

York Region Transit

Concrete Bus Pad

Specifications

Updated: January 2024

\*York Region Transit requires a minimum of two weeks’ notice to remove shelters and waste/recycling receptacles to accommodate construction.

Feel free to contact York Region Transit Facilities with any questions or comments:

Marco D’Ambrosio - Program Manager

Marco.D'Ambrosio@york.ca

David Luong – Facilities Supervisor

David.Luong@york.ca

Operations Dispatch 1(877)464-9675 x75841

OperationsDispatch@york.ca

Table of Contents

[Table of Contents 3](#_Toc155960017)

[Concrete Transit Pads 4](#_Toc155960018)

[Concrete Sidewalk 5](#_Toc155960019)

[Concrete 6](#_Toc155960020)

[Concrete Barrier Curb 7](#_Toc155960021)

[Concrete Curb 8](#_Toc155960022)

[YRT Concrete Bus Pad Standard Drawings 8](#_Toc155960023)

Concrete Transit Pads

This Specification shall be read in conjunction with OPSS.MUNI 351 (Nov 2021), OPSS.MUNI 1010 (Nov 2013) and OPSS.MUNI 1350 (Nov 2023).

The following Standard Drawing is applicable to this item: OPSD 310.010 (Nov 2019).

The Contractor shall install all concrete passenger standing areas, shelter and waste pads, links and sidewalks in accordance with OPSS.MUNI 351. The Work shall include excavation and disposal of excess excavated material, compaction of sub-grade, supply and placement of 150mm of concrete and 300mm of Granular ‘A’ in accordance with OPSS.MUNI 1010. In the area of the concrete passenger standing areas and shelter pads sawed contraction joints shall be used in lieu of dummy joints.

* Granular “A” shall be compacted to 100% maximum dry density.
* All sawed contraction joints shall be saw cut within 12 to 24 hours after placement of concrete.
* Sawed contraction joints shall be a minimum of ¼ of the slab depth and no more than 2.0 meters apart in each direction.
* Expansion joint material shall be placed abutting all existing concrete surfaces.
* Polyethylene membrane shall be used on subgrade where directed by the Region.
* All concrete Work shall be constructed with a 2% cross fall (perpendicular to the curb) and consistent with the Accessibility for Ontarians with Disabilities Act (AODA), unless pre-approved by York Region Transit and other municipal authorities.
* All concrete Work shall be constructed with a maximum of 8% slope parallel to the curb.
* The pad shall be broom finished (pass a 30 mm smooth edge around the perimeter of the pad) to provide a slip resistant surface.
* Water ponding will not be tolerated; the pad and/or panel shall be removed and replaced.

The Contractor shall be responsible for the removal and proper disposal of any existing York Region Transit (YRT) bus stop signs and/or posts as directed by the Commissioner.

The Contractor is advised that, for excavation operations, the Contract allows for the replacement of one roll width of sod (400mm) adjacent to the concrete Work unless noted otherwise in the Contract Documents. Any additional sod damage shall be repaired at the Contractor’s expense. The exception is where there is a fill area involved in the Work or as directed by the Commissioner. Fill slopes are not to exceed 3:1

The Contractor is responsible for the removal and disposal of any materials within the areas of excavation. The materials may include, but are not limited to, the removal of u-channel signs, re-bar, timber, tree roots and stumps.

The Contractor shall be responsible for restoring any area affected by excavation to its original, pre- construction state. This may include, but is not limited to, asphalt kill strips and interlock walkways.

The Contractor is also responsible for the construction layout of the concrete pads as shown on the YRT Concrete Bus Pad Standard Drawings. The Region will assist with interpretation of the Standard Drawings, if required.

The Contractor is also responsible for ensuring that the slope of the pad does not exceed 4% of the typical section slope as shown in OPSD 310.010. If the initial layout causes the slope to exceed 4% of the typical section slope, the Contractor shall contact the Region for instruction and Site review, if necessary, prior to the placement of concrete. Any pad installed which exceeds 4% of the typical section slope shall be removed and replaced at the Contractor’s expense.

Expansion joint material shall be placed abutting all existing concrete surfaces and every 3 bays (4.5m). No saw cutting joints will be permitted.

The Contractor shall note that all formwork shall be removed, all debris collected and removed from the Place of the Work and all necessary restoration required to eliminate trip hazards shall be completed within 48 hours of the placement of the concrete. A trip hazard will be considered to be eliminated when there is less than a 25mm grade differential between the concrete and the abutting surface.

It is the responsibility of the Contractor to protect the concrete during the curing process and any panels and/or bays marked shall be removed and replaced at the Contractor’s expense. This includes, but is not limited to, graffiti, marks from protective covers and tire marks. Patching and/or parging of concrete will not be accepted.

It is the responsibility of the Contractor to provide access to the properties. When working within an entrance, the Contractor shall stage its Work accordingly to maintain a minimum 3.8m wide access through an entrance at all times.

Concrete Sidewalk

This Specification shall be read in conjunction with OPSS.MUNI 351 (Nov 2021).

The following Standard Drawings are applicable to this item: OPSD 310.010 (Nov 2019), OPSD 310.020 (Nov 2019) and OPSD 310.030 (Nov 2015).

* Sidewalk bays shall be a maximum of 1.5m to 2.0m in length.
* Sidewalk thickness shall be 150mm.
* Sidewalk concrete depth shall be increased to 250mm for the first panel from the curb return at all commercial and industrial entrances.
* Polyethylene membrane shall be used on subgrade where directed by the Region.

Concrete

This Specification shall be read in conjunction with OPSS.MUNI 1350 (Nov 2023).

Concrete shall conform to the requirements of OPSS.MUNI 1350, except as otherwise noted herein. The Contractor shall be responsible for the concrete mix design as specified in subsection 1350.04 and for providing concrete of the required properties.

The class of concrete shall be as specified in the Contract Documents. Concrete shall be a minimum of 32 MPa compressive strength at 28 Days with 6.5% ± 1.5% air entrainment.

Chemical admixtures shall be selected from the designated source list and shall be added according to the manufacturer's recommendations.

When submitting the mix proportions, the Contractor shall specify the source of the coarse and fine aggregate and the manufacturer of the cement.

The mix proportions and the required test data, for each class of concrete, shall be submitted to the Commissioner at least 14 Days prior to the placement of concrete. They shall be submitted in the standard MTO Form PH-CC-433 under Headings (A) and (B).

1. Contractor Designed Concrete Mix

Mix Proportions shall be expressed as follows:

|  |  |
| --- | --- |
| * 1. Portland Cement
 | Type, source and content in kilograms per cubic metre of concrete. |
| * 1. Cementitious Hydraulic Slag
 | Percent slag, source and content in kilograms per cubic metre of concrete |
| * 1. Coarse Aggregate
 | Nominal maximum size, relative density (dry) source, content in kilograms per cubic metre of concrete and dry rodded density in kilograms per cubic metre of concrete. |
| * 1. Fine Aggregate
 | Fineness modulus, relative density (dry), source and content in kilograms per cubic metre of concrete. |
| * 1. Water
 | Content in kilograms per cubic metre of concrete. |
| * 1. Chemical
 | Admixture - Source, type and dosage per 100 kilograms cement. |
| * 1. Air Entraining
 | Admixture - Source and type. |

Mix proportions shall be based on an aggregate in an oven dry condition.

1. Strength Test Data

The Contractor shall produce the following information with regard to the mix design. The information shall consist of test data from a laboratory or field mixed batch of concrete, or a summary of test data from previous work using similar concrete mix proportions, as follows:

i) Laboratory or Field Mixed Batch of Concrete

The test data shall include compressive strength tests consisting of at least one set of standard cylinders tested at seven Days, and one set of standard cylinders tested at 28 Days. For mixes with cementitious hydraulic slag, the compressive strength tests shall also include one set of standard cylinders tested at three Days. The air content, temperature and slump of the samples of concrete used to fabricate the test cylinders shall be stated.

ii) Summary of Test Data

The test data shall include at least ten consecutive 28 Day strength tests from previous work. The data shall report individual strength tests and the average of all groups of three consecutive strength tests. The air content and slump of the samples of concrete used to fabricate the test cylinders shall be stated. The tests shall have been carried out within a period of two years prior to the award of the Contract.

Concrete Barrier Curb

This Specification shall be read in conjunction with OPSS.MUNI 353 (Nov 2021) and OPSS.MUNI 314 (Nov 2023).

The Contractor shall install all concrete barrier curbs in accordance with OPSS.MUNI 353. The Work shall include excavation and disposal of excess excavated material, compaction of sub-grade, and supply and placement of Granular ‘A’ in accordance with OPSS.MUNI 314.

The Contractor is advised that, for excavation operations, the Contract allows for the replacement of one roll width of sod (400mm) adjacent to the concrete Work unless noted otherwise in the Contract Documents. Any additional sod damage shall be repaired at the Contractor’s expense. The exception is where there is a fill area involved in the Work or as directed by the Commissioner. Fill slopes are not to exceed 3:1.

The Contractor is responsible for the removal and disposal of any materials within the areas of excavation. The materials may include, but are not limited to, the removal of u-channel signs, re-bar, timber, tree roots and stumps.

The Contractor shall be responsible for restoring any area affected by excavation to its original, pre- construction state. This may include, but is not limited to, asphalt kill strips and interlock walkways.

Concrete Curb

This Specification shall be read in conjunction with OPSS.MUNI 353 (Nov 2021) and OPSS.MUNI 314 (Nov 2023).

The Contractor shall install all concrete curbs in accordance with OPSS.MUNI 353. The Work shall include excavation and disposal of excess excavated material, compaction of sub-grade, and supply and placement of Granular ‘A’ in accordance with OPSS.MUNI 314. The Contractor shall be responsible for the replacement of asphalt to its original depth.

The Contractor is advised that, for excavation operations, the Contract allows for the replacement of one roll width of sod (400mm) adjacent to the concrete Work unless noted otherwise in the Contract Documents. Any additional sod damage shall be repaired at the Contractor’s expense. The exception is where there is a fill area involved in the Work or as directed by the Commissioner. Fill slopes are not to exceed 3:1.

The Contractor is responsible for the removal and disposal of any materials within the areas of excavation. The materials may include, but are not limited to, the removal of u-channel signs, re-bar, timber, tree roots and stumps.

The Contractor shall be responsible for restoring any area affected by the excavation to its original, pre- construction state. This may include, but is not limited to, asphalt kill strips and interlock walkways.

In areas where drop curb is specified, the gutter is to be dished, with no lip, to allow for wheelchair movement.

YRT Concrete Bus Pad Standard Drawings

Standard Drawingsare available for download at [www.york.ca/standards](http://www.york.ca/standards) under *Road Construction Design Guidelines and Standards* accordion.