

issued or revised
émis ou révisé

1	Issued for tender	April 16 2018
no.	description	date

project
projet

**NCC Building
Fire Protection Upgrade**

drawing
dessin

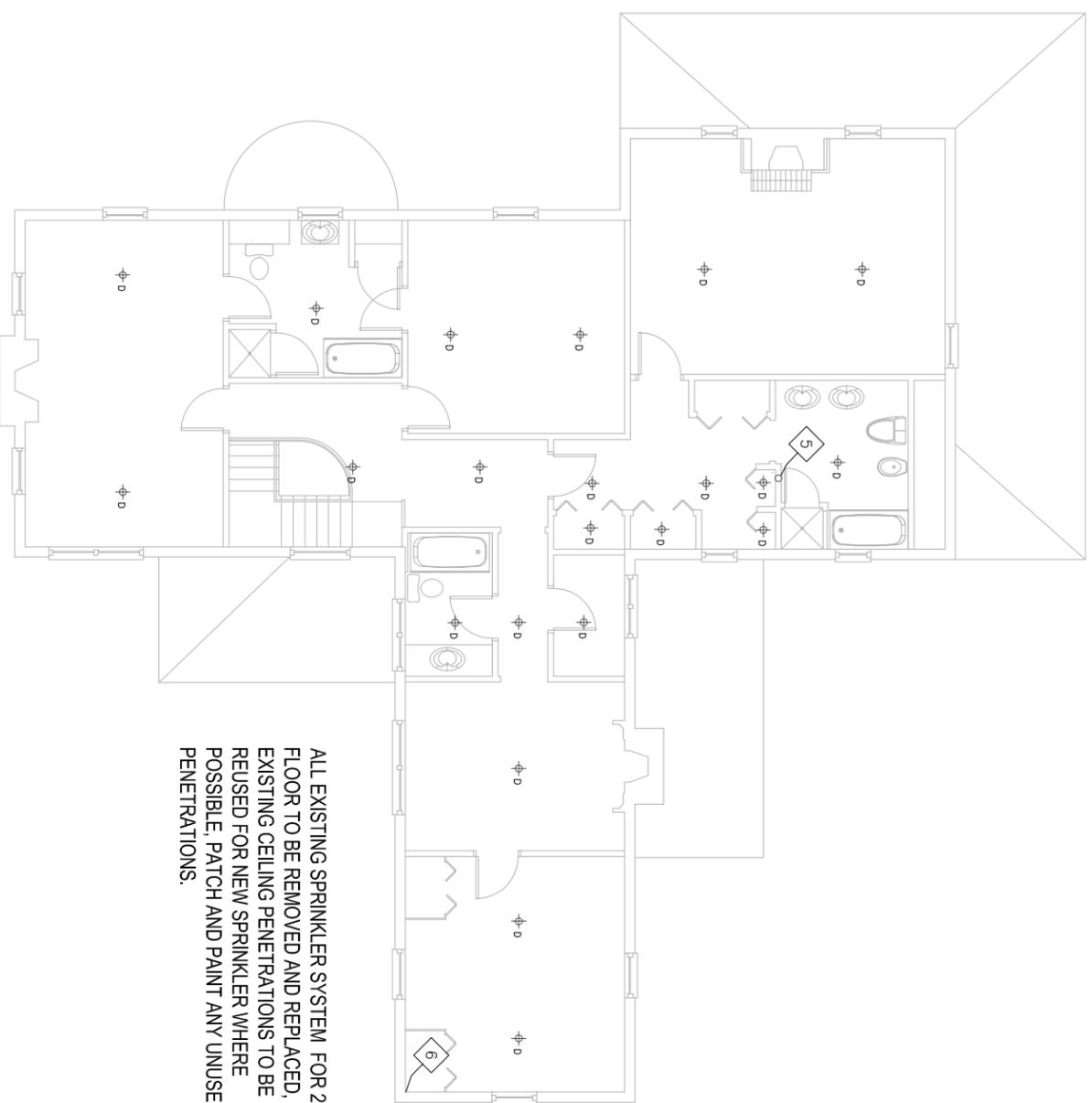
SECOND FLOOR PLAN

approved by approuvé par	A.B.
designed by conçu par	A.B.
drawn by dessiné par	A.B.
date	2018/03/28
scale	1:125

NCC project no.
no. du projet de la CCN

sheet no.
no. de la feuille

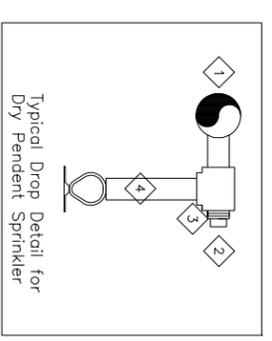
RD- FP-2 e



ALL EXISTING SPRINKLER SYSTEM FOR 2nd.
FLOOR TO BE REMOVED AND REPLACED,
EXISTING CEILING PENETRATIONS TO BE
REUSED FOR NEW SPRINKLER WHERE
POSSIBLE. PATCH AND PAINT ANY UNUSED
PENETRATIONS.

DRAWING NOTES:

1. TO DRY SYSTEM.
2. RUN OUTLET PLUG.
3. SPRINKLER FITTING AS REQUIRED BY NFPA FOR DRY PENDENT SPRINKLER.
4. DRY SPRINKLER.
5. APPROXIMATE LOCATION OF SPRINKLER RISER TO FEED ATTIC.
6. TO DRY PIPE SYSTEM TEST VALVE COORDINATE EXACT LOCATION ON SITE.



LEGEND

ITEM	DESCRIPTION
⊕ D	DRY PENDANT SPRINKLER - WHITE SPRINKLER AND ESCUTCHEON
N	SWING CHECK VALVE
	BUTTERFLY VALVE
⊕	OUTSIDE SCREW AND YOKE VALVE (OS&Y)
⊗	AUXILIARY VALVE
◆	DRY PIPE VALVE
⊗	RELIEF VALVE
⊕	NEW FIRE PUMP

DRY PIPE SPRINKLER SYSTEM & FIRE PUMP REPLACEMENT

PUMP AND DRY PIPE SPRINKLER SYSTEMS

- All work to be completed in accordance to the requirements of the 2013 edition of NFPA 13D, NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2013 Edition, Underwriters' Laboratories of Canada (ULC)
- The contractor is responsible for all required shutdowns and/or bypasses of any fire protection systems which may be affected by this project.
- Where draining of any fire protection system is required, the contractor shall be responsible for draining, refilling and ensuring that there are no leaks on the system once returned to normal working pressure.
- All fire protection systems must be returned to their normal operating condition upon completion and at the end of each work shift.
- Contractor to prepare and submit:
 - Hydraulic calculation for new second floor sprinkler system prior to the commencement of the work. Hydraulic calculation must be reviewed and approved (sealed) by a licensed professional Engineer in the province of Quebec.
 - Design drawings for new attic sprinkler system prior to the commencement of work. Sprinkler layout to reflect existing system. Design drawings must be reviewed and approved (sealed) by a licensed professional Engineer in the province of Quebec.
 - Shop drawings and product data sheets for all components installed on the sprinkler system. Delete information not applicable to the project from the shop drawings.
 - Design Criteria: Design and install systems in accordance with NFPA 13D, manufacturer specification and as indicated on drawing.
- Operation and Maintenance Data: submit operation and maintenance data for all equipment for incorporation into manual. Operation and maintenance manual approved by, and final copies deposited with, Consultant before final inspection data to include.
 - Control schematics for systems including environmental controls.
 - Description of systems and their controls.
 - Description of operation of systems at various loads together with reset schedules and seasonal variances.
 - Operation instruction for systems and component.
 - Description of actions to be taken in event of equipment failure.
 - Valves schedule and flow diagram.
 - Serviceing, maintenance, operation and trouble-shooting instructions for each item of equipment.
 - Equipment manufacturer's performance datasheets with point of operation as left after commissioning is complete.
 - Equipment performance verification test results.
 - Special performance data as specified.
 - Submit 2 copies of draft Operation and Maintenance Manual to Consultant for approval. Submission of individual data will not be accepted unless directed by Consultant.
 - Make changes as required and re-submit as directed by Consultant.
- Products:
 - Pipe: Ferrous, schedule 40, threaded to NFPA 13D.
 - Fittings: ULC listed threaded fittings for fire protection service and according to manufacturer specification.
 - Sprinklers: ULC listed for residential dry pendent, use Tyco Model TY2235 or approved equivalent
 - Provide proper connection where piping joined to dissimilar metal.
 - Fibreglass Water tanks as per NFPA 13D 2013 - 5.1.3; & 6.1.2
- Fire Pump:
 - ULC, CSA listed and labelled horizontal shaft centrifugal fire pump and controller.
 - Driver: electric totally enclosed motor, starting equipment and controls 240 volts.
 - Materials and construction: to NFPA 20.
 - Capacity: to satisfy fire protection system requirements and NFPA:
 - Flow rate: 3 L/s.
 - Pressure: 275 kPa.
 - NPSH: 150 kPa.
 - Speed: 1800 r/min.
 - Accessories to NFPA 20 requirements and in addition:
 - Audible and visual suction side alarm.
 - OS&Y valves on suction and shut off valves on discharge, electrically supervised.
 - Anchor bolts and templates:
 - Size anchor bolts to withstand seismic zone 4 acceleration and velocity forces.
- Installation:
 - Install system in accordance to the requirements of NFPA 13D and NFPA 20.
 - Install system as per manufacturer's instructions and reviewed shop drawings.
 - Install wiring in accordance with manufacturer's instructions and applicable codes.
 - Existing low point drains and test locations shall be reused. Where low points occur in system as part of installation, an appropriate low point drain (drum drip) shall be installed.
- Testing:
 - Testing to be conducted per NFPA 13D and NFPA 20.
 - Field test each fire pump, driver and controllers in accordance with NFPA 20.
 - Verification of proper installation, system initiation, adjustment and fine tuning.
 - Verification of the sequence of operations and alarm systems.
 - Testing to be witnessed by authority having jurisdiction.
 - Develop, with Consultant assistance, detailed instructions for O & M installation
 - Sprinkler system shall be air tested at 276 kPa (40 psi) with a maximum pressure loss of 10 kPa for a minimum duration of 24 hours.
 - Following successful air test, sprinkler system shall be hydrostatically tested at 1378 kPa (200 psi) for a minimum duration of 2 hours.
 - Testing to be witnessed by the authority having jurisdiction. Notify engineer 48 hours prior to testing.
 - Contractor to provide testing certificate within 48 hours of successful testing.

DOMESTIC WATER PIPING

- Reference:
 - American Society of Mechanical Engineers International (ASME) ASME B16.15-2013, Cast Bronze Threaded Fittings, Classes 125 and 250.
 - ASME B16.18-2012, Cast Copper Alloy Solder Joint Pressure Fittings.
 - ASME B16.22-2013, Wrought Copper and Copper Alloy Solder Joint Pressure
- Fittings
 - ASME B16.24-2011, Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500.
 - ASTM International Inc.
 - ASTM A307-12, Standard Specification for Carbon Steel Bolts and Studs, ASTM B88M-09, Standard Specification for Seamless Copper Water Tube American Water Works Association (AWWA)
 - AWWA C111/A21.11-12, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- Product Data:
 - Provide manufacturer's printed product literature and datasheets for insulation and adhesives, and include product characteristics, performance criteria, physical size, finish and limitations.



Canada



300-2611 QUEENSWAY DRIVE
OTTAWA ONTARIO CANADA K2B 8K2
TEL.: 1-613-829-2800 | FAX: 1-613-829-8299 | WWW.WSP.COM
PROJECT #:xxx-

Issued or revised
émis ou révisé

no.	description	date
1	Issued for tender	April 16 2018

project
projet

NCC Building Fire Protection Upgrade

drawing
dessin

NOTES AND SPECIFICATIONS

approved by approuvé par	A. B.	sheet no. feuille	
designed by conçu par	A. B.	scale échelle	NTS
drawn by dessiné par	A. B.		
date	2018/03/28		

NCC project no.
no. du projet de la CCN

RD- **FP-3 e**