

# **236 Gehl Place – Scoped HIA For Demolition of Additions to the Original Log Home**

April 25, 2024

## **1.0 Background**

The home at 236 Gehl Place is of heritage interest to the City of Kitchener due to the presence of an original 1½ storey log structure in part of the home c. 1860.

The home sits on land that is part of the expanded urban boundary and it is ultimately subject to development as a residential subdivision. Currently there is urgency to review the heritage attributes and complete an HIA because the 236 Gehl Place site can contribute a significant amount of structural soil material to be used in the adjoining Mattamy residential subdivision currently under construction to the north. The Mattamy subdivision was formerly an aggregate extraction site, so the use of neighbouring soils that are excess to the future 236 Gehl Place subdivision, is good engineering practice both economically and environmentally. The grade in the vicinity of the log structure will be lowered approximately 3.5 metres according to analysis prepared by Matt Ninomiya P.Eng of Walterfeddy.

The first step to facilitate the HIA for the log structure, is to determine if the additions to the log home contribute to its heritage value or not. The Scoped HIA is for this purpose.

## **2.0 Heritage Impact Assessment Requirements**

Discussion between the owner and Kitchener Planning and Heritage Planning staff confirms municipal interest in the Log Home at 236 Gehl Place. To further investigate the heritage attributes, and to prepare the way for relocation of the heritage asset, terms of reference for this scoped HIA were provided by Michelle Drake. A full HIA for the original Log Home is underway and will follow this report as more information on the building and its history becomes available.

## **2.1 Present Owner**

Schlegel Urban Developments  
325 Max Becker Drive, Suite 201  
Kitchener, Ontario  
N2E 4H5

## 2.2 Reserved

## 2.3 **Description of Additions & Statement of Heritage Value**

The original Log Home c.1860 appears to have had two separate renovations.

The first addition is a 1½-storey extension to the north side. It is about 2/3 the width of the original building and is aligned with it on the west side. This addition has a basement level. The foundations are cast-in-place concrete using small pea gravel as the primary aggregate. The structure above is a full dimension 2x4 wood frame with wood plank sheathing and evidence of tar paper, sawn lath, and stucco as the exterior finish, though much of the exterior finish appears to have been removed at the second renovation. The floorboards are 5 ½" x ¾" tongue & groove planks on 9¾" x 2" joist at 20" on centre at the ground floor. The roof is pitched at approximately 7 in 12 and is shingled. The interior painted drywall finishes are contemporary with the second renovation, as is the exterior aluminum siding. The main floor is used as a kitchen. The second level is a bedroom space. This addition includes the only stairs in the home today. This suggests that the stairway in the original Log Home was removed, and some remodeling of the original Log Home interior occurred at this time. The nature of the concrete with rounded aggregate and remnant stucco suggests a c. 1920-1930 construction. We note a significant swayback at the ridgeline of the addition, suggesting an inadequate roof structure.

The second addition is in two parts. Both are 1-storey and are found to the east and west sides of the first addition. Both are north of the original Log Home. These extensions have no basements. The exterior walls are insulated, nominal 2x4 wood stud framing. The roofs are flat. Interior finishes are painted drywall. The exterior is clad in aluminum siding.

To the west the addition was purpose built for a garage and utility room/laundry. This addition replaced a woodshed and outhouse in this area, according to William (Bill) Henhoeffler. To the east the addition served as a family room with a large window facing east and a door to the exterior on the north side. The construction of this addition is confirmed by the past owners, Bill and Marlene Henhoeffler, as c. 1960 shortly after the property was purchased by Bill's father Edward in 1959.

Using the 9 criteria listed below, taken from the Ontario Heritage Act Regulation 9/06, we find that the additions to the Log Home (not the Log Home itself) do not meet the test for heritage value or interest and may

therefore be considered for careful demolition without the loss of heritage attributes.

*Ontario Heritage Act Regulation 9/06*

*Criteria for determining Cultural Heritage Value or Interest*

1. *The property has design value or physical value because it is rare, unique, representative or early example of a style, type, expression, material or construction method.*

Criteria not met. After the 1960 renovation by Edward Henhoefffer and his son William (Bill), the additions, including the first addition, are of common construction materials and style. The first addition was once completely clad in stucco on tar paper. This detail helped the author to date the first addition to 1920-1930. As such, it may have been an early example of the use of stucco cladding material; however, the remnant of stucco is a small area in one corner of the east addition. It does not warrant conservation of the complete 1½ storey addition. A representative sample of the stucco wall assembly can be carefully removed and kept if a suitable heritage material archive is available to store it and make it available to the public.

2. *The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit.*

Criteria not met. The additions are of competent craftsmanship, though the roof of the 2-storey addition sags and is not. There are no details or materials of inherent value or artistic intent.

3. *The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement.*

Criteria not met. The additions framing and finish are technically vernacular and have no scientific intent.

4. *The property has historical value or associative value because it has direct associations with theme, event, belief, person, activity, organization, or institution that is significant to a community.*

Criteria not met. The additions were not the site of a unique cultural heritage activity. The Log structure and the land will be evaluated separately in the full HIA.

5. *The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture.*

Criteria not met. The generic form, technique and use of the additions contributes nothing new or unique to this understanding. The Log structure and the land will be evaluated separately in the full HIA.

6. *The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*

Criteria not met. The 2-storey addition builder is anonymous, and the recent past owner and his father built the 1-storey addition. There is no significant individual's body of work involved.

7. *The property has contextual value because it is important in defining, maintaining or supporting the character of an area.*

Criteria not met. The additions are isolated from any other built context and the original surrounding farmland forms are changing to suit the proposed new residential use. The Log structure and the land will be evaluated separately in the full HIA.

8. *The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings.*

Criteria not met. The additions have a historic link to their surroundings; However, the surroundings lands are proposed to change from a farm to a residential subdivision. The context is expected to change substantially. The log structure and the land contextual value will be evaluated separately in the full HIA.

9. *The property has contextual value because it is a landmark.  
O Reg 569/22, s. 1.*

Criteria not met.

## 2.4 **Documentation**

See Appendix A for Excerpt from Southwest Kitchener Urban Area Study.



See Appendix B for Photographs

See Appendix C for Measured Drawings

See Appendix D for Structural Assessment

## 2.5 **Proposed Demolition**

The current application proposes demolition of the c. 1920-1930 addition, and the c. 1960 additions above the ground level to reveal the original Log Home for full heritage assessment.

Structural Engineer David Witzel P.Eng has reviewed the log structure and the additions from this perspective. His full report is found in Appendix D While he concludes that the additions do not provide structural support to the original log building, he states that it is prudent to temporarily fill openings in the north wall of the log structure with wood frame and sheathing to provide protection to the log structure and to the adjacent cut logs.

The demolition team will have a minimum of 5 years of experience in work where demolition involves parts of the original structure to remain intact and undamaged. Preference given to experience with heritage log structures. The demolition of any elements directly in contact with the log structure and its roof should be undertaken by hand to ensure that the forces generated by the removal of these elements do not harm the original structure. Once the additions are detached from the original structure, the removal of the bulk material may continue aided by backhoe machines suited for the purpose. This work will be subject to ground vibration limitation and monitoring.

A vibration analysis, to establish the maximum permitted vibration in the vicinity of the log structure, will be prepared by a qualified geotechnical engineer in collaboration with the structural consultant. The ground will be monitored during the demolition of the additions. Any exceedance of the permitted maximum vibration will stop the work with immediate notification of the owner and heritage consultant.

At this stage it is not necessary to excavate and remove the concrete foundation of the additions. They may remain in place. This will substantially reduce the vibration of the ground around the Log Home.

To further reduce the impact of the proposed demolition, the part of the gable roof that extends over the log structure shall remain in place. It will be necessary to enclose the exposed gable with sheathing materials to block the elements and to discourage animal access to the original roof area. With this

temporary conservation construction in place, there will be time to plan for the restoration of the roof over the log structure in the full HIA.

## 2.6 **Conservation of the Log House**

While this Scoped HIA does not deal with the Log House directly, the demolition of the additions for purposes of fully revealing the Log House to facilitate its own HIA does beg the question of interim conservation of the Log House during transition to a final use and location. Once the documentation of the Log House is complete, any exterior opening will be temporarily blocked, and the house will be wrapped in a vapor permeable membrane such as Tyvek. This will seal the exterior from rain and snow without trapping humidity in the wood structure and interior. This installation will not harm the logs and can be maintained periodically by the owner until a permanent exterior cladding is approved and installed. A thorough installation of this barrier will also discourage bats from roosting in the attic through the interim transition.

A demolition Stabilization and Temporary Protection Plan including a structural assessment, risk management, hoarding construction plan, and the vibration assessment & monitoring report will be submitted to the City prior to the demolition of the additions.

## 2.7 **Summary of Applicable Heritage Conservation Principles for the Scoped Work**

From: Conservation of Historic Places in Canada

*6. Protect and, if necessary, stabilize a historic place until any subsequent intervention is undertaken.*

This applies to the remaining Log Home during a multistage rehabilitation process.

From: Eight Guiding Principles in Conservation of Built Heritage Properties

*1. Respect for documentary evidence*

*Do not base restoration on conjecture. Conservation work should be based on historic documentation such as historic photographs, drawings and physical evidence.*

The physical evidence investigation applies to the careful documentation of the Log Home and justifies removing the additions.

2. *Respect for the original location.*

*Do not move buildings unless there is no other means to save them. Site is an integral component of a building or structure. Change in site diminishes cultural heritage value considerably.*

This applies to the predicament of the site grade alteration to facilitate development of the lands under the Log Home. Relocation is necessary to save the heritage building. The full HIA will address the loss of heritage value and the alternatives for conservation and future context of the heritage asset.

## 2.8 **Proposed Demolition Justification**

The additions to the Log Home do represent changes to the life of the Log Home over time, which some principles of conservation suggest should not be removed to restore the log structure to a specific single time period.

However, the additions themselves are of no heritage value and the owner's conservation plan for the Log Home is not to restore it to an earlier time. Rather it is to save the surviving log structure, its roof silhouette and patterns of fenestration by relocating them away from the proposed site grading alterations to a safe permanent location and then conserving them within a new exterior envelope. This will protect the heritage attributes in the coming decades and will provide a practical new use that can sustain regular maintenance of the heritage attributes for the long term.

The task will best be conducted once the additions are carefully removed and the entire log structure is exposed and available for evaluation, interim preservation and ultimately for transport preparation.

## 2.9 **Recommendations**

The additions to the log structure do not contribute to heritage interest, consequently:

1. Reinforce the log structure in preparation for demolition of additions per WitzelDyce Engineering Inc. instructions.  
See Appendix D.

2. Engage the services of a vibration monitoring company to set maximum vibration tolerance around the log structure and to monitor the demolition activity to ensure the work remains within acceptable limits.
3. Stop work at once and notify the owner and heritage consultant if vibration exceeds tolerance or if any change to the log structure and stone foundation is seen.
4. By hand and without damage to the original log structure, detach all elements of the additions that connect to, or abut the log structure, including the gable roof outside the footprint of the log structure. Be sure to leave intact all the gable roof addition that is within the roof area of the log structure.
5. Similarly, leave intact all remnants of the original roof structure including eaves and fascia currently obscured by the addition
6. Once detached, remove the bulk material of the additions to the top of foundations using the smallest machine equipment suitable for the work to limit vibration of the ground.
7. Complete Log Home HIA analysis and documentation

## 2.10 **Qualifications of the Author**

The author is an architect who has been registered with the Ontario Association of Architects for more than 40 years. From 2018 he is the President of Anderson Wellsman Architects Incorporated and was formerly the Vice President of Carson Woods Architects Limited. In these roles he has provided Consulting on Kitchener area heritage projects including:

1. The Donnenworth House HIA , including relocation of the stone structure. The project team received the Mike Wagner Heritage Award.
2. The Becker House HIA. In situ rehabilitation at the Wallaceton Estates, including evaluation of two other older homes and barns in the HIA and an assessment of Plains Road leading to memorializing the remnant geometric pattern of Plains Road the Wallaceton Estates subdivision plan.
3. The Henhoeffler House HIA at the Williamsburg Green Subdivision. Ongoing consultation on the heritage precinct and continued conservation of the Heritage Building.  
also.
4. Humber Heights Consolidated School. Work with heritage colleagues Ian McGillivray and Spencer Higgins preserving and integrating the heritage attributes into a new retirement community.
5. Unionville Town Hall renovations.

6. Robert studied architectural conservation in the Ontario context, at the U of W, under Peter John Stokes, architect of Niagara on the Lake and Upper Canada Village.
7. Robert is a professional architect with decades of experience in new construction and heritage conservation. He is not a member of CAHP.

The structural engineer David Witzel P. Eng is President of WitzelDyce Engineering Inc. with over 15 years of structural engineering experience, including analysis, modelling and design of new structures and renovations to existing structures for municipal, residential, commercial, and heavy industrial clients. He has completed large projects in both Canada and the United States providing him with a thorough knowledge of the key North American design and construction standards. He is adept in using specialized problem-solving techniques such as finite element modeling to solve more difficult problems. Mr. Witzel is a registered Engineer in 9 Canadian provinces plus the Yukon Territory as well as 4 states in the United States

Relevant Projects include:

1. The Imperial Renovation and Restoration | Residential Design | New Hamburg, ON

A renovation and addition to an existing three storey masonry and wood framed building originally constructed over 120 years ago. The scope involved a full demolition of the interior finishes to accommodate the extensive structural restoration and reinforcing. New vaulted ceilings and floor toppings were added to create modern residential units. The three-storey addition accommodated a ground floor commercial space with two storeys of residential suites above. Witzel Dyce Engineering Inc. was retained to provide structural design services.

2. Hanson Heritage Barn Restoration | Residential Design | Kitchener, ON

A renovation and addition to an existing bank barn which is on a heritage property in Kitchener, Ontario. The existing bank barn was in poor shape prior to the restoration. Extensive structural rehabilitation and repair was required to preserve and change the use of the barn to a residential unit.

3. Bauer Residence - Law Office | Structural Review and Building Renovation | Waterloo, ON

This project included the structural review and upgrade of a 604 m<sup>2</sup> (6,500 sq. ft.) century home that was renovated for a new law office. The work was required as a result of a change in occupancy from residential to commercial. The existing wood structure was analyzed and retrofitted to ensure that it complied with the current building code.

4. David is a professional engineer with many years of experience in new construction and renovation of heritage buildings. He is not a member of CAHP.

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The following references were consulted:

1. Standards and Guidelines for the Conservation of Historic Places in Canada
2. Eight Guiding Principles in Conservation of Built Heritage Properties
3. The Ontario Heritage Tool Kit
4. The Tweedsmuir Archive
5. Former property owners Bill and Marleen Henhoeffter (1966-2019)

### 3.0 **Summary Statement and Conservation Recommendation**

A draft of the Heritage Attributes of 236 Gehl Place are:

1. The original Log Structure
2. The fieldstone foundation
3. The footprint and silhouette of the original log house
4. The existing fenestration pattern of the log home on the east, west, and south sides and the position of the south door
5. Original interior doors, casing, hardware
6. Original split plank lath and interior partition framing

Full list of heritage attributes will be provided in the log structure HIA

All are associated with the log structure. None are associated with the additions proposed for removal.

The later additions to the house do not contribute to the heritage value and are an obstacle to the full HIA. They should be carefully removed to help the HIA evaluation and to enable the municipally approved next steps in conservation of the heritage asset.

Prepared by:

**ANDERSON WELLSMAN ARCHITECTS INCORPORATED**



Robert Anderson, O.A.A., B.E.S., B.Arch.  
President

# **APPENDIX A**

## **ARCHITECTURAL ANALYSIS**

### **EXCERPT FROM SOUTHWEST KITCHENER URBAN AREA STUDY**





**Figure 40:**  
Photograph from the  
Tweedsmuir History  
Book of the Plains  
School House prior to  
any alterations

*Contextual Value:*

The school has considerable value as the educational centre of people within its district. Although new development is scheduled to touch its borders, the school property itself should allowed enough surrounding space to recall its rural history.

*Preliminary List of Heritage Attributes:*

- The side and front brick walls of the original school building
- The window apertures and wood frames
- The shape and silhouette of the original school building

*Evaluation:*

This site merits listing in the *Municipal Heritage Register*, designation under the *Ontario Heritage Act*, and conservation as it is defined in the *Provincial Policy Statement*.

*Reasons for Evaluation:*

The school house has some design and physical value as a representative school building in the area, but its most significant values are historical and contextual. As an institution it was very important to its community and it plays a role in the understanding of education in Waterloo Township and in Ontario. It is also important in supporting the character of its area; it is physically, visually, and historically related to its surroundings, and it forms a landmark for those in the area whose own histories are connected with that of the school.

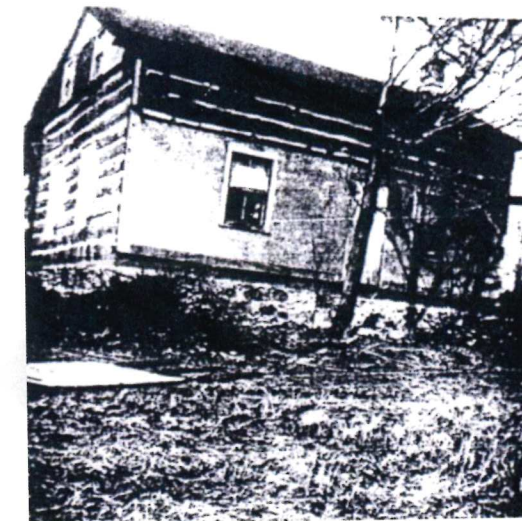
6.2.2 236 Gehl Place

*Legal description:* G.C.T. Part Lot 142, Part Lot 144

*Types of Heritage Resource:* Farmhouse and barn

*Historic/Associative Value:*

The farmstead at 236 Gehl Place was probably established by William Gehl, who acquired G.C.T. Lot 142 after the death of the previous owner William Meyer, in 1860., and gave his name to the lane leading from Bleams Road to his farm. (Meyer had purchased G.C.T. Lot 142 in 1847, when he already owned G.S.T. Lot 141). Gehl must have died soon after, however, because both the Tremaine map of 1861 shows his wife Margaret as the owner of the property and the 1861 Census report does not list William among the seven family members, the children ranging in age from 10 to 26. His will suggests that William placed a great deal of faith in his wife's abilities: he leaves her 166 acres on G.C.T. Lots 141 and 142, "to youse [sic] and manage as she thinks proper and also all the stock and farming materials [?] and house furniture." In 1861 Margaret and her family were living in what was described as a two-storey log house (figure 41). Margaret retained the property for only a brief period, however. In 1868, it was sold to George Israel, and it remained in the Israel family until 1866. In recent decades it has been owned by Edward Henhoeffter (Land records, 1851 and 1861 Census reports).



**Figure 41:** Historical photograph of log house at 236 Gehl Place. (From the architectural analysis by Don Ryan, where the photograph was included courtesy of Mrs. Genevieve Henhoeffter)



**Figure 42:** The house at 236 Gehl Place, 2010



*Design/Physical Value:*

The house has value as an enduring pioneer dwelling that has undergone relatively few changes to its physical structure. The original log house still exists under layers of later cladding: it was covered in stucco, then insul-brick, and then, in 1966, aluminum siding which was added after the insul-brick was removed. Additions have been added to the west and north, but the original fenestration pattern remains on the south façade and on the east and west sides. In the Georgian tradition, the windows are all placed symmetrically, but the front door is off-centre in order to allow entry directly into the main living area. Inside, much of the original floor plan remains, and the walls have a plaster finish as did the original log house. A verandah that once stretched along all of the south façade has been replaced by a one bay porch (Ryan 1991). The front shed-roofed dormer is a later addition.



Figure 43: The barn at 236 Gehl Place

*Contextual/Cultural Landscape Value:*

The house still sits at the end of the long road that traditionally led from Bleams Road, and it looks south over acres of tilled fields as it has throughout its history. The original barn still stands (figure 42), though its roof has naturally had to be replaced, so the spaces defined for the farmstead are relatively intact.

*Preliminary List of Heritage Attributes:*

- The original log structure
- The fieldstone foundation
- The footprint and silhouette of the original house
- The existing fenestration pattern on the east, west, and south sides, and the position of the front door
- Original interior and exterior doors
- Original baseboards and door and window surrounds
- Original floor joists
- Original floor boards

*Evaluation:*

This site merits listing in the *Municipal Heritage Register*, Designation under the *Ontario Heritage Act*, and conservation as it is defined in the *Provincial Policy Statement*.

*Reasons for Evaluation:*

The property has design and physical value as a early, representative example of a substantial log dwelling. It has historical value because of its associations with a pioneer family, with an important family in the community, and with the development and

practice of agriculture in the area. It therefore also has contextual value in defining, maintaining, and supporting the character of the area, and in its physical, functional, visual, and historic links to its surroundings.]

6.2.3 397 Gravel Ridge Trail

*Type of Heritage Resource:* Former farmhouse

*Historic/Associative Value:*

The subject house formerly fronted Bleams Road on G.C.T. Lot 132, on the site where it was built by Jacob Donnenwerth, a German-speaking immigrant from Alsace, in 1856. Donnenwerth's house and farm was operated by family members for five generations: by his son, the husband of his granddaughter, and, although it was sold out of the family for some years, after 1925 by the husband of his great-granddaughter, Isaiah Eby, and by his great-great grandson Nyle Eby. In 1960, the Warren Paving Company established a gravel excavation site on the property (Mrs. Isaiah Eby, entry in Tweedsmuir Books, 1965; Read 1988: 4). By 1991, the barn necessary for farming had been removed, along with a summer kitchen, woodshed, and smokehouse (Ryan 1991: 1). When RBJ Schelegel contemplated developing Eby Estates on the property, then owners Nyle Eby and his sister Audrey Becker made the conservation of the family homestead a priority. After the 400-ton house was moved to its present location in November of 2006, however, its roof and wooden interior were destroyed by fire. The exterior of the house was nevertheless carefully restored by RBJ Schlegel (Vaughan Bender 2010; plaque in front of the restored house), and it is currently for sale, with a board-and-batten addition and garage at the rear of the building (figure 44).



Figure 44: The Donnenwerth/Eby house now at 397 Gravel Ridge Trail

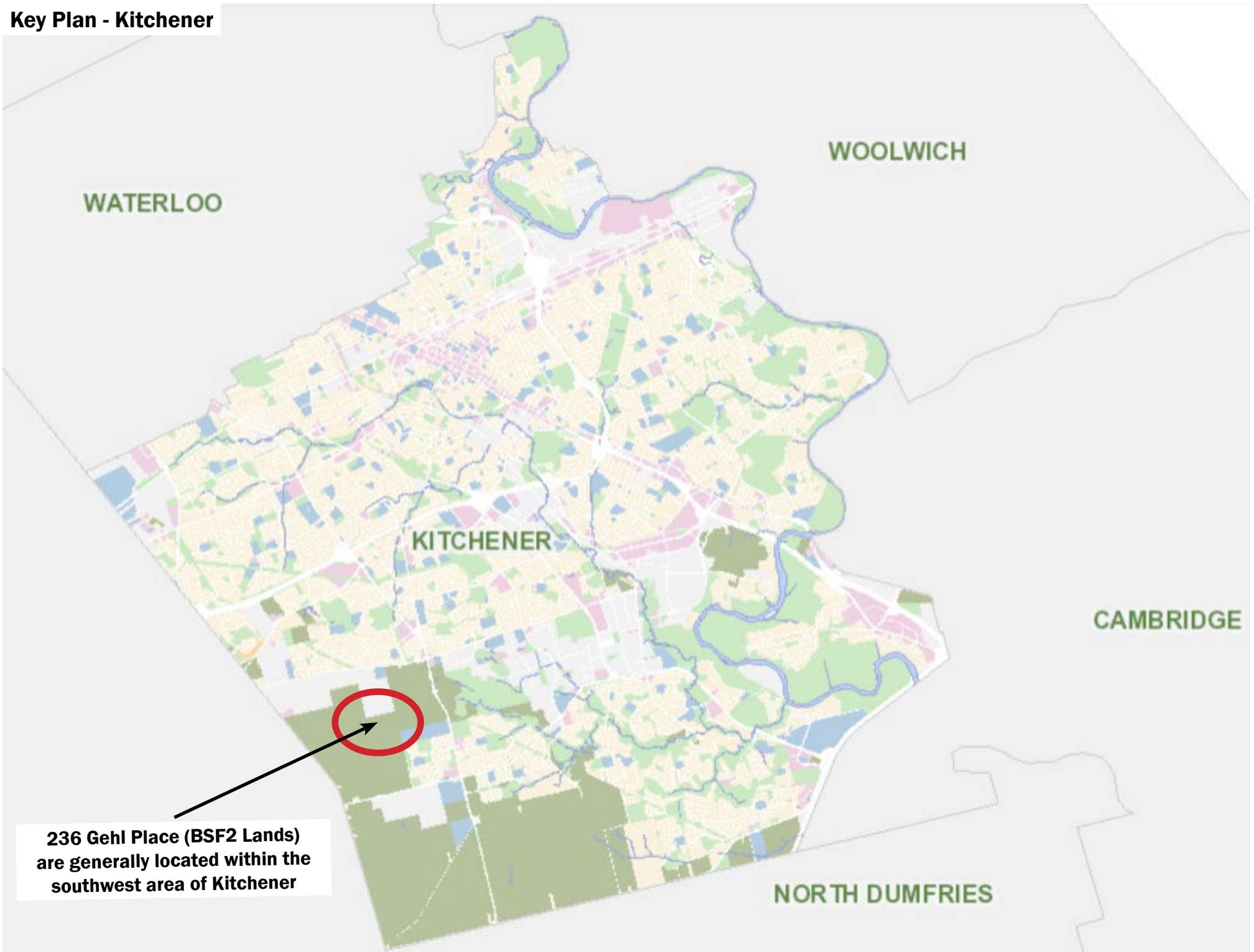
# **APPENDIX B**

**PHOTOGRAPHS:**

**- 236 GEHL PLACE**



**Key Plan - Kitchener**



**236 Gehl Place (BSF2 Lands)  
are generally located within the  
southwest area of Kitchener**



**Key Plan - Southwest Kitchener**



Bleams Road

Gehl Place

Fischer-Hallman Road

236 Gehl Place  
(‘BSF2’ Lands)

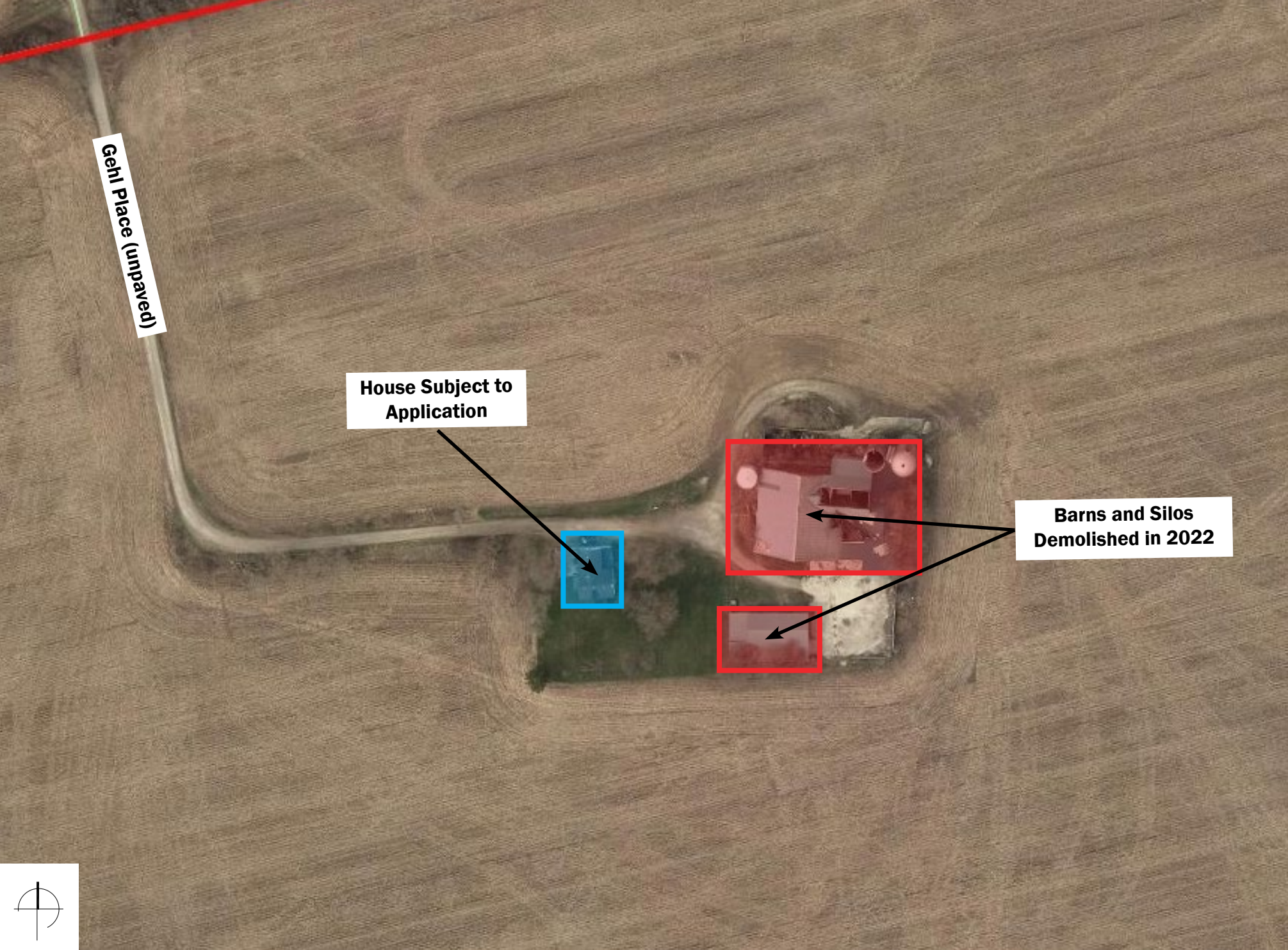
Trussler Road

Huron Road





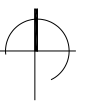
**Key Plan - 236 Gehl Place Farm Property**



Gehl Place (unpaved)

House Subject to Application

Barns and Silos Demolished in 2022



**Aerial - Limits of Demolition**

**Non-original additions  
proposed for demolition**



**Limits of Original  
Log Structure**





**Facade Orientation**



**North Elevation**

**East Elevation**

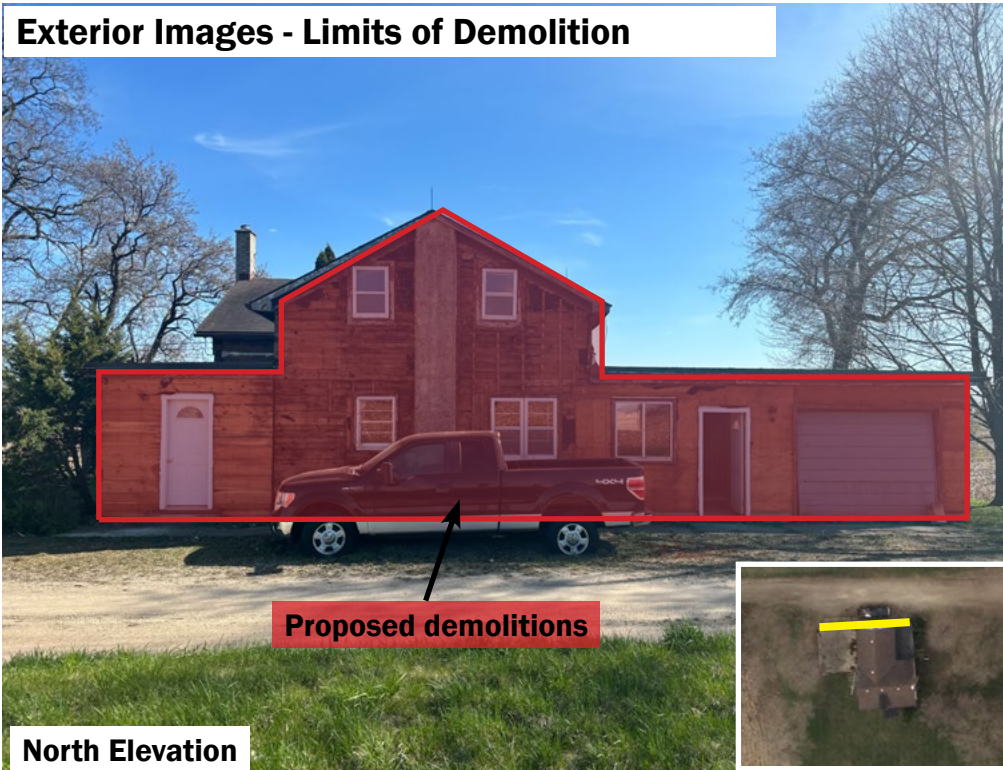
**West Elevations**

**South Elevations**

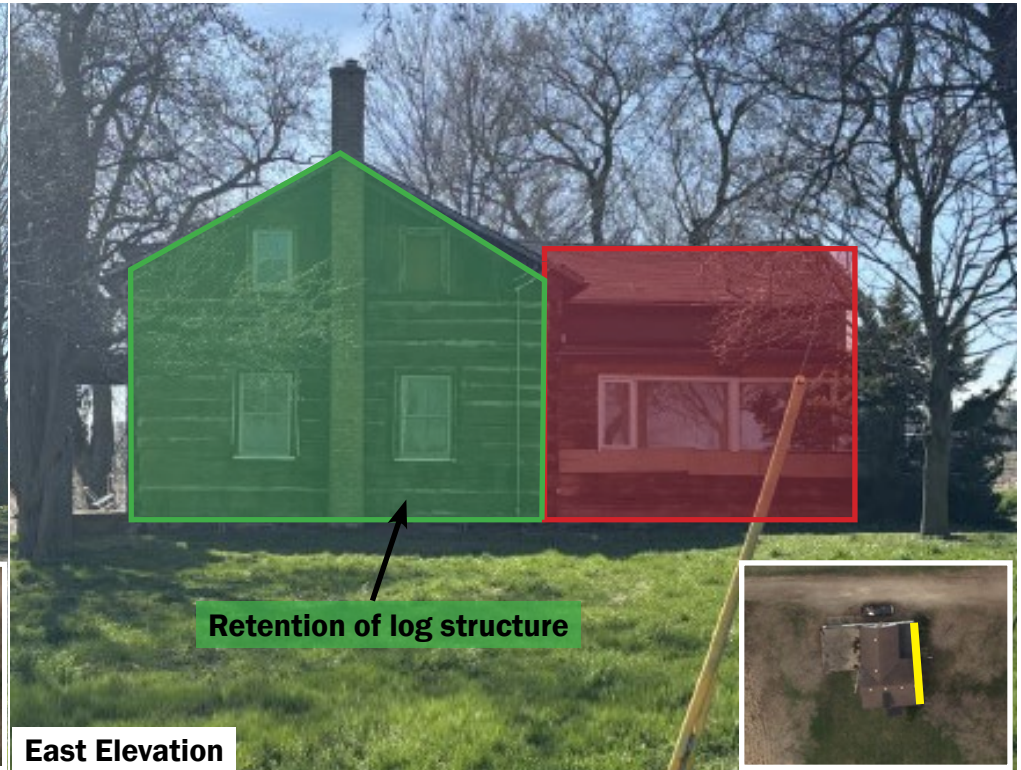




**Exterior Images - Limits of Demolition**



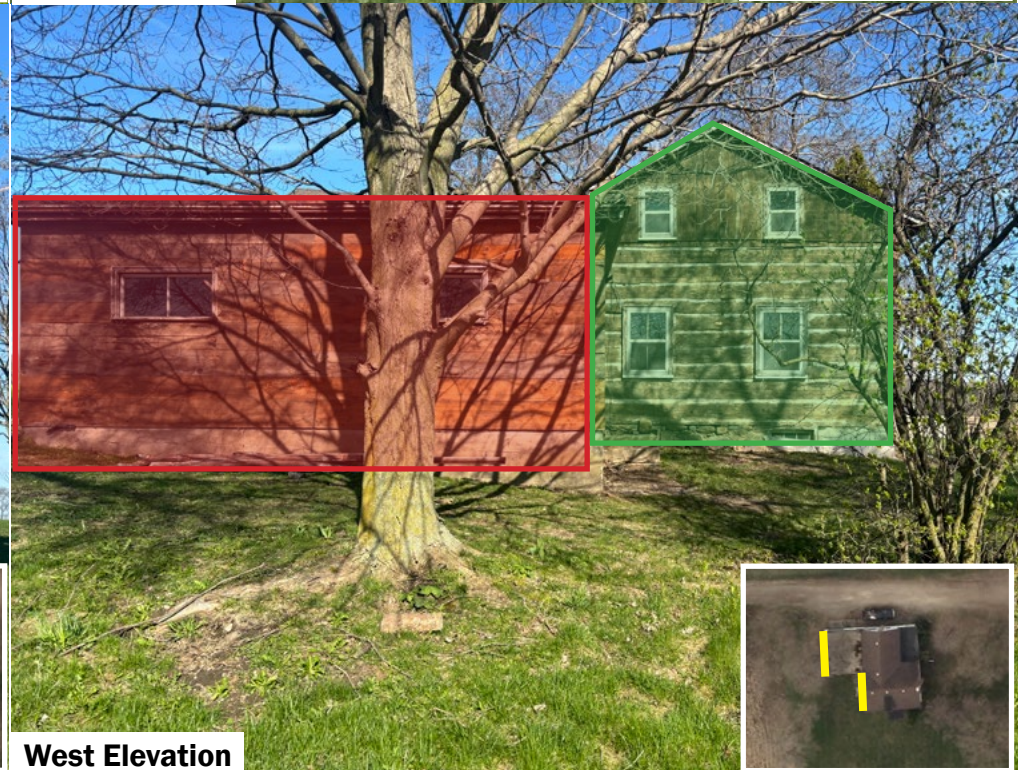
**North Elevation**



**East Elevation**



**South Elevation**



**West Elevation**





**NORTH ELEVATION**



**EAST ELEVATION**



**SOUTH ELEVATION**



**WEST ELEVATION  
LOG STRUCTURE**





**WEST ELEVATION  
GARAGE**



**EAST SIDE  
JUNCTION OF LOG  
STRUCTURE TO 1-  
STOREY ADDITION**



**UTILITY ROOM**



**UTILITY ROOM  
GARAGE  
PARTITION**



**UTILITY ROOM 2-  
STOREY WALL**





**GARAGE**



**KITCHEN LOOKING  
NORTHEAST**



**KITCHEN LOOKING  
SOUTHEAST**



**FAMILY ROOM**



**FAMILY ROOM**



**SECOND FLOOR  
BEDROOM**





**CUT OUT FOR  
WASHROOM  
DOOR OPENING  
LOOKING NORTH**



**CUT OUT FOR  
WASHROOM  
DOOR OPENING  
LOOKING SOUTH**



**REMNANT  
OF STUCCO  
SIDING AT  
FAMILY  
ROOM  
SOUTHWEST**

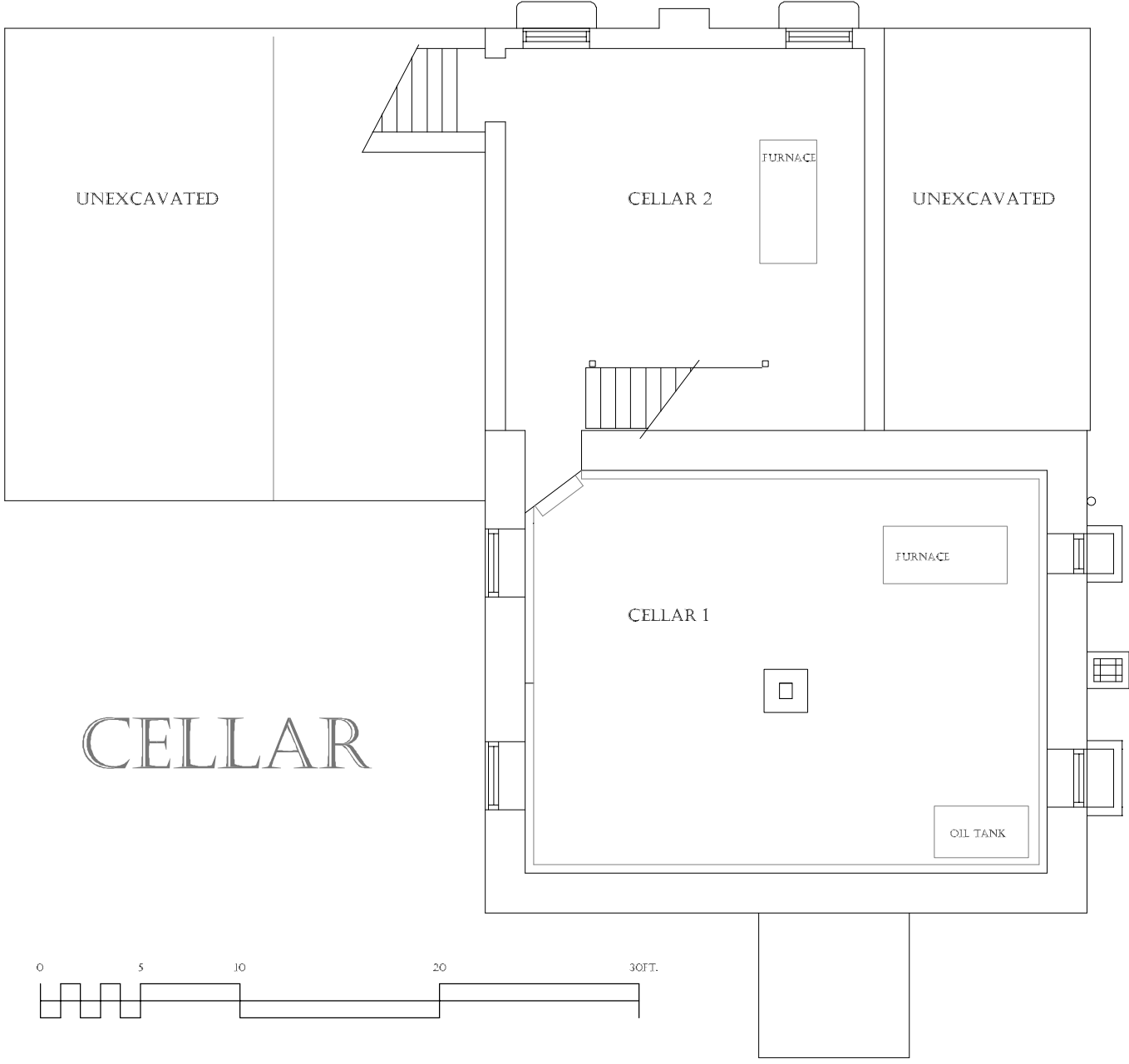


**DETAIL OF  
STUCCO  
SIDING AT  
FAMILY  
ROOM  
SOUTHWEST**

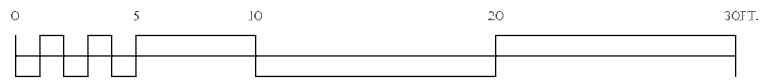
# **APPENDIX C**

**MEASURES DRAWINGS:**

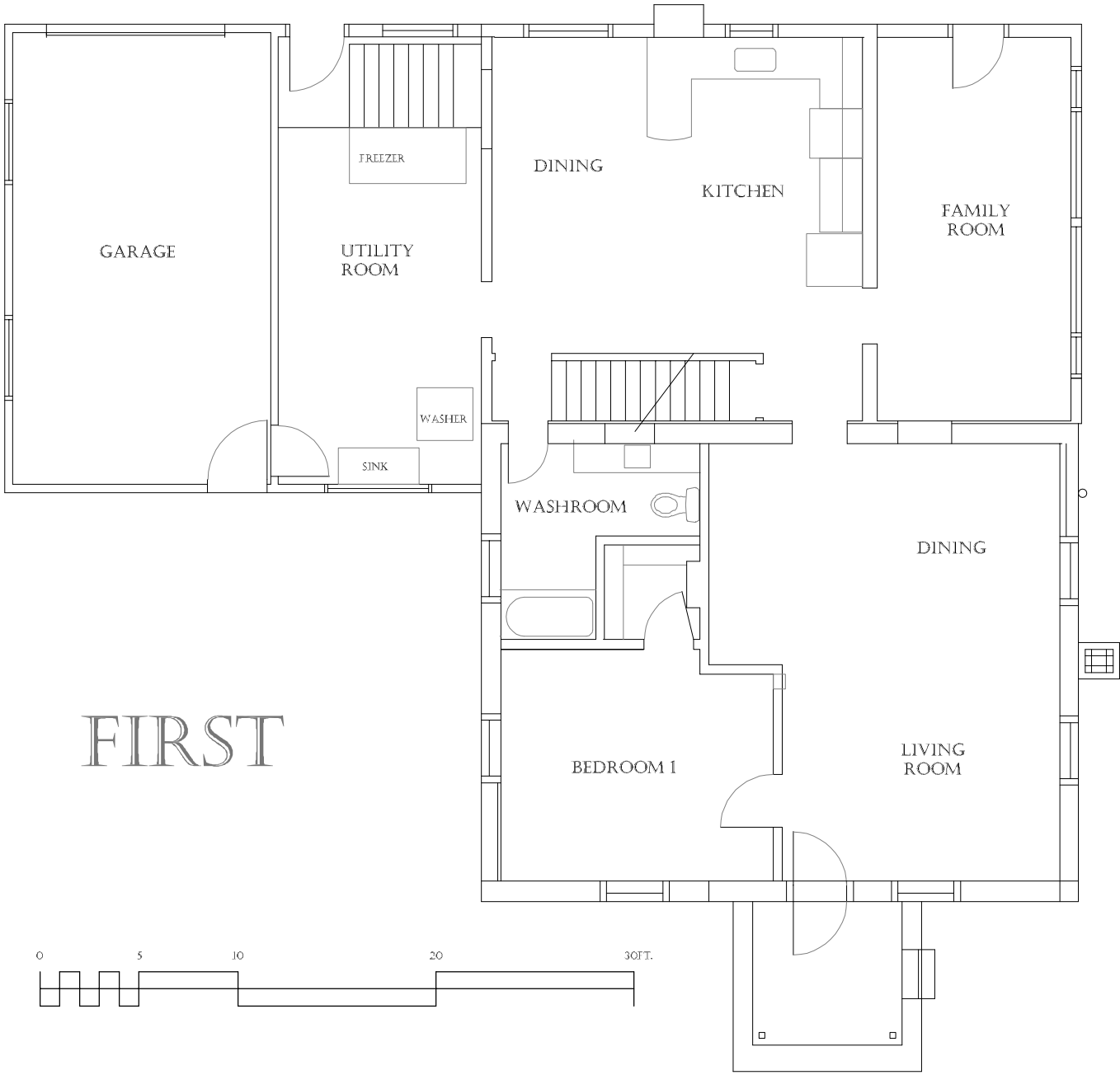
**236 GEHL PLACE**



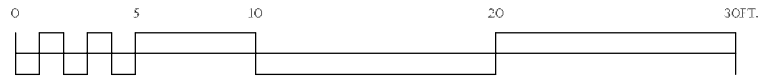
# CELLAR



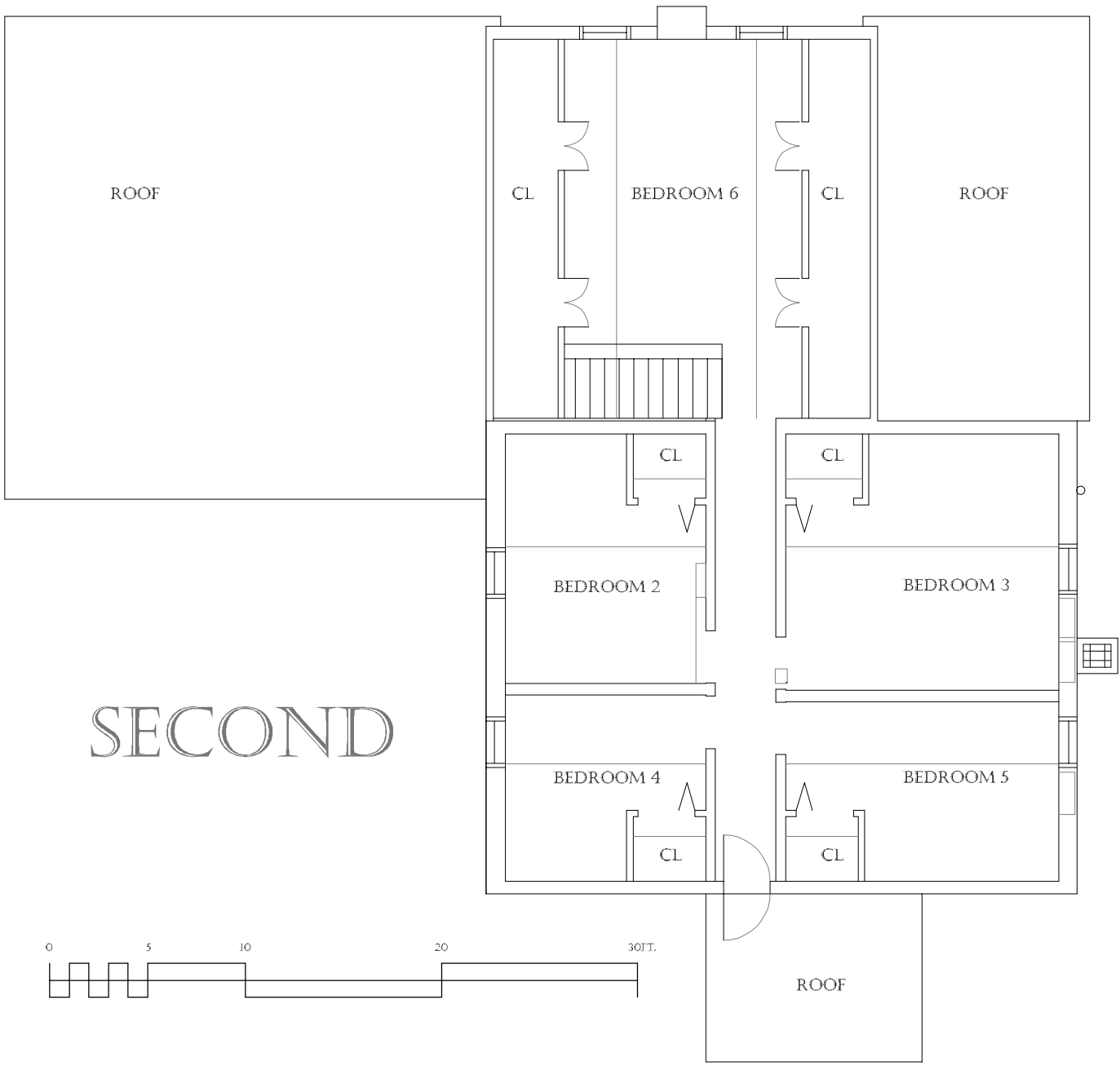
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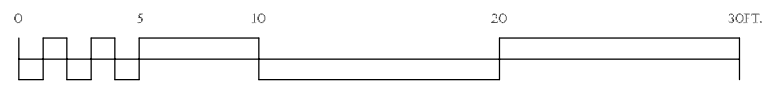
FIRST



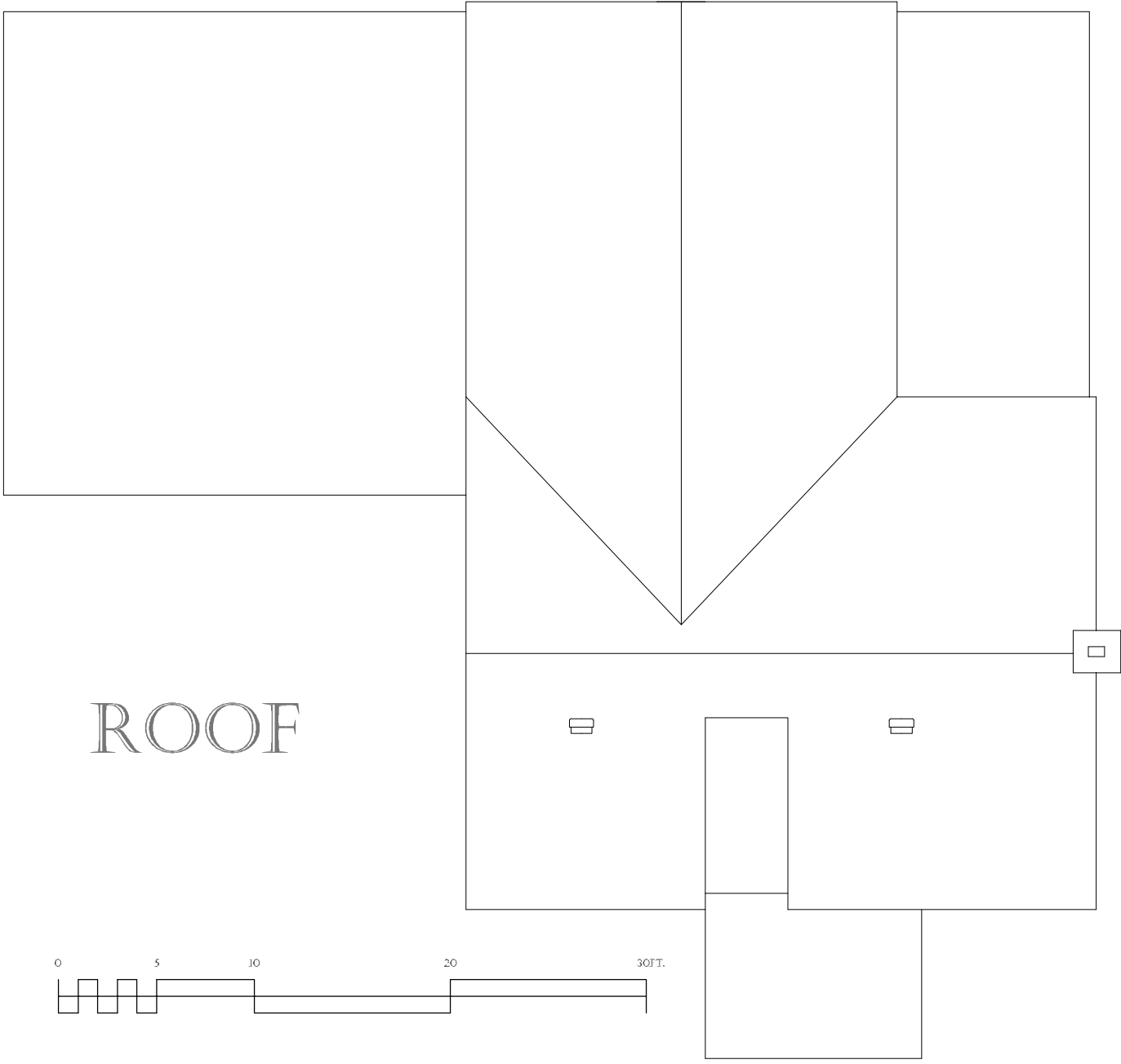
Sheet No. <b>A02</b>	Drawing Title: GROUND FLOOR PLAN		Input: Checked: RA Revised:	Scale: $\frac{1}{8}'' = 1'$ Date: 2024.04.15	Project: <b>236 GEHL PLACE</b>
			Job No.: 2406	ANDERSON WELLSMAN ARCHITECTS INCORPORATED 1990 DON MILLS ROAD SUITE 612 TORONTO Toronto Ontario M3C 5R6 (416) 923-2775	



SECOND



Sheet No. <b>A03</b>	Drawing Title: SECOND FLOOR PLAN		Input: Checked: RA Revised:	Scale: 1/8" = 1'	Project: 236 GEHL PLACE
				Date: 2024.04.15	Job No. 2406
ANDERSON WELLSMAN ARCHITECTS INCORPORATED 1990 DON MILLS ROAD SUITE 612 Toronto Ontario M3C 5R6 416) 923-2775					



Sheet No.

**A04**

Drawing Title:

ROOF PLAN

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Date: 2024.04.15

Job No.

2406

Project:

236 GEHL PLACE

**ANDERSON WELLSMAN**  
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Toronto Ontario M3C 5R6 (416) 923-2775



Project: <b>236 GEHL PLACE</b> Kitchener, Ontario	Drawing Title: SOUTH ELEVATION	Input: Checked: RA	Scale: $\frac{1}{8}'' = 1'$ Date: 2024.04.15	Sheet No. <b>A05</b>
<b>ANDERSON WELLSMAN ARCHITECTS INCORPORATED</b> <small>1090 DON MILLS ROAD SUITE 612 Toronto          Toronto Ontario M3C 3R6 416) 923-2775</small>		Revised:	Job No. 2406	





Project: **236 GEHL PLACE**  
Kitchener, Ontario

Drawing Title: **EAST ELEVATION**

Input:  
Checked: RA

Scale:  $\frac{1}{8}'' = 1'$   
Date: 2024.04.15

Sheet No. **A06**

**ANDERSON WELLSMAN ARCHITECTS INCORPORATED**  
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Toronto Ontario M3C 3R6 416) 923-2775

Revised:

Job No. 2406



Project: 236 GEHL PLACE  
Kitchener, Ontario

Drawing Title: WEST ELEVATION

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Scale:  $\frac{1}{8}'' = 1'$

Sheet No.

Checked: RA

Date: 2024.04.15

**A07**

ANDERSON WELLSMAN ARCHITECTS INCORPORATED 1090 DON MILLS ROAD SUITE 612 Toronto Toronto Ontario M3C 3R6 416) 923-2775

Revised:

Job No. 2406



Project: <b>236 GEHL PLACE</b> Kitchener, Ontario	Drawing Title: <b>NORTH ELEVATION</b>	Input: Checked: RA	Scale: $\frac{1}{8}'' = 1'$ Date: 2024.04.15	Sheet No. <b>A08</b>
<b>ANDERSON WELLSMAN ARCHITECTS INCORPORATED</b> 1090 DON MILLS ROAD SUITE 612 Toronto Toronto Ontario M3C 3R6 416) 923-2775		Revised:	Job No. 2406	

# **APPENDIX D**

**STRUCTURAL ASSESSMENT & RECOMENDATIONS**

**- 236 GEHL PLACE**



May 14, 2024

WDE File No.: 16516-100

Robert Anderson  
Anderson Wellsman Architects Inc.  
1090 Don Mills Road, Suite 612  
Toronto, Ontario, M3C 3R6

**RE: Structural Heritage Impact Assessment  
236 Gehl Place, Kitchener, Ontario**

Dear Mr. Anderson:

Witzel Dyce Engineering Inc has been retained to assess the structural condition of the existing heritage house located at 236 Gehl Place, Kitchener, Ontario. The log house was constructed c. 1860 and had two subsequent additions since then. The first of which was a two-storey addition completed c. 1920-1930s, and a second one-storey addition completed in 1960. Additionally, the basement floor slab was lowered, and the original rubble foundations were underpinned. The exact date of the foundation underpinning is unknown; however, it is estimated to be 1980 by former resident William (Bill) Henhoeffler who dug the basement by hand with the help of his son.

As per the schematic architectural drawings as provided by Anderson Wellsman Architects, the basement cellar below the heritage structure is approximately 520 sq.ft, the total ground floor is  $\pm 1450$  sq.ft (excluding garage) and the total second floor area is approximately 1000 sq.ft. The ground floor area is approximately 530 sq.ft and currently contains a living, dining, bedroom and washroom. The existing structure is stick framed with heavy timber log walls atop rubble foundations.

## **1.0 Site Reviews and Structural Assessment**

Site Reviews were conducted by David Witzel, P.Eng on March 5, 12, 25 and April 19, 2024, to review and visually assess the existing structure. Photos of the site review can be found in Appendix A. The goal of the site review was to ascertain the condition of the

heritage log structure. The additions that were constructed later were also reviewed and recommendations for demolition shall be discussed below.

At the time of the initial review, the exterior of the log structure was concealed behind aluminum siding, and the interior was concealed behind lathe and plaster. The decision was made to remove the lower four to six feet of siding and cut holes in the lathe and plaster on the interior of the structure to expose the logs.

Following the initial review of the exposed log structure, it was determined that the structure was in fair condition, and it would be worthwhile to expose the entire structure, both externally and internally for a follow up review.

Our findings are provided in the following sections:

### Exterior Log Walls

The exterior walls of the log structure were constructed of rectangular logs 12 to 18 inches deep, and approximately 8" wide. The log walls were chinked along the horizontal joints which is typical for log structures of this era. Corners are finished with a finger joint lap with minimal cracking or shrinkage present (Photos 1, 2, 3, 4). The end grain at corners appeared to be in fair condition showing minimal signs of rotting or checking (Photo 9). Minor deterioration was observed specifically around windows which is relatively common, as these areas are typical prone to moisture accumulation, typically as a result of poor sealant around the window frames. The deterioration was less than was expected following the removal of the siding. The chinking appeared to be in fair condition around the entire perimeter with few locations showing minor cracking, in other locations chinking had fallen out completely (Photo 6). This is not uncommon for chinking as the timber logs will expand and contract over time due to expansion and shrinkage caused by changes in moisture content in the timber. It is recommended that chinking be repaired as required to maintain the integrity of the log structure.

The logs were covered by aluminum siding which has done an excellent service to the structure by protecting the timber logs from direct weather. The siding was supported by 1x2 vertical strapping which provided good ventilation between the siding and the logs (Photos 5, 6, 7, 8). From the assembly, it appears that the logs have been relatively well protected from excessive weathering but allowed to ventilate and get rid of any excessive moisture. This is consistent with the log condition as observed on site.

Overall, the existing exterior face of the log wall appeared to be in generally fair condition with minor re-chinking being the only remediation required. The condition is as expected for the age and type of construction considering it has been well protected and maintained. We would recommend that the log structure be covered in a similar manner to its existing condition to ascertain long-term preservation of the log structure.

### Rubble Foundations

The heritage structure sits on a stone-rubble foundation that is exposed around both the interior and exterior. From the exterior, one corner had parging present, however, in most locations there was no parging visible – it is unclear whether this was a result of the exterior finish demolition, or if the rubble wall has been left unparged (Photos 7, 8). In some locations, it appeared that the mortar which binds the large stones in the foundation together has severely deteriorated such that it appears there are large gaps between individual stones (Photo 11). The condition may be consistent if the exterior rubble wall was left unprotected and allowed to weather over the years. This is not uncommon if vegetation was present in front of the wall which likely accelerated weathering on the rubble wall. From the interior however, this did not appear to be the case. Stones were well embedded into a mortar which appeared to be well maintained showing only minor signs of cracking (Photo 14).

From the interior, it is also evident that underpinning was completed at some point to lower the basement slab. The ledge of underpinning is approximately 24" tall with the width unknown, however it is likely that the ledge extends underneath the existing rubble. There are no signs of major disturbances as a result of the underpinning such as slab or rubble wall cracking indicating no structural issues (Photo 13).

Overall, the rubble foundation walls appeared to be in fair condition with no further remediations required at this time.

### Basement Structure and Ground Floor Framing

A simplified mark-up of the structural framing for the ground floor, including second and roof framing, are shown in Appendix B. All sizing and dimensions are to be verified.

The ground floor framing as viewed from the basement, appeared to be framed with 8"x3" joists at roughly 28" on center (varying  $\pm 2-3"$ ). The joists spanned from the exterior walls

to a central 8.5"x11" (depth x width) wood beam. The joist spans either side of the beam are approximately 12'-6". Atop joists appeared to be plank decking in lieu of plywood. Additionally, there is a wood column located at midspan of the center beam and supported by a large pad footing at the base (Photos 13, 14).

It was noted that there was a section of infill floor framing near the center of the main floor which was likely where the original stair into the cellar was located. This section of floor infill was poorly constructed, and there is sagging in the floor as a result. We strongly recommend that this section of floor is reinforced as it is currently considered an unsafe condition on the main floor. There was also a modification to the floor framing to accommodate the furnace and duct work on the east side of the structure.

Overall, the ground floor framing appeared to be in fair condition other than locations requiring reinforcing. The heavy timber elements (beam and column) appeared to be in fair condition showing no major signs of deterioration or checking. It is recommended that a full structural analysis be conducted to review the overall scope of reinforcing which may be required to certify the floor structure. Reinforcing works may include sistering existing joists, replacing floor sheathing or the removal and replacement of joists in poor condition. This work has not yet been completed, but it is recommended if the building is to be re-occupied.

### Second Floor Framing and Roof

The second-floor framing is similar to the ground floor framing. Spans, beams, joist sizing, and spacings are almost identical with minor differences as shown in the markup in Appendix B. There are no major concerns or comments with the second-floor framing at this time.

The roof framing is conventional stick framed rafters with ceiling joists spanning from exterior wall-to-wall. The rafters were found to be approximately 5.5" x 2.5" at what appears to be 30-36" on centers. The size and spacing of the rafters should be confirmed on-site. Collar ties fasten the rafters at approximately midspan of both rafters. (Photos 17, 18) The roof ridge over the additions appears to be sagging significantly more than the roof over the timber log structure.

Without removing finishes and conducting a more extensive review of the roof structure, it is not immediately clear what the cause of the sagging is. However, it is not uncommon for older roofs to show large deflections such as those observed here. The cause can vary from general deterioration to extensive shrink and swell cycles experienced over



many years. It is recommended to monitor the roof to ensure the sagging does not continue to worsen. Ultimately, the roof over the original log structure is in fair condition. Reinforcing the roof sag may require shoring and jacking the existing roof up followed by sistering of existing rafters and/or collar ties. At the time of writing this report, it is difficult to ascertain the overall reinforcing required. A full analysis should be completed to conclude the adequacy of the existing roof and any reinforcing which may be required in due course. It is not recommended to try and remove the permanent deformation of the roof as it is likely the result of wood shrinkage and long duration loading. It may be advisable to sister the roof members if the building is to be re-occupied. Additional rafter thickness would also provide the opportunity for better roof ventilation and insulation.

### Additions

The two additions that have been added over the lifespan of the home. The additions adjacent to the log structure did not appear to affect the original structure. There did not appear to be any major structural elements, such as beams or columns, bearing on the heritage structure which would require conservation. It is likely that the demolition of the additions would not impact the log house structure besides the work required to close in the openings that were added between the log structure and the additions. Reframing and sealing of the roof and second floor walls will be required to close in the portion of roof over the heritage structure where it joins the additions and stairs. Additionally, a new internal stairwell will likely be required to access the second floor from the main floor of the heritage log structure.

It is highly recommended that structures be temporarily protected during demolition of the additions to ensure that no damage occurs to the existing heritage structure. The extent of the protection requirements shall be determined upon the removal of finishes and verification of the addition to log structure interface. Potential temporary protection may include sheathing, tarping, or use of ram board to protect vulnerable areas near the demolition from spills, impacts, abrasions, or excessive dust build up. This work is considered to be relatively minor in nature as the additions to be removed are not supporting the heritage log structure. We would expect that the openings would be framed, temporarily or permanently, with infill wood stud framing and sheathing, and then treated with insulation, air barriers, vapour barriers and rain screens as required.

## **2.0 Required Reinforcing**

Minor repairs to the ground floor are required as a result of joists damages. We would recommend sistering damaged floor joists with new 2x8 sawn lumber.

The roof will need to be framed, sheathed, and closed in when the additions are removed. Temporary shoring is not anticipated to support the existing structure during removal of the additions. Reinforcing and closure plans will be provided in due course following removal of finishes. It is anticipated that the work will be minor in nature and will not negatively impact the heritage log structure.

Additionally, work may be required to create a new opening into the cellar and second floor of the structure. The original stair openings, if re-used, will require minor reinforcing as they do not meet current standards.

The cut door opening (Photo #19), as well as other openings, on the North wall of the home shall be blocked and closed in with wood framing prior to the removal of the additions. It is not anticipated that the openings would require additional reinforcing to support gravity loads due to the removal of the additions. Additional plans and details will be provided in due course. This work is expected to be minimal and not affect the heritage log structure.

A vibration monitoring program is to be conducted during demolition in order to limit any damages that may occur. A standard range for historic structures based on various standards falls between 0.1 – 0.5 in/sec peak particle velocity for frequencies under 10 Hz. The range above is perceptible but is not likely to cause any damage to the structure. Although it is not anticipated, vibrational mitigation may be required dependent on the results of the vibration monitoring such as restricting machinery use or implementing vibrational damping pads. The basis for the vibration monitoring program shall be determined by a qualified expert with experience in heritage type structures.

## **3.0 Conclusion**

The heritage structure at 236 Gehl Place appears to generally be in fair condition. The exterior timber log walls have been well preserved over time, almost certainly as a result of the decision to clad the structure in aluminum siding. The main floor framing required some minor reinforcing to better support the section of floor where the original stairs were likely located. This reinforcing will require the sistering of joists and shall be completed prior to the demolition of the additions.

The second floor and roof appeared to be in fair condition. Minor infill framing shall be completed to the opening in the roof and walls of the heritage structure as required once the demolition of the additions is completed.

Sagging of the roof and minor cracking of chinking shall be monitored to ensure the condition is not worsening at an accelerated rate. It is not uncommon that brittle materials such as chinking, gypsum, plaster or any masonry-based materials experience cracking over time. It is difficult to ascertain at this time whether or not the roof must be reinforced however it is expected that any reinforcing or sistering of roof rafters may be completed following the demolition of the additions.

The removal of the additions should be completed carefully to ensure the log structure is not damaged during demolition. Temporary protection such as sheathing, tarping, ram board etc. should be used to mitigate any of damages which may occur. The extent of protection shall be finalized upon removal of finishes and verification of the interface between the additions and the heritage structure. The additions near the log structure shall be manually hand demolished with the use of heavy machinery limited to reduce vibrations.

Lastly, a vibration monitoring program is to be conducted during demolition. The final range for the monitoring program should be determined by a qualified expert taking into consideration the type of construction, age of the structure, type of tools used, and structure importance. The final vibration criteria should be coordinated and agreed upon with the demolition engineer and contractor to ensure feasibility with continual reviews to ensure that program compliance is achieved.

We trust this meets your current requirements. Should you have any questions or comments please feel free to contact our office.



Hasan Basic  
Designer



David Witzel, P.Eng., P.E.  
Principal

### Qualifications of the Author

David Witzel, P. Eng has over 15 years of structural engineering experience including the analysis and design of new structures and renovations to existing structures for heritage, residential, commercial, and industrial clients. David has obtained specific heritage experience at local projects including, but not limited to:

- **The Imperial Renovation & Demolition:** a three-storey masonry and wood framed building constructed c. 1890 requiring extensive structural rehabilitation.
- **St. Jacobs Market - The Mennonite Story:** one and a half storey log cabin conversion requiring structural assessment and reinforcing details for exterior rehabilitation.
- **Hanson Heritage Barn Restoration:** stick framed wood barn renovation and extensive structural rehabilitation to preserve and amend the use of the barn.
- **19 Regina Building Restoration and Office Conversion:** 3-storey wood and masonry structure with basement preserved and converted from residential to office space, basement lowering, and additional floor added.
- **B-W Feed Mill:** Structural Assessment of a heritage mill constructed of heavy timber and masonry.
- **9 Queen Street:** A renovation and addition to a historic building in downtown Kitchener, converting the space into Class A office.

Additionally, David has completed hundreds of projects on buildings over a century old, many of which do not have heritage designations, but have very similar construction. He has also designed numerous projects with heavy timber construction for various purposes including residential, commercial, institutional, and agricultural.

**Limitations**

This report has been prepared by Witzel Dyce Engineering Inc. (WDE) at the request of Schlegel Urban Development. The material in it reflects the best judgment of WDE based on the information which was available at the time of its preparation. Any use of this report by a third party or any reliance or decisions made based on this report are the responsibility of that third party. WDE accepts no responsibilities for damages, if any are incurred, suffered by any third party as a result of decisions or actions made based upon this report.

WDE accepts no responsibility for any decisions and or actions taken as a result of this report unless WDE is specifically advised of and participates in such actions, in which case WDE's responsibility will be agreed to at that time. Any user of this report denies any right to claim against the Consultant, Sub-consultants, the Officers, Agents and Employee in excess of the fee paid for the professional services.

This assessment does not wholly eliminate uncertainty regarding the potential for existing or future costs, hazards or losses in connection with a property. No physical or destructive testing and no engineering calculations have been performed unless specifically mentioned in the report. Existing conditions which have not been recorded may not have been apparent given the level of study undertaken. Further investigation on any items of concerns can be undertaken if required. Only specific information that has been identified has been review. The consultant is not obligated to identify any mistakes or insufficiencies in the information obtain from various sources, nor is it obligated to verify the accuracy of such information. The consultant is permitted to use the information provided by various sources in performing its services and is entitled to rely upon the accuracy and completeness thereof. It is not WDE's responsibility to detect or advice on any pollutants, contaminates or hazardous materials.

**Appendix A – Site Review Photos**



Photo #1: North elevation (exterior finishes removed)



Photo #2: East elevation (exterior finishes removed)





Photo #3: South Elevation (exterior finishes removed)



Photo #4: West Elevation (exterior finishes removed)





Photo #5: Exterior log wall and dutchman / finger joint corner from east elevation





Photo #6: South elevation, crumbling chinking, exposed rubble wall



Photo #7: South elevation, partial parging at corner





Photo #8: West elevation, partially parged foundation, exposed wall with chinking





Photo #9: Corner log measurement



Photo #10: Wall log depth measurement





Photo #11: East elevation, exposed rubble foundation, crumbling mortar and chinking





Photo #12: Exposed portion of wall from interior





Photo #13: Basement, underpinning, rubble foundation wall



Photo #14: Basement, joists cracking and notching. Plank decking spanning over joists.



Photo #15: Central column on pad footing





Photo #16: End bearing condition over rubble wall.





Photo #17: Roof framing finishes removed.



Photo #18: Roof framing finishes removed.



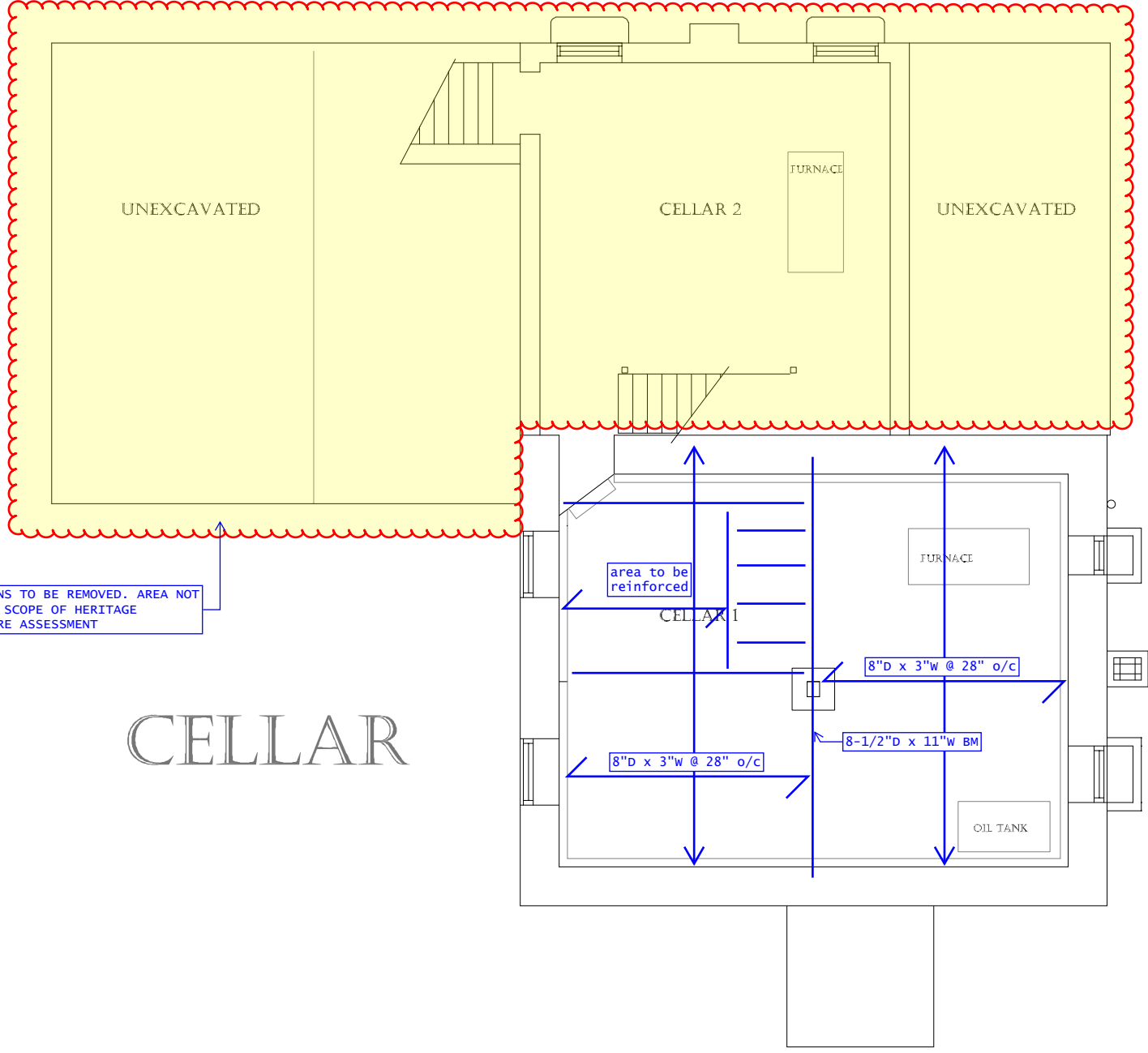
Photo #19: Northwest corner washroom door opening.

**Appendix B – Architectural Plans with Structural Markups**



ADDITIONS TO BE REMOVED. AREA NOT PART OF SCOPE OF HERITAGE STRUCTURE ASSESSMENT

# CELLAR



Sheet No.

**A01**

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CELLAR PLAN

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1/8" = 1'

Date: 2024.04.15

Job No.

2406

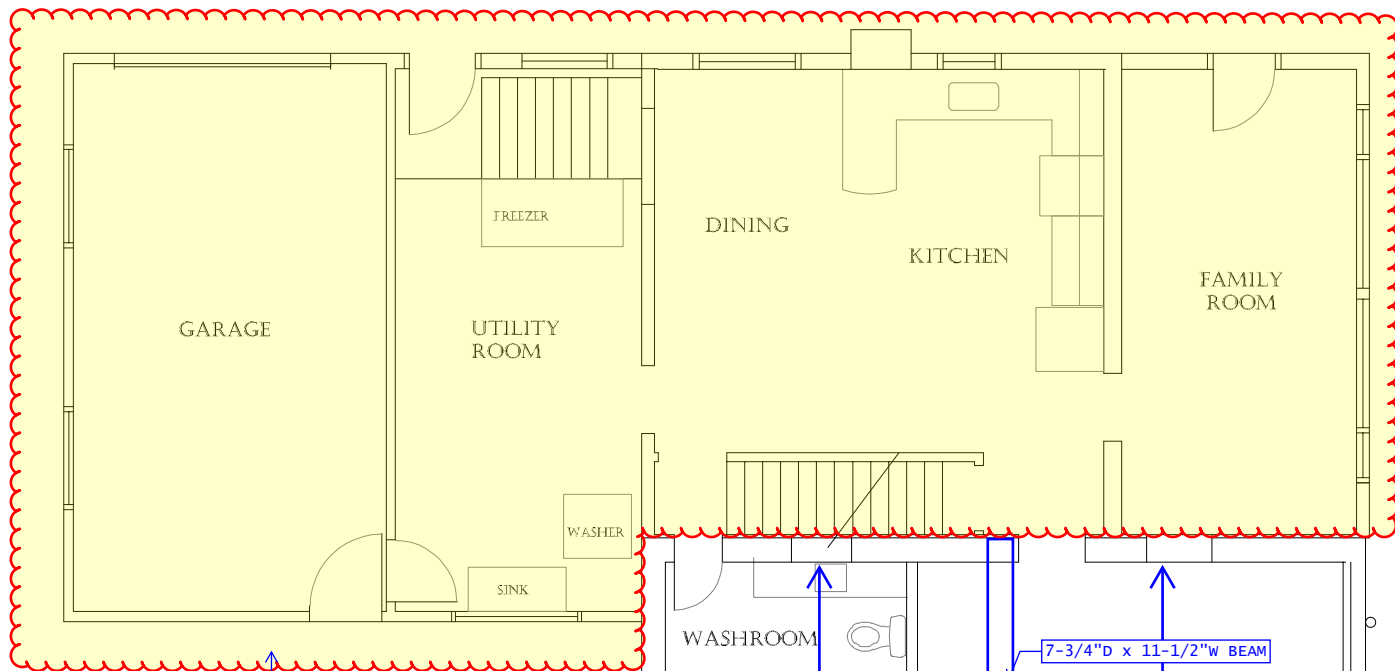
Project:

236 GEHL PLACE

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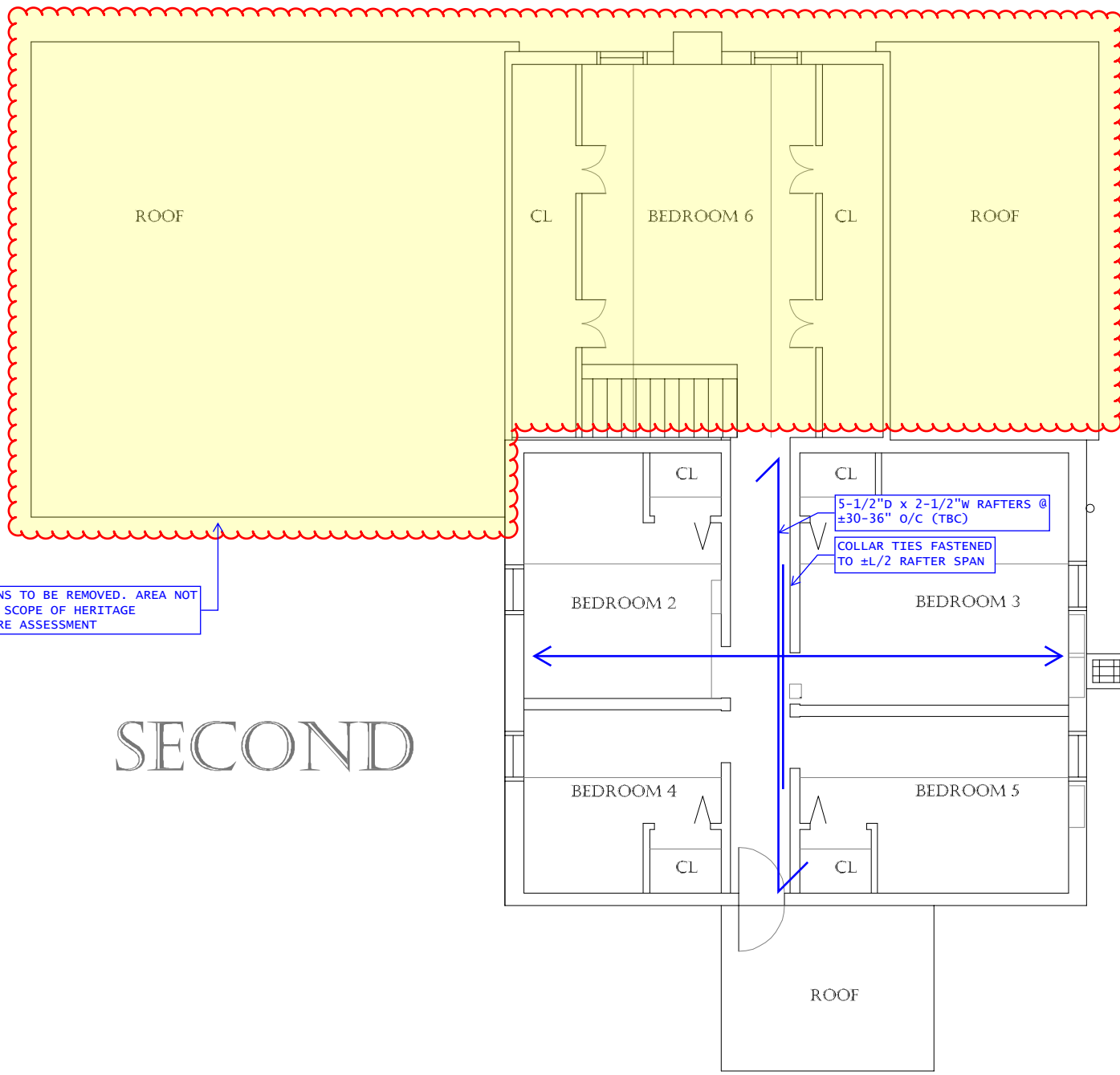




ADDITIONS TO BE REMOVED. AREA NOT PART OF SCOPE OF HERITAGE STRUCTURE ASSESSMENT

FIRST

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		Revised:	Job No. 2406	ANDERSON WELLSMAN ARCHITECTS INCORPORATED 1990 DON MILLS ROAD SUITE 612 TORONTO Toronto Ontario M3C 5R6 (416) 923-2775



# SECOND

Sheet No.	Drawing Title:		Project:
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	Checked: RA	Date: 2024.04.15	
	Revised:	Job No. 2406	