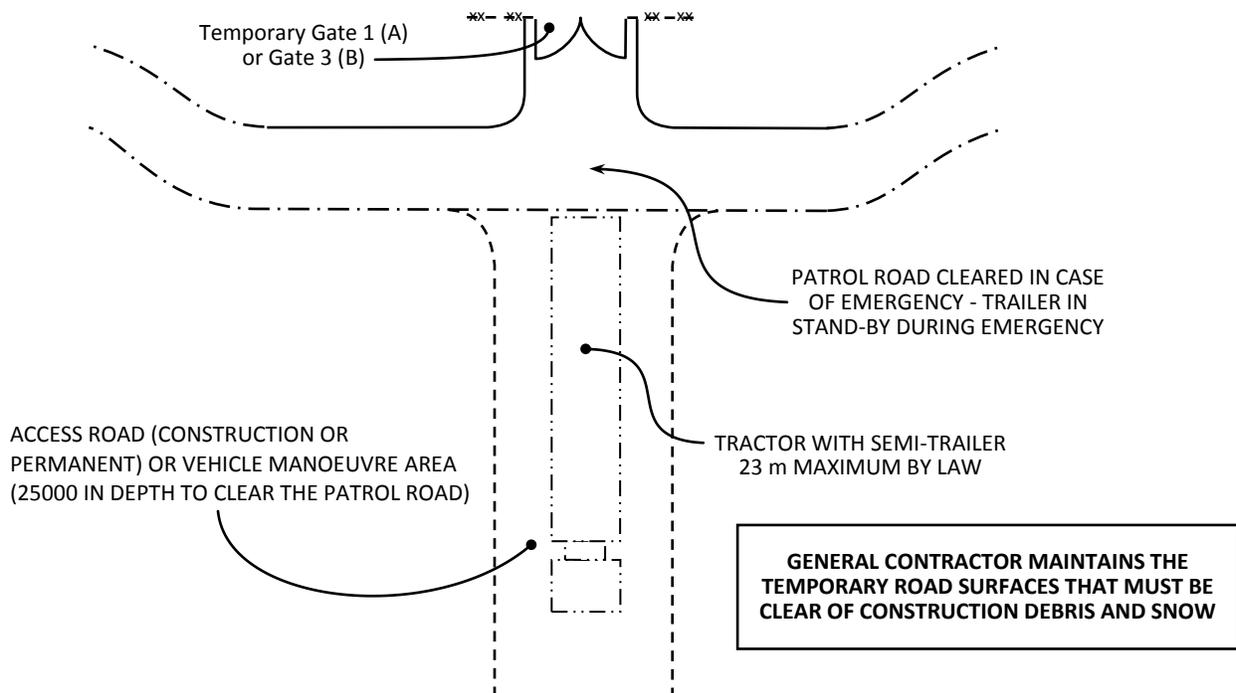




**A – INSIDE THE INSTITUTION**

**B – OUTSIDE THE INSTITUTION**

**SP-6-4 – TYPE 4 FENCE –**  
**ENTRANCE OPTIONS**



**SP-6-5 – TYPE 4 FENCES –**  
**VEHICLE ACCESS DETAIL**