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Our ref: 12595958

October 24, 2024

Bashar Ghreiwati Weston Consulting 2200-1250 Boul Rene-Levesque O. Montreal, Quebec H3B 4W8

69 & 117 John Street, Mississauga – Waste Management Plan

Dear Bashar,

1. Introduction

GHD Limited (GHD) was retained by GSAI (**Glen Schnarr & Associates Inc.**) to complete a Waste Management Plan in support of a Site Plan Application for the proposed multi-residential development located at 69 & 117 John Street in the City of Mississauga. The proposed development consists of 1,342 residential units in three buildings (A, B, and C) and a connecting Podium, 2 levels of underground parking, and an outdoor and indoor amenity space. **Table 1.1** shows the number of residential units in each building. The Waste Management Plan has been prepared to address requirements from both the Region of Peel's (Region's) waste collection perspective and the City of Mississauga's (City's) development application requirements in relation to the proposed development.

Table 1 Residential Units Per Building

Building	Storey	No. of Residential Units
A	31	247
В	30	226
С	20	190
Podium		679
	Total	1,342

The waste management requirements within the Region are outlined in By-Law 35-2015¹ as well as within the Region's *Waste Collection Design Standards Manual*² (Manual). This Waste Management Plan has been prepared with both of these items in mind.

https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf

¹ By-Law 35-2015 - A by-law to regulate the collection of waste in the Regional Municipality of Peel and to repeal By-law Number 47-2014.

² Peel Region. (2020). Waste Collection Design Standards Manual. Retrieved from:

This letter discusses the waste management issues related to the Site and should be considered to be the "Waste Management Plan" to satisfy the Region's requirements. The following elements are discussed in this letter/Waste Management Plan:

- Waste Volume and Storage
 - Storage Location
 - Capacity Requirements
- Waste Collection
 - Schedule and Frequency
 - Collection Vehicle Routing
- Recycling and Diversion Initiatives

2. Solid waste collection by the region

As stated in the Region's Manual, the Region provides waste collection services to residential units, some institutions, and small businesses located within Business Improvement Areas (BIAs). Eligibility for the Region's waste collection services requires compliance with the requirements set out in their Manual.

As per the Region's Manual, "The developer must submit a completed 'Acknowledgement and Release for Private Property Waste Collection Form' and 'Application for Private Property Waste Collection Form' to the Region's Waste Management Division prior to commencement of Waste Collection" (pg. 22 of 62).

As described in the Region's Manual, before the application is approved, the development must be more than 90% occupied. In the interim, the developer is responsible for solid waste management.

After the above-mentioned forms and confirmation of 90% occupancy is received by the Region, the Waste Management Division will visit the development within 5 to 10 business days to determine if the occupancy level has reached 90%, and if the development is in compliance with the Region's Manual.

The Region's collection of waste material involves the separation of waste streams into garbage and recycling. In addition, the Region will provide bulk waste pickup (e.g., furniture and carpets). Based on discussions with the Region, there is a possibility that owners of multi-unit residential buildings in southern Ontario will be required to collect source separated food and organic waste to meet the provincial target of 50% waste reduction and resource recovery by 2025.

At this time, the Region recommends a tri-sorter with three separate chutes or the ability to easily collect all three streams.

3. Solid waste management plan – waste collection on private property

As per the Region's Manual, the design requirements for multi-residential complexes with more than 60 dwelling units are as follows (pg. 26 to 30 of 62):

- 1. Recycling receptacle access must be equally or more convenient than that of garbage;
- 2. A waste storage room must be of sufficient area to accommodate the required number of front-end bins and/or recycling carts required for the development;
- 3. Recyclable materials must not be compacted;
- 4. If a chute system is used then separate chutes must be provided for garbage and recyclable materials, or a single chute can be used if equipped with an automated mechanical separation system to direct garbage and recyclable materials into separate front-end bins;
- 5. The design of developments must include features that make the set-out of recyclable materials as convenient to each occupant as that for garbage;
- 6. A minimum 18 metre (m) straight head-on approach to the collection point is required. This approach is to be level, solid (maximum 2% slope) and the same width as the collection point;
- 7. A minimum clear height of 7.5 m from the concrete pad must be provided at the collection point. The clear height of 7.5 m must be free of obstructions such as sprinkler systems, ducts, balconies, wires and trees;
- 8. Outside the collection point, a clear height of 4.4 m from the top of the access road must be provided along the waste collection vehicle access and egress route. The clear height of 4.4 m must be free of obstructions such as sprinkler systems, ducts, balconies, wires and trees;
- 9. The collection point should be designed with sufficient area to eliminate the need for property management staff to jockey front-end bins to make them accessible to the waste collection vehicle;
- 10. Where these requirements cannot be met, reliance on property management staff to facilitate waste collection will be considered at the Commissioner's discretion, subject to the following conditions:
 - a. The driver is not required to exit the waste collection vehicle to facilitate collection;
 - b. Property management staff is responsible for jockeying of front-end bins during collection;
 - c. The Region will not be responsible for emptying bins that are inaccessible to the waste collection vehicle; and,
 - d. Property management staff must be visible to the waste collection vehicle on approach to the site; otherwise, the waste collection vehicle will not enter;
- 11. The minimum width of the collection point must be 3 m for each front-end bin. The minimum depth of the collection point must be 2 m for a 3-cubic yard (cu. yd.) front end bin and 3 m for 4 and 6-cu. yd. front end bins. However, where these requirements cannot be met, reliance on property management staff to facilitate waste collection will be considered at the Commissioner's discretion, subject to the following conditions:
 - a. The driver is not required to exit the waste collection vehicle to facilitate collection;
 - b. Property management staff is responsible for jockeying of front-end bins during collection;
 - c. The Region will not be responsible for emptying bins that are inaccessible to the waste collection vehicle; and,
 - d. Property management staff must be visible to waste collection vehicle on approach to the site, otherwise the waste collection vehicle will not enter the site;
- 12. The collection point and storage area, including the number and size of front-end bin(s) to be used for garbage and the number, size, and type of recycling receptacle(s) (front-end bin or cart), the compactor and chute systems, are to be clearly shown and labelled on drawings (e.g., site plan, ground floor

- plan, etc.). The drawings must also show the waste collection vehicle's route through the development and the radius of every turn must be labelled;
- 13. Bollards or a concrete curb must be installed at the rear of the collection point to protect the structural wall from damage when the front end bins are picked up or returned in place by the waste collection vehicle;
- 14. Multi-residential complexes and stacked townhouses must supply front-end bins for garbage collection. Recycling carts or front-end bins for recyclable materials will be provided by the Region;
- 15. The maximum walking distance from a dwelling unit to the closest concealed collection point or storage room must be less than 100 m:
- 16. Developers will be required to inform prospective owner(s) of the location of the concealed collection point(s) in:
 - a. Agreements of purchase and sale, a written contract between a seller and a buyer for the purchase and sale of a particular property; and,
 - b. The condominium declaration and description, also sometimes known as master deed, is a fundamental document that establishes the existence of and further governs the use and maintenance of a condominium property.

3.1 Site plan

With the Region's Manual in mind, the Site Plan has been designed to meet the applicable design requirements. As stated above, the proposed development consists of 3 buildings and a connecting podium with a total of 1,342 residential units. See **Figure 1** for the Site Plan.

The current Parking Level 1 floor plan (**Figure 2**) shows the proposed residential waste storage areas, labelled as "Garbage Room". The underground level storage areas for residential waste are approximately 147 m² for Building A, 155 m² for Building B, and 158 m² for Building C. A waste chute room is located on each level for the three buildings and is accessible to all the units in the podium as well (**Figure 3**). The waste chute will discharge into the three-waste stream sorting systems located in the waste storage area. as shown in **Figure 2**. A shared Loading Area (covered) is located on the ground floor for the waste collection, with a length of 18 m, a width of 14 m, and a height of 9 m clear. Approximately 60 m² is provided for waste staging area. See **Figure 4** for the Ground Floor Plan.

Figure 3 demonstrates the layout of a typical residential level. A room will be located by the elevators in all three Buildings on each floor with access to the three-stream waste chute.

3.1.1 Collection vehicle routing

As demonstrated in **Figures 5 & 6**, which show the anticipated movement of a waste collection vehicle (auto-turn analysis), the geometrics of the proposed private road and loading turnaround area will facilitate the safe and unobstructed movement of a waste collection vehicle. The auto-turn analysis was completed using the specifications in the Region's Manual for collection vehicle dimensions and minimum turning radii required for Site Plan approval. The development's internal roads will meet the minimum 6 m width and a turning radius of 13 m, as required by the Region's Manual to be able to receive municipal waste collection services.

Waste collection vehicles will enter the site from John Street and make a right hand turn into the Loading Area (see **Figure 5**). Once the waste is collected, the waste collection vehicle will reverse for approximately 20 m and exit the site on John Street in a forward moving fashion (see **Figure 6**).

The waste collection point at the concrete pad is 9 m high and meets the region requirement of a minimum 7.5 m.

3.1.2 Waste volume and storage requirements

As per the Region's Manual, the volume and type of waste generated is required to assist in determining the appropriate level of storage capacity and method of storage. We have utilized the Region's estimates in determining appropriate waste storage to satisfy the Region's requirements for collection from multi-Residential developments.

Multi-Residential

In terms of Buildings A, B, and C, the estimated residential waste volumes were determined by working backwards from the Region's Manual for waste capacity requirements. Peel Region collects front-end bins for garbage and recycling for multi-residential complexes with 60 and more dwelling units. Based on the number of units, GHD completed calculations to determine the minimum number of bins required for garbage and recycling as well as the bin footprints (see Attachment 1 for detailed waste capacity calculations). The 670 units in the podium may use either of the waste chutes in Buildings A, B, and C. Hence, these units were divided among the three buildings for calculation purpose. The breakdown is as follows:

Building A - 416 units from Building A and the Podium

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted) ³	8	3 cu. yd. bin(s)
Recycling	10	3 cu. yd. bin(s)
Organics (not currently collected by Peel Region) ⁴	2	3 cu. yd. bin(s)

Building B - 566 units from Building B and the Podium

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted) ³	11	3 cu. yd. bin(s)
Recycling	13	3 cu. yd. bin(s)
Organics (not currently collected by Peel Region) ⁴	3	3 cu. yd. bin(s)

Building C - 360 units from Building C and the Podium

Minimum Number of Bins Required - Residential	Value	Unit
Garbage (compacted) ³	7	3 cu. yd. bin(s)
Recycling	8	3 cu. yd. bin(s)
Organics (not currently collected by Peel Region) ⁴	2	3 cu. yd. bin(s)

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

Garbage Floor Footprint

The Region's Manual does not require the development to utilize a compactor, however, it is highly recommended as it will save on the number of bins and floor space required. As per the Region's Manual, recycling material is not to be compacted.

Compactors can range in size and dimensions. The calculated footprint for the compactor and tri-sorter layout is 16.9 m^2 .

³ The required number of bins for Garbage may reduce in the future, as the Region's Manual currently incorporates the organic fraction in its bin calculation for Garbage.

⁴ Organic waste is currently collected co-mingled with garbage by the Region; however, the Region recommends to source separate.

It is recommended that the development utilize a compactor in conjunction with 3-cu. yd. bins to minimize the number of bins for garbage and total footprint required.

Using the footprint dimensions⁵ of a 3-cu. yd. bin included in the Region's Manual, the total space required for garbage bins for the three Buildings are as follows:

- Building A 17 m²
- Building B 24 m²
- Building C 15 m²

Recycling Floor Footprint

Using the footprint dimensions of a 3-cu. yd. bin included in the Region's Manual the total space required for recycling bins for the three Buildings are as follows:

- Building A 22 m²
- Building B 28 m²
- Building C 17 m²

Total Storage Space for Mixed Waste and Recyclable Material

GHD calculated the total footprint required for the waste storage rooms incorporating the number of bins, 16.9 m² area for the compactor & tri-sorter layout, and 2.25 m² maneuvering area. The total waste storage space recommended for each of the three Buildings is as follows:

Table 2 Minimum Waste Storage Room Size for Front-End Collection Bins

Building	Minimum Waste Storage Room Size Requirement (m²)	Size of Waste Storage Room on the Proposed Site Plan (m²)
Building A (416 units including Podium units)	62.59	147
Building B (566 units including Podium units)	77.80	155
Building C (360 units including Podium units)	56.08	158

Therefore, sufficient area has been provided in each residential waste storage room to satisfy the requirements of the Region's Manual.

Bulk Waste Floor Footprint

The Region's Manual requires that a clear and accessible area of 10 m² is made available within the building for the storage of larger items such as bulk waste. Each of the three Garbage Rooms has ample space to allocate 10 m² for Bulk Waste. This area should be separated from the Garbage Room by a chain-link fence.

A 33 m² area for Bulk Waste collection is also provided on the Ground Floor adjacent to the Loading Area.

Non-Residential

The Site Plan shows 600 m² of non-residential space on the Ground Floor in Building B. The use for this space is not yet determined, therefore bin calculation was carried out for a common commercial (non-food) operation:

⁵ 3-cu. yd. inside storage area bin dimensions: 1.26 m (H) x 2.03 m (W) x 1.07 m (D)

Waste Types	Bins	Units	Footprint
Commercial (non-food)			
Garbage (Not Compacted)	1	3 cu. yd. bin(s)	1.87m ²
Recycling	1	3 cu. yd. bin(s)	1.87m ²
Estimated total Space Requir without a Compactor (including	6m ²		

The Site Plan does not provide a Garbage Room for non-residential uses. A minimum of 6 m² area of Commercial Garbage Room is recommended on the Ground Floor.

3.1.3 Waste collection

On the collection day, a staff member on-site will be responsible for emptying/moving full waste bins from the proposed Garbage Rooms in the basement of all three buildings to the Ground Floor Loading Area via the Freight Elevator.

Waste collection will occur at the dedicated waste collection point. 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. A person will be on site to assist the driver of the waste collection vehicle in accessing the collection point and exiting the Site.

All waste collection containers will be placed at the collection point for pick up before 7:00 a.m. on the day scheduled for waste collection.

Schedule and Frequency

Based on the number of waste collection containers allocated, 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 until 90% occupancy is reached. The collection frequency and hours of collection will be determined and set out in the contract between the private hauler and the developer.

A development must be more than 90% occupied before the Region will approve the application for waste collection services. After *Acknowledgement and Release for Private Property Waste Collection Form* and *Application for Private Property Waste Collection Form* are submitted to the Region's Waste Management Division, and confirmation of 90% occupancy is received by the Region, the Waste Management Division will visit the development within five to ten business days to determine if the occupancy level has reached 90%, and if the development is in compliance with the Region's Manual. Once approved for final clearance, collection service will be scheduled to commence ten to 15 business days thereafter. In the interim, the developer is responsible for solid waste management and will need to set up a contract with a private hauler to remove waste from site.

3.1.4 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.

A letter should be provided to all tenants/owners informing them of the waste management system in place and the services provided by the Region or by the private hauler (interim collection). In addition to this, we suggest that quarterly notifications be sent out to tenants/owners indicating any potential issues related to waste management that property management are encountering, such as people not sorting waste correctly and providing information on the importance of 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 area and staging area.

Waste collection area and staging area 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.

3.1.5 Recommendations and conclusions

The following recommendations are provided:

- Show a labeled 10 m² separate area for Bulk Waste storage in all three Garbage Rooms.
- Provide a Commercial Garbage Room on the Ground Floor for all the non-residential uses with a minimum of 6 m² area to accommodate one (1) 3-cu.yd. bin each for uncompacted garbage and recycling.

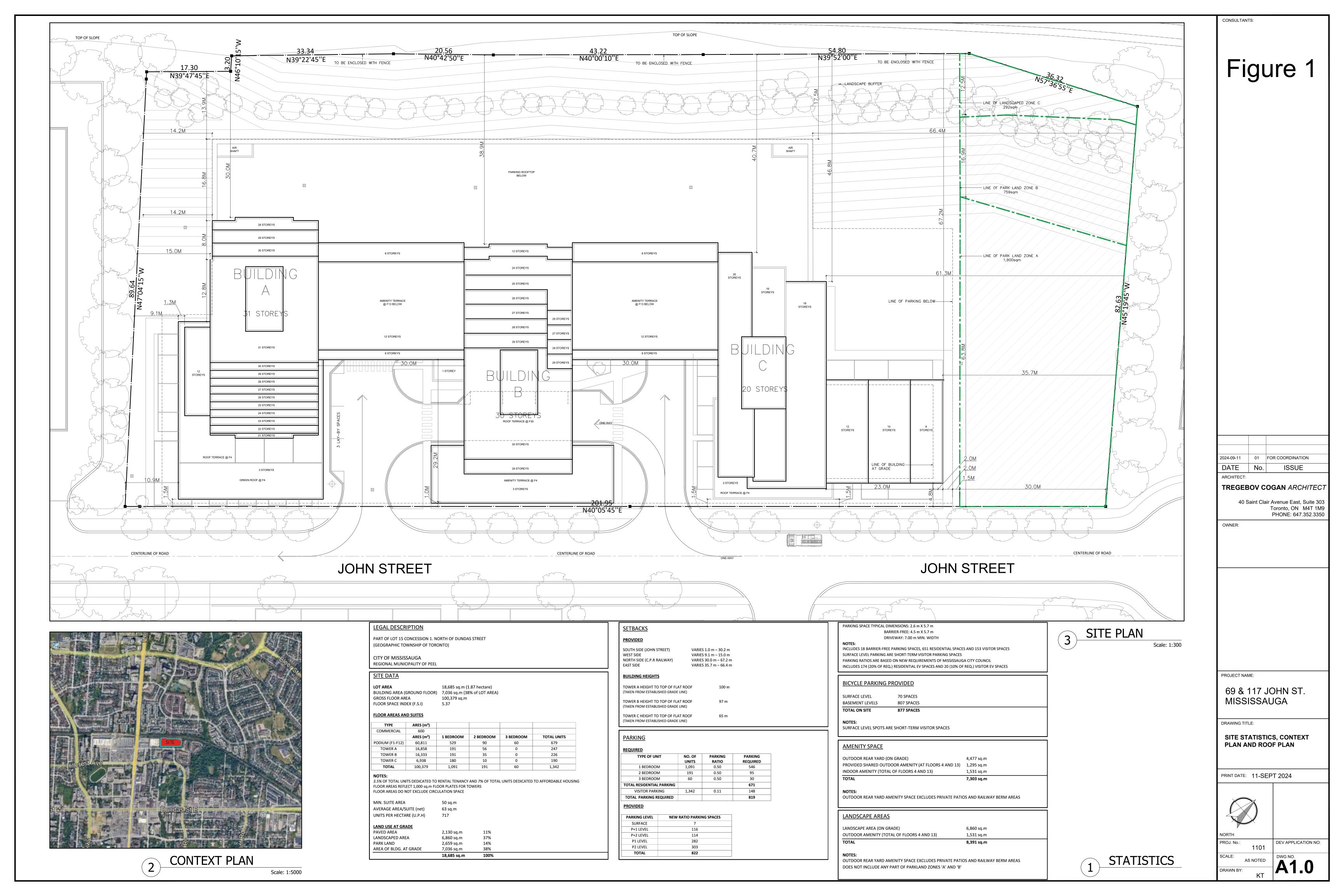
By implementing the recommendations set out in this Waste Management Plan, the Region's requirements for a development application as it relates to Waste Management will be satisfied.

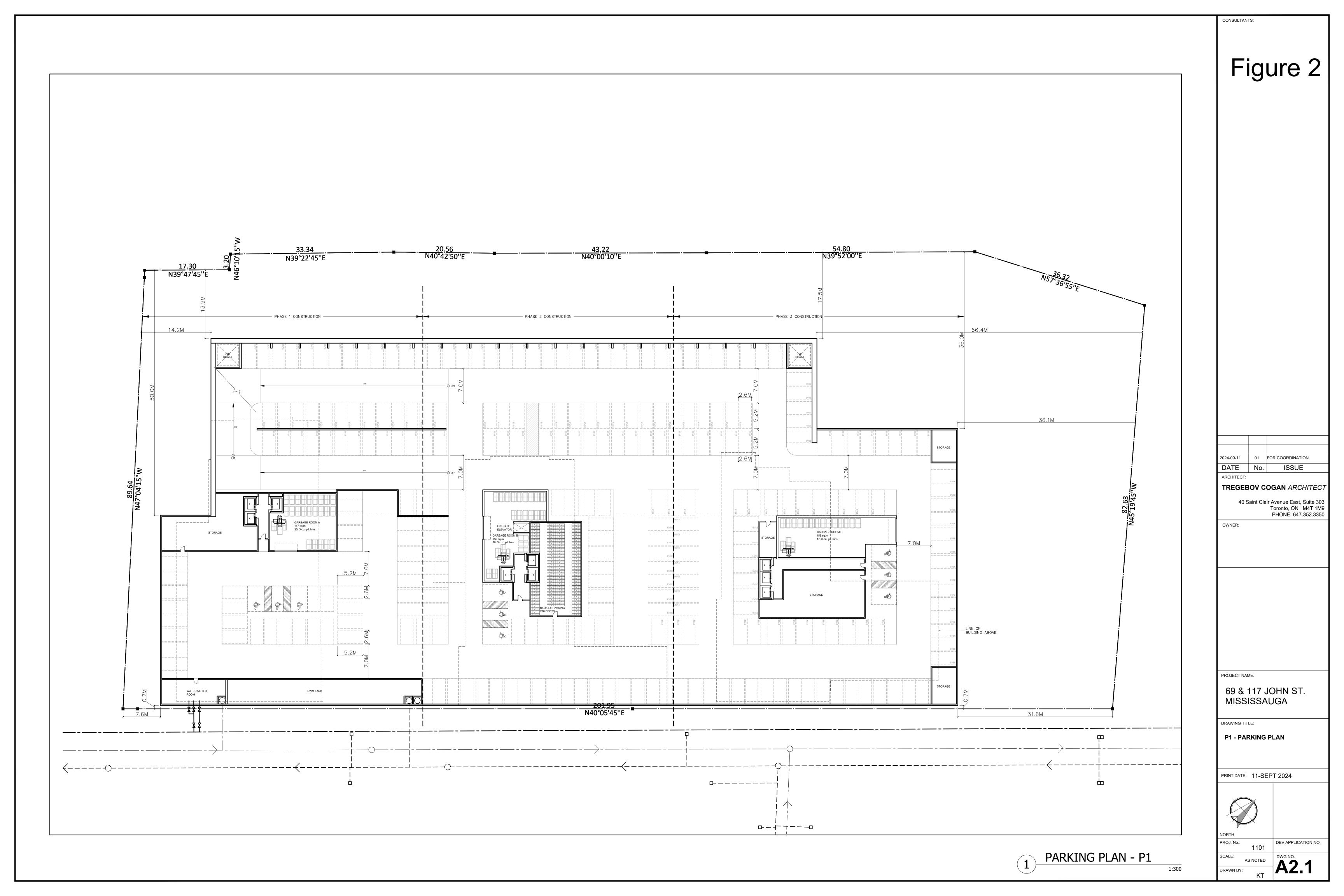
Should you have any questions on the above, please do not hesitate to contact us.

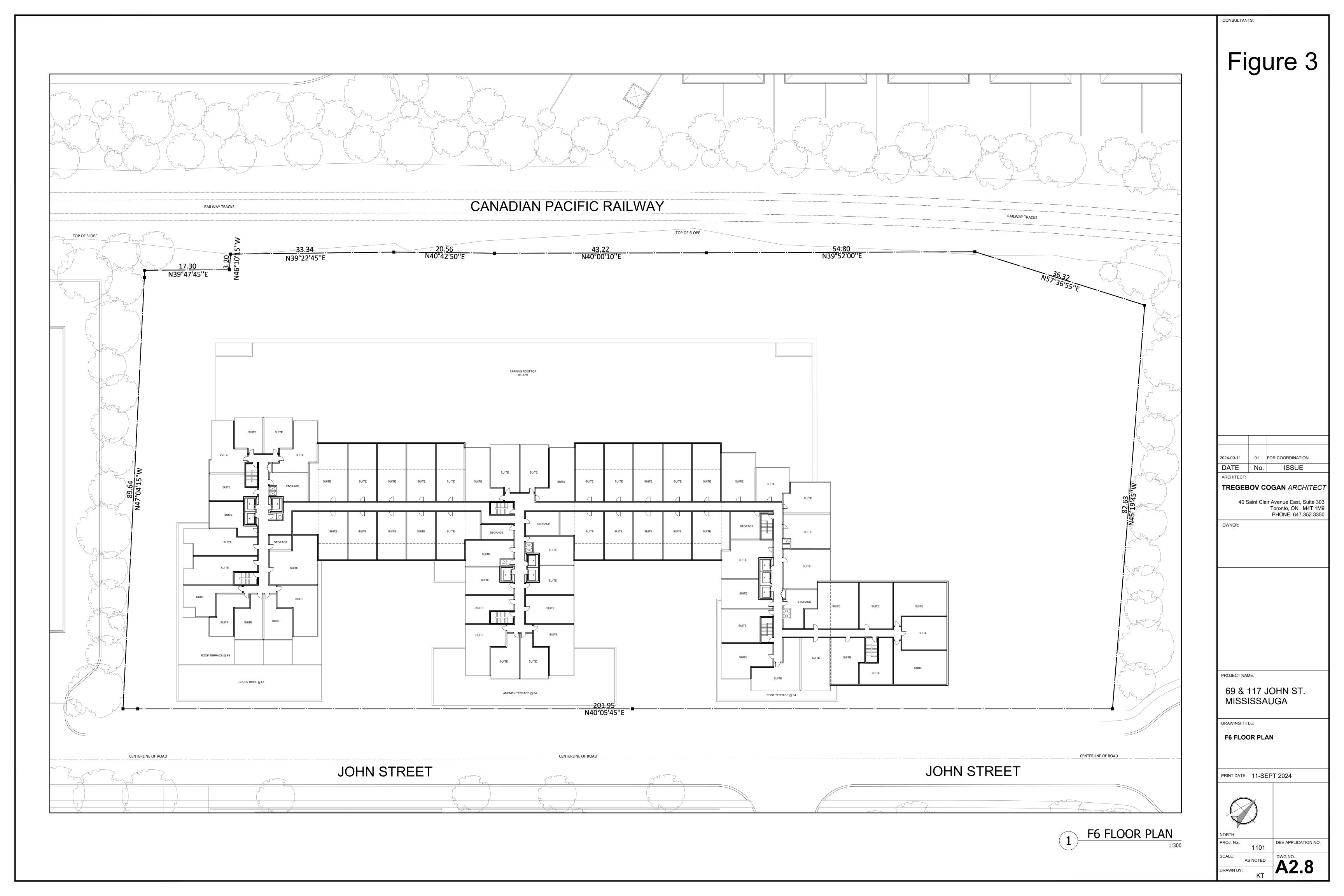
Regards

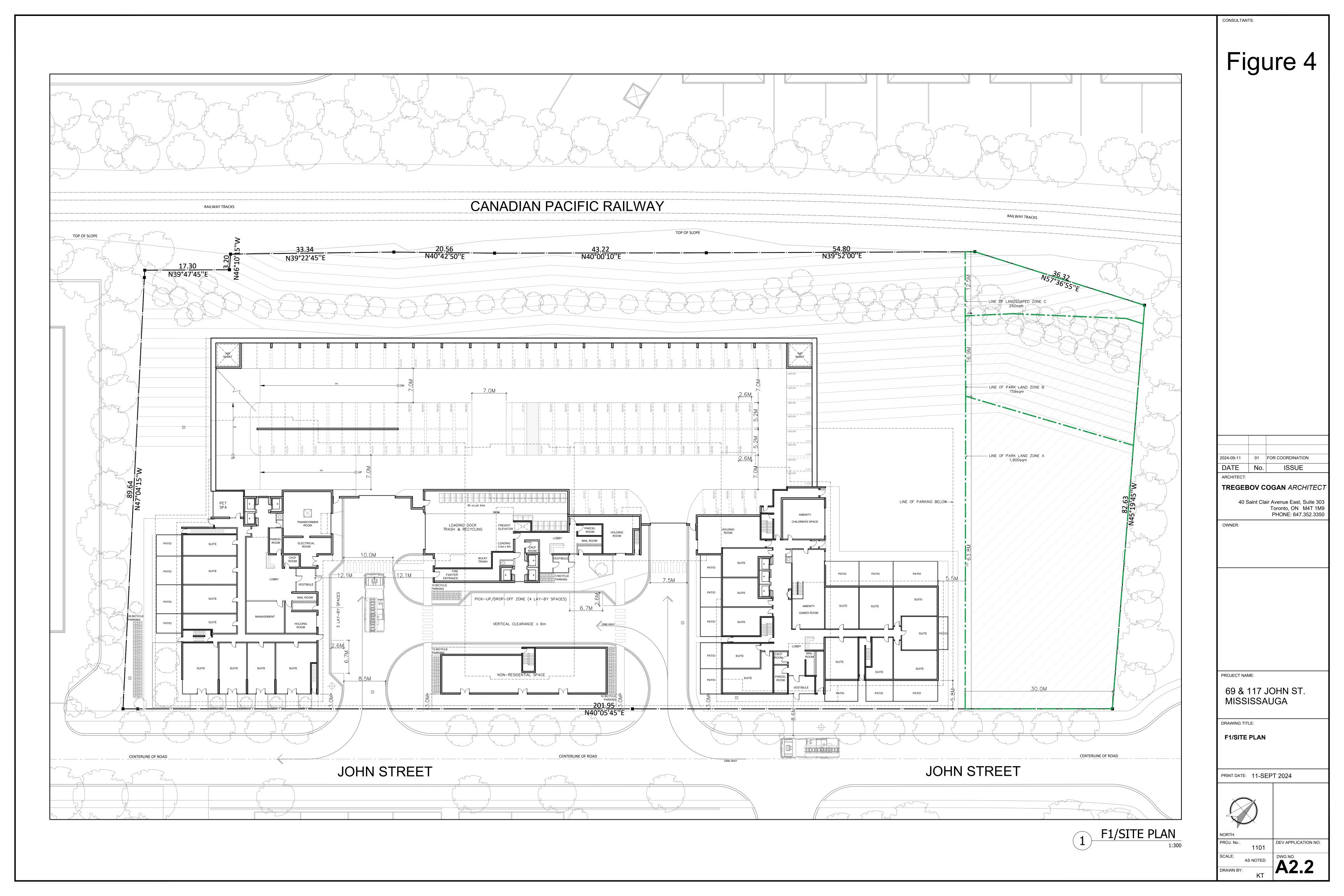
Erika Brown MEnv., RPP Waste & Environmental Planner

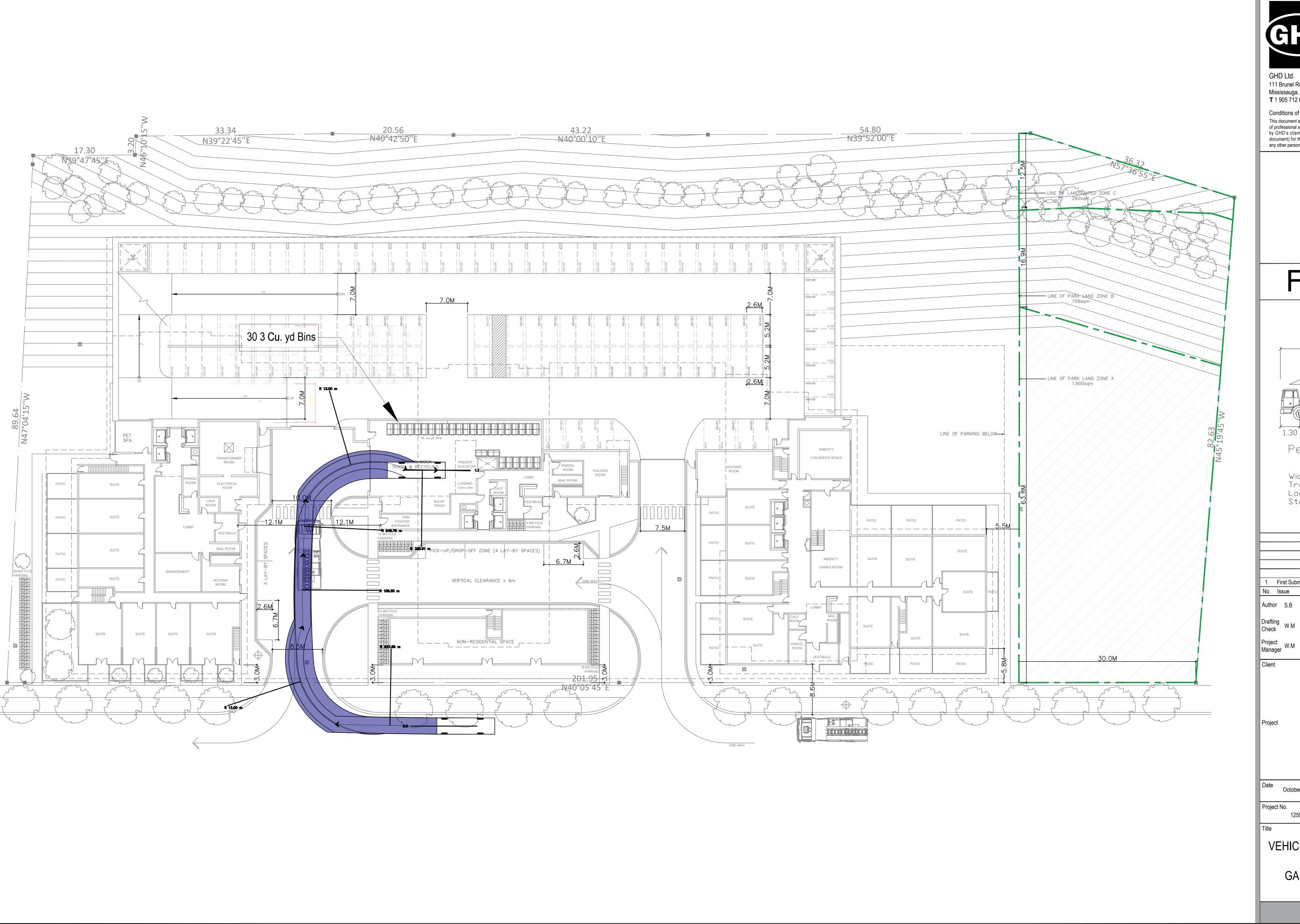
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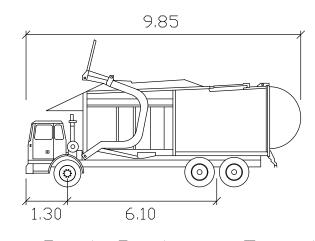
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Figure 5



Peel Garbage Front meters

: 2.77 : 2.77 Width Track Lock to Lock Time 6.0 Steering Angle : 28.0

First Submission W.M W.M 10/7/24 Checked Approved Date No. Issue Author S.B Designer S.B Design Check W.M Drafting Check W.M Project W.M Director

69-117 John Street

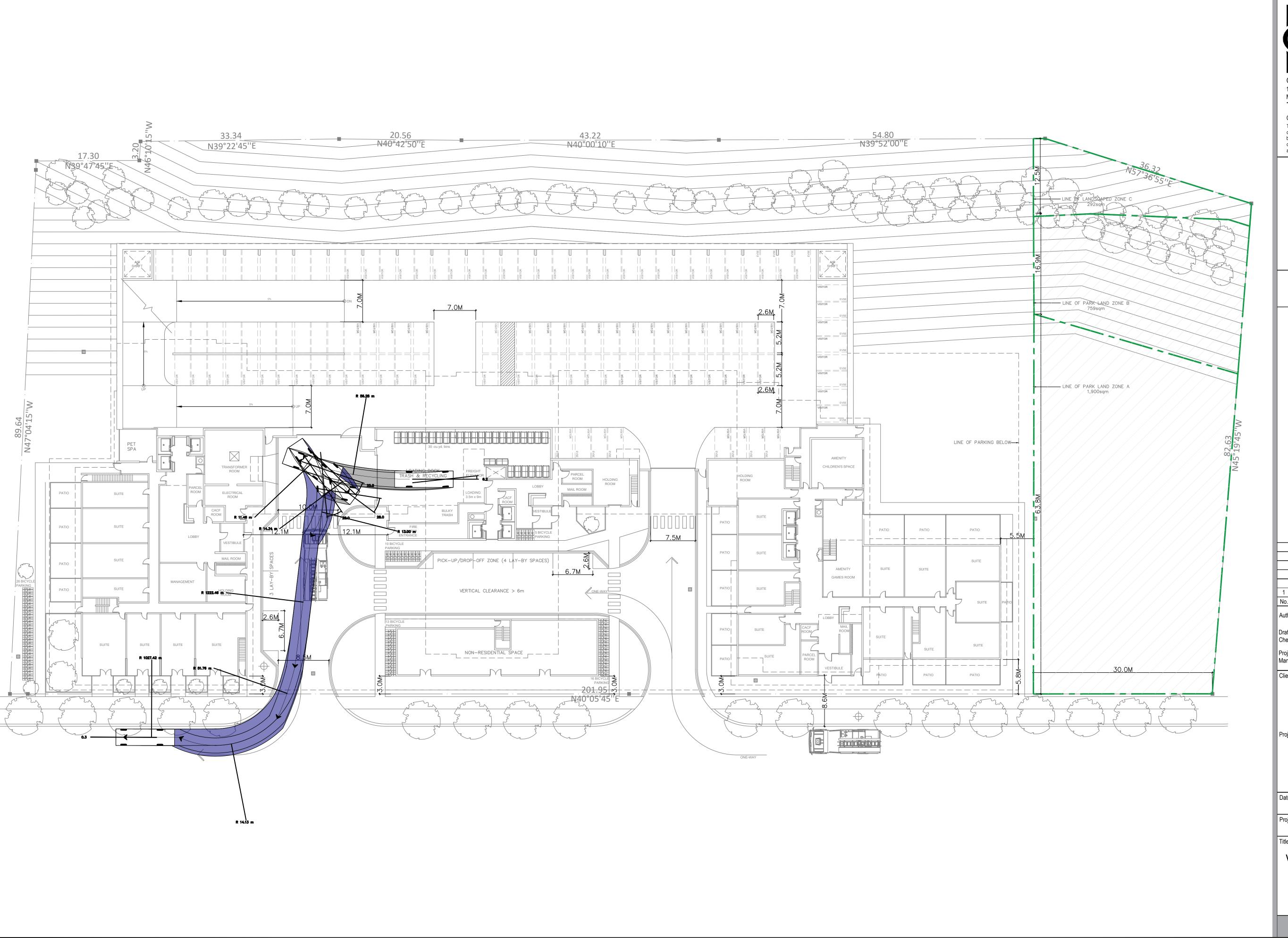
Scale NTS October 7, 2024 Project No.

12595958

VEHICLE MANEUVERING DIAGRAM -GARBAGE TRUCK (INBOUND)

AT-101

Plotted By: Subhesh Baral







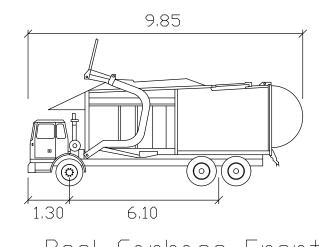
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Figure 6



Peel Garbage Front meters

: 2.77 : 2.77 Width Track Lock to Lock Time 6.0 Steering Angle : 28.0

First Submission W.M W.M 10/7/24 Checked Approved Date No. Issue Author S.B Designer S.B Design Check W.M Drafting Check W.M Project Manager W.M Project W.M Director

Client

69-117 John Street

Scale NTS October 7, 2024 Project No.

12595958

VEHICLE MANEUVERING DIAGRAM -GARBAGE TRUCK (OUTBOUND)

AT-102

Attachment 1





Residential Waste Capacity Estimates 69 117 John Street, Missisuagua, Ontario

Building Stats					
Stats/Item	Value	Unit	Comments		
Dwelling Units	416	units	416 Units from Building A and the Podium		
Bulk Waste Room Space Recommended	10	m²	Ref #1, Internal Waste Storage Rooms must be a minimum of 10 square metres for the storage of Bulky Items for each Multi-Residential Complex.		
Collection Frequency	Weekly	-	Assumed waste collection frequency		

Estimated Number of Bins Required				
Stats/Item Value Unit Comments				
Garbage (compacted)	8	3 cu. yd. bin(s)	Ref #1, compacted garbage (includes ratio of organics), one 3 cu. yd. per 54 units	
Recycling	10	3 cu. yd. bin(s)	Ref #1, does not compact, one 3 cu. yd. per 45 units	
Organics	2	3 cu. yd. bin(s)	Does not compact, one 3 cu. yd. per 225 units, Provided by Region of Peel	
Total	20	bins	(Estimate)	

Bin and Equipment Footprint for Sizing					
Stats/Item	Value	Unit	Comments		
Single 3 Cubic Yard Bin	2.17	m²	Ref #1, 2.03 m (W) X 1.07 m (D), may slightly differ from various manufactures		
Single 4 Cubic Yard Bin	4.08	m²	Ref #1, 2.03 m (W) X 2.01 m (D), may slightly differ from various manufactures		
Single 6 Cubic Yard Bin	4.12	m²	Ref #1, 2.03 m (W) X 2.03 m (D), may slightly differ from various manufactures		

	Estimated Footprint		
Compactor and Trisorter Layout	16.9	m²	This may vary by model/ company, 4.368 m (W) X 3.869 m (L)
Garbage	17	m²	
Recycling	22	m²	
Organics	4	m²	
Manoeuvre Factor	2.25	m²	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 footprint required in Waste Storage Room	62.59	m²	

^{1.} Region of Peel. (2020). Region of Peel Waste Collection Design Standards Manual. Retrieved from: https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf

^{2.} City of Toronto. (2012). City of Toronto Requirements for Garbage, Recycling, and Organics Collection Services for New Developments and Redevelopments. Retrieved from: https://www.toronto.ca/wp-content/uploads/2018/04/8e5f-Solid-Waste-Guidelines-Final-Version-May-2012-2017-Forms-002.pdf





Residential Waste Capacity Estimates 69 117 John Street, Missisuagua, Ontario

Building Stats					
Stats/Item	Value	Unit	Comments		
Dwelling Units	566	units	566 Units from Building B and the Podium.		
Bulk Waste Room Space Recommended	10		Ref #1, Internal Waste Storage Rooms must be a minimum of 10 square metres for the storage of Bulky Items for each Multi-Residential Complex.		
Collection Frequency	Weekly	-	Assumed waste collection frequency		

Estimated Number of Bins Required				
Estimated Number of Bins Required				
Stats/Item	Value	Unit	Comments	
Garbage (compacted)	11	3 cu. yd. bin(s)	Ref #1, compacted garbage, one 3 cu. yd. per 54 units	
Recycling	13	3 cu. yd. bin(s)	Ref #1, does not compact, one 3 cu. yd. per 45 units	
Organics	3	3 cu. yd. bin(s)	Does not compact, one 3 cu. yd. per 225 units, Provided by Region of Peel	
Total	27	bins	(Estimate)	
Bin and Equipment Footprint for Sizing				
Stats/Item	Value	Unit	Comments	
0' 0 0 1' 10'	0.47	2	D (1/2 0 00 (141)) (4 0 T (/ D)	

Stats/Item	Value	Unit	Comments
Single 3 Cubic Yard Bin	2.17	m²	Ref #2, 2.03 m (W) X 1.07 m (D), may slightly differ from various manufactures
Single 4 Cubic Yard Bin	4.08	m²	Ref #2, 2.03 m (W) X 2.01 m (D), may slightly differ from various manufactures
Single 6 Cubic Yard Bin	4.12	m²	Ref #2, 2.03 m (W) X 2.03 m (D), may slightly differ from various manufactures
		Estimated Foot	print
Compactor and Trisorter Layout	16.9	m²	This may vary by model/ company, 4.368 m (W) X 3.869 m (L)
Garbage	24	m²	
Recycling	28	m ²	
Organics	7	m²	
Manoeuvre Factor	2.25	m²	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 footprint required in Waste Storage Room	77.80	m²	

^{1.} Region of Peel. (2020). Region of Peel Waste Collection Design Standards Manual. Retrieved from: https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf

^{2.} City of Toronto. (2012). City of Toronto Requirements for Garbage, Recycling, and Organics Collection Services for New Developments and Redevelopments. Retrieved from: https://www.toronto.ca/wp-content/uploads/2018/04/8e5f-Solid-Waste-Guidelines-Final-Version-May-2012-2017-Forms-002.pdf





Residential Waste Capacity Estimates 69 117 John Street, Missisuagua, Ontario

Building Stats						
Stats/Item	Value	Unit	Comments			
Dwelling Units	360	units	360 units from Building C and the Podium			
Bulk Waste Room Space Recommended	10		Ref #1, Internal Waste Storage Rooms must be a minimum of 10 square metres for the storage of Bulky Items for each Multi-Residential Complex.			
Collection Frequency	Weekly	-	Assumed waste collection frequency			

Estimated Number of Bins Required						
Stats/Item	Value	Unit	Comments			
Garbage (compacted)	7	3 cu. yd. bin(s)	Ref #1, compacted garbage, one 3 cu. yd. per 54 units			
Recycling	8	3 cu. yd. bin(s)	Ref #1, does not compact, one 3 cu. yd. per 45 units			
Organics	2	3 cu. yd. bin(s)	Does not compact, one 3 cu. yd. per 225 units, Provided by Region of Peel			
Total	17	bins	(Estimate)			
Bin and Equipment Footprint for Sizing						
Stats/Item	Value	Unit	Comments			
			T 6 1/2 2 2 2 2 1/2 1/2 1/2 1/2 1/2 1/2 1/2			

Stats/Item	Value	Unit	Comments			
Single 3 Cubic Yard Bin	2.17	m²	Ref #2, 2.03 m (W) X 1.07 m (D), may slightly differ from various manufactures			
Single 4 Cubic Yard Bin	4.08	m²	Ref #2, 2.03 m (W) X 2.01 m (D), may slightly differ from various manufactures			
Single 6 Cubic Yard Bin	4.12	m²	Ref #2, 2.03 m (W) X 2.03 m (D), may slightly differ from various manufactures			
		Estimated Foot	tprint			
Compactor and Trisorter Layout	16.9	m²	This may vary by model/ company, 4.368 m (W) X 3.869 m (L)			
Garbage	15	m²				
Recycling	17	m²				
Organics	4	m²				
Manoeuvre Factor	2.25	m²	Ref #4, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above			
Total footprint required in Waste Storage Room	56.08	m²				

^{1.} Region of Peel. (2020). Region of Peel Waste Collection Design Standards Manual. Retrieved from: https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf

^{2.} City of Toronto. (2012). City of Toronto Requirements for Garbage, Recycling, and Organics Collection Services for New Developments and Redevelopments. Retrieved from: https://www.toronto.ca/wp-content/uploads/2018/04/8e5f-Solid-Waste-Guidelines-Final-Version-May-2012-2017-Forms-002.pdf



Table 4 Non-Residential Space Waste Capacity Estimates 69 117 John Street, Missisuagua, Ontario

Stats/Item	Value	Unit	Comments	
Commercial Floor Space	600	m²	Gross floor area	
Commercial Use	Common Commercial (non-food)			
Collection Frequency	1	per week	Assumed waste collection frequency	

Estimated Waste Generation Rate						
Stats/Item	Value	Unit	Comments			
Garbage Waste Generation Rate per Floor Area per Day	0.50	L/m²/day	Ref #1, 50L/100 m2 floor area/day			
Recycling Waste Generation Rate per Floor Area per Day	0.50	L/m²/day	Ref #1, 50L/100 m2 floor area/day			
Garbage Waste Generation Rate per Day	300.0	L/day				
Recycling Waste Generation Rate per Day	300.0	L/day				
Estimated Commercial Garbage Waste Generated in Litres	2,100	L/Week				
Estimated Commercial Recycling Waste Generated in Litres	2,100	L/Week				
Estimated Commercial Garbage Waste Generated in Gallons	555	gallon	converted units, Conversion factor: 3.79L/gallon			
Estimated Commercial Recycling Waste Generated in Gallons	555	gallon	converted units, Conversion factor: 3.79L/gallon			
Estimated Commercial Garbage Waste Generated in Cubic Yards	2.7	cu. yd.	converted units, Conversion factor: 765L/cubic yard			
Estimated Commercial Recycling Waste Generated in Cubic Yards	2.7	cu. yd.	converted units, Conversion factor: 765L/cubic yard			

Estimated Number of Bins Required						
Stats/Item	Value	Unit	Comments			
Garbage (uncompacted)	1	3 cu. yd. bin(s)				
Recycling	1	3 cu. yd. bin(s)	uncompacted			
Total	2	bins	(Estimate)			
or						
Garbage (compacted)	1	3 cu. yd. bin(s)	conservatively assumed ratio of 2:1; will vary on manufacturer and on material			
Recycling	1	3 cu. yd. bin(s)	uncompacted			
Total	2	bins	(Estimate)			

Bin and Equipment Footprint for Sizing						
Stats/Item	Value	Unit	Comments			
Single 2 Cubic Yard Bin	1.64	m²	Ref #2 based on bin size: 1.80m(L), 0.91m(W), 0.91m(h) may slightly differ from various manufactures			
Single 3 Cubic Yard Bin	1.87	m²	Ref #2 based on bin size: 1.80m(L), 1.04m(W), 1.22m(h) may slightly differ from various manufactures			

Estimated Bin and Equipment Footprint with Manoeuvring Space						
Stats/Item	Value	Unit	Comments			
Uncompacted Garbage Bins	1.87	m²				
Recycling Bins	1.87	m²				
Manoeuvre Factor	2.25	m²	Ref #3, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above			
Total Space Required in Waste Storage Room without a Compactor	6.0	m²	(Estimate)			
or						
Compacted Garbage Bins	0.00	m²	Minus area of 1 bin which is covered under the compactor footprint			
Recycling Bins	1.87	m²				
Compactor	10.41	m²	This may vary by model/ company, 4.877 m (W) X 2.134 m (L); includes 1 bin			
Manoeuvre Factor	2.25	m²	Ref #3, this is a consideration to factor in. Allows for manoeuvring and access path ways. The City minimum floor space requirements are provided above			
Total Space Required in Waste Storage Room with a Compactor	14.5	m²	(Estimate)			

- 1. Earle, J., & Monckton, R. (2004). Waste Management Guidelines for Proposed Developments. Randwick: GHD Pty Ltd. Retrieved from https://www.randwick.nsw.gov.au/__data/assets/pdf_file/0008/38249/Waste-Management-Appendices-A-K.pdf
- 2. City of Toronto. (2022). City of Toronto Requirements for Garbage, Recycling, and Organics Collection Services for New Developments and Redevelopments. Retrieved from: https://www.toronto.ca/wp-content/uploads/2022/05/97c6-SWMS-Development-Requirements.pdf
- 3. 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



Waste Staging Area Estimates 69 117 John Street, Missisuagua, Ontario

Building Stats						
Stats/Item	Value	Unit	Comments			
Dwelling Units	1,342	units				
Collection Frequency	Weekly	-	Assumed waste collection frequency			

Stats/Item	Value	Unit	Comments
Vertical Loading Clearance	7.5	m	
Width	6.0	m	
Length	18.0	m	
Loading Space Minimum Area	108.0	m²	
Waste Staging Minimum Area	130.0	m²	Ref#1 Used as proxy. Staging Area varies with # of units. Add 5m² for every 50 units >50, 0.10m² for each additional unit for developments with 51 units or more, including a starting base of 5 m² for the first 50 units
Total Loading Space and Staging Minimum Area Required	238.0	m²	

^{1.} City of Toronto. (2012). City of Toronto Requirements for Garbage, Recycling, and Organics Collection Services for New Developments and Redevelopments. Retrieved from: https://www.toronto.ca/wp-content/uploads/2018/04/8e5f-Solid-Waste-Guidelines-Final-Version-May-2012-2017-Forms-002.pdf