



Dufferin-Peel Catholic District School Board

STANDARD TEXT GUIDELINE FOR

Security Systems – Intrusion Alarm

for

SECONDARY AND ELEMENTARY SCHOOLS

Prepared by the Plant Department

With Assistance from Vision Dynamics

Formatted by the Design Department

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1 INSTRUCTIONS TO ARCHITECTS

1.1 SPECIAL NOTES

- 1.1.1 This is not a specification. It is a Guideline indicating typical supply and installation of the Board's *Intrusion Alarm System* in its Secondary and Elementary Schools, and is reproduced here for the information of the Consultants.
- 1.1.2 This Guideline addresses Intrusion Alarm System for new schools only. For additions, the Consultants must review the Board's requirements with the appropriate Board's designated Intrusion Alarm staff.
- 1.1.3 The typical supply and installation of the Intrusion Alarm System as described herein is to be carried as an *Allowance* for both new projects and for additions in the Contract Documents and is established by the Board's Design Department, in consultation with the Architect.
 - 1.1.3.1 The *Allowance* will cover the supply and installation of all devices, wiring, and connections, software and programming, documentation, testing and training, for the complete System as outlined in this Guideline.
- 1.1.4 The Intrusion Alarm System is installed by a Sub-contractor in direct contractual agreement with the Board, separate from the General Contract.
- 1.1.5 The following items will be included – but not necessarily limited to, (supply and install) as part of the General Contract:
 - 1.1.5.1 All back boxes, (wall mounted as applicable)
 - 1.1.5.2 All door contact back boxes
 - 1.1.5.3 All conduit leading from back boxes to appropriate termination points
- 1.1.6 It is the Consultant's responsibility to insure that these Guidelines are coordinated with the Contract Documents, in the appropriate sections.

2 DOOR FRAME PREPARATION

- 2.1.1 The Consultants must note that in conjunction with the Intrusion Alarm System, door frame preparation is necessary to be identified in the Contract documents. (See *Standard Text Guideline for Finish Hardware*)
- 2.1.2 As a minimum requirement, prepare door frames as follows:
 - 2.1.2.1 Prepare all exterior doors and all exterior frames for Intrusion Alarm System – door contactors.

3 INTRUSION ALARM SYSTEM

3.1 PREAMBLE

- 3.1.1 The intent of this document is to provide a typical Guideline that will be used for all JK-OAC educational and administrative facilities requiring an Intrusion Alarm System. This document provides the minimum performance criteria for the components and sub-systems comprising a complete *Intrusion Alarm System* that shall accommodate The Dufferin-Peel Catholic District School Board (*the Board*) current security system requirements.
- 3.1.2 Product specifications, general design considerations, and installation guidelines are provided in this written document. Quantities of outlets, typical installation details, and outlet types for the specific educational facility, or facilities, are to be provided on the drawings by the Consultants. If the bid documents are in conflict, the written specification, based on this Guideline, shall take precedence. The successful vendor shall meet or exceed all requirements of the system described in this Guideline.

3.2 GENERAL REQUIREMENTS

- 3.2.1 Compliance with the General Conditions of the Contract, Supplementary General Conditions, Requirements of Division 10000 and Electrical Basic Materials and Methods, Division 16000 is mandatory.

3.3 SYSTEM

- 3.3.1 Provide complete and operating Intrusion Alarm System, as shown on the Drawings and described further herein. The system shall include the supply and installation of all hardware, software, wiring, devices, programming, and documentation, testing and training.

3.4 FUNCTIONS

- 3.4.1 Detection of an alarm from either security field devices, alarm operation of the fire alarm system or detection of low temperature thermostats shall be zone enunciated in the control panels, LCD keypad.
- 3.4.2 Initiate a programmed signal transmitted via **TL250 network communication**, over the Bell Canada telephone system to the Board's central monitoring agency.

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- 3.4.3 Supply and install all the necessary relays, parts and wiring in the fire alarm system to trip the 24-hour fire zone. Trouble indication on the fire alarm panel shall activate a trouble supervised condition at the LCD keypad.
- 3.4.4 Operation of the remote arming DSC LCD 4500 stations shall provide for programmable 0 to 99-second entrance/exit delay. The **front** entrance doors and the **rear custodian entrance** shall be programmed as delay zones. The piezo sounders and keypad shall sound during entry and exit delay times. Sirens will only sound upon detection of an alarm from security field devices.
- 3.4.5 **Each specified intrusion point** shall be programmed as a separate zone for zone annunciation on the LCD keypad.
- 3.4.6 The system shall provide minimum four (4) hours rechargeable standby power and shall notify of charging unit malfunction.
- 3.4.7 The system shall log all functions initiated through the applied system. The panel shall provide a local signal if any of the perimeter door contacts are opened, or if a motion detector is actuated. It shall automatically transmit a signal to remote central monitoring station when in the secured mode.
- 3.4.8 **Refer to Lighting Fixtures, Circuitry & Switching in the Elementary and Secondary School Technical Texts for security functions.**

3.5 SUBMITTALS

- 3.5.1 Submit shop drawings in accordance with Section 16000
- 3.5.2 Shop drawings shall be submitted for approval of equipment and installation and shall include:
 - 3.5.2.1 Block diagram of the complete system including all units and controls with type and quantity of interconnecting connectors.
 - 3.5.2.2 Catalogue data sheets for all components
 - 3.5.2.3 Shop drawings for custom components

3.6 RELATED WORK

- 3.6.1 Wiring Methods, Conduits, Conduit Fastenings & Conduit Fittings, Splitters, Junction Boxes, Pull Boxes and Cabinets, Outlet Boxes, Conduit Boxes and Fittings shall be as per Section 16000.

3.7 MANUFACTURERS

- 3.7.1 Provide a complete intrusion alarm system complete with all components by manufacturers listed herein.

3.8 ACCEPTABLE BIDDERS

- 3.8.1 Acceptable bidders for the Intrusion Alarm System are as follows:

Barrie Communications
Hamilton Video & Sound Ltd.
ADT Security Services Canada Inc.
Vision Dynamics

4 PRODUCTS

- 4.1.1 System components and products change from time to time. The Electrical Consultants must review the *Product* and *Installation* sections with the Design Department staff and the appropriate Board's Intrusion Alarm staff.

4.2 SYSTEM COMPONENTS

- 4.2.1 The control unit shall be able to receive up to 128 unique signals (zones) and initiate the programmed action or actions to be performed.
- 4.2.2 The control panel shall be capable of logging and storing in memory 600 events. The memory shall be protected by and supervised by a low battery condition. It shall be possible for user to generate a report of logged information upon request both at the panel and by means of a remote computer.
- 4.2.3 The wall mounted control/communicator panel with tamper-protected lockable door shall be a DSC PC4020 and LCD 4500 message keypad, and shall include:
- 4.2.3.1 Supervised 12 v. DC operation from 120 v. supply and standby batteries adequately rated for all function and to maintain operation for a period of not less than four hours.
 - 4.2.3.2 Program storage, EEPROM
 - 4.2.3.3 Programming via the full function LCD keypad station
 - 4.2.3.4 Fully supervised detectors and remote key operated switches
 - 4.2.3.5 Status report - history report
 - 4.2.3.6 Multi-report - digital auto dialler communicator

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- 4.2.3.7 Local alarm driver power for sirens
- 4.2.3.8 Auxiliary alarm contacts
- 4.2.3.9 Programmable 8 partitions and testing
- 4.2.3.10 Alarm zones for monitoring the fire alarm system and building low temperature
- 4.2.3.11 600 event memory with date and time of each event to be displayed on the alphanumeric display
- 4.2.3.12 Thirty-two, (32) character display in 2 lines of user-selective English language to identify changes to status. It shall display upon request, points: bypass, secured, alarm, etc.
- 4.2.3.13 Capable of accepting a minimum of 128 unique user codes with selectable operation
- 4.2.3.14 Shall have the provision of a selectable duress signal to a remote central monitoring station
- 4.2.3.15 16-18 volt, 37 VA Class II transformer
- 4.2.3.16 Shall incorporate 12 volt supervised (must monitor back-up battery circuit and report trouble condition [if any] to panel.) Power supplies are to be provided for alarm devices (motion detectors, glass break, etc.)
- 4.2.3.17 Security system is to have a dual line dialer module connected to both phone lines.
- 4.2.3.18 Provide an additional tamper-protected lockable cabinet to house expansion modules for an initial system zone capacity of 64 zones.
- 4.2.4 The remote key-switch arming stations (where required) shall be equal to MIX LAD2RV flush-mounted key-operated control switch station, complete with "BEST" master switch (model #1W7B3), tamper-proof fastenings, "Systems Ready" and "Alarm" pilot lights, mounted in existing flush single gang outlet boxes. Switch to be provided by the Board.
- 4.2.5 Door contacts shall be concealed pressfit magnetic contacts, steel door type comprised of a closed circuit and be 1" diameter.
- 4.2.6 Low temperature sensing thermostats shall be mounted on existing flush single gang outlet box in area noted on Drawings. Set unit for fixed temperature alarm at 10° C.
- 4.2.7 Combination passive infrared/microwave sensors (360° motion detectors) mounted in Classrooms flush ceiling mounted in central location; approximately 1-1.5 meter distance from vents; mounted on a separate tile; and the sensitivity setting set at "3", complete with tamper switches and double end-of-lines for supervision, where noted on Drawings. The sensors shall be no less than 7 meters away from the windows.

- 4.2.8 Motion detectors mounted in Corridors shall be long range.
- 4.2.9 Local alarm signals shall be 30 watt electronic siren, dual tone type, mounted above tiles where noted on Drawings.
- 4.2.10 Passive graphic panel outlining area of each zone in system, mounted under framed plexiglass adjacent to control unit. Building layout as well as list of all zones and description of each shall be provided.
- 4.2.11 Cables shall be of type and size in accordance with manufacturer's specifications and minimum 22 AWG wire FT4 in conduit or FT6 where run exposed in ceiling plenums.

5 EXECUTION

5.1 INSTALLATION

- 5.1.1 ***All wire and cable shall be of plenum rated material and installed in cable trays wherever possible.*** Empty flexible conduits will be used in frame preparation and conduit systems utilized only in inaccessible areas. The Consultant must co-ordinate wiring installation with Electrical Contractor and the Intrusion Alarm Supplier/Installer prior to the final electrical design and on site.
- 5.1.2 Coordinate the installation and location of all outlets with the Electrical Contractor. Installation of cover plates to outlets as required shall be part of the General Contract.
- 5.1.3 Work provided by Electrical Contractor on base building and included in Division 16000 Tender is to be as follows:
 - 5.1.3.1 Provision and installation of flush single-gang outlet boxes for all MASONRY WALL mounted sensors and remote arming key-switches only. Ceiling-mounted sensors shall be installed without back boxes or conduit by the Intrusion Alarm Supplier/Installer.
 - 5.1.3.2 All boxes and junction covers will be colour-coded by the Electrical Contractor as part of the General Contract.
 - 5.1.3.3 Provision and installation of 120 volt supply in conduit terminated at location of control/communication unit for connection to control cabinet by Intrusion Alarm System contractor.
 - 5.1.3.4 Provision of conduits with suitable fishwire to facilitate wiring installation by Intrusion Alarm system contractor
 - 5.1.3.5 Provide wires in existing conduit from fire alarm panel to the intrusion alarm control panel for connection of the fire alarm/trouble outputs.

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- 5.1.3.6 Where ceiling tiles have been installed, the **Intrusion Alarm Supplier/Installer** shall be responsible for removal and re-installation of tiles. Tiles and grid members which have been marked or damaged during installation of this system shall be replaced by the above mentioned Contractor.
- 5.1.3.7 Intrusion Alarm System contractor will be required to co-ordinate all work with the General Contractor and Electrical Contractor on site.
- 5.1.3.8 Co-ordinate fully with Board's monitoring company and Electrical Contractor's fire alarm system supplies to connect monitor/dispatch function.
- 5.1.3.9 All wiring at panels shall be identified by number markers and a list of numbering and descriptions supplied with shop drawings.
- 5.1.3.10 Provide all required end-of-line resistors at field devices to supervise wiring.

6 TESTS

- 6.1.1 The Intrusion Alarm System Contractor shall perform a complete test of the system.
- 6.1.2 Provide a letter as evidence that such tests and operating instruction to Board have been performed and additionally to indicate that;
 - 6.1.2.1 System complies with Manufacturer's installation recommendations.
 - 6.1.2.2 System has been tested, verified and certified in writing by the Board's monitoring station.
 - 6.1.2.3 Installation is acceptable for warranty.
- 6.1.3 Prior to energizing or commissioning the system, it shall be fully inspected, tested, checked and adjusted by the manufacturer's representative and shall include, but not be limited to the following:
 - 6.1.3.1 The type of equipment installed is that designated by the Specifications;
 - 6.1.3.2 That the wiring connections to all equipment components show that the installer has complied with ULC and CSA requirements;
 - 6.1.3.3 That the equipment has been installed in accordance with the Manufacturer's recommendations and that all devices have been operated and tested to verify their operation and that the system operates in accordance with the requirements of the Specification.
 - 6.1.3.4 The installation of the system is in accordance with Manufacturer's instructions and in accordance with all applicable codes of governing bodies having jurisdiction;

- 6.1.3.5 That an acceptance test in the presence of and to the satisfaction of the Board has been performed;
- 6.1.3.6 A copy of the inspecting technician's report showing location of each device and certifying the test results of each device shall be forwarded to the Consultant for review.
- 6.1.4 During the inspection, testing and commissioning of the system this Contractor shall make available technicians, as required by the Manufacturer of the system, for assistance.
- 6.1.5 All costs for testing, verification, connection to the remote central monitoring station, attendance of the designated alarm monitoring company technician and demonstration of the system shall be included in the Tender Price.
- 6.1.6 The use of the system prior to "Substantial Completion" of the entire project is at the risk of the supplier/installer and shall not affect the commencement of warranty period at "Substantial Completion".

6.2 INSTRUCTIONS

- 6.2.1 Illustrated manuals for operation and service are to be provided. System supplier's representative shall fully instruct the Board personnel in all phase of equipment upon completion of installation.

6.3 WARRANTY

- 6.3.1 The installation shall include one (1) year warranty for all material and labour effective from the date of "Substantial Completion" as established by the Architect.

6.4 MANUALS, PROGRAMMING AND PRINTOUTS

- 6.4.1 Installation manuals and program manuals are to be provided.
- 6.4.2 A printout of complete system program to be provided as well as software required for uploading/downloading and manuals.
- 6.4.3 All access codes at all levels is to be left at factory settings. System is to be ready for uploading/downloading by the Board personnel.

6.5 ALARM PANEL ACCESS CODES

- 6.5.1 The installer shall handover to the Board all access and programmable codes once the alarm system is activated.

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- 6.5.2 The School Board upon recognizing that the alarm system and all its functions are operating in a satisfactory manner may change the codes.
- 6.5.3 Changing of the codes shall not void the installer warranty on any of the installed devices or wiring.
- 6.5.4 Changing of the codes from the ones issued by the installer until changed by the School Board shall not void the warranty or programming.

END OF INTRUSION ALARM SYSTEM

LATEST REVISION IN GREEN FONT

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