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**Previous Issue Date:** n/a

**From:** Marko Paranosic, P.Eng, PE

**Client:** City of Brampton

**Project Name:** Denison Avenue Extension Class EA Study

**Project No.:** 2018-5301

## DESIGN CRITERIA

| GEOMETRIC DESIGN CRITERIA  |  |  |  |
|--|--|--|--|
| <b>Project No.:</b>  | <b>Municipality:</b><br>City of Brampton | <b>Type of Project:</b><br>Preliminary Design (EA) |  |
| <b>Location:</b> Denison Avenue                                  |  | <b>Length:</b> 205m                                |  |
| <b>Project Limits:</b> Extension from Park Street to Mill Street |  |  |  |
| DESIGN PARAMETERS  | DESIGN STANDARDS                         | PROPOSED STANDARDS                                 | Design Standard Reference                              |
| ROAD CLASSIFICATION  | UCU50 <sup>1</sup>                       | UCU50<br>Minor Collector                           | TAC 2017 <sup>2</sup> Table 2.6.2                      |
| ROW WIDTH (m)  | 23m                                      | 23m  | CoB SDM <sup>3</sup> Geometric Design Criteria         |
| POSTED SPEED (km/h)  | 50                                       | 50   | N/A  |
| MIN. DESIGN SPEED (km/h)   | 60                                       | 60   | CoB SDM Geometric Design Criteria, Appendix D, Table 1 |
| MINIMUM STOPPING SIGHT DISTANCE (m)                              | 85                                       | 85   | TAC 2017 Section 2.5                                   |
| MINIMUM 'K' FACTOR   | 11 (Crest)<br>18 (Sag)                   | 11 (Crest)<br>18 (Sag)                             | TAC 2017 Section 3.3                                   |
| GRADES<br>MAXIMUM/MINIMUM  | 0.3% min<br>5 % max                      | 0.3% min<br>5 % max                                | CoB SDM Geometric Design Criteria, Appendix D, Notes   |
| MINIMUM CENTRELINE RADIUS  | 190m                                     | 190m   | CoB SDM Geometric Design Criteria, Appendix D, Table 1 |
| MINIMUM TANGENT LENGTH AT INTERSECTIONS (m)                      | 30                                       | 30   | CoB SDM Geometric Design Criteria, Appendix D, Table 1 |
| MINIMUM CURB RADIUS AT INTERSECTIONS (m)                         | 10.5                                     | 10.5   | CoB SDM Geometric Design Criteria, Appendix D, Table 2 |

| <b>GEOMETRIC DESIGN CRITERIA</b>                                 |  |  |  |
|--|--|--|--|
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| <b>Location:</b> Denison Avenue                                  |  | <b>Length:</b> 205m                                |  |
| <b>Project Limits:</b> Extension from Park Street to Mill Street |  |  |  |
| <b>DESIGN PARAMETERS</b>   | <b>DESIGN STANDARDS</b>                                  | <b>PROPOSED STANDARDS</b>                          | <b>Design Standard Reference</b>                               |
| INTERSECTION SIGHT TRIANGLES (DAYLIGHTING)                       | 7.5m R (curvilinear)                                     | 7.5m R (curvilinear)                               | CoB SDM Geometric Design Criteria, Appendix D, Table 1 Note i) |
| PAVEMENT WIDTH (m)   | 10<br>2 @ 3.50 m (veh)<br>2 @ 1.50 m (bike) <sup>4</sup> | 7.5<br>2 @ 3.75 m<br>(shared veh & bike)           | CoB STD Dwg. 202 <sup>5</sup>                                  |
| BOULEVARD WIDTH (m)  | 6.5  | 6.5 +/-  | CoB STD Dwg. 202   |
| SIDEWALK WIDTH (m)   | 1.8 (both sides)   | 1.8 (N/W Side Only)                                | CoB STD Dwg. 202   |
| SIDEWALK CROSSFALL (%)   |  |  |  |
| DRIVEWAYS  | Max. 8.0% (approach)<br>Max. 4% (sidewalk)               | Max. 8.0% (approach)<br>Max. 4% (sidewalk)         | CoB STD Dwg. 239 <sup>6</sup>                                  |
| MULTI-USE PATH (m)   | 2.4 -3.0   | n/a  | CoB (Standard Practice)  |

### CROSSING OF ORANGEVILLE-BRAMPTON RAIL LINE

| <b>DESIGN PARAMETERS</b>  | <b>EXISTING</b> | <b>DESIGN STANDARD</b> | <b>Design Standard Reference</b> |
|---|-----------------|------------------------|----------------------------------|
| CROSSING SKEW ANGLE (°)   | 82              | 70-110                 | GCS <sup>7</sup> , Section 6.5   |
| SIGHT DISTANCE ALONG TRACKS (m, D <sub>Stopped</sub> <sup>8</sup> ) | 160             | 151 <sup>9</sup>       | GCS, Section 7.2                 |
| MIN. DISTANCE FROM INTERSECTIONS <sup>10</sup> (m)                  | n/a             | 30                     | GSC, Section 11.1                |

<sup>1</sup> Urban Collector Undivided

<sup>2</sup> Transportation Association Canada Road Design Guideline, 2017

<sup>3</sup> City of Brampton Subdivision Design Guide, 2008

<sup>4</sup> Denison Avenue identified in City of Brampton Active Transportation Master Plan as a planned on-road cycle route

<sup>5</sup> City of Brampton Standard Drawing 202 (2014) for Minor Collector (10m Pavement, 23m ROW)

<sup>6</sup> City of Brampton Standard Drawing 239 (2014) for Urban Entrance

<sup>7</sup> Transport Canada Grade Crossing Standards (2014)

<sup>8</sup> Decision Stopped Sight Distance for Stop-Controlled Passive Rail Crossing

<sup>9</sup> Based on vehicle clearance calculation of 13.53s for both approaches, V<sub>s</sub> = 40.2km/h and driver start 2m from stop bar

<sup>10</sup> Includes driveways and/or entrances

Memo To: File

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**Prepared by:**

Signature/Seal

**Initials**