The City of Winnipeg
Bid Opportunity No. 313-2024B
Redevelopment of the Old Ex Arena

Appendix - G
INTRUSION, ACCESS CONTROL,
AND SURVEILLANCE STANDARDS

APPENDIX – G

CITY OF WINNIPEG
INTRUSION, ACCESS CONTROL, AND SURVEILLANCE STANDARDS 2024
CONTRACTOR REFERENCE MANUAL

City of Winnipeg

Intrusion, Access Control, and Surveillance Standards

2024

Contractor Reference Manual

Introduction:

All equipment installed for the City of Winnipeg must meet and be approved by the Facility Systems and Technologies Department, Municipal Accommodation Division and must be in accordance with the 2018 City of Winnipeg Accessibility Design Standards, Section 3.5.1 & 3.5.2. 388-2018_Appendix_A.pdf (winnipeg.ca)

All work being conducted must be in accordance with the Canadian Electrical Code and the Canadian Building Standards.

The Contractor shall be responsible for all permits, licenses, inspections, computer generated As-Built drawings, Operation and Maintenance Manuals, and fees related to the project.

Prior to beginning the work, the contractor must obtain all of the necessary licenses, permits, and inspection documents to follow the Federal, Provincial, and Municipal laws and regulations. These documents must be made available upon request from the City of Winnipeg.

The installation and commissioning of all security systems, cabling and devices, shall be performed by qualified personnel that hold all of the required licenses and certifications.

General Contractor Requirements:

- The contractor will not keep any information/drawings of the systems or components that have been installed following completion of the project.
- Only the approved products listed below will be allowed.
- Any equipment not listed below must be pre-approved by the City of Winnipeg, Municipal Accommodations Division, before proceeding.
- Installation and warranty of all equipment must be performed by Licensed, Certified and Factory Trained personnel.
- The work area must be secured at all times and be in accordance with all City of Winnipeg standards.
- No building or work area is permitted to be left unsecured when no personnel are present.
- The contractor will be responsible to supply City of Winnipeg approved personnel in the event that the building or site is not secured, in accordance with the City of Winnipeg standards.

Contractor must provide the following documentation upon completion:

- Operation and Maintenance Manuals containing complete As-Built Drawings for equipment not provided by the City of Winnipeg.
- Electrical permits and final inspection reports.
- Manufacturer's datasheets for all devices and software.
- User and Installation manuals.

Contractor Obligations:

- Verification of full system and all devices. Facility system and technologies personnel must be present for the testing.
- The warranty period is to be a minimum of one (1) year for parts and labour from the date of final completion of all testing for the project. In the event the manufacturer's warranty exceeds one year, warranty must be provided for that duration.
- The contractor must respond to the following warranty situations in the following timelines (unless otherwise stated in writing):
    - System fail: Within 4 hours.
    - Component fail: Within 6 hours.
- Defective equipment is to be repaired on site. If the equipment cannot be repaired the contractor shall replace the defective equipment at the contractor's cost. The replacement must meet the City of Winnipeg's standards. This work shall come at no additional cost to the City of Winnipeg.
- If the building cannot be armed or secured after hours, the contractor will be responsible for the cost of the security company to monitor the building until the contractor repairs the system in accordance with the City of Winnipeg's standards. The security company used to secure the site must be pre-approved by the City of Winnipeg.

As-Built drawings:

Computer generated as built drawings (in a PDF, PNG, or TIFF file) must be supplied for all security systems that have been installed. If drawings are provided by the City of Winnipeg, any changes or modifications must be updated and submitted to the project coordinator.

The As-Built drawing must include the following: Drawing/floor plans of the building.
- Make and models of all devices.
- Show locations of all installed devices and equipment.
- Shaded areas on the drawing of all of the device coverages.
- Zones and partition must be identified.
- Wire labels must be included. Indelible markings at both ends.
- Wire labels must contain device identification. (name, wire number, zone description)
- Signed verification/documentation that all devices have been tested to the head end.
- A copy of all hardware and/or software backup files that are required to install or operate the security system along with systems codes. Software keys must also be submitted.
- The electrical panel name and location along with the circuit number must also be included.
- Warranty coverage for all devices.
- All cables must be installed in accordance with the Canadian Electric Code.

Project completion must include:
- A site walkthrough upon completion of all projects with the contractor, Project coordinator and a Municipal Accomodations member to verify the installation and the reporting of all alarms.
- As-Builts / O&M Manuals, must be delivered within two weeks of the commissioning of all security systems and before the final billing/invoice.
- Accuracy of the As-Built will be verified by the contractor and signed off by the City of Winnipeg, Municipal Accomodations Department.

City of Winnipeg Approved Equipment and Installation Methods:

Contents

Intrusion Alarm Systems

a) Intrusion Control Panels
The following Intrusion Control Panels are approved for use within City of Winnipeg Facilities:
- Bosch B9512G
- Typical Panel Installation should include:
  B8108 Enclosure
  D101 Cabinet Lock
  ICP-EZTS Dual Tamper Switch
  D122 Battery Harness
- Cabinets shall be mounted no higher than 5'10" to the top of the cabinet.
- Cabinets shall be installed with no impedance or impairment to accessing or servicing.

b) Keypads

- Bosch B930 Alpha-Numeric Keypad (Master Keypad / Panel)
- Bosch B915 Alpha-Numeric Keypad (Arming Stations)
- STI-7510F Keypad Enclosure

c) Zone Expanders
- Bosch B208 8 Input Expansion Module
- B8108 Enclosure w/ D101 Cabinet Lock

d) Motion Detectors
- Bosch ISC-CDL1-W15 Commercial Series Tri-Tech Motion Detector
  Built-in End of Line Resistors

e) Door Contacts
- Metal Frame Doors
  ~~GRI 184-12W SPST 1" Contact~~
  GRI 199-12W DPDT 1" Contact (for use with access control systems)
  WBox STLDRMAG Door Channel Magnet
  GRI MC-180 Door Channel Magnet
- ~~Wood Frame Door~~
  ~~GRI 4040-12WG SPST 3/8" Contact~~
  ~~GRI 4545-12WG DPDT 3/8" Contact~~
- ~~EOL Resistor Pack~~
  ~~GRI 6444-1 Four State EOL Resistor Pack~~

f) Overhead Door Contacts
- GRI 4700-A
- EOL Resistor Pack
  GRI 6444-1 Four State EOL Resistor Pack

g) Installation

- Installation of equipment must conform to manufactures specifications and adhere to CSA/cUL/ULC guidelines.
- Equipment Layout and Panelboard configuration must follow City of Winnipeg guidelines. (see Section: Risers and Diagrams.)

Cabling

a) Cable Types and Manufacturers

- All cabling must be cUL/CSA approved, FT6 Rated Cabling
- Device Wiring – 22/4 Stranded or 18/4 Stranded (wire size determined by manufacturer specifications)
- Power Supply Wiring – 18/4, 18/2 Stranded
- Approved Multi-Conductor Access Control Cabling: Honeywell Profusion 3195 FT6 rated, or equivalent.

b) Cable Installation

- All cabling to be installed in accordance with the Canadian Electrical Code.
- J-Hooks are required for all cabling run in-ceiling or in free-air spaces.
- Cable ties are NOT permitted as a means of support.
- All conductors must be mechanically protected where exposed.
- EMT must be used for all panel interconnection, stubs, cable protection and cable pathways. PVC is not permitted.
- All connectors and fittings must be insulated or have threaded plastic bushings installed.
- All knock-outs must be fitted with an insulated bushing.
- All unused knock-outs must be filled with approved cover.

Power Supplies and Batteries

a) Power Supply Types, Batteries, and Approved Manufacturers

- Panel Power Supply
  16.5 V 75VA Wire In Power Supply, CSA/cUL/ULC Listed
  16.5 V 40VA Wire In Power Supply, CSA/cUL/ULC Listed
- Auxiliary Intrusion Device Power Supply
  Bosch B520 2A 12V Power Supply
- Approved Battery Type – 12V 7AH Yuasa SLA – No Substitutions

b) Installation

- Installation of equipment must conform to manufactures specifications and adhere to CSA/cUL/ULC guidelines.
- Equipment Layout and Panelboard configuration must follow City of Winnipeg guidelines. (see Section: Risers and Diagrams.)

Access Control Systems

a) ~~2 Door Network Controller~~
- ~~Mercury LP1502~~

b) 2 Door Network Controller
- Mercury MR52

c) Access Control Cabinets Pre-Wired with Power Supply
- ~~Altronix Trove T1M1CK1D – Accommodates up to 2 Mercury Controllers (4 Doors)~~
- Altronix Trove T2M7XK1D – Accommodates up to 6 Mercury Controllers (12 Doors)
- Altronix Trove T3M77XK1D – Accommodates up to 8 Mercury Controllers (16 Doors)
- Cabinets shall be mounted no higher than 5'10" to the top of the cabinet.
- Cabinets shall be installed with no impedance or impairment to accessing or servicing.

d) ~~Access Control Power Supplies and Batteries (replacement only)~~
- ~~Altronix eFlow 6NA8D – 24 VDC, 8 Output~~
- ~~Altronix eFlow 104N16 – 24 VDC, 16 output~~
- ~~A dedicated 120VAC 15A circuit is required, with a lockable disconnect switch within 3 feet of the cabinet.~~
- ~~Outputs and connected wiring shall be labelled, as to clearly identify device and location.~~
- ~~Approved Battery Type – 12V 7AH Yuasa SLA – No Substitutions~~

e) ~~Access Control Cabinets (Empty)~~
- ~~Trove 1M1 – Accommodates up to 4 Mercury Boards~~
- ~~Trove 2M2 – Accommodates up to 8 Mercury Boards~~
- ~~Trove 3M3 – Accommodates up to 16 Mercury Boards~~

f) Proximity Card Readers
- HID Signo Multi Class Reader – 40NKS-00-000000
- HID Signo Multi Class Reader – 20NKS-00-000000
- ~~HID Signo Multi Class Reader – 40NKS-T0-000000~~
- ~~HID Signo Multi Class Reader – 20NKS-T0-000000~~

g) ~~Request to Exit Sensor~~
- ~~Bosch – DS150i~~
- ~~Bosch – DS160 – with sounder and adjustable latch time~~

h) ~~Electric Strikes~~
- ~~HES 5000 Series – Low Profile Cylindrical Lockset Strike~~
- ~~HES 9000 Series – Surface Mounted RIM Exit Strike (9400 Low profile, 9600 Standard Profile)~~
- ~~HES 1006CS Series – Direct Replacement for Von Duprin 6211~~

i) Installation

- Installation of equipment must conform to manufactures specifications and adhere to CSA/cUL/ULC guidelines.
- Equipment Layout and Panel board configuration must follow City of Winnipeg guidelines. (see Section: Risers and Diagrams.)

These are the approved methods of mounting Mercury Devices in City of Winnipeg cabinets:

For cabinets **_with_** a perforated backplanes:

1. Stainless / Aluminum Threaded M4 Hex Stand Off (self-tapping / drilling) affixed to existing perforated back plane with nylon spacer.

2. 1" #6 Screw fastened to existing perforated back plane, with ¾" Nylon spacer between device and perforated back plane.

3. Altronix BR3M2PK – Angled Bracket, can be affixed to back of cabinet with standard self-tapping / drilling #8 or #6 screws.

(this is the preferred method for cabinets with insufficient space)

4. 20mm Length PCB Mounting L Feet with Screws

For cabinets **_without_** factory mounts for Mercury devices or **_without_** a perforated back plane:

1. Altronix BR3M2PK – Angled Bracket, can be affixed to back of cabinet with standard self-tapping / drilling #8 or #6 screws.

(this is the preferred method for cabinets with insufficient space)

2. Altronix MM24 – Magnetic Mounting magnets with screws and nylon standoffs

3. 20mm Length PCB Mounting L Feet with Screws

Network Surveillance Systems

The City of Winnipeg uses Hanwha Network Cameras, Recorders, Devices.

For a complete list of approved devices, please contact Municipal Accommodations – Facilities Systems and Technologies Department.

a) Network Video Recorder
- Hanwha Embedded NVR / Wisenet Compatible 16/32/64 Channel Recorder
- All Storage drives must be designed for "Surveillance" use, no exceptions (Seagate Skyhawk, Western Digital Purple)

b) Video Encoder
- Hanwha 16 Channel Encoder / Wisenet Compatible

c) Video Decoder / Public Awareness Monitor / Live Viewing
- Hanwha 64 Channel Dual HDMI Video Decoder/ Wisenet Compatible

d) Network Cameras
- Hanwha Network Camera / Wisenet Compatible

e) Public Display Monitors
- All display monitors must be commercial grade, 16/7 or 24/7 usage rated.

f) Wall Cabinets / Enclosures
- 6U Hammond HLP6U31BK / HLP6U43BK (Deep) There's HLP8U43BK option also
- 6U Tripplite SRWF6U

g) Cabling
- All cabling must be cUL/CSA approved, FT6 Rated Cabling
- Device Wiring – Category 6 cabling
- Terminations must be TIA/EIA-568-B. Cabling must terminate to Cat6 Patch Panels, Keystone Jacks, Terminal boxes, and interconnected with Cat6 Patch Cables to devices. No concealed joints or terminations are permitted
- Camera Terminations must be made in Hanwha Back Boxes, Junction Boxes, and must be accessible for servicing equipment
- All Cabling and terminations must be tested and verified, with documented test results.

h) Installation
- Installation of equipment must conform to manufactures specifications and adhere to CSA/cUL/ULC guidelines.
- Equipment Layout and Panel board configuration must follow City of Winnipeg guidelines. (see Section: Risers and Diagrams.)

~~Video Intercom Systems~~

a) ~~Network Video Intercom~~
- ~~Aiphone IX Series – Peer to Peer, Vandal Resistant~~
- ~~System design must be provided by / approved by City of Winnipeg FST Dept.~~

b) ~~Stand Alone Video Intercom – 4 Doors / 8 Interior~~
- ~~Aiphone JP Series – Vandal Resistant~~
- ~~System must include JP-8Z, home run adapter~~
- ~~System design must be provided by / approved by City of Winnipeg FST Dept.~~

c) ~~Stand Alone Video Intercom – 2 Doors / 2 Interior Stations~~
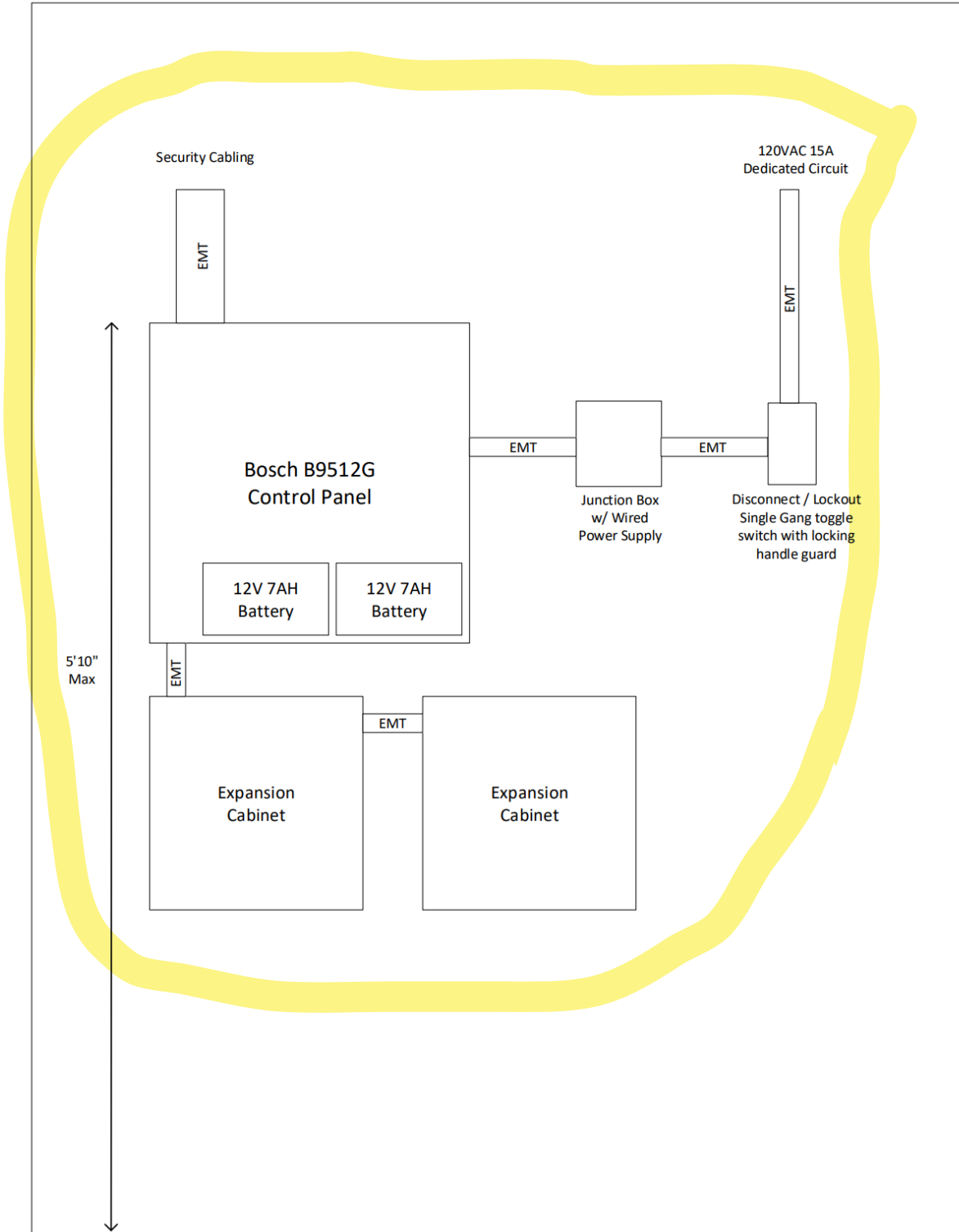- ~~Aiphone JO Series – Vandal Resistant~~
- ~~System must include JOW-2D, home run adapter~~
- ~~System design must be provided by / approved by City of Winnipeg FST Dept.~~

d) ~~Stand Alone Wireless Video Intercom – 1 Door / 1 Interior Station~~
- ~~Aiphone WL-11 Series – Wireless Intercom~~
- ~~Interior only, non-vandal resistant~~
- ~~Only for systems that do not allow for hard-wiring, i.e. Historic Building~~

Risers and Diagrams

a) Security Panel Riser

Security Cabling

120VAC 15A
Dedicated Circuit

EMT

EMT

Bosch B9512G
Control Panel

EMT

EMT

12V 7AH
Battery

12V 7AH
Battery

Junction Box
w/ Wired
Power Supply

Disconnect / Lockout
Single Gang toggle
switch with locking
handle guard

5'10"
Max

EMT

EMT

Expansion
Cabinet

Expansion
Cabinet

b) Access Control Panel Riser

Control Cabling

EMT

Mercury
LP1502

Mercury
MR52

Altronix Trove
TM2
LifeSafety
EM6

120VAC 15A
Dedicated Circuit

EMT

5'10"
Max

EMT

Altronix Eflow
6NX8

12V 7AH
Battery

12V 7AH
Battery

EMT

Junction Box
w/ cover

EMT

Disconnect / Lockout
Single Gang toggle
switch with locking
handle guard
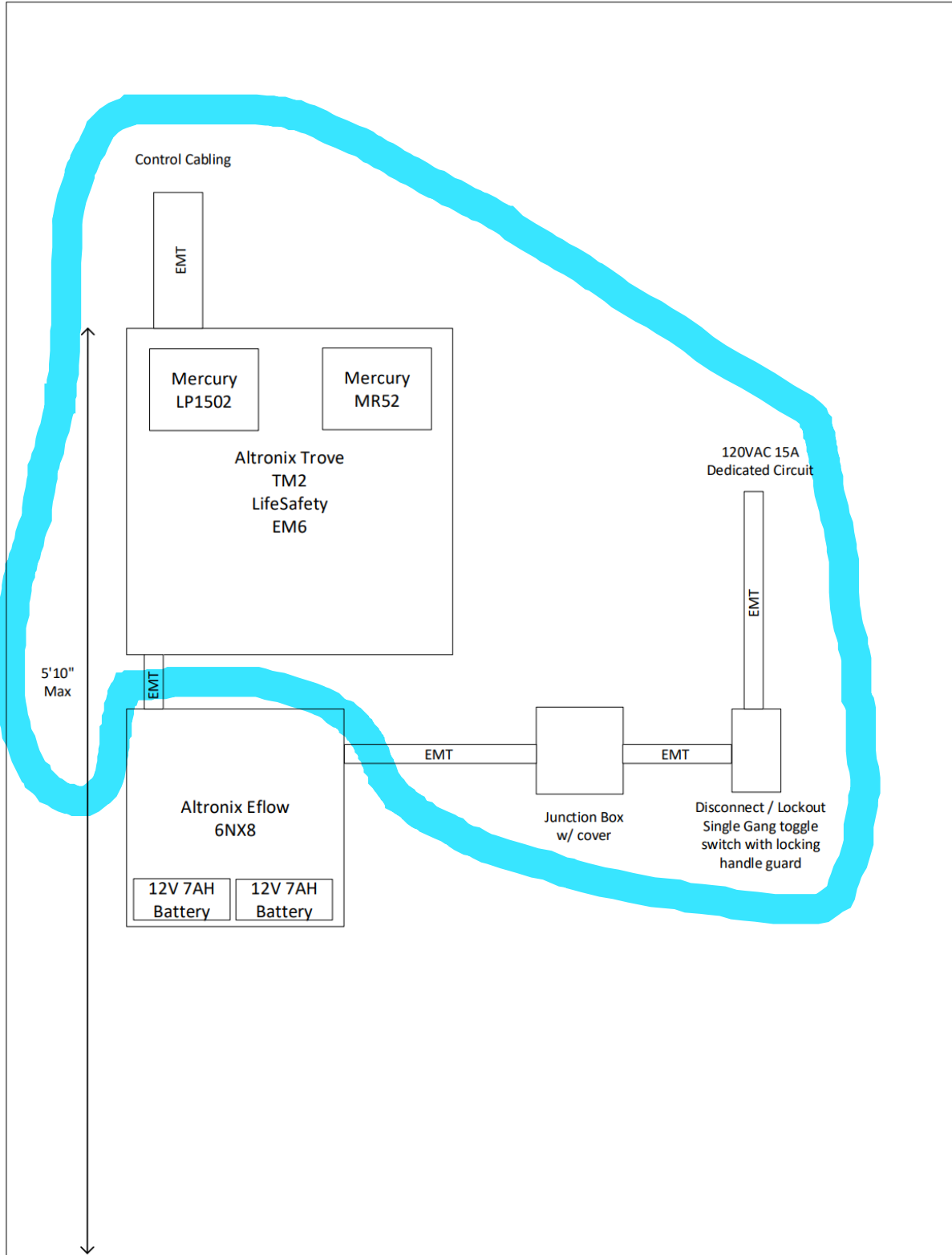
Accessibility Requirements

All devices must be installed in accordance with the 2018 City of Winnipeg Accessibility Design Standards

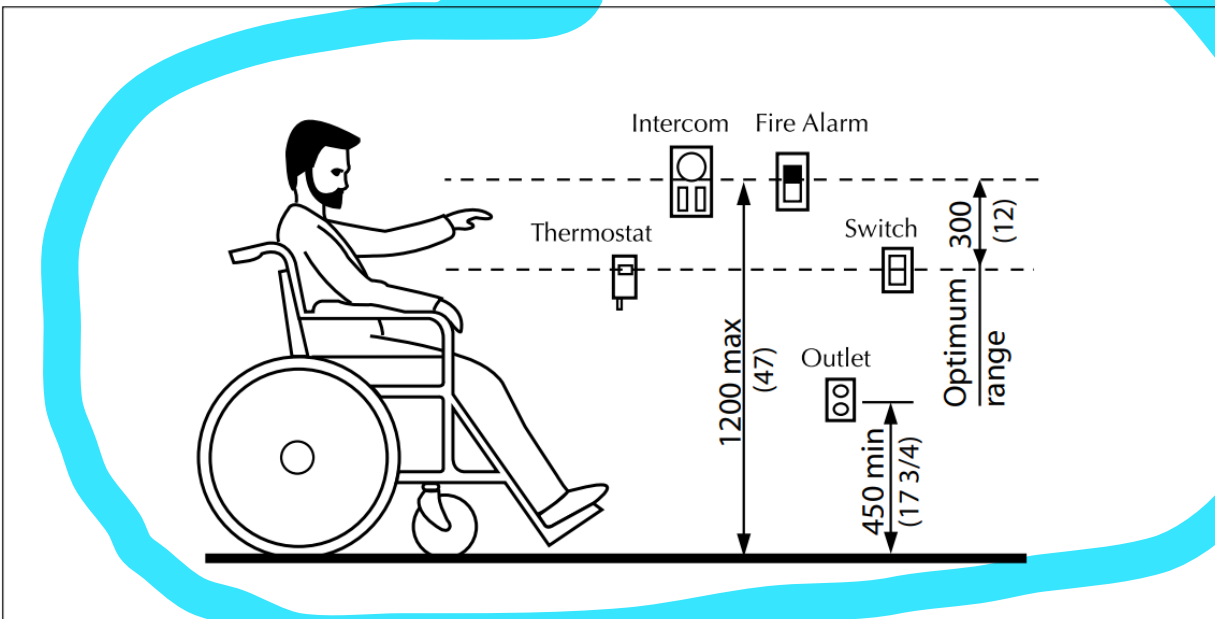3.5.1 Controls and Operating Mechanisms

Figure 3.5.1.1   Reach Range for *Accessible* Controls

RATIONALE

Operating mechanisms that require a high degree of dexterity or strength will be difficult for many people to use. They can also be obstacles for children, individuals with arthritis or even someone wearing gloves. Controls that require two hands to operate can also be difficult for some people, particularly those with reach or balance limitations, or those who must use their hands to hold canes or crutches. The placement of controls is integral to their accessibility. For the individual using a wheelchair, the height of the controls and the space to position the wheelchair in front of the controls are important. Controls placed high on a wall are also difficult for children or persons of short stature. Individuals with vision impairments may have difficulty with flush-mounted buttons, touch screens or controls without tactile markings. Controls that contrast in colour from their background, including colour contrasted raised letters, may be easier to locate. Persons with cognitive challenges may find counter-intuitive controls or graphics difficult.

APPLICATION

Controls and operating mechanisms generally used by staff or public (e.g., light switches and dispenser controls) shall comply with this section. Exception: Restricted-access controls.

DESIGN REQUIREMENTS

A clear, level floor area at least 900 mm x 1500 mm (35-1/2 in. x 59 in.) shall be provided at controls and operating mechanisms, such as dispensers and receptacles. The operable portions of controls and operating mechanisms such as electrical switches, thermostats and intercom switches, shall be located

between 900 mm (35 in.) and 1200 mm (47 in.) from the floor. Exception: Elevators and power door operator controls. Refer to Sections 3.1.3 Doors and 3.1.5 Elevators. Controls or operating mechanisms shall:

- be located no closer than 700 mm (27-1/2 in.) from an inside corner, for side-access;
- be located no closer than 400 mm (15-3/4 in.) from an inside corner, for front-access. Electrical outlets and other types of devices shall be located no lower than 400 mm (15-3/4 in.) Faucets and other controls shall be hand-operated or electronically controlled. Hand-operated controls and mechanisms shall be operable:
- with one hand, without tight grasping, pinching, or twisting of the wrist; and
- with a force of less than 13N (3 lbf.).
- Control settings shall provide tactile and/or auditory information, indicating function and position of controls. Information on visual displays shall:
- be supplemented by tactile and/or auditory information;
- be colour contrasted; and
- be located on a glare-free surface. Operating mechanisms shall be capable of being illuminated to at least a level of 100 lux (9.2 ft-candles). Colour contrast shall be incorporated into controls and operating mechanisms to differentiate them from the surrounding environment. Dispensers with visual markings shall also incorporate tactile lettering and pictograms.

3.5.2 Card Access, Safety and Security Systems

RATIONALE

In many cases, persons such as seniors and persons with disabilities may be considered to have a higher degree of vulnerability and therefore seek more reassurance and inherent security. Items such as adequate lighting and accessible signalling devices promote this security.

Emergency signalling devices are important in individual washrooms where the potential for a fall is increased and an individual may be alone.

Where card-access systems are selected as a means of entry to particular facilities or spaces, the systems and components selected should be suitable for use by persons with varying abilities, including persons with reduced manual dexterity, poor vision or difficulty with reaching.

The use of heat-sensing activation buttons should be avoided, as they are indiscernible to a person who is blind.

Proximity scanning card systems are preferred.

APPLICATION

Card-access, safety, security and entry systems shall comply with this section.

DESIGN REQUIREMENTS

Adequate lighting shall be provided continuously along public walkways, steps and ramps that are actively used at all times of year and/or where staff and public parking is provided. Card access, safety and security systems shall be on an accessible route complying with Section 1.1.3 Accessible Routes, Paths and Corridors. Card-entry systems shall:

- be wall-mounted, 800 mm - 900 mm (31-1/2 in. - 35-1/2 in.) above the floor or ground, adjacent to the door and free of the door swing;
- be located no closer than 700 mm (27-1/2 in.) from an inside corner, for side-access to the card-entry system;
- be located no closer than 400 mm (15-3/4 in.) from an inside corner, for front-access to the card-entry system;
- be colour contrasted from the surface on which they are mounted;
- provide both audible (beep) and/or verbal prompt (welcome) and visual (light) signals to indicate that access has been granted;
- where a card entry system is used than incorporates a card-slot, the card-slot shall have bevelled edges;
- be illuminated or colour contrasted from the mounting plate;
- include tactile graphic symbols on the surrounding surface that represents the card and its orientation for insertion; and
- use cards that incorporate a distinctive colour, texture or raised graphic/lettering on one side.

~~Intercom entry systems shall:~~

- ~~comply with Section 3.5.1 Controls and Operating Mechanisms;~~
- ~~provide both visual and verbal features to provide access for persons with vision, hearing or speech impairments; and~~
- ~~provide both audible (beep) and visual (light) signals to indicate that access has been granted.~~