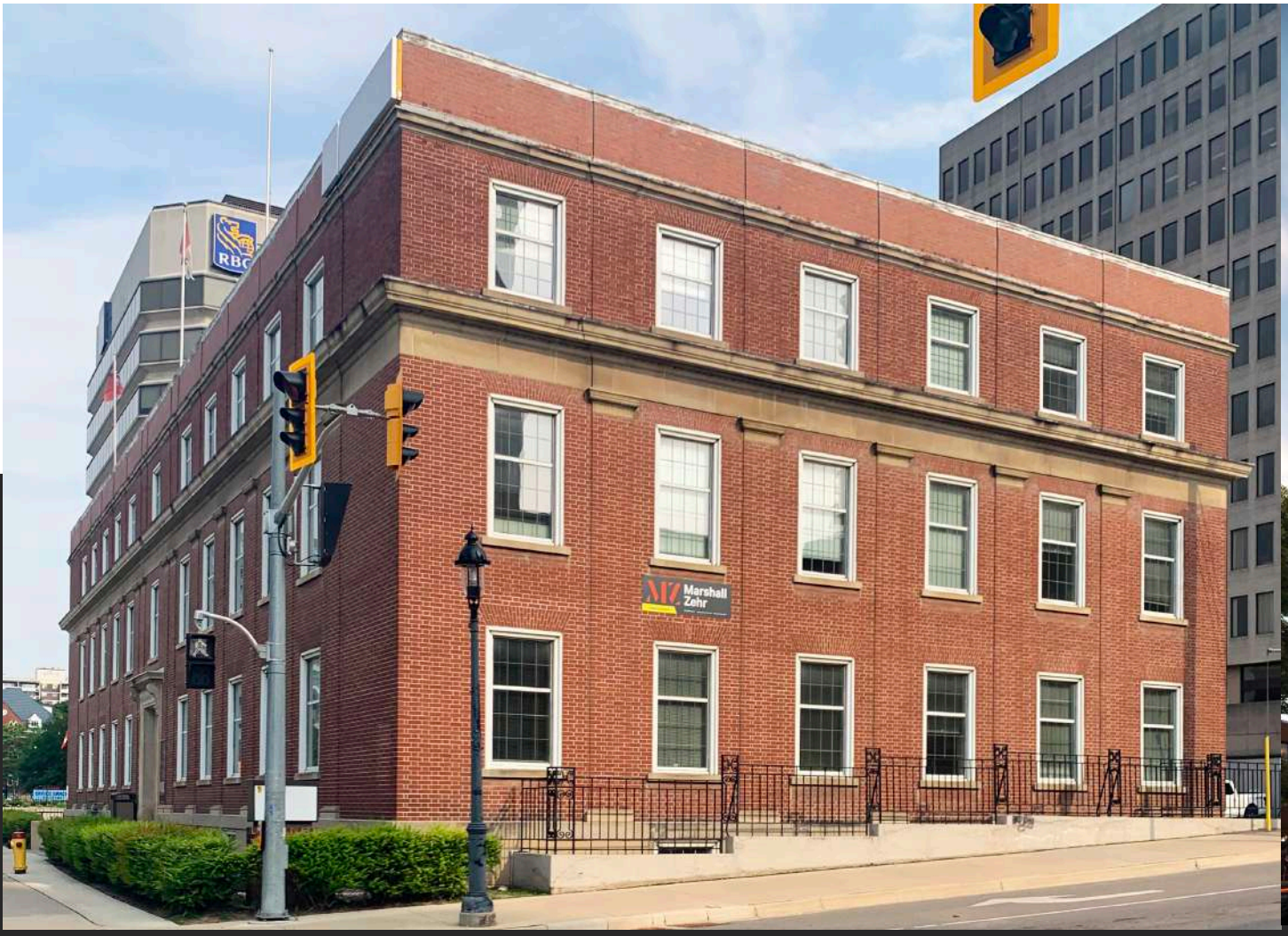
mcCallumSather

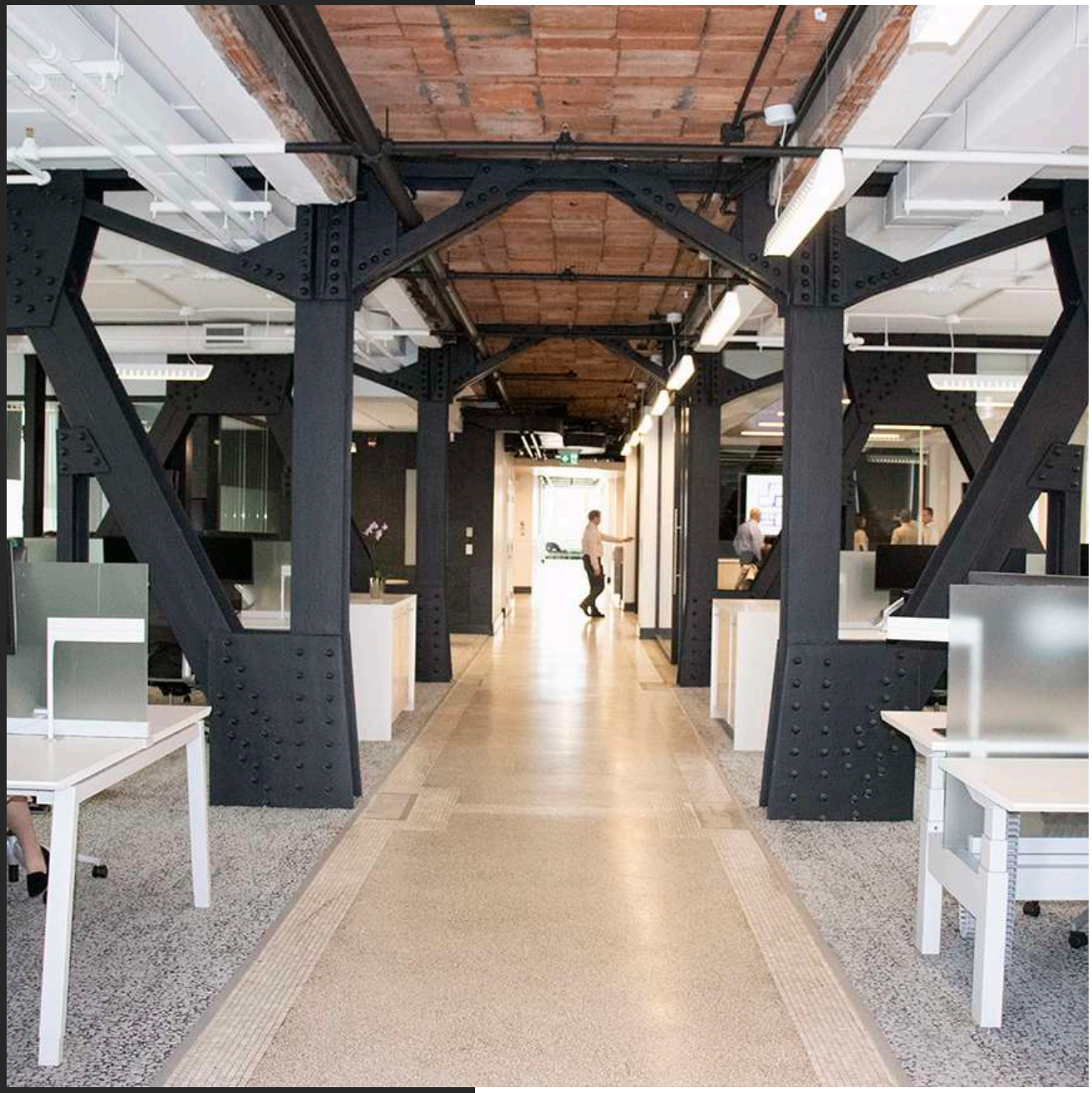


Heritage Conservation Plan

CITY OF KITCHENER // 10 DUKE STREET WEST

REVISION 1: JANUARY 2024

APRIL 25, 2022



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Executive Summary

mcCallumSather ('mCs') was retained by VanMar Developments ('client') to prepare a Heritage Conservation Plan report ('HCP') for the property municipally known as 10 Duke Street West, Kitchener, Ontario. The HCP aims to address how the building's cultural heritage resource and attributes, as identified and described in the Heritage Impact Assessment ('HIA') dated April 14, 2023 (revision to the November 22, 2021 CHIA), also prepared by mCs, will be conserved.

This proposal was subsequently reviewed again by the Site Plan Review Committee in July 2022 (application-SP22/104/D/AP) and shared by Heritage Staff Jessica Vieira that further comments on the April 2022 HCP Draft will be provided by Staff under a separate cover. These comments were provided by Staff on June 29, 2023. This revised January 2024 HCP Draft responds to the June 2023 comments from City Staff. The approval of this HCP is a condition of the Site Plan application approval. This document also addresses the changes to the design as reflected on the approved elevations (ex. addition of the Queen Street door).

This HCP document will:

- Identify the appropriate conservation principles for the attributes being conserved;
- Provide an assessment of the building's current condition and deficiencies and demonstrates proposed elements to be salvaged;
- Recommend the conservation measures and interventions in the short, medium, and long term to ensure protection and conservation of the cultural heritage resource.

Prior to submission, mcCallumSather and the development team collaborated to determine an approach for the conservation and adaptation of the cultural resources on the site. Historical analysis, design alteration and construction on the site. This historical analysis was provided as part of the Heritage Impact Assessment (HIA), submitted to the City in November 2021 and then more recently in April 2023. The report follows the format laid out in the Terms of Reference of City of Kitchener's heritage planning department, and the Ontario Heritage Act ('OHA').

This Heritage Conservation Plan (HCP) concludes:

- Prior to significant works commencing on site, protection, selective demolition, offsite storage, and salvage of select heritage elements and attributes will be required.

- Identifies general areas and works required to undertake a thorough heritage restoration of the retained south, east, and west facades.

- Details procedures which heritage restoration shall follow for all cleaning, repairs, restoration, and replacement tasks.

- Provides further recommendations for the development team to conserve, retain, reintroduce, and reincorporate additional existing heritage attributes from the heritage structure into the proposed design.

- Provides the appropriate measures required to protect the heritage façade prior to construction, for the duration of construction and post construction, and uphold its integrity following its incorporation into the proposed structure.

1.0 Introduction to the Report

1.1 Contact Information

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1.2 Purpose

The HCP is written in reference to the Ontario Ministry of Culture's (now Ministry of Tourism, Culture and Sport) document Heritage Resources in the Land Use Planning Process, InfoSheet #5, Heritage Impact Assessment and Conservation Plans. The intent of this HCP is therefore to provide the following information:

• Identification of the conservation principles appropriate for the type of cultural heritage resource being conserved;
• Analysis of the cultural heritage resource, including documentation of the resource, descriptions of cultural heritage value or interest, assessment of resource conditions and deficiencies, discussion of historical, current and proposed use;
• Recommendations for conservation measures and interventions, short or long term maintenance programs, implementation, and the qualifications for anyone responsible for the conservation work; and
• Recommendations for a maintenance and monitoring schedule.

This report also provides the following information:
• The proposed new window specifications (including size, style, colour, etc.);
• The relationship and connection details of new ramp at the front entrance to the heritage attributes (scale, material, colour, reversibly etc.);
• The relationship and connection details of new building addition over top and to the north of the heritage attributes (scale, material, colour, structure);
• The conservation approach to respond to heritage attributes as identified in the Heritage Impact Assessment, mcCallumSather, (April 2023);
• The proposed specifications for the masonry repair including brick replacement (contractor qualifications, type of mortar, etc.); and,
• The proposed specifications for masonry cleaning (if required).

The HCP has been written in reference to the conservation principles identified in the Heritage Impact Assessment, mcCallumSather, (April 2023), which were intended to allow the conservation of the property's cultural heritage significance:
• Maintain appropriate physical relationships and visual settings that contribute to the cultural significance of the heritage building;
• Preserve the historic character of the heritage building (as described in the HIA), do not over repair;
• Allow for new construction that relates to and conserves the essential form and integrity of the existing heritage building;
• Conserve the exterior elements that are important to defining the overall heritage value of the building;
• Apply minimal intervention wherever possible, repair rather than replace building materials. Repair with like materials, restoring without altering the integrity of significant elements;
• Allow for alterations (canopies, signage, new openings etc.) in a reversible manner;
• Design additions should be a contrast to distinguish new from old, and a compositional relationship with materials, scale etc.;
• Undertaking maintenance should be a regular ongoing project to stabilize the building fabric and to avoid major conservation projects in the future; and,
• Document and record before, during and after any repairs to the existing buildings.

This HCP is written to specifically address the exterior conservation work, alterations to the original building (windows and demolition of the north facade and partial west facade) and the points of connection between new and old to ensure that the details appropriately manage concerns of durability and reversibly. The conservation strategy also applies to interior elements such as the structure because these details are directly related to the stability required to ensure the exterior elements are protected.

1.4 Methodology

This HCP was prepared by mcCallumSather based on the City of Kitchener's Heritage Conservation Plan - Terms of Reference as well as provincial policy framework.

Archival research, site and building investigations were incorporated as part of mCs's comprehensive heritage consulting services. Representatives of mCs visited the subject site on January 20th, 2022 and September 6th, 2023 to conduct a visual inspection and photograph the property and its surroundings.

The research methodology gathers relevant data from the city archives (maps, photos, publications, primary source etc), and first hand analysis of the site from all relevant stakeholders and consultants. Evaluation of cultural heritage value for the property has been executed using the criteria as stated in Ontario Regulation 9/06. This has been documented in detail in the HIA prepared by mCs submitted to the City in November 2022 and later in April 2023.

This HCP is being submitted in compliance with the requirements of the Ontario Heritage Act ('OHA'), and by Council through the Municipal Register. It also references technical drawings, heritage policies, historical documents and applicable references of the municipality associated with the subject property, other provincial and municipal heritage standards and guidelines, as well as archive documents from various sources.

This Conservation Plan will explore the short, mid, and long term scope of work for the building and give direction with respect to material specifications, methodology of construction, maintenance and monitoring strategy after the development is complete.

Figure 1. Aerial View Image showing the location of 10 Duke Street W at the corner of Queen and Duke in Downtown Kitchener, ON. (Source: Google Earth). Annotated by mCs to show the subject site.

2.0 Introduction to the Subject Site

2.1 Site Description & Context

The subject property is municipally known as 10 Duke Street West, in the City Centre District in Kitchener, ON. The site consists of an existing listed (non-designated) heritage building, built c.1949 in the Colonial Revival style, which sits on the southern half of the property. There is a parking lot on the north (rear) half, and a driveway along the east (Figure 2). The building is 37,480 sf and situated on a 0.55-acre parcel of land, located on the north-west corner of Duke St. W and Queen St. N in the Urban Growth Centre of downtown Kitchener (Figure 3).

The subject property is located neighboring to the following properties included in the City's Register of Property of Cultural Heritage Value or Interest:
- 2-22 Duke Street East - Listed, Non-designated
- 15 -29 Duke Street East- Listed, Non-designated
- 16-20 Queen Street N - Designated by-law on June 28th, 2022, no. 2022-077 (Update provided by City Staff in their comments received on June 28th, 2022)

The subject property is located adjacent to the following properties included in the City's Register of Property of Cultural Heritage Value or Interest:
- 30-32 Duke Street West - Listed, Non-designated
- 49 Queen Street N - Listed, Non-designated

The above have been discussed in detail in the HIA report submitted to the City in November 2021 and later revised and resubmitted in April 2023.

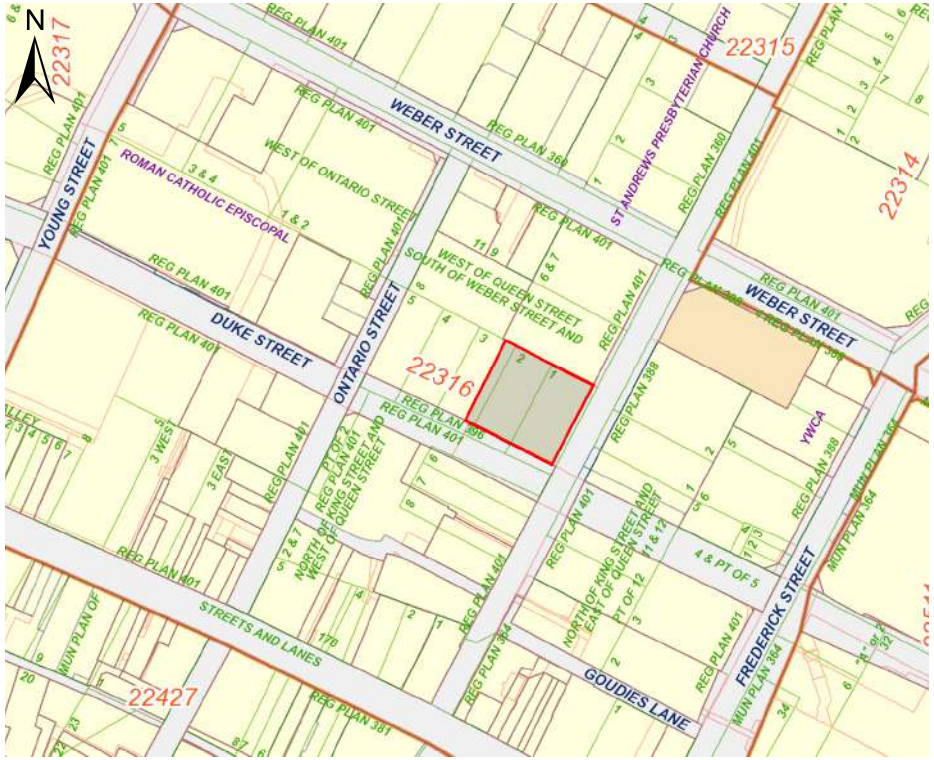


Figure 2. Property Index Map showing the approximate extents, lot number, block number of the development site 10 Duke Street West (Source: Ontario Land Registry 2021, retrieved online from: https://www.onland.ca/api/cmv/export/_ags_WebMap_8ddae95e-3025-11ec-b21f-0050568fa01d.pdf)

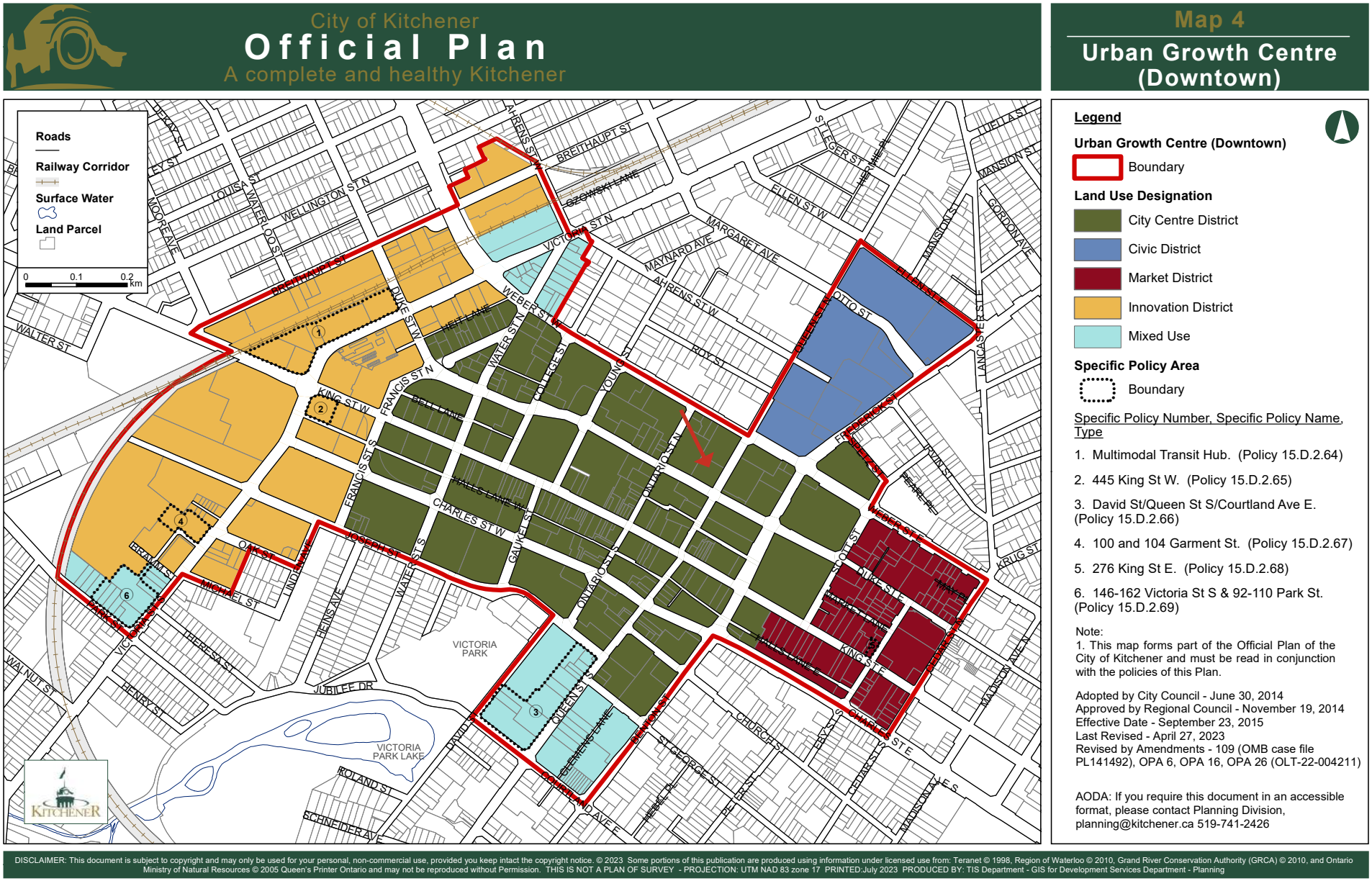


Figure 3. Urban Growth Centre (Downtown), City of Kitchener, 2023. Annotated by mCs to show the subject site. Retrieved online from: https://www.kitchener.ca/en/resourcesGeneral/Documents/DSD_PLAN_OP_Map_4_UGC_Downtown.pdf

2.2 Introduction to the Building

The building is rectangular in plan, and its façade consists of red bricks in a Flemish-bond pattern. The windows are replacement single hung models with imitation 8/12 divisions, and feature flat arched brick lintels and cut limestone stone sills. Despite the identical 8/12 configuration, the third-floor windows are slightly shorter than those on the first two floors. There are additional 4/4 division windows at the above grade portion of the basement level of the Duke St. facade, which mirror the pattern of the windows above.

There are eleven equally spaced bays along the South and north facade of the building, and six bays along the east and west facades. Each bay is divided from the next by raised red brick pilasters with carved limestone capitals and bases. There is a carved limestone entablature between the second and third floors, and an additional carved stone cornice just below the parapet.

The parapet is also capped in a carved limestone capital. On the south façade, there is a wooden main entrance door along Duke St. W. with a glazed transom, shoulder moldings, carved limestone corbels and a limestone cornice.

Figure 4. South Façade facing Duke Street West to be retained. July 2021. (Source: mcCallumSather, 2021)

2.3 Identification of Heritage Attributes

The building at 10 Duke Street West is currently listed, but not designated. A property may be designated under Section 29 of the Ontario Heritage Act (Ontario Regulation 9/06) if it meets one or more of the criteria for determining whether the building is of cultural heritage value or interest. The HIA for the building (November 2021) recommends designation based on the evaluation of the heritage resource's cultural heritage value.

Heritage Value

10 Duke Street West is recognized for its design, physical, contextual, historical, and associative values. We have identified that the original building, built in 1949, satisfies the criteria for designation as per Ontario Regulation 9/06.

Description of Recommended Heritage Attributes

The heritage value of 10 Duke Street West resides in the following character defining heritage attributes that are indicative of the Colonial Revival architectural style. The character defining attributes have been identified as follows:

1. Red Flemish brick;
2. Rectangular plan;
3. 11 bays along Duke Street and 6 bays along Queen Street;
4. Segmentally fat windows openings with brick voussoirs;
5. 8/12 windows with stone sills;
6. Main entrance door with door surround, transom and entablature;
7. Stone band between 2nd and 3rd floors;
8. Parapet along the roof-line;
9. Prominent location at intersection of Duke Street West and Queen Street North and balanced front and side facades; and,

Character defining interior attributes include:

10. Brass elements: Stair railings, newel post caps and wall grilles; and,
11. Roman Travertine tile in vestibule entrance and lobby.

Figure 5. Heritage Attributes - Photographic Documentation. (mCs, January 2022)

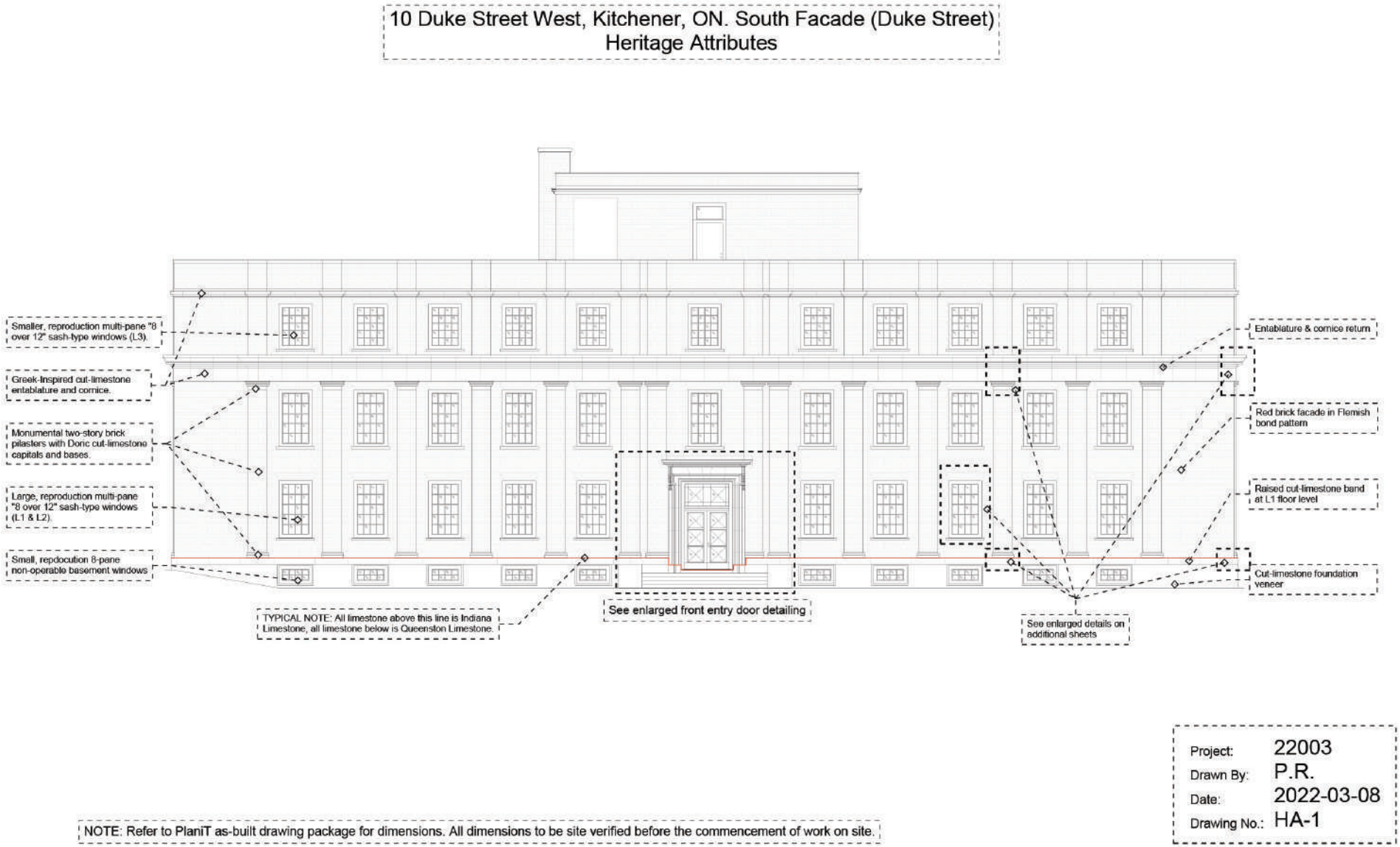


Figure 6. Heritage Attributes as observed on the building's front facade. Refer to Appendix C for other elevation drawings and details.

2.4 Conservation Principles & Guidelines

The following principles have been derived from the Eight Guiding Principles in the conservation of heritage properties from the Government of Ontario's Ministry of Tourism, Culture and Sport ('MTCS') as they have informed the design direction. These principles, endorsed by the Ontario Heritage Trust, provide an intellectual framework for decision making in architectural conservation. They also provide conservation rationale for activities or interventions that may affect the character, features or context of a heritage property[1].

1. Respect for documentary evidence
Do not base restoration on conjecture. Conservation work should be based on historical documentation, such as historical photographs, drawings and physical evidence.

Documentation includes documenting the character defining elements or heritage attributes of a property prior to undertaking work (restoration, rehabilitation or regular maintenance as part of preservation), documenting features of a site prior to their loss or removal, or keeping documentation of changes or alteration made to a site. Documentation may include photographs, detailed drawings, plans or reports. Documentation also refers to making use of available documentation, including photographs, drawings or physical evidence or appropriate similar examples when undertaking rehabilitation or restoration. This ensures that restored or replaced elements of the site are appropriate in character and context.

Our recommendation is to emulate the existing window design and detailing with divisions (8 over 12) within the proposed replacement windows.

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. Any change in site diminishes heritage value considerably.

The proposal retains the heritage building at its original location. The front facade and the queen street facade are retained fully, which maintains the streetscape character and preserves site lines.

3. Respect for historical material
Repair or conserve rather than replace building materials and finishes, except where absolutely necessary. Minimal intervention maintains the historical content of the resource.

Historic material on significant cultural heritage resources should be repaired and conserved. Minimal intervention is necessary to maintain the condition of historic material. The proposed conservation plan conserves the heritage building through restoration and rehabilitation. Bricks, stone and details that can be salvaged from the side and the rear facades should be stored in a protected and monitored facility for future reuse and restoration.

Please refer to Appendix C - Conservation Plan Drawings Sheet HCP-1, HCP-3 for proposed conservation measures and notes and annotated areas.

4. Respect for original fabric
Repair with like materials, to return the resource to its prior condition without altering its integrity.

Materials and finishes of a cultural heritage resource should be repaired and conserved, rather than replaced, except when absolutely necessary. Minimal intervention is necessary to maintain the condition of historic material. Materials will be salvaged **(Please refer section 5.1.1)** from any

1 Eight guiding principles in the conservation of historical properties, Ontario Heritage Trust. Accessed from: https://www.heritagetrust.on.ca/en/pages/tools/tools-for-conservation/eight-guiding-principles

demolition scope in order to ensure that repairs/restoration can be made with the salvaged materials. Salvage to include:

- Foundation cut-limestone horizontal bands;
- Foundation cut-limestone veneer;
- Limestone pilaster caps and bases;
- Limestone window sills;
- Limestone cornice; and,
- Choice selection of brick masonry.

In a situation where salvaged materials are not available to make restoration repairs, Wherever possible, like-for-like replacements, assuming similar wear are recommended. It is recommended that the owner sources a soft, clay brick, with relatively high permeability and absorption rate. Cracked, spalled or missing bricks should be replaced with materials which match existing colour and size. Bricks may be sourced from a historic brick fabricator, such as Ibstock UK. Local companies like Skycon offer a good color match for Ontario size brick. For stone replacement, category2 or 3 limestone would be appropriate. Dense category 3 limestone is preferred at or below grade. Both materials should be selected for colour as well.

5. Respect for the buildings history

Do not restore to one period at the expense of another. Do not destroy later additions to a house solely to restore it to a single time period.

Efforts should be made to respect the layers of use and history of the significant cultural heritage resource. Restoration to one period over another or removal of elements to accomplish this is discouraged.

6. Reversibility

Alterations should be able to be returned to original conditions. This conserves earlier building design and technique. For instance, when a new door opening is put in a stone wall, the original stones are numbered, removed and stored, allowing for future restoration.

Changes made to a significant cultural heritage resource, such as additions or new openings, should be reversible so that the significant heritage resource could be returned to its earlier state at a later time. This may include detailed documentation and storage of elements that may be removed. Proposed additions and items such as signage and lighting recommend a methodology that would make the changes reversible.

7. Legibility

New work should be distinguishable from old. Buildings should be recognized as products of their own time, and new additions should not blur the distinction between old and new.

The proposed addition encompasses a three-storey expansion to the north of the original building and thirty-nine storeys above. The exterior materiality of the proposed addition is intended to contrast the heritage building to ensure legibility between old and new elements. Similarly, new interior elements are intended to be modern in nature and contrast original materials rather than mimic them.

8. Maintenance

With continuous care, future restoration will not be necessary. With regular upkeep, major conservation projects and their high costs can be avoided.

Regular maintenance is necessary to preserve the cultural heritage resource. Regular and careful upkeep can minimize later needs for costly and involved restoration. Condition of the cultural heritage resource should be monitored on a regular basis, and minimal intervention (gentle techniques) should be exercised when repair or maintenance is needed. See Section 6 for details on the proposed maintenance and monitoring/phasing plan.

3.0 Building Condition Assessment

3.1 Existing Condition Documentation

Foundation
The condition of the existing stone veneer applied to the above grade portions of the concrete foundations is generally in fair condition. A non-original paint has been applied and is deteriorating. Certain areas are in a more advanced state of deterioration and will require replacement.

Masonry
The exterior brick, which forms the exterior finished face of the building, appears to be in very good condition and in need of mostly minor repairs. There are some locations where efflorescence and mortar deterioration has occurred due to water damage. The brick above the top cornice appears to have been replaced.

There are many locations where the stone sills and cornice have eroded and left staining and residue on the bricks. Stone sills, stone masonry foundations and detailing in good overall condition. Limestone above the raise horizontal foundation band is identified as Indiana Limestone, whereas Limestone below the pilaster bases is Queenston Limestone.

There are some locations where cracking has occurred in the limestone due to settlement and water damage. There are also several areas where the stone has eroded significantly due to water damage, particularly at the front entrance stair and decorative banding.

(See Appendix B - Photosheets for reference photos and annotations)

Windows & Doors
The current windows are not original. It is suspected that the original windows would have been double hung with 8/12 divisions, similar to the current models. Existing windows are mostly intact, and in good condition, but it is recommended that they be replaced with modern windows in the original heritage style for better performance and greater historic compatibility.

The entrance door, transom window and hardware are original. The main entrance door is a listed heritage attribute and thus should be retained and rehabilitated to emulate its original design and detailing. Additional exterior doors such as the two north access doors and west stairwell door are not original, and therefore non-character defining, and will be discarded and or replaced.

Mechanical
The existing mechanical system consists of a natural gas fired, hydronic system with forced air handlers and hydronic convectors. It is currently in operation and will be replaced with a VRF HVAC system independent of the high-rise residential development. This VRF system will provide separate control for each commercial suite and will not require significant mechanical space, or modifications to the retained structure or façade.

Interiors
Floor finishes throughout the vestibule and lobby are original Roman travertine flooring with marble accents at thresholds. The washrooms are two-toned ceramic tile. The original stair corridors are finished in a polished terrazzo. The stair railing features black metal spindles and newel posts with a brass railing. The vestibule at the front entry features decorative brass grilles on the east and west walls. These features are original to the building. The remainder of the interior finishes have been modified and finished with generic office fixtures, carpets and interior partition walls.

(See Appendix B - Photosheets for reference photos and annotations)

Structure
The building maintains a unique structural system, being a product of the transitional period between load-bearing exterior walls and non-load bearing curtain walls. Its principal structural system consists of solid profile wide flange steel beams bearing on internal columns and solid exterior masonry walls.

All exterior walls are load bearing to the original structure, with each beams supported twice mid-span by 12 steel columns per floor. The floor plates are cast in place concrete spanning between the walls and columns.

The below grade foundation walls are cast in place concrete with a footer below.

Due to the unique structural system of the building, the inside face of the exterior walls are flush on all sides and there are no internal structural pilasters boxing out any columns. The pilasters on the exterior of the building do not align with the existing structural system and are architectural ornamentation. The existing steel and concrete structure appears to be in generally good condition.

Per the façade retention strategy and phasing plan (ref. Structural Assessment Report, John G. Cooke & Associates, December 4th, 2023), the existing structural system will be modified and removed to accommodate the superstructure of the proposed development. The existing structure will be removed in stages and connected to the new structure. While the façade is stabilized, the remaining interior floors of the retained portion of the heritage façade will be removed and new steel framing will be constructed to both support the façade and the new interior floors.

(See Appendix B - Photosheets for Reference Photos and Annotations & Appendix E - Facade Retention Strategy)

Building Envelope
The exterior wall assembly is assumed to consist of a double-wythe clay brick rainscreen facade, with terra cotta clay "speed tiles" supporting the embedded beams and providing fire protection of critical structural members and stairwells. The plater finish is directly applied to the clay tile wall system with a wire mesh. No insulation was observed in the original wall cavity. Special care will need to be taken to ensure proper drainage and moisture transmission when the replacement building envelope is selected.

Signage
The building currently has several small blank signs along the south and east facades and the principal entryways and below the parapet. These signs will be removed during construction and restoration. It is anticipated that some type of signage will be necessary for the proposed retail space on the ground floor. An appropriate signage plan should be developed to ensure any new signage to be installed is designed and installed in a manner that does not detract from the heritage façade. Additional recommendations are provided in the "Further recommendations" section of this report.

(See Appendix B - Photosheets for Reference Photos and Annotations.)

3.2 As-Built Drawings (Measured - January 2022)

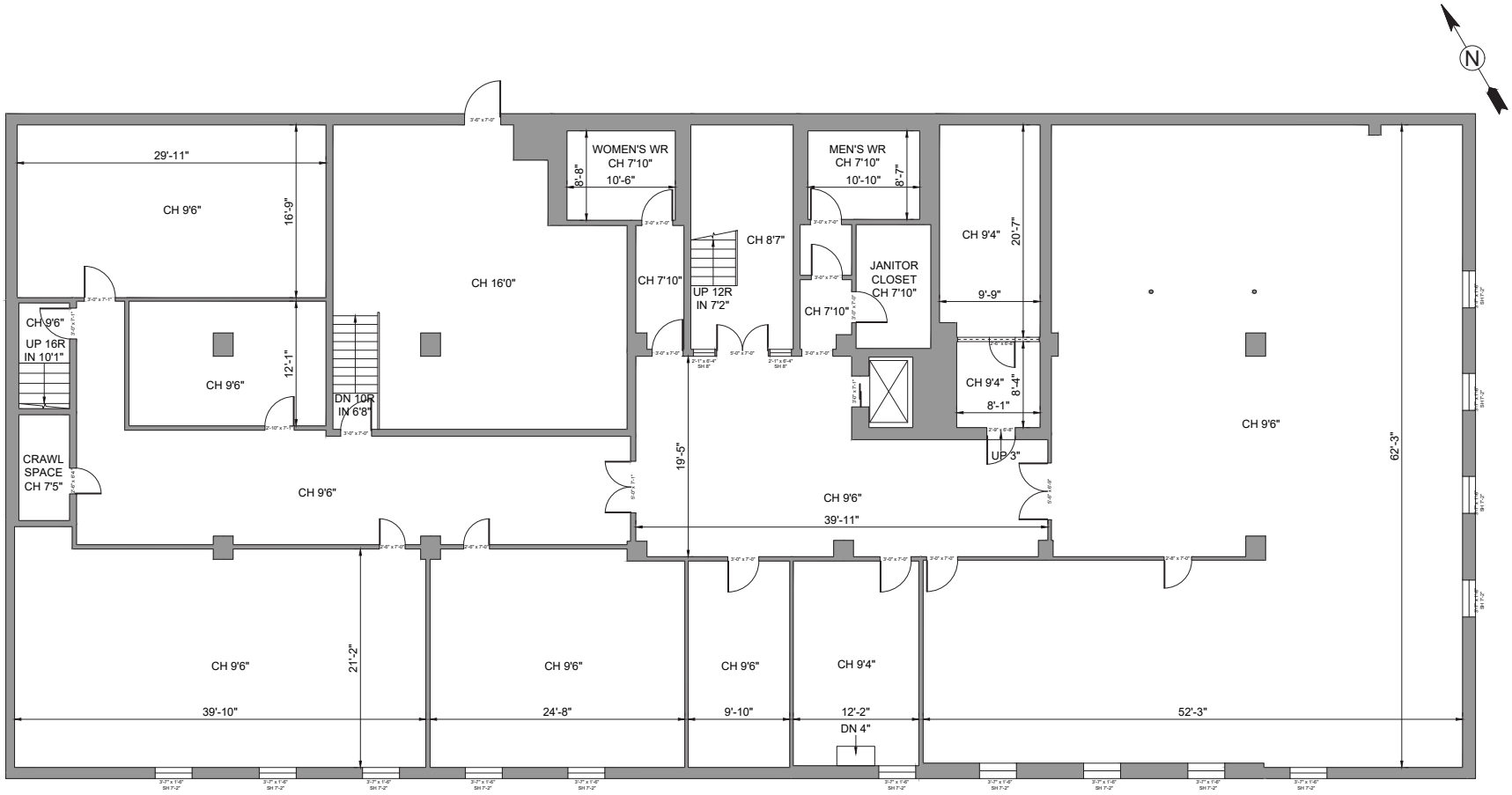
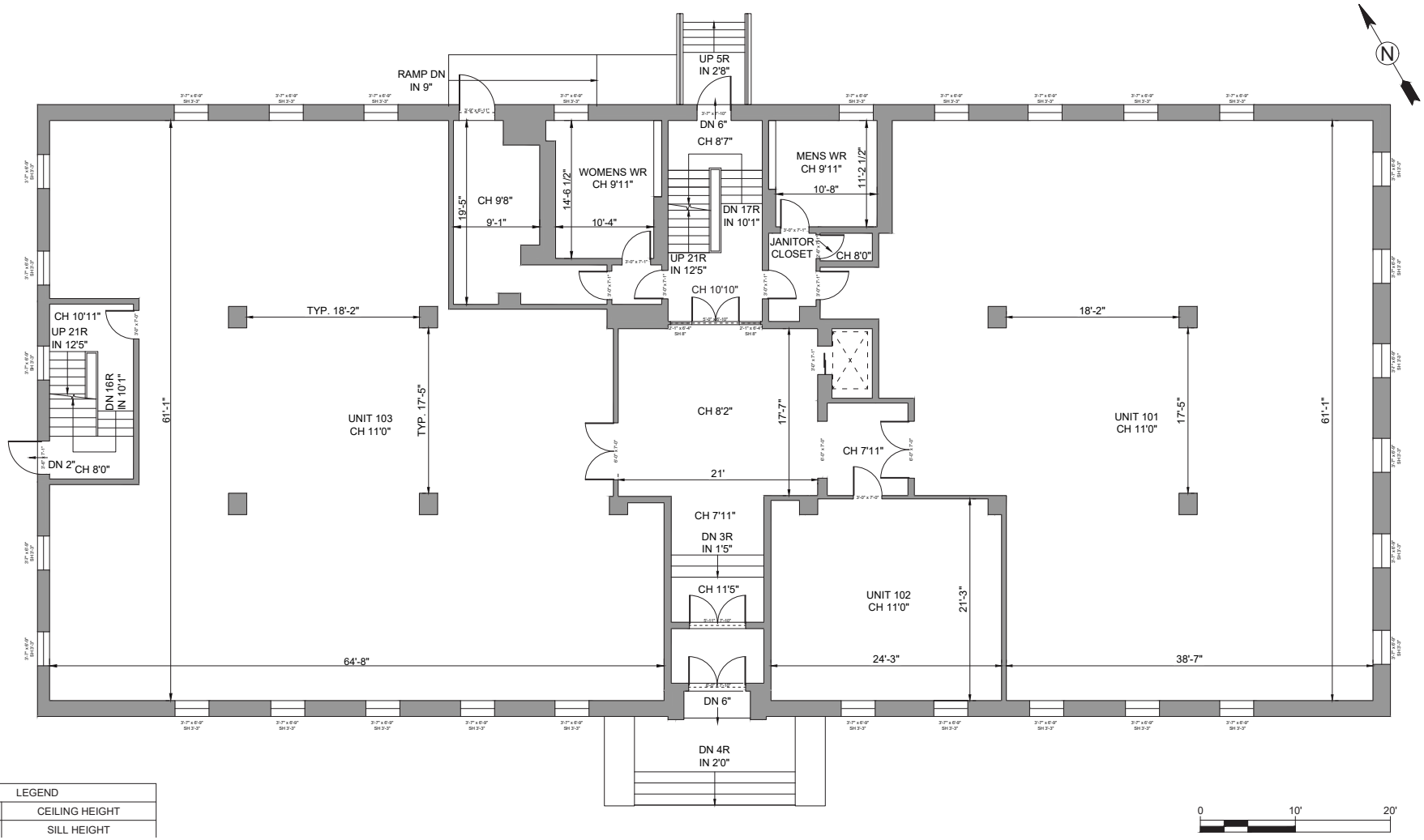


Figure 7. Basement Plan - As-Built Drawing.



LEGEND	
CH	CEILING HEIGHT
SH	SILL HEIGHT

Figure 8. Main Floor Plan - As-Built Drawing.

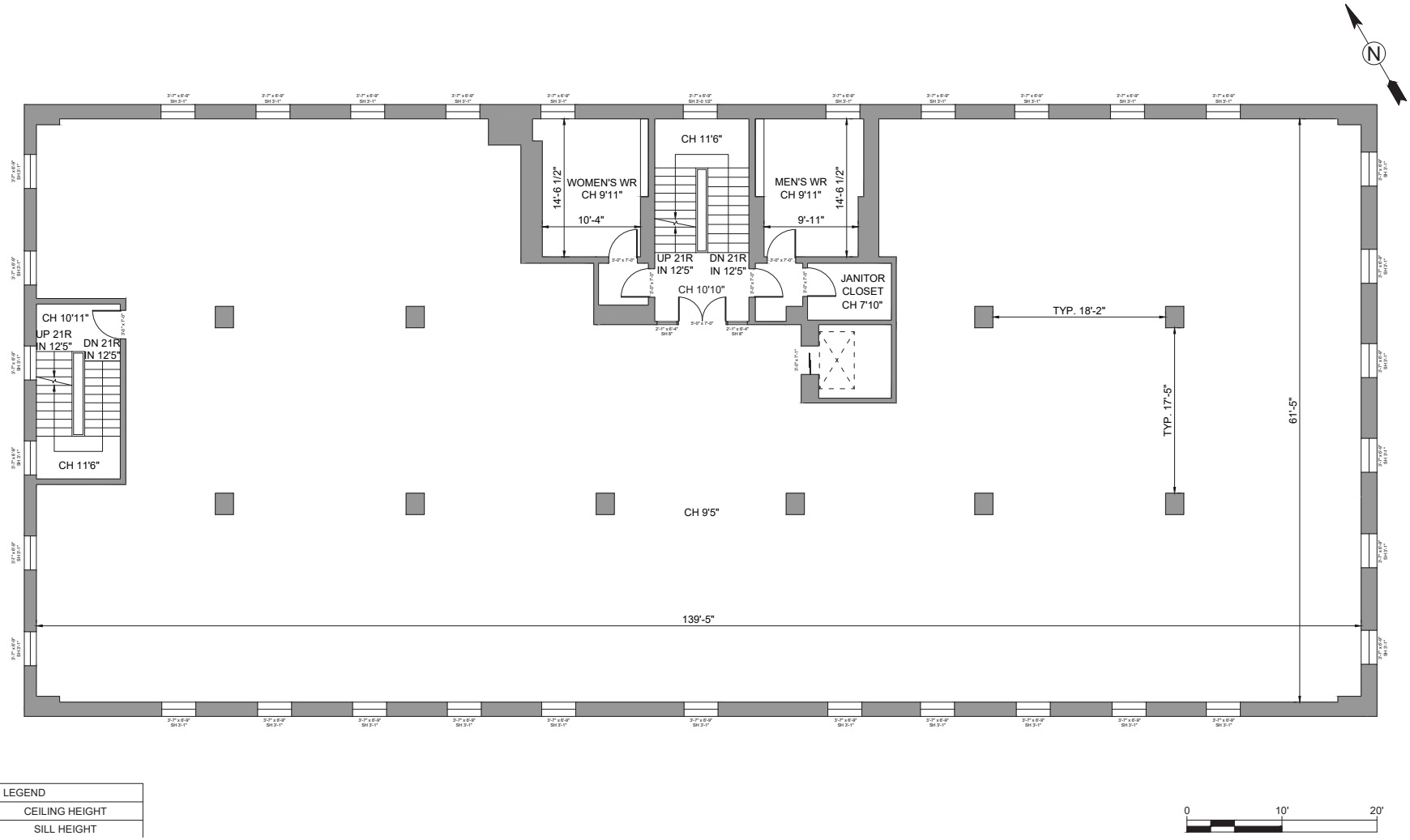


Figure 9. Second Floor Plan - As-Built Drawing.

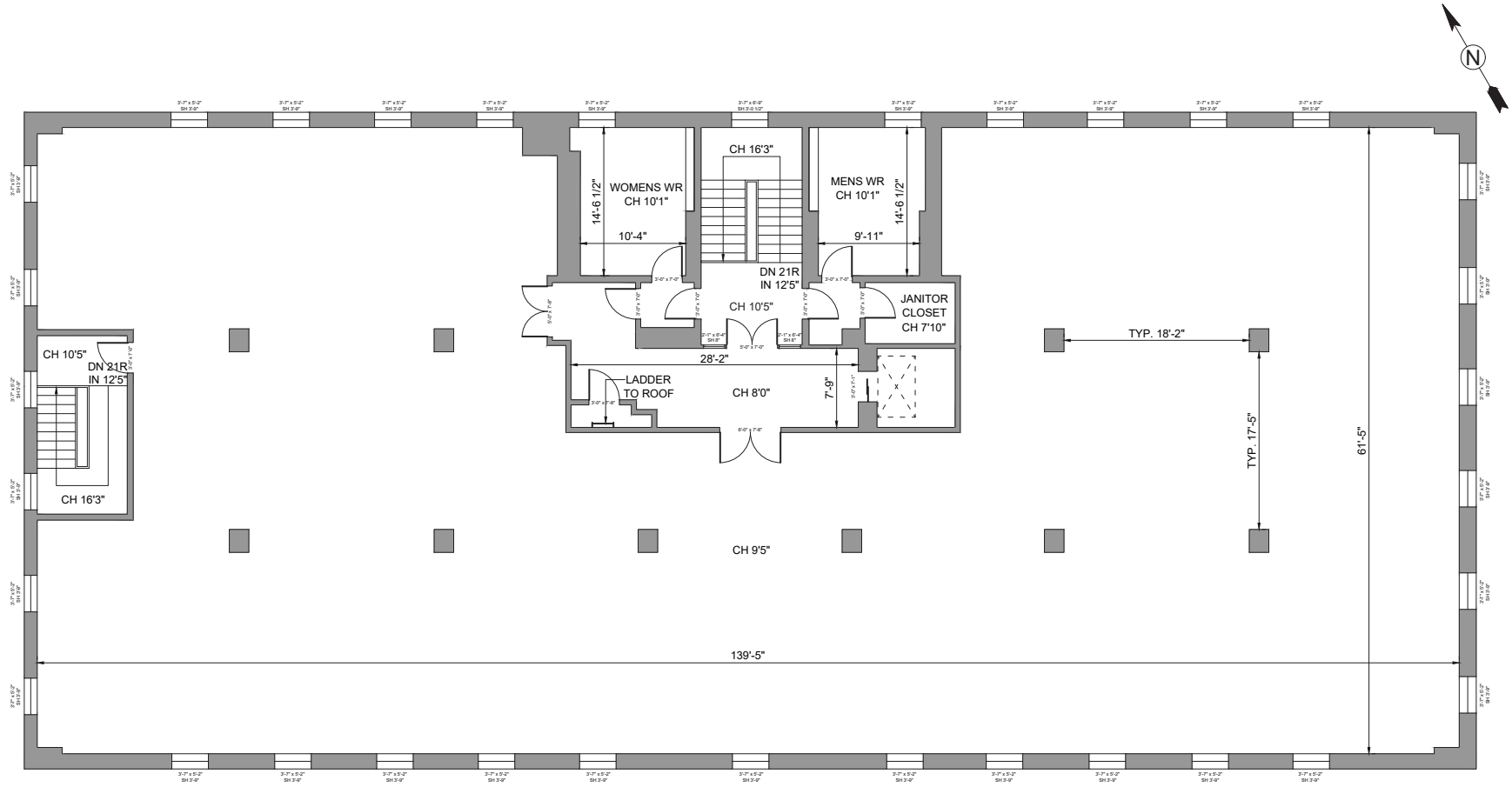


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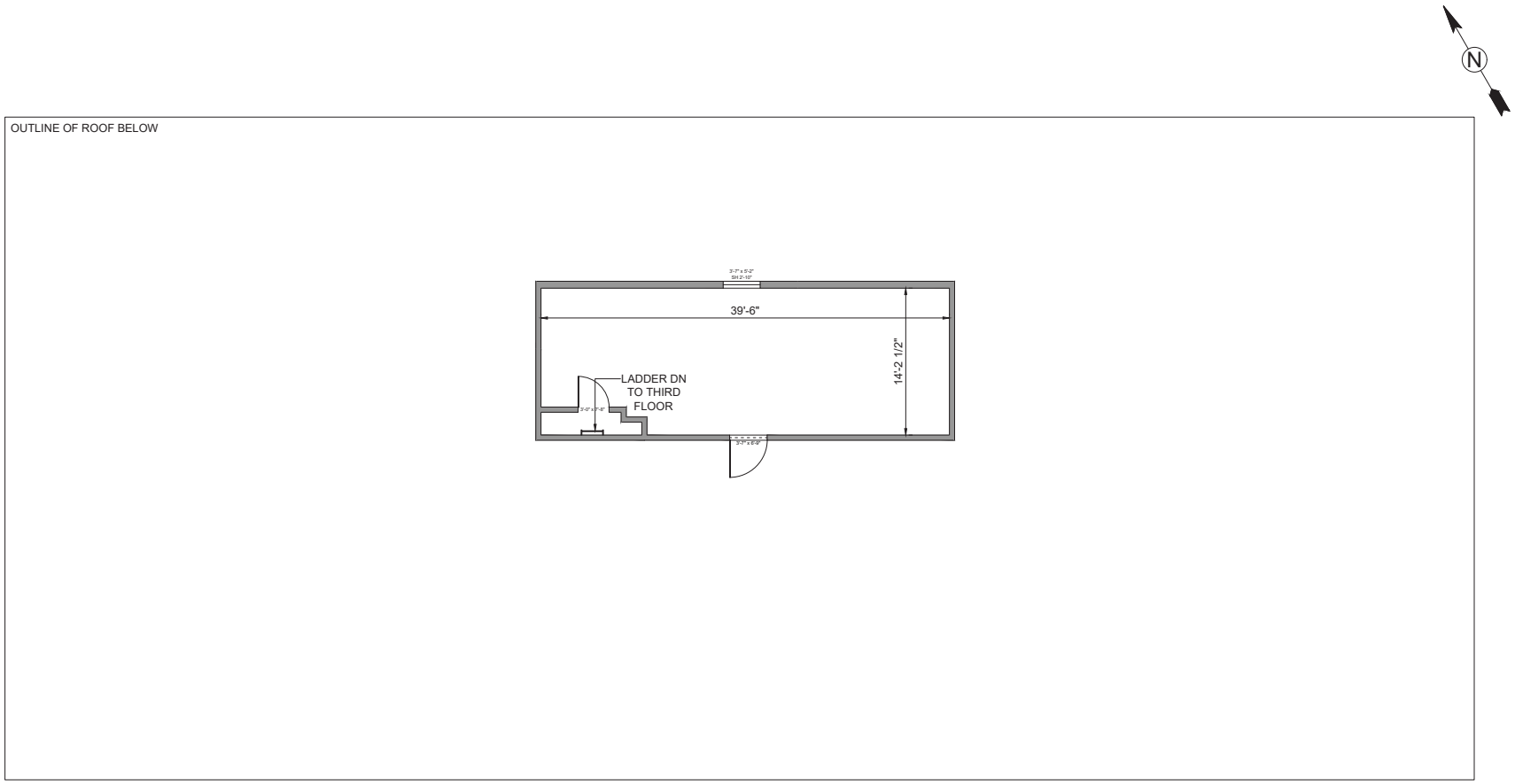
Figure 10. Third Floor Plan - As-Built Drawing.



LEGEND	
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0 10' 20'

NOTE: ESTIMATED LEVEL. ROOF COULD NOT BE ACCESSED DUE TO SNOW.

Figure 11. Roof Plan - As-Built Drawing.

Figure 12. Elevations - As-Built Drawing.

4.0 Proposed Development

4.1 Description of Proposed Development & Site Alteration

The proposed mixed-use development is set above and north of the existing building and consists of a new glazed podium 3 floors above and north of the retained heritage façade, as well as an additional 39 floors of residential space.

Proposed Use for the heritage building
The proposed development calls for the retention of the entire south (principal façade) and east facades facing Queen St. N. and Duke St. W., respectively, as well as a portion of the west façade. The retained portions of the heritage façade will be incorporated into the tower's podium to include at-grade retail and amenity space, as well as above grade office space and parking and amenity space. The rear (north) facade will be demolished to accommodate the proposed programming.

Due to the location of the building on the site, sitting on the south half of the property, the north facade would be located in the middle of the proposed tower podium, between the residential lobby and the parking and loading area. The remainder of the existing structure, including the north (rear) facade will be removed and replaced with the new tower and podium. The proposed façade retention strategy maintains key sightlines of the building along Duke St. W. and Queen St. N., while allowing for increased density and infill of the underutilized at-grade parking lot on the northern half of the site. The identified exterior attributes are mirrored across both axes of the building, therefore, despite the removal of the character defining elements on part of the west and entire north facades, the overall character of the building is maintained. In-situ retention of the building will preserve the streetscape context and the building's relationship with Duke St. W., Queen St. N., and the surrounding public spaces.[1]

(See Appendix E - Facade Retention Strategy, Ast and Partners)
(See Appendix D - Design Drawing, May 30, 2023, Turner Fleischer Architects Inc.)

The proposed development retains all of the character defining features as described in section 2.3 'Statement of Cultural Heritage Value or Interest, including:

1. Red Flemish brick;
2. Rectangular plan;
3. 11 bays along Duke Street and 6 bays along Queen Street;
4. Segmentally fat windows openings with brick voussoirs;
5. 8/12 windows with stone sills;
6. Main entrance door with door surround, transom and entablature;
7. Stone band between 2nd and 3d floors;
8. Parapet along the roof-line;
9. Prominent location at intersection of Duke Street West and Queen Street North and balanced front and side facades; and,

Character defining interior attributes include:

10. Brass elements: Stair railings, newel post caps and wall grilles; and,
11. Roman Travertine tile in vestibule entrance and lobby.

4.2 Site Layout, Design Program & Accessibility Upgrades

The subject site comprises 2,226 sq.m. on the north-western corner of the intersections of Duke Street West and Queen Street North. The existing structure occupies only the southern half of the site along Duke Street West, with the northern half being reserved for surface parking.

Site Statistics:
Net Lot area: 2,226 sq.m.
Proposed Building Height: 45 floors
Number of Residential Units: 499

Total Gross Floor Area: 36,235.1 sq.m.
Residential Area: 36,864.8 sq.m.
Non-Residential Area: 1,370.3 sq.m.

Parking required: 161
Parking provided: 168

The proposed development integrates this underutilized surface parking lot into the tower podium for enclosed, above-grade parking. Along Duke Street West, the retained façade is restored, and its main entryway is reincorporated as the entryway for the ground floor uses (e.g. amenity space, residential/ office lobby, and office uses). The ground floor office unit fronting Queen Street was originally proposed to be accessed by one entryway just above the north-eastern extent of the retained Queen Street façade adjacent to a stairwell exit door. This entryway is to remain however, as full details related to programing of the ground floor has yet to be determined, a second entryway has been added closer to the intersection at the end of the planting bed that wraps around the building. The additional entryway will afford flexibility to accommodate more than one ground floor non-residential unit. Beyond the two entry doors, the podium extends eastward beyond the extents of the existing façade, and includes a double door hydro vault, pedestrian garage entry door and overhead garage door.

The second office unit on the ground floor is accessed by an entryway on the eastern (Queen Street North) façade, just above the north-eastern extent of the retained façade, adjacent to a stairwell exit door. Beyond these two doors, the podium extends eastward beyond the extents of the existing façade, and includes a double-door hydro vault, pedestrian garage entry door, and overhead garage door.
On the western elevation, the retained façade extends three bays north to an exit door in an existing opening with transom. North of this door, the glazed podium extends west by 2m, and continues to the back of the lot with a narrow alleyway alongside it. See Figure 13.

A new barrier-free ramp will be provided on the south elevation at the main entryway, and the existing exterior steps and concrete stoop will be replaced to contend with the change in elevation. The ramp shall be designed to complement the existing heritage façade, and with materials compatible with the stone and masonry already present on the site. Similar materials will not aim to mimic their existing counterparts, and will maintain a distinct change in tone to differentiate the ramp as new.

This accessibility upgrade creates a positive impact on the heritage building as it encourages all users to enter the building from the front entrance.

(See Figures 13-16 & Appendix D - Design Package, May 30th, 2023 for proposed floor plans, sections and elevations).

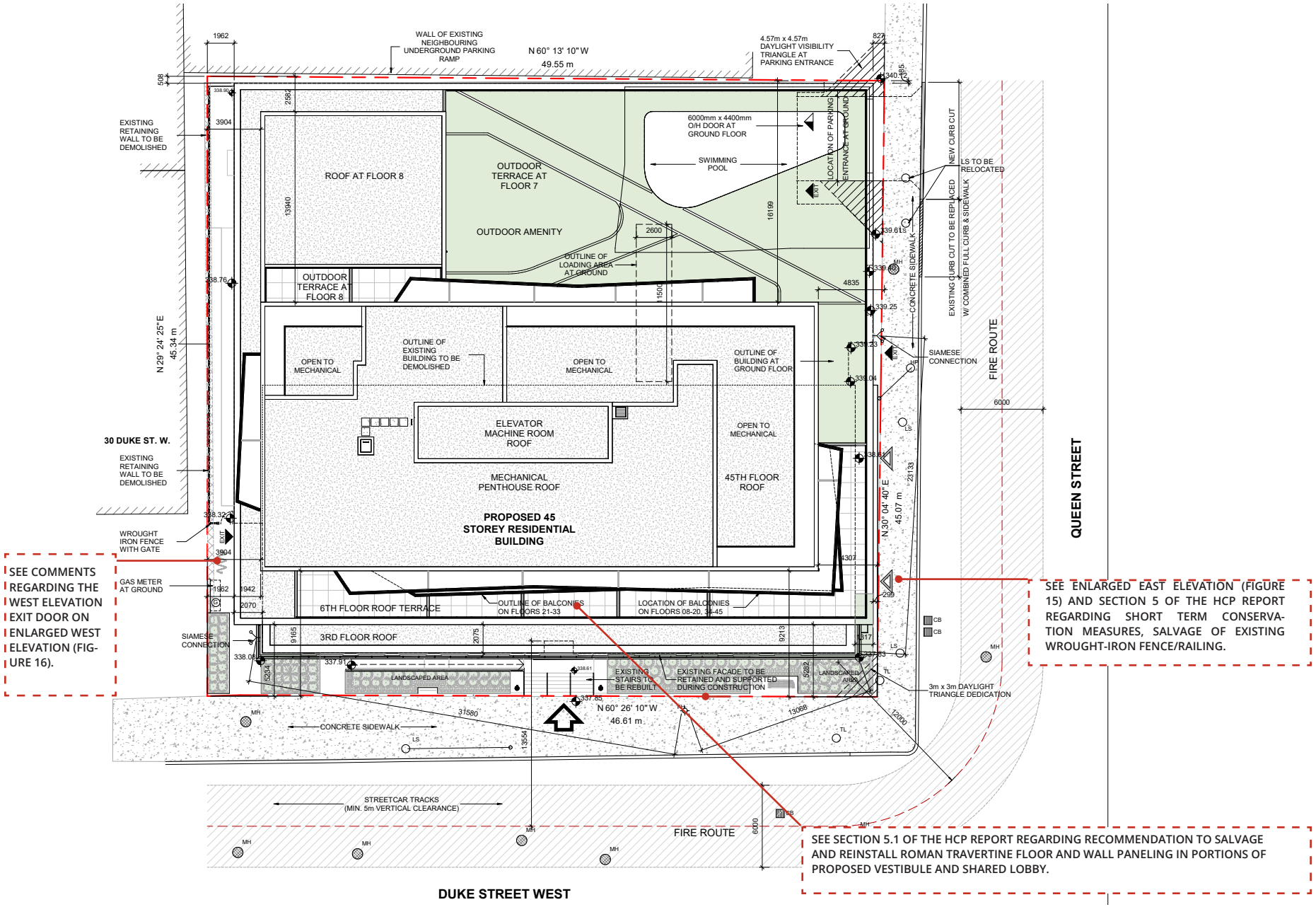


Figure 13. Site Plan for the proposed development (**Source:** Design Drawings, May 30, 2023, Turner Fleischer Architects Inc.) - Annotated by mCs to show mark-ups and references.

VIEW FROM VOGELSANG GREEN

VIEW FROM QUEEN STREET NORTH

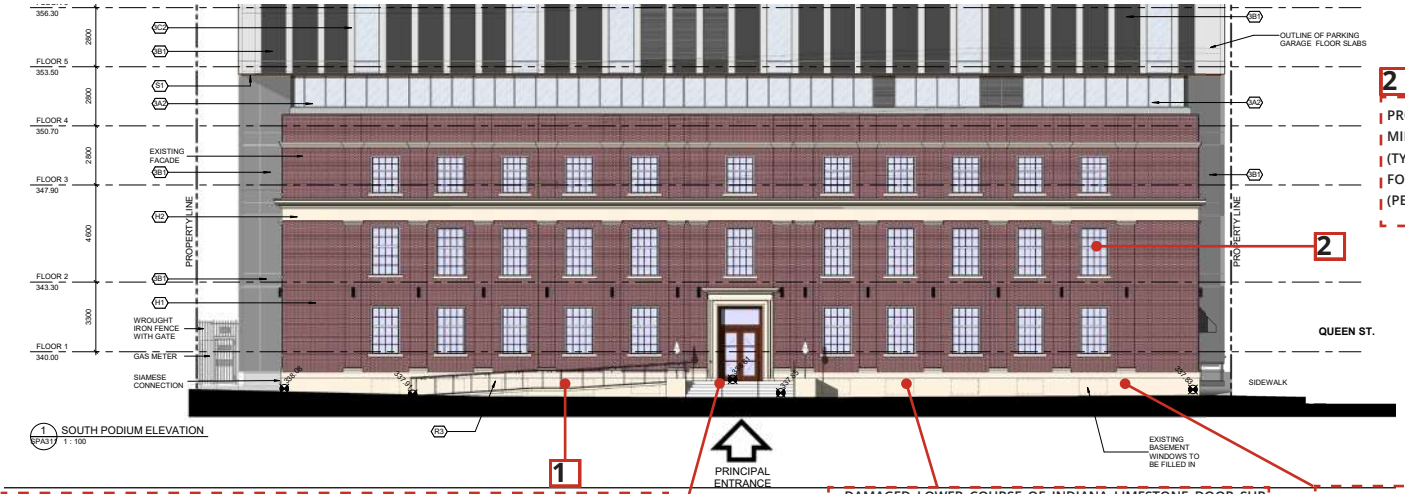
Figure 14. 3D Perspective for the proposed development (**Source:** Package issued for SPA, May 30, 2023, from Turner Fleischer Architects Inc.)

A RAMP/RETAINING WALL WILL BE ADDED TO ACCOMMODATE THE QUEEN STREET, GROUND LEVEL OFFICE ENTRY DOORS, ALONG WITH A GLASS GUARD ON TOP OF THE WALL. AT THE CORNER, A LOW PLANTING BED THAT WILL ALSO INCLUDE A RETAINING WALL WILL WRAP THE CORNER OF THE BUILDING. PROPER MOISTURE PROTECTION OF THE FOUNDATION WALL WILL BE PROVIDED.

EXTENT OF PODIUM SET-BACK FROM RETAINED FACADE, CONTINUOUS FROM PROPOSED FOURTH FLOOR ADDITION ATOP RETAINED FACADE, NEW CONSTRUCTION NORTH OF THIS CORNER EXTENDS FURTHER EAST THAN RETAINED FACADE.

1

A RAMP WILL BE RECONSTRUCTED SIMILARLY IN MASSING. A PLANTING BED WILL BE ADDED IN FRONT OF THE RAMP, SO THE ELEVATION OF THE RAMP WILL NOT BE EXPOSED. A GLASS RAILING FOLLOWING THE SLOPE OF THE RAMP WILL ALSO BE PROVIDED AS PER THE APPROVED ELEVATIONS.



2

PROPOSED REPLACEMENT WINDOWS TO BE ALUMINUM OR FIBERGLASS-CLAD WOOD, 8 OVER 12 (TYPICAL), SINGLE HUNG OR FIXED. LARGER PANES FOR LVL1, LVL2 AND SMALLER PANES FOR LVL3 (PER EXISTING CONDITIONS)

1

NEW ENTRYWAY STAIRS AND STOOP REQUIRED TO ACCOMMODATE BARRIER FREE ACCESS, INCLUDING REMOVAL OF THRESHOLD, NEW STAIRS TO MAINTAIN FOOTPRINT AND CHARACTER OF EXISTING ENTRYWAY, INCLUDING BULLNOSE PROFILE AND ADJACENT QUEENSTON LIMESTONE CLAD PEDESTALS. DETAILS FROM THE ORIGINAL ARCHITECTURAL PLANS WILL BE DETAILED IN THE TENDER DRAWINGS.

DAMAGED LOWER COURSE OF INDIANA LIMESTONE DOOR SURROUND TO BE REPLACED WITH SIMILAR MAKE / SUITABLE REPLACEMENT, MODIFIED TO ACCOMMODATE RAISED FRONT STOOP LEVEL. DETAILS FROM THE ORIGINAL ARCHITECTURAL PLANS WILL BE DETAILED IN THE TENDER DRAWINGS.

PROPOSED FACADE RETENTION PLAN ELIMINATES BASEMENT & REMOVES LOWER WINDOWS. INFILL OPENINGS SET BACK FROM FLUSH WITH QUEENSTON LIMESTONE IN SIMILAR TEXTURE AND LIGHTER TONE (TYPICAL).

Figure 15. South and East elevations (podium) for the proposed development (**Source:** Design Drawings, May 30, 2023, Turner Fleischer Architects Inc.) - Annotated by mCs to show the proposed alterations and mitigation measures.

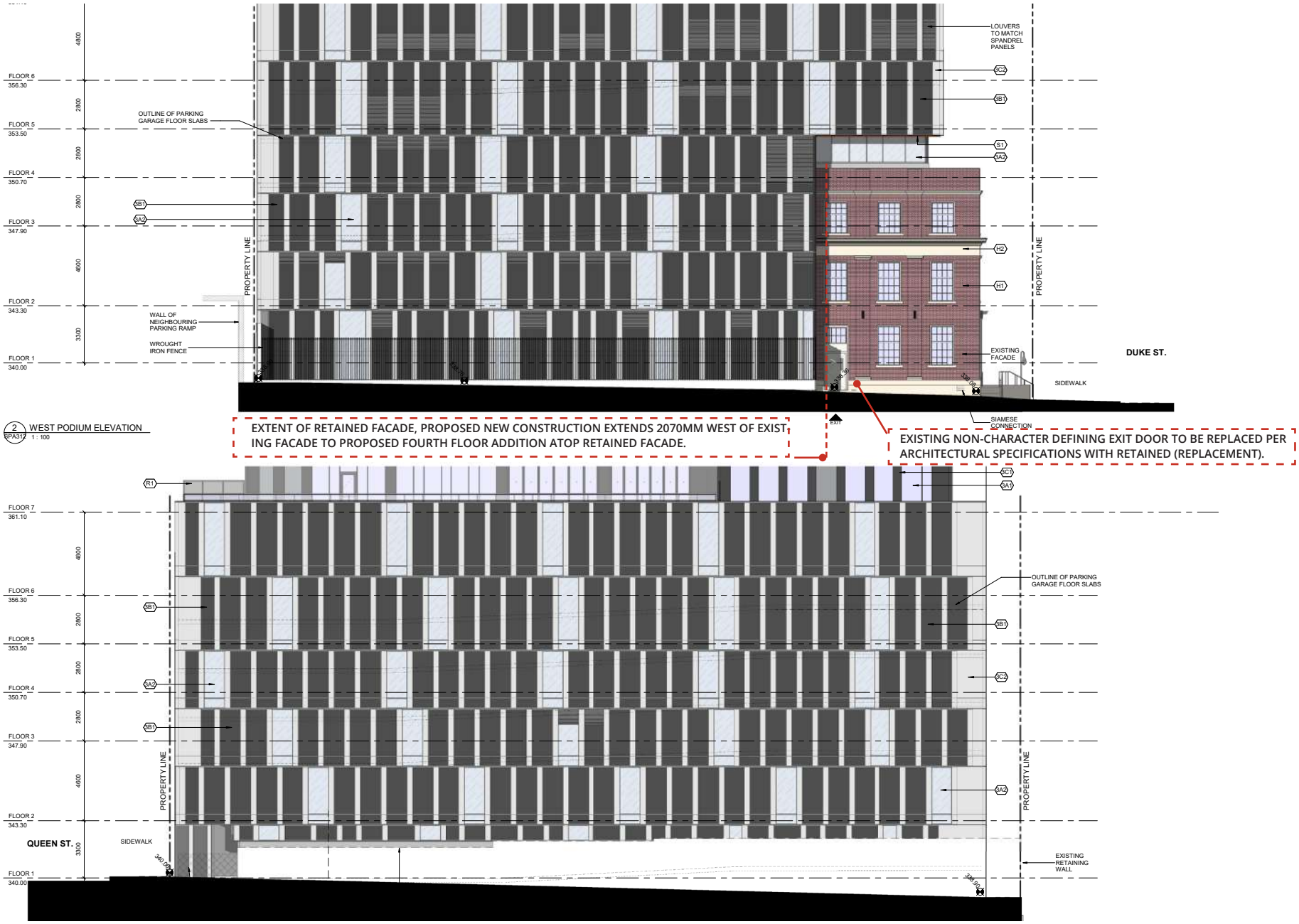


Figure 16. North and West elevations (podium) for the proposed development (**Source:** Design Drawings, May 30, 2023 Turner Fleischer Architects Inc.) - Annotated by mCs to show the proposed alterations.

5.0 Heritage Conservation Measures

The Heritage Conservation Plan (HCP) details the conservation plan and procedure to be followed to ensure the integrity and conservation of the listed structure throughout the duration of the project and into the future. These three stages are short, medium, and long-term.

5.1 Short-term Measures

With regards to the scope of the proposed development, the short-term heritage conservation plan includes both immediate steps to ensure the integrity of the heritage structure before construction commences, as well as steps for the development construction team to take prior to substantial works being undertaken on-site.

The short-term plan lasts roughly until new works are scheduled to be undertaken on the retained heritage facades, such as structural interconnection with the new superstructure, as well as planned restoration works on the retained portion of the heritage building. Accordingly, the short-term conservation plan comprises the partial demolition stage of the heritage building, where the façade will be stabilized, and materials of cultural and architectural value will be removed from the site and safely stored in a protected and monitored facility for future reuse during restoration.

Prior to work commencing on site, identified interior heritage attributes of the listed structure are to be carefully removed and safely stored in a climate-controlled environment for future reuse on-site or off-site. The existing stairs (west) include the black painted stairway balustrades with brass newel post caps and deco-inspired, brass rails. These will be preserved in-situ.

Salvage of Interior Elements - Recommendations
The walls and floors of the first-floor entry foyer, adjacent to the main entry door on the Duke Street façade, are clad in large-format, solid panels of white roman travertine stone, and are original to the structure. These unique interior finishes are informed by the roman-inspired classical revival exterior facades. In the front vestibule, solid brass convector grilles are also identified as materials worthy of architectural salvage and potential reuse. Effort should be made to incorporate these into the new vestibule and shared lobby directly adjacent to the main entry door on the Duke Street façade.

Salvage of Exterior Elements - Recommendations
Red Flemish brick;
Brick voussoirs;
Two stone sills;
Part of the stone band between 2nd and 3rd floors;
Part of the stone band below the parapet;
Pilasters capitals and base; and,
Corner cornice piece (1).

For further details on exterior heritage attributes proposed to be salvaged, please refer to section 5.1.1.

It is further recommended that an attempt be made to restore the main front entry door off Duke Street and its associated wood trim, brass hardware and glass transom shall be removed and stored off site for restoration and reinstalled prior to project completion. If restoration is not possible, it is recommended that the new replacement door emulate the historic appearance of the existing door with new brass hardware.

A plywood door can be provided for access if needed. The door surround will remain in place and repaired in fair weather.

5.1.1 Salvage Plan

As part of the comments provided by Heritage Staff Jessica Vieira on June 29, 2023, further details on the Salvage Strategy were requested. This sub-section responds to the following staff comments:

Salvage and Documentation Plan

- *Identify all heritage attributes*

mCs response: Please refer to Section 2.3 of this report.

- *Identify which of the attributes are being salvaged*

mCs response: The proposed development retains the complete front (Duke Street elevation) and side (Queen Street elevation) thereby retaining all heritage attributes. From a salvage perspective, prototypical section of each heritage attribute will be salvaged from the rear elevation (North elevation) which is proposed to be demolished to allow for successful integration with the proposed development.

The drawings and photos on the following pages provide further specifics on attributes to be salvaged.

Per building condition assessment conducted on September 6, 2023, the annotated attributes of the north elevation were found to be in a good condition for salvage as there was no significant weathering, masonry cracks or signs of water damage.

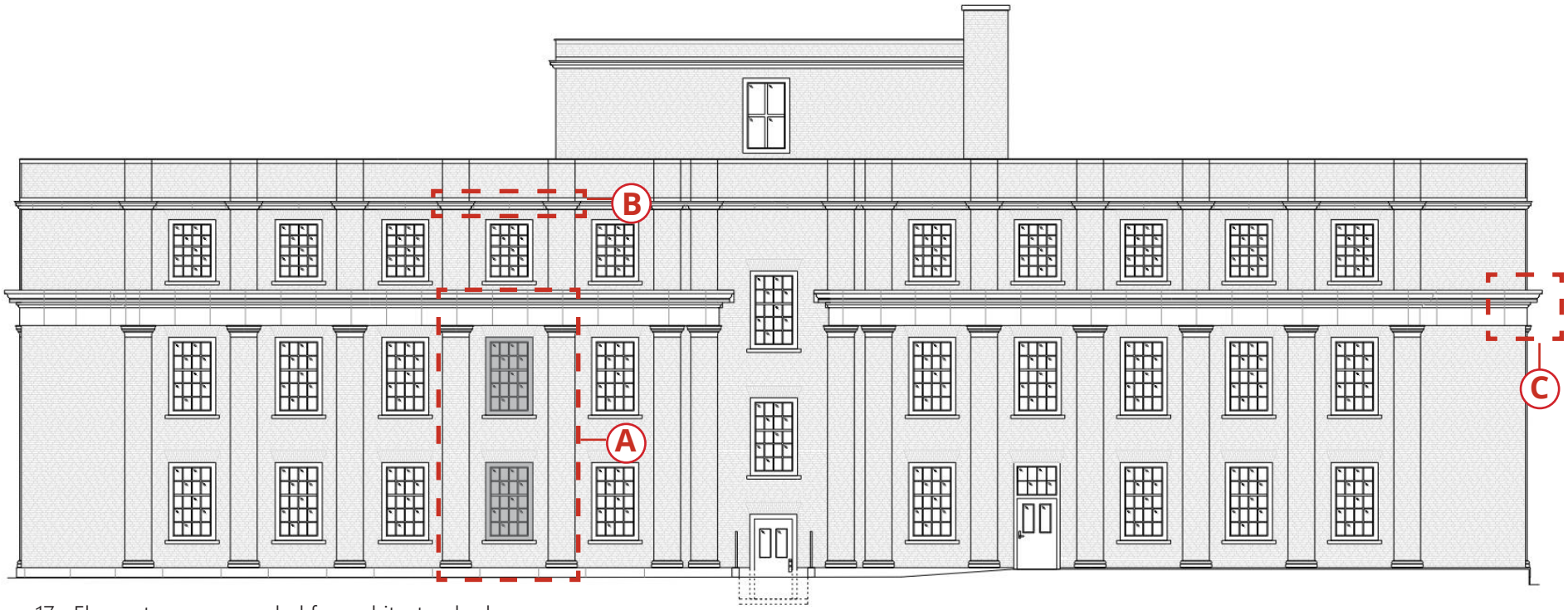


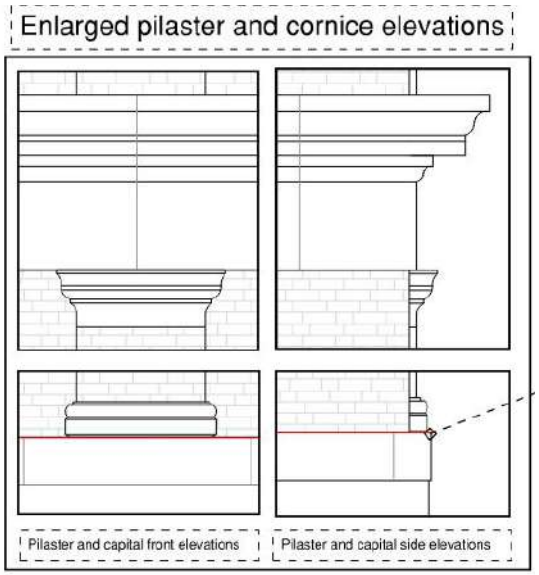
Figure 17. Elements recommended for architectural salvage

Facade portion (Attributes) recommended for salvage

Existing windows not recommended for salvage

Exterior Elements include:
Elements from a typical bay (A) (B) and (C) as shown above are recommended to be salvaged in its entirety as it would preserve the following attributes:

- Red Flemish brick (quantity as shown in the red boxed zone in image above;
- Brick voussoirs (above two windows at first and second level);
- Two stone sills (windows at first and second level);
- Part of the stone band between 2nd and 3rd floors;
- Part of the stone band below the parapet;
- Pilasters capitals and base (2 each); and,
- Corner cornice piece (1).



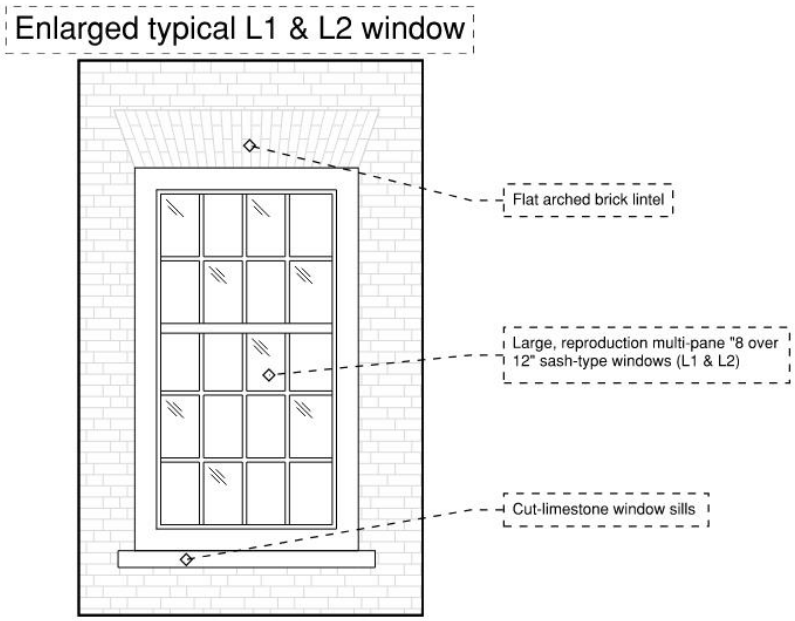


Figure 18. Close up of the typical bay at north elevation recommended to be salvaged. Existing window systems are not recommended to be salvaged. (mCs September 2023)

Methodology:
Prior to demolition of the rear facade, scaffolding or lift equipment shall be used on the north façade to facilitate the safe removal of select architectural elements for salvage and reuse during restoration.

a. Assessment
- An assessment of the masonry by qualified professional is recommended to be conducted prior to removal of original materials;

b. Selection Criteria
- Selection criteria for masonry salvage will be dictated by color range, physical dimensions and durability;

c. Dismantling
- Bricks and stone are recommended to be dismantled individually using a chipping hammer as this would avoid breaking the bricks/stone.
- Dismantling can be done by drilling holes to the mortar joint surrounding the brick.
- A flat pointed bar or mason's chisel is recommended during demolition to try and shear the mortar from the brick, to take advantage of the lesser strength in tension, rather than trying to lower the strength in compression.

d. Cleaning
- Should the bricks require cleaning, an attempt should be first made with Prosoco brand chemical cleaners, as well as diluted Trisodium Phosphate "TSP", and diluted calcium carbonate or they can be washed in a weak solution of muriatic acid.
- Should the owner decide to opt for an excavator or electronic saw to known down the wall, the collected bricks, stone and mortar may then be eventually removed by using a chisel.

e. Transportation
- The demolished bricks/stones are recommended to be piled up on pallets and secured with a strong plastic wrap or straps to keep the latter from falling.
- The pallets are recommended to be moved using a forklift and transport to the storage location.

f. Storage
- The salvaged items are recommended to be stored in a sheltered place, protected from water and temperature fluctuations.

This process would ensure that a thorough selection of brick and stone masonry is carefully removed and retained for long-term repairs and re-use across the retained elevations if required in the future.

Minimum width 300mm either side.

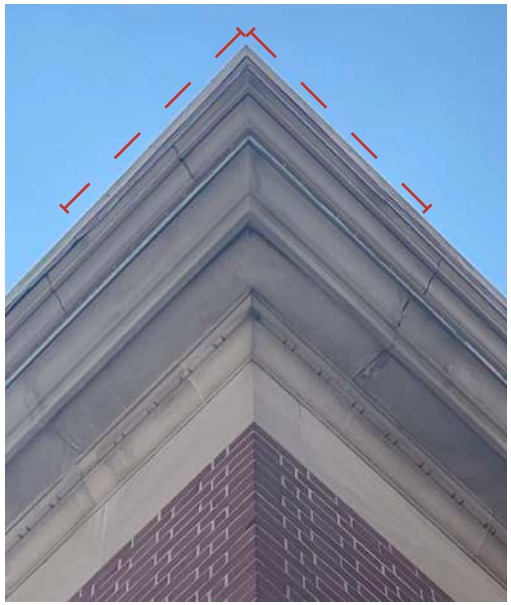


Figure 19. Close up of the corner cornice section north elevation - recommended to be salvaged. (mCs September 2023)

- *Provide justification on any major components that are not being salvaged*

mCs response:
Due to the location of the building on the site, sitting on the south half of the property, the north facade would be located in the middle of the proposed tower podium, between the residential lobby and the parking and loading area. As a result to allow for successful integration of the old with the new it is critical to demolish the rear and part of the west facade. The retained portions are in a good condition and would require minimal intervention if managed and maintained on a regular basis. To facilitate any future repairs or restoration work, one complete bay is recommended to be salvaged that comprises of all typical heritage attributes and roughly 15% of the bricks.

- *How are the salvaged elements being stored / protected until their reused? Does the proposed method comply with best practices?*

The salvaged elements will be stored in a dedicated controlled and monitored storage room in the corner of one of the parking level to protect them from deterioration/ vandalism. After the salvage has been conducted, the salvaged inventory of materials should be accurately labeled until they are reused for repairs or restoration work in the future. This process complies with best practices.

- *How are the identified salvaged materials proposed to be reused? What are the limitations for their reuse? Is there a plan in place if the identified re-use is not feasible and/or otherwise doesn't work out?*

mCs response: The salvaged materials will be stored in a protected facility until they are required for reuse or repairs in the future. They will not be incorporated into the proposed development.

- *Include documentation of all elevations and floor plans*

mCs response: All as-existing elevation and floor plans have been documented as part of this report in section 3.2.

5.1.2 Inventory of Salvaged Items

Item #	Item Description	Original Location	Proposed Location
1	Red Flemish brick	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
2	Brick voussoirs	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
3	Two stone sills	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
4	Part of the stone band between 2nd and 3rd floors	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
5	Part of the stone band below the parapet	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
6	Pilasters capitals and base & Corner cornice piece (1)	North Facade - As highlighted in Figure 17	A dedicated controlled and monitored storage room in the corner of a parking level.
7	Solid panels of white roman travertine stone	Entrance Lobby along Duke Street	A dedicated controlled and monitored storage room in the corner of a parking level.
8	Solid brass convector grilles	Entrance Lobby along Duke Street	A dedicated controlled and monitored storage room in the corner of a parking level.

As shown in the Floor 01 drawing - SPA 151), the proposed development intends to modify the grade along the east elevation, however it is noted on the proposed first-floor plan that the existing retaining wall and fence are to be removed. This grade change shows the incoming services adjacent to the building edge with the grade level sloping away from the building. This would protect the building from water damage. The finished grade of any sidewalk paving would not encroach on the existing façade (as shown in the drawing SPA 151). At the time of construction, a qualified engineer is recommended to review the site conditions to ensure there are no issues with drainage impacting the building.

Additional issues arising from this grade change will also require further heritage detailing including ensuring proper drainage away from the remaining exposed limestone and ensuring that the façade is not damaged by de-icing salts and vehicular traffic in the long term (Figures 20-21).

Heritage Hoarding & Protection for Demolition & Construction

In addition to typical site preparations for demolition, selective heritage hoarding shall be installed at this stage to protect certain heritage attributes for the duration of construction. Care should be given to the Duke St. entry door stone surround, trim and opening. As the front door and transom are expected to be removed from site and restored throughout the duration of construction, a temporary entry door or frame and plywood cover shall be installed in its place.

Plywood hoarding is also to be installed around the front door cornice and carved corbel brackets. Plywood hoarding and protection should also be installed at the building corners, and wherever else may necessitate extra protection throughout the duration of construction. Ultimately, heritage hoarding should ensure that there is no new and undocumented damage to the retained portions of the existing façade.

Figure 20. Existing retaining wall and fence along the East Facade - proposed to be removed. (mCs, 2022)

Figure 21. Close up of the grade change showing the exposed limestone and retaining wall. (mCs, 2022)

Moisture Integrity & Protection & Building Envelope
As the retained heritage facades will be exposed to the elements and left unconditioned for the duration of the construction, it is crucial to ensure the parapet, retained roof, and exposed interior wall elements of the designated structure are properly protected from the elements, and allow moisture to freely drain away from the wall assembly. This will be an ongoing measure for the duration of the phased construction plan and for the long-term preservation of the designated façade.

Partial Demolition of North & West Facades
Pursuant to the façade retention strategy and structural phasing plan provided by the consulting engineer[1], demolition of the rooftop pop-up, north and partial west facades, interiors and front entry steps may proceed with caution.

Monitor-Ongoing
Following demolition, and as progress on the new structure continues, it will be necessary to monitor and regularly inspect the heritage façade for any evidence damage or unplanned changes to its structural, architectural or heritage elements. This will include proper waterproofing and roofing at the parapet to prevent moisture intrusion into the wall cavity. We recommend engaging a CAHP certified structural engineer to monitor the building on a monthly basis when demolition is happening on site.[2]

1 Ref. Existing Façade Retention Structural Assessment Report, prepared by John G. Cooke & Associates, December 4th, 2023. (See Appendix E)

2 Ref. Existing Façade Retention Vibration Monitoring Plan, prepared by John G. Cooke & Associates, December 15, 2023. (See Appendix E)

5.2 Mid-term Measures

Repairs
In general, areas requiring repairs greater than minor patching, repoining, or pinning should be replaced with materials salvaged from the north elevation. See salvage notes (Appendix C) for a complete description of materials to be salvaged for restoration.

Masonry and Limestone Mortar Joints
Select areas have been identified as having cracked, eroded or washed-out mortar. Particular areas of concern include where signage has been removed and where water runs onto the façade from limestone protrusions such as window sills, cornice, parapet, entablature, and door surrounds. To ensure moisture transmission and reduce stress on the mortar joints, a lime-based mortar is to be used. Colour match with existing mortar samples in good condition and with typical coloring for both typical Indiana and Queenston limestone, as well as red-brick masonry mortar joints. Adjustments in pigmentation and tint may be required on different facades to match patina and weathering. Adjust sand and pigment levels accordingly. Repointed joints in brick masonry are to be cleared at least 1" in depth below finish surface before new mortar is installed, and stone joints may extend up to 2" in depth, or as otherwise directed. Follow typical mortar face profile across the facade.

Limestone Repairs
Select cut limestone elements with hairline cracking or minor damaged may be restored by pinning and mortar patching or dutchman type repairs. For areas with full, through-stone type cracking and shifting, complete replacement with salvaged materials may be necessary. See salvage notes - Appendix C).

For pinning, the damaged area is to be further exposed, with a stainless-steel threaded rod inserted and secured at least 2" into the substrate by epoxy. Secure replacement stone with patching compound coloured with stone dust. Mortar patching as required using Kiem or Jahn as indicated in complete restoration documentation. See mortar specifications for additional comment.

Front Door Restoration/ Replacement
The listed hardwood front entry door with its associated trim, hardware and transom window are planned to have been removed from the site for storage and restoration prior to demolition work commencing on site. The door hardware is to be stored indoors and an experienced heritage door restoration firm is to be engaged to restore the door and make it ready for re-installation. Door restoration work is to include removing any existing finishes, sanding, patch and refinishing as necessary and replacing and upgrading air and weather sealing and preparing a new frame for the existing door, trim, hardware, and opening. If restoration is not possible, it is recommended that the new replacement door emulate the historic appearance of the existing door with new brass hardware.

Restoration by Replacement
Elements with significant damage or deterioration greater than the realistic scope of repair may require replacement. Wherever possible, salvaged materials from the removed north elevation of the building shall be used for like-for-like replacements, assuming similar patina and wear. Elements including, brick masonry, limestone pilaster caps, bases, sills, banding, foundation veneer, cornice and entablature are to be salvaged and retained for use in restoration, and stored for long-term repairs.

Where no suitable replacement limestone specimens are available from on-site salvage, such as the door surround base course on the south façade, suitable "like-for-like" replacement stones shall be used. Recommended grade for new replacement stone is "Grade C" to match the existing worn patina and texture. All carved and cut elements above the raised foundation horizontal band are Indiana Limestone, whereas stones below the pilaster bases are Queenston Limestone.

Where the front porch is removed to accommodate the change in grade and barrier-free access, the new staircase will maintain the same layout and scale, and be faced in Queenston Limestone steps with bullnose profile.

Previously completed repairs with incompatible materials or repairs that do not match the existing character of the façade or building shall be removed and replaced with salvaged materials and repaired in accordance with these standards to the satisfaction of the heritage consultant. This includes the vehicle impact noted on the south-west corner of the Duke Street elevation (see Figure 22). Existing brick masonry repairs are of an incompatible colour and shall be replaced with salvaged materials. The limestone banding and foundation veneer shall also be replaced with typical salvaged materials.

Figure 22. Vehicle impact damage at the southwest corner of the building. (mCs, 2022)

Basement Window Infill

The façade retention strategy for the proposed development calls for the existing structure's basement to be removed and replaced with a structural concrete slab for the new development. As a result, replacement of the basement windows on the south and east facades will not be feasible. It is recommended to infill the existing window openings with Queenston Limestone in a similar texture, but lighter tone than the existing foundation veneer. The infill stone is to be set slightly back from the face of the existing limestone veneer, to show that basement windows previously existed, and could be re-installed in the future if desired. This follows the conservation practices of reversibility and is recommended.

Window Replacement

Windows play a significant role in upholding a building's identified heritage character. The building's existing windows are not original and detract from its cultural value. The following guidelines should be applied to replacement windows for the retained portion of the heritage facades.

New models should be compatible in appearance and character with the structure's original windows (colour, material, etc.).

Connection details should be designed to prevent water penetration and ensure proper water drainage and contribute to a robust building envelope plan developed by a building envelope consultant with experience working with heritage facades. The new windows are proposed to be a commercial-grade, wood or aluminum clad wood in an 8-over-12 single-hung or stationary frame. The colour of the exterior window frames should match the historical character of the retained façade.

Cleaning
Thorough cleaning of masonry and stone elements shall be considered a "Medium-Term preservation measure" and will be required following completion of the most disruptive demolition and new construction phases of the proposed structure. Restoration and repair of identified elements shall be completed in advance of cleaning, unless otherwise instructed by the heritage consultant
Cleaning of all materials shall be initially tested on a non-descript area, or a piece of salvaged material with a typical appearance and staining as the retained façade. Cleaning shall be tested on samples of both existing limestone varieties. If the cleaning results for the sample area are favorable in terms of cleaning results and material preservation, it may be replicated across the façade. Cleaning is to follow a "top-down" approach to minimize wear and ensure only one cleaning pass is required on most elements.

Overall Cleaning - Limestone
For all typical carved and cut limestone elements including cornice, parapet, entablature, and door surrounds with mild to moderate staining, use a low-pressure, hot water wash. Ensure areas of deeper staining from soot, dirt or dust receive greater attention. Should select areas require additional cleaning, proprietary chemical cleaners may be used following test patches on salvaged material. Ensure chemical cleaners do not result in a deeper clean or different finish than that of general hot water jet cleaning. Abrasive cleaning procedures should not be used for carved stone elements.

Deeper Cleaning - Limestone
The existing foundation stone veneer is treated with a non-original, flaking beige paint. This paint is to be removed and cleaned to ensure an even and consistent finish with other stone elements. If a standard low-pressure hot water wash is not sufficient, a super-heated water hot water jet similar to a DOFF or ThermaTech should be used.
Should painted areas continue to persist, a chemical cleaner similar to "Smart Strip" may be used. The last resort for removing painted stone finishes shall be low volume, low pressure micro abrasives such as TORC or JOS systems. All deep cleaning procedures are to be tested on a non-descript or salvaged sample prior to replication.

Overall Cleaning - Masonry
For all typical masonry elevations with mild to moderate staining, soiling or efflorescence, areas should be thoroughly cleaned and blended to ensure continuity across the facade. All chemical cleaners shall be diluted per manufacturer's specifications and tested on a non-descript or salvaged sample prior to replication. In cleaning the masonry elements of the façade, the intent is not to remove the patina and aged look of the façade, but to blend areas of more advanced staining and discoloration into the rest of the façade. In general, the mildest cleaners shall be attempted before progressively stronger solutions are employed.

Attempt cleaning first with Prosoco brand chemical cleaners, as well as diluted Trisodium Phosphate "TSP", and diluted calcium carbonate. All three proposed cleaners may side by side or on adjacent samples to determine the most effective and non-destructive procedure.

5.2.1 Commemorative Design Brief

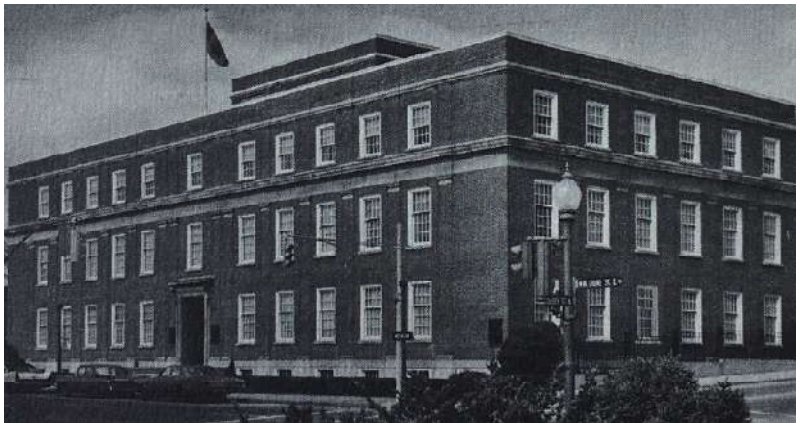
A Heritage Plaque is proposed as part of the front landscaped area along Duke Street facade.

Please see the proposed Landscape Plan for the proposed location of the plaque. This location is recommended as it will be publicly accessible and will educate the users of the building and the public about the site's history.

The following page includes the proposed contents of the plaque.

10 DUKE STREET WEST

Economical Fire Insurance Company of Berlin



The Economical Mutual Fire Insurance Company of Berlin, Ontario, was founded in 1871, when it issued its first policy on a house and barn, on November 25th, 1871. At the time, the small town of Berlin had a population of 2,743 persons, and people were motivated by the fear of fire which was always present through knowledge of great fires such as, St. John's, Newfoundland, in 1816, Quebec City in 1845 and 1866, Ottawa and Hull in 1900, and Toronto in 1904, to name only a few. Fire insurance in small centres such as Berlin was expensive and difficult to obtain at the time.

The first company office was located on Queen Street North in Berlin, ON. From 1871 - 1948, Economical occupied 4 different office buildings in Berlin. The rapid growth of the company post-World War II resulted in the need for a larger and more modern premise. In 1948, the present site at Duke and Queen Streets was acquired, and the Toronto-based architecture firm of Messrs. Mathers & Haldenby were commissioned to design a new head office on the site. Mathers & Haldenby Architects are well known for their work on a number of notable buildings in Toronto, including the Robarts Library at University of Toronto Campus, Queen's Park Complex, Roy Thompson Hall, as well as the Public Archives and National Library Building in Ottawa. Economical Mutual Fire Insurance occupied the building from it's opening on February22, 1952 until 1989.

The heritage value of 10 Duke St. W resides in the following architectural characteristics that are indicative of the Colonial Revival architectural style: red flemish brick; rectangular plan; repeating bays; segmented windows openings with brick voussoirs; 8/12 windows with stone sills; main entrance door with door surround, transom and entablature; stone band between 2nd and 3rd floors; and a strong parapet along the roofline.

Figure 23. Proposed content for the heritage plaque

5.3 Long-term Measures

The long-term conservation measures required to ensure the retained heritage façade remains in good condition into the future centered around monitoring, planned maintenance and maintenance as necessary.

Once rehabilitation and restoration are complete, a regular maintenance and inspection plan for all aspects of the heritage façade will be required. In addition to planned, regular inspections, maintenance, and repair of masonry, flashing, glazing and penetrations will be required throughout the lifetime of the building. Leftover salvaged materials from the demolition phase shall be stored in a secure, sheltered location on site to be used in future masonry or stone repairs as needed.

Maintenance
Maintenance will consist of routine clean up to prevent accelerated deterioration and potential saturation zones in the event that drainage away from the masonry becomes inadequate. In particular de-icing salts will be flushed from the entrances as soon as weather permits. Damaged or deteriorated caulked joints will be cut out and re-caulked by an experienced sealant company and small localized repointing work will be carried out as necessary by a qualified masonry contractor. Both these latter two items will utilize the named products used for the restoration work.

Monitoring Strategy
The Owner will be responsible for monitoring the condition of as much of the building fabric that can be observed from grade level from the public realm and elevated vantage points. In the event that an issue is identified and interventions are required to be implemented to ensure the stability of the building, a meeting will take place between relevant City departments and appropriate committees to determine an appropriate scope of work and schedule. The monitoring program will record the presence and locations of any deteriorated mortar or caulked joints, as well as cracks.

The condition of window millwork will be assessed and recorded, and the need for repainting or touch-up work clearly identified and actioned. An annual inspection of the building envelope will occur to look for / address damage related to vandalism, the elements / weather, animals and general occupancy. Repair will be done as needed. Every 5 years, the Owner will conduct a more detailed Condition Assessment to evaluate masonry, seals, roof and flashings, windows and doors.

Warranty Inspection & Condition Assessment Inspections
During the year after occupancy, a warranty inspection will be carried out to determine whether or not there are deficiencies to the Short and Medium term exterior and interior restoration work.

Following the warranty inspection and the correction of deficiencies—if any— structured Condition Assessments will be scheduled to thoroughly evaluate the condition of the entire building envelope on an ongoing basis. These assessments will be carried out by a professional consultant, experienced in the evaluation of heritage masonry and roof. A detailed Condition Assessment Report will be prepared for each assessment and photographs will be provided to record the observed conditions.

Recommendations will be made within the report regarding any intervention strategies considered to be necessary and the next scheduled visit will be determined.

5.4 Further Recommendations

In addition to the required heritage conservation measures described in this report, several additional recommendations are also provided to ensure the long-term integrity of the retained heritage attributes.

Building Envelope Integrity
It has been determined that the existing building's structural system and building envelope comprises exterior load-bearing masonry walls with terracotta clay tiles and plaster on the interior. This building envelope does not include a robust or intentional insulation layer, and therefore allows any moisture transmitted through the face bricks to drain through the wall and weep out at the base of the wall. Maintaining breath-ability and moisture transmission will be crucial to ensuring the long-term integrity of the retained heritage façade.

It is recommended that the new building envelope of the retained heritage façade be kept to approximately an R-14 insulation level. This moderate level of insulation will ensure that moisture trapped in the bricks and double-wythe masonry wall is allowed to freely drain or evaporate. Should a more robust building envelope be installed in this façade, it could allow moisture contained in the double-wythe masonry wall to freeze and remain trapped in the wall. This could result in long-term damage to the building envelope which could materialize as spalling bricks, moisture damage on the interior or continually degrading mortar and stone.

To ensure any new building envelopes for these facades do not contribute to the long-term degradation of the heritage façade, it is recommended that the development team consult a building envelope specialist to determine an acceptable solution.

Re-installation of Interior Architectural Heritage Elements
Few interior heritage elements identified in this report are recommended to be incorporated into the new design of the retained structure. These elements include the travertine lobby and front lobby convector grilles. It is recommended that the development team's interior design consultant seek to incorporate these elements into the front lobby on the Duke Street West Elevation.

Signage
If new signage is proposed, it should be of a contemporary design, easily reversible, and visually distinct. Signage should respect the overall design and physical integrity of the property and the streetscape. It should be compatible with the character of the heritage property. A corner location is recommended where it is visually prominent from Queen and Duke Street however does not obstruct the key heritage features on the building facade.

Exterior Lighting
Exterior lighting will be provided to complement the building and provide safety and security to a light level in line with OBC requirements. Location and selection of light fixtures is done by the Landscape Designer with the Architect keeping with best conservation practices.

The proposed exterior lighting focuses on:
1. Highlighting the facade bays by up/down lights to increase visual presence
2. Light in select locations to highlight key locations like entrances and retail access points, heritage plaque.

The goal is to use light to highlight the most prominent heritage features of the retained facades, and bring a new awareness to its character in a more contemporary context as a result this is recommended. In developing the lighting scheme, consideration should be given to position light fitting and cables unobtrusively, so they do not spoil or damage the appearance of the building and avoid fixing exterior lighting to a building in a destructive or irreversible manner.

6.0 Conclusion

The proposed conservation plan for the former Economical Fire Insurance building at 10 Duke St. W. follows a light, yet robust approach. Character defining features on the south, west and east facades including brick and limestone masonry, windows and doors are proposed to be restored, rehabilitated and conserved, in accordance with industry best practices. The intent is to complete the work with minimal intervention, in keeping with the Parks Canada Standards and Guidelines for the Conservation of Historic Places in Canada. The interiors are more substantially altered (structure is replaced) to accommodate the core of the proposed structure.

The following heritage conservation phasing approach is proposed to complete the conservation work outlined in this report:

Phase 1: Short Term (0-6 months from start of demolition)

- Salvage of heritage defining elements for reuse, protection of remaining attributes prior to work commencing.
- Demolition of interiors, roof, north façade, and portion of west façade.
- Stabilization of remaining elevations / protection of openings.
- Prepare for future connections, construction staging.

It is understood that the owner will apply for a demolition permit as a first step to remove the above elements and prepare the site for work. To ensure protection of the remaining heritage attributes as this work is completed, the owner will provide temporary protections, heritage hoarding, and security for all remaining openings until the building is fully enclosed.

Phase 2: Medium Term (12-24 Months from Issuance of Building Permit)

Provide new structure and begin construction on new tower envelope

- Window Replacement (heritage building)
- Sill Repair / Replacement (heritage building)
- Re-point/ replace brick and stone in areas of deterioration (heritage building)
- Tie retained heritage facades into new structure
- Signage
- Exterior Lighting
- Installation of Heritage Plaque

While the building is generally in good condition, selective repointing and brick / stone repair is required to minimize further deterioration. Repair or replacement of window sills and limestone elements will be required in areas where damage is observed.

Conservation work could occur at the end of construction, or post occupancy, include items relating to signage and lighting. These items are significant for reinstating the building as active and occupied but are not required for occupancy.

Phase 3: Long Term (Post Occupancy, ongoing)

- Brick Cleaning (ongoing)
- Maintenance / monitoring of building envelope

Trade Qualifications

The conservation work described in this Conservation Plan will be executed by specialist sub-contractors with experience working with heritage masonry structures, heritage metal work, windows, doors and limestone.

7.0 Appendices

Appendix A: References

Gouvernment of Canada
2010 Standards and Guidelines for the Conservation of Historic Places in Canada. Second Addition. Electronic Document: https://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf

City of Kitchener
2008 Statement of Significance 10 Duke Street West

2014 Downtown Built Inventory List. Retrieved from: https://www.Kitchener.ca/sites/default/files/media/browser/2014-12-16/downtown-built-heritage-inventory-list.pdf

2014 Official Plan. Electronic Document: https://www.kitchener.ca/en/development-and-construction/official-plan.aspx

2021 Terms of Reference Heritage Conservation Plan

Province of Ontario
1990 Ontario Heritage Act. Electronic Document:
https://www.ontario.ca/laws/statute/90o18?search=heritage+act
Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)

2007 Infosheet: Eight Guiding Principles in the Conservation of Built Heritage Properties: Ministry of Tourism, Culture and Sport, Toronto.

2014 Standards and Guidelines for the Conservation of Provincial Heritage Properties – Heritage Identification and Evaluation Process. Ministry of Tourism, Culture and Sport, Toronto.

Appendix B: Photo Sheets - Annotated

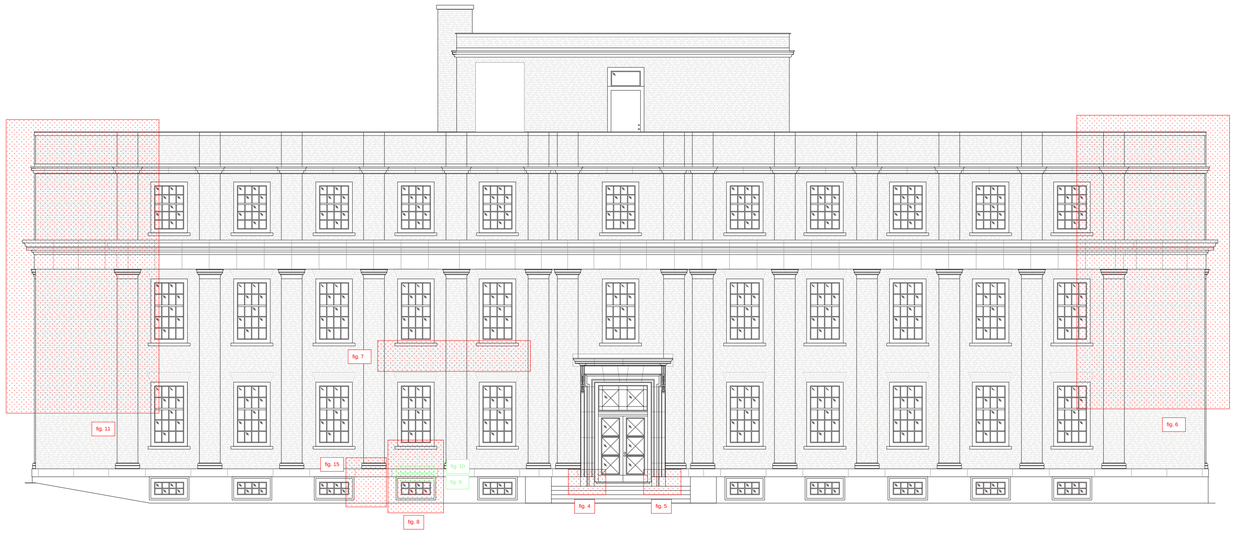


Figure 1. South elevation to be retained. Facing onto Duke Street West. Left hand side is east, right hand side is west.

Source: As-built drawings prepared by PlanIt Measuring (January 2022), annotated by mCs in reference to photo-sheet.

Note: All dimensions are to be verified on site before commencement of any proposed work.

Figure 2. Southwest (left hand side) of Duke St. facade to be retained.

Figure 3. Enlarged original front entry door on Duke St.

Figure 4. Damaged & painted stone at front entry-left.

Figure 5. Damaged & painted stone at front entry-right.

Figure 6. Southeast corner of Duke St facade (right corner)

Figure 7. Staining on bricks below second floor window sills, bays 4 & 5 from southwest.

Figure 8. Damaged sealant, sills & stone at bay 4 first floor.

Figure 9. Enlarged cracked stone banding base of L1.

Figure 10. Enlarged damaged sealant and metal flakes.

Figure 11. Southwest corner of Duke St facade (left corner)

Figure 12. View along Duke St. facade towards Queen St (southwest to southeast).

Figure 13. South bay 4 with damage and staining.

Figure 14. Overall front entry on Duke St, stone detailing, travertine steps & threshold.

Figure 15. Gas service penetrations to be repaired.

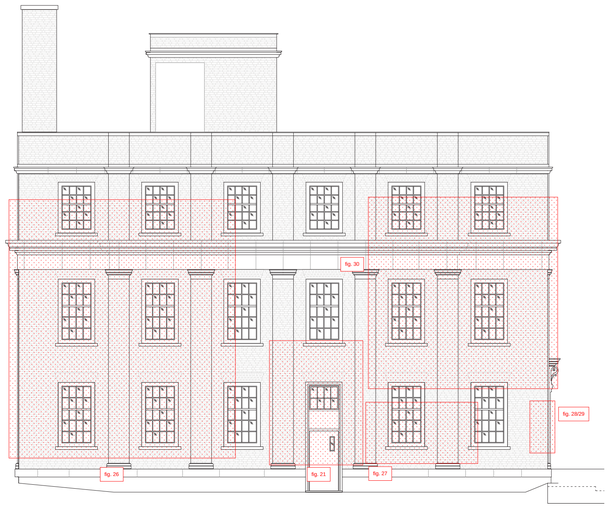


Figure 16. West elevation to be partially retained, left three bays to be removed.

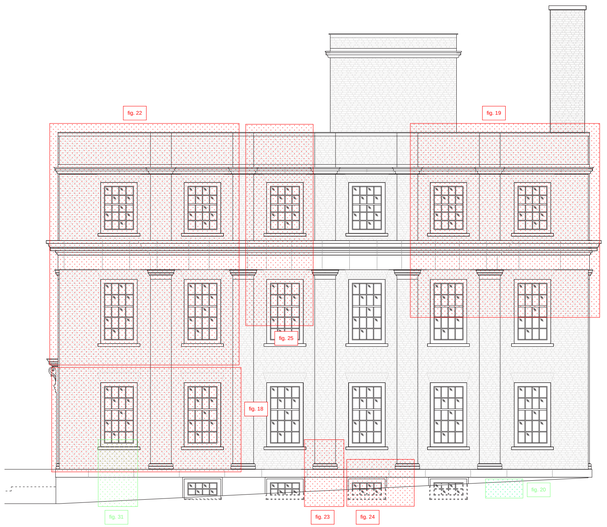


Figure 17. East elevation to be retained, all roof level excluding parapet to be removed (typical)

Source: As-built drawings prepared by PlanIt Measuring (January 2022), annotated by mCs in reference to photo-sheet.

Note: All dimensions are to be verified on site before commencement of any proposed work.

Figure 18. South portion of east (Queen St.) facade to be retained.

Figure 19. South portion of east facade to be retained, brick staining at window sills.

Figure 20. Enlarged north portion of east facade stone banding to be cleaned and retained.

Figure 21. Ornate wrought iron fence at east facade

Figure 23. Retaining wall at grade change along Queen St.

Figure 24. Northeast service penetration to be repaired.

Figure 25. Enlarged cornice and brick staining east facade.

Figure 28. Degraded paint on stone foundation west facade.

Figure 31. Damaged stone and brick at southwest corner.

Figure 26. Damaged stone banding and bricks to repair.

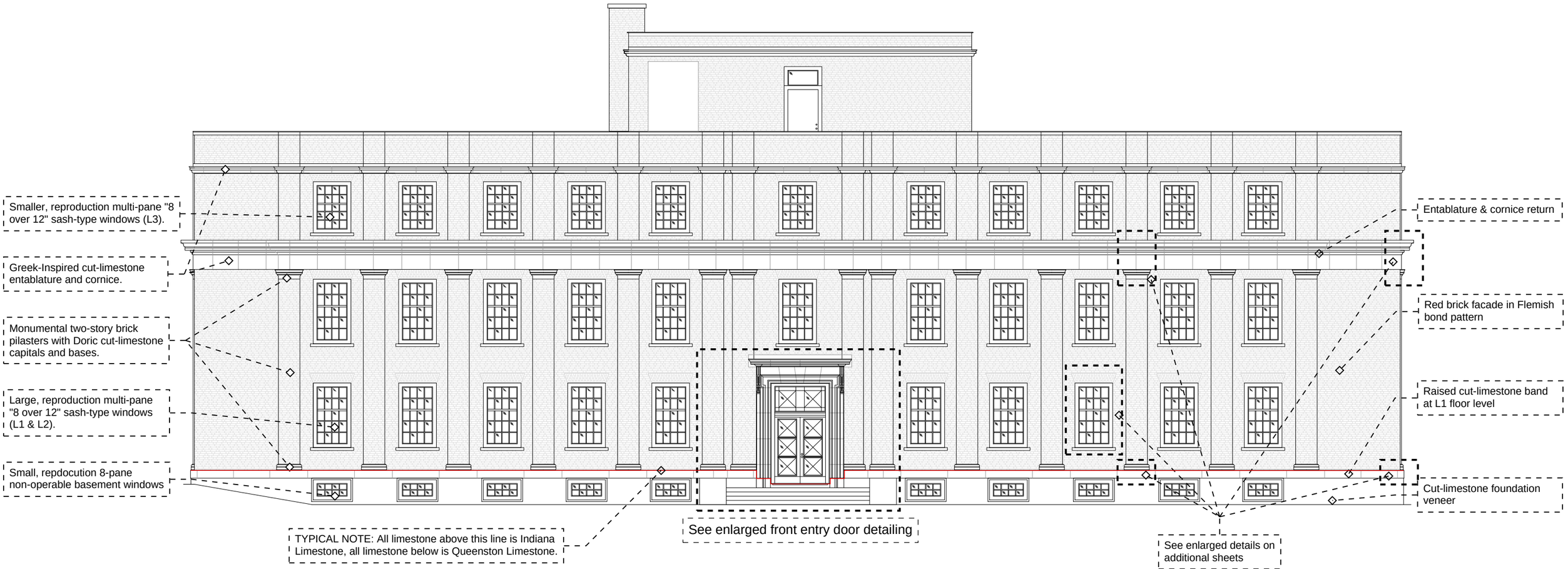
Figure 29. Southern portion of west facade to be retained.

Figure 30. West facade to be retained up to end of this bay.

Figure 22. North portion of west facade to be removed.

Figure 27. Wrought iron fence at grade on southeast facade.

Appendix C: Demolition Drawings & Heritage Conservation Plan Drawings

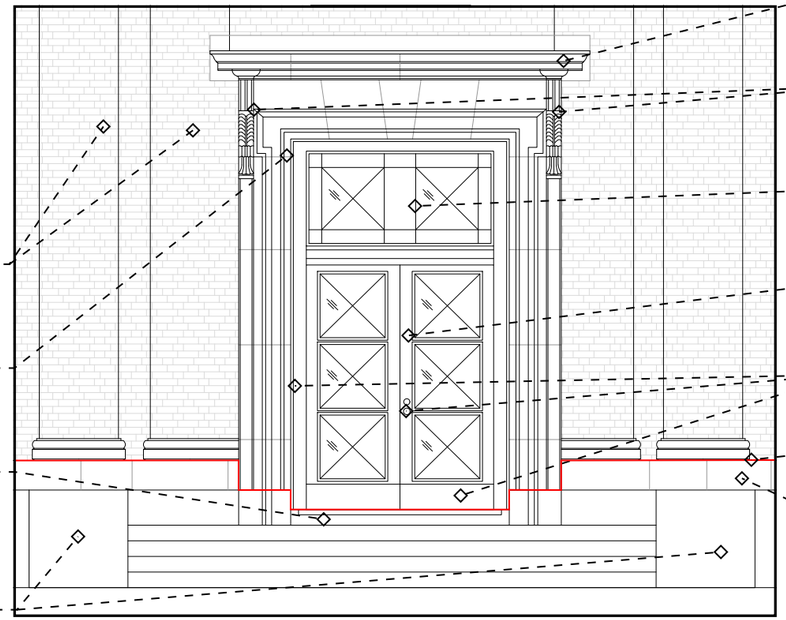


10 Duke Street West, Kitchener, ON. South Facade (Duke Street)
Heritage Attributes & existing condition

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	P.R.
Date:	2022-03-08
Drawing No.:	HA-1

Enlarged front entry door, south elevation



Doubled up 2-story monumental pilasters

Cut-limestone shouldered door surround

limestone exterior steps with bullnose profile to be reproduced

Cut-limestone front entry pedestals

Entryway cornice

Ornate scroll-like carved limestone door corbels with Roman acanthus detailing, supporting a projecting cut-limestone cornice above the entryway

Original glass transom window with similar glazing and iron "X" detailing as below front entry door

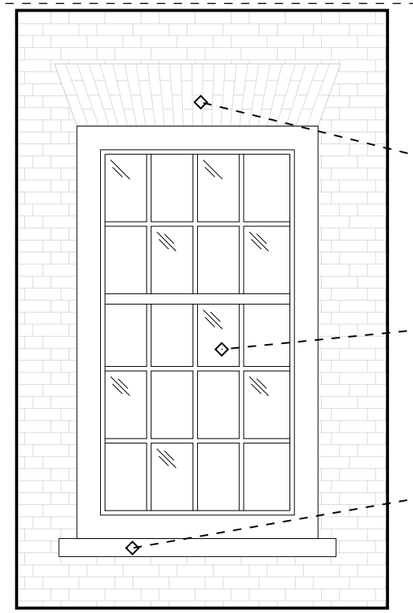
Original hardwood front entry door, contemporary style with 6 square glazed openings with black iron bar "X"

Original brass door handle, kickplate and buzzer (left of door in elevation)

TYPICAL NOTE: All limestone above this line is Indiana Limestone, all limestone below is Queenston Limestone.

Raise cut-limestone banding at the base of L1

Enlarged typical L1 & L2 window

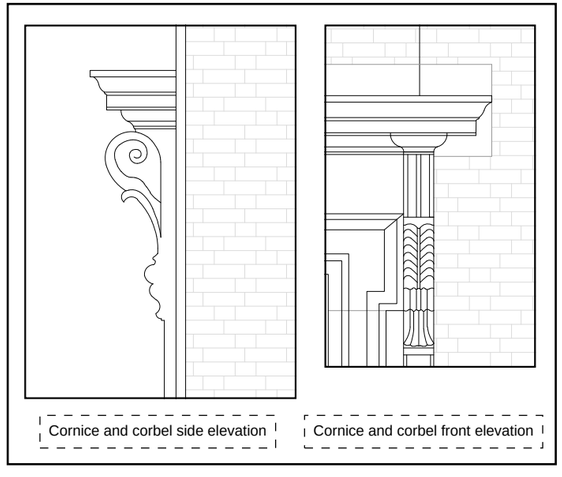


Flat arched brick lintel

Large, reproduction multi-pane "8 over 12" sash-type windows (L1 & L2)

Cut-limestone window sills

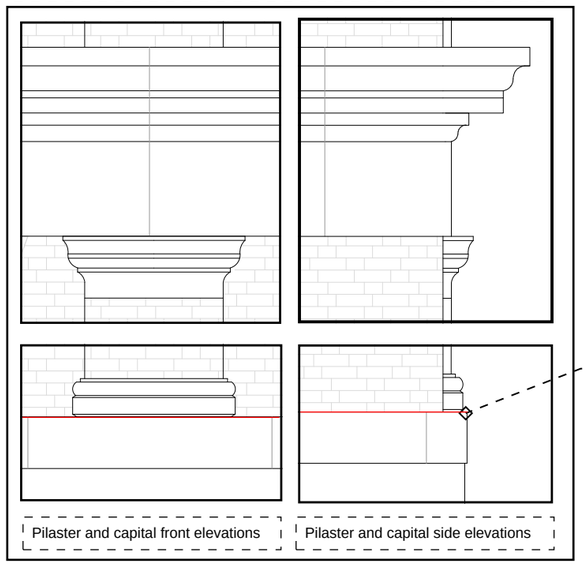
Enlarged limestone front entry door cornice and carved corbels.



Cornice and corbel side elevation

Cornice and corbel front elevation

Enlarged pilaster and cornice elevations



Pilaster and capital front elevations

Pilaster and capital side elevations

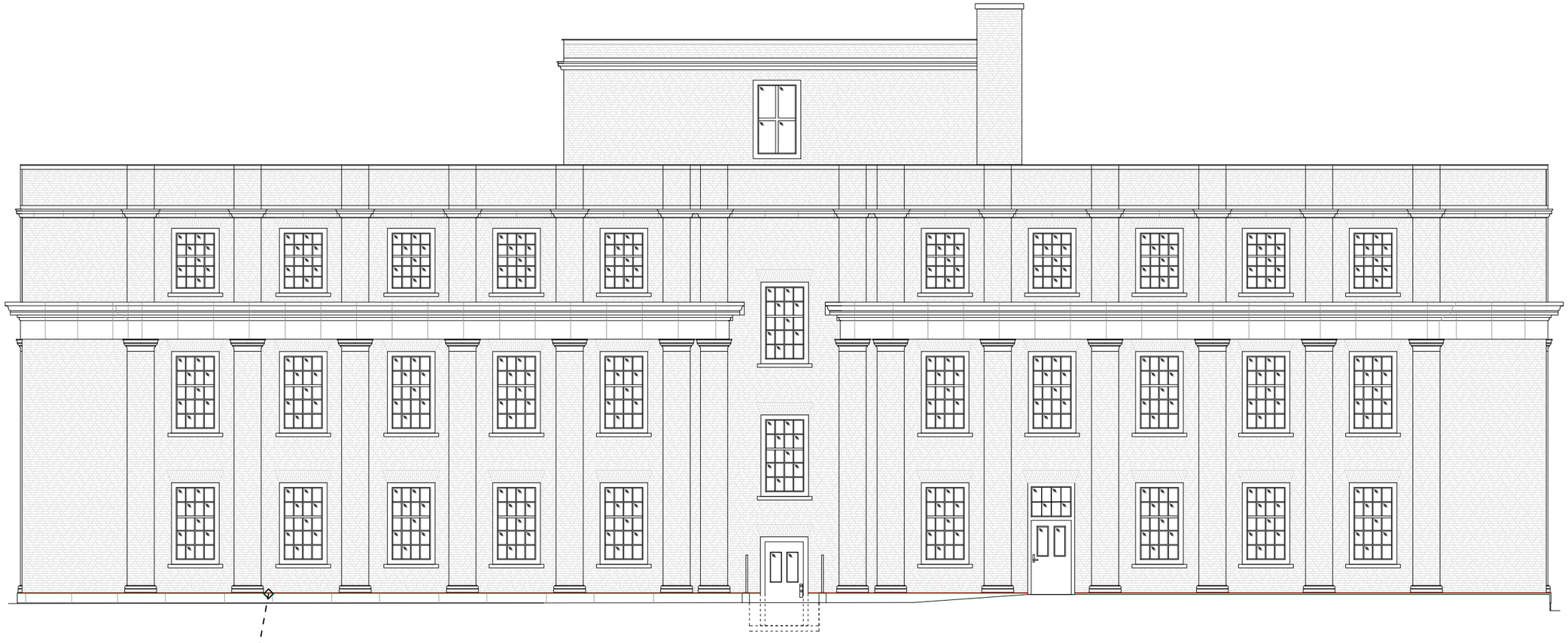
TYPICAL NOTE: All limestone above this line is Indiana Limestone, all limestone below is Queenston Limestone.

10 Duke Street West, South Elevation enlarged heritage attributes

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	P.R.
Date:	2022-03-08
Drawing No.:	HA-2

North (Rear) Facade, to be fully removed.

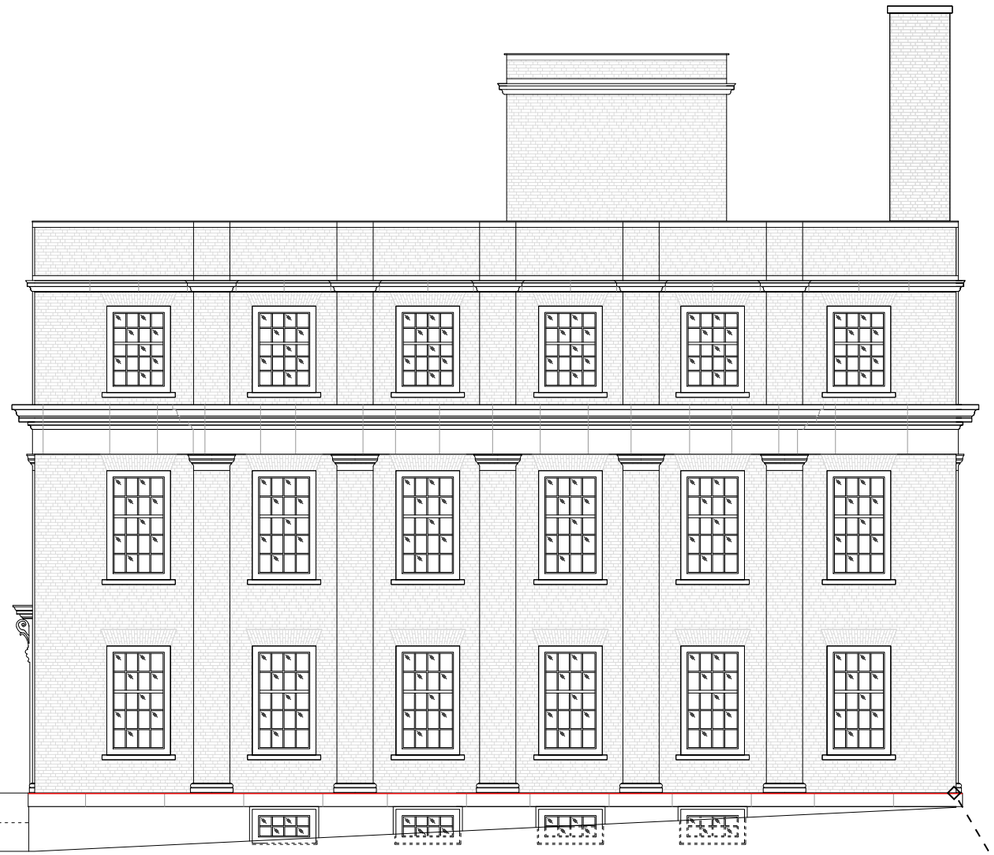


TYPICAL NOTE: All limestone above this line is Indiana Limestone, all limestone below is Queenston Limestone.

10 Duke Street West, Kitchener, ON - North Facade
Heritage Attributes & existing condition

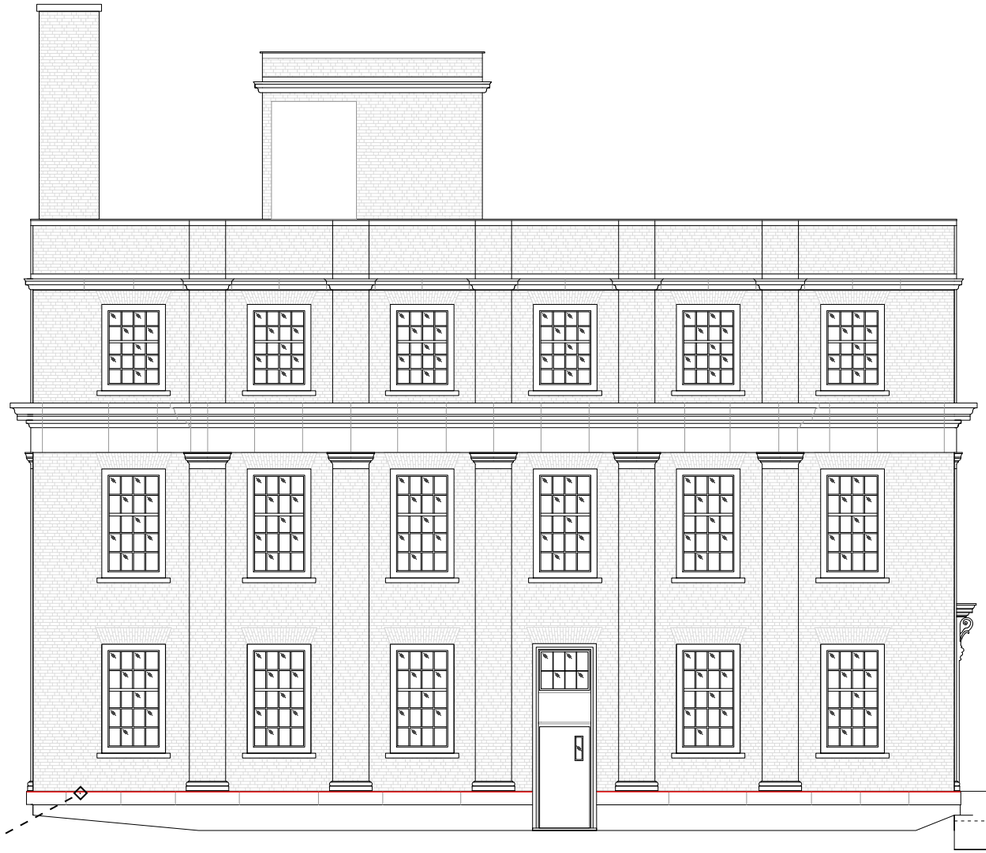
NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	K.K.
Date:	2023-10-04
Drawing No.:	HA-3



TYPICAL NOTE: All limestone above this line is Indiana Limestone, all limestone below is Queenston Limestone.

East elevation to be fully retained to top of roof parapet

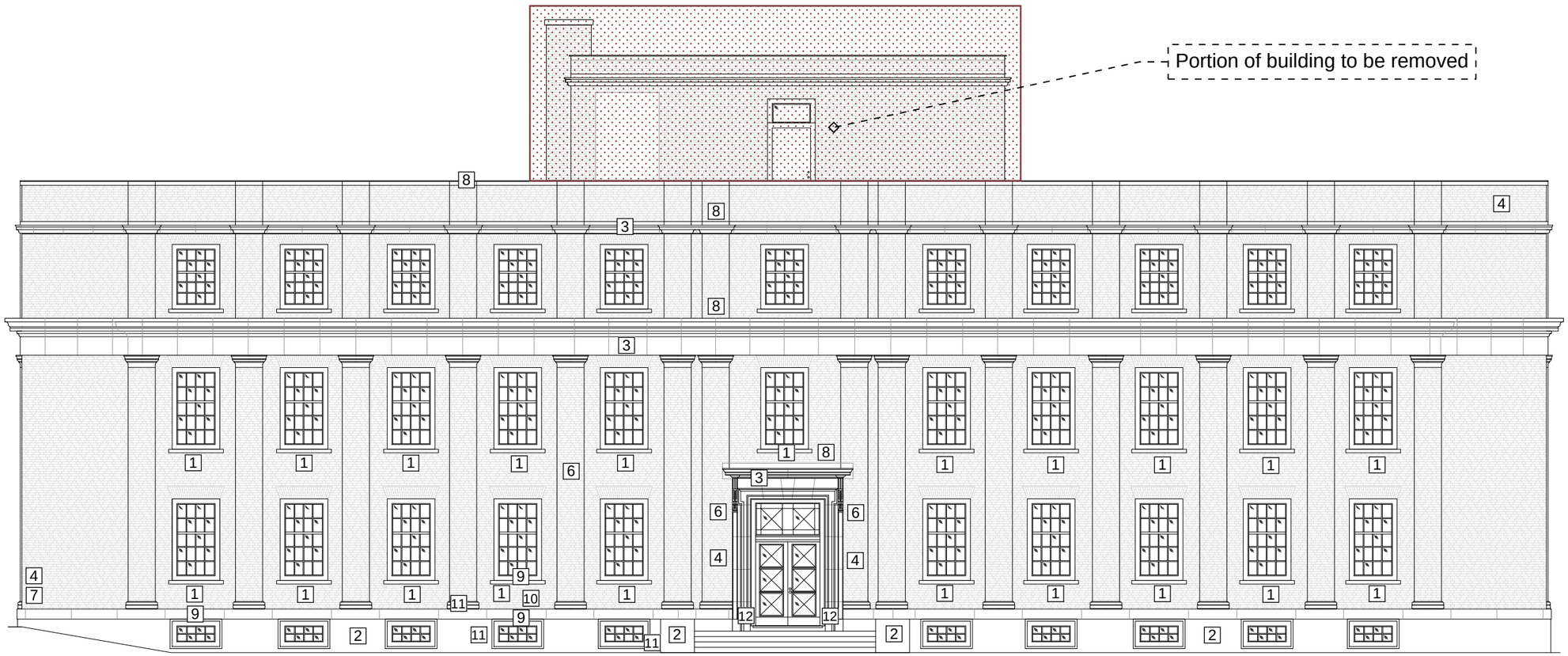


West elevation to be partially retained

10 Duke Street West, Kitchener, ON. Side Elevations
Heritage Attributes & existing condition

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	P.R.
Date:	2022-03-08
Drawing No.:	HA-4



HERITAGE CONSERVATION NOTES

1. Localized cleaning of moderate staining on brick coursing from lintels below L1 & L2 windows.

2. Strip paint, clean and restore painted limestone foundation veneer on all retained elevations.

3. Thorough cleaning of limestone cornice and entablature on all retained elevations.

4. Remove existing signage, patch, clean and repair brick to typical condition. Removal of electrical services for lighted signage may be required). In the case of severely damaged brick or masonry, replace with salvage from removed portion of building.

5. Localized repointing of mortar where washout has occurred. See mortar specification.

6. Localized deep cleaning of efflorescence and brick staining.

HERITAGE CONSERVATION NOTES CONT.

7. At vehicle impact damage on SW corner, remove damaged and non-matching existing repairs and replace limestone band and masonry with materials salvaged from removed portion of the building.

8. Inspect and repair any parapet, cornice or entablature flashing on all elevations to ensure adequate drainage away from the masonry and facade.

9. Repair hairline cracking in limestone lintels and veneer per repair specification.

10. Failed silicone sealant at joint of brick and limestone. Repair and ensure proper drainage.

11. Remove servicing and repair limestone and or masonry penetration per specification.

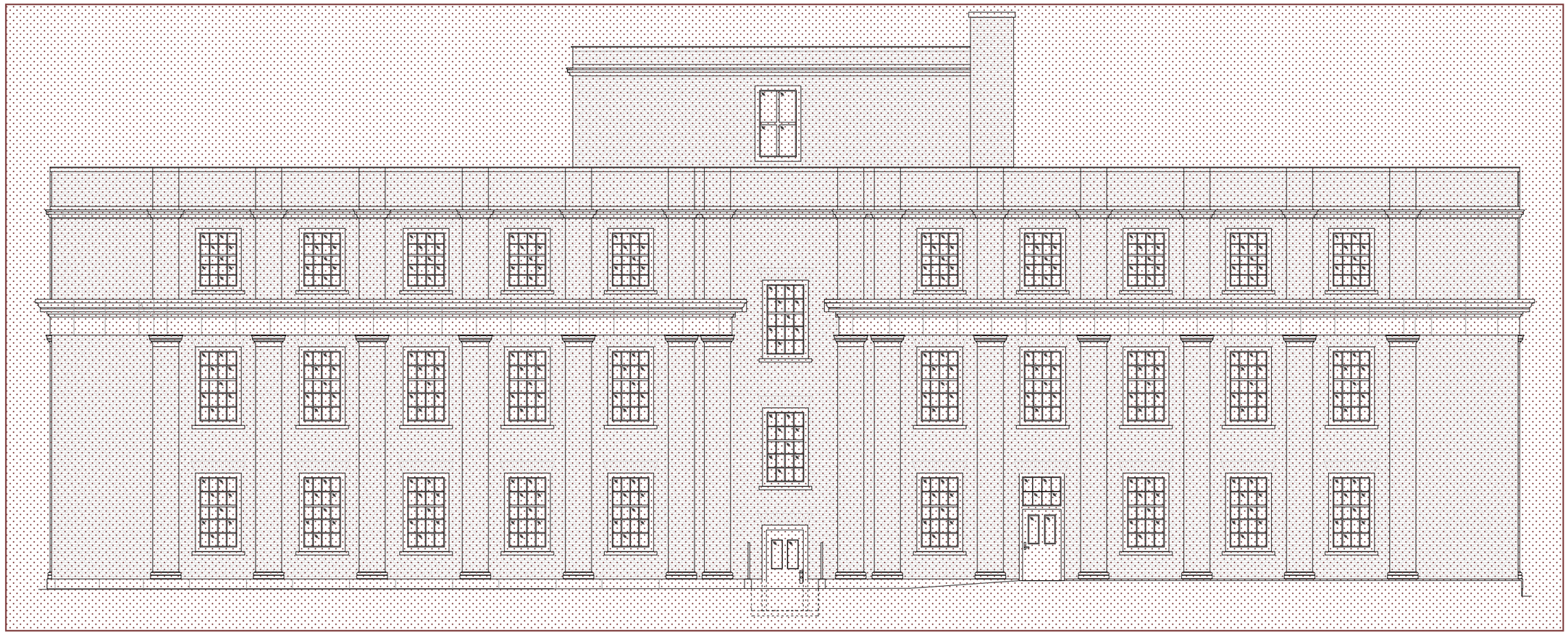
12. Replace base course of significantly deteriorated limestone door surround.

10 Duke Street West, Kitchener, ON. South Facade (Duke Street) - Heritage Conservation Plan & Demolition

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	P.R.
Date:	2022-03-08
Drawing No.:	HCP-1

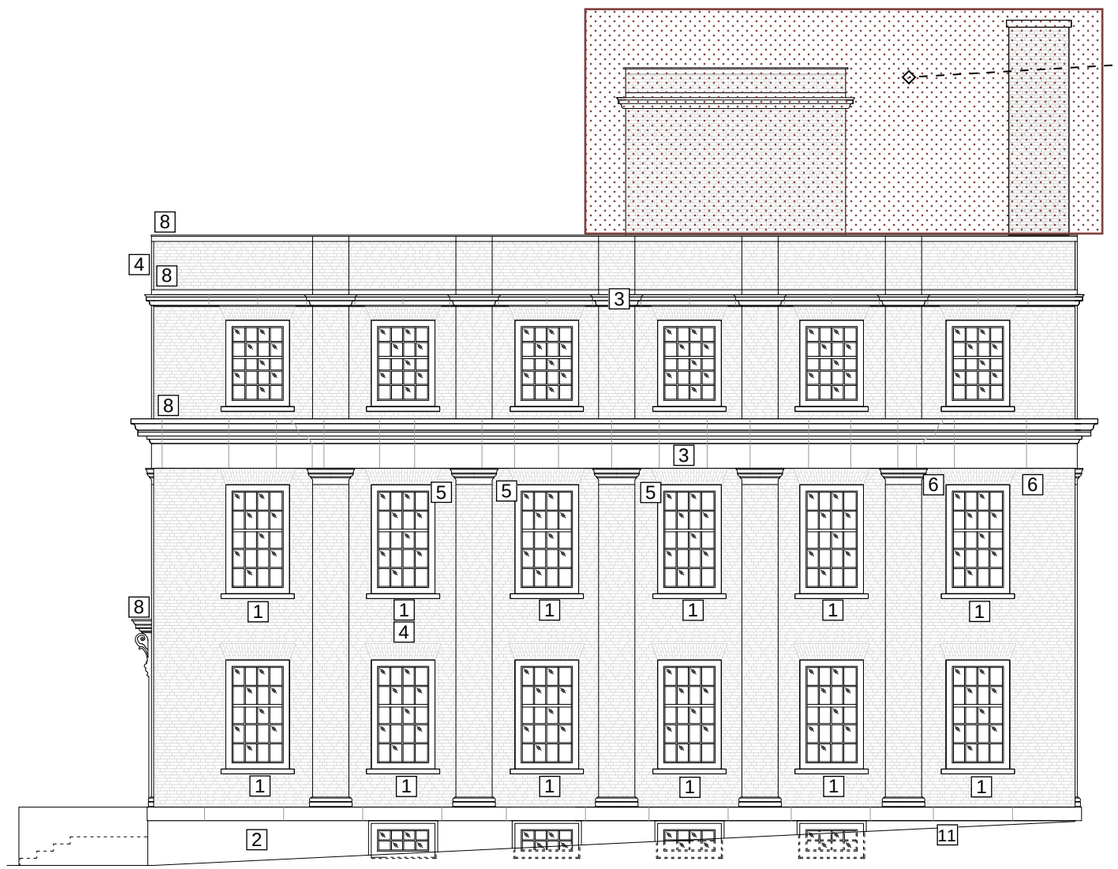
10 Duke Street West, Kitchener, ON. North Facade, to be fully removed.
Heritage Conservation Plan & Demolition



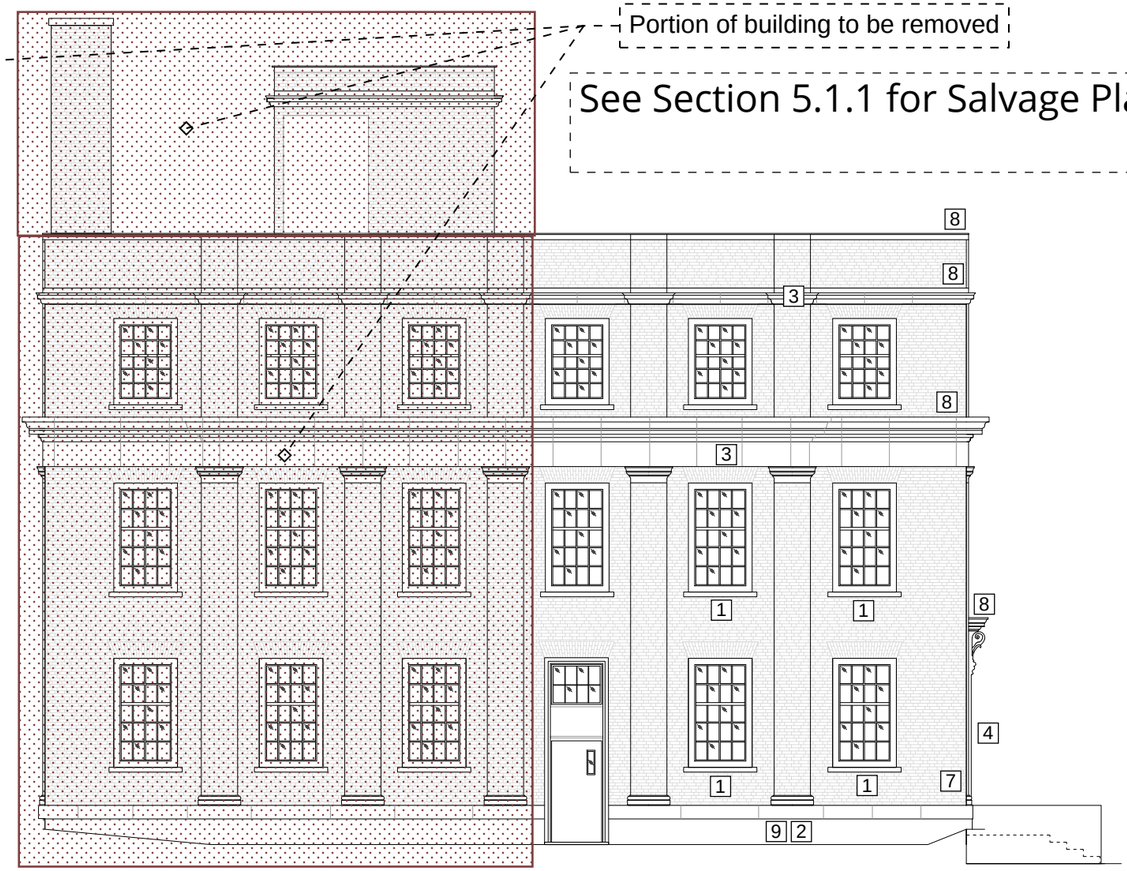
See Section 5.1.1 for Salvage Plan

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	K.K.
Date:	2023-10-04
Drawing No.:	HCP-2



East elevation to be fully retained to top of roof parapet



West elevation to be partially retained

HERITAGE CONSERVATION NOTES

1. Localized cleaning of moderate staining on brick coursing from lintels below L1 & L2 windows.

2. Strip paint, clean and restore painted limestone foundation veneer on all retained elevations.

3. Thorough cleaning of limestone cornice and entablature on all retained elevations.

4. Remove existing signage, patch, clean and repair brick to typical condition. Removal of electrical services for lighted signage may be required). In the case of severely damaged brick or masonry, replace with salvage from removed portion of building.

5. Localized repointing of mortar where washout has occurred. See mortar specification.

HERITAGE CONSERVATION NOTES CONT.

6. Localized deep cleaning of efflorescence and brick staining.

7. At vehicle impact damage on SW corner, remove damaged and non-matching existing repairs and replace limestone band and masonry with materials salvaged from removed portion of the building.

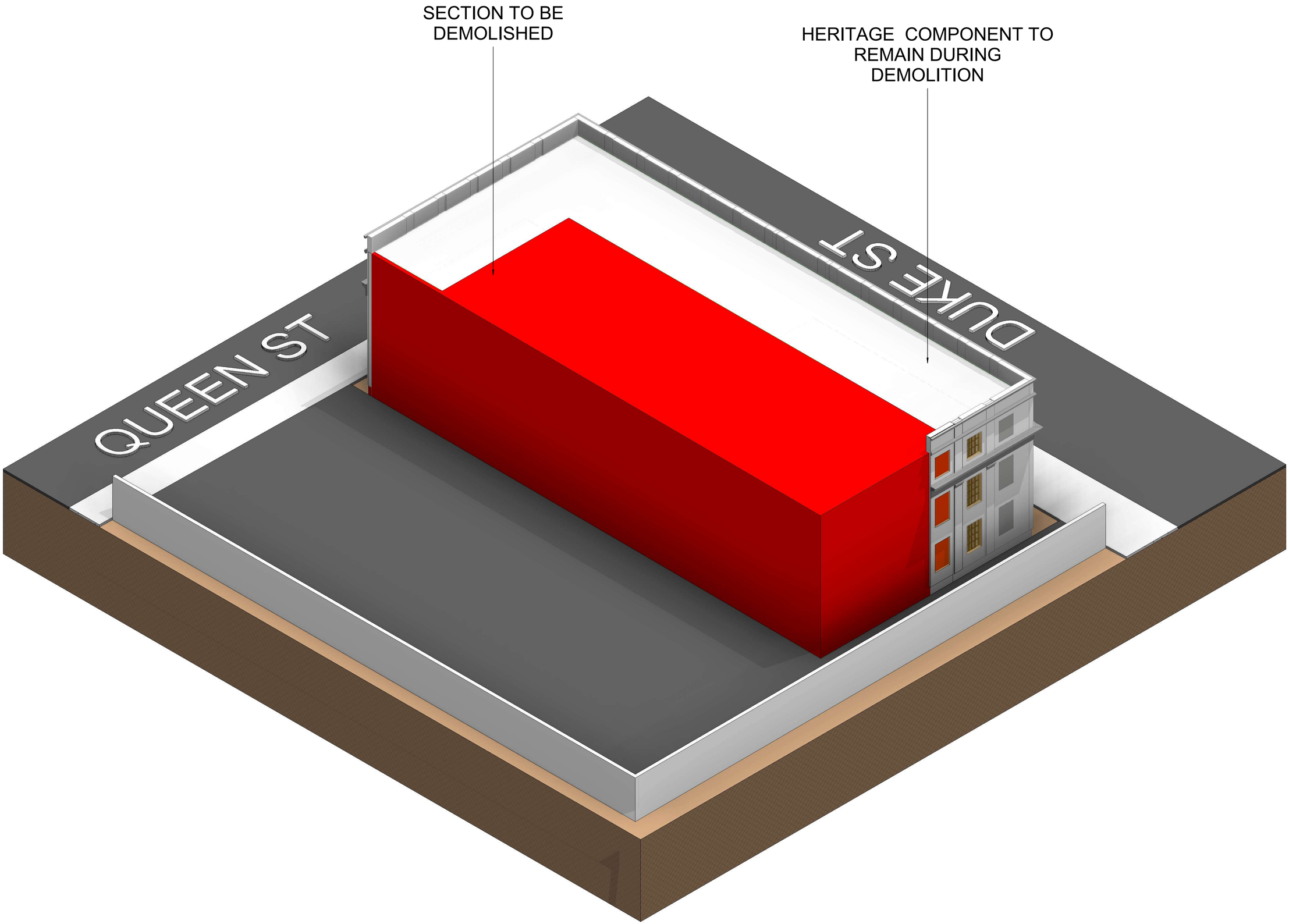
8. Inspect and repair any parapet, cornice or entablature flashing on all elevations to ensure adequate drainage away from the masonry and facade.

9. Degraded limestone foundation veneer to be replaced with salvage from rear of building

10 Duke Street West, Kitchener, ON. Side Elevations
Heritage Conservation Plan & Demolition

NOTE: Refer to PlaniT as-built drawing package for dimensions. All dimensions to be site verified before the commencement of work on site.

Project:	22003
Drawn By:	K.K.
Date:	2023-10-04
Drawing No.:	HCP-3



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

NOT FOR CONSTRUCTION

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

EXISTING CONDITION

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

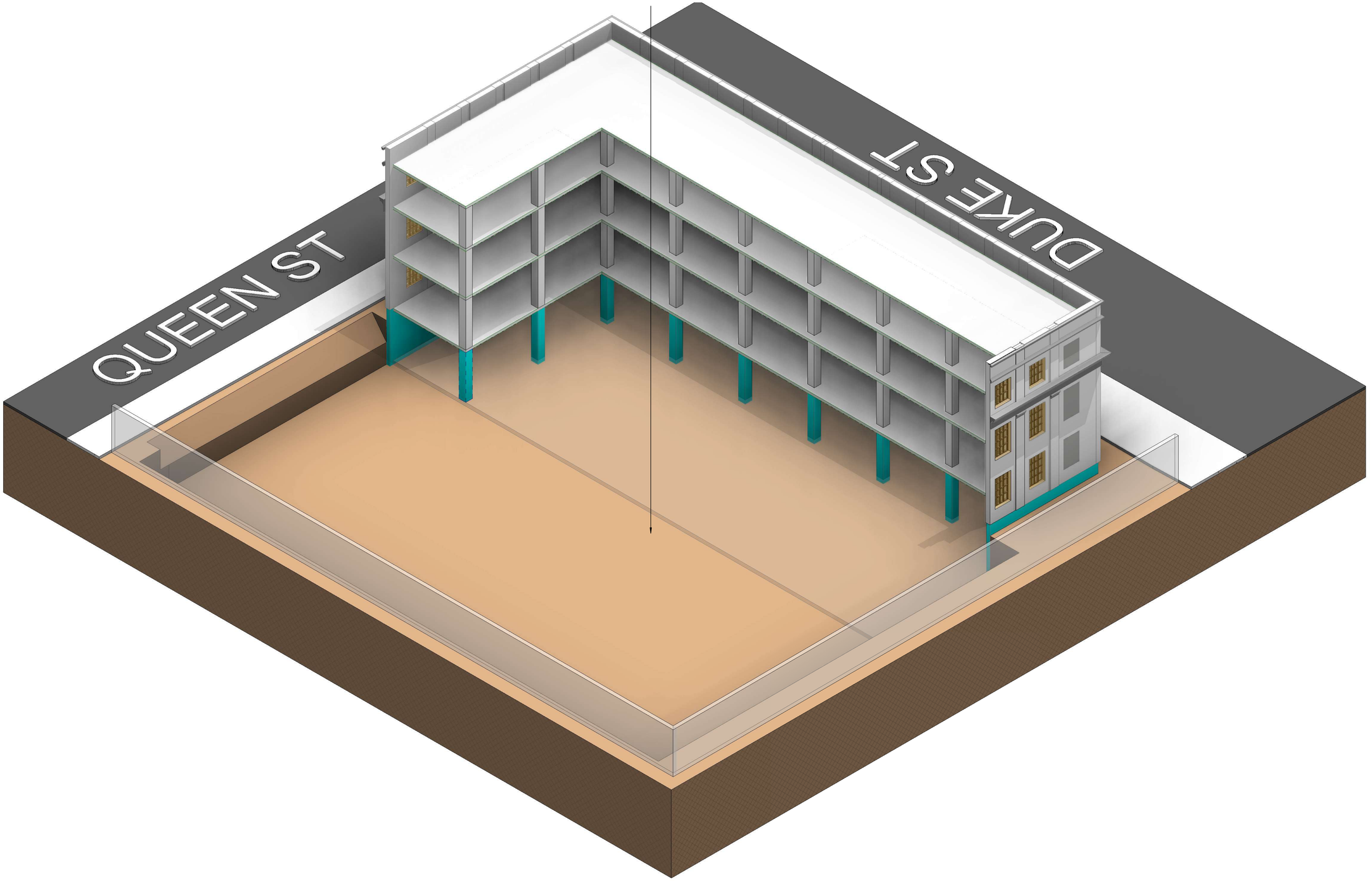
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A101

DEMO EXISTING AND EXCAVATE
TO BASEMENT SLAB LEVEL



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

DEMOLITION + EXCAVATION

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

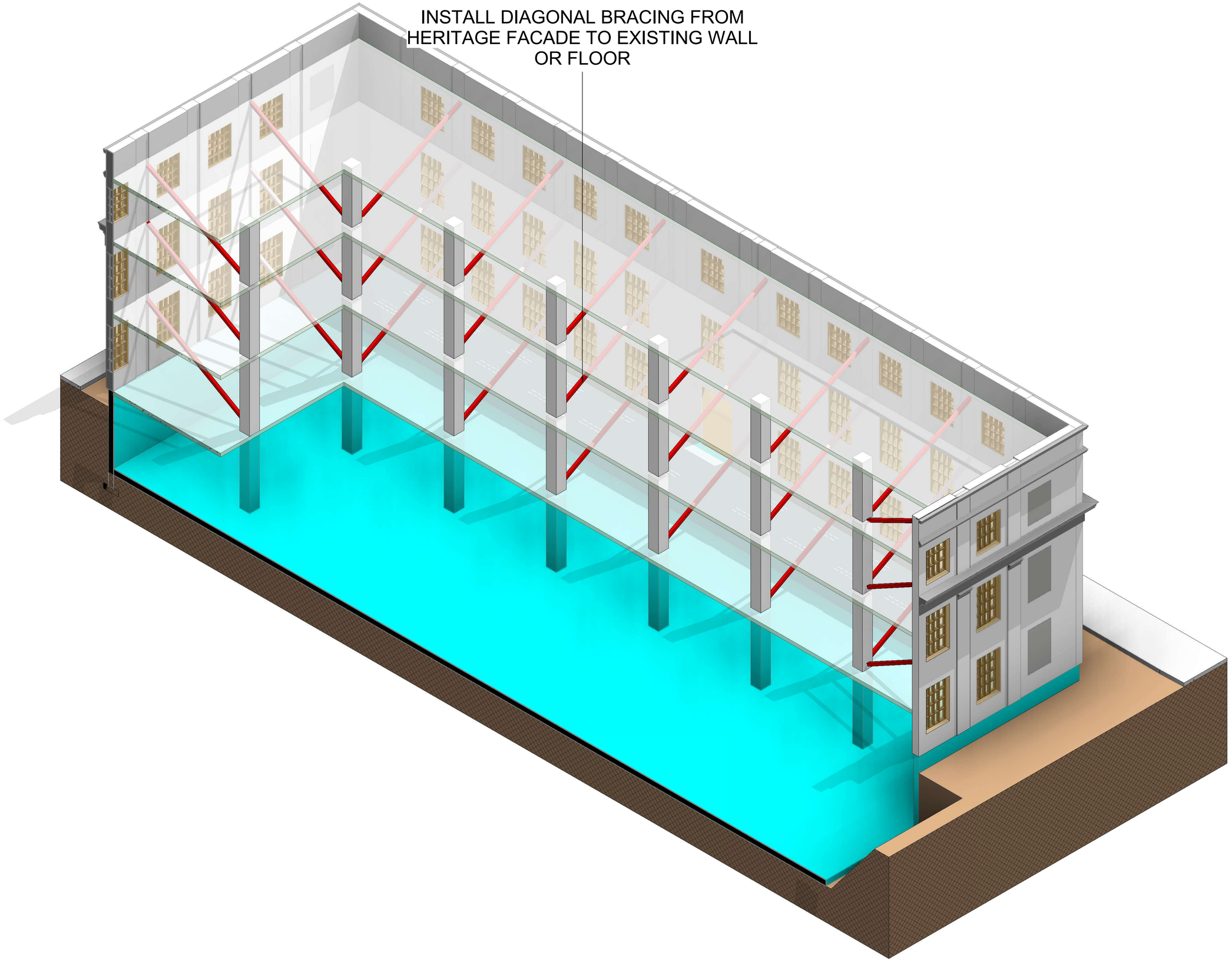
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A102

NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION

VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

BRACING INSTALL

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

REQUESTED BY: **KG**

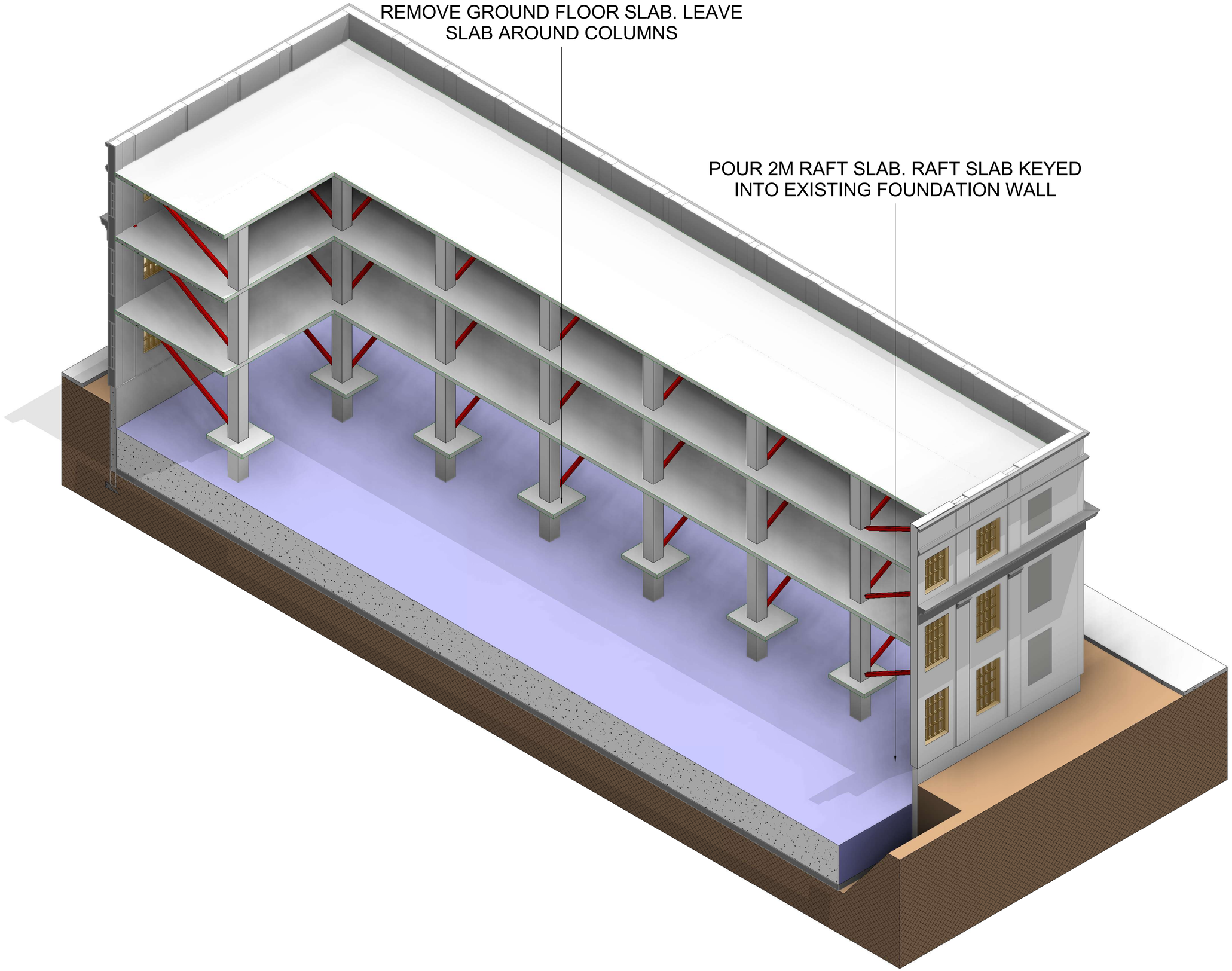
ISSUE DATE: **2021-09-29**

SHEET NUMBER

A103

REMOVE GROUND FLOOR SLAB. LEAVE SLAB AROUND COLUMNS

POUR 2M RAFT SLAB. RAFT SLAB KEYED INTO EXISTING FOUNDATION WALL



NOT FOR CONSTRUCTION

VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO.	ISSUE	DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

RAFT SLAB INSTALL

PROECT: **1034-001**

SCALE:

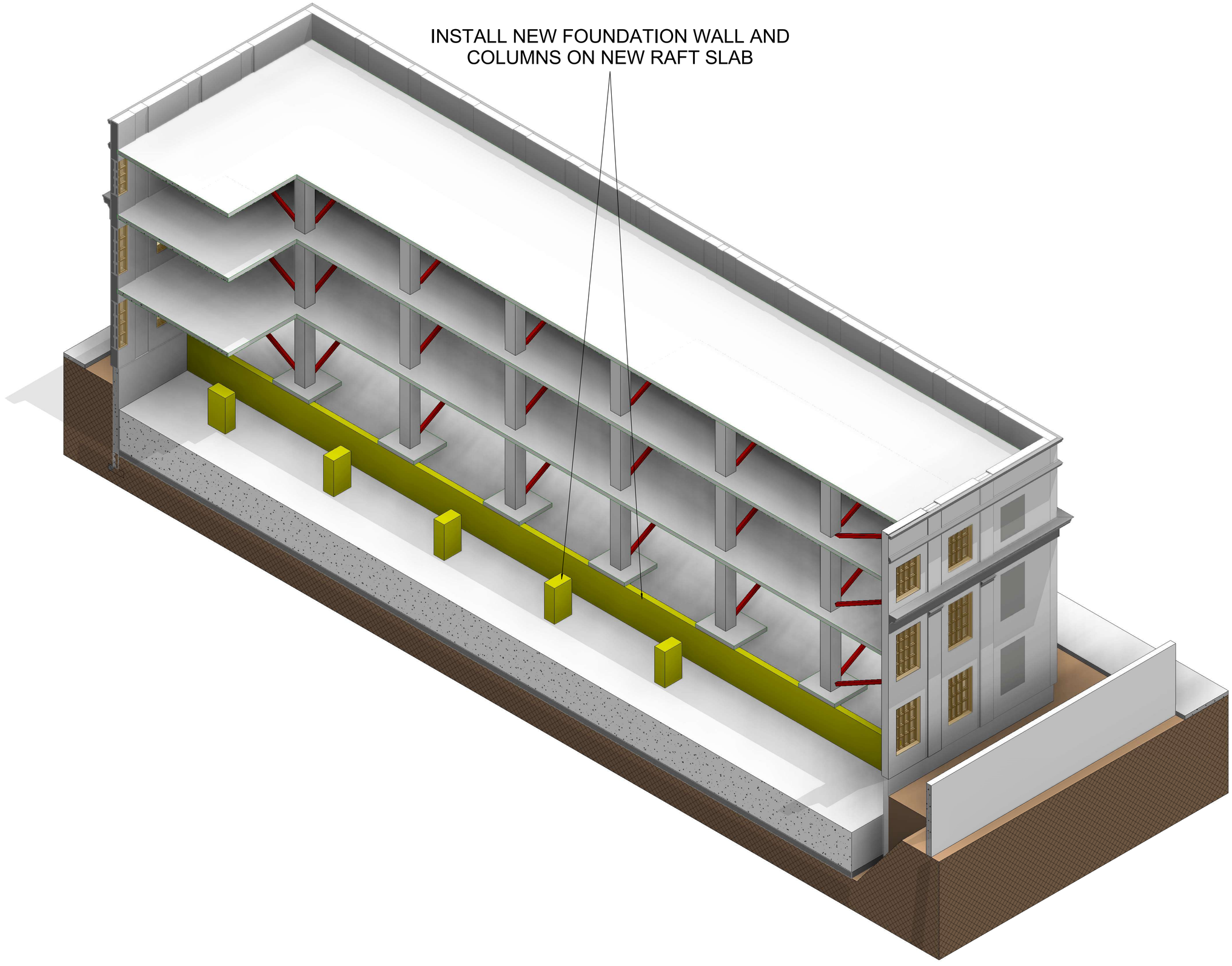
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A104



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO.	ISSUE	DATE

NOT FOR CONSTRUCTION

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

BELOW GRADE STRUCTURE

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

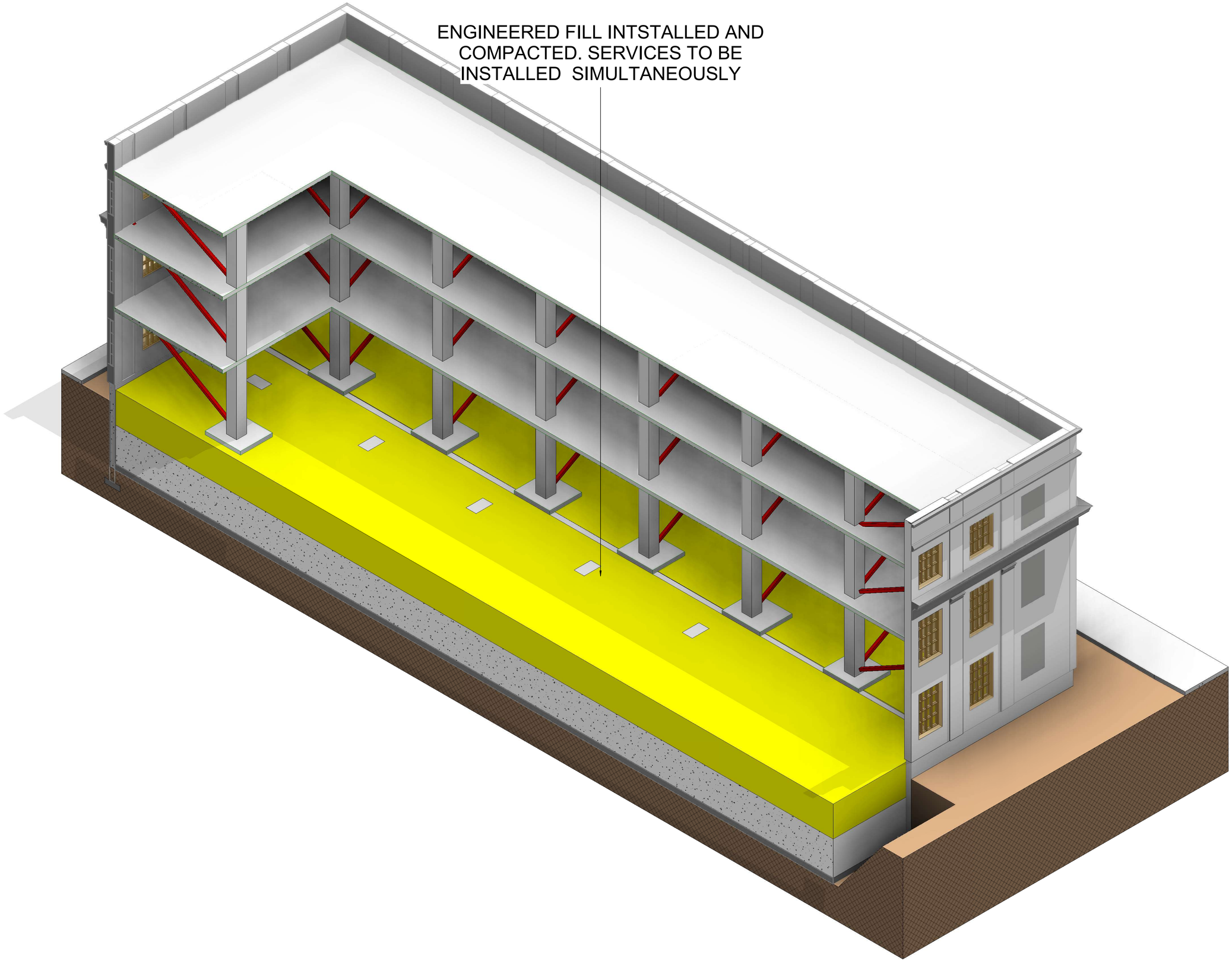
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A105

ENGINEERED FILL INTSTALLED AND COMPACTED. SERVICES TO BE INSTALLED SIMULTANEOUSLY



NOT FOR CONSTRUCTION

VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO.	ISSUE	DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

ENGINEERING FILL + SERVICES

PROECT: **1034-001**

SCALE:

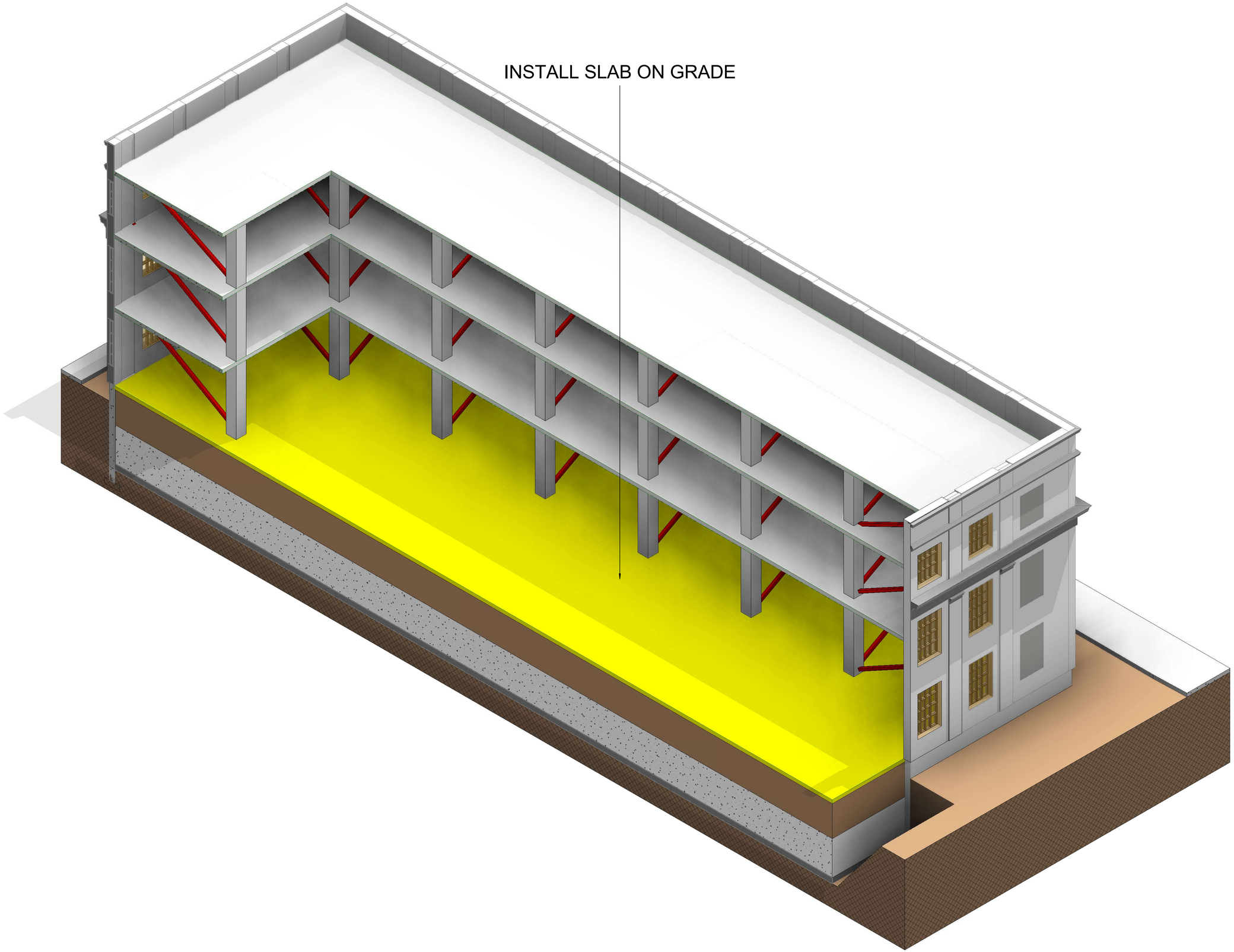
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A106



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

SLAB ON GRADE

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

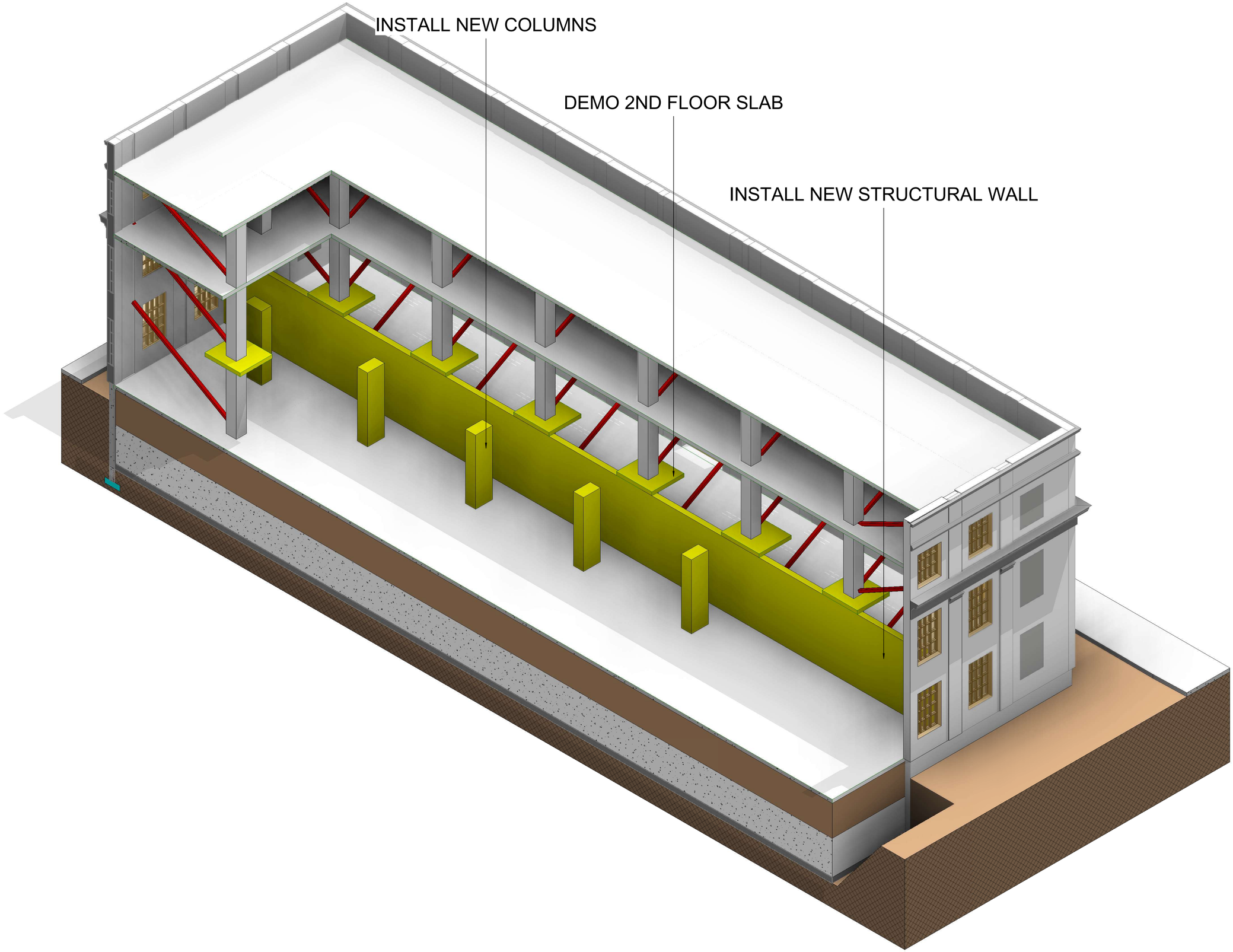
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A107

NOT FOR CONSTRUCTION



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

NOT FOR CONSTRUCTION

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

DEMO 2ND FLOOR SLAB

PROECT: **1034-001**

SCALE:

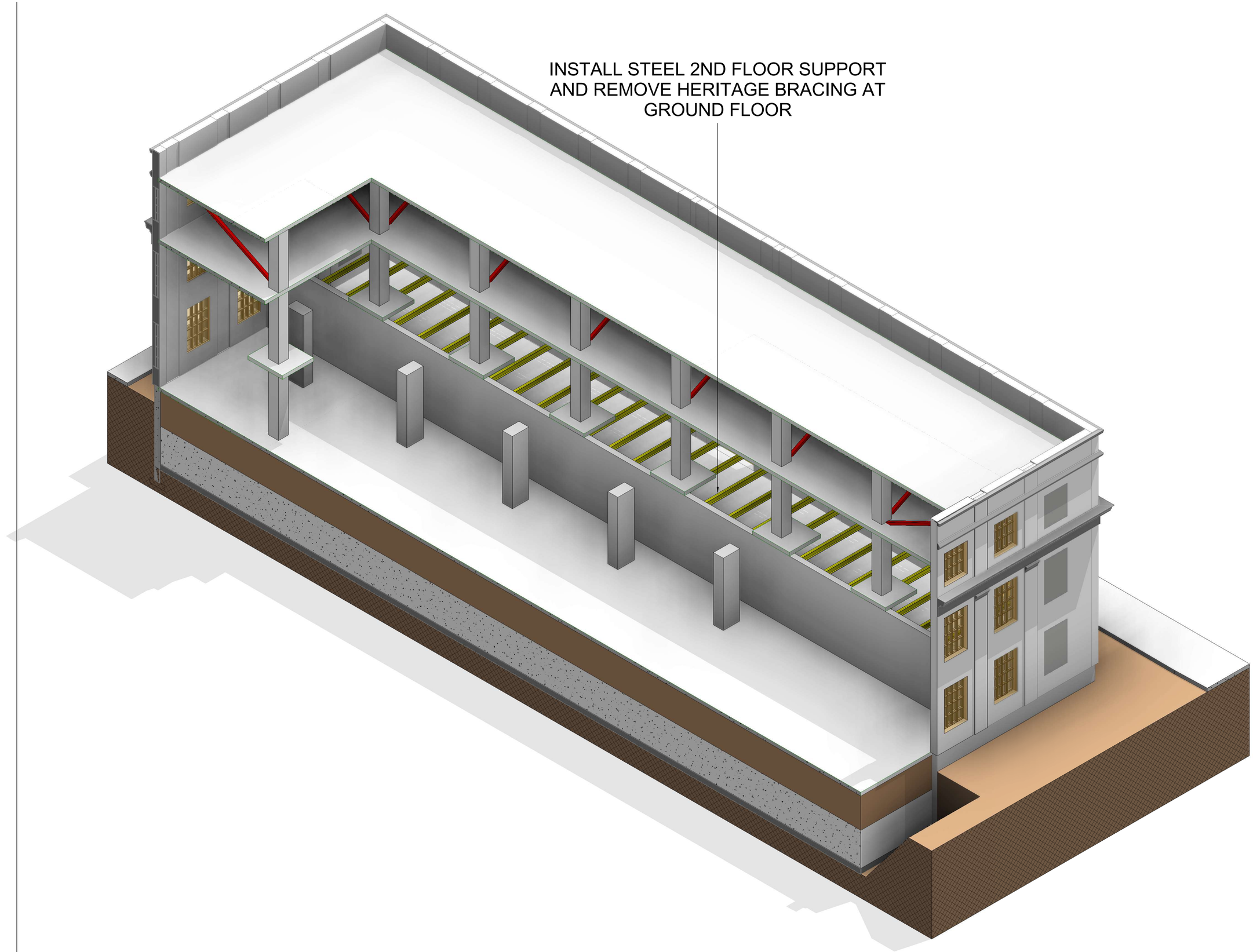
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A108



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

NOT FOR CONSTRUCTION

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

2ND FLR STEEL INSTALL

PROECT: **1034-001**

SCALE:

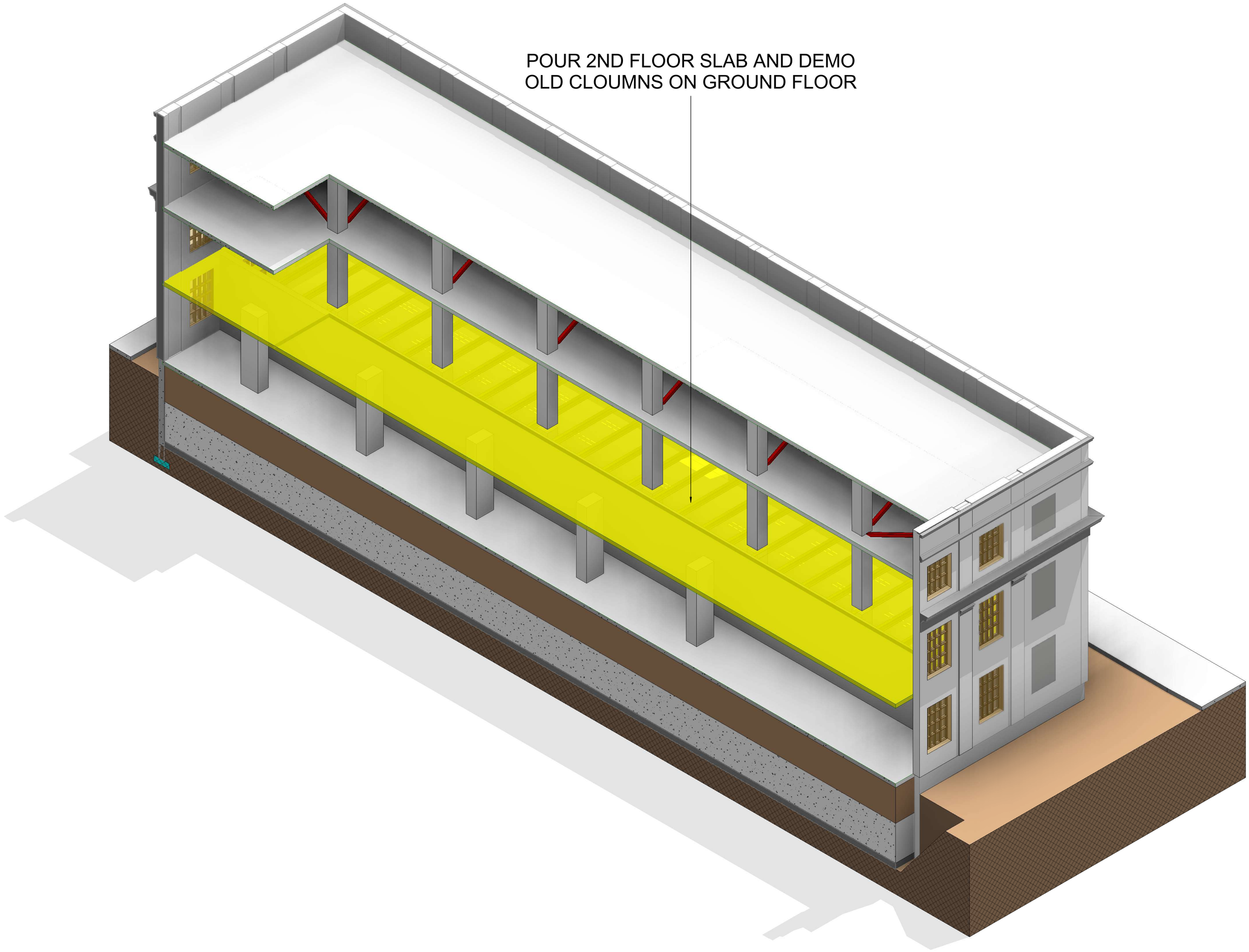
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A109



VanMar CONSTRUCTORS INC.

NOT FOR CONSTRUCTION

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

2ND FLR POUR

PROECT: **1034-001**

SCALE:

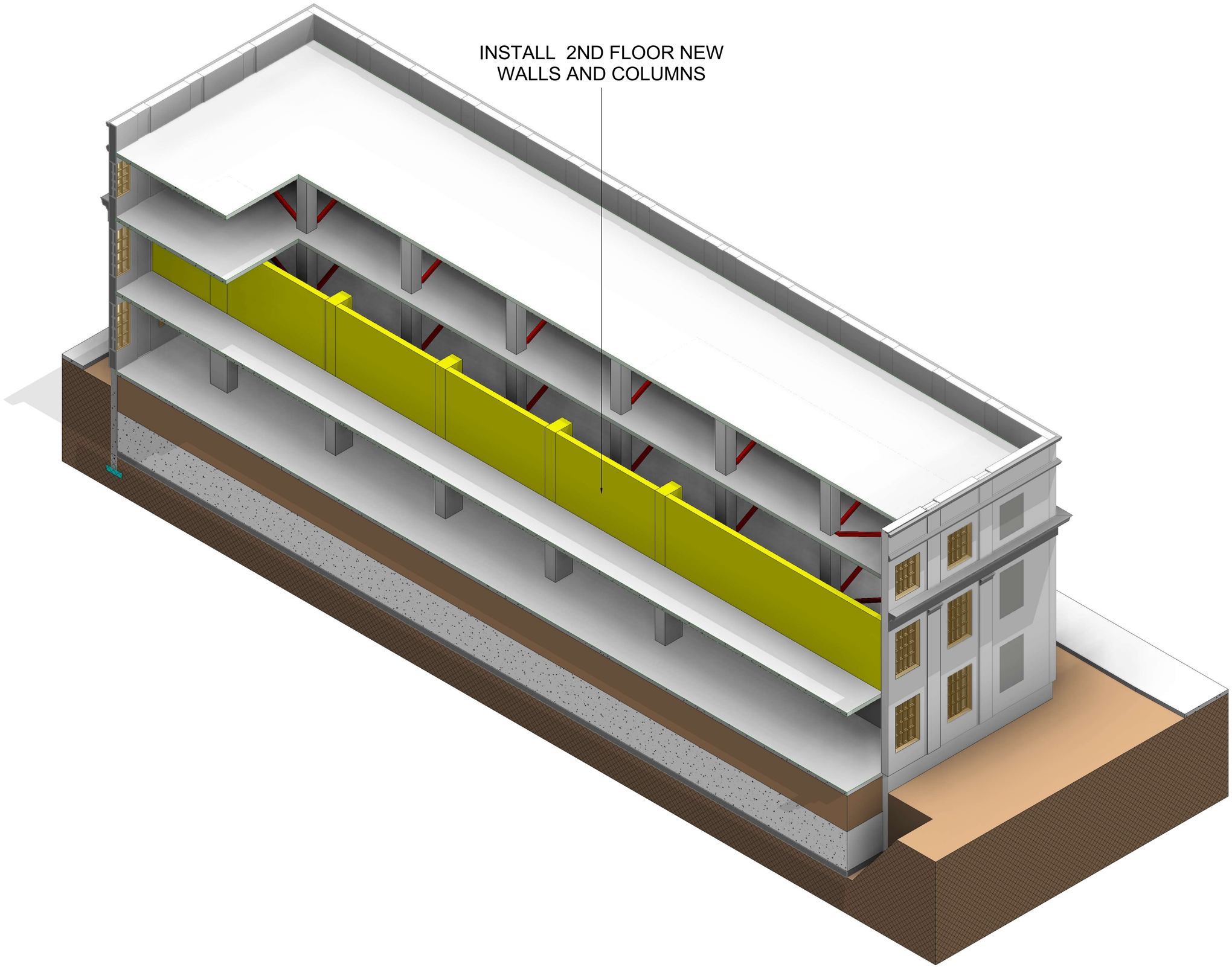
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A110



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

2ND FLR VERTICALS

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

REQUESTED BY: **KG**

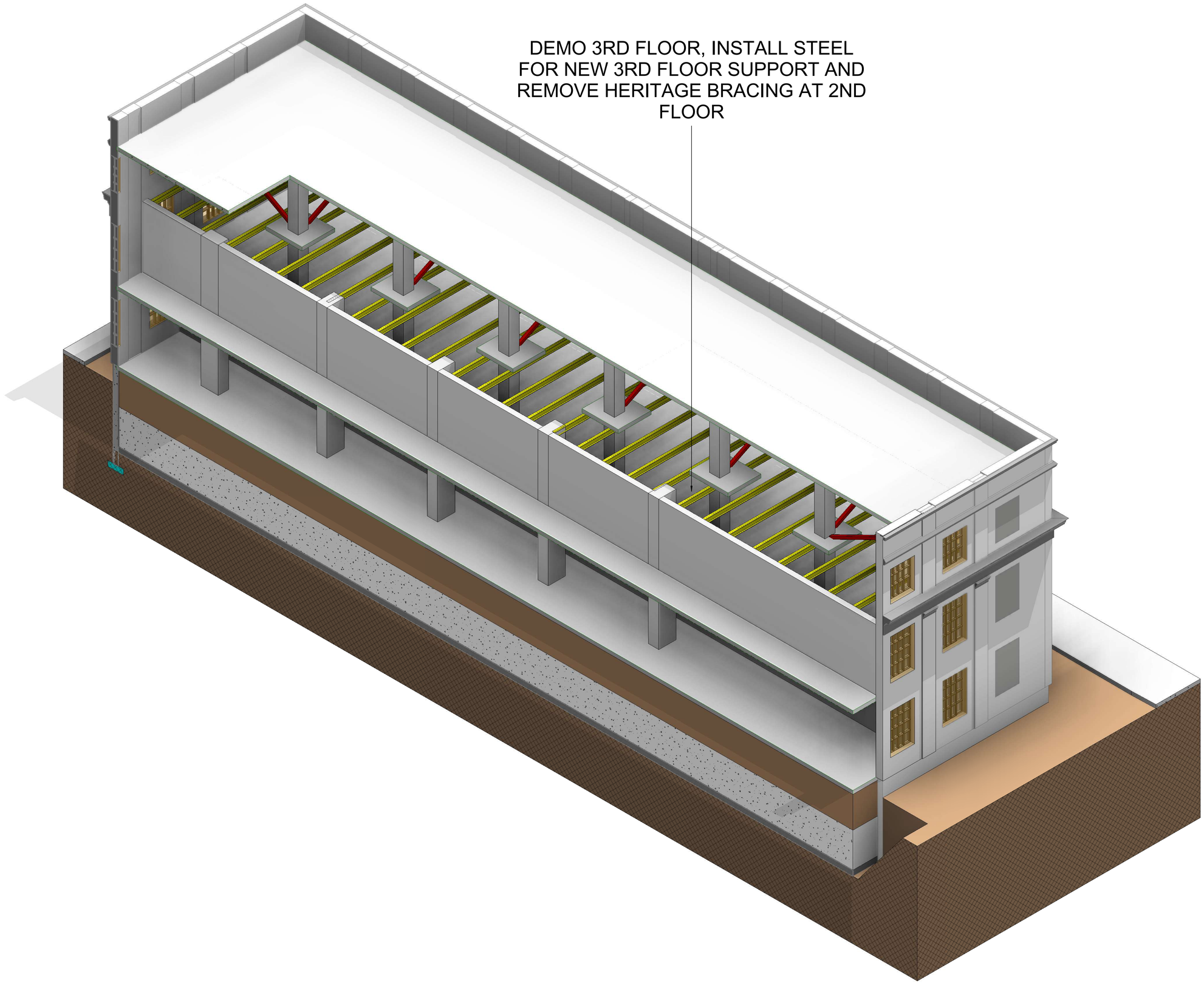
ISSUE DATE: **2021-09-29**

SHEET NUMBER

A111

NOT FOR CONSTRUCTION

DEMO 3RD FLOOR, INSTALL STEEL FOR NEW 3RD FLOOR SUPPORT AND REMOVE HERITAGE BRACING AT 2ND FLOOR



NOT FOR CONSTRUCTION

VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

3RD FLR STEEL INSTALL

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

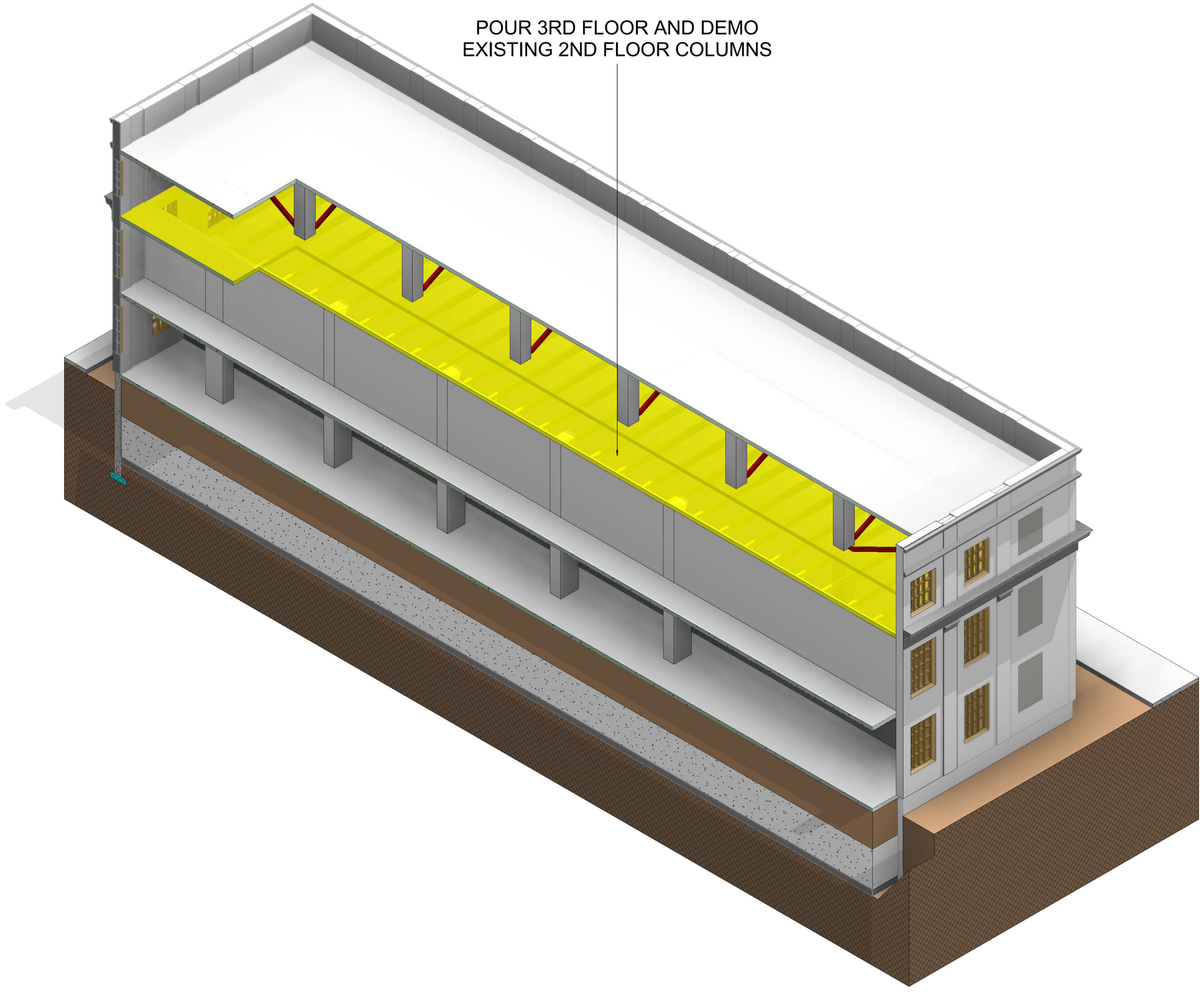
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A112

POUR 3RD FLOOR AND DEMO
EXISTING 2ND FLOOR COLUMNS



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

3RD FLR POUR

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

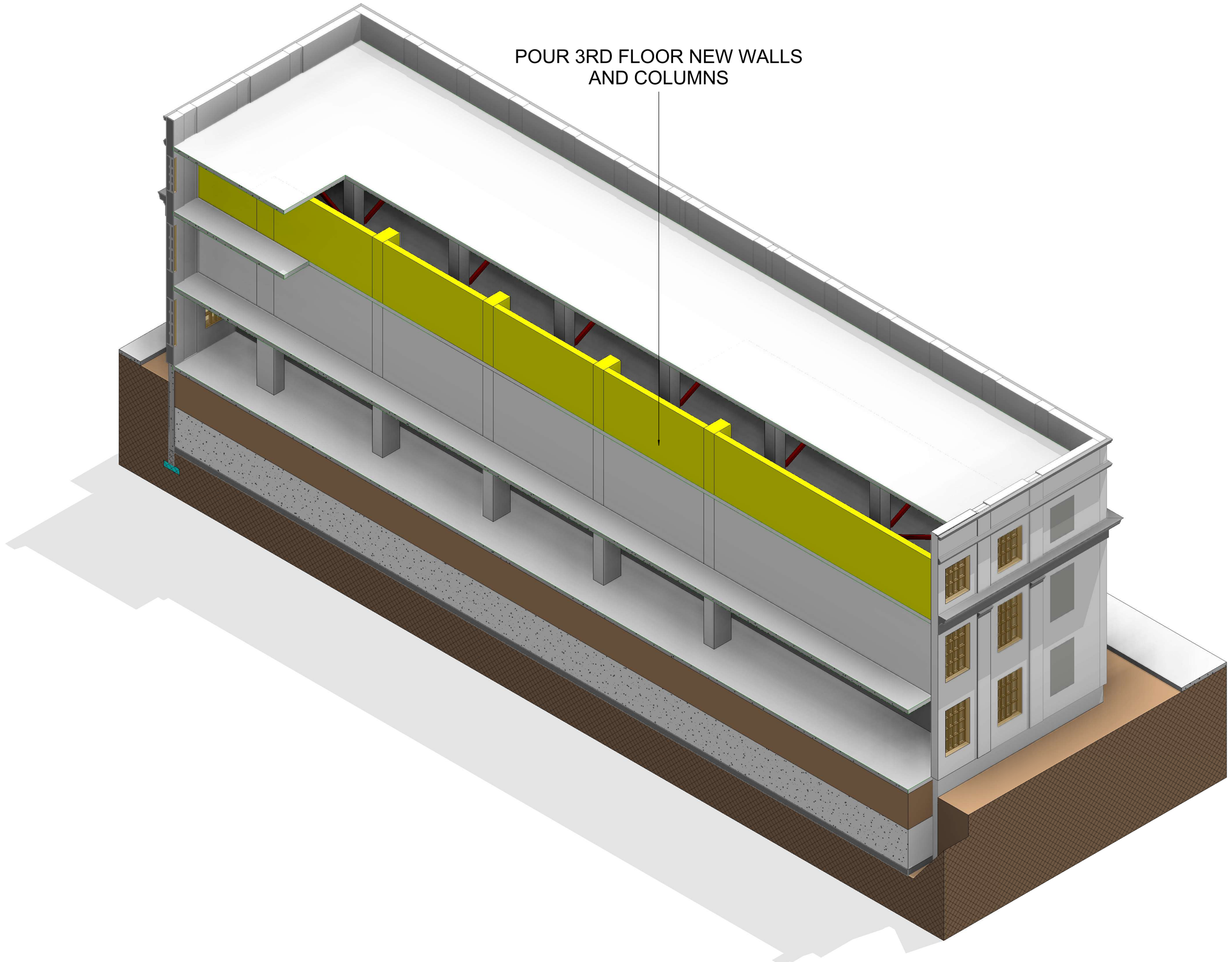
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A113

NOT FOR CONSTRUCTION



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

3RD FLR VERTICALS

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

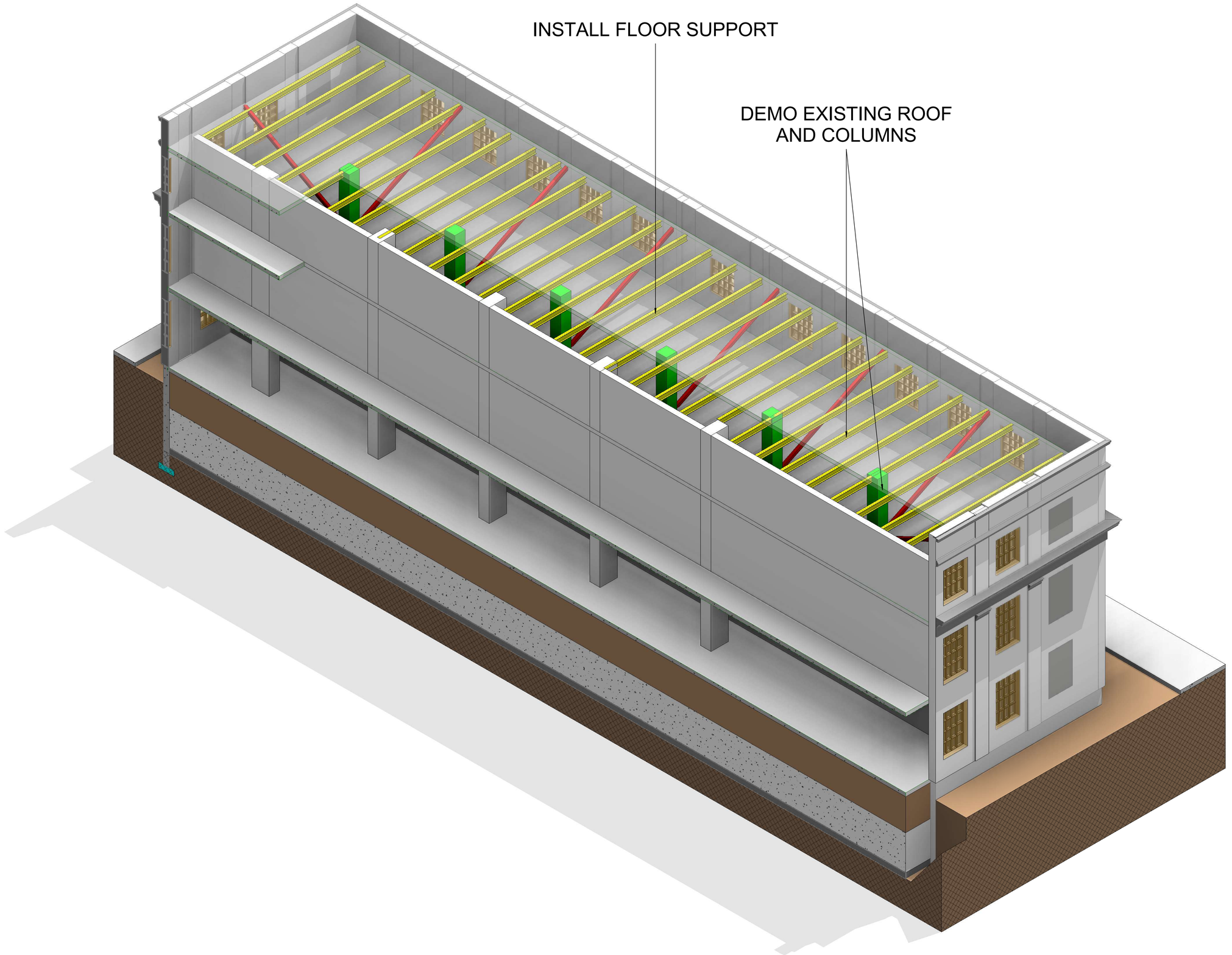
REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A114

NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION

VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO.	ISSUE	DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

DEMO ROOF INSTALL STEEL

PROECT: **1034-001**

SCALE:

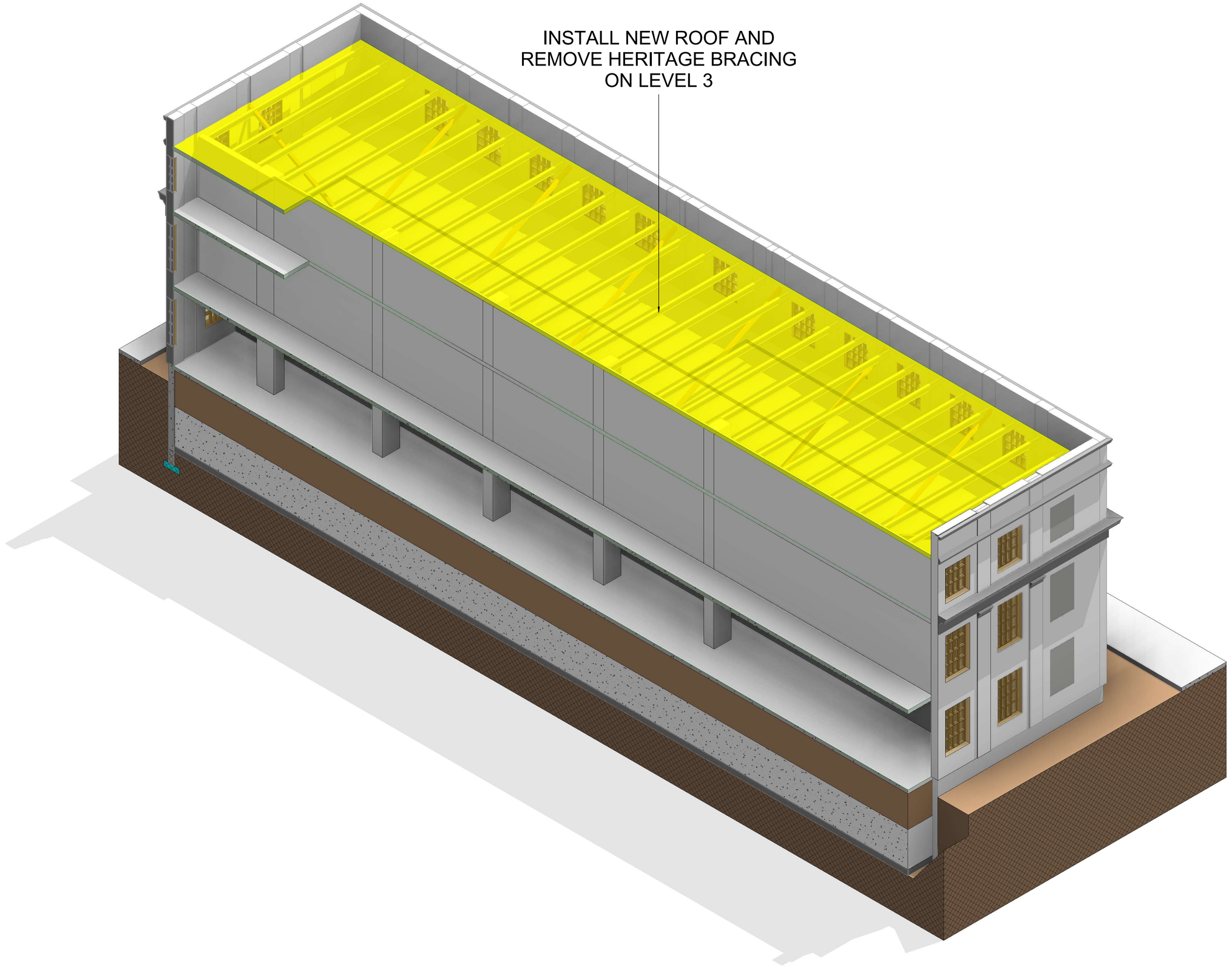
DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A115



VanMar CONSTRUCTORS INC.

NORTH.

LEGEND

NO. ISSUE DATE

10 DUKE ST

10 Duke St W, Kitchener, ON N2H 3W4

TITLE

INSTALL NEW ROOF

PROECT: **1034-001**

SCALE:

DRAWN BY: **KG**

REQUESTED BY: **KG**

ISSUE DATE: **2021-09-29**

SHEET NUMBER

A116

NOT FOR CONSTRUCTION

Appendix D: Design Package Turner Flesicher Architects, May 30, 2023

VanMar Constructors
145 Goddard Crescent
Cambridge, ON N3E 0B1
Contact Name: Jordan Zekveld
519-740-6800 x126
jordan.zekveld@vanmaron.com

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

21.167CS

TURNER FLEISCHER
67 Lesmill Rd
Toronto, ON, M3B 2T8
Matthew Young
416-425-2222 ext 381
matthew.young@turnerfleischer.com

RE-ISSUED FOR SITE PLAN APPLICATION
MAY 30, 2023

RWDI
Wind Engineer
600 South Gt Drive
Guelph, Ontario
Jessica Confalone
519-823-1311
jessica.confalone@rwdi.com

MHBC
Landscape Architect
540 Bingermans Ct Dr Suite 200
Kitchener, Ontario
Eliza Oprescu
519-576-0121
eoprescu@mhbcplan.com

Arrow Fire
Fire Protection Engineer
231 Labrador Drive
Waterloo, Ontario
Siobhan Macfarlane
519-576-7399 x 444
siobhan@arrowfire.ca

WalterFedy
Civil Engineer
675 Queen St. S., Suite 111
Kitchener, Ontario
Rushin Khakharia
519-576-2150 x 469
rkhakharia@walterfedy.com

SNC-Lavalin
Electrical Engineer
235 Lesmill Road
Toronto, Ontario
Hoa Phuong
416-445-8255 x 341
Hoa.Phuong@snclavalin.com

SNC-Lavalin
Mechanical Engineer
235-247 Lesmill Road
Toronto, Ontario
Kevin Song
416-445-8255 x 217
Kevin.Song@snclavalin.com

Jablonsky, Ast And Partners
Structural Engineer
3 Concorde Gate, 4th Floor
Toronto, Ontario
Craig Slama
416-447-7405
cslama@astint.on.ca

Kirkor Architects
Design Architect
20 De Boers Dr. Suite 400
Toronto Ontario
Varunpreet Singh
516-665-6060
vsingh@kirkorarchitects.com

21167CS - 10 DUKE STREET WEST
KITCHENER, ONTARIO

PROJECT SUMMARY

PROJECT SITE AREA	m²	ft²
TOTAL NET SITE AREA	2,226.0	23,960
PROPOSED BUILDING FLOOR AREA	43,242.0	465,453
FLOOR SPACE RATIO	19.4	x SITE AREA

GROSS FLOOR AREA SUMMARY

USE	GFA	
	m²	ft²
OFFICE	1,361.9	14,659
TOTAL NON-RESIDENTIAL	**1,361.9**	**14,659**
RESIDENTIAL	34,232.5	368,475
INDOOR AMENITY	632.4	6,807
TOTAL RESIDENTIAL	**34,864.8**	**375,282**
TOTAL	**36,226.7**	**389,941**

DEFINITIONS
CITY OF KITCHENER ZONING BYLAW 85-1

"Gross Floor Area" means the aggregate horizontal area measured from the exterior faces of the exterior walls of all floors of a building (excluding any floor area having a ceiling height of 2.0 metres or less or devoted exclusively to parking) within all buildings on a lot. (By-law 92-232, S.3[d])

"Building Floor Area" means the aggregate horizontal floor area measured from the exterior walls of all floors or storeys of a building excluding any floor area located totally below grade or within an uninhabitable attic. The mid-point of a common wall shall be considered the face of the exterior in the case of common walls located on a...

GROSS FLOOR AREA (GFA) BREAKDOWN

GROSS...										TOTAL GROSS FLOOR AREA		PARKING (EXCLUSION)	
FLOOR	# OF UNITS	OFFICE		RESIDENTIAL				INDOOR AMENITY					
				SALEABLE		NON-SALEABLE							
	#	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²
1		339.5	3,654			771.1	8,300.2	98.2	1,057	1,208.8	13,011	627.0	6,749
2		502.6	5,410			687.3	7,398.1			1,190.0	12,809	170.3	1,833
2 MID.		416.7	4,485			123.9	1,333.6			540.6	5,818	545.9	5,876
3		18.8	202			190.0	2,044.8			208.8	2,247	1,264.6	13,612
4		47.9	515			191.0	2,056.2			238.9	2,572	1,516.6	16,325
5		21.1	227			249.8	2,688.8			270.9	2,916	1,580.8	17,016
6		15.3	165			509.1	5,480.1			524.4	5,645	1,035.6	11,147
7	5			293.7	3,161.0	163.3	1,757.6	534.2	5,750	991.2	10,669		
8	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
9	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
10	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
11	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
12	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
13	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
14	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
15	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
16	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
17	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
18	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
19	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
20	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
21	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
22	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
23	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
24	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
25	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
26	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
27	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
28	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
29	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
30	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
31	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
32	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
33	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
34	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
35	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
36	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
37	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
38	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
39	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
40	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
41	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
42	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
43	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
44	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
45	13			671.7	7,229.6	130.5	1,404.4			802.1	8,634		
MPH						572.7	6,164.4			572.7	6,164		
TOTAL	**499**	**1,361.9**	**14,659**	**25,816.4**	**277,885**	**8,416.1**	**90,590**	**632.4**	**6,807**	**36,226.7**	**389,941**	**6,740.8**	**72,558**

UNIT TYPE

FLOOR	UNIT TYPE		TOTAL
	1B	2B	
1	-	-	-
2	-	-	-
2 MID.	-	-	-
3	-	-	-
3	-	-	-
5	-	-	-
6	-	-	-
7	3	2	**5**
8	11	2	**13**
9	11	2	**13**
19	11	2	**13**
11	11	2	**13**
12	11	2	**13**
13	11	2	**13**
14	11	2	**13**
15	11	2	**13**
16	11	2	**13**
17	11	2	**13**
18	11	2	**13**
19	11	2	**13**
20	11	2	**13**
21	11	2	**13**
22	11	2	**13**
23	11	2	**13**
24	11	2	**13**
25	11	2	**13**
26	11	2	**13**
27	11	2	**13**
28	11	2	**13**
29	11	2	**13**
30	11	2	**13**
31	11	2	**13**
32	11	2	**13**
33	11	2	**13**
34	11	2	**13**
35	11	2	**13**
36	11	2	**13**
37	11	2	**13**
38	11	2	**13**
39	11	2	**13**
40	11	2	**13**
41	11	2	**13**
42	11	2	**13**
43	11	2	**13**
44	11	2	**13**
45	11	2	**13**
TOTAL	**421**	**78**	**499**

UNIT SIZE

<51m²	>51m²
-	-
-	-
-	-
-	-
-	-
-	-
-	-
3	2
11	2
11	2
11	2
11	2
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11	2
11	2
11	2
421	**78**

BARRIER FREE UNITS - PROVIDED

FLOOR	1B	2B	TOTAL
1	-	-	-
2	-	-	-
2 MID.	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	1	-	**1**
8	2	1	**3**
9	2	1	**3**
10	2	1	**3**
11	2	1	**3**
12	2	1	**3**
13	2	1	**3**
14	2	1	**3**
15	2	1	**3**
16	2	1	**3**
17	2	1	**3**
18	2	1	**3**
19	2	1	**3**
20	2	1	**3**
21	2	1	**3**
22	2	1	**3**
23	2	1	**3**
24	2	1	**3**
25	2	1	**3**
26	2	1	**3**
27	2	-	**2**
28	2	-	**2**
29	2	-	**2**
30	2	-	**2**
31	2	-	**2**
32	2	-	**2**
33	2	-	**2**
34	2	-	**2**
35	2	-	**2**
36	2	-	**2**
37	1	-	**1**
38	1	-	**1**
39	1	-	**1**
40	1	-	**1**
41	1	-	**1**
42	1	-	**1**
43	1	-	**1**
44	1	-	**1**
45	1	-	**1**
TOTAL PROVIDED	**68**	**19**	**87**
RATIO PROVIDED	**16.2%**	**24.4%**	
TOTAL REQUIRED	**64**	**12**	**76**

VEHICULAR PARKING - REQUIRED

USE	RATIO	UNITS	AREA	TOTAL
RESIDENTIAL (UNITS <51m²)	0.165/UNIT	421	-	70
RESIDENTIAL (UNITS >51m²)	1/UNIT	78	-	78
OFFICE**	AREA -465 X 1 SPACE PER 69m²	-	897	13
TOTAL REQUIRED				**161**

**VEHICULAR PARKING RATIOS AS PER CITY OF KITCHENER ZONING BY-LAW 85-1*

***OFFICE PARKING CALCULATION INCLUDES ONE TIME EXEMPTION AS PER SECTION 6.1.2(b)(viii)B): FOR EACH LOT EXISTING ON THE DAY OF THE PASSING OF BY-LAW 96-36, A ONE TIME ONLY EXEMPTION FROM PARKING REQUIREMENTS SHALL APPLY TO THE FIRST 465 SQUARE METRES OF GROSS FLOOR AREA CONSTRUCTED AFTER THE DAY OF THE PASSING OF BY-LAW 96-36.*

ACCESSIBLE VEHICULAR PARKING- REQUIRED

101-200 OFF STREET PARKING SPACES REQ'D	1+ 3% OF TOTAL REQ'D PARKING
162 X .03 = 5.0 + 1 = 6 TOTAL SPACES REQUIRED	

*ACCESSIBLE VEHICULAR PARKING RATIOS AS PER CITY OF KITCHENER ZONING BY-LAW 85-1

BICYCLE PARKING - PROVIDED

FLOOR	COUNT
FLOOR 1	148
FLOOR 2	92
TOTAL PROVIDED	**240**

VEHICULAR PARKING - PROVIDED

FLOOR	USE		TOTAL
	RESIDENTIAL	OFFICE	
FLOOR 1	1	3	4
FLOOR 2	-	12	12
FLOOR 3	30	5	35
FLOOR 4	44	-	44
FLOOR 5	46	-	46
FLOOR 6	27	-	27
TOTAL PROVIDED	**148**	**20**	**168**

ACCESSIBLE VEHICULAR PARKING - PROVIDED

FLOOR	TYPE		TOTAL
	TYPE A	TYPE B	
FLOOR 1	-	-	-
FLOOR 2	-	-	-
FLOOR 3	-	-	-
FLOOR 4	1	1	2
FLOOR 5	1	1	2
FLOOR 6	1	1	2
TOTAL	**3**	**3**	**6**

ELECTRICAL VEHICLE PARKING - PROVIDED

FLOOR	COUNT
FLOOR 1	-
FLOOR 2	12
FLOOR 3	18
FLOOR 4	4
FLOOR 5	-
FLOOR 6	-
TOTAL	**34**

AMENITY AREAS PROVIDED

FLOOR	TYPE	
	INDOOR...	OUTDOOR (m²)
FLOOR 1	98.2	-
FLOOR 7	534.2	542.6
TOTAL	**632.4**	**542.6**

LOCKERS PROVIDED

FLOOR	COUNT
FLOOR 1	-
FLOOR 2+MID	67
FLOOR 3	19
FLOOR 4	20
FLOOR 5	43
FLOOR 6	70
TOTAL	**219**

DRAWING LIST

DRAWING NUMBER	DRAWING NAME	CURRENT REVISION DATE	REVISION ISSUANCE
SPA000	COVER SHEET	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA001	STATISTICS	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA002	SURVEY	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA003	SURVEY	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA004	SITE PLAN	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA151	FLOOR 01	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA152	FLOOR 02	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA153	FLOOR 02 MID LEVEL	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA154	FLOOR 03	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA155	FLOOR 04	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA156	FLOOR 05	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA157	FLOOR 06	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA158	FLOOR 07	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA159	FLOOR 08 - 45	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA160	MECHANICAL PENTHOUSE PLAN	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA301	ELEVATIONS	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA302	ELEVATIONS	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA311	SOUTH AND EAST PODIUM ELEVATION	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA312	NORTH AND WEST PODIUM ELEVATION	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA401	BUILDING SECTIONS	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA801	3D PERSPECTIVES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA811	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA812	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA813	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA814	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA815	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION
SPA816	SHADOW STUDIES	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION

TURNER FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar
CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
STATISTICS

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

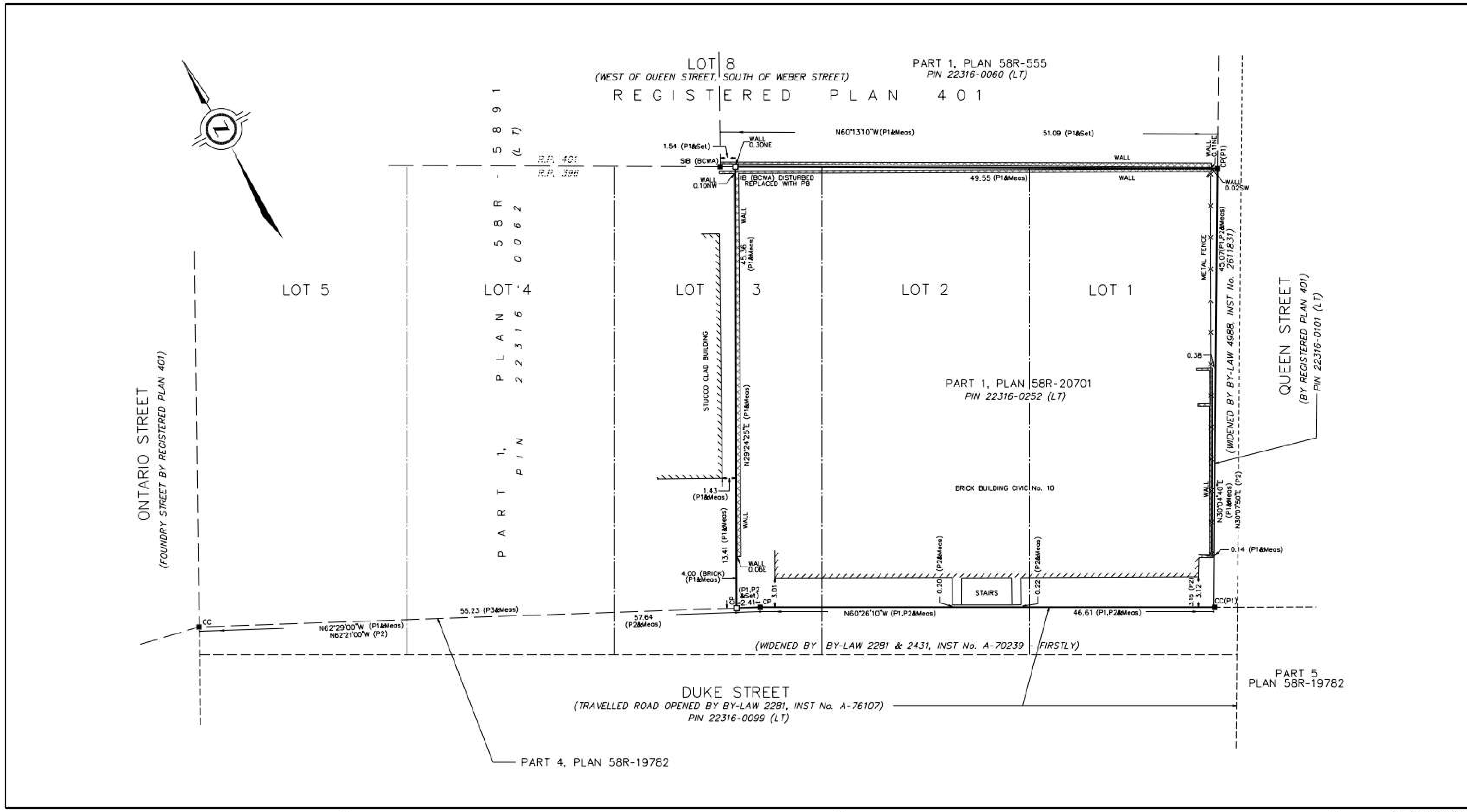
DRAWING NO.
SPA001
REV.
8

2023-05-30 4:00:59 PM

TURNER FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com



PLAN OF SURVEY OF

PART OF LOTS 1, 2 & 3 REGISTERED PLAN 396

D.S. SHOEMAKER'S SURVEY

CITY OF KITCHENER

REGIONAL MUNICIPALITY OF WATERLOO

SCALE 1 : 250

5 0 5 10 15 metres

BLACK, SHOEMAKER, ROBINSON & DONALDSON,
A WHOLLY OWNED SUBSIDIARY OF J.D. BARNES LIMITED

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM THE NORTHERNLY LIMIT OF DUKE STREET, HAVING A BEARING OF N60°26'10"W REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81° WEST LONGITUDE) NAD 83 (CSRS 2010).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999573.

FOR BEARING COMPARISONS, A ROTATION OF 0°03'00" COUNTER-CLOCKWISE WAS APPLIED TO P2 TO CONVERT TO GRID BEARINGS.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND (375 UNLESS NOTED OTHERWISE)
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
CC	DENOTES	CUT CROSS
IB	DENOTES	IRON BAR
CP	DENOTES	CONCRETE PIN
WIT	DENOTES	WITNESS
MEAS	DENOTES	MEASURED
375	DENOTES	BLACK, SHOEMAKER, ROBINSON & DONALDSON LTD
BCWA	DENOTES	BRUBACHER, CAMPBELL, WYMAN AND AUER LIMITED
OU	DENOTES	ORIGIN UNKNOWN
P1	DENOTES	PLAN 58R-20701
P2	DENOTES	PLAN 58R-19782
P3	DENOTES	PLAN 58R-5891

ALL SET SSIB AND PB MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH SECTION 11 (4) OF O.REG. 525/91.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 7th DAY OF JULY, 2021.

13 JULY, 2021
DATE

LEO LIU
ONTARIO LAND SURVEYOR

BSR&D ONTARIO LAND SURVEYORS URBAN & RURAL PLANNERS
A wholly owned subsidiary of J.D. Barnes Ltd.
SURVEYING MAPPING GIS
257 WOODLAWN ROAD WEST, UNIT 101, GUELPH, ON N1H 8J1
T: (519) 822-4031 F: (519) 822-1220 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
RPA	LL	21-14-490-00
PLOTTED: 7/13/2021		DATED: JULY 12, 2021

FILE: G:\21-14-490\00\Drawing\21-14-490-00 RPlan.dgn

#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

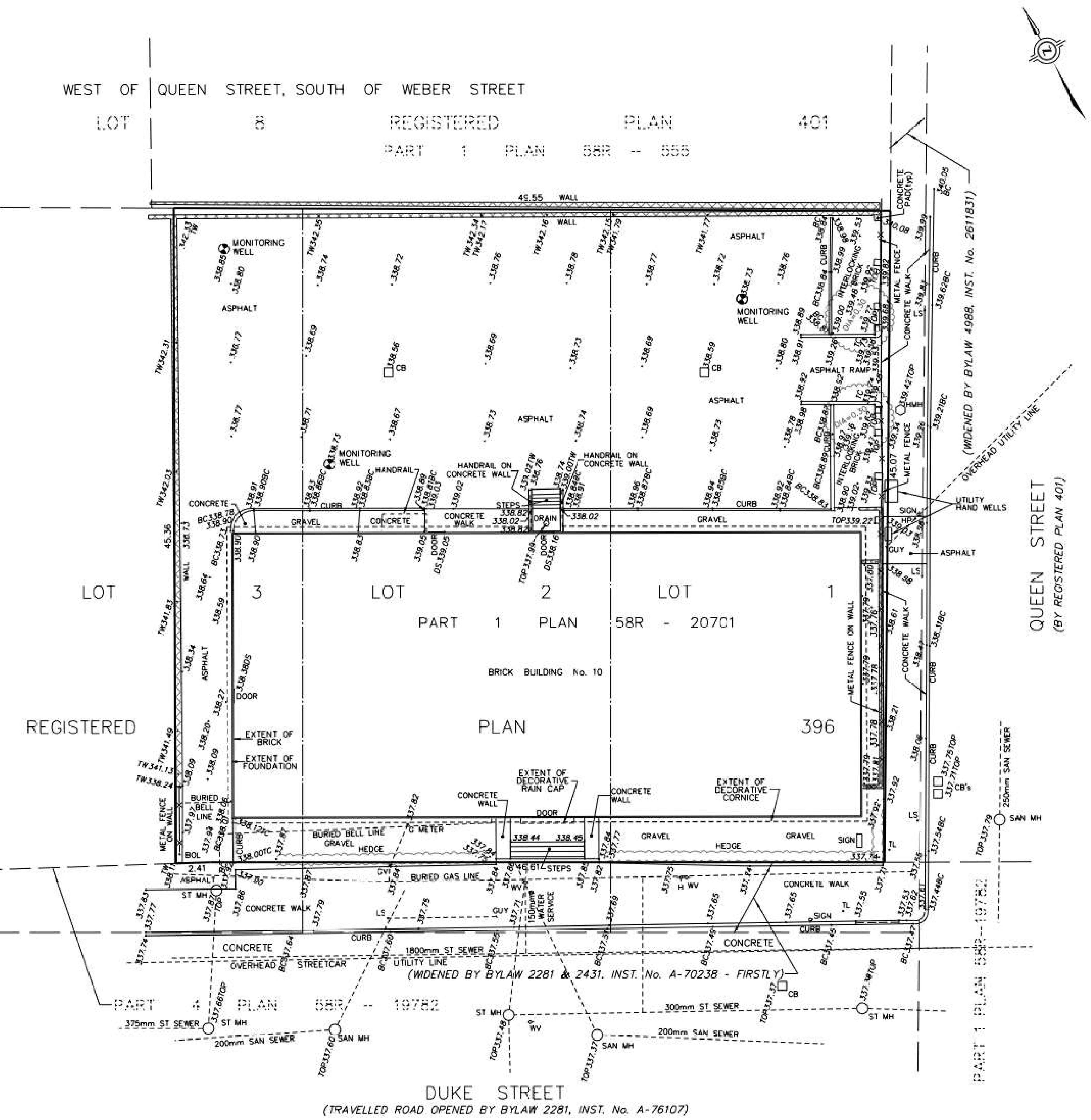
10 DUKE STREET WEST, KITCHENER, ON

DRAWING

SURVEY

PROJECT NO.	21.167CS
PROJECT DATE	2021-10-07
DRAWN BY	MJM
CHECKED BY	MYG
SCALE	
DRAWING NO.	SPA002
REV.	8

2023-05-30 4:01:01 PM



PARTIAL TOPOGRAPHIC PLAN OF

PART OF LOTS 1, 2 & 3
REGISTERED PLAN 396

D.S. SHOEMAKER'S SURVEY

CITY OF KITCHENER

REGIONAL MUNICIPALITY OF WATERLOO

BLACK, SHOEMAKER, ROBINSON & DONALDSON,
A WHOLLY OWNED SUBSIDIARY OF J.D. BARNES LIMITED

SCALE 1 : 200

5 0 5 10 metres

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES & LEGEND

CB	DENOTES CATCHBASIN
GV	DENOTES GAS VALVE
G METER	DENOTES GAS METER
HMH	DENOTES HYDRO MANHOLE
SAN MH	DENOTES SANITARY MANHOLE
BOL	DENOTES BOLLARD
HP	DENOTES HYDRO POLE
LS	DENOTES LIGHT STANDARD
TL	DENOTES TRAFFIC SIGNAL
H	DENOTES FIRE HYDRANT
WV	DENOTES WATER VALVE
BC	DENOTES BOTTOM OF CURB
TC	DENOTES TOP OF CURB
TW	DENOTES TOP OF WALL
DS	DENOTES DOOR SILL
	DENOTES DECIDUOUS TREE (CANOPY TO SCALE)
	DENOTES EXISTING ELEVATION (AUGUST, 2021)

THIS PLAN WAS PREPARED FOR VANMAR DEVELOPMENTS.

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED FOR TRANSACTION OR MORTGAGE PURPOSES.

THE POSITION OF ALL POLE LINES, CONDUITS, WATER MAINS, SEWERS AND OTHER UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THIS PLAN, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

ELEVATIONS SHOWN HEREON ARE GEODETIC (CGVD-1928: 78) AND ARE DERIVED FROM GNSS OBSERVATIONS USING NATURAL RESOURCES CANADA'S GEOID MODEL HT2_0-ON.

THE FIELD SURVEY PORTION OF THIS PLAN WAS COMPLETED ON SEPT. 10, 2021.

BSR&D ONTARIO LAND SURVEYORS URBAN & RURAL PLANNERS SURVEYING MAPPING GIS
A wholly owned subsidiary of J.D. Barnes Ltd.
257 WOODLAWN ROAD WEST, UNIT 101, GUELPH, ON N1H 8J1
T: (519) 822-4031 F: (519) 822-1220 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
DM	LL	21-14-490-00
PLOTTED: 9/14/2021		DATED: SEPTEMBER 14, 2021

FILE: G:\21-14-490\00\Drawing\SEPT 13 2021 TOPO.dgn

TURNER FLEISCHER
Turner Fleischer Architects Inc.
67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

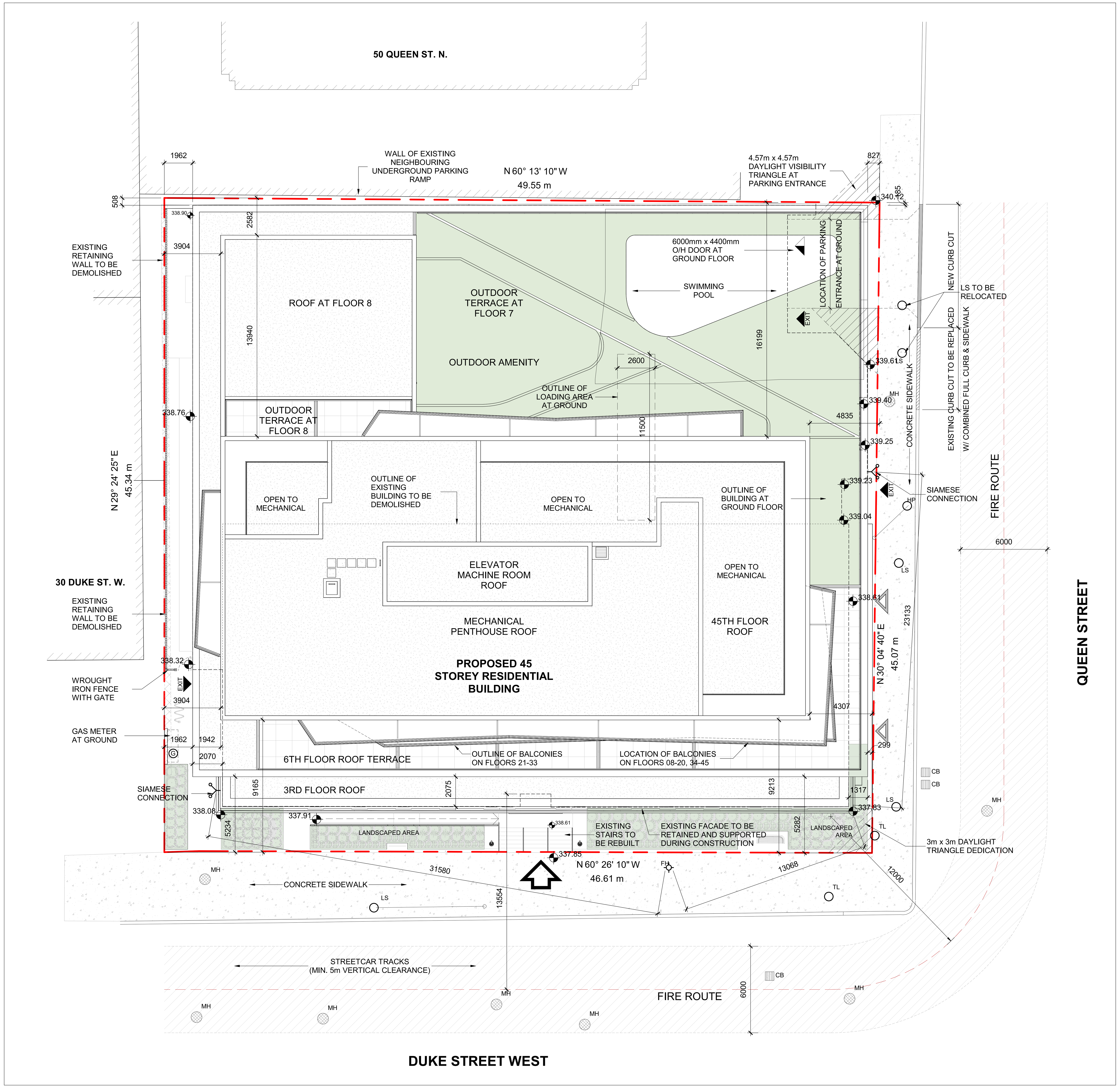
10 DUKE STREET WEST, KITCHENER, ON

DRAWING

SURVEY

PROJECT NO.	21.167CS
PROJECT DATE	2021-10-07
DRAWN BY	MJM
CHECKED BY	MYG
SCALE	
DRAWING NO.	SPA003
REV.	8

2023-05-30 4:01:03 PM



1 SITE PLAN
SPA004 1 : 150

CONTEXT PLAN
N.T.S

TURNER FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

LEGAL DESCRIPTION

BOUNDARY INFORMATION BASED ON PLAN OF SURVEY

PART OF LOTS 1, 2 & 3
REGISTERED PLAN 396

CITY OF KITCHENER

SURVEY COMPILED BY:
BSR&D
257 WOODLAWN ROAD, UNIT 101
GUELPH, ONTARIO N1H 8J1
DATED: SEPTEMBER 14, 2021

LEGEND

- PRIMARY ENTRANCE
- OFFICE ENTRANCE
- LOADING/ VEHICULAR ENTRANCE
- EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- CONVEX MIRROR
- FIRE ROUTE SIGN
- 000.00 SPOT ELEVATION
- GAS/HYDRO METER

#	DATE	DESCRIPTION	BY
7	2023-10-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
4	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-03-25	ISSUED FOR 100% DD	MY
2	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
1	2022-01-14	ISSUED FOR 50% DD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

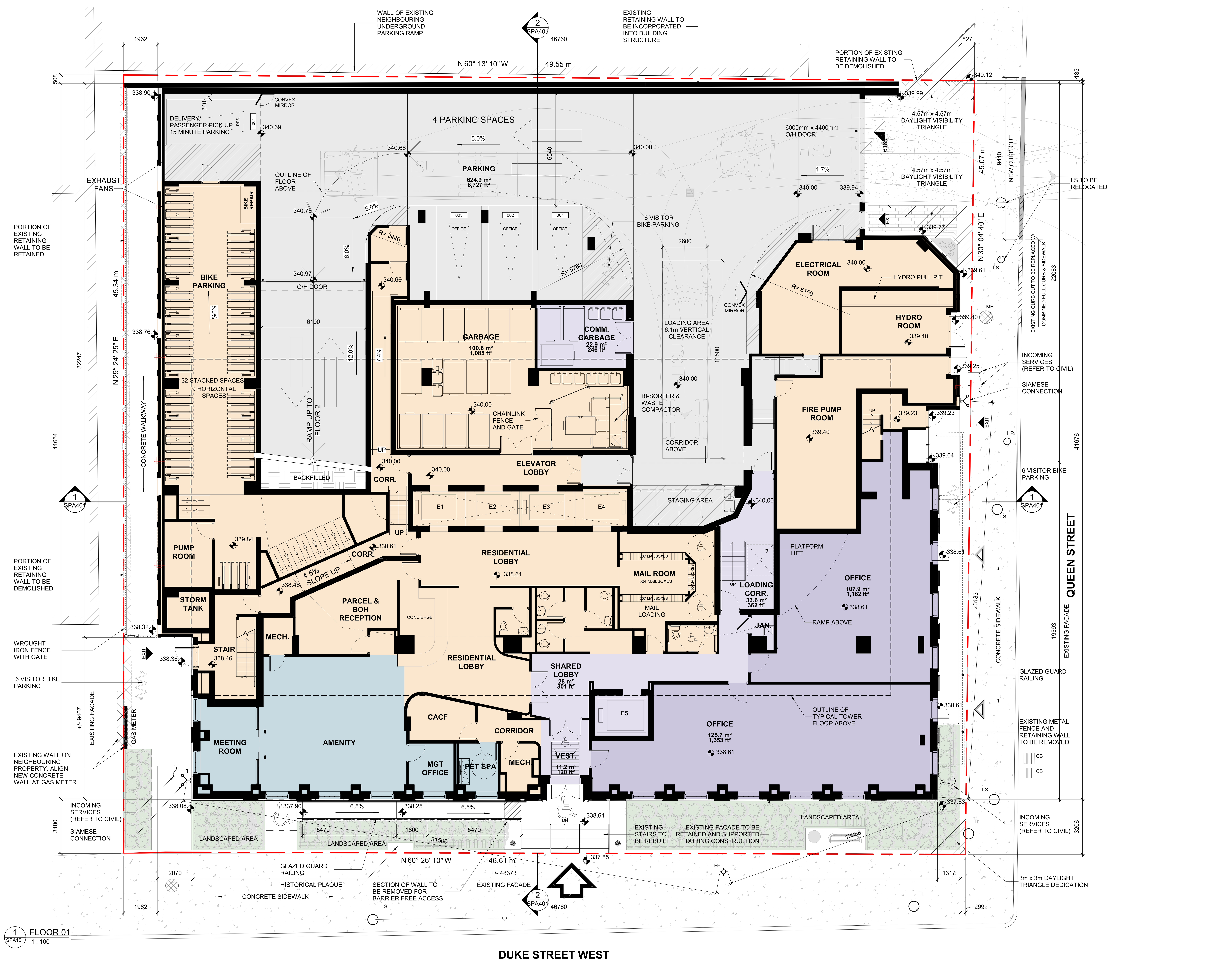
DRAWING
SITE PLAN

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA004
REV. 7

2023-10-31 4:58:25 PM



1 FLOOR 01
SPA151 1 : 100

DUKE STREET WEST

TURNER FLEISCHER

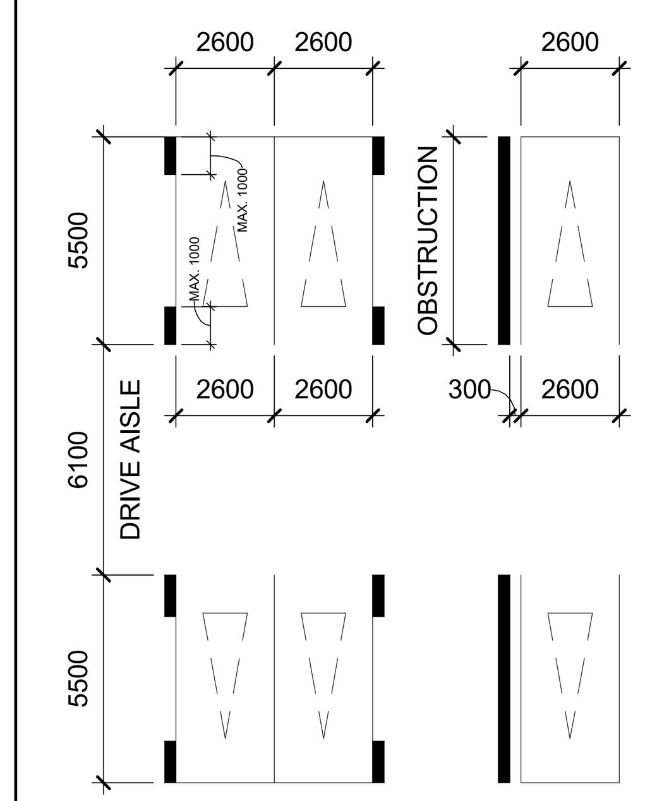
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

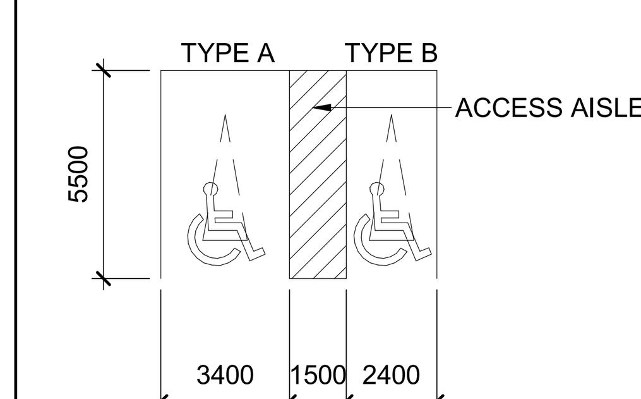
TYPICAL PARKING DIMENSIONS

AISLE WIDTH: MIN 6.1m

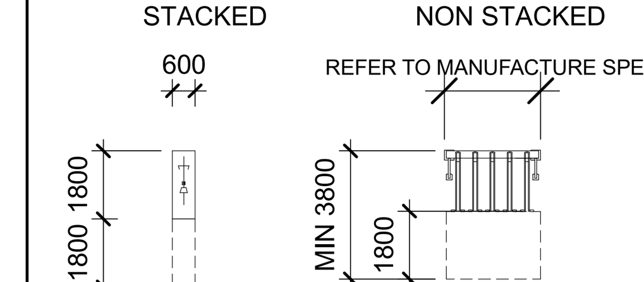
TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



TYPICAL BARRIER-FREE PARKING DIMENSIONS
TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS
STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
9	2023-10-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
FLOOR 01

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA151
REV. 9

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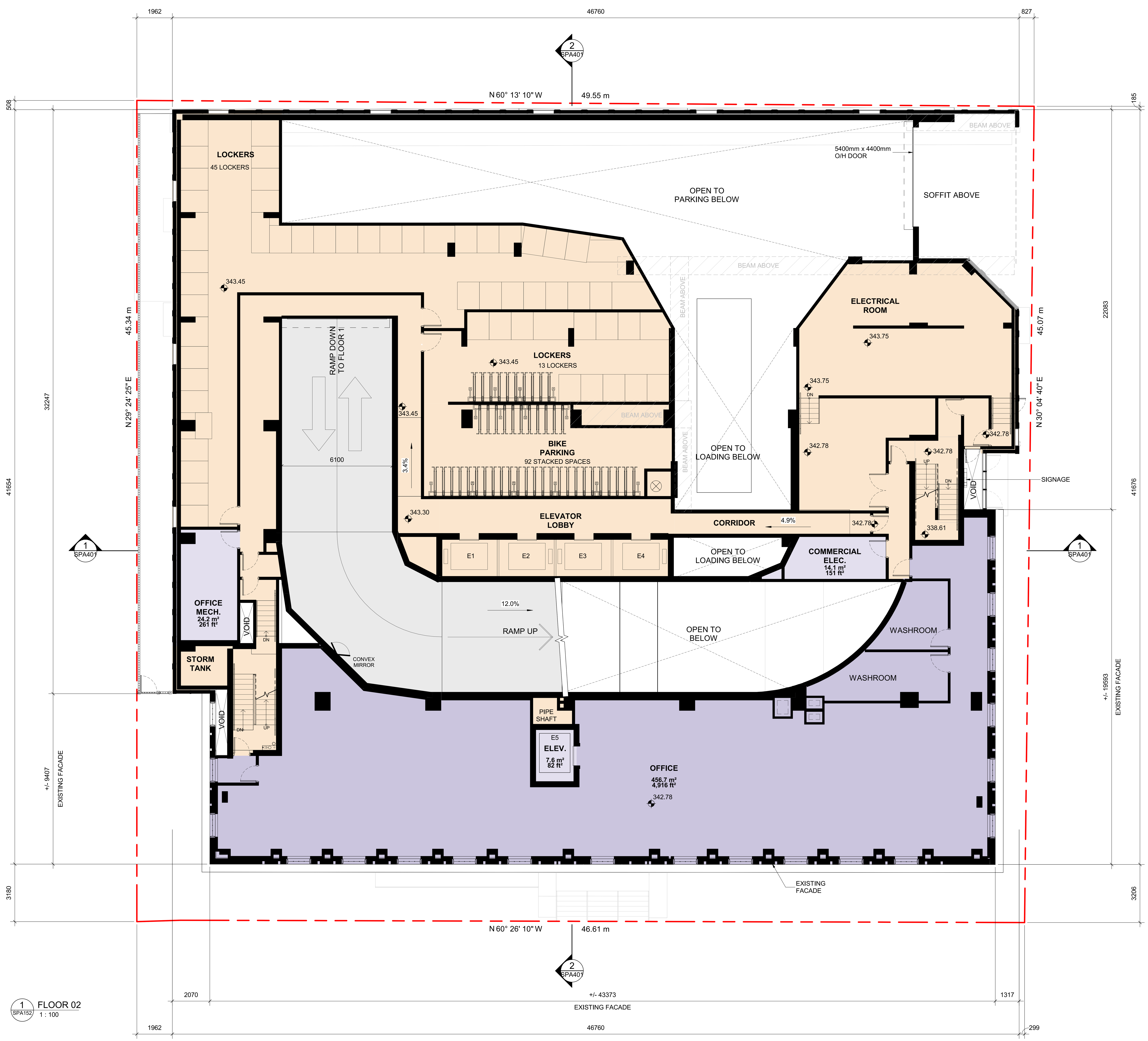


1 SPA152 FLOOR 02
1 : 100

TURNER FLEISCHER

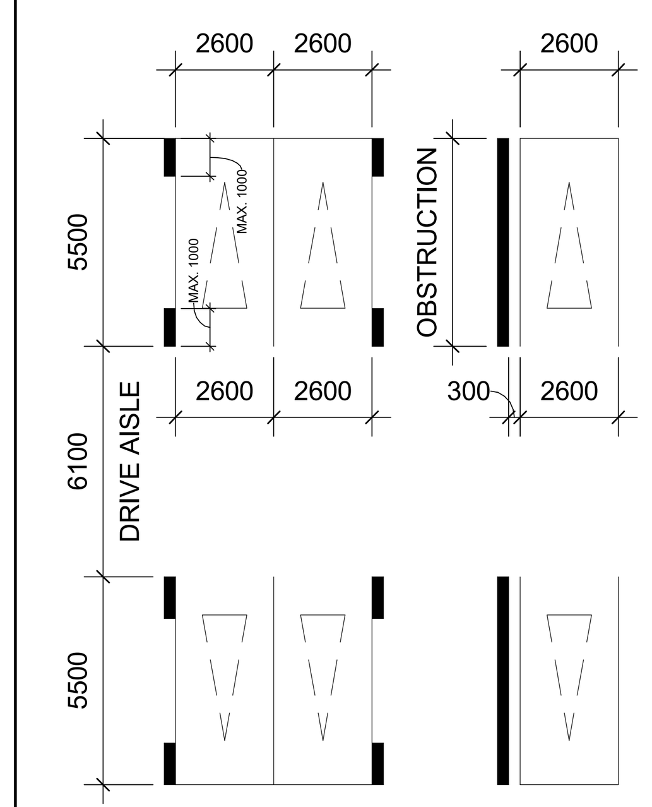
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

TYPICAL PARKING DIMENSIONS

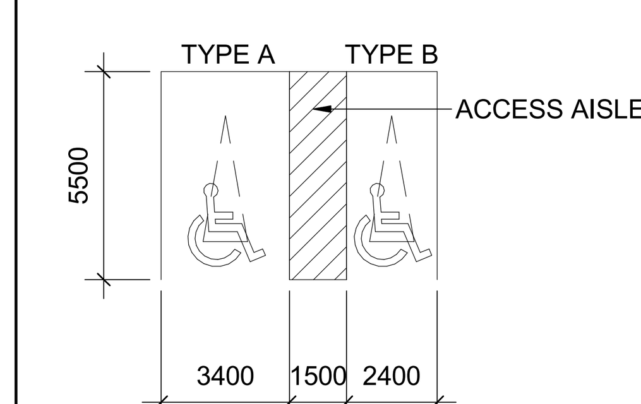
AISLE WIDTH: MIN 6.1m

TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



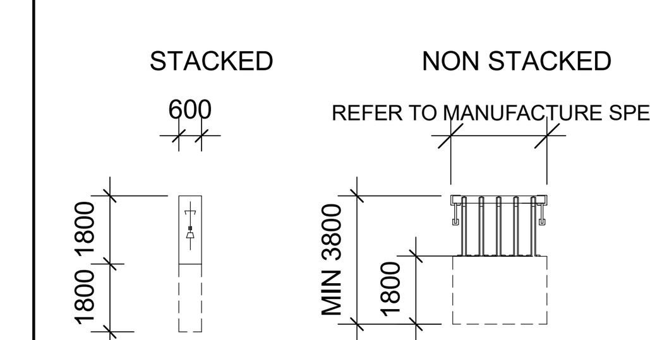
TYPICAL BARRIER-FREE PARKING DIMENSIONS

TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS

STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar
CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

FLOOR 02

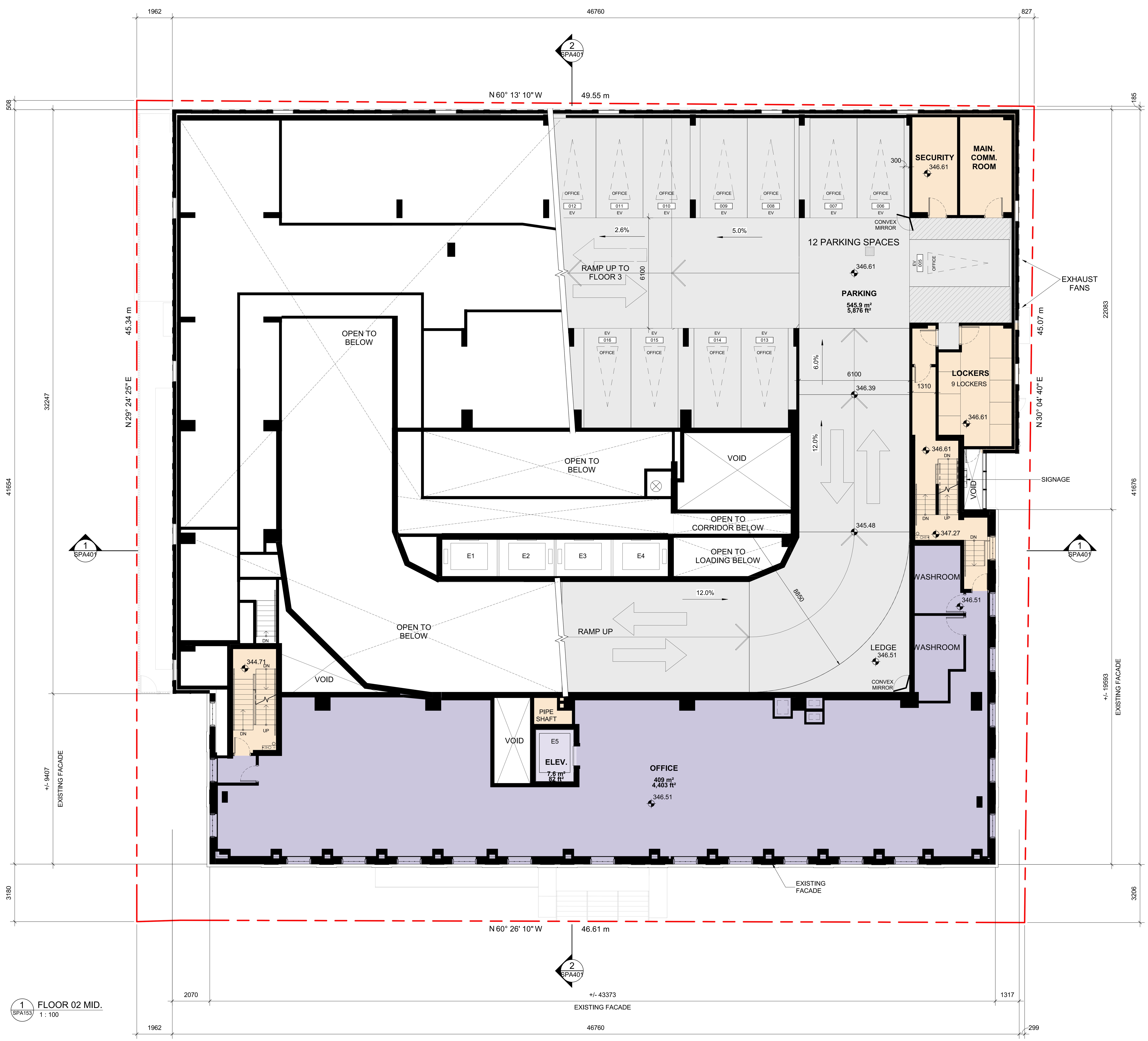
PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE
AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L. FLEISCHER
LICENCE
5004

N

DRAWING NO.
SPA152
REV.
8

2023-05-30 4:01:19 PM



TURNER FLEISCHER

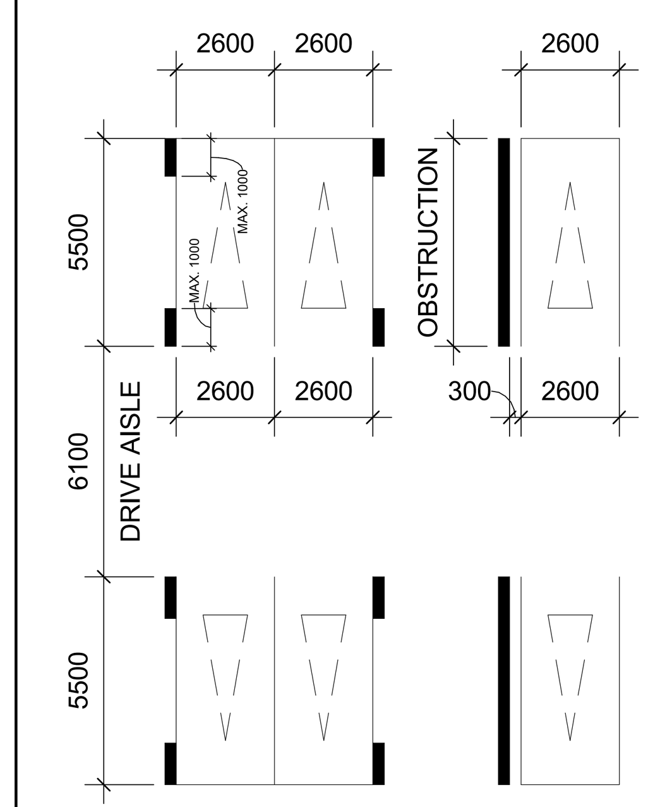
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

TYPICAL PARKING DIMENSIONS

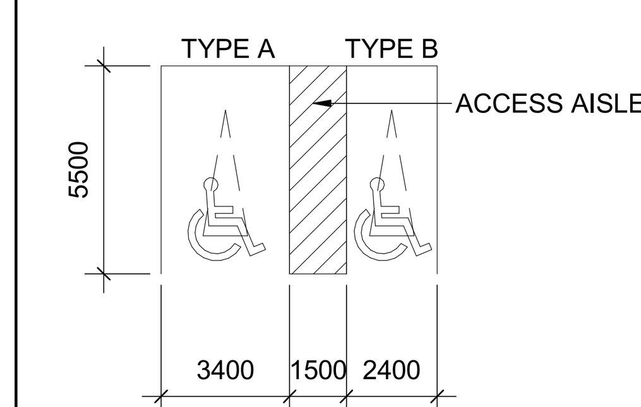
AISLE WIDTH: MIN 6.1m

TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



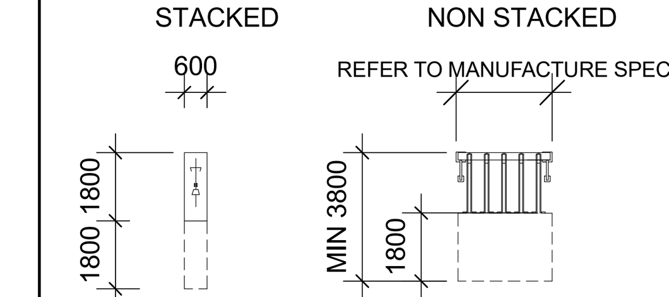
TYPICAL BARRIER-FREE PARKING DIMENSIONS

TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS

STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
7	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
4	2022-03-25	ISSUED FOR 100% DD	MY
3	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
2	2022-01-14	ISSUED FOR 50% DD	MY
1	2021-12-06	ISSUED FOR 100% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

FLOOR 02 MID LEVEL

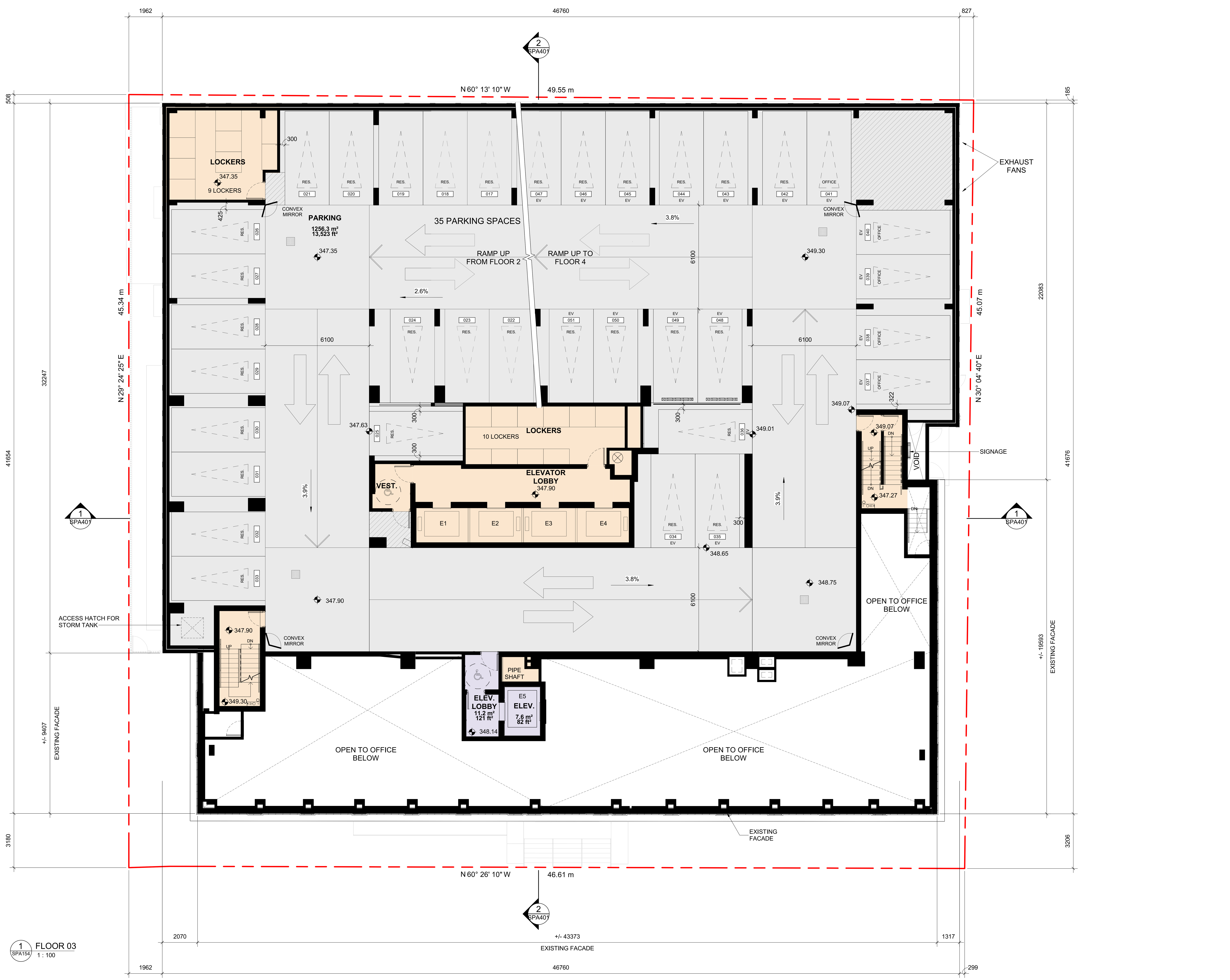
PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

N

DRAWING NO. SPA153
REV. 7

2023-05-30 4:01:20 PM



2023-05-30 4:01:21 PM

TURNER FLEISCHER

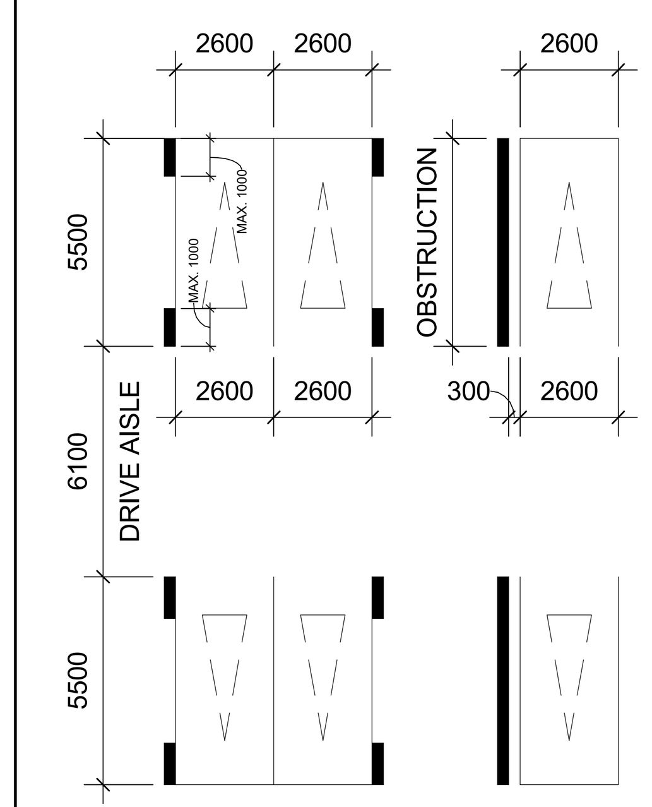
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

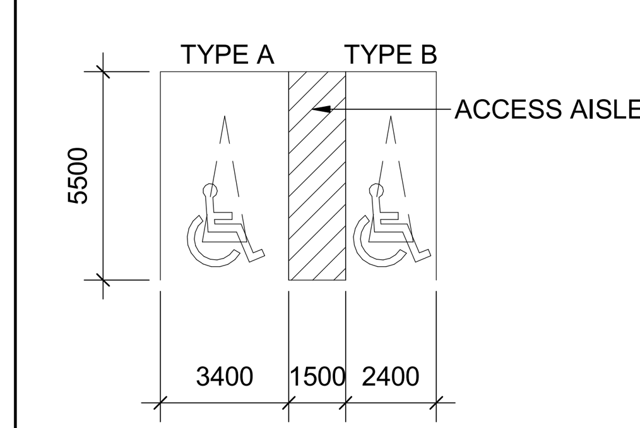
TYPICAL PARKING DIMENSIONS

AISLE WIDTH: MIN 6.1m

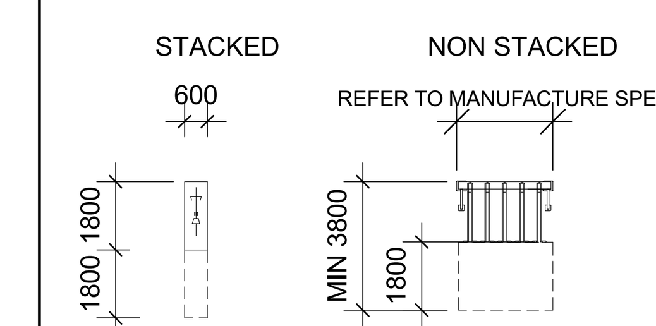
TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



TYPICAL BARRIER-FREE PARKING DIMENSIONS
TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS
STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
FLOOR 03

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA154
REV. 8

TURNER FLEISCHER

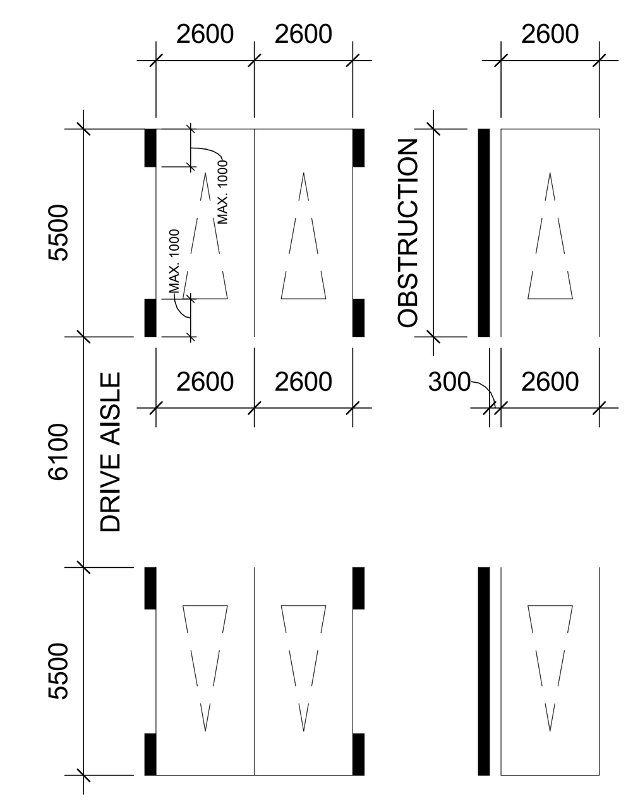
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

TYPICAL PARKING DIMENSIONS

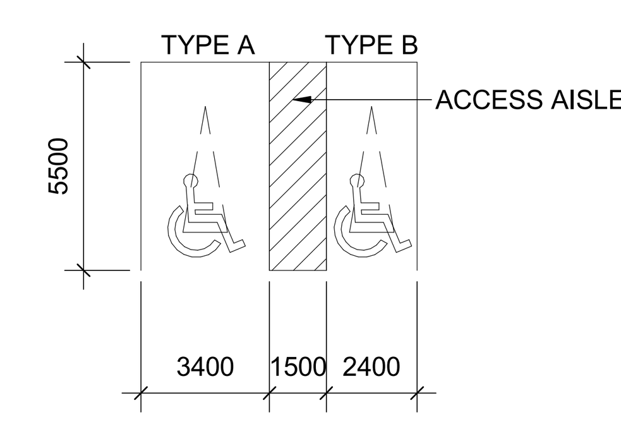
AISLE WIDTH: MIN 6.1m

TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



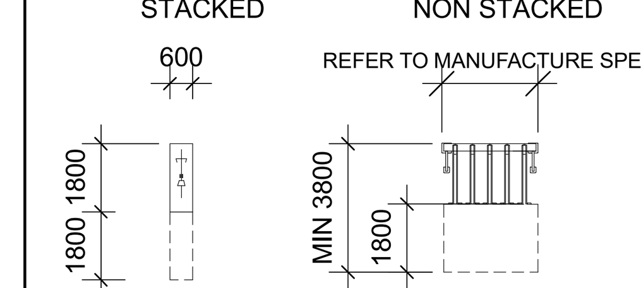
TYPICAL BARRIER-FREE PARKING DIMENSIONS

TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS

STACKED: MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

FLOOR 04

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA155
REV. 8

2023-05-30 4:01:22 PM

1 FLOOR 05
SPA156 1 : 100

TURNER FLEISCHER

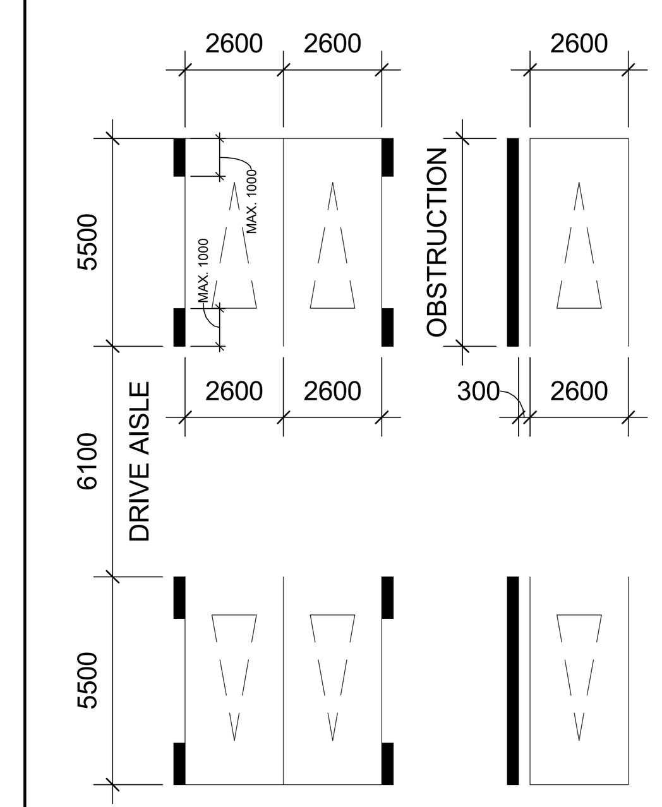
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

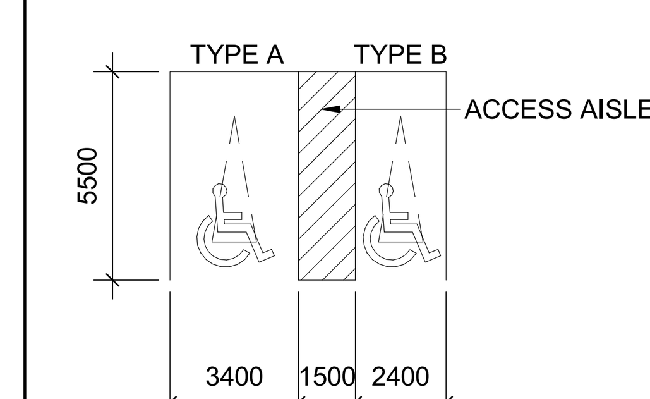
TYPICAL PARKING DIMENSIONS

AISLE WIDTH: MIN 6.1m

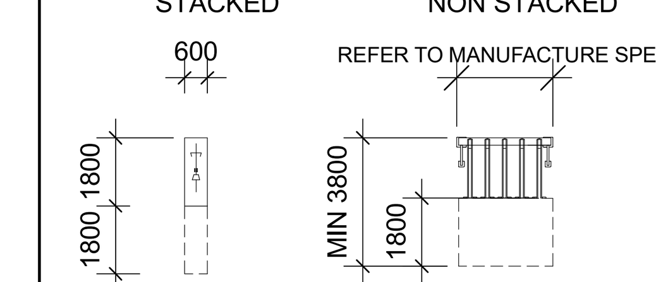
TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



TYPICAL BARRIER-FREE PARKING DIMENSIONS
TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS
STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
FLOOR 05

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA156
REV. 8

2023-05-30 4:01:23 PM

1 FLOOR 06
SPA157 1 : 100

2023-05-30 4:01:24 PM

TURNER FLEISCHER

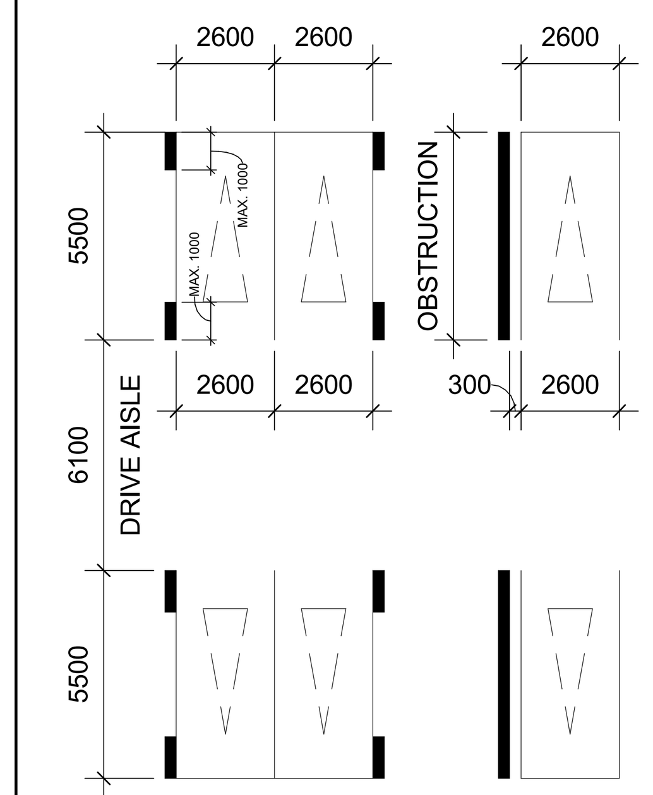
Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

TYPICAL PARKING DIMENSIONS

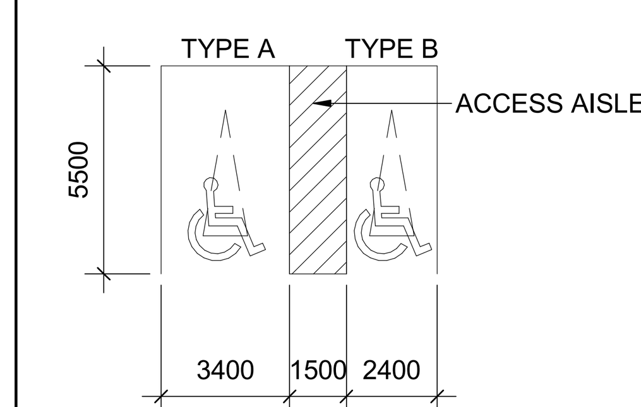
AISLE WIDTH: MIN 6.1m

TYPICAL PARKING SPACE:
MIN. 2.6 x 5.5 x 2.0m HIGH



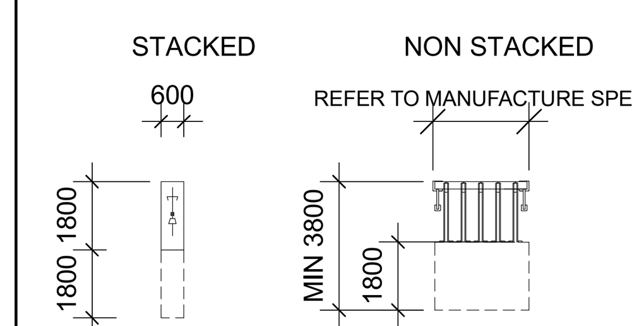
TYPICAL BARRIER-FREE PARKING DIMENSIONS

TYPE (A) : MIN 3.4 x 5.5 x 2.1m HIGH
TYPE (B) : MIN 2.4 x 5.5 x 2.1m HIGH



TYPICAL HORIZONTAL BIKE PARKING DIMENSIONS

STACKED : MIN .6 x 1.8 x 1.9m HIGH
NON STACKED: MIN 1.9m HIGH



#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

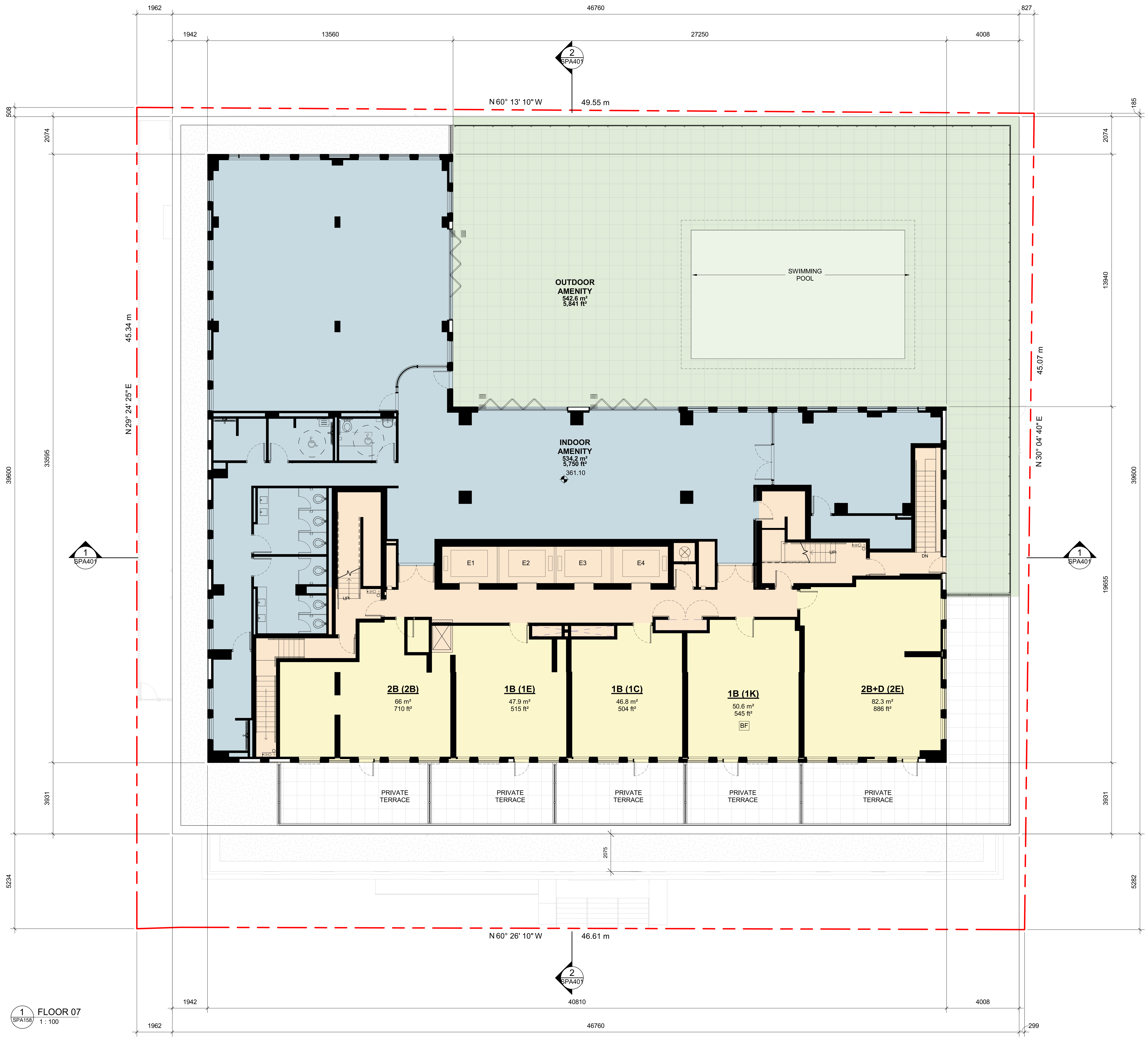
DRAWING

FLOOR 06

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE
AS NOTED

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO.
SPA157
REV.
8



1 FLOOR 07
SPA158 1 : 100

2023-05-30 4:01:26 PM

TURNER FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

#	DATE	DESCRIPTION	BY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
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5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

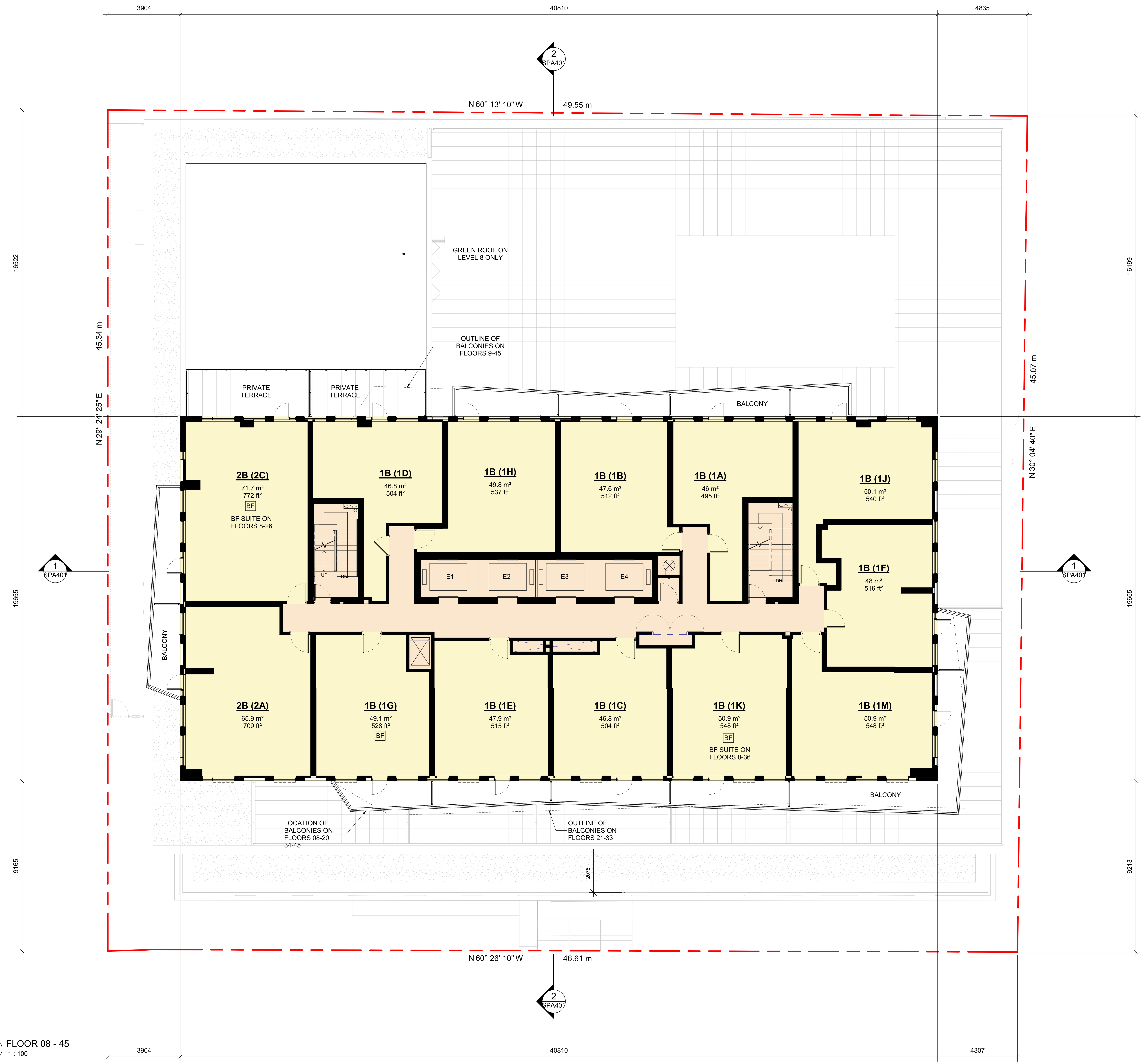
DRAWING

FLOOR 07

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE 1 : 100

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA158
REV. 8



1 FLOOR 08 - 45
SPA159 1 : 100

2023-05-30 4:01:31 PM

TURNER
FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

#	DATE	DESCRIPTION	BY
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5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar
CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

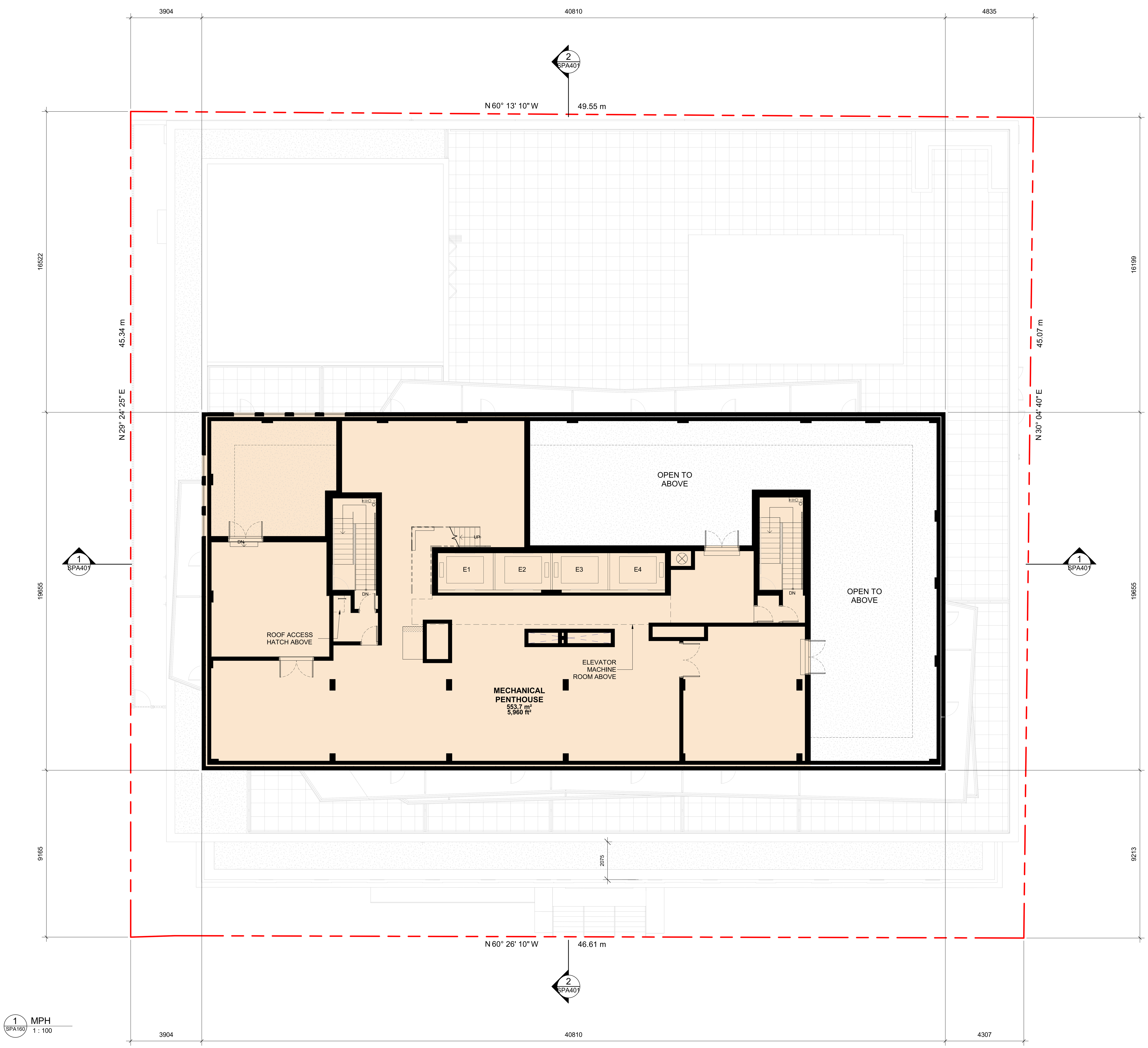
FLOOR 08 - 45

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE
1 : 100

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

N

DRAWING NO.
SPA159
REV.
8



1 MPH
SPA160 1 : 100

2023-05-30 4:01:44 PM

TURNER FLEISCHER

Turner Fleischer Architects Inc.
67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

#	DATE	DESCRIPTION	BY
7	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
4	2022-03-25	ISSUED FOR 100% DD	MY
3	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
2	2022-01-14	ISSUED FOR 50% DD	MY
1	2021-12-06	ISSUED FOR 100% SD	MY

VanMar CONSTRUCTORS INC.

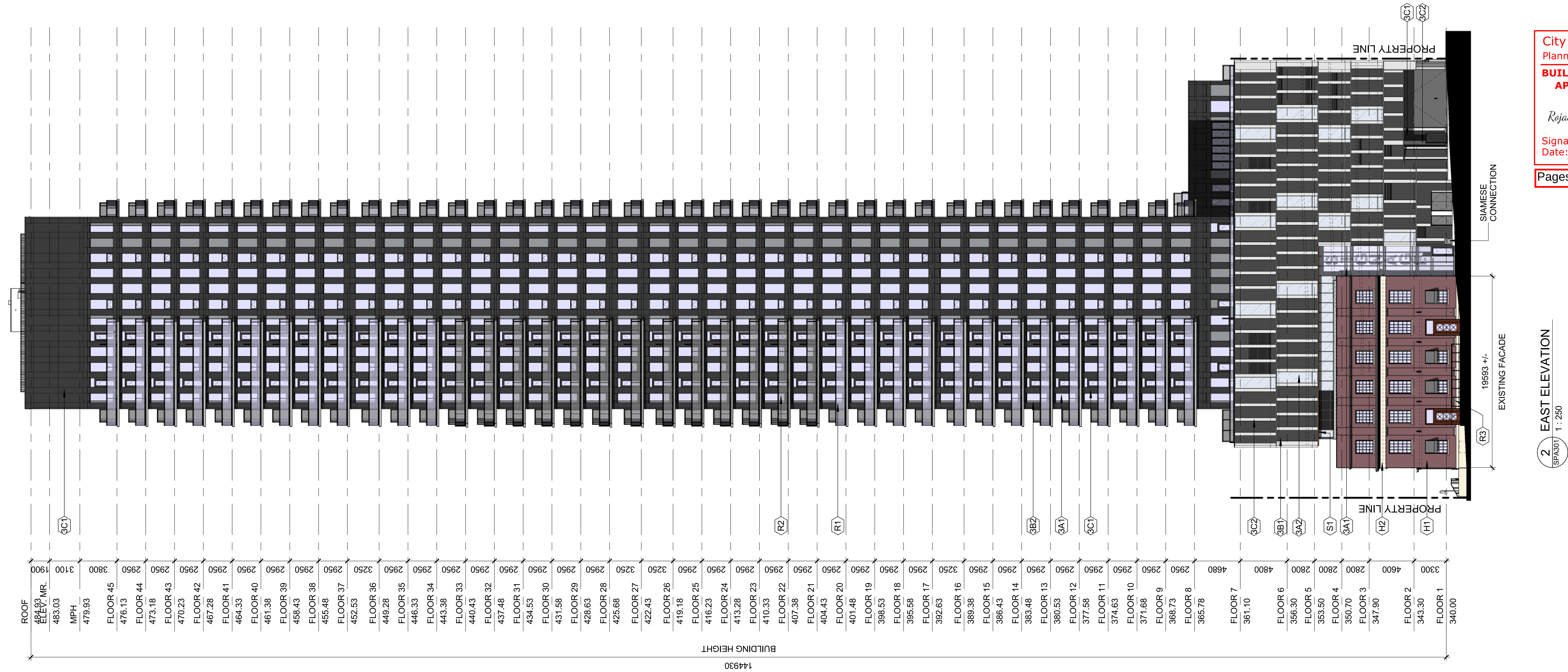
PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
MECHANICAL PENTHOUSE PLAN

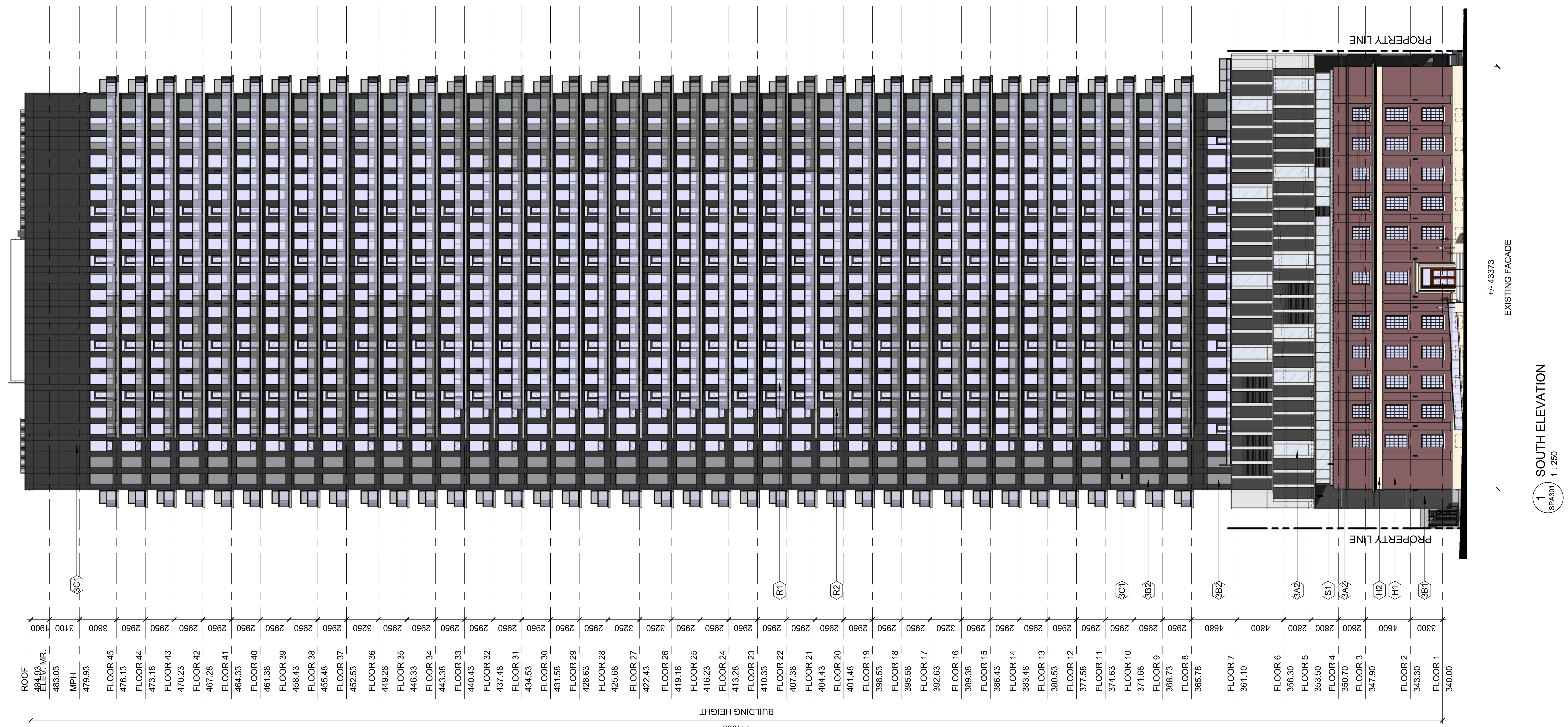
PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
Author
CHECKED BY
Checker
SCALE
1 : 100

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO.
SPA160
REV.
7



2 EAST ELEVATION 1 : 250



1 SOUTH ELEVATION 1 : 250

City of Kitchener
Planning Division
BUILDING ELEVATION PLAN APPROVED
Rojan Mohammadi
Signature: RojanM
Date: 12/15/2023

Pages 1 to 4, Revision # 9

TURNER FLEISCHER

Turner Fleischer Architects Inc.
67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

EXTERIOR FINISHES LEGEND

DEVELOPER RESERVES THE RIGHT TO SUBSTITUTE EQUIVALENT ALTERNATE FINISHES DURING CONSTRUCTION

WINDOW WALL / CURTAIN WALL GLAZING SYSTEM

- 3A1 VISION PANEL IN WINDOW WALL / CURTAIN WALL GLASS: GUARDIAN SUN-GUARD 'SNR 50' ON CLEAR
- 3A2 DOUBLE GLAZED SPANDREL UNIT IN CURTAIN WALL GLASS: GUARDIAN SUN-GUARD 'SNR 35' ON CLEAR SPANDREL: OPACI-COAT #3-5185 SILENT NIGHT ON CLEAR
- 3B1 SPANDREL PANEL IN CURTAIN WALL COLOUR: OPACI-COAT #1-0334 SPACE BLACK ON CLEAR
- 3B2 SPANDREL PANEL IN WINDOW WALL COLOUR: OPACI-COAT #3-0770 WARM GREY ON CLEAR
- 3C1 PROJECTED METAL PANEL IN WINDOW WALL COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK
- 3C2 PROJECTED METAL PANEL IN CURTAIN WALL COLOUR: DURANAR UC72638 - GRAHAM WHITE

GLAZED GUARDS

- R1 PRE-FINISHED GLAZED ALUMINUM RAILING GLASS: CLEAR GLASS
- R2 PRE-FINISHED GLAZED ALUMINUM RAILING GLASS: DARK GREY TINTED GLASS
- R3 PRE-FINISHED GLAZED POWDER COATED BLACK ALUMINUM RAILING GLASS: CLEAR CLASS

STONE VENEER / HERITAGE FACADE

- H2 EXISTING LIMESTONE (OR NEW TO MATCH EXISTING)
- H1 EXISTING RESTORED / RECLAIMED BRICK

MISCELLANEOUS

- S1 PRE-FINISHED METAL SOFFIT COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK

#	DATE	DESCRIPTION	BY
9	2023-12-07	RE-ISSUED FOR SITE PLAN APPLICATION	MY
8	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
7	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
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5	2022-03-25	ISSUED FOR 100% DD	MY
4	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-01-14	ISSUED FOR 50% DD	MY
2	2021-12-06	ISSUED FOR 100% SD	MY
1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

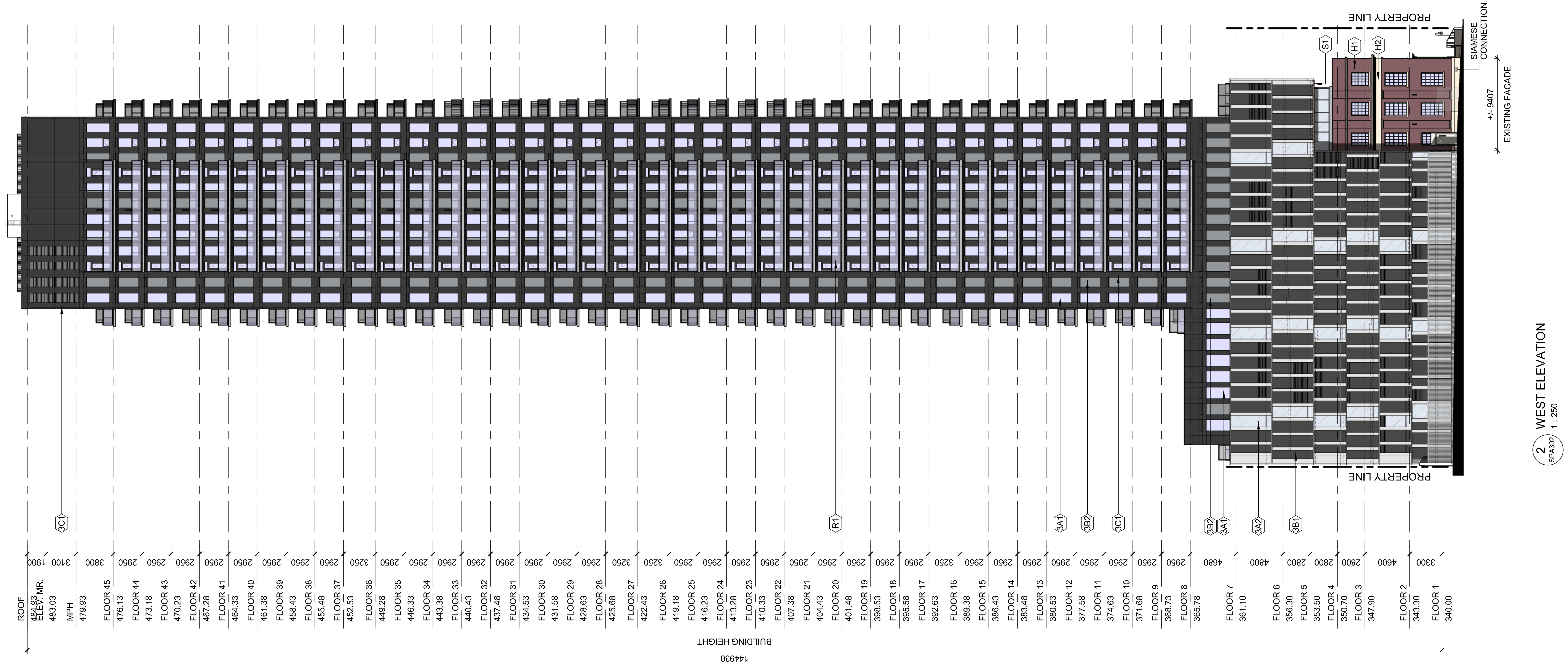
DRAWING
ELEVATIONS

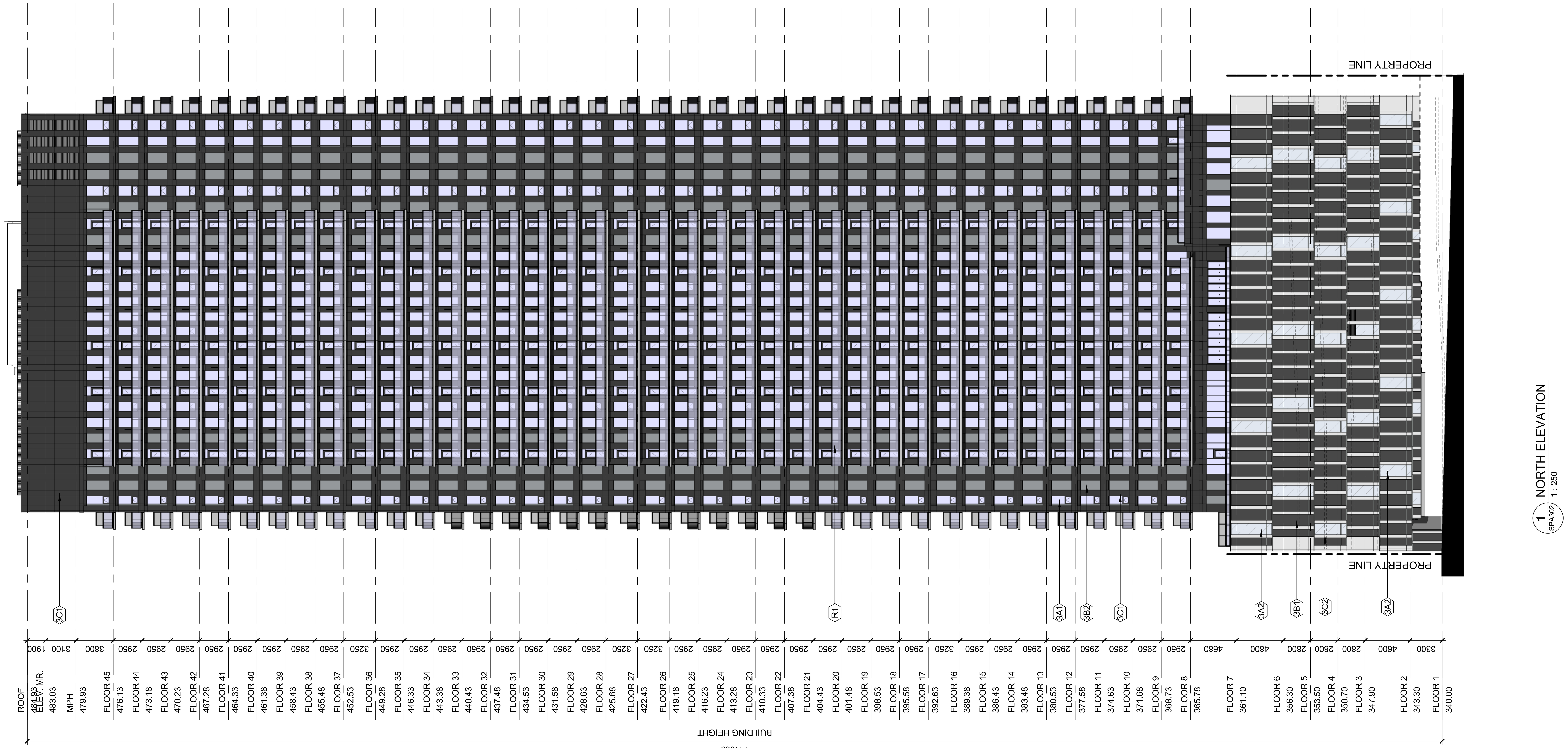
PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA301
REV. 9

2023-12-07 2:14:58 PM





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T 416 425 2222
turnerfleischer.com

EXTERIOR FINISHES LEGEND

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WINDOW WALL / CURTAIN WALL GLAZING SYSTEM

- 3A1 VISION PANEL IN WINDOW WALL / CURTAIN WALL
  GLASS: GUARDIAN SUN-GUARD 'SNR 50' ON CLEAR
- 3A2 DOUBLE GLAZED SPANDREL UNIT IN CURTAIN WALL
  GLASS: GUARDIAN SUN-GUARD 'SNR 35' ON CLEAR
  SPANDREL: OPACI-COAT #3-5185 SILENT NIGHT ON CLEAR
- 3B1 SPANDREL PANEL IN CURTAIN WALL
  COLOUR: OPACI-COAT #1-0334 SPACE BLACK ON CLEAR
- 3B2 SPANDREL PANEL IN WINDOW WALL
  COLOUR: OPACI-COAT #3-0770 WARM GREY ON CLEAR
- 3C1 PROJECTED METAL PANEL IN WINDOW WALL
  COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK
- 3C2 PROJECTED METAL PANEL IN CURTAIN WALL
  COLOUR: DURANAR UC72638 - GRAHAM WHITE

GLAZED GUARDS

- R1 PRE-FINISHED GLAZED ALUMINUM RAILING
  GLASS: CLEAR GLASS
- R2 PRE-FINISHED GLAZED ALUMINUM RAILING
  GLASS: DARK GREY TINTED GLASS
- R3 PRE-FINISHED GLAZED POWDER COATED BLACK ALUMINUM RAILING
  GLASS: CLEAR CLASS

STONE VENEER / HERITAGE FACADE

- H2 EXISTING LIMESTONE (OR NEW TO MATCH EXISTING)
- H1 EXISTING RESTORED / RECLAIMED BRICK

MISCELLANEOUS

- S1 PRE-FINISHED METAL SOFFIT
  COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK

#	DATE	DESCRIPTION	BY
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1	2021-10-15	ISSUED FOR 50% SD	MY

VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

ELEVATIONS

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE
As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA302
REV. 9

2023-12-07 2:16:50 PM

2 EAST PODIUM ELEVATION
SPA311 1 : 100

1 SOUTH PODIUM ELEVATION
SPA311 1 : 100

TURNER FLEISCHER

Turner Fleischer Architects Inc.

67 Lesmill Road
Toronto, ON, M3B 2T8
T 416 425 2222
turnerfleischer.com

EXTERIOR FINISHES LEGEND

DEVELOPER RESERVES THE RIGHT TO SUBSTITUTE EQUIVALENT ALTERNATE FINISHES DURING CONSTRUCTION

WINDOW WALL / CURTAIN WALL GLAZING SYSTEM

- 3A1 VISION PANEL IN WINDOW WALL / CURTAIN WALL
  GLASS: GUARDIAN SUN-GUARD 'SNR 50' ON CLEAR
- 3A2 DOUBLE GLAZED SPANDREL UNIT IN CURTAIN WALL
  GLASS: GUARDIAN SUN-GUARD 'SNR 35' ON CLEAR
  SPANDREL: OPACI-COAT #3-5185 SILENT NIGHT ON CLEAR
- 3B1 SPANDREL PANEL IN CURTAIN WALL
  COLOUR: OPACI-COAT #1-0334 SPACE BLACK ON CLEAR
- 3B2 SPANDREL PANEL IN WINDOW WALL
  COLOUR: OPACI-COAT #3-0770 WARM GREY ON CLEAR
- 3C1 PROJECTED METAL PANEL IN WINDOW WALL
  COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK
- 3C2 PROJECTED METAL PANEL IN CURTAIN WALL
  COLOUR: DURANAR UC72638 - GRAHAM WHITE

GLAZED GUARDS

- R1 PRE-FINISHED GLAZED ALUMINUM RAILING
  GLASS: CLEAR GLASS
- R2 PRE-FINISHED GLAZED ALUMINUM RAILING
  GLASS: DARK GREY TINTED GLASS
- R3 PRE-FINISHED GLAZED POWDER COATED BLACK ALUMINUM RAILING
  GLASS: CLEAR CLASS

STONE VENEER / HERITAGE FACADE

- H2 EXISTING LIMESTONE (OR NEW TO MATCH EXISTING)
- H1 EXISTING RESTORED / RECLAIMED BRICK

MISCELLANEOUS

- S1 PRE-FINISHED METAL SOFFIT
  COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK

#	DATE	DESCRIPTION	BY
7	2023-12-07	RE-ISSUED FOR SITE PLAN APPLICATION	MY
6	2023-05-30	RE-ISSUED FOR SITE PLAN APPLICATION	MY
5	2023-04-06	RE-ISSUED FOR SITE PLAN APPLICATION	MY
4	2023-03-20	RE-ISSUED FOR SITE PLAN APPLICATION	MY
3	2022-03-25	ISSUED FOR 100% DD	MY
2	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
1	2022-01-14	ISSUED FOR 50% DD	MY

VanMar CONSTRUCTORS INC.

PROJECT
PROPOSED MIXED USE DEVELOPMENT
10 DUKE STREET WEST, KITCHENER, ON

DRAWING
SOUTH AND EAST PODIUM ELEVATION

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
MJM
CHECKED BY
MYG
SCALE
As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO.
SPA311
REV.
7

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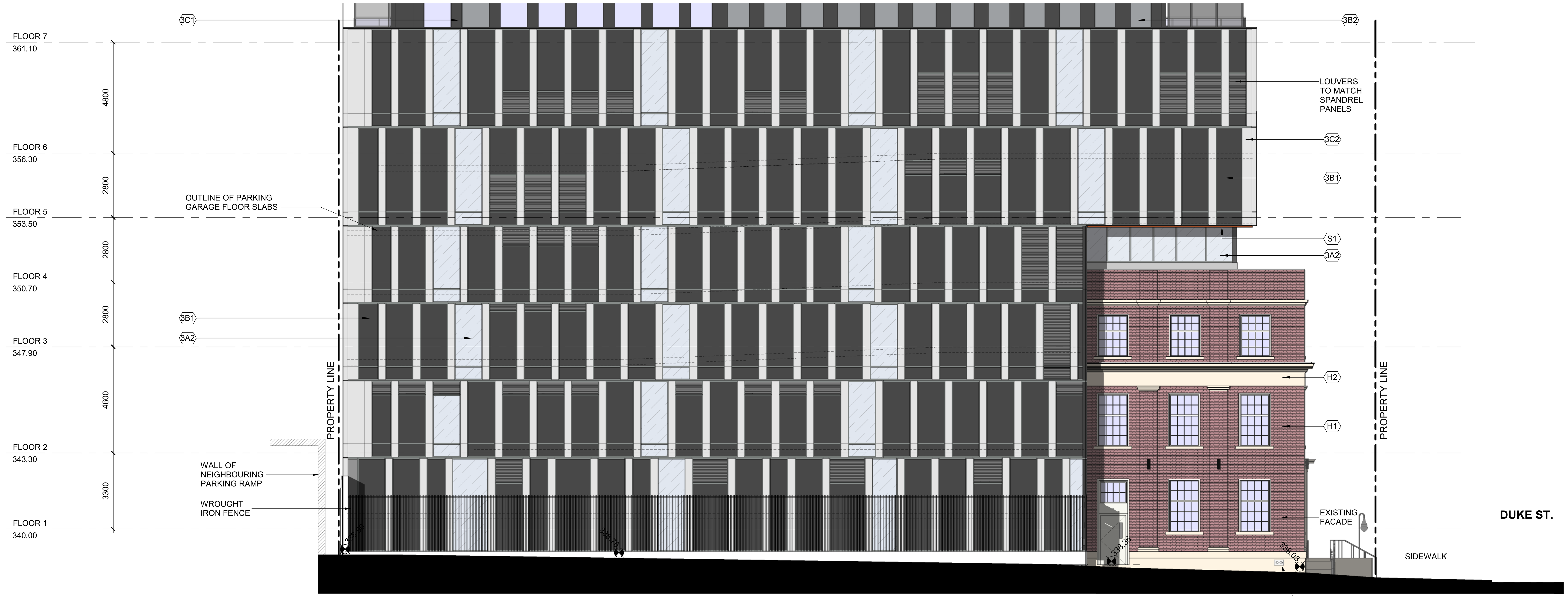

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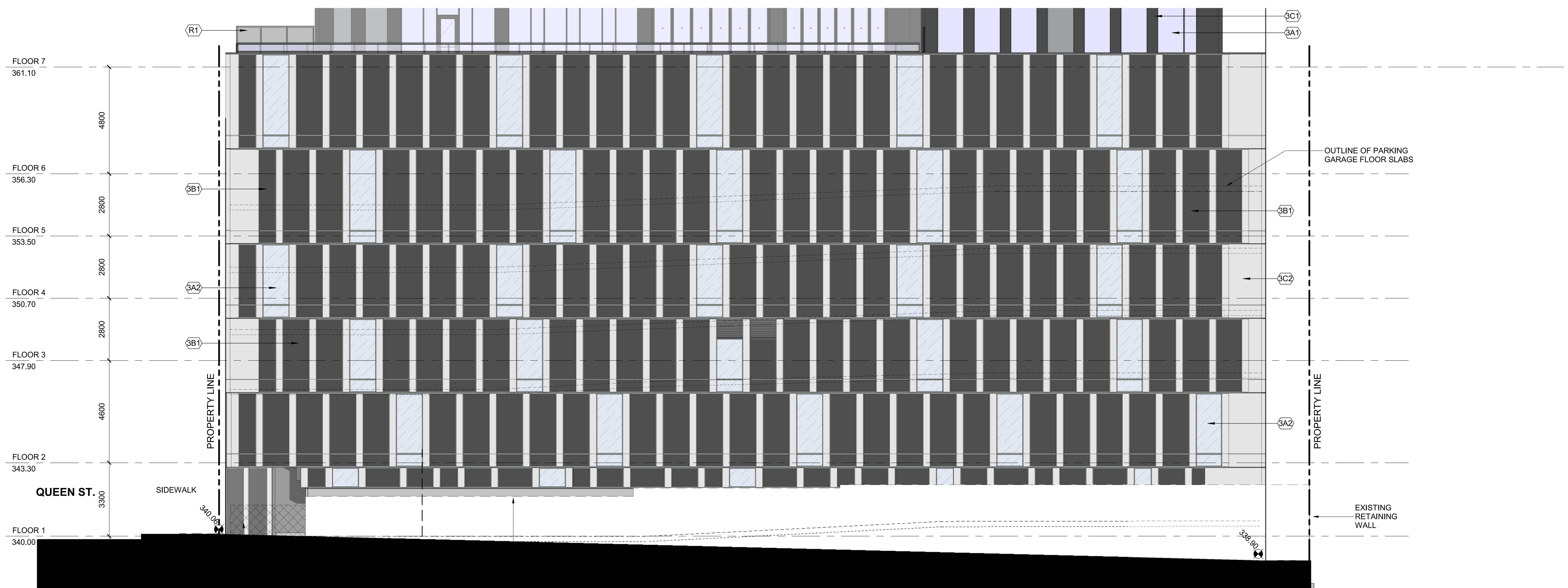

1 NORTH PODIUM ELEVATION
SPA312 1 : 100

PORTION OF EXISTING RETAINING WALL TO BE DEMOLISHED

EXISTING RETAINING WALL TO BE INCORPORATED INTO BUILDING STRUCTURE

2023-12-07 2:19:28 PM

TURNER FLEISCHER

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EXTERIOR FINISHES LEGEND

DEVELOPER RESERVES THE RIGHT TO SUBSTITUTE EQUIVALENT ALTERNATE FINISHES DURING CONSTRUCTION

WINDOW WALL / CURTAIN WALL GLAZING SYSTEM

- 3A1 VISION PANEL IN WINDOW WALL / CURTAIN WALL GLASS: GUARDIAN SUN-GUARD 'SNR 50' ON CLEAR
- 3A2 DOUBLE GLAZED SPANDREL UNIT IN CURTAIN WALL GLASS: GUARDIAN SUN-GUARD 'SNR 35' ON CLEAR SPANDREL: OPACI-COAT #3-5185 SILENT NIGHT ON CLEAR
- 3B1 SPANDREL PANEL IN CURTAIN WALL COLOUR: OPACI-COAT #1-0334 SPACE BLACK ON CLEAR
- 3B2 SPANDREL PANEL IN WINDOW WALL COLOUR: OPACI-COAT #3-0770 WARM GREY ON CLEAR
- 3C1 PROJECTED METAL PANEL IN WINDOW WALL COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK
- 3C2 PROJECTED METAL PANEL IN CURTAIN WALL COLOUR: DURANAR UC72638 - GRAHAM WHITE

GLAZED GUARDS

- R1 PRE-FINISHED GLAZED ALUMINUM RAILING GLASS: CLEAR GLASS
- R2 PRE-FINISHED GLAZED ALUMINUM RAILING GLASS: DARK GREY TINTED GLASS
- R3 PRE-FINISHED GLAZED POWDER COATED BLACK ALUMINUM RAILING GLASS: CLEAR CLASS

STONE VENEER / HERITAGE FACADE

- H2 EXISTING LIMESTONE (OR NEW TO MATCH EXISTING)
- H1 EXISTING RESTORED / RECLAIMED BRICK

MISCELLANEOUS

- S1 PRE-FINISHED METAL SOFFIT COLOUR: DURANAR UC131816 - SOLAR REFLECTIVE BLACK

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2	2022-03-10	ISSUED FOR SITE PLAN APPLICATION	MY
1	2022-01-14	ISSUED FOR 50% DD	MY

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PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

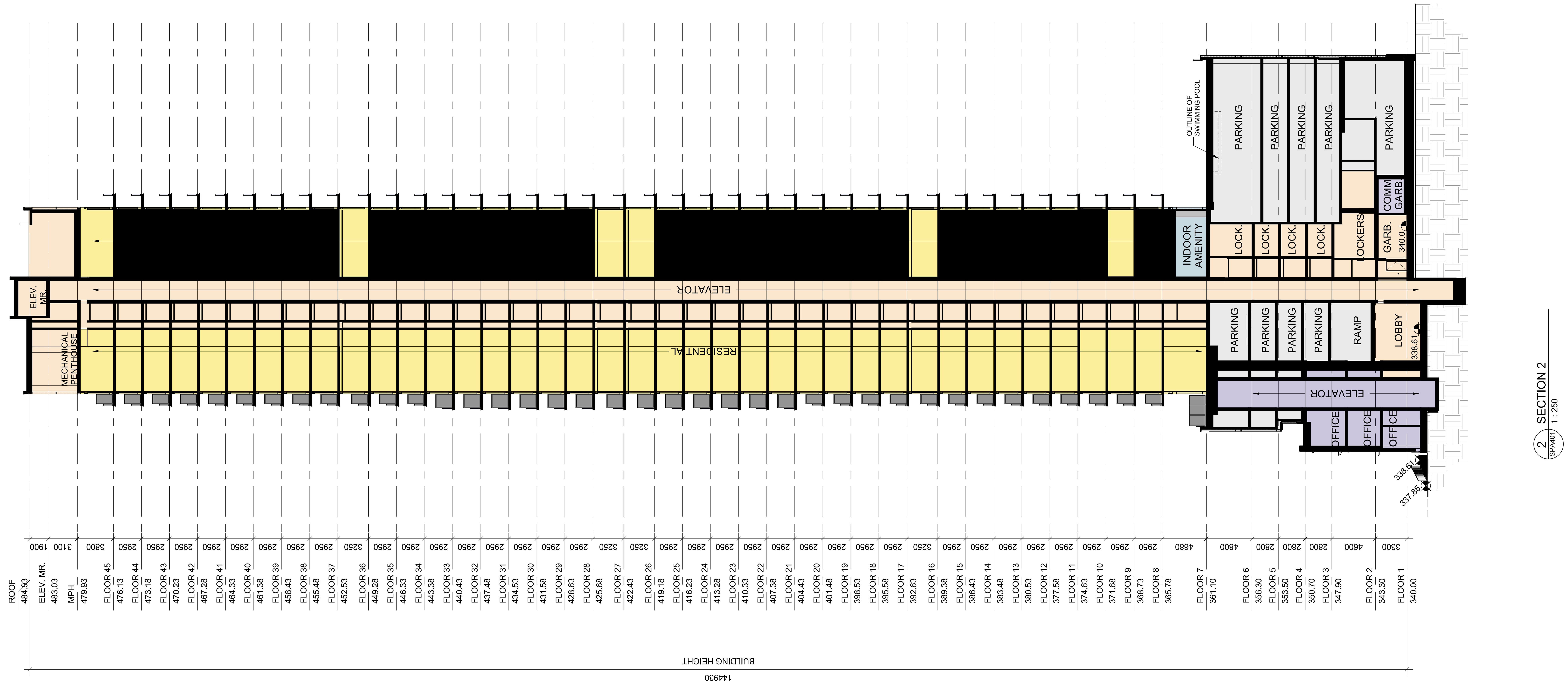
DRAWING

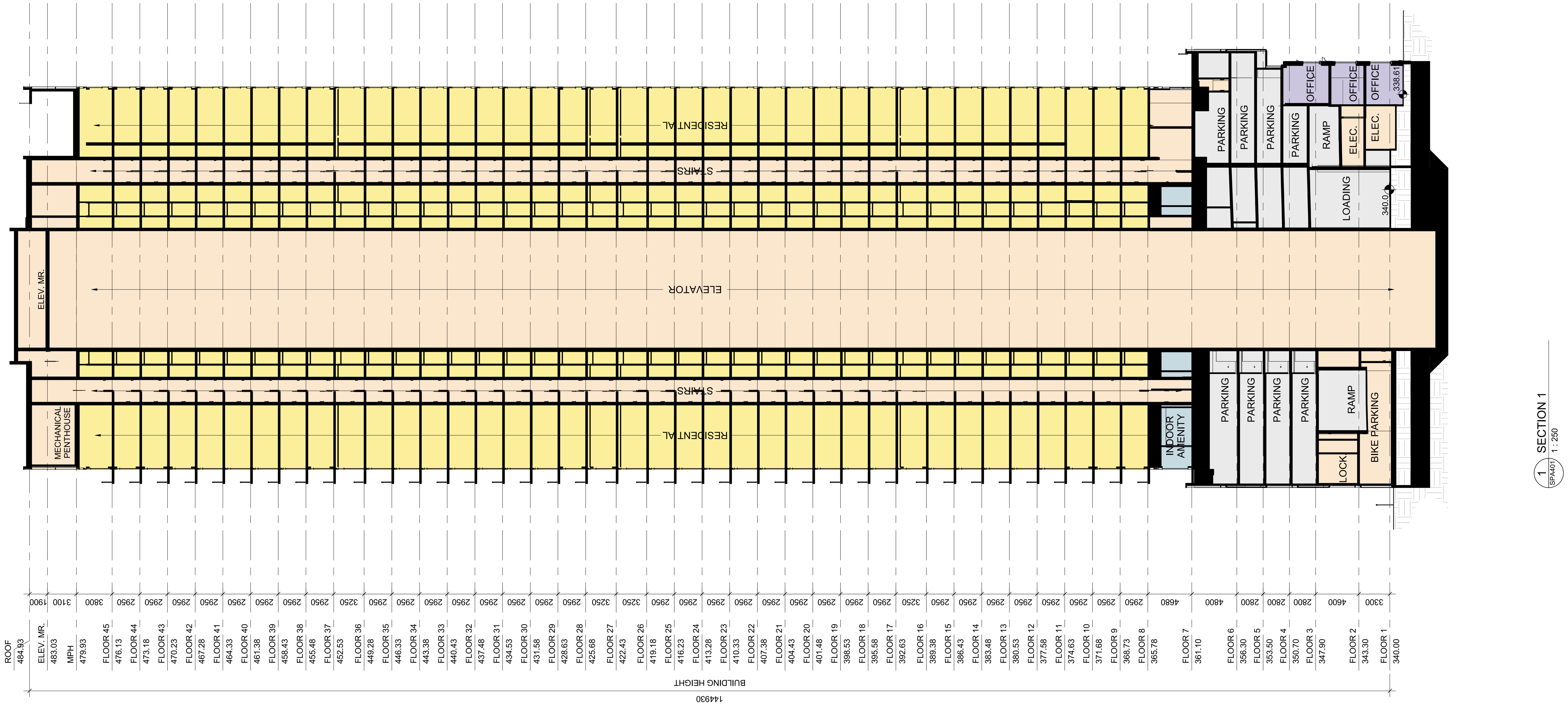
NORTH AND WEST PODIUM ELEVATION

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA312
REV. 7





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VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

BUILDING SECTIONS

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
DRAWN BY MJM
CHECKED BY MYG
SCALE 1 : 250

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5004

DRAWING NO. SPA401
REV. 8

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VIEW FROM VOGELSANG GREEN

VIEW FROM QUEEN STREET NORTH

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PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

3D PERSPECTIVES

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
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MYG
SCALE

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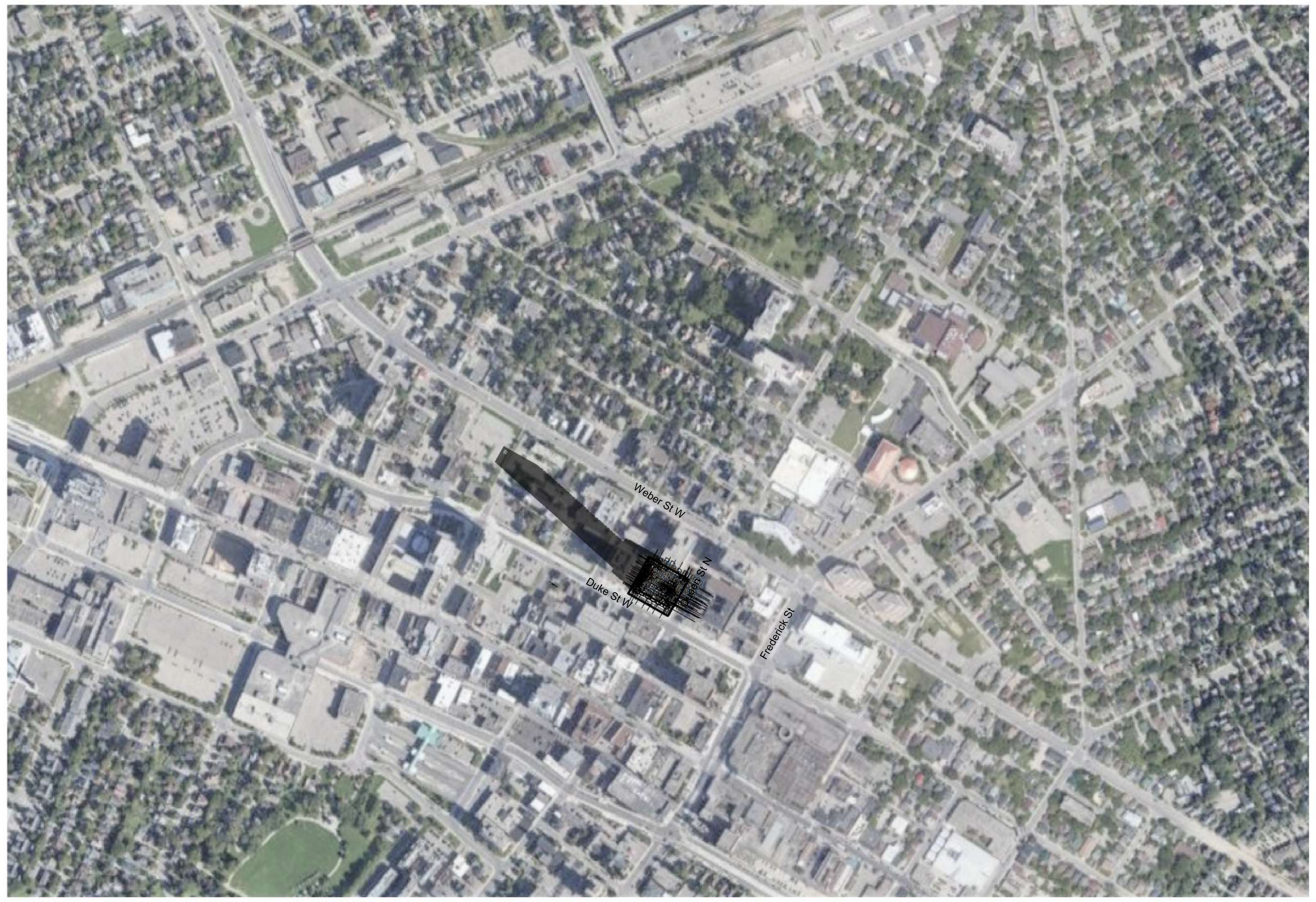

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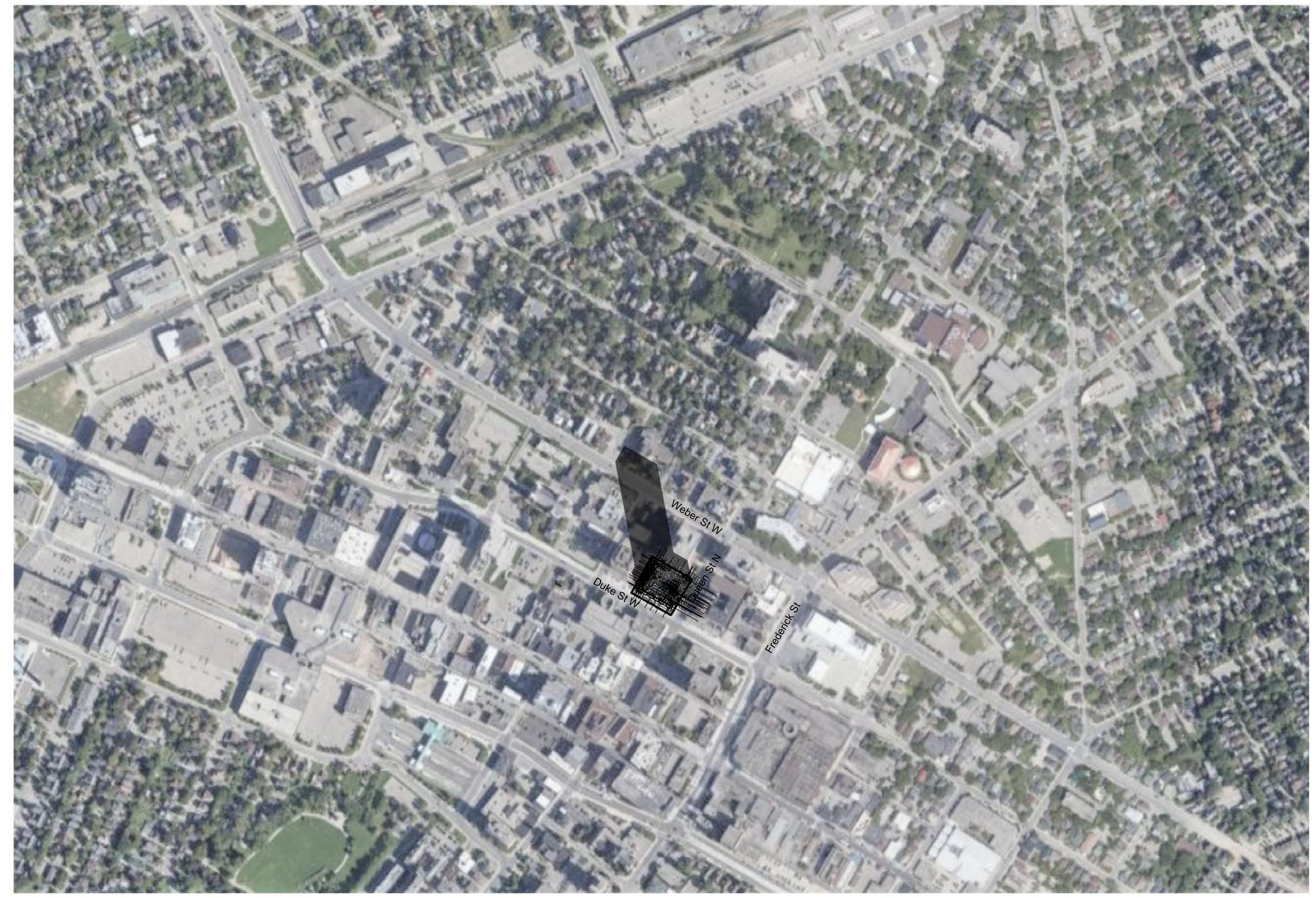

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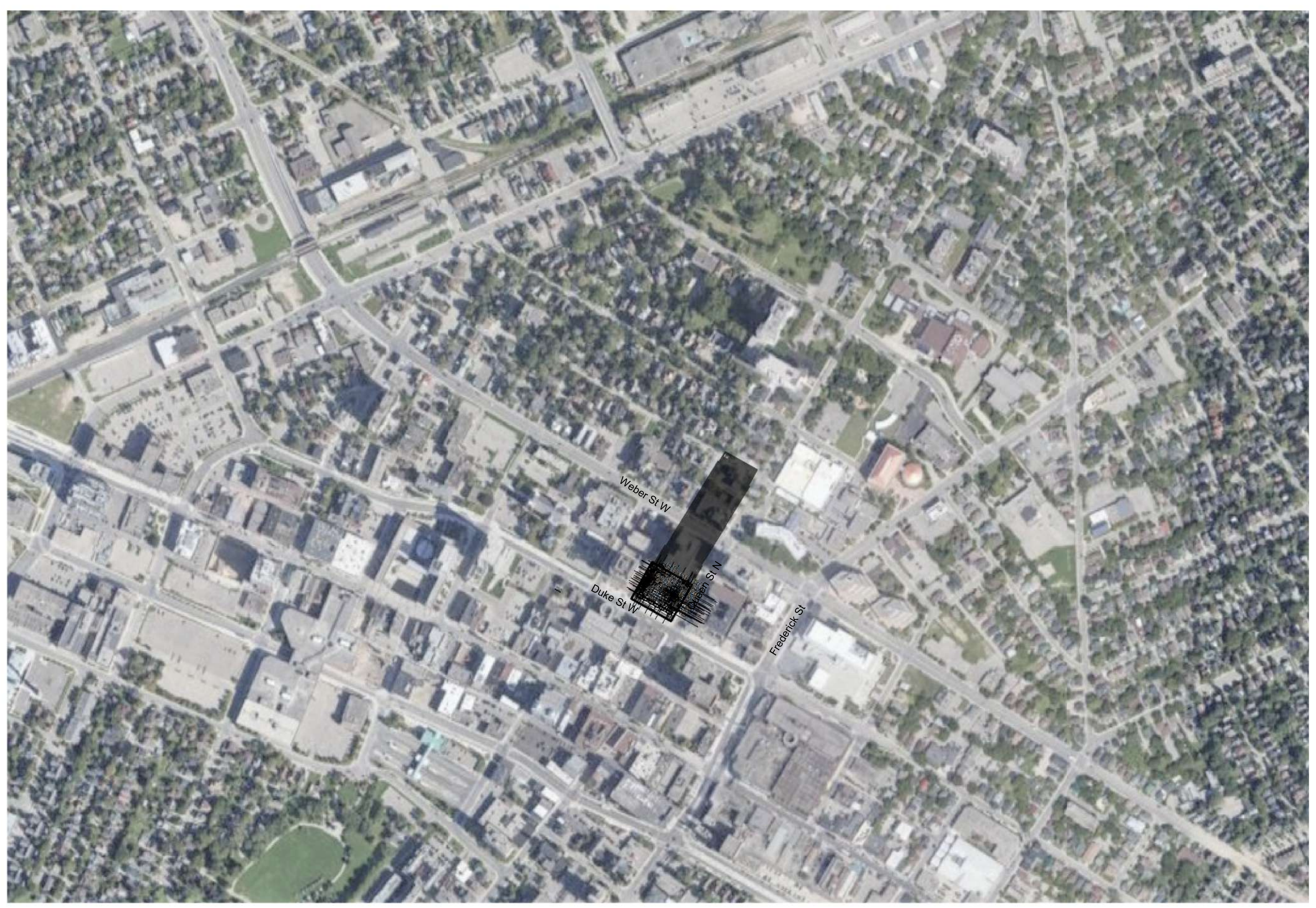

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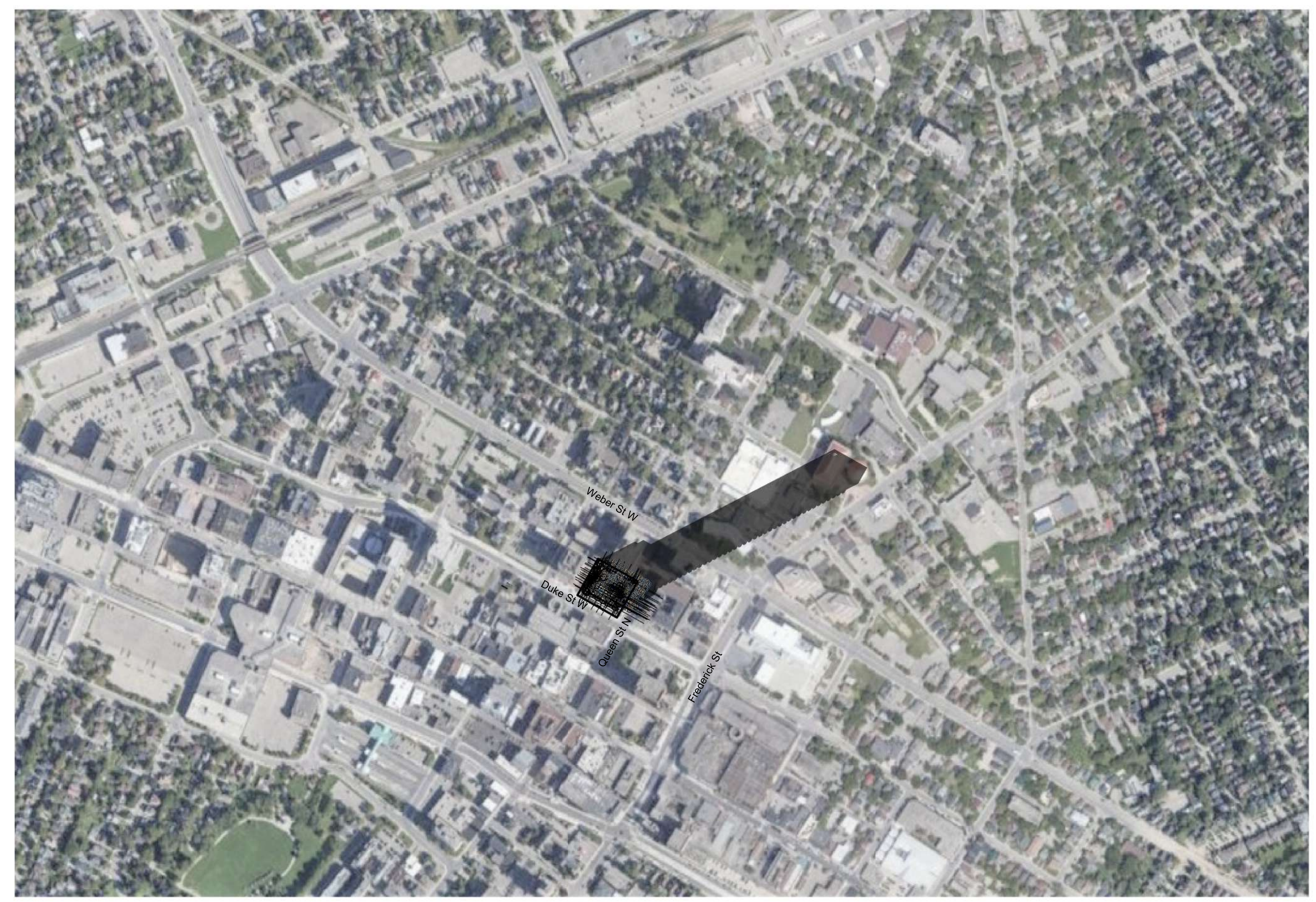

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VanMar CONSTRUCTORS INC.

PROJECT

PROPOSED MIXED USE DEVELOPMENT

10 DUKE STREET WEST, KITCHENER, ON

DRAWING

SHADOW STUDIES

PROJECT NO.
21.167CS

PROJECT DATE
2021-10-07

DRAWN BY
SSZ

CHECKED BY
MYG

SCALE
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DRAWING NO.
SPA811

REV.
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VanMar CONSTRUCTORS INC.

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10 DUKE STREET WEST, KITCHENER, ON

DRAWING
SHADOW STUDIES

PROJECT NO.
21.167CS
PROJECT DATE
2021-10-07
DRAWN BY
SSZ
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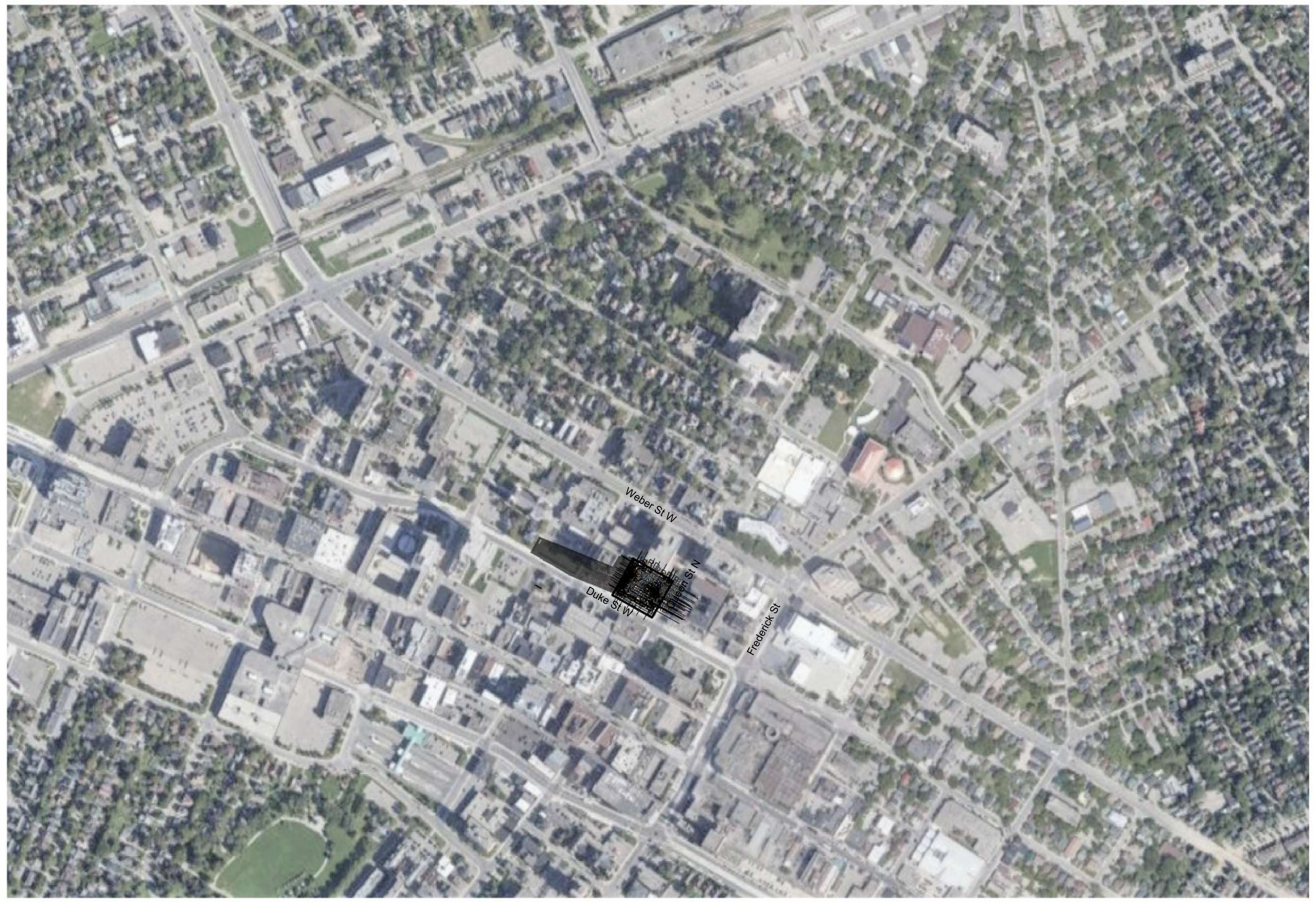

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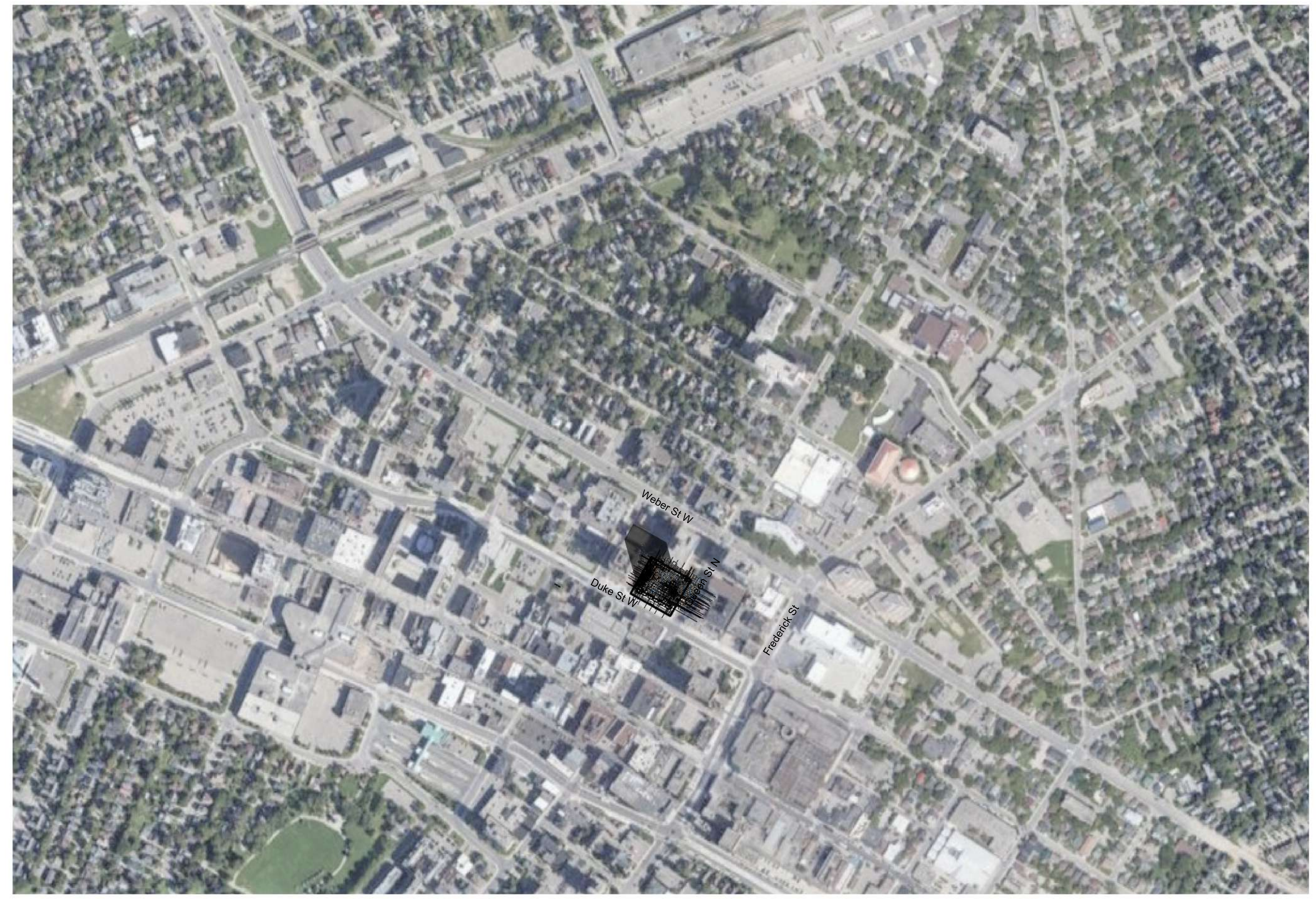

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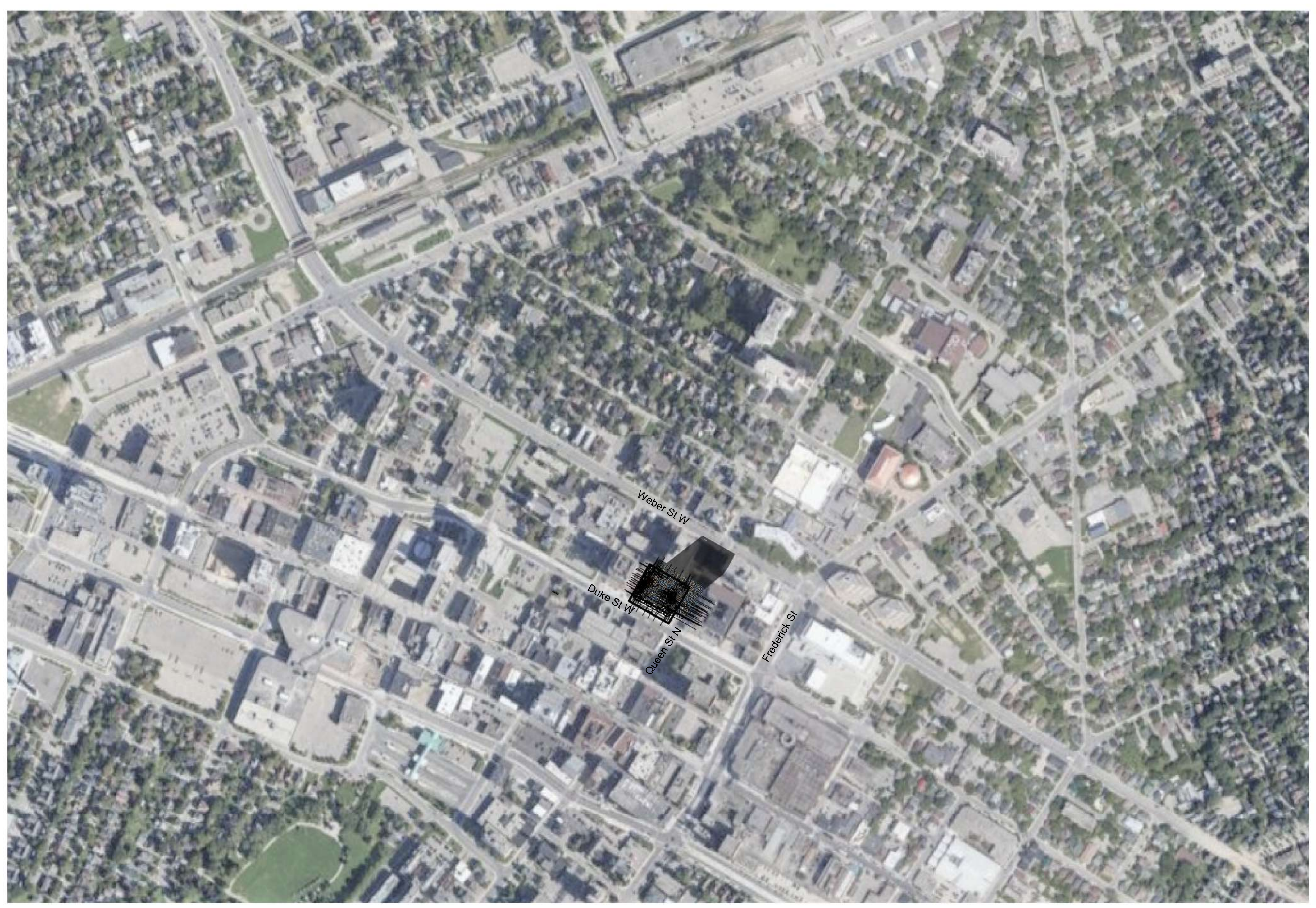

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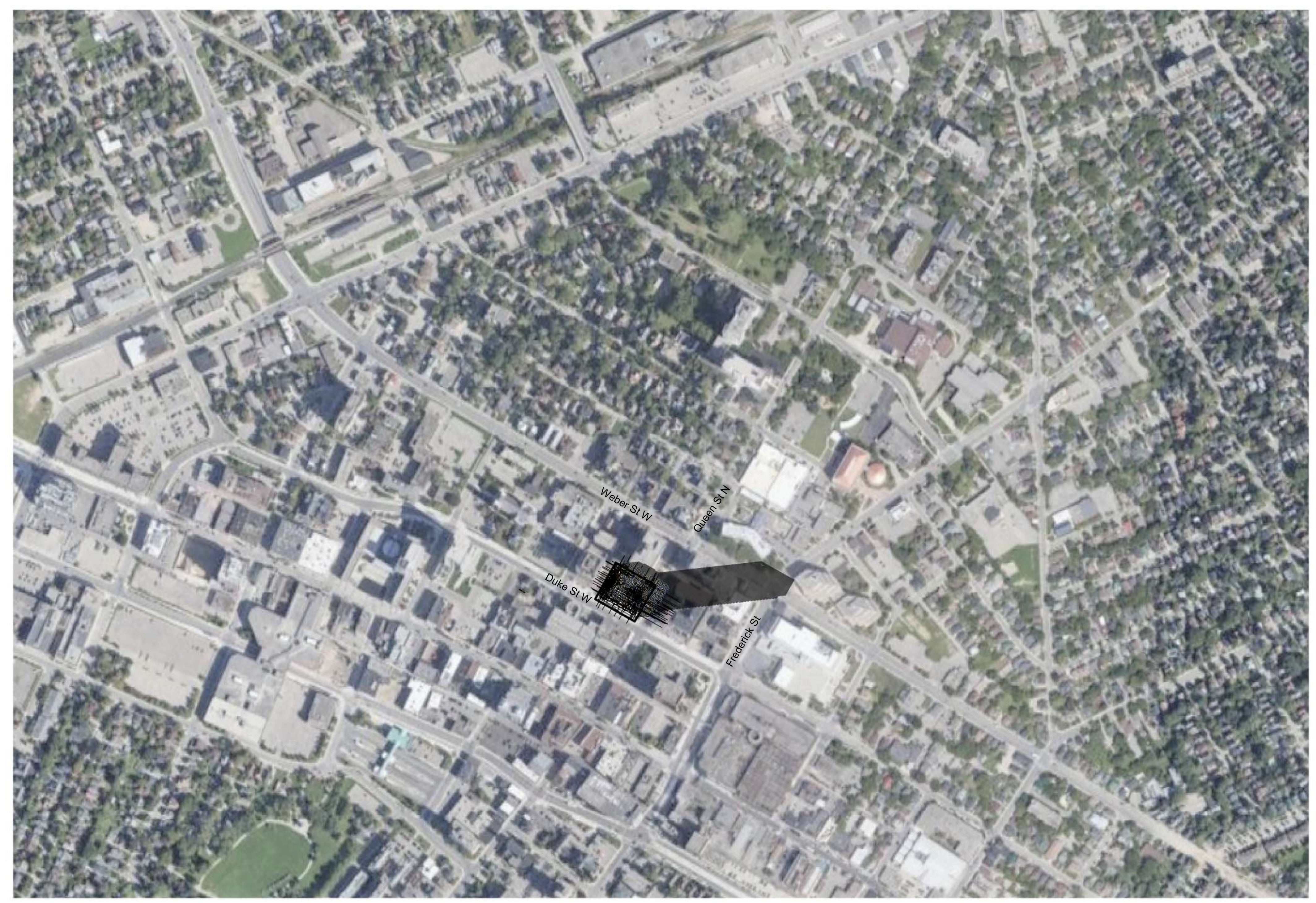

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VanMar CONSTRUCTORS INC.

PROJECT

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10 DUKE STREET WEST, KITCHENER, ON

DRAWING

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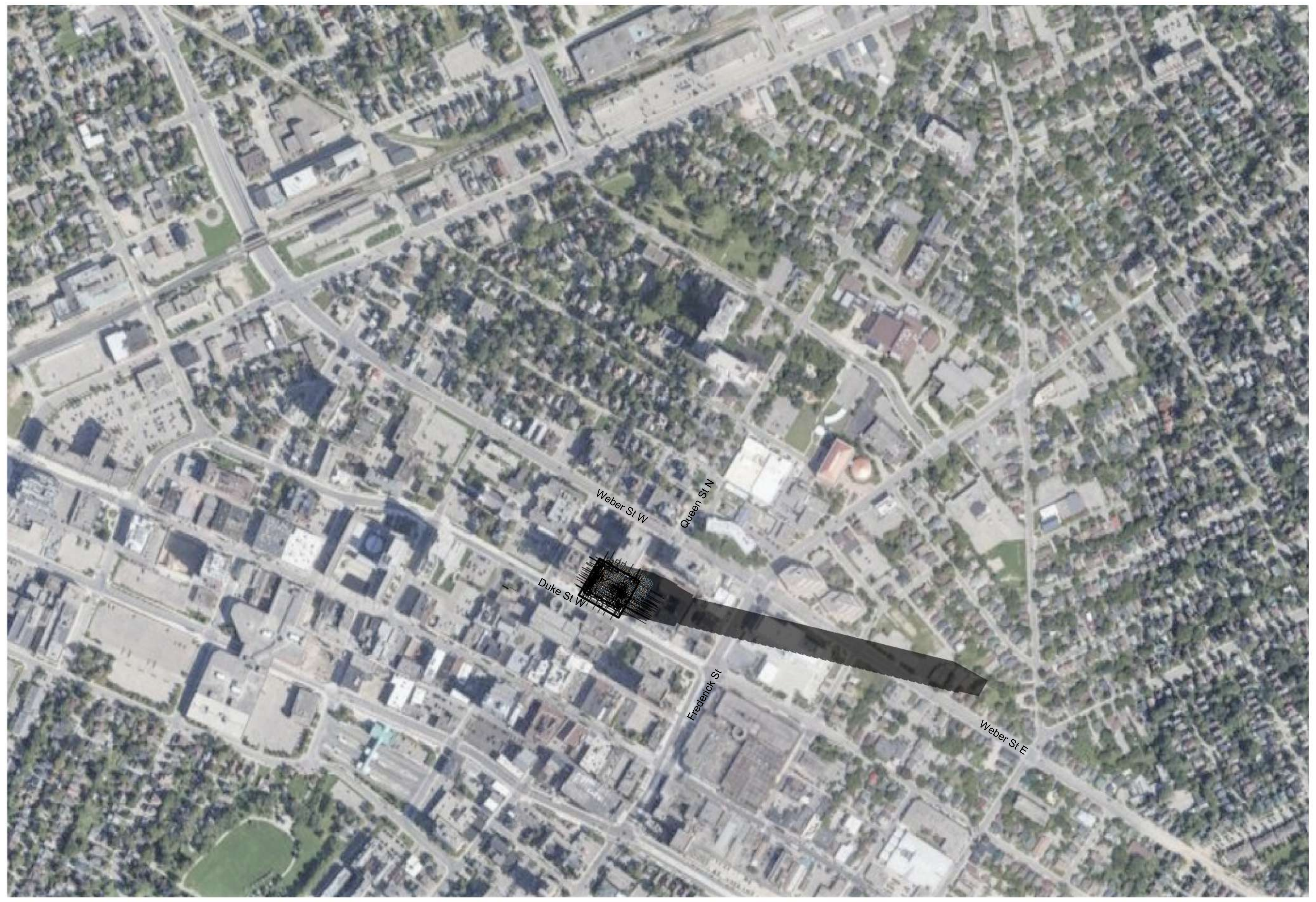

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VanMar CONSTRUCTORS INC.

PROJECT

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10 DUKE STREET WEST, KITCHENER, ON

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SHADOW STUDIES

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LICENCE
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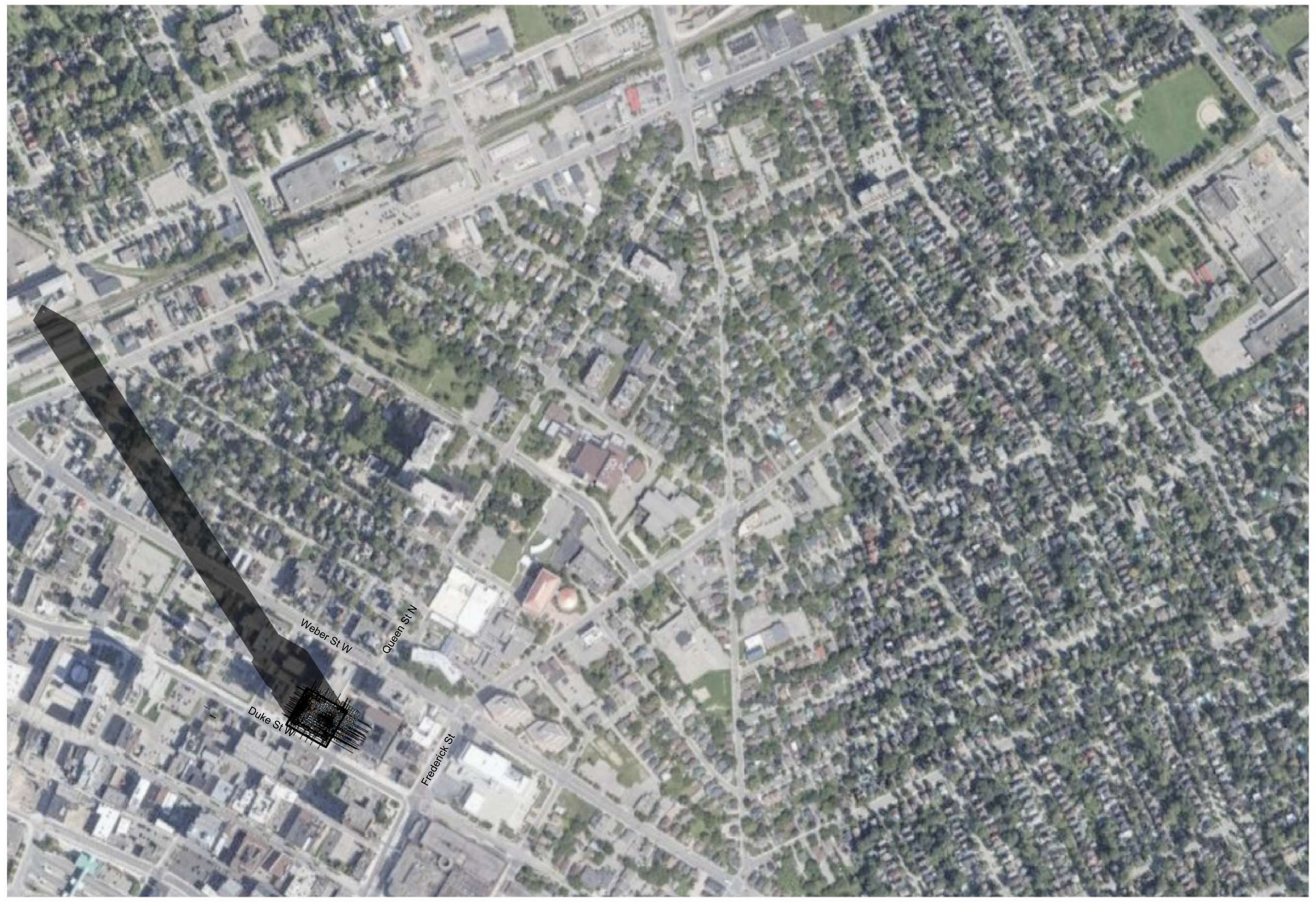

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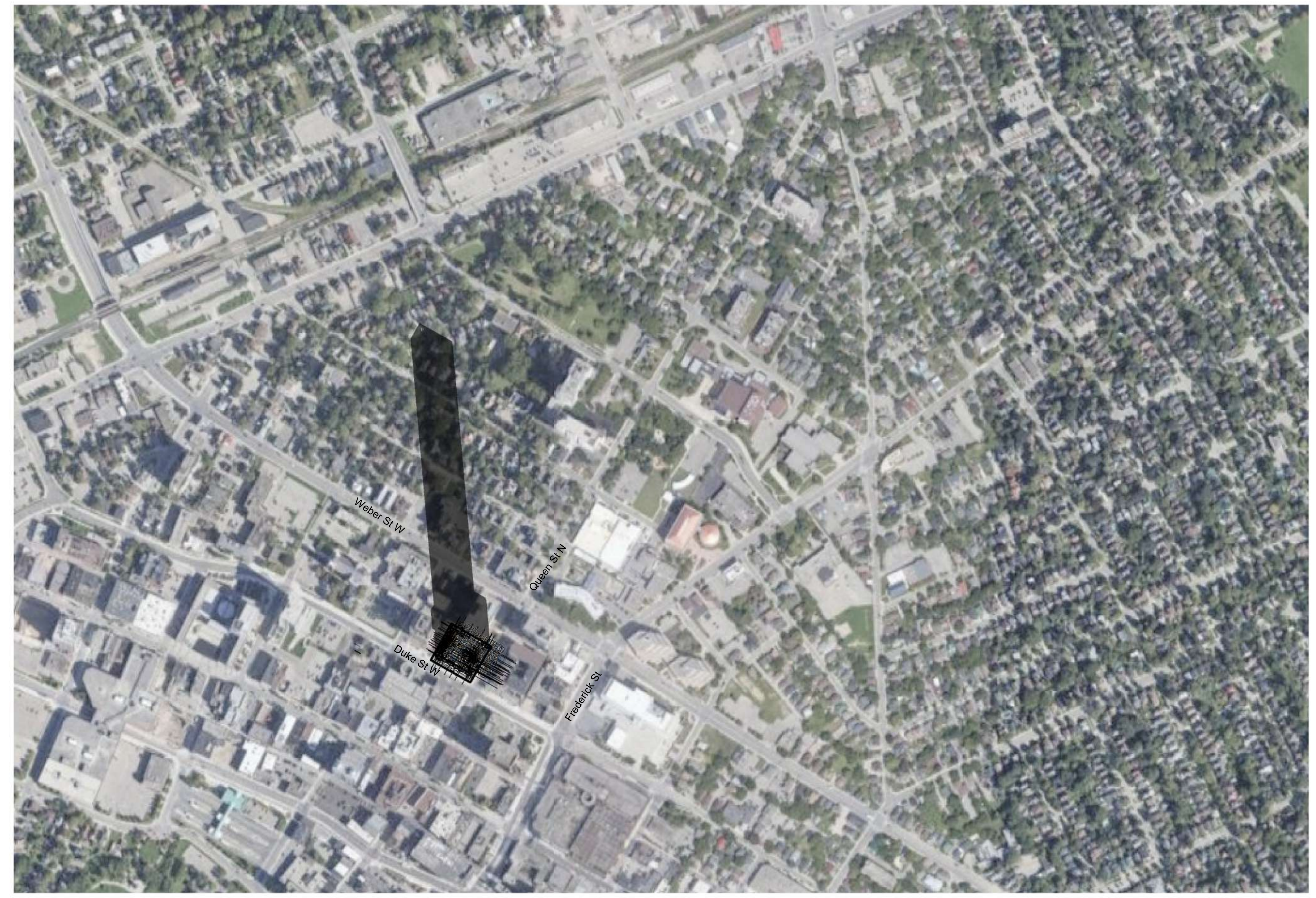

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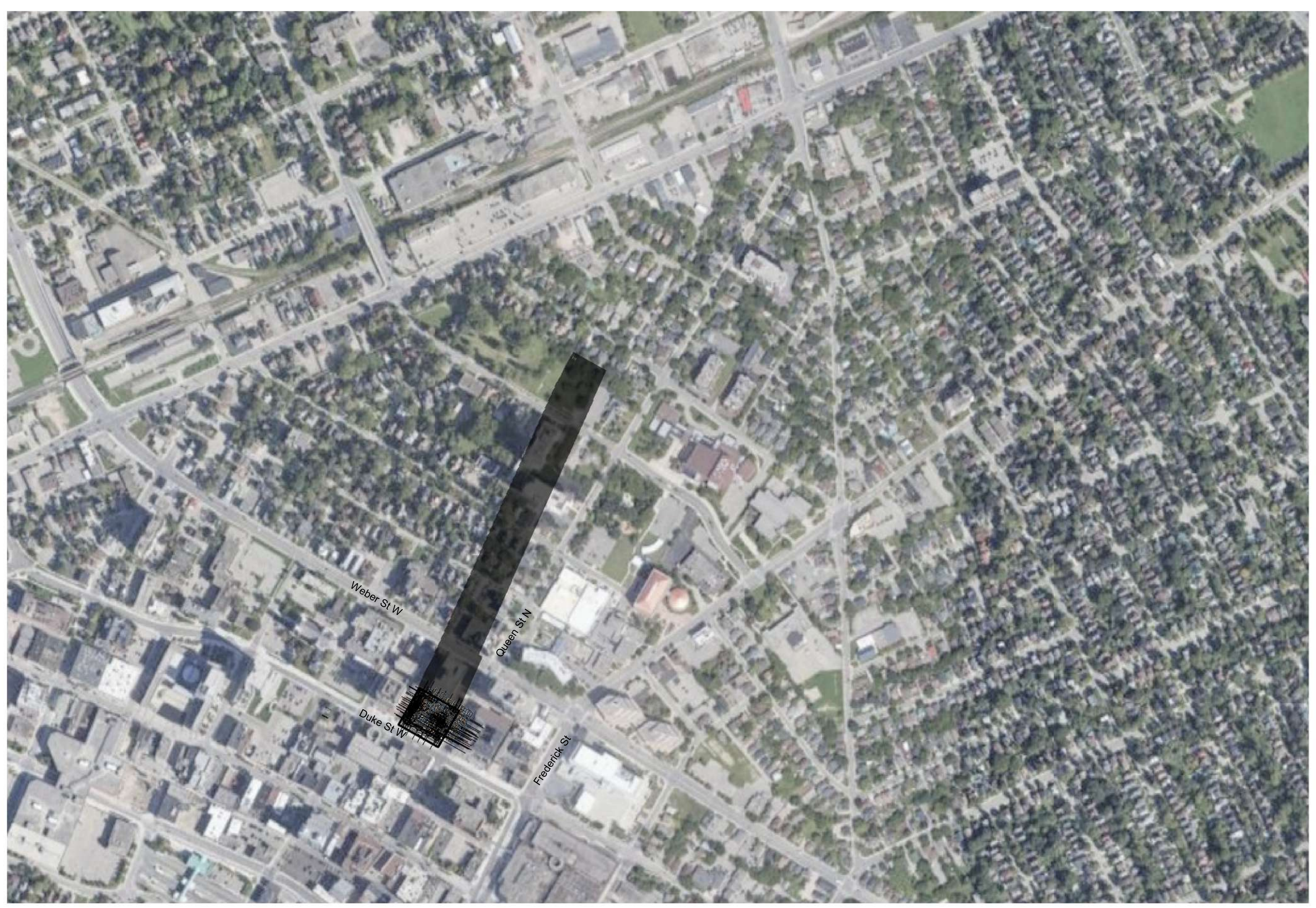

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PROJECT

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10 DUKE STREET WEST, KITCHENER, ON

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SHADOW STUDIES

PROJECT NO. 21.167CS
PROJECT DATE 2021-10-07
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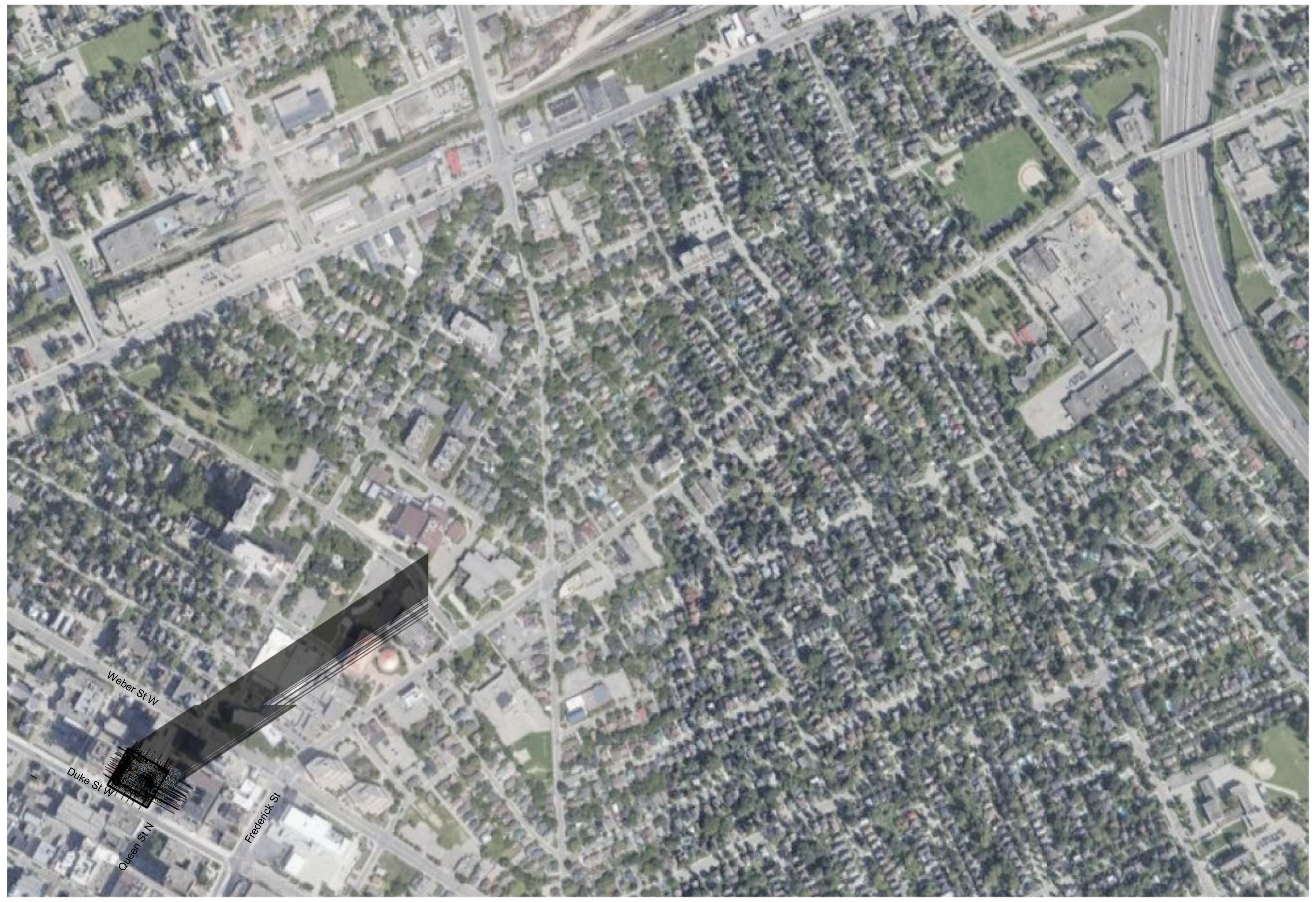

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PROJECT
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SHADOW STUDIES

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SPA816
REV.
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Appendix E: Existing Façade Retention Structural Assessment Report, December 4th, 2023 & Vibration Monitoring Plan, John G. Cooke & Associates, December 15, 2023

10 Duke Steet West
Kitchener, Ontario

Existing Façade Retention
Structural Assessment Report

Project No. 24012

Draft report issued November 17th, 2023

Final report issued December 4th, 2023

Report Prepared by:

JOHN G. COOKE & ASSOCIATES LTD.
CONSULTING ENGINEERS

TABLE OF CONTENTS

1. INTRODUCTION

John G. Cooke & Associates Ltd. (JCAL) was retained by VanMar Developments Inc. (VanMar) to provide consulting structural engineering services as it relates to the retention of portions of the primary façades of the existing building at 10 Duke Street West, in Kitchener, Ontario, for incorporation of these facades with a planned redevelopment on the site. The redevelopment will include the construction of a new tower that occupies much of the footprint of the existing building presently on the site.

VanMar's intent is to retain the existing masonry facades by primarily making use of the steel frame of the existing load-bearing masonry and steel-framed building, supplemented by temporary bracing and supports as necessary, until the façade may be secured to the new permanent structure (designed by other consultants), as construction of the latter progresses.

VanMar received conditional approval of their Site Plan Application - SP22/104/D/AP, the draft version of which, dated June 23, 2023 and available to JCAL, requires "That the Owner's Consulting Engineer … submit a Structural Assessment Report for 10 Duke Street West to be included within the Demolition and Stabilization Plan, … advising on the means and methods to be used to safely remove portions of the existing building and to avoid causing structural damage to the historic portions of the front facades…". This report is intended to satisfy that requirement and be the basis to develop the design further. Designs indicated herein are not for construction but are intended to show concepts and intents that will be developed further and coordinated more closely with the new construction, during production of a set of shoring and sequencing drawings for the purposes of pricing and construction.

JCAL was provided with some photographs of original drawings. These lacked several key details regarding the existing structure and JCAL first undertook an investigation to identify and confirm these details, along with condition of exposed elements that may impact the retention of the facades and the need for any restoration work that might be required in advance. This information was used in developing analytical models and the approach to the retention concept that is discussed herein.

2. TERMS OF REFERENCE

The scope of work for John G. Cooke & Associates Ltd. is based on JCAL proposal P23208, dated September 18, 2023.

3. METHODOLOGY

JCAL completed an investigation of existing conditions, identified applicable codes and standards to be referenced, and completed analysis of the existing and new temporary components to be used in the temporary support of the façade during the course of the new construction and retention.

3.1. Investigation

Jonathan Dee, P.Eng., CAHP of JCAL made an initial visit to the site on September 6, 2023, accompanied by representatives from VanMar and mcCallumSather, the heritage architects who have completed a Heritage Impact Assessment and Conservation Plan for the subject property.

Jonathan Dee and Andrew Azinovic, EIT revisited the site on October 18, 2023. Using hand-tools, investigatory openings were made in several locations where possible. Locations were identified for further investigatory openings, to be made using power tools and with the assistance of VanMar's forces.

These further openings were completed by VanMar at JCAL's direction, and reviewed by Jonathan Dee and Andrew Azinovic, throughout the course of the day on October 30, 2023. The investigation included primarily of the use of a chipper to remove interior terra cotta tile and plaster wall finishes

to view the enclosed structural elements and details, and to remove brick from the interior side of the exterior walls, to determine the construction and condition of the existing wall assembly.

3.2. Applicable Codes and Standards

The primary codes, standards, and guidelines referenced during and applicable to the production of work described in this report and for further development of the retention design are as follows:

- Ontario Building Code 2012, inclusive of latest effective amendments (the OBC)
- Structural Commentaries of the National Building Code of Canada, including Commentary L: Application of NBC Part 4 of Division B for the Structural Evaluation and Upgrading of Existing Buildings
- CSA A23.3-14 - Design of Concrete Structures
- CSA A371-14 - Masonry Construction for Buildings
- CSA S304-14 (R2019) - Design of Masonry Structures
- CSA S16-14 - Design of Steel Structures
- Standards and Guidelines for the Conservation of Historic Places in Canada, published by Parks Canada.

3.3. Analysis

The applicable wind load was calculated to OBC 2012, using a reduced importance factor of 0.75 for calculating loads for serviceability and deflections.

It is our opinion that seismic loading may be neglected during construction, given the brief construction period relative to the 2500-year return period for code-specified seismic loads. However, seismic considerations are relevant in the permanent attachment of the facades to temporary elements that may remain as part of the permanent structure. The applicable seismic load was calculated in accordance with OBC Article 4.1.8.18 for building elements and non-structural components. The applicable seismic loads were calculated, using seismic Site Class C as recommended in the geotechnical report (File no. G21270, Chung & Vander Doelen Engineering Ltd.), and it was determined the above-noted wind forces govern design.

Rigidity and stiffness requirements for the lateral support of the masonry generally governed design, and the limitations stipulated in CSA A371 were followed, of L/600 for unreinforced masonry where flexural stress is perpendicular to the bed joints (i.e., for bending in the vertical direction of the wall) and L/300 for unreinforced masonry where flexural stress is parallel to the bed joints (i.e. for bending in the horizontal direction of the wall).

Analysis of the existing and new temporary components to be used in retaining of the facades was carried out using procedures identified in the above-noted standards documents and using Bentley STAAD structural analysis software.

4. OBSERVATIONS

Observations made during our investigation that relate to the retention of the existing facades are documented below. Sketches of key typical existing details are included in Appendix A.

The building’s structure consists of one-way flat concrete slabs, spanning on steel floor beams. These beams are supported on two interior east-west lines of structural steel columns and, on the load bearing exterior walls at the perimeter of the building. A further general description of the building is otherwise documented in the Heritage Impact Assessment or Conservation Plan and is not repeated here.

4.1. Existing Concrete Slabs

The existing floor slabs were hammer drilled. While only a relatively small drill bit was available, these were measured as accurately as possible and found to be 127 mm (5”) thick and are believed to be overlain with a bonded floor topping for leveling, which is assumed to be on average 25 mm (1”) thick. The floor slabs span in the east-west direction, between floor beams.

These slabs were not scanned for reinforcing steel, but we believe they would contain smooth reinforcing steel bars parallel to the span direction, and temperature steel reinforcement in the opposite direction.

4.2. Existing Structural Steel Framing

4.2.1 Columns

The building’s columns are generally clad with terra cotta tile and plaster. Occasionally this has been overclad with newer drywall and steel studs. Openings were made to expose the structural steel columns within, at

- three locations above the Ground floor level,
- two locations above the 2nd floor level, and
- one location above the 3rd floor level.

The key findings are that the column steel is generally exposed behind the terra cotta tile, with no additional concrete encasing or coatings beyond the grey paint (see Fig. 1). A column splice, suspected to be present but not otherwise documented, was found at both openings made just above the 2nd floor level (see Fig. 2), and not at any of the openings on other floors. This splice location is believed to be typical at all columns and may act as a hinge in the column if not laterally supported in both directions at all times.

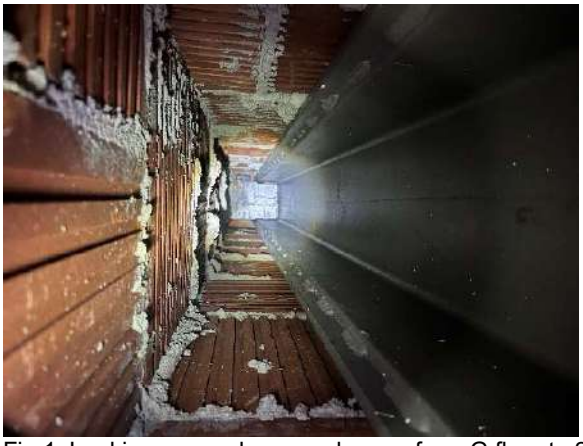

Fig 1: Looking up a column enclosure, from G floor to 2nd

Fig 2: Typical column splice, above 2nd floor

Below the splice, the columns were found to be wide flange profiles with welded top and bottom flange cover plates. The wide flange profile was measured to have a depth of approx. 225 mm and a flange thickness of approx. 19 mm, and the cover plates to be approx. 12 mm thick and 260 mm wide. These may be historic US 8” WF @ 58lbs/ft sections per the 1946 US Steel catalogue. For the purposes of analysis, these were conservatively analysed as modern W200x71 sections, plus the cover plates as measured, which is a similar but conservative selection.

Above the splice, at the 3rd floor opening the upper columns were found to be wide flange profiles with no flange cover plates. The wide flange profile was measured to have a depth of approx. 200 mm and a flange thickness of approx. 12 mm. These may be historic US 8”

WF @ 31 or 35 lbs/ft sections per the 1946 US Steel catalogue. For the purposes of analysis, these were conservatively analysed as modern W200x46 sections, which is a similar but slightly conservative selection.

4.2.2 Beams

The steel floor beams, present interior column lines and with an additional beam at the mid-span of each bay, were understood to bear on the exterior masonry walls. These beams are generally clad in metal lath and plaster with exposed steel beyond.

Openings in the ceiling and wall finishes around a typical beam were made below the 3rd floor beam bearing on the south exterior wall. Lath and plaster was removed and the interior wythes of brick were removed adjacent to the beam (see Fig. 3). As expected based on available documentation, but of significant value to the project to definitively confirm, no steel column within the wall was located. A steel bearing plate is present below the beam, and the beam was found to bear approximately 200 mm (8”), or the full depth of the two interior wythes of backup brick (see Fig. 4). Additionally, the top flanges of the floor beams are noted to be embedded above the soffit of the slab.

Fig 3: Typical beam bearing on brick backup at exterior wall

Fig 4: Typical beam bearing length on exterior wall

4.3. Wall Assembly

4.3.1 Foundation Wall

The foundation wall assembly was investigated at the interior of the basement, toward the east end of the south foundation wall, by removing a portion of the interior plaster and terra cotta (see Fig. 5). The wall assembly was found to consist of, from the interior:

- plaster,
- 76mm (3”) terra cotta tile,
- approx. 13 mm (1/2”) gap, and the
- concrete foundation wall.

Naturally, the removals did not extend through the concrete wall, but the exterior is finished with limestone, which is presumably bearing on a ledge in the concrete foundation wall. Dovetail tracks were noted to be present on the interior face of the concrete foundation wall, and one dovetail anchor was found extending into the terra cotta tile (see Fig. 6). This may suggest that dovetail anchors were used on the exterior stone as well, and future masonry conservation work should be mindful of the fact that dovetail anchors from this period are prone to inconsistent placement and corrosion.


Fig 5: Opening in terra cotta tile at foundation wall, interior


Fig 6: Looking down at opening, dovetail anchor

4.3.2 Above-Grade Masonry Wall

The above-grade load-bearing masonry walls were investigated from the interior, primarily with brick removals completed above the 2nd floor level, near the east end of the north wall, 2nd floor (see Figs. 7 and 8). The interior brick was very difficult to remove and therefore only one opening was made, and conditions were otherwise exposed during investigations of beam pocket and slab-wall interface.

The wall assembly was found to consist of, from the interior:

- plaster,
- 76mm (3") terra cotta tile,
- approx. 13 mm (1/2") gap,
- two wythes of concrete brick backup masonry, laid in common bond, and the
- exterior wythe of clay brick, laid in Flemish bond.

The interior terra cotta tile was noted to be anchored to the backup brick by way of corrugated ties, as one of these was located in the removal area. No ties were noted between backup wythes or to the exterior brick, and the brick wythes are believed to be tied together solely by way of header bricks.


Fig 7: Removals at above-grade masonry wall, interior


Fig 8: Angled view of opening shown in Fig 7.

4.4. Slab-Wall Interface

Determining the slab-wall interface is important to defining a removal methodology that will not impact the integrity of the existing walls and to determining a temporary and permanent approach to laterally securing these walls.

Removal of the interior terra cotta to expose the interior side of the backup brick masonry just above the slab was completed in two locations at the 2nd floor (see Figs. 9 and 10). The interior brick was removed in one location and the slab was noted to extend into the backup masonry. The terra cotta wall tile bears on the slab, and a topping appears to have been placed overtop of the slab. It's likely that the exterior brick wall was built up to the underside of slab level with the slab poured directly onto it.

We do not believe that removing the existing slab from the exterior walls is necessary and that doing so may result in unnecessary damage to heritage fabric.

Fig 9: Removals at slab level, S wall, above 2nd floor

Fig 10: Add'l removals of interior finishes at slab level

4.5. Masonry Condition

The backup brick masonry, consisting of the two interior wythes of concrete brick laid in common bond, where exposed in the above-noted investigatory openings, appeared to be in very good condition. Joints were well filled with mortar, including collar joints, the bricks and mortar were intact, and it was quite difficult to remove individual bricks.

The exterior wythe of brick consists of an extruded clay brick, laid in Flemish bond. The mortar joints are generally intact and in good condition, though there are localized areas of debonding and erosion. No signs of systemic delamination or outward displacement of the exterior wythe was noted, and it appears to be well bonded to the backup brick masonry.

The vertical brick piers in the exterior wythe of brick project slightly towards the exterior. We suspect that this projection is created by simply thickening the collar joint between the exterior and backup wythes. There is also a continuous vertical mortar joint up each side of these piers where they interface with the adjacent brick masonry. While this might be cause for some concern, a header is present at every other course and this is believed to be a true header, tying the wythes together and no systematic separation is noted along these piers. See Figures 11 and 12.

No investigation was carried out of the exterior stone cladding at cornices, foundation level, etc. Given the age of the building, these may be keyed into the backup masonry and/or anchored to the backup brick using strap or cramp anchors. Often in buildings of this age anchorage was only provided to the top of the stones. However, no systemic issues were observed of displacement of the stones, and no special care is believed to be required for these in terms of the retention.


Fig 11: Typical projection at brick pier


Fig 12: Typical continuous vertical joint at brick pier

5. RETENTION APPROACH

The overall approach to retaining the existing facades is to retain these in-situ while the new building is constructed within the footprint of the existing. In order to minimize retention costs and impact to exterior areas along the facades, the retention will make use of the existing structural steel framing along the walls to be retained. This will be supplemented with new temporary steel bracing and lateral support members. The existing floors will then be removed and replaced with new floors, at matching levels, at which point the lateral support of the existing walls may be transferred to these new floors.

5.1. Sequencing

Careful sequencing of the work is a key factor in the successful retention of the existing facades in-situ and is necessary to ensure that overall stability and adequate lateral support of the facades to be retained is maintained at all times. The order of operations is anticipated to proceed generally as follows:

1. Remove existing terra cotta tile and interior finishes to enable access to backup masonry and enclosed structural steel elements that will be part of temporary bracing system.
2. Core or cut holes in the roof and floors at piers and install vertical strongbacks from above, using a crane, at the interior face of the existing walls to be retained, where indicated, with
    a. full-height (spliced) strongbacks at braced bays and
    b. partial-height strongbacks at unbraced bays
3. Install temporary steel framing, including
    a. diagonal bracing within existing structural bays where bracing is identified to be installed,
    b. lateral bracing in both directions at all existing column splices, where existing columns are identified to be retained,
    c. lateral support angles to interior face of backup masonry, above all floor levels, and which angles will ultimately become part of the permanent anchorage for these façades.
4. Create separation cuts in the existing façade walls, at points where the existing facades will no longer be retained.
5. Complete the demolition of the portions of the building not to be retained or temporarily to remain as part of the temporary support system, including the facades (salvaging any stone or other material indicated for such), and following an engineered demolition plan.

6. Construct the raft slab in the basement, encasing the base of the remaining existing columns within the raft slab and securing the raft slab to the exterior foundation wall.
7. Remove and replace floors along the interior of the facades to be retained, one at a time, by:
    a. anchoring the vertical strongback at the unbraced bays to the wall at the position indicated, centered on the slab to be removed,
    b. saw-cutting the existing concrete slab to be demolished to free it from the walls to be retained,
    c. temporarily shoring and then cutting close to the walls the existing steel beams bearing on the walls to be retained,
    d. placing the new structural slab, casting around the columns to be temporarily retained,
    e. securing the new slab to the lateral support angles placed above each floor level, and
    f. repeating at the next floor, above.
8. Remove temporary steel bracing and strongback members, leaving the now-permanently affixed lateral support angles.
9. Cut off existing columns that were temporarily retained above the top of the raft slab, remove the columns, and infill new slab openings around them.

5.2. Temporary Bracing

The lateral support of the facades to remain during construction will make use of the existing structural steel, supplemented with temporary steel framing, as described below.

5.2.1 Bracing Within Existing Structural Bays

The existing column lines inboard of the façade walls to be retained will remain in-situ until the walls are laterally supported by the new permanent structure. Several of these column bays will be braced, in both the north-south and east-west directions, with new diagonal bracing members installed between the 2nd and 3rd levels, and from the 3rd floor to the roof level.

At unbraced bays, the existing and new slabs will act as diaphragms, to transfer lateral forces collected at these bays to the braced bays, noted above.

The bracing approach, developed to minimize the amount of bracing that is required, relies on the column bases to be encased within the raft slab, effectively resulting in a fixed connection.

5.2.2 Vertical Strongbacks

As confirmed during our investigation, there are no existing steel columns within the exterior walls to be retained. Vertical strongbacks, steel members placed against and anchored to the interior face of the walls, will be introduced at each column line along the walls to be retained, in order to serve the following functions:

- resolve axial tension and compression forces at braced bays, especially in order to resist tension forces that would otherwise be induced in the masonry by the diagonal bracing,
- bring forces collected by the lateral support angles at demolished floor levels to the diaphragms above and below the strongback, and
- provide an attachment point for the lateral support members perpendicular to the wall that brace the column splices to permit removal of the 2nd floor slab.

The strongbacks will be installed from above, through vertical pockets cored or cut into existing slabs at the interior face of the exterior walls, directly adjacent to the existing floor beams on column lines.

At braced bays, the strongbacks will be effective for the full height of the walls, with a splice between 2nd and 3rd floor levels. At the base of the strongback, they will be vertically and laterally anchored to the raft slab and/or inside face of the existing foundation wall.

At unbraced bays, the strongbacks will be set and repositioned as required to bridge from a removed floor to remaining and new floor diaphragms above and below, respectively.

5.2.3 Horizontal Lateral Support Angle at Existing Floor Levels

An angle will be placed along the full lengths of the walls to be retained, directly above each existing floor level, and anchored to the interior face of the walls with HILTI HIT-HY 270 or similar adhesive anchors.

The angle will span horizontally between vertical strongbacks on column lines. This angle is anticipated to be fairly large at L203x203x19, in order to meet stiffness requirements for lateral masonry support in this condition when slabs are removed.

Upon completion of each new floor slab, this angle and its anchorage to the wall will remain and be secured to the new floor slab.

5.2.4 Lateral Support at Column Splices

As noted in the observations section above, column splices were found above the 2nd floor level, at roughly the mid-height of the overall column, and this is believed to be typical of all existing columns. These splices will become unbraced upon removal of the 2nd floor.

It is necessary to ensure that lateral support remains in place at these splices, until the new 2nd floor structure is completed and may restrain the column or, if lateral support from the 2nd floor is not possible, until the existing column is no longer required.

The lateral bracing will consist of a horizontal steel member, spanning between all column splices along the column line parallel to the wall, and ultimately supported by a braced bay in that column line. In the direction perpendicular to the wall, the splice will be braced by a member that spans from the splice to the steel strongback at the interior face of the wall.

The bracing member will be sized in accordance with the strength and stiffness requirements in steel handbook's procedure for bracing assemblies, in accordance with CSA S16 clause 9.2.6.2.

5.2.5 Other Conditions, Miscellaneous Framing

There are isolated conditions where the typical bracing pattern may not apply, or may conflict with vertical elements in the new construction, such as stair and elevator shafts. These details will be developed as the concept is pushed into further design and as comprehensive temporary framing drawings are produced.

Further coordination with the overall building consultants will be required. We anticipate providing additional steel framing around these elements, or resizing of specific members to resist intermediate loads, should it not be possible to work around temporary framing, or where these new elements may not be relied upon to provide temporary lateral support.

5.3. Disconnecting Material to be Demolished/Removed

5.3.1 Terra Cotta Tile and Interior Finishes

The terra cotta wall tiles and interior plaster finishes, along with recent steel studs and gypsum board, as well as original and more recent ceiling finishes will need to be removed

from most areas in order to install members needed for the temporary stabilization of the walls to be retained.

These components are not load bearing, and they may be removed without impact to the balance of the wall assemblies or structural systems that must remain temporarily. Care must still be taken to make sure removal is completed safely, and to not leave sections of terra cotta tile vertically unsupported.

5.3.2 Wall Cutting and Demolition

The portions of the existing facades to remain must be separated from those portions that are to be demolished, prior to demolition. We propose to make this separation by way of saw-cutting, at an appropriate mortar joint line in the exterior wythe, in a position that will not leave partial bricks or stone fragments with less than a 1:1 aspect ratio of length to course height. The saw cut will penetrate the full depth of the masonry wall assembly.

Upon completion of the cutting, it will be necessary to consolidate the wall ends, by raking out any loose mortar and filling these and any existing voids with new mortar. Additional anchorage will also be provided to secure the cut ends of any stone units to the backup brick.

Finally, we recommend temporarily capping the wall ends with plywood and a membrane, to mitigate water infiltration and any resulting damage until these ends are permanently tied into the building's wall envelope.

5.3.3 Removal of Slabs and Beams

The portions of floor slabs to be demolished must be separated from those portions that will remain temporarily as part of the bracing system. We propose that this be achieved by saw-cutting, in continuation of the line of cutting in the walls.

As the existing floor slabs and beams are pocketed into the facades to be retained, we propose to cut these free at the appropriate times, by saw-cutting along the slab edge near to the wall, and by cutting the beams free from the walls. The remaining stubs of slabs and beams would remain in the walls.

While the slabs are concrete and pose little concern, the beam ends do carry the potential for future corrosion, causing future corrosion jacking of the masonry to be preserved. However, we note that where exposed, the embedded beam end showed only minimal surface corrosion, we noted no significant evidence of corrosion jacking at present. Additionally, the effort and impact to the heritage fabric from attempting to remove these beam ends now would be similar to the effort required to complete this work in the future, if it ever becomes required. For these reasons, we propose to retain the beam stubs within the walls.

6. DISCLAIMER & LIMITATIONS

This report is based on and limited to information supplied to John G. Cooke & Associates Ltd. by VanMar Developments Inc. personnel and representatives, and by observations made during walk-through inspections of the subject property. Only those items that are capable of being observed and are reasonably obvious to John G. Cooke & Associates Ltd. or have been otherwise identified by other parties and detailed during this investigation can be reported.

The work reflects the Consultant's best judgment in light of the information reviewed by them at the time of preparation. There is no warranty expressed or implied by John G. Cooke & Associates Ltd. that this investigation will uncover all potential deficiencies and risks of liabilities associated with the subject property. John G. Cooke & Associates Ltd. believes, however, that the level of detail carried out in this investigation is appropriate to meet the objectives as outlined in the request. We cannot guarantee the completeness or accuracy of information supplied by any third party.

John G. Cooke & Associates Ltd. is not investigating or providing advice about pollutants, contaminants, or hazardous materials.

This report has been produced for the sole use of VanMar Developments Inc. and cannot be reproduced or otherwise used by any third party unless approval is obtained from John G. Cooke & Associates Ltd. No portion of this report may be used as a separate entity; it is written to be read in its entirety.

We trust this report covers the scope of work as outlined in our Terms of Reference. Should there be any questions regarding this report, or if we can be of any further assistance to you, please contact us.

JOHN G. COOKE & ASSOCIATES LTD.

Jonathan Dee, P. Eng., ing., CAHP
Principal

JD/jd
24012/10 Duke - Structural Assessment Report

APPENDIX A

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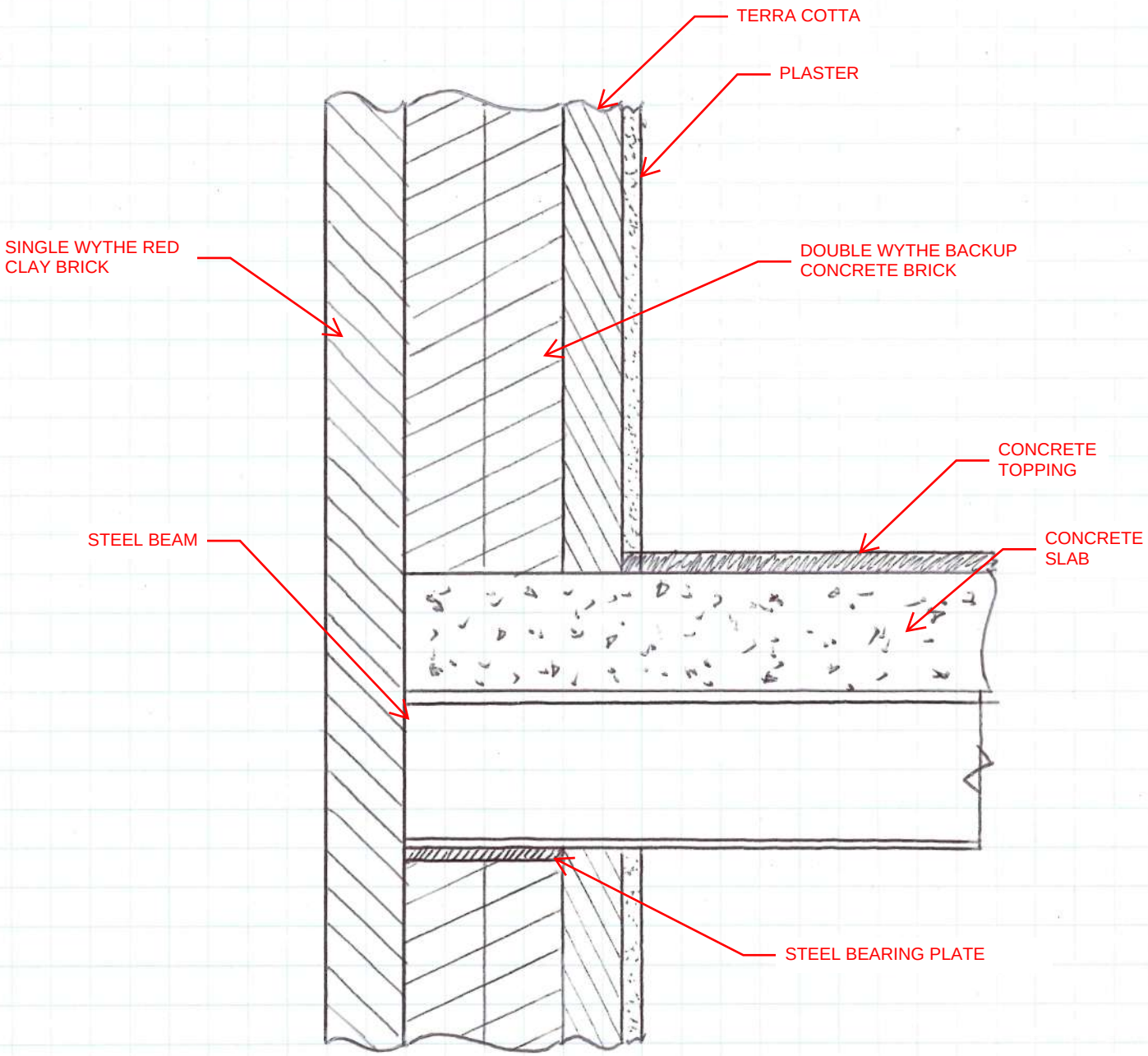
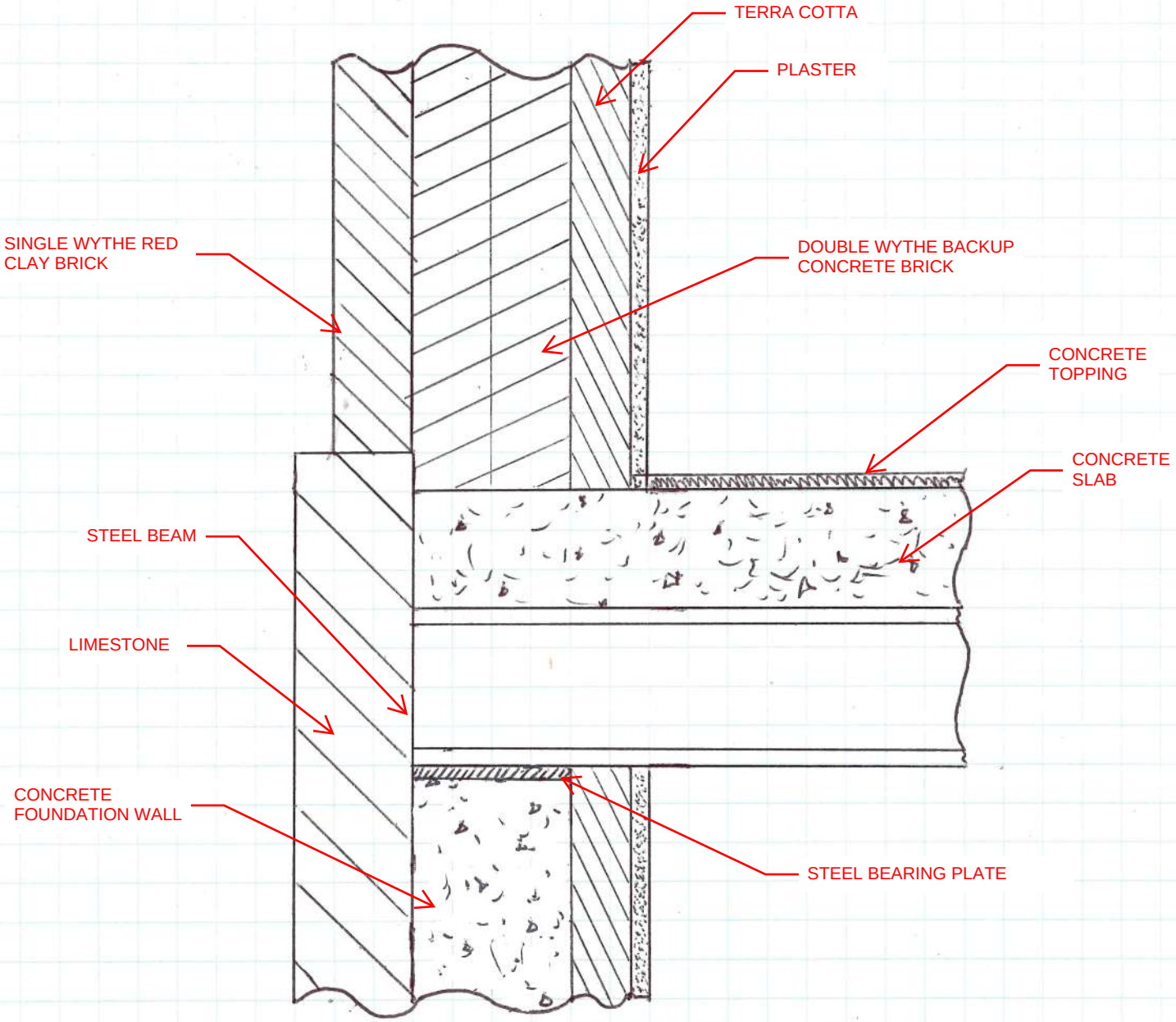
SKETCHES OF TYPICAL EXISTING KEY DETAILS



SLAB - WALL CONNECTION - TYP.

24012
Andrew Azimov's
Nov. 3/23



SLAB-WALL CONNECTION - BASEMENT

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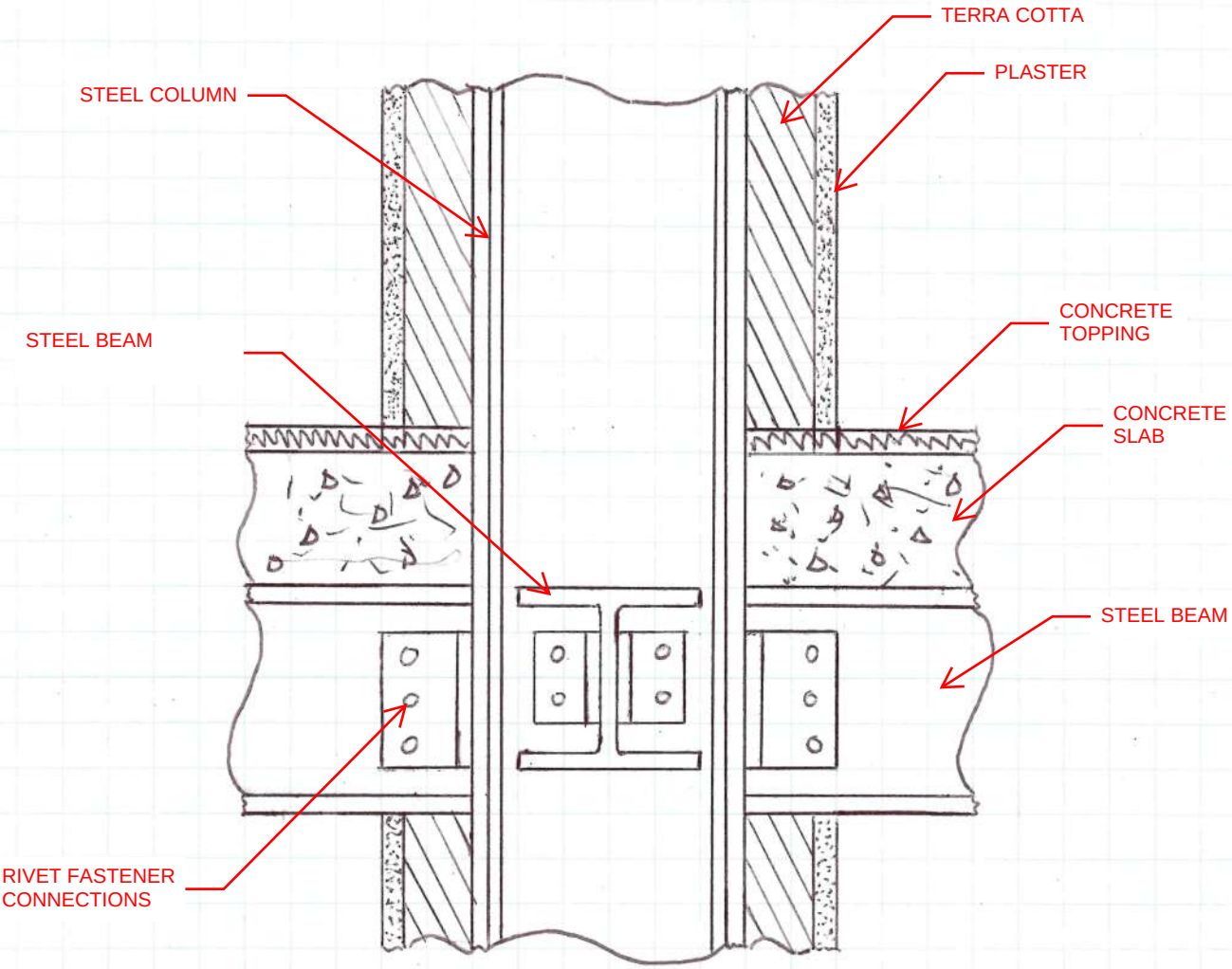
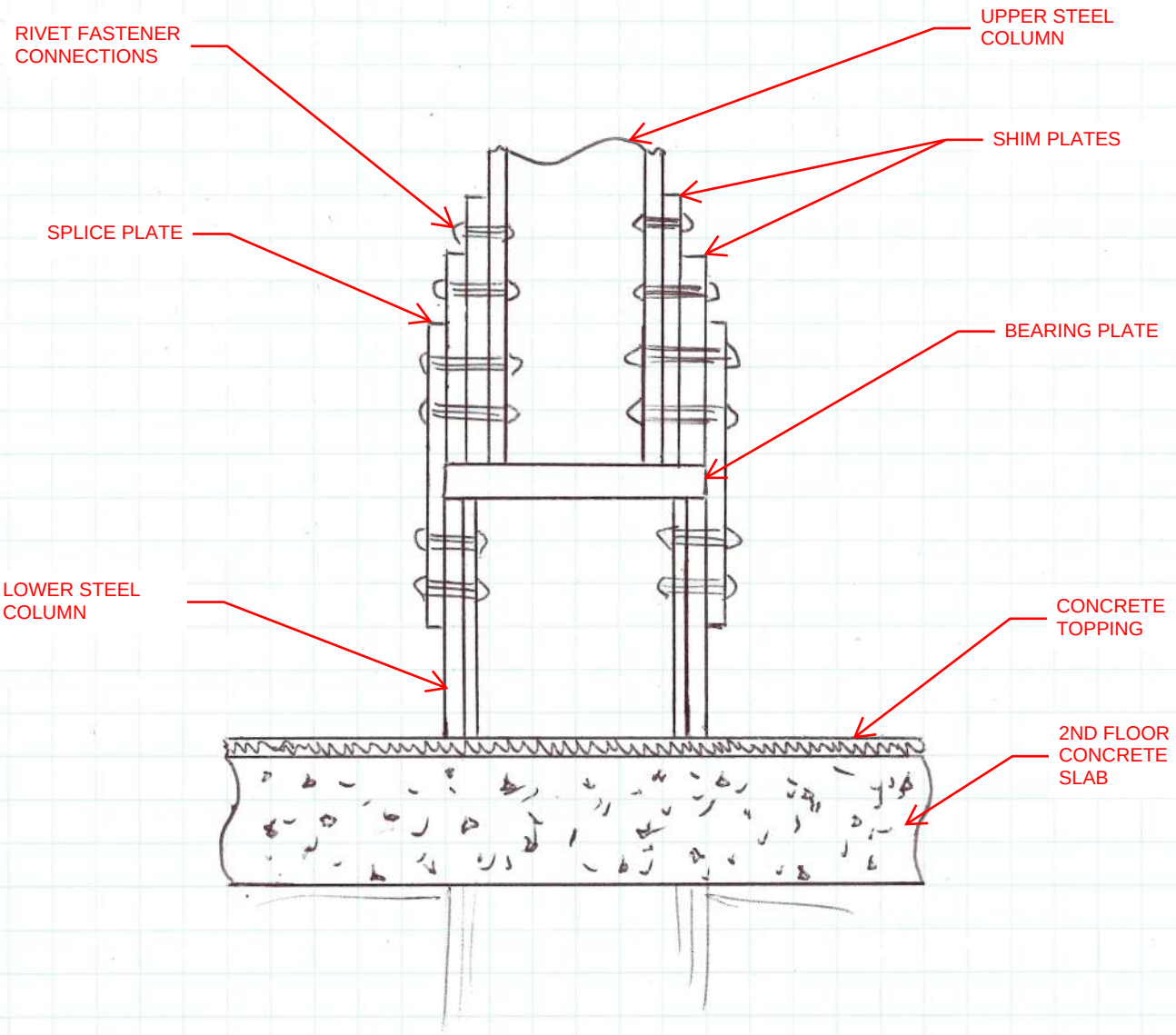
Andrew Azironic
Nov. 3/23



SLAB - COLUMN CONNECTION - TYP.

24012
Andrew Azinovic
Nov. 3/23

NOTE:
TERRA COTTA, PLASTER FINISH, ETC. NOT SHOWN FOR SIMPLICITY.



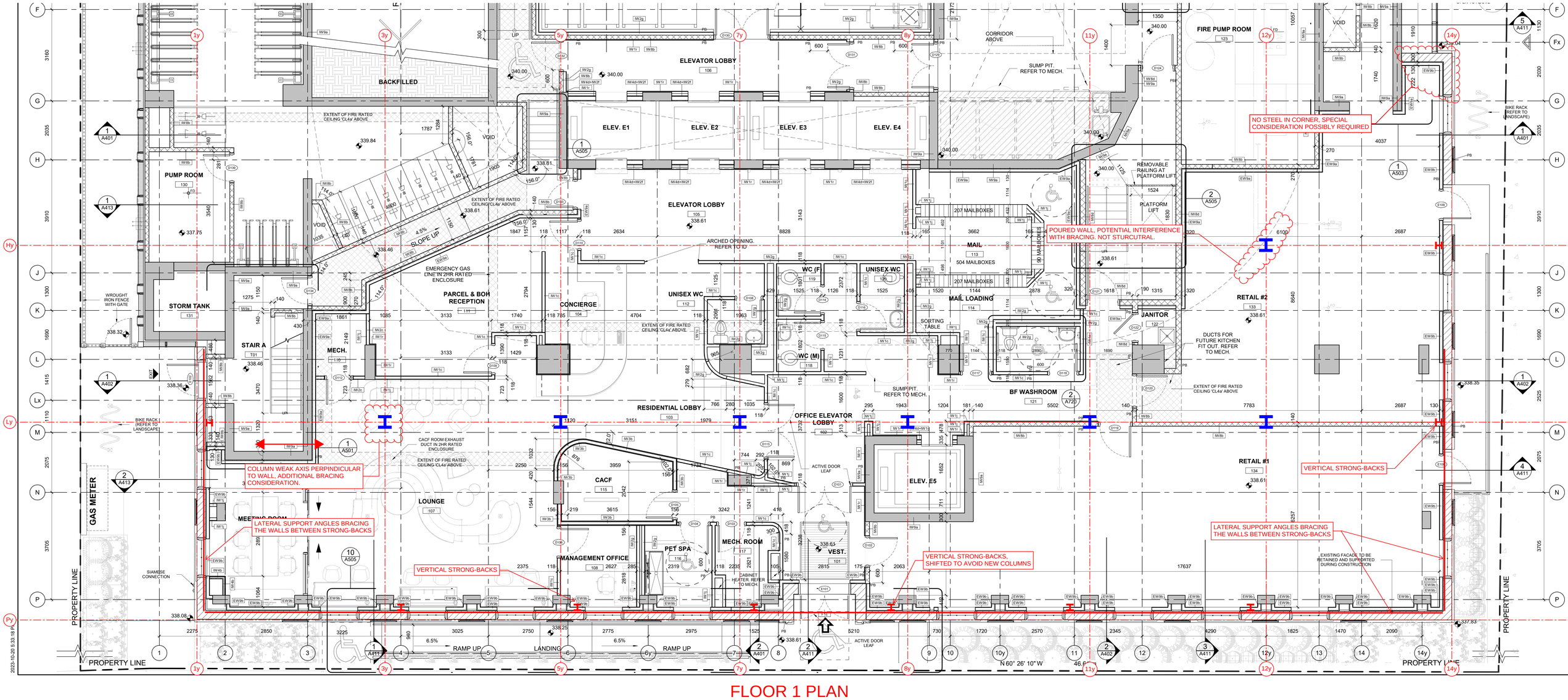
COLUMN SPLICE – ABOVE 2nd FLOOR

24012
Andrew Azimovi
Nov. 3/23

APPENDIX B

-

RETENTION FRAME CONCEPT SKETCHES



FLOOR 1 PLAN

2023-10-20 5:33:19 PM

ELEVATOR LOBBY
207
VOID
ELEV. E1
ELEV. E2
ELEV. E3
ELEV. E4
OPEN TO LOADING BELOW
CORRIDOR
206
CORRIDOR
204
COMMERCIAL ELEC.
205
NO STEEL IN CORNER, SPECIAL CONSIDERATION POSSIBLY REQUIRED
OFFICE MECH.
210
EXTENT OF FIRE RATED CEILING 'CL4a' ABOVE
STORM TANK
211
STAIR A
VOID
RAMP UP
OPEN TO BELOW
PIPE SHAFT
GAS RISER
WASHROOM
203
WASHROOM
202
VEST.
OFFICE
201
ELEV. E5
NEW WALL, POTENTIAL INTERFERENCE WITH BRACING.
COLUMN LATERAL SUPPORT BEAM, PLACED AT EXISTING COLUMN SPLICE
SEQUENCE SHORING REMOVAL WITH WALL CONSTRUCTION
LATERAL SUPPORT ANGLES BRACING THE WALLS BETWEEN STRONG-BACKS
VERTICAL STRONG-BACKS
BRACED BAY
LATERAL TIES, SHIFTED TO AVOID NEW COLUMNS
VERTICAL STRONG-BACKS, SHIFTED TO AVOID NEW COLUMNS
BRACED BAY
LATERAL SUPPORT ANGLES BRACING THE WALLS BETWEEN STRONG-BACKS
VERTICAL STRONG-BACKS
EXISTING FACADE TO BE RETAINED AND SUPPORTED DURING CONSTRUCTION
PROPERTY LINE
PROPERTY LINE
PROPERTY LINE
PROPERTY LINE
AND BELOW
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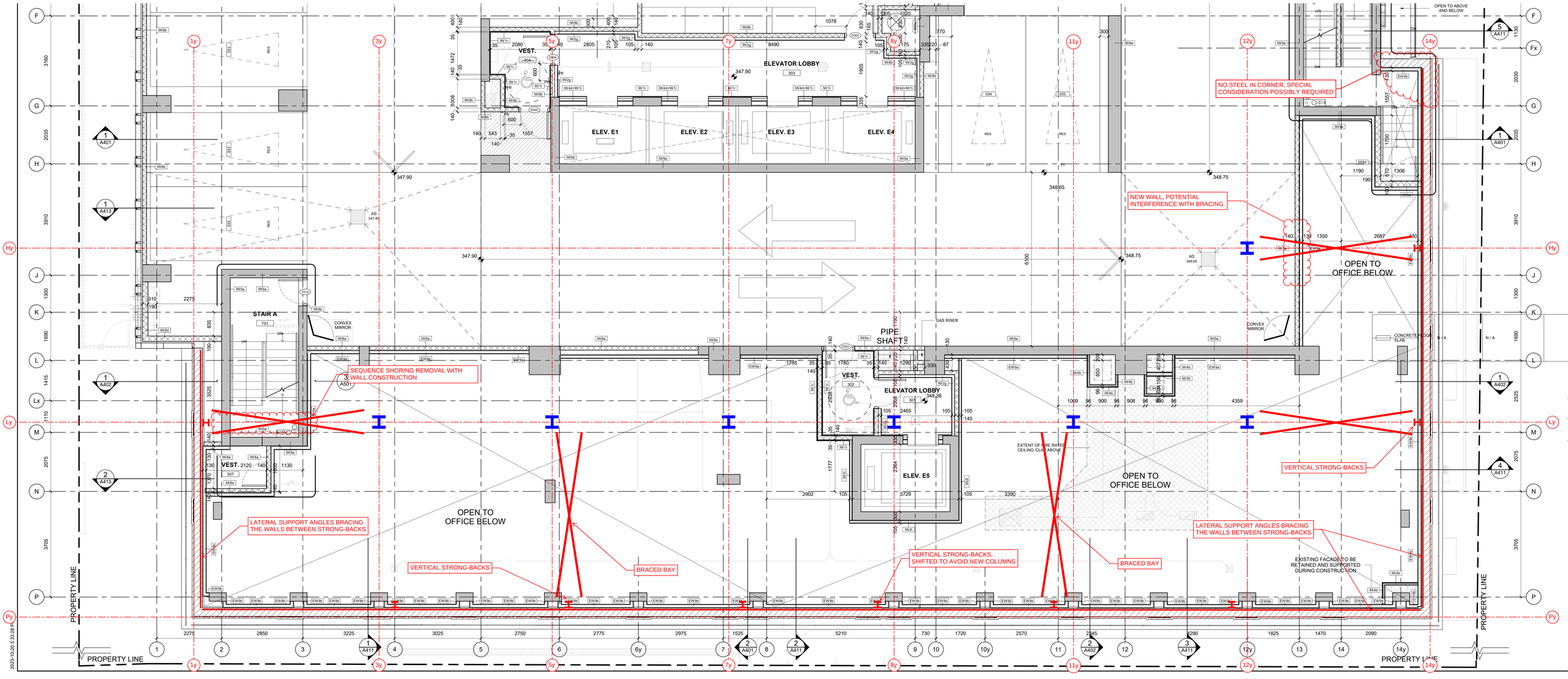
FLOOR 2 PLAN



FLOOR 3 PLAN

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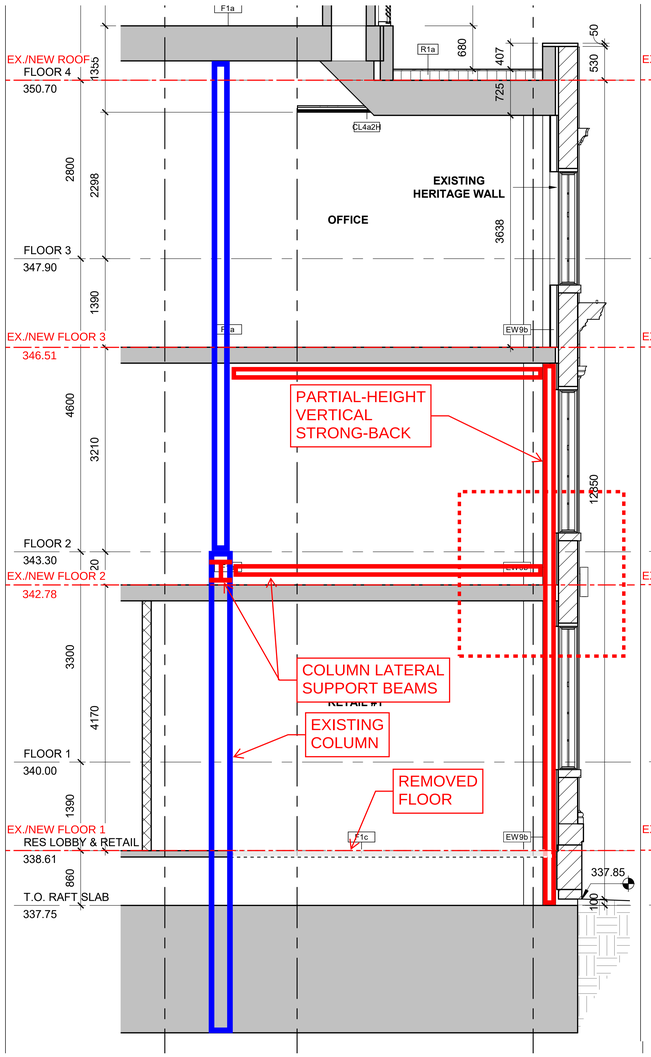
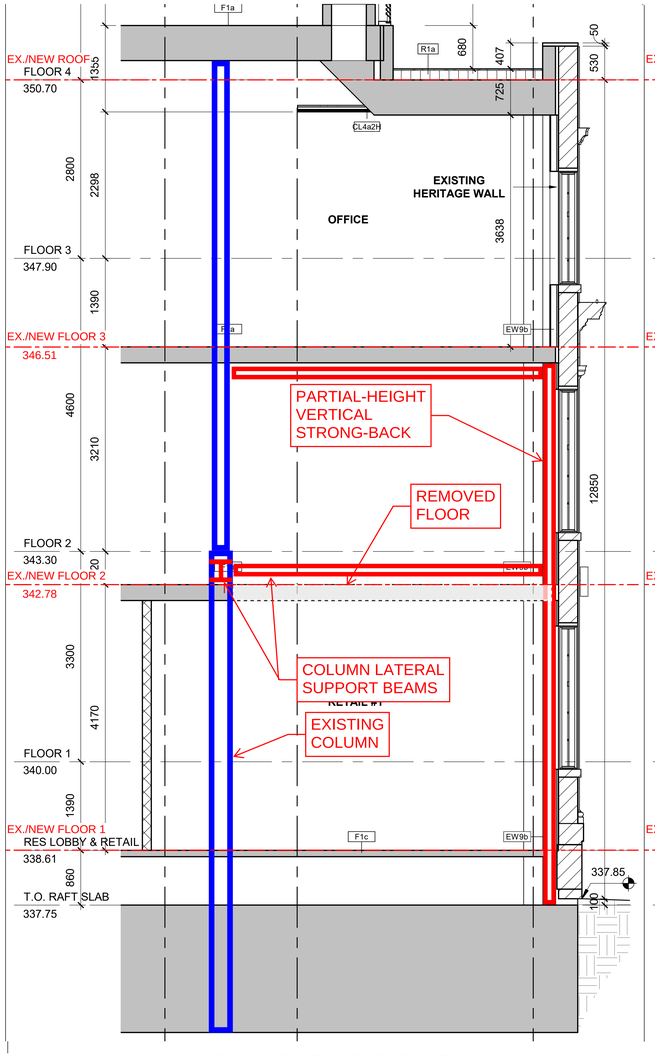
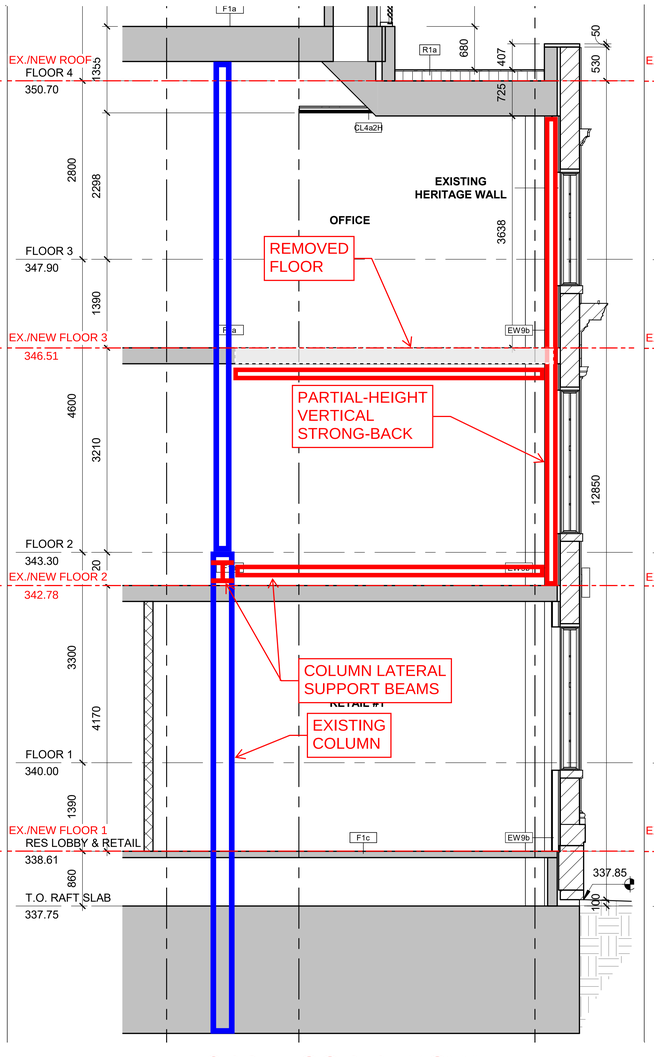
TYPICAL UNBRACED BAY SEQUENCING



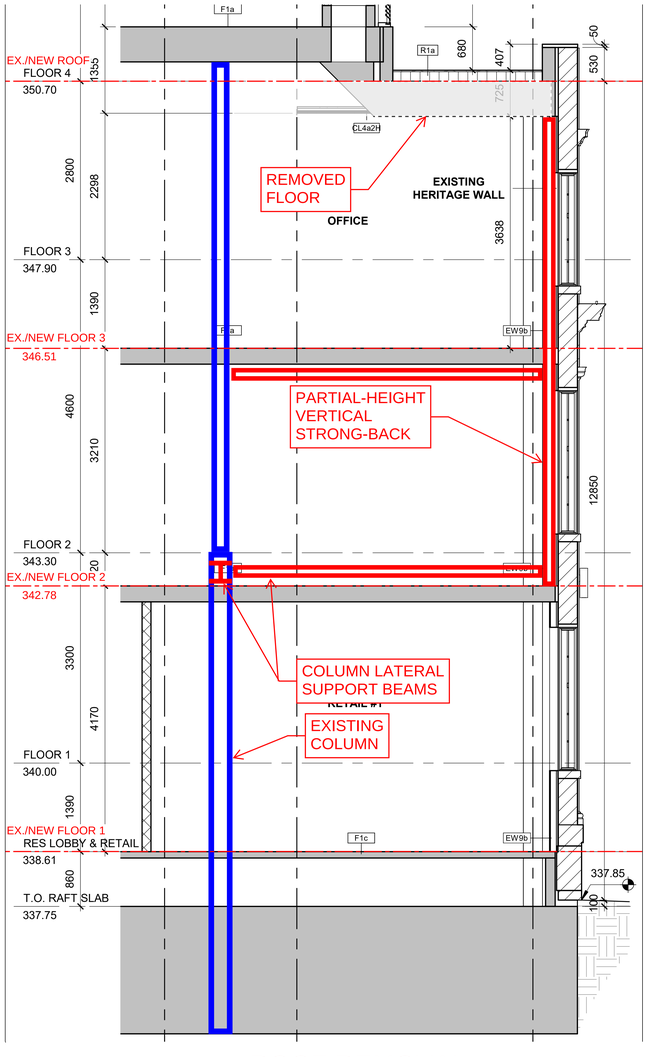
MAIN FLOOR REMOVAL



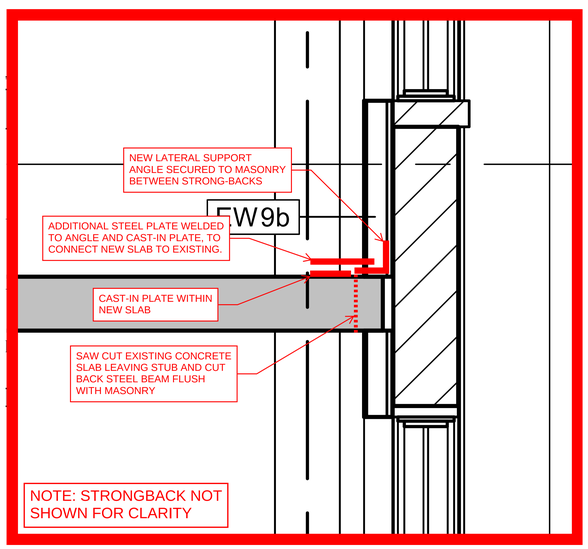
2ND FLOOR REMOVAL



3RD FLOOR REMOVAL

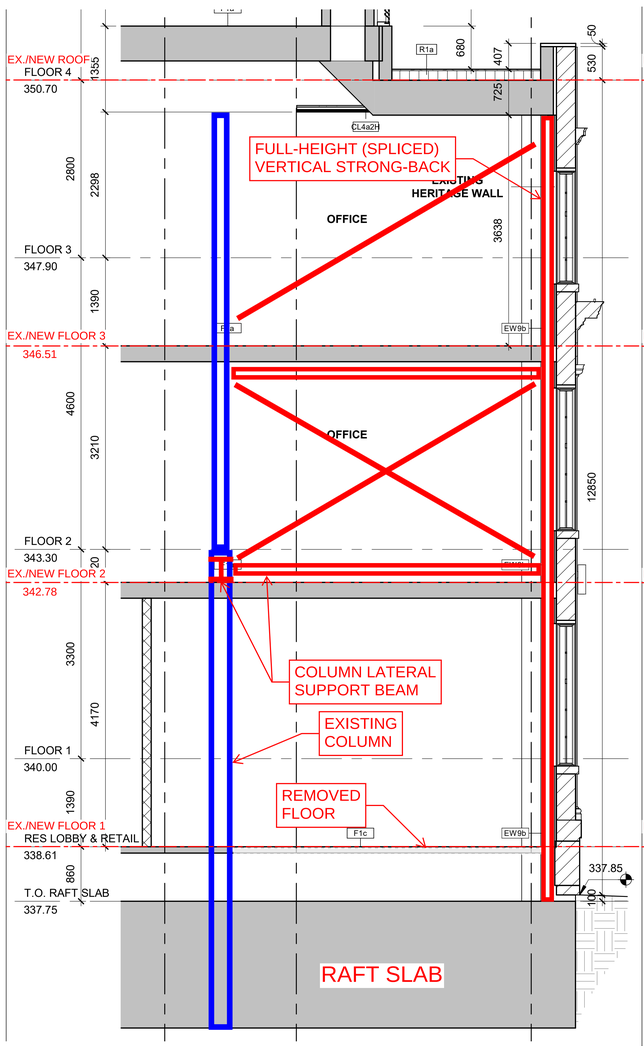


ROOF REMOVAL

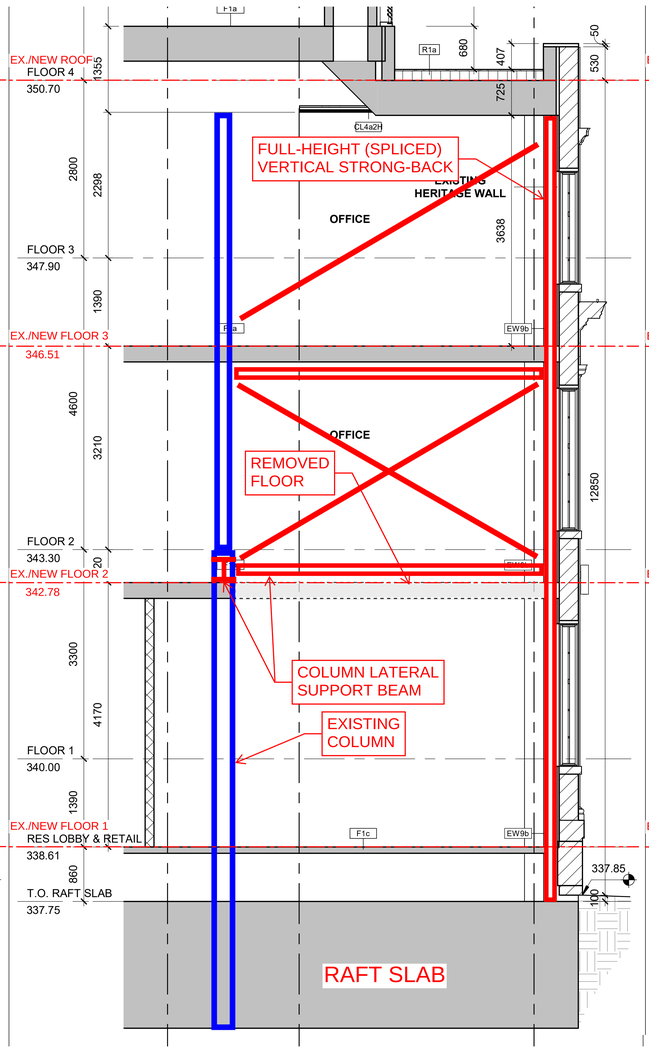


NEW SLAB CONNECTION, TYP.

TYPICAL BRACED BAY SEQUENCING



MAIN FLOOR REMOVAL



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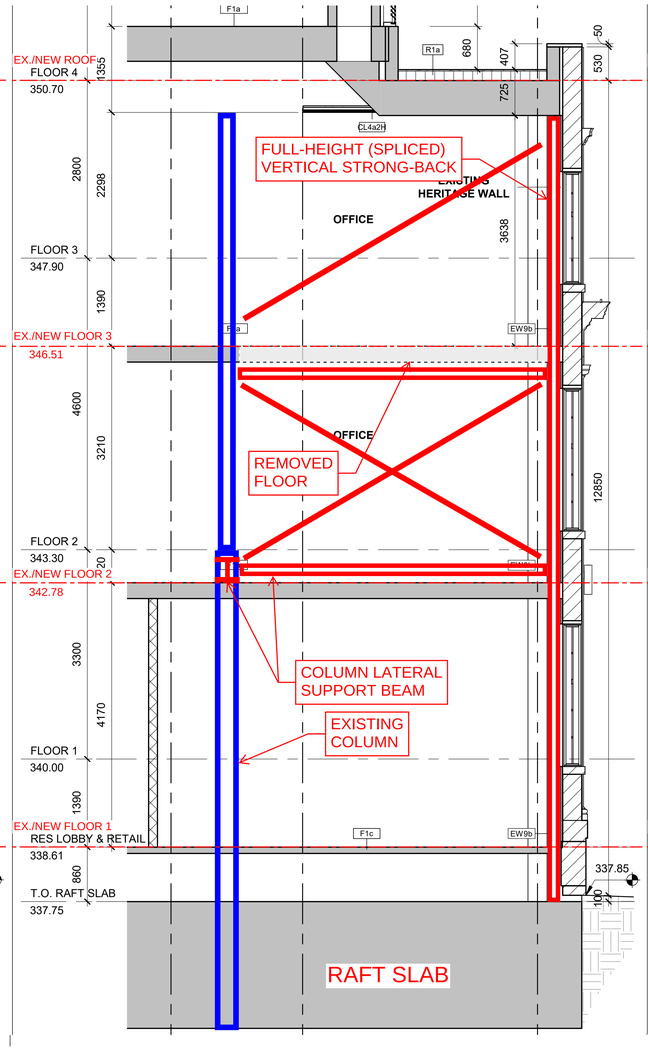
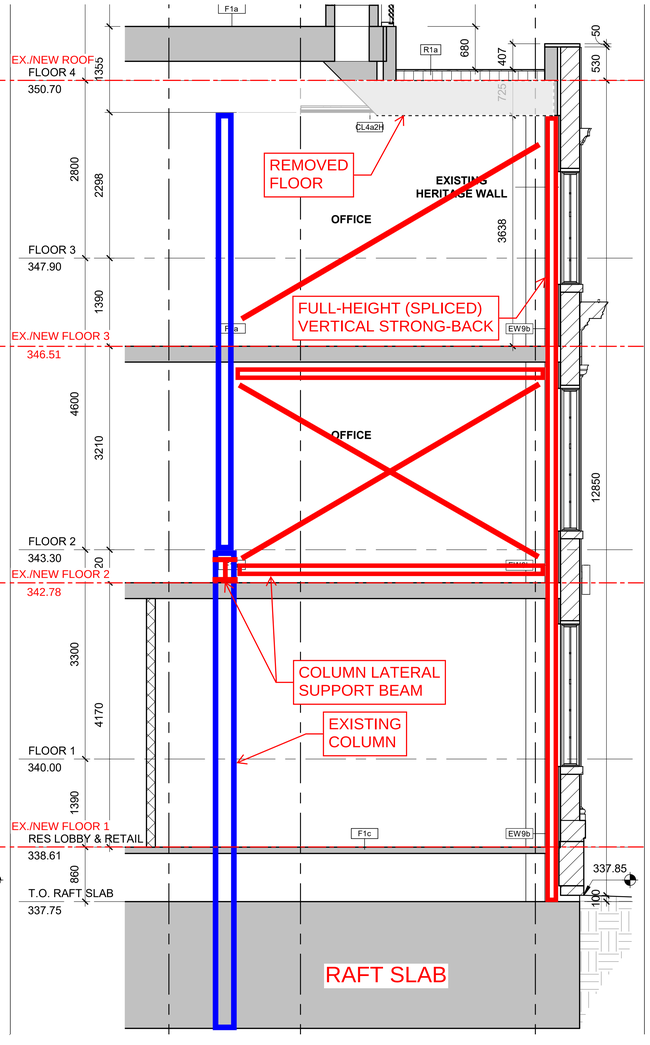


3RD FLOOR REMOVAL



ROOF REMOVAL

10 Duke Steet West
Kitchener, Ontario

Existing Façade Retention
Vibration Monitoring Plan

Project No. 24012

Draft report issued December 15th, 2023

Final report issued December 15th, 2023

Report Prepared by:

JOHN G. COOKE & ASSOCIATES LTD.
CONSULTING ENGINEERS

1. INTRODUCTION

John G. Cooke & Associates Ltd. (JCAL) was retained by VanMar Developments Inc. (VanMar) to provide consulting structural engineering services as it relates to the retention of portions of the primary façades of the existing building at 10 Duke Street West, in Kitchener, Ontario, for incorporation of these facades with a planned redevelopment on the site. The redevelopment will include the construction of a new tower that occupies much of the footprint of the existing building presently on the site.

VanMar received conditional approval of their Site Plan Application - SP22/104/D/AP. The draft version of this approval, dated June 23, 2023 and provided to JCAL, included Heritage Planning Conditions which require

> *[t]hat the Owner submits a Risk Management Plan, including a Vibration Monitoring Plan commenting on the means and methods that shall be used to minimize vibration to 10 Duke Street West during grading, construction, servicing or other site development works to the satisfaction of the Manager of Development Review and the City's Heritage Planner.*

This report is intended to satisfy the requirement for a Vibration Monitoring Plan.

Further to other conditions in the Site Plan Application approval, JCAL has already completed an investigation of the subject site, including destructive exploratory openings, and prepared a Structural Assessment Report, dated December 4th, 2023.

Design progress drawings for the new tower have been completed and reviewed by JCAL, to 75% progress at the time of this writing. A geotechnical report (File no. G21270, Chung & Vander Doelen Engineering Ltd.) has been prepared and also reviewed by JCAL.

2. TERMS OF REFERENCE

The scope of work for John G. Cooke & Associates Ltd. is based on JCAL proposal P23208, dated September 18, 2023.

3. EXISTING CONDITIONS

JCAL completed an investigation of existing conditions at the subject site. Observations made during that investigation are more comprehensively described in our Structural Assessment Report. A summary of the relevant facts are included in the discussion below.

The existing building is constructed predominantly of one-way concrete slabs, supported by steel beams, which are supported by interior steel columns and, at the building perimeter, load-bearing multi-wythe brick masonry exterior walls. The exiting building is a 3-storey building plus a full-height basement level.

The existing exterior walls are in good condition where visible on the exterior, and where exposed during investigatory openings made at the interior. The walls consist of an exterior wythe of clay brick with two backup wythes of concrete brick at the interior. These are bonded together with regular header bricks. Mortar joints remain generally intact, except for localized areas. and openings at the interior revealed a well-constructed wall assembly with solid mortar present in the head and collar joints. Stone masonry is included at details such as bands, sills, and surrounding the main entrance.

Localized repointing and other conservation work will be required as part of the preservation and retention of the relevant portions of the existing facades, including at stone details and throughout the masonry. No bulging, significantly displaced stones, or excessively deteriorated or unstable

masonry was noted that would cause us to consider this building to be especially vulnerable to vibrations. Masonry conservation work is not expected to be required in advance of construction.

One caveat is at the parapet which extends above the roof level. The interior face of the parapet is fully covered with metal flashing. While it was not possible to assess the masonry at arms-length from the exterior, and mortar joints here do appear to be generally intact, there is some efflorescence at the exterior of the parapet. This is an indication of high moisture content and migration, suggesting a higher likelihood of deterioration of masonry within the core of the wall. There is nothing to suggest a deviation from the course of action proposed herein, but the condition of this parapet will be monitored and assessed further, as work is ongoing on this project.

4. PLANNED CONSTRUCTION

As noted in the Introduction section, above, the project includes the planned retention of a portion of the primary facades of the existing building at 10 Duke St W, for integration with a new tower to be constructed on the site. The project's intent is to retain the existing facades by primarily making use of the steel frame of the existing load-bearing masonry and steel-framed building, supplemented by temporary bracing and supports as necessary, until the façade may be secured to the new permanent structure (designed by other consultants), floor by floor, as construction progresses.

The interior finishes in the building are typically applied to a terra cotta tile backup placed with an approximately 25 mm gap to the interior wythe of backup brick. As part of the work to stabilize the façade and to integrate it with new wall assemblies, it is proposed to remove this terra cotta tile and all finishes. As such, impact to plaster or other finishes are not a consideration in determining the vibration susceptibility of the building.

The new tower will be constructed with a raft foundation, the base of which will be set close to the basement level of the current building. The raft will occupy much of the height of the current lower level of the building, and, aside from elevator pits, the occupiable space of the building will generally extend from approximately grade level and above. The geotechnical report indicates that native soil on the site consists generally of fine granular deposits and silty clay till. It is clear that rock will not be encountered for the proposed depth of excavation.

As a result of the foundation and soil conditions, excavation is anticipated to be relatively minimal. It is further understood, as communicated by VanMar, that the limited excavation that will be required will proceed using sloped excavations. Certainly, no blasting or hoe ramming of rock is anticipated to be required.

Currently, there is a basement mechanical/boiler room within the existing building that extends further below grade than typical conditions, approximately an additional floor level below grade. This room is located against the North (rear) wall of the building and extends for approximately 10m in each direction (about 1½ structural bays). The brick chimney which extends up beyond the roof is quite visible and is located at the northeast of this room. It will be necessary to fill and level the subgrade prior to construction of the raft slab, and the geotechnical report provides two potential options for infilling at this room, to bring it flush with the remaining basement. The first is to place lean mix concrete for the height required, and the second is to place heavily compacted granular fill. VanMar have indicated that they will place lean mix concrete to fill this void, which would not result in significant vibrations being induced, as the costs are quite comparable between the options.

Overall, vibration from excavation is expected to be relatively minimal. General vibration from other construction is expected to stem from miscellaneous construction equipment and activities, such truck traffic adjacent to the facades retained in-situ, and no special circumstances are anticipated to apply.

Localized vibration may be induced from demolition and construction activity near the masonry to be retained. The bracing and construction sequencing and the design of temporary lateral support for the existing masonry facades to remain in-situ are also being prepared by JCAL. Provisions for saw or torch cutting of masonry, concrete, and steel elements connecting to the masonry to be retained will be included. Specifically,

- saw cuts will be introduced in masonry walls at the interface with masonry to be retained before demolition is to occur on portions that are not to be retained,
- saw cuts will be introduced in the concrete slabs along the masonry walls to be retained, before those slabs are removed,
- steel beams that are connected with elements to remain will be torch cut prior to removal, and
- the use of chippers on elements that remain connected to the masonry to be retained will be limited to 12 lb. electric models, unless a mock-up demonstrates that alternatives do not risk damaging masonry.

5. VIBRATION LIMITS

Vibration limits are not stipulated in the City's conditions, nor is there a municipal bylaw in effect to limit vibrations. The nearby City of Toronto has placed limits on construction vibrations, in their bylaw No. 514-2008, and those limits are indicated in Figure 1, below.

Table 1.0 "Prohibited Construction Vibrations"	
Frequency of Vibration (hertz)	Vibration Peak Particle Velocity (mm/sec)
Less than 4	8
4 to 10	15
More than 10	25

Fig 1: City of Toronto construction vibration limits

The above-noted vibrations, while a good benchmark, are limits for any construction activity and are not necessarily applicable or appropriate to all projects. For historic buildings we typically recommend following the limits established in the DIN 4150-3 Standard, per line 3 of Table 1, included at Figure 2, below. The limits are

- **3 mm/s for vibrations less than 10 Hz,**
- **3 to 8 mm/s for vibrations between 10 to 50 Hz, to be interpolated linearly,**
- **8 to 10 mm/s for vibrations between 50 to 100 Hz, to be interpolated linearly, and**
- **10 mm/s for vibrations above 100 Hz.**

We recommend proceeding with the limits indicated above in this case.

These limits are quite low, and are intended to mitigate effects of vibration on historic buildings that might include deteriorated materials or sensitive finishes. The masonry facades to be retained on this building can be expected to be more resilient than many more delicate built historic structures.

Though we do not anticipate exceedances even of these values given the understood nature of the adjacent construction, these limits could be re-evaluated should these limits be found to have significant impact on construction.

Table 1: Guideline values for vibration velocity to be used when evaluating the effects of short-term vibration on structures

Line	Type of structure	Guideline values for velocity, v_i, in mm/s			
		Vibration at the foundation at a frequency of			Vibration at horizontal plane of highest floor
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz *)	at all frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)	3	3 to 8	8 to 10	8

*) At frequencies above 100 Hz, the values given in this column may be used as minimum values.

Fig 2: DIN 4150-3 guideline on vibration limits for various structure types

6. VIBRATION MONITORING AND MONITOR PLACEMENT

We recommend that vibration monitoring be implemented with the placement of two tri-directional digital seismographs to be securely affixed to the façade. See Figure 3.

- The first monitor is to be affixed to the interior face of the concrete foundation wall below the façade, just above the level of the raft slab, within the central third of the South (front) elevation wall. See red star in Fig 3.
- The second monitor is to be affixed to the interior face of the façade, immediately above the first monitor, within 600 mm of the underside of the roof level. See blue star in Fig 3.

Existing interior finishes and terra cotta tile are to be removed from the wall prior to installation, such that the monitors can be affixed to the underlying concrete or backup brick masonry.

The monitors and associated reporting are to continue through the course of construction on the project, or until such time as major vibration inducing construction activities have been completed, there are no regular vibration exceedances, any potential for damage from vibration is not anticipated, and the Consultant advises that they may be removed.

The vibration monitors are to be supplied and installed by a specialized firm that has experience providing such monitors for the duration of construction projects.

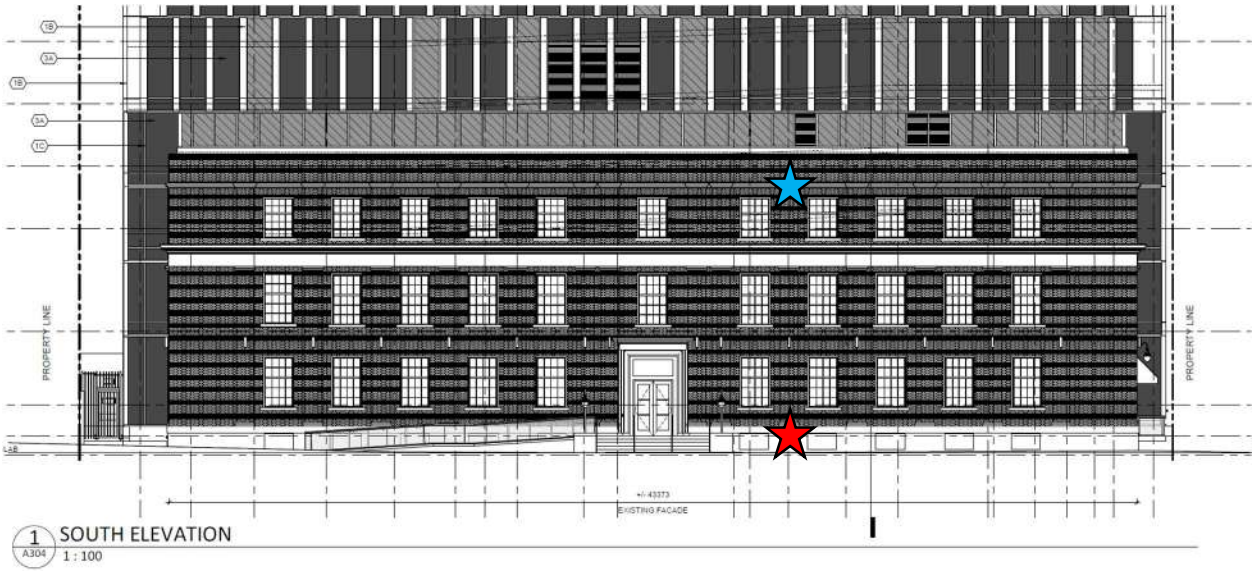


Fig 3: Part South Elevation, indicating proposed locations of vibration monitors.

7. NOTIFICATION AND EXCEEDENCE PROCEDURE

The vibration monitors must be connected for continual reporting of vibration events that result in exceedances of the vibration limits stipulated above. Exceedance events shall be reported by automated email to the Contractor, Owner, and appropriate Consultant(s).

In the event of an exceedance the Consultant is to be contacted. If the exceedance is not the result of disturbing the vibration monitoring equipment or very localized activity around it (both of which are common causes of exceedances), and the Consultant considers the exceedance to be significant, the Consultant shall review on site for any damage that may have resulted from the exceedance.

Future construction activity shall be modified to avoid further exceedances. In cases where this is not possible, and the exceedance was not observed to have had any impact to the structure, the Consultant may advise with respect to increased vibration limits. Note that this approach is intended to be generally consistent with the DIN 4150 standard, which states that "Exceeding the values in table 1 does not necessarily lead to damage; should they be significantly exceeded, however, further investigations are necessary." As noted above, it is our view that this building would likely tolerate vibration limits above those stipulated.

8. DISCLAIMER & LIMITATIONS

This report is based on and limited to information supplied to John G. Cooke & Associates Ltd. by VanMar Developments Inc. personnel and representatives, and by observations made during walk-through inspections of the subject property. Only those items that are capable of being observed and are reasonably obvious to John G. Cooke & Associates Ltd. or have been otherwise identified by other parties and detailed during this investigation can be reported.

The work reflects the Consultant’s best judgment in light of the information reviewed by them at the time of preparation. There is no warranty expressed or implied by John G. Cooke & Associates Ltd. that this investigation will uncover all potential deficiencies and risks of liabilities associated with the subject property. John G. Cooke & Associates Ltd. believes, however, that the level of detail carried out in this investigation is appropriate to meet the objectives as outlined in the request. We cannot guarantee the completeness or accuracy of information supplied by any third party.

John G. Cooke & Associates Ltd. is not investigating or providing advice about pollutants, contaminants, or hazardous materials.

This report has been produced for the sole use of VanMar Developments Inc. and cannot be reproduced or otherwise used by any third party unless approval is obtained from John G. Cooke & Associates Ltd. No portion of this report may be used as a separate entity; it is written to be read in its entirety.

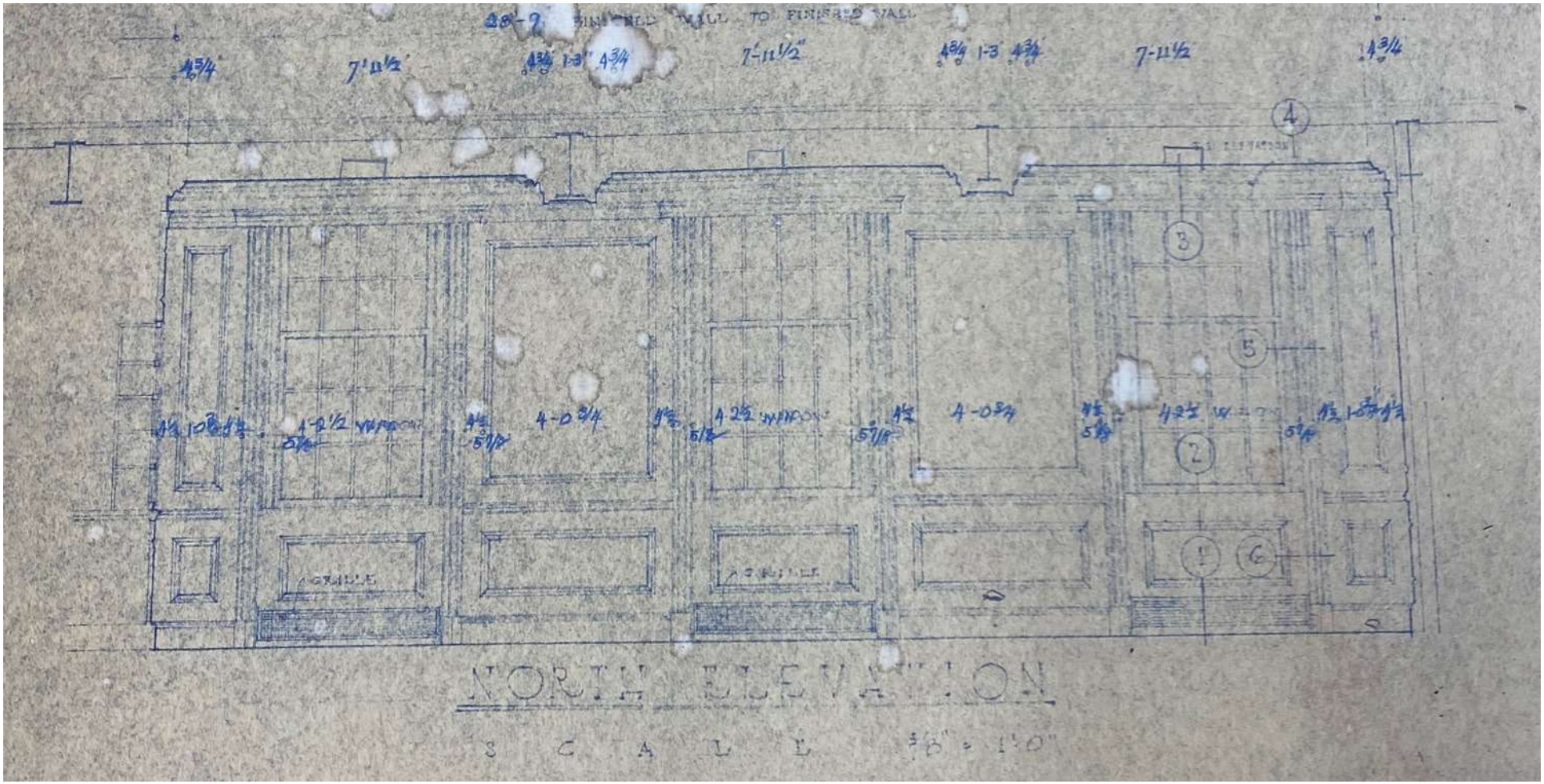
We trust this report covers the scope of work as outlined in our Terms of Reference. Should there be any questions regarding this report, or if we can be of any further assistance to you, please contact us.

JOHN G. COOKE & ASSOCIATES LTD.

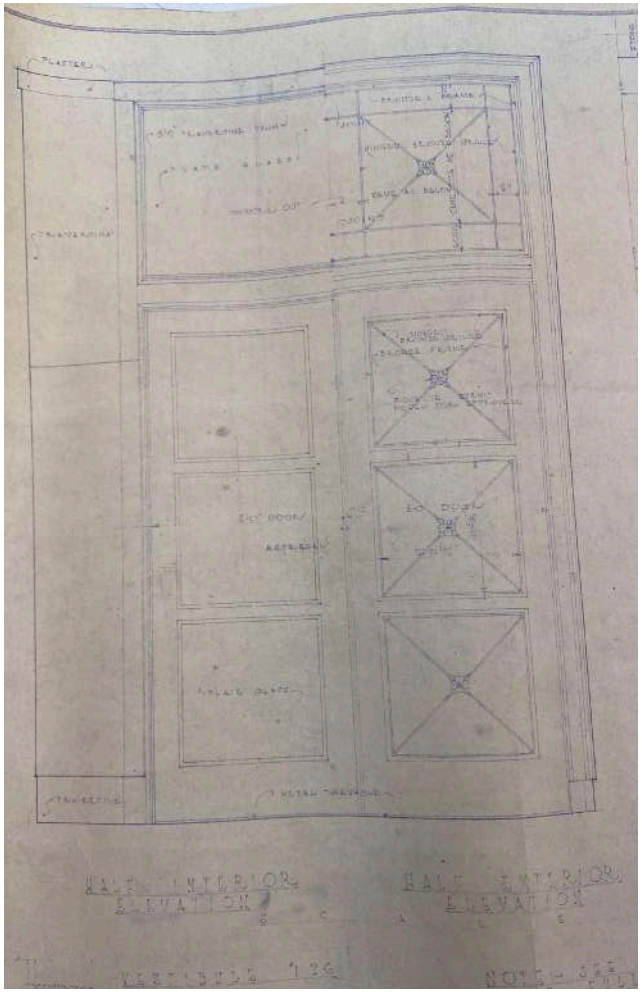
Jonathan Dee, P. Eng., ing., CAHP
Principal

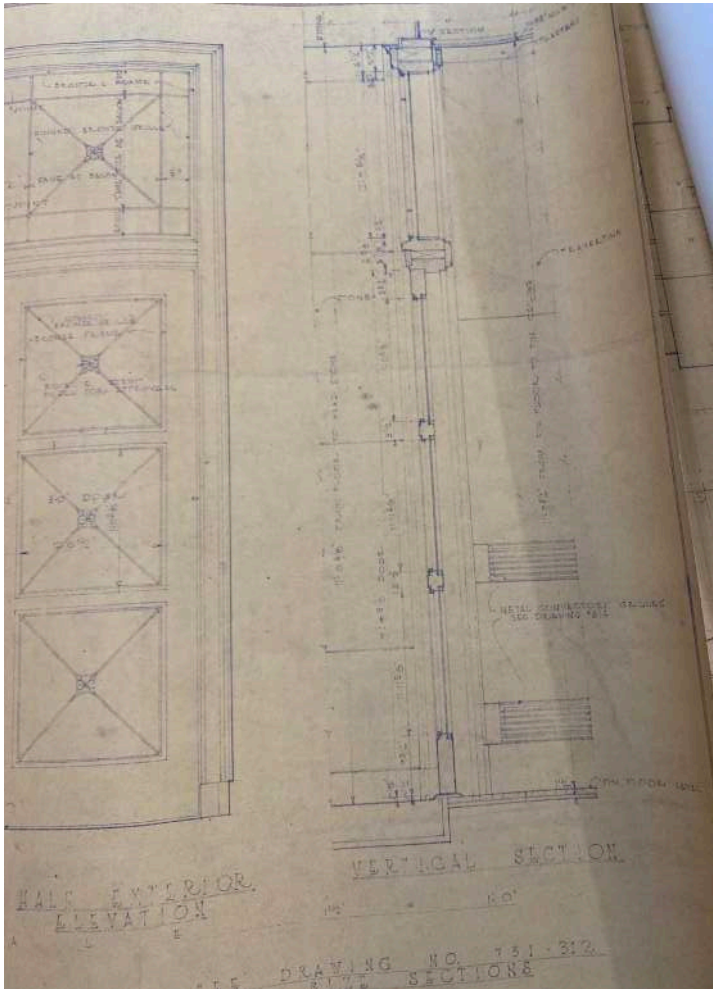
JD/jd
24012/10 Duke – Vibration Monitoring Plan

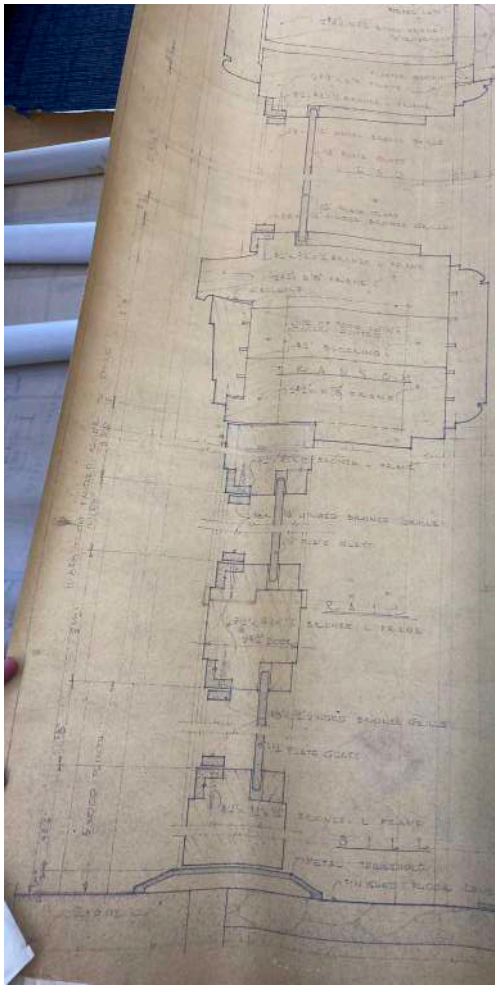
Appendix F: Archival Data



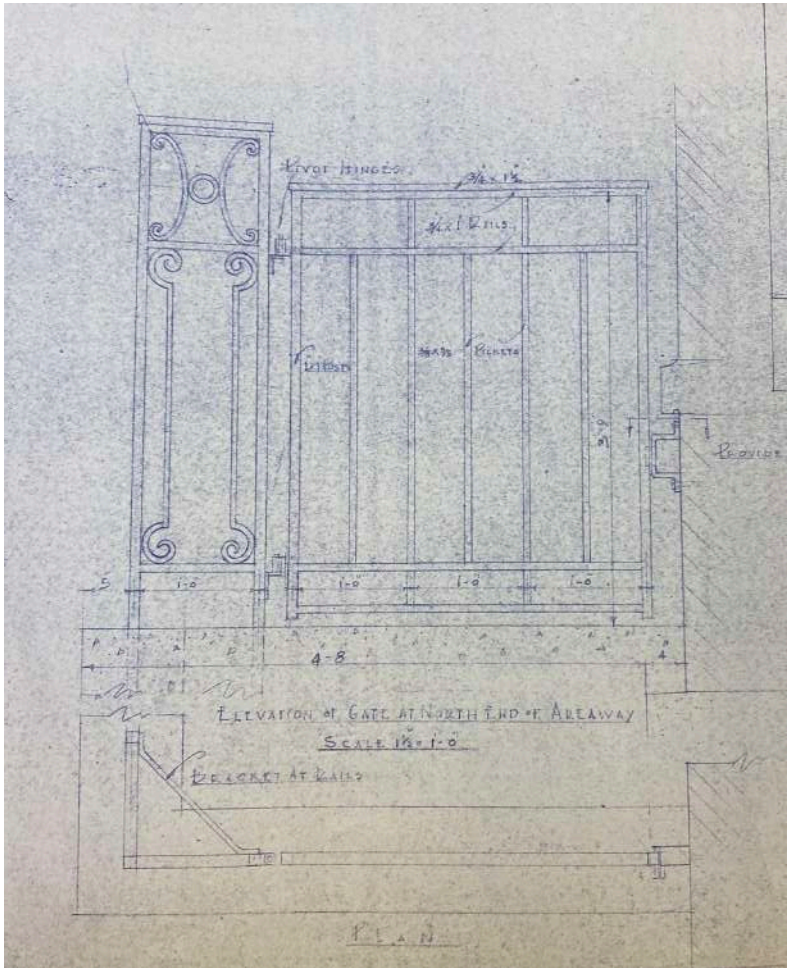
North Elevation of the heritage building. (Head Office Building for the Economical Mutual Fire Insurance Company, Mathers & Haldenby Architects, November 1949)







Elevation, section and detail of the main entrance door on the south elevation. (Head Office Building for the Economical Mutual Fire Insurance Company, Mathers & Haldenby Architects, November 1949)



Elevation of the existing wrought iron fence along the east elevation. (Head Office Building for the Economical Mutual Fire Insurance Company, Mathers & Haldenby Architects, November 1949)

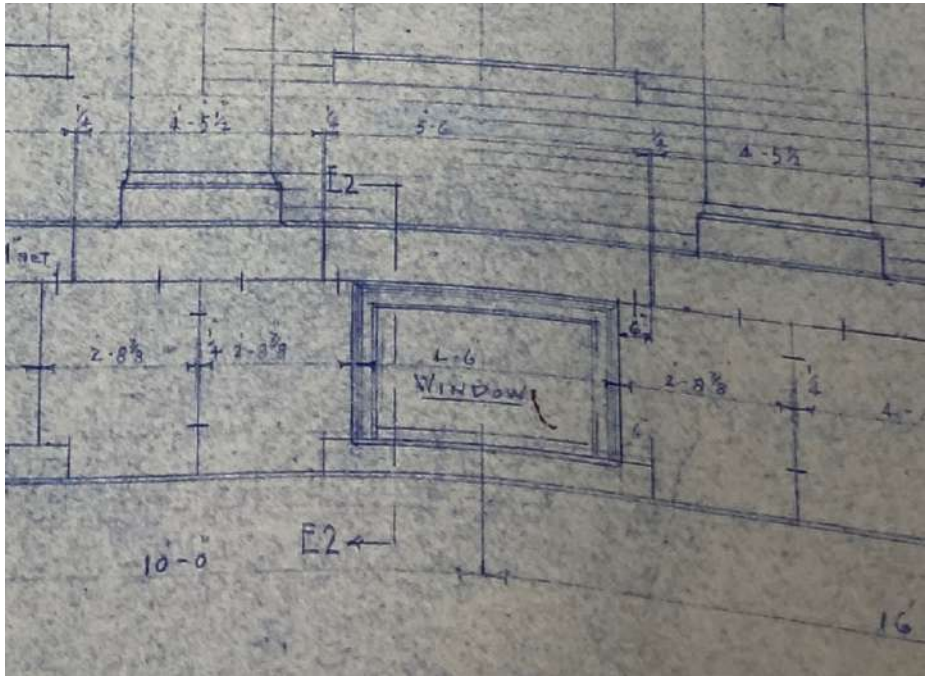
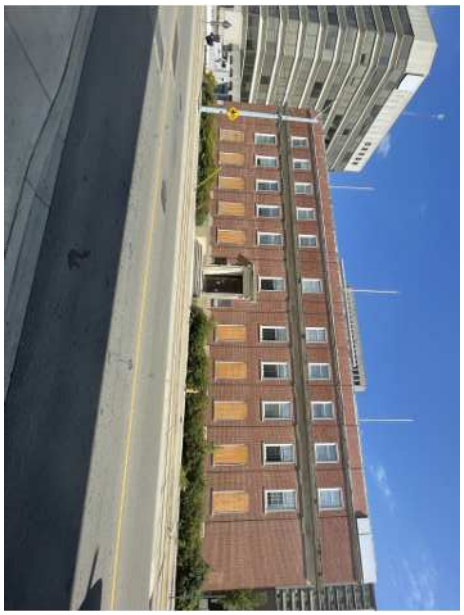


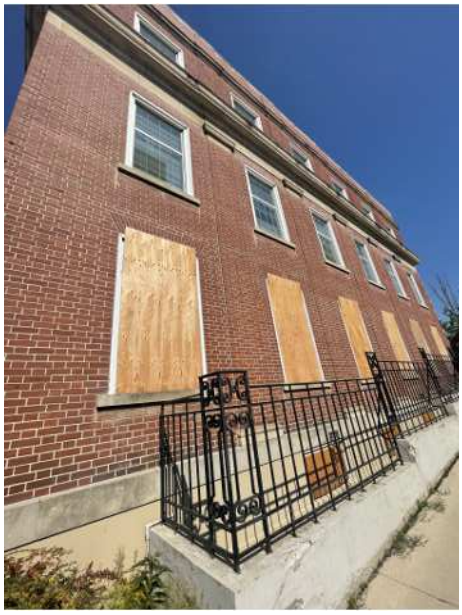
Figure 23. Elevation of the existing basement windows. (Head Office Building for the Economical Mutual Fire Insurance Company, Mathers & Haldenby Architects, November 1949)

Appendix G: Site Photos

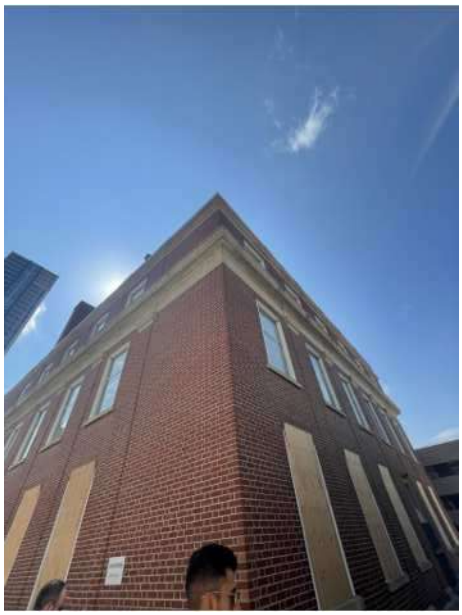
SITE VISIT - SEPTEMBER 2023, mCs



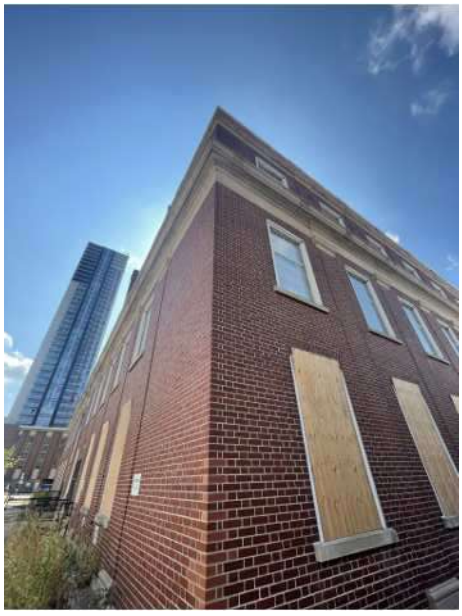








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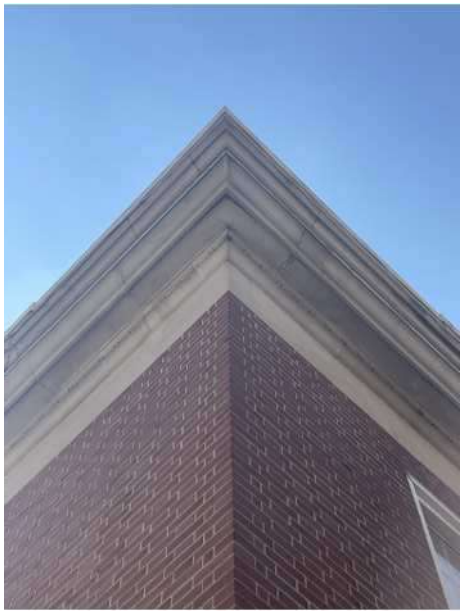

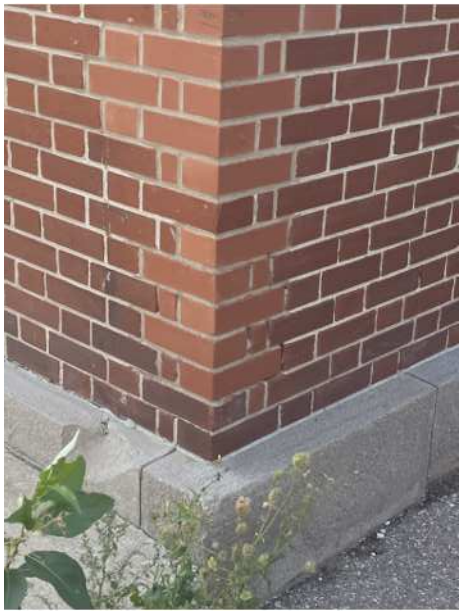


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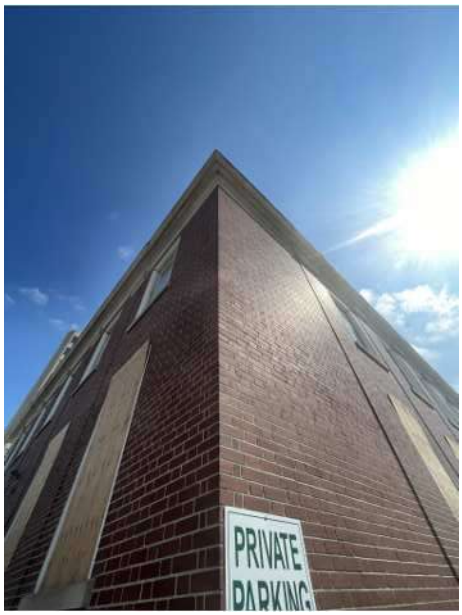
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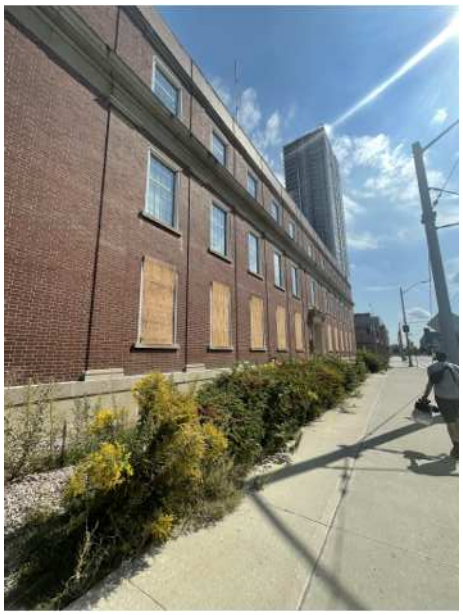






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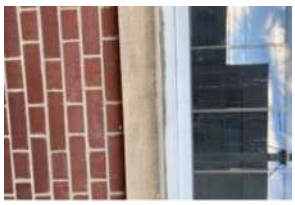
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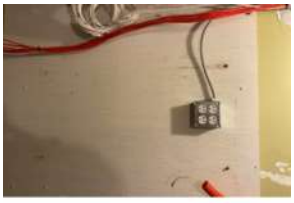
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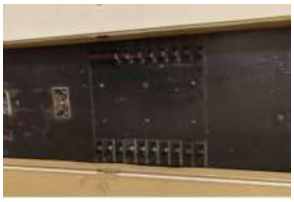
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