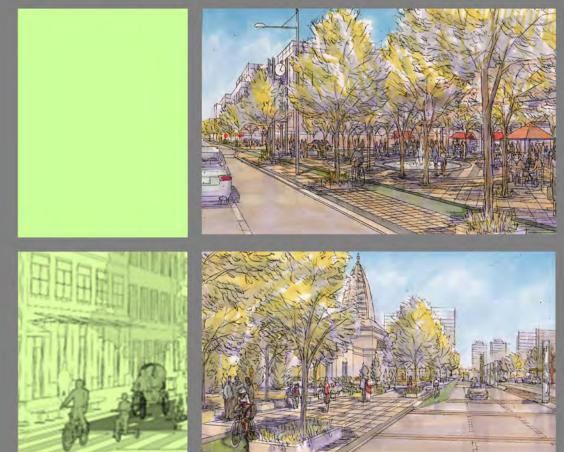






# **CONCEPTUAL STREETSCAPE UPDATE OPTIONS**





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# 2.0 CONCEPTUAL STREETSCAPE UPDATE OPTIONS

### 2.1 PHILOSOPHY AND APPROACH

### 2.1.1 PROCESS OF BUILDING THE DESIGNS

While one of the major objectives of this Master Plan Upgrade is redesigning from on-road cycling facilities, as proposed in the 2012 Master Plan, to on-boulevard cycling facilities, the philosophy for the Conceptual Streetscape Updated Options remains rooted from the Preferred Streetscape Design Conceptual Approach – Linked Districts Approach, as documented in the 2012 Master Plan. It was also emerged through our work on Phases 1 and 2, as well as the outcomes of the stakeholder consultation. The process for developing the draft Streetscape Master Plan was as follows:

#### 1. Build on the vision and "must have" items

Further build upon the vision and list of "must have" items developed through the stakeholder engagement process, in order to lay the groundwork for the South Yonge Street Streetscape Master Plan.

#### 2. Identify functional features of the street

A number of functional features for Yonge Street were identified after the vision was established. These include:

 No central left turn lanes (except at Steeles Avenue and Highway 407)

- Minimal right turn lanes subject to analysis to confirm
- Lane width of 3.3m
- Designated bike facilities
- Lay-by parking
- Pedestrian areas

#### 3. Identify Concept Options

Three conceptual options were identified:

- Concept A: Cycle Track on Road with Raised Curbs;
- Concept B: Cycle Track on Boulevard;
- Concept C: Combination of Concepts A and B.

Each Concept was examined and evaluated, while keeping the "must have" items and functional features in mind.

#### 4. Choosing of the Preferred Concept

Concepts A, B and C were presented to the Core Team and a detailed discussion took place to evaluate the advantages and disadvantages of these three Concepts. Concept C - Combination of Concepts A and B was chosen as the preferred option to be developed into the draft Updated Streetscape Master Plan.

#### 5. Articulate the Details

The draft Streetscape Master Plan was further revised and refined. Details of the draft plan are articulated within Section 3.0 of this report.

As the plan evolved, it became clear that the Master Plan would

not be implemented for several years due to the timing and funding requirements relative to the proposed Yonge Street Subway extension construction. It is envisaged that future development along the Yonge corridor will be the prime driver in the implementation of streetscape development on Yonge Street. This Updated Master Plan will then serve as a strong basis and guidance in articulating details in design and implementation.

However, the detailed Project Schedule and Implementation Phasing Plan were still being developed, a "Pre-Subway Plan" was prepared in Section 4 identifying, at a high level key streetscape implementation principles. These principles would relate to the timing, construction methods and interim transit and traffic management requirements with which elements of the Streetscape Master Plan could be timely implemented.

### 2.2 BRIEF DESCRIPTION OF THE APPROVED 2012 STREETSCAPE CONCEPT

### 2.2.1 APPROVED 2012 STREETSCAPE CONCEPT - LINKED DISTRICTS APPROACH

As documented in the 2012 Master Plan, the approved 2012 Streetscape Concept was based on the Linked District Approach which combined the strengths of each of the linear and nodal concepts and is centred on one strong street that also recognizes local character and features. The districts or

character areas are linked with threshold zones that will provide the appropriate transition between each area. Streetscape elements are generally consistent throughout the study corridor; however, variations in some elements may occur where special conditions are present, such as street tree planting, median location and parking.

### 2.3 OBJECTIVES AND DESIGN PRINCIPLES

The updated active transportation design will support and complement the Streetscape Master Plan that would achieve a Vision which has been re-endorsed by Region's Core Team. Ultimately, the updated Streetscape Master Plan will serve to provide clear direction on the design and function of the public realm and the future public-private interface along the southern segment of the Yonge Street corridor in the Region.

Figure 2 & 3 cross-sections illustrate the Midblock at Yonge-Steeles District previously approved by Council with the other one taken from the RFP of this project which reflects Region's current policy.

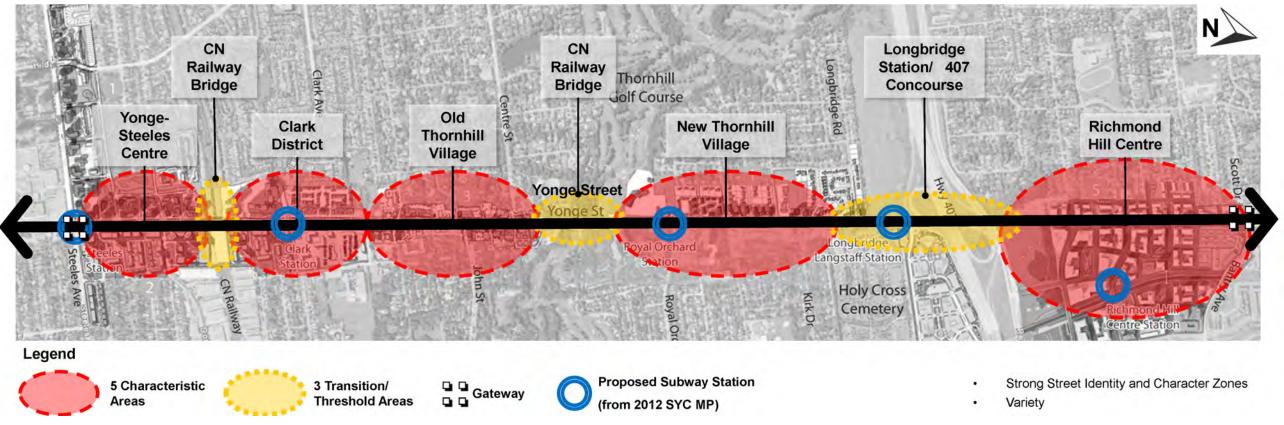


Figure 1: 2012 Preferred Concept Option Diagram Hybrid: Linked Districts / Precincts

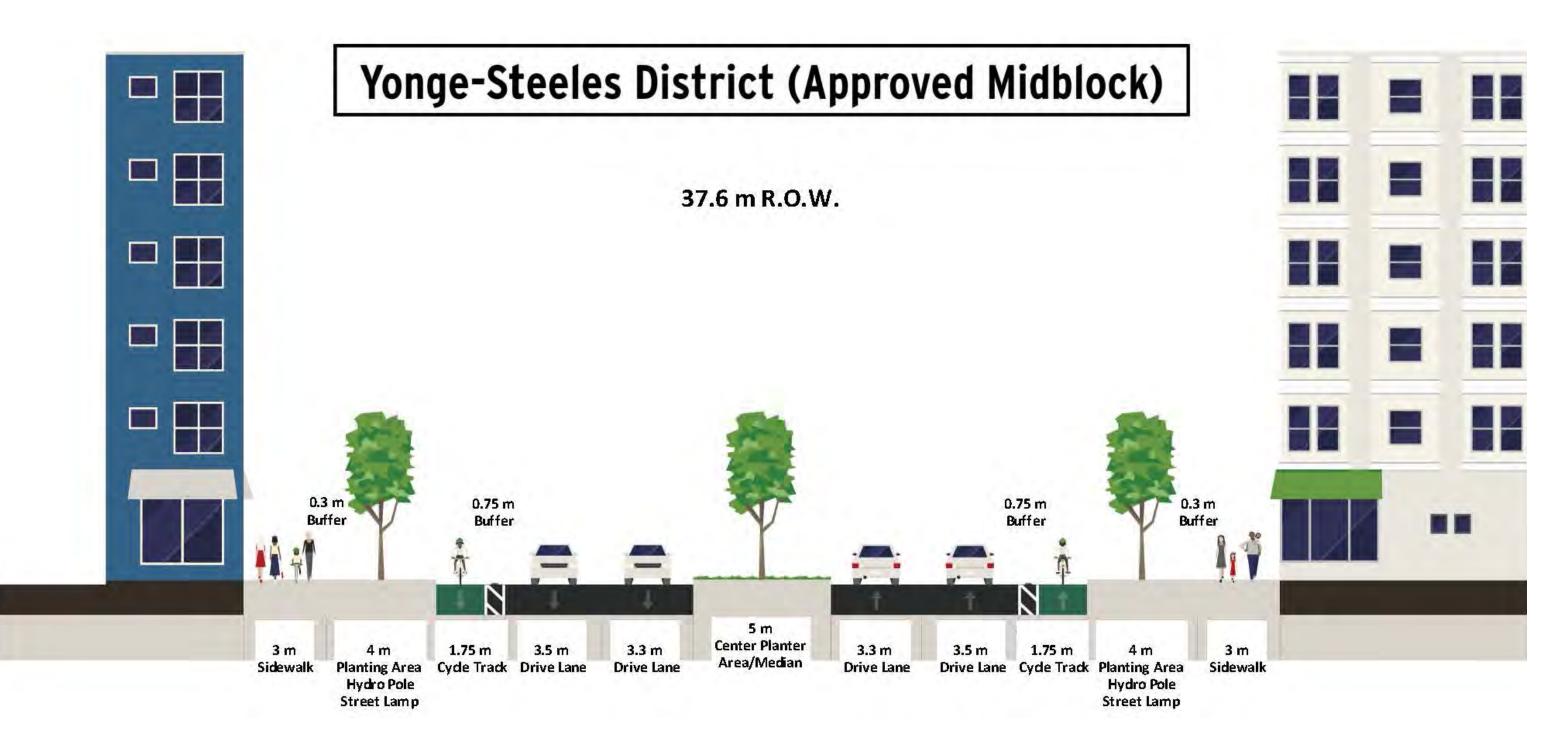
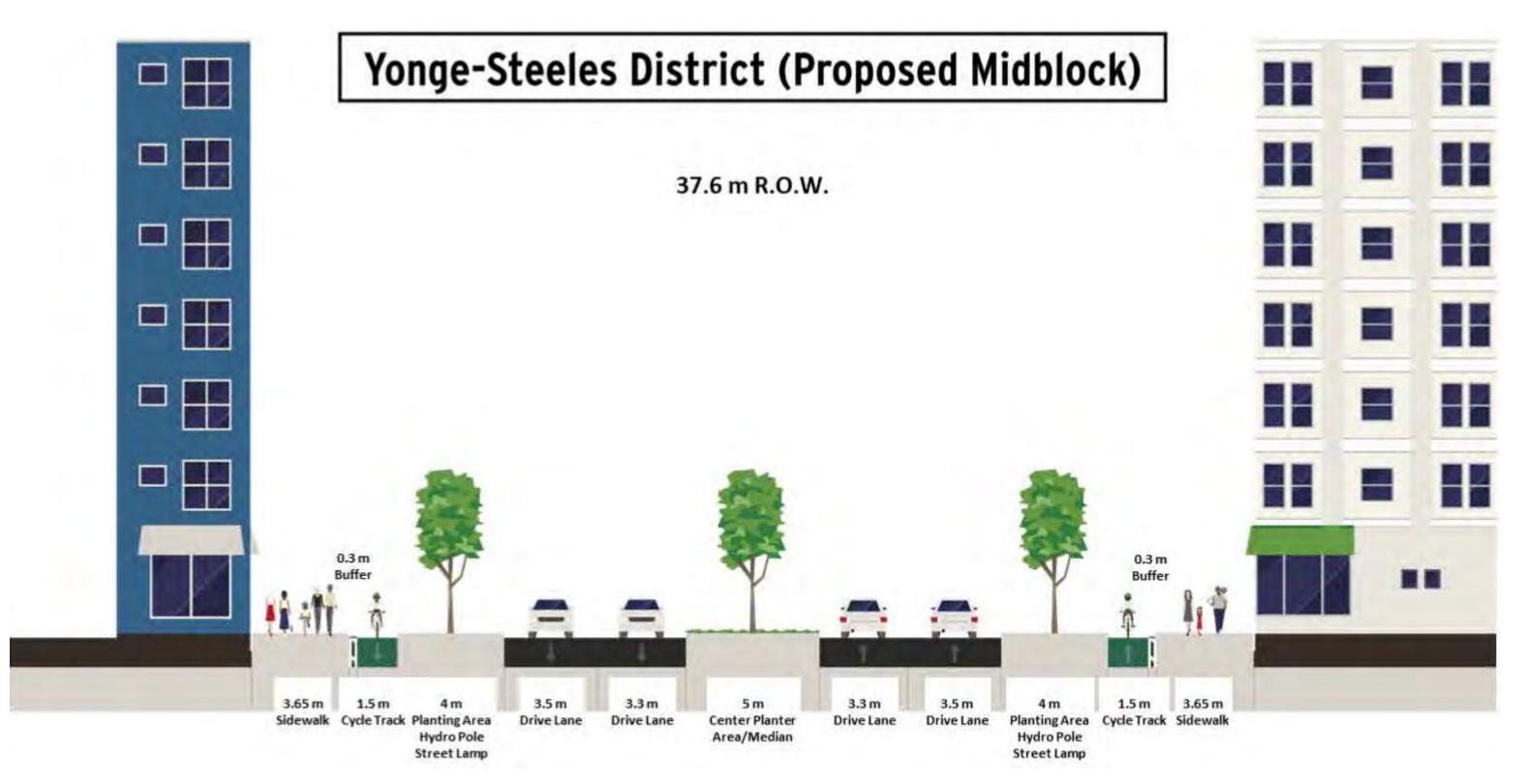


Figure 2: Yonge-Steeles District (Approved Midblock-2012 South Yonge Street Corridor Streetscape Master Plan)



**Figure 3:** Yonge-Steeles District (Proposed Midblock-2020 South Yonge Street Corridor Streetscape Master Plan)

#### 2.3.1 OBJECTIVES

To complement and strengthen the above Master Planning Updating objectives, as detailed in Section 2.3 Objectives and Design Principles, the Streetscape Master Plan Detail Design Guidelines and Standards in Phase 4 will also be updated to provide a finer level of details to the Streetscape Master Plan and integrate innovative design standards and practical implementation tools.

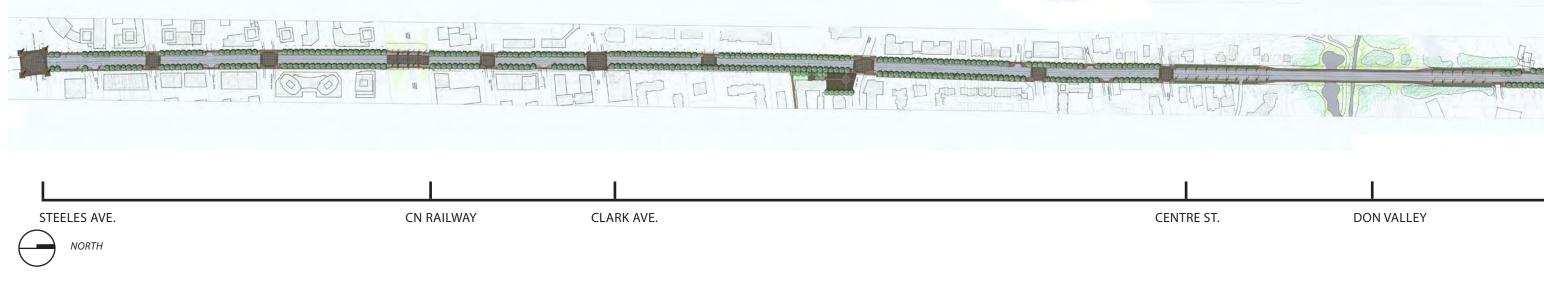
#### **2.3.2 DESIGN PRINCIPLES**

Streetscape Design Principles established in the original Master Plan will be adhered to and further developed. User safety and security are fundamental to designing Streetscapes. Cycling facilities within boulevards, separated from vehicular traffic, offer substantial benefits to cyclists from both safety and comfort perspectives. Separated facilities often reduce vehiclerelated crashes. They also encourage cycling as a mode of transportation among a broader range of people, from an age,

ability, and demographic perspective, increasing the overall number of cyclists and reducing the number of cars on the road. By locating cycling facilities within the boulevards, important design decisions will need to be made, specifically with respect to:

- Intersection and driveway design
- Street furniture, landscape development, and utility locations • Phasing and implementation

Figure 4: 2020 South Yonge Street Corridor Streetscape Master Plan, Steeles Avenue - Don Valley Section



- Transit stop locations and cycling facility interfaces
- Drainage and all-season maintenance

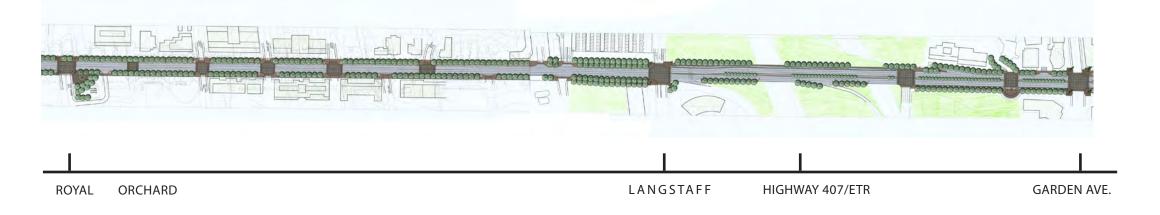
### 2.4 2020 - CONCEPT OPTIONS

### 2.4.1 CONCEPT A - RAISED CYCLE TRACKS

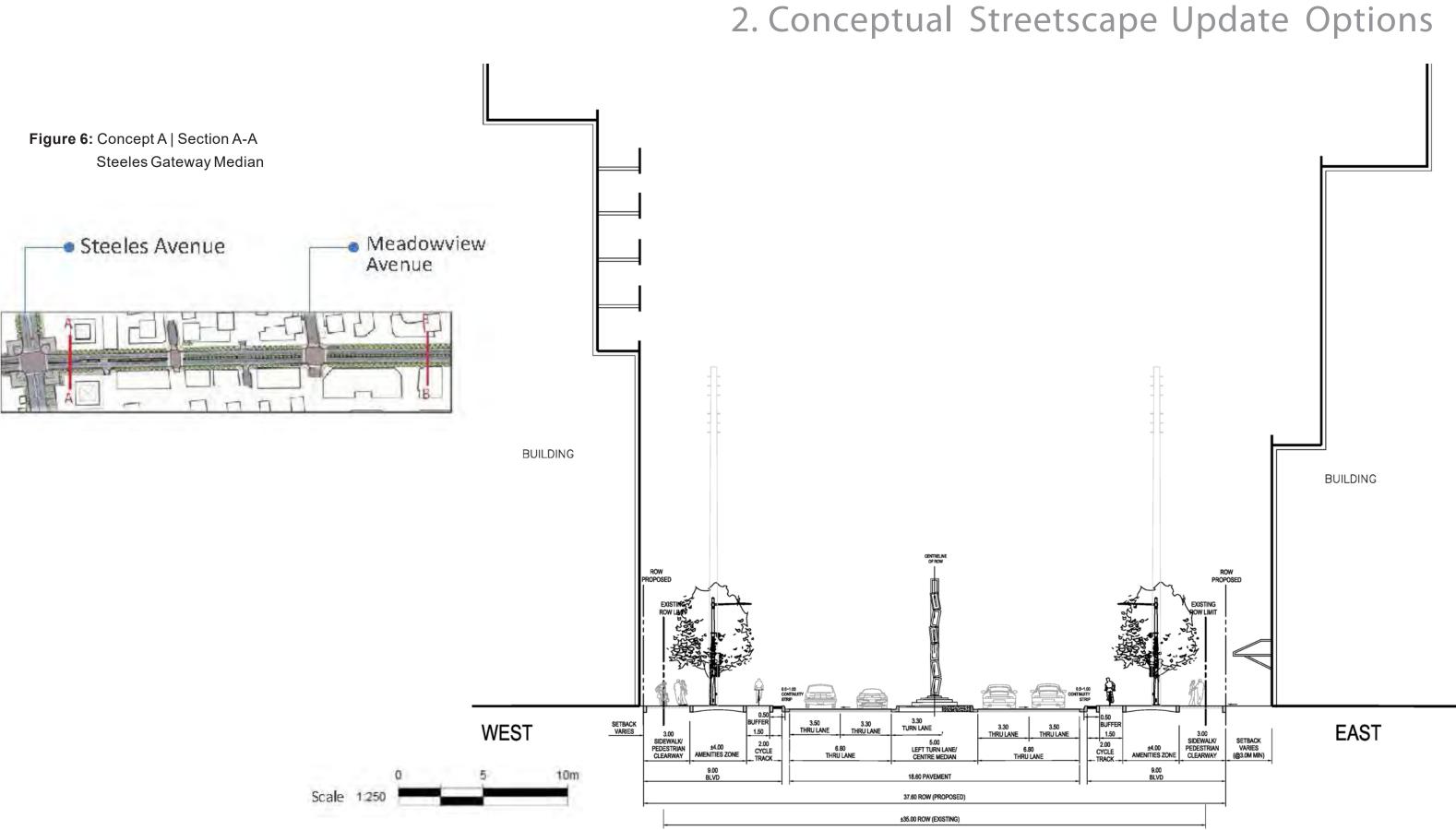
#### **Highlights Of Concept A**

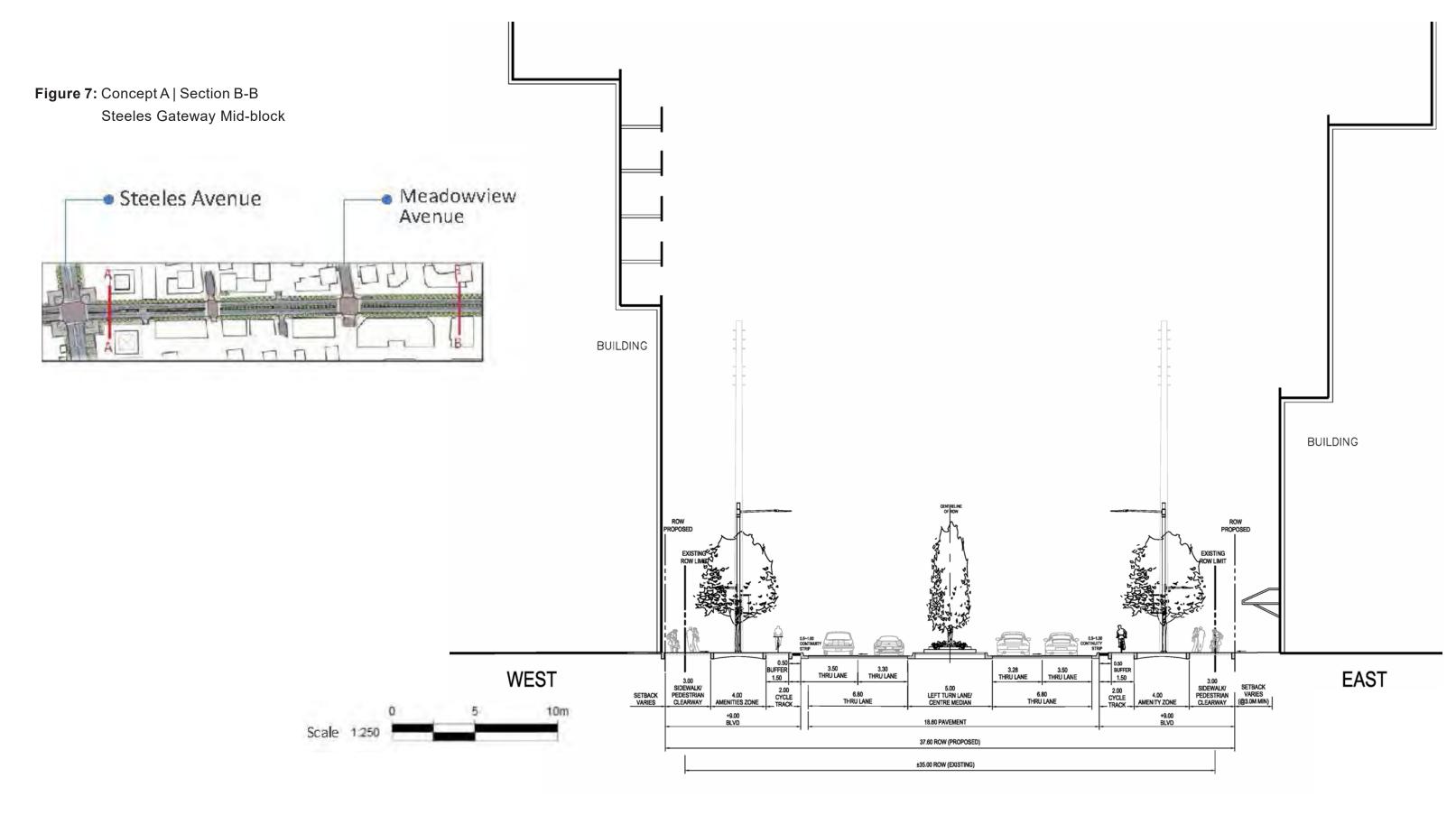
Using the approved 2012 Master Plan as a basis, it is proposed that the new cycle track be installed 150 mm above the existing road surface retained by a continuous raised barrier curb along the alignment of the proposed curbs in the 2012 Master Plan. The new cycle track will be installed on boulevard physically separated from the adjacent vehicular traffic. The following cross-sections illustrate the relationship of the propose cycle track with the streetscape and pedestrian zones, all within the boulevard and separated from the vehicular traffic on the adjacent roads.

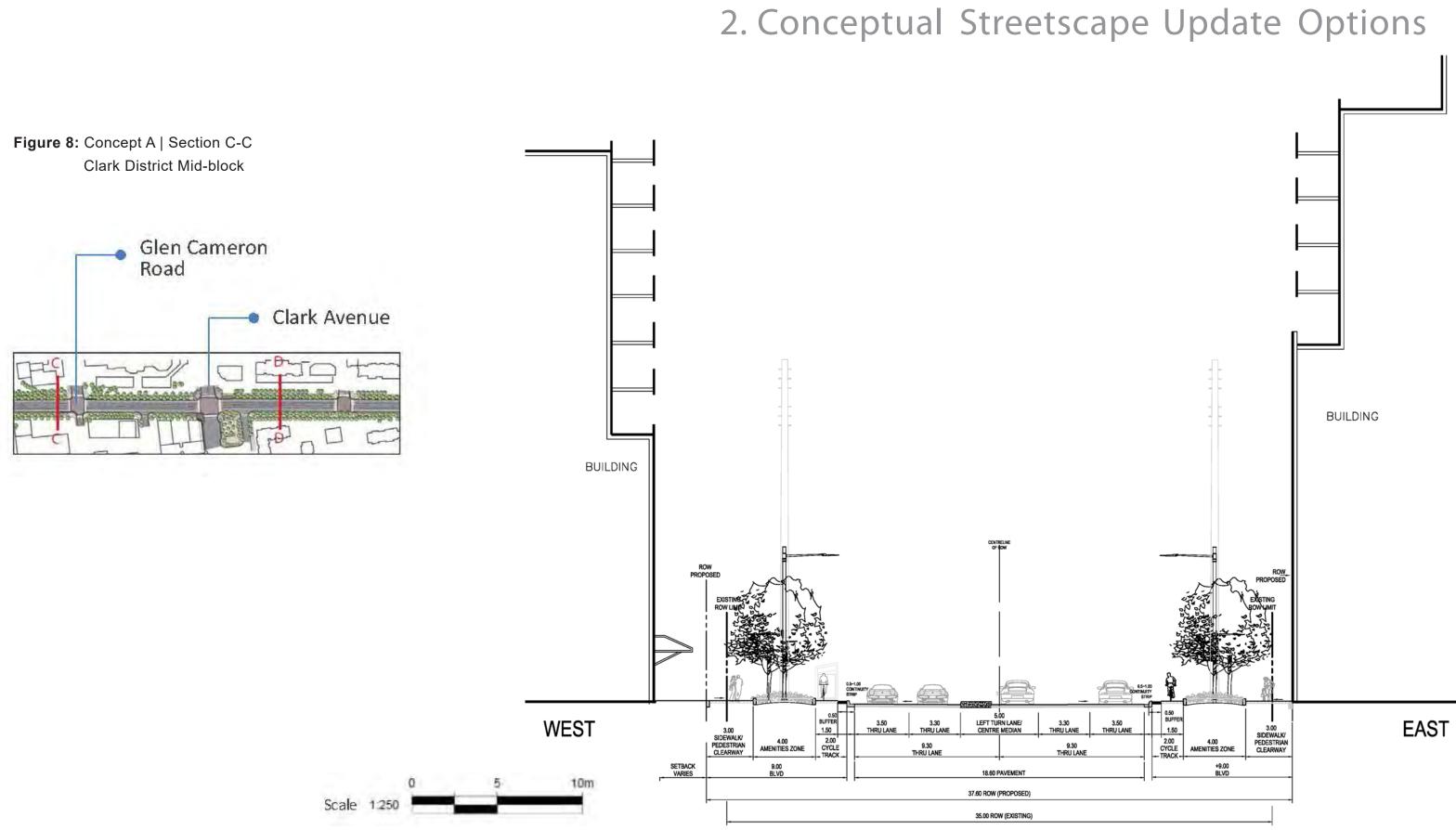
Figure 5: 2020 South Yonge Street Corridor Streetscape Master Plan, Royal Orchard - Garden Avenue Section



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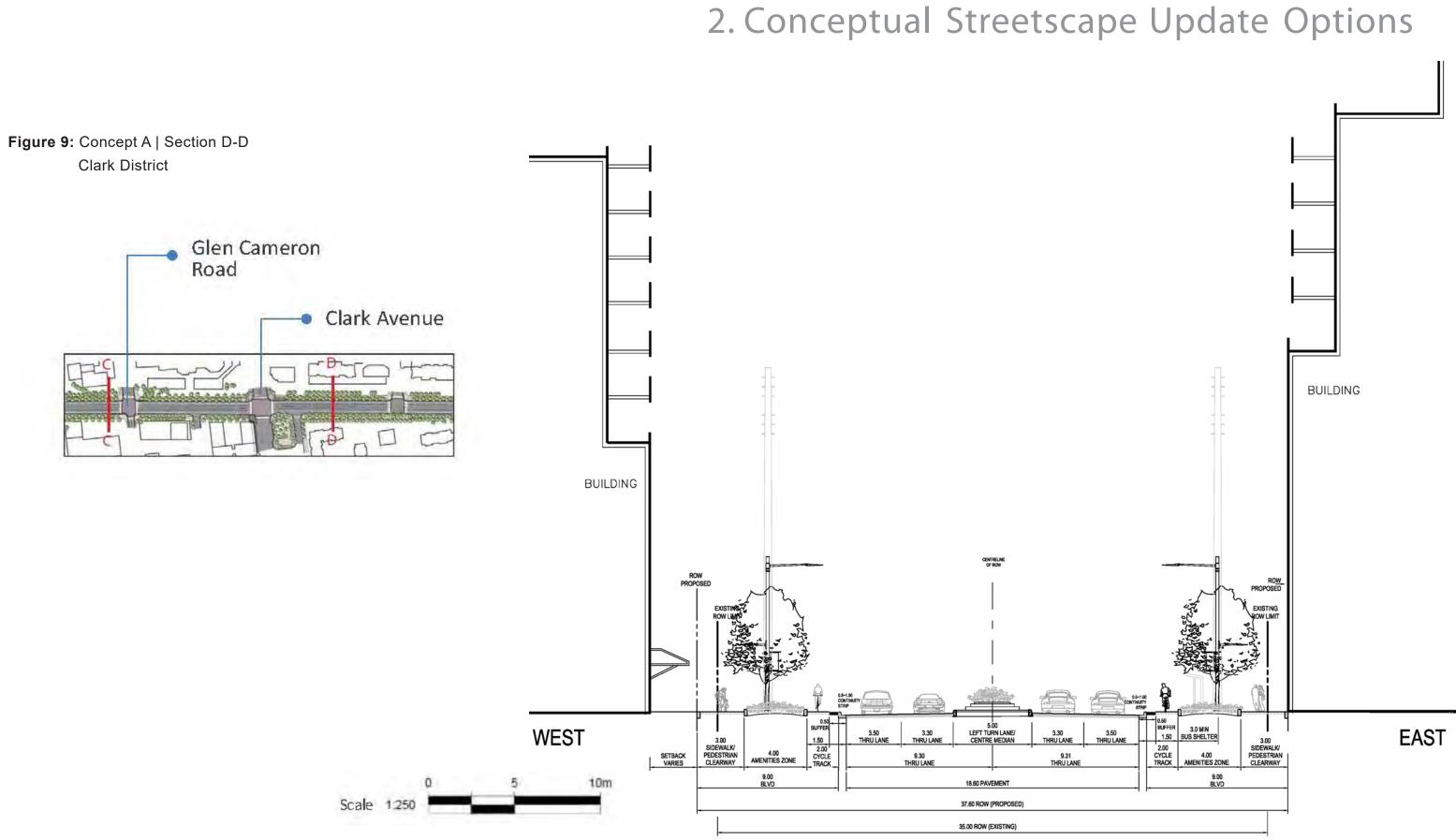
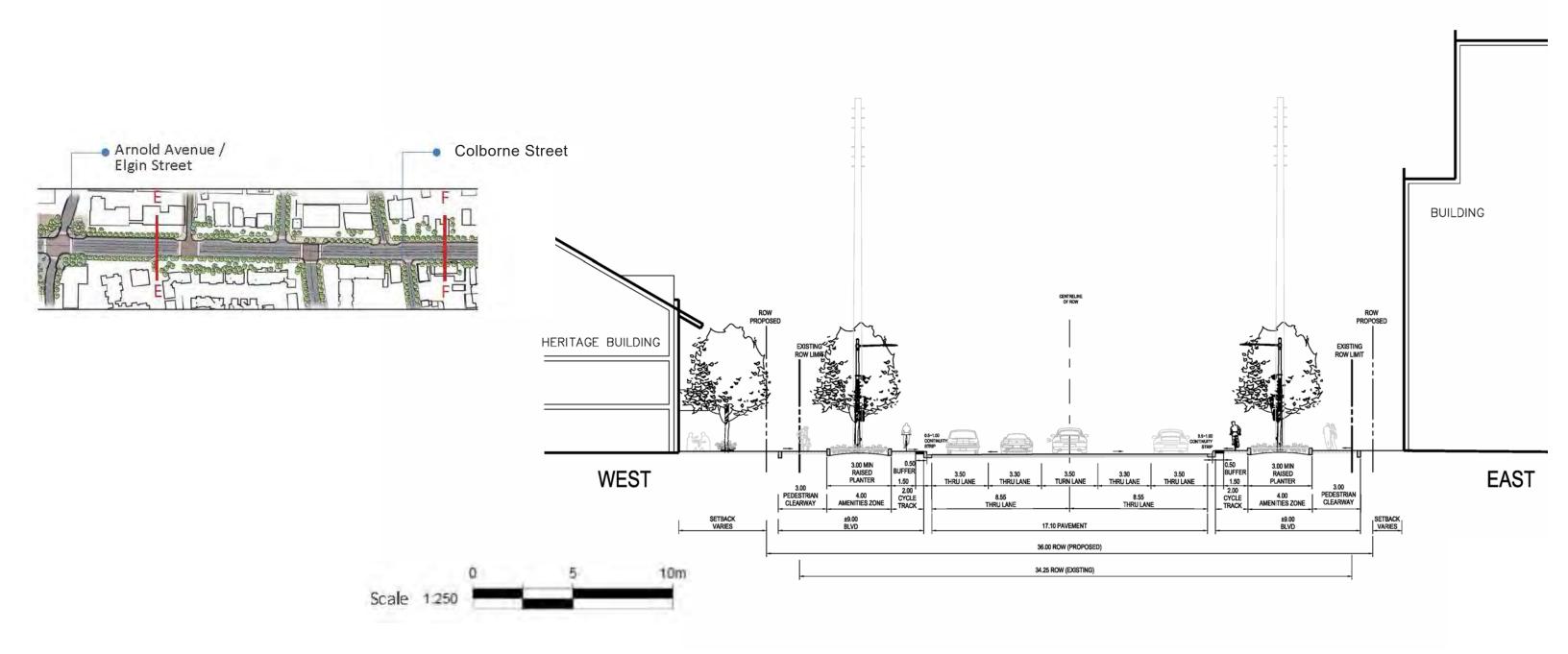
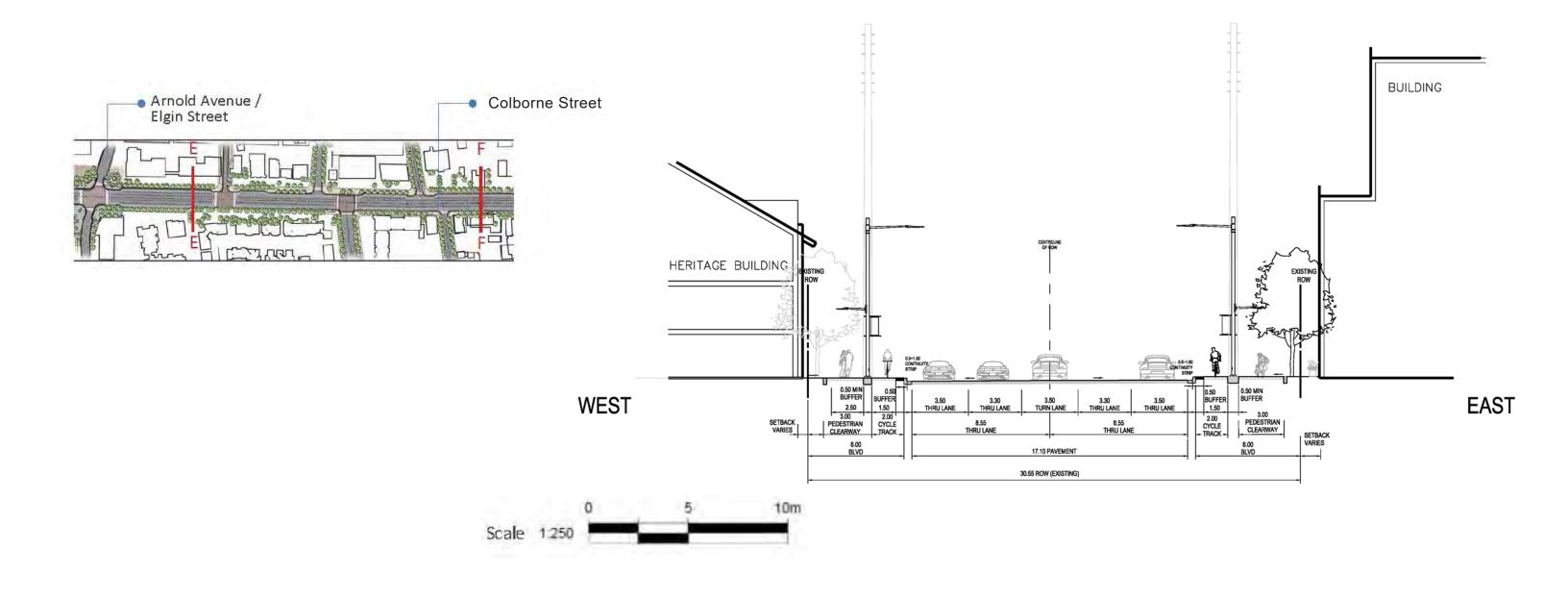
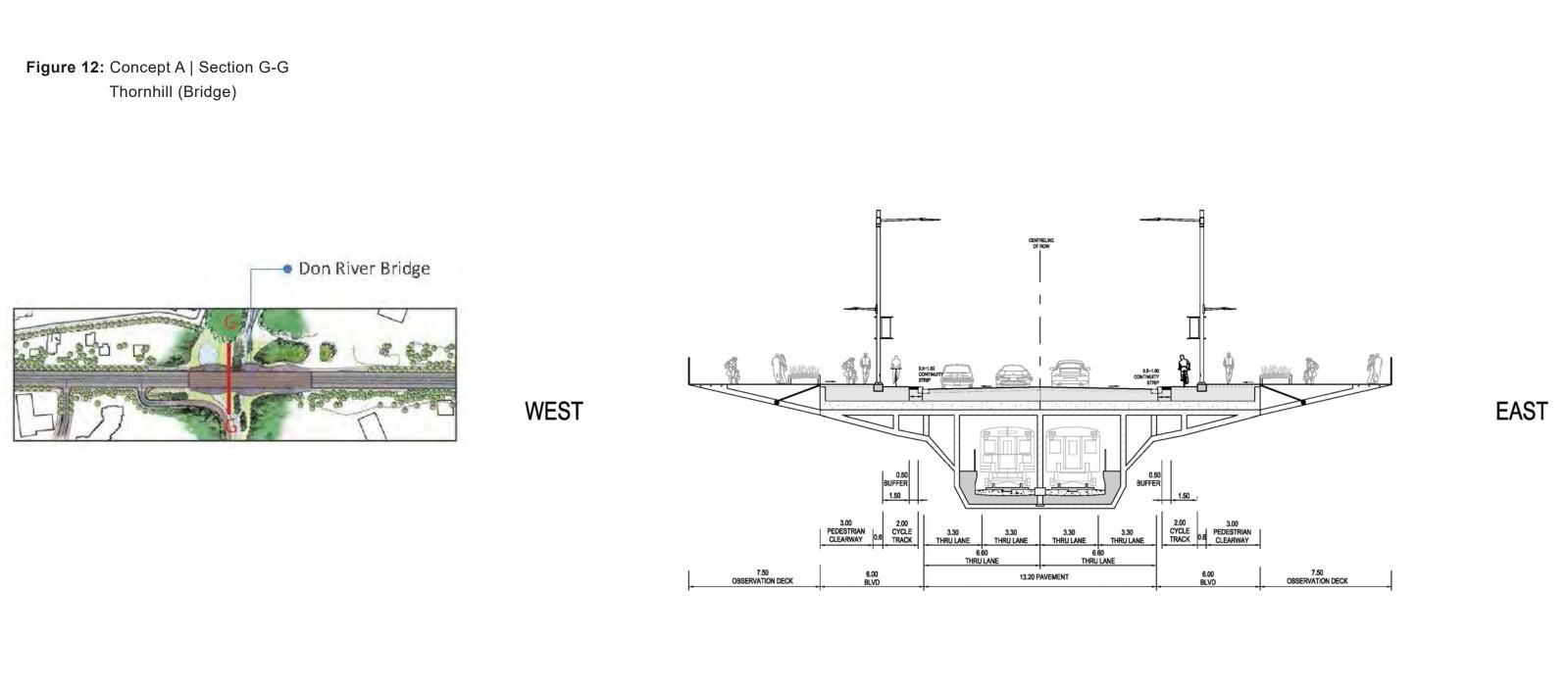


Figure 10: Concept A | Section E-E Old Thornhill- Approach to Intersection

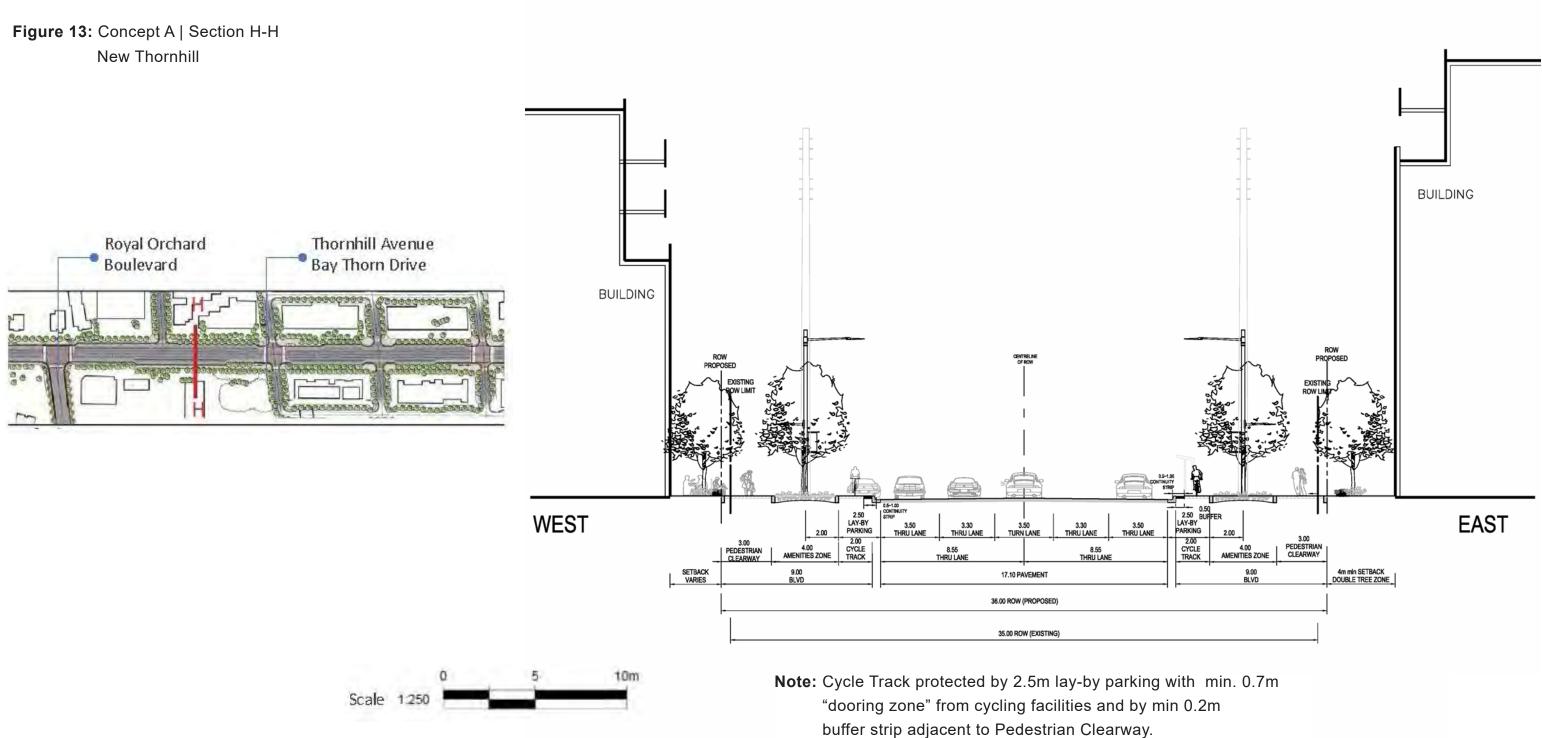


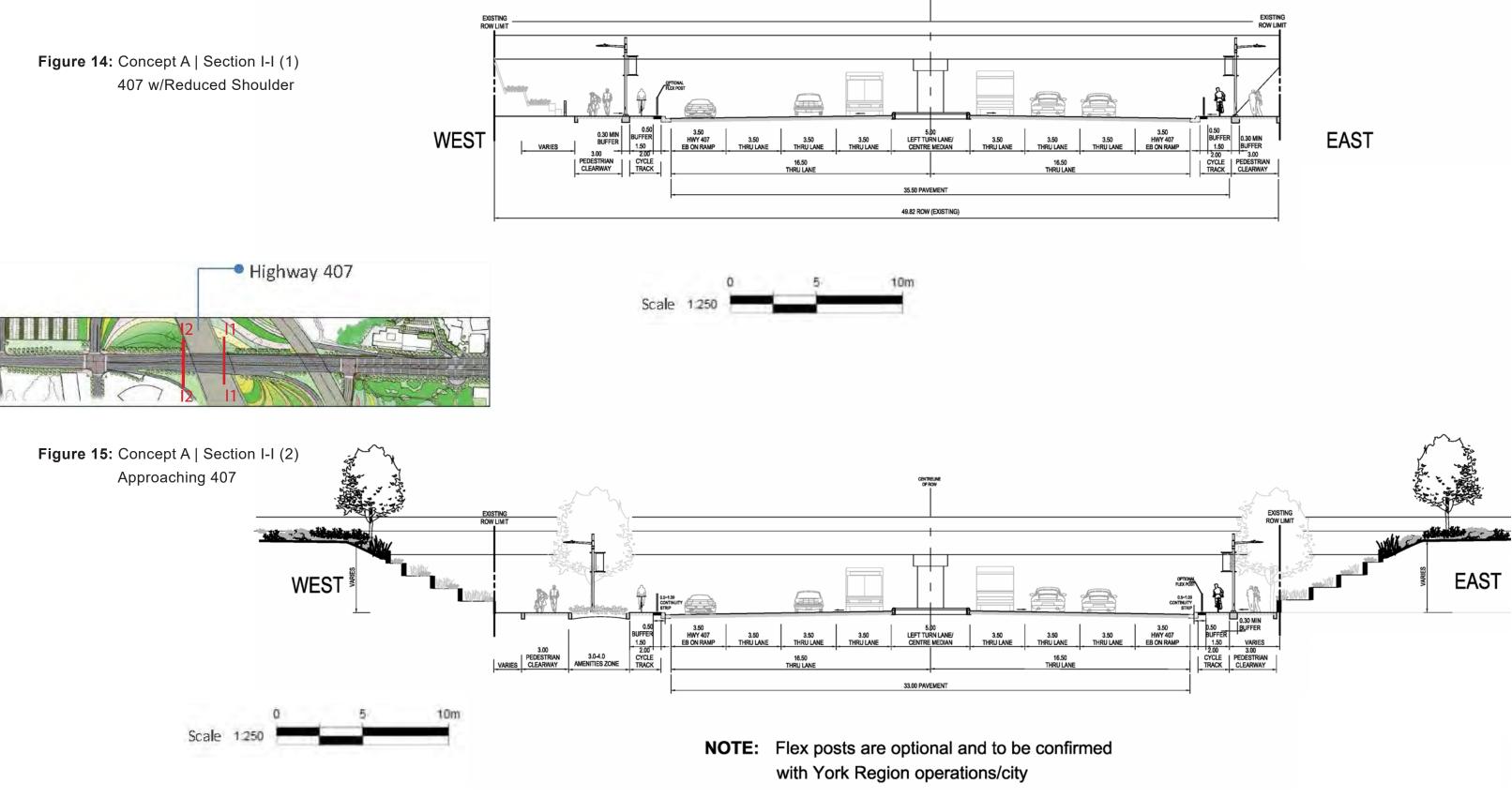
**Figure 11:** Concept A | Section F-F Old Thornhill (Heritage)



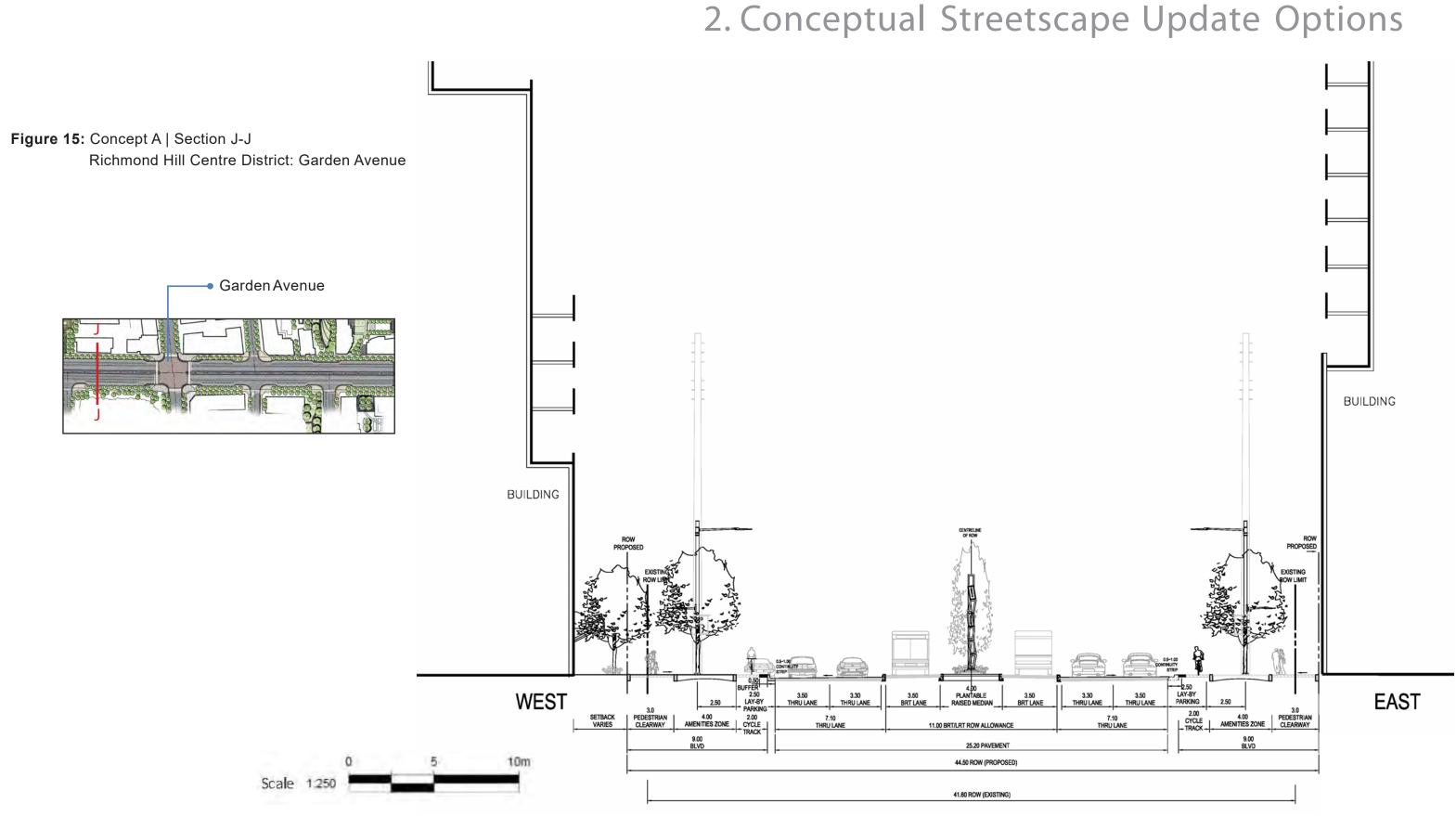






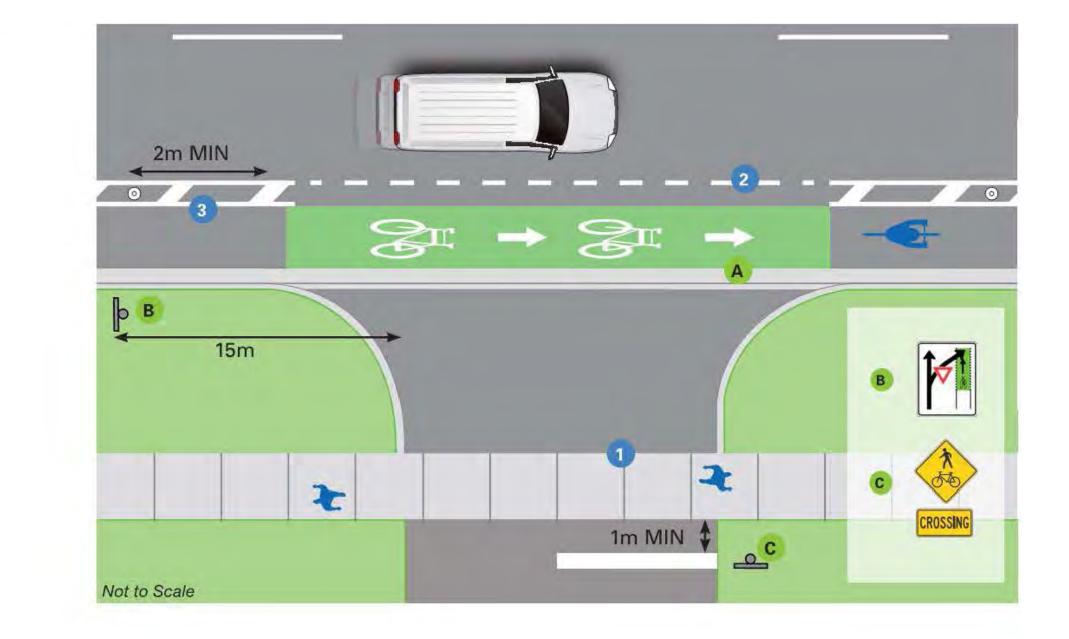








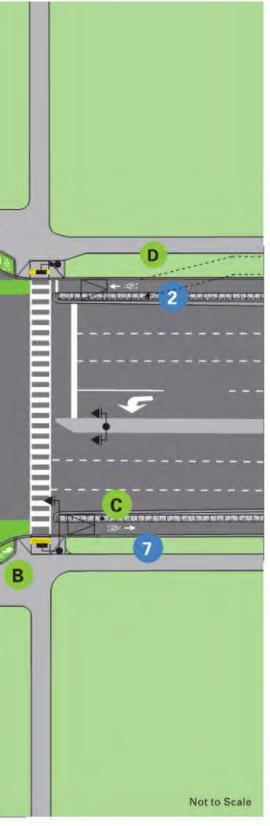
**Figure 16:** Concept A Precedent: Greater Manchester's 'Bee Network



**Figure 17:** Detail A; On Road Bikeway Crossing a High Volume Driveway



**Figure 18:** Detail B; Major Urban Protected Intersection With Sidewalk & Raised Cycle Tracks (Bend In)



#### **Advantages**

- Improved protection for cyclists over on-street cycling facilities;
- Does not require relocation of utilities within the existing boulevard such as, Hydro poles, Bell boxes, fire hydrants, etc.;
- Does not require significant redesign from original Master Plan concept;
- Signalized Intersection design is greatly simplified; significant retrofits are not necessarily required;
- Previous transportation analysis and justification is maintained;
- On-street parking could be likely maintained in most areas, with buffer strip converting to a "door zone".

#### Disadvantages

- Protection of cyclists not as significant as a boulevardseparated design;
- Region's preferred installation of streetscape amenity zone, cycling and pedestrian facilities cannot be fully achieved

- Potential for illegal use of the cycle track by drivers (i.e. parking across the route; by delivery drivers or maintenance vehicles);
- Relocation of existing curbs with new curbs would be required in most locations;
- Modification to the existing storm sewer and appurtenances would also be required in most locations which typically requires converting the existing catch basin manhole to a manhole and installation of a catch basin at the new curb location which will avoid the cost of relocating the storm sewer (see figure below)
- Bus stop design requires passengers to cross the cycle track when boarding or alighting.

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#### 2.4.2 CONCEPT B – CYCLE TRACK ON BOULEVARD

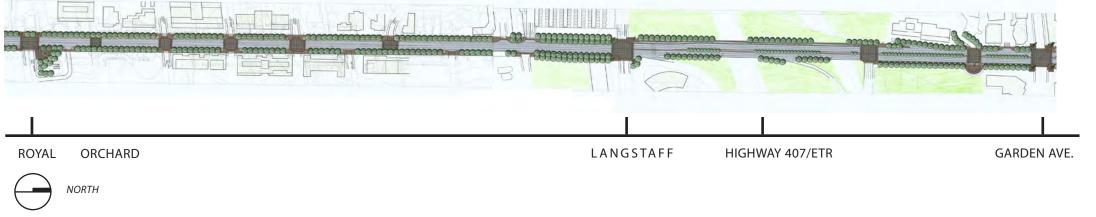
#### **Highlights Of Concept B**

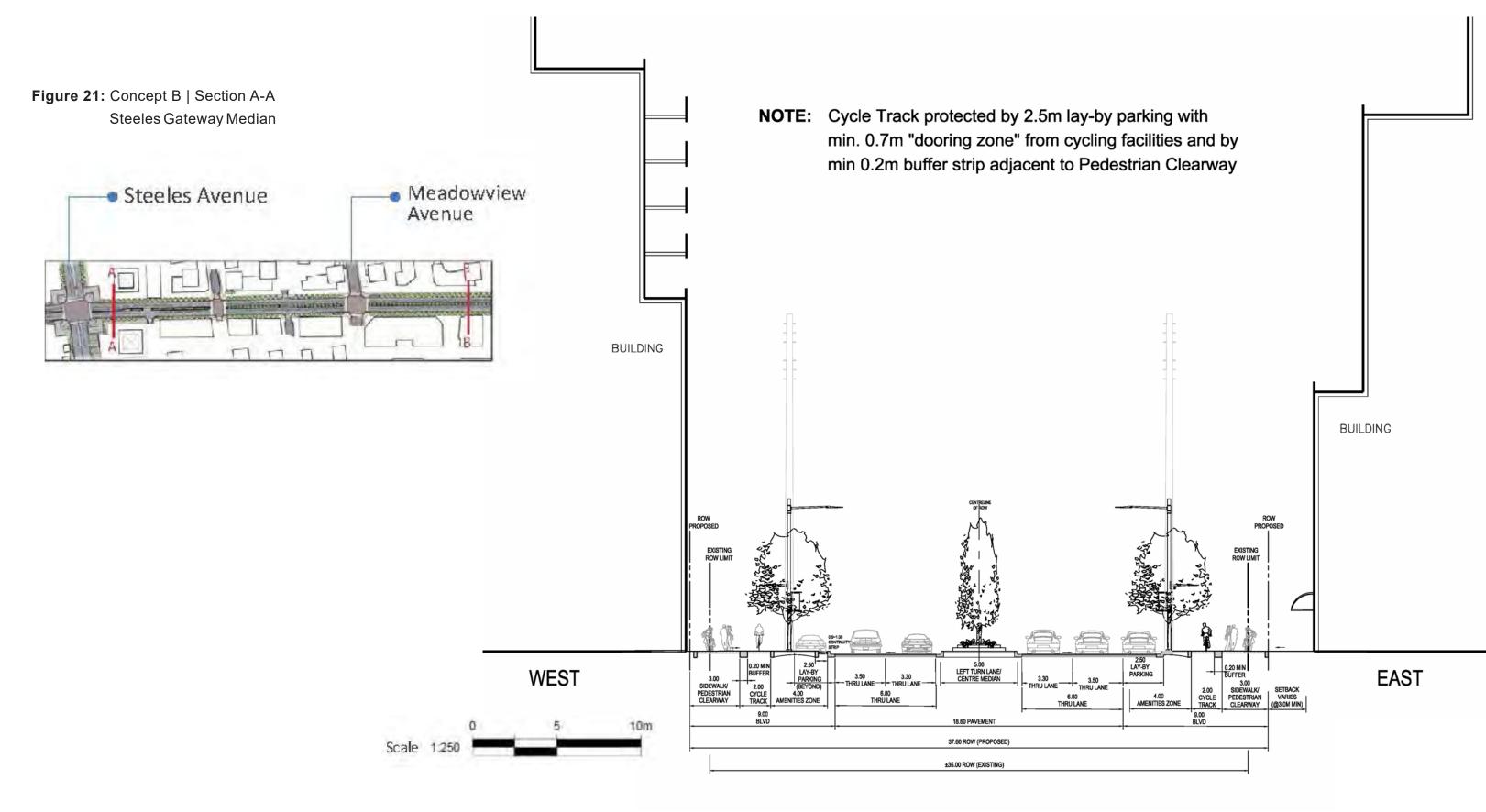
Concept B is based on the application of the proposed crosssection, as indicated in the RFP documents issued by York Region, reflecting Region's current policy throughout the corridor within the existing ROW. It is shown that in parts of the corridor,

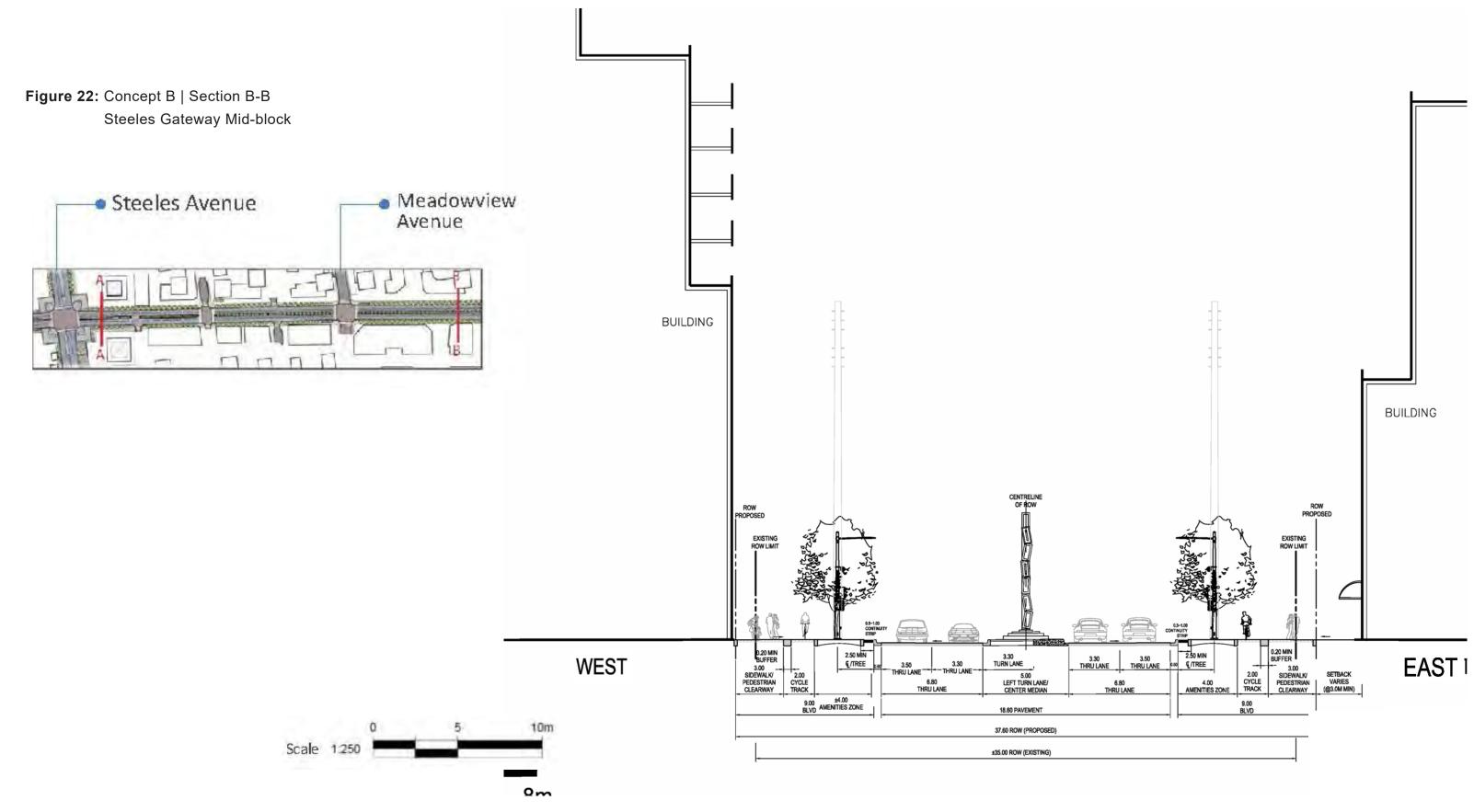
Region's proposed cross-section cannot be achieved without considerable expropriation of private lands. The following crosssections illustrate Concept B.

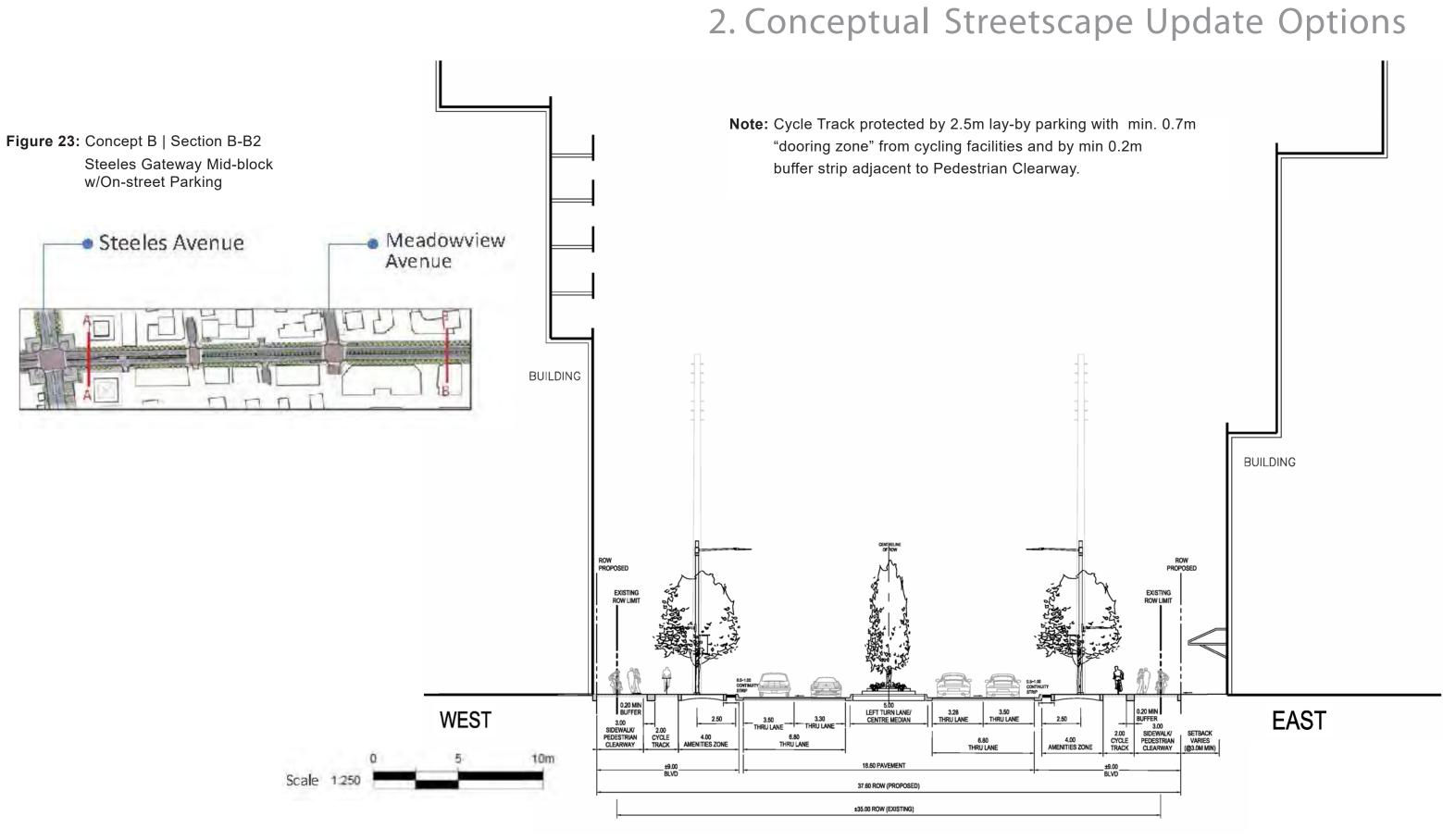
#### Figure 19: 2020 South Yonge Street Corridor Streetscape Master Plan, Steeles Avenue - Don Valley Section

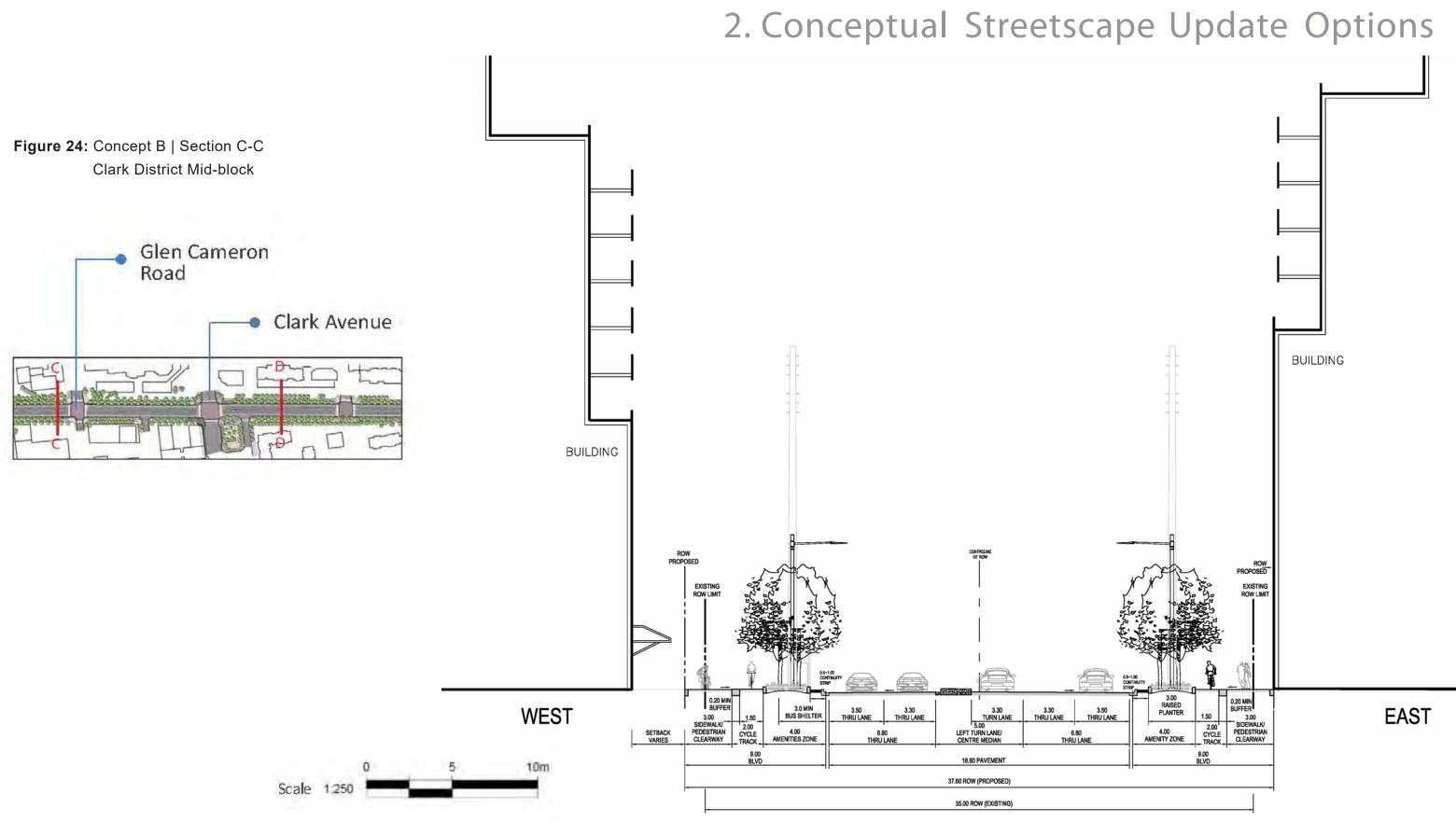












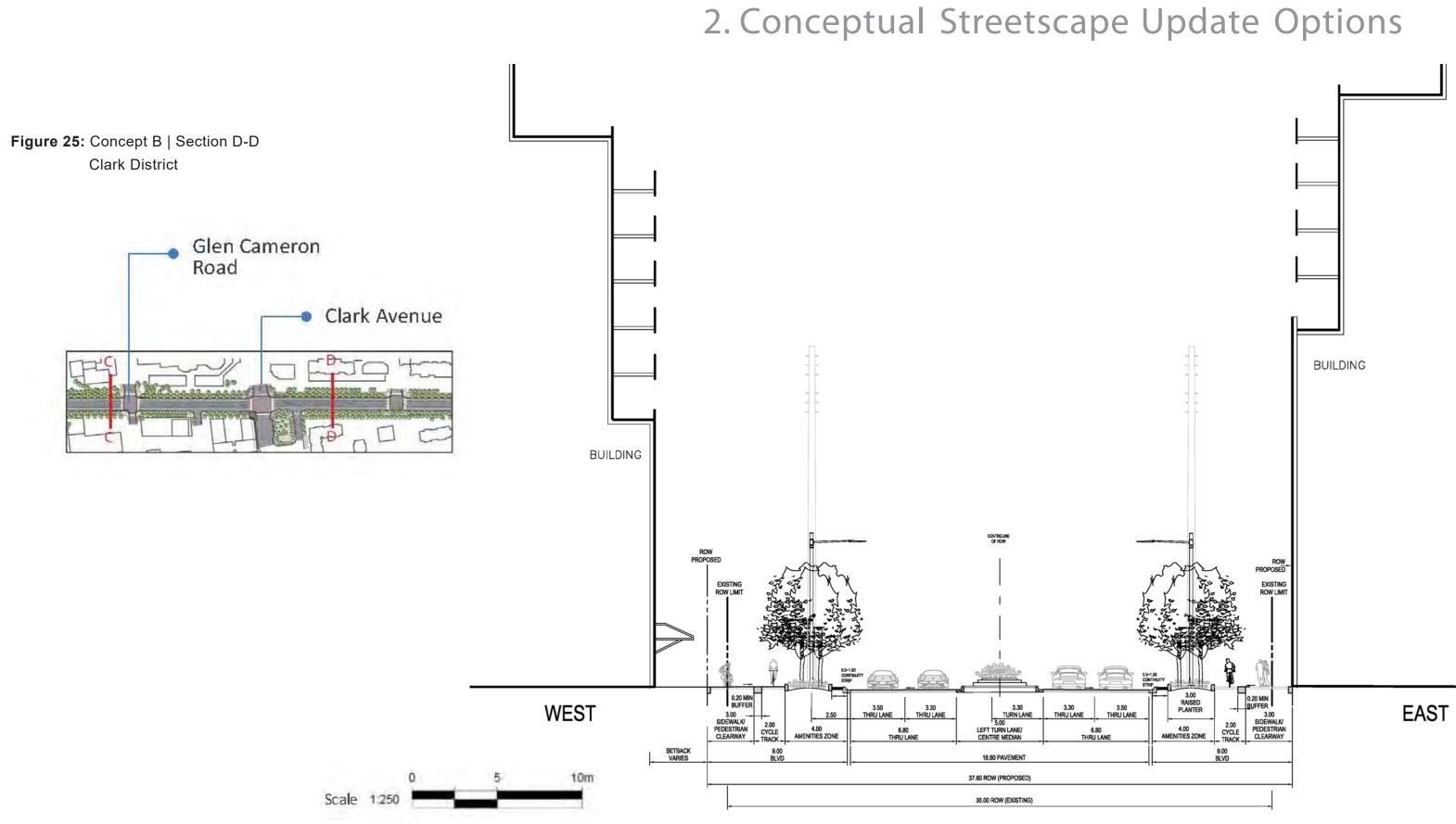
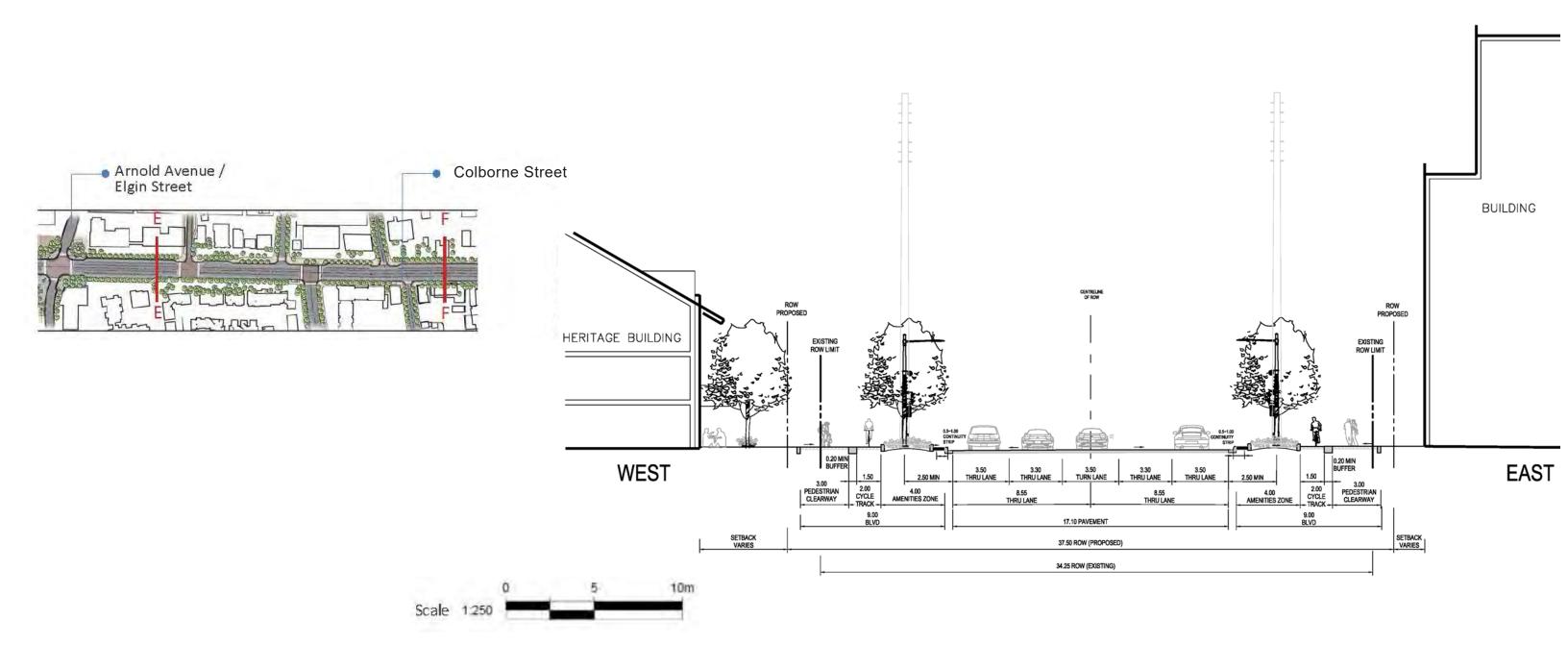


Figure 26: Concept B | Section E-E Old Thornhill- Approach to Intersection



**Figure 27:** Concept B | Section F-F Old Thornhill (Heritage)

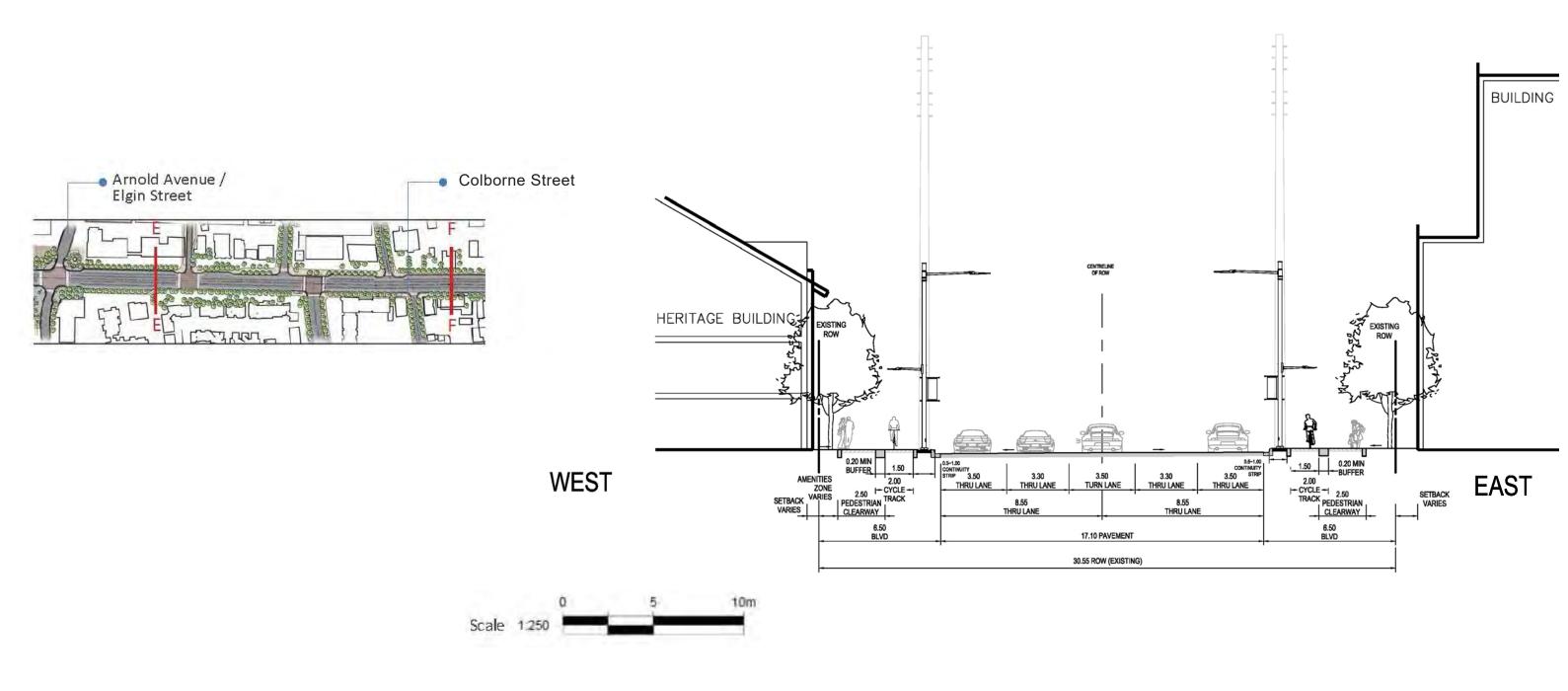
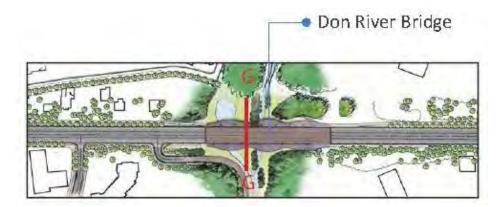
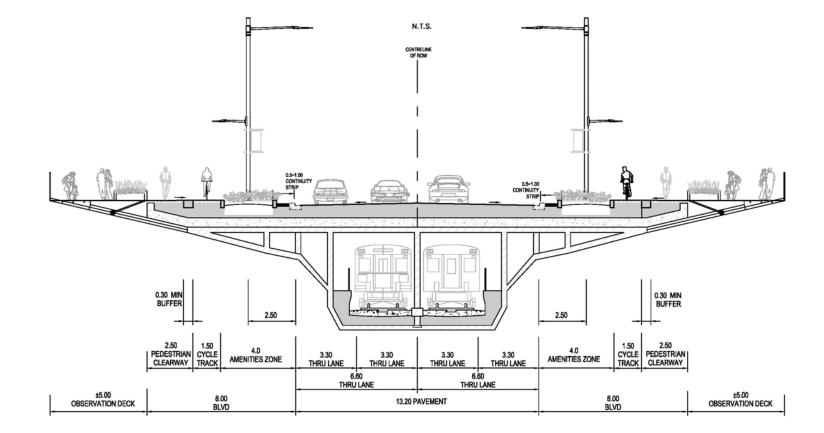


Figure 28: Concept B | Section G-G Thornhill (Bridge)

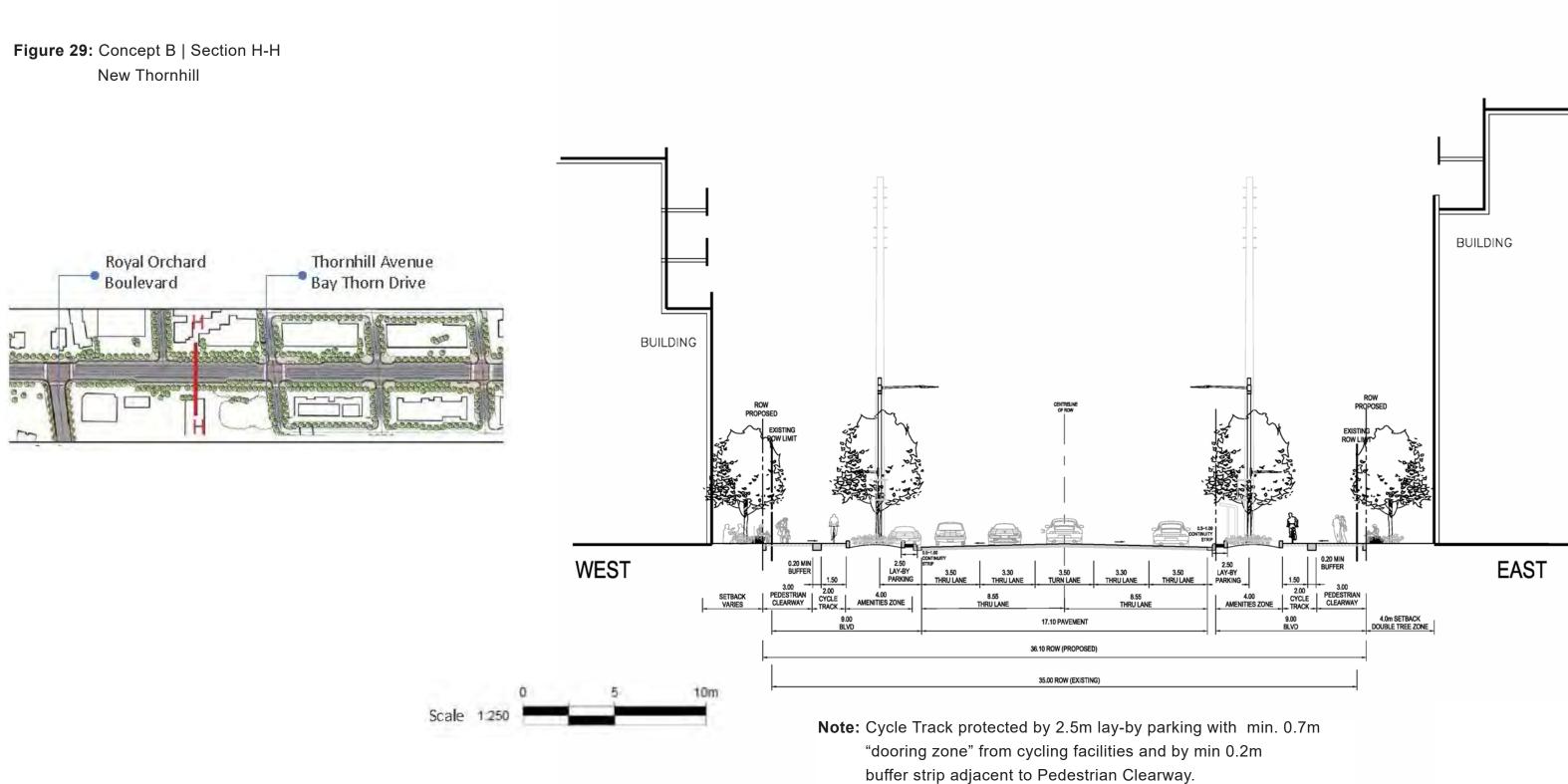


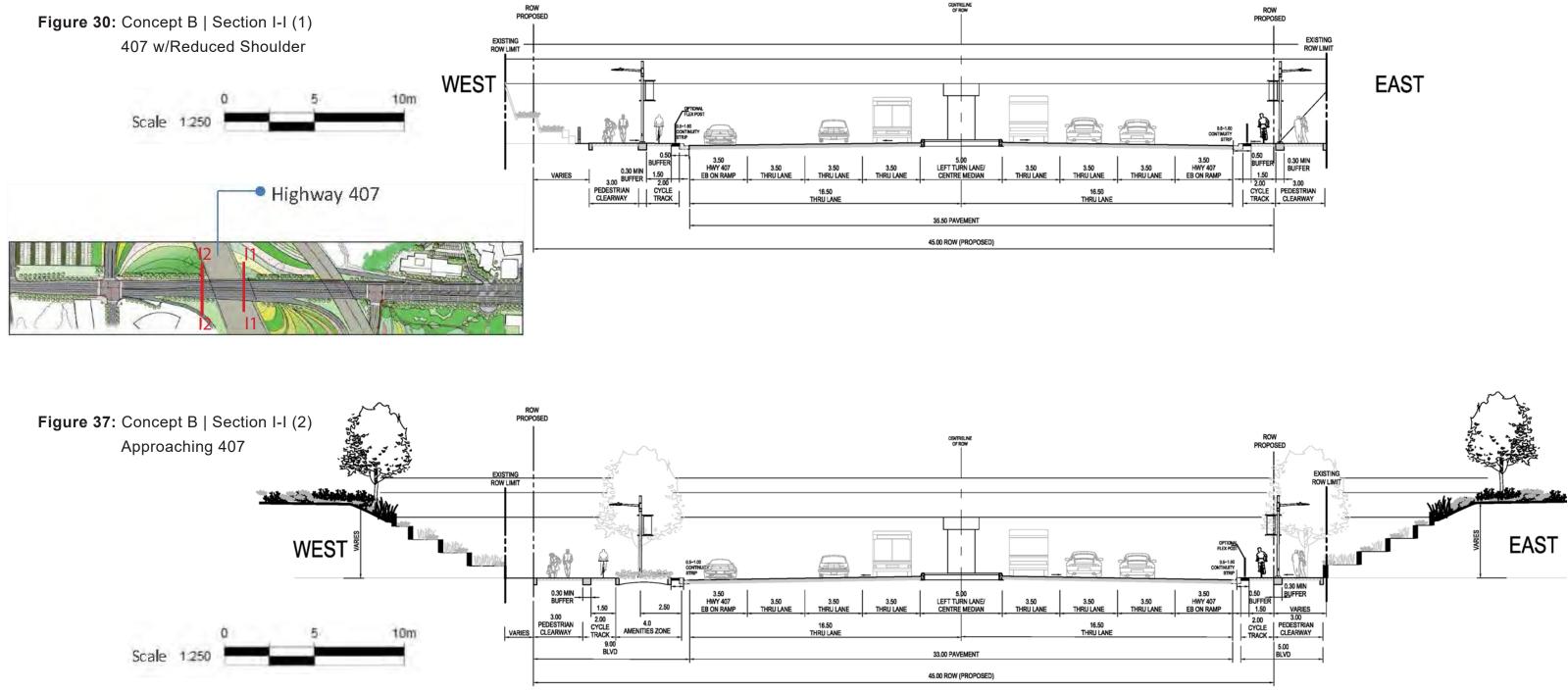






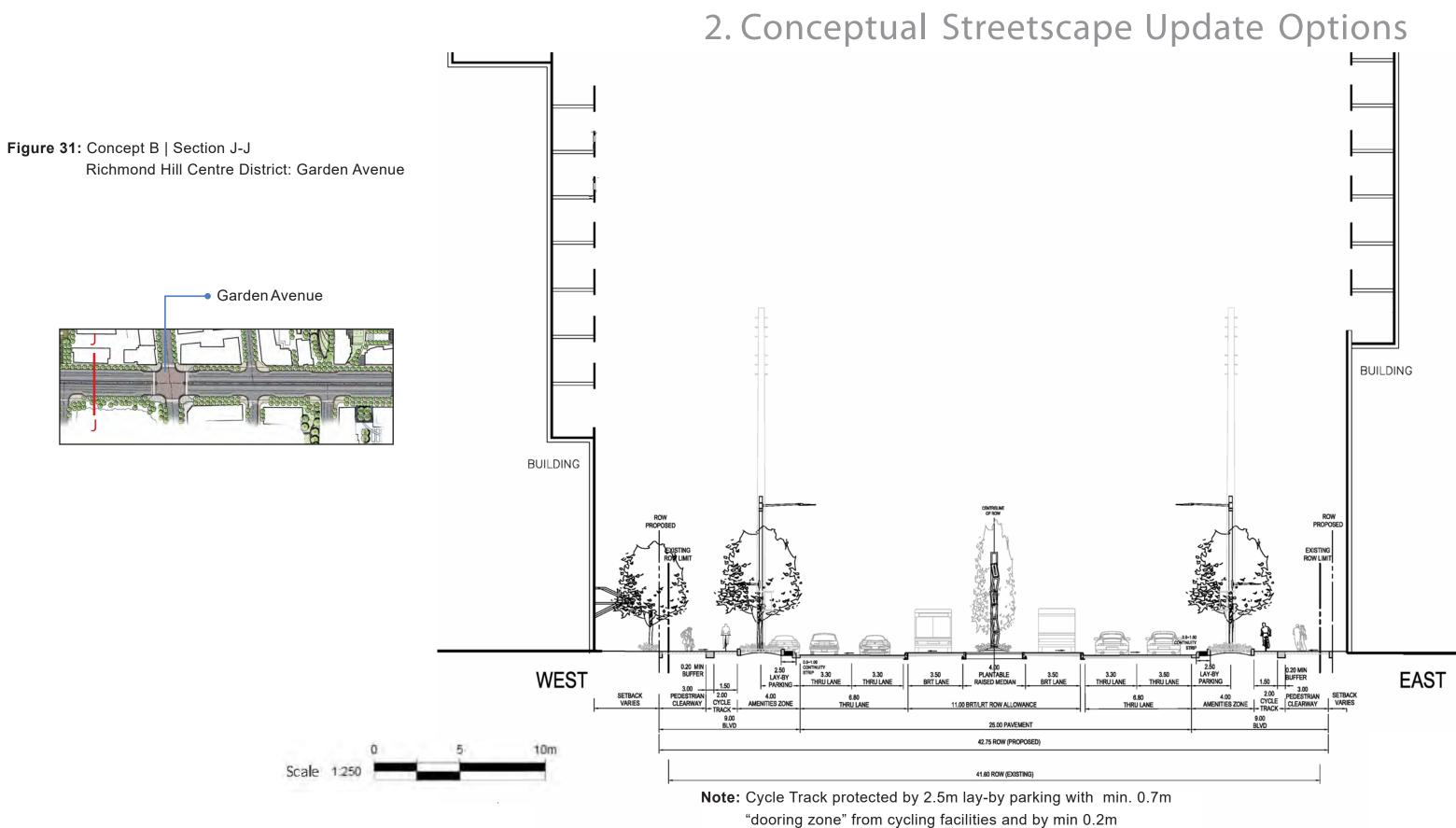






NOTE: Flex posts are optional and to be confirmed with York Region operations/city





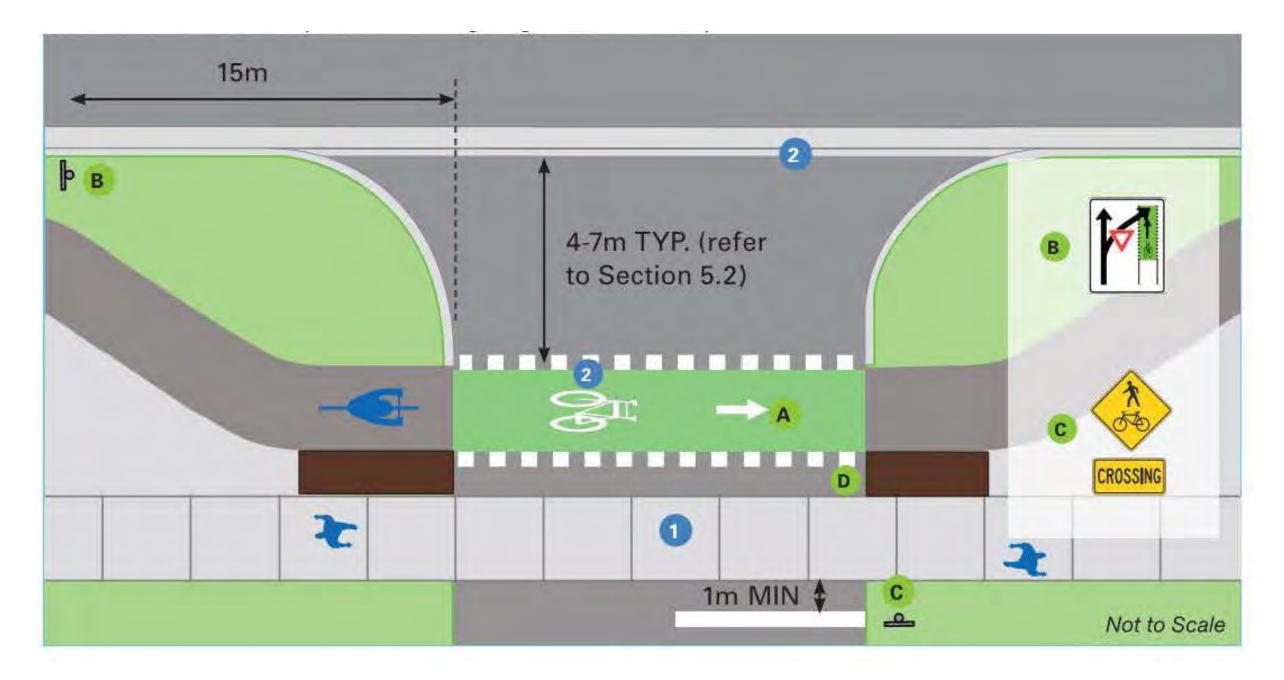
buffer strip adjacent to Pedestrian Clearway.

**Figure 32:** Concept B Precedent in the Netherlands



**Figure 33:** Detail C; In – Boulevard Cycle Track Crossing & High-Volume Driveway.

Refer to Pedestrian and Cycling Planning & Design Guidelines; 2019: Section 5.2.



**Figure 34:** Detail D; In – Boulevard – Separated Bikeway with Crosswalk at Unsignalized Intersection.

Refer to Pedestrian and Cycling Planning & Design Guidelines; 2019.

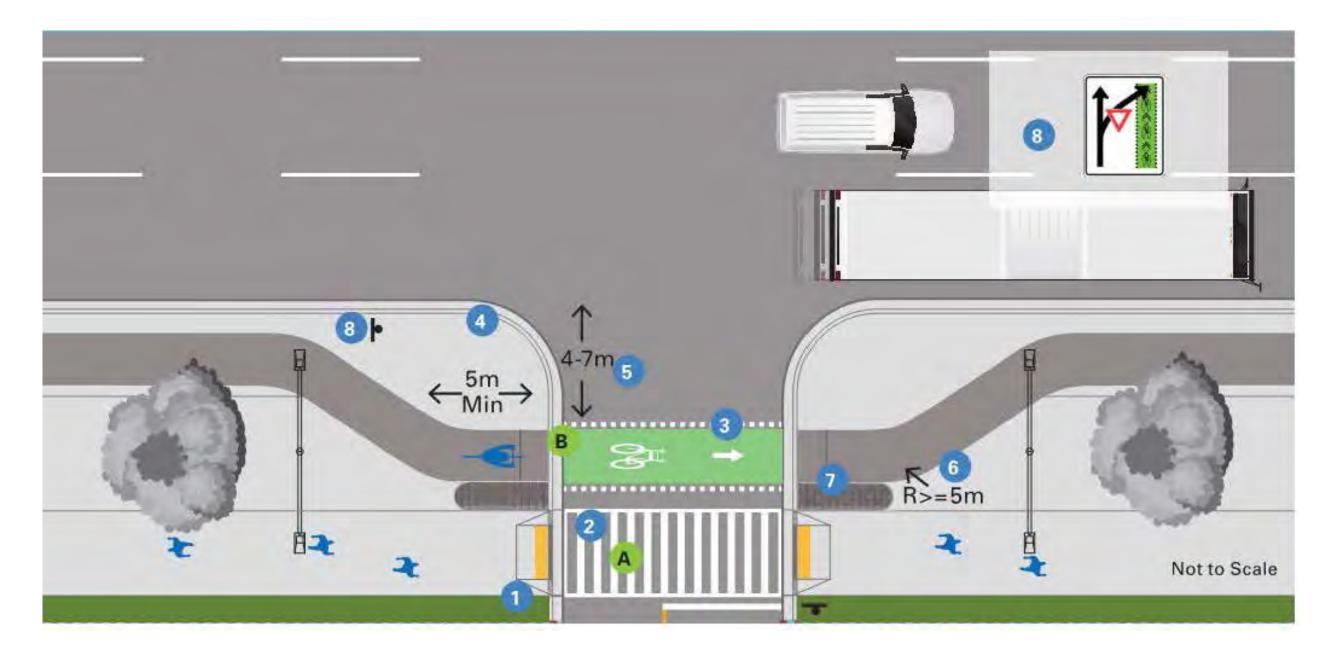
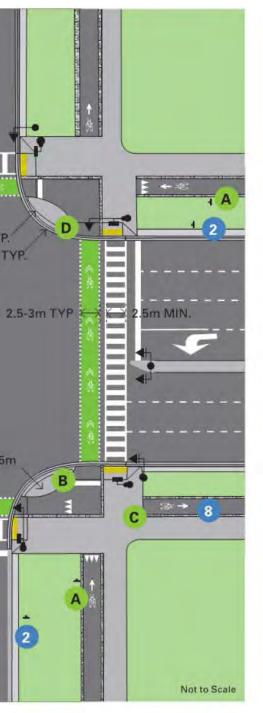


Figure 35: Detail E; Major Urban Protected Intersection (Bend Out)



R 9-12m TYP. R 7.5m TYP. R≥5m 2



**Figure 36:** Separated Bikeway & Sidewalk with Bus Bay

### Minimum

2

3

Sidewalk carried through the cycle track to emphasize pedestrian priority

Yield markings alerting approaching cyclists of pedestrian priority

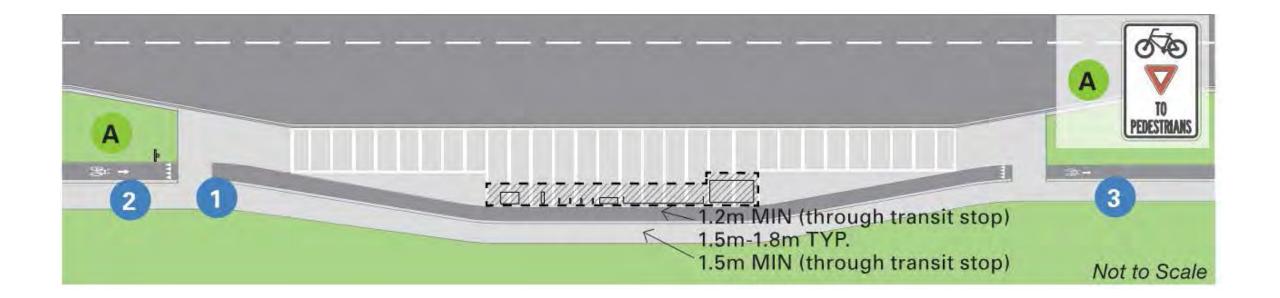
Bike symbol and arrow following bus bay

### Preferred

'Cyclists Yield to Pedestrians' signage (Rb-73-OTM) to alert cyclist of transit passengers

B V

Where space is constrained pedestirans can pass through the transit bay in lieu of a separate sidewalk



#### **Advantages**

- Improved protection for cyclists over on-street bike lanes or on-street cycle facilities;
- Higher utilization by cyclists of "all ages and abilities";
- Signalized intersection design provides for 'protected' corners and turning moves by bicycles;
- All-weather use is improved (no snow build up in winter from plows, no splatter from puddles);
- Design of unsignalized intersections (driveways and stop controlled roads) is simplified and consistent across the corridor;
- Drivers cannot illegally block the cycling facility;
- Preferred bus stop design possible ('island' style stops);
- On-street parking could be preserved in most locations.

#### Disadvantages

- Steeles to Meadowview Avenue: 100% relocation of hydro poles and CBs;
- Meadowview Avenue to Clark: 100% relocation of hydro poles and CBs;

- Clark to Colborne: 100% relocation of hydro poles and CBs;
- Colborne to Don Valley Bridge: 100% relocation of hydro poles and CBs;
- Don Valley Bridge to Hwy 407: 100% Hydro Poles and 100% CBs to be relocated;
- Hwy 407 to Garden: 0% Hydro Poles, 100% CB relocations;
- Signalized intersection redesign is more significant;
- The widening of boulevards will require the construction of new curbs in most locations;
- Considerable expropriation of private property required in many locations (or reduction in vehicular travel lanes) to accommodate change;
- Bus stop design requires passengers to cross the cycle track when boarding or alighting;
- On-Street parking difficult to accomplish in Old Thornhill.
- Potential grading challenges in matching to existing grade at the frontages of the existing buildings.

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### 2.4.3 CONCEPT C – COMBINATION OF CONCEPTS A & B

### **Highlights of Concept C**

- Combining the best of Concepts A and B wherever feasible without expropriation of private lands;
- Cycle are fully protected from traffic throughout the corridor;
- All proposed new streetscape installation will be within 36

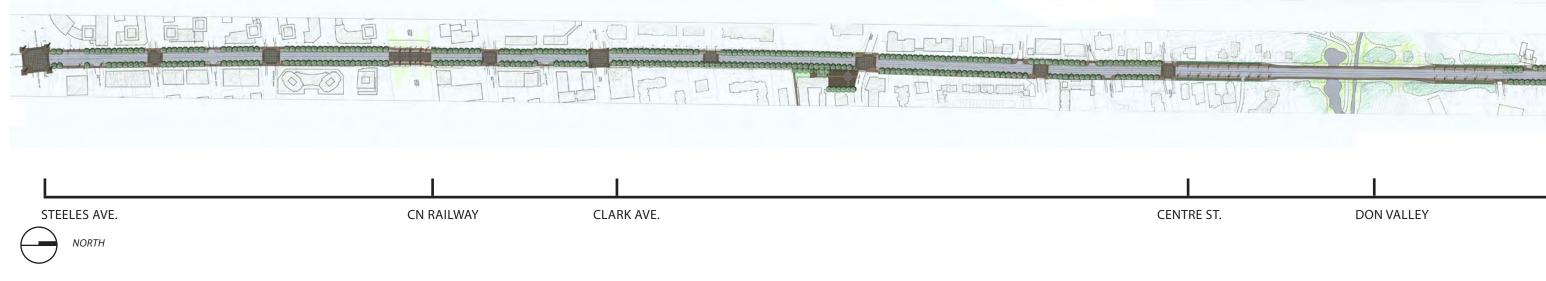
metre R.O.W. Virutally no expropriation of private land would be required;

- From Steeles to Meadowview Ave: urban streetscape • character with a generous streetscape amenity zone and a combined cycle track and pedestrian walkway zones;
- North of Meadowview Ave. where interim streetscape ٠ installations at World of Yonge and existing trees in the

boulevard can remain;

- Threshold;
- to HWY 407.

Figure 37: 2020 South Yonge Street Corridor Streetscape Master Plan, Steeles Avenue - Don Valley Section



• North of Clark Ave., amenity zone can be achieved on both side of Yonge Street.

• Urban condition design proposals from Steeles to Don River

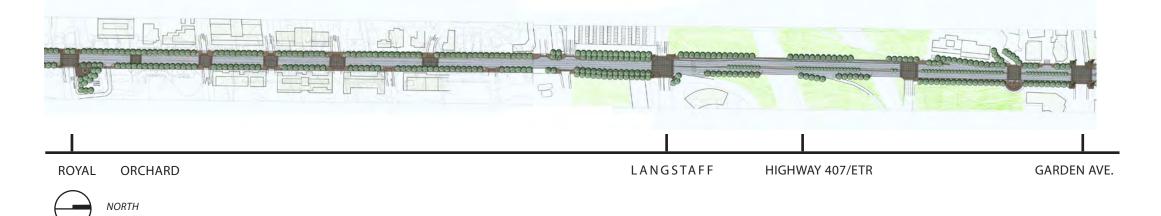
• Achieve Region's current policy north of Don River Threshold

• New cycle tracks and walkways are within existing boulevards

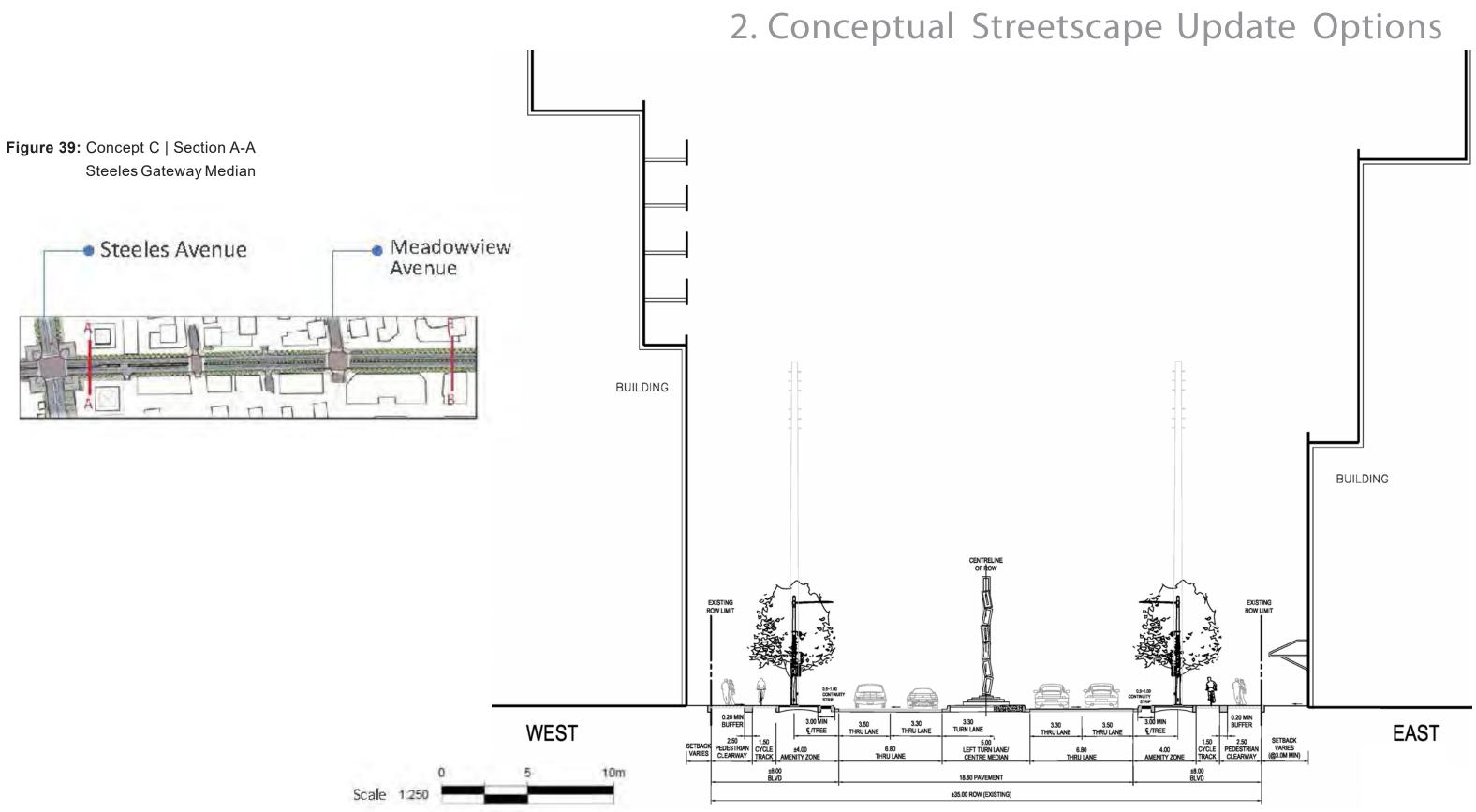
on both sides of Yonge Street;

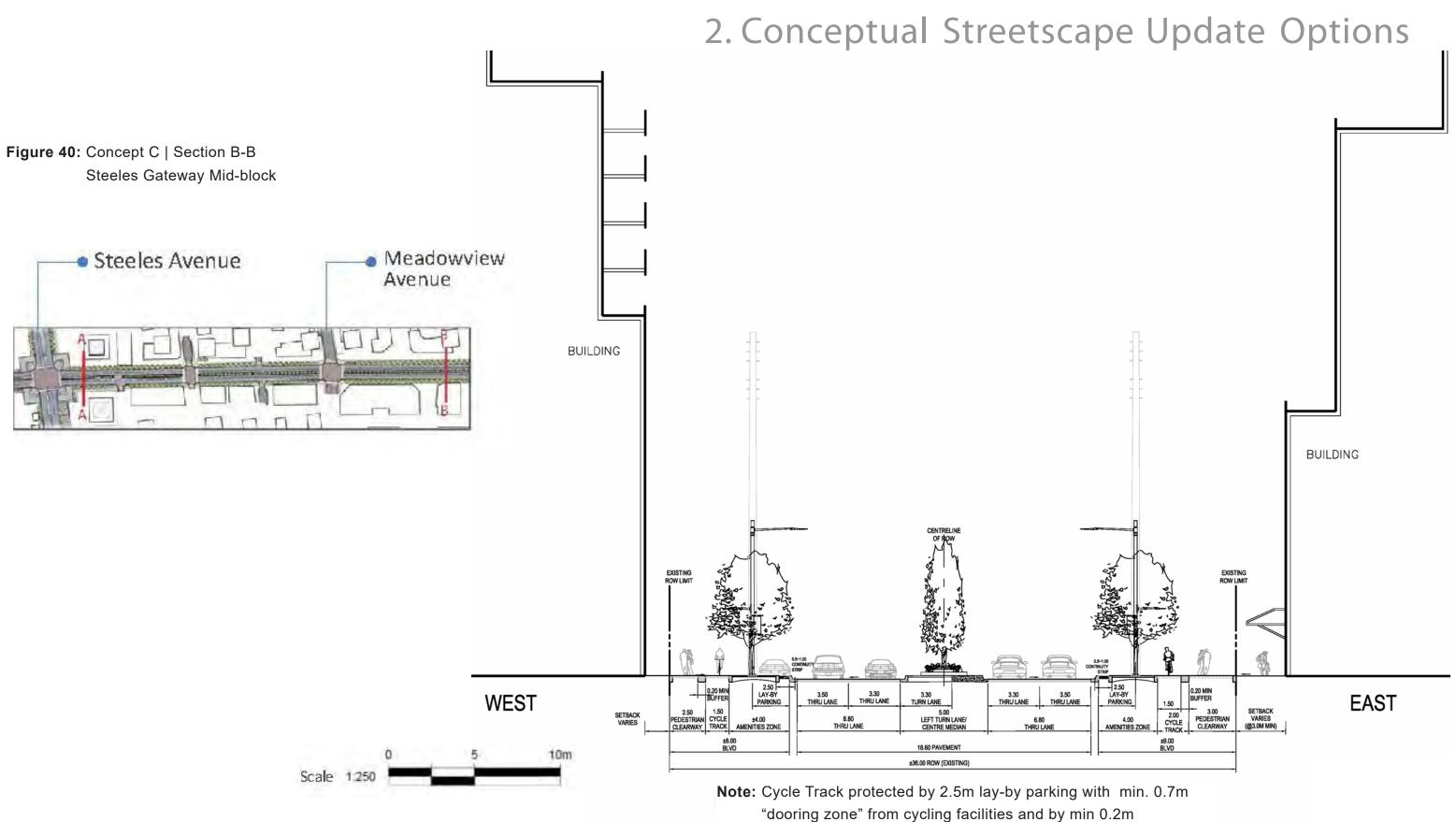
- Transition of new cycle tracks Integration with cycle tracks constructed on road Garden Avenue could be harmoniously achieved;
- Some amenity zone can be achieved on the east side of Yonge Street which will connect same to HWY 7 and HWY 407.

Figure 38: 2020 South Yonge Street Corridor Streetscape Master Plan, Royal Orchard - Garden Avenue Section

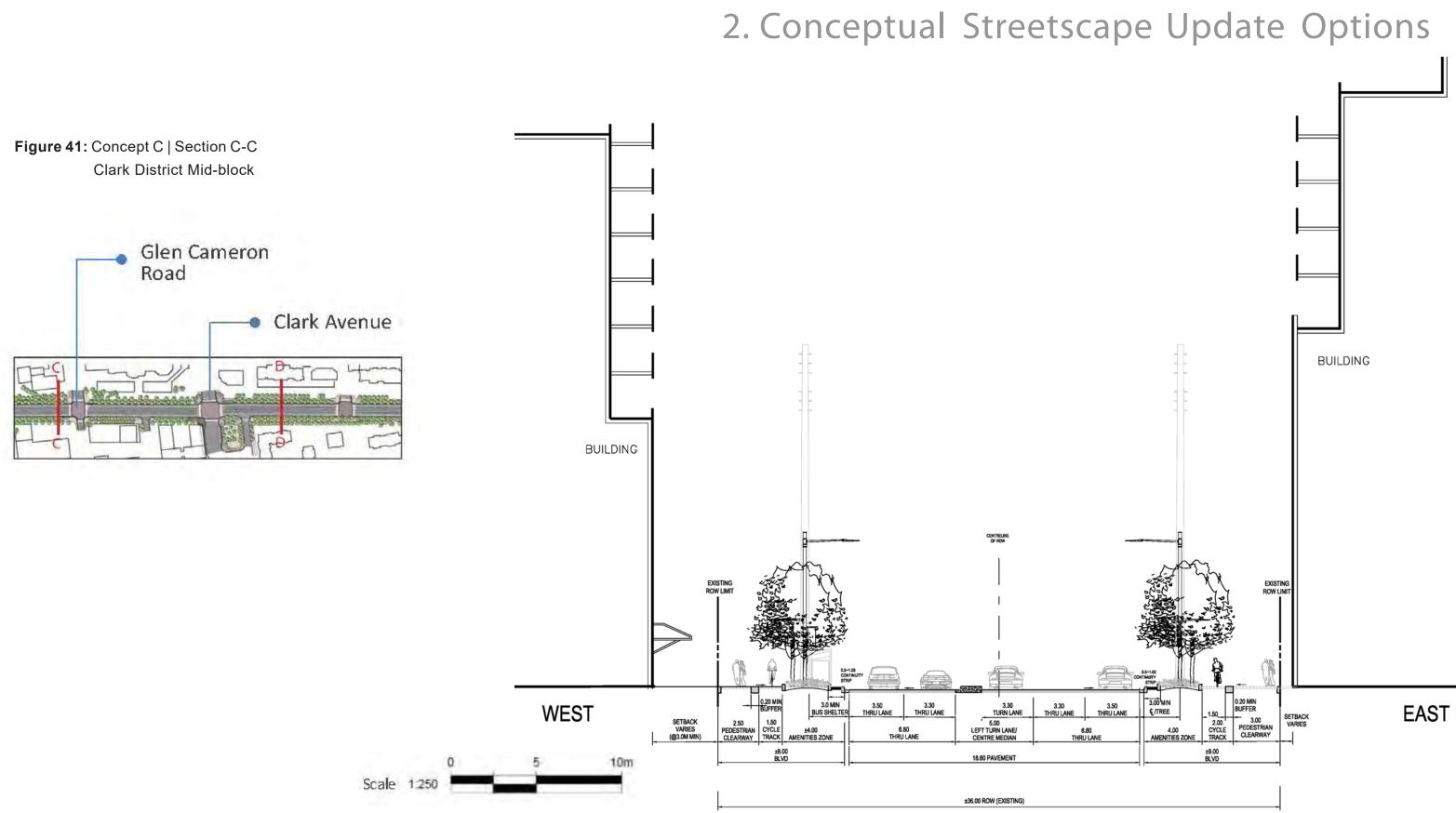


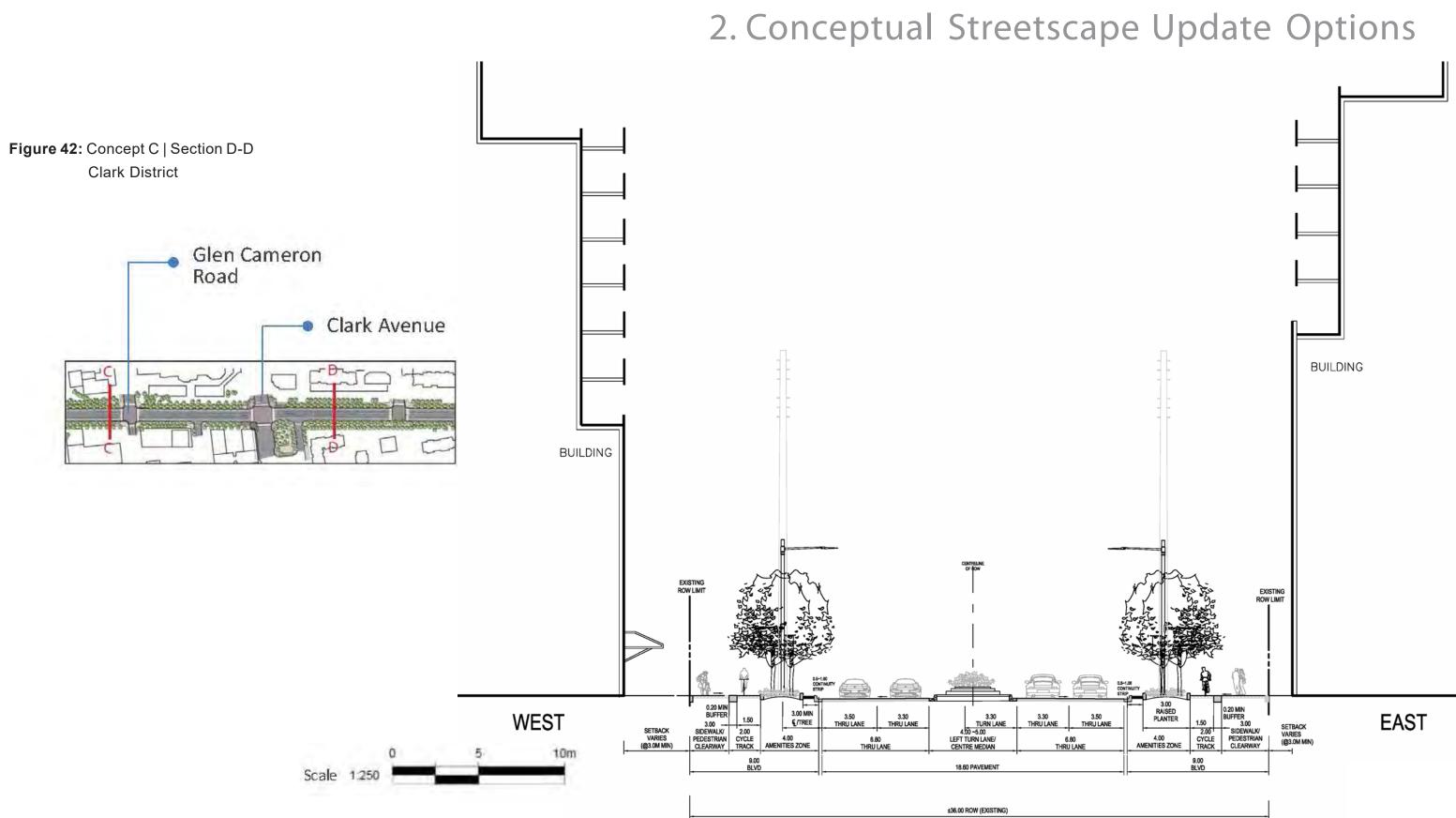
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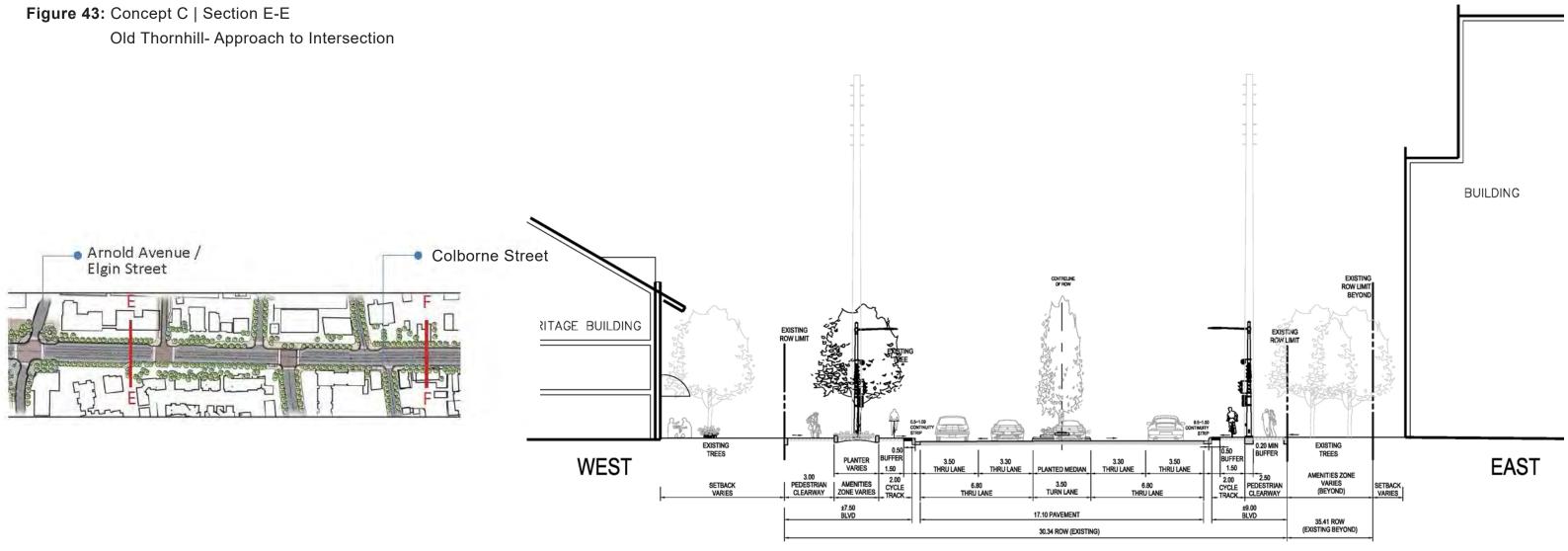




buffer strip adjacent to Pedestrian Clearway.









**Note:** Due to the varying widths of the ROW within the corridor, actual location of hydro poles, light poles, street signs and any other obstructions will be addressed on a site specific basis at design development stage.

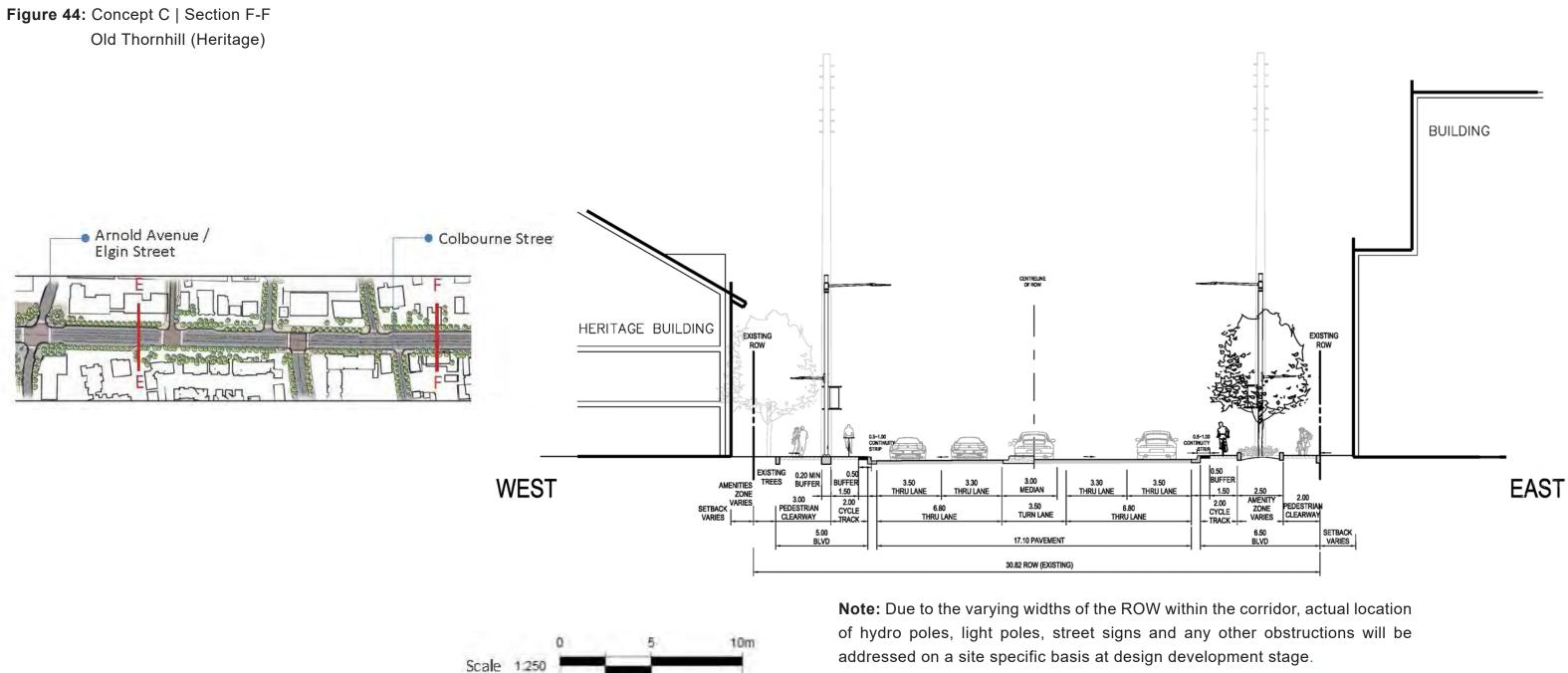
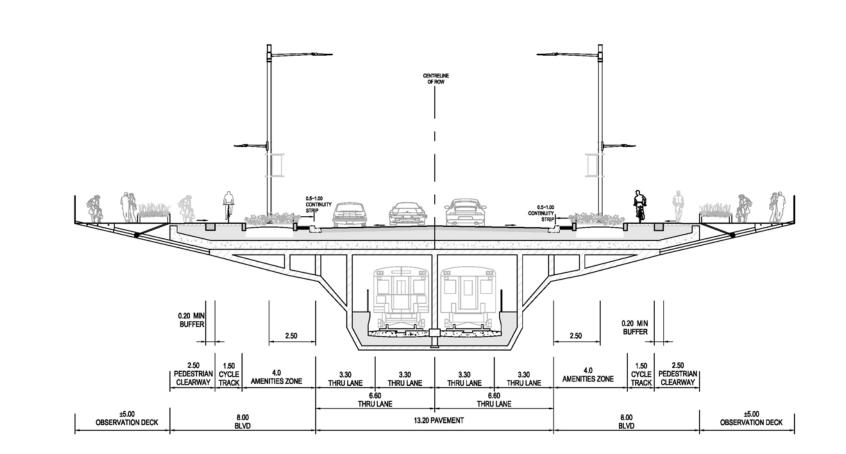


Figure 45: Concept C | Section G-G Thornhill (Bridge)

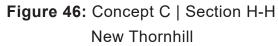


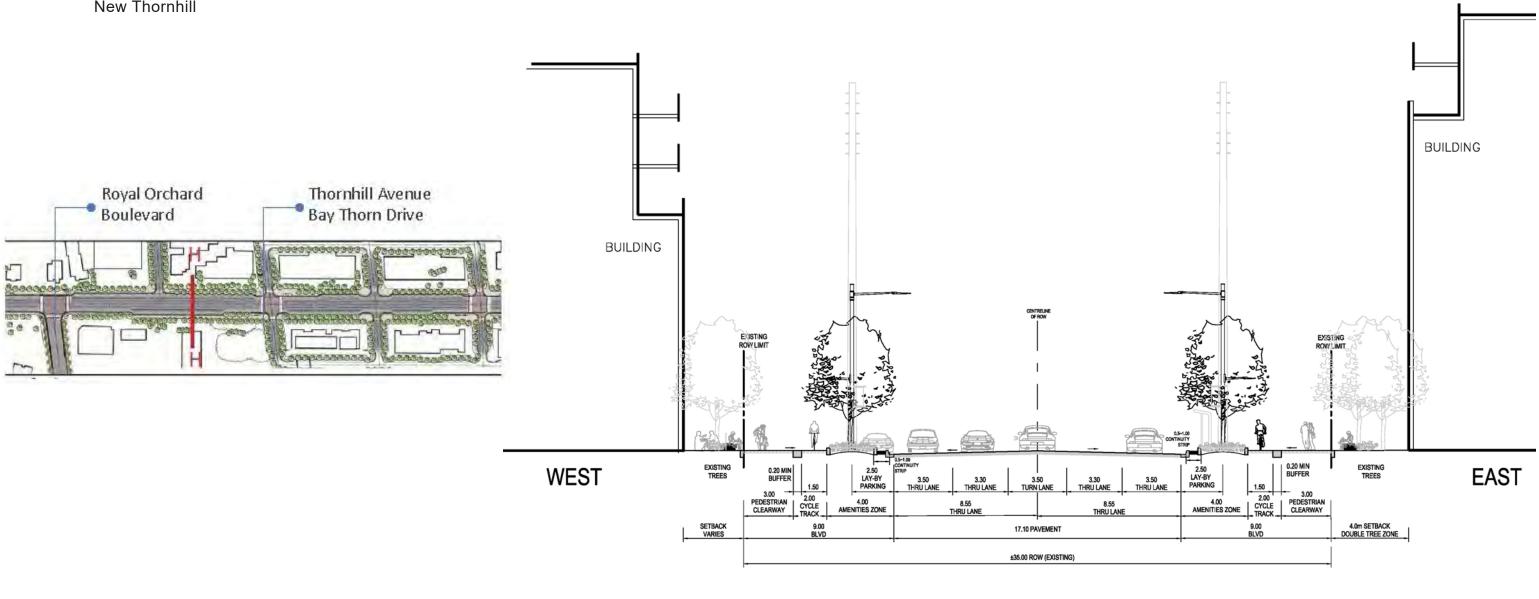








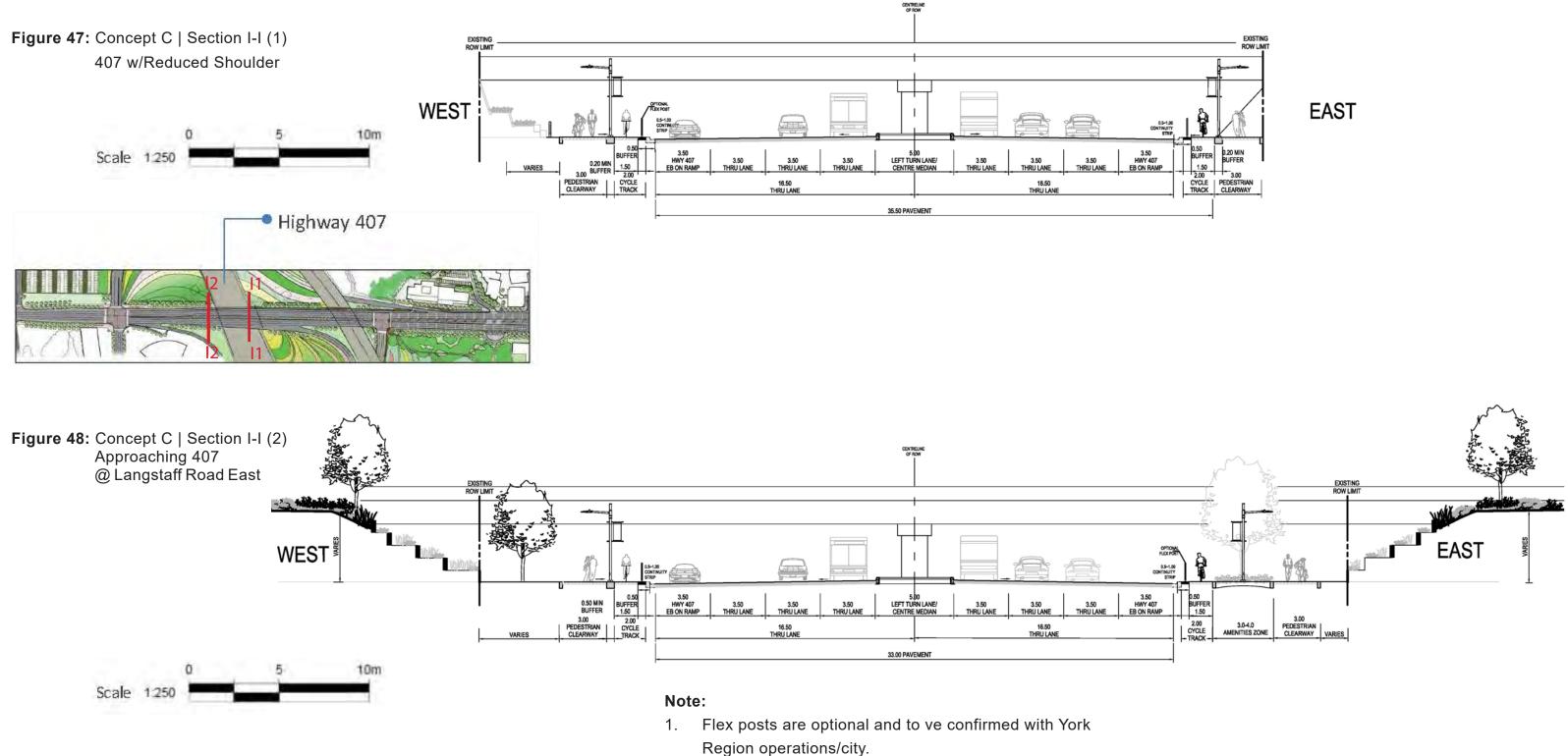




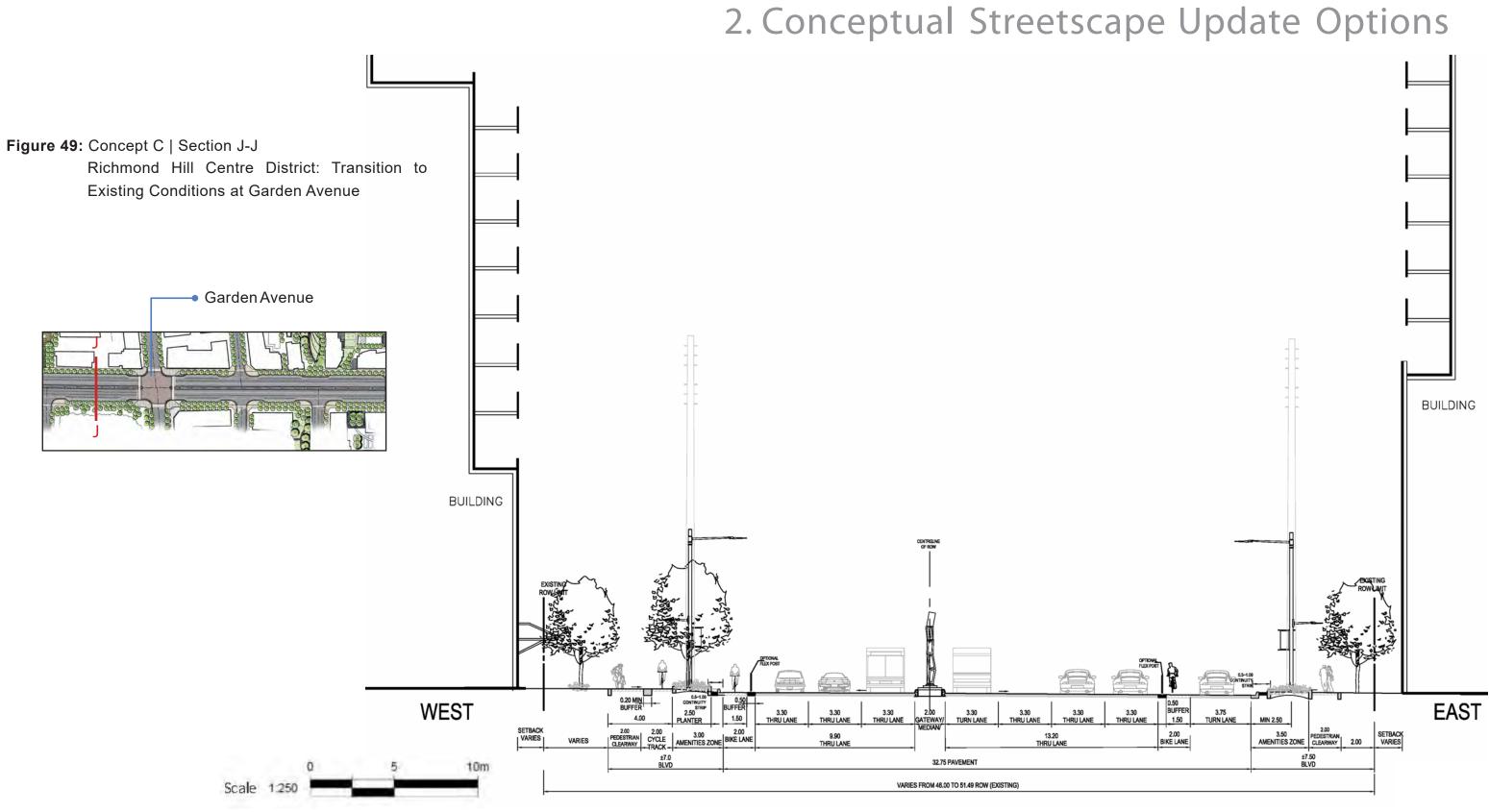


**Note:** Cycle Track protected by 2.5m lay-by parking with min. 0.7m "dooring zone" from cycling facilities and by min 0.2m buffer strip adjacent to Pedestrian Clearway.

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Where space is available, In-boulevard cycle facility will be 2. used. When space is limited, this condition will be applied.



NOTE: Flex posts are optional and to be confirmed with York Region operations/city

**Figure 50 & 51:** Concept C Precedents for Cycling Facilities in the Greater Manchester Area, UK.





#### **Advantages**

- · Region's preferred on boulevard cycle lane with amenity and pedestrian zones with full width can be achieved from HWY 407 to New Thornhill Village District;
- Partial amenity zone and fully combined cycle and pedestrian zones can be achieved to the Old Thornhill Village with no expropriation of private properties;
- Most of newly constructed streetscape improvements remain;
- Urban character achieved by generous streetscape amenities, protected combined cycles and pedestrian zones down to Yonge and Steele;
- Strong sense of continuity of Yonge Street Corridor;
- On-street parking could be addressed on a site specific.

#### Disadvantages

• Relocation and/or modification to the existing storm sewer and appurtenances would also be required in most locations which typically requires converting the existing catch basin manhole to a manhole and installation of a catch basin at the new curb location which will avoid the most of relocating the storm sewer;

- Steeles to Meadowview Avenue: 100% relocation of hydro poles and CBs
- Meadowview Avenue to Clark: 100% relocation of hydro • poles and CBs
- Clark to Colborne: 75% relocation of hydro poles and CBs
- Colborne to Don Valley Bridge: 100% relocation of hydro • poles and CBs
- Don Valley Bridge to HWY 407: 50% Hydro Poles and 50% • CBs to be relocated
- Hwy 407 to Garden: 0% Hydro Poles, 50% CB relocations

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### 2.5 EVALUATION AND PREFERRED CONCEPT

The three concept options were presented to Region's Core Team on July 22, 2020 and the advantages and disadvantages of each concept were discussed and evaluated. The following is a summary of advantages and disadvantages of each concept:

### 2.5.1 CONCEPT A

#### **Advantages**

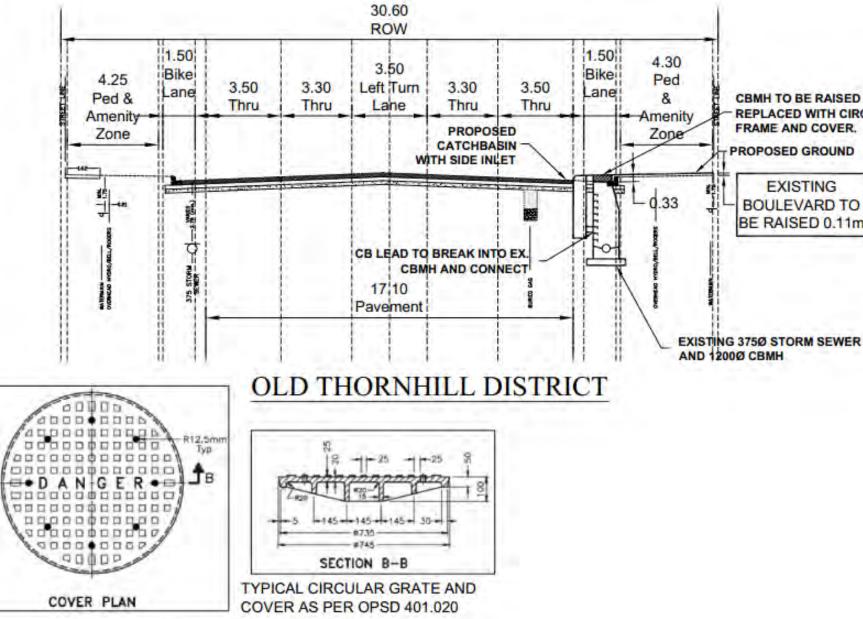
- Improved protection for cyclists over on-street cycling facilities;
- Does not require relocation of utilities within the existing boulevard such as, Hydro poles, Bell boxes, fire hydrants, etc.;
- Does not require significant redesign from original Master Plan concept;
- Signalized Intersection design is greatly simplified; significant retrofits are not necessarily required;
- Previous transportation analysis and justification is maintained;

• On-street parking could be likely maintained in most areas, with buffer strip converting to a "door zone".

#### Disadvantages

- Protection of cyclists not as significant as a boulevardseparated design;
- Region's preferred installation of streetscape amenity zone, cycling and pedestrian facilities cannot be fully achieved
- Potential for illegal use of the cycle track by drivers (i.e. parking across the route; by delivery drivers or maintenance vehicles);
- Relocation of existing curbs with new curbs would be required in most locations;
- Modification to the existing storm sewer and appurtenances would also be required in most locations which typically requires converting the existing catch basin manhole to a manhole and installation of a catch basin at the new curb location which will avoid the cost of relocating the storm sewer (see figure below)
- Bus stop design requires passengers to cross the cycle track when boarding or alighting.

Figure 52: Concept A Catch Basin Adjustment



\*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

B

CBMH TO BE RAISED AND REPLACED WITH CIRCULAR

EXISTING BOULEVARD TO

### 2.5.2 CONCEPT B

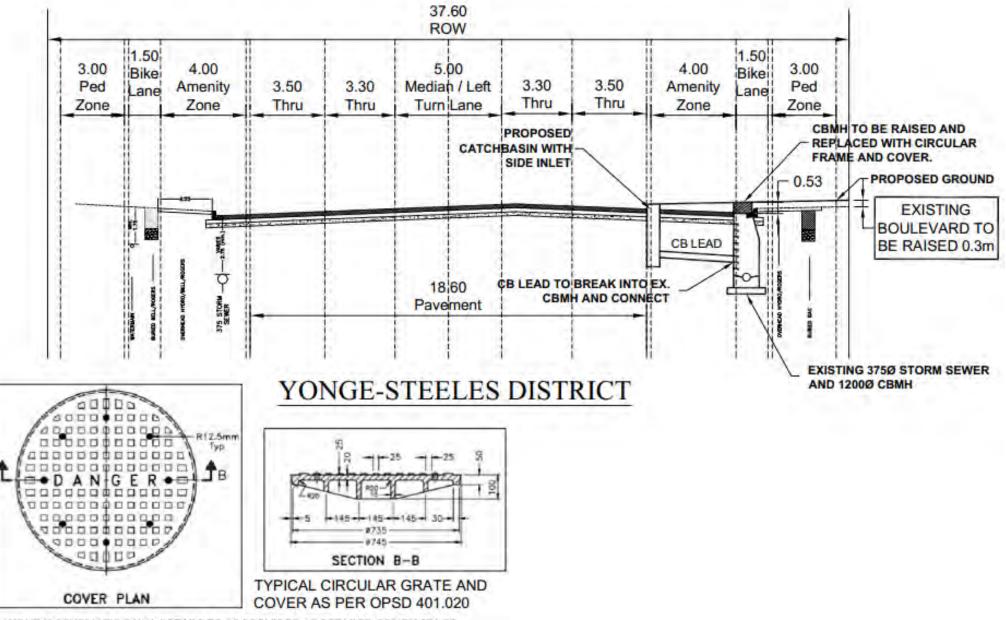
#### **Advantages**

- Improved protection for cyclists over on-street bike lanes or on-street cycle facilities;
- Higher utilization by cyclists of "all ages and abilities";
- Signalized intersection design provides for 'protected' corners and turning moves by bicycles;
- All-weather use is improved (no snow build up in winter from plows, no splatter from puddles);
- Design of unsignalized intersections (driveways and stop controlled roads) is simplified and consistent across the corridor;
- Drivers cannot illegally block the cycling facility;
- Preferred bus stop design possible ('island' style stops);
- On-street parking could be preserved in most locations.

#### Disadvantages

- Steeles to Meadowview Avenue: 100% relocation of hydro poles and CBs;
- Meadowview Avenue to Clark: 100% relocation of hydro poles and CBs;
- Clark to Colborne: 100% relocation of hydro poles and CBs;
- Colborne to Don Valley Bridge: 100% relocation of hydro poles and CBs;
- Don Valley Bridge to HWY 407: 100% Hydro Poles and 100% CBs to be relocated;
- HWY 407 to Garden: 0% Hydro Poles, 100% CB relocations;
- Signalized intersection redesign is more significant;
- The widening of boulevards will require the construction of new curbs in most locations;
- Considerable expropriation of private property required in many locations (or reduction in vehicular travel lanes) to accommodate change;
- Bus stop design requires passengers to cross the cycle track when boarding or alighting;
- On-Street parking difficult to accomplish in Old Thornhill.
- Potential grading challenges in matching to existing grade at the frontages of the existing buildings.

**Figure 53:** Concept B Catch Basin Adjustment



\*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

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### 2.5.3 CONCEPT C

#### **Advantages**

- Region's preferred on boulevard cycle lane with amenity and pedestrian zones with full width can be achieved from HWY 407 to New Thornhill Village District;
- Partial amenity zone and fully combined cycle and pedestrian zones can be achieved to the Old Thornhill Village with no expropriation of private properties;
- Most of newly constructed streetscape improvements remain;
- Urban character achieved by generous streetscape amenities, protected combined cycles and pedestrian zones down to Yonge and Steeles;
- Strong sense of continuity of Yonge Street Corridor;
- On-street parking could be addressed on a site specific.

#### Disadvantages

 Relocation and/or modification to the existing storm sewer and appurtenances would also be required in most locations which typically requires converting the existing catch basin manhole to a manhole and installation of a catch basin at the new curb location which will avoid the most of relocating the storm sewer;

- Steeles to Meadowview Avenue: 100% relocation of hydro poles and CBs
- Meadowview Avenue to Clark: 100% relocation of hydro poles and CBs
- Clark to Colborne: 75% relocation of hydro poles and CBs
- Colborne to Don Valley Bridge: 100% relocation of hydro poles and CBs
- Don Valley Bridge to HWY 407: 50% Hydro Poles and 50% CBs to be relocated
- HWY 407 to Garden: 0% Hydro Poles, 50% CB relocations

### **2.5.4 PREFERRED CONCEPT**

The advantages and disadvantages of each Concept were presented and evaluated with Region's PCT, Concept C was identified as the Preferred Concept for further development of the Draft Master Plan.