BURNSIDE

Solid Waste Management Plan
Millcroft Greens Residential Development

Millcroft Greens Corporation
4900 Palladium Way, Suite 105
Burlington ON L7M 0W7

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September 2020
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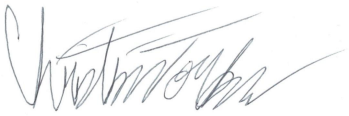
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Record of Revisions

Revision	Date	Description
1	May 6, 2020	Updated Submission to Client
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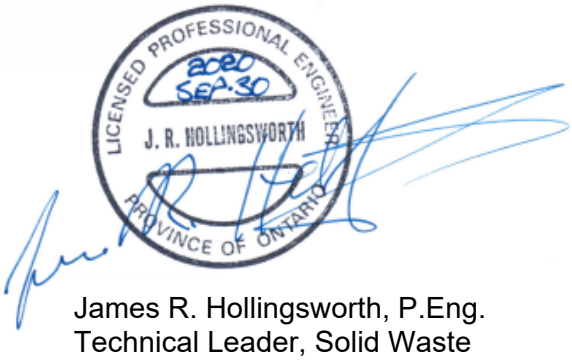
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1.0 Introduction

This document describes the Solid Waste Management Plan developed to consider issues and solutions related to solid waste management for the proposed Millcroft Greens Corporation residential development. This plan is based on current plans for development of Blocks A-E, outlined on the Gerrard Design Associates Inc. *Preliminary Development Concept*, dated September 30, 2020 (provided on the next page). The development will have a net developable area totalling 9.47 hectares in size. The layout of these Blocks may change prior to construction, though it is currently expected that the methods of handling solid waste as expressed in this report will not require revision.

As stated on the City of Burlington *Development Application Pre-Consultation Form,* dated March 4, 2020, this project involves redeveloping five (5) areas of an existing golf course for residential use:

- Blocks A-D include 98 detached units on condominium roads:
  - Block A will contain 33 detached homes;
  - Block B will contain 42 detached homes;
  - Block C will contain 16 detached homes;
  - Block D will contain 7 detached homes; and
- Block E, located at 4252 Dundas Street, is a 6-storey apartment building with 126 units, including surface and underground parking.

In preparing this report, Burnside has considered the following:

- Waste Diversion Ontario – Continuous Improvement Fund (CIF) Report 219: *Best Practices for the Storage and Collection of Recyclables in Multi-Residential Buildings*, dated February 2011;
- Waste Diversion Ontario – Continuous Improvement Fund (CIF) Report 723: *Multi-Residential Project Debriefing Series*, dated March 14, 2014;
- Halton Region – Development Design Guidelines for Source Separation of Solid Waste, Regional Official Plan Guidelines, dated June 2014;
- Halton Region – By-Law's No. 123-12, 88-15;
- Resource Recovery and Circular Economy Act, 2016; and
- *Ontario Food and Organic Waste Framework*, dated April 2018.

PRELIMINARY DEVELOPMENT CONCEPT

Millcroft Greens Corporation | Burlington, Ontario

- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.
- Aerial Photo: Google Earth, Approx. Spring 2015

GERRARD DESIGN

PROJECT 1516
DATE SEP 30, 2020
SCALE NTS

Figure 1-1

Additional Burnside Solid Waste Notes:
- Blocks A - D include 98 detached units on condominium roads
- Block E is a 6-storey apartment building with 126 units, including surface and underground parking

2.0 Waste Collection and Storage

Block A-E will be designed to utilize Halton Region waste collection services. The *Halton Region Development Design Guidelines for Source Separation of Solid Waste* document (hereinafter referred to as the Halton Guidelines) provides a comprehensive guideline for how wastes from the Blocks must be managed to qualify for Regional collection services.

2.1 Blocks A-D (Detached Units)

Blocks A-D will be designed appropriately to utilize Halton Region waste collection services. The private, condominium roads will be designed and constructed in accordance with all applicable legislation, by-laws and Halton Guidelines. Per the Halton Guidelines, the private roads will be designed to:

- Allow for access of the curbside collection points, without requiring reversal onto Municipal Roads;
- Allow for continuous forward motion, not requiring collection vehicles to reverse;
- Be constructed with a hard surface acceptable to the Region;
- Have a minimum width of 6 metres;
- Have turns featuring a turning radius from the centre line of 13 metres;
- Have an overhead clearance of 7.5 metres, kept free from obstructions; and
- Support a minimum of a fully loaded waste truck (35 tonnes).

Wastes are to be set out at their collection point by each homeowner prior to 7:00 a.m. on their designated collection day. Wastes are to be set out in a manner that is accessible to the waste collection vehicle and does not obstruct any sidewalk or roadway. Garbage is collected once every other week, though recycling and organics are collected by the Region weekly. The quantity and standard container requirements for these wastes have been included in Section 3.0. Additional recycling, organics and garbage receptacles may be collected, though extra garbage containers must have a garbage tag obtained from the Region. Waste and receptacles are to be stored inside their respective residences (i.e., in a garage) between collection dates.

Halton Region also provides scheduled collection of bulky wastes and yard wastes throughout the year. In Burlington, three bulky waste items may be collected per residential unit every other week. Yard waste is also collected every other week from the months March through to December. These wastes are to be placed at the collection point by property owners in accordance to Regional by-laws and guidelines.

Property owners may also bring their wastes for disposal at the Halton Waste Management Site. Should they do so, they may be subjected to associated disposal fees.

2.2 Block E (4252 Dundas Street Medium Density Residential Development)

The Halton Guidelines incorporates waste storage requirements and contains additional design criteria to describe physical characteristics of the waste storage rooms and building requirements to accommodate waste collection vehicles.

2.2.1 Waste Storage Room

In addition to the Halton Guidelines document, Burnside has also considered CIF Report 219 and Report 723 related to multi-unit residential buildings for their waste management effectiveness. Both reports made recommendations for the design and operation of new buildings. The findings of the CIF reports are consistent with Halton's Guidelines. Burnside has also studied the Ontario Food and Organic Waste Framework which outlines the objective of increasing resource recovery (from food and organic waste in particular) from multi-unit residential buildings.

Based on the reviewed documentation, Burnside recommends that Block E include the following features:

- A single storage room for residential recycling, garbage, and organics waste:
  - Space for bulky waste will be accommodated in this room as required by Halton Guidelines.
- A tri-sorter chute system, accessible on each residential floor of the tower, will be used to deliver the waste to the waste storage room:
  - Controls at the chute access include an interlock to prevent simultaneous access and access during maintenance; and
  - The controls will also indicate the type of waste being disposed by the resident. This will operate a tri-sorter providing three outlets: one for organics, another for (single stream) recycling, and a third for garbage.
- For ground floor residential units, residents will dispose of waste using a through-the-wall chute system, leading into the waste room. Three separate chutes will be available for use, one for each waste stream. These ground level chutes will feed into small containers (121 litre containers or similar), which will be emptied into their waste streams respective cart / bin as necessary by facility management as necessary.
- A compactor will be used to minimize the number of bins required for garbage storage.
- Three cubic yard front-load bins will have wheels to allow maintenance staff to move the bins as required.
- The waste storage room will not be accessible to residents.
- The waste storage room will be rodent proof, properly ventilated, and include a hose bib and floor drain for periodically washing the room.

The front-load bins and semi-automated carts used to store materials will have wheels to allow maintenance staff to move the bins as required. The waste storage room will be rodent proof, properly ventilated[1], and include a hose bib and floor drain for periodically washing the room. Should it be necessary, odour and insect issues can be addressed by increasing the ventilation (air changes per hour), reducing the storage temperature (air conditioning) or adding odour neutralizer sprays in the waste room.

Based on the Halton Guidelines document, the residential development is expected to be compatible with Halton Region provided recycling, organics and refuse collection. The Block E waste management plan is sufficiently flexible to allow future revision of the Region's waste collection processes, including privatization and changes that may occur because of the Resource Recovery and Circular Economy Act.

2.2.2 Three Stream Waste Disposal

Located on the ground floor of the 6-storey building, the waste collection room will provide a chute and tri-sorter to facilitate the collection of recycling, organics and garbage. It is recommended that posters are displayed near the chute door on each floor that educate the residents on waste diversion, reduction and acceptable wastes[2]. The chute will lead waste into the tri-sorter on the ground level, which will feed front load bins for recycling, semi-automated carts for organics and a compactor for garbage. The front load bins are of three cubic yards capacity. The semi-automated carts are standard 360 litre plastic bins with wheels. Section 3.0 outlines waste bin and equipment requirements for this plan.

Ground floor units will have access to a through-the-wall chutes system for each of the three waste streams. These units will feed their waste into these chutes (akin to a mailbox drawer), which lead to small containers. Maintenance staff will check the carts and bins daily to ensure those reaching capacity are exchanged for empty units. Building maintenance staff will control access to the waste storage room as there are some safety concerns with the chute, tri-sorter and the garbage compactor.

2.2.3 Waste Collection

Halton Region collects all wastes from Block E once per week, on different days – though garbage may be collected twice per week. On each collection day by 7:00 a.m., maintenance staff will move the carts and/or bins from the waste storage room to the Waste Loading Area. The Loading Area is designed in accordance with Halton Guidelines so that the waste collection service provider (collection vehicle) does not

[1] Per ASHRAE Standard 62, air exchange rate for waste storage rooms as one-cubic foot per minute per square foot of floor space (1 CFM/sq.ft.).
[2] These educational materials are generally available from Halton Region, displayed here: https://www.halton.ca/For-Residents/Recycling-Waste/Waste-Collection-for-Apartment-and-Condominium-Bui (accessed April, 2020).

need to exit the vehicle to jockey bins or carts while collecting the waste stream. The property manager will organize bins in accordance with the 'grid' system in preparation for collection, as indicated in Appendix 4 of the Halton Guidelines. This system is illustrated within the floor plan of the loading area, which has been included in Appendix B. Facility maintenance staff will transport the empty carts and bins back to the waste storage room for continued use by residents. Each waste stream will be collected on separate days, so they may use the same loading area without conflict.

While the bins or carts are in the Loading Area, there may not be a bin or cart available for resident use in the waste storage rooms. For tower residents, the chute system may be 'locked out' to prevent disposal of that waste type (or all wastes). All residents will be made aware of the waste collection schedule so they can plan their disposal routine while minimizing waste stream contamination (i.e., garbage in recycling or organics) and maximize diversion (avoiding organics or recycling in the garbage stream). However, we anticipate the waste storage room is large enough to store additional containers that may be used to provide continuous service, even when the remaining containers are awaiting collection. This concept is shown with the additional bins/carts present on the waste room floor plan, attached in Appendix B.

2.2.4 Bulky Waste Disposal

A contiguous bulky waste storage area, at least 10 m^2 in size, is incorporated into the Block E waste storage room. Bulky waste items such as used furniture, mattresses, appliances, etc., will be stored in the waste collection room. This material will be collected by the Region as coordinated by the Property Manager. Residents will not have general access to this room. Residents may contact the Property Manager or other applicable person to gain access to this room (generally escorted access).

In general, materials that are subject to a stewardship program or a Product Care Association and items such as automotive tires, paints, and electronics, will not be accepted as bulky waste.

Halton Region also supplies a 40 cubic yard roll-off bin twice per year for bulky waste collection. If required, this bin will be placed in the outdoor parking area. The Property Manager will contact the Region to coordinate delivery and collection of the bin.

2.2.5 Grounds Keeping, Maintenance and Renovations

It is anticipated that waste generated by minor Block E building maintenance activities, such as replacing broken fixtures, light bulbs, etc., can be accommodated in the waste room.

Block E grounds' keeping is expected to be a contracted service that will remove the leaf and yard waste as part of the service.

Contractors will typically undertake significant renovations or maintenance projects. It is expected that wastes generated during the work will be removed as part of their contract.

2.3 Materials Not Collected

Waste materials that are not accepted by the Region's three stream waste collection system will not be collected at Blocks A – D. Similarly, these materials will not be accepted or stored in Block E's waste storage room.

Municipal Hazardous and Special Waste (MHSW) and Waste Electronics and Electrical Equipment (WEEE) are not accepted by the Region's collection vehicles. Residents with MHSW or WEEE must return it to an appropriate recovery facility, such as retailers with take-back programs or to the Halton Waste Management Site. The residents are responsible for the storage and disposal of these materials.

All wastes should be handled and disposed by residents in accordance with Halton Region's guidelines[3]. Generally, the Halton Waste Management Site accepts all waste types, including those not collected at the curbside. Residents must deliver the waste to the Site themselves, following direction from Site staff.

The waste materials that are collected may change as Individual Producer Responsibility (IPR) stewardship programs are developed under the Resource Recovery and Circular Economy Act (RRCEA). This may include additional take-back programs at retailers. Overall, it is expected that changes to the wastes collected can be accommodated within the storage areas available individually for Blocks A – D, or the waste room of Block E.

[3] Information on how alternate waste streams are to be disposed / recycled can be found on the Region's website, www.halton.ca/waste (accessed April 2020).

3.0 Waste Management System Requirements

Table 1 outlines the system requirements for residential waste management at Blocks A-D. These are detached units, so each will have their own waste storage containers as required by Halton's Guidelines:

Table 1: Household Equipment Requirements– Block A-D

Quantity	Item	Use	Collection Frequency
2	100 litre rigid, plastic containers (also known as a "Blue Box").	Recycling	Weekly
1	A plastic container compatible with the Region's Contractor for the provision of Organic Waste Collection, with a capacity of 35 to 50 litres.	Organics	Weekly
3	Garbage Receptacles defined in the Regions By-Law No. 123-12.	Garbage	Once every other week
*Recycling and organics receptacles will be provided by the Region to residents.			

Table 2 provides the requirements for Block E, a multi-unit residential building. We note, per Halton Guidelines:

- Each waste stream is collected weekly, on separate days (one stream per day);
- Storage of recycling assumes one 360 L (0.34 yd^3) recycling bin for every seven units, per Halton Guideline section 1.8.1.2.2. This volume was then converted to front-lift bins (without compaction);
- Halton Guideline section 1.8.1.3.2 requires one 360 L (0.34 yd^3) organics bin for every 25 residential units;
- 81 to 200 residential units can be accommodated using 6 yd^3 of compacted garbage per week, per Appendix 2 of Halton's Guidelines; and
- Trash Slots are provided for ground floor residents waste disposal – one for each waste stream. Waste in the containers below the Trash Slots is transferred by building staff into the correct storage container (i.e., semi-automated cart or front-load bin) as necessary.

Table 2: Waste Storage Room Equipment Requirements – Block E

Quantity	Item	Use	Collection Frequency
3	3 cubic yard front load waste bin	Recycling (uncompacted)	Weekly
6	360 litre semi-automated carts	Organics (uncompacted)	Weekly
2	3 cubic yard front load waste bin (compaction type bin)	Garbage (compacted)	Weekly

Quantity	Item	Use	Collection Frequency
1	Waste Compactor	Compacts garbage into the bins	N/A
1	Tri-sorter	Directs chute to the correct waste stream	N/A
3	Trash Slots	Disposal for ground-floor residents	Transferred as necessary
The Block E waste storage room will facilitate all items listed above, provides space for bulky waste, and allows for the repositioning of bins and carts as they reach capacity.			

4.0 Conclusions

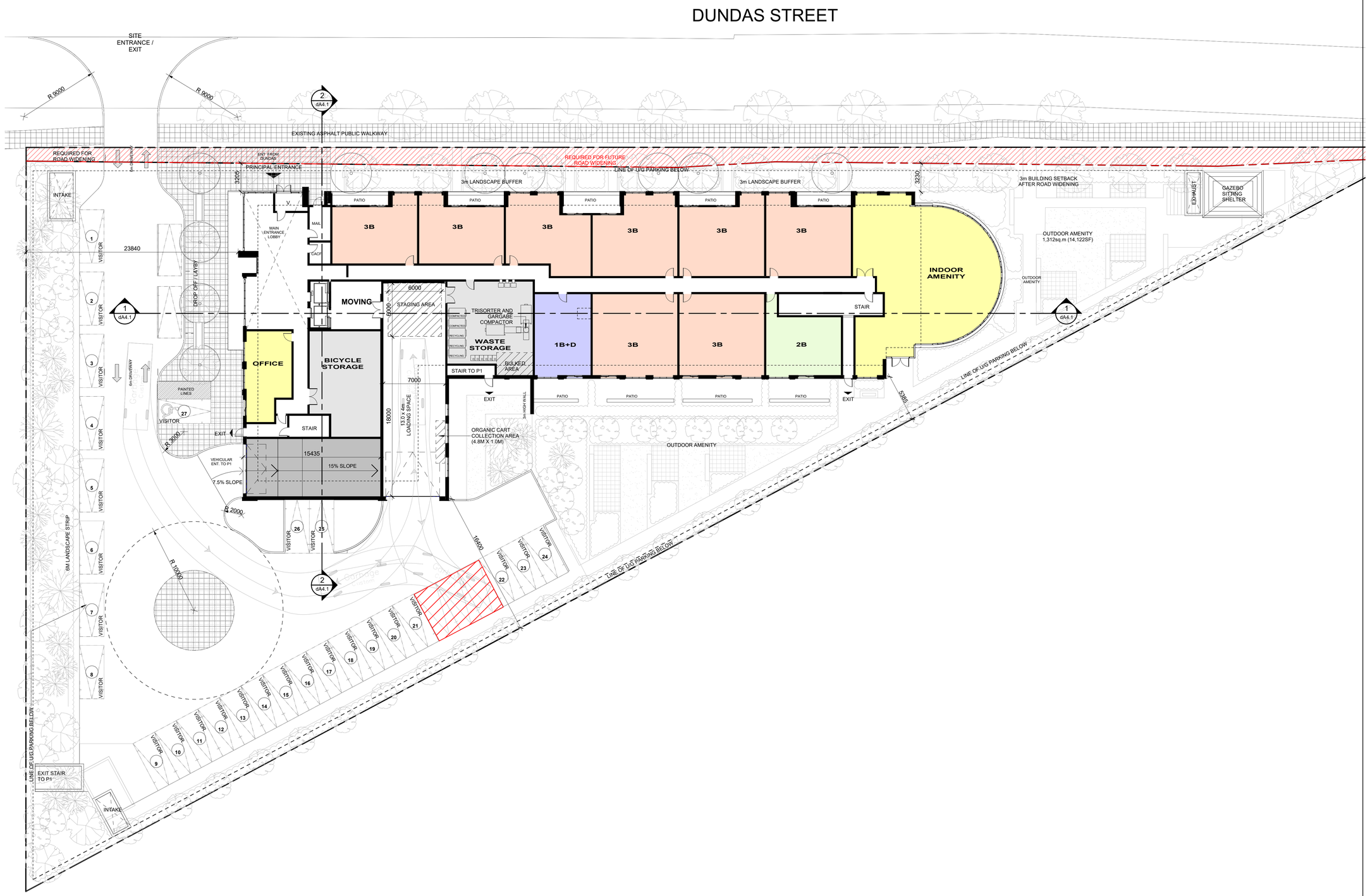
From the research completed in preparing this report, Burnside believes that the design of the Millcroft Greens Residential development project will be able to provide flexibility in current and future solid waste management systems for Blocks A-E. The development has been designed to meet all current Regional standards and guidelines. Further, the development's design provides the flexibility required to address future changes to Halton's solid waste management programs.

BURNSIDE

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Appendix A

Collection Vehicle Turning Plan



Ground Floor Plan
1 : 200

1
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20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

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No.:	Issued For:	Date:

Drawing Title:

Ground Floor Plan

Client:

MILLCROFT - BLOCK E

Project:

PROPOSED RESIDENTIAL DEVELOPMENT

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Scale: 1 : 200
Drawn by: Author
Checked by: Checker
Project No.: 19-111
Date: 07/07/20

Drawing No.:

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Appendix B

Block E Waste Room and Loading Area Plans

General Notes

NTS

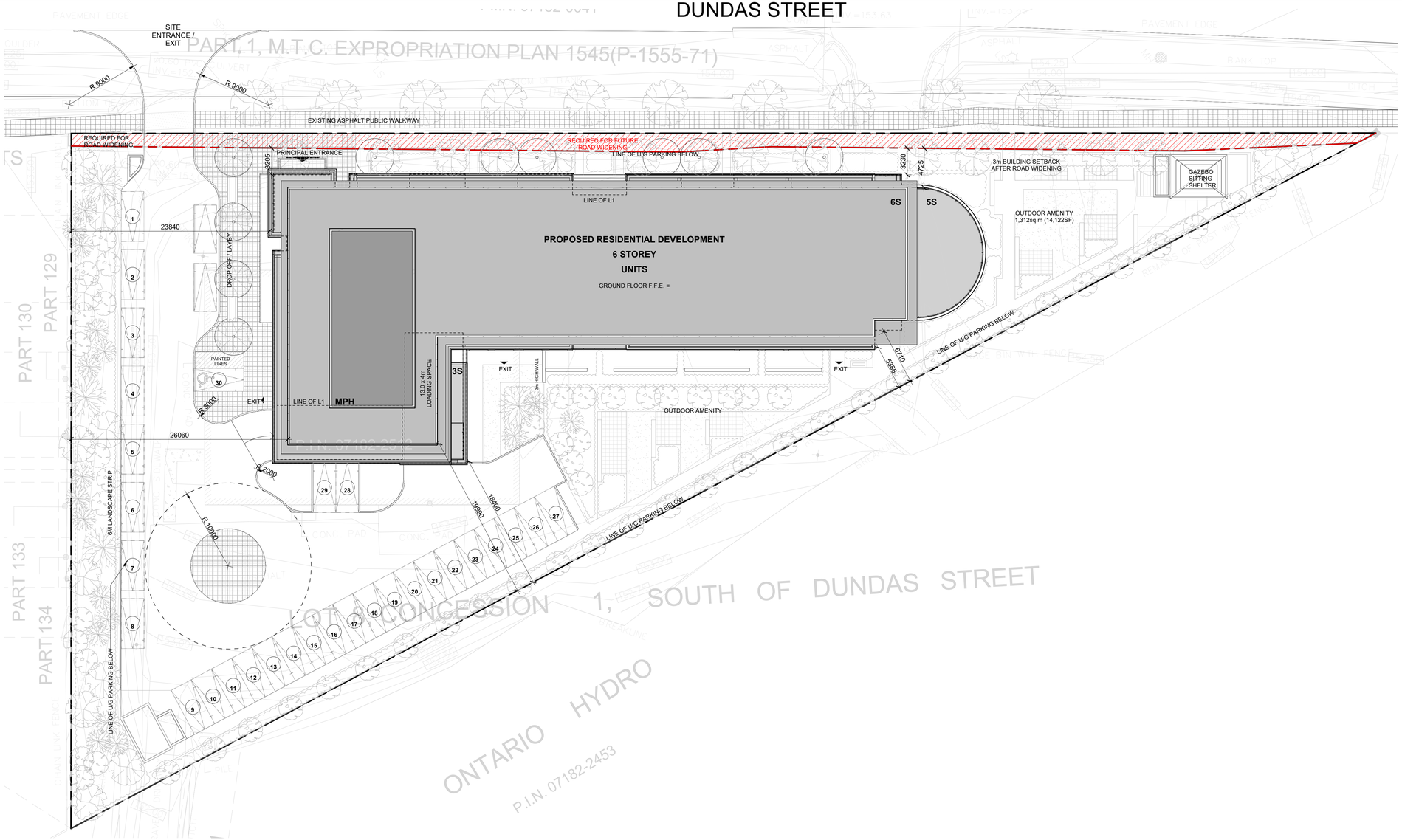
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Typical Parking Space Legend

NTS

2
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DUNDAS STREET



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MILLCROFT - BLOCK E

Project:

PROPOSED RESIDENTIAL DEVELOPMENT

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Scale: 1 : 250

Drawn by: Author

Checked by: Checker

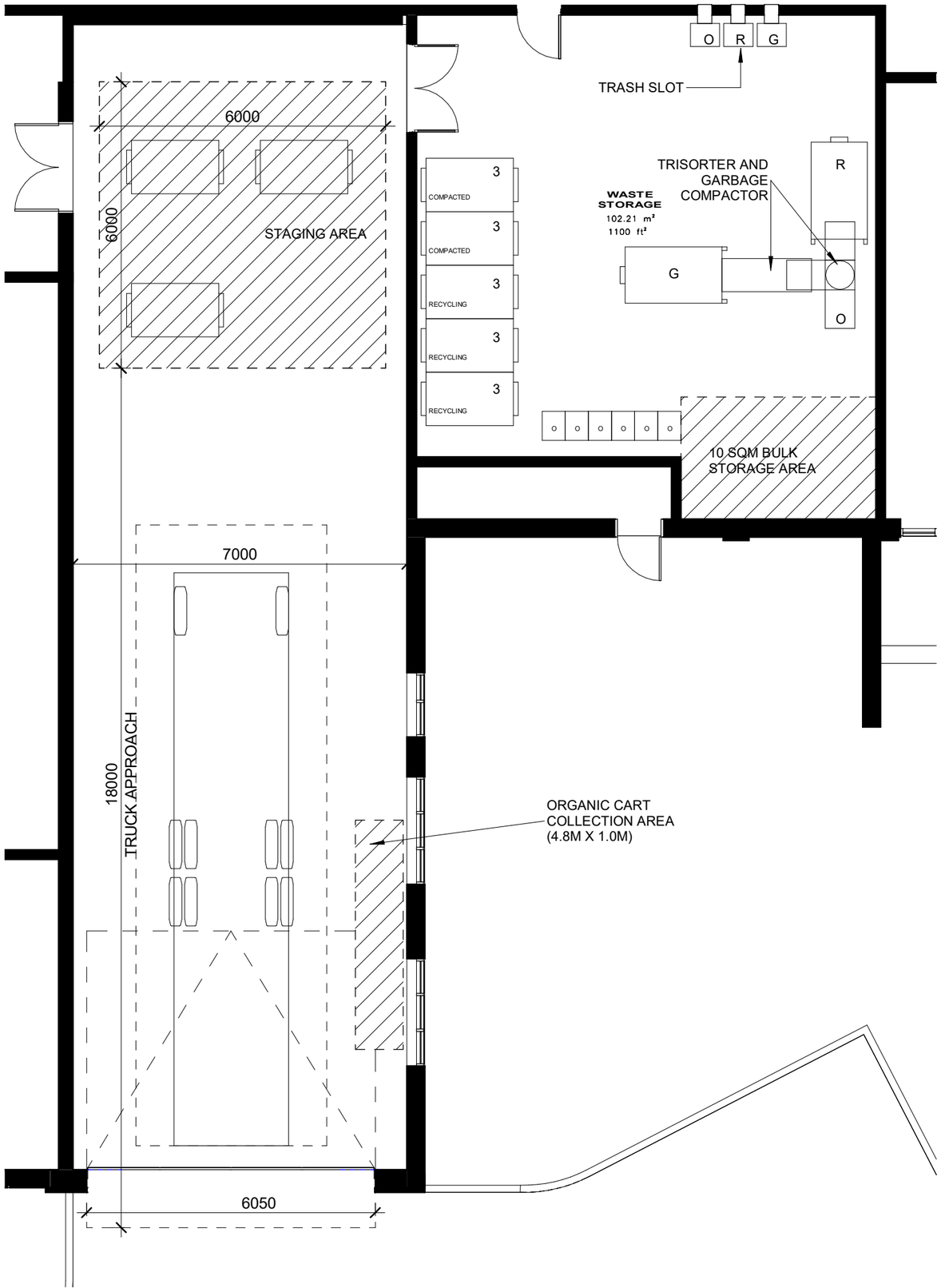
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Waste Management Plan

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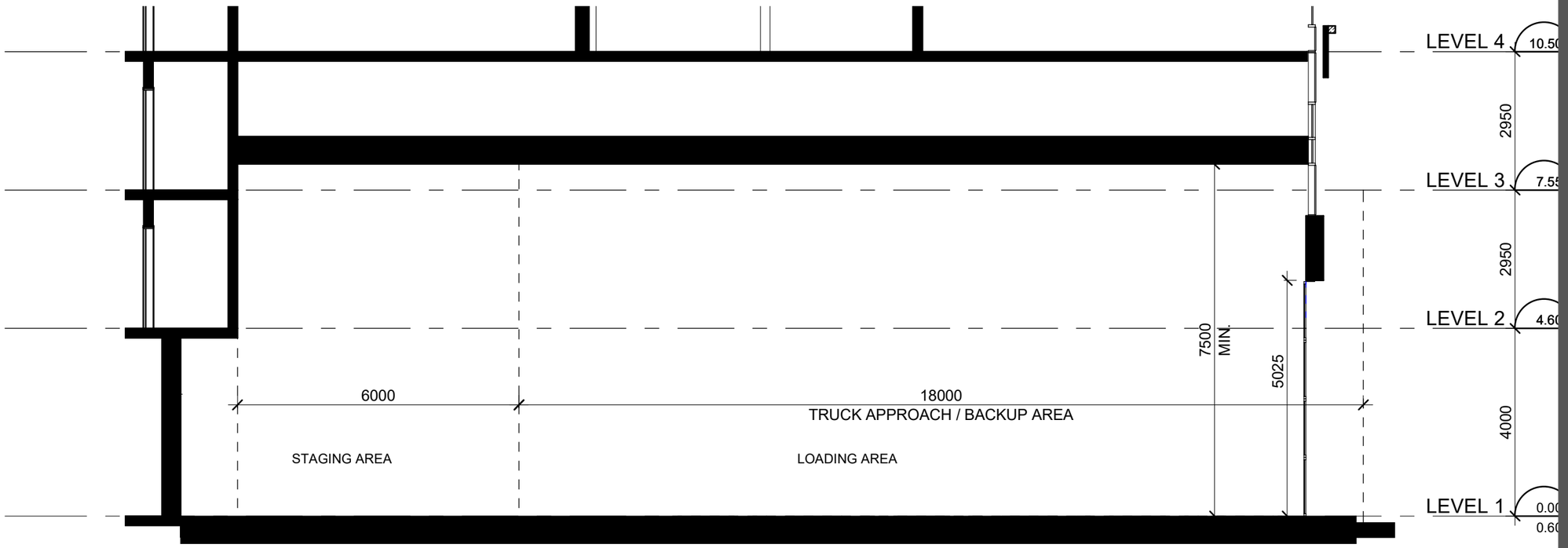
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Loading Section

1 : 100



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dW1.2

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