TOWN OF LUNENBURG
RFP #TOL2021028

REQUEST FOR PROPOSALS
Town Hall Exterior Restoration

Proposals will be received no later than:
2:00 p.m. LOCAL TIME
January 13, 2022

Addressed to:
Katie MacMillan, BBA
Business Coordinator
Town of Lunenburg
119 Cumberland Street
Lunenburg, NS B0J 2C0

TABLE OF CONTENTS

1.0 GENERAL TERMS AND CONDITIONS

Section 1 of this proposal document sets out a summary of requirements and outlines the general terms and conditions. The Town of Lunenburg shall be referred to as the "Town" throughout this document.

1.1 Purpose

The Town is seeking proposals regarding the completion of an exterior condition assessment of the Lunenburg Town Hall building and the drafting of tender documents for the exterior work of same as further specified within this Request for Proposal (RFP).

This RFP sets out the instructions for submitting proposals and procedures and criteria by which the successful Proponent may be evaluated, subject to the Town's overriding discretion to determine what is in its best overall interests.

1.2 Proposal Submissions

Any change notices, appendices and addenda issued for this RFP shall be considered part of this proposal document. The proposal is to be submitted, clearly marked with **"Town Hall Restoration RFP"** and proposal document number **TOL2021028**, to Katie MacMillan, Business Coordinator at 119 Cumberland Street, Lunenburg, NS, B0J 2C0 before the closing time on the closing date (Closing Time). Proponents must submit one (1) PDF copy via email to purchasing@townoflunenburg.ca or on a USB drive. Erasure, overwriting or strikeouts must be initialed by the person signing on behalf of the Proponent. Proposals will not be accepted after the Closing Time. The Town shall have the right in its absolute and unfettered discretion to determine whether a proposal has been received prior to the Closing Time. Proposal prices must remain open and available for acceptance by the Town for 90 days after the Closing Time. All proposals shall become the property of the Town of Lunenburg. It is the responsibility of each Proponent to submit all required documents as outlined in this RFP. Failure to quote on all options set out may disqualify your proposal.

1.3 Irrevocable Offer

The Proponent hereby acknowledges that offers contained within your response to this RFP shall remain open for acceptance by the Town of Lunenburg for a period of not less than ninety (90) days from the Closing Time specified in Section 1.6. Proponents may not make modifications to their Proposals after the Closing Time.

1.4 Proposal Costs

The Proponent shall be solely and fully responsible for all costs associated with the development, preparation, transmittal, submission of proposal, and any work performed prior to official appointment by the Town of Lunenburg.

1.5 Municipal Contact for RFP

It shall be the Proponent's responsibility to clarify any points in question with the Town of Lunenburg prior to submitting the proposal. Deadline for all inquiries is January 7, 2022. Inquiries regarding the specifications of the RFP and the RFP process should be directed to:

Name: Katie MacMillan
Title: Business Coordinator
Email Address: purchasing@townoflunenburg.ca

If a Proponent discovers any inconsistency, discrepancy, ambiguity, error, or omission in this Request for Proposal, they must notify the Town of Lunenburg immediately in writing.

Any revision to this Request for Proposal will be issued as an addendum to all known potential Proponents.

Please check the Town website townoflunenburg.ca/purchasing.html to determine if any addendums have been issued prior to the submission deadline.

1.6 Opening

Proposals will only be received by:

Name: Katie MacMillan
Title: Business Coordinator
Email Address: purchasing@townoflunenburg.ca

One (1) PDF copy of your proposal must be received by email prior to **2:00 p.m.** local time, **January 13, 2022**. Proposals will be signed by an official authorized to bind the Proponents will provide the name(s), title(s), address, and telephone number of the individual(s) to be contacted during the evaluation process. Proposals received later than the specified Closing Time may be returned unopened to the Proponent.

There will not be a public opening for this RFP. As this is a proposal document for which a number of criteria will be evaluated, only the names of the Proponents who have submitted a proposal will be identified after the opening, upon request.

1.7 Selection Process

Selection – Subject to Section 1.9 of this RFP, the Town will not necessarily accept the lowest price or any proposal. Any implication that the lowest price or any proposal will be accepted is hereby expressly negated. The successful Proponent(s) will be selected based upon evaluation criteria developed by the Town which in its sole discretion will determine the manner in which each response to this RFP meets the evaluation criteria. The proposal may be awarded to one Proponent only or more as the Town determines.

Evaluation Criteria – Subject to Section 1.9 of this RFP, each response to this RFP will be evaluated by the Town to determine the degree to which it responds to the requirements as set out herein. Because this is an RFP other factors in addition to price will be considered when submissions are evaluated.

Please indicate any requirements not met in your proposal with a brief description and reasons therefor.

The Town will read, review, and evaluate each proposal. The below evaluation criteria table should be used as a reference only. The Town may in its sole and absolute discretion use or alter the below criteria or use some other evaluation criteria in its entirety.

Evaluation Criteria	**Percentage**
Price – value for money	**25%**
Ability to complete all RFP components	**15%**
Demonstrated understanding of project, work plan, methodology and schedule	**25%**
Project timeline	**10%**
Knowledge, experience, and technical competence of the Proponent and the proposed project team members as well as their ability to address the project scope	**25%**
TOTAL	**100%**

1.8 Modification and Withdrawal of Proposals

Proposal prices must remain open and available for acceptance by the Town for 90 days after the Closing Time. Proponents may not make modifications to their proposals after this. Proponents will not have the right to change conditions, terms, or prices of the proposal once the proposal has been submitted in writing to the Town. All proposals shall become the Town's property. It is the responsibility of each Proponent to submit all required documents as outlined in this RFP.

1.9 Acceptance and/or Rejection of Proposals and Reservation of Rights

The Town is not under any obligation to award a contract, and reserves the right to terminate this RFP at any time for any reason, and to withdraw from discussions with all or any of the Proponents who have responded. The receipt and opening of a proposal does not constitute acceptance of any proposal.

The Town reserves the right to reject all or any proposals, and to not necessarily accept the lowest proposal. The Town may accept any proposal that may be considered in the best interests of the Town in its sole and absolute discretion. The Town also reserves the right in its sole and absolute discretion to waive any formality, informality, or technicality

in any proposal. This includes the right to accept a proposal that is not strictly compliant with the instructions in the RFP document.

The Town reserves the right to negotiate, after the RFP Closing Time, with any Proponent to finalize service arrangements in the best interests of the Town.

The Town shall not be bound by trade or custom in dealing with and/or evaluating the responses to the RFP. The Town reserves the right to interpret any and all aspects of this RFP as may be most favorable to the Town.

Proponents will be deemed to have familiarized themselves with existing conditions and any other conditions which may affect performance of the contract. No plea of ignorance of such conditions as a result of failure to make all necessary examinations will be accepted as a basis for any claims for extra compensation.

Proponents waive any claim against the Town for compensation of any kind whatsoever as a result of its participation in or providing a response to this RFP process, including without limitation any claim for costs of proposal preparation or participation in negotiations, or for loss of anticipated profits, whether based in contract including fundamental breach, tort, equity, breach of any duty, including, but not limited to breach of the duty of fairness, breach of any obligation not to accept non-compliant proposals or any other cause of action whatsoever.

In submitting a proposal, the Proponent has accepted the reservation of rights as set out herein and agrees to be bound by same.

1.10 Governing Law and Jurisdiction

Any contract resulting from this RFP shall be governed by and interpreted in accordance with the laws of the Province of Nova Scotia. Any disputes shall be determined in the courts of Nova Scotia.

1.11 Proposal Form

The attached Proposal Form (3.0) must be completed and submitted with all proposals for consideration. Failure to complete and submit the proposal form could lead to the rejection of the proposal.

1.12 Freedom of Information and Protection of Privacy Act

The Town of Lunenburg is subject to the Municipal Government Act provisions relating to the freedom of information and protection of privacy provisions Freedom of Information and Protection of Privacy Act (FOIPOP) and associated Provincial legislation. Any proposal submitted to the Town may be required to be disclosed publicly if any request is to be made under FOIPOP. All proposals received in response to this RFP will be considered public.

1.13 Insurance Requirements

The successful Proponent shall at its own expense obtain and maintain until the completion of the contract and provide the Town with a Certificate of Insurance providing proof of:

a. Professional Liability insurance covering the work and services described in this Agreement for an amount not less than $2.0 Million per occurrence.
b. Comprehensive General Liability insurance for an amount not less than $2.0 Million per occurrence.
c. Automobile Liability insurance for an amount not less than $2.0 Million covering all vehicles used in any manner in connection with the performance of the work described in this RFP.

1.14 Conflict of Interest

The Proponent warrants that no conflict of interest exists with any Town staff, Council or Committee member regarding their RFP submission or with the Town's evaluation process. Should a conflict of interest exist or arise, the Town at its sole discretion may disqualify the proposal submission and/or contract as applicable.

1.15 Nova Scotia Worker's Compensation

The successful Proponent must be registered and remain in good standing with NS WCB throughout the term of a contract issued pursuant to this RFP.

1.16 Human Rights Act

The successful Proponent shall ensure full observance of the NS Human Rights Act in all dealings related to this project.

1.17 Ownership of Data and Information

All data, other information and all resulting reports and materials prepared by the successful Proponent shall be the exclusive property of the Town who reserves ownership rights to all ideas, plans, concepts, etc.

2.0 SPECIFICATIONS AND REQUIREMENTS

2.1 Background and Overview

The Lunenburg Town Hall is located at 119 Cumberland Street in Lunenburg, Nova Scotia. It was originally built in 1893 to serve as the Town's administrative offices and still houses the Town's Corporate Services Department today.

In 2008 the Town of Lunenburg undertook a Conservation program to undertake restoration work to the exterior of the Town Hall. There was work completed to the East and South sides of the building, leaving the West and North still to be done. The Conservation program document is attached as Schedule "A".

In 2020 EXP engineering completed a snow load assessment of the building as well as a general condition assessment of the roof. There were numerous recommendations as a result of the 2020 EXP report which is attached as Schedule “B”.

The Town would like to plan a fuller scale exterior restoration of the building. Work is required to the main roof, mansard roof, dormers, windows, wooden trim, soffits, gutters, and downspouts as well and the brick siding. The brick is required to be patch re-pointed on the south and east facades and more extensive work will be required on the north and west facades of the building.

Due to budgets and government funding programs, we would like to plan the conservation program to take place over the next 6 years, outlined as follows:

- Year 1 2022-2023 – hire a firm to complete an exterior condition assessment and draft tender documents for the exterior work.
- Year 2 2023-2024 – start exterior work.
- Year 3 2024-2025 – Continue and finish exterior work.
- Year 4 2025-2026 – undertake an architecture firm to complete drawing and tender documents for interior restoration.
- Year 5 2026-2027 – begin interior work.
- Year 6 2027-2028 – complete interior work.

The first step is to hire a firm to complete an exterior building condition assessment and develop an exterior restoration package with complete tender documents. This would guide us into the next two years of the exterior restoration.

2.2 Scope of work

The scope of work for this project is suggested as, but not limited to:

- Complete an exterior building condition assessment.
- Develop detailed measured drawings for exterior work.
- Develop a detailed scope of work and tender documents for exterior work required.
- Prepare a Construction Budget – Prepare an estimate of probable construction cost (Class “C” estimates) to serve as construction budget until more detailed estimate of probable construction cost can be determined. Advise Town accordingly.
- Financial feasibility – Analyze the reasonable probability of the Town’s objectives for the project being reached within the budget allocation and advise on measures to align the project requirements with the budget if in the first instance the expectations are not feasible.

2.3 Expectations

The Town’s expectations are that the successful proponent will complete a building assessment, drawings, and tender documents that will take the Town to the construction phase of this exterior restoration. At the end of the exterior restoration the exterior envelope of Town Hall will be restored and provide roughly a 25-year life expectancy with required maintenance.

3.0 PROPOSAL FORM

NAME OF PROPONENT: _____

Do not include HST in the Amount of Proposal. All the below pricing is to be in Canadian Dollars.

Amount of Proposal…….. $ _____

HST…… $ _____

Total……..... $ _____

Please attach the following additional information:

- Proposed project schedule required to complete the work.
- Two relevant work references and contact phone numbers.
- Description of relevant safety training and work experience including certification.
- Proof of current WCB coverage.
- Certificate of Insurance for $2.0 million General Commercial Liability Insurance.
- Proof of current Construction Safety Nova Scotia Association Certificate of Recognition (COR) Certification, or equivalent.

Mailing Address _____

_____

Phone Number _____

Email Address _____

Signature _____

Print Name & Title _____

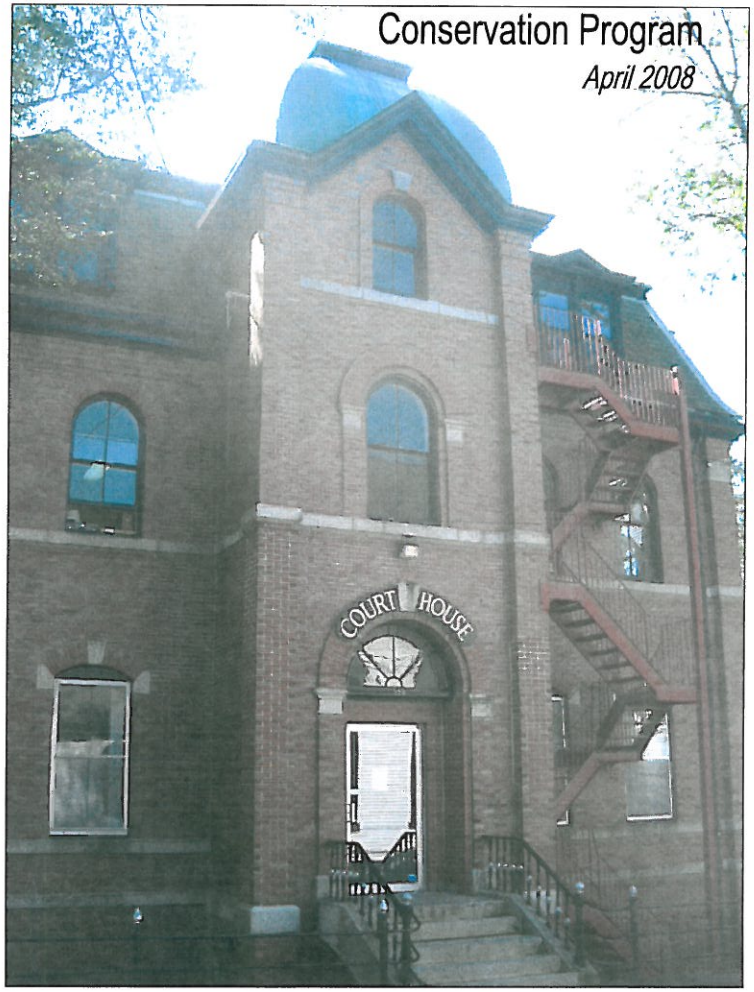
Date _____

Witness _____

Date _____

Details of Proposal – please attach your submission details as required in this RFP.

LUNENBURG TOWN HALL & COURTHOUSE



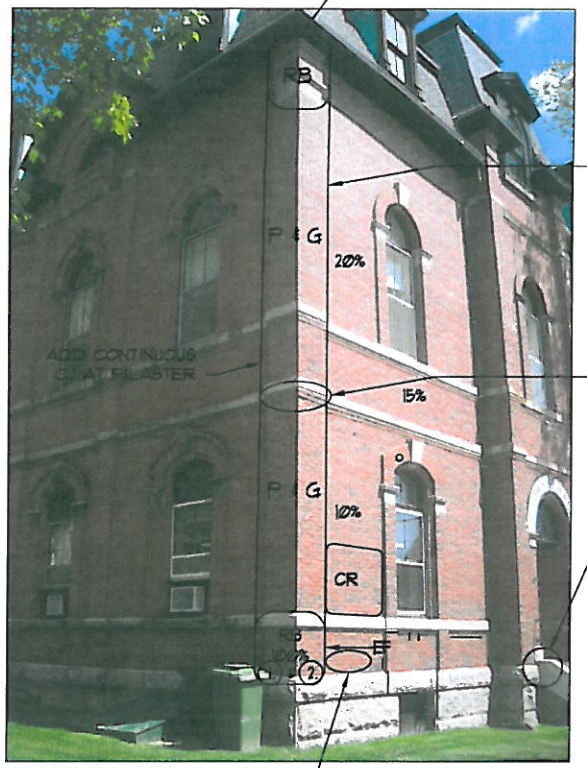
Conservation Program

April 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1496 Lower Water St. Suite 314D
Box 27, Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

TOWN OF LUNENBURG, NOVA SCOTIA



SOUTH WEST CORNER

LEGEND:

B= BIRD REPELLANT SYSTEM
C= CRACK - REMOVE & REPAIR
CR= CRACKED BRICK - REPLACE
CK= CAULK - REMOVE & REPAIR
EF= EFFLORESCENCE
EXF= EXFOLIATED BRICK - REPLACE
FG= FERROUS GROUT - REMOVE & POINT
G= GROUT (UNIT RATE)
P&G= PIN & GROUT
P= POINT
R= RUST
RB= REBUILD
RC= RECONDITION WOODWORK (T&M)

SOUTH ELEVATION

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
SOUTH ELEVATION

Key:

Location:
N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-1

SW CORNER PILASTER
- BEFORE TEST HOLE 1.

SW PILASTER CONSTRUCTION 2.

POOR REBUILT CORBEL ON PILASTER - REBUILD 3.

PILASTER FAILING. 4.

G.F. DUFFUS & CO LTD.
ARCHITECTS

1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

PRINT DATE: APRIL 14 2008

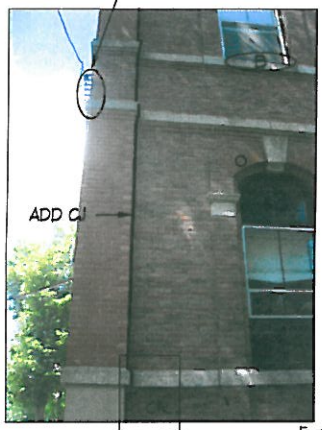
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
SOUTH ELEVATION - PHOTOS

Key:

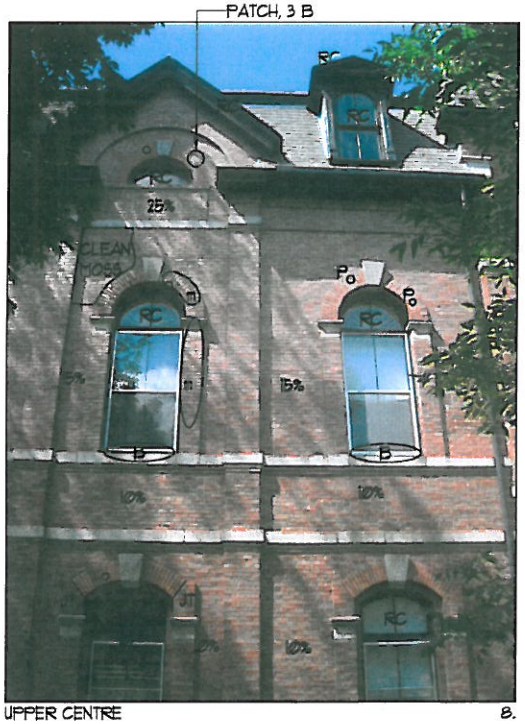
Location:
E
N S
W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-1a

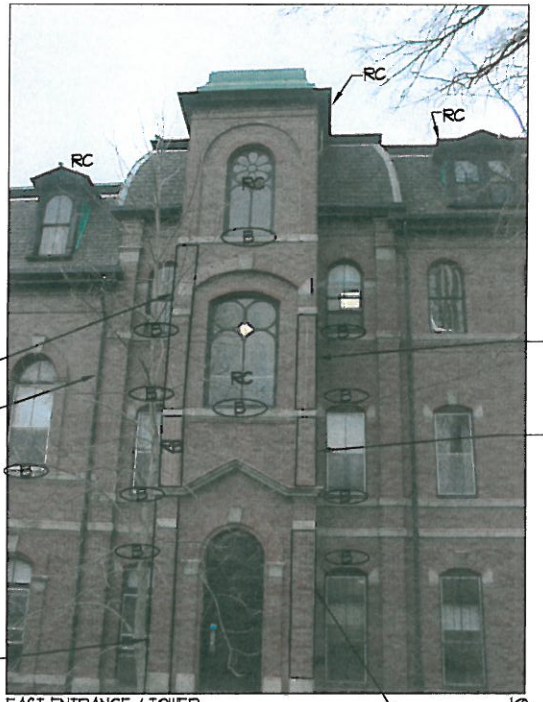


5.

6.



UPPER CENTRE 8.



EAST ENTRANCE / TOWER 10.

SOUTH END OF EAST ELEVATION 7.

LOWER CENTRE 9.

LEGEND:

- B= BIRD REPELLANT SYSTEM
- C= CRACK - REMOVE & REPAIR
- CR= CRACKED BRICK - REPLACE
- CK= CAULK - REMOVE & REPAIR
- EF= EFFLORESCENCE
- EXF= EXFOLIATED BRICK - REPLACE
- FG= FERROUS GROUT - REMOVE & POINT
- G= GROUT (UNIT RATE)
- P&G= PIN & GROUT
- P= POINT
- R= RUST
- RB= REBUILD
- RC= RECONDITION WOODWORK (T&M)

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1495 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
EAST ELEVATION - LHS

Key:

Location:
10 8,9 5,6,7
E
N S
W

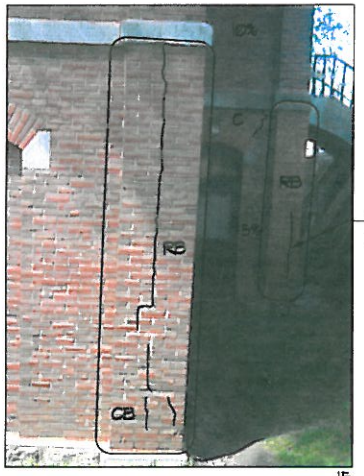
Date: APRIL 2008
Job no. 0805
Dwg. no. A-2

EAST ENTRANCE - SE CORNER 11.

EAST ENTRANCE TOWER - NE CORNER - UPPER 12.

EAST ENTRANCE TOWER - NE CORNER - LOWER 13.

NORTH EAST CORNER - TOP 14.



NORTH EAST CORNER -BOTTOM 15.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1495 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

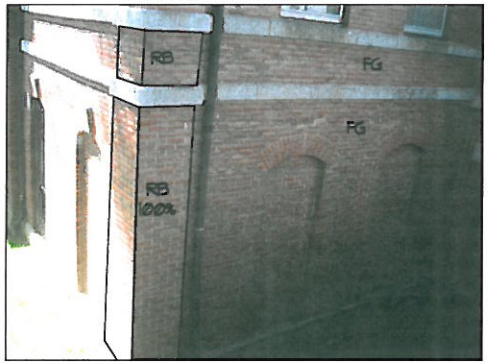
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
EAST ELEVATION - RHS

Key:

Location:
12,13 ▲ ▲11
14,15
E
N S
W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-3



LEGEND:

B= BIRD REPELLANT SYSTEM
C= CRACK - REMOVE & REPAIR
CR= CRACKED BRICK - REPLACE
CK= CAULK - REMOVE & REPAIR
EF= EFFLORESCENCE
EXF= EXFOLIATED BRICK - REPLACE
FG= FERROUS GROUT - REMOVE & POINT
G= GROUT (UNIT RATE)
P&G= PIN & GROUT
P= POINT
R= RUST
RB= REBUILD
RC= RECONDITION WOODWORK (T&M)

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R8 902/420-1851
FACSIMILE 902/425-7445

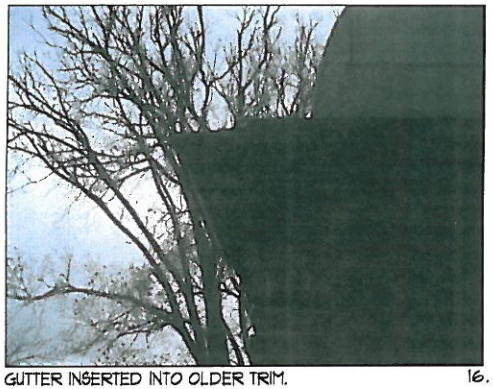
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
NORTH ELEVATION

Key:

Location:

Date: APRIL 2008
Job no. 0805
Dwg. no. A-4



GUTTER INSERTED INTO OLDER TRIM. 16.

COPPER ROOF, MANSARD INTERSECTION. 17.
INSPECT - MAKE REPAIRS (T&M)

STEP FLASHING ROOF/TOWER 18.
LEAD & COPPER

COPPER ON SIDE OF DOMERS, WRONG NAILS 19.
REPAIR / RECONDITION

DOMER - WEATHERING, NEEDS REPAIR 20.
RECONDITION WOODWORK

GUTTER, PAINT FLAKING - REPAINT 21.

GUTTER, PAINT FLAKING - REPAINT 22.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1495 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
NORTH ELEVATION DETAILS
ROOF - PHOTOS

Key:

Location:
E
N S
W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-4a

DETERIORATED TRIM, WIRED GLASS WINDOW - REPLACE/RECONDITON 23.

STRINGER AT LANDING - CORROSION. BLAST AND REPAINT 24.

NO LINTEL AT NEW DOOR - CUT OUT BRICK AND INSTALL GALVANIZED LINTEL. SIZED TO SUIT 25.

BIRD GUANO - REMOVE, BLAST STEEL AND REPAINT 26.

ROTTEN SILL - WIRED GLASS WINDOW. REPALCE / RECONDITION 27.

MOSS BUILD UP UNDER STAIRS. CLEAN / INSPECT. POINT AS REQ'D 28.

POORLY MATCHED REPAIR CUT OUT AND REPOINT 29.

RUST ON STONE BAND COURSE - CLEAN POINT ALL JOINTS ON STONE TRIM - V4H 30.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
NORTH ELEVATION DETAILS
FIRE EXIT - PHOTOS

Key:

Location:

N E S W

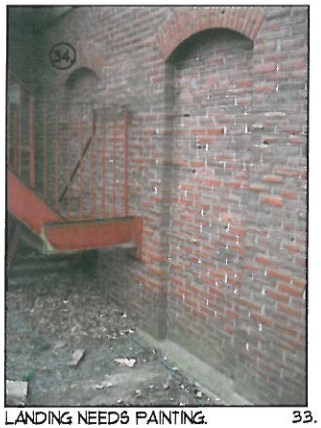
Date: APRIL 2008

Job no. 0805

Dwg. no. A-4b

CORROSION TO FRAMES AND SUPPORTS. 31.
BLAST PRIME AND PAINT, AS PER SPEC.

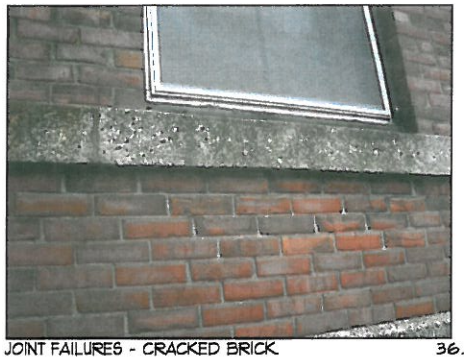
RUST ON RAILING - BLAST PRIME AND PAINT 32.



LANDING NEEDS PAINTING. 33.

MOSS BUILD UP ON JOINTS - 34.
CLEAN AND POINT WHERE REQ'D

MOSS & BAD REPAIRS. 35.
CLEAN AND REPOINT



JOINT FAILURES - CRACKED BRICK 36.

CRACKED BRICK PILASTER 37.
REBUILD

STRESS CRACK, SAME PILASTER 38.
REBUILD

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
NORTH ELEVATION DETAILS
RHS

Key:

Location:
E
N
S
W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-4c

LEGEND:

B= BIRD REPELLANT SYSTEM
C= CRACK - REMOVE & REPAIR
CR= CRACKED BRICK - REPLACE
CK= CAULK - REMOVE & REPAIR
EF= EFFLORESCENCE
EXF=EXFOLIATED BRICK - REPLACE
FG= FERROUS GROUT - REMOVE & POINT
G= GROUT (UNIT RATE)
P&G=PIN & GROUT
P= POINT
R= RUST
RB= REBUILD
RC= RECONDITION WOODWORK (T&M)

NOTES:

1. CUT DRIP IN BOTTOM OF GRANITE BAND/SILL COURSE WHERE PROJECTION IS GREATER THAN 1"
2. PAINT ALL EXPOSED WOODWORK

G.F. DUFFUS & CO LTD.
ARCHITECTS
1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
WEST ELEVATION

Key:

Location:
N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-5

PRINT DATE: APRIL 14 2008

FOR INFORMATION:

SEE DRAWING A-5 FOR SCOPE OF WORK

G.F. DUFFUS & CO LTD.
ARCHITECTS

1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

PRINT DATE: APRIL 14 2008

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
WEST ELEVATION

Key:

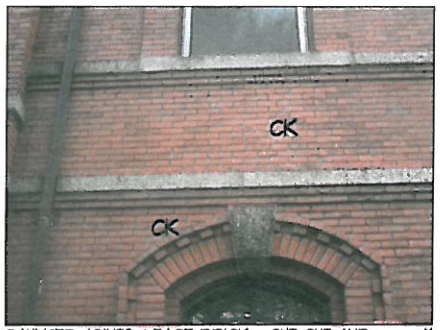
Location:
N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-5a

OPEN SILL JOINT GRANITE - POINT - TYPICAL 39.

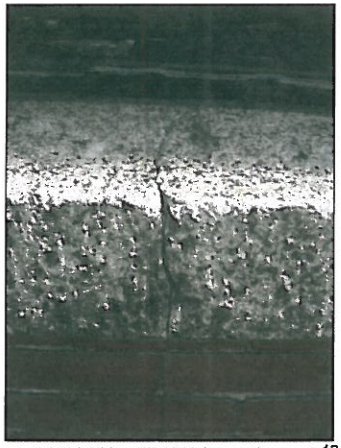
THIS WINDOW (NIC) TO BE MODIFIED TO PROVIDE BARRIER FREE EXIT DOOR

OPEN JOINTS - POINT ALL V&H JOINTS IN GRANITE 40.
(TYPICAL)



CAULKED JOINTS & FACE BRICK - CUT OUT AND POINT: ALL GRANITE JOINTS, V& H TO BE REDONE (TYPICAL) 41.

SOME MISSING BRICKS IN ARCHES - REPAIR 42.
ALL BRICK ARCHES TO BE 100% REPOINTED



CRACK IN SILL DUTCHMAN REPAIR 43.

DAMAGED ORIGINAL BRICK WITH SMALL JOINTS. 44a.
THIS IS DESIRED JOINTING FOR NEW BRICKWORK

ABRADED ORIGINAL BRICK - INSPECT 44b.
POSSIBLY TREAT (T&M)

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1495 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

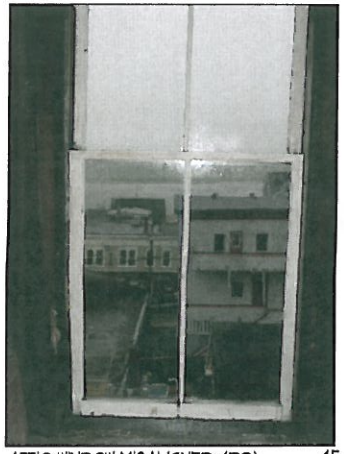
Dwg. title:
WEST ELEVATION DETAILS
BRICKWORK - PHOTOS

Key:

Location:
E
N S
W

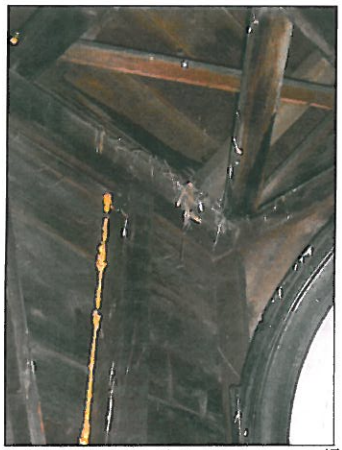
G.F. DUFFUS AND COMPANY LIMITED

Date: APRIL 2008
Job no. 0805
Dwg. no. A-5b



ATTIC WINDOW MISALIGNED. (RC) 45.

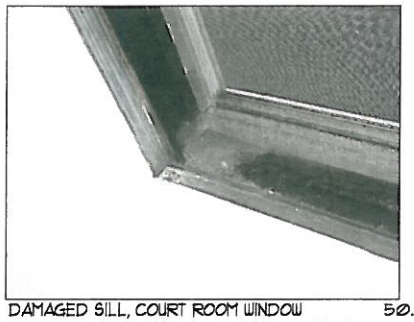
ATTIC - WINDOW TOP SASH DROPPED. (RC) 46.



ATTIC BIRD DROPPINGS / NEST. CLEAN UP 47.

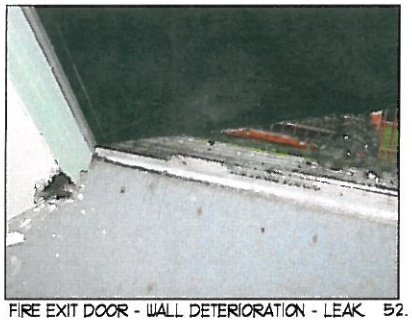
OLD SILL, MISSING PIECE, REPLACE ORIGINAL SASH - STANDARD FOR REPLACEMENT IF REQ'D 48.

OLD SILL, REPAIR BEFORE CLADDING 49.



DAMAGED SILL, COURT ROOM WINDOW REPAIR LEAKS - INSPECT, REPAIR & CAULK 50.

BATHROOM WINDOW, SPIKES IN SILL, REMOVE & REPLACE WITH SPECIFIED BIRD REPELLANT SYSTEM 51.



FIRE EXIT DOOR - WALL DETERIORATION - LEAK 52.

NORTH TOWER WINDOW. (RC) 53.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS

1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

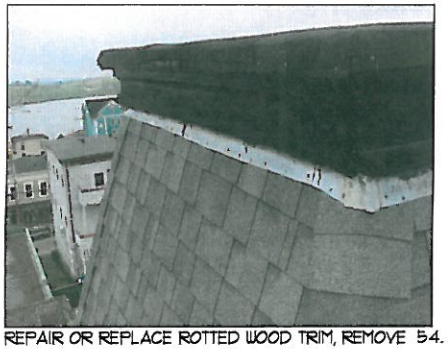
Dwg. title:
INTERIOR DETAILS - ATTIC
WINDOWS/DOORS - PHOTOS

Key:

Location:

N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-6

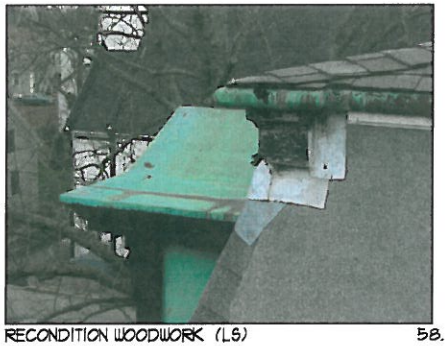


REPAIR OR REPLACE ROTTED WOOD TRIM, REMOVE NAILS ON LEAD & REPLACE WITH STAINLESS OR HOT DIPPED GALVANIZED. 54.

INSPECT COPPER - ADVISE ON REPAIRS 55.
UNDERTAKE AS APPROVED ON (T&M BASIS)
REPLACE ALL NON COPPER NAILS WITH COPPER (LS)

CHIMNEY REPOINT 100% 56.

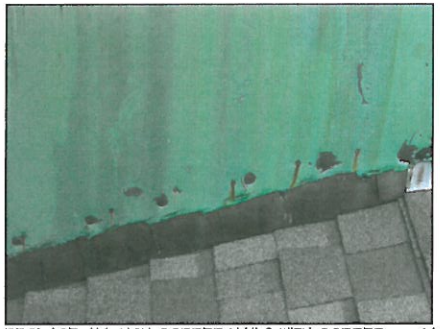
CHIMNEY REPOINT 100% 57.
PRICE # TO TAKE DOWN & REBUILD
WITH RED BRICK TO MATCH BUILDING



RECONDITION WOODWORK (LS) 58.
INSPECT COPPER

DORMER & FIRE EXIT 59.
INSPECT COPPER AS PER ALL COPPER, BLAST AND REPAINT STAIRS WITH SPECIFIED PAINT SYSTEM.

INSPECT COPPER 60.
(SEE NOTES PHOTO 55 THIS PAGE)



REPLACE ALL NON COPPER NAILS WITH COPPER 61.
(LS)

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

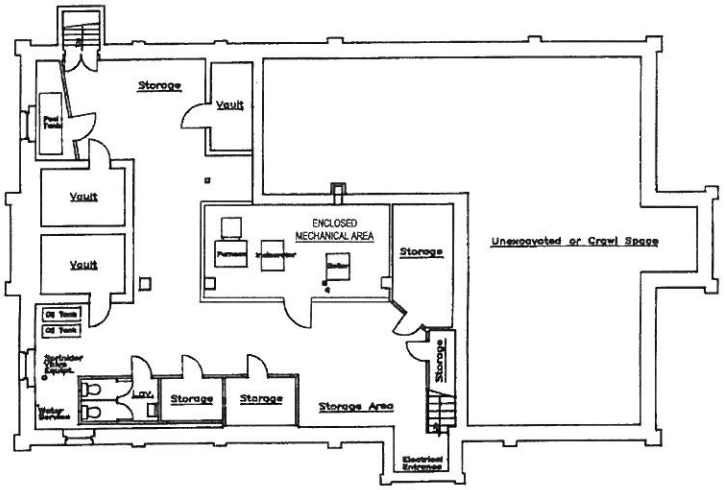
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
ROOF DETAILS
COPPER, TRIMS, & CHIMNEY

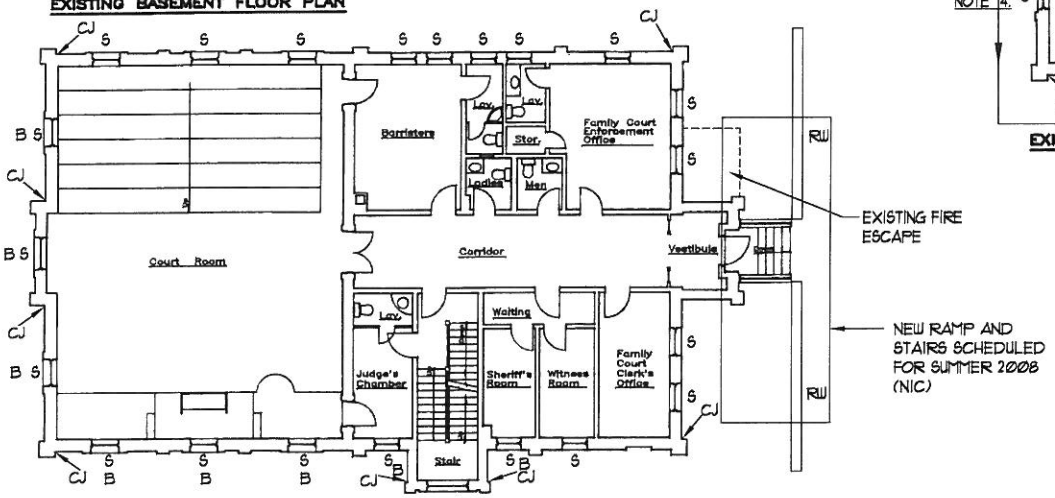
Key:

Location:

Date: APRIL 2008
Job no. 0805
Dwg. no. A-6a

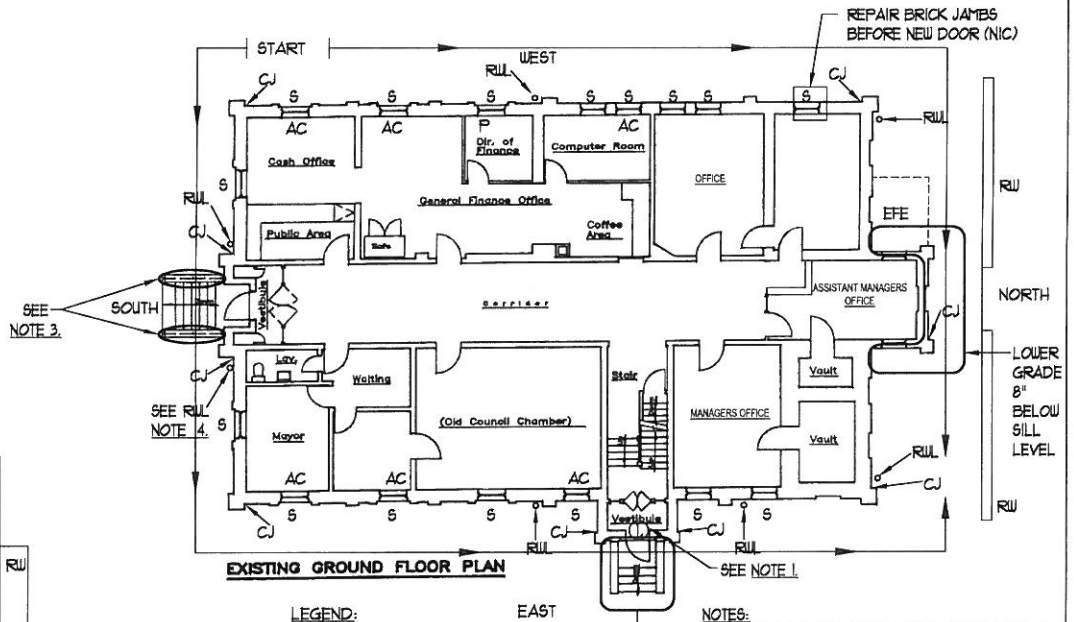


EXISTING BASEMENT FLOOR PLAN



EXISTING FIRST FLOOR PLAN

SITE WORK SCHEDULED FOR SUMMER 2008



EXISTING GROUND FLOOR PLAN

LEGEND:

AC - AIR CONDITIONER IN PANEL
AP - ACCESS PANEL
B - BIRD REPELLANT SYSTEM
C - CRACK IN PLASTER
CJ - CONTROL JOINT
F - FAIR CONDITION
M - MOLD
P - POOR CONDITION
PL - PANEL AT BOTTOM SASH
RC - RECONDITONED WINDOW
RW - RETAINING WALL
RWL - RAIN WATER LEAD
S - STORM WINDOW
V - VINYL WINDOWS
WD - WATER DAMAGED PLASTER (NIC)
WG - WIRED GLASS

NOTES:

1. REPLACE DOOR/INFILL WITH RECONDITIONED ORIGINAL DOOR. PRICE # 1
2. REMOVE AND RESET GRANITE STAIR: ASSUME REQUIRES A STRUCTURAL SLAB ON GRADE. PRICE # 2
3. REMOVE AND RESET GRANITE STRINGERS TO SIDES OF STAIR, RECONDITION AND RESET RAILING. PRICE # 3
4. REMOVE 1 ABS DOWNSPOUTS & PROVIDE 1 NEW 4"ø COPPER DOWNSPOUTS. PRICE # 4

FOR INFORMATION ONLY:

GENERALLY THERE ARE NO INTERIOR REPAIRS IN CONTRACT, UNLESS OTHERWISE NOTED ON DWG. AROUND DOORS AND WINDOWS. THIS IS MAINLY AN EXTERIOR ENVELOPE PROGRAM.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1496 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

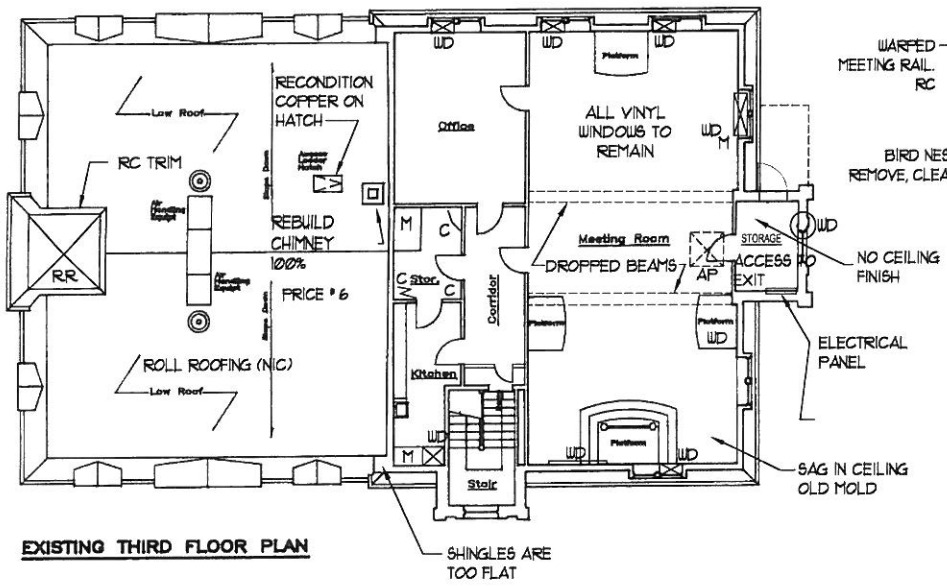
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
EXISTING FLOOR PLANS
BASEMENT, GROUND & FIRST

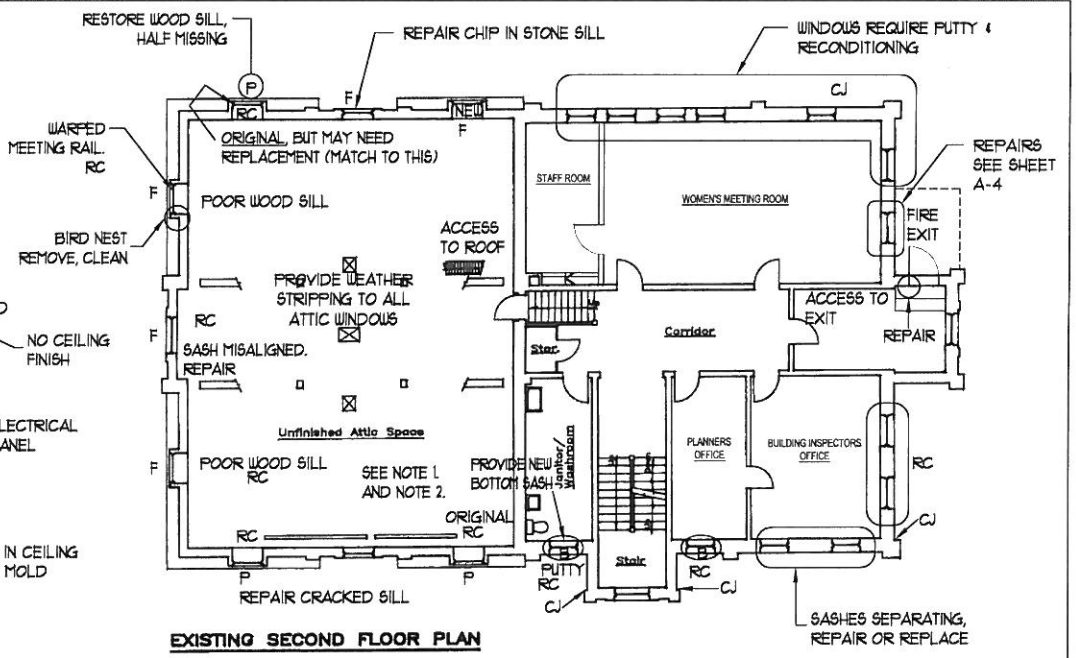
Key:

Location:

Date: APRIL 2008
Job no. 0805
Dwg. no. A-1



EXISTING THIRD FLOOR PLAN



EXISTING SECOND FLOOR PLAN

LEGEND:

AC - AIR CONDITIONER IN PANEL
AP - ACCESS PANEL
B - BIRD REPELLANT SYSTEM
C - CRACK IN PLASTER
CJ - CONTROL JOINT
F - FAIR CONDITION
M - MOLD
P - POOR CONDITION
PL - PANEL AT BOTTOM SASH
RC - RECONDITONED WINDOW
RW - RETAINING WALL
RWL - RAIN WATER LEAD
S - STORM WINDOW
V - VINYL WINDOWS
WD - WATER DAMAGED PLASTER (NIC)
WG - WIRED GLASS

NOTES:

1. ALL SEVEN (7) ROUND CAP WINDOWS TO HAVE WEATHER STRIPPING ADDED,BE RECONDITIONED AND REPAIRED TO FUNCTION PROPERLY AND HAVE NEW (BLACK) ALUMINUM CAPPING OVER REPAIRED, FILLED AND PAINTED SILLS. ALL EXTERIOR WOODWORK TO BE RECONDITIONED (LS)
2. OPTIONAL PRICE #5 PROVIDE: 4 FIXED AND 3 OPERABLE WINDOW SCREEN (BLACK) ALUMINUM STORM WINDOWS TO ATTIC
3. PRICE #6 ROOF TOP CHIMNEY: TAKE DOWN AND REBUILD WITH NEW RED BRICK, IF DEEMED SALVAGABLE WE MAY REPOINT. PRICE #7 TO REPOINT.
4. INCLUDE REMOVAL OF ALL NON COPPER OR STAINLESS NAILS OR SCREWS IN COPPER WORK ON ROOFTOPS/TOWERS, AND REPLACE WITH COPPER STAINLESS. (LS)

FOR INFORMATION ONLY:

GENERALLY THERE ARE NO INTERIOR REPAIRS IN CONTRACT, UNLESS OTHERWISE NOTED ON DWG. AROUND DOORS AND WINDOWS. THIS IS MAINLY AN EXTERIOR ENVELOPE PROGRAM.

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1495 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

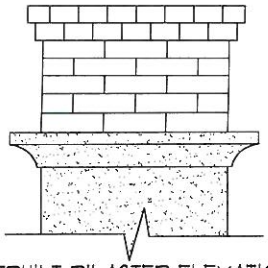
Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
EXISTING FLOOR PLANS
SECOND & THIRD

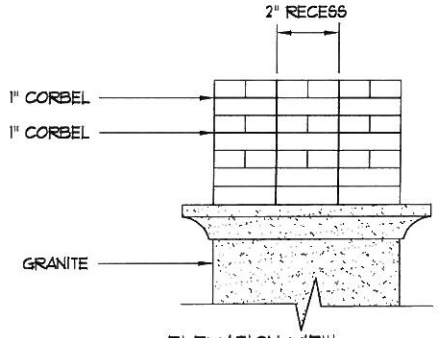
Key:

Location:
N E S W

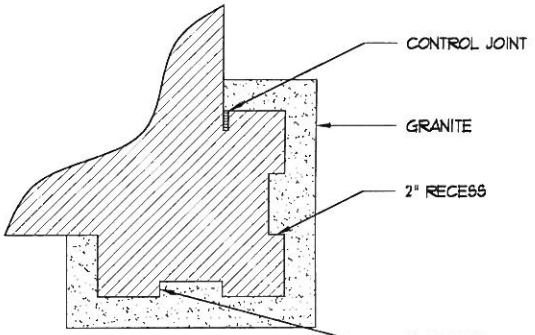
Date: APRIL 2008
Job no. 0805
Dwg. no. A-8



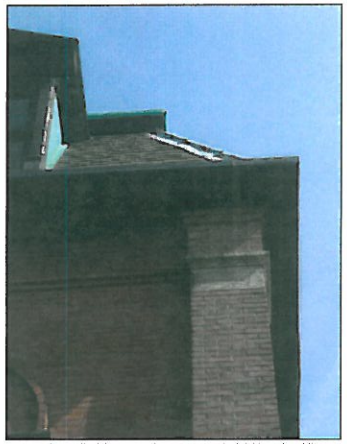
REBUILT PILASTER ELEVATION
SCALE: 3/4" = 1'-0"



ELEVATION VIEW
SCALE: NTS

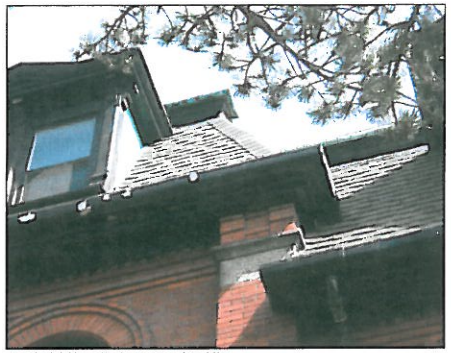


PLAN VIEW
SCALE: NTS



REBUILT PILASTER. NOT TO ORIGINAL DETAIL.
REBUILD SIMILAR TO ORIGINAL AS PER DETAIL.

ORIGINAL PILASTER DETAIL



ORIGINAL PILASTER DETAIL

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
PILASTER REBUILDING DETAIL

Key:

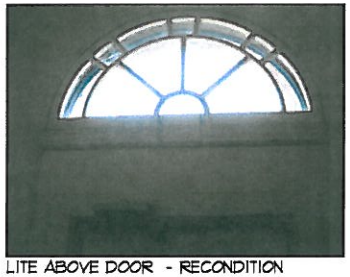
Location:
N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-9

SPECIAL PRICE #1

EXISTING DOOR - RECONDITION LS

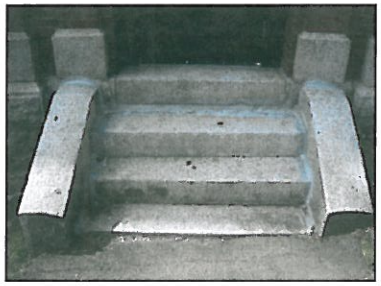
SPECIAL PRICE #1 - TO REMOVE THIS DOOR AND REINSTALL ORIGINAL RECONDITIONED DOUBLE DOORS.



LITE ABOVE DOOR - RECONDITION
SPECIAL PRICE #1 TO REPLACE EXISTING DOOR WITH ORIGINALS

EXISTING JAMB - SPECIAL PRICE #1

SPECIAL PRICE #2



SPECIAL PRICE #2
EAST STAIR - REST ON BASE SLAB

SPECIAL PRICE #3

SOUTH STAIR - STRINGER & RAIL (LHS)

SOUTH STAIR - SPECIAL PRICE #3 (RHS)

SOUTH STAIR - SPECIAL PRICE #3

SOUTH STAIR - SPECIAL PRICE #3

PRINT DATE: APRIL 14 2008

G.F. DUFFUS & CO LTD.
ARCHITECTS
1498 Lower Water St.
Halifax, Nova Scotia
B3J 1R9 902/420-1851
FACSIMILE 902/425-7445

Project:
TOWN HALL
CONSERVATION PROGRAM
TOWN OF LUNENBURG

Dwg. title:
MISCELLANEOUS SPECIAL PRICE PHOTOS

Key:

Location:
N E S W

Date: APRIL 2008
Job no. 0805
Dwg. no. A-10

Lunenburg Town Hall – Snow Load Report

Town of Lunenburg

Type of Document:
Final Report – Rev. 1

Project Number:
HFX-00257545-A0

Prepared By:
Matt Fennell, P.Eng.

Approved By:
Normand Landry, P.Eng.

EXP
90 Lovett Lake Drive
Halifax, Nova Scotia
t: +1.902.453.5555
f: +1.902.429.5457

Date Submitted:
2020-03-30

Legal Notification

This report was prepared by EXP for the account of the Town of Lunenburg. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. The report, which includes Appendix A, Appendix B, and Appendix C, is based on observations and information collected during the assessment conducted by EXP. It is based solely on the conditions encountered at the times of the site visits completed on November 26th, 2019 and December 4th, 2019, as reported herein.

The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

March 30th, 2020

Executive Summary

EXP was retained by the Town of Lunenburg to prepare this Structural Assessment report for the Lunenburg Town Hall, located at 119 Cumberland St, Lunenburg, Nova Scotia. The purpose of this Structural Assessment report is to describe the condition of the existing structural roof framing elements, and identify any deficiencies required to upgrade this building to current National Building Code of Canada standards for snow load.

This report provides a detailed description of the Mansard roof structure, shingles, copper and lead flashing and sheathing, along with the estimated costs to carry out the detailed design and approximate cost for any required upgrades.

No engineering drawings have been provided to EXP by the Town of Lunenburg for this building.

The Town Hall is wood-framed with masonry wall construction and is founded on a stone foundation.

This report provides an overview of the condition of the structural elements of the Town Hall roof. All photographs applicable to this report are provided in Appendix A and are referenced numerically within the body of this report. Appendix B includes roof-framing drawings that describe in detail the main structural systems of the Town Hall roof. Provided in Appendix C is EXP's Cost Estimate Table containing EXP's Opinion of Probable Costs (Class D) for structural components that are recommended to be replaced/repaired. The Cost Estimate Table also includes EXP's Opinion of Probable Costs (Class D) for repair/replacement of roof covering (i.e. shingles and membrane) and associated flashing/accessories.

This summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety. Use of report and third-party reliance are outlined in this report.

Structural Components:

Overall, the condition of the Town Hall roof structural elements can be considered to be in good condition and can be seen in detail on the drawings in Appendix B of this report.

See Section 2 of this report for specific structural observations and see Section 3 of this report for specific conclusions and recommendations.

Opinion of Cost:

The Class D Cost Estimate Table is provided in Appendix C. The summary is broken down into the following sections, with associated total estimated costs:

- Indirect Costs: $35,000
- Roof Improvement Costs: $234,000

The sub-total for the Town Hall recommendations noted above comes to an estimated cost of **$269,000**. Using a contractor overhead and profit of 15%, a contingency of 25%, and an estimated architectural/engineering fee of $67,000, the overall total comes to an estimated **$443,600** plus HST.

Table of Contents

1 Overview

1.1 Introduction

The Town of Lunenburg contacted EXP to provide engineering services to assess the roof structure at the Lunenburg Town Hall, located at 119 Cumberland Street, Lunenburg, Nova Scotia.

A climate change action plan report was completed in February 2015 which outlines recommendations to assess the roof structures within the Town to determine compliance with the current edition of the National Building Code of Canada (NBCC 2015), as described below.

Roof inspections were completed by Matt Fennell, Dan Ripley, and Hunter van Leeuwen. Site visits were performed on November 26th, 2019 and December 4th, 2019.

A meeting was also held on March 2nd, 2020 at the Town Hall with Matt Fennell, Normand Landry, and Paul Bracken which involved discussion as follows:

> After this meeting, Paul would arrange holes to be cut in the building to expose structural members that were covered up when EXP conducted their original site visits, and provide member sizes to EXP. It was agreed that EXP would continue the structural analysis with this new information and provide the results to the Town (contained in this revision of the report).
>
> Also provided by EXP would be a cost estimate to design and detail reinforcing for the structure, as required, separate from this report.
>
> EXP has also provided additional information in the Recommendations section of this report with some information and direction on phasing and how to move forward with the roof repairs.

1.2 Reference Material

It should be noted that construction drawings for this building were not made available to EXP for use in this report.

1.2.1 Photographs

See Appendix A for photographs taken on site by EXP.

1.3 Background and Purpose

A Municipal Climate Change Action Plan (MCCAP) was completed for the Town of Lunenburg in February 2015. The following paragraph taken from the MCCAP indicates that the Town should review all Town-owned buildings to ensure they meet current building code standards as a result of additional snow load associated with climate change:

> "While the frequency of snowstorms and overall snow amounts in a season may decrease, the intensity and amount of snow dropped in an individual storm may increase. This is potentially compounded by the increase in winter rain events, whereby any snow that remains on a roof may act as a "sponge" holding water and creating additional weight on the roof. The increase in freeze thaw cycles may also create ice build-ups that could cause problems associated with weight and ice jams. These impacts could cause increased snow and ice loading on buildings. The Town should review all structures it owns and ones that might be used as emergency

shelters to ensure that they have sufficient structural integrity to support anticipated snow loads."

The purpose of this report is to present the findings of a structural analysis and assessment of the roof of the Lunenburg Town Hall which were performed to determine if this roof structure meets current National Building Code of Canada requirements for snow load. This report also presents findings related to the review of the existing roof membrane, shingles, flashing, and gutters.

2 Observations

2.1 General Existing Construction

The existing building is wood-framed with masonry exterior walls (see Photo 1). The footprint of the building is approximately 50 ft x 80 ft. A cornerstone in the southeast corner of the building indicates that the building was constructed in 1891. The building is composed of a 4-storey north section and a 3-storey south section. The elevation of the roof of the north section of the building is approximately 3 ft higher than the elevation of the roof of the south section of the building (See Photo 2). Both roofs are Mansard-style, with low-slope hipped upper roof sections. Both roofs contain dormers (see Photo 3) and cupolas (see Photo 4). The roof of the south section of the building also contains a masonry chimney (see Photo 5), roof hatch, and a clock tower base (clock tower no longer present) (see Photo 6).

The Mansard portions of both roofs, as well as the hipped portion of the roof of the north section of the building are covered in asphalt shingles. The hipped portion of the roof of the south section of the building is covered in roofing membrane.

The roofs were accessed via a hatch on the roof of the south section of the building (see Photo 7).

There is a weathered rooftop mechanical unit and two circular roof vents on the roof of the south section (see Photo 8).

2.2 Roof Structure Framing

Note that all dimensions and spans presented in this report are approximate and in Imperial units, unless noted otherwise.

2.2.1 North Section Roof

The roof of the north section of the building is the higher of the two roofs. This roof is composed of a Mansard-style lower section and a hipped upper section. The Mansard-style lower section, which was covered on the inside with lathe and plaster during the site inspections, is assumed to be framed with rafters and planks, similar to how the Mansard-style lower section of the roof of the south section of the building is framed. The hipped upper section is framed with two triangular trusses which support a series of ceiling joists, vertical studs, roof purlins, and planks.

The rafters which frame the Mansard-style portion of the roof are assumed to be 3" x 6" deep at 20" on centre and span 9 ft (similar to the framing in the roof of the south section of the building).

There are three sets of horizontal ceiling joists. The first set of joists are 3" x 10" deep at 20" on centre and span from the west exterior wall to the bottom chord of the first truss. The second set of joists are a combination of alternating 3" x 10" deep and 3" x 6" deep at 20" on centre and span from the bottom chord of the first truss to the

bottom chord of the second truss (see Photo 9). The third set of joists 3” x 10” deep at 20” on centre and span from the bottom chord of the second truss to the east exterior wall.

Each roof truss is triangular and consists of two, inclined 8” x 8” wood top chords, an 8” x 8” horizontal wood bottom chord, and two vertical steel round tension bars at the centre (see Photo 10).

The vertical studs are 3” x 3” and span between the roof purlins and the ceiling joists.

The roof purlins are 3” x 6” deep and span 3.3 ft between vertical studs.

The roof planks are assumed to be 1” thick (similar to the roof planks that were measured in the roof of the south section of the building) and span 20” between roof purlins.

2.2.2 South Section Roof

The roof of the south section of the building is the lower of the two roofs. This roof is composed of a Mansard-style lower section and a flat upper section. The Mansard-style lower section is framed with rafters and planks. The flat upper section is framed with two trusses which support a series of roof joists and planks. This roof has a gradual slope towards the exterior walls created by stick-framing above the roof joists.

The rafters which frame the Mansard-style portion of the roof are 3” x 6” deep at 20” on centre and span 9 ft (see Photo 11).

There are three sets of horizontal roof joists (see Photo 12). The first set of joists are 3” x 10” deep at 20” on centre and span from the west exterior wall to the top chord of the first truss. The second set of joists are 3” x 10” deep at 20” on centre and span from the top chord of the first truss to the top chord of the second truss. The third set of joists 3” x 10” deep at 20” on centre and span from the top chord of the second truss to the east exterior wall.

Each roof truss consists of two horizontal wood top chords, a horizontal wood bottom chord, two vertical wood web members at roughly third points of the truss span, and two inclined wood web members at each end (see Photo 13). The horizontal top chords of these roof trusses consist of an 8” x 10” deep member spanning between vertical web members and a 5” x 8” deep horizontal member spanning from the north interior wall to the south exterior wall. Note that this north interior wall separates the north building section from the south building section. The vertical web members are 7.5” x 10”, and the inclined top chords of these trusses are 8” x 9”. The bottom chord is 8.5” x 12” deep. The connections at the truss node points are composed of steel brackets and/or steel through-bolts (see Photos 14 and 15). The bottom chords of these trusses support the attic floor joists.

The attic is currently used for bulk file storage.

The roof planks are 1” thick and span 20” between horizontal roof joists.

2.3 Roofing Materials

2.3.1 North Section Roof

The roofing material on the lower Mansard-style portion of the roof of the north section of the building is composed of asphalt shingles (see Photo 16). The shingles on this section of roof appear to be older than the shingles on the hipped portion of this roof, however, they appear to be in fair condition.

The roofing material on the upper, hipped portion of the roof of the north section of the building is also composed of asphalt shingles. Most of the asphalt shingles appear to be in relatively good shape, however, near the cupola on the east side of this roof, there are two, small, flat section of shingles that appear to have water damage (see Photos 17 and 18).

2.3.2 South Section Roof

The roofing material on the lower Mansard-style portion of the roof of the south section of the building is composed of asphalt shingles (see Photo 1). The shingles on this section of roof appear to be of the same vintage as the shingles on the lower Mansard-style portion of the roof of the north section of the building, although some damage was observed on the east side of the building (see Photo 19).

The roofing material on the upper flat portion of the roof of the south section of the building is composed of asphaltic roofing membrane. Moss growth was observed on this membrane (see Photo 20). Screws penetrating the roofing membrane were observed in two locations (see Photos 21 and 22).

2.3.3 Dormers, Cupolas, and Former Clock Tower Base

Some of the roofs of the dormers are covered in shingles with a lead ridge cap (see Photo 23) and others are covered in copper (see Photo 24). Paint is peeling on the wood trim of the dormers (see Photo 25).

The cupolas are covered in copper (see Photo 26). The cupola on the north side of the north building section is covered in copper with a flat top that consists of roof membrane with a metal edge (see Photo 27).

The roof of the south section of the building contains a wood-framed base of a former clock tower (see Photo 28). The sides of this base are covered with asphalt shingles. The base also contains a wooden lid also covered in shingles. Lead flashing is installed at the base of the lid. Moss and lichen growth were observed on the shingles of this base (see Photo 29).

2.4 Flashing

Different types of flashing materials have been used on these roofs. The sides of the dormers are flashed with bent copper panels (see Photo 30). The flashing around the chimney is lead (see Photo 31). The cupolas on the roof of the north building section are covered in copper, but the flashing is lead and tar (see Photo 32). The cupolas in this area also have a copper skirt on the exterior side. The roof hatch is flashed with membrane (see Photo 7). The circular roof vents on the south section of the building are flashed with roofing membrane and deteriorating tar (see Photos 33 and 34). Copper flashing and tar were used at the fire escape on the north side of the building (see Photo 35).

2.5 Gutters and Downspouts

The gutters are composed of bent steel with wood ends (see Photo 36) and have thin steel mesh covers that have been bent up in several locations (see Photo 37). The gutters do not appear to have any observable slope towards the downspouts.

2.6 Interior Top Levels

Extensive water damage to the interior lathe and plaster wall sheathing was observed in the top floor of the north section of the building. Most of the water damage was observed at the dormer locations (see Photo 38). Water damage was also observed in the southwest corner of the north section of the building (see Photo 39), in the east side of the north section of the building (see Photo 40), and at the north side of the north section of the building, at a truss-support location (see Photo 41).

3 Conclusions and Recommendations

3.1 General

The below paragraphs outline conclusions and recommendations for different aspects of the Town Hall roof repairs or restoration. In order to properly carry out a thorough cost estimate and complete detailed drawings, we recommend engaging the services of an architect experienced in historic rehabilitation to develop a plan and details for proper roof repairs and rehabilitation. This can be carried out in conjunction with structural engineers experienced in historical repairs to develop a plan and details for any necessary structural repairs. EXP could provide some of these experts within their organization and sub-consultants if requested.

3.2 Roof Structure Framing

3.2.1 Snow Loads

Design snow loads for this roof were calculated in accordance with NBCC 2015 and found to be 44 psf (2.12 kPa), with a small localized drift at the roof step between the roof of the north section of the building and the roof of the south section of the building. This snow load is for Lunenburg, NS and is based on a 1 in 50-year event, rough terrain, and non-wind-swept conditions.

3.2.2 North Section Roof

The roof planks meet the snow load requirements of NBCC 2015.

The roof purlins meet the snow load requirements of NBCC 2015.

The horizontal roof joists that span from the exterior walls to the trusses meet the snow load requirements of NBCC 2015.

The smaller (3” x 6” deep) horizontal roof joists that span from truss to truss **do not** meet the snow load requirements of NBCC 2015. These joists should be reinforced to meet the snow load requirements of NBCC 2015.

The rafters meet the snow load requirements of NBCC 2015.

The bottom chords of the roof trusses currently **do not** meet the snow load requirements of NBCC 2015. These bottom chords should be reinforced to meet the requirements of NBCC 2015. EXP can provide these reinforcement details if requested.

3.2.3 South Section Roof

The roof planks meet snow load requirements of NBCC 2015.

The horizontal roof joists meet snow load requirements of NBCC 2015.

The rafters meet the snow load requirements of NBCC 2015.

The roof trusses meet snow load requirements on NBCC 2015, if the attic area is **not** used for bulk file storage. If the attic area is used for bulk file storage, the bottom chords of these roof trusses **do not** meet the load requirements of NBCC 2015 and should be reinforced. EXP can provide these reinforcement details if requested.

3.3 Roofing Materials

3.3.1 North Section Roof

The shingles on the flat section of roof near the cupola appear to be water-damaged due to the flatness of the roof, which creates a condition in which rainwater is unable to properly shed. The shingles on these flat sections of the roof should be removed and replaced with roofing membrane. The shingles on the Mansard-style lower section of this roof should also be considered for replacement when the flashing around the dormers is being replaced.

3.3.2 South Section Roof

The shingles on the Mansard-style lower section of this roof should also be considered for replacement when the flashing around the dormers is being replaced.

Moss growth should be removed. Screws embedded in roofing membrane should be removed and membrane should be patched.

3.3.3 Dormers, Cupolas, and Former Clock Tower Base

The peeling paint on the wood trim of the dormers should be scraped off and the trim repainted.

All moss and lichen growth should be removed.

3.4 Flashing

The flashing around the dormers is a main cause of water infiltration into the upper level of the building, especially the flashing between the dormer roofs and the Mansard-style roof. The flashing around each dormer should be removed and replaced properly to ensure a watertight seal.

Tar should be repaired around the bases of the circular roof vents on the south section of the building.

3.5 Gutters and Downspouts

Gutters should be sloped towards downspouts to allow rainwater to drain properly. Gutter guards, specifically designed for this application, should also be installed to prevent debris (leaves, twigs, etc.) from entering the gutter and clogging up the gutters and downspouts.

3.6 Phasing of Future Work

Phasing of the future work should be as follows:

- Remove the file storage load from the south attic of the building.
- Enlist the help of a structural engineering firm to design repairs to the structure as required.
- Enlist the help of a contractor to execute repairs to the structure.
- Enlist the help of an architect to design repairs/replacement of roofing systems, with a focus on water-proofing the roofs and roof elements (i.e. dormers).
- Enlist the help of a contractor to execute repairs to the roofing systems. Repairs to the roofing systems can be phased so one roof is repaired at a time, to help spread costs over multiple years.

4 Comments on Cost Estimate Table

EXP's opinion of probable costs were estimated based on either a unit rate or lump sum basis and are intended only as an indication of the order of magnitude cost. The estimated probable costs for repair or replacement are also based on our judgment of normal and remaining life, assuming a reasonable amount of timely and proper maintenance.

Establishing probable costs for replacement, rehabilitation, or upgrades for various elements are based on several factors such as:

- Quantity of repair
- Accessibility and protection requirements
- Economies of scale
- Consultation with qualified contractors
- Local qualified trade presence
- Impact on local services, public access, and other disruptions.

A recommended contingency amount of 25% was added to the probable costs to allow for the following items:

- Contractor and equipment availability
- Risk, location, and site factors
- Unexpected existing conditions
- Variability in material costs
- Variation in estimated unit prices due to competitive tender bidding
- Additional work required to repair any hidden damage concealed by finishes
- Project attractiveness or otherwise as viewed by the bidders.

A recommended amount of 15% was also added to the probable costs to allow for Contractor's overhead and profit.

The probable estimated costs to remediate property deficiencies or normal replacement items as outlined in the report do not necessarily reflect competitive market rates for any particular type of work identified. It is assumed that the structure will be properly maintained. As such, well-qualified maintenance staff are expected to be available to perform many smaller repair/replacement tasks on an ongoing basis and to provide assistance and oversight for larger tasks where outside contractors are required.

Probable cost estimates made herein are based on the expectation that experienced property management staff are capable of obtaining competitive pricing using a combination of both internal staff resources and outside contractors and realizing economies of scale.

The probable costs provided are budget figures only, based on the current market conditions, and have not been adjusted for future inflation. The actual costs of construction may vary considerably depending on the time of year when tendering is conducted, the actual detailed scope of work, and the economic climate of the construction industry. As an example, the preparation of a probable cost estimate requires making a number of assumptions, such as:

- The means and methods of construction the contractor will employ
- The cost and extent of labour
- Equipment and materials the contractor will employ
- Contractor's techniques in determining prices
- Market conditions at the time of tender
- Other bidding factors over which EXP has no control.

The repair and replacement recommendations in this report may require a more detailed investigation prior to implementation. However, the short-term costs associated with the anticipated repair of the identified physical deficiencies and replacement of components of the structure, which may have exceeded their normal expected service life, based on our recommendations, are summarized in the Class D Cost Estimate Table in Appendix C. HST is not included in the Class D Cost Estimate Table.

5 Limitations

This report is intended for the use of the Town of Lunenburg. EXP will not be responsible for any use of this report, or any reliance on or decisions made based on this report by a third party, unless a reliance letter has been addressed to, or otherwise provides reliance to, such third party.

EXP will also not be responsible for the consequential effects of the resulting factual report, or the discovery of certain conditions and/or taking preventive measures relative to these conditions, on the real or perceived property values, or on the ability to sell, finance, or insure the property.

In order to achieve the objectives outlined, we arrived at conclusions based upon the best information presently known to us. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing the information obtained and in the formulation of the conclusions. Like all professional persons rendering advice, we do not act as absolute insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions as set out in the Services Agreement.

The client has agreed that EXP's employees, officers, directors, and agents shall have no personal liability to the client in respect of a claim, whether in contract, tort, and/or any other cause of action in law related to this report. Accordingly, the client expressly agrees that it will bring no proceedings and take no action in any court of law against any of EXP's employees, officers, directors, or agents in their personal capacity.

In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety, including the Services Agreement and its amendments. EXP is not responsible for use by any party of portions of the Report.

We trust this report satisfies your immediate requirements. If you have any questions regarding the information in this report, please do not hesitate to contact this office.

Appendix A – Photographs

Photo 1 – Lunenburg Town Hall, from Cumberland Street

Photo 2 – Step from south roof to north roof

Photo 3 – Dormer example

Photo 4 – Cupola example

Photo 5 – Masonry chimney

Photo 6 – Clock tower base

Photo 7 – Roof hatch

Photo 8 – Rooftop mechanical equipment

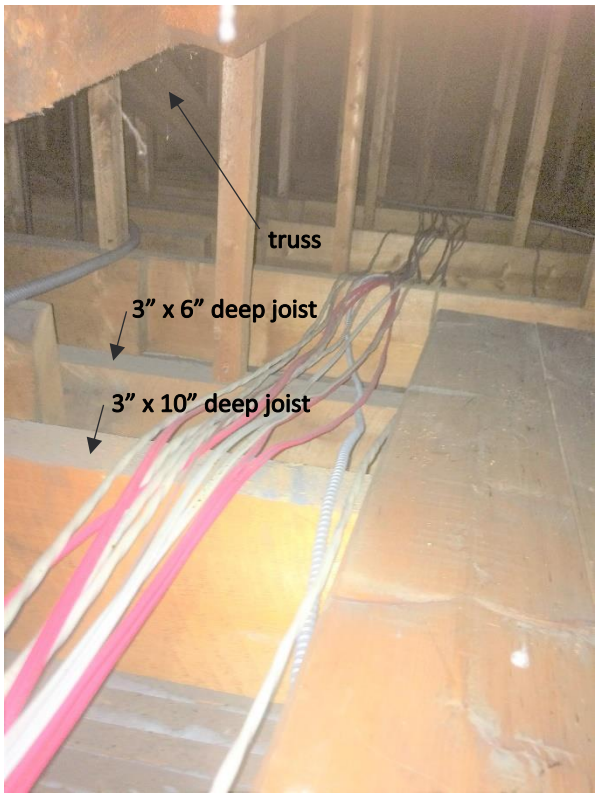


Photo 9 – Alternating roof joists. The joists labelled span from truss to truss.

Photo 10 – Truss with double steel tension rods

Photo 11 – Rafters for the Mansard-style portion of the roof of the south section of the building

Photo 12 – Horizontal roof joists

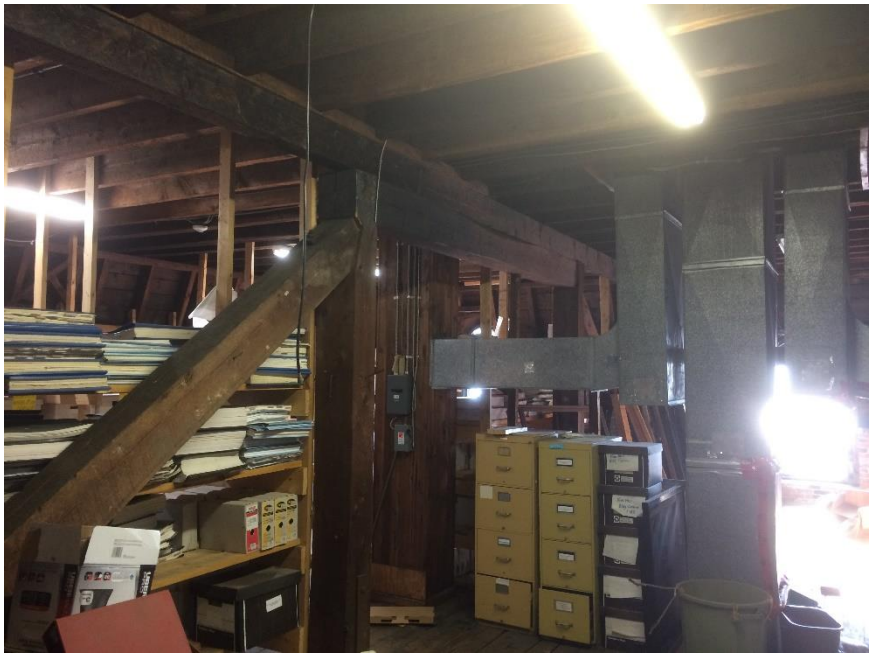


Photo 13 – Roof truss in south section of building

Photo 14 – Truss bracket with through-bolts

Photo 15 – Truss through-bolt connection (inclined web member to bottom chord)

Photo 16 – Mansard-style roof on north section of building

Photo 17 – Water-damaged shingles (1 of 2)

Photo 18 – Water-damaged shingles (2 of 2)

Photo 19 – Damaged shingles on Mansard-style roof (west side of building)

Photo 20 – Moss growth on roof membrane

Photo 21 – Screw in roof membrane (1 of 2)

Photo 22 – Screw in roof membrane (2 of 2)

Photo 23 – Dormer with metal ridge cap

Photo 24 – Dormer with copper roof

Photo 25 – Paint peeling from wood trim on dormer

Photo 26 – Cupola with copper cover

Photo 27 – Cupola with flat top at north end of building

Photo 28 – Base of former clock tower

Photo 29 – Moss and lichen growth at base of former clock tower

Photo 30 – Dormer with bent copper panel

Photo 32 – Lead flashing around chimney

Photo 32 – Lead and tar flashing around cupola

Photo 33 – Flashing around circular roof vent (1 of 2)

Photo 34 – Flashing around circular roof vent (2 of 2)

Photo 35 – Lead flashing between exterior masonry wall and Mansard-style roof

Photo 36 – Typical gutter (bent steel with wood ends)

Photo 37 – Bent steel mesh above gutters

Photo 38 – Interior water damage, typical around dormers

Photo 39 – Interior water damage (1 of 3)

Photo 40 – Interior water damage (2 of 3)

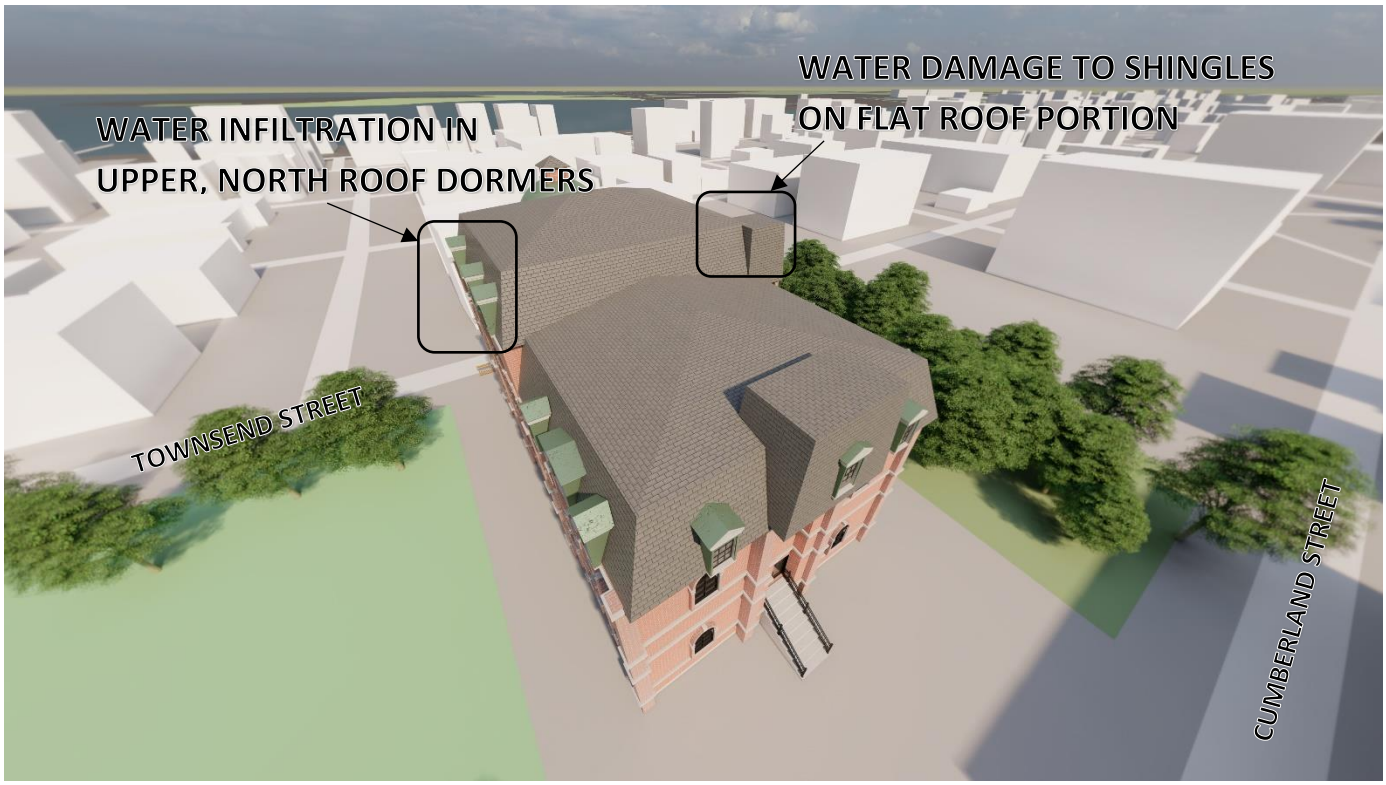
Photo 41 – Interior water damage (3 of 3)

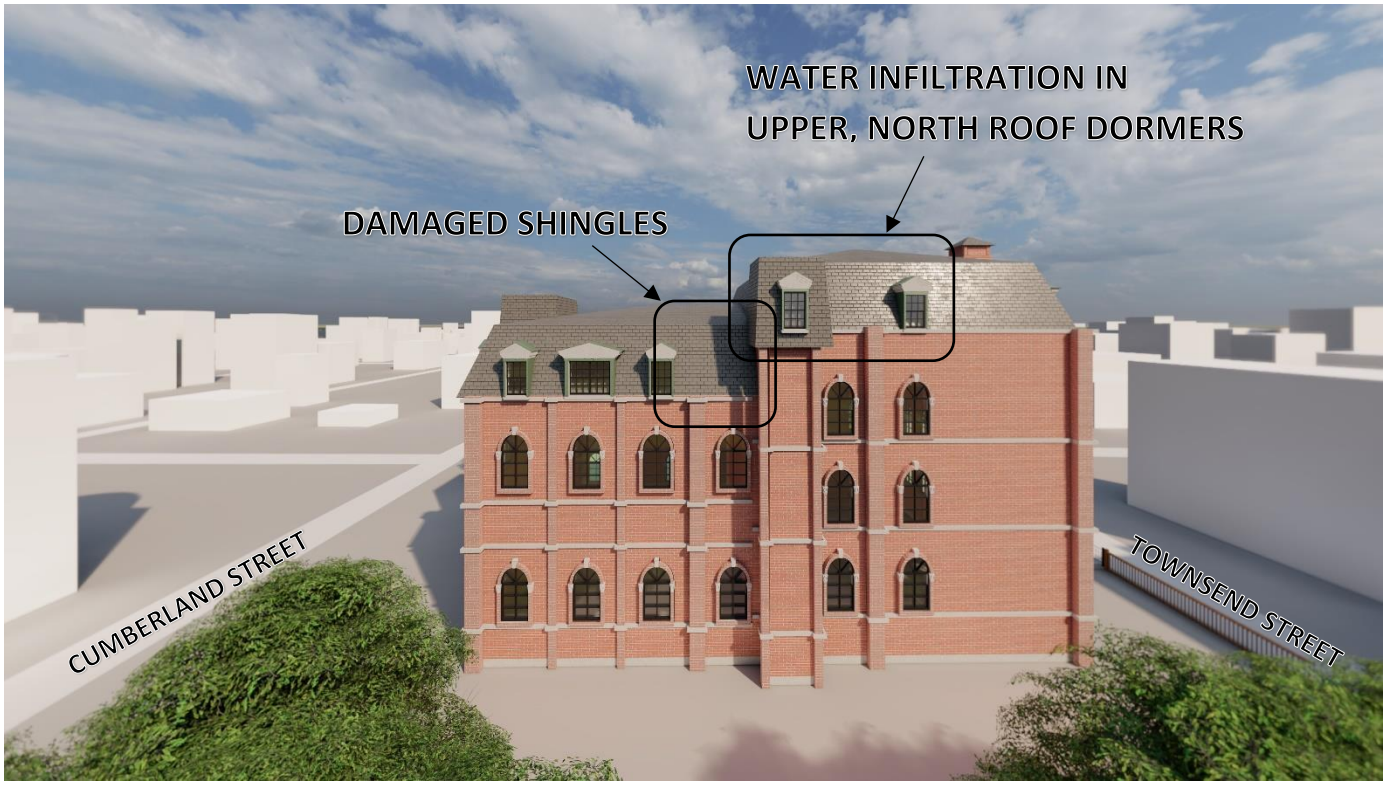
Appendix B –
Structural Drawings and Architectural Renderings

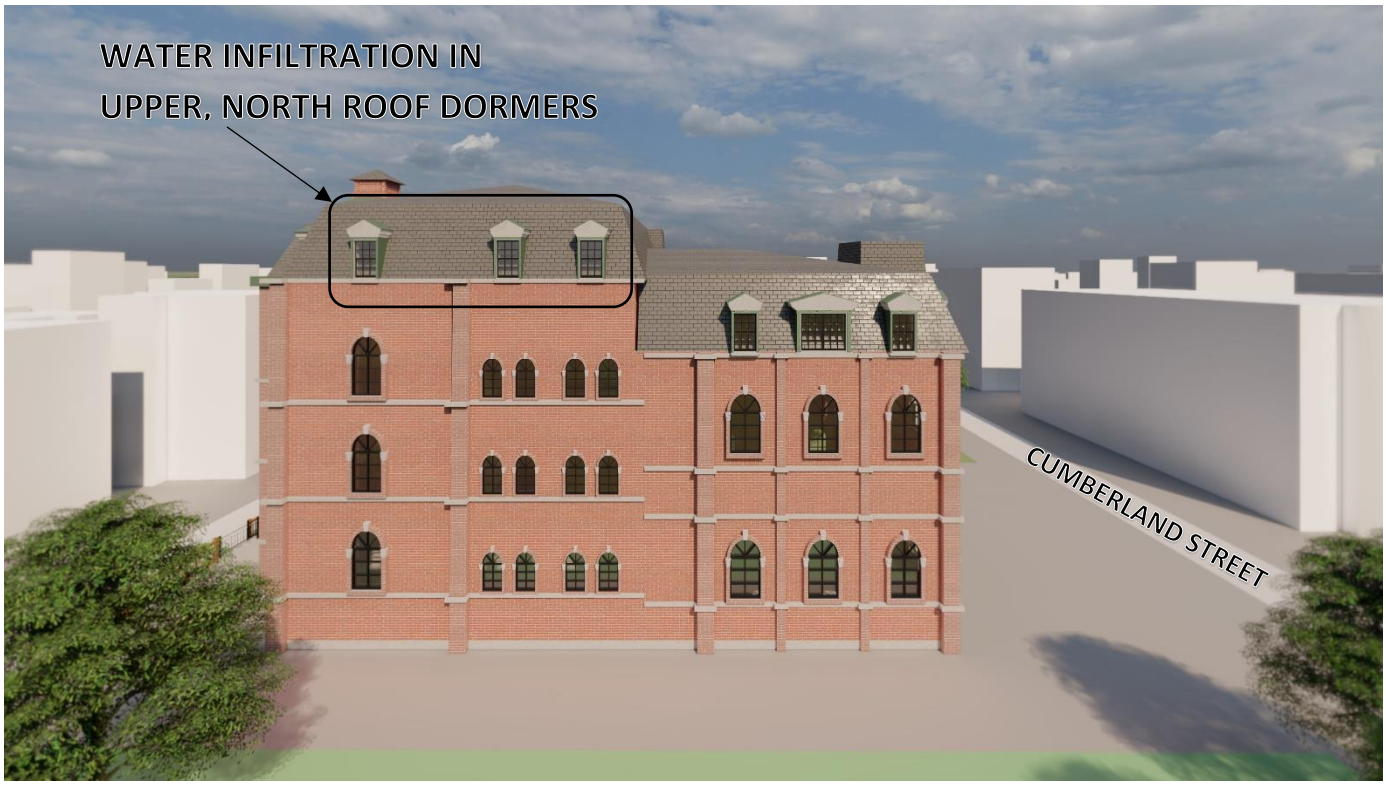
March 30th, 2020


WATER INFILTRATION IN
UPPER, NORTH ROOF DORMERS
CUMBERLAND STREET


WATER DAMAGE TO SHINGLES
ON FLAT ROOF PORTION
CUMBERLAND STREET

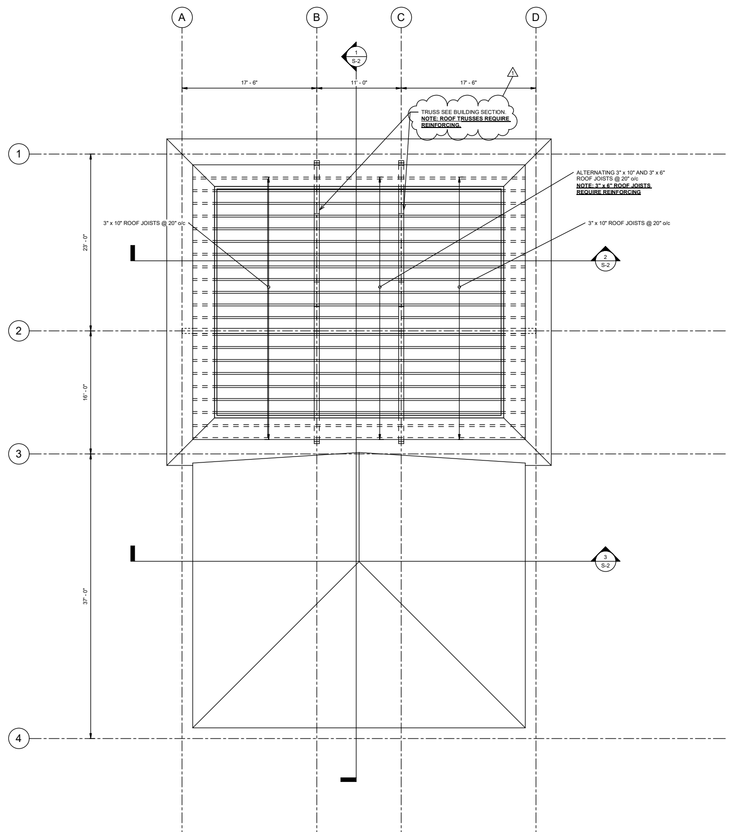

WATER DAMAGE TO SHINGLES
ON FLAT ROOF PORTION
WATER INFILTRATION IN
UPPER, NORTH ROOF DORMERS
TOWNSEND STREET
CUMBERLAND STREET


WATER INFILTRATION IN
UPPER, NORTH ROOF DORMERS
DAMAGED SHINGLES
CUMBERLAND STREET
TOWNSEND STREET

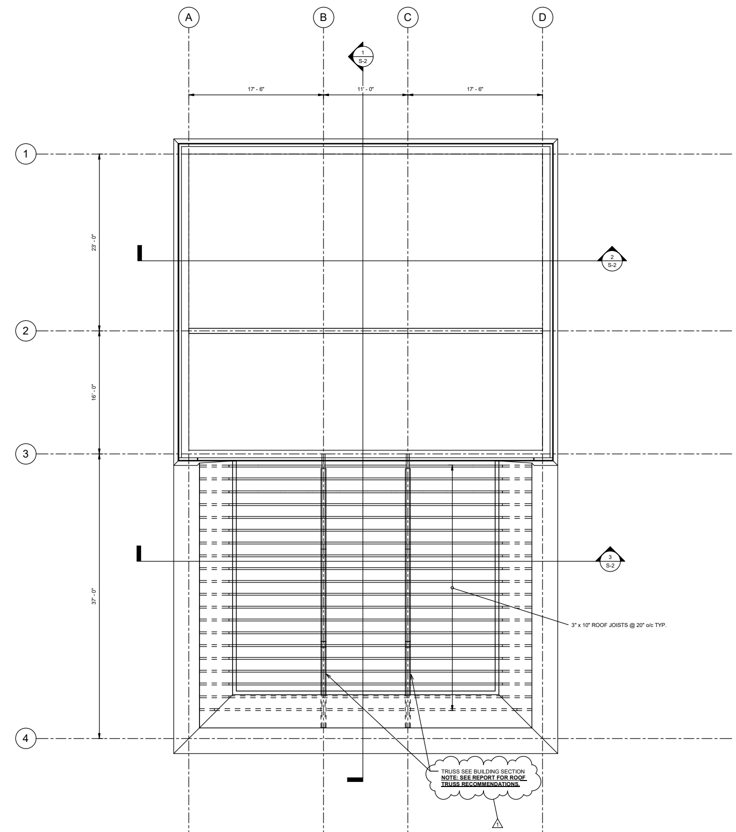

WATER INFILTRATION IN
UPPER, NORTH ROOF DORMERS
CUMBERLAND STREET


CUMBERLAND STREET ENTRANCE

PROJECT NORTH



1 Upper, North Roof
3/16" = 1'-0"



2 Lower, South Roof
3/16" = 1'-0"

exp.

BUILDINGS • EARTH & ENVIRONMENT • ENERGY
INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

GENERAL NOTES:

1) ALL GRIDLINE DIMENSIONS ARE APPROXIMATE.
2) DORMERS, ARCHITECTURAL FEATURES, AND MECHANICAL COMPONENTS NOT INCLUDED IN STRUCTURAL DRAWINGS.

No.	DATE	DESCRIPTION
1	MAR 16, 2020	FRAMING UPDATES

DRAWN BY: MAF
CHECKED BY: NL
DATE: 01/17/20

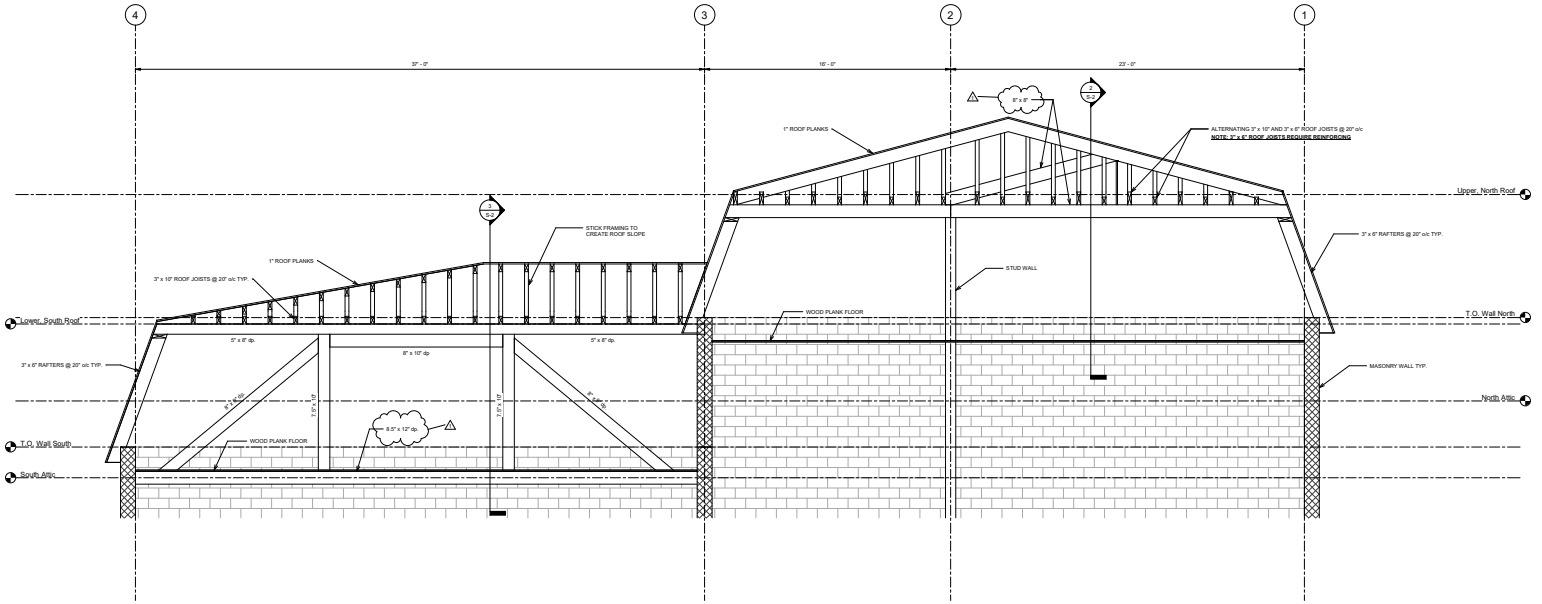
PROJECT
Lunenburg Town Hall Snow Load Review

119 Cumberland St
Lunenburg, Nova Scotia

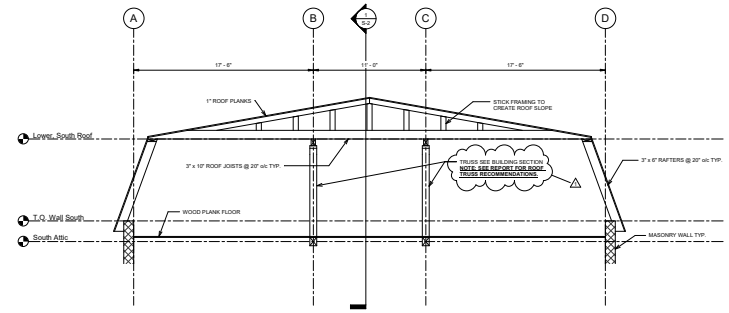
PROJECT NO: HFX-00257545-A0

SHEET TITLE:
Roof Framing Plans

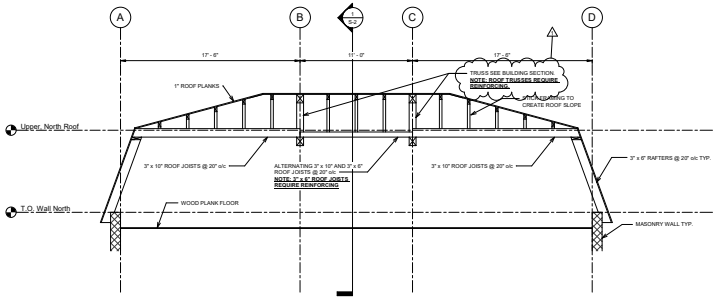
S-1



1 Building Section
3/8" = 1'-0"



3 Lower, South Roof Section
1/4" = 1'-0"



2 Upper, North Roof Section
1/4" = 1'-0"

exp.

BUILDINGS • EARTH & ENVIRONMENT • ENERGY
INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

GENERAL NOTES:

1) ALL GRIDLINE DIMENSIONS ARE APPROXIMATE.
2) DORMERS, ARCHITECTURAL FEATURES, AND MECHANICAL COMPONENTS NOT INCLUDED IN STRUCTURAL DRAWINGS.

No.	DATE	DESCRIPTION
1	MAR 19, 2020	FRAMING UPDATES

DRAWN BY: MAF
CHECKED BY: NL
DATE: 01/17/20

PROJECT:
Lunenburg Town Hall Snow Load Review

119 Cumberland St
Lunenburg, Nova Scotia

PROJECT NO: HFX-00257545-A0

SHEET TITLE:
Roof Sections

S-2

Appendix C –
Class D Cost Estimate Table

Item No.	Item	Description	Estimated Quantity	Unit of Measure	Unit Price ($/unit)	Cost Estimate
Indirect Costs						
1	Incidentals	Mobilization/demobilization, insurance/permitting, lodging/expenses, trash removal, safety plan/equipment, etc.	1	Lump Sum	$15,000	$15,000
2	Rentals	Miscellaneous tools and equipment rental	1	Lump Sum	$20,000	$20,000
					Indirect Costs - Subtotal	**$35,000**
Roof Improvement Costs						
3	Roof Joist/Truss Reinforcement	Reinforcement of existing roof joists and roof trusses	1	Lump Sum	$17,500	$17,500
4	Roof Covering - Membrane	2-ply modified bitumen roofing system to replace low-slope shingles and patch damaged areas	1000	Square Feet	$20	$20,000
5	Roof Covering - Shingles	Asphalt Shingles (lower portion of roofs)	2500	Square Feet	$20	$50,000
6	Flashing and Painting	Removal and proper reinstatement of copper flashing around roof features (i.e. dormers, cupolas, clock tower base, etc.), and painting of these features	17	Roof Feature	$7,000	$119,000
7	Roof Membrane Cleaning	Removal of moss and lichen growth from roof membrane	3500	Square Feet	$5	$17,500
8	Gutters and Downspouts	Provide proper slope to existing gutters, clean debris from gutters, provide gutter guards	1	Lump Sum	$10,000	$10,000
					Roof Improvement Costs - Subtotal	**$234,000**
					Total Costs - Subtotal	**$269,000**
					Contractor Profit (15%)	**$40,350**
					Contingency (25%)	**$67,250**
					Architectural / Engineering Design Fee	**$67,000**
					Town Hall Roof Repairs - Grand Total	**$443,600**