

**STATEMENT OF WORK
SIO ALARM SYSTEMS – PACIFIC REGION**

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1 INTRODUCTION

1.1 Objective

- .1 Correctional Service Canada intends to contract a qualified firm to provide Security Intelligence Officer (SIO) Alarm Systems at various Pacific region institutions.

1.2 Overview

- .1 The SIO Alarm systems will make the SIO office(s) into security partitions and remove the requirement for the large DASCO cabinets to store their SINet access cryptographic hardware.
- .2 The SIO offices will be equipped with alarm controllers with keypads, door contacts and dual technology motion detection sensors to provide continuous observation.
- .3 The SIO alarm systems will report the system's arm and alarm states to a 24-hour post. The post in medium and higher security institutions will be the Main Communications and Control Post. The post at minimum security institutions and community correctional centers will report to the main administration office, usually at the reception post.
- .4 Each location will have one or more security partitions for the SIO office(s) depending on the configuration at each location.
- .5 **NOTE:** In this document, the term "partition" is used to define the area to be protected and "zone" to refer to a single input on an alarm panel. This matches the security alarm industry terminology.

2 REFERENCES

2.1 Standards

- .1 Access to non-government specifications is the responsibility of the contractor.
- .2 Any standards where the revision is not specified must be the latest revision.
- .3 Standards may include:
 - .1 relevant federal and provincial health and safety standards;
 - .2 equipment performance requirements;
 - .3 equipment installation requirements;

3 SCOPE

3.1 Nature of the Work

- .1 The Contractor must perform the Work as described in this Statement of Work.
- .2 The Work involves installing, connecting, and testing all components of the system. Sensors and contacts will be installed at identified partitions on each site. Sensor positioning will meet the specified coverage requirements.
- .3 The contractor may determine the sequencing and simultaneity of system installations.
- .4 The contractor must perform all alarm testing between 8am and 4pm local time during installation.
- .5 Site access for each institution must be coordinated with the institutional contact.

3.2 Tasks and Activities

- .1 The system installations and all other contractual activities are expected to take place within six months after contract award.
- .2 The Contractor must provide the elements described in this section, the details of which are provided throughout this document.

- .3 Each site must have one or more systems installed and tested with the following system components for each identified partition in compliance with the technical requirements in Appendix A in locations as identified in Locations of Work:
 - .1 One or more door contacts;
 - .2 One or more motion sensors;
 - .3 One or more keypads;
 - .4 One or more control panels;
 - .5 Power supplies, equipment cabinets, wiring and conduit as required;
- .4 Training classes for operators at each site must be provided. The operator course is to be offered twice per institution with a class size of up to 5 conducted in English. Class times are to be coordinated with each site's Institutional Contact. The training course must be delivered at each site. Training attendance sheets must be submitted to the Technical Authority and to each Institutional Contact within 2 days of delivering the training. The target audience includes Main Communication and Control Post operators, SIOs, and correctional managers.
- .5 Operator training classes for Mountain and Kent sites may be combined.
- .6 Training classes for maintainers at each site must be provided. The maintenance course is to be offered once per institution with a class size of up to 5 conducted in English. Class times are to be coordinated with each site's Institutional Contact. The training courses must be delivered at each site. Training attendance sheets must be submitted to the Technical Authority and to each Institutional Contact within 2 days of delivering the training.
- .7 Maintenance training classes for Mountain and Kent sites may be combined.
- .8 Documentation as identified in Deliverables must be provided to the Technical Authority by the Contractor as part of the design, installation and test activities.

3.3 Locations of Work

- .1 Any required face-to-face interactions with the Technical Authority, determined entirely at the discretion of the Technical Authority, must take place at CSC National Headquarters in the National Capital Region. Where feasible, communications between the Technical Authority and the Contractor's representative will take place by telephone, email, or teleconference.
- .2 Institutional contacts will be provided to the contractor by CSC upon contract award.
- .3 Locations and plans are in Appendix E.

3.4 Contractor Security Requirements

- .1 The Contractor must hold a valid Designation Organization Screening issued or granted by the Canadian Industrial Security Directorate of Public Service Procurement Canada.
- .2 Each candidate proposed as project personnel in support of this project must hold a valid Reliability security status issued by Canadian Industrial Security Directorate of Public Service Procurement Canada. Should the Contractor's personnel be found to be ineligible at the time of screening, the Contractor must provide an equivalent replacement that passes the security requirement.
- .3 Delays caused by the CSC security clearance requirement must not incur any additional costs to CSC.

4 PROJECT GOVERNANCE

4.1 Communications

- .1 All meetings, telephone or teleconference discussions, email correspondence, and other communications with the Technical Authority must be conducted in English.
- .2 Verbal and written communications with all CSC sites and personnel must be in English.
- .3 All Work deliverables must be completed in English.

4.2 Project Performance

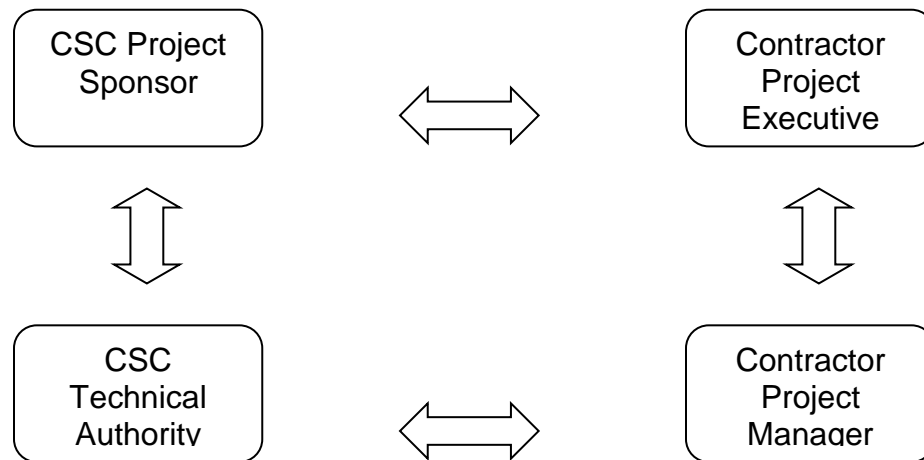
- .1 The Contractor must design and install all cabling components in accordance with the structured cabling requirements of Appendix B.
- .2 The Contractor must meet all the requirements for Contractor safety regulations in accordance with Appendix C.

4.3 Project Governance

- .1 Overall project management responsibility will lie with the Technical Authority. The Technical Authority will manage all aspects of liaison with the Contractor in terms of issue resolution, change management, project timeline management, and other delivery issues and will act as the focal point for all CSC personnel-related interfaces.
- .2 The Technical Authority is:

Mark Bottomley
Electronic Security Systems Engineer
Technical Services and Facilities
340 Laurier Avenue West
Ottawa, ON
K1A 0P9
613-996-8871
mark.bottomley@csc-scc.gc.ca
- .3 Each institution will have a designated Institutional Representative. Each Institutional Representative will provide guidance on the detailed location of the initiation points.
- .4 The Technical Authority is the only person permitted to modify partition definitions or add or remove rooms, doors contacts, and keypads.
- .5 The Contractor must designate a single qualified person as the Contract Project Manager. The Contract Project Manager must act as the focal point for all Contractor issues regarding delivery of service as well as providing a single point of contact for any items requiring contact with the Technical Authority for issue resolution, change management, timeline management, and other delivery issues.
- .6 The Contract Project Manager must be the sole resource permitted to communicate with CSC unless express permission is provided by the Technical Authority. Members of the Contractor management team must direct all communications with CSC through the Contract Project Manager.
- .7 If the Technical Authority is unable to communicate effectively with the Contract Project Manager or finds the resource is unable or unwilling to provide a satisfactory level of service, the CSC Project Sponsor will inform the Contractor Project Executive of the impasse. The Contractor must then replace the Contract Project Manager within thirty (30) days of CSCs notification with an equally well-qualified or superior resource.
- .8 Should the need arise to escalate project issues beyond the levels of the Contract Project Manager and the Technical Authority, the personnel of both the Contractor and CSC responsible for ultimate project governance will become involved. Escalation of an issue will only occur internally in either organization. The project governance level (i.e. CSC Project Sponsor and Contractor Project Executive) of one group is not to be contacted by the

project management personnel (i.e. Technical Authority and Contract Project Manager) of the other.



4.4 Project Initiation

- .1 The objective of the Project Initiation exercise is to set the standards, timings, and deliverables that will govern the Project throughout its life.
- .2 Within thirty (30) days following contract award, the Technical Authority and the Contractor Project Manager will meet to define the activities comprising Project Initiation. At this time, the Technical Authority and Contractor Project Manager will assign resources and set objectives and schedules for the Project. The project initiation phase must be completed no later than forty-five (45) days following contract award.

5 DOCUMENTATION DELIVERABLES

5.1 Delivery

- .1 All reports, plans, and documentation, unless otherwise noted, must be submitted electronically to the Technical Authority.

5.2 Design Reviews

- .1 The Contractor must submit a draft of the Design Report to the Technical Authority. CSC will perform a review of the report and schedule a meeting with the Contractor Project Manager within seven (7) calendar days of the submission. At that meeting, the Technical Authority will grant Design Acceptance in writing, or present the Contractor Project Manager with CSC's feedback on the draft identifying issues based on their review that must be addressed by the Contractor in the second draft. The second report submission and review sequence will be the same as the initial draft. If the review of the second draft report is still not acceptable, the Technical Authority will edit and provide an approved Design Report within ten (10) calendar days of the submission.
- .2 The Design Report submission must contain at a minimum:
 - .1 performance specifications of components to verify meeting system requirements;
 - .2 equipment list with quantity, manufacturer, part number and model number;
 - .3 installation drawings and instructions;
 - .4 spares plan;

- .5 training plan;
- .3 Unless instructed by the Technical Authority in writing, ordering of equipment/material before approval of the Design Report is at the Contractor's own risk.
- .4 Design Change Control starts upon Design Acceptance.

5.3 Design Change Control

- .1 If there is a need to modify the design after the Design Reviews, then the contract must prepare and submit electronically a Design Change Request in .pdf format. Design Change Requests are categorized as Type I or Type II depending on their project impact.
- .2 Type I changes are those that affect one or more of:
 - .1 cost;
 - .2 schedule;
 - .3 reliability;
 - .4 maintainability;
 - .5 availability;
- .3 Type II changes are those that correct a design error or modify the design without affecting:
 - .1 cost;
 - .2 schedule;
 - .3 reliability;
 - .4 maintainability;
 - .5 availability;
- .4 Type I changes must be submitted to the Contracting Authority.
- .5 Type II changes must be submitted to the Technical Authority.
- .6 Change requests must include at a minimum:
 - .1 change type;
 - .2 a description of the design change;
 - .3 reason for the change;
 - .4 the specification requirement(s) being affected;
 - .5 the Design Report element(s) being changed;
 - .6 cost impact;
 - .7 schedule impact;
 - .8 reliability impact;
 - .9 maintainability impact;
 - .10 availability impact;
 - .11 any trade-off recommendations;
- .7 Changes must not be implemented until accepted in writing by the Technical Authority through the Contracting Authority.

5.4 Progressed Schedule

- .1 Upon Design Acceptance, the Contractor must provide the Technical Authority a Progressed Schedule update every two (2) weeks.
- .2 The Progressed Schedule must include at a minimum:
 - .1 date of last schedule progress update;
 - .2 identification of all updates since the previous submission;
 - .3 progress details for each milestone;

- .4 identification of all items delayed by more than two (2) weeks from the original schedule;
 - .5 plans for preventing further schedule slippage of delayed items;
 - .6 separate entries for each alarm zone;
 - .7 separate entries for each door contact by zone;
 - .8 separate entries for each sensor installation by zone;
 - .9 separate entries for each keypad installation by zone;
 - .10 separate entries for each control panel installation by zone;
 - .11 separate entries for all report, plan, and documentation deliverables;
- .3 The schedule may be provided electronically, or alternately be made available online through a Contractor hosted project management portal.

5.5 Acceptance Test Plan

- .1 The Contractor must submit a draft of the Acceptance Test Plan to the Technical Authority. CSC will perform a review of the plan and schedule a meeting with the Contractor Program Manager within seven (7) calendar days of the submission. At that meeting, the Technical Authority will grant Test Plan Approval in writing, or present the Contractor Program Manager with CSC's feedback on the draft identifying issues based on their review that must be addressed by the Contractor in the second draft. The second plan submission and review sequence will be the same as the initial draft. If the review of the second draft plan is still not acceptable, the Technical Authority will edit and provide an approved Acceptance Test Plan within ten (10) calendar days of the submission.
- .2 The Acceptance Test Plan must contain at a minimum:
- .1 the purpose of the test;
 - .2 step-by-step instructions for test performance;
 - .3 blank forms for recording test results;
- .3 The Acceptance Test Plan tests must include at a minimum tests that cover correct operation of all components;

5.6 Operator Training Plan

- .1 The Contractor must submit a draft of the Operator Training Plan to the Technical Authority. CSC will perform a review of the plan and schedule a meeting with the Contractor Program Manager within seven (7) calendar days of the submission. At that meeting, the Technical Authority will grant Training Approval in writing, or present the Contractor Program Manager with CSC's feedback on the draft identifying issues with the plan based on their review that must be addressed by the Contractor in the second draft. The second plan submission and review sequence will be the same as the initial draft. If the review of the second draft plan is still not acceptable, the Technical Authority will edit and provide an approved Operator Training Plan within ten (10) calendar days of the submission.
- .2 The Operator Training Plan must contain at a minimum:
- .1 course goals;
 - .2 course agenda with topics and durations;
 - .3 hands-on operation of the installed system in the SIO office(s) and on the MCCP console;
 - .4 printed materials to be retained by each student;

5.7 Maintenance Training Plan

- .1 The Contractor must submit a draft of the Maintenance Training Plan to the Technical Authority. CSC will perform a review of the plan and schedule a meeting with the Contractor Program Manager within seven (7) calendar days of the submission. At that meeting, the Technical Authority will grant Training Approval in writing, or present the Contractor Program Manager with CSC's feedback on the draft identifying issues with the plan based on their review that must be addressed by the Contractor in the second draft. The second plan submission and review sequence will be the same as the initial draft. If the review of the second draft plan is still not acceptable, the Technical Authority will edit and provide an approved Maintenance Training Plan within ten (10) calendar days of the submission.
- .2 The Maintenance Training Plan must contain at a minimum:
 - .1 course goals;
 - .2 course agenda with topics and durations;
 - .3 hands-on examination of the installed system;
 - .4 practical fault isolation;
 - .5 printed materials to be retained by each student;

5.8 Milestone Acceptance

- .1 Each location will be considered a separate milestone.
- .2 Installation and training activities at the site must be completed by the Contractor prior to any performance of any acceptance testing.
- .3 Upon completion of the SIO Alarm System(s) at each site, including all training, testing and commissioning activities, CSC will review the results and accompanying documentation to ensure that all deliverables have been met and that all issues identified by the Technical Authority have been addressed. If those conditions have been met, CSC will grant Milestone Acceptance for the relevant milestone.

5.9 Final Acceptance

- .1 Once all of the sites have been granted Milestone Acceptance, CSC will review the project. The goal of this activity is to ensure that all tasks and deliverables have been met by the Contractor, including training, As-Built Documentation and the Warranty, and that all issues identified by the Technical Authority have been addressed. If those conditions have been met, and the Technical Authority has approved the Contractor's Final Project Report, CSC will grant Final Acceptance, closing the project.

5.10 As-Built Documentation

- .1 The Contractor must provide as-built documentation. All drawings must be submitted in AutoCAD 2013 or later format in addition to .pdf format. The full documentation package must be provided to the Technical Authority and the National Maintenance Contractor for each site. The documentation must not contain any hand-written content except for signatures and signing dates.
- .2 The Contractor as-built documentation must include at a minimum site and building plans with:
 - .1 individual cable runs;
 - .2 conduit sizes;
 - .3 new and re-used conduits;
 - .4 equipment boxes;
 - .5 riser diagrams;
 - .6 cable identification numbers;

- .7 installed equipment serial numbers;

5.11 Final Project Report

- .1 The Contractor's final project report must include at a minimum copies of:
 - .1 completed, successful acceptance tests;
 - .2 operator training course attendance sheets;
 - .3 maintenance training course attendance sheets;

6 PROJECT DELIVERABLES

6.1 SIO Alarm Systems

- .1 The Contractor must:
 - .1 supply Incident Alarm systems at locations specified in Appendix E that meet the technical requirements of Appendices A, B, and C.
 - .2 provide for each site all the reports, plans, and documentation identified in Documentation Deliverables;
 - .3 provide operator training in accordance with the approved Operator Training Plan to each site's National Maintenance Contractor personnel;
 - .4 provide maintenance training in accordance with the approved Maintenance Training Plan to each site's National Maintenance Contractor personnel;
 - .5 perform a successful Acceptance Test at each site witnessed and signed-off by the Technical Authority or delegate;

7 WARRANTY

7.1 Warranty

- .1 The Contractor must provide a written twelve (12) month system warranty that covers all materials and labour required to correct any system problems occurring during the warranty period.
- .2 The separate warranty period for each site is deemed to have started at the earliest of acceptance of the system by the Technical Authority or delegate; or placing the system into service by CSC.

APPENDIX A – SECURITY PARTITION ALARM TECHNICAL REQUIREMENTS

1 INTRODUCTION

1.1 Overview

- .1 This defines the requirements of Correctional Service Canada for a system to make an office/suite a designated security partition for use at federal correctional institutions. There may be multiple partitions where there are separate requirements.

1.2 Purpose

- .1 The systems are for deployment in locations with requirements to be a security partition as defined by G1-026 Guide to the Application of Physical Security Zones.
- .2 Security Zone:

Definition	"An area to which access is limited to authorized personnel and to authorized and properly escorted visitors".
Examples	"An area where secret information is processed or stored".
Perimeter	"Must be indicated by a recognizable perimeter or a secure perimeter as indicated by the TRA".
Monitoring	Monitored continuously **, i.e., 24 hours a day and 7 days a week.

**** Monitored continuously** - to confirm on a continuous basis that there has not been a breach of security. Examples include electronic intrusion detection systems or someone guarding a particular point on a constant basis.

- .3 The target locations are preventative security intelligence staff areas where they require access to the Protected C information on SINet.
- .4 **NOTE:** The G1-026 Guide uses the term "zone" for the area to be protected; however this document will use "partition" to define the area to be protected and "zone" to refer to a single input on an alarm panel. This matches the security alarm industry terminology.

2 REFERENCES

2.1 Standards

- .1 Access to non-government specifications is the responsibility of the contractor.
- .2 Any standards where the revision is not specified must be the latest revision.

3 PHYSICAL

3.1 Lock

- .1 The partition perimeter doors must be lockable. This is outside the scope of Electronic Security Systems, but is assumed to exist.

3.2 Alarm System

- .1 Alarm system connectivity must be wired only, wireless connections are not permitted.

3.3 Alarm Control Panel

- .1 The alarm control panel must:
 - .1 be able to arm/disarm the system with a code of at least 4 digits from a connected alarm keypad;
 - .2 have a minimum of four spare zone inputs after system acceptance;

- .3 provide two dry contact outputs for arm and alarm states for each partition connected to the panel;
 - .4 include an internal backup battery with a minimum of sixty minutes battery operation time for the panel and connected devices;
 - .5 be enclosed in a locked, metal box;
- .2 All alarm control panels on the same site must be keyed alike.

3.4 Alarm Sensors

- .1 Each room within the partition must include one or more area coverage, dual technology (passive infrared and microwave) motion sensing devices.
- .2 Each door on the perimeter of the security zone must have a door contact.
- .3 The door contacts must:
 - .1 be triple bias (e.g. GE Sentrol 2700 series) high security contacts; **or**
 - .2 be rated UL 634 Connectors and Switches for Use with Burglar-Alarm Systems security level 1 or better (e.g. Magnasphere HS L1.5 series);
- .4 be powered from the Alarm Control Panel;

3.5 Alarm Keypad

- .1 The alarm keypad must:
 - .1 include an illuminated numeric keypad;
 - .2 include a continuous visible indication of the current arm state;
 - .3 provide an audible and visible indication when the system is in alarm;
 - .4 provide an audible and visible indication when the system is in the arm/disarm delay period;
 - .5 display the zone(s) in alarm when in the alarm state;
 - .6 be powered from the Alarm Control Panel;

3.6 Alarm Status Display

- .1 The alarm status display must:
 - .1 include a continuous visible indication of the current arm state;
 - .2 provide an audible and visible indication when the system is in alarm;
 - .3 display the zone(s) in alarm when in the alarm state;
 - .4 be powered from the Alarm Control Panel or an equivalent duration backup power supply;
- .2 The alarm status display must **NOT** be able to arm/disarm the system.

3.7 Environment

- .1 Any indoor equipment must:
 - .1 be capable of continuous operation;
 - .2 start and operate from 0°C to 50°C;
 - .3 start and operate from 20% to 90% non-condensing humidity;

3.8 Interference

- .1 All electronics must:

- .1 be certified compliant with IEC EN55022 or IEC EN 55032 (IEC EN55022 – International Electrotechnical Commission Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement) (IEC EN55032 – International Electrotechnical Commission Electromagnetic compatibility of multimedia equipment – Emission requirements (Replacing IEC EN55022));
- .2 be certified compliant with IEC EN 55024 (IEC EN55024 – International Electrotechnical Commission Information technology equipment – Immunity characteristics – Limits and methods of measurement);

3.9 Reliability

- .1 All components must:
 - .1 have a Mean Time Between Failures of at least 75,000 hours;

4 INSTALLATION

4.1 Installation

- .1 The system installation must be installed by a manufacturer certified technician.
- .2 Each sensor must be individually “home run” wired to the alarm control panel.
- .3 Each sensor must be connected to a separate zone in the alarm control panel(s).
- .4 All sensor wiring must be Station ‘Z’ 22 AWG or heavier solid conductor wire with a GREY jacket.
- .5 Door contacts must be located and installed on the security partition perimeter doors as identified in Appendix E.
- .6 Door contacts must be recessed inside the door frame or mounted on the secured side of the door.
- .7 Motion sensors must be mounted on the ceiling or at least seven feet up on a wall.
- .8 The motion sensor(s) in each room must cover at least 90% of the open floor area. The open floor area is the floor area not covered by cabinets and furniture, excluding chairs.
- .9 Alarm keypad(s) must be located and installed within the security partition as identified in Appendix E.
- .10 The only location permitted to arm/disarm the system is the alarm keypad within the partition.
- .11 Alarm control panel(s) power must be provided using 18 AWG or heavier wire.
- .12 Alarm control panel(s) must be located and installed
 - .1 in the room indicated in appendix E;
 - .2 such that they are serviceable from floor level without the use of a ladder;
 - .3 in an Electronic Security Systems rack if rack mountable;
- .13 Alarm Control Panels located in Terminal Equipment Rooms or Security Partitions will have access to fiber optic connections or Electronic Security Systems network switches for connection of outputs to the Central Equipment Room.
- .14 The system must **NOT** be configured for automatic arm/disarm on a schedule.

4.2 Installation – Medium and Higher Security Locations

- .1 The system must be integrated into the Main Communications and Control Post’s Facilities Alarm Annunciation System to display for each partition:
 - .1 armed/bypassed status.
 - .2 alarm/clear status;

- .2 All arm and alarm status changes and Facilities Alarm Annunciation System acknowledgements must be logged in the central data logger with the system, event, location, and time/date.

4.3 Installation – Minimum Security and Community Correctional Center Locations

- .1 The system must have an alarm status panel in the identified location.

5 OPERATIONAL

5.1 Alarms

- .1 The system must:
 - .1 retain its configuration over a power cycle;
 - .2 **not** generate spurious alarms on start-up;
 - .3 resume normal operation without operator intervention;
- .2 Alarms must be reported within one second of detection.
- .3 Sensor processing must detect and alarm for sensor cable open circuits.

6 INTERFACE

6.1 System Power

- .1 Any powered indoor components **not** using DC power inputs must:
 - .1 accept power from a 120VAC circuit;
 - .2 **not** require more than 15A during start-up and operation;
- .2 The system must:
 - .1 be connected to a circuit supplied by the institution's backup generator;
 - .2 be connected to an Uninterruptible power Supply that can maintain system operation for at least sixty minutes; **or**
 - .3 have an internal battery backup that can maintain system operation for at least sixty minutes;

APPENDIX B - WIRING TECHNICAL REQUIREMENTS

7 INSTALLATION

7.1 All Cabling

- .1 Low voltage cabling (less than 50V AC or DC) must be run in separate conduits or cable trays from power cabling.
- .2 All cable infrastructure must be protected from or entirely free from burrs and other sharp edges.
- .3 All new cable runs must be continuous without splices.
- .4 All cable must have sufficient slack to allow a minimum of three (3) reconnections with new connectors.
- .5 All cables in junction boxes must have a maximum of a single loop of slack (not folded).
- .6 Electrical tape, masking tape, or its equivalent must NOT be used on cables or any installed equipment.
- .7 Upon identification by the Technical Authority or delegate all redundant cables, and conduit must be removed and disposed of in accordance with any applicable federal or provincial regulations.
- .8 Upon determination by the Technical Authority or delegate, any damage to remaining or new cables, conduits, or equipment caused by the removal of redundant cables and conduit must be repaired or replaced at the contractor's expense.

7.2 Low Voltage Cabling (less than 50V AC or DC)

- .1 All low voltage cabling must be installed and tested in accordance with a structured cabling standard compliant with TIA/EIA-568 version B or later.
- .2 All low voltage cables must be FT4 fire rated.
- .3 All installed low voltage cables must be run through conduit and/or in cable trays. An installed cable is a cable that runs farther than the adjacent equipment rack. Equipment racks must be abutting, without side panels to be considered adjacent.
- .4 All premise low voltage cables must be terminated at a patch panel in the equipment racks.
- .5 All new and reused existing network cabling must be tested with a certified cable analyzer and the test results must include:
 - .1 origin and destination of the cable;
 - .2 wire map – pass/fail;
 - .3 propagation delay – pass/fail;
 - .4 cable length – length in metres and pass/fail;
 - .5 insertion loss – dB loss and pass/fail;
 - .6 return loss – dB loss and pass/fail;
 - .7 NEXT (Near End Crosstalk) – pass/fail;
 - .8 ELFEXT (Equal Level Far-End Crosstalk) – pass/fail;
- .6 All new network cabling must be Category 6 or better.
- .7 All network patch cables must be stranded cable.
- .8 All network premises cables must be solid conductor.
- .9 All network camera connections must NOT use patch cables.
- .10 All network camera connections must be terminated directly on the premises cables with:
 - .1 solid conductor Category 6 rated RJ45 connectors; or
 - .2 factory assembled stranded pigtailed with Category 6 rated RJ45 connectors;

- .11 All new (including unused fibres) and reused existing fibre optic cabling must be tested with a certified fibre optic analyzer and the test results must include:
 - .1 origin and destination of the cable;
 - .2 light loss – dB loss and pass/fail;
 - .3 cable length – length in metres and pass/fail;
- .12 If fibre optic cabling is required, all new fibre optic cabling must be OM-3 50/125µm unless otherwise specified in the Request for Proposal.
- .13 If fibre optic cabling is required, all new fibre interconnections should try to be geographically redundant (separate fibre pairs through separate conduits to different core switches) or at a minimum logically redundant (separate fibre pairs through the same conduit to different core switches).
- .14 All reused cable must be tested prior to installation of new cabling and equipment to identify any existing deficiencies.
- .15 All failed new or reused cables must be replaced as part of the project.
- .16 All network and fibre optic cabling must have a bright green jacket.
- .17 All cabling must have a warranty duration of twenty (20) or more years.

7.3 Power Cabling

- .1 All power cabling installation must be installed in accordance with CSA guidelines, and national and provincial electrical codes.
- .2 All power cabling termination blocks must have a protective guard.
- .3 Surge suppression type lightning arrestors must be installed on all cables at the building perimeter.
- .4 All ground conductor to ground rod connections must be done with thermic welding.
- .5 External, “wall wart” style AC power adapters where the electronics forms a fixed unit with the AC plug must NOT be used.

7.4 Connections

- .1 All connections, terminations, and cross connections must be made in enclosures or equipment rooms.
- .2 All joins or splices must be soldered and encased in waterproof heat shrink tubing.
- .3 Marelite type connectors must NOT be used.
- .4 All connection solder flux residue must be cleaned-up.
- .5 Acid based solder flux must NOT be used.
- .6 All cable shielding must be secured against fraying.
- .7 All connectors must be a locking type.
- .8 All connections must be in an accessible location.
- .9 Crimp connections must NOT be used with solid conductor wire.

7.5 Termination Blocks

- .1 All wires in multi-conductor cables terminating at a block must terminate on the block.
- .2 All unused wires must be grounded.
- .3 Wires must not cross the face of a block.
- .4 All power wiring must use terminal lugs with termination blocks.
- .5 All connections to screw terminals must use spade terminal lugs unless otherwise specified.
- .6 Each spade terminal lug must connect to only a single wire excluding cases where wires do not need to be disconnected for servicing.
- .7 No more than two (2) spade terminal lugs must be connected to a screw thread terminal.

- .8 No bare wire must be visible between the spade terminal lug and the wire.
- .9 All blocks must be secured to a hard surface using mechanical fasteners.
- .10 Stranded conductors must NOT be used with BIX or other Insulation displacement termination blocks.

7.6 Labelling

- .1 Labels must be applied to:
 - .1 all cables within 0.3 metres of each end;
 - .2 all cables at any access point. e.g. pull box, wall shaft opening;
 - .3 all conduit runs using bright green labels at least every 3.5m and within 0.3m of any wall penetration;
 - .4 all wires at a termination block;
 - .5 all termination blocks;
 - .6 all enclosures using bright green labels;
 - .7 all racks;
- .2 All wire and cable labels must be:
 - .1 machine printed;
 - .2 mounted with clear heat shrink tubing;

7.7 Conduits and Cable Trays

- .1 All metallic conduit installation must be free from burrs or sharp edges.
- .2 Cable trays must be:
 - .1 continuous;
 - .2 metal;
 - .3 equipped with covers;
- .3 Cable runs in inmate accessible areas should be minimized by using existing pipe chases and in-wall conduits.
- .4 All indoor cable runs in inmate accessible areas less than 4m from the floor or less than 4m from any balcony, must be:
 - .1 in Galvanized Rigid Conduit;
 - .2 surface mounted and strapped with two-hole mounting straps every 5 feet.
- .5 All other indoor cable runs must be in either cable trays or Electrical Metallic Tubing or better conduit.
- .6 All outdoor, above ground cable runs must:
 - .1 be in Galvanized Rigid Conduit;
 - .2 include expansion joints where the expected expansion exceeds 0.25” between two fixed points;
- .7 All underground cable runs must
 - .1 be in Rigid Nonmetallic Conduit;
 - .2 have a minimum six inch wide marker tape above it in the back fill at least 50cm above the conduit where possible.
 - .3 be encased in poured concrete when passing under a road;
- .8 Liquid-tight flexible metal conduit with a maximum length of one (1) metre may be used for edge device connections in non-inmate areas.

- .9 Outdoor non-sensor cables located on a fence must:
 - .1 be positioned within 10cm of the top rail of the fence;
 - .2 be UV-rated for outdoor use;

7.8 Cable Dressing

- .1 All cabling in equipment racks, cable trays, junction boxes, and at edge devices will be dressed using Velcro style “hook and loop” re-useable straps.
- .2 Cable straps must encircle all the cables in a given bundle.
- .3 Vertical cable runs in an equipment rack must be:
 - .1 strapped at least every thirty (30) cm;
 - .2 run in the side panel area;
- .4 If a tie-wrap is used to secure any new cable, the contractor must replace the entire cable at their expense as the conductors may have been damaged.
- .5 All cables entering from the top of the rack must be routed to the base of the rack before returning to the termination point.
- .6 All cables entering a rack must have sufficient slack to allow a connection to be made anywhere in the rack.
- .7 All cables connected to sliding rack elements must provide sufficient additional slack to allow sliding elements to be fully extended without disconnecting the cable from the equipment.

7.9 Outdoor Enclosures

- .1 Outdoor enclosures, including cable entries, must
 - .1 meet NEMA 4X or IP66 or better when installed;
 - .2 be lockable;
 - .3 be mounted at least three (3) feet above grade or floor;
 - .4 be secured to existing structures or stub pole supports;
- .2 All enclosures grouted in concrete must include a drain hole.

7.10 Restoration

- .1 Cut, opened, or damaged walls and removed conduit holes must be patched and painted to match the existing colour.
- .2 Exposed conduit in office and staff work areas must be painted to match the existing colour.

APPENDIX C - INSTALLATION STANDARDS

8 INSTALLATION

8.1 Tools, Equipment, and Materials

- .1 The contractor must be responsible for shipment and delivery of all tools, equipment, and materials to the site.
- .2 All shipment labelling must appear on a minimum of two (2) locations on each package.
- .3 All shipment labelling must include:
 - .1 “FRAGILE” where applicable;
 - .2 complete name of the institution;
 - .3 complete name of the institutional representative;
 - .4 complete shipping address;
 - .5 description of the contents;
- .4 All electronic equipment must remain in the original packaging material until the equipment is installed.
- .5 The contractor must:
 - .1 secure all tools, equipment, and materials prior to the end of each work day;
 - .2 ensure the shipment and delivery of tools, equipment, and materials to the site in good order;

8.2 Redundant Electronics

- .1 If there are any redundant electronics, the contractor must identify and provide identification of the redundant electronics to the Technical Authority or delegate at least 2 weeks prior to removal.
- .2 The Technical Authority or delegate will confirm within one week of receipt of the identified redundant equipment that the equipment may be removed.
- .3 Redundant electronics identification must as a minimum include:
 - .1 location;
 - .2 make;
 - .3 model;
 - .4 serial number;
- .4 All redundant electronics must be removed and handed over to the national electronic security systems maintenance representative in good condition.

APPENDIX D - CONTRACTOR SAFETY REGULATIONS

1 COMPLIANCE

1.1 Acts and Regulations

- .1 The Contractor must comply with the latest issue of the following specifications:
 - .1 Canadian Labour Code Part II;
 - .2 National Building Code Part VIII;
 - .3 Occupational Health and Safety – British Columbia (for British Columbia sites);
 - .4 WorkSafeBC – British Columbia (for British Columbia sites);
- .2 The Contractor must comply with safety regulations and procedures that are prepared by the institution and in effect at the Work site.
- .3 In the event of conflict between any provisions of the Acts, Regulations, and safety regulations and procedures, the most stringent must apply.

2 PROCESS

2.1 Safety Plan

- .1 The Contractor must
 - .1 create and maintain a site specific safety plan for each site;
 - .2 provide the safety plan in electronic .pdf format to institutional staff, and inspectors and safety officers authorized by the Acts and Regulations upon request;
- .2 The safety plan must include at a minimum:
 - .1 compliance confirmation with the location relevant Acts and Regulations above;
 - .2 a hazard(s) assessment of hazards associated with the project site;
 - .3 controls to minimize risks by identifying safe work practices, standard operating procedures, and safety inspections;
 - .4 emergency procedures in the event of an accident or incident;
 - .5 emergency contact information for ambulance, fire department, police department, and institutional safety officer;
 - .6 a communications strategy to ensure the safety plan contents are communicated with all contractor personnel and non-CSC employees entering the project site;
- .3 The Contractor must ensure that required safety training as mandated in the Acts and Regulations above, and site specific safety regulations and procedures is received by all contractor personnel and non-CSC employees entering the project site.

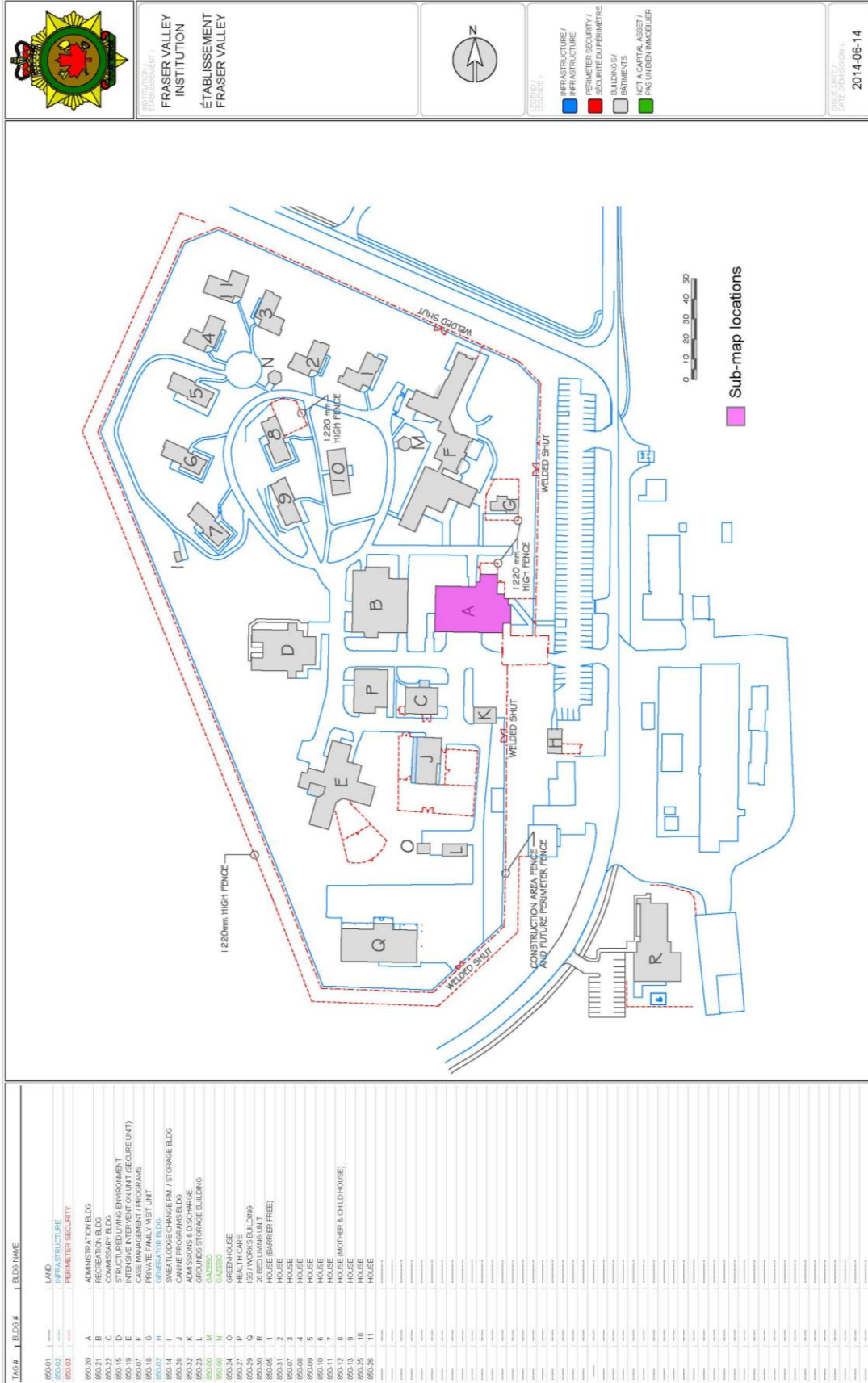
APPENDIX E - LOCATION PLANS

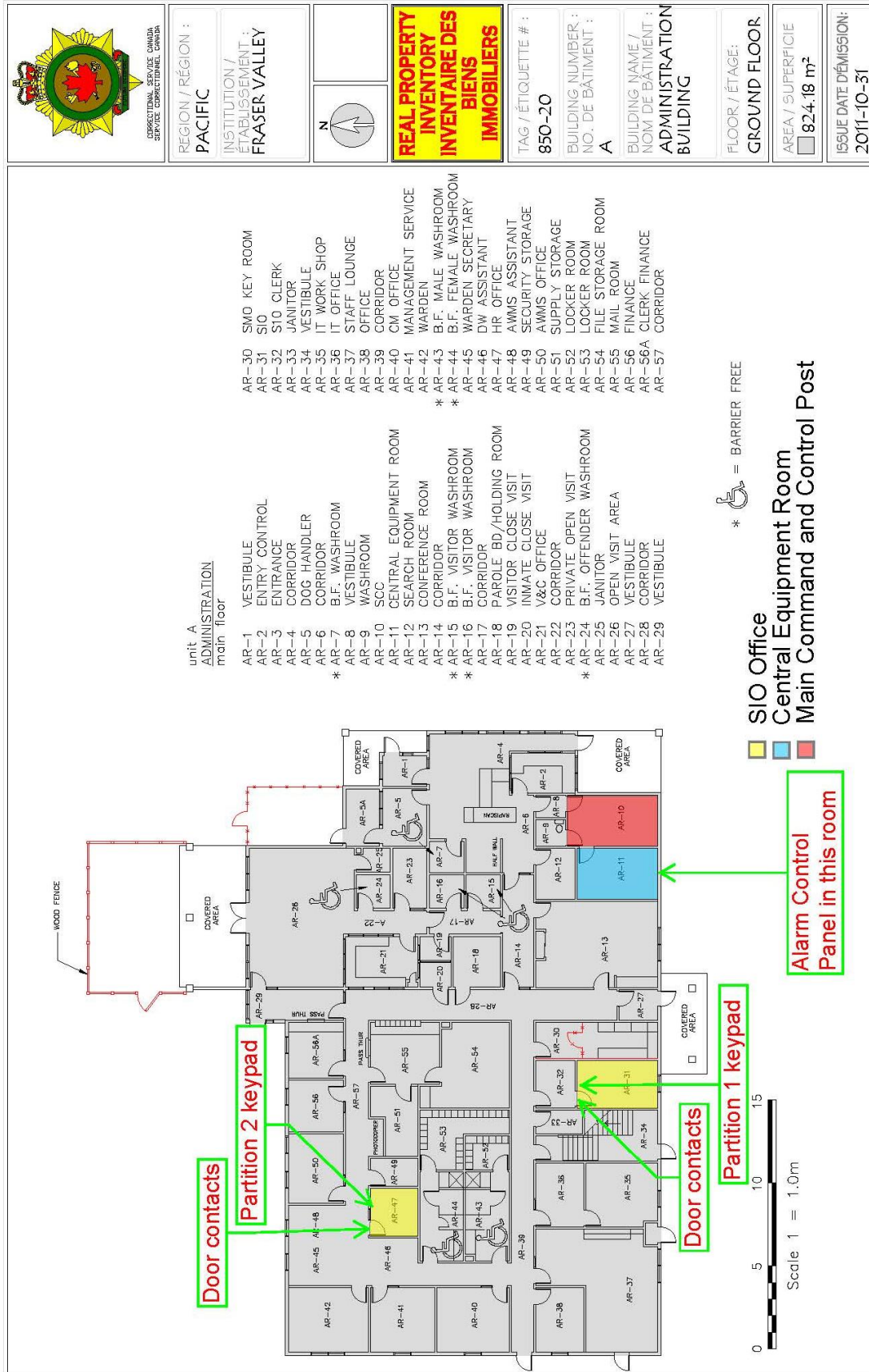
Fraser Valley Institution

NOTES

Two partitions
Two keypads
Two door contacts
Three rooms
Alarm panel in Central Equipment Room

Statement of Work – SIO Alarm Systems – Pacific Region

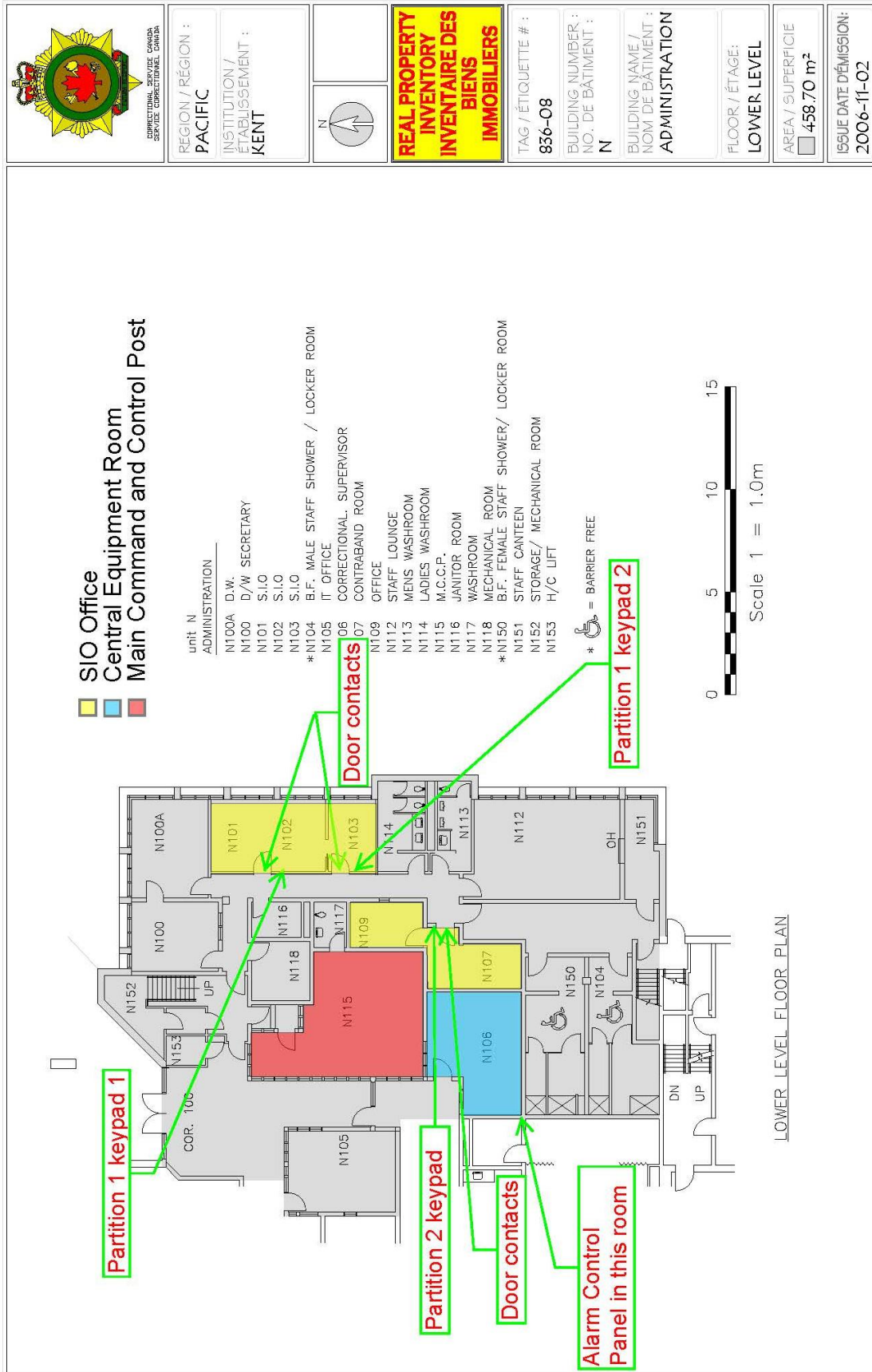




Kent Institution, Maximum Security

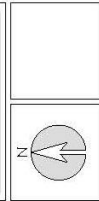
NOTES

Two partitions
Three keypads
Three door contacts
Four rooms
Alarm panel in Central Equipment Room



REGION / RÉGION :
PACIFIC

INSTITUTION /
 ÉTABLISSEMENT :
KENT



**REAL PROPERTY
 INVENTORY
 INVENTAIRE DES
 BIENS
 IMMOBILIERS**

TAG / ÉTIQUETTE # :
836-08

BUILDING NUMBER :
 NO. DE BÂTIMENT :
N

BUILDING NAME /
 NOM DE BÂTIMENT :
ADMINISTRATION

FLOOR / ÉTAGE:
LOWER LEVEL

AREA / SUPERFICIE
 458.70 m²

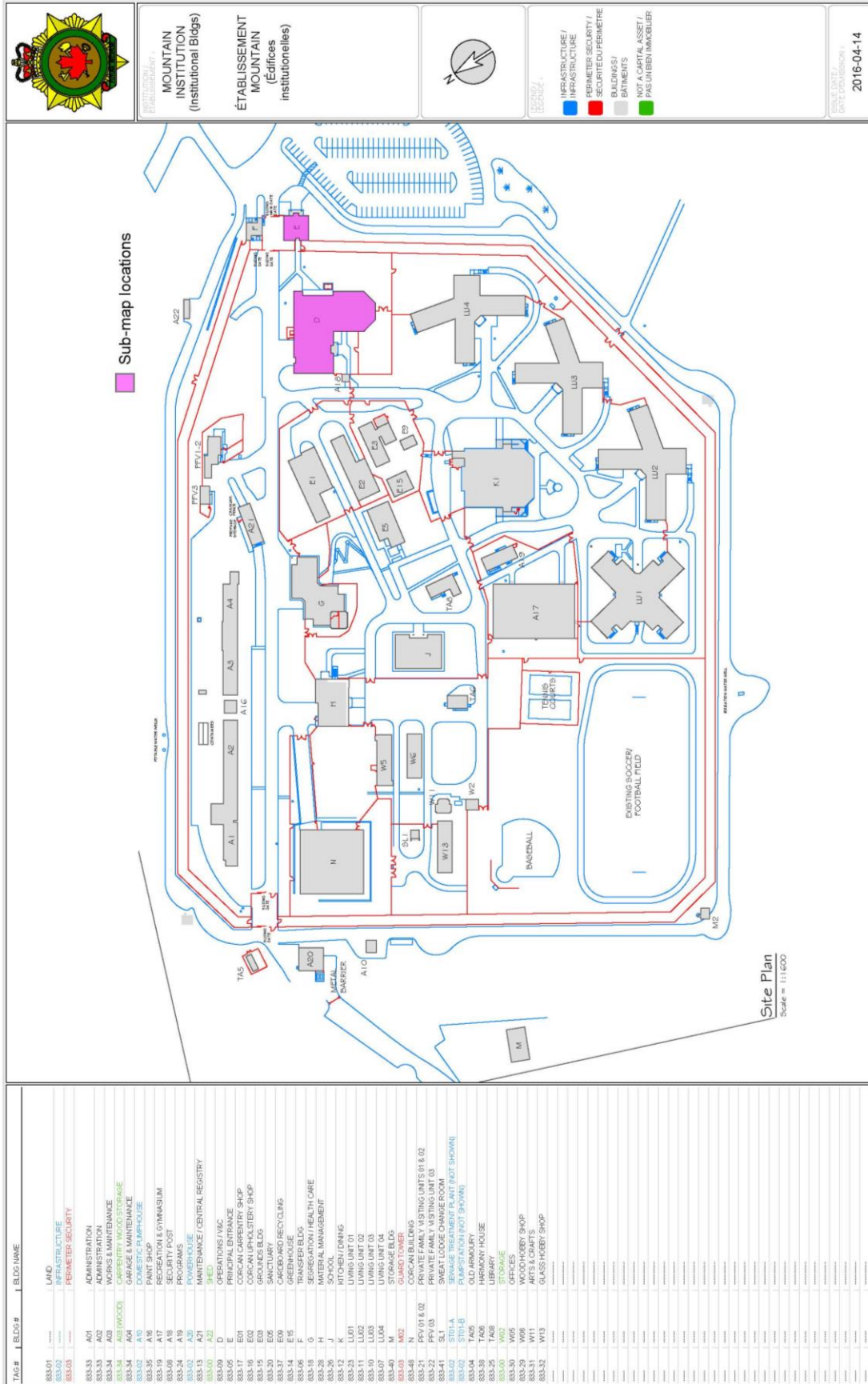
ISSUE DATE DÉMISSION:
2006-11-02

Mountain Institution, Medium Security

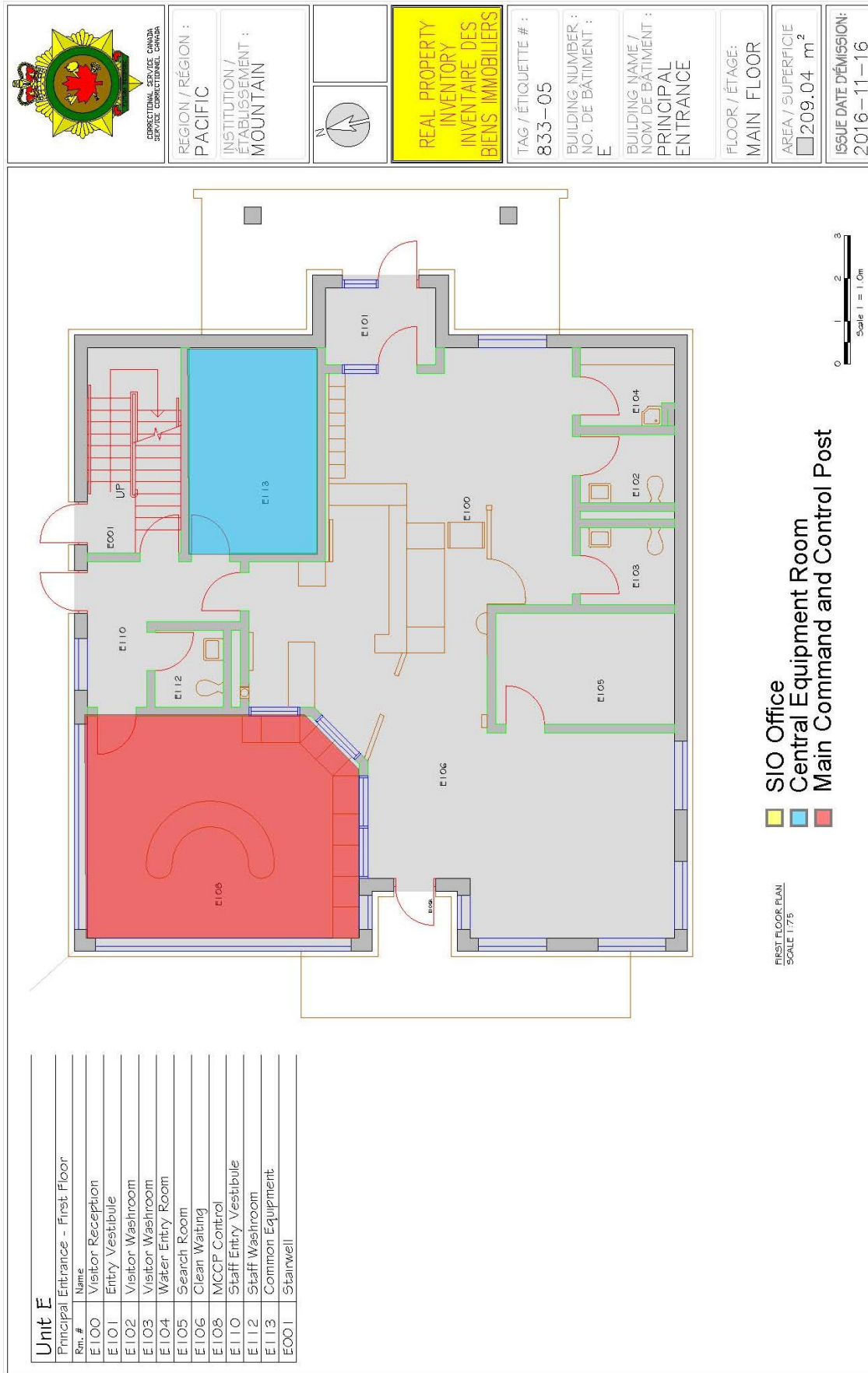
NOTES

One partition
One keypad
One door contact
Two rooms
Alarm panel in Terminal Equipment Room

Statement of Work – SIO Alarm Systems – Pacific Region



Statement of Work – SIO Alarm Systems – Pacific Region

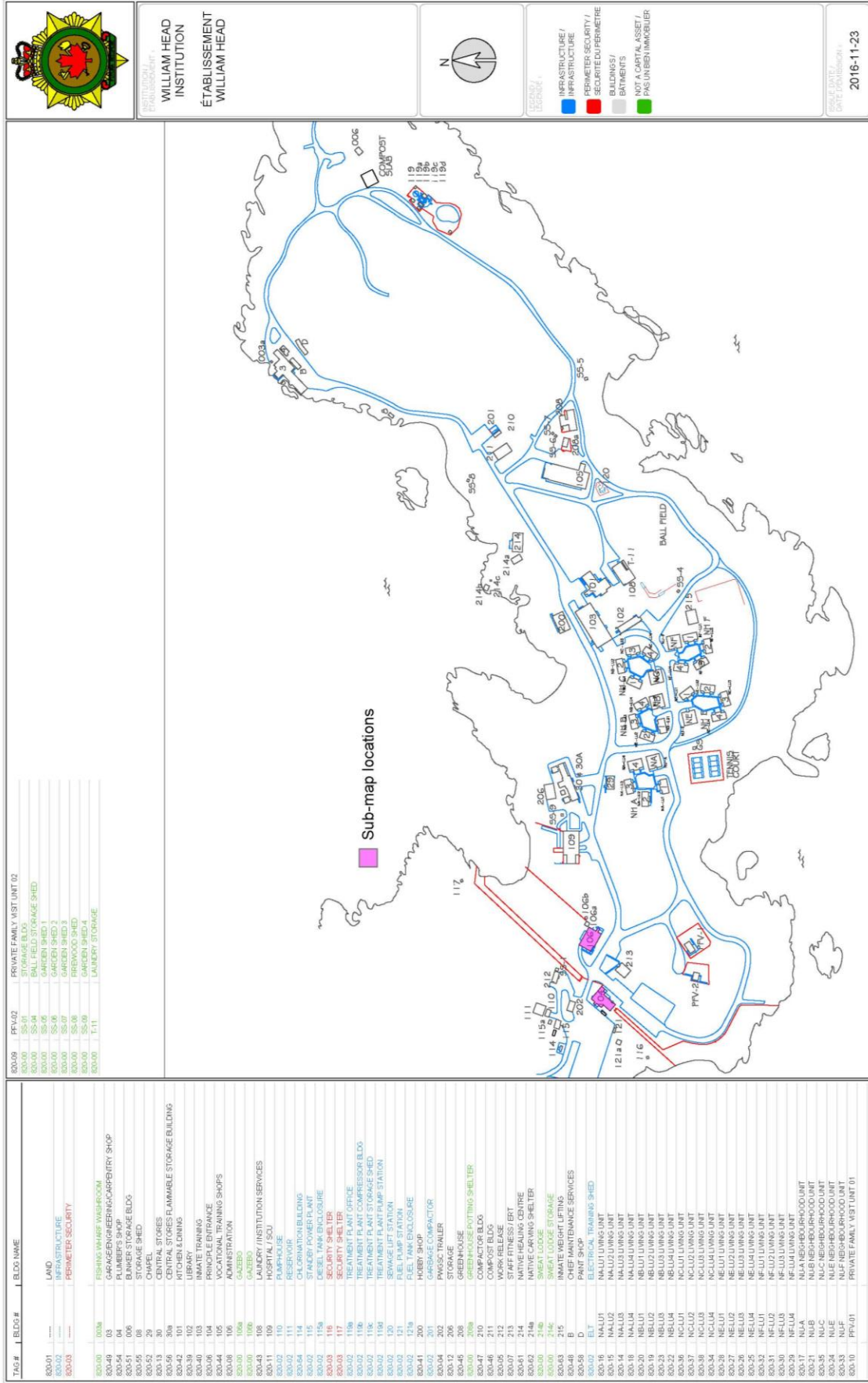


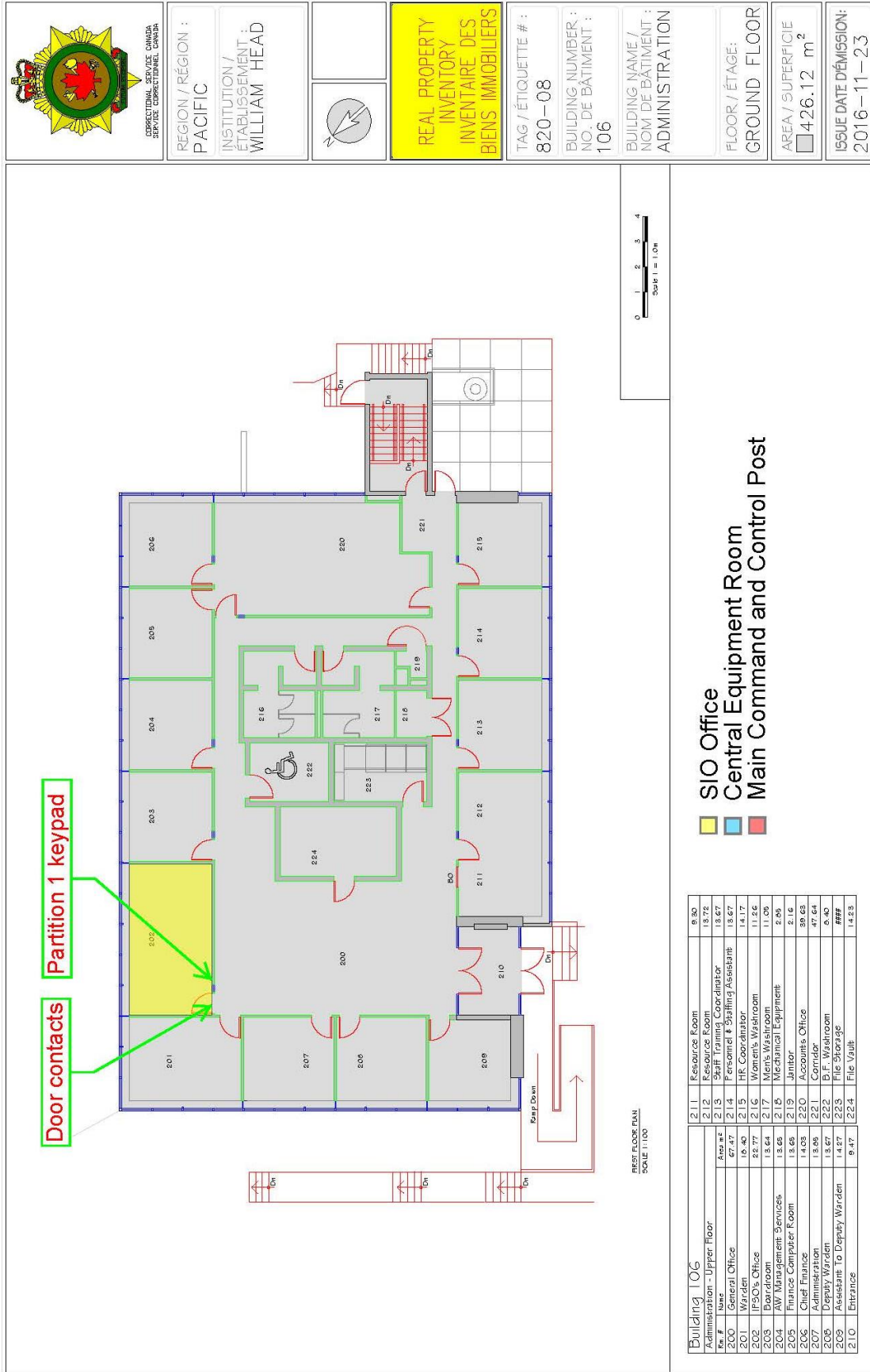
William Head Institution (Victoria) Minimum Security

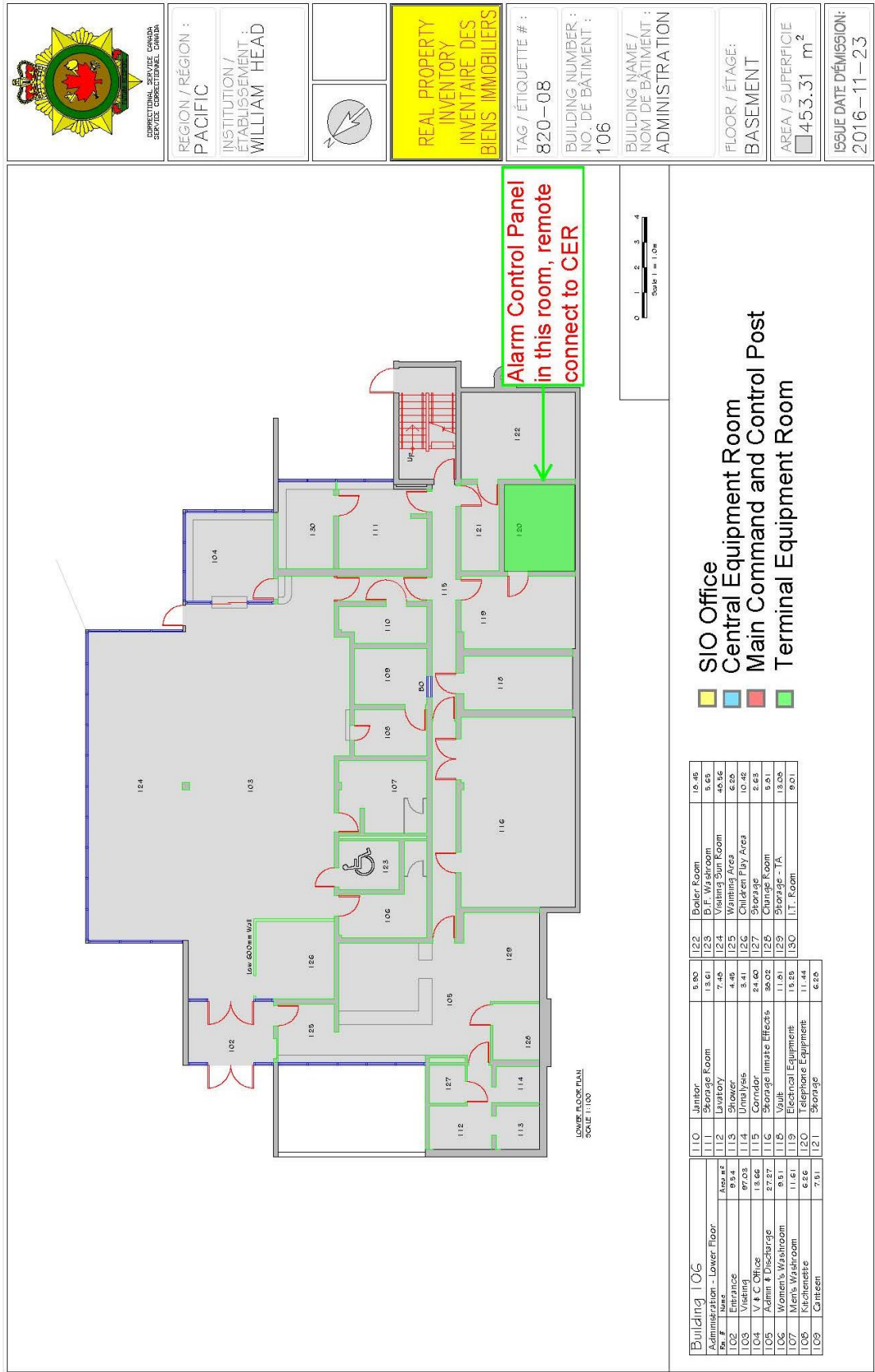
NOTES

One partition
One keypad
One door contact
One room
Alarm panel in Central Equipment Room
Alarm status display in Main Reception

Statement of Work – SIO Alarm Systems – Pacific Region







Statement of Work – SIO Alarm Systems – Pacific Region

