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Our ref: 12624194

December 13, 2024

Evan Kernaghan
Neatt Communities
775 Main Street East
Milton, Ontario
L9T 3Z2

Waste Management Plan for a Residential Development at Dundas Street West and 3056 Neyagawa Boulevard, Oakville, Ontario

Dear Evan Kernaghan,

1. Introduction

GHD Limited (GHD) was retained by Neatt Communities to complete a Waste Management Plan in support of a development application for a proposed residential development located at 3056 Neyagawa Boulevard in the Town of Oakville, Ontario (Site). The proposed development consists of seven residential towers arranged into three blocks, including a total of 2,278 residential units and retail spaces located within two of the towers. A description of each of the components of the development is as follows:

- Block 1
  - Building 1: 26-storeys consisting of 395 residential units with 1,079 m^2 of proposed retail space on the ground floor
  - Building 2: 18-storeys consisting of 258 residential units
- Block 2
  - Building 3: 18-storeys consisting of 266 residential units with 472 m^2 of proposed retail space on the ground floor
  - Building 4: 24-storeys consisting of 341 residential units
  - Building 5: 28-storeys consisting of 389 residential units
- Block 3
  - Building 6: 15-storeys consisting of 216 residential units
  - Building 7: 25-storeys consisting of 413 residential units
- Parking structure – combination of below grade and above grade parking

The Waste Management Plan has been prepared to address requirements of the Region of Halton's waste collection application requirements in relation to the proposed development (layout and use).

The Waste Management Plan was prepared using the Region's Regional Official Plan Guideline that relates to waste management titled *Development Design Guidelines for Source Separation of Solid Waste* (Guideline)[1]. This letter discusses the waste management issues related to the Site and should therefore be considered to

[1] Halton Region. (2014). Development Design Guidelines for Source Separation of Solid Waste

be the “Waste Management Plan” to satisfy the approval authority’s requirements. The following elements are discussed herein:

– Proposed Site Plan
– Anticipated commercial and residential waste types and amounts
– Retail and residential waste storage options
– Retail and residential waste collection details
– Best management practices to address common waste-related complaints
– Recommendations

2. Draft waste management plan

2.1 Site plan

As stated above the proposed development consists of 2,278 units within seven residential towers, including two retail units in Block 1 – Building 1 with a total of 1,079 m^2 gross floor area and one retail unit in Block 2 – Building 3 with 472 m^2 of gross floor area (see **Figure 1** for Site Plan). Each of the buildings has its own dedicated Garbage Room located on the P1 level (see **Figures 2, 3,** and **4**), connected with two waste chutes that are accessible to all residents on all floors of the building (see **Figure 5** for a typical floor plan). Each set of waste chutes will include one dedicated chute for recycling and one chute that will discharge into a two-waste stream (garbage and organics) sorting compaction system. Since these residential waste storage areas will have the waste dual-sorter and compactor system, for safety reasons, residents will not have access to these areas. This is in keeping with the Guideline:

> *1.9.3.4 Should the design require a Compactor for garbage, the Compactor must be secured at all times with no general access. A Garbage Compactor system may be used with or without a chute system (i.e., through a small garbage access door from the Recyclable Material/Organic Waste room).*

Collection vehicle routing

Figures 6 (in-bound) and **7 (out-bound)** show the anticipated movement of the waste collection vehicles (auto-turn analysis). As demonstrated in these figures, the geometrics of the proposed loading turnaround areas will facilitate the safe and unobstructed movement of the waste collection vehicle. The auto-turn analysis was completed using the specifications in the Region’s Guideline for collection vehicle dimensions and minimum turning radii required for site plan approval.

Block 1

The waste collection vehicle will access the waste from the Block 1 loading area by entering the Site through either Street A or Street B from the proposed extension of 16 Mile Drive and can gain access to the waste collection point by driving into the loading space through Street B (**Figure 6**). Once the waste has been loaded, the vehicle will reverse back a few metres and will exit the Site in a forward direction onto Neyagawa Boulevard (**Figure 7**).

The waste collection vehicle route is open and is not obstructed by any overhangs.

Block 2

The waste collection vehicle will access the waste from the Block 2 loading area by entering the Site from the proposed extension of 16 Mile Drive and gain access to the waste collection point by driving into the loading space (**Figure 6**). Once the waste has been loaded, the vehicle will reverse out of the loading area and exit the

Site in a forward direction through the same access point onto the proposed extension of 16 Mile Drive (**Figure 7**).

The waste collection vehicle route is open and is not obstructed by any overhangs.

Block 3

The waste collection vehicle will access the Block 3 waste loading area by entering the Site from the proposed extension of 16 Mile Drive through the Street A access point and continuing to enter Street C to gain access to the waste collection point for Block 3 by driving into the loading space (**Figure 6**). Once the waste has been loaded, the vehicle will exit the Site by reversing from the loading area and exiting in a forward direction along Street C and Street B, to exit through the Street B access point onto the proposed extension of 16 Mile Drive (**Figure 7**).

The waste collection vehicle route is open and is not obstructed by any overhangs.

2.2 Waste volume

Although there are no requirements for demonstrating the volume or types of waste generated, understanding this information assists in determining the appropriate waste bin storage method and capacity requirements.

2.2.1 Residential

Based on the Region's requirements, each building will have:

- Dedicated storage areas, with enough space to store waste for a minimum of one week
- Recyclable and organic waste systems that are as convenient as the garbage system
- Collection point locations for waste that are accessible to all residents/occupants
- A water hose connection and floor drain to allow storage areas and waste receptacles to be easily cleaned
- Adequate and well-maintained mechanical ventilation and cooling mechanisms to suppress odour during periods of hot weather in the waste storage areas
- A sprinkler and fire prevention system in the waste storage areas
- Secure access to the compactor with no general access

2.2.1.1 **Block 1**

In terms of Buildings 1 and 2, the estimated residential waste volumes were determined by working backwards from the Region's Guideline standards for waste capacity requirements. Halton Region collects 3 and 4 cubic yard (cu. yd.) garbage and recycling bins and 95-gallon carts for organics, based on the types of collection vehicles utilized. Based on the number of units, GHD completed calculations to determine the minimum number of bins/carts required for garbage, recycling, and organics as well as the bin/cart footprints (see **Attachment 1** for detailed waste capacity calculations). The breakdown is as follows:

Building 1 (395 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	5	3 cu. yd. bin(s)
Recycling	9	3 cu. yd. bin(s)
Organics	16	95-gallon cart(s)
Total Bin/Cart Footprint Area	64.9 m^2	

The current Building 1 Garbage Room provides a sufficient area of 106.7 m^2.

Building 2 (258 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	4	3 cu. yd. bin(s)
Recycling	6	3 cu. yd. bin(s)
Organics	11	95-gallon cart(s)
Total Bin/Cart Footprint Area	51.8 m^2	

The current Building 2 Garbage Room provides a sufficient area of 104.9 m^2.

It should be noted that the above calculations are all based on public collection.

Should private collection be contemplated for this development, the minimum number of 3 cu. yd. organics bins for each of the buildings is as follows:

– Building 1 – 3 bins (3 cu. yd.)
– Building 2 – 2 bins (3 cu. yd.)

Garbage

– As per the Region's Guideline, developments with 200 plus units should have a 3 cu. yd. compacter with three bins on wheels.
– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for garbage storage is as follows:
  - Building 1 – 11.4 m^2
  - Building 2 – 9.1 m^2

Recyclable material

– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for recycling storage is as follows:
  - Building 1 – 20.5 m^2
  - Building 2 – 13.6 m^2

Organic waste

– As per the Region's Guideline, space allotment for organics carts should be 0.8 m by 1 m per cart. Total storage space is as follows for organic waste:
  - Building 1 – 12.8 m^2
  - Building 2 – 8.8 m^2

2.2.1.2 Block 2

In terms of Buildings 3, 4, and 5, the estimated residential waste volumes were determined by working backwards from the Region's Guideline standards for waste capacity requirements. Halton Region collects 3 and 4 cu. yd. garbage and recycling bins and 95-gallon carts for organics, based on the types of collection vehicles utilized. Based on the number of units, GHD completed calculations to determine the minimum number of bins/carts required for garbage, recycling, and organics as well as the bin/cart footprints (see **Attachment 1** for detailed waste capacity calculations). The breakdown is as follows:

Building 3 (266 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	4	3 cu. yd. bin(s)
Recycling	6	3 cu. yd. bin(s)
Organics	11	95-gallon cart(s)
Total Bin/Cart Footprint Area	51.8 m^2	

The current Building 3 Garbage Rooms provides a sufficient area of 105.1 m^2.

Building 4 (341 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	5	3 cu. yd. bin(s)
Recycling	8	3 cu. yd. bin(s)
Organics	14	95-gallon cart(s)
Total Bin/Cart Footprint Area	61.0 m^2	

The current Building 4 Garbage Rooms provides a sufficient area of 82.3 m^2.

Building 5 (389 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	5	3 cu. yd. bin(s)
Recycling	9	3 cu. yd. bin(s)
Organics	16	95-gallon cart(s)
Total Bin/Cart Footprint Area	62.6 m^2	

The current Building 5 Garbage Rooms provides a sufficient area of 104.3 m^2.

It should be noted that the above calculations are all based on public collection.

Should private collection be contemplated for this development, the minimum number of 3 cu. yd. organics bins for each of the buildings is as follows:

– Building 3 – 2 bins (3 cu. yd.)
– Building 4 – 3 bins (3 cu. yd.)
– Building 5 – 3 bins (3 cu. yd.)

Garbage

– As per the Region's Guideline, developments with 200 plus units should have a 3 cu. yd. compacter with three bins on wheels.
– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for garbage storage is as follows:
    - Building 3 – 9.1 m^2
    - Building 4 – 11.4 m^2
    - Building 5 – 11.4 m^2

Recyclable material

– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for recycling storage is as follows:
  - Building 3 – 13.6 m^2
  - Building 4 – 18.2 m^2
  - Building 5 – 20.5 m^2

Organic waste

– As per the Region's Guideline, space allotment for organics carts should be 0.8 m by 1 m per cart. Total storage space is as follows for organic waste:
  - Building 3 – 8.8 m^2
  - Building 4 – 11.2 m^2
  - Building 5 – 12.8 m^2

2.2.1.3 Block 3

In terms of Buildings 6 and 7, the estimated residential waste volumes were determined by working backwards from the Region's Guideline standards for waste capacity requirements. Halton Region collects 3 and 4 cu. yd. garbage and recycling bins and 95-gallon carts for organics, based on the types of collection vehicles utilized. Based on the number of units, GHD completed calculations to determine the minimum number of bins/carts required for garbage, recycling, and organics as well as the bin/cart footprints (see **Attachment 1** for detailed waste capacity calculations). The breakdown is as follows:

Building 6 (216 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	3	3 cu. yd. bin(s)
Recycling	5	3 cu. yd. bin(s)
Organics	9	95-gallon cart(s)
Total Bin/Cart Footprint Area	45.6 m^2	

The current Building 6 Garbage Rooms provides a sufficient area of 75.2 m^2.

Building 7 (413 Units)

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted)	6	3 cu. yd. bin(s)
Recycling	10	3 cu. yd. bin(s)
Organics	17	95-gallon cart(s)
Total Bin/Cart Footprint Area	70.2 m^2	

The current Building 7 Garbage Rooms provides a sufficient area of 106.4 m^2.

It should be noted that the above calculations are all based on public collection.

Should private collection be contemplated for this development, the minimum number of 3 cu. yd. organics bins for each of the buildings is as follows:

– Building 6 – 2 bins (3 cu. yd.)
– Building 7 – 3 bins (3 cu. yd.)

As per the waste management requirements in the Region's Guideline there will be:

Garbage

– As per the Region's Guideline, developments with 200 plus units should have a 3 cu. yd. compacter with three bins on wheels.
– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for garbage storage is as follows:
    - Building 6 – 6.8 m^2
    - Building 7 – 13.6 m^2

Recyclable material

– Using the dimensions of a 3 cu. yd. bin included in the Region's Guideline and keeping in mind that as per industry standards the bins should be separated by a minimum of 0.76 m, the total space required for recycling storage is as follows:
    - Building 6 – 11.4 m^2
    - Building 7 – 22.7 m^2

Organic waste

– As per the Region's Guideline, space allotment for organics carts should be 0.8 m by 1 m per cart. Total storage space is as follows for organic waste:
    - Building 6 – 7.2 m^2
    - Building 7 – 13.6 m^2

2.2.1.4

Bulk waste

A clear and accessible area is located on the Ground Floor of each building for the storage of large, bulk waste items. The Site Plan provides a minimum of 10 m^2 for bulk waste items on the Ground Floor of each block.

2.2.2 Commercial

There are typically no requirements for demonstrating the volume or types of waste generated, however understanding the volume and types of waste generated assist in determining the appropriate level of storage capacity and method of storage. We are using industry standards as a proxy for the Site in order to demonstrate an appropriate storage and collection solution, which is also based on the type of uses proposed. Given that the proposed uses are commercial retail, GHD has calculated a conservative estimate of 0.5 L/m^2/day for commercial garbage and recycling waste generation for retail (non-food) space in Building 1

and Building 3 (see **Attachment 1** for detailed waste capacity calculations). With this waste and recycling generation in mind, the following number of bins are required for the Commercial use:

Building 1 (1,079 m^2)

Minimum Number of Bins Required – Commercial	Value	Unit
Garbage (compacted)	2	3 cu. yd. bin(s)
Recycling	2	3 cu. yd. bin(s)
Total Bin/Cart Footprint Area	11.3 m^2	

The Site Plan provides a dedicated commercial Garbage Room in Building 1 with an area of 27.6 m^2.

Building 3 (472 m^2)

Minimum Number of Bins Required – Commercial	Value	Unit
Garbage (compacted)	1	3 cu. yd. bin(s)
Recycling	1	3 cu. yd. bin(s)
Total Bin/Cart Footprint Area	6.8 m^2	

The Site Plan provides a dedicated commercial Garbage Room in Building 3 with an area of 24.7 m^2.

Typical waste storage and collection practices for Commercial developments that are relevant to the proposed development are as follows:

– All waste containers must be housed within a designated area or structure, as appropriate
– All waste containers must be easily accessible to the user
– Storage points and collection points should be convenient for both the user and the service crews to access without presenting a risk to health and safety
– All commercial waste containers will be clearly labelled as such
– Collection points should be hard-surfaced and should be of a size capable of accommodating the required number of bins so there is no overflow onto the public right of way
– Ensure collection contracts are established and executed

2.3 Waste collection

As stated above, the collection will occur at the dedicated waste collection point (labelled in **Figures 1**, **6**, and **7** as “Staging”). Signs will be posted to indicate that the area is a waste collection point and that there shall be no parking or blocking of the waste collection containers. An on-site staff member will assist the driver of the waste collection vehicle in accessing the collection point and exiting the Site.

2.3.1 Residential

On collection day, the on-site staff member will be responsible for transporting all bins and carts using the waste caddy from the Residential Garbage Rooms on Parking Level 1 of Buildings 1-7 to their designated Staging and Loading areas on the Ground Floor via the parking ramp.

A development must be more than 90 percent occupied before the Region will provide residential waste collection services (collection of front-end garbage bins, recycling carts, organic carts and bulky waste). In the interim, the developer is responsible for solid waste management. Therefore, the collection of residential waste will be discussed as 2 phases:

Phase 1 – Pre-90 Percent Occupancy – The developer will be responsible for establishing a solid waste collection for residents as an interim measure.

Phase 2 – 90 Percent Occupancy – Once 90 percent occupancy has been achieved, the developer will submit the "Application for Waste collection Services to Halton Region Waste Management Services", which will facilitate the provision of regional solid waste management services.

A "Drive Through Agreement" will be established with Halton Region before collection commences to allow the Region and/or its agents full access to the internal property for the purpose of providing waste collection services.

2.3.1.1 Phase 1 – pre-90 percent occupancy

Schedule and Frequency

Based on the number of bins required for the residential units, it is anticipated that the collection frequency will be a minimum of once a week. All collections would occur during the hours of 8:00 a.m. to 5:00 p.m. and will be contracted to a private waste hauler. The collection frequency and hours of collection will be determined and set out in the contract between the private hauler and the developer.

2.3.1.2 Phase 2 –90 percent occupancy achieved

A letter will be provided to all tenants/owners within the development to communicate the details of the waste management system and when collection by the Region will commence.

Schedule and Frequency

As per the Region's Guidelines, the collection of garbage will occur weekly. It is anticipated that recyclable material and organic waste collection will also occur weekly. Collection time and date will be established by the Region.

2.3.2 Commercial

As stated in Section 3.3.1 of the Region's Guidelines, commercial developments larger than seven units or more in size are not eligible for waste collection by Halton Region. Private waste collection must be arranged. Therefore, this development is not eligible for commercial waste collection by the Region. As such, a contract with a private waste hauler will be established before the commercial space is occupied.

Schedule and Frequency

Based on the number of waste collection containers allocated for the commercial space, it is anticipated that the collection frequency will be a minimum of once a week. All collections would occur during the hours of 8:00 a.m. to 5:00 p.m. and as stated above will be contracted to a private waste hauler. The collection frequency and hours of collection will be determined and set out in the contract between the private hauler and the developer.

2.4 Best management practices

In addition to the above, we have provided Best Management Practices (BMPs) that will mitigate any potential issues or complaints from residents as it relates to the management of waste on-site:

Continuous communication with tenants/owners about the waste management system

As stated above a letter will be provided to all tenants/owners informing them of the waste management system in place and the services provided by the Region. In addition to this, we suggest that quarterly notifications be

sent out to tenants/owners indicating issues related to waste management that have been experienced such as people not sorting waste correctly and providing information and facts promoting waste diversion and reduction.

The lids of the waste storage containers should be kept closed at all times, except when depositing waste/collection is to occur

Keeping the lids securely fastened, (except when depositing waste/ waste collection), will reduce nuisance related effects, such as odour, and attraction of vermin.

Clean up litter from around waste collection point

Waste collection point should be checked for litter after waste has been collected each week.

Noise

Ensure that collection hours are written into the contract with the private waste haulers and are established for normal business hours to reduce the noise effects from back-up beepers.

2.5 Conclusions

By implementing the best practices set out in this Waste Management Plan, the Region's requirements for a development application as it relates to waste management will be satisfied.

Should you have any questions on the above, please do not hesitate to contact us.

Regards,

Erika Brown, MEnv., RPP
Waste & Environmental Planner

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erika.brown@ghd.com

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

EXISTING SIXTEEN MILE DRIVE STORM SEWERS

7.5M OVERHEAD CLEARANCE THROUGH PRIVATE ROAD TO BE CLEAR OF ALL OBSTRUCTIONS (INCL. OVERHANGS, BALCONIES & UTILITY WIRES)

VISITOR PARKING STALLS

GARBAGE STAGING

DASHED LINE INDICATES GARAGE BELOW

OUTDOOR PLAYGROUND

OPEN PLAZA, REFER TO LANDSCAPE

LAND DEDICATION FOR ROW WIDENING VARIES IN WIDTH FROM 0 TO 0.493M

GARBAGE STAGING WITH SCREENS

DASHED LINE INDICATES GARAGE BELOW

BLOCK-2 BUILDING-4 8 LEVELS HEIGHT:26.80

BLOCK - 2 BUILDING - 3 18 LEVELS + MPH FFE@GROUND: 159.50 BUILDING HEIGHT: 57.60 + MPH GEODETIC HEIGHT: 217.10 + MPH

BLOCK - 2 BUILDING - 4 24 LEVELS MPH FFE @ GROUND:159.15 BLDG HT: 76 + MPH GEO' HT: 235.15 + MPH

BLOCK-2 BUILDING-4 6 LEVELS HEIGHT:20.80

BLOCK-2 BUILDING-3 6 LEVELS HEIGHT:20.70

BLOCK-1 BUILDING-1 6 LEVELS HEIGHT:20.70

BLOCK - 1 BUILDING - 1 26 LEVELS + MPH FFE @ GROUND: 159.55 BLDG HT: 82.20 + MPH GEO' HT: 241.75 + MPH

BLOCK - 2 BUILDING - 5 6 LEVELS HEIGHT: 19.90

BLOCK - 2 BUILDING - 5 28 LEVELS + MPH FFE @ GROUND: 159 BUILDING HEIGHT: 88.30 + MPH GEODETIC HEIGHT: 247.30 + MPH

BLOCK-2 BUILDING-5 8 LEVELS HEIGHT:26.50

BLOCK-1 BUILDING-2 5 LEVELS HEIGHT:16.60

BLOCK - 1 BUILDING - 2 18 LEVELS + MPH FFE @ GROUND: 159.25 BUILDING HEIGHT: 56.50 + MPH GEODETIC HEIGHT: 215.75 + MPH

BLOCK-3 BUILDING-6 6 LEVELS HEIGHT:19.60

BLOCK - 3 BUILDING - 6 15 LEVELS + MPH FFE @ GROUND:158.60 BLDG HT: 47.20 + MPH GEO' HT: 205.80 + MPH

BLOCK-3 BUILDING-7 6 LEVELS HEIGHT:20.60

BLOCK - 3 BUILDING - 7 25 LEVELS + MPH FFE @ GROUND: 158.75 BLDG HT: 79.40 + MPH GEO' HT: 238.15 + MPH

BLOCK-3 BUILDING-7 6 LEVELS HEIGHT:20.60

PRIME ENVISION INC.

1013 DUNDAS STREET W

3056 NEYAGAWA BLVD
OAKVILLE, ON

STREET A

STREET B

STREET C

NEYAGAWA BOULEVARD

MATCH EX. SIDEWALK

MATCH EX. GROUND w/ 3:1 SLOPE (SEE NOTE 1)

EX. RETAINING WALL

EXISTING BUILDING

EX. DITCH TOP 155.38 INV152.38±

EX. DITCH TOP 158.37

LEGEND

NOTES:

-OVERHEAD CLEARANCE THROUGHOUT THE PRIVATE ROAD MUST BE A MINIMUM OF 7.5 M AND BE FREE FROM OBSTRUCTIONS SUCH AS OVERHANGS, AWNINGS, UTILITY WIRES, BALCONIES, AND MUST BE KEPT CLEAR OF TREE BRANCHES, ETC

-ALL PRIVATE ROADS AND SUPPORTED STRUCTURES ALONG THE WASTE COLLECTION ROUTE MUST BE DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK). THE REGION WILL RECEIVE A LETTER, CERTIFIED BY AN ONTARIO PROFESSIONAL ENGINEER, IN ADVANCE OF ANY INITIAL WASTE COLLECTION, INDICATING THAT THE SUPPORTED STRUCTURE CAN SUPPORT A FULLY LOADED WASTE TRUCK.

-THE COLLECTION POINT MUST BE LEVEL (THE CHANGE OF GRADE MUST BE LABELLED ON THE SITE PLAN AND NOT BE MORE THAN +/_ 2%)

-A TRAINED ON-SITE STAFF MEMBER TO BE AVAILABLE TO MANEUVER WASTE BINS FOR CITY COLLECTION AT THE LOADING AREA AND ALSO ACT AS A FLAGMAN WHEN TRUCK IS PARKING AND REVERSING.

-RETAIL MANAGEMENT MUST ARRANGE FOR THEIR COLLECTION DAYS TO BE SCHEDULED ON OPPOSITE DAYS FROM THOSE OF THE RESIDENTIAL COLLECTION DAYS.

-RETAIL / COMMERCIAL BINS WILL BE LABELED SEPARATELY, AND MUST BE CLEARLY LABELED.

-ILLUSTRATED VEHICLE MOVEMENT DIAGRAM IS TAKEN FROM TRAFFIC REPORT. REFER ALSO TO TRAFFIC REPORT.

-REFER TO SITE SERVICING AND GRADING PLAN FOR DETAILED GRADING.

-REFER TO LANDSCAPE PLAN FOR PLANTING AND PAVING LOCATION, MATERIALS AND DETAILS.

-TWO CHUTES EQUIPPED. ONE C/W BI-SORTER FOR GARBAGE (G) AND COMPOST (C). OTHER CHUTE FOR RECYCLING (R). GARBAGE STREAM ATTACHED TO COMPACTOR

Figure 1

NO.	REVISIONS	DATE
03	ISSUED FOR OPA & ZBA	06 DEC 2024
02	ISSUED FOR URBAN DESIGN BRIEF	31 OCT 2024
01	ISSUED FOR PRE-CONSULTATION MEETING #02	05 SEP 2024

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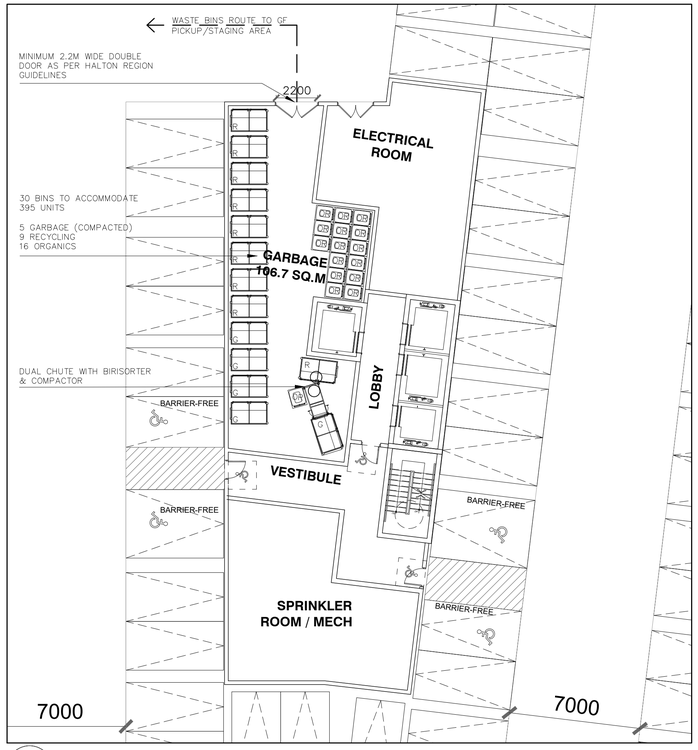
neatt

ONTARIO ASSOCIATION OF ARCHITECTS
MASAK ESLAHJOU
LICENCE

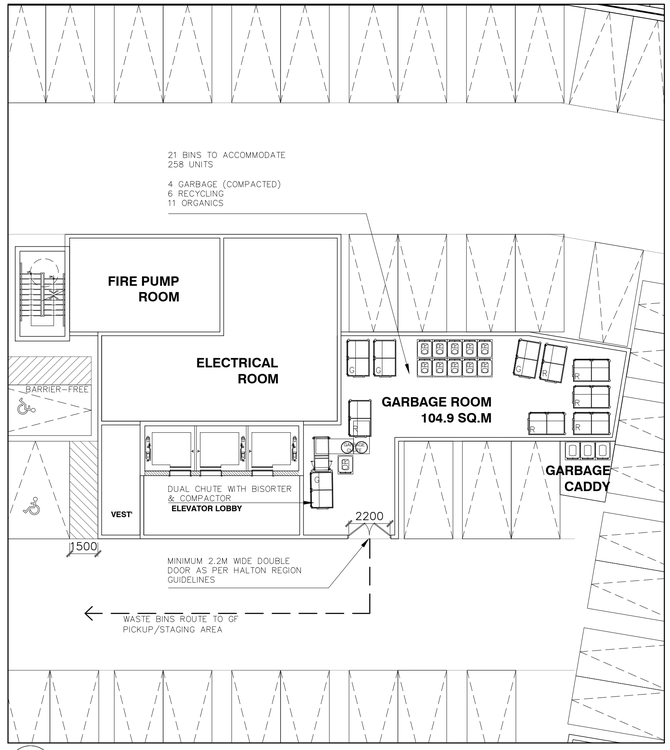
Drawn: SR	Scale: 1:400
Checked: CW	Date: MARCH 2024

Title: SITE PLAN

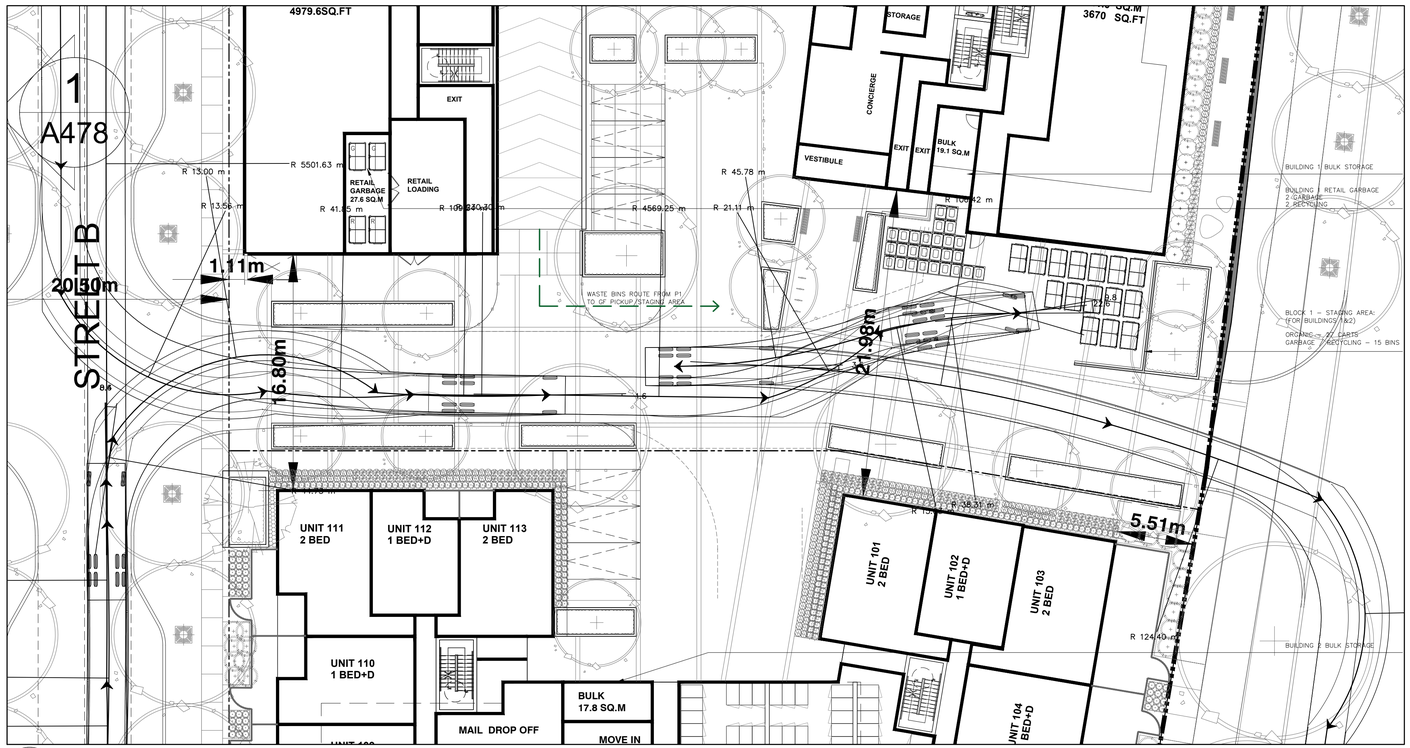
Project No.: 23-109	Drawing No.: A106



3 A107 BUILDING 1 – GARBAGE ROOM @ P1



2 A107 BUILDING 2 – GARBAGE ROOM @ P1



1 A107 BLOCK 1 – LOADING AREA

LEGEND

NOTES:

-OVERHEAD CLEARANCE THROUGHOUT THE PRIVATE ROAD MUST BE A MINIMUM OF 7.5 M AND BE FREE FROM OBSTRUCTIONS SUCH AS OVERHANGS, AWNINGS, UTILITY WIRES, BALCONIES, AND MUST BE KEPT CLEAR OF TREE BRANCHES, ETC

-ALL PRIVATE ROADS AND SUPPORTED STRUCTURES ALONG THE WASTE COLLECTION ROUTE MUST BE DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK). THE REGION WILL RECEIVE A LETTER, CERTIFIED BY AN ONTARIO PROFESSIONAL ENGINEER, IN ADVANCE OF ANY INITIAL WASTE COLLECTION, INDICATING THAT THE SUPPORTED STRUCTURE CAN SUPPORT A FULLY LOADED WASTE TRUCK.

-THE COLLECTION POINT MUST BE LEVEL (THE CHANGE OF GRADE MUST BE LABELLED ON THE SITE PLAN AND NOT BE MORE THAN +/_ 2%)

-A TRAINED ON-SITE STAFF MEMBER TO BE AVAILABLE TO MANEUVER WASTE BINS FOR CITY COLLECTION AT THE LOADING AREA AND ALSO ACT AS A FLAGMAN WHEN TRUCK IS PARKING AND REVERSING.

-RETAIL MANAGEMENT MUST ARRANGE FOR THEIR COLLECTION DAYS TO BE SCHEDULED ON OPPOSITE DAYS FROM THOSE OF THE RESIDENTIAL COLLECTION DAYS.

-RETAIL / COMMERCIAL BINS WILL BE LABELED SEPARATELY, AND MUST BE CLEARLY LABELED.

-ILLUSTRATED VEHICLE MOVEMENT DIAGRAM IS TAKEN FROM TRAFFIC REPORT. REFER ALSO TO TRAFFIC REPORT.

-REFER TO SITE SERVICING AND GRADING PLAN FOR DETAILED GRADING.

-REFER TO LANDSCAPE PLAN FOR PLANTING AND PAVING LOCATION, MATERIALS AND DETAILS.

-TWO CHUTES EQUIPPED. ONE C/W BI-SORTER FOR GARBAGE (G) AND COMPOST (C). OTHER CHUTE FOR RECYCLING (R). GARBAGE STREAM ATTACHED TO COMPACTOR

Figure 2

BUILDING 1 395 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	8	3 CU. YD. BIN(S)
RECYCLING	9	3 CU. YD. BIN(S)
ORGANIC	16	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	64.9 SQ.M	

BUILDING 2 258 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	4	3 CU. YD. BIN(S)
RECYCLING	6	3 CU. YD. BIN(S)
ORGANIC	11	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	51.8 SQ.M	

NOTES:

- NUMBER OF BINS AND AREAS CALCULATED AS PER HALTON REGION GUIDLINE. (REFER TO WASTE MANAGEMENT PLAN).
- MINIMUM 2.2M WIDE DOUBLE DOOR AS PER HALTON REGION GUIDELINE
- OVERHEAD CLEARANCE THROUGHOUT THE PRIVATE ROAD MUST BE MINIMUM OF 7.5M AND BE FREE FROM OBSTRUCTIONS SUCH AS OVERHANGS, AWNINGS, UTILITY WIRES, BALCONIES, AND MUST BE KEPT CLEAR OF TREE BRANCHES, ETC.
- ALL PRIVATE ROADS AND SUPPORTED STRUCTURES ALONG THE WASTE COLLECTION ROUTE MUST BE DESIGNED AND CONSTRUCTED TO SUPPORT MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK).
- COLLECTION POINT MUST BE LEVEL (THE CHANGE OF GRADE MUST NOT BE MORE THAN +/– 2%) AND IF APPLICABLE, MUST BE CERTIFIED THAT IT IS DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK).

NO.	REVISIONS	DATE
03	ISSUED FOR OPA & ZBA	06 DEC 2024
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OAKVILLE, ON

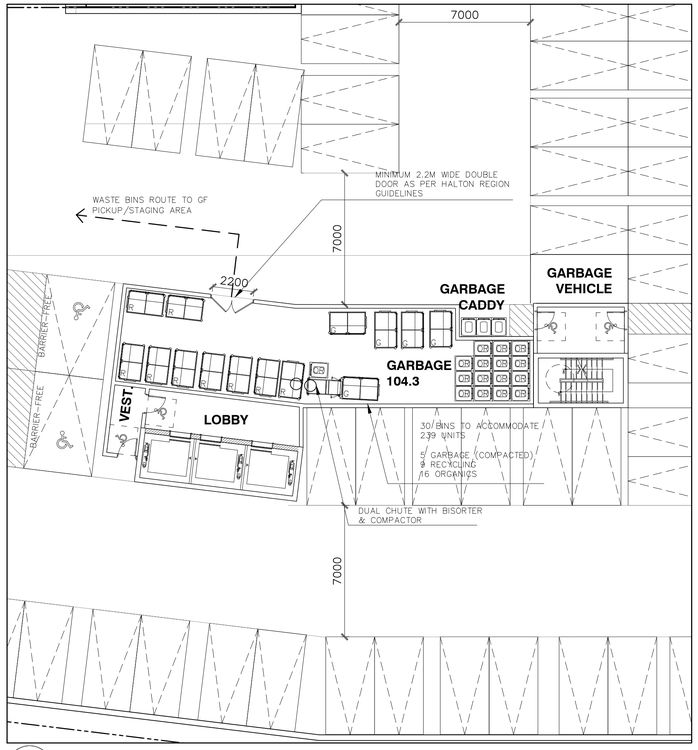
neatt

ONTARIO ASSOCIATION OF ARCHITECTS
MIRIAM ESLAHJOU LICENCE

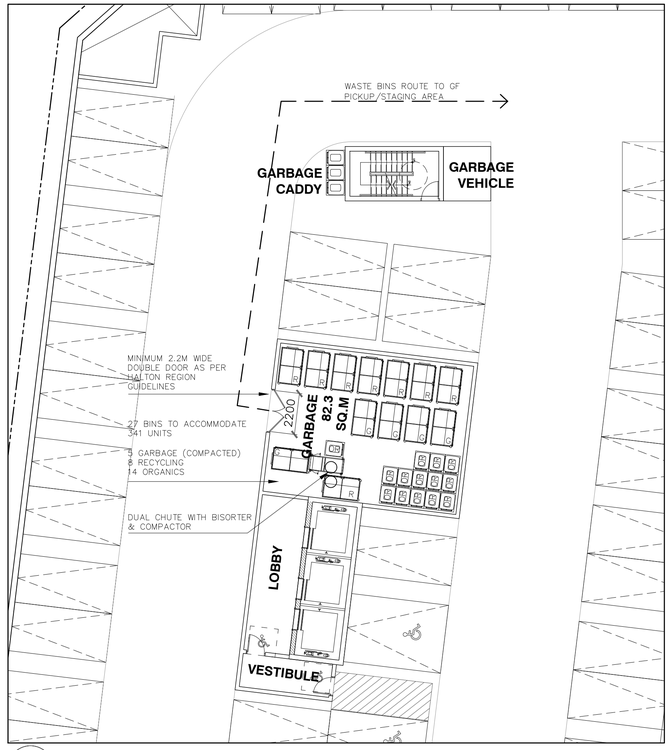
Drawn	Scale
SR	1:150
Checked	Date
CW	MARCH 2024

Title
WASTE MANAGEMENT-
BLOCK 1

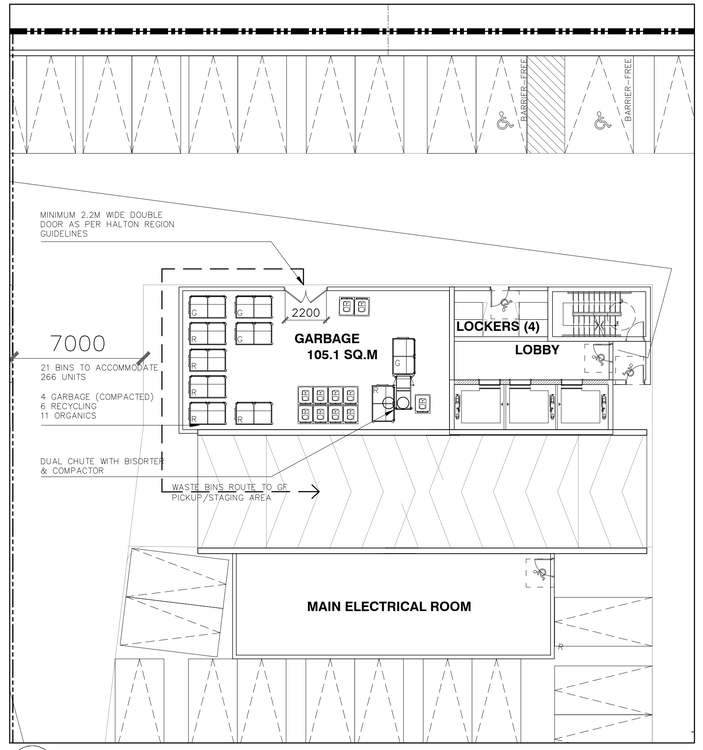
Project No.	Drawing No.
23-109	**A107**



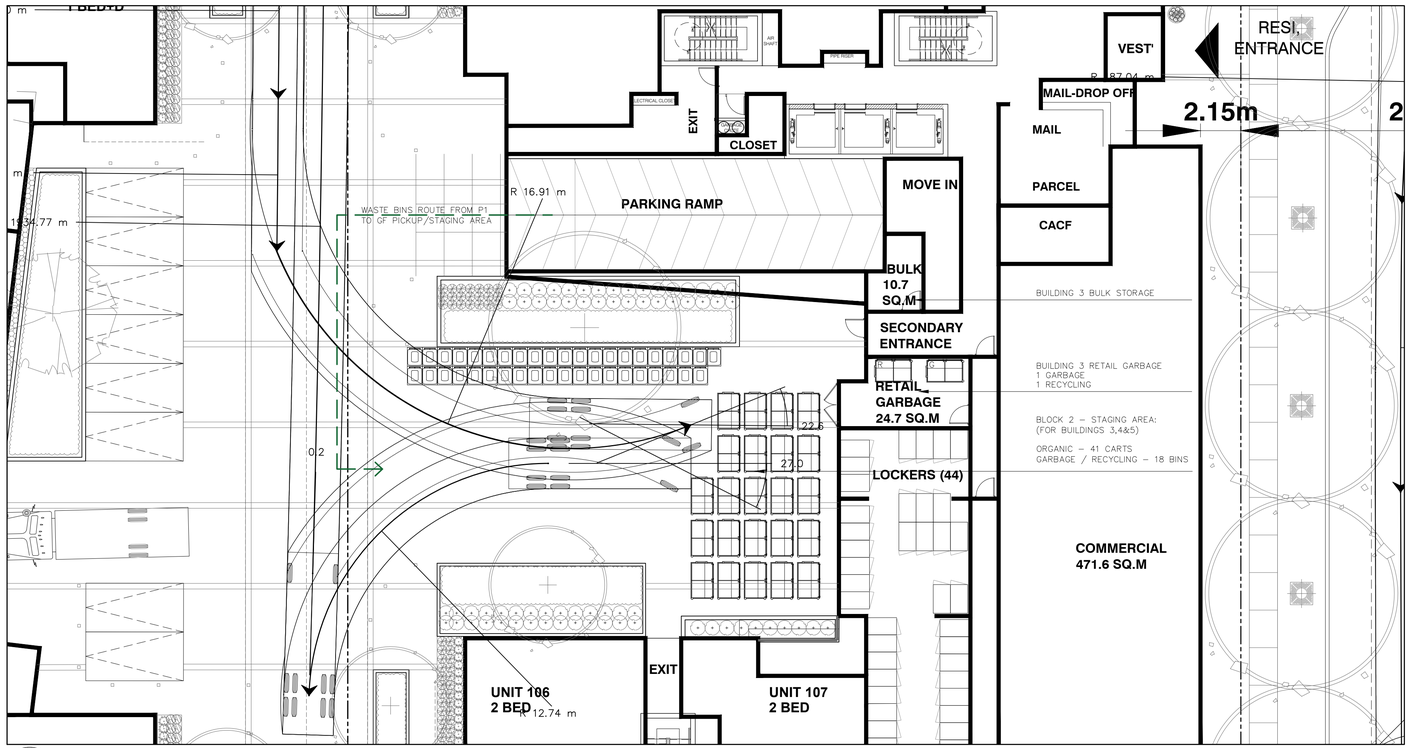
4 A108 BUILDING 5 – GARBAGE ROOM @ P1



3 A108 BUILDING 4 – GARBAGE ROOM @ P1



1 A108 BUILDING 3 – GARBAGE ROOM @ P1



2 A108 BLOCK 2 – STAGING/LOADING AREA

BUILDING 3 266 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	4	3 CU. YD. BIN(S)
RECYCLING	6	3 CU. YD. BIN(S)
ORGANIC	11	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	51.8 SQ.M	

BUILDING 4 341 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	5	3 CU. YD. BIN(S)
RECYCLING	8	3 CU. YD. BIN(S)
ORGANIC	14	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	61.0 SQ.M	

BUILDING 5 389 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	5	3 CU. YD. BIN(S)
RECYCLING	9	3 CU. YD. BIN(S)
ORGANIC	16	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	62.6 SQ.M	

NOTES:

- NUMBER OF BINS AND AREAS CALCULATED AS PER HALTON REGION GUIDLINE. (REFER TO WASTE MANAGEMENT PLAN).
- MINIMUM 2.2M WIDE DOUBLE DOOR AS PER HALTON REGION GUIDELINE
- OVERHEAD CLEARANCE THROUGHOUT THE PRIVATE ROAD MUST BE MINIMUM OF 7.5M AND BE FREE FROM OBSTRUCTIONS SUCH AS OVERHANGS, AWNINGS, UTILITY WIRES, BALCONIES, AND MUST BE KEPT CLEAR OF TREE BRANCHES, ETC.
- ALL PRIVATE ROADS AND SUPPORTED STRUCTURES ALONG THE WASTE COLLECTION ROUTE MUST BE DESIGNED AND CONSTRUCTED TO SUPPORT MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK).
- COLLECTION POINT MUST BE LEVEL (THE CHANGE OF GRADE MUST NOT BE MORE THAN +/- 2%) AND IF APPLICABLE, MUST BE CERTIFIED THAT IT IS DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF 35 TONNES (THE WEIGHT OF A FULLY LOADED WASTE TRUCK).

LEGEND

NOTES:

-OVERHEAD CLEARANCE THROUGHOUT THE PRIVATE ROAD MUST BE A MINIMUM OF 7.5 M AND BE FREE FROM OBSTRUCTIONS SUCH AS OVERHANGS, AWNINGS, UTILITY WIRES, BALCONIES, AND MUST BE KEPT CLEAR OF TREE BRANCHES, ETC

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-THE COLLECTION POINT MUST BE LEVEL (THE CHANGE OF GRADE MUST BE LABELLED ON THE SITE PLAN AND NOT BE MORE THAN +/_ 2%)

-A TRAINED ON-SITE STAFF MEMBER TO BE AVAILABLE TO MANEUVER WASTE BINS FOR CITY COLLECTION AT THE LOADING AREA AND ALSO ACT AS A FLAGMAN WHEN TRUCK IS PARKING AND REVERSING.

-RETAIL MANAGEMENT MUST ARRANGE FOR THEIR COLLECTION DAYS TO BE SCHEDULED ON OPPOSITE DAYS FROM THOSE OF THE RESIDENTIAL COLLECTION DAYS.

-RETAIL / COMMERCIAL BINS WILL BE LABELED SEPARATELY, AND MUST BE CLEARLY LABELED.

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-TWO CHUTES EQUIPPED, ONE C/W BI-SORTER FOR GARBAGE (G) AND COMPOST (C). OTHER CHUTE FOR RECYCLING (R). GARBAGE STREAM ATTACHED TO COMPACTOR

Figure 3

NO.	REVISIONS	DATE
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OAKVILLE, ON

neatt

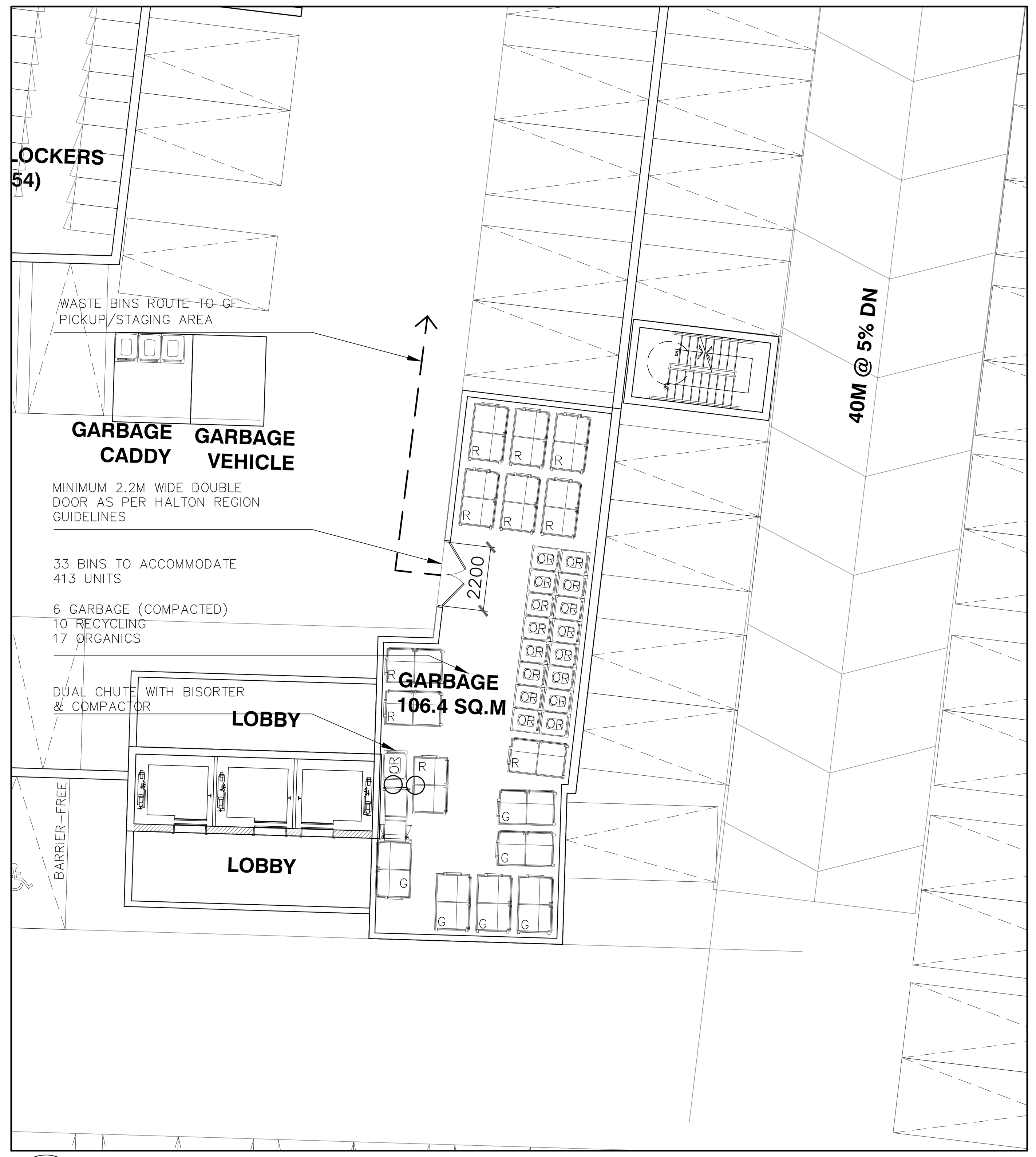
ONTARIO ASSOCIATION OF ARCHITECTS
OMAR ESLAHJOU LICENCE

Drawn: SR	Scale: 1:150
Checked: CW	Date: MARCH 2024

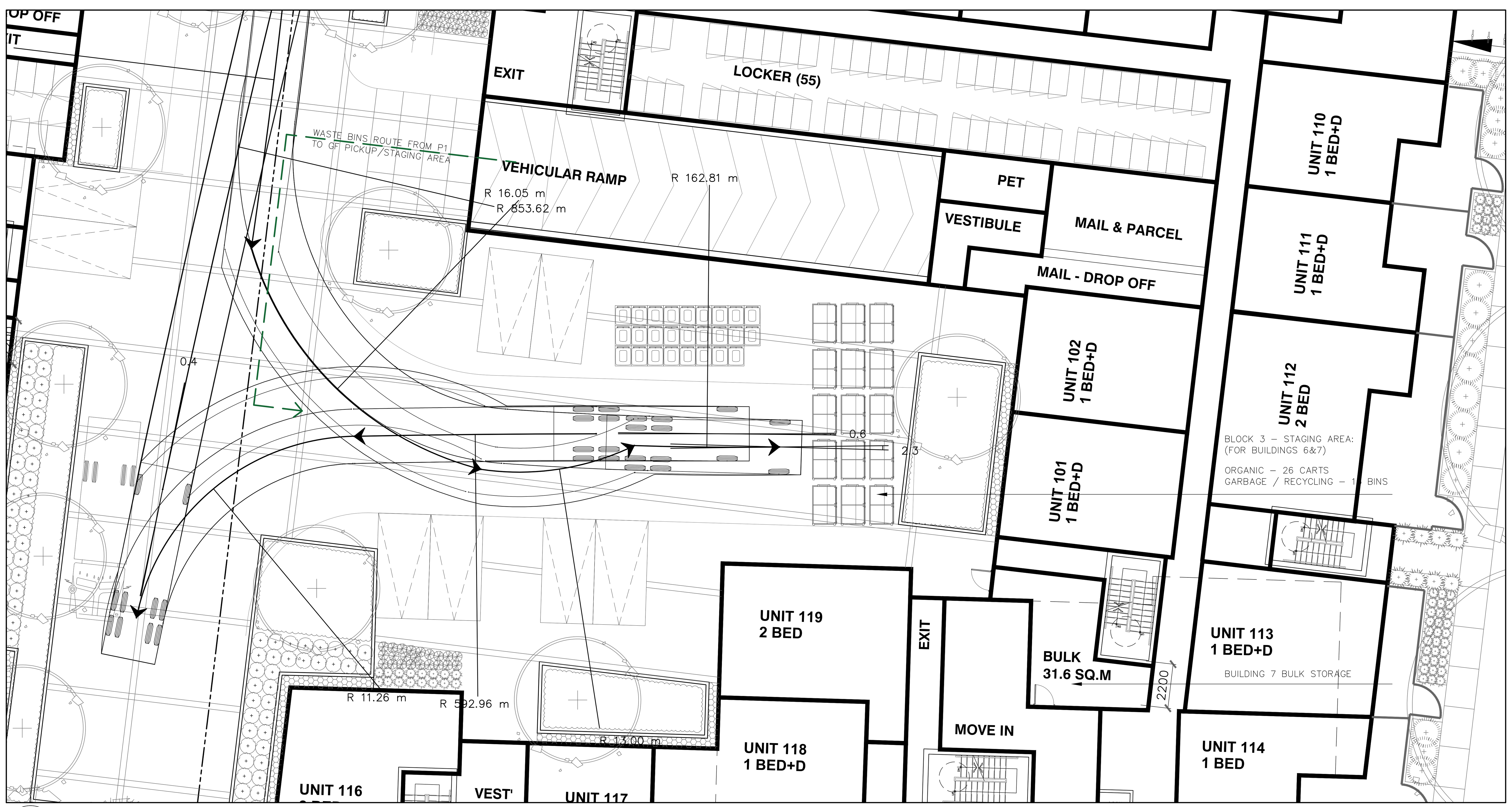
Title: WASTE MANAGEMENT- BLOCK 2

Project No.: 23-109	Drawing No.: **A108**

3 A107 BUILDING 6 – GARBAGE ROOM @ P1



2 A107 BUILDING 7 – GARBAGE ROOM @ P1



1 A107 BLOCK 1 – LOADING AREA

BUILDING 6 216 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	3	3 CU. YD. BIN(S)
RECYCLING	5	3 CU. YD. BIN(S)
ORGANIC	9	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	45.6 SQ.M	

BUILDING 7 413 (UNITS)		
MINIMUM NUMBER OF BINS REQUIRED – RESIDENTIAL	VALUE	UNIT
GARBAGE	6	3 CU. YD. BIN(S)
RECYCLING	10	3 CU. YD. BIN(S)
ORGANIC	17	95 GAL. CART(S)
TOTAL BIN/CART FOOTPRINT AREA	70.2 SQ.M	

NOTES:

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LEGEND

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Figure 4

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01	ISSUED FOR PRE-CONSULTATION MEETING #02	05 SEP 2024

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS ON THE JOB.

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OAKVILLE, ON

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ONTARIO ASSOCIATION OF ARCHITECTS

Drawn: SR	Scale: 1:150
Checked: CW	Date: MARCH 2024
Title: WASTE MANAGEMENT- BLOCK 3	
Project No.: 23-109	Drawing No.: A109

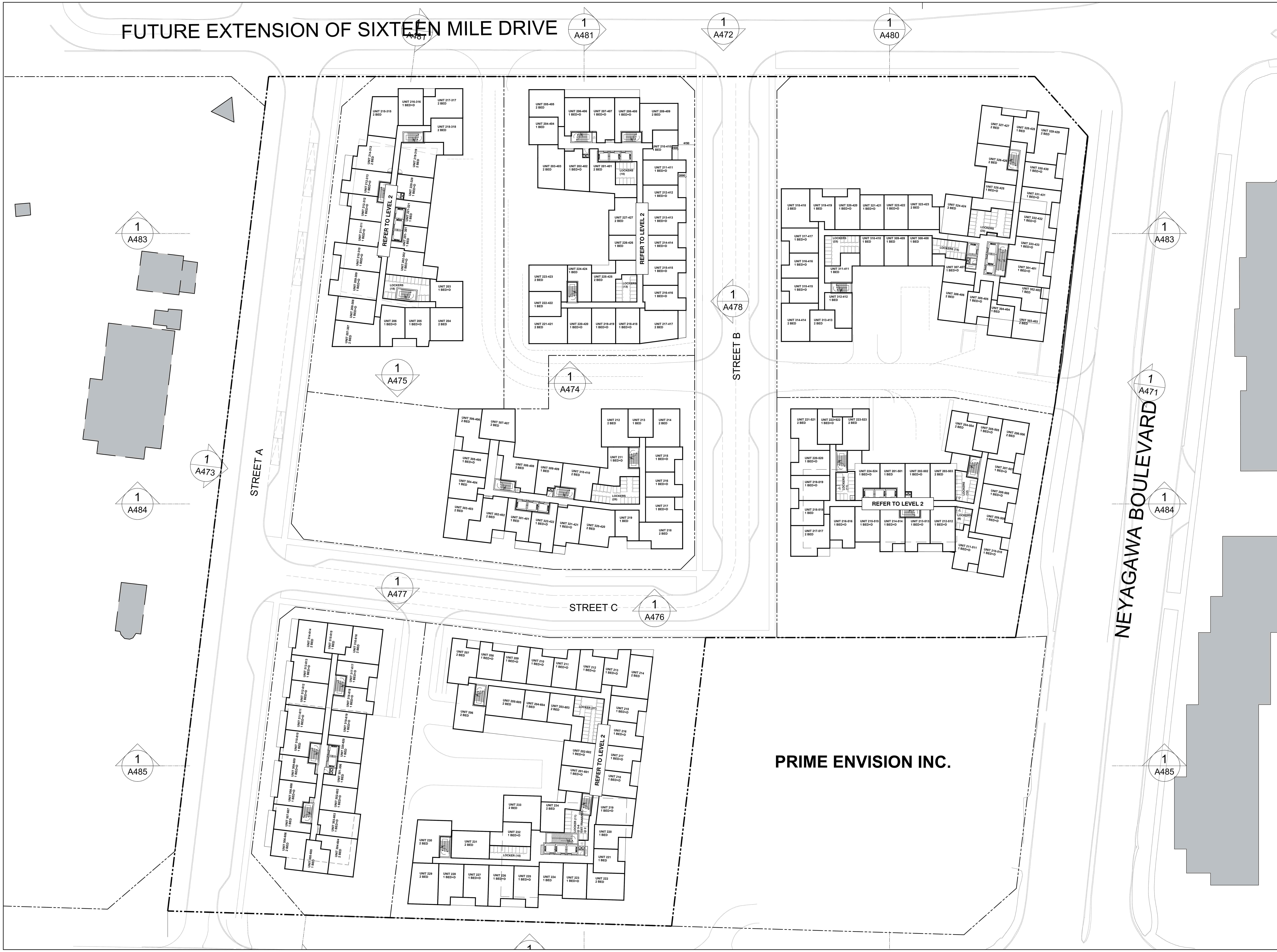

Figure 5

NO.	REVISIONS	DATE
03	ISSUED FOR OPA & ZBA	06 DEC 2024
02	ISSUED FOR URBAN DESIGN BRIEF	31 OCT 2024
01	ISSUED FOR PRE-CONSULTATION MEETING #02	05 SEP 2024

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BABAK ESLAHJOU
LICENCE
4706

Drawn	Scale
SR	1:400
Checked	**Date**
CW	MARCH 2024

Title
LEVEL 4

Project No.	Drawing No.
23-109	A207

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

STORM SEWERS

MATCH EX. SIDEWALK

STREET A

STREET B

STREET C

NEYAGAWA BOULEVARD

EX. RETAINING WALL

EX. TRAILER

EXISTING BUILDING

MATCH EX. GROUND w/ 3:1 SLOPE (SEE NOTE 1)

BLOCK-2 BUILDING-4 8 LEVELS HEIGHT:26.80

BLOCK - 2 BUILDING - 3 18 LEVELS + MPH FFE@GROUND: 159.50 BUILDING HEIGHT: 57.60 + MPH GEODETIC HEIGHT: 217.10 + MPH

BLOCK - 2 BUILDING - 4 24 LEVELS MPH FFE @ GROUND:159.15 BLDG HT: 76 + MPH GEO HT: 235.15 + MPH

BLOCK-2 BUILDING-4 6 LEVELS HEIGHT:20.80

BLOCK-2 BUILDING-3 6 LEVELS HEIGHT:20.70

BLOCK-1 BUILDING-1 6 LEVELS HEIGHT:20.70

BLOCK - 1 BUILDING - 1 26 LEVELS + MPH FFE @ GROUND: 159.55 BLDG HT: 82.20 + MPH GEO HT: 241.75 + MPH

BLOCK - 2 BUILDING - 5 6 LEVELS HEIGHT: 19.90

BLOCK - 2 BUILDING - 5 28 LEVELS + MPH FFE @ GROUND: 159 BUILDING HEIGHT: 88.30 + MPH GEODETIC HEIGHT: 247.30 + MPH

BLOCK-2 BUILDING-5 8 LEVELS HEIGHT:26.50

BLOCK-1 BUILDING-2 5 LEVELS HEIGHT:16.60

BLOCK - 1 BUILDING - 2 18 LEVELS + MPH FFE @ GROUND: 159.25 BUILDING HEIGHT: 56.50 + MPH GEODETIC HEIGHT: 215.75 + MPH

BLOCK-3 BUILDING-6 6 LEVELS HEIGHT:19.60

BLOCK - 3 BUILDING - 6 15 LEVELS + MPH FFE @ GROUND:158.60 BLDG HT: 47.20 + MPH GEO HT: 205.80 + MPH

BLOCK-3 BUILDING-7 6 LEVELS HEIGHT:20.60

BLOCK - 3 BUILDING - 7 25 LEVELS + MPH FFE @ GROUND: 158.75 BLDG HT: 79.40 + MPH GEO HT: 238.15 + MPH

EX. DICB TOP 155.88 INV152.38

EX. DICB TOP 158.37

LAND DEDICATION FOR ROW WIDENING VARIES IN WIDTH FROM 0 TO 0.493M

GARBAGE STAGING WITH SCREENS

DASHED LINE INDICATES GARAGE BELOW

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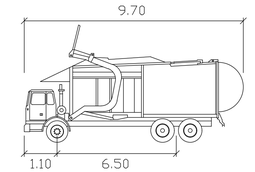
LICENSED PROFESSIONAL ENGINEER
May. 6, 2024
W.C. MARIA
PROVINCE OF ONTARIO

Figure 6



Halton-Front-End
meters

Width	: 2.70
Track	: 2.70
Lock to Lock Time	6.0
Steering Angle	: 30.0

No.	Issue	Author	Checked	Approved	Date
1	First Submission	W.M	W.M		12/3/24

Author	S.B	Designer	S.B
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client: -

Project: -

Date: December 3, 2024

Scale: NTS

Project No.: -

Title: NEYAGAWA WASTE COLLECTION CIRCULATION (INBOUND)

Size: ANSI D

Sheet No.: AT-101

Plot Date: 4/12/24 Plotted By: Subhesh Baral Path and Filename: C:\Users\sbaral3\OneDrive - GHD\Project\2024\Waste Management - Negawaga\AutoTURN\BASE AT.dwg

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

PROP. CB TO BE CONNECTED TO EXISTING SIXTEEN MILE DRIVE STORM SEWERS

MATCH EX. SIDEWALK

EX. RETAINING WALL

EX. TRAILER

EXISTING BUILDING

MATCH EX. GROUND w/ 3:1 SLOPE (SEE NOTE 1)

BLOCK-2 BUILDING-4 8 LEVELS HEIGHT:26.80

BLOCK - 2 BUILDING - 4 24 LEVELS MPH FFE @ GROUND:159.15 BLDG HT: 76 + MPH GEO HT: 235.15 + MPH

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BLOCK - 1 BUILDING - 1 26 LEVELS + MPH FFE @ GROUND: 159.55 BLDG HT: 82.20 + MPH GEO HT: 241.75 + MPH

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BLOCK - 2 BUILDING - 5 28 LEVELS + MPH FFE @ GROUND: 159 BUILDING HEIGHT: 88.30 + MPH GEODETIC HEIGHT: 247.30 + MPH

BLOCK-2 BUILDING-5 8 LEVELS HEIGHT:26.50

BLOCK-3 BUILDING-6 6 LEVELS HEIGHT:19.60

BLOCK - 3 BUILDING - 6 15 LEVELS + MPH FFE @ GROUND:158.60 BLDG HT: 47.20 + MPH GEO HT: 205.80 + MPH

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BLOCK - 3 BUILDING - 7 25 LEVELS + MPH FFE @ GROUND: 158.75 BLDG HT: 79.40 + MPH GEO HT: 238.15 + MPH

STREET A

STREET B

STREET C

NEYAGAWA BOULEVARD

LAND DEDICATION WIDENING VARIES FROM 0 TO 0.493M

GARBAGE STAGIN SCREENS

DASHED LINE INDI GARAGE BELOW

EX. DICB TOP 158.37

EX. DICB TOP 155.38 INV152.38

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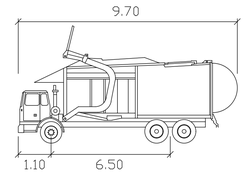
LICENSED PROFESSIONAL ENGINEER
May. 6, 2024
W.C. MARIA
PROVINCE OF ONTARIO

Figure 7



Halton-Front-End

meters

Width	: 2.70
Track	: 2.70
Lock to Lock Time	6.0
Steering Angle	: 30.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	12/3/24

Author	S.B	Designer	S.B
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client: -

Project: -

Date: December 3, 2024

Scale: NTS

Project No.: -

Title: NEYAGAWA WASTE COLLECTION CIRCULATION (OUTBOUND)

Size: ANSI D

Sheet No.: AT-102

Plot Date: 4/12/24 Plotted By: Subhesh Baral Path and Filename: C:\Users\sbaral3\OneDrive - GHD\Project\2024\Waste Management - Negawaga\AutoTURN\BASE AT.dwg

Attachment 1

Waste Capacity Calculation

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	26	storeys	
Dwelling Units on Second Floor and Higher	395	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	5	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	57	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	9	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	16	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	3	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	20.5	m²	bins
Organics	12.8	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	64.9	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	20.5	m²	bins
Organics	6.8	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	56.7	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	18	storeys	
Dwelling Units on Second Floor and Higher	258	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	Value	Unit	Comments
Number of Bins Required - Residential			
Garbage (compacted)	4	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	37	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	6	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	11	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	2	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	9.1	m²	bins
Recycling	13.6	m²	bins
Organics	8.8	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	51.8	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	9.1	m²	bins
Recycling	13.6	m²	bins
Organics	4.5	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	45.3	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	18	storeys	
Dwelling Units on Second Floor and Higher	266	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	4	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	38	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	6	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	11	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	2	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	9.1	m²	bins
Recycling	13.6	m²	bins
Organics	8.8	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	51.8	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	9.1	m²	bins
Recycling	13.6	m²	bins
Organics	4.5	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	45.3	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	24	storeys	
Dwelling Units on Second Floor and Higher	341	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	5	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	49	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	8	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	14	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	3	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	18.2	m²	bins
Organics	11.2	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	61.0	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	18.2	m²	bins
Organics	6.8	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	54.4	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	28	storeys	
Dwelling Units on Second Floor and Higher	389	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	5	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	56	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	9	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	16	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	3	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	20.5	m²	bins
Organics	12.8	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	62.6	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	11.4	m²	bins
Recycling	20.5	m²	bins
Organics	6.8	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	56.7	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	15	storeys	
Dwelling Units on Second Floor and Higher	216	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	3	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	31	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	5	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	9	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	2	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	6.8	m²	bins
Recycling	11.4	m²	bins
Organics	7.2	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	45.6	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	6.8	m²	bins
Recycling	11.4	m²	bins
Organics	4.5	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	40.7	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Residential Waste Storage Room			
Stats	**Value**	**Unit**	**Comments**
Number of Storeys	25	storeys	
Dwelling Units on Second Floor and Higher	413	units	
Bulk Waste Room Space Requirement	10	m²	A clear and accessible area of 10 square meters within the building that can be used for the storage of larger items such as Bulk Waste, shall be included in the design.
Collection Frequency	Weekly	-	Assumed waste collection frequency

Item	**Value**	**Unit**	**Comments**
Number of Bins Required - Residential			
Garbage (compacted)	6	3 cu. yd. bin(s)	Compacted garbage, Ref #1, one 3 cu. yd. per 80 units, used with Regions and private collection system
Recycling	59	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 7 units, used with Regions collection system
	10	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Organics	17	95 gallon cart(s)	Ref #1, (does not compact), one 95 gal (360L) per 25 units, used with Regions collection system
	3	3 cu. yd. bin(s)	606 gallon = 3 cu. yd.
Bin/Cart Footprint			
95 Gallon Cart	0.8	m²	Ref #1, 0.8 m (W) X 1 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #1, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
4 Cubic Yard Bin	2.8	m²	Ref #1, 2.03 m (W) X 1.37 m (D), may slightly differ from various manufactures
Total Footprint Required (Scenario A - bins and carts - Region Collection)			
Garbage (compacted)	13.6	m²	bins
Recycling	22.7	m²	bins
Organics	13.6	m²	carts
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Manoeuvre Factor	2.25		Ref #2, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above
Total Bin/Cart Footprint Required in Residential Waste Storage Room	70.2	m²	(Estimate) Bulk waste room **not** included
Total Footprint Required (Scenario B - bins ONLY - Private Collection)			
Garbage (compacted)	16.7	m²	bins
Recycling	22.7	m²	bins
Organics	6.8	m²	bins
Compactor Layout with Bins	18	m²	This may vary by model/ company, 4.5 m (W) X 4 m (L)
Total Bin/Cart Footprint Required in Residential Waste Storage Room	64.2	m²	(Estimate), this footprint does not include spacing for alleyway or other movement. Bulk waste room **not** included

References

1. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
2. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Table 8
Building 1 - Retail
Waste Capacity Calculations

Stats	Value	Unit	Comments
Number of Bins Required - Commercial			
Retail (non-food) Garbage	0.5	L/m²/day	Ref #1, 50L/100 m2 floor area/day
Retail (non-food) Recycling	0.5	L/m²/day	Ref #1, 50L/100 m2 floor area/day
Commercial Floor Space	1,079	m²	Total space
Commercial Garbage Waste Generation Rate	540	L/day	Using retail generation numbers
Commercial Recycling Waste Generation Rate	540	L/day	Using retail generation numbers
Days between collection	7	day(s)	Assuming weekly collection
Estimated Commercial Garbage Waste Generated	3,776.5	L	Retail
Estimated Commercial Recycling Waste Generated	3,776.5	L	Retail
Estimated Commercial Garbage Waste Generated	997	gallon	Converted units, retail, Conversion factor: 3.79L/gallon
Estimated Commercial Recycling Waste Generated	997	gallon	Converted units, retail, Conversion factor: 3.79L/gallon
Estimated Commercial Garbage Waste Generated	4.9	cu. yd.	Converted units, retail, Conversion factor: 765L/cubic yard
Estimated Commercial Recycling Waste Generated	4.9	cu. yd.	Converted units, retail, Conversion factor: 765L/cubic yard
Number of Bins Required - Commercial			Private Collection
Garbage	2	3 cu. yd. bin(s)	
Recycling	2	3 cu. yd. bin(s)	
			- or -
Garbage	11	95 gallon	
Recycling	11	95 gallon	
Bin/Cart Footprint			
1 Cubic Yard Bin	2.0	m²	Ref #3, 2.09 m (W) X 0.97 m (D), may slightly differ from various manufactures
2 Cubic Yard Bin	2.1	m²	Ref #2, 2.03 m (W) X 1.02 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #2, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
35 Gallon	0.3	m²	Ref #4, 120L, .513 m (W) X .584 m (D)
95 Gallon	0.6	m²	Ref #4, 360L, .729 m (W) X .857 m (D)
Footprint Required - Option 1			Option dependant on private contractor
3 Cu yd. Garbage	4.5	m²	
3 Cu yd. Recycling	4.5	m²	
Manoeuvre Factor	2.25		Ref #5, this is a consideration to factor in. Allows for manoeuvring and access path ways.
Total Footprint Required in Waste Storage Room	11.3	m²	(Estimate)
Footprint Required - Option 2			Option dependant on private contractor
95 g. Garbage	6.9	m²	
95 g. Recycling	6.9	m²	
Total Footprint Required in Waste Storage Room	13.7	m²	(Estimate)

References

1. City of Melbourne. (2017). Guidelines for Preparing a Waste Management Plan.
2. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
3. Toter 1 Cubic Yard Front Loading Dumpster W/ Bumpers, Dark Cool Gray - FR010-00125. (n.d.). Retrieved from https://www.globalindustrial.ca/p/outdoor-grounds-maintenance/garbage-recycling/dumpster/1-yard-front-loading-dumpster-w-bumpers-dark-cool-gray-fr010-00125?infoParam.campaignId=T9F&gclid=CjwKCAiAtK79BRAIEiwA4OskBt3Nx1dm96L2pAH4fgwSIlHE_IpeR3FDqoTCXmxgmnM_uzEvqBvmdhoCOwoQAvD_BwE
4. City of Toronto. (2020, October 28). Garbage Bin Sizes & Fees. Retrieved from https://www.toronto.ca/services-payments/recycling-organics-garbage/houses/garbage-bin-sizes-fees/
5. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf

Table 9
Building 3 - Retail
Waste Capacity Calculations

Stats	Value	Unit	Comments
Number of Bins Required - Commercial			
Retail (non-food) Garbage	0.5	L/m²/day	Ref #1, 50L/100 m2 floor area/day
Retail (non-food) Recycling	0.5	L/m²/day	Ref #1, 50L/100 m2 floor area/day
Commercial Floor Space	472	m²	Total space
Commercial Garbage Waste Generation Rate	236	L/day	Using retail generation numbers
Commercial Recycling Waste Generation Rate	236	L/day	Using retail generation numbers
Days between collection	7	day(s)	Assuming weekly collection
Estimated Commercial Garbage Waste Generated	1,650.6	L	Retail
Estimated Commercial Recycling Waste Generated	1,650.6	L	Retail
Estimated Commercial Garbage Waste Generated	436	gallon	Converted units, retail, Conversion factor: 3.79L/gallon
Estimated Commercial Recycling Waste Generated	436	gallon	Converted units, retail, Conversion factor: 3.79L/gallon
Estimated Commercial Garbage Waste Generated	2.2	cu. yd.	Converted units, retail, Conversion factor: 765L/cubic yard
Estimated Commercial Recycling Waste Generated	2.2	cu. yd.	Converted units, retail, Conversion factor: 765L/cubic yard
Number of Bins Required - Commercial			Private Collection
Garbage	1	3 cu. yd. bin(s)	
Recycling	1	3 cu. yd. bin(s)	
			- or -
Garbage	5	95 gallon	
Recycling	5	95 gallon	
Bin/Cart Footprint			
1 Cubic Yard Bin	2.0	m²	Ref #3, 2.09 m (W) X 0.97 m (D), may slightly differ from various manufactures
2 Cubic Yard Bin	2.1	m²	Ref #2, 2.03 m (W) X 1.02 m (D), may slightly differ from various manufactures
3 Cubic Yard Bin	2.3	m²	Ref #2, 2.03 m (W) X 1.12 m (D), may slightly differ from various manufactures
35 Gallon	0.3	m²	Ref #4, 120L, .513 m (W) X .584 m (D)
95 Gallon	0.6	m²	Ref #4, 360L, .729 m (W) X .857 m (D)
Footprint Required - Option 1			Option dependant on private contractor
3 Cu yd. Garbage	2.3	m²	
3 Cu yd. Recycling	2.3	m²	
Manoeuvre Factor	2.25		Ref #5, this is a consideration to factor in. Allows for manoeuvring and access path ways.
Total Footprint Required in Waste Storage Room	6.8	m²	(Estimate)
Footprint Required - Option 2			Option dependant on private contractor
95 g. Garbage	3.1	m²	
95 g. Recycling	3.1	m²	
Total Footprint Required in Waste Storage Room	6.2	m²	(Estimate)

References

1. City of Melbourne. (2017). Guidelines for Preparing a Waste Management Plan.
2. Halton Region. (2014). Development Design Guidelines for Source Seperation of Solid Waste. Halton Region. Retrieved from https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separatio
3. Toter 1 Cubic Yard Front Loading Dumpster W/ Bumpers, Dark Cool Gray - FR010-00125. (n.d.). Retrieved from https://www.globalindustrial.ca/p/outdoor-grounds-maintenance/garbage-recycling/dumpster/1-yard-front-loading-dumpster-w-bumpers-dark-cool-gray-fr010-00125?infoParam.campaignId=T9F&gclid=CjwKCAiAtK79BRAIEiwA4OskBt3Nx1dm96L2pAH4fgwSIlHE_IpeR3FDqoTCXmxgmnM_uzEvqBvmdhoCOwoQAvD_BwE
4. City of Toronto. (2020, October 28). Garbage Bin Sizes & Fees. Retrieved from https://www.toronto.ca/services-payments/recycling-organics-garbage/houses/garbage-bin-sizes-fees/
5. City of Richmond. (2018). Commercial and Multi-Family Developments Waste Management Design Guidelines. Retrieved from: https://www.richmond.ca/__shared/assets/Waste_Management_Design_Guidelines48945.pdf