Exhibit B

STRUCTURAL CONDITIONS ASSESSMENT

NORTHPORT TOWN OFFICE
NORTHPORT, MAINE

Prepared for
2A architects, llc

Prepared by

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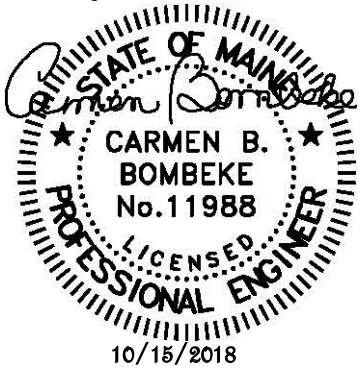

SCOPE OF CONDITIONS ASSESSMENT

We conducted a structural observation of the Town Office building in Northport, Maine on September 18, 2018. We documented the visible portions of the existing structure during our site visit, including the foundation and existing structural elements and layout (member sizes, spans, etc.). We also investigated the material integrity of structural framing members at locations typically prone to material degradation (e.g. joists adjacent to foundation wall, etc.). This structural conditions assessment report is based on our observations of the building during this visit.

This conditions assessment aims to provide a general understanding of the existing condition of the building at the time of our visit. This report includes: (1) descriptions of the primary structural elements and construction; (2) assessments of the condition and capacity of the primary structural elements and components; and (3) general recommendations for necessary repairs and upgrades. For orientation, the facade of the building facing the road is considered south throughout this report; the entry side toward the parking lot is considered west.

Although we make every effort to conduct a comprehensive site visit and provide accurate documentation of a building, it is possible that deficiencies may exist which are not identified in this report. It is also possible that conditions may change during the interim period between the date of the visit and the date the report is issued. We are not responsible for either unidentified deficiencies or changes in the condition of the building any time after the date of the site visit.

GENERAL DESCRIPTION AND BACKGROUND

The building was reportedly originally constructed in 1932 and previously occupied as a school house. The building was constructed as a single story structure on a raised foundation wall. Circa 1990 the original building was raised up approximately 5-feet, the foundation was modified, a new first floor was constructed to provide at-grade access, an addition was added to the west side to create the existing entry lobby and an addition was added to the east side to house the mechanical room. Plans from 1990 indicate the footprint at that time included the main building as well as an existing 8-foot by 12-foot vault where the current vault is located.

Currently the building is occupied by the Town of Northport. The first floor is accessible via the west entrance to the entry lobby. The first floor includes a lobby, waiting room, office, meeting room, restroom, kitchen, vault and mechanical room. The second floor is accessed by stairs located directly north of the lobby. The second floor includes open lobby space, offices for town administration and code enforcement, storage and a hall for egress to an exterior stair on the east side of the building.

GOVERNING STRUCTURAL CONSIDERATIONS

Maine has adopted the Maine Uniform Building and Energy Code (MUBEC) which includes the 2015 International Building Code (IBC) and the 2015 International Existing Building Code (IEBC). Although MUBEC is not currently adopted or enforced in Northport, this is the governing standard which we use for structural evaluations.

Based on the current uses of the space, the following minimum uniformly distributed live loads and minimum concentrated live loads apply to the structure (IBC 2015 Table 1607.1):

Occupancy/Use Area	**Uniform Load (psf)**	**Concentrated Load (lbs)**
Offices	50	2,000
First floor corridors	100	-
Second floor corridors	80	-
Fire escapes	100	-
Assembly areas – Lobby/Public meeting rooms	100	2,000
Stairs and Exits	100	300

Our structural assessment and recommendations herein have been developed to achieve compliance with the minimum live loads specified above. Since MUBEC has not been adopted in Northport and the building is not changing use, upgrade is not necessarily mandated unless conditions are deemed dangerous. However, it will be our recommendation to upgrade the existing structure to comply with current minimum standards if and when substantial renovation is undertaken.

Additional design criteria per IBC 2015 are identified below:

Design criteria	
Ground snow load, p_g (IBC 2015 Figure 1608.2)	60 psf
Ultimate design wind speed, v_{ult} (IBC 2015 Figure 1609.3(1))	116 mph
Seismic Design Category (based on presumptive soil estimate)	B

Snow loads have been considered in our assessment of the existing roof structure. Analysis for wind and seismic forces is beyond the scope of this assessment.

A dead load of 15 psf has been assumed for the roof and finished floor levels.

All existing wood members are assumed to be Spruce-Pine-Fir #1/#2 or better. Analysis for wood connection capacities is beyond the scope of this assessment.

EXISTING CONDITION OBSERVATIONS

ROOF STRUCTURE
The existing roof framing appears to be the original 1932 construction. The roof framing consists of 1 ¾" x 5 ½" rafters spaced approximately 24" on-center spanning from the 1 ¾" x 5 ½" ridge board to the eaves. The hip roof sections on the south and north ends of the building are similarly framed with 1 ¾" x 5 ½" rafters spanning from a 1 ¾" x 5 ½" hip to the walls. The south and north end walls extend up approximately 2' above the second floor ceiling elevation creating an unusual hip roof condition on the end walls of the building. 2x6 collar ties have been added approximately 6' above the attic floor elevation. The roof is sheathed with 1x10 boards.

The roof structures of the west entry addition and the mechanical room were not visible for observation.

The roof structure of the vault is sloped cast-in-place concrete. The vault ceiling appears to be poorly consolidated concrete. Steel reinforcing bars are visible on the underside of the vault ceiling where inadequate cover was achieved.

ATTIC FLOOR/SECOND FLOOR CEILING STRUCTURE
The second floor ceiling framing is buried in a thick layer of insulation. The framing appears to be similar size as rafters (approximately 1 ¾" x 5 ½"). Ceiling joists span east-west and act to tie the exterior walls together and prevent outward thrust. The second floor ceiling is not sheathed on the top side, thus there is essentially no attic floor. The lack of sheathing and thickness of insulation inhibit movement and observation within the attic space.

SECOND FLOOR STRUCTURE
The second floor framing appears to be the original 1932 construction (although formerly the first floor level before the building was raised). The second floor framing consists of 1 ¾" x 5 ½" joists spaced approximately 16" on-center spanning east-west. Two lines of interior support are provided which create a 3-bay joist condition. Joists span approximately 8'-6" between exterior bearing walls and/or interior supports. Interior support is provided by 6x6 dropped beams which run north-south the full length of the building, spliced at post locations. Interior beams are supported by a series of posts, typically 5 3/8" square.

Significant deflection indicative of severe overstress is visible in the 6x6 beams supporting the second floor. Several of the columns are moderately checked. The west post in the first floor meeting room is severely bowed.

FIRST FLOOR STRUCTURE
The first floor framing appears to be newer construction, presumably from the 1990 renovation. The first floor framing consists of 2x12 joists spaced 16" on-center spanning east-west in the main area of the building. One line of interior support is provided near the center of the building which creates a 2-bay joist condition. Joists span approximately 13' from exterior foundation walls to the interior (3) 2x12 support beam. The interior (3) 2x12 support beam is installed flush with the joists and is posted approximately 8' on-center with 4x6 PT posts. There are additional

posts of varying sizes in the crawl space. These posts are likely intended to provide support below posts supporting the second floor, although some of the posts appear to be offset slightly from the posts above and/or installed as an after-thought.

The mechanical room floor is framed with 2x10 joists spaced 16" on-center clear-spanning approximately 8' east-west. The west end of the mechanical room joists are attached to a 2x10 ledger attached to the foundation.

The west entry addition and the vault floors are both a slabs-on-grade. The west entry slab is covered with finish materials. The vault floor is exposed concrete.

FOUNDATION

The existing foundation is cast-in-place concrete. The written scope of the proposed renovations indicates the original foundation was going to be maintained and cut down to grade level, although discussions with town representatives indicate the foundation may have been more significantly modified or even partially replaced. The majority of the foundation is not visible for inspection, so it is difficult to discern this for sure either way. The interior of the foundation is largely covered with rigid insulation. The extent of the foundation which is exposed on the interior appears to be in satisfactory condition. The exterior of the foundation is only exposed on the north façade where it extends well above the first floor elevation. The north foundation wall is considerably bowed inward toward the center, which may have occurred during original construction. The pattern of formwork lines visible on the foundation indicate a panel form, which would typically indicate a foundation newer than 1932. Various more recent repairs have been performed on the north wall.

There is a concrete slab-on-grade in the crawl space below the main area of the building. The crawl space below the mechanical room has a dirt floor. Other areas are slab-on-grade at the first floor elevation (no crawl space).

WALL FRAMING

The south and north end wall framing exposed in the attic is composed of 2x4 studs spaced approximately 16" on-center. This is likely representative of the typical exterior wall construction of the original 1932 construction. We observed spray foam around newer 2x4 wall framing on the north end of the building at the first floor level; this may be a double wall system, although the details of the construction are unknown. Based on the 1990 written scope of the proposed renovations the first floor walls were to be 2x6 construction.

Interior walls appear to be 2x4 construction. First floor north-south running interior walls are likely assisting with support of the second floor. Second floor north-south running interior walls are providing intermediate support to the second floor ceiling joists.

STAIRS

The interior stair construction was not exposed or observed. The exterior egress stair is composed of 2x12 PT stringers on each side with 2x plank steps (flatwise).

ASSESSMENT

ROOF STRUCTURE

The original 1932 roof structure without the added 2x6 collar ties would have been severely deficient for the current calculated design snow load. However, the addition of the 2x6 collar ties was sufficient to reduce the span on the rafters to achieve adequate rafter design capacity. The 2x6 collar ties are acting in compression to minimize deflection of opposing rafters, however the collar ties do not meet the geometric criteria for compression given their span. Current codes would require lateral bracing top and bottom (running parallel with the ridge) to prevent buckling of these relatively slender compression elements.

The roof structures of the west entry addition and the mechanical room were not visible for observation and have thus not been evaluated.

The roof structure of the vault cannot be evaluated definitively due to the unknown concrete properties and the unknown reinforcing. The poorly consolidated concrete and exposed reinforcing bars indicate potentially substandard construction, although we did not observe severe structural cracks or other indicators of significant distress.

ATTIC FLOOR/SECOND FLOOR CEILING STRUCTURE

The existing second floor ceiling is lightly framed. Reasonable performance of the ceiling relies on the presence of interior second floor walls which provide intermediate support to the existing ceiling joists. With the existing second floor layout, the joists are spanning 16’ to 17’ in the code enforcement office and a portion of the upper lobby. There are no perpendicular walls to provide support in the hallway, although this is relatively small area. Based on our analysis the existing ceiling joists should only span approximately 14’ (maximum) between supports.

SECOND FLOOR STRUCTURE

The existing second floor joists have a uniform live load capacity of approximately 45 psf and are thus inadequate for all existing second floor uses, including offices (50 psf), second floor corridors (80 psf) and lobby/meeting spaces (100 psf). The existing second floor joists are severely undersized to accommodate the design concentrated live load applicable to offices.

The existing carrying beams are severely inadequate and overstressed. The beams are completely insufficient for the application. No certifiable design load capacity can be attributed to the existing carrying beams.

Existing posts supporting the second floor have adequate design capacity to support office loads above. The observed checking and bowing in the existing posts is anticipated to be due to the actual material of the pieces of wood. The checking is not highly concerning as it does not significantly reduce the capacity of the post. However, the severely bowed post has reduced capacity since it has naturally adopted the shape of a buckled column. Although this post theoretically has adequate capacity, the actual capacity may be far less due to its bowed shape.

FIRST FLOOR STRUCTURE

The existing first floor joists in the main area of the building have a uniform live load capacity of approximately 80 psf. This is adequate for offices (50 psf) but is inadequate for corridors, lobbies, or public meeting spaces (100 psf). With load sharing, the joists are expected to be adequate for the concentrated live load applicable to offices.

The existing carrying beams in the main area of the building have a uniform live load capacity of approximately 60 psf. This is adequate for offices (50 psf) but is inadequate for corridors, lobbies and meeting spaces open to the public (100 psf).

The floor capacity in the mechanical room is limited by the marginal attachment of the ledger to the foundation. The existing first floor joists in the mechanical room themselves have a uniform live load capacity of approximately 150 psf, however due to the connections (observed but not analyzed), the capacity is anticipated to be significantly less.

The vault slab-on-grade appears to be in satisfactory condition and structurally sound.

FOUNDATION

The existing foundation and crawl space slab-on-grade appear to be in satisfactory condition and structurally sound. The raised north foundation wall is bowed, although this appears to be perhaps due to the original construction or differential loading before the 1990 renovation. The size and configuration of interior footings (if present) is unknown.

The crawl space below the mechanical room is moist, which introduces moisture into the crawl space of the main building which lacks ventilation.

WALL FRAMING

The existing exterior wall frame is not exposed for thorough observation, however we did not observe indicators of structural distress.

Several existing first floor interior walls are likely assisting with supporting the second floor since the second floor beams are so severely undersized. However, there is no support below these walls to allow them to act as true bearing walls. If these walls are acting as load bearing walls, they are reducing the capacity of the first floor framing and likely causing overstress in first floor joists and beams.

STAIRS

The interior stair construction was not evaluated. The exterior egress stair is inadequate for exit stair design loads.

MISCELLANEOUS

Raised beds with plantings are present on the south and a portion of the west side of the building. In many locations soil and mulch are up against the siding of the building which can cause material degradation of wood framing and sheathing.

RECOMMENDATIONS

ROOF STRUCTURE

1. Install 2x6 longitudinal bracing at midspan on the top and bottom of the existing 2x6 collar ties, typical along the full length of the building.
2. Replace the vault ceiling if the vault is proposed to be modified.

ATTIC FLOOR/SECOND FLOOR CEILING STRUCTURE

3. Depending on the proposed second floor layout and proposed ceiling finishes, sistering or other reinforcement of the existing ceiling joists may be required.

SECOND FLOOR STRUCTURE

4. Replace existing support beams with new LVL or steel beams. The size and shape of the beams will depend on the first floor layout and post locations as well as the second floor layout and uses (offices, meeting spaces, corridors, etc.).
5. Upgrade the second floor joists to achieve adequate structural integrity for proposed uses. The joist upgrade design will depend on the second floor layout and uses (offices, meeting spaces, corridors, etc.). For preliminary design and budgeting purposes we recommend anticipating sistering all existing joists with an additional 1.75x5.5 LVL, typical throughout the entire second floor.
6. Replace existing support posts with new PSL or steel posts to match new beam material. Install appropriate connection hardware and fasteners to attach posts to beams.

FIRST FLOOR STRUCTURE

7. Upgrade the first floor joists to achieve adequate structural integrity in areas with higher load requirements, including lobbies, corridors, exits and public meeting spaces. For preliminary design and budgeting purposes we recommend anticipating sistering existing joists with an additional 2x12, typical below these higher load requirement areas only.
8. Upgrade the first floor support beam to achieve adequate structural integrity in areas with higher load requirements, including lobbies, corridors, exits and public meeting spaces. For preliminary design and budgeting purposes we recommend anticipating adding an intermediate post and footing at midspan between existing posts, typical below these higher load requirement areas only.
9. Install new support posts and isolated footings below new posts supporting second floor loads above. Size and location to be determined based on proposed first floor layout.
10. Upgrade the connection between the ledger and the foundation in the mechanical room.

FOUNDATION

11. Install an appropriate vapor barrier and concrete slab-on-grade in the crawl space below the mechanical room to minimize moisture intrusion.
12. Further assessment of the bowed north wall may be warranted depending on the loads applied to the wall in the proposed renovation.

STAIRS

13. Replace the existing exterior egress stair and landing with a structurally adequate and code compliant stair.
14. Expose and upgrade interior stair framing as required (if stairs are not otherwise modified).

MISCELLANEOUS

15. Remove or lower raised beds where soil is up against the siding. Regrade as required to provide a minimum of 6" clearance between untreated wood (including wood sheathing below vinyl siding) and exterior grade. Exterior finish grades shall slope away from the building at all locations.

LIMITATIONS

Although we make every effort to conduct a comprehensive site visit and provide accurate documentation of a structure, it is possible that deficiencies may exist which are not identified in this report. It is also possible that conditions may change during the interim period between the date of the site visit and the date the report is issued. We are not responsible for unidentified deficiencies or changes in the condition of the structure after the date of the site visit.

PHOTO APPENDIX

Additional photo-documentation from our site visit is provided on the following pages for reference.

HISTORIC DOCUMENT APPENDIX

Enclosed are copies of the following documents provided by the Town of Northport and referenced in this report:

- Northport Town Hall, Proposed Renovation 3-90 by Elinor Moore, Architect (Front Elevation and New First Floor Plan)
- Northport Town Hall, Proposed Renovation 3-5-90, Town Hall Committee by Nell Moore (Written work scope description)
- Untitled plot plan showing parcel to be conveyed by Francis E. Bonin Jr. to the Town of Northport