

- ### DRAWING NOTES
- 1 REPLACE ALL SPRINKLERS WITH NEW QUICK RESPONSE TYPE SPRINKLERS THROUGHOUT THE SCHOOL, INCLUDING THE CRAWL SPACE AREAS. ALLOW FOR APPROXIMATELY 760 SPRINKLERS TO BE REPLACED. REFER TO SPECIFICATIONS FOR INFORMATION ON SPRINKLER TYPES TO BE INSTALLED.
 - 2 ALL ROOM NAMES AND NUMBERS ARE TO BE CONFIRMED DURING SPRINKLER INSTALLATION AND BE NOTED ON THE AS-BUILT DRAWING SUBMISSION. REFER TO SPECIFICATIONS ON DRAWING FP2.
 - 3 HIGH CEILING IN THIS ROOM.
 - 4 CLOUDED AREAS NOTES WHERE ARCHITECTURAL RENOVATIONS HAVE BEEN MADE AND WHERE THE TRADE CONTRACTOR IS TO INVESTIGATE AND REVISE COVERAGE TO MEET NFPA 13 SPACING REQUIREMENTS. REFER TO SPECIFICATIONS.

■ DENOTES CRAWL SPACE AREAS.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF PRINCE EDWARD ISLAND
 VALID FOR THE YEAR 2023
 Benjamin Coles
 No. 1208
 DATE: 17/05/23
 LICENSED PROFESSIONAL ENGINEER
 PROVINCE OF PRINCE EDWARD ISLAND

No.	Revisions	By	Date
1	ISSUED FOR TENDER	SB	23-05-17
0	ISSUED FOR CLIENT REVIEW	RF	23-04-27

RJ Bartlett Engineering Ltd
 Fire Protection Engineers
 Building Code Consultants
 www.rjbartlett.com

Consultant Project Number: 23036

ISSUED FOR TENDER
 MAY 17, 2023

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A = Detail #
 BB = Sheet # (Where Detail Required)
 CC = Sheet # (Where Detailed)

Project Title:
**Fire Protection Upgrades
 Queen Charlotte Intermediate
 School, Charlottetown, PE**

Drawing Title:
**Lower and Main Level
 Floor Plans**

Scale: 1:250 Design By: SB/RF
 Drawn By: HR Date: MAY 17, 2023
 Project No.: Drawing #:

460-23010 **FP1**

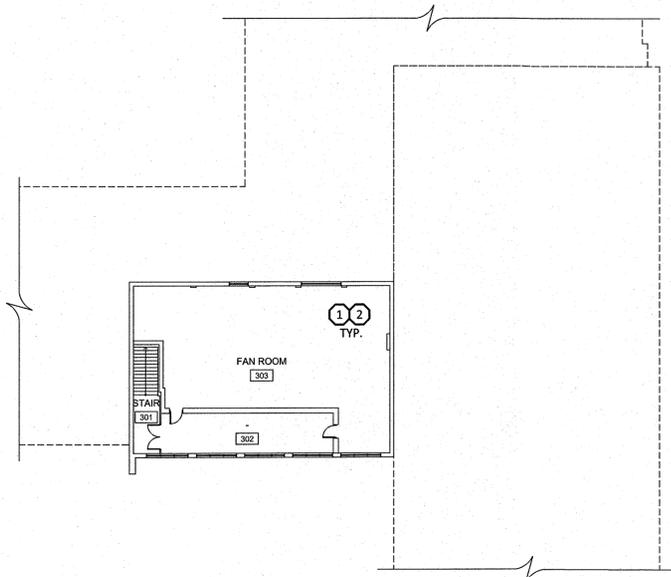
Filename: 23036.460.802.dwg

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2 UPPER LEVEL FLOOR PLAN
FP1/FP2 1:250

PART 1 - GENERAL

1.1 - SUMMARY OF WORK

- 1 THIS SPECIFICATION OUTLINES THE SCOPE OF WORK FOR THE REPLACEMENT OF ALL SPRINKLERS IN THE SCHOOL WITH NEW QUICK RESPONSE UL LISTED SPRINKLERS (INCLUDING PROVISION FOR SPARE SPRINKLERS).
- 2 THE TRADE CONTRACTOR SHALL INVESTIGATE AND ADD/RELOCATE SPRINKLERS (IF REQUIRED AND IN CONFORMANCE WITH NFPA 13) WHERE GENERALLY INDICATED ON THE DRAWINGS.
- 3 THE TRADE CONTRACTOR SHALL COMPLETE ALL WORK IN ACCORDANCE WITH NFPA 13, NFPA 25, AND THESE SPECIFICATIONS.

1.2 - REGULATIONS

- 1 THE INSTALLATION OF NEW SPRINKLERS SHALL BE IN ACCORDANCE WITH THE DRAWINGS ISSUED UNDER THIS CONTRACT, THESE SPECIFICATIONS, AND:
 - 1 THE NATIONAL BUILDING CODE OF CANADA - 2015 (NBC),
 - 2 THE NATIONAL FIRE CODE OF CANADA - 2015 (NFC),
 - 3 NFPA 13 - 2013, "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS"
 - 4 NFPA 25 - 2017, "STANDARD FOR THE INSPECTION, TESTING, AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEMS",

1.3 - COMPONENTS

- 1 ALL SYSTEM COMPONENTS REQUIRED TO BE "LISTED" AS PER NFPA SHALL HAVE THEIR LISTING THROUGH UNDERWRITERS LABORATORIES OF CANADA (ULC).

1.4 - AUTHORITY HAVING JURISDICTION

- 1 THE CONSTRUCTION FIRE SAFETY PLAN IS TO BE REVIEWED BY THE AUTHORITY HAVING JURISDICTION (AHJ), THE PRINCE EDWARD ISLAND FIRE MARSHAL OFFICE (PEIFMO), AND CITY OF CHARLOTTETOWN FIRE DEPARTMENT.

1.5 - REVIEW AUTHORITY

- 1 THE WORKING (SHOP) DRAWINGS SHALL BE REVIEWED BY R. J. BARTLETT ENGINEERING LTD. (THE ENGINEER). ANY COMMENTS SHALL BE DIRECTED TO THE ENGINEER FOR REVIEW AND ACTION.
- 2 THE CONTRACTOR WILL FORWARD THE REVIEWED CONSTRUCTION FIRE SAFETY PLAN TO THE AHJ AS REQUIRED.

1.6 - SUBMISSIONS

- 1 SCHEDULES:
 - 1 SHOP DRAWINGS AND CONSTRUCTION FIRE SAFETY PLAN (INCLUDING CONSTRUCTION SCHEDULE) ARE TO BE SUBMITTED A MINIMUM OF THREE WEEKS PRIOR TO START OF CONSTRUCTION.
 - 2 INITIAL HYDROSTATIC TEST REPORT TO BE SUBMITTED TO THE ENGINEER 5 DAYS PRIOR TO THE START OF WORK (REFER TO 3.4).
- 2 WORKING (SHOP) DRAWINGS:
 - 1 COMPLETE CATALOGUE INFORMATION FOR DEVICES/EQUIPMENT SPECIFIED.
 - 2 FLOOR PLAN DRAWINGS SHOWING PROPOSED EXTENT OF CUT, PATCH, AND PAINT WORK REQUIRED TO ADDRESS SPRINKLER SYSTEM COVERAGE MODIFICATIONS.
 - 3 CONFIRMATION FOR FULL TIME FOREMAN'S NAME AND PROVINCIAL CERTIFICATION.
 - 4 THE WORKING DRAWINGS SHALL BE SUBMITTED AS ONE PACKAGE.
- 3 RECORD DRAWINGS
 - 1 RECORD DRAWINGS SHALL REPRESENT THE INSTALLED SYSTEM COMPONENTS.
 - 2 THE CONTRACTOR SHALL USE THE TENDER WHITE PRINT SHOP DRAWINGS DURING THE INSTALLATION. CONFIRM ROOM NAMES AND NUMBERS AND SPRINKLER HEAD TYPES INSTALLED IN EACH ROOM, IN RED PENCIL ON THESE DRAWINGS.
 - 3 IDENTIFY DRAWINGS AS "PROJECT RECORD COPY". MAINTAIN IN NEW CONDITION AND MAKE AVAILABLE FOR INSPECTION ON SITE AND AT JOB MEETINGS.
 - 4 THE CONTRACTOR SHALL SUBMIT UP-TO-DATE ACCURATE RECORD DRAWINGS FOR THE SPRINKLER INSTALLATION AND CHANGES TO THE ENGINEER.

4 OPERATION AND MAINTENANCE DATA:

- 1 THE CONTRACTOR SHALL PROVIDE ONE HARD COPY OF THE OPERATION AND MAINTENANCE INFORMATION TO THE OWNER, AND IS TO INCLUDE:
 - 1 COPY OF REVIEWED (STAMPED) PRODUCT DATA.
 - 2 COPY OF CONTRACTOR'S MATERIAL AND TEST CERTIFICATES FOR ABOVEGROUND PIPING FOR ALL SPRINKLER SYSTEMS IN ACCORDANCE WITH NFPA 13 (INITIALED AND COMPLETED).
 - 3 LETTER IDENTIFYING CONTRACTOR'S MAINTENANCE AND WARRANTY OBLIGATIONS.
- 2 ONE ELECTRONIC COPY OF THE MAINTENANCE MANUAL IS TO BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO SUBMITTAL OF THE HARD COPY TO THE OWNER.
- 3 HARD COPY SUBMISSIONS ARE TO INCLUDE AN INDEX AND DIVIDING TABS FOR EACH SECTION.
- 4 ELECTRONIC SUBMISSIONS ARE TO INCLUDE AN INDEX WITH SEPARATE SUBFOLDERS PROVIDED FOR EACH SECTION.
- 5 CONSTRUCTION FIRE SAFETY PLAN
 - 1 A CONSTRUCTION FIRE SAFETY PLAN, IN ACCORDANCE WITH THE NFC REQUIREMENTS, SHALL BE SUBMITTED AND REVIEWED BY THE ENGINEER AND THE OWNER PRIOR TO SUBMITTING TO THE AHJ FOR THEIR REVIEW AND APPROVAL.
 - 2 A COPY OF THE APPROVED (BY THE AHJ) CONSTRUCTION FIRE SAFETY PLAN SHALL BE PROVIDED TO THE ENGINEER PRIOR TO START OF WORK.

1.7 - CONTRACTOR

- 1 ONLY CONTRACTORS COMPETENT IN THE INSTALLATION OF SPRINKLER SYSTEMS WHO HAVE A THOROUGH KNOWLEDGE OF REQUIREMENTS IN NFPA 13 AND 25 WILL BE CONSIDERED ACCEPTABLE FOR THIS PROJECT.
- 2 THE CONTRACTOR SHALL ASSIGN AN ON-THE-JOB FULL-TIME FOREMAN WHO HAS ALL REQUIRED PROVINCIAL CERTIFICATES. ALL EMPLOYEES WORKING ON SITE MUST HOLD VALID CERTIFICATIONS.

1.8 - WARRANTY

- 1 THE EQUIPMENT AND INSTALLATION SHALL BE UNDER FULL LABOUR AND MATERIAL WARRANTY FOR A PERIOD OF ONE YEAR FROM CERTIFICATION.

1.9 - CERTIFICATION

- 1 CONTRACTOR'S MATERIAL AND TEST CERTIFICATES FOR ABOVEGROUND PIPING FOR EACH SYSTEM (ZONE) ARE TO BE COMPLETED IN ACCORDANCE WITH NFPA 13.
- 2 CERTIFICATION DATE SHALL BE AS POSTED ON CERTIFICATES.

1.10 - DESIGN APPROACH

- 1 SPRINKLER ADDITION OR RELOCATION IS TO MEET THE SPACING REQUIREMENTS OF NFPA 13.
- 2 WHERE SPRINKLERS ARE ADDED, THE EXISTING PIPE SCHEDULE IS TO BE MAINTAINED.

PART 2 - PRODUCTS

2.1 - SPRINKLERS

- 1 ALL SPRINKLERS SHALL BE OF ONE MANUFACTURER AND BE ULC LISTED.
- 2 QUICK RESPONSE SPRINKLERS THROUGHOUT TO MATCH THE CHARACTERISTICS AS FOLLOWS:
 - 1 UPRIGHTS, PENDENTS, SIDEWALL, AND DRY TYPES.
 - 2 K FACTOR TO MATCH EXISTING SPRINKLER.
 - 3 STANDARD OR EXTENDED COVERAGE TO MATCH EXISTING.
 - 4 TEMPERATURE RATING PER NFPA 13 REQUIREMENTS.
 - 5 BRASS FINISH FOR UPRIGHTS AND PENDENTS, CHROME FINISH FOR SEMI-RECESSED PENDENTS.
 - 6 CORROSION RESISTANT FINISH IN AREAS OF HIGH HUMIDITY (i.e. WASHROOMS, SHOWER ROOMS, KITCHENS).
 - 7 CHROME FINISH FOR ESCUTCHEON CUPS.
- 3 ACCEPTABLE PRODUCTS: VICTAULIC, RELIABLE, TYCO, AND VIKING.

2.2 - PIPING AND FITTINGS

- 1 PIPING SHALL SATISFY THE FOLLOWING CRITERIA:
 - 1 STEEL PIPE SHALL BE OF THE TYPE TESTED FOR SPRINKLER USE AS PER NFPA 13 AND BE STAMPED ACCORDINGLY (ALL SECTIONS). PIPE TO BE MANUFACTURED IN CANADA OR THE UNITED STATES. ALL PIPE MUST BE STORED INSIDE PRIOR TO INSTALLATION AND HAVE ZERO CORROSION.
 - 2 CONCEALED PIPE SHALL HAVE RED AND WHITE DECALS INDICATING SPRINKLER PIPING EVERY 3m ALONG MAINS AND RISERS. BRADY TYPE OR EQUIVALENT.
 - 3 SCHEDULE 10 BLACK STEEL PIPE 65mm OR OVER.
 - 4 SCHEDULE 40 BLACK STEEL PIPE 50mm OR SMALLER.
 - 5 SCHEDULE 40 GALVANIZED PIPING FOR PIPE PENETRATING EXTERIOR WALLS. GALVANIZED PIPE SHALL BE DIPPED AT THE FACTORY.
 - 6 ACCEPTABLE PRODUCTS: BULL MOOSE, ALLIED, WHEATLAND, NOVA, AND YOUNGSTOWN.
- 2 FITTINGS SHALL SATISFY THE FOLLOWING CRITERIA:
 - 1 PIPING 65mm AND OVER TO BE GROOVED.
 - 2 PIPING 50mm AND SMALLER TO BE THREADED OR GROOVED.
 - 3 FITTINGS ARE TO WITHSTAND 12.07 BAR WORKING PRESSURE.
 - 4 FITTINGS SHALL BE THE TYPE TESTED FOR SPRINKLER USE AS PER NFPA 13. EACH INDIVIDUAL FITTING IS TO BE COMPLETE WITH A ULC MARKING, BE STORED INSIDE PRIOR TO INSTALLATION, AND HAVE ZERO CORROSION.
 - 5 ACCEPTABLE PRODUCTS (GROOVED): VICTAULIC, SHURJOINT, AND TYCO.
 - 6 ACCEPTABLE PRODUCTS (SCREWED): WARD, BML, AND ANVIL STAR.
 - 7 ONE MANUFACTURER TO BE USED FOR EACH TYPE (GROOVED AND SCREWED) OF FITTING.
- 3 FLANGE BOLTS SHALL BE SQUARE OR HEX-HEAD BOLTS WITH HEAVY DUTY HEX NUTS TO ASTM A307-82a.
- 4 FLANGE GASKETS SHALL BE 1.6 mm THICK PLAIN OR CLOTH INSERTED RED RUBBER TO ASME/ANSI B16.20-2012 AND ASME/ANSI B16.21-2016.
- 5 TIE RODS SHALL BE MINIMUM 16 mm.
- 6 NO SITE WELDING.
- 7 EXPOSED HANGERS SHALL HAVE COLLARS/PLATES AT CEILING.

2.3 - PIPE HANGERS

- 1 PIPING SHALL BE SUPPORTED BY HANGERS AS PER NFPA 13.
- 2 ACCEPTABLE PRODUCTS: TOLCE, ERICO, AND ANVIL.

2.4 - SPRINKLER HEAD GUARDS

- 1 ULC LISTED FOR USE WITH INSTALLED SPRINKLERS.
- 2 ACCEPTABLE PRODUCT: VICTAULIC, RELIABLE, TYCO, AND VIKING.

2.5 - SPRINKLER HEAD CABINET

- 1 SIZED TO ACCOMMODATE NUMBER OF SPARE SPRINKLERS REQUIRED IN ACCORDANCE WITH NFPA 13.
- 2 COMPLETE WITH A SPARE SPRINKLER WRENCH.
- 4 ACCEPTABLE PRODUCT: VICTAULIC, RELIABLE, TYCO, VIKING, AND LYNCAR.

PART 3 - EXECUTION

3.1 - APPROVALS

- 1 WORKING (SHOP) DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO ANY ORDERING OF MATERIAL OR SITE WORK.
- 2 THE CONTRACTOR SHALL REVIEW ALL CHANGES, CLARIFICATIONS, AND/OR SCOPE MODIFICATIONS WITH THE ENGINEER PRIOR TO PROCEEDING.
- 3 CONSTRUCTION FIRE SAFETY PLAN IS TO BE REVIEWED BY THE ENGINEER AND THE OWNER PRIOR TO SUBMISSION TO THE AHJ FOR THEIR APPROVAL.
- 4 APPROVAL OF CONSTRUCTION FIRE SAFETY PLAN REQUIRED PRIOR TO INITIATION OF SITE WORK.

3.2 - SITE VISIT REPORTS

- 1 SITE VISIT REPORTS AS ISSUED BY THE ENGINEER ARE TO BE SIGNED-OFF (BY ITEM) BY THE FOREMAN WHEN THE DEFICIENCY IS RECTIFIED. REPORTS ARE TO BE ISSUED, WITH SIGNATURES AND SUMMARY OF HOW EACH DEFICIENCY WAS CORRECTED, TO THE ENGINEER UPON COMPLETION.
- 2 THE REVIEW AND ACCEPTANCE OF THE SIGNED-OFF REPORTS IS TO THE DISCRETION OF THE ENGINEER.

3.3 - INSTALLATION

- 1 ALL COMPONENTS TO BE INSTALLED AS PER THE SHOP DRAWINGS, THESE SPECIFICATIONS, AND THE MANUFACTURER'S RECOMMENDATIONS.
- 2 INSTALL GUARDS ON ALL SPRINKLERS WHERE MECHANICAL DAMAGED IS POSSIBLE.
- 3 INSTALL HIGH TEMPERATURE CLASSIFICATION SPRINKLER HEADS WHERE LOCATED WITHIN 2134 mm OF A UNIT HEATER IN ACCORDANCE WITH NFPA 13.
- 4 INSTALL A SPARE SPRINKLER CABINET AT THE VALVE HEADER.
- 5 THE SYSTEMS SHALL NOT BE DRAINED AND REFILLED MORE THAN 2 TIMES DURING THE COURSE OF THIS WORK, UNLESS REQUIRED TO ADDRESS LEAKS.
- 6 SYSTEMS ARE TO BE LEFT IN OPERABLE CONDITION AT THE END OF EACH WORKING DAY SUCH THAT THEY CAN BE MANUALLY ACTIVATED AS NEEDED BY THE ZONE CONTROL VALVE. OPEN OUTLETS ARE NOT PERMITTED.
- 7 WHERE SPRINKLERS ARE ADDED OR RELOCATED, THIS CONTRACTOR IS RESPONSIBLE TO CUT/PATCH/PAINT CEILINGS, OR REMOVAL AND REINSTALLATION OF SUSPENDED CEILING TILES, AS REQUIRED. PRIOR TO START OF THIS WORK, CONTRACTOR IS TO COORDINATE WITH THE OWNER IDENTIFYING EXTENT OF RENOVATIONS REQUIRED FOR EACH ADDITION/RELOCATION OF SPRINKLERS.

3.4 - TESTING

- 1 THE CONTRACTOR SHALL SUBJECT ALL SYSTEM COMPONENTS TO A HYDROSTATIC TESTING AT SYSTEM PRESSURE AS PER THE REQUIREMENTS OF NFPA 13 WITHIN 7 DAYS OF THE START OF ANY WORK AT THE SITE. TEST IS TO BE WITNESSED BY THE OWNER (OR THEIR REPRESENTATIVE) AND TEST REPORTS FORWARDED TO THE ENGINEER A MINIMUM OF TWO WORKING DAYS BEFORE WORK STARTS.
- 2 THE CONTRACTOR SHALL SUBJECT ALL SYSTEM COMPONENTS TO HYDROSTATIC TESTING AT SYSTEM PRESSURE AS PER THE REQUIREMENTS OF NFPA 13 AT THE INSTALLATION COMPLETION. REPAIR ALL LEAKS AND DEFICIENCIES THAT ARE NOTED DURING THE TESTS.
- 3 THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOUR FOR ALL REQUIRED TESTING OF RETROFITTED SYSTEMS AS REQUIRED.

3.5 - DEMOLITION

- 1 DISPOSE OF ALL DEMOLISHED MATERIALS OFF SITE IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT REGULATIONS.

3.6 - FIRE WATCH

- 1 THE CONTRACTOR SHALL PROVIDE A DEDICATED FIRE WATCH IN CONFORMANCE WITH THE NFC WHILE THE SPRINKLER SYSTEMS ARE NOT OPERATIONAL DURING CONSTRUCTION. FIRE WATCH PROCEDURES SHALL BE INCLUDED IN THE CONSTRUCTION FIRE SAFETY PLAN.
- 2 THE CONTRACTOR IS RESPONSIBLE FOR ALL IMPAIRMENT PROCEDURES OUTLINED IN THE NFC AND THE APPROVED CONSTRUCTION FIRE SAFETY PLAN. PLEASE NOTE THAT A FIRE WATCH ON ITS OWN MAY NOT BE CONSIDERED ADEQUATE TO THE AHJ DEPENDING ON THE EXTENT AND DURATION OF IMPAIRMENT. CONTRACTOR IS RESPONSIBLE TO NEGOTIATE APPROPRIATE IMPAIRMENT PROCEDURES WITH THE OWNER AND AHJ.

3.7 - ACCESS EQUIPMENT

- 1 THE TRADE CONTRACTOR IS RESPONSIBLE FOR PROVIDING LIFT(S) AND EQUIPMENT REQUIRED FOR ACCESSING SPRINKLERS AT HEIGHT.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF PRINCE EDWARD ISLAND
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Project Title:
**Fire Protection Upgrades
 Queen Charlotte Intermediate
 School, Charlottetown, PE**

Drawing Title:
**Upper Level Floor Plan
 and Project Specifications**

Scale:	1:250	Design By:	SB/RF
Drawn By:	HR	Date:	MAY 17, 2023
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