



Engineering Design Criteria & Standard Drawings

2020

APPENDIX H – WASTE COLLECTION DESIGN STANDARDS POLICY





City of Vaughan

WASTE COLLECTION DESIGN STANDARDS POLICY

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Note:
**The City's Waste Collection Design Standards Policy has been incorporated into the
City's Engineering Design Criteria and Standard Drawings
(Section 3 – Site Development & Appendix H)**

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PART 1 INTRODUCTION

1.1 OVERVIEW

1.1.1 Purpose

This document sets out the City's waste collection design standard requirements for the access, internal storage and collection of waste materials specific to various categories of developments / redevelopments and land uses. All development / redevelopment applications shall adhere to all applicable requirements in this document.

1.1.2 Definitions

Definitions in this document are consistent with, where applicable, the City's most current Waste Collection By-law, as amended and the Consolidated Zoning By-law 1-88, as amended.

1.1.3 Waste Management Site Plan Review

To determine if a development / redevelopment application adheres to the City Waste Collection Design Standards Policy (WCDSP), the Environmental Services department or designate reviews development / redevelopment applications, including applications to amend the Official Plan and Zoning By-law, as well as applications for Site Plan and Committee of Adjustment (Minor Variances).

1.1.2 Other Policies / Legislation

This document shall be used in conjunction with, and not in place of, the Ontario Building Code, the Ontario Fire Code, the Environmental Protection Act, the City's Engineering Design Criteria and Standard Drawings and all other applicable legislation and municipal standards and policies. It is the Owner's responsibility to comply with the most current version of all applicable legislation and municipal standards and policies at time of Site Plan Application. Information concerning the Site Plan Control process may be obtained from the City's Development Planning department.

1.2 MUNICIPAL WASTE COLLECTION SERVICE ELIGIBILITY

1.2.1 General Waste Collection Requirements

Outlined in the following section are the general requirements which must be adhered to for municipal waste collection services to be provided. Specific requirements based on the type of building and use will be in the appropriate section.

- The City will only collect garbage, recyclable goods, household organics, bulky items, white goods and yard waste and reserves the right to revoke collection services to any development that does not adhere to the requirements as laid out in this document and within the City's Waste Collection By-Law.
- Collection services for garbage are provided for non-hazardous municipal solid waste. The City will not collect waste generated by manufacturers, any hazardous or pathological wastes, or construction materials.
- Property management is responsible for moving bins during collection if so required. The City will not be responsible for emptying bins that are inaccessible to the collection vehicle.
- For detailed information on the City's waste collection services and schedules, refer to the City of Vaughan website at www.vaughan.ca or call 905-832-2281

1.2.2 Waste Collection By-law 217-2010

Properties are eligible for municipal waste collection services as outlined in the Waste Collection By-law 217-2010.

1.2.2 'Private' Residential

Private residential developments / redevelopments not currently eligible for municipal waste collection services, are required to seek a private waste collection service provider¹. This includes residential developments / redevelopments that front onto private streets / laneways and / or accessed by a private driveway or laneway, and / or are part of a private development (i.e. multi-unit residential developments such as apartment, condominium and townhouse condominium developments), including rental and freehold.

1.2.3 Institutional, Commercial, Industrial and Mixed Use

Institutional, Commercial, Industrial and Mixed Use (i.e. residential / commercial) developments / redevelopments are not eligible for municipal waste collection services, and are required to seek a private waste collection service provider.²

1.3 SUBMISSION AND GENERAL REQUIREMENTS

1.3.1 Submission Requirements

It is the responsibility of the Owner to provide to the City with the submission of a development application:

- a) a Waste Management Site Plan. The Waste Management Site Plan must show the following information:
 - access route(s), including truck turning movements using 'auto turn' or similar type computer program;
 - designated loading area;
 - waste storage facility(s);
 - size, type and number of garbage, recycling and other waste containers to be used;
 - waste diversion method (e.g. recycling using a 3 yd³ front-end container); and
 - additional details are required for multi-unit residential developments. Please refer to Waste Management Site Plan checklist (Appendix A) for additional detail requirements.
- b) a completed Waste Servicing Details Form (Appendix A - Part 1) for each building within development / redevelopment;
- c) a completed Waste Management Site Plan checklist (Appendix A – Part 2).

For details on the above requirements, please refer to appropriate section(s) in this document.

In all cases, it is the Owner's responsibility to ensure that the Waste Management Site Plan (and all other applicable drawings) are stamped and signed by a Professional Engineer of Ontario, or a registered Architect of Ontario.

Refer to Appendix A of this document for the Waste Servicing Details Form (Part 1) and the Waste Management Site Plan checklist (Part 2).

¹ With the exception of those locations grand-parented by Council on December 12, 2005.

² With the exception of those locations grand-parented by Council on December 12, 2005.

1.3.2 Mandatory Waste Diversion Programs

It is the responsibility of the Owner to comply with all existing and future government regulations pertaining to waste reduction and waste audit programs and requirements in Industrial, Commercial, and Institutional developments, as well as Mixed Use and Multi-Unit Residential establishments.

Refer to the Environmental Protection Act, Ontario Regulation 103/94, as amended, for recycling (Source Separation) requirements specific to the type of development / redevelopment.

1.3.3 Number and Size of Waste Containers

It is the responsibility of the Owner to determine the number and size of waste containers required for the development / redevelopment. All waste containers shall be provided and maintained by the Owner.

Refer to Appendix B for typical Waste Container Dimensions and Quantity Guidelines.

1.3.4 Waste Container Access

It is the responsibility of the Owner to ensure all waste containers are fully accessible by the property management and waste service provider.

The internal waste storage facility shall be designed such that there is adequate room to jockey the waste containers and other waste materials (i.e. bulky items) within the internal waste storage facility.

All waste containers shall be placed on the loading pad in a manner that does not require the manual jockeying of waste containers by the waste collection service provider, and allows sufficient space to place empty waste containers on the loading pad as to not interfere with the collection of other waste containers.

Refer to Appendix C for typical Waste Container Dimensions and Quantity Guidelines.

1.3.5 Maintenance of Access Route and Loading Area

It is the responsibility of the Owner to ensure that the access route and loading area be maintained and free of all obstructions on the designated collection day(s). This shall include, but not be limited to, debris, sightline obstructions, overhanging structures, snow, ice and parked vehicles.

1.3.6 Time of Collection

It is the responsibility of the Owner to ensure the time of waste collection operations is in accordance with all of the City's applicable by-laws, including the Noise By-law 96-2006 (as amended).

1.3.7 Additional Requirements

The City reserves the right to apply site-specific requirements during a detailed review of a development / redevelopment application, including but not limited to, rolled curbs, hard-surfaced aprons, the method and location of collection, and access route and loading area requirements. The City also reserves the right to increase or decrease the number and size of waste containers, the size of the loading area and the type, number and size of internal waste storage facilities.

1.3.8 Other Collection / Disposal Methods

The City recognizes that new collection / disposal systems may be developed that are not identified as an approved waste system in this document. Should such a system be developed, the City will review its applicability of the system for a proposed development / redevelopment on a case-by-case basis.

1.3.9 Other Developments / Redevelopments

Redevelopments that do not fall within the categories noted and / or are unable to comply with one or more of the requirements of the Waste Collection Design Standards Policy will be reviewed on a case-by-case basis.

PART 2 ACCESS ROUTE AND LOADING AREA REQUIREMENTS

2.1 WASTE COLLECTION ACCESS ROUTE

2.1.1 Location of Access Route

It is the responsibility of the Owner to ensure that the access route be situated in a location that minimizes the interface with pedestrian traffic and public vehicular ingress / egress to the building's main parking area, including underground garage, drive-through and visitor parking areas.

The Owner shall show on the Waste Management Site Plan, the waste collection vehicle's footprint throughout Collection Access Route and at the point of Ingress / Egress and turnaround. The Owner shall include dimensions (i.e. width, turning radius, etc.) throughout access route as well as point of ingress / egress and turnaround. The City will, at its discretion, require applicant to submit such information using auto-turn or similar type program. Typical dimensions of a waste collection vehicle are shown in the standard waste drawings.

2.1.2 Pavement Design of Access Route

It is the responsibility of the Owner to ensure that the pavement design of the access route shall be a minimum as per the City's Engineering Design Criteria and Standard Drawings for 'Industrial & Heavy Duty Driveways' or a City approved alternative.

Refer to 'Road Pavement Designs' in the City's Engineering Design Criteria and Standard Drawings, **Section 1.2.4.1**.

2.1.3 Driveway Width and Curb Radius at Point of Ingress / Egress

It is the responsibility of the Owner to ensure that:

- the driveway width shall be a minimum of 6.0 metres at the property line; and
- the inside curb radius shall be no less than 9.0 metres.

Refer to SW-101 for standard drawing.

Notwithstanding the above, the City may consider an inside curb radius less than 9.0 metres, but never less than 7.6 metres, provided that the reduced internal turning radius is proportional to the increased width of the access driveway at the property line, as approved by the City.

2.1.4 Driveway Width, Radius and Vertical Clearance throughout Access Route

It is the responsibility of the Owner to ensure that:

- the driveway width throughout the entire access route shall be a minimum of 6.0 metres from face-of-curb to face-of-curb;
- the radius along the entire access route shall be no less than 12.0 metres (centre line); and
- the minimum vertical clearance of 4.4 metres (i.e. any overhead structure including trees, balconies, wires) shall be observed throughout the entire access route.

Refer to SW-102 for standard drawing.

Notwithstanding the above, the City may consider a portion of the access route to have a width of less than 6.0 metres but never less than 4.5 metres provided that:

- a) the portion of the reduced width roadway is identified as a dedicated maintenance route for non-public vehicles (i.e. deliveries, waste collection access etc.);
- b) that all requirements stipulated in 2.1.3 are met; and
- c) that the waste collection access route does not form part of a fire access route.

2.1.5 Ingress / Egress and Turnaround

It is the responsibility of the Owner to ensure that the access route and loading area be designed in such a way to allow a waste collection vehicle to enter the site, collect the waste materials and exit the site solely in a forward motion. Collection vehicles will not be permitted to backup (or turnaround) onto a public roadway and / or adjacent private or public property.

To accomplish this requirement, the following three options are available:

a) Cul-de-sac

- outside curb radius no less than 13.0 metres; and
- cul-de-sac shall be fully situated on private property.

Refer to SW-103 for standard drawing.

Should the cul-de-sac have an 'island', the Owner must ensure that the outside curb radius is adjusted proportionately to accommodate the minimum 6.0 metre wide access route as well as the minimum 9.0 metre inside curb radius. Using these minimum standards, the outside turning radius will be required to increase proportionately to accommodate the 6.0 metre wide access route.

As an example, if the Owner provides the minimal access route width (6.0 metres) and an island consisting of a 9.0 metre inside turning radius, then the outside turning radius will proportionately increase to 15.0 metres.

The City reserves the right to require the island to have a rolled curb and / or hard surface apron.

b) Three Point Turn (Turning Stub)

- with the required 6.0 metres wide (or greater) access route, the depth of the turnaround (turning stub) shall be no less than 11.0 metres deep (the standard length of one collection vehicle). This excludes the width of the access route itself;
- the width of the turning stub shall not be less than 4.5 metres wide;
- the inside curb radius no less than 9.0 metres; and
- the turnaround shall be fully situated on private property.

The City reserves the right to require the turning stub be directly adjacent to the location where the vehicle must turn around. The City also reserves the right to require a rolled curb and / or hard surface apron.

Refer to SW-104 for standard drawing.

Notwithstanding the above, should the Turning Stub be located on a portion of the access route that does not meet the 6.0 metre wide access route requirement, the City shall require a wider and / or deeper Turning Stub and / or a increased inside turning radius to ensure waste collection vehicles maneuver turn appropriately. Turnaround be shown on the Waste Management Site Plan using 'Auto Turn' or similar type computer program.

c) Continuous Forward Motion

Continuous Forward Motion means that the waste collection vehicle ingresses and egresses the site predominantly in a forward motion.

- access route requirements, including required turning radius, shall comply with Section 2.1.3 and 2.1.4.

2.1.6 Grade

It is the responsibility of the Owner to ensure that the slope of the access route shall not be greater than 5.0%.

2.1.7 Support Structures

If collection vehicle(s) are required to drive onto or over any supported structure, such as an underground parking garage, it is the Owner's responsibility to ensure that the structure can safely support a fully loaded waste collection vehicle (a minimum of 35,000 kgs.) and that the structure conforms to all applicable legislation, including but not limited to Section 4 of the Ontario Building Code.

It is the Owner's responsibility to indicate on the Waste Management Site Plan that waste collection vehicles will be required to drive onto or over a supported structure(s) and the submitted Waste Management Site Plan, supported by written confirmation from a Professional Engineer licensed to operate in Ontario, indicates that the structure can support a minimum of 35,000 kgs.

2.1.8 Pavement Markings and Signage

It is the responsibility of the Owner to consider where appropriate, pavement markings, warning lights, mirrors and signage along access route and loading area.

2.2 DESIGNATED LOADING AREA

2.2.1 Location of Loading Area

The Loading Area is defined as the loading pad and the space requirement for waste collection vehicle to access the loading pad (i.e. an 18.0 metre approach).

It is the responsibility of the Owner to ensure that the loading area be situated in a location that minimizes the interface with pedestrian traffic and public vehicular access to the building's main parking area, underground garage, drive-through and visitor parking areas. Visual and odour considerations should be evaluated by the Owner when determining the potential loading area location.

To ensure collection vehicle has direct access to the loading area, a minimum of 18.0 metre 'straight ahead' approach to the loading pad is required (Note: direct access to the loading area can be straight or slightly angled).

Refer to SW-105 for standard drawing.

2.2.2 Design of Loading Pad

It is the responsibility of the Owner to ensure that the loading pad has a minimum base of 300 mm of compacted 20 mm crusher run-limestone.

The loading pad shall be finished to a minimum of 200 mm depth of concrete or a City approved alternative (i.e. heavy-duty uniform pavers).

Where the loading pad comprises part of the access route, the loading pad shall be to a minimum 200 mm of reinforced concrete.

Refer to SW-105 for standard drawing.

2.2.3 Dimension & Vertical Clearance of Loading Area

The required quantity of waste containers set out for collection determines the length and width of the loading pad. It is the responsibility of the Owner to ensure that the width of the loading pad shall not be less than 6.0 metres wide. The City may consider a decrease in the width depending on site condition, size of development and the number of bins set out for collection.

The minimum unencumbered vertical clearance for the entire loading area shall be:

- Front End Collection - 7.5 metres
- Top Loader – 7.5 metres
- Roll Off (either self-contained compactor or open top) - 7.5 to 9.0 metres
- Deep Collection – 8.7 metres

It is the responsibility of the Owner to ensure the vertical clearance in the loading area is not obstructed by trees, wires, balconies, overhead structures etc.

Pursuant to Section 1.3.4, the dimension of the loading pad must accommodate the movement of waste containers to allow sufficient space to place empty waste containers on the loading pad as to not interfere with the collection of other waste containers.

For multi-unit residential establishments, an additional area for special pick-ups (i.e. bulky items and large appliances) will be required when determining the loading pad dimension.

2.2.4 Staging of Waste Containers

It is the responsibility of the Owner to ensure that the Waste Management Site Plan shows the footprint of all waste containers in the internal waste storage facility and on the loading pad.

2.2.5 Grade of Loading Area

It is the responsibility of the Owner to ensure that the grade of the loading pad and the grade of the 'straight-ahead' approach adhere to the following grade requirements:

- a) Loading Pad: Shall not exceed +/- 2% in any direction, and where the loading area is not flat, a mechanism to prevent the containers from rolling off the loading pad is required.
- b) Straight Ahead Approach: The 18.0 metre 'straight ahead approach' (refer to 2.2.1) shall not exceed a crossfall grade of +/-2%. Refer to SW-105 for standard drawing.
The grade of the 'approach' shall be consistent with Section 2.1.6.

Note: the 'Loading Area' is comprised of both the Loading Pad and the 18.0 metre 'Straight Ahead Approach'.

2.2.6 Bollards / Barriers

To prevent damage to the building, it is the responsibility of the Owner to ensure that bollards or a City approved alternative, are installed on either side of the loading door(s). The Owner shall show the required bollards / barrier on the Waste Management Site Plan.

PART 3 MULTI UNIT RESIDENTIAL DEVELOPMENTS / REDEVELOPMENTS: SERVICING AND WASTE STORAGE REQUIREMENTS

3.1 OVERVIEW OF REQUIREMENTS

3.1.1 Disclosure Requirements

It is the responsibility of the Owner to disclose in writing and as part of negotiations for purchase, sale or lease, to a prospective buyer, leasee or renter of a unit within the development, the type of waste collection system and requirements of the prospective owner / tenant regarding waste storage and collection. This shall include the fact that waste collection services are provided and maintained privately.

The Owner of multi-unit residential developments / redevelopments will be further required to ensure that all future owners / tenants are notified via a purchase and sale agreement of the need to provide and maintain private waste collection services.

3.1.2 Number of Units

The Owner is required to show on the Waste Management Site Plan, the number of units (both residential and commercial if mixed use) for each building in the proposed development / redevelopment.

3.1.3 Multiple (Three-Stream) Sort System

The Owner is required to ensure that the waste diversion program including recycling and other waste streams (i.e. Organics) be as convenient to each resident in the development as the garbage collection program. It is the responsibility of the Owner to provide a multiple-sort disposal system designed for the increase or decrease of waste streams, if so required in the future. The three stream / multi sort waste system may be achieved using one of the following methods:

- one chute with tri-sorter (tri-sorter equipped with an operational lock-out mechanism);
- two separate chutes with one of the chutes equipped with a dual sorter (dual sorter equipped with an operational lock-out mechanism);
- three separate chutes; or,

The Waste Management Site Plan must include:

- a typical floor plan showing multi-sort system on every floor; and
- a 'plan' view of the multi-sort system and layout of containers in the waste storage facility.

3.1.4 Ventilation

Pursuant to the Ontario Building Code, it is the responsibility of the Owner to meet no less than the minimum standards for ventilation and appropriate odour control requirements for the Waste Storage Facility.

3.2 COLLECTION METHOD AND CONTAINER REQUIREMENTS

3.2.1 Small Residential (2 to 5 units)

The storage of waste materials, collection location and method of collection will be to the satisfaction of the Director of Environmental Services, or designate.

3.2.2 Mid-size Residential (6 to 29 units)

a) Recycling & Other Waste Streams

Recycling collection shall be provided using one or more of the following collection types:

- cart – 90 to 95 gallon
- front-end (bulk lift) uncompacted - 3 yds³ to 6 yds³

b) Garbage

Garbage collection shall be provided using one or more of the following collection types:

- front-end (bulk lift) mechanically compacted – 3 yds³ to 4 yds³
- front-end (bulk lift) uncompacted - 3 yds³ to 6 yds³

3.2.3 Large Residential (30 or more units)

a) Recycling & Other Waste Streams

Recycling collection shall be provided using one or more of the following collection types:

- cart – 90 to 95 gallon
- front-end (bulk lift) uncompacted - 3 yds³ to 6 yds³

b) Garbage

Garbage collection shall be provided using one or more of the following collection types:

- front-end (bulk lift) mechanically compacted – 3 yds³ to 4 yds³

In some circumstances, the City may allow uncompacted garbage provided the internal waste storage room is large enough to accommodate the increase number of uncompacted waste containers.

Private development single family dwellings with individual driveway and garages will require to provide an area of approximately 1.0 m x 2.0 m internal for the garbage for the storage of garbage, recycling and other waste streams. This area must be shown on the Waste Management Site Plan.

3.3 WASTE STORAGE FACILITY REQUIREMENTS

It is the responsibility of the Owner to provide one or more of the following Internal Waste Storage Facility options:

3.3.1 Internal Waste Storage Room(s) Attached to or Integral to Main Use of Building

An internal waste storage room built in accordance with all applicable regulations must be provided in each building within the development / redevelopment. Internal waste storage room(s) must be attached to, or integral to, the main use of each building.

The internal waste storage room shall be rodent proof, vented and large enough to store all waste materials, including bulky items and other designated wastes generated by the proposed establishment (for both proposed and future uses) between designated collection days. The internal waste storage room must be external to the living area and be large enough to permit movement of the waste containers and other designated waste, such as bulky items.

For the safety of residents and the public, the building is required to be designed in a manner that prohibits access to any waste storage room(s) equipped with a compactor(s). Where a compactor is used, the Owner is required to provide a separate but attached recycling room for tenant / owner access for oversized material (i.e. corrugated cardboard etc.).

In all cases, waste materials must be stored in a designated internal waste storage room attached to (or integral to) the main use of each building until the designated day of collection and all waste containers must be returned to the internal waste storage room immediately following collection. No waste shall be stored outside the internal waste storage room between designated collection days. The internal waste storage room(s) shall be fully situated on private property.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines.

3.3.2 Detached Fully Enclosed Waste Storage Structure

On a case-by-case basis, the City may accept a 'Detached Fully Enclosed Waste Storage Structure' for small and medium sized residential developments / redevelopments. Should the City approve this as an option for waste storage, then all requirements noted in 4.3.2 of this document apply.

4.0 Revisions to the Waste Collection Design Standards Policy

The City may from time to time review, revise and update its Waste Collection Design Standards Policy.

Any revisions to this document will require the approval of the Deputy City Manager, Public Works or designate.

PART 4 INDUSTRIAL, COMMERCIAL, INSTITUTIONAL AND MIXED USE DEVELOPMENTS / REDEVELOPMENTS: SERVICING AND WASTE STORAGE REQUIREMENTS

4.1 OVERVIEW OF REQUIREMENTS

4.1.1 Disclosure Requirements

It is the responsibility of the Owner to disclose in writing and as part of negotiations for purchase, sale or lease, to a prospective buyer, leasee or renter of a unit within the development, the type of waste collection system and requirements of the prospective owner / tenant regarding waste storage and collection. This shall include the fact that waste collection services are provided and maintained privately.

4.1.2 Ventilation

Pursuant to the Ontario Building Code, it is the responsibility of the Owner to meet no less than the minimum standards for ventilation and appropriate odour control(s) requirements for the Waste Storage Facility.

4.2 COLLECTION METHOD AND CONTAINER REQUIREMENTS

a) Recycling

Recycling collection typically uses one or more of the following collection types:

- cart - 90 to 95 gallon
- front-end (bulk lift) uncompacted – 3 yds³ to 8 yds³
- enclosed compaction roll-off (i.e. specifically a cardboard compaction unit)
- deep / in-ground collection system* - typically 5,000 litres (*limited application only – see 4.3.4)

b) Garbage

Garbage collection typically uses one or more of the following collection types:

- front-end (bulk lift) mechanically compacted - 3 yds³ to 4 yds³
- front-end (bulk lift) uncompacted – 3 yds³ to 8 yds³
- enclosed or open compaction roll-off – 20 yd³ to 40 yd³
- deep / in-ground collection system* - typically 5,000 litres (*limited application only – see 4.3.4)

4.3 WASTE STORAGE FACILITY REQUIREMENTS

It is the responsibility of the Owner to provide one or more of the following Waste Storage Facility options:

4.3.1 Internal Waste Storage Room(s) Attached to or Integral to Main Use of Building

An internal waste storage room(s) built in accordance with all applicable regulations must be attached to, or integral to, the main use of each building.

The internal waste storage room shall be rodent proof and vented and large enough to store all waste materials, including bulky items and other waste streams generated by the proposed establishment (for both proposed and future uses) between designated collection days. Where it is intended that significant quantities of other wastes such as corrugated cardboard and cooking oil is produced, the Owner is to consider specialized collection (and containers) for these additional waste streams, which may include a cardboard compactor and / or separate collection of cooking oil. The internal waste storage room must be large enough to permit movement of the waste containers and other designated waste such as bulky items etc.

For the safety of users of the facility and the public, the building is required to be designed in a manner that prohibits access to any waste storage room(s) equipped with a compactor(s). Where a compactor is used, the Owner is required to provide a separate but attached recycling room for tenant / owner access for oversized material (i.e. corrugated cardboard etc.) and other wastes.

In all cases, waste materials must be stored in a designated internal waste storage room attached to (or integral to) the main use of each building until the designated day of collection and all waste containers must be returned to the internal waste storage room immediately following collection. No waste shall be stored outside the internal waste storage room between designated collection days. The internal waste storage room(s) shall be fully situated on private property.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines.

4.3.2 Detached Fully Enclosed Waste Storage Structure

In Industrial, Commercial, Institutional as well as some mixed-use developments, the City may permit a detached fully enclosed waste storage structure. The detached fully enclosed waste storage structure shall be rodent proof and externally vented and large enough to store all waste materials, including bulky items and other waste streams generated by the proposed establishment (for both proposed and future uses) between designated collection days.. Where it is intended that significant quantities of other wastes such as corrugated cardboard and cooking oil is produced, the Owner is to consider specialized collection (and containers) for these additional waste streams, which may include a cardboard compactor and / or separate collection of cooking oil. The detached fully enclosed waste storage structure must be large enough to permit movement of the waste containers and other designated waste such as bulky items etc.

The fully enclosed waste storage structure shall include full walls, roof, concrete floor, and either overhead door with side man-door or double man doors large enough to accommodate width of waste bins when fully opened. The exterior finish and design of the structure shall be an integrated part of the building design and to the satisfaction of the City. The detached fully enclosed waste storage structure must comply with all zoning and other applicable regulations.

In all cases, waste materials must be stored in fully enclosed waste storage structure until the designated day of collection and all waste containers must be returned to the waste storage structure immediately following collection. No waste shall be stored outside the fully enclosed waste storage structure between designated collection days. The fully enclosed waste storage structure shall be fully situated on private property.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines.

4.3.3 Roll-off Containers

The roll-off system (compacted or uncompacted) shall be large enough to contain all waste materials generated from the proposed development (for both proposed and future uses) between collection days.

Should the City approve the use of a roll-off container(s) system (compacted or uncompacted) for a development / redevelopment, the City may still require a separate internal waste storage room or structure to store bulky material or additional waste streams. Roll-off container options include:

a) Compacted

A compacted (closed) roll-off container shall be:

i) Appropriately screened if the compaction unit is external to, but attached to, the main use of building. The Owner is responsible to ensure that such screening be an integrated part of the building design; or

ii) Fully enclosed by being internal to the main use of building or by a detached fully enclosed waste storage structure (Refer to Section 4.3.2).

The City reserves the right to determine the most appropriate option (and appropriate screening) noted above.

b) Uncompacted

Uncompacted (open-top) roll-off containers stored external to main use of building (i.e. outside) are generally not accepted, but may, at the discretion of the City, be considered in some industrial developments / redevelopments that permit outside storage (i.e. EM2 zone only).

Where the uncompacted roll-off containers are permitted by the City, the Owner is responsible to ensure that it is appropriately screened, and that such screening be an integrated part of the building design. The City reserves the right to determine the most appropriate screening.

4.3.4 Deep / In-Ground Collection Systems

In some small Commercial (i.e. stand-alone) or Institutional developments / redevelopments, the City may, at its sole discretion, permit a deep / in-ground collection system for the disposal of waste materials. **The deep / in-ground collection system will only be considered for (small) commercial and institutional type developments not exceeding 1,600 square metres. Deep / in-ground collection systems will not be permitted in Industrial, Commercial, Institutional exceeding the aforementioned limit nor will it be acceptable in Residential (including Mixed Use) developments and redevelopments.**

If permitted, the deep / in-ground collection system shall be large enough to contain all waste materials generated from the proposed development (for both proposed and future uses) between collection days.

In all cases, waste materials must be stored inside the deep / in-ground collection system. No waste shall be stored outside the deep / in-ground collection structure between designated collection days. The deep / in-ground collection system shall be fully situated on private property.

Should the City approve a deep / in-ground collection system for a development / redevelopment, the City may still require a separate internal waste storage room or structure to store bulky material and/or additional waste streams.

APPENDICES

ALL applicants MUST submit with their Waste Management Site Plan completed forms as provided in Appendix A (Part 1 and 2) of this document.

**APPENDIX A: WASTE COLLECTION DESIGN STANDARDS POLICY
SUBMISSION REQUIREMENTS**



The Owner is required to complete both Part 1 and Part 2 of Appendix A. Completed forms, along with a Waste Management Site Plan (and other relevant drawings), shall be submitted to the Planning Department.

Part 1: WASTE SERVICING DETAILS FORM

- Applicants must complete the fillable form online by accessing www.vaughan.ca/waste and clicking on Waste Collection Design Standards Policy in the right side of page.
- The Owner is required to provide a 'Waste Servicing Details Form' for each building within the development / redevelopment.

APPENDIX A (Part 1 of 2) WASTE SERVICING DETAILS FORM			
GENERAL INFORMATION			
Development Information			
Building Standards No. or Development Application No.			
Municipal address of development			
Brief summary of development proposal			
Does development proposal consist of more than one building?	No	Yes	<i>If 'yes', please ensure to submit an Appendix 'A' - Part 1 form for each building of development.</i>
If multiple buildings within development, identify building as shown on site plan (i.e. Building 'A')			
Agent Information			
Agent Name & Company Name			
Business Address			
Daytime phone number		Email Address	
Applicant Information			
Applicant Name & Company Name			
Address			
Daytime phone number		Email Address	
WASTE SERVICING DETAILS			
Waste Stream	Type & Size of Container		Number of Containers
Garbage	Front-end		Front-end
	Roll-off		Roll-off
	Other		Other

Recycling	Carts	Carts
	Front-end	Front-end
	Other (a)	Other (a)
Cardboard	Front-end	Front-end
	Other	Other
Organics	Carts	Carts
	Other	Other
Cooking Oil	Specify:	
Other:	Specify:	
ADMINISTRATION - FOR OFFICE USE ONLY		
Site Plan File No.		
City Planner & Extension		
Public Works (Approved by)		
Date of Approval		

**APPENDIX A: WASTE COLLECTION DESIGN STANDARDS POLICY
SUBMISSION REQUIREMENTS**



PART 2: CHECKLIST - WASTE MANAGEMENT SITE PLAN REQUIREMENTS

- Applicants must complete the fillable form online by accessing www.vaughan.ca/waste and clicking on Waste Collection Design Standards Policy in the right side of page.
- Standard Drawings specific to the WCDSP are provided in Standard Drawing Section (SW-101 to SW-105) of the City's Engineering Design Criteria and Standard Drawings (EDC&SD)
- The 'Description' noted below is a summary only. Please refer to appropriate section of this policy for details and other conditions.

APPENDIX A (Part 2 of 2) CHECKLIST WASTE MANAGEMENT SITE PLAN REQUIREMENTS					
SECTION REFERENCE	WCDSP	EDC&SD	DESCRIPTION	Checklist	
				Yes	No
ACCESS ROUTE					
1. Show location of access route	2.1.1		Waste collection vehicles are to enter and exit site solely in a forward motion. The Access Route and required turnaround can be shown using 'Auto turn' or similar type program.		
2. Show pavement design of access route	2.1.2	1.2.4.1	Pavement design shall be a minimum as per City's Engineering Design Criteria and Standard Drawings for 'Industrial & Heavy Duty Driveways' or a City approved alternative.		
3. Show driveway width & curb radius at point of ingress / egress to site	2.1.3	SW-101	Driveway width shall be a minimum 6.0 metres from face of curb to face of curb		
			Inside curb radius shall be no less than 9.0 metres.		
4. Show driveway width, curb radius and vertical clearance throughout access route	2.1.4	SW-102	Driveway width shall be a minimum 6.0 metres from face-of-curb to face-of-curb.		
			Radius throughout entire access route shall be no less than 12.0 metres (centre line).		
		A minimum vertical clearance of 4.4 metres throughout entire access route.			
5. Show ingress / egress and turnaround (or continuous forward motion) throughout access route	2.1.5	SW-103	1. Cul-de-sac Outside curb radius no less than 13.0 metres. *Note additional conditions if cul-de-sac has an island.		
		SW-104	2. Three Point Turn (Turning Stub) Inside curb radius no less than 9.0 metres, and - If road width is 6.0 metres or greater, the depth of the turning stub shall be no less than 11.0 metres.		
			3. Continuous Forward Motion Access shall be a minimum of 6.0 metres throughout entire access route (from face-of-curb to face-of-curb) and observe required turning radius.		
6. Show grade of access route	2.1.6		The slope of the access route shall not exceed 5%.		
7. Show affected support structures (if any) throughout access route	2.1.7		If a waste collection vehicle must pass over a support structure(s), show support structure(s) and indicate whether support structure(s) can support a minimum of 35,000 kgs.		
DESIGNATED LOADING AREA					
8. Show location of loading pad, as well as the 18.0 metre straight-	2.2.1	SW-105	In addition to location of loading area, ensure a minimum of 18.0 metre 'straight ahead'		

ahead approach			approach is shown.		
9. Show design of loading pad	2.2.2	SW-105	Loading pad design shall have a minimum base 300 mm of compacted 20mm crusher run-limestone and shall be finished to a minimum of 200 mm depth of concrete or a City approved alternative (i.e. heavy duty pavers). See additional requirements should loading pad form part of the access route.		
10. Show dimension of loading pad & vertical clearance at loading pad	2.2.3		The required number of waste containers set out for collection determines the length and maximum width of the loading pad (pad shall not be less than 6.0 metres wide). Dimension to include sufficient space for the movement of containers on loading pad.		
11. Show staging of all waste containers on the loading pad	2.2.4		Show footprint of all waste containers on the loading pad. as well as required space for special collections (i.e. bulky items, oil, corrugated cardboard etc.) and sufficient space for the movement of containers within storage facility.		
12. Show grade of loading area	2.2.5	SW-105	Grade of loading pad shall be no greater than + / -2% (grade of crossfall).		
13. Show bollards or other type barrier(s) on either side of loading door	2.2.6		Bollards or other type barriers are to be installed on either side of the loading door(s).		
WASTE STORAGE FACILITY(S)					
14. Show ventilation requirements meet Ontario Building Code minimum standards	3.1.4 or 4.1.2		Responsibility of Owner to meet no less than minimum standards pursuant to Ontario Building Code and appropriate odour controls requirements for Waste Storage Facility.		
15. Show location & dimension of <u>internal</u> waste storage facility	3.3 or 4.3		Refer to appropriate section to determine options. If compactor is used, a separate waste storage room must be shown.		
OTHER					
16. Show Collection Method and Container Requirements	3.2 or 4.2		Include type, size and number of waste containers required for all waste streams. This information is to be consistent with the information on the Waste Servicing Details Form (Appendix A – Part 1).		
17. Show Waste Management Site Plan is stamped and signed (Section 2.1)	2.1		Waste Management Site Plan must be stamped and signed by Professional Engineer or an Architect licensed in Ontario.		
ADDITIONAL REQUIREMENTS FOR MULTI UNIT RESIDENTIAL OR MIXED USE DEVELOPMENTS					
Note: This section is to be completed <i>only</i> if the development is residential or mixed use. Please indicate whether the development is residential or mixed use.					
18. Show number of units	3.1.2		Indicate number of residential dwelling and commercial units (where applicable).		
19. Show multi-sort / three stream system	3.1.3		Provide a typical floor plan showing the multi-sort system on every floor.		
			Provide a 'plan' view of multi-sort system and layout of containers in waste storage area. (As additional supporting information, the City may require the manufacturer's brochure of the multi-sort system be provided with the submission).		



APPENDIX B: WASTE CONTAINER DIMENSIONS & QUANTITY GUIDELINES

The guidelines noted below are estimates only. The Owner is responsible to determine the quantity (volume / weight) of waste generated from the proposed development / redevelopment, for both proposed and future uses. The following information is to provide guidance to the Owner in determining the size of waste storage facility(s) for their proposed development / redevelopment.

The waste storage facility shall be designed to accommodate all waste containers and other waste materials including but not limited to bulky items, large appliances, cooking oils, and hazardous waste generated by the proposed development / redevelopment between collection days. The Owner is also responsible to ensure that the waste storage facility shall include adequate space to allow for the jockeying of containers within the waste storage facility and on loading pad.

WASTE CONTAINER DIMENSIONS					
Container Type	Unit of Measure	Volume	Width	Length	Height
TOTER	Metric (Imperial)	360 litres (95 gallon US)	0.70 m (27.5 in)	0.95 m (37.5 in)	1.20 m (47 in)
FRONT END <i>Width includes lifting supports</i>	Metric (Imperial)	2.29 m ³ (3 yd ³)	2.03 m (80 in)	1.10 m (43 in)	1.22 m (48 in)
	Metric (Imperial)	3.06 m ³ (4 yd ³)	2.03 m (80 in)	1.40 m (54 in)	1.22 m (48 in)
	Metric (Imperial)	4.60 m ³ (6 yd ³)	2.03 m (80 in)	1.83 m (72 in)	1.37 m (54 in)
	Metric (Imperial)	6.13 m ³ (8 yd ³)	2.03 m (80 in)	1.83 m (72 in)	1.83 m (72 in)
ROLL OFF	Metric (Imperial)	15 m ³ to 30 m ³ (20 yd ³ to 40 yd ³)	2.4 m (8 ft)	6.7 m (22 ft)	<i>Depends on size of container - ranges from 4ft to 8ft</i>

**Dimensions noted are guidelines only and may vary slightly from manufacturer to manufacturer.*

QUANTITY GUIDELINES – RESIDENTIAL RECYCLING*				
	360 l (95 gal US) Totter	2.29 m³ (3 yd³) Front end uncompacted	3.06 m³ (4 yd³) Front end uncompacted	4.50 m³ (6 yd³) Front end uncompacted
	7 units/container	45 units/container	60 units/container	90 units/container

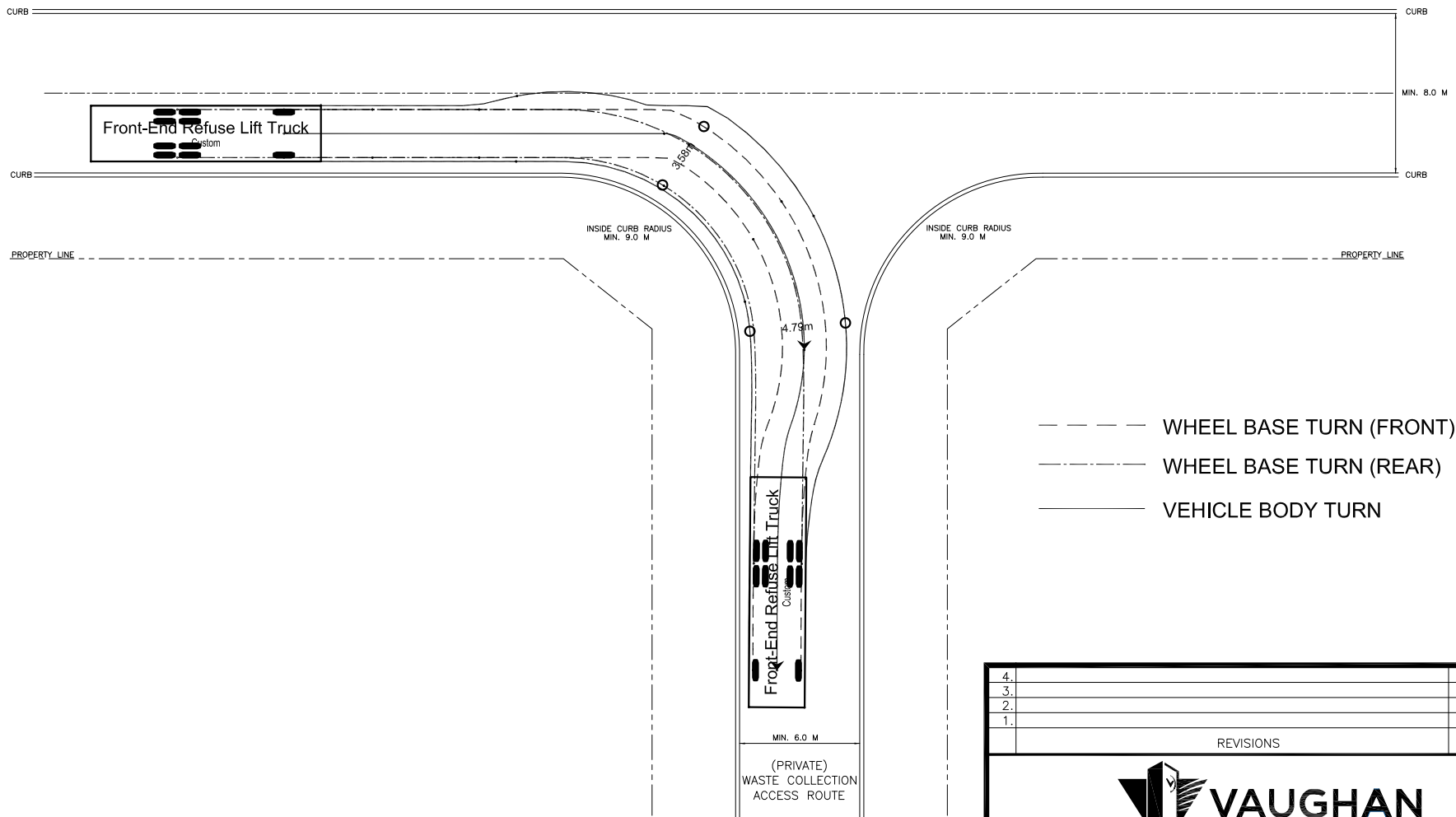
**These numbers are based on Waste Diversion of Ontario's 'Best Practices'.*

QUANTITY GUIDELINES – RESIDENTIAL ORGANICS				
	360 l (95 gal US) Totter	2.29 m³ (3 yd³) Front end uncompacted	3.06 m³ (4 yd³) Front end uncompacted	
	8 units/container	51 units/container	68units/container	

These numbers are based on 45 liters per week per household'

QUANTITY GUIDELINES – RESIDENTIAL GARBAGE (source???)			
Container Type	2.29 m ³ (3 yd ³)	3.06 m ³ (4 yd ³)	4.50 m ³ (6 yd ³)
Compacted (front-end)	50 units/container	67 units/container	100 units/container
Uncompacted (front-end)	17 units/container	23 units/container	34 units/container

These numbers are based on the average surrounding municipalities' online data using a compaction ratio of 3:1 (Halton Region 2012, Ottawa 2012, Hamilton 2011, Peel Region 2007)



NOTES:

1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY SECTION 2.2.3

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

4.			
3.			
2.			
1.			
REVISIONS		APR'D	DATE



CITY OF VAUGHAN ENGINEERING STANDARD

**DRIVEWAY WIDTH & CURB RADIUS
AT PROPERTY LINE**

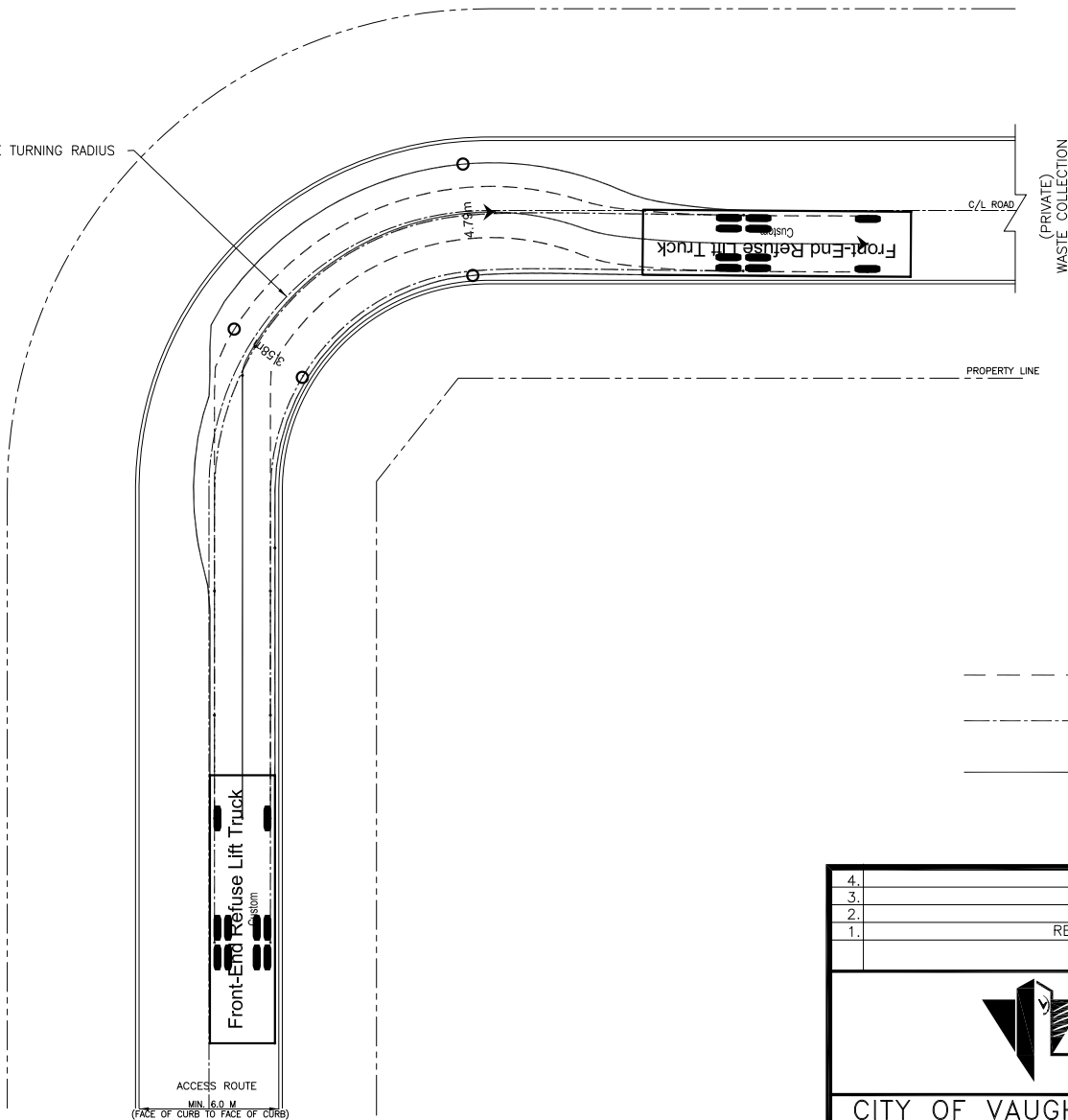
NOT TO SCALE DESIGNED: PUB WORKS

REVISION: _____ DATE: MAY 2015

STD. DWG.

SW-101

ACCESS ROUTE TURNING RADIUS
MIN. 12.0 M
(CENTRE LINE)



--- WHEEL BASE TURN (FRONT)
-.- WHEEL BASE TURN (REAR)
— VEHICLE BODY TURN

NOTES:

1. VERTICAL CLEARANCE SHALL BE A MINIMUM OF 4.4M THROUGHOUT THE ACCESS ROUTE
2. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY SECTION 2.2.4

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

4.			
3.			
2.	REV 2		JAN29
1.	REV 1. NOTES ADDED		JAN23
	REVISIONS	APR'D	DATE

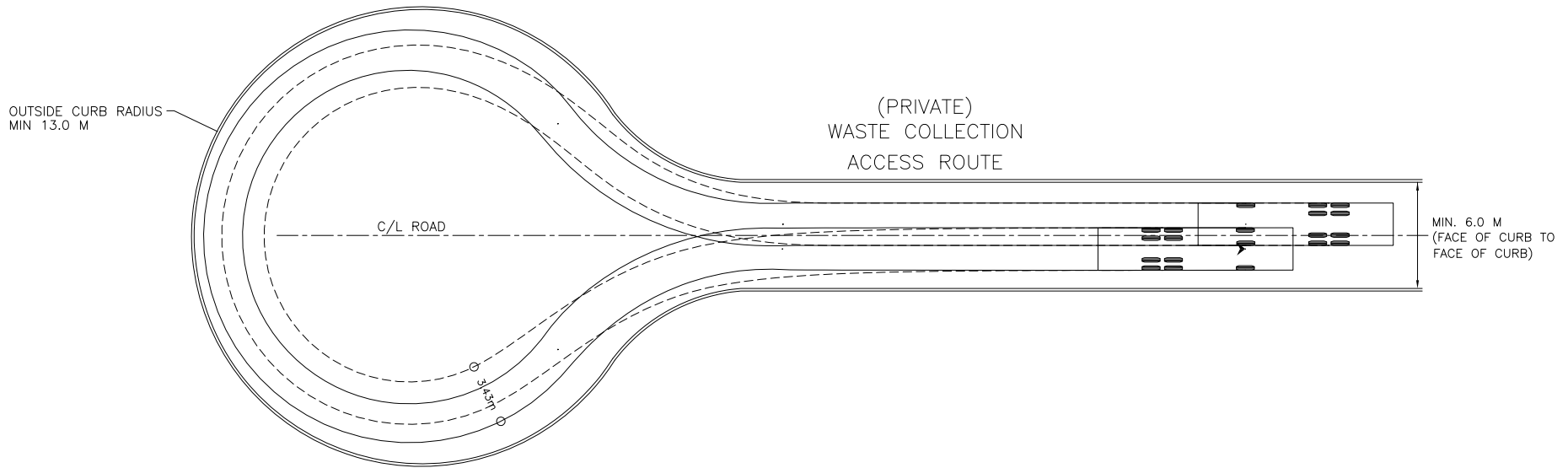


CITY OF VAUGHAN ENGINEERING STANDARD
**DRIVEWAY WIDTH, RADIUS
THROUGHOUT ACCESS ROUTE**

NOT TO SCALE DESIGNED: PUB WORKS
REVISION: _____ DATE: MAY 2015

STD. DWG.
SW-102

Acad File: C:\Trans_Srv_Prk & Frat_Opa\Roads\Technical\AUTOCAD\STANDARD\SW-103 TD 104 Ingress_Egress_Turnaround.dwg



NOTES:

1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY SECTION 2.2.5(a)

4.			
3.			
2.			
1.			
	REVISIONS	APR'D	DATE



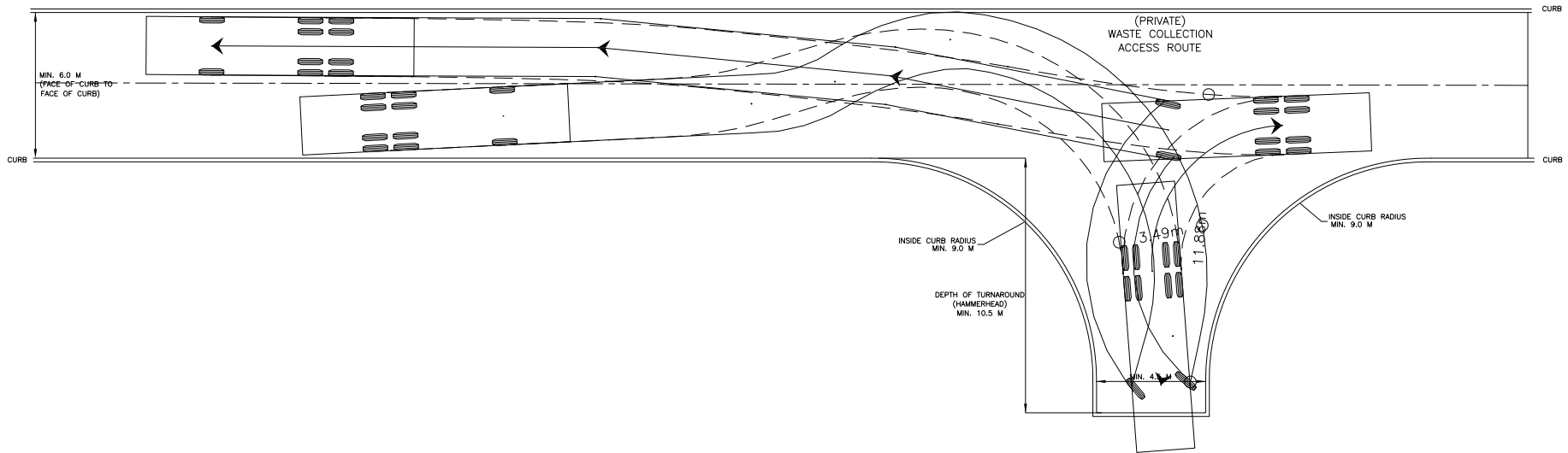
CITY OF VAUGHAN ENGINEERING STANDARD

**TURNAROUND -
CUL-DE-SAC**

NOT TO SCALE DESIGNED: PUB WORKS
 REVISION: _____ DATE: MAY 2015

STD. DWG.
SW-103

mm DIMENSIONS IN MILLIMETRES
 EXCEPT AS NOTED



NOTES:

1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY SECTION 2.2.5(b)

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

4.			
3.			
2.			
1.			
REVISIONS			APR'D DATE



CITY OF VAUGHAN ENGINEERING STANDARD

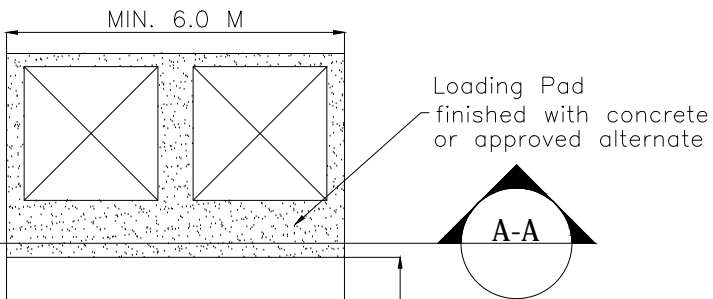
**TURNAROUND -
THREE POINT TURN**

NOT TO SCALE DESIGNED: PUB WORKS

REVISION: _____ DATE: MAY 2015

STD. DWG.

SW-104



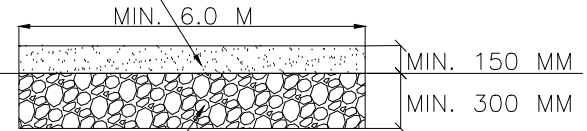
MIN. 18.0 M
Straight-Ahead Approach
for waste collection vehicle

MIN. 18.0 M

Width of straight-ahead
approach must be a
minimum of 6.0 M

LOADING AREA

Loading Pad
finished with concrete
or approved alternate



Base constructed with
compacted 20mm
crusher run-limestone

Section A-A

NOTES:

1. WIDTH OF LOADING PAD MAY VARY DEPENDING ON THE REQUIRED NUMBER OF WASTE CONTAINERS SET OUT FOR COLLECTION.
2. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY SECTION 2.3.1 & 2.3.2

4.			
3.			
2.	REV. 2		JAN29
1.	REV.1 NOTES ADDED		JAN24
	REVISIONS	APR'D	DATE



CITY OF VAUGHAN ENGINEERING STANDARD

DESIGNATED LOADING AREA

LOADING PAD & STRAIGHT AHEAD APPROACH

NOT TO SCALE

DESIGNED: PUB WORKS

STD. DWG.

REVISION: _____

DATE: JAN. 2013

SW-105

mm

DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED