

1 ADDENDUM #1

All clauses set forth in the Bidding Documents, Contract Documents and General Requirements of the original Contract Documents shall apply to and govern this work. The addendum refers to changes and additions to the original Contract Documents and is to be read in conjunction with the same. All other parts of the original Contract Documents are to be considered as applying to the work of this Contract with the exceptions and changes as noted below.

1.1 SPECIFICATIONS

- .1 Reference Section 00 41 13 - Bid Form:
 - .1 Reference Paragraph 1.12 - APPENDIX 'E'
 - .1 Delete Appendix 'E' as originally issued and replace with the version attached, dated May 20, 2021.
- .2 Reference Section 08 71 00 - Door Hardware:
 - .1 Delete section as originally issued and replace with version dated May 20, 2021, attached and forming part of this addendum.
- .3 Reference New Specification Section 27 51 16 - Public Address and Mass Notification Systems:
 - .1 Attached and forming part of this addendum is Section 27 51 16 - Public Address and Mass Notification Systems.
- .4 Reference Section 28 31 00 - Fire Detection and Alarm
 - .1 Reference Paragraph 2.17
 - .1 CLARIFICATION
 - .1 New hybrid fire alarm control panel and fire alarm devices does not need to match existing Edwards system. All existing convectional fire alarm initiation loops and notification loops to be wired back to new fire alarm control panel. Acceptable material or approved equal: Mircom, Siemens, Edwards, Notifier.

1.2 DRAWINGS

- .1 Reference Drawing E2-200 - Lower & Upper Level Demolition Plan - Power:
 - .1 Contractor to trace out, disconnect and remove all obsolete electrical conduits and cabling associated with obsolete mechanical equipment in Mechanical 120 back to panelboard 'G'. Coordinate exact mechanical equipment to be demolished with Mechanical Contractor.
 - .2 Reference Demolition Note 8:
 - .1 CLARIFICATION: Contractor to disconnect and remove incoming feeder and all electrical conduits and cabling routed to recess mounted panelboard 'G' but maintain existing panelboard 'G'.
 - .2 Delete wording that reads "Provide for reinstatement of concrete block wall as required".
- .2 Reference Drawing E2-600 - Lower & Upper Level Floor Plan - Power:
 - .1 Reference Key Plan - Lower Level Power:
 - .1 In Gymnasium 128, existing 100A, 120/208V, three phase, four wire

panelboard 'F' to be fed from new 600A, 120/208V, three phase, four wire distribution panelboard 'DP' with 4#2, 1#6 bond in existing 35mmC routed through accessible ceiling space and to underside of exposed ceiling deck of Gymnasium. Contractor to trace out and confirm exact location of exiting conduit on site prior to rough-in.

- .2 Reference Detail 1/E2-600:
 - .1 For clarification, two (2) 103mm conduits surface mounted to exterior façade of building to penetrate with an LB elbow into the accessible ceiling space of Electrical 125 and then downwards to new 600A, 120/208V, three phase, four wire service rated disconnect switch. Contractor to seal around exterior penetrations with low VoC mastic compound.
 - .2 CLARIFICATION: All new mechanical equipment located in Mechanical 120 to be wired back to new 100A, 120/208V, three phase, four wire surface mounted panelboard 'P'.
 - .3 In Electrical 125, provide 1-1/2"C from PT/CT cabinet c/w pull cord routed through accessible ceiling space to meter base located on the exterior façade of the building. Coordinate exact location of meter base onsite with MECL prior to rough-in.
- .3 Reference Detail 3/E2-600
 - .1 In AV Room 243, remove note 4 associated with duplex receptacle located on the west wall.
- .3 Reference Drawing E2-700 - Lower & Upper Level Floor Plan - Lighting:
 - .1 Reference Detail 1/E2-700:
 - .1 In Mechanical 120, six (6) type D2 lights to be suspended with chains at 3000mm AFF. Exact location and suspension heights to be coordinated with General Contractor and mechanical equipment on site prior to rough-in.
 - .2 Reference Detail 2/E2-700
 - .1 In WR 109A, replace one (1) type A3 luminaire with one (1) type A4 luminaire.
 - .2 Replace luminaire type A3 located between gridlines X and Y and gridlines 7 and 8 with a 2'x'4 type A2 luminaire.
- .4 Reference Drawing E2-900 - Lower Level Floor Plan - Systems:
 - .1 Reference Detail 1/E2-900
 - .1 Reference Note 4:
 - .1 All wording that reads "sensor module" to be replaced with "security switching card audio port".
- .5 Reference Drawing E2-901 - Upper Level Floor Plan - Systems:
 - .1 Reference Detail 1/E2-901:
 - .1 CLARIFICATION: In Principal 200 and Main Office 201, "telephone handset" is to be referred to as "Administrative Phone".
 - .2 Add the following drawing note:
"Public address wall mounted enclosure to be c/w one (1) 48-port patch panel, one (1) security switching card audio port, one (1) amplifier, one (1) audio attenuator module and all necessary hardware and cabling required for a fully functional system. All components are to be wired and installed in accordance with manufacturer's wiring and installation instructions. Security switching card audio port to be installed within wall

mounted enclosure to be wired with one (1) CAT6 communications cabling in 27mmC routed through accessible ceiling space and downwards to Carehawk Central Controller SS port. Wall mounted enclosure to be supplied by Owner and installed by Electrical Contractor. Coordinate exact location of wall mounted cabinet with ITSS on site prior to installation. All PA equipment installed within enclosure to be supplied by Owner, installed and commissioned by Electrical Contractor. "

.6 Reference Drawing E2-1000 - Electrical Details:

- .1 Reference Detail 1/E2-700:
 - .1 Existing panelboard 'F' to be fed with "4#2, 1#6 bond in existing 35mmC" instead of "4#3, 1#6 bond in existing 35mmC".

1.3 APPENDICES

.1 Reference Appendix 'D' - Material / Finish Schedule:

- .1 Reference Acoustic Ceilings ACT-1:
 - .1 Add CGC - Mars ClimaPlus ceiling tiles as an acceptable alternate.
- .2 Reference Suspension System:
 - .1 Add CGC - DX/DXL, 15/16" suspension system as an acceptable alternate.

.2 Reference Appendix "F" - Luminaire Schedule:

- .1 Reference Type A1:
 - .1 Add the following as an acceptable manufacturer:
 - .1 CFI #2FPZ42B835-4-DS-UNV-DIM
- .2 Reference Type A2:
 - .1 Add the following as an acceptable manufacturer:
 - .1 CFI #2FPZ30L835-4-DS-UNV-DIM-FMA24
- .3 Reference Type A3:
 - .1 Add the following as an acceptable manufacturer:
 - .1 CFI #1FPZ30L835-4-DS-UNV-DIM
- .4 Reference Type A4:
 - .1 Add the following as an acceptable manufacturer:
 - .1 CFI #1FPZ15L835-4-DS-UNV-DIM
- .5 Reference Type B1:
 - .1 Add the following as an acceptable manufacturer:
 - .1 LIGHTOLIER #4RN-Z4RDL10835W OCDZ10U
- .6 Reference Type C1:
 - .1 Add the following as an acceptable manufacturer:
 - .1 MAXIM #52102-PC
- .7 Reference Type D1:
 - .1 Add the following as an acceptable manufacturer:
 - .1 CFI #FSS220L835-UNV-DIM
- .8 Reference Type D2:
 - .1 In the mounting column delete wording that reads "surface mounted to drywall ceiling" and replace with the following wording:
"suspended at 3000mm AFF. Coordinate exact location and suspension height with General Contractor and mechanical equipment on site prior to rough-in."
 - .2 Remove the acceptable manufacturer "LITHONIA #CLX L48 5000LM SEF RDL MVOLT GZ20 35K 80CRI WH" and replace with the following:

"LITHONIA #CLX L48 5000LM SEF RDL MVOLT GZ10 35K 80CRI WH
HC36 M12".

.3 Add the following as an acceptable manufacturer:

.1 CFI #FSS455L835-UNV-DIM-FSTH

END OF SECTION

1.12 APPENDIX 'E'

.1 CASH ALLOWANCES

The undersigned hereby acknowledges that the sum of:

TWENTY-SIX THOUSAND DOLLARS
\$26,000.00 (EXCLUDING HST)

is included in the total tender amount as Cash Allowances, to perform the following work:
This money to be expended in accordance with the requirements of CCDC2 2008
General Condition GC4.1 - Cash Allowances, only on consultant's written instructions.

WORK:

- .1 \$26,000.00 - Removal of the asbestos containing material in the Boiler Room.
Air monitoring to be included in the work.

Contractors are advised to carry sufficient overhead and administration cost to administer and coordinate this work.

In the event that the Owner decides not to proceed with any or all of this work, we agree to credit the Contract with the unused portion of the full amount of these Cash Allowances, as applicable, and the related HST.

COMPANY: _____

AUTHORIZED SIGNATURE: _____

END OF SECTION

1 General

1.1 SUMMARY

- .1 Supply and deliver all finish hardware as specified in hardware sets for doors listed on door schedule. Hardware shall include all fasteners and devices necessary for the proper installation of hardware.

1.2 RELATED REQUIREMENTS

- .1 Section 08 11 13 - Hollow Metal Doors and Frames.
- .2 Section 08 14 16 - Flush Wood Doors.
- .3 Electrical wiring.

1.3 REFERENCES

- .1 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
 - .1 CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frames Manufacturer's Association.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB 69.17 M86(R1993), Bored and reassembled Locks and Latches.
 - .2 CAN/CGSB 69.18 M90/ANSI/BHMA A156.1 1981, Butts and Hinges.
 - .3 CAN/CGSB 69.19 93/ANSI/BHMA A156.3 1984, Exit Devices.
 - .4 CAN/CGSB 69.20 M90/ANSI/BHMA A156.4 1986, Door Controls (Closers).
 - .5 CAN/CGSB 69.21 M90/ANSI/BHMA A156.5 1984, Auxiliary Locks and Associated Products.
 - .6 CAN/CGSB 69.22 M90/ANSI/BHMA A156.6 1986, Architectural Door Trim.
 - .7 CAN/CGSB 69.24 M90/ANSI/BHMA A156.8 1982, Door Controls Overhead Holders.
 - .8 CAN/CGSB 69.26 96/ANSI/BHMA A156.10 1991, Power operated Pedestrian Doors.
 - .9 CAN/CGSB 69.28 M90/ANSI/BHMA A156.12 1986, Interconnected Locks and Latches.
 - .10 CAN/CGSB 69.29 93/ANSI/BHMA A156.13 1987, Mortise Locks and Latches.
 - .11 CAN/CGSB 69.30 93/ANSI/BHMA A156.14 1991, Sliding and Folding Door Hardware.
 - .12 CAN/CGSB 69.31 M89/ANSI/BHMA A156.15 1981, Closer/Holder Release Device.
 - .13 CAN/CGSB 69.32 M90/ANSI/BHMA A156.16 1981, Auxiliary Hardware.
 - .14 CAN/CGSB 69.33 M90/ANSI/BHMA A156.17 1987, Self closing Hinges and Pivots.
 - .15 CAN/CGSB 69.34 93/ANSI/BHMA A156.18 1987, Materials and Finishes.
 - .16 CAN/CGSB 69.35 M89/ANSI/BHMA A156.19 1984, Power Assist and Low Energy Power Operated Doors.
 - .17 CAN/CGSB 69.36 M90/ANSI/BHMA A156.20 1984, Strap and Tee Hinges and Hasps.
- .3 All hardware shall comply with requirements of the National Building Code (2010).

1.4 REQUIREMENTS OF REGULATORY AGENCIES

- .1 Use ULC listed and labeled hardware for doors in fire separations and where noted on Door Schedule (located at the end of this document in the Schedules section).

1.5 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Hardware List:
 - .1 Submit Finish Hardware Schedule electronically for approval.
 - .2 Schedule shall be written in accordance with DHI Sequence and Format for vertical hardware schedule publication.
 - .3 Schedule shall reference item and door number to hardware set specified.
 - .4 Door index to be included referencing the door number to scheduled item number.
 - .5 Submit electronic copies of keying schedules for approval.
 - .6 Schedule shall be written in accordance with DHI Handbook Keying Schedule Systems and Nomenclature. Coordinate all keying in writing.
- .3 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
 - .2 Provide template drawings as requested.
- .4 Closeout Submittals
 - .1 Provide operation and maintenance data for door closers, lockets, door holders electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.6 QUALITY ASSURANCE

- .1 Hardware supplier must have on staff an Architectural Hardware Consultant or person of equivalent qualification and experience. Hardware supplier must have been in hardware supply for a minimum of two (2) years, have supplied similar type projects, and have adequate facilities to service project.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Trade Contractor to provide clean, dry locked room for storage of hardware on shelving.
- .2 Each hardware item shall be delivered to site in manufacturers original packaging. Each item shall be labeled with door and item number to correspond with hardware schedule.
- .3 All hardware will be delivered to one receiving area on site.

1.8 WARRANTY

- .1 Furnish a one-year written warranty for all products with exceptions of door closers, Mortise locksets and latchsets which shall be warranted for ten (10) years, and exit devices and trim, overhead holders and stops which shall be warranted for five (5) years.

1.9 WASTE DISPOSAL AND MANAGEMENT

- .1 Collect and separate for disposal waste material generated by this Section.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the Owner initiating a clean-up and related costs being deducted from progress claims.

2 Products

2.1 MANUFACTURERS

- .1 Acceptable Material: Specified in Hardware Sets.

2.2 FINISH

- .1 Finish for this project in general shall be 626 (Satin Chrome). Exceptions are as noted in

hardware packages.

2.3 KEYING

- .1 All cylinders construction, master keyed.
- .2 Provide three (3) master keys for each MK or GMK group.
- .3 Stamp keying code numbers on keys and cores.

2.4 FASTENINGS

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Recommend mounting heights shall be in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturer's Association.
- .4 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 INSTALLATION

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.
- .2 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .3 Install key control cabinet.
- .4 Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .5 Remove construction cores when directed by Consultant; install permanent cores and check operation of locks.

3.3 ADJUSTING

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety, weather tight closure and to provide tight fit at contact points with frames.

3.4 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware

- in accordance with manufacturer's instructions.
 .3 Remove protective material from hardware items where present.

3.5 PROTECTION

- .1 Provide proper protection of all hardware items until Owner accepts project as complete.

3.6 APPROVED ALTERNATES

	<u>Specified Product:</u>	<u>Approved Alternates:</u>
.1	Ives 5BB1	McKinney TA2714
.2	Schlage ND series	Sargent 11 series
.3	LCN 1450 series	Sargent 1431 series
.4	Ives Flat wear	Standard Metal flat wear

3.7 DOOR HARDWARE SCHEDULE

- .1 Hardware items are referenced in the following hardware.

HARDWARE GROUP NO. 1

For use on Door #(s):

125A.1

Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4	652	IVE
1	EA	STOREROOM LOCK	ND80RD SPA	626	SCH
1	EA	SURFACE CLOSER	1450 RW/PA	689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW	630	IVE
1	EA	WALL STOP	WS406/407	US32D	IVE
1	EA	INTUMESCENT	W-22 x door width x (2) door height		KNC

DOOR IS ALWAYS LOCKED ALWAYS NEED A KEY TO GET IN. FREE EGRESS AT ALL TIMES

HARDWARE GROUP NO. 2

For use on Door #(s):

137.1 248.1 251.1

Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4	652	IVE
1	EA	PRIVACY LOCK	ND40S SPA	626	SCH
1	EA	SURFACE CLOSER	1450 RW/PA	689	LCN
1	EA	WALL STOP	WS406/407	US32D	IVE

HARDWARE GROUP NO. 3

For use on Door #(s):

238.1 240.1 245.1 246.1

Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4	652	IVE
1	EA	ENTRANCE LOCK	ND53RD SPA	626	SCH
1	EA	WALL STOP	WS406/407	US32D	IVE

HARDWARE GROUP NO. 4

For use on Door #(s):

239.1	241.1	242.1	243.1	244.1	252.1
Provide each SGL door(s) with the following:					
3	EA	HINGE	5BB1 4.5 X 4	652	IVE
1	EA	CLASSROOM LOCK	ND70RD SPA	626	SCH
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW	630	IVE
1	EA	WALL STOP	WS406/407	US32D	IVE

DOOR CAN BE LOCKED BY EXTERIOR KEY ONLY. FREE EGRESS AT ALL TIMES

END OF SECTION

1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 - Common Work Results - Electrical.
- .2 Section 26 05 28 - Pathways for Communications System
- .3 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .4 Section 27 10 05 - Structured Cabling for Communications Network.

1.2 REFERENCES

- .1 Industry Canada - Terminal Attachment Program
 - .1 CS-03, Telecommunication Apparatus Compliance Specification, Issue 8.

1.3 SYSTEM DESCRIPTION

- .1 Public address system to be completed with recess mounted / surface mounted public address speakers, call-in switches, amplifier, audio attenuator module, security switching card, administrative phones, central controller etc. and all associated connections, adaptors, wiring and software required for a fully functional public address system as indicated on the Drawings.
- .2 Public address system to incorporate the following:
 - .1 Voice paging;
 - .2 Emergency paging;
 - .3 Emergency call-in;
 - .4 PC based call-in.
 - .5 Broadcast pre-recorded emergency announcements;
 - .6 External and internal telephone access;
 - .7 Calendar scheduling;
 - .8 Master clock integration;
 - .9 Play music;
 - .10 All required software for a complete public address system required for a school.
- .3 Operations:
 - .1 Paging:
 - .1 Voice paging to override broadcast or music reproductions.
 - .2 Selective area page to areas indicated.
 - .3 Pre-recorded emergency page to all areas to override all other voice paging.
 - .2 Music:
 - .1 Music from a media player installed within central controller.
- .4 Public address system configuration to be a stand alone, wall mounted system. ITSS has a standing offer with CareHawk for the public address system equipment. All public address equipment to be supplied by Owner, installed and commissioned by Electrical Contractor.

1.4 SUBMITTALS

- .1 Shop Drawings
 - .1 Submit shop drawings and product data in accordance with Division 01 - General Requirements required for the proper operation of the public address system.
 - .1 All public address system devices, hardware and associated software.
 - .2 Include:
 - .1 Layout of equipment.
 - .2 Complete public address riser.

- .3 Quality assurance submittals: submit the following in accordance with Division 01 - General Requirements.
 - .1 Certificates: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .2 Instructions: Submit manufacturer's installation instructions.
 - .3 Manufacture's Field Reports.
- .4 Closeout submittals:
 - .1 Provide operation and maintenance data for public address system for incorporation into maintenance manual as specified in Division 01 - General Requirements. Maintenance Manual to include the following:
 - .1 Operation instructions for each required mode of operation.
 - .2 Description of system operation.
 - .3 List specifying each piece of equipment in system by its original manufacturer name and model number.
 - .2 As-built Drawings: Include up-to-date drawings including changes made to the public address system during the installation.

1.5 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 All system components are to be a standard product of one manufacturer.
 - .2 Work provided under this section to consist of furnishing and installing all equipment, cabling, software, etc. required for a fully complete and functional system.
 - .3 Installer: Company or person specializing in public address system installation to have a minimum of five (5) years documented experience in the specific application of the equipment proposed for these systems.
 - .4 Representative or technician from manufacturer of the system to be responsible for the installation of the system, adjustment, preliminary testing, final testing of the system and providing instruction to project personnel.

1.6 REGULATORY REQUIREMENTS

- .1 The public address system and all associated equipment to be tested and certified in accordance with UL/CSA 60065. Certifications to be completed by a nationally recognized Testing Laboratory (UL, CSA, TUV, etc.).
- .2 All equipment completed with a digital apparatus that generates timing signals at a rate in excess of 9,000 pulses per second to meet FCC, Industry Canada regulations and CSA C108.8. Non-compliant equipment is not acceptable to be supplied or installed.

1.7 TRAINING

- .1 Arrange and pay for on-site lectures and demonstrations by system manufacturer to train operating personnel in the use and maintenance of the system.
- .2 Arrange and pay for up to eight (8) hours of on-site lectures and demonstrations by system manufacturer to train operating personnel in the use and maintenance of the system. Training to include operation of all system functions and scheduling software.
- .3 The user to have access to telephone support from the manufacturer at no additional cost.

1.8 WARRANTY

- .1 Submit manufacturer's warranty document executed by an authorized company or official stating that the entire system is warranted against defects in operation, material and workmanship for a period of five (5) years for the public address system from date of signed off substantial completion of the project. All material to be provided at no expense

to the Owner.

2 Products

2.1 CENTRAL CONTROLLER

- .1 Operating voltage and current: 120VAC, 2.5A.
- .2 Switching Frequency: 45kHz.
- .3 Central controller is designed to use standard CAT 6 communications cabling.
- .4 The Carehawk life safety platform is capable of the following:
 - .1 Responds quickly and clearly to emergencies.
 - .2 Easily connect access control and security systems.
 - .3 Allows users to help in several ways via a call-in switch that can be used to initiate emergency call back to an administrative location or via a virtual call switch.
 - .4 Remote support and access is available from anywhere.
 - .5 Allows users to schedule unlimited events.
 - .6 Play pre-recorded messages at least twenty-five (25) tones and bells, distribute music, activate cameras, active relays to lock doors, signal other systems on a schedule, etc.
 - .7 Allows administrators to have control when and where they need it.
 - .8 Integrated master clock keeps any facility running effortlessly, on time and in-sync.
- .5 Central controller is to be completed with one (1) telephone card, up to three (3) audio communication cards (one (1) for each administrative phone), up to two (2) security switching cards, one (1) intercom module, sixty-four (64) ports, RS232, RS485, USB and Ethernet ports for communication to any third party system. It is also to be completed with five (5) open collectors, three (3) dry contacts and six (6) general purpose inputs for third party system integration and general panic buttons.
- .6 To be completed with integrated surge protection for all audio parts and security switching card audio ports.
- .7 Provide all necessary wall mounting brackets to wall mount Central Controller in Janitor 110B.
- .8 Acceptable manufacturer:
 - .1 Carehawk #CH1000LT-64-3A c/w #RK100 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.2 ADMINISTRATIVE PHONE

- .1 Input voltage and power: 12 - 24VDC, 3W.
- .2 Provides a control center for all paging, security, video and telephone communications with the Carehawk Central Controller.
- .3 Completed with a 128 x 240 backlit LCD graphic display that provides a clear visual information center configured with 14 lines by 16 characters. Backlit display turns red to indicate emergency calls, independent volume control for handset, speaker and ring tones and arrow keys to allow for easy scrolling through the call queue, directory and menus.
- .4 Allows the user to page to zones or to all speakers throughout the School.
- .5 Completed with one-touch emergency page, nine (9) custom speed dials, visual and audible indicator for incoming calls, built-in speaker phone for hands free based communications with optional push-to-talk functionality.
- .6 Administrative phone to be powered up by a DC power supply adaptor connected directly to the administrative phone. Each administrative phone to be connected to AC1 card within the Central Controller with one (1) CAT6 communications cable.

- .7 Administrative phone to be desk mounted.
- .8 or approved equal:
 - .1 Carehawk #AP1 c/w #PS-AP1 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.3 CALL-IN SWITCH

- .1 Completed with an epoxy-coated silicon call-in push button mounted to a brushed stainless-steel plate. A single press on the call-in push button initiates a normal intercom call and a double press on the call-in switch initiates an emergency intercom call that is received by the administrative phone.
- .2 Provides RJ45 connectivity for a CAT6 communication cable from a security switching card port, RJ45 connectivity for a camera, a terminal strip for a classroom speaker and a terminal strip for a contact closure.
- .3 To be wall mounted on a single gang recess mounted outlet box in new gypsum walls and wall mounted to a surface mounted outlet box completed with turned-in corner on existing concrete block walls.
- .4 Acceptable manufacturer:
 - .1 Carehawk #CS100 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.4 AMPLIFIER

- .1 Power requirements: 120VAC, 3.15A.
- .2 Maximum output voltage and power: 25V, 300W.
- .3 Frequency response: 300Hz - 30kHz (-3dB).
- .4 Completed with two (2) terminal strips to connect to recess mounted speakers in corridors and common space areas such as washrooms as indicated on the drawings.
- .5 To be fastened to inside of wall mounted cabinet.
- .6 Amplifier to go to sleep to reduce their current draw when not in use and to be completed with a built in pink noise generator for testing speaker quality and audio levels.
- .7 A 25V audio attenuator module is required to be used when a remote amplifier is needed to drive larger audio loads as indicated on the drawings. The attenuator module provides the means of attenuating 25V audio down to 0-2V line level audio. The line level audio is then routed to the remote amplifier, and the returning 25V audio is then routed back to the SS32 security switching card audio port.
- .8 Black powder coat finish.
- .9 Acceptable manufacturer:
 - .1 Carehawk #DAF300-25 c/w Audio Attenuator Module #AT1 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.5 SECURITY SWITCHING CARD PORT

- .1 Central Controller Carehawk #CH1000LT supports up to two (2) security switching card ports #SS32.
- .2 To be completed with thirty-two (32) ports and to be powered of the Central Controller with one (1) CAT6 communications cable installed at a maximum distance of 800 meters away from the Central Controller.
- .3 Each recess mounted speaker located in the classroom to be wired to one (1) port of the thirty-two (32) security switching card with a CAT6 communications cable as indicated on the drawings.
- .4 One thirty-two (32) security switching card to be mounted inside of wall mounted cabinet located in Janitor 110B to connect lower level classroom, corridor and common space, recess mounted speakers and one (1) thirty-two (32) security switching card to be mounted inside of wall mounted cabinet located in LAN 210B to connect upper level

classroom, corridor and common space recess mounted speakers.

- .5 Acceptable manufacturer:
 - .1 Carehawk #SS32 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.6 RECESS MOUNTED SPEAKER

- .1 305mm x 610mm, 25V lay in ceiling speaker completed with an 8" frame, perforated steel baffle, integral back box and two (2) RJ45 jacks provided on the rear of the speaker to allow for daisy chaining of multiple speakers. The recess mounted lay in speakers interfaces with the #SS32 security switching card.
- .2 Speaker to be rated at 4W. Minimum output sound pressure level at a distance of 1 meter with 1W of input power applied to be 92dB SPL.
- .3 Frequency response: 65Hz to 17kHz.
- .4 Recess mounted speaker to be tapped to suit classroom and corridor requirements.
- .5 Acceptable manufacturer:
 - .1 Carehawk #SPL-12-RTRJ (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.7 AUDIO COMMUNICATION CARD

- .1 Input voltage and power: 5VDC from Central Controller, 0.25W.
- .2 Audio communication card is to be installed within Central Controller. It powers and communicates with the administrative phone using a CAT6 communications cable.
- .3 Provides visual status indicators for host communication status with the Central Controller, audio communication card status and administrative phone status.
- .4 Acceptable manufacturer:
 - .1 Carehawk #AC1 (Supplied by Owner, installed and commissioned by Electrical Contractor).

2.8 MEDIA PLAYER

- .1 12GB of media storage capacity. Media player is capable of playing most audio formats like MP3, WAV files and internet radio.
- .2 Installed within the Central Controller and connects via the 3.5mm pigtail cable.
- .3 Built-in 10/100BaseT Ethernet port allows connectivity into a facility's local area network providing a web accessible user-friendly interface. Users can easily load audio files, create play lists and tune in to internet radio stations.
- .4 Acceptable manufacturer:
 - .1 Carehawk #MPD100.

2.9 MASTER CLOCK

- .1 To be capable of being synchronized by a Network Time Server (NTP), providing unlimited schedules with unlimited events, scheduling tone events, output events and program source events.
- .2 To be calendar based capable of future event programming at least 30 years in the future and to provide for automatic daylight-saving time adjustment with leap year programming.

3 Execution

3.1 INSTALLATION

- .1 Install equipment in accordance with manufacturer's instructions, and as indicated.
- .2 The public address system is to utilize CAT6 communications cabling for connection of speakers, call-in switches, administrative phones, etc.

- .3 Install all conduit, wiring, etc. in accordance with manufacturer's installation instructions for a complete and functional system.
- .4 The manufacturer's representative is responsible for the installation of all equipment specified herein for a fully functional system. The testing to comprise an examination of such equipment for the following.
- .5 Ensure the type of equipment installed is that specified herein.
- .6 Ensure all new equipment has been installed in accordance with manufacturer's installation instructions, and that all new components have been operated or tested to verify their operation.

3.2 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical and Division 01 General Requirements.
- .2 Conduct intelligibility test.
- .3 Manufacturer to review work involved in the handling, installation, protection and cleaning of its products, and submit written reports, in acceptable format, to verify compliance of work with Contract.
- .4 Provide for manufacturer's certified technician to visit, program, commission and verify that the public address system is installed as indicated and operates as intended and that there are no problems.
- .5 Perform tests in accordance with Section 26 05 00 - Common Work Results.

END OF SECTION