1.1 GENERAL

.1 Refer to Specifications.

.2 Provide for a complete and working installation as herein specified and as shown on the

1.2 ELECTRICAL SPECIFICATIONS

.1 The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, provincial and municipal codes and regulations.

.2 Obtain all permits, approvals and pay all related fees required for this installation.

.3 All equipment and wiring supplied under this contract shall be new and be C.S.A. approved.

.4 Arrange for, and coordinate, rough—in and final inspections with Inspection Authorities, and Contract Administrator.

1.3 EXAMINATION

.1 Examine the architectural, interior design, structural and mechanical drawings to ensure that the Work under this contract can be satisfactorily carried out. Report any discrepancies to the Contract Administrator.

.2 The Contractor shall examine the Site, local conditions and all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

1.4 SUPERVISION

.1 Supervise the Work at all times through a responsible and competent supervisor.

.2 Full cooperation shall be shown with other trades to facilitate installations and to avoid delays in carrying out the Work.

1.5 ACCURACY OF DATA

.1 Drawings are schematic; exact locations, distances, levels and other dimensions shall be governed by the building as constructed.

.2 Outlets or equipment shall be moved to any point within a 10' radius when relocation is requested by the consultant before the Work has been substantially completed, without additional cost.

1.6 APPROVAL OF MATERIAL

.1 Request for approval of material as equals or alternates to that specified shall be submitted to the Contract Administrator in accordance with Specifications.

1.7 SHOP DRAWINGS

.1 Provide a minimum of seven copies of shop drawings for review. The shop drawings must be assembled into complete brochures, with no loose sheets. Unassembled submissions will be returned as incomplete.

.2 The review of the shop drawings is for the sole purpose of ascertaining conformance with the general design concept. The review shall not mean approval of the detailed design inherent in the equipment, the responsibility for which shall remain with the Contractor. The review shall not relieve the Contractor of the responsibility to meet the requirements of the contract documents. The Contractor shall remain responsible for confirming and correlating the dimensions on the jobSite, and for information that pertains to the fabrication process. construction techniques, and installation details, and for coordinating all Work.

.3 Fabrication of equipment shall not commence until shop drawings of such equipment have been reviewed and approved. Two sets shall be submitted with local inspection department approval where required.

.4 The Contractor shall review all mechanical and sprinkler shop drawings — requiring electrical connection — and coordinate and provide all necessary connections.

1.8 AS-BUILT DRAWINGS

.1 Keep a record set of drawings on the Site at all times recording any changes that may occur. Submit these drawings to the Contract Administrator upon completion of the Work. As-builts shall include circuiting of new and existing equipment to remain.

.2 Submit a certificate of inspection from the local inspection authority upon completion of Work and include with as-builts.

1.9 TESTING

.1 The installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

Building Code, Municipal By—laws or Inspection Authorities.

.2 Arrange for and include in the Bid Submission all commissioning and witnessing of the fire alarm and life safety system as required by the Authority Having Jurisdiction. This includes any and all witnessing and testing by professional engineers, where required by the

1.10 GUARANTEE

.1 The satisfactory operation of all Work shall be guaranteed for a period of 12 calendar months from date of Total Performance.

1.11 REQUEST FOR CHANGE

.1 All quotations in response to request for change shall be submitted complete with an itemized cost breakdown of all materials and labour required in the change.

1.12 GROUNDING

.1 The entire installation shall be grounded in accordance with the Canadian Electrical Code.

1.13 WORKMANSHIP

.1 Install equipment, conduit and cables in a workmanlike manner to present a neat appearance to the satisfaction of the Contract Administrator. Install conduit and cable runs parallel or perpendicular in chases, behind furring or above ceilings. In areas where systems indicated to be exposed, provide Wiremold surface raceway, and paint to suit.

.2 Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with adequate clearances and accessibility for same.

.3 Include, in the Work, all requirements shown on the shop drawings or manufacturers' installation instructions.

.4 Use of clips for securing cables or conduit to ceiling system is prohibited.

.5 All conduits must be clipped to structural components by means of anchors or supported by unistrut hangers as close to underside as possible. Confirm all mounting methods and procedures with Contract Administrator BEFORE installing.

All electrical and fire alarm components must be supported independently.

MATERIALS AND INSTALLATION

2.1 OUTLET BOXES

.1 Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit each individual application.

2.2 WIRING METHODS

.1 Unless otherwise shown on the drawings, all signal wire shall be copper, minimum #12 awg Fire Alarm System approved cable with overall jacket. Wiring to be installed in conduit.

2. Conduits installed in areas exposed to moisture, such as crawlspaces or in the vicinity of sprinkler system components requiring maintenance (electrical riser rooms), use watertight steel compression connectors and fittings.

.3 All wiring in finished areas shall be concealed. All conductors and conduits shall be run perpendicular or parallel to the building core walls.

.4 Conduit and wiring shall be grouped where possible and clipped in a neat and workmanlike manner.

.5 Securex cable may be used for drops from conduit systems to detectors in accessible ceilings, or where cable must be "fished" into existing walls. Home runs, any runs between floors or at fire separations must be in conduit.

6. Detection and addressable loop cables shall be minimum #18, copper, with overall iacket, and approved for addressable Fire Alarm Systems.

2.3 IDENTIFICATION OF EQUIPMENT

.1 All equipment shall be identified with $3/8" \times 1 1/2" (1/8" letters)$ engraved lamacoid nameplates indicating panel and circuit number or fire alarm horn designation. Lamacoids shall be either screwed or riveted in place, except where this would affect the device integrity (such as horns or detectors — where self-adhesive is acceptable. Lamacoids shall be white lettering on red face for emergency and fire alarm devices.

MECHANICAL EQUIPMENT WIRING

1. Provide addressable input modules for all sprinkler system devices (flow switches and tamper-proof switches) and addressable output modules for any required fan shut-down.

2.7 CUTTING AND PATCHING

.1 See General Conditions for requirements for cutting and patching, and arrange for same.

.2 Arrange for appropriate fire stop at all fire wall and floor penetrations.

2.14 FIRE ALARM SYSTEM

1. The existing system includes a single stage conventional and an addressable control panel.

2. This project includes for replacement of all fire alarm detection and signaling devices on the 2nd floor — in its entirety. The remainder of the building shall continue to be serviced by the existing conventional (Edwards 6500) fire alarm panel.

3. The Work described on the fire alarm drawings includes all necessary changes, modifications and re-work of BOTH the existing conventional and the existing addressable systems - to ensure continuity and proper life—safety throughout the building complex, including other buildings monitored at this facility

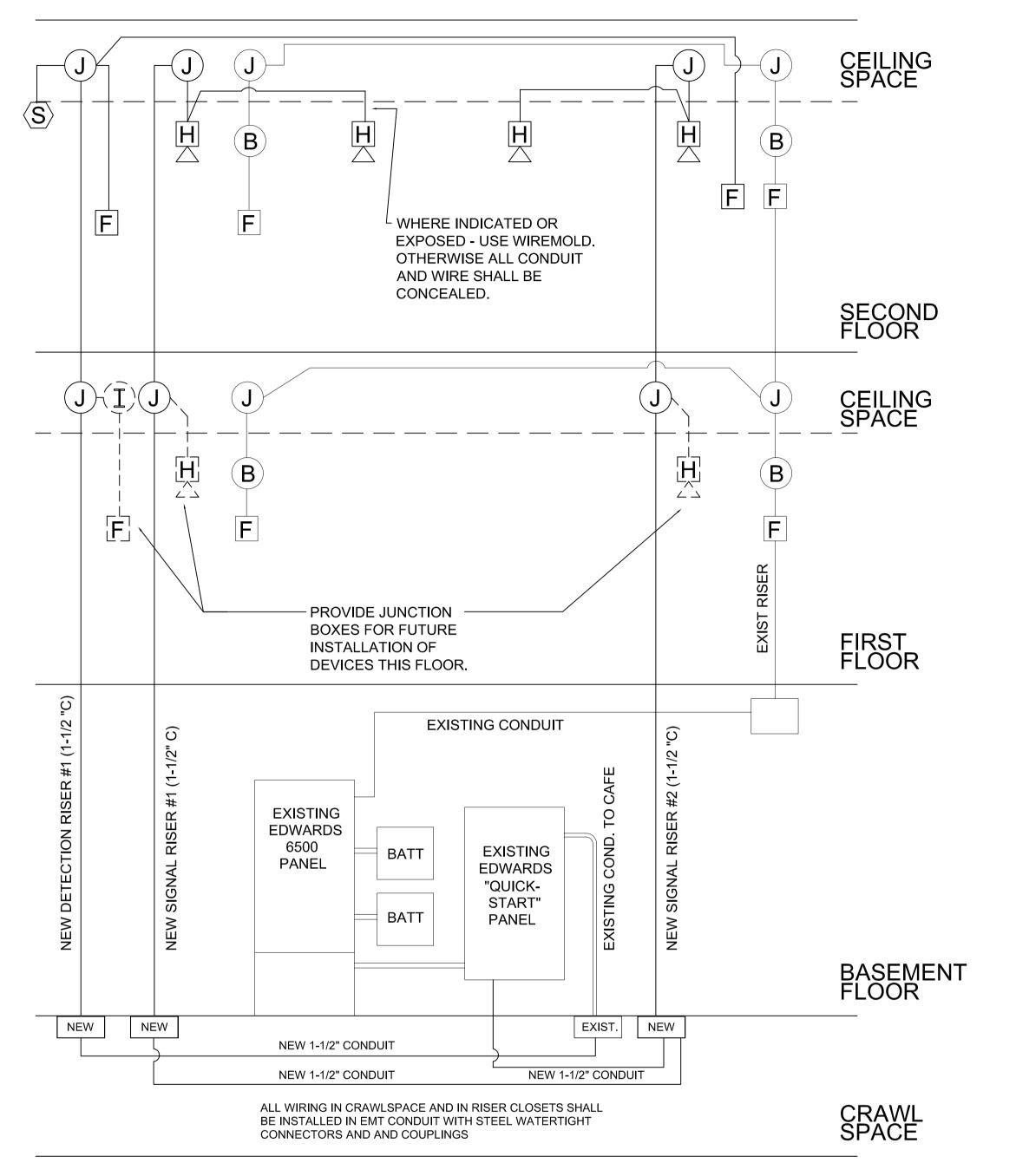
4. Both the conventional and addressable system are Edwards (GE Security) and all Work required in these panels shall be performed by Edwards. Devices shall be as manufactured by Edwards and shall match existing (both conventional and addressable) for continuity of the system.

5. Include all changes to the existing panels, and all existing Fire Alarm Annunciators (where for a complete and operating system.

6. With the exception of the Cafe area (which is connected to the new addressable panel), the remainder of the facility, and the adjacent City of Winnipeg buildings with interconnection, are provided with a 'series' signal circuit. Take all necessary precautions, and include all necessary wiring changes and extension of circuits to ensure that these signal circuits continue to function.

7. Test and Verify every circuit which has been modified or disrupted, and well as any new circuit to be provided under this contract, in accordance with current and applicable ULC standards. Submit the report to the Contract Administrator for review and approval, and include copies in the maintenance manuals.

8. Shop drawings and schematics in Maintenance Manuals shall show clearly what equipment and devices are included in this contract for "future" expansion of the system. Provide 4 sets of shop drawings and schematics in Maintenance Manuals.



PARTIAL RISER DIAGRAM

RISER DIAGRAM NOTES

THE FIRE ALARM SYSTEM ON THE SECOND FLOOR SHALL BE UPGRADED TO INCLUDE NEW RISERS, DETECTION AND SIGNAL CIRCUITS AS INDICATED FROM THE NEW (BUT EXISTING) EDWARDS "QUICKSTART" PANEL LOCATED IN THE BASEMENT ELECTRICAL ROOM.

NEW CONDUIT, CIRCUITS AND WIRING SHALL BE INSTALLED TO ALLOW FOR FUTURE EXPANSION OF THE SYSTEM THROUGHOUT THE BUILDING. CONFIRM ALL CONDUIT SIZES - FOR FUTURE USE - WITH MANUFACTURER. SIZES SHOWN ARE MINIMUM ALLOWED.

PULL BOXES IN CRAWLSPACE SHALL NOT BE USED AS JUNCTION BOXES, ANY CONNECTIONS SHALL BE MADE IN JUNCTION BOXES IN THE BASEMENT, CEILING SPACE OR RISER LOCATIONS ONLY. SIZE PULL BOXES TO SUIT CONDUIT REQUIREMENTS. MINIMUM SIZE 12"X12"X4" DEEP WITH BOLT-ON COVER. PAINT ALL JUNCTION BOX AND PULL BOX COVERPLATES RED AND LABEL WITH LAMACOID IN ACCORDANCE WITH CITY OF WINNIPEG STANDARDS.

NEW DEVICES SHALL MATCH EXISTING DEVICES - AS USED IN THE MAIN FLOOR CAFETERIA - AND AS MANUFACTURED BY EDWARDS.

INCLUDE ALL REQUIRED EQUIPMENT AND Work IN BOTH FIRE ALARM PANELS, INCLUDING, BUT NOT LIMITED TO: NEW ZONE AND SIGNAL MODULES, WIRING TO-FROM DEVICES, PROGRAMMING, TYPED LABELS FOR ALL NEW AND EXISTING ZONE INDICATION. INCLUDE INTERCONNECTION TO THE EXISTING EDWARDS 6500 SYSTEM, SUCH THAT AN ALARM ON A NEW DETECTION CIRCUIT (OR SUPERVISORY TROUBLE ZONE) WILL BE RECEIVED BY THE EXISTING SYSTEM AND SHALL SIGNAL ALARM, DIAL CENTRAL REPORTING AND SHUTDOWN FANS ETC. - AS IF IT WERE DETECTED ON THE 6500 PANEL.

INCLUDE CONNECTION OF NEW 2ND FLOOR SPRINKLER DEVICES (TAMPER-PROOF SWITCHES, FLOW SWITCHES ETC.) AND DEDICATED ANNUNCIATION AT NEW PANEL. AS A TEMPORARY MEASURE ONLY, ADJUST LOCAL AND REMOTE ANNUNCIATION CONNECTED TO THE EXISTING EDWARDS 6500 PANEL TO STATE THAT SECOND FLOOR DETECTION INCLUDES SPRINKLER DETECTION.

DO NOT RE-USE ANY EXISTING FIRE ALARM WIRING. THE EXISTING DETECTION AND BELL CIRCUITS ON OTHER FLOORS SHALL REMAIN IN WORKING CONDITION FOR FUTURE UPGRADING. MAKE ALL NECESSARY EXTENSIONS TO CONDUIT OR WIRING TO ASSURE THAT ALL OF THE EXISTING DEVICES (ON THE OLD SYSTEM) TO REMAIN, THROUGHOUT THE BUILDING WILL REMAIN OPERATIONAL. PROVIDE A VERIFICATION OF ANY AND ALL EXISTING ZONES DISRUPTED BY THIS Work - AND INCLUDE ALL COSTS FOR SAME.

ONCE NEW DETECTION AND SIGNAL CIRCUITS ARE IN PLACE. TESTED AND FUNCTIONING. REMOVE EXISTING 2ND FLOOR DEVICES AND ENSURE THAT THE DETECTION AND SIGNALS IN THE REMAINDER OF THE BUILDING ARE IN WORKING ORDER. TEST 1ST FLOOR AND 3RD FLOOR WIRING FOR CONTINUITY AND PROPER OPERATION. PROVIDE SUITABLE COVERPLATES ON ANY OUTLET BOX WHERE A DEVICE HAS BEEN REMOVED. CONFIRM TYPE AND COLOR WITH THE CONTRACT ADMINISTRATOR - AS A MINIMUM CARRY BRUSHED STAINLESS STEEL FOR ALL OUTLET BOXES, AND ADJUST AS DIRECTED.

TEST AND INSTALL BATTERIES ALREADY ON Site - TO SUPPORT NEW DEVICES ON NEW PANEL.

REVISION/DESCRIPTION

DRAWN BY JCW CHECKED BY APPROVED 2005.11.28 USER APPROVAL



NOTES :

THESE DRAWINGS SHALL NOT BE SCALED.

THE Contractor SHALL VISIT THE Site AND SATISFY ONESELF ALL DIMENSIONS, DATUM, AND DETAILED INFORMATION SHOWN ARE CORRECT.

ALL OPENINGS THROUGH FIRE ASSEMBLIES ARE TO BE FIRE STOPPED AND SEALED WITH ULC APPROVED FIRE STOPPING TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION, AND PROVIDE A SMOKE-TIGHT BARRIER.

ALL PRODUCTS AND MATERIALS SHALL BE NEW AND INSTALLED IN CONFORMANCE WITH

THE Contractor SHALL BE RESPONSIBLE TO PATCH AND MAKE GOOD ALL EXISTING CONSTRUCTION AFFECTED BY THE REMOVAL OF ALL ITEMS FORMING THE PART OF THE

APEGN

Certificate of Authorization

Woods Engineering

No. 257 Expiry: April 30, 2006

MANUFACTURER'S SPECIFICATIONS & APPLICABLE CODES

THE Contractor IS TO REVIEW AND COORDINATE ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL OPENINGS THROUGH FLOORS. WALLS, AND CEILINGS FOR DUCT, PIPE & ELECTRICAL RISERS AND ALL OPENINGS NOT

> CITY OF WINNIPEG PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT CIVIC ACCOMMODATIONS DIVISION 300 - 65 GARRY ST. R3C 4K4

PROJECT ADMINISTRATION BUILDING

SECOND FLOOR RENOVATIONS CONVERSION TO OFFICE AREA

510 MAIN STREET SHEET TITLE

> FIRE ALARM RISER AND SPECIFICATION

PROJECT NO. SHEET NO. **F-2** 2004-180-06 AS NOTED

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1