Oakville TOC Development
Solid Waste Management Plan

157 & 165 Cross Avenue, Oakville ON

Cross Realty LP.
90 Wingold Avenue, Unit 1
Toronto, ON M6B 1P5

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R.J. Burnside & Associates Limited

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Table of Contents

Tables

Appendices

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Waste Management Requirement – Location Matrix

Requirement	Report Location	Notes
Set out and collection locations for residential and commercial units.	Described in Sections 2.0 & 3.0.	
Staging Area Bin Configuration	Illustrated in Appendix A, Level 1 Plan (No. A211).	
Residential and/or Commercial Floors and Units.	Described in Section 1.0.	
Number and Size of Waste Receptacles.	Described in Section 2.2.	
Configuration of Waste Containers, Compacting and Sorting Equipment.	Illustrated in Appendix A, Level P1 Plan (No. A208)	
Flow of Receptacles from the Waste Storage Room to Loading Area.	Described in Sections 2.0 and 3.0	
Truck Turning Plan Showing Waste Collection Route (to and from Municipal Road).	Illustrated in Appendix B.	
Turning Radius of 13 m from the Centreline.	Illustrated in Appendix B.	
13m Reversal Distance.	Illustrated in Appendix B.	
Loading Area Overhead Clearance of 7.5 metres.	Described in Section 2.6. Illustrated in Appendix A, Level 1 Plan (No. A211).	
Number of Organics Carts (360 L) Required for the Site	Described in Section 2.2	
Collection Point Level (+/- 2%).	Described in Section 2.6	
Weight Capacity of Loading Area (35,000 kg).	Described in Section 2.6	
Loading Area Width Required (6 metres).	Described in Section 2.6, Appendix A, Level 1 Plan (No. A211).	
Head-On Approach (Minimum 18 m).	Illustrated in Appendix B (figure VMD-01).	The 18 m head-on approach item is not applicable to this context. Per the Halton Guidelines, the truck can enter and exit the collection area completely and in a forward motion without the need to backup as there is a turnaround space provided.
Sufficient Storage for all Waste Receptacles.	Illustrated in Appendix A, Level 1 Plan (No.A208)	

1.0 Introduction

This document describes the Solid Waste Management Plan (Plan) for the proposed Oakville Transit Oriented Communities (TOC) site located at 157 & 165 Cross Avenue in the Town of Oakville, Ontario.

Ontario's TOC program is a government initiative focused on creating lively, pedestrian-friendly, and sustainable urban areas near major transit stations. By combining residential, commercial, and public areas with transit infrastructure, the program aims to decrease car dependency, increase public transportation usage, and enhance overall accessibility. Additionally, it seeks to stimulate economic growth and promote the development of affordable housing.

This Plan is intended for municipal review during the developmental approvals process. R.J Burnside & Associates Limited (Burnside) acknowledges that the existing design features minor deficiencies related to waste management operation, most of which have been identified with this submission. These deficiencies will be addressed in future iterations of the design. As such, the development's Site Plan is expected to change during the Zoning By-Law Amendment (ZBA) and / or Site Plan Approval (SPA) process. However, it is expected that the general methods of handling solid waste as expressed in this report will not require revision.

This report is based on the 'Issued for TOC Development' drawing package, dated September 20, 2024. Table 1 provides a list of drawings from this package that are contained in Appendix A. These drawings describe the development's solid waste management features for both residential and commercial waste:

Table 1: Appendix A Drawing List

Drawing No.	Drawing Title
A001	Sheet List, Zoning Requirements
A208	Level P1 Plan
A211	Level 1 Plan
A401	North & South Elevations
A402	East & West Elevations

This proposed Oakville TOC development will provide:

- 1,222 residential units.
  - Tower A is 58-storeys, featuring 658 residential units.
  - Tower B is 50-storeys, featuring 564 residential units.
- 2,522 m^2 Gross Floor Area (GFA) of leasable commercial and retail space:
  - The first two levels of Tower A provide 1,710 m^2.
  - The first two levels of Tower B provide 983 m^2.

- 1,254 m^2 GFA of office space between the first two levels of Tower A.
- Eight (8) levels of underground parking (i.e., Levels P1 to P8).
  - Both Towers are connected at these parking levels.
- Each Tower has their own residential waste storage room located at Level P1.
- Retail and office waste storage rooms located on the ground floor.
  - These rooms are not delineated on this iteration of plans but are expected to be within the 'commercial' and 'office' footprints. These will be featured on a future design.
- Both Towers share a Collection Point (including loading and staging area) on the ground level.

Based on discussions with Halton staff regarding similar, nearby projects, twice-per week collection of waste (or more frequent) may be implemented at this development. However, to be conservative, the design of this development can accommodate collection of each stream on either a once or twice-per-week schedule. From a building maintenance/operating perspective, the twice-per-week collection schedule is expected to be similar to once-per-week collection. Increasing beyond twice-per-week collections would increase operating costs.

As noted in the Pre-Consultation Comments Report by Halton Region staff, the development will not be eligible to receive non-residential waste collection services. Therefore, private collection must be arranged. The management of non-residential wastes is discussed in Section 3.0.

1.1 Design Resources

In preparing this report, R.J. Burnside & Associates Limited (Burnside) has considered the following sources:

- Halton Region – 'Development Design Guidelines for Source Separation of Solid Waste, Regional Official Plan Guidelines', Version 1.0 dated June 2014;
- Pre-Consultation Comments Report from the Town of Oakville dated June 28, 2023;
- Direct communications with Halton staff related to waste management and collection for large development projects;
- Halton Region – By-law No. 123-12 and No. 88-15;
- 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;
- Resource Recovery and Circular Economy Act, 2016; and
- Ontario Food and Organic Waste Framework, dated April 2018.

1.1.1 Halton Region Guidelines

Halton Region's (Region) 'Development Design Guidelines for Source Separation of Solid Waste' document (hereinafter referred to as the 'Guidelines') outline the requirements to obtain approval for municipal waste collection services. Following the Guidelines provides some flexibility to address future solid waste management needs and programs. In addition, the Region's municipal waste collection services are preferred over private services when considering long term operating costs for the development.

Based on the Guidelines, the residential portion of this development is expected to be compatible with Regional provided recycling, organics, and refuse collection. This waste management plan for the development is sufficiently flexible to allow future revision of Regional waste collection processes, including privatization and changes anticipated by the Resource Recovery and Circular Economy Act (RRCEA).

1.1.2 Other Considerations

In addition to the Region's Guidelines, Burnside considered Continuous Improvement Fund (CIF) Report 219 and Report 723 related to multiunit residential buildings for their waste management effectiveness. Both reports made recommendations for the design and operation of waste management systems for new multi-residential buildings. The findings of the CIF reports are consistent with Regional 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 multiunit residential buildings.

2.0 Residential Waste Management System Elements

2.1 Waste Storage Rooms

Towers A and B provide residents with equivalent waste disposal service. Each Tower has its own Residential Waste Storage Room located on Level P1. In accordance with Section's 1.9.2 and 1.9.3 of the Guidelines, the Residential Waste Storage Rooms for this development will feature the following:

- A chute system consisting of three separate chutes for recyclables, organics, and garbage will be used to deliver these wastes to the Residential Waste Storage Rooms on Level P1.
  - The chute system will be accessible to all residential units via internal corridors.
  - Controls at chute access points include an interlock to prevent simultaneous access and access during maintenance.
- Each Residential Waste Storage Room will have a compactor to minimize the number of bins required for garbage storage.
- Separate rooms on the ground level of each Tower are designated for the storage of bulky waste (i.e., the Bulky Waste Storage Area). These rooms are sized above the minimum 10m^2.
- Aside from bulky waste, all waste storage rooms (both for residential and non-residential waste – see Section 3.0) will be locked and inaccessible to residents. See additional details in Section 2.3.
- All waste storage rooms, including bulky waste storage rooms, will be rodent proof, properly ventilated, and include a hose bib and floor drain for periodically washing the room, equipment, and waste containers (carts and bins). Should it be necessary, odour and insect issues can be addressed by:
  - Increasing the cleaning efforts for the room and its equipment;
  - Adding odour neutralizer sprays in the waste room(s);
  - Increasing the ventilation (air changes per hour);
  - Installing an in-room air cleaner; and / or
  - Reducing the storage room temperature (air conditioning).
- The width of the doors for all waste storage rooms will be enough to accommodate the size of all required waste containers, a minimum of 2.2 metres in width.

2.2 Equipment Requirements

Three chutes will lead recyclables, organic waste, and garbage into each tower's Residential Waste Storage Room. The following equipment will be located under each chute:

- Recyclables chute: 4 yd^3 front-load bins for storing recyclables.
- Organics chute: 360 L semi-automated carts for storing organics waste.

- Garbage chute: A compactor that loads 3 yd^3 front-load bins for storing garbage.

Waste storage container needs (bin counts), based on updated information from the Region's Multi-Residential Waste Diversion Coordinator [1] These rates assume once-per-week collection as follows:

1. Recycling (loose):
   - 56 residential units can be serviced by one 4 yd^3 front-lift bin.

2. Organics:
   - One 360 L (0.34 yd^3) organics bin is required for every 25 residential units.

3. Garbage (compacted):
   - 54 residential units per 3 yd^3 front-lift bin.

Based on discussions with Halton staff regarding similar, nearby projects, the Region has indicated that twice or three times-per-week collection of waste may be available to the development in the future (see Section 1.0). Despite this, the equipment requirements detailed in this Plan assume once-per-week collection. That is, each waste stream is collected on a separate day. This is discussed further in Section 2.6.1.

Table 2 outlines the equipment requirements for each Residential Waste Storage Room. Maintenance staff will check the containers frequently to ensure those reaching capacity are exchanged for empty ones. They will also control access to the Residential Waste Storage Room as there are safety concerns associated with the chutes and the garbage compactor.

[1] Garbage and recycling bin ratios were provided to Burnside via March 22, 2022, email from Halton Region's Multi-Residential Waste Diversion Coordinator, Andrew Suprun. These values update Halton's Guidelines.

Table 2: Residential Waste Storage Room Equipment

Item	Stream/Use	Quantity	
		Tower A (658 Units)	Tower B (564 Units)
4 yd^3 front-lift bin	Recycling	13	12
360 L semi-automated carts	Organics	28	24
3 yd^3 front-lift bin (compaction type)	Garbage (compacted)	14	12
Waste Compactor	Compacts garbage into the 3 yd^3 front-lift bins	1	1
Bin Tractor	To move bins & (loaded) cart trailer	1	
Cart Trailer	To move carts	1	

Note:
1. Container counts (carts and bins) assume once per week collection.
2. Container counts include one extra for continuous service during collection.

The current design for each Residential Waste Storage Room not only meets these spatial requirements for all equipment, but also includes additional space to provide flexibility to accommodate future waste management needs and facilitate more efficient bin movements.

Additionally, the design of the development can support a twice per week collection schedule (as discussed in Section 1.0) for each waste stream, featuring:

- Sufficient staging area space for simultaneous staging of recyclables and organics containers at the collection point (discussed further in Section 2.3), and
- Each residential Waste Storage Room can accommodate a full week's storage, so increasing collection frequency – reducing storage needs – is not a concern.

2.3 Bulky Waste Disposal

Bulky Waste Storage Rooms in Towers A and B are located on Level 1 (ground level) of each building. Each room exceeds the 10 m^2 required by the Guidelines. Bulky waste items such as used furniture, mattresses, appliances, etc. will be temporarily stored in the Bulky Waste Storage Rooms. These items will be collected by the Region as coordinated by the Property Manager.

The Bulky Waste Storage Rooms will be operated in a manner ensuring controlled access to residents. Access to these rooms will be facilitated either through the use of a key card system or by staff providing escorted entry. Giving residents easy access, via key card, will provide convenience and reduce bulky wastes from being forced down the waste chutes. Regular supervision of these rooms (i.e., through property management

staff checks or via video camera) will help ensure that unacceptable wastes (see Section 2.5) or materials that are subject to a stewardship or a Product Care Association program (such as automotive tires, paints, and electronics) will not be left in the rooms. Should misuse and disposal of unacceptable wastes occur during operation of these rooms, then access can be limited to staff escorted use.

Halton Region also supplies a 40 yd^3 roll-off bin twice per year for bulky waste collection. If required, this bin will be placed in an outdoor area of the development acceptable to Property Management Staff and the Region. Staff will contact the Region to coordinate the delivery and collection.

2.4 Grounds Keeping, Maintenance and Renovations

It is anticipated that waste generated by minor building maintenance activities, such as replacing broken fixtures, light bulbs, etc. (but excluding those noted in Section 2.5), can be accommodated in the waste room.

Groundskeeping services will be outsourced to a contracted provider. The contractor will be responsible for removal of leaf and yard waste as per the service agreement.

Construction 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.

2.5 Materials Not Collected

Waste materials not accepted by the Region's three stream waste collection program will not be collected by the Region. Similarly, these materials will not be accepted nor stored in the Residential Waste Storage Rooms. Residents with Hazardous and Special Products (HSP, sometimes called Household Hazardous Waste) or Electronics and Electrical Equipment (EEE) are responsible for the storage and disposal of these materials.

Residents are to handle and dispose of all waste in accordance with Halton Region's requirements[2]. They may do so by using Return-to-Retailer programs or making use of the Halton Waste Management Site. Generally, the Halton Waste Management Site accepts all waste types, including those not collected by the development's waste management system. Residents must deliver their waste to the Halton Waste Management Site or retailer themselves.

[2] Information on how alternate waste streams must be disposed/recycled can be found on the Region's website, www.halton.ca/waste (accessed September 2024).

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). For instance, the HSP program began in October 2021. Changes included additional takeback programs at retailers.

2.6 Waste Collection

All waste streams accumulated in each of the Residential Waste Storage Rooms (Section 2.1) and Bulky Waste Storage Areas (Section 2.3) of each Tower will be taken by maintenance staff to the shared loading /staging area (i.e., Collection Point), present on the ground floor.

2.6.1 Collection Schedule

Although the Region has indicated that twice or three time per week collection of waste may be available to the development in the future, this Plan assumes once-per week collection, with each waste stream collected on a separate day. This collection schedule allows for conservatively designed staging areas and waste storage room sizing (to account for excessive waste generated during tenancy) and reduces maintenance staff efforts and therefore operating cost.

Further, the Blue Box Transition under the Resource Recovery and Circular Economy Act, Regulation 391/21, is scheduled to begin April 1, 2025, for the Town of Oakville. This may affect who collects recyclables and the Region's overall collection schedule.

Although this Plan assumes a once-per-week collection schedule, The current waste storage rooms and design of the loading / staging area will accommodate either once-per-week or twice-per-week collection. The container staging for both options is shown in Appendix A, drawing A211. The staging area is also sized to allow collection of organics and recycling (or garbage) on the same day, however same day collection of recycling and garbage cannot be accommodated.

Burnside assumes an acceptable non-residential waste collection schedule can be implemented that avoids conflicts with the Region's residential waste collection (see Section 3.0). Similarly, the collection schedule will accommodate future Blue Box material collection by the Producer Responsibility Organization without conflicts.

2.6.2 Loading / Staging Area Design

Waste from both Towers will be collected at the single Collection Point, located on the ground floor. The Collection Point will feature:

- a loading area which is 6.5 m in width by 13 m in length
- a minimum 7.5 m overhead clearance;
  - Having no overhead encumbrances (i.e., beams, sprinkler heads, etc.) below this height.
- a +/- 2% grade; and
- the ability to accommodate a 35,000 kg (35 tonnes)[3] waste collection vehicle.

The Region's collection vehicle will be able to access the loading areas, as indicated in the vehicle movement diagrams, attached as Appendix B, showing the minimum 13 m centreline turning radii.

2.6.3 Collection Method

- Bins from Tower A's Residential Waste Storage Room will reach the Collection Point by using the service elevator accessible inside the room. Bins will then be moved (using a bin-puller or similar) through the back of house (BOH) hallway system, to the staging area[5].
  - Should the service elevator be out of order, bins may be transported to the collection point via the adjacent parking ramp to the ground level. Maintenance staff may use a ride-on tractor[6] for ease of transporting bins. This bin movement path has been provided in Appendix A.
- Bins / carts from Tower B's Residential Waste Storage Room will be moved directly to the staging area via the service elevator connecting it to the staging area.

During collection, maintenance staff will assist in moving and positioning the bins in front of the collection vehicle. This will allow its driver to remain within the vehicle during collection, and not require multiple rows of bins in the staging area, positioned for collection (per Appendix 4 of the Guidelines, a minimum of 6 metres width). Staff will then shuffle bins in the staging area as the tipping proceeds. All waste containers will be returned to their respective Residential Waste Storage Rooms following collection.

[3] Confirmation to be provided by others.
[5] The existing hallway / ramp system to transport Tower A's waste will be widened, if necessary, on future design iterations to ensure efficient movement of front-lift bins.
[6] A Kubota sub-compact tractor (https://www.kubota.ca/products/BX2380 accessed September 2024) is provided as an example.

All waste containers will be returned to their respective Residential Waste Storage Rooms following collection.

While waste containers are awaiting collection in the staging areas, there may not be any left for resident use in the Residential Waste Storage Rooms. In this case, 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 and maximizing diversion.

3.0 Non-Residential Waste Management

The Region has stated they will not provide waste collection for non-residential (retal and office) wastes generated by this development. As such, private collection will be arranged for non-residential wastes produced at the property. In each Tower, non-residential wastes will be stored separately from residential wastes within their own dedicated waste rooms. These non-residential waste rooms are not shown on the current plans and will be incorporated in the design at a later stage.

3.1 Storage Room & Equipment

It is expected that non-residential wastes will be temporarily stored within each commercial unit in a small closet using 360 L carts (or smaller) for each waste stream (i.e., garbage, recyclables, and organic waste), before they are transported to the Non-Residential Waste Room in their respective tower. This movement will be completed by the commercial tenants either daily or once the cart(s) are filled.

The non-residential waste rooms will be of a sufficient size to allow for the storage and maneuvering of multiple 360 L carts or front-lift bins for each waste stream, dependent on the operational requirements.

3.1.1 Using Front-lift Bins

Should front-lift bins be used for storage, a cart tipper[7] will be required in the non-residential waste room to empty carts into front-lift bins.

The use of the room in this manner can be operated by either:

a) Commercial Tenants:

   Tenants will bring their waste carts to the waste storage room and use the cart tipper to empty the cart into the appropriate front-lift bin. The tenant will then return their emptied cart to their (commercial unit) storage closet.

   This option has the benefit of requiring the fewest carts. However, training must be provided to the tenant's staff for the safe use of the cart tipper.

[7] A cart tipper such as one from Vestil Manufacturing Corp. or similar may be used (e.g., https://www.vestil.com/product.php?FID=227, accessed September 2024).

b) Facility Maintenance:

Tenants will bring their filled waste carts to the waste storage room. There will be spare, empty carts in the room. The tenant will grab one of the spare carts and return to their (commercial) unit, leaving their filled cart(s) in the waste storage room.

Facility maintenance staff will empty the filled carts using the cart tipper. The emptied carts will then be positioned for reuse by the tenants.

A minimum of two days of carts are recommended with this method. Tenant staff will not require training to operate the cart tipper.

3.1.2 Using Carts Only

If using only carts (no front-lift bins), then the tenants will:

- Deliver their filled carts to the room, and
- Grab an empty cart before returning to their (commercial) unit.

This option is likely to require the highest number of carts compared to other options. Increasing collection frequency (i.e., recycling collection two times per week) would reduce the cart count. Some manual movement of waste to completely load partly filled carts may also reduce the number of carts required.

3.2 Collection Point and Waste Collection

Collection of non-residential waste will take place at the same Collection Point that is used for residential waste. Facility maintenance staff will be responsible for moving the front-lift bins or carts into the staging area.

Private collection of non-residential waste will be scheduled so that it does not conflict with the Region's (residential) waste collection schedule or future Producer Responsibility Organization collection of residential Blue Box materials.

4.0 Conclusions

From the research completed in preparing this report, Burnside believes that the Oakville TOC site, located at 157 & 165 Cross Avenue, has a waste management system that will operate in a safe, functional, and accessible manner, compatible with the Region's residential waste collection system. Furthermore, the development's design provides flexibility to address future solid waste management systems.

Burnside will work with the architectural team to ensure the site's design considers the Region's waste management Guidelines and addresses any municipal comments when preparing future submissions.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A

Site Plan and Statistics

SHEET LIST

UNIT SUMMARY (PER LEVEL)

LEVEL	UNIT CATEGORY	MINIMUM (SF)	MAXIMUM (SF)	COUNT
LEVEL 04	1B	523 SF	643 SF	11
LEVEL 04	2B	620 SF	866 SF	7
LEVEL 04	3B	796 SF	1,065 SF	6
				24
LEVEL 05	1B	485 SF	602 SF	10
LEVEL 05	2B	631 SF	784 SF	11
LEVEL 05	3B	749 SF	805 SF	3
				24
LEVEL 06	1B	508 SF	652 SF	68
LEVEL 06	2B	663 SF	699 SF	24
LEVEL 06	3B	764 SF	764 SF	4
				96
LEVEL 08	1B	521 SF	652 SF	68
LEVEL 08	2B	663 SF	667 SF	20
LEVEL 08	3B	752 SF	764 SF	8
				96
LEVEL 10	1B	514 SF	652 SF	64
LEVEL 10	2B	616 SF	672 SF	24
LEVEL 10	3B	764 SF	792 SF	8
				96
LEVEL 12	1B	522 SF	652 SF	32
LEVEL 12	2B	656 SF	663 SF	12
LEVEL 12	3B	764 SF	764 SF	4
				48
LEVEL 14	1B	514 SF	652 SF	528
LEVEL 14	2B	663 SF	672 SF	198
LEVEL 14	3B	764 SF	803 SF	66
				792
LEVEL 49	1B	523 SF	648 SF	16
LEVEL 49	2B	646 SF	667 SF	8
				24
LEVEL 57	1B	522 SF	652 SF	14
LEVEL 57	2B	663 SF	663 SF	4
LEVEL 57	3B	766 SF	983 SF	4
				22
TOTAL				1222

UNIT SUMMARY (PER LEVEL) TOWER A

LEVEL	UNIT CATEGORY	MINIMUM (SF)	MAXIMUM (SF)	COUNT
LEVEL 04	1B	523 SF	643 SF	8
LEVEL 04	2B	663 SF	663 SF	1
LEVEL 04	3B	796 SF	1,065 SF	3
				12
LEVEL 05	1B	485 SF	602 SF	5
LEVEL 05	2B	641 SF	663 SF	5
LEVEL 05	3B	749 SF	770 SF	2
				12
LEVEL 06 (L07,L53,L55)	1B	508 SF	652 SF	36
LEVEL 06 (L07,L53,L55)	2B	663 SF	663 SF	8
LEVEL 06 (L07,L53,L55)	3B	764 SF	764 SF	4
				48
LEVEL 08 (L09,L53,L54)	1B	521 SF	652 SF	36
LEVEL 08 (L09,L53,L54)	2B	663 SF	663 SF	8
LEVEL 08 (L09,L53,L54)	3B	764 SF	764 SF	4
				48
LEVEL 10 (L11,L51,L52)	1B	522 SF	652 SF	32
LEVEL 10 (L11,L51,L52)	2B	616 SF	663 SF	12
LEVEL 10 (L11,L51,L52)	3B	764 SF	764 SF	4
				48
LEVEL 12 (L13,L49,L50)	1B	522 SF	652 SF	32
LEVEL 12 (L13,L49,L50)	2B	656 SF	663 SF	12
LEVEL 12 (L13,L49,L50)	3B	764 SF	764 SF	4
				48
LEVEL 14 (TOWER)	1B	522 SF	652 SF	280
LEVEL 14 (TOWER)	2B	663 SF	667 SF	105
LEVEL 14 (TOWER)	3B	764 SF	764 SF	35
				420
LEVEL 57 (L58)	1B	522 SF	652 SF	14
LEVEL 57 (L58)	2B	663 SF	663 SF	4
LEVEL 57 (L58)	3B	766 SF	983 SF	4
				22
TOTAL				658

UNIT SUMMARY (PER LEVEL) TOWER B

LEVEL	UNIT CATEGORY	MINIMUM (SF)	MAXIMUM (SF)	COUNT
LEVEL 04	1B	523 SF	596 SF	3
LEVEL 04	2B	620 SF	866 SF	6
LEVEL 04	3B	805 SF	892 SF	3
				12
LEVEL 05	1B	523 SF	596 SF	5
LEVEL 05	2B	631 SF	784 SF	6
LEVEL 05	3B	805 SF	805 SF	1
				12
LEVEL 06 (L01,L47,L48)	1B	523 SF	633 SF	32
LEVEL 06 (L01,L47,L48)	2B	663 SF	699 SF	16
				48
LEVEL 08 (L00,L45,L46)	1B	523 SF	633 SF	32
LEVEL 08 (L00,L45,L46)	2B	663 SF	667 SF	12
LEVEL 08 (L00,L45,L46)	3B	752 SF	752 SF	4
				48
LEVEL 10 (L11,L43,L44)	1B	514 SF	633 SF	32
LEVEL 10 (L11,L43,L44)	2B	667 SF	672 SF	12
LEVEL 10 (L11,L43,L44)	3B	792 SF	792 SF	4
				48
LEVEL 14 (L12,TO L42)	1B	514 SF	633 SF	248
LEVEL 14 (L12,TO L42)	2B	667 SF	672 SF	93
LEVEL 14 (L12,TO L42)	3B	803 SF	803 SF	31
				372
LEVEL 49 (L33)	1B	523 SF	648 SF	16
LEVEL 49 (L33)	2B	646 SF	667 SF	8
				24
TOTAL				564

OVERALL VEHICLE PARKING SCHEDULE

LEVEL	PARKING TYPE	COUNT
LEVEL P1	COMMERCIAL - ACCESSIBLE A (5700 x 3650)	1
LEVEL P1	COMMERCIAL - ACCESSIBLE B (5700 x 2700)	1
LEVEL P1	COMMERCIAL - STANDARD (5700 x 2700)	35
LEVEL P1	VISITOR - STANDARD (5700 x 2700)	43
LEVEL P1		80
LEVEL P2	VISITOR - ACCESSIBLE A (5700 x 3650)	1
LEVEL P2	VISITOR - STANDARD (5700 x 2700)	127
LEVEL P2		128
LEVEL P3	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P3	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P3	RESIDENTIAL - STANDARD (5700 x 2700)	109
LEVEL P3	VISITOR - STANDARD (5700 x 2700)	13
LEVEL P3		126
LEVEL P4	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P4	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P4	RESIDENTIAL - STANDARD (5700 x 2700)	123
LEVEL P4		127
LEVEL P5	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P5	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P5	RESIDENTIAL - STANDARD (5700 x 2700)	123
LEVEL P5		127
LEVEL P6	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P6	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P6	RESIDENTIAL - STANDARD (5700 x 2700)	123
LEVEL P6		127
LEVEL P7	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P7	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P7	RESIDENTIAL - STANDARD (5700 x 2700)	123
LEVEL P7		127
LEVEL P8	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P8	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P8	RESIDENTIAL - STANDARD (5700 x 2700)	109
LEVEL P8		113
TOTAL PARKING		955

RESIDENTIAL VEHICLE PARKING

LEVEL	TYPE	TOTAL
LEVEL P3	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P3	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P3	RESIDENTIAL- STANDARD (5700 x 2700)	109
LEVEL P3		113
LEVEL P4	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P4	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P4	RESIDENTIAL- STANDARD (5700 x 2700)	123
LEVEL P4		127
LEVEL P5	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P5	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P5	RESIDENTIAL- STANDARD (5700 x 2700)	123
LEVEL P5		127
LEVEL P6	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P6	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P6	RESIDENTIAL- STANDARD (5700 x 2700)	123
LEVEL P6		127
LEVEL P7	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P7	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P7	RESIDENTIAL- STANDARD (5700 x 2700)	123
LEVEL P7		127
LEVEL P8	RESIDENTIAL - ACCESSIBLE A (5700 x 3650)	2
LEVEL P8	RESIDENTIAL - ACCESSIBLE B (5700 x 2700)	2
LEVEL P8	RESIDENTIAL- STANDARD (5700 x 2700)	109
LEVEL P8		113
TOTAL PARKING		734

VISITOR VEHICLE PARKING

LEVEL	TYPE	TOTAL
LEVEL P1	VISITOR - STANDARD (5700 x 2700)	43
LEVEL P1		43
LEVEL P2	VISITOR - ACCESSIBLE A (5700 x 3650)	1
LEVEL P2	VISITOR - STANDARD (5700 x 2700)	127
LEVEL P2		128
LEVEL P3	VISITOR - STANDARD (5700 x 2700)	13
LEVEL P3		13
TOTAL PARKING		184

COMMERCIAL OR NON-RES. PARKING

LEVEL	TYPE	TOTAL
LEVEL P1	COMMERCIAL - ACCESSIBLE A (5700 x 3650)	1
LEVEL P1	COMMERCIAL - ACCESSIBLE B (5700 x 2700)	1
LEVEL P1	COMMERCIAL - STANDARD (5700 x 2700)	35
LEVEL P1		37
TOTAL PARKING		37

TOWN OF OAKVILLE ZONING BY-LAW 2014-014

SITE AREA	TOTAL = **9,630 m²**	
	AREA OF ROAD CONVEYANCES = **3,680.53 m²**	
	PRIVATELY OWNED PUBLIC ACCESSIBLE SPACES = **647.80 m²**	
SITE INFORMATION	SITE AREA PROVIDED BY: **J. D. BARNES LTD**	
PROGRAM	MULTI-TOWER RESIDENTIAL DEVELOPMENT WITH 6-STY PODIUM; TOWER A @ 58 STY + MPH; TOWER B @ 50 STY + MPH; WITH A TOTAL OF ***1222*** RESIDENTIAL UNITS	
	REQUIRED / PERMITTED	PROVIDED
MAXIMUM BUILDING HEIGHT	--	TOWER A @ 58 STY + MPH; TOWER B @ 50 STY + MPH
WASTE LOADING	13.0 m (L) x 4.0 m (W) x 7.5 M (H)	13.0 m (L) x 4.0 m (W) x 7.5 M (H)
GROSS CONSTRUCTION AREA	**104,340.58 m²**	
GROSS FLOOR AREA	TOTAL GFA **102,609.92 m²** — *FLOOR AREA, GROSS (GFA) DEFINITION AS PER TOWN OF OAKVILLE BY-LAW NUMBER 2023-065 "MEANS THE TOTAL AREA OF ALL OF THE FLOORS IN A BUILDING MEASURED FROM THE EXTERIOR FACES F THE EXTERIOR WALLS, BUT SHALL NOT INCLUDE AN ATTIC, BASEMENT OR MECHANICAL PENTHOUSE*	
	RESIDENTIAL GFA **98,833.37 m²**	
	NON-RESIDENTIAL GFA (RETAIL) **2,522.19 m²**	
	NON-RESIDENTIAL GFA (OFFICE) **1,254.35 m²**	
FLOOR SPACE INDEX — *FLOOR SPACE INDEX (FSI) DEFINITION PER TOWN OF OAKVILLE BY-LAW 2014-014 & AMENDED IN BY-LAW 2023-065 "MEANS THE GROSS FLOOR AREA OF ALL BUILDINGS ON A LOT DIVIDED BY THE LOT AREA"*	FSI (GROSS) [GFA / Gross Site Area (including conveyances)] **102,609.92 m²** (TOTAL GFA) / **9,630 m²** (LOT AREA) = **10.64**	
	FSI (NET) [GFA / Net Site Area (excluding conveyances)] **102,609.92 m²** (TOTAL GFA) / **5,950 m²** (LOT AREA) = **17.26**	
NUMBER OF UNITS	***1222*** RESIDENTIAL UNITS	

AMENITY AREA PROVISIONS

INDOOR AMENITY SPACE	**4,130.53 m²**	/ ***1222***	UNITS	**3.41 m² PER UNIT**
OUTDOOR AMENITY SPACE	**1,290.11 m²**	/ ***1222***	UNITS	**1.09 m² PER UNIT**

PARKING PROVISIONS

		REQUIRED / PERMITTED		PROVIDED	
VEHICULAR PARKING	RESIDENTIAL	***1222*** x (0) = **0**		**734** / ***1222*** = **0.60**	
	VISITOR	***1222*** x (0) = **0**		**184** / ***1222*** = **0.15**	
	RETAIL / COMMERCIAL	**2,522.19 m²** (NA) = **0**		**37**	/ (**2,522.19 m²** / 100 m²) = **25**
	OFFICE	**1,254.35 m²** (NA) = **0**			/ (**1,254.35 m²** / 100 m²) = **12**
TOTAL		**0**		**955**	
BICYCLE PARKING *(NON-RESIDENTIAL PARKING REQUIREMENT - THE GREATER OF 2 OR 1.0 PER 1,000 m²)*	RESIDENTIAL	***1222*** x (1.00) = **1223** → **917**		**312** BICYCLE STACKER - SHORT-TERM VISITOR (460x1800)	
	VISITOR *(25% OF TOTAL)*	***1222*** x (0.25) = (**306**)		**918** BICYCLE STACKER - LONG-TERM RESIDENTIAL (460x1800)	
	RETAIL / COMMERCIAL	**2,522.19 m²** (1.00/1,000 m²) = **3**			
	OFFICE	**1,254.35 m²** (1.00/1,000 m²) = **2**			
TOTAL		**1228**		**1230**	

VEHICULAR PARKING PROVISION BREAKDOWN BY FLOOR LEVEL

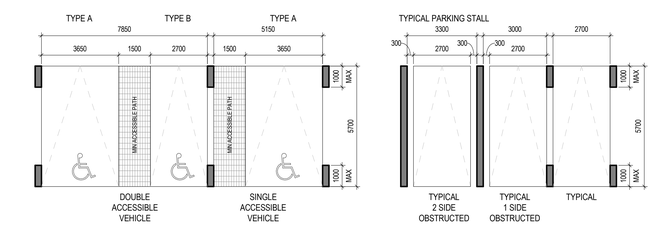
LEVEL	RESIDENTIAL	VISITOR	NON-RES. 1 & 2*	TOTAL
P8	**113**			**113**
P7	**127**			**127**
P6	**127**			**127**
P5	**127**			**127**
P4	**127**			**127**
P3	**113**	**13**		**126**
P2		**128**		**128**
P1		**43**	**37**	**80**
TOTAL	**734**	**184**	**37**	**955**

BICYCLE PARKING PROVISION BREAKDOWN BY FLOOR LEVEL

LEVEL	RESIDENTIAL	VISITOR	NON-RES. 1 & 2	TOTAL
MEZZ	**978**			**978**
L01		**256**		**256**
P2				
TOTAL				**1234**

STORAGE LOCKERS PROVIDED

TOTAL	



PARKING SPACE DIAGRAM
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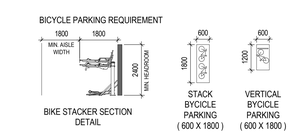

BICYCLE PARKING REQUIREMENTS
1 : 100

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SHEET LIST, ZONING REQUIREMENTS

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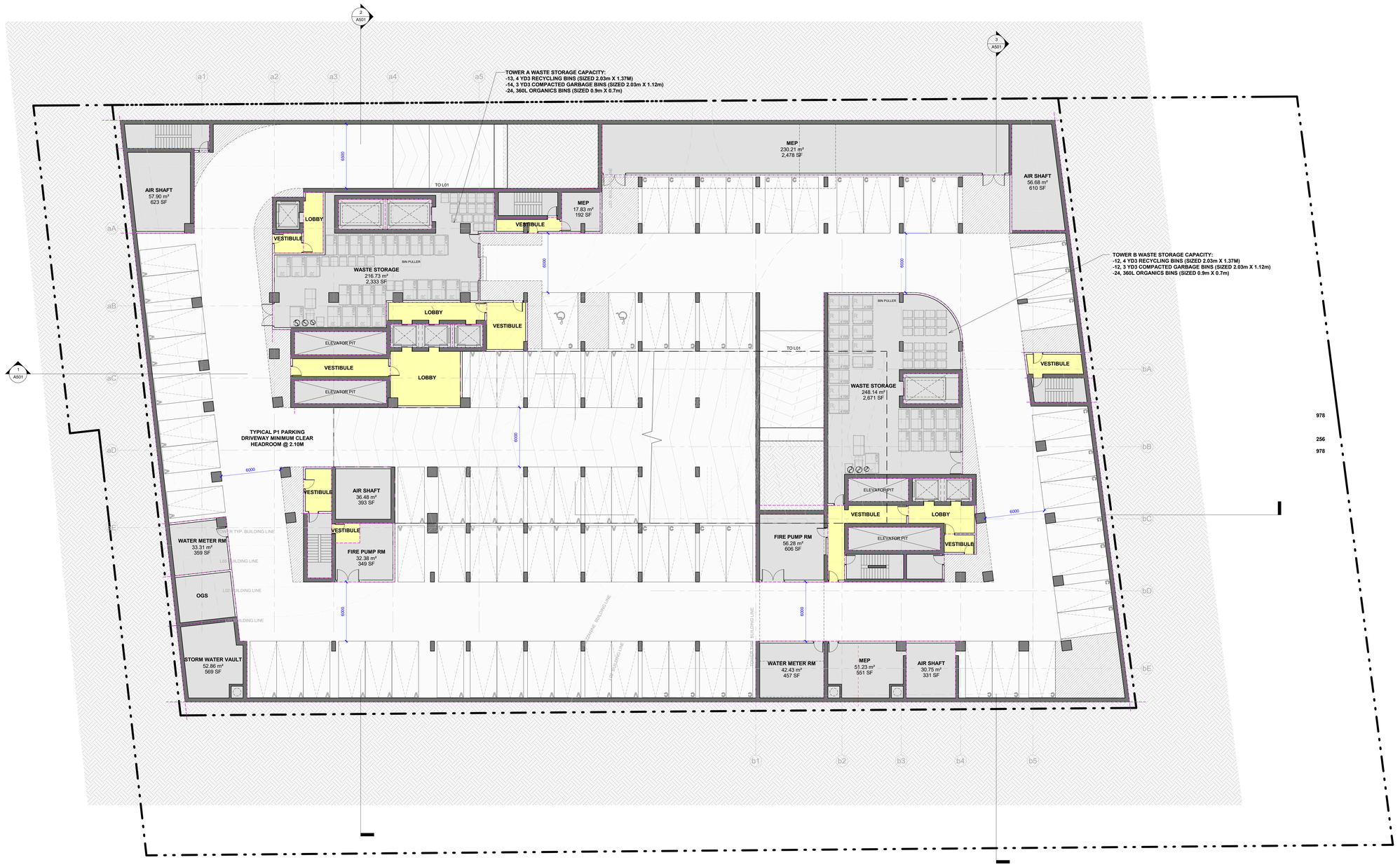
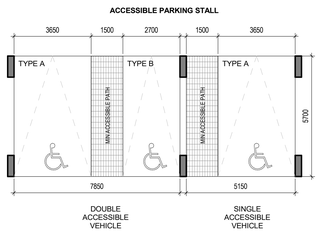


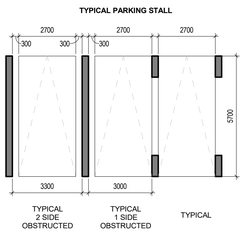
ACCESSIBLE PARKING STALL



DOUBLE ACCESSIBLE VEHICLE

SINGLE ACCESSIBLE VEHICLE

TYPICAL PARKING STALL



TYPICAL 2 SIDE OBSTRUCTED

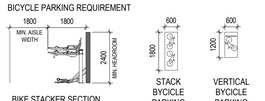
TYPICAL 1 SIDE OBSTRUCTED

TYPICAL

VEHICULAR PARKING SUMMARY PER LEVEL	
	RESIDENTIAL
37	NON-RESIDENTIAL*
43	VISITOR
80	TOTAL

POTENTIAL RETAIL AND/OR POTENTIAL DAYCARE, TBC

BICYCLE PARKING REQUIREMENT



BIKE STACKER SECTION DETAIL

STACK BYCICLE PARKING (600 X 1800)

VERTICAL BYCICLE PARKING (600 X 1800)

BICYCLE PARKING SUMMARY PER LEVEL	
	RESIDENTIAL
	NON-RESIDENTIAL*
	VISITOR
	TOTAL

POTENTIAL RETAIL AND/OR POTENTIAL DAYCARE, TBC

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ELECTRICAL
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LEVEL P1 PLAN

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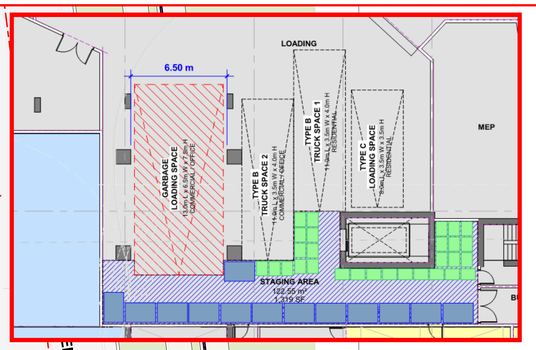
TWICE PER WEEK COLLECTION SCHEDULE 'WORST CASE' STAGING AREA ORIENTATION



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STRUCTURAL
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MECHANICAL
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ELECTRICAL
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LEVEL 1 PLAN

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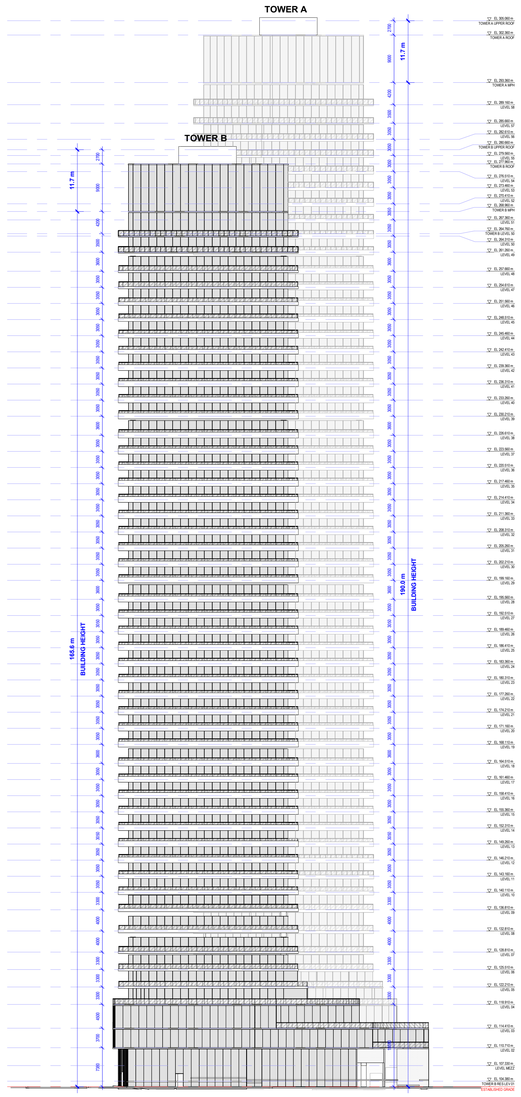
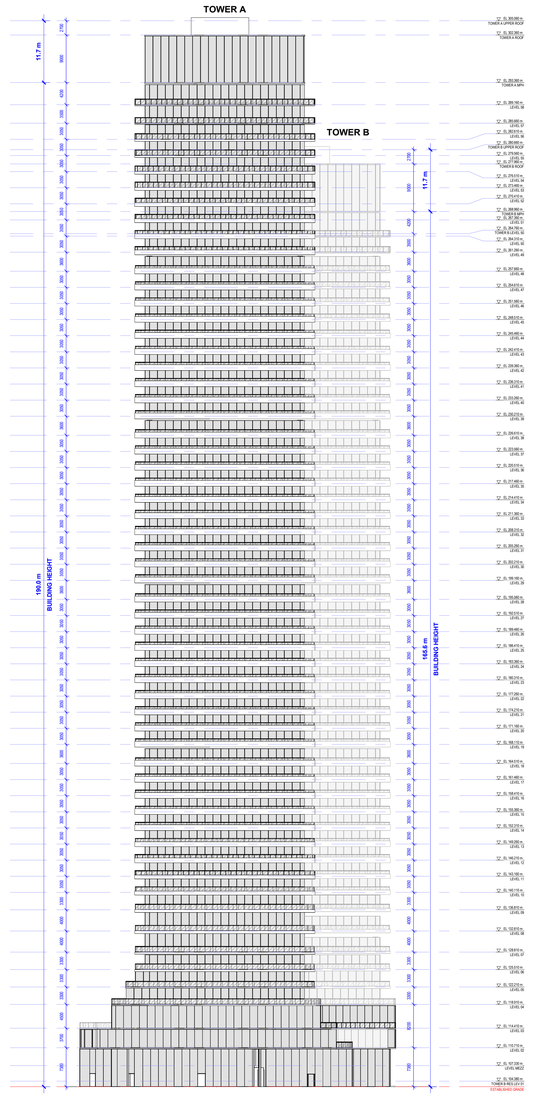


1 NORTH ELEVATION
1 : 400



2 SOUTH ELEVATION
1 : 400

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ELECTRICAL
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NORTH & SOUTH ELEVATIONS

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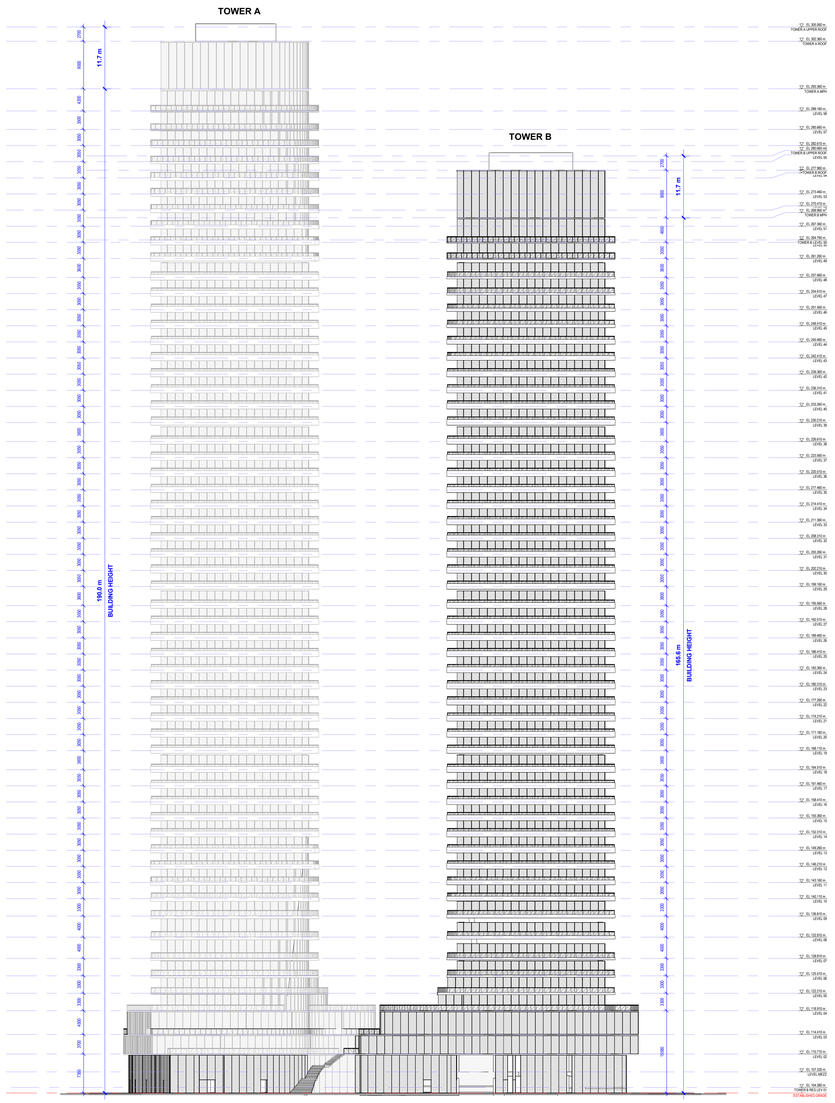
A401



2 **EAST ELEVATION**
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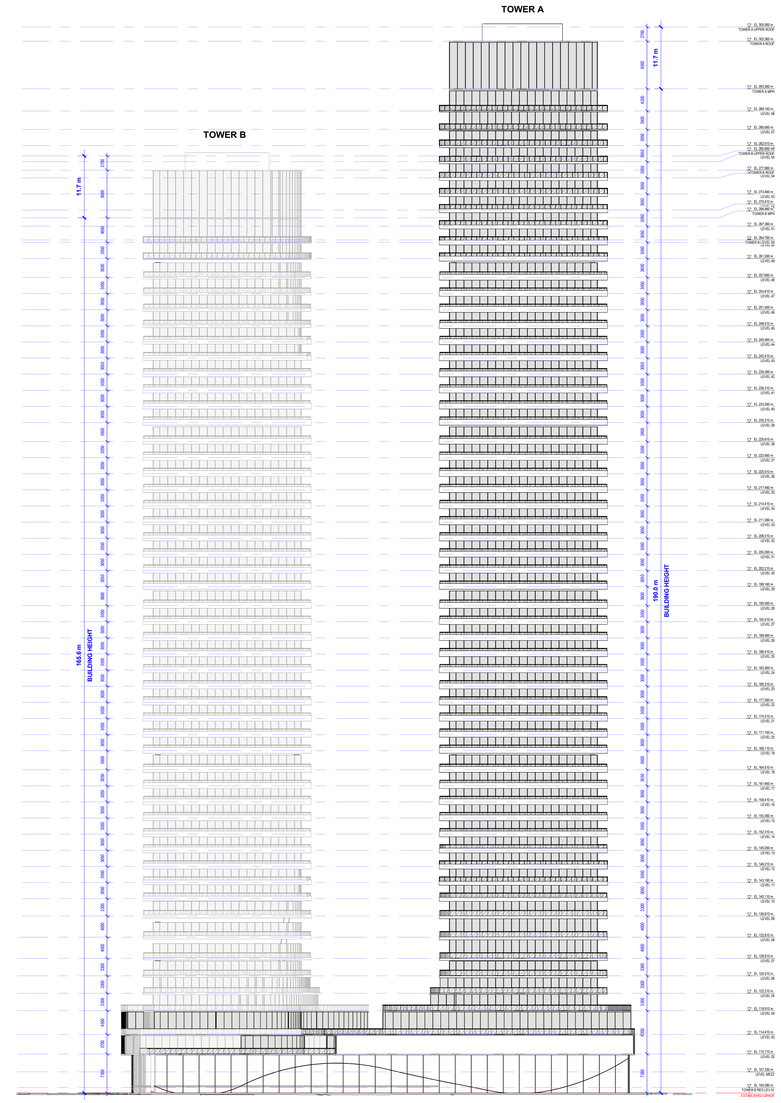

1 **WEST ELEVATION**
1 : 400

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ELECTRICAL
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EAST & WEST ELEVATIONS

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A402

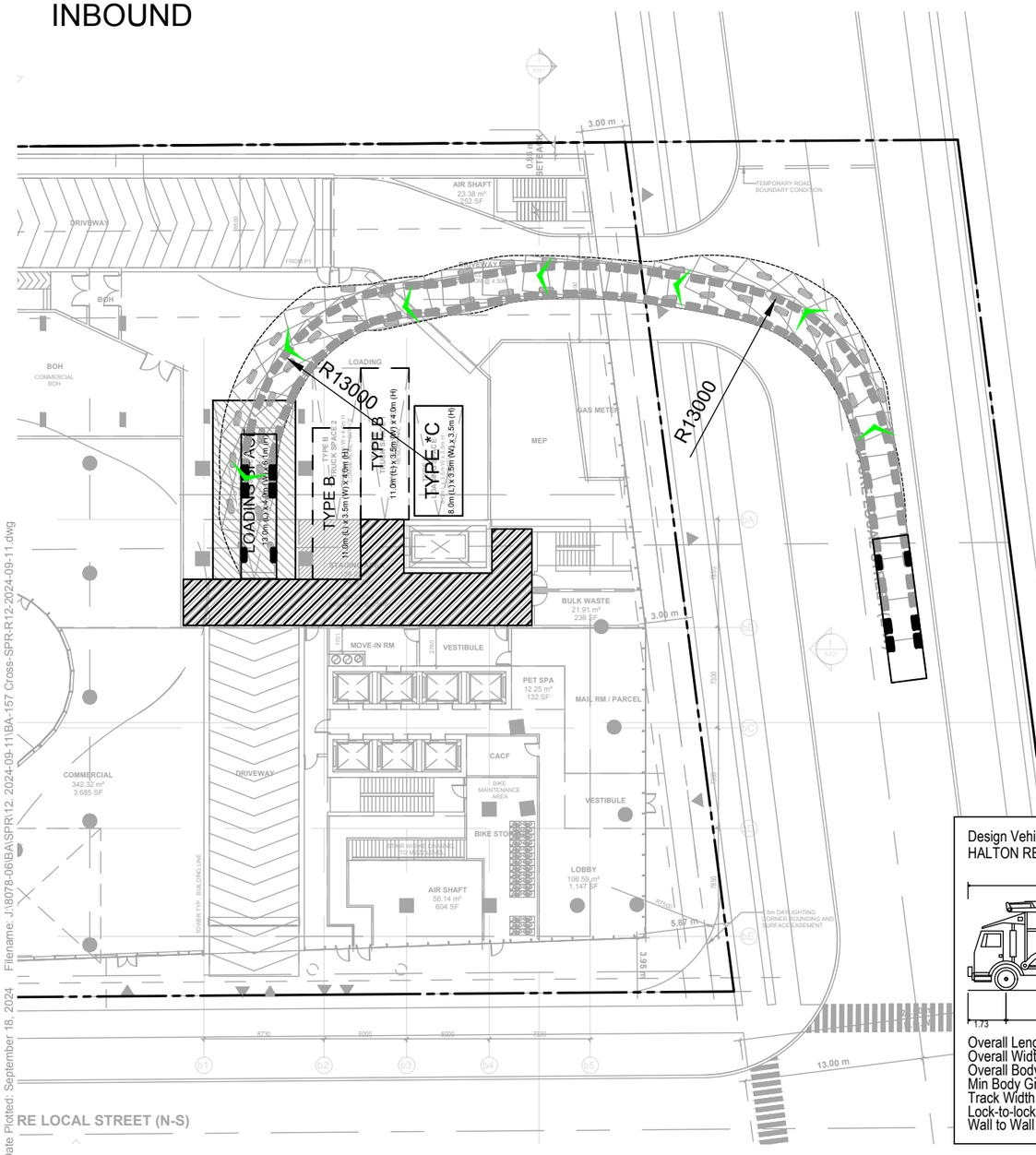
BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

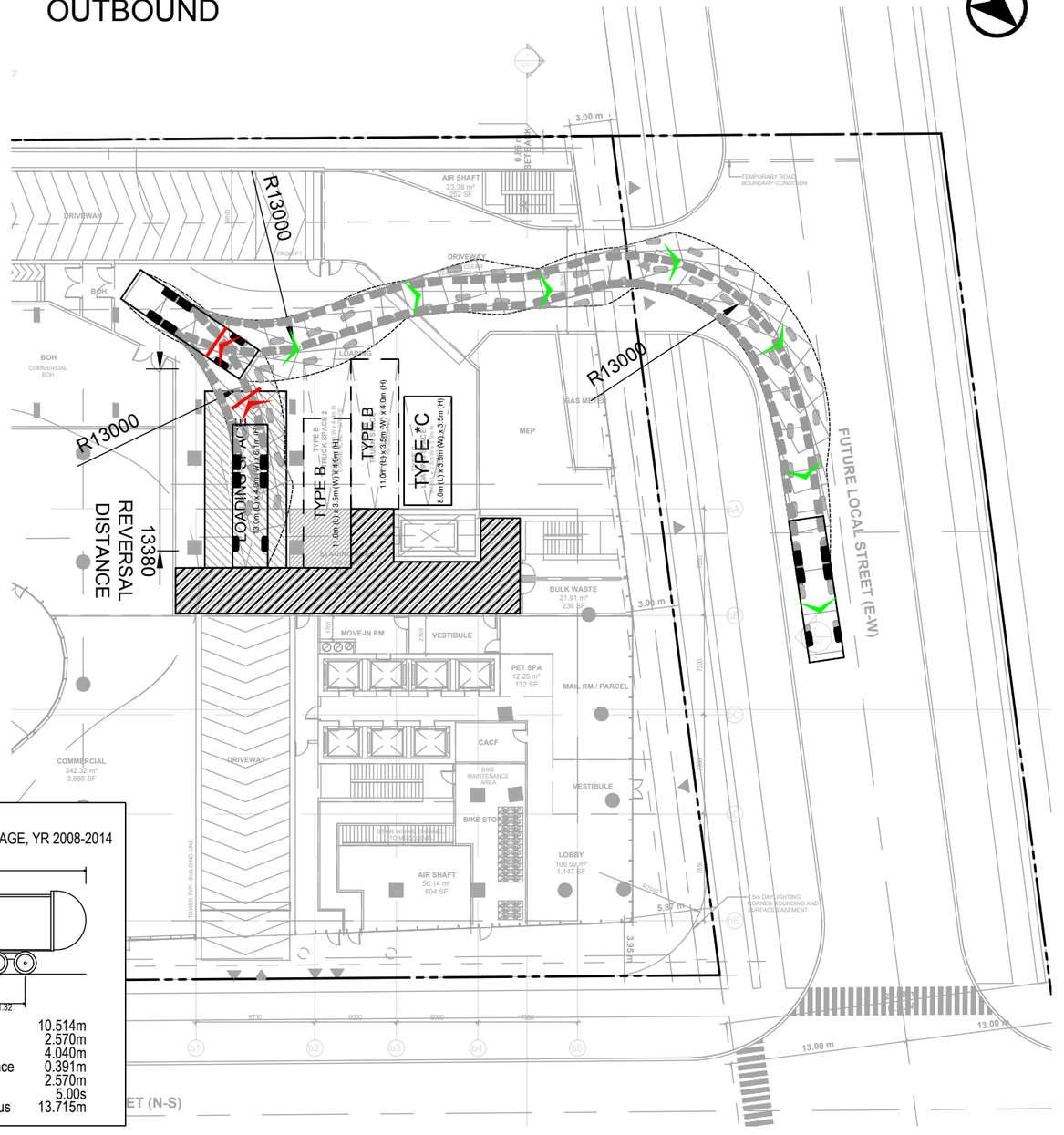
Appendix B

Waste Collection Vehicle Turning Path Analysis

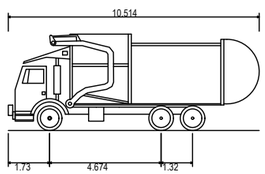
INBOUND



OUTBOUND



Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Filename: J:\8078-06\BA\SPR\12. 2024-09-11\BA-157 Cross-SPR-R12-2024-09-11.dwg
Date Plotted: September 18, 2024

BA Group

157 CROSS AVENUE

Vehicular Manoeuvring Diagram
Halton Region Waste Collection Vehicle

Project:	157 CROSS
Project No.	8078-06
Date:	October 02, 2023
Revised:	September 11, 2024

Scale 1:400 — 0 2 4 6 8 10 20m

Drawing No. VMD-01

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