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**SCHEDULE 15-2
DESIGN AND CONSTRUCTION REQUIREMENTS**

**PART 6
URBAN DESIGN, LANDSCAPE ARCHITECTURE AND CONNECTIVITY
REQUIREMENTS**

ARTICLE 1 INTRODUCTION

1.1 Introduction

- (a) The work under this Part 6 identifies the requirements for the integration of the Stations, sidewalks, MUPs, additional work on NCC lands and City lands that shall be developed to enhance the public realm.
- (b) The Site plans shall be developed in conjunction with the Project Stations, Civil and Guideway and Federal Land requirements to provide a comprehensive solution for the alignment.

1.2 Overview

- (a) The Project includes the design and construction of the Site development for the proposed Stations, Park and Ride facilities, MUPs, PPUDO, bike rack and storage areas, sidewalks and landscape restoration of lands affected by the construction of the Confederation Line.
- (b) DB Co shall obtain all the necessary Permits, Licences and Approvals for the construction of the Site works. Refer to Schedule 17 – Environmental Obligations and Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria for coordination with final Site works.
- (c) In general, the work includes the Site plans for:
 - (i) 17 Stations;
 - (ii) Protection of, and enhancement to, the Connectivity for the Stations, and the adjacent community;
 - (iii) Modification to, and additional development of, the Park and Ride facilities;
 - (iv) MUPs adjacent to the Track alignment, with connections to existing Facilities, as indicated within this Part 6;
 - (v) Completion of the landscape works as identified by the NCC for the SJAM Parkway, Kitchissippi Lookout and Rochester Fields lands;

- A. Works within the Rochester Field lands shall include the centerline axis for the Rochester Field pathway and crossing, including associated rough grading and site servicing plans, contained within this Part 6.
- (vi) Completion of the Streetscape for the Richmond Road Complete Street;
 - (vii) Completion of Byron Linear Park, and Bryon Avenue;
 - (viii) Completion of Miscellaneous Site Works as identified within this Part 6;
 - (ix) Development of Tree Mitigation Report(s) and Tree Compensation Drawing(s);
 - (x) Development of the mitigation plan for the SWM requirements;
 - (xi) Miscellaneous mitigation works as identified within this Part 6; and
 - (xii) Restoration of lands required for the construction of the Confederation Line, including the construction staging areas.

ARTICLE 2 DESIGN CRITERIA

2.1 Introduction

- (a) This Article 2 presents the design requirements for the landscape architecture and urban design that shall be integrated into the design of the Project, including the standards for streetscape elements, bicycle facilities, Park and Ride facilities, fencing, pedestrian and cycling access to the Stations, planting, and tree compensation.

2.2 Reference Documents

- (a) Order of Precedence

- (i) All Project urban design and landscape works shall comply with the criteria contained within this Article 2 and the Applicable Law, guidelines or practices applicable to the Project, including but not limited to the following Reference Documents. The Order of Precedence for this portion of the Contract shall be as follows:

- A. The criteria in this Article 2;
- B. OBC;
- C. COADS;
- D. AODA;
- E. OTM (Books 1 through to 12 and 18);
- F. City of Ottawa Construction Specifications, Drawings and Details;
- G. Other relevant City Operation Policy, Procedures and Guidelines;
- H. OPSS and OPSD;
- I. TAC Guidelines for Understanding Use and Implementation of Accessible Pedestrian Signals;
- J. Canadian Standards for Nursery Stock, most recent edition;
- K. NCC Landscape Drawings, as identified in Appendix A, B, C and D;

2.3 Scope of Work

- (a) The general scope of work shall include, but not limited to:

- (i) Public realm: Station entry plazas, Site furnishings, pedestrian lighting, sidewalk and MUP connections from the community to the plaza entry, PPUDOs, plant material, and miscellaneous items to complete the Work;
- (ii) Park and Rides: the parking lot configuration, pedestrian requirements, lighting, plant material, and coordination with Site plan requirements;
- (iii) Any restoration and rehabilitation of the lands disturbed by the construction of the Project; and,
- (iv) All other works identified within this Part 6.

2.4 Urban Design and Landscape Architectural Design

- (a) Designs shall meet COADS and AODA standards for all Works surrounding bus waiting areas, sidewalks, entrances and pathways to the Station Platform/Revenue Vehicle area. Safe, efficient and accessible pedestrian circulation shall be given the highest priority in Station design.
- (b) There shall be a consistent use of standard landscape elements including fencing, paving, plant material, and other items identified in this Article 2, utilized throughout the alignment and within the Existing Confederation Line.
- (c) Urban development and landscape treatments shall compliment the adjacent land use. Pedestrian and cycling links shall be protected and connections to the adjacent communities provided.
- (d) Refer to Article 3 – Connectivity Requirements, and Article 4 – Site Specific Desired Outcomes, of this Part 6 for additional requirements.
- (e) Native plant material shall be used wherever feasible.
- (f) Where appropriate, existing landforms and vegetation shall be preserved and incorporated into urban design. Designs shall be achieved with the intent to minimize impacts to the surrounding environment.
- (g) The landscape design of each Station shall have standard and common finishes. All Stations shall express the local character and qualities of their communities and planning context and assist in wayfinding/Station identification. Station entrances shall be easily identifiable and be designed to discourage loitering and to maximize safety/observation through the use of lighting and glazing.
- (h) DB Co shall design and construct the urban design elements and landscaping in accordance with CPTED principles. DB Co shall submit a CPTED report outlining all measures undertaken to conform to CPTED principles.

- (i) All Emergency egress points shall be designed to accommodate snow removal and clearing operations. DB Co shall provide a turn-around for the snow clearing equipment as per Schedule 15-2, Part 2, Article 1 – Introduction.

2.5 Park and Ride Facilities

- (a) Parking lot shall adhere to City standards, including the following:
 - (i) There shall be a minimum of 15% landscape treatment within the parking lot. This landscape treatment may contain a combination of paved walking surfaces, dry SWM facilities, street trees, and sod. Wet ponds shall not be considered part of the 15% landscape requirements;
 - (ii) The alignment of the stalls shall be developed to accommodate unobstructed pedestrian paths along the drive aisles to the sidewalk connections to the Station Platform and Station Plaza. The direct pedestrian routes to the sidewalks and Station should not bisect the drive aisles;
 - (iii) The accessible parking spaces shall be designed according to COADS and located immediately adjacent to the Station entry;
 - (iv) Refer to Schedule 15-2, Part 4, Article 2.6, (i) for additional park and ride requirements;
 - (v) There shall be a main drive aisle, with sidewalks on either side, perpendicular from the Station to the furthest limit of the parking lot. This main drive aisle shall have shade trees adjacent to the sidewalk, with a maximum of 7m on centre spacing;
 - (vi) There shall be a continuous sidewalk connecting the Park and Ride facility to the Station entry plaza. Where the pedestrian route crosses a traffic lane(s), a painted crosswalk demarcating the pedestrian route shall be provided;
 - (vii) The parking lot shall be divided into parking cells, aligned with drive aisle access, and a maximum of 200 parking spaces per cell;
 - (viii) The cells shall be defined with parking islands at the end of each row of parking spaces;
 - (ix) In each cell, the islands closest to the Station shall have a minimum of two deciduous trees, with a minimum width of 3m, and a surface treatment capable of allowing precipitation to percolate into the soil;
 - (x) In each cell, the islands furthest from the Station shall have a minimum width of 2.4m, paved walking surface, and TWSI to current City standards;

- (xi) The pedestrian route between the islands shall be delineated on the roadway surface;
- (xii) The pedestrian sidewalk shall be immediately adjacent to the parking lot, and offset a minimum of 2.4m from any MUP. There shall be a landscape buffer between the sidewalk and MUP, and shall include shade trees, with a maximum of 7m on centre; and,
- (xiii) Supplemental lighting for the sidewalk shall be provided as required to provide lighting levels to meet the Schedule 15-2, Part 4, Article 6 - Electrical Design Criteria.

2.6 Landscape Plans

- (a) DB Co shall submit Landscape Plans in accordance with Schedule 10 – Review Procedure:
- (b) Station, Facilities and Site Specific Drawing Requirements:
 - (i) Layout drawings, dimensioning all landscape items;
 - (ii) Grading drawings, indicating the drainage in accordance with the criteria of Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria and shall include the finished elevations of all built elements from the edge of the Station façade to the original surface, edge of roadway curb, or limits of adjacent landscape not disturbed by the construction;
 - (iii) Fencing plans, indicating all fence locations, maintenance and access gates, bridge fences, heights, and connections to existing and proposed features;
 - (iv) Planting plans;
 - (v) Details indicating all construction requirements for the landscape items; and,
 - (vi) All coordination Site works, including civil, electrical, architectural, existing and proposed above and below services, and existing vegetation, Structures and miscellaneous works to provide a complete illustration of the proposed Site within the adjacent lands.
- (c) Proposed MUP and Connectivity Requirements:
 - (i) Layout and grading, including cross-slopes for all proposed pathways, MUPs and sidewalks, bridges, Culverts, lighting and wayfinding signage, roadway crossings, beyond the individual Stations and connections into the existing pedestrian and cycling system.

- (ii) All coordination Site works, including civil, electrical, architectural, fencing, existing and proposed above and below services, stormwater management criteria, and existing vegetation, Structures and miscellaneous works to provide a complete illustration of the proposed Site within the adjacent lands.
- (d) Tree Mitigation Report(s) and a Tree Compensation Plans(s)
- (i) DB Co shall submit a package for the Tree Mitigation Report(s) and Tree Compensation Plan(s) for review prior to commencement of work for each segment.
 - (ii) Tree Mitigation Plan(s) shall include:
 - A. Survey of all existing trees, including species, caliper, and evaluation within the Lands;
 - B. Survey of all existing trees, including species, caliper and evaluation within 20m of the limits of construction on City, Federal, or private lands;
 - C. Identify all SAR Butternut trees, and SAR bat maternity roost trees, methodology of protection wherever feasible, where removal is required, provide mitigation and/or compensation as per Schedule 17 – Environmental Obligations and as identified in any SARA permitting requirements; and,
 - D. Methodology for the review, and approval, of any trees identified for protection during the initial planning, and subsequently identified for potential removal due to construction conflicts.
 - (iii) Tree Compensation Plan(s) shall include:
 - A. Limits of construction as per Schedule 15-2, Part 1, Article 4 – Design and Construction, and Tree Protection Fence(s) as required to protect all existing trees identified to remain;
 - B. Location, species, quantity and size of all trees proposed to be removed to accommodate the construction requirements;
 - C. Location, species, quantity and size of proposed trees for the compensation for all the existing tree removals, as per City and Federal requirements. The compensation shall include all the proposed trees as identified within this Part 6;
 - D. Identification of proposed butternut plantings, as per Schedule 17 – Environmental Obligations.

- (e) The drawings and specifications identified in Appendices A, B, C, D, E, and G of this Part 6 reflect the requirements for the Federal Lands and shall be considered as the Pre-Final Design Development submittal. DB Co shall finalize the detailed drawings prepared by the NCC for the Federal Lands for the Final Design Development submittal, unless otherwise identified. The drawings identified in Appendix M of this Part 6 reflect the requirements for [REDACTED].
- (f) Restoration Drawings
 - (i) DB Co shall provide restoration drawings for all lands affected by the construction of the Works, including temporary construction facilities, and lands decommissioned after the closure of the Transitway;
 - (ii) The restoration drawings shall include all other lands affected by the construction, not identified above;
 - A. Existing structures and facilities to be removed, including all permanent and temporary roads and facilities;
 - B. Grading and layout of all pathways, roadways, sidewalks, lighting, and miscellaneous Site works; and,
 - C. Final landscape treatment, including seeding, sodding, plant material, and miscellaneous items to restore the Site.

2.7 Urban Design and Landscape Elements

- (a) Sidewalk, Pathways and Plaza Pavement
 - (i) Each Station shall have an entry plaza, across the façade of all Passenger entry points to the Station, large enough to accommodate the peak flow identified;
 - (ii) The Station entry plaza shall extend from the front face of the Station to the adjacent roadway, and encompass any existing sidewalks;
 - (iii) There shall be a minimum of 3m clear from the front façade of the entry or ticket machines to any intersecting MUP;
 - (iv) There shall be a minimum of 3m clear from the front façade of the entry to any intersecting MUP. A combination of concrete and unit paving stones shall be used to construct primary sidewalks and plaza spaces. Sidewalks and plazas shall apply COADS, have a minimum width of 3m, unless specified elsewhere in this Part 6, and shall be a paved surface capable of withstanding heavy duty commercial use including access by Emergency and Maintenance Vehicles as per City standards.

- (v) Contrasting pavers and textures delineating thresholds and pedestrian routes to meet the current COADS, AODA and CAN/CSA B651 shall be provided at all Stations and bus Platforms. This shall commence at the limit of the Station Entry plaza and be continuous through to the Station. The pavers and textures shall be consistent with the materials utilized within the Station, and match the pavers utilized in the Existing Confederation Line, including:
 - A. Type 1 Paving Stones: Cambrian Black Buffed, as manufactured by [REDACTED], or approved equal.
 - B. Type 2 Paving Stones: Beige/Grey, as manufactured by [REDACTED], or approved equal.
- (vi) Sidewalks and MUPs shall be designed in accordance with the applicable existing and recreational networks of the surrounding community and shall adhere to City of Ottawa Construction Specifications, Drawings and Details for MUPs. Within Federal Lands, MUPs, and Pathways shall adhere to NCC standards. Design and selection of construction materials and layout alignment shall be consistent with specific Site context and associated landscape type.
- (vii) There shall be a sufficient offset of all streetscape elements to have a minimum of 1.8m clear space for all sidewalks.
- (viii) Sidewalks and MUPs shall be reconstructed to the full width. Patching shall not be permitted.
- (ix) All existing recreational pathways, MUPs, and sidewalks shall remain open to public use during construction. Refer to Article 3 – Connectivity Requirements, of this Part 6.
- (x) The primary sidewalks and secondary pathways shall meet the requirements of the AODA and COADS, and shall not exceed a grade of 5% with a minimum landing distance of 6m at the bottom of each slope prior to a horizontal alignment shift. Sidewalks adjacent to roadways shall follow the same grade profile of the roadway and may exceed 5%. Cross slopes shall not exceed 2%. The primary sidewalks and secondary MUPs shall be designed to maintain positive Drainage and eliminate water accumulation in accordance with City guidelines.
- (xi) DB Co shall delineate the intersections between the bus and LRT Passengers accessing the system from the cyclists and MUP users with the following:
 - A. Where a cycle track or MUP intersects with a Station entry plaza, the concrete paving of the entry plaza will extend across the cycling/MUP facility.

- B. Where a bus stop occurs on a Roadway, the concrete paving from the bus waiting area shall extend across any MUP or segregated cycling facility. The minimum length of the concrete paving shall be 9m.
 - C. Three double soldier course bands of interlocking paving, minimum 600mm on centre spacing, shall be installed as warning indicators on the cycle track or MUP in the asphalt paving.
- (xii) Pedestrian crosswalks with vehicular traffic, including cycle lanes shall include TWSI as per City of Ottawa Construction Specifications, Drawings and Details;
- (xiii) PPUDOs shall be installed with a continuous pedestrian sidewalk to the Station with the quantities delineated in Article 4 – Site Specific Desired Outcomes, of this Part 6.
- (xiv) Paving materials shall be as follows:
- A. Primary Paving Stones: Cambrian Black Buffed, as manufactured by [REDACTED], or approved equal. Size to meet and match the dimensions of the Platform edge pavers;
 - B. Accent Paving Stones: Beige/Grey, as manufactured by [REDACTED], or approved equal. Size to meet and match the dimensions of the Platform edge pavers. When utilized as the contrasting colour for the visually impaired, the paver shall have a texture variation to meet the standards of the AODA;
 - C. Concrete Paving: shall be to 35 MPa, with a magnesium float finish, caulked expansion joints and saw cut control joints. There shall be no tooled edges;
 - D. DB Co shall design and construct new work to provide smooth, safe and seamless transition of materials where the construction of, including but not limited to, sidewalks, pathways, MUPs, and plazas adjoins existing installations; and,
 - E. Where the proposed sidewalk is immediately adjacent to a cycle track or MUP, there shall be a 200mm wide delineator strip between the sidewalk, and the asphalt surface.
- (b) Site Furnishing
- (i) Site furniture shall be in the family of complementary Site furnishings, from the Existing Confederation Line, that provide an unobstructed view of the underside of the furniture, coordinated with the interior Station furniture and sustainable in terms of its recycled content and long-term durability. Site furnishings shall be

strategically placed along sidewalks, plaza spaces and Platform areas to maximize their use and not encumber pedestrian movement. All furniture shall be fastened to the surface with non-corrosive fastenings to reduce vandalism and to protect for future replacement requirements. All furniture and landscape features shall be coordinated with light standards, CCTV and other elements to reduce vandalism. Site furnishings utilized on the Existing Confederation Line include:

- A. 3-Stream Recycling Container CAR-205, by [REDACTED];
 - B. Narrow U-stand, stainless steel Bicycle Rack MBR-500 DB, by [REDACTED];
 - C. Ipe wood slats, powder coated cast aluminum sides, Bench, MLB 100-W-A, by [REDACTED]; and,
 - D. KicK – K4 Small Scale Luminaire, Light Standard, by [REDACTED].
- (ii) The Site furniture shall be located to provide clear access and visibility to any Site wayfinding signage, so that it does not obstruct views for CCTV and with sufficient offset to restrict unauthorized access.
 - (iii) Waste/Recycle Receptacle units shall be provided and shall be easily accessible for maintenance and trash pick-up. A clear, transparent type of waste/recycle receptacle design is required. Waste/recycle receptacles shall be open installed outside of all Stations and at the bus platform areas. A minimum of one waste/recycle receptacle unit shall be required per Station entrance and shall be located such that it does not obstruct pedestrian and cycling traffic flow. Additional waste receptacles shall be provided as per drawings.
 - (iv) Benches shall be strategically placed at key gathering and waiting zones, be highly visible (CPTED) and clear of any pedestrian traffic. Benches shall be designed according to AODA and COADs standards.
 - (v) New Bicycle Racks shall be provided in accordance with the quantities noted in this Article 4. A minimum of 80% of bicycle racks, shall be sheltered. Clear access from the MUP to the bicycle parking shall be provided and additional area to accommodate dismounting and mounting of the bicycle beyond the width of the MUP. There shall be sufficient space to double the bicycle parking within the plaza or the adjacent turf, without the requirement for additional grading/retaining walls or elimination of streetscape elements and identified on the Landscape Plans.
 - (vi) All bicycle parking shall be consolidated in groups as per Article 4.1 of this Part 6, with the nearest bicycle rack provided within 9m of the Station Entry, unless otherwise approved by the City.

- (vii) Bicycle Repair stations shall be installed as indicated within this Part 6, as manufactured by [REDACTED], or approved equal. Each self-service bike repair station shall include a work stand, an air pump and the following tools:
 - A. Philips screwdriver and stand
 - B. two steel core tire levers
 - C. pedal wrench
 - D. two cone wrenches (8/10mm 9/11mm)
 - E. Torx T-25
 - F. Hex key set
- (c) Access Control
 - (i) Fencing barriers at all Stations shall be provided to prevent public access to the Tracks and Fare-Paid Zones. Fences shall also serve as dividers separating pedestrians and cyclists at specific areas and prevent customers from crossing the bus roadways.
 - (ii) Landscape handrails shall be designed to meet the OBC and the AODA and shall be integrated with the design of the stairways and ramps to meet the above codes. All handrails and fastenings shall be stainless steel, exterior grade.
 - (iii) Bollards shall be provided to control vehicular and cycling activities adjacent to the Stations. Bollards shall be designed to facilitate replacement as required.
- (d) Fencing
 - (i) The alignment shall be fenced to restrict public access to the Track and Fare Paid Zones, and shall meet the following criteria:
 - A. General:
 - i. Shall be within the Lands identified for the alignment and Stations;
 - ii. Shall be continuous along the alignment and Stations and connect to vertical walls and abutments at Stations and Bridges;
 - iii. Shall be a minimum of 1.8m high chain link fence except at Structures over the alignment;
 - iv. The height shall be measured from the publicly accessible side;

- v. Shall be offset a minimum of 1.2m from any Structures or built elements that would assist in facilitating public access to the Track or Fare Paid Zones;
 - vi. Shall be offset a minimum of 600mm from the base of any landform; and,
 - vii. All new fencing shall be black vinyl coated.
- B. Station fencing:
- i. Shall encompass the Fare-Paid Zone, as required, to restrict access to the entry points at all Stations;
 - ii. Shall encompass the bus Stations to accommodate for unrestricted Passenger flow between the Train and the bus; and,
 - iii. Shall have one set of two lockable gates, each a minimum 1.8m in width, situated between any bus Station and Train Station to accommodate Passenger movements during Train Station closure.
- C. NCC/Federal Lands:
- i. In addition to the above, all fencing, within, or adjacent to, NCC or Federal Lands, shall be black vinyl coated chain link fencing, with black powder coated posts.
- D. Track alignment fencing shall;
- i. Extend continuously along the Track throughout the alignment;
 - ii. DB Co shall inspect the alignment, install new fencing as required and repair any damaged sections of the fence to meet the Requirements of this Article 2;
 - iii. Be located within the Lands;
 - iv. Have lockable service gates, as required for service and Emergency vehicle access, as per Schedule 15-2, Part 1, Article 2 – Physical Layout;
 - v. Each service gate shall be a minimum of 1.8m in width, with a lock box fixed to the adjacent fence fabric, for Emergency access; and,

- vi. Each service gate shall have a 1.8m wide paved pathway from the nearest MUP, roadway or service access road. There shall be sufficient paved surface to accommodate the turnaround of snow clearing equipment Schedule 15-2, Part 2, Article 1 - Introduction.

E. Bridge Structure Fencing:

- i. DB Co shall provide Guideway protection fencing on all new and existing Bridge Structures that span the alignment and have pedestrian or cyclist movements. The minimum height from the adjacent pedestrian accessible spaces shall be 2.4m clear as measured from the walking surface or accessible ledge of parapet wall;
 - 1 It shall be acceptable to include the height of a non-climbable parapet wall when measuring the required 2.4m height.
- ii. Shall be non-climbable;
- iii. Shall extend the full length of the Bridge structure and parapet walls where the Bridge spans only the alignment;
 - 1 Where Bridge Structures span the Guideway and other elements including roadways, parks, and streams, the full height fencing is required to extend across the Track limit to a distance of 6.0m beyond the most adjacent Track centre;
 - 2 From the location identified in Clause 1 above (6.0m beyond the most adjacent Track centre), DB Co shall provide a transition zone of fencing from the 2.4m height to the required Bridge guardrail height. Length of the transition zone shall be no less than 3.5m.
- iv. Shall be designed to be integrated within the structural requirements of the Bridge;
- v. Shall have vertical pickets, 100mm on centre, with 150mm extending above the top horizontal member, and 100mm below the bottom horizontal member;
- vi. Shall have a steel mesh, maximum 25mm openings, attached to the alignment side of the pickets, and extend from the bottom to top rail; and,

- vii. All elements shall have a black vinyl coated finish.
- viii. DB Co may propose alternative decorative designs for the vertical picket and rail design described above. Acceptance of any design not conforming to these requirements shall be at the sole discretion of the City.

(e) Bridge Guardrails

- (i) Bridge guardrails shall be designed to accommodate the requirements for raised cycling facilities at the back of roadway curb. Refer to Schedule 15-2, Part 2, Article 4 – Structural Design Criteria and Requirements;
- (ii) Where Bridge guardrails are installed, there shall be minimum clearance, as indicated in Schedule 15-2, Part 2, Article 4 – Structural Design Criteria and Requirements, and Clauses 4.1 and 4.4 of this Part 6;
- (iii) The guardrails shall splay outwards, at a minimum of 15 degrees, to enhance the comfort of the cyclist along the perimeter of the MUP on the bridge structure; and
- (iv) There shall be a continuous handrail along the inside of the guardrail, which is outside of the 4.2m clear MUP pathway.

(f) Site Lighting

- (i) All Station plazas, sidewalks, Platforms and other areas external and immediately adjacent to Stations that are accessible to the public shall be lit with an LED light source to provide improved safety and security, and meet the requirements of Schedule 15-2, Part 4, Article 6, Table 4-6.2.
- (ii) All pedestrian lighting shall be LED, downcast and have full cut-off to minimize light pollution. Additional shielding or cut-off fixture shall be provided adjacent to residential communities.
- (iii) All direct pathway connections from the adjacent street to the front entry plaza shall be lit, and provide a continuous light level with the front entry plaza, and as indicated in this Part 6.
- (iv) All pathway lights shall have a 4.3m height pole.
- (v) No pedestrian lighting of federal lands, pathways and trails shall be permitted, unless specifically identified elsewhere in Article 4 – Site Specific Desired Outcomes, of this Part 6.

(g) Wayfinding Signage

- (i) All signage, including temporary construction staging, shall be bilingual.
 - (ii) Refer to Schedule 15-2, Part 7 - Traffic and Transit Management and Construction Access, for construction staging signage requirements.
 - (iii) Permanent bilingual wayfinding signage shall be provided throughout the corridor, and directing the community along the MUPs and sidewalks to the individual Stations.
 - (iv) Wayfinding signage shall be carefully located to protect the high quality views towards the Ottawa River, Parliament Hill or other landmarks.
 - (v) Based upon the graphics provided by the NCC, within the SJAM lands, DB Co shall provide the following pathway signage:
 - A. 70 regulatory signs: 50mm x 50mm x 4,000mm black metal post with 600mm x 300mm aluminum signs;
 - B. 50 painted standard symbols on pavement (pedestrian, cyclist, arrow). Pathway signage content and locations to be provided by NCC
 - (vi) At each Station, wayfinding signage shall be provided at the interface between the Station plaza and MUP providing direction to the adjacent Station and key Ottawa landmarks.
 - (vii) Directional wayfinding signage shall also be provided at each MUP junction indicating the next Station in either direction.
 - (viii) Bilingual wayfinding signage shall indicate the following:
 - A. Station Name;
 - B. Approximate distance to station;
 - (ix) Wayfinding signage graphics shall meet and match the existing signage on the pathway system. The content and location of the signage shall be approved by the City.
 - (x) The location of the wayfinding signage shall take precedence over the location of street furniture, plant material or other items which may restrict clear access to the view the signage.
- (h) Existing Plant Material
- (i) Existing plant material shall be protected where feasible and as per the Tree Mitigation Plan(s).

- (ii) Provide an Existing Tree Protection/Monitoring Plan, developed by a Licensed Arborist, which defines the methodology for the protection and maintenance of the existing trees;
 - (iii) Protect plant material during construction as per City and NCC specifications and standards. Ensure protective fencing is inspected and repaired as required.
 - (iv) Any plant material required to be removed for the construction of the Project shall be replaced as per Article 2.11 (b) of this Part 6, and the shrubs shall be reinstated at an equal ratio: for each square metre of shrubs removed, instate with a square metre of shrubs. The shrub spacing in the planting beds shall have a maximum on centre spacing of 750mm.
 - (v) Any existing trees identified for protection, and proposed for removal during construction, shall be reviewed, and approved by the City prior to removal.
- (i) Proposed Planting
- (i) Planting outside of Stations shall be used to define spaces, provide shade and reduce wind speed on Platforms to help direct customers safely between public streets and Station entrances and assist in deterring pedestrian crossings through restricted access areas. Plant material shall be designed to be harmonious with the architecture and scale of the Station and coordinated with sight line locations for security cameras and Station lighting, in particular with respect to anticipated vegetation growth.
 - (ii) Planting shall adhere to CPTED requirements.
 - (iii) Street trees shall be integrated into the pedestrian plazas adjacent to the Stations to provide shade and comfort to the pedestrians. Where the trees are integrated within a paved plaza surface, a structural support system or a root control system below the paved surfaces shall be integrated into the overall design to provide a sufficient root growth to sustain growth. A minimum of 30m³ of soil volume shall be provided per tree. This may include 16m³ of direct soil, and 14m³ of shared soil with an adjacent tree.
 - (iv) Street trees shall be reinstated in all City ROW where tree removals have occurred as a result of the Work. Trees shall be installed with a maximum of 7m on centre spacing.
 - (v) Street trees shall be proven to grow in the Ottawa roadside environment, and located to maximize the offset distance between the vehicle travel lanes and proposed trees.
 - (vi) Monocultures of a single species shall not be permitted, and species shall be large canopy species to provide shade to the Roadway and pedestrian realm.

- (vii) Quality and source shall comply with the CNLA metric guide referring to size, development and rootball of plant material. Measure plants when branches are in their natural position. Use trees and shrubs of No.1 Grade. All plant material shall be hardy to the local urban conditions and native to the Ottawa area where possible. All plant material shall meet the requirements of “Canadian Standards for Nursery Stock.”
- (viii) Plant material shall be hardy to the urban conditions, winter maintenance requirements and be designed to be low-maintenance both in the short and long term. Plant material shall be salt tolerant when used in areas adjacent to bus facilities and in areas identified for snow storage. Local native species shall be selected wherever feasible. Supplemental watering to assist in establishment of the plant material shall be required.
- (ix) An irrigation system shall not be permitted.
- (x) The plant material palette shall include a variety of plant material to provide seasonal variety and colour.

Minimum Planting Criteria for Station and Guideway Landscapes

Plant Material	Size	Spacing
Deciduous Trees – large	70 mm cal.	5.0 metres
Deciduous Trees – medium	45 mm cal.	4.0 metres
Coniferous Trees	1.5 m ht	3.0 metres
Coniferous Shrubs	45 cm spread	900 mm
Deciduous Shrubs	45 cm ht	900 mm

- (j) Refer to Appendix A and D of this Part 6 for specific requirements on species size, location and quantities for the Federal lands within the SJAM Parkway, Atlantis and Rochester Fields.
- (k) Topsoil
 - (i) All in-situ topsoil stripped for construction requirements shall be removed off-Site unless there is sufficient room to stockpile topsoil at no greater height than 1.2m. Stockpiled topsoil shall only be used in areas of seeding adjacent to the alignment.
 - (ii) All topsoil shall be fertile, friable, natural sandy loam containing not less than 4% of organic matter for sandy loams, with an acidity value ranging from pH 6.0 to pH 7.5 and capable of sustaining vigorous plant growth. It shall be free of stems or roots, stones and clods more than 50mm diameter or other extraneous matter. Topsoil shall be screened. Topsoil shall not be supplied in a frozen state.
- (l) Sod

- (i) All turf areas within 9m of pedestrian pathways, entry plazas and paved public spaces, shall be sodded, unless otherwise specified in this Article 2.
 - (ii) Nursery Sod: quality and source shall comply with standards outlined in ‘Canadian Standards for Nursery Stock’, most recent addition.
 - (iii) DB Co shall scarify the existing subgrade a minimum of 150mm, and apply a minimum of 150mm of topsoil prior to installation of sod.
- (m) Seed
- (i) The limits of construction and staging areas for some Stations and sections of the Track are expected to extend beyond the limits of sodding indicated above. Any disturbed areas extending beyond the limits identified for sod above shall be rehabilitated as per Schedule 15-2, Part 1, Article 4 – Design and Construction. A review of the adjacent land uses and Site development shall be completed for these locations and the most appropriate groundcover shall be selected.
 - (ii) Seed: to meet the requirements of the City specifications, unless otherwise noted in this Article 2.
 - (iii) DB Co shall scarify the existing subgrade 150mm, and apply a minimum of 150mm of topsoil prior to installation of seed.
- (n) For planting within Highway Corridor Lands, DB Co shall use the following plant list. Additional species may be considered, and subject to review and acceptance from MTO
- (i) Deciduous Trees:
 - A. *Acer Fremanii* “Jeffersred”, (Freeman Maple);
 - B. *Gleditsia Triacnathos* “Shademaster” (Shademaster Honeylocust);
 - C. *Quercus rubra*, (Red Oak);
 - D. *Tilia Americana*, (American Linden);
 - E. *Ulmus* “Morton”, (Accolade Elm); and,
 - F. *Celtis Occidentalis*, (Common Hackberry).
 - (ii) Coniferous Trees
 - A. *Picea Pungens*, (Colorado Green Spruce); and,
 - B. *Pinus strobus*, (White Pine).

- (iii) Shrubs
 - A. *Amelanchier Canadensis*, (Serviceberry);
 - B. *Aronia Melanocarpa*, (Black Chokeberry);
 - C. *Rhus Aromatica* “Low-Gro”, (Low-gro Fragrant Sumac);
 - D. *Rhus Typhina*, (Staghorn Sumac); and,
 - E. *Sorbaria Sorbifolia*, (False Spirea).
- (iv) Vines
 - A. *Parthenocissus Tricuspidata*, (Boston Ivy).
- (o) Earth Borrow
 - (i) All in-situ non-contaminated overburden, and topsoil not appropriate for reuse as topsoil, stripped for the construction requirements, may be utilized as Earth Borrow backfill over the Tunnel alignment;
 - (ii) All stripped overburden shall be allowed to be stockpiled; and,
 - (iii) Imported Earth Borrow shall consist of material as defined by OPSS 212.

2.8 Natural Channel Restoration

- (a) Refer to Schedule 15-2, Part 2, Article 5 - Drainage and Stormwater Management Design Criteria, for the SWM requirements for the channel design.
- (b) DB Co shall design all watercourse embankments that are to be reinstated in accordance with the following:
 - (i) Maximum of 3:1 slopes.
 - (ii) Any embankments where the proposed slopes would be less than 3:1, shall be constructed with a retaining wall at the base of the slope, to provide a 3:1 embankment for planting. The retaining walls shall be made of natural materials, such as armour stone rock wall, wood revetments, root wads, or other measures. All built features shall meet the flow analysis and Design Criteria to ensure the slope stability.
 - (iii) Use biodegradable materials to anchor the logs and root wads to the embankment.
 - (iv) Rip rap or gabion baskets shall not be permitted.

- (v) On all outside bends of the creek, DB Co shall reinforce the channel embankment with root wads. The reinforcement shall protect the embankment for the 2 year flows and be a minimum 0.75m height, or as per the detailed design analysis, completed as per Schedule 15-2, Part 2, Article 5 - Drainage and Stormwater Management Design Criteria.
- (vi) All slopes shall be vegetated with native species woody plant material;
- (vii) DB Co shall ensure the slope stabilization of the final planting beds during the 2 year warranty and establishment of the plant material to control wash-outs and sediment movement into the watercourse;
- (viii) The vegetation shall be a blend of 90% trees and 10% shrubs, and shall be of an appropriate species for the location on the embankment. DB Co shall identify species that are tolerant for locations within the seasonal flooding, 10 year flood, 100 year flood and upland planting.
- (ix) The trees shall consist of a blend of the following:
 - A. 25% Coniferous Trees;
 - B. 70% Reforestation Trees;
 - C. 5% Caliper Deciduous Trees;
- (x) The shrubs shall include:
 - A. 70% shrubs;
 - B. 30% live stakes; and
- (xi) Meet the following planting criteria;

Minimum Planting Criteria for Restoration Landscapes

Plant Material	Size	Spacing
Caliper Deciduous Trees	60 mm cal.	5.0 metres
Reforestation Trees	20 mm cal	3.0 metres
Coniferous Trees	900 mm	2.4 metres
Deciduous Shrubs	45 cm ht	600 mm
Riparian Planting	450 mm ht	450 mm
Live Stake Planting (Deciduous)	90 cm length	100 mm

- A. Any live stakes shall consist of native species, rhizome spreaders, and be tolerant of the Site specific conditions at the creek edge.

2.9 LID SWM Landscapes

- (a) Refer to Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria, for the SWM requirements for the drainage requirements.
- (b) All surface drainage swales shall be landscaped to the following criteria:
 - (i) Flat-bottomed swales;
 - (ii) Varying side slopes, with a maximum slope of 3:1 and a minimum slope of 8:1;
 - (iii) Establish a ground cover consisting of perennials, grasses, shrubs and trees that accommodates the periodic wetting;
 - (iv) All bioswales adjacent to areas of vehicular traffic shall be protected by a raised concrete curb, with curb openings to accommodate surface drainage; and,
 - (v) All plant material utilized within the bioswales shall be salt tolerant.

2.10 Existing Tree Protection

- (a) DB Co shall submit a Tree Mitigation Report, as per Schedule 10 – Review Procedure, and Clause 2.6 of this Part 6, to delineate existing trees impacted by the Work. These drawings shall be reviewed, and appropriate agency approval received, prior to commencement of work;
- (b) Within the SJAM lands, between Cleary and Dominion, DB Co shall protect all the existing trees, as identified in Appendix E. In addition, for work beyond the works identified in Appendix E, DB Co shall identify all trees to be removed for approval prior to commencement of work;
- (c) All tree protection shall be installed prior to the commencement of any Works.
- (d) DB Co shall develop a construction plan that minimizes the removals and impacts on the adjacent trees to be protected;
- (e) DB Co shall work within the following construction restrictions with respect to the existing tree removals within the SJAM Parkway. Refer to Schedule 20- Lands.
 - (i) A 3m offset north from the temporary road works for the SJAM Parkway;
 - (ii) Protection of the existing trees adjacent to the Richmond Road row of Rochester Fields. DB Co shall be permitted to remove a maximum of one tree to accommodate construction access. The exact trees to be removed shall be in consultation with the NCC;

- (iii) To accommodate the construction road access, DB Co shall relocate one existing trees adjacent to Richmond Road, as identified in Appendix C of this Part 6. This tree shall be assessed for health to determine feasibility of relocation within Rochester Fields;
- (iv) Protection of the existing trees along the west property line of Rochester Fields;
- (v) Protection of the existing trees along the east property line of Rochester Fields, including the woodlot east of the storm sewer leading to the Ottawa River;
- (vi) Protection of the existing woodlot south of the pedestrian path, on the south side of the SJAM Parkway, west of Rochester Fields;
- (vii) Protection of the existing stand of mature trees south of the pedestrian footpath, east of Rochester Fields, leading to Dominion Station;
- (viii) Protection of the existing trees north of the MUP, north of the SJAM Parkway, with the exception of the work area required to complete the storm sewer outfall works at the Ottawa River;
- (ix) Protection of the existing deciduous trees, south of Richmond Road, east of the alignment;
- (x) DB Co shall submit a plan, and rationale for the limits of work for review and approval, prior to proceeding in areas where the limits of construction extend within the areas identified above.

2.11 Tree Compensation

- (a) Based upon the required removals to accommodate the construction requirements, DB Co shall complete the Tree Compensation Plan(s), and submit as consolidated package and in accordance with Schedule 10 – Review Procedure.
- (b) The Tree Compensation Plan(s) shall be based upon the following criteria:
 - (i) For every deciduous tree, over 100mm, DB Co shall replace with two 70mm caliper trees;
 - (ii) For every coniferous tree DB Co shall replace with two 1.8m height trees;
- (c) The Tree Mitigation Plan shall be prepared by a Licensed Arborist in conjunction with the Landscape Architect.
- (d) DB Co shall develop the Tree Compensation Plan(s) in conjunction with the overall planting plan for the Project, including Stations and Guideway to ensure sufficient compensation for the required removals.

- (e) The Tree Compensation Plan(s) shall conform to approved tree species list and FLUDTA requirements.
- (f) Existing trees (including crown, trunk and root system) in proximity or vulnerable to damage by the Work, shall be protected during all stages of Work. No material, construction equipment or vehicles shall be stored under the drip-line of trees at any time. Trees shall be protected and watered regularly as required by standard horticultural practice during the construction period.

2.12 Site Restoration

- (a) DB co shall complete the following:
 - (i) Removal of all temporary and permanent roadway works, including granular bases;
 - (ii) Scarification of compacted subgrade a minimum of 150mm prior to the placement of topsoil for planting, seeding or sodding;
 - (iii) Core aerate within the drip line of all existing trees where any construction activities have occurred;
 - (iv) Regrading and shaping of the Site to reinstate the original contours and drainage patterns. In areas where the roadway will be removed, the regrading shall eliminate the engineered roadway grades and profile; and,
 - (v) Install a minimum of 150mm topsoil prior to final seeding or sodding for turf areas, and 450mm topsoil for shrub beds.
 - (vi) Where the Alignment is below grade, install a minimum of 300mm of topsoil, and 1.2m of Earth Borrow over the Alignment to facilitate the growth of the vegetation.

ARTICLE 3 CONNECTIVITY REQUIREMENTS

3.1 General Requirements

- (a) Existing pathways, sidewalks and MUPs are critical community connections that shall be maintained throughout construction, unless specifically identified and agreed to by the City for closure or removal.
- (b) DB Co shall develop a TTMP to identify any potential safety concerns for pedestrians and cyclists during construction and measures for protection, as per Schedule 15-2, Part 7, Article 6 – Traffic and Transit Management Plan.
- (c) DB Co shall implement any required measures to alleviate these potential safety concerns and ensure the community connections identified in this Part 6, and Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access, are maintained. Sidewalks and pathways shall be installed as required to provide connection between the adjacent communities to the Station and as indicated elsewhere in Schedule 15-2, Part 4 – Stations, and this Part 6.

3.2 Connectivity Elements

- (a) Design and selection of construction materials and layout alignment shall be consistent with specific Site context and associated landscape type.
- (b) Pathways and MUPs shall be minimum 3.0m in width unless specified otherwise in this Article 3 and shall be a paved surface capable of commercial use, including access by maintenance and Emergency vehicles and shall not be used for calculating the requirements for loading or unloading of the buses.
- (c) All pathways and MUP's shall have a TWSI located at vehicular intersections, or where a sidewalk crosses a cycle track.
- (d) A sodded clearance strip shall be provided on each side of a MUP, as per Article 2 – Design Criteria, of this Part 6, except in the following conditions;
 - (i) Where MUPs are located beneath a Bridge, provide 0.6m paved shoulder on each side of MUP;
 - (ii) Where MUP traverses an open paved plaza, provide pavement markings, change in paving colors or change in hard surface material to identify the route of the MUP. This shall include a minimum of four bands of interlocking pavers in a double soldier course, centred 0.6m prior to the MUP traversing the plaza.
 - (iii) Where a MUP traverses the entry plaza to a Station, there shall be a minimum of 3m offset from the Station entry.

- (iv) Where a MUP is adjacent to an existing or a proposed vertical constructed surface or element such as a building, guardrail, retaining wall, fence, etc., a 0.6m “buffer” space shall be provided from the existing constructed surface in addition to the width of the MUP.
- (e) The MUPs and sidewalks at Stations shall be designed to ensure crossing locations to minimize the potential conflict between cyclists and pedestrians. This may include “T” intersections, small walls, planters or other design elements.
- (f) Install bollards at all roadway intersections to restrict vehicular access to the MUP. These bollards shall be collapsible, to accommodate service vehicles.
- (g) DB Co shall provide reflective tape on all bollards.
- (h) Depressed curbs shall be provided at all sidewalk roadway interfaces and shall be in proximity to bicycle parking areas to facilitate safe access from roadway to sidewalk.
- (i) The City has a long term plan to institute additional MUP connections at a future date, as per the TMP, Ultimate Cycling Network. Where future connections are identified by the City, DB Co shall maintain a 6m unencumbered width to access the MUP corridor that would prevent the connection from being made. A 6m-wide clear corridor shall be established that will allow a connection to be constructed and therefore shall not be encumbered with utility boxes, grade difference or other obstacle that would reasonably prevent construction of such a connection.

3.3 Accommodation of Pedestrians and Cyclists During Construction

- (a) All trails, pathways and MUPs shall remain open throughout construction unless specifically identified. DB Co shall install a temporary granular pathway for closures less than 7 days in duration. Where the trail, sidewalk, pathway or MUP is required to be closed for longer than 7 days, DB Co shall provide an alternate route with a minimum of a paved asphalt surface for the duration of the closure.
- (b) DB Co to provide an alternate route that minimizes any detours for the pedestrians and cyclists, and is a maximum of 20% additional length.
- (c) Proposed temporary closure or re-routing of pedestrian and cycling routes shall be submitted in accordance with Schedule 10 – Review Procedure, and shall conform to the construction Site Pedestrian Control Plan as required by City of Ottawa Special Provision D-005 and as documented in COADS. DB Co shall include a Pedestrian Access Plan/construction Site Pedestrian Control Plan in the TTMP submissions per Schedule 15-2, Part 7, Article 6 – Traffic and Transit Management Plan.
- (d) Multiple subsequent closures of less than seven days, shall not be permitted, and an alternate route shall be provided and shall include:

- (i) Smooth paved surface to meet Universal Design requirements;
 - (ii) Curb cuts as required to provide barrier-free routes from pathways and sidewalks to roadway crossings;
 - (iii) A minimum width of 1.8m for sidewalks, as per COADS;
 - (iv) A minimum width of 3m for MUP;
 - (v) Positive drainage to ensure no ponding on the travelled route; and
 - (vi) Temporary routes shall be lit to the same level as the original route.
- (e) All existing pedestrian walkways and cycling facilities shall be maintained to the City standards at all times, during the construction period. DB Co shall be responsible for all design, approvals, construction and maintenance, including cleaning, of the pedestrian walkways and cycling facilities for the duration of time the detour is in service.
- (f) DB Co shall provide and maintain way-finding signage for pedestrian walkways, MUP and cycling closures and detours in accordance with the TTMP. The signs shall include maps of the affected routes, and shall be posted at least at all access points, key decision points and intersections between the existing route and the alternate route, and, on the Pedestrian Walkway 50m in advance of each pedestrian walkway closure or relocation. The maps shall provide detailed directions to the alternate routes in order to travel to the original destination point.
- (g) DB Co shall not close any MUP or sidewalk identified to remain open during construction, and the TTMP shall identify all measures to ensure the safety of pedestrians and cyclists. DB Co shall modify the TTMP as required to accommodate the pedestrian and cyclists.
- (h) The Site pedestrian control design shall include all temporary bilingual pedestrian signing, directional signing, maintenance of sidewalk, relocation and any other delineation to provide safe environment for pedestrians and cyclists.

3.4 Roadway Crossings

- (a) General
- (i) DB Co shall be responsible for liaising and coordinating with the City with regard to all modifications that may be required at municipal traffic signals both during and after completion of the design and construction. Proposed modifications shall be supported by traffic engineering analysis and meet the City traffic signal requirements and standards.
 - (ii) On Federal Lands, DB Co shall install the crosswalks as per Appendix C and D;

- (iii) DB Co shall provide Crossrides where a proposed multi-use pathway or cycle track crosses an intersection.
- (iv) DB Co shall complete a traffic study to finalize the configuration and review with the City with respect to the type of controlled crossing device to be implemented (pedestrian signal, full traffic signal, or PXO Type B, C or D). DB Co shall implement the type of controlled crossing device selected by the City at each intersection where a new controlled crossing is required as per this Part 6
- (v) DB Co shall coordinate the work of this Article 3 with Schedule 15-2, Part 2 – Civil and Guideway, and Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

3.5 Winter Maintenance

- (a) DB Co shall design the Station plazas, pedestrian Emergency egress, PPUDO, Park and Rides and MUP to accommodate winter maintenance, including providing a route for equipment to manoeuvre along the corridor. This shall include locations to stockpile snow along the pathways as required, with sufficient space for equipment turn around, including a minimum of 5m x 5m at all egress points at the building façades;
- (b) DB Co shall indicate the snow storage locations on the layout drawings and fencing drawings;
- (c) Any snow storage locations shall be located on unencumbered City lands and outside of any ROW;
- (d) Any allocated snow storage locations shall be offset from the existing and proposed Site features, bioswales and plant material; and,
- (e) Any snow storage locations shall ensure the drainage pattern is integrated within the overall SWM plan.

ARTICLE 4 SITE SPECIFIC DESIRED OUTCOMES

4.1 Station Specific Design Criteria

(a) Montreal Station

- (i) DB Co shall provide a 2.5m continuous sidewalk, on both the north and south sides of Montreal Road, from the existing sidewalks east of Shefford Road to the east side of the OR174 EB off-ramp or on-ramp, with the following exceptions:
 - A. Under the bridge structures and Station, the sidewalk width shall be reduced to 2m; and,
 - B. On the south side on Montreal Road, the sidewalk, between Shefford Road and the bus shelter immediately east of Shefford, Road shall not be widened to 2.5m, and on the north side the existing sidewalk between Shefford Road and a point approximately 140m east of Shefford Road, shall not be widened to 2.5m.
- (ii) On the south side of Montreal Road, DB Co shall provide:
 - A. A 3m MUP, behind the curb and offset from the sidewalk by a 3m landscape buffer, with a crosswalk/crossride, at the OR174 WB on-ramp, and a Protected Intersection, including crosswalk and bi-directional crossride, at the signalized OR174 WB off-ramp/Montreal Road intersection to provide a continuous MUP connection, as identified in Clause 4.4 (a)(i) of this Part 6;
 - B. This MUP shall also serve as the EB cycling lane for Montreal Road and DB Co shall provide the depressed curb, paving markings and COADS requirements at the intersection at the OR174 WB on-ramp, to delineate the pedestrian and cycling routes; and,
 - C. The EB cycling route shall continue as a segregated cycle lane, east of the OR174 WB off-ramp/Montreal Road signalized intersection, under the Montreal Road bridges, to the OR174 EB off-ramp, with the City standard Protected Intersection and pavement markings to connect to the on-road cycle lane adjacent to the vehicle travel lane east of the intersection.
- (iii) On the north side of Montreal Road, DB Co shall provide:
 - A. A 3m MUP, immediately adjacent to the sidewalk, from the crosswalk/crossride at Montreal Road/OR174 WB off-ramp to the east-west MUP, to provide the continuous MUP connection, as identified in Clause 4.4 (a)(i) of this Part 6;

- B. A 3m MUP, continuing westerly, and connecting to the south end of Rainbow Street and connecting to a new sidewalk on the west side of Rainbow that shall extend to Canotek Road;
 - C. A segregated westbound cycle track commencing from the east side of the OR174 EB on-ramp to the west side of the OR174 WB off-ramp; and,
 - D. Provide Protected Intersections and pavement markings to connect to the on-road cycle lane adjacent to the vehicle travel lanes at each intersection.
- (iv) Under the OR174 Bridge Structures, there shall be a minimum of 8m of paving, from the front face of the curb, to the front face of the Bridge abutments to generally include:
- A. 2m width for the bus shelter or streetscape elements;
 - B. 2m sidewalk width for the pedestrians;
 - C. 2m width for the bus staging/access;
 - D. 1.5m width for the cycle track;
 - E. 0.5m width for buffer between the cycle track, curb and sidewalk; and,
 - F. With the exception of the asphalt paving for the cycle track, and the interlocking pavers for the buffer, all the paving shall be concrete.
- (v) DB Co shall provide continuous concrete paving from the outer limit of the bus staging area, 18m from the bus flag location, to the outside limit of the Station entry, to create a pedestrian/cycling mixing zone across the full extent of the bus stop and Station entry.
- (vi) The cycle track shall be developed behind the roadway curb. At the bus stop location, the alignment for the cycle track shall offset from the curb to accommodate a 2m bus staging/access area.
- (vii) The bicycle parking shall have equal quantities at each entry, offset from the Station entry and Montreal Road bus stops.
- (b) Jeanne d'Arc Station
- (i) The bicycle parking for the Station shall be located immediately north and south of the Bridge Structure, on the east side of the ROW.

- (ii) 50% of the bicycle parking shall be provided on the north side of the bridge, and 50% of the bicycle parking shall be provided on the south. Provide retaining walls as required for the bicycle parking.
 - (iii) There shall be a MUP leading to the bicycle parking from Fortune Drive.
 - (iv) Provide 2m wide sidewalk on the east and west sides of Jeanne d'Arc Boulevard on the Bridge Structure. Extend the 2m sidewalk to the bicycle parking to the north, and the MUP to the south, on the east side of the roadway.
- (c) Orléans Station
- (i) The bicycle parking for the Station shall be located in equal quantities to the north and south, and immediately adjacent to the Bridge Structure with retaining walls and guards as required.
 - (ii) Widen the sidewalk, from Lumberman Way and Fortune Drive, to 2.5m to accommodate pedestrian movements to the Station, with the exception of the sidewalks on the bridge structure.
- (d) Place d'Orléans Station
- (i) DB Co shall provide a Station entry plaza within the existing lands of the BRT Station, with access from Champlain Street, and ensuring the plaza accommodates the bus movements within the Station.
 - (ii) DB Co shall provide a fence between the Fare Paid Zone and unpaid zone, from 9m west of the crosswalk at Champlain to the north side of the Station entry, and extend the fence on the south side of the Station Entry to the existing jersey barrier on the north side of the Shopping Centre parking lot. The existing sidewalks shall be extended to reduce the access point to one lane for Emergency access, with a lockable gate.
 - (iii) DB Co shall provide a paved Station plaza on either side of the fare gates, with deciduous trees within the pavement.
 - (iv) The Park and Ride on the north side of OR174 shall be reconfigured to accommodate a minimum of three PPUDO spaces adjacent to north end of the existing pedestrian bridge.
 - (v) Provide 2.4m wide concrete sidewalk adjacent to PPUDO spaces.
 - (vi) Provide a Station entry plaza at the Champlain Street entrance.
 - (vii) Bicycle parking for the Station shall be provided as follows:

- A. 70% north, at the existing Park and Ride;
 - B. 30% south, at the entry plaza adjacent to Place d'Orléans.
- (e) Trim Station
- (i) Provide a Station entry plaza that encompasses the LRT and bus Station of approximately 1,500 m², with 60% paved.
 - (ii) Provide a shared parking lot with one cell for the Universal Accessible Parking and one cell for the PPUDO immediately adjacent to the Station plaza.
 - (iii) Provide a 2.4m continuous sidewalk, from each parking lot cell to the Station plaza, with crosswalks as required.
 - (iv) Provide 3.0m wide concrete sidewalk along the north side of the parking lot linking parking areas to the Station plaza.
 - (v) Provide a secure fenced perimeter around the bus facility, extending from the Station to the fare controlled entrance, to restrict any unauthorized access to the Station and bus Station.
 - (vi) Provide pedestrian lighting on sidewalks and pathways from the perimeter of the Site on all sidewalks and MUPs.
 - (vii) Bicycle parking for the Station shall be provided to the south of the Station, and shall service both the LRT and Transitway Stations.
 - (viii) Prior to the removal of existing Redblacks forest on the east side of the Park and Ride facility, DB Co shall:
 - A. Plant the equal number of trees, with the same caliper and species in Cumberland Millennium Park, 100 Millennium Blvd, Orleans, relocate the existing signage, relocate the existing maple trees of the Redblacks Forest, affected by the reconfiguration of the facility to a site selected by the City, within a 5km radius of the existing site, including the maintenance and warranty of the trees for two years.
- (f) Westboro Station
- (i) Provide a MUP connection from the existing pathway northwest of the Station, leading from Lanark Avenue to Scott Street.
 - (ii) The Station plaza on the south side of the alignment shall be developed as a transition zone for pedestrians and cyclists.

- (iii) The Station plaza shall extend from the Station Entry to Scott Street, and between the bus access loop to the bus stop on the north side of the Station.
 - (iv) The bicycle parking shall be provided in equal quantities at both the east and west end of the Station plaza.
 - (v) Provide equal number of PPUDO's on both the north and south side of Scott Street, offset on either side of the front Station plaza, beyond the bus access loop.
 - (vi) The sidewalks to the east and west of the plaza shall be widened to 3m wide MUPs.
 - (vii) A crosswalk/Crossride shall be provided at the MUP crossing of the bus loop staging area.
- (g) Dominion Station
- (i) There shall be a Station plaza extending between Dominion Avenue and the Station entry, with an approximate size of 200 m².
 - (ii) There shall be a minimum 4.2m wide direct public lit MUP connection between Workman Avenue and Dominion Avenue, connecting to the Station plaza over the alignment.
 - (iii) There shall be a 3m MUP connection from Workman Avenue to the at-grade pedestrian crossing of the SJAM. Provide pathway connections to the existing NCC pathways east of the at-grade crossing, on the north and south sides of the SJAM Parkway.
 - (iv) Construct the at-grade crossing as per Clause 4.4, of this Part 6.
 - (v) The bicycle parking shall be located with 50% of the bicycle parking on the south side of the Station, and 50% on the north side, within the Station plaza.
 - (vi) The Station plaza shall provide a direct connection to the NCC pathway on the SJAM Parkway west of the Station, and connect with the MUP on the south side of the LRT corridor, along the Scott Street corridor.
 - (vii) A PPUDO shall be provided to the south side of the Station, on Dominion Avenue.
 - (viii) A continuous sidewalk, commencing at Richmond Road shall be constructed on the east side of Berkley Avenue and north side of Dominion Avenue to the Station plaza. DB Co shall complete the design of the drainage to ensure adequate drainage is provided.

- (h) Cleary Station
- (i) There shall be a Station plaza extending from the Station entry to the east side of the Cleary intersection crosswalk.
 - (ii) There shall be a 3m MUP from the northeast intersection of Cleary Avenue/Richmond Road connecting directly to the NCC Pathway.
 - (iii) The bicycle parking shall be located within the Station plaza.
 - (iv) There shall be a raised intersection at Cleary Avenue/Richmond Road that encompasses both the east and west crosswalk/Crossride, and shall be constructed of 100mm x 200mm, 100mm depth interlocking pavers, with 100mm concrete base, Sierra colour, in a herringbone pattern as manufactured by [REDACTED].
 - (v) Provide equal number of PPUDO's on both the north and south side of Byron Avenue, adjacent to the Station plaza to the east of the Station.
 - (vi) Reinstate the lands in the northeast quadrant of Richmond Road/Cleary Avenue with topsoil and sod.
- (i) New Orchard Station
- (i) There shall be a Station plaza between the west crosswalk of New Orchard Avenue/Richmond Road, and the front entry of the Station;
 - (ii) There shall be a raised intersection at New Orchard/Richmond Road that encompasses both the east/west, and north/south crosswalk/Crossride, and shall be constructed of interlocking pavers, with a 100mm concrete base. Meet and match the pavers and details developed for the Cleary Avenue intersection.
 - (iii) The Station plaza shall be a minimum of 50% paving, and provide a direct pedestrian connection between the intersection and the Station entry.
 - (iv) The Station plaza shall include lighting to City standards, and in accordance with Article 2.7 of this Part 6.
 - (v) There shall be a 2.4m wide concrete sidewalk on the south side of the Station, connecting the Station plaza to Byron Linear Park, with a minimum of 3m landscape buffer, with tree planting. There shall be a minimum 5m landscape buffer, with tree planting on the north side.
 - (vi) Refer to Clause 4.4 of this Part 6, for Richmond Road Complete Street streetscape requirements.

- (vii) Provide the PPUDO on the north side of Byron Avenue, adjacent to the Station plaza
- (j) Lincoln Fields Station
 - (i) There shall be a direct lit MUP connection, between the signalized intersection on SJAM Parkway and the at-grade Station entry on the west side of the alignment.
 - (ii) The MUP connection shall be designed to elevations above the 100 year flood, and where the MUP crosses the floodplain, it shall be elevated with a Bridge.
 - (iii) There shall be a Station plaza at the west entrance of sufficient size to accommodate the pedestrian movement to the entry and 40% of the required bicycle parking spaces.
 - (iv) There shall be a Station plaza on the south end of the Station, connecting the Station Entry with Carling Avenue, of an approximate size of 100m², with a minimum of 60% paved.
 - (v) There shall be a Station plaza on the east side of the Station, connecting the PPUDO, paid entry gates, bus Platforms and Station entry. The Station plaza shall contain 20% of the bicycle parking spaces.
 - (vi) 40% of the required bicycle parking spaces shall be accommodated at the Station plaza leading from Carling Avenue.
 - (vii) The traffic islands within the bus Station shall include infiltration trenches with tree and shrub planting.
 - (viii) Provide permeable pavers at the Station entrance and a permeable paver strip along the pedestrian walkway (adjacent to bus Platform) to a dry pond.
 - (ix) The bus Station shall have trees in the plaza adjacent to the bus shelters to provide shade and shelter to the transit users.
 - (x) Provide a separate PPUDO, with access from the existing signalized intersection at Carling Avenue/Lincoln Fields Station and have a sidewalk connection from the PPUDO, and Carling Avenue, to the at-grade entrance to the east side of Station.
 - (xi) Provide retaining walls to allow direct access from the PPUDO to the fare controlled entrance.
 - (xii) Provide a secure fenced perimeter around the bus facility, extending from the Station to the fare controlled entrance for the PPUDO, to restrict any unauthorized access to the Train Station and bus Station.

- (xiii) Provide a 2m wide sidewalk and 1.8m cycle lane on both sides of Carling Ave. between existing signalized crossing and proposed 6m wide crosswalk/Crossride.
 - (xiv) Locate the pedestrian activated crosswalk/Crossride signalized intersection approximately 120m west of the existing Transitway entry on Carling Avenue to align with the MUP on the south side of Carling and with the Station entry Plaza.
- (k) Iris Station
- (i) There shall be a Station plaza on both the east and west side of the Station which delineates the pedestrian space.
 - (ii) The West Station plaza shall extend from the proposed stairs connecting the plaza to Iris Street Bridge to the south to encompass the bicycle parking.
 - (iii) There shall be a lit MUP connection from Iris Street to both Station plazas and fare control entry location.
 - (iv) There shall be a MUP on the west side of the Station, extending from Baseline Station to the NCC Capital Trail on the north side of Iris Street.
 - (v) DB Co shall provide a controlled crossing of Iris Street between Iris Station and Parkway Drive. DB Co shall complete a traffic study to finalize the configuration and review with the City with respect to the type of controlled crossing device to be implemented (pedestrian signal, full traffic signal, or PXO Type B, C or D). DB Co shall implement the type of controlled crossing device selected by the City.
 - (vi) Provide equal number of PPUDO's on both the north and south side of Iris Street, and coordinated with the bus stops and signalized pedestrian crossing.
 - (vii) The Emergency exits shall provide a direct connection from the Station to the walkways.
 - (viii) There shall be bicycle parking provided adjacent to the Station entry, with 50% provided at each entry.
- (l) Baseline Station
- (i) The bus Station plaza shall extend from the Station entry at College Avenue, and encompass the interior of the bus Station. It shall be a minimum of 60% soft landscape and 40% paved areas, with sidewalks a minimum of 3m. The soft landscape shall contain earth forms with 3:1 slopes that direct the Passengers between the bus stops and the LRT entry. There shall be a break in the landforms to provide a direct pedestrian access between the east and west sides of the Transitway to accommodate transfers between the local and express buses.

- (ii) Provide lighting throughout the Station plaza to City Standards, and in accordance with Clause 2.7 of this Part 6.
 - (iii) Provide a secure fenced perimeter around the bus facility, extending from the Station to the fare controlled entrance, to restrict any unauthorized access to the Station and bus Station.
 - (iv) Relocate the MUP to the west side of [REDACTED] plaza.
 - (v) 60% of bicycle parking shall be provided at the south entry to the Station and 40% at the north Station entry.
 - (vi) Provide a plaza entry at the north Station Entry, with the following:
 - A. Remove all the existing turf at the north Station entry and install concrete paving.
 - B. Relocate existing café tables to accommodate Station entry
 - C. On the north side of the Station entry, remove existing turf and extend concrete paving a minimum of 350m².
 - (vii) Reinstate the remaining plaza to the west of the [REDACTED] building to match existing paving and soft landscape areas.
 - (viii) Remove the bus stops and two lanes of the Transitway and reinstate with topsoil and sod. Maintain two lanes of the existing Transitway between Navaho Drive and College Avenue, as per Schedule 15-2, Part 1, Article 14 – Demolition, Removals and Disposal.
 - (ix) Provide a MUP on the west side of the Transitway, extending from the existing east-west MUP, to Pallister Private.
- (m) Queensview Station
- (i) The bicycle parking shall be provided at street level, with 30% of the spaces provided at each the south side and 70% on the north side of the Station.
 - (ii) Provide a PPUDO on the north side of Baxter Road near the Station entry/Pedestrian Bridge with a sidewalk connection between the PPUDO and the Station Entry.
 - (iii) Provide a MUP leading from the PPUDO on Queensview Drive to the Station entry ramp on the west side with tree planting and lighting to City standards.
 - (iv) Provide a lit MUP from the east Station Entry to Roman Avenue.

- (v) Provide a PPUDO to the north of the Station on Queensview Drive.
 - (vi) Provide a lit 2.4m wide sidewalk, with a roll curb along the existing parking lot, from the MUP north to the Queensview Drive, to the Station north entry Station Plaza.
 - (vii) Provide an entry plaza of approximately 300m² on the north side adjacent to the retail parking lot, with 80% paving, and 20% soft landscaping.
 - (viii) Provide a sidewalk on the west side of the Station, along the south and west side of the parking lot, extending to Queensview Drive.
 - (ix) Provide a 6m wide pedestrian walkway from the north Station entry plaza to the existing retail building, framed on either side with a 2.0m wide planting bed. The pedestrian walkway shall provide a smooth slope between the existing retail building and the Station, with a raised crosswalk at the drive aisle.
 - (x) Reconfigure the parking lot to accommodate the proposed modifications, including the traffic island, with the two trees.
 - (xi) DB Co shall provide a Station plaza at Baxter Road of sufficient size to accommodate the entry to the Station entry/Pedestrian Bridge and the bicycle parking.
 - (xii) Provide a sidewalk on the north/west side of Baxter Road, from the Station Entry to Iris Street.
- (n) Pinecrest Station
- (i) Provide a lit MUP from the southwest corner of the intersection of Pinecrest Road/Hwy 417 WB off-ramp to the Station plaza.
 - (ii) Provide a lit Station Plaza with a minimum of 9m width between the bus Platform and the Station entry to accommodate the Passenger movement, and the east-west MUP on the north side of the Station. Provide a sidewalk with a 3m landscape buffer, between the MUP along the bus Platform and connecting to the Station entry plaza.
 - (iii) Provide a 3m wide lit MUP connection from Dumaaurier Avenue to the Station plaza and a controlled crossing at Dumaaurier Avenue. DB Co shall complete a traffic study to finalize the configuration and review with the City with respect to the type of controlled crossing device to be implemented (pedestrian signal, full traffic signal, or PXO Type B, C or D). DB Co shall implement the type of controlled crossing device selected by the City.

- (iv) There shall be a PPUDO on Dumaaurier Avenue with a sidewalk connection to the MUP leading to the Station.
- (o) Bayshore Station
 - (i) There shall be a Station Plaza from the limit of the Fare-Paid Zone to the Bayshore access road.
 - (ii) Provide a fence enclosure from the paid fare entry around the bus Station to restrict access to the Station.
 - (iii) There shall be a MUP from the Station plaza to Woodridge Crescent on the west side of the bus access, with an at-grade controlled crossing between the MUP and the sidewalk on the north side of Woodridge Crescent.
 - (iv) DB Co shall complete a traffic study to finalize the configuration and review with the City with respect to the type of controlled crossing device to be implemented (pedestrian signal, full traffic signal, or PXO Type B, C or D). DB Co shall implement the type of controlled crossing device selected by the City.
 - (v) Provide a crosswalk from the Station plaza, east to the sidewalk along the north face of the shopping centre.
 - (vi) DB Co shall extend a 3.0m sidewalk along the north side of the alignment under Richmond Road, and connecting to the Richmond Road/417 off-ramp. DB Co shall maximize the width of the sidewalk under the Richmond Road Bridge and widen to 3m east and west of the Richmond Road Bridge. DB Co shall maximize the sidewalk width on Richmond Road up to 3.0m by modifying the lane widths, and protecting the existing retaining wall.
 - (vii) There shall be a PPUDO on the south side of Woodridge Crescent.
 - (viii) Provide infiltration trench with tree and shrub planting within central island of Transitway zone.
 - (ix) Provide crosswalk/Crossride on the south side of the signalized intersection of the Highway 417 WB off-ramp at Richmond Road.
 - (x) Provide a MUP from Woodridge Crescent to Holly Acres Drive, on the north side of the alignment.
- (p) Moodie Station
 - (i) DB Co shall provide a Station entry plaza of approximately 600m², connecting the BRT to the LRT;

- (ii) Provide lockable gates from the BRT Station to the entry plaza, to accommodate passenger movement when the LRT is not operational;
 - (iii) Realign the current MUP from Moodie Drive to the east of the Station, as required to accommodate the Station and the realignment of Corkstown Road. Any MUP relocation shall be no closer to Stillwater Creek. Reinstall the existing PXO, as per the original conditions prior to commencement of the works. Modify the grading of the MUP at the Moodie intersection to eliminate ponding on the MUP. The existing MUP south of Corkstown Road and east of Moodie Station shall remain in its current position and no realignments of this portion shall be permitted;
 - (iv) DB Co shall provide two PPUDOs accessed from Corkstown Road: one west of the Station, and one east of the Station entry. Each PPUDO shall be located as close as possible to the Station entry. Should the PPUDO be located on the north side of Corkstown Road, provide a crossing at the PPUDO and Corkstown Road. DB Co shall complete a traffic study to finalize the configuration and review with the City with respect to the type of controlled crossing device to be implemented (pedestrian signal, full traffic signal, or PXO Type B, C or D). DB Co shall implement the type of controlled crossing device selected by the City.
 - (v) Provide a secured perimeter enclosing the LRT and BRT Platform, with lockable gates located between the bus Platform and the LRT Platform.
 - (vi) There shall be a 2.4m sidewalk from Corkstown Road to the Station entry plaza, connecting to the existing sidewalk, and offset from the MUP with a landscape median.
 - (vii) Extend a MUP from the existing sidewalk along the north side of Corkstown Road, as required to provide a continuous connection between the existing MUP south of Corkstown Road to Moodie Drive. The MUP shall be lit.
 - (viii) Provide a pedestrian connection between the PPUDOs and the Station entry.
- (q) Tunney's Pasture
- (i) DB Co shall increase the size of the Existing Confederation Line Station plaza to accommodate the modifications to the bus layby area, west of the Station.
 - (ii) DB shall provide a secured fence perimeter around the bus staging area and the entrance to the LRT Station to create one Fare Paid Zone, with an Emergency access at the northeast corner to Yarrow Drive.
 - (iii) The Site design includes the Streetscape, Station plaza and the Bus Loop Green Space, as per Appendix N, Tunney's Pasture Concept Reference Plan. DB Co

shall be responsible to finalize the design, and submit drawings, as per Schedule 10 – review Procedure, for the landscape.

(iv) DB Co shall provide the following elements for the design:

A. Tree Planting:

- i. Provide a soil trench a minimum of 3.0m in width for trees installed in narrow planting beds;
- ii. All trenches and boulevard planters shall contain a breakthrough to catch basin in a series of 4 trees; and,
- iii. Include 150mm drainage tiles with filter sock, encompassed in 20mm washed clear stone, enclosed in Class 1 non-woven geotextile.

B. Tree Planting in Paving:

- i. Trees shall provide shade to seating zones during the summer and shall not obstruct key sightlines and access routes;
- ii. Trees planted in hard surface pavements be installed with structural soil and shall include tree grates to protect tree roots in the walking surface; and,
- iii. Irrigation shall be provided for the trees in the structural cells.

C. Plant Material Sizes:

Plant Material	Spacing	Size
Deciduous trees, large	7.5 m on centre, with 10m on centre adjacent to streets	70-90 mm caliper *
Shrubs	600-900 mm on centre	60 cm ht. / 3 gal.
Grasses & Groundcovers and Vines	300 mm on centre	1 gal. pot
* No more than 30% of trees shall be at the lowest size in the specified range.		

D. Concrete unit pavers:

- i. Concrete unit pavers shall accommodate maintenance and Emergency vehicle access;

- ii. Concrete unit pavers shall be a minimum 100mm thick and shall be laid over a concrete base; and,
- iii. Concrete unit pavers shall be rectangular with a length at least three times the width, and a minimum of two contrasting shades of grey.

E. Benches

- i. Curved benches shall be provided and shall be 450mm high x 500mm wide, typical. Benches shall be integrated into the planting beds adjacent to provide curved, concave seating spaces beyond the main sidewalk or plaza spaces;
- ii. Bench base shall be cast-in-place concrete with integral colour pigment to achieve a consistent mid-grey colour and include full depth footings;
- iii. Wood seating shall be provided over concrete bench base integrated into the overall design to achieve a visually cohesive effect:
 - 1 30% of seating shall also provide backrests and armrests to suit universal accessibility;
 - 2 wood shall be highly durable & low-maintenance (will not require re-coating after a one-time sealer application);
 - 3 ipe or approved equivalent;
 - 4 concealed galvanized steel connection brackets throughout;
 - 5 stainless steel fasteners throughout; and,
- iv. Skateboard deterrents shall be provided along benches, to be located maximum 1000mm on centre, maximum 450mm from corners. Shall be Grade 316 stainless steel, concealed fixing using mounting pin/drill & epoxy installation; Skatestoppers G-05-SS or approved equivalent.

F. Roadway Lighting

- i. Streetscape lighting shall be provided along Yarrow Driveway, Goldenrod Driveway and Tunney's Pasture Driveway;

- ii. Pole spacing shall be coordinated with tree plantings to achieve an equal spacing between trees, while meeting required illumination levels. Fixtures shall be full cut-off in accordance with dark-sky friendly best practices; and,
- iii. Poles shall have a minimal clean-lined aesthetic: slender vertical tapered pole, modern LED luminaires located close (maximum 150mm) to the pole and shall be premium light grey or mid-grey finish colour.

G. Pedestrian-scale lighting

- i. Pedestrian-scale lighting fixtures shall combine on street lighting poles with a separate davit arm facing the sidewalk. Modern LED luminaires located close (maximum 150mm) to the pole; pedestrian fixtures shall be consistent height between 3.5m and 5m. Lighting shall be full cut-off in accordance with dark-sky friendly best practices; and,
- ii. Where separate poles are required, light poles shall have a minimal clean-lined aesthetic, slender vertical tapered pole, modern LED luminaire located close (maximum 150mm) to the pole. Shall be consistent height between 3.5m and 5m. Shall have consistent spacing between 12m and 20m and shall be premium light grey or mid-grey finish colour.

H. Services

- i. Electrical and water services shall be provided from 101 Tunney's Pasture Driveway; and,
- ii. Sanitary services shall connect to the existing sewer on Yarrow Driveway, Goldenrod Driveway or Tunney's Pasture Driveway.

I. Streets: Goldenrod Driveway, Yarrow Driveway and Tunney's Pasture Driveway

- i. The paving shall match the adjacent paving for Station plaza or bus loop green space;
- ii. 1.5m high stainless steel, 200mm diameter bollards shall be installed throughout the south side of Yarrow Drive;
- iii. The following street trees, shall be planted framing the roads within the proposed plaza paving and sidewalks:

- 1 24 trees on the south side of Yarrow Drive; and,
 - 2 Six trees on the east side of Goldenrod Driveway;
 - iv. The following street trees shall be planted, framing the road, within the soft landscape treatment;
 - 1 Five trees on the west side of Tunney's Pasture Driveway.
 - v. Three benches, with a total 18m length, shall be installed to provide curved, concave seating spaces beyond the main sidewalk; and,
 - vi. The streets shall be lit.
- J. Station Plaza
- i. The Station plaza shall occupy the east half of the site, bordered by the bus loop, bus loop green space, Yarrow Driveway and Tunney's Pasture Driveway;
 - ii. There shall be 75% paving and 25% planting beds;
 - iii. Benches:
 - 1 DB Co shall provide 13 curved benches, totalling 55m in length. A minimum of nine benches shall be integrated into the three Station plaza sodded planting beds and provide curved, concave seating spaces, with three benches facing the central water feature. A minimum of four free-standing benches shall be provided in the east half of the plaza.
 - iv. Planting Beds:
 - 1 DB Co shall provide a total of four planting beds within the Station plaza. Planting beds shall be organically shaped, with rounded corners and sides;
 - 2 All planting beds shall be defined by continuous, 200mm wide flush concrete curbs;
 - 3 Three sodded planting beds shall be provided west of the main building entrance and configured to provide visual interest, convenient pedestrian access, and a range of places to sit in sun or in shade;

- 4 Grading within sodded planting beds shall provide gently mounded landforms with min 10% and maximum 25% slope;
 - 5 Planting within the sodded planting beds shall include large deciduous shade trees as outlined below;
 - 6 One bioswale planting bed shall be provided at the west edge of the Station plaza. Planting bed shall extend along the bus loop fence line and provide visual screening from activities within the bus loop;
 - 7 Grading within bioswale planting bed shall provide gently sloping swale with a maximum 8% slope.
 - 8 Planting within the bioswale planting bed shall be a mix of deciduous trees, deciduous and coniferous shrubs, ornamental grasses, perennials, and ground covers that provide variation, texture and visual interest to the site through all seasons. Plants shall be non-invasive species that are drought-tolerant, salt tolerant and low maintenance.
- v. Tree Planting within the plaza paving
- 1 DB Co shall provide a minimum of 38 large deciduous trees within the Station plaza; and,
 - 2 Large deciduous trees within the Station plaza shall be planted on a skewed 7.5m grid with one axis parallel to Yarrow Driveway and one axis perpendicular to the Station building face. Grid shall be continuous over entire plaza, including paved areas and planting beds.
- vi. Lighting
- 1 Pedestrian lights shall be aligned with the tree planting grid axes and coordinated to achieve an equal spacing between the trees, and maintaining required illumination levels;
 - 2 Feature/accent lighting shall be provided to within sodded planting beds to accentuate seating area; Continuous LED lighting shall be integrated into benches;
 - 3 Up-lighting shall be integrated into the tree grates and planting beds to illuminate large deciduous trees in Station plaza; and,

- 4 Two light sources per tree shall be provided.
- vii. Electrical
- 1 A minimum of three power sources shall be provided within the Station plaza for outdoor programming;
 - 2 Each power source shall provide 200 amp electrical service with eight outlets;
 - 3 Power sources shall have stainless steel enclosures, and shall be fully integrated into the landscape design;
 - 4 The assembly shall be able to withstand normal water-condensation and other environmental influences; and,
 - 5 Exposed plastic receptacles shall not be permitted.
- K. Bus Loop Green Space:
- i. Paving
 - 1 The paving shall be cast in place concrete, with no tooled margins or stamped finish, and designed to accommodate service and Emergency vehicle access, or as indicated below;
 - 2 A vehicular access shall be provided at the east edge of the bus loop green space, min 7m wide connecting the bus Loop to Yarrow Driveway. The concrete paving shall be able to accommodate heavyweight vehicular traffic;
 - 3 A continuous central 2,4m wide pathway shall be provided. The pathway shall have meandering curves with a mid-point connection to Yarrow Driveway and diagonal connections to the northwest and southwest corners of the park at Goldenrod Driveway. The central pathway shall increase in width to 4m minimum at the intersection of the main pathway and mid-point connection.
 - ii. Tree Planting
 - 1 A minimum of 23 large deciduous trees shall be planted within the bus loop green space.

- 2 Large deciduous trees within the greenspace north of bus loop shall be planted on a skewed 7.5m grid with one axis parallel to Yarrow Driveway and one axis perpendicular to the Station building face. Grid shall be continuous throughout the bus loop green space, including raised planters, planting beds and central pathway.

iii. Planting Beds

- 1 A total of four planting beds shall be provided within the bus loop green space. Planting beds shall be organically shaped, with rounded corners and sides.
- 2 All planting beds shall be defined by continuous flush 200mm wide concrete curbs.
- 3 Three sodded planting beds shall be provided north of the central pathway.
- 4 Grading within sodded planting beds shall provide gently mounded landforms with min 10% and maximum 25% slope.
- 5 Planting within the sodded planting beds shall include large deciduous shade trees as outlined below.

iv. Bioswale

- 1 One bioswale planting bed shall be provided along the south side of the pathway. The planter shall be continuous between Goldenrod Driveway and the Station plaza, and extend to the south edge of the bus loop green space.
- 2 Grading within bioswale planting bed shall provide a gently sloping swale with a maximum 8% slope.
- 3 Planting within the bioswale planting bed shall be a mix of deciduous trees, deciduous and coniferous shrubs, ornamental grasses, perennials, and ground covers that provide variation, texture and visual interest to the site through all seasons. Plants shall be non-invasive species that are drought-tolerant, salt tolerant and low maintenance.

v. Lighting

- 1 Pedestrian lights shall be located along the main central pathway.
- 2 Pole spacing shall be coordinated with tree plantings to achieve an equal spacing between trees, while meeting required illumination levels.

(r) Moodie LMSF

- (i) DB Co shall develop a site plan for the LMSF with the following parameters:
 - A. Provide a 3m wide tree/shrub hedgerow, with a minimum of 70% trees, as a buffer between Corkstown Road and a minimum of 60% of the overall length of the facility and the alignment;
 - B. Provide a fenced perimeter around the facility to control access to the facility and meet the MTO safety requirements for Highway 417. The existing fence at the west end of the perimeter shall be maintained or replaces in its current location.
 - C. Provide a lit sidewalk connection from Corkstown Road to the main entrance to the Administration Building;
 - D. Provide trees along the sidewalks within the LMSF to provide pedestrian comfort and safety; and,
 - E. Provide accent planting at the main entrance to the Administration Building.

4.2 Station Elements

- (a) DB Co shall provide the minimum quantities of following elements for each Station:

Station	PPUDO parking spaces	Total Bicycle Parking Spaces	Current Bicycle Parking	Accessible Benches	Waste Receptacles
Montreal	0	40	-	4	2
Jeanne d'Arc	0	20	12	0	2
Orléans Station	0	20	-	0	2
Place d'Orléans	3	40	28	0	2
Trim	6	60	12	7	2
Westboro	6	40	12	4	3

Dominion	3	60	48	3	1
Cleary	6	20	-	1	1
New Orchard	2	20	-	4	2
Lincoln Fields	9	60	36	4	4
Iris	6	40	12	2	4
Baseline	0	60	36	20	2
Queensview	6	20	-	3	2
Pinecrest	3	20	12	5	1
Bayshore	3	40	24	3	1
Moodie	4	30	-	4	2
Tunney's Pasture	0	40		10	8

4.3 Station Plantings

- (a) DB Co shall provide the minimum quantities of plant material for each Station:

Station	Deciduous Trees	Coniferous Trees	Deciduous Shrubs	Coniferous Shrubs
Montreal	17	0	0	0
Jeanne d'Arc	0	0	0	0
Orléans Station	0	0	0	0
Place d'Orléans	50	0	0	0
Trim	325	0	900	385
Westboro	5	0	260	100
Dominion	20	5	900	400
Cleary	0	0	0	0
New Orchard	20	0	100	200
Lincoln Fields	80	0	2000	1000
Iris	23	0	300	100
Baseline	131	0	500	300
Queensview	45	0	100	230
Pinecrest	58	0	500	135
Bayshore	33	0	2000	500
Moodie	305	100	1500	300
Tunney's	65	35	600	900

4.4 Corridor Specific Design Requirements

- (a) Confederation East – Blair to Sir George-Étienne Cartier Parkway

- (i) DB Co shall provide a MUP continuous along north side of OR174 from Blair Station easterly to Montreal Road/OR174 EB off-ramp on the north side of the OR174. Continue the MUP easterly over Green's Creek, and connect to the existing NCC Greenbelt Pathway E, west of Sir George Etienne Cartier Parkway. Db Co shall design and construct the MUP to be limited to the Lands, as described in Schedule 20 – Lands.
- (ii) DB Co shall provide MUP crossing of Green's Creek.
- (b) Confederation East - Sir George-Étienne Cartier Parkway to Jeanne d'Arc Boulevard
 - (i) No additional Connectivity requirements.
- (c) Confederation East - Jeanne d'Arc Boulevard to Trim Road
 - (i) DB Co shall provide 3.0m wide MUP continuous along the south side of OR174, from the north end of St. Pierre Street, easterly to Champlain Street and connecting to Place d'Orléans Drive, and south to Centrum Boulevard, including any Culverts required to maintain existing drainage.
- (d) Place d'Orléans Station
 - (i) DB Co shall add a crossride at Champlain Street on the north side of Place d'Orléans Drive to the existing signalized intersection.
 - (ii) DB Co shall widen existing footpath to the north of the Station between parking lot and Bilberry Drive to a 3m wide MUP and reconfigure parking lot to allow MUP access. Install collapsible bollards at MUP/parking lot interface to control vehicular movement.
 - (iii) DB Co shall widen existing pathway between Alpine Street and Champlain Street to 3m wide MUP and provide sufficient lighting to City of Ottawa standards.
 - (iv) DB Co shall add a crossride across Champlain Street linking Alpine Street MUP to Park and Ride to the north leg of the existing signalized intersection of Champlain Street and the OR174 WB off ramp.
- (e) Trim Station
 - (i) There shall be a MUP on the realigned Trim Road, connecting from the existing MUP at Dairy Drive, to the existing MUP on the north side of Jeanne d'Arc Boulevard, west of the existing Trim Road. The MUP shall be located on the west side of the realigned Trim Road, and the south side of Inlet Private, with crosswalks/crossrides at Trim/Jean d'Arc Boulevard.

- (ii) DB Co shall retain the two MUP connections from the existing MUPs to Cardinal Creek community, to the Station entry plaza and through to the Trim Road/OR174 intersection. The MUP connection to the north, shall cross at the OR174/Realigned Trim Road intersection, and the southern MUP shall cross the Roadway at the signalized intersection to the east access to the Park and Ride with a crosswalk/crossride.
- (f) Workman/Scott Street Bus Detour
 - (i) DB Co shall reinstate the Site, from Churchill Avenue to the SJAM, with the following:
 - A. Provide a continuous MUP from Churchill Avenue/Scott Street intersection to the Dominion Station plaza;
 - B. The centreline of the MUP shall be offset a minimum of 9m from the south abutment of the Roosevelt pedestrian bridge;
 - C. Provide a 100mm conduit, capped and sealed at each end, terminated at a hand hole, with a pull wire, on the south side of the MUP throughout the corridor to accommodate future City lighting requirements;
 - D. Provide and install plant material as per Appendix F for all City Lands. Appendix A, shall govern for all NCC lands;
 - E. Provide topsoil and seed to all areas disturbed by the construction activities, to City of Ottawa standards;
 - F. Provide a 1.2m high powder coated black fence, with vertical pickets, adjacent to the existing interlocking pathway leading to the entrance to 2100 Scott Street; and,
 - G. Reinstate the pathway connection between the interlocking pathway and the MUP.
 - (ii) DB Co shall protect the existing spruce trees immediately north of [REDACTED] wherever feasible. The Tree Mitigation Plan shall indicate the location of these trees, the BRT detours, and the limits of grading for approval, prior to commencement of Work.
- (g) Churchill Overpass
 - (i) DB Co shall design and construct the pathways, and provide a new MUP and connections within the SJAM Parkway lands to integrate the pathways with the proposed underpass, including the following:

- A. Provide a MUP from the north end of Churchill to the MUP and pathway on the north side of the SJAM Parkway, adjacent to the Ottawa River;
- B. The minimal clear width of the Structure shall be 5m;
- C. Modify the access point through the perimeter fence with the removal of one fence panel, and new termination posts on either side;
- D. Provide culvert(s) as required to provide a drainage swale on the west side of the proposed MUP to the Ottawa River;
- E. Realign the MUP on the north side of the SJAM Parkway to maintain the original elevations;
- F. Provide “Y” intersections for the MUP connections;
- G. Maintain the location of the existing pathway along the Ottawa River shoreline;
- H. Realign the pathway on the south side of the SJAM Parkway to minimize the impacts on the adjacent woodlots, and retain the original elevations;
- I. Upon the completion of the underpass, remove all the existing temporary works, including granular bases, scarify the sub-grade a minimum of 150mm, and regrade to original contours;
- J. Provide side slopes with an average of 6:1 for the MUP, and 4:1 for the drainage swale;
- K. Provide topsoil and seed to all areas disturbed by the construction activities, to City of Ottawa standards; and,
- L. The overall width of the pedestrian underpass shall be 5m, as per the NCC design drawings, with an exemption for the 0.5m offset from the MUP to the structural wall permitted.

(h) SJAM Parkway

- (i) The Site design including pathways, roadway crossings, grading, planting, seeding, and specifications have been developed by the NCC for SJAM Parkway and Rochester Fields. These include:
 - A. Appendix A: Landscape Plans and Details for SJAM, including Dominion at-grade crossing;
 - B. Appendix B: Landscape Specifications;

- C. Appendix C: Rochester Fields at-grade crossing, planting and grading; and
 - D. Appendix D: Rochester Fields Pedestrian Crossing Landscape.
- (ii) DB Co shall be responsible to finalize the design developed by the NCC and submit drawings as per Schedule 10 – Review Procedure, for the landscape including:
- A. Final grading to integrate the realigned SJAM Parkway with the parkway setting of the corridor;
 - B. Proposed asphalt pathway on the south side of the SJAM Parkway, from Woodroffe Avenue to Atlantis, including linkages to the community to the south, pathways under the underpass and connections to the existing pathway on the north side of the SJAM Parkway;
 - C. Supply and installation of the park furniture, including concrete bases, modifications to perimeter fence on south property line, line painting, signage and miscellaneous Site works to finalize the landscape on the south side of the SJAM Parkway and MUP connections to the existing MUP north;
 - D. Grading of Rochester Fields to accommodate the proposed pathway and crosswalk leading to the Ottawa River Promenade for the future development by the NCC. This shall include the granular bases for the pathway only, no pavers. Refer to Appendix A of this Part 6;
 - E. Final Site works for the pedestrian crossing at Rochester Fields and Dominion Station including the pavers, bollards, TWSI, line painting, plant material and miscellaneous works. Refer to Appendix C and D of this Part 6;
 - F. Contour grading, soil preparation, topsoil and seeding for the development of Rochester Fields. The berms identified adjacent to the Cleary Station Fan Plant shall be deleted, and the overall grading requirement for the SJAM shall be completed, as per Clause 4.4(h)(iii)A of this Part 6. Refer to Appendix A, of this Part 6;
 - G. Soil preparation, topsoil, planting bed preparation, installation of all plant material, within the median, south of the SJAM Parkway, including the two year warranty and maintenance. Refer to Appendix F of this Part 6 for the site works south of the NCC lands at Dominion Station;
 - H. Soil preparation, growing media, installation of plant material and seed mixes for the bioswales between the SJAM Parkway lanes, including the establishment, maintenance and warranty;

- I. Fine grading of all disturbed areas, soil preparation, topsoil, seeding, establishment, maintenance and warranty of the grass and meadow mixes.
- (iii) In addition to design drawings in Appendices A, C and D of this Part 6, the following design parameters shall be met during the design:
- A. Site Grading
 - i. The gradient of the side slopes from the SJAM Parkway to the existing lands shall be a minimum of 6:1, and provide an even transition between the slope and the original grade.
 - ii. Side slopes of 3:1 from the SJAM Parkway to the existing lands shall be permitted in locations within 9m of existing trees to be protected. A 0.6m flat shoulder at the back of curb shall be provided prior to the commencement of the side slope.
 - iii. The grade transition between the tree protection locations and the general transition grading shall occur over a minimum of 15m.
 - iv. The pedestrian crossings shall meet and match the grades developed for the realigned SJAM Parkway.
 - v. The original drainage pattern of the SJAM lands south of the Parkway shall be maintained after the completion of the landscape works. DB Co shall install the proposed pathway at an elevation to provide overland drainage to the existing ditches and swales.
 - vi. The planting bed areas shall be excavated to the depths as required for the bed preparation. Raised beds for the plant material shall not be permitted.
 - vii. The overall width of the pedestrian underpass shall be 5m, as per the NCC design drawings, with an exemption for the 0.5m offset from the MUP to the structural wall permitted.
 - viii. The contouring grading for the proposed screening of the original fan plant adjacent to Cleary Station is required only if the fan plant is constructed within the SJAM parkway lands. Should the fan plant not be installed, the contour grading shall not be installed, and the grading criteria identified in this Article shall apply.
 - B. Reinstatement of all lands to the north of the realigned SJAM Parkway shall be completed with topsoil and City of Ottawa seed mix.

- C. Where there is a requirement for a depressed curb for the major storms, DB Co shall install a reinforced geogrid between the curb and the original grade. The width of the geogrid shall be no less than 5m and centred on the depressed curb location. This geogrid shall be of sufficient opening size to accommodate for the growth of turf.
 - D. Refer to Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria, for the SWM requirements for the spillways from the roadway to the bioswales.
 - E. Catchbasins within the bioswales shall be centred on a riverwashed stone area, with a minimum of width of 1m, and length of 2m, with a filter fabric separation to subgrade.
 - F. The concrete headwall of the bioswales shall be delineated with an identification marker for visibility during maintenance, and grass cutting operations.
 - G. The bioswales to the north and south of the SJAM Parkway shall be planted with a blend of grasses and forbes;
 - H. Plant material as per Appendix A of this Part 6, shall be utilized within the median; and,
 - I. The clear width for the underpass shall be a minimum of 5m.
- (i) Pinecrest Creek Corridor – Richmond Road to Highway 417
- (i) Lawn Avenue Interface
 - A. DB Co shall protect the existing large deciduous trees at the east property line, south of Richmond Road, during construction of the alignment;
 - B. DB Co shall provide a berm and planting on the east side of the alignment, as per Appendix G;
 - C. DB Co shall provide a root barrier protection on all the underground utilities through the Lawn Avenue Parkette to accommodate planting within 1m of the realigned utilities;
 - D. DB Co shall complete the landscape plan for the Lawn Avenue Parkette including:
 - i. Provide an entrance plaza at Edgeworth with approximately 85m² of interlocking paving, two benches, and framed along the south side with a low natural stone wall, approximately 9m in length, and

- encompassing both crosswalks at Edgeworth Avenue/Lawn Avenue intersection;
- ii. Provide an interlocking sidewalk connection to the existing interlocking sidewalk, south of the parkette;
 - iii. Provide a 3m wide MUP connecting from the north intersection crosswalk to the NCC pathway, west of Lawn Avenue;
 - iv. The entrance plaza shall meet and match the grades of the Roadway, and a culvert shall be installed as required with the overall grading modifications to Edgeworth Avenue;
 - v. Provide bollards along the interface of the entry plaza, sidewalk and MUP to control vehicular movements into the parkette. There shall be lockable bollards at the MUP entry to provide service vehicle access to the corridor;
 - vi. The parkette shall be graded to ensure that overland drainage is towards the west, while providing a level terrain for a play area;
 - vii. Complete the planting plan including 13 deciduous trees, 190 deciduous shrubs and 50 coniferous shrubs to provide a buffer between the parkette and the adjacent home owners; and,
 - viii. The reinstatement of the turf areas shall be sod only, seeding shall not be permitted.
- E. DB Co shall remove the existing community garden, shed and auxiliary items and reinstate upon completion of the Work.
- (ii) DB Co shall complete the following MUP works adjacent to Lincoln Fields Station:
- A. Relocate the existing MUP north of the Woodroffe Pedestrian Bridge to between the SJAM and the alignment, with a connection to the at-grade signalized intersection at the SJAM and the MUP to the west Station Plaza.
 - B. Extend the MUP on the west side of alignment, north to connect to Richmond Road, the MUP on the east side of the alignment and the existing NCC pathway.
 - C. Provide a MUP on the east side of the alignment, from the signalized intersection at Carling to Richmond Road, with connection to Lawn Avenue Parkette, and the MUP west of the alignment.

- D. Realign the MUP on the east side of alignment to provide a continuous 3m wide MUP connection from Woodroffe Pedestrian Bridge to Woodroffe High School and Rosewood Avenue. Extend MUP to connect with proposed crosswalk/Crossride at Station entrance on Carling Avenue.
 - E. Provide a MUP connection from the intersection of Severn/Connaught to the Pinecrest Creek Pathway;
 - F. Provide a MUP connection from Roman Avenue to Pinecrest Creek Pathway.
- (iii) DB Co shall complete the overland Drainage swale from Carling Avenue to Richmond Road:
- A. Remove the existing Transitway connection at the SJAM Parkway, and reinstate the Parkway alignment with a concrete curb.
 - B. Remove all the existing infrastructure of the Transitway, including granular bases, scarify the subgrade and regrade to develop a swale between the alignment and the SJAM Parkway. Utilize earth borrow to raise the grade as required for the final landscape treatment.
 - C. Scarify the subgrade a minimum of 300mm to eliminate any hardpan.
 - D. Remove and cap existing catchbasins within the Transitway alignment to accommodate the overland drainage channel that commences at Carling Avenue and extends northerly to the ORPP inlet.
 - E. Create an overland swale with a minimum of 5 meanders between the SJAM Parkway and the alignment, with a channel to convey the local drainage from a 100 year flood between Carling Avenue and Richmond Road, and as per Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria.
 - F. Commence the swale to the south of Carling Avenue, with a minimum of 20:1 side slopes.
 - G. North of Carling Avenue, vary the side slope between 3:1 and 8:1 to avoid existing manholes and structures identified to be protected. Maintain side slopes of 6:1 for 50% of the overall distance of the drainage swale on both sides. Refer to Appendix G.
- (iv) Connaught Fields

- A. DB Co shall provide two landforms to the north of the alignment to screen the alignment from the residential homes on Connaught Avenue with the following requirements:
- i. South landform:
 - 1 The landform shall be commencing at the north wall of the alignment, with a top of berm elevation of 71.00, and the drainage swale from the alignment at the eastern perimeter;
 - 2 Provide a berm with varying side slopes with a maximum of 3:1 at 30% of the berm;
 - 3 Provide surface drainage from the west to connect with the drainage swale from the pumping station on the south side of the alignment; and,
 - 4 Provide tree planting on the berm.
 - ii. North Landform:
 - 1 The landform shall be an extension of the berm located to the north of the MUP accessing Henley Street, with a top of berm elevation of 71.50;
 - 2 The toe of the berm shall be shaped to protect the existing trees to the north and west of the existing landform; and,
 - 3 There shall be a berm with 50% of the berm with side slopes of 3:1, 25% of the berm with 2:1 slopes to protect existing vegetation, and 25% of the slopes with 4:1 or greater.
- B. DB Co shall complete the overland Drainage:
- i. The overland drainage for the alignment shall drain to Pinecrest Creek, as per Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria.
 - ii. The side slopes shall be a minimum of 4:1, and shall extend to the adjacent features, such as the MUPs and alignment.
- C. DB Co shall provide MUP connections from Connaught at Severn Avenue, and connect to the Pinecrest Creek north/south MUP.

- (v) DB Co shall provide a MUP connection from Roman Avenue to the north-south MUP on the west side of the alignment. Utilize the BRT on-ramp location to reduce potential impacts to the adjacent naturalized landscape.
- (vi) Environmental Passages
 - A. DB Co shall meet the requirements of Schedule 17 for the connectivity of small mammals to either side of the alignment.
- (vii) DB Co shall complete the following restoration work:
 - A. Remove all the original Transitway roadway, granular bases, catch basins, and infrastructure after the decommissioning of the Transitway.
 - B. Remove the existing jersey barrier at the east side of the SJAM at Lincoln Fields Station, and reinstate with a new concrete curb to delineate the roadway surface of the SJAM.
 - C. Remove the ramps from the 417 to the BRT at Queensway Station, and regrade to eliminate the surface contouring for the drainage and ramp configuration. Reshape the lands to meet and match the existing topography beyond the drainage swale, with the exception of rock cut locations. Regrade the areas within the rock cut to provide one central drainage swale, with a minimum of 6:1 side slopes.
 - D. Scarify the subgrade a minimum of 300mm to eliminate any hardpan.
 - E. Regrade all the disturbed lands to reinstate overland drainage to the Pinecrest Creek, and eliminate the landforms and shaping of the Transitway corridor.
 - F. Reinstate the existing sports field south of the alignment to City standards.
 - G. With the exception to the above works, the Pinecrest Creek corridor lands disturbed by the construction activities, shall be reinstated with the following seed mix. Refer to Appendix B of this Part 6:
 - i. 65% low maintenance lawn mix.
 - ii. 30% indigo-ultra (the blend of polinisation and melliferes).
 - iii. 5% custom seed mix (Type 1 cool) as accent.
 - H. Remove all the original Transitway roadway, granular bases, catchbasins, and infrastructure after the decommissioning of the Transitway. Refer to

Schedule 15-2, Part 1, Clause 14.1(c)(i), for the Queensway Station removal requirements.

- (viii) At Parkhaven Avenue DB Co shall:
 - A. At the south end of Parkhaven Avenue, provide a MUP through the NCC lands westerly to the Hanlon Baseball Diamond. This MUP shall connect the pedestrian access to the diamond, and be of sufficient alignment to accommodate service vehicles.
 - B. Provide a service vehicle lockable gate, at the northwest corner of the outfield. Provide bollards to control unauthorized vehicles entering into the NCC property.

- (j) Pinecrest Creek Corridor Highway 417 to Baseline Station
 - (i) DB Co shall realign the MUP to the west side of the alignment south of Iris Street to Baseline Station to eliminate the at-grade crossing of the alignment;
 - (ii) At Iris Street DB Co shall:
 - A. Maintain the MUP on the west side of the alignment, under the Iris Street Bridge.
 - B. On the north side of Iris Street, provide a MUP connection from the signalized intersection, northerly to the NCC Pinecrest Creek Pathway.
 - C. Provide a MUP on the south side of Iris Street from the signalized intersection, at Iris Street, including on the Iris Street Bridge, to the Pinecrest Creek Pathway on the east side of the alignment to provide an uninterrupted trail connection.
 - D. Provide a depressed curb, and 3m wide MUP, extending a minimum of 9m from the curb, on the northeast quadrant of Iris and the alignment to provide service vehicle access. This access route shall have bollards to control unauthorized vehicles entering into the NCC property.
 - (iii) DB Co shall complete the following restoration:
 - A. With the exception to the above works, the Pinecrest Creek corridor lands disturbed by the construction activities, shall be graded to provide overland drainage and reinstated with the following seed mix. Refer to Appendix B of this Part 6:
 - i. 65% low maintenance lawn mix;

- ii. 30% indigo-ultra (the blend of polinisation and melliferes);
 - B. Remove all the original Transitway roadway, granular bases, catchbasins, and infrastructure after the decommissioning of the Transitway. Refer to Schedule 15-2, Part 1, Clause 14.1(c)(i), for the Queensway Station removal requirements.
 - C. Remove the ramps from Highway 417 to the Transitway at Queensway Station, and regrade to eliminate the surface contouring for the drainage and ramp configuration. Reshape the lands to meet and match the existing topography beyond the Drainage swale, with the exception of rock cut locations. Regrade the areas within the rock cut to provide one central Drainage swale, with a minimum of 6:1 side slopes.
 - D. Scarify the subgrade a minimum of 300mm to eliminate any hardpan.
 - E. Regrade all the disturbed lands to reinstate overland Drainage to Pinecrest Creek, and eliminate the landforms and shaping of the Transitway corridor.
- (k) Pinecrest Creek Realignment
- (i) For the low flow channel design requirements, review to Schedule 15-2, Part 2 – Drainage and Stormwater Management Design Criteria.
 - (ii) For the channel embankment between the low flow and 2-year flow, the embankment shall consist of hydric soils or flood tolerant forbes and grasses, native to the Ottawa area.
 - (iii) For the channel embankments above the 2-year flows shall consist of a combination of reforestation trees, 70 % and shrubs, 30 %, as per Clause 2.8, of this Part 6. Within the 100 year flood elevation, all plant species shall be tolerant to the potential flooding. For the lands beyond the top of the embankment, install a minimum of 35 deciduous trees to provide a transition from the woodlot to Station.
 - (iv) On the outside meander of all sections of realigned Pinecrest Creek, the creek embankment up to the 2-year flow water level shall be constructed with a root wad retaining walls.
 - (v) Where required due to land and utility constraints, DB Co shall be permitted to construct an embankment to a maximum of 2:1. The extent of the 2:1 shall be minimized. Slope stabilization shall consist of natural materials as per Clause 2.8, of this Part 6.

- (vi) Provide tree planting to reinstate all woodlot removed for the implementation of the Pinecrest Creek alignment, temporary bus detours and Station construction.
- (vii) Environmental Passages
 - A. DB Co shall meet the requirements of Schedule 17 for the connectivity of small mammals to either side of the alignment.
- (l) Pinecrest Stormwater Management Facility
 - (i) DB Co shall finalize the Site design for the landscape works that have been developed for the Pinecrest Stormwater Management Facility, as per Schedule 15-2, Part 2, Appendix J.
 - (ii) DB Co shall be responsible to finalize the design development and complete the construction documents, as per Schedule 10 – Review Procedure, for the landscape including:
 - A. Final grading to integrate the stormwater facility within the adjacent landscape;
 - B. Development of the pathway systems;
 - C. Development of the pedestrian passages around and over the facility;
 - D. All final grading, topsoil and planting; and,
 - E. Miscellaneous items as per the design drawings to complete the site works.
 - (iii) DB Co shall salvage the tree stumps required for removal due to the works of this project and the alignment to be utilized as the root wads along the perimeter of the stormwater pond.
 - (iv) DB Co shall supply and install the hydric soil, to meet the following:
 - A. Provide the source of the hydric soil to the City for approval prior to commencement of work;
 - B. The hydric soil shall be handled a maximum of two times, including installation. The hydric soil may be stockpiled, with a maximum height of 3m, with no truck traffic on the stockpiles;
 - C. After installation, DB Co shall not move or operate equipment on the hydric soil. Should there be a requirement to move, the hydric soil shall be replaced with new material;

- D. There shall be a continuous goose barrier around the perimeter of the pond, at the limit of the bench on the pond side, to allow the hydric soils to establish. This barrier shall be installed prior to the commencement of the regeneration the soils, and maintained for the maintenance and warranty period for the adjacent plant material;
 - E. The goose barrier shall be removed without damaging the vegetation established on the bench surrounding the pond; and,
 - F. The plant material, seeding and hydric soil shall be installed in a timely manner to maximize the growing potential.
- (m) Richmond Road Complete Street
- (i) Refer to Schedule 15-2, Part 2, Clause 6.19 for the technical civil requirements for the development of Richmond Road Complete Street.
 - (ii) DB Co shall design and construct Richmond Road streetscape elements to create a high quality pedestrian environment on the north side of Richmond Road, with 2m segregated cycling facilities on both the north and south side of the Roadway, linking Cleary Station in the east with New Orchard Station to the west;
 - (iii) There shall be a cohesive design selection of materials and products for the streetscape elements, strengthening the visual connection between the two Stations;
 - (iv) The streetscape design shall be coordinated with the civil and Utility requirements, and develop specific details as required to provide the design within the constraints of the underground Utilities;
 - (v) DB Co shall coordinate with the City to identify all proposed developments to ensure the streetscape design reflects the current conditions as well as the proposed developments;
 - (vi) On-Street Parking
 - A. During the design development DB Co shall explore opportunities to include 20 on-street parking spaces on the north side of Richmond Road, in the form of parallel parking (parking pockets) in accordance with the City of Ottawa parking design standards and zoning. These will be established only where OC Transpo bus stops, SWM rain gardens, pedestrian, cycling and streetscape furniture, infrastructure and property access would not be compromised.
 - B. These locations shall be identified during the initial submission for review with the City prior to final integration within the roadway design.

- (vii) Pathways, Sidewalks and MUPs
- A. Provide a concrete sidewalk on the north side of Richmond Road from east of the SJAM Parkway overpass to east of Cleary Station with a standard width of 3m, unless constrained by property requirements or intersection requirements.
 - B. Provide a minimum 2m wide concrete sidewalk on the south side of Richmond Road from the SJAM Parkway overpass to the entrance of Byron Linear Park, at the Richardson Avenue ROW.
 - C. Meet and match the east end of the sidewalk with the concrete pathway for Byron Linear Park. Refer to Article 3 – Connectivity Requirements of this Part 6.
 - D. There shall be no sidewalk installed along the south side of Richmond Road adjacent to Byron Linear Park unless specifically outlined in this Article 4.
 - E. A minimum of 200mm delineator strip shall be provided between all segregated cycle facilities and directly adjacent pathways, sidewalks or MUPs.
 - F. Provide a separate material, texture and colour to distinguish the delineator strip between the sidewalk and the cycle track.
 - G. Provide interlocking paving in boulevards less than 600mm width and sod in boulevards greater than 600mm width. Pavers to be 200mm x 100mm, 100mm depth Sierra pavers, installed in a herringbone pattern, as manufactured by [REDACTED], or approved equal.
 - H. Provide interlocking paving installed at all bus stops, beyond the bus shelter pads, to distinguish from the concrete sidewalk. Interlock shall be installed in the sidewalk and within the adjacent boulevard. Pavers to match boulevard pavers.
 - I. Refer to Schedule 15-2, Part 2, Clause 6.19 for cycle track requirements and pavement markings.
 - J. Provide 3m concrete crosswalk for all pedestrian crossings of Richmond Road and the side streets.
 - K. Provide a MUP on the south side of Richmond Road from the SJAM Parkway overpass to the entrance of Byron Linear Park. Extend the MUP to Byron Avenue, at the Richardson Avenue ROW, and extend the EB cycle track to the MUP.

- L. Provide a concrete sidewalk on the south side of Richmond Road to connect each bus stop to the nearest intersection.
 - M. Rain gardens shall be installed adjacent to the bus stops, as delineated under Schedule 15-2, Part 2, Article 5 – Drainage and Stormwater Management Design Criteria. Framing the rain garden at each end, shall be a 450mm height, 1.2m long seating height wall. The wall shall be centred on the rain garden to articulate the limits of the garden for pedestrians and cyclists. Each corner shall have a 314 grade stainless steel angle iron anchored in the wall to protect the wall from maintenance equipment and shadow lines, detailing to enhance the visual appearance
- (viii) Richmond/Cleary Intersection;
- A. Provide concrete paving for both the concrete sidewalk and the cycle track at Cleary intersection;
 - B. Provide interlocking paving between the concrete crosswalks and concrete curb on the south side of Richmond Road to connect with the Cleary plaza within Byron Linear Park.
 - C. Provide a raised intersection, which includes the crosswalks and Crossrides;
 - D. Provide interlocking pavers within the intersection; and,
 - E. Provide a MUP connection from the northeast corner of the Richmond Road/Cleary Avenue intersection northerly to the NCC pathway system in the SJAM Parkway, including a connection to the MUP underpass. The MUP shall have a minimum offset of 2m from the existing Cleary Avenue sidewalk.
- (ix) Richmond/New Orchard Intersection
- A. Provide a raised intersection, which includes the crosswalks and Crossrides;
 - B. Provide concrete paving for both the concrete sidewalk and the cycle track at New Orchard intersection;
 - C. Provide interlocking pavers within the intersection;
 - D. Provide interlocking paving between the concrete crosswalks and concrete curb on the south side of Richmond Road to connect with the Byron Linear Park and the New Orchard Station entrance plaza; and,

- E. Extend the concrete sidewalk, from the east cross walk, to the bus stop, located adjacent to the New Orchard Station.
- (x) Richmond Road shall be lit to City Standards. DB Co shall provide the lighting design for review with the City, with the following:
 - A. Tall Mount lights, alternating sides; and,
 - B. Pedestrian Lights, north side only.
- (xi) Street Tree Planting
 - A. All trees planted within the paving for the sidewalks and cycle lanes shall be planted in structural soil cell modules, with a conduit system to accommodate supplemental watering.
 - B. Openings for the tree trunks shall have a raised perimeter to ensure the sidewalk drainage does not enter into the soil.
 - C. Provide a minimum of 20m³ of soil per tree. Where utilities or services request a reduction in the soil volume of the trees, the City shall be notified for review and direction.
 - D. Where feasible, group trees together to share structural soil cell volumes.
 - E. Provide a trace wire around the perimeter of the structural soil cells.
 - F. Provide 33 trees along the north side of Richmond Road, east of New Orchard Avenue.
 - G. West of New Orchard Avenue, provide additional 25 street trees, on the south side of the roadway, and 30 street trees on the north side of the roadway, behind the concrete sidewalk.
 - H. Remove a minimum of 900mm depth of asphalt and granulars at the Richardson Road closure, and backfill with earth burrow and 300 mm of topsoil to accommodate the trees and landscape treatment.
- (xii) Street Furniture
 - A. Site furnishings shall be placed between the sidewalk and cycle track on the north side of Richmond Road to maximize their use and not encumber pedestrian or cyclist movement.

- B. Where required, benches may be placed at back of sidewalk, or in seating clusters, as reviewed and approved. All furniture shall be fastened to concrete paving to reduce vandalism.
 - C. Provide the following street furniture along the north side of Richmond Road:
 - i. 50 Bicycle Racks;
 - ii. 21 Benches; and,
 - iii. 10 Recycling Units.
 - D. Provide the following street furniture on the south side of Richmond Road, between the SJAM Parkway and Richardson Avenue:
 - i. 13 Bicycle Racks;
 - ii. 2 Benches; and,
 - iii. 2 Recycling Units.
 - E. Provide bus shelters at each bus stop, as per OC Transpo standards.
 - F. Site furnishings shall meet the City standard for roadways.
- (n) Byron Linear Park
- (i) Approximately 17 m wide Byron Avenue Right-of-Way from the eastern edge of the Compton Avenue Right-of-Way to the western edge of the Woodroffe Avenue Right-of-Way (approximately 72 m) is existing road which is to be closed and converted to parkland. Approximately 15.6 m wide Byron Avenue Right-of-Way from the eastern edge of the Woodroffe Avenue Right-of-Way and the western edge of the Lockhart Avenue Right-of-Way (approximately 168 m) is also existing road which is to be closed and converted to parkland. In addition, Redwood Avenue, Hartleigh Avenue and Richardson Avenue through the Byron Linear Park shall be closed. As per Section 168.3.1 of the Environmental Protection Act and Ontario Regulation 153/04, DB Co Qualified Person shall, on behalf of the City of Ottawa, prepare the necessary documents and shall file for Record of Site Condition. Note that this will require, at a minimum, a Phase I ESA prepared in accordance with O. Reg. 153/04, and a plan of survey of the lands prepared by a licensed surveyor.
 - (ii) This Park underlines the City's commitment to the importance of the urban design excellence for the Richmond/Byron corridor (Richmond Road Complete Street, Byron Linear Park and Byron Avenue). This shall be a transformative landscape

that creates a unique landscape for the community, and acts as a catalyst for community building. DB Co shall develop a design that creates a sense of place which welcomes the local community, and provides opportunities for the passive recreation, seating, park, and community programming, and a visual buffer between the communities to the south of Byron and Richmond Road.

- (iii) The community consultation response reinforced the requirement for Byron Linear Park to provide an environmentally sensitive design. DB Co shall design Byron Linear Park to be environmentally sustainable, and shall include LID SWM principles, diversity of native and ornamental species to provide biodiversity for both flora and fauna, use of natural materials, reuse of materials for built elements, and other elements identified during the design developments. No invasive species shall be permitted. Wet ponds for SWM shall not be permitted.
- (iv) DB Co shall develop a design for Byron Linear Park that integrates the diverse elements of pathways, gathering nodes, trees, SWM, land forms, seating walls and benches, lighting, and miscellaneous site works to create a landscape tapestry which connects to Byron Avenue and Richmond Road.
- (v) DB Co shall incorporate the following design elements within the park:
 - A. Cleary plaza, between Richmond Road and Byron Avenue, from the east side of the east crosswalk, and extending westerly to the front entry of the Station. This plaza shall consist of 50% hard surfacing and 50% soft landscape, and be configured to allow park programming including 10 market stalls, 3m x 3m, with 3m walking surface along the front of the stalls;
 - B. The Cleary plaza shall be provided with one 38mm water supply, complete with shut off valve and three electrical outlets. The electrical outlets shall be stainless steel, weather proof to accommodate the exterior conditions;
 - C. The pedestrian sidewalks, connecting the crosswalks at Cleary intersection, through to Byron Avenue, shall be designed and constructed to include lighting;
 - D. Where the current land use changes from roadway and/or shoulders to Parkland, including Redwood Avenue, Hartleigh Avenue, Ancaster Avenue, Richardson Avenue and Byron Avenue use changes from roadway to Park, remove a minimum of 900mm of the original asphalt and granular base, scarify and backfill with Earth Borrow and topsoil to sustain the final landscape treatment. Granular bases shall be permitted to be retained where the hard surfacing is to remain, such as the cycling lanes along Richmond Road or Cleary plaza;

- E. New Orchard Station entry plaza shall be located west of the Station, and the park pathway shall extend on the north side of the Station to the entry plaza, and encompass the bus stop;
- F. A continuous 2.4m concrete pathway, meandering through the park, between New Orchard intersection and Cleary intersection, which connects Roadway intersections, pedestrian crossings, and bus stops;
- G. The concrete pathway shall be widened to a 3.0m asphalt MUP east between the Woodroffe Avenue intersection and Lockhart Avenue, and west between Woodroffe Avenue intersection and Compton Avenue;
- H. Provide two 38mm water supply lines, with a metered water chamber, and accessible drinking fountains, to be located within the Linear Park. The drinking fountains shall have a stainless steel basin, and be complimentary in design to the other park elements. One drinking fountain shall be installed west of Woodroffe Avenue, and one to the east. The exact location shall be determined and approved by the City during the design process;
- I. Pedestrian height lighting shall extend along the pathway throughout the park, and extend to the Roadway intersections;
- J. There shall be two ipe wood shade structures or trellises, with a minimum footprint of 6m x 9m integrated within the park, with one structure located near [REDACTED], and one structure located west of Woodroffe Avenue;
- K. There shall be a minimum of four gathering nodes within the park, excluding Cleary plaza and New Orchard plaza, along the pathway alignment, with a minimum size of 100m², and a maximum of 300m². Each gathering node shall have unique characteristics, which distinguishes the nodes including paving materials and patterns, walls, entry features, park elements, configuration, and lighting;
- L. A minimum of two of the nodes shall include an electrical outlet integrated into the site features;
- M. There shall be rain gardens designed and constructed in a natural configuration to accept the SWM requirements for the park only. Where the rain garden intersects with the pathway, a bridge over the rain garden shall be designed and constructed. There shall be a minimum of three bridges within the park. Galvanized or concrete culverts and rip rap side slopes shall not be permitted;

- N. There shall be a minimum of 18 low land forms to articulate the spaces and provide diversity of grades and contours. The land forms shall be a maximum of 1m in height, and have varying side slopes ranging from 3:1 to 10:1, with a minimum area of 100m² and the maximum of 1000m². The 3:1 slopes shall be placed inward towards the park. The land forms shall be balanced with the same overall area of open flat meadow areas to provide opportunity for recreational and community gathering opportunities;
 - O. The configuration of the land forms shall intersect with the pathway, creating opportunities for seating and viewing towards both Richmond Road and Byron Avenue at various locations throughout the Park;
 - P. Where the pathway intersects with the land forms, there shall be low seating height retaining walls. These walls shall be offset from the pathway by 600 mm, with the concrete paving extending to the base of the retaining wall. DB Co shall provide natural stone walls and finishes for review, and final selection by the City; and,
 - Q. DB Co shall install a bicycle repair station at the interface of the pathway and the entry plazas for both Cleary Station and New Orchard Station.
- (vi) Byron Linear Park shall provide a no net loss of greenspace from the original park to the final configuration and shall be a combination of park elements as described in Clause 4.4 (n) (v) of this Part 6. DB Co's design shall maintain the quantity of greenspace, based upon current turf areas, with the exception of the space required for the construction of the Cleary Station.
 - (vii) Byron Avenue, between Woodroffe Avenue and Lockhart Avenue, shall be converted from the existing roadway to the park, creating a gateway at the intersection of Richmond Road and Woodroffe Avenue.
 - (viii) A direct sidewalk connection from Allison Avenue to the PXO on Richmond Road shall be provided.
 - (ix) Park Planting
 - A. DB Co shall develop a planting palette and plan, that provides diversity of tree and shrub species to create seasonal interest and habitat throughout the year;
 - B. The deciduous trees shall provide the core element of the design, in a curvilinear patterning, providing the visual element that links the pathways, land forms and park elements, with Richmond Road and Byron Avenue;

- C. Deciduous shade trees shall be located to provide shade to the pathway and bench seating areas; and,
 - D. The planting plan shall be a range of deciduous and coniferous trees and shrubs, and plants to provide seasonal variety and colour and include the following:
 - i. 230 large deciduous trees;
 - ii. 80 coniferous trees;
 - iii. 70 small flowering deciduous trees;
 - iv. 1,000m² of shrubs; and,
 - v. Sufficient grasses, forbes and perennials for the rain gardens.
- (x) Park Furniture
- A. DB Co shall provide three park furniture alternatives for review, and final selection by the City, and based upon the following requirements:
 - i. 22 Benches to COADS; and,
 - ii. Seven Recycling Units with three streams.
 - B. Provide a minimum of one bench and one recycling unit in close proximity to each Roadway intersection abutting the Park; and,
 - C. DB Co shall not include play structures for children in the park furniture design.
 - D. All site furniture shall be suited for public use.
- (xi) DB Co shall complete the design and construction for [REDACTED] based upon the design drawing provided in Appendix M - [REDACTED] Parking Lot, of this Part 6, including the following:
- A. Layout and grading of the church parking lot and access;
 - B. Pedestrian sidewalks;
 - C. Landscape Plan;
 - D. Restoration of all disturbed areas; and,

- E. SWM. This drainage may be connected to the existing stormwater system within Byron Avenue.
- (o) Byron Avenue Modifications
- (i) DB Co shall reinstate Byron Avenue in accordance with the following:
 - A. A final travel width of 7m, commencing at the south side with the new concrete sidewalk/curb described in Clause 5.2 (f) of this Part 6;
 - B. All Roadway asphalt and granular bases, including the Roadway shoulders, shall be removed to a minimum of 900mm depth, and backfilled with Earth Borrow and topsoil to complete the final site design of the park beyond the final 7m Roadway width and on-street parking;
 - C. Curbs on both the north and south side of the Roadway;
 - D. West of Woodroffe Avenue, recessed on-street parking shall be provided on the north side of the roadway, and located between the hydro poles, with a total of 18 parking spaces, excluding the PPUDO. No on-street parking shall be permitted adjacent to Cleary Station;
 - E. On-street parking shall not be permitted:
 - i. between the hydro poles at Sherbourne intersection; and,
 - ii. on either side of Lockhart Avenue, at the north segment connecting Byron Avenue to Richmond Road.
 - F. A PPUDO, on the either side of Byron, adjacent to Cleary plaza, each with three parking spaces. The westbound PPUDO shall be located in close proximity to the Station Entry, and there shall be a sidewalk from the WB PPUDO to the Cleary plaza;
 - G. A PPUDO, on the north side of Byron, adjacent to the New Orchard Station plaza for two vehicle parking spaces;
 - H. Interlocking pavers shall be utilized for all the parking spaces;
 - I. LID SWM may be considered on the north side, at Lockhart, connecting with the LID SWM for the Park, upon review and approval by the City; and,
 - J. Roadway lighting shall meet the City standards.

- (ii) DB Co's design and construction of Byron Avenue corridor shall include the reinstatement of the 7m width of the impacted road pavement and as a minimum shall provide for an appropriate thickness of resurfacing pavement treatment so that the Byron Avenue's pavement will meet the requirements of Schedule 15-2, Part 2, Clause 6.10 – Pavement – Municipal Roads
- (p) Moodie Drive and Corkstown Road
 - (i) DB Co shall complete the following at Moodie Drive and Corkstown Road:
 - A. Provide a MUP connection from the existing TransCanada Trail south of Corkstown Road to the Corkstown/Moodie intersection on the north side of Corkstown Road;
 - B. Remove any portions of MUP that do not provide the continuous connection between the existing MUP east of the Station, and Moodie Drive;
 - C. Provide a crosswalk/crossride protected intersection at the Moodie/Corkstown intersection and extend the MUP to the existing TransCanada Trail;
 - D. Provide a lighted sidewalk on the north side of Corkstown, from the entrance to [REDACTED] to the pedestrian crossing/PPUDO at Moodie Station; and,
 - E. Provide a naturalized landscape along the corridor, extending across the Station and to the Moodie/Corkstown intersection.
 - (ii) DB Co shall complete the design and construction of the following on the west side of Moodie Drive, from the Corkstown Road intersection, southerly to the signalized intersection of the Highway 417 EB off-ramp;
 - A. A raised 2m width sidewalk, from the south side of Highway 417 WB on-ramp, southerly to the north side of Highway 417 EB off-ramp;
 - B. Realign the cycling lane to adjacent to the sidewalk, at the roadway elevation;
 - C. Paved shoulder north of the WB on-ramp to the Corkstown Road intersection; and,
 - D. Crosswalk/crossride at Highway 417 ramps, connecting to the facilities to the north and the south of the roadway.
- (q) Highway 417 - Highway Works

- (i) DB Co shall complete the Tree Compensation Plans for the Works identified in Schedule 15-2, Part 9 – Highway Works;
- (ii) In addition to the Tree Compensation requirements, DB Co shall reinstate the shrubs at an equal ratio: for each square metre of shrubs removed, reinstate with a square metre of shrubs. The shrub spacing in the planting beds shall have a maximum on centre spacing of 750mm;
- (iii) The plants shall be reinstated in approximately the same location within the corridor as those removed, while maintaining the MTO safety requirements;
- (iv) DB Co shall ensure a minimum of double the quantity of trees, and an equal area of shrubs, are reinstated for the plant material removed within an interchange;
- (v) The proposed planting shall be submitted in accordance with Schedule 10 – Review procedure, and shall reinforce the existing naturalized landscape of the Highway 417/Highway 416 interchange, commencing at the southwest quadrant of Richmond Road/Highway 417;
- (vi) Where, during the tree evaluation, trees greater than 500 mm diameter at breast height, or with environmental significance are identified, DB Co shall prove how the tree can be protected during construction, and develop compensation requirements, if removal is necessary;
- (vii) Where there is an existing watercourse, DB Co shall maintain a minimum of 10m offset from the top of the embankment. Should there be a requirement to reduce the construction offset, DB Co shall prove any encroachments and provide methodology for protection; and,
- (viii) Should there be a requirement for a SWM pond within MTO lands, DB Co shall include the following criteria in the design;
 - A. The pond shall be offset from the traffic safety zones;
 - B. The pond shall have varying side slopes with a blend of grasses and shrubs to naturalize the perimeter, and shall be able to withstand the varying water levels within the pond; and,
 - C. The maintenance requirements of the pond shall be integrated within overall design.

4.5 Corridor Planting

- (a) DB Co shall provide the minimum quantities of plant material for each Corridor Specific Section identified in this Article 4, in addition to the planting required within the SJAM

lands, the Pinecrest Creek realignment, the Richmond Road/Byron Park corridor and MTO Lands:

Location	Deciduous Trees	Conifer Trees	Reforestation	Deciduous Shrubs	Conifer Shrubs	Riparian Shrubs
Connaught Park	110	125		545	235	
Dominion/Scott	167	74		1900	600	
Lincoln Fields	175	140		300	130	
Churchill Underpass	21	11		-	-	
Woodroffe Stormwater Pond	285	50	2000	9000	500	22000
Moodie Drive and Corkstown Road	75	50	1260	1000	-	-

ARTICLE 5 SITE SPECIFIC TEMPORARY REQUIREMENTS

5.1 Station Specific Temporary Requirements

(a) Westboro Station

- (i) DB Co shall maintain pedestrian access from Lanark Avenue to Scott Street via the MUPs to the northeast and northwest of Westboro Station, at all times during construction.
- (ii) DB Co shall maintain safe pedestrian/cyclist crossings at Westboro Station along the north side of Scott Street throughout construction.

(b) Dominion Station

- (i) DB Co shall maintain the existing pedestrian connection for the existing or relocated Transitway from the community to the southwest of the Station throughout construction and Workman Avenue to the east. This may include the following:
 - A. Flagperson at construction access route west of the alignment to accommodate the pedestrian movement at grade;
 - B. Construction of the unpaid fare zone bridge adjacent the Station to allow public access to the Transitway Station;
- (ii) DB Co shall maintain existing signalized crossings of the Transitway and SJAM Parkway at all times to accommodate pedestrian, cyclists and Transitway detour until pedestrian bridge at Station is available for public use;
- (iii) DB Co shall remove the pedestrian connection from the southwest to the existing Dominion Transitway station, with a temporary relocation east to existing pedestrian overpass, temporary baily bridge for Transitway or Churchill Avenue, shall not be permitted.
- (iv) DB Co shall maintain pathway located along the south side of the Transitway from Roosevelt Avenue to the at-grade signalized crossing of the Transitway in service at all times;

(c) Cleary Station

- (i) DB Co shall provide a paved pathway connection between Cleary Avenue and the NCC trail to the west of the construction Site.

(d) Baseline Station

- (i) DB Co shall maintain the pedestrian and cycling connection between the pathway within the hydro corridor and Woodroffe Avenue.
- (ii) DB Co shall maintain the Transitway access to [REDACTED].
- (e) Queensway Station
 - (i) DB Co shall maintain the MUP access from Queensway Station to Roman Avenue at all times throughout construction.

5.2 Corridor Specific Temporary Requirements

- (a) SJAM Parkway
 - (i) During construction, the pathway on the south side of the SJAM shall be closed from Cleary Avenue to the signalized intersection of the Transitway. DB Co shall provide a temporary pathway connection between Cleary Avenue and the pathway west of the point of closure.
 - (ii) The temporary closure signage to occur at each end of the pathway closure and at each community connection from the south, including one at Woodroffe Avenue and the pathway.
 - (iii) The MUP on the north side of the SJAM Parkway shall remain operational throughout construction.
- (b) Lincoln Fields Station to Highway 417
 - (i) DB Co shall maintain the pathway connection on the south side of Carling Avenue to Rosewood Avenue and construct a MUP to Woodroffe High School.
 - (ii) DB Co shall retain the MUP on the west side of the Pinecrest Creek corridor, from Lincoln Fields under Highway 417 to Iris Street throughout construction. The MUP alignment may vary to accommodate the construction requirements of the alignment.
- (c) Pedestrian Bridge at Woodroffe High School
 - (i) The existing Pedestrian Bridge, and connecting MUPs shall be replaced due to the requirements of the alignment. Refer to Schedule 17 – Environmental Obligations for approval requirements.
 - (ii) The new Pedestrian Bridge and MUPs shall be constructed to connect to:
 - A. Existing pathway Sackville Connaught Avenue intersection;

- B. Woodroffe High School.
- (iii) The new Pedestrian Bridge shall be constructed within 50m of the existing alignment at the west end, and 80m of the east end of the alignment.
- (iv) The new Pedestrian Bridge and connections to the MUPs shall be constructed and in service prior to the decommissioning of the existing Pedestrian Bridge. All the adjacent Site works shall be completed including the installation of the MUP connections, to provide an uninterrupted service between the communities to the east and west of the Pinecrest Creek corridor.
- (v) Connections to be retained throughout construction include:
 - A. Pathway to Woodroffe High School; and,
 - B. MUP to Connaught Avenue.
- (d) Pinecrest Creek Corridor, Highway 417 to Baseline Station
 - (i) DB Co shall retain the MUP connection from Baseline Station, and the NCC Pinecrest Creek Pathway from Woodroffe Avenue, through to Lincoln Fields throughout construction. The alignment may vary to accommodate the construction requirements of the alignment. Refer to Article 3 – Connectivity Requirements, of this Part 6, for temporary construction requirements.
 - (ii) The existing alignment of the MUP, and the unsignalized crossing of the Transitway, south of Iris Station shall remain operational until the proposed MUP on the west side of the alignment, between Iris and Baseline, is complete and in service.
- (e) Bayshore Station
 - (i) DB Co shall be permitted to close the pathway on the north side of the transit corridor, between Holly Acres Drive and Bayshore Station as required to construct the alignment.
 - (ii) Temporary closure signage shall be placed at each end of the pathway closure, at Woodridge Avenue, and with additional signage through the parking lot to the MUP connection, and Bayshore Station, clearly delineating the alternate route.
- (f) Byron Avenue
 - (i) Prior to the closure of Byron Linear Park, DB Co shall install a raised 2m wide concrete sidewalk, with a curb, on the south side of Byron Avenue, throughout the total length of the park closure.

- (ii) On the east side of Woodroffe Avenue, DB Co shall:
 - A. Install the concrete sidewalk on the north side of the existing concrete curb to minimize any impacts on the existing landscape behind the curb; and,
 - B. Remove the existing concrete curb and relocate the existing catch basins as required to accommodate the new sidewalk.
- (iii) On the west side of Woodroffe Avenue, DB Co shall install a concrete sidewalk north of the existing swale. Refer to Schedule 15-2, Part 2, Clause 5.7 (n).
- (g) TransCanada Trail/Corkstown Road
 - (i) DB Co shall maintain the TransCanada Trail west of Holly Acres Drive throughout construction.