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MEMORANDUM

November 14, 2023 Reference No.: 19311.20.

TO: David Hunter / Senior Project Manager / City of Toronto
FROM: Chris Sidlar / Vice President, Transportation / LEA Consulting

RE: Broadview Avenue Intersection Reconfiguration Feasibility Study and Functional Design

1 INTRODUCTION

The following memo outlines the development of design alternatives for the *Broadview Avenue Intersection and Mid-block Reconfiguration Feasibility Study and Functional Design* (Broadview Avenue Intersection Reconfiguration Feasibility Study). Building on the recommendations set out in the *Port Lands and South of Eastern Transportation and Servicing Master Plan Environmental Assessment* (*TSMP EA*) (2017) and the expectation for there to be nearby development pressures, the City has set out to determine how the Broadview Avenue right-of-way can be redesigned between Queen Street East and Eastern Avenue to accommodate bikeways, improved pedestrian facilities, and facilitate streetcar service in the interim and ultimate condition once redevelopment occurs along the east side of Broadview Avenue. In addition, the city has set out to identify opportunities for vehicle lay-bys and on-street parking opportunities as part of the options to be considered for the Broadview Avenue Intersection Reconfiguration Feasibility Study.

1.1 BACKGROUND

The Port Lands and South of Eastern TSMP EA supports the evolution of Toronto's only active port and continued employment growth in the South of Eastern area over the next 30 to 50 years. The Port Lands and South of Eastern area contain a mix of industrial, employment and commercial uses, as well as vacant lands, with a small area of residential development located south of Eastern Avenue. To support the anticipated redevelopment and diversity of this area of the Port Lands, an urban structure is proposed that supports a mix of transportation infrastructure with a greater emphasis on transit, cycling and walking.

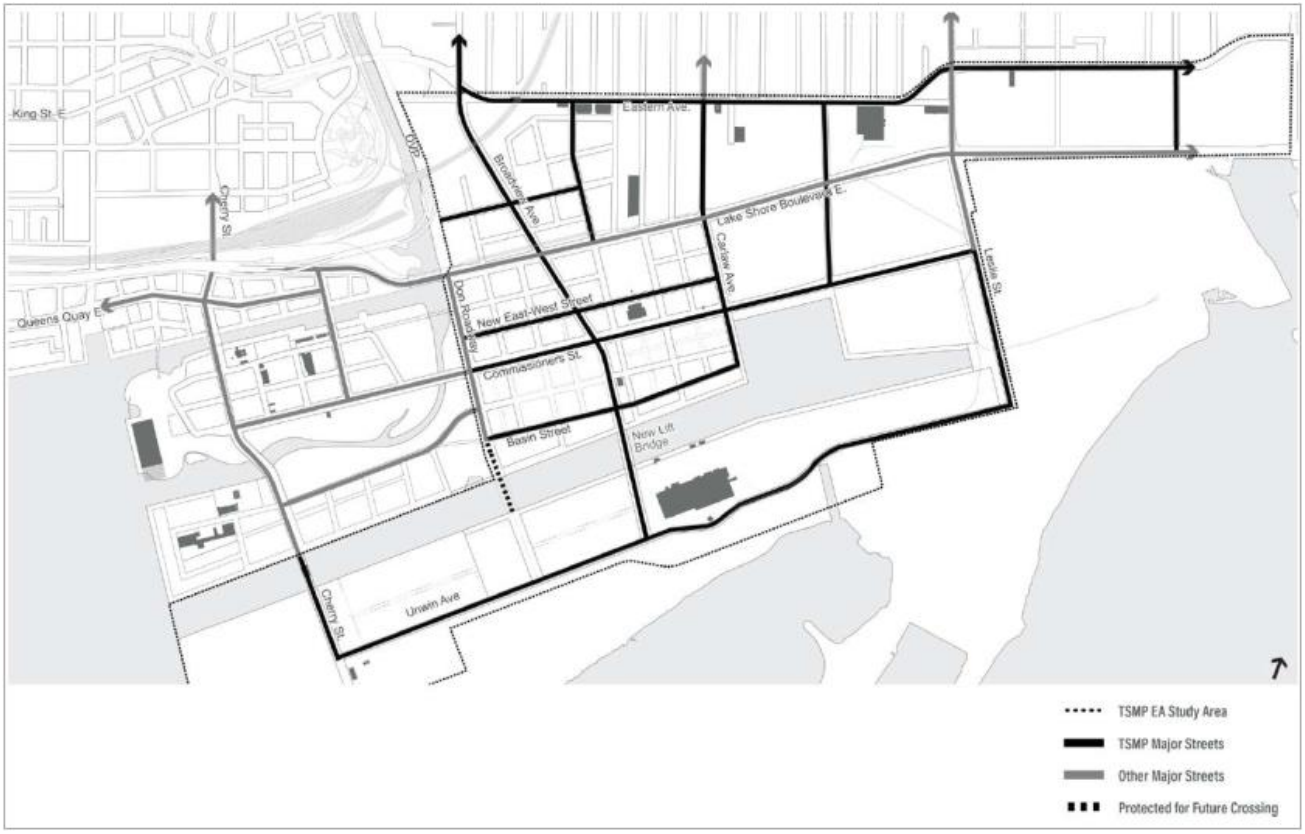
Broadview Avenue currently terminates at Eastern Avenue/Sunlight Park Road. There are plans to extend Broadview Avenue to the south and implement parts of the TSMP road network through the *Broadview Avenue Extension Environmental Assessment* (Broadview Extension EA), which builds upon the TSMP work to complete Phases 3 and 4 of the Municipal Class EA process for the extension of Broadview Avenue and a New East-West Street.

The Broadview Avenue Extension will extend from Eastern Avenue as a new street to Lake Shore Boulevard East, and the New East-West Street will extend through the East Harbour Development site from the Don

Roadway to Booth Avenue. The Broadview Avenue Extension and New East-West Street will be designed as complete streets that prioritize transit and active transportation.

The TSMP EA consists of a series of complete streets that provides enhanced connections and capacity, supports transit, and completes and expands the cycling network. The recommended transit network includes a streetcar in a dedicated right-of-way that will connect with streetcar service along Broadview Avenue north of Queen Street East. The mobility needs of pedestrians will be met with high quality pedestrian amenities (such as appropriately sized sidewalks for the function and character of each street) but also with a high degree of access to transit. All streets in the transportation network are proposed to have wide sidewalks on both sides of the street and include space to accommodate other pedestrian amenities and public realm elements, such as green infrastructure, trees, and landscaping. **Figure 1** shows the TSMP EA Street Network including the Broadview Avenue Extension south past Eastern Avenue.

Figure 1: TSMP EA Street Network

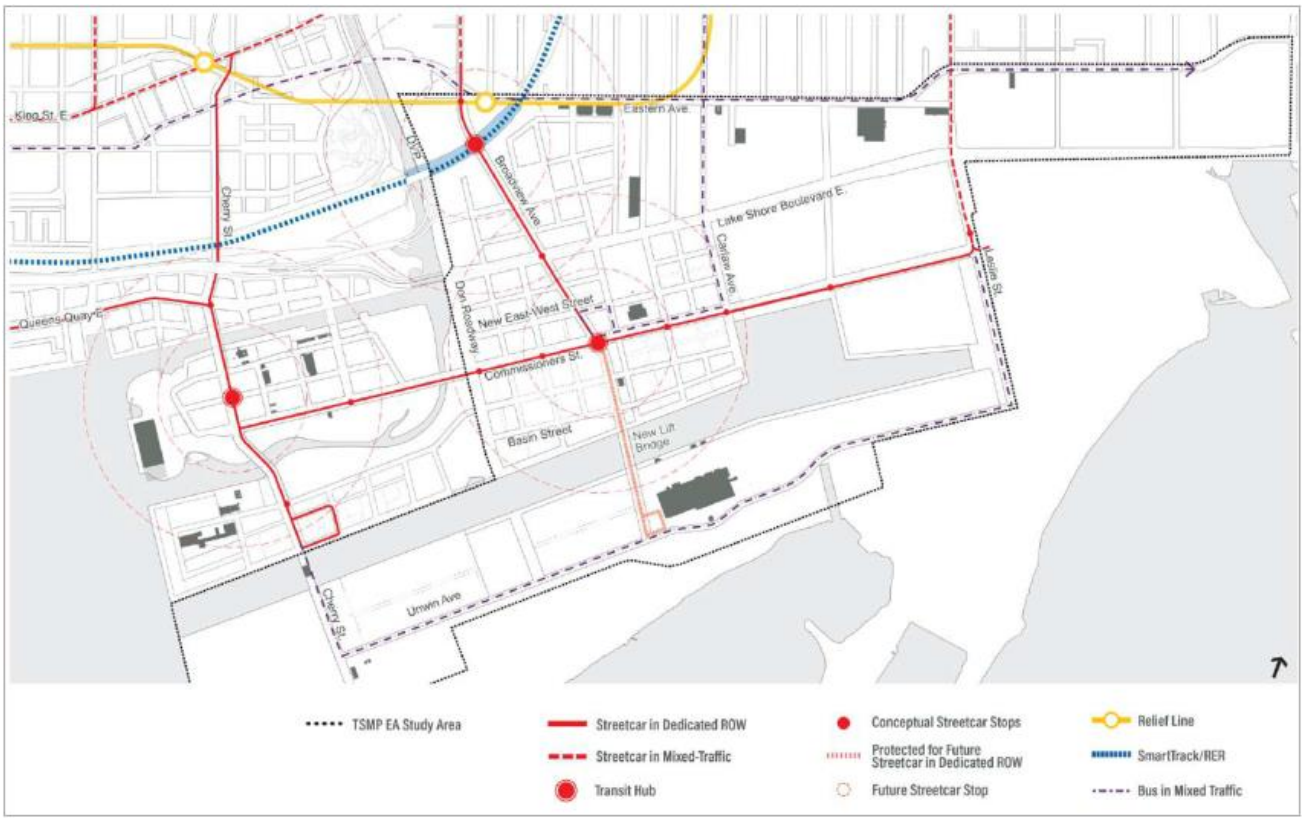


Source: Port Lands + South of Eastern Transportation and Servicing Master Plan EA, 2017

The recommended transit network incudes the existing, approved, and proposed transit projects. The TSMP EA transit network includes streetcar service in a dedicated right-of-way on Commissioners Street connecting to streetcar service proposed in the Lower Don Lands, as well as streetcar service in a dedicated right-of-way along the Broadview Avenue Extension. North of Eastern Avenue, future streetcar service will occur in mixed traffic and connect to existing streetcar service along Broadview Avenue north of Queen Street East, also in

mixed traffic. **Figure 2** shows the TSMP EA Transit Network including the extension of streetcar service south on Broadview Avenue past Eastern Avenue.

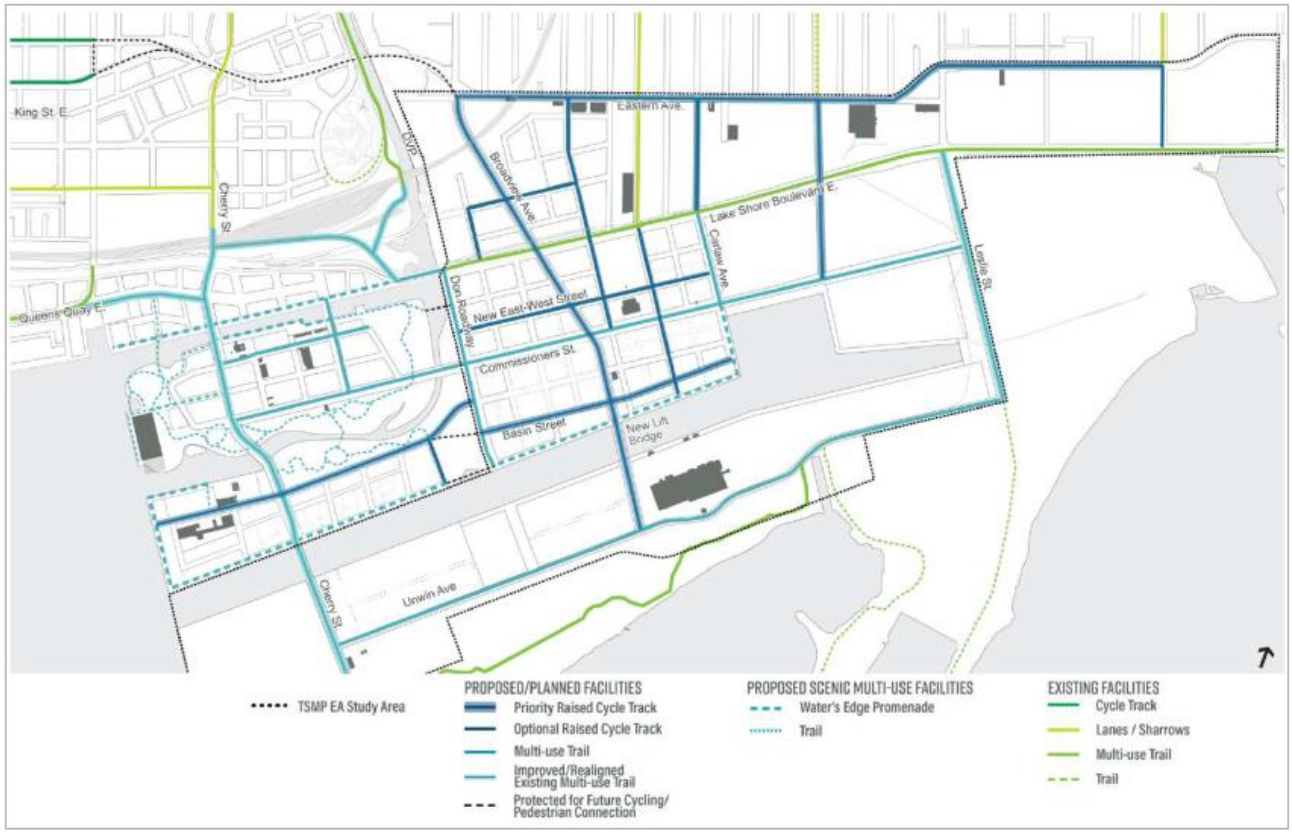
Figure 2: TSMP EA Transit Network



Source: Port Lands + South of Eastern Transportation and Servicing Master Plan EA. 2017

The TSMP EA proposes an extensive cycling network with a combination of existing and proposed (or improved/realigned) multi-use trails and cycle tracks. The combination of multi-use trails and cycle tracks will serve to meet the needs of both commuter and recreational cyclists. All of the major streets have been conceived to enable high-quality bikeways as an integral part of the public realm. While not shown on the TSMP EA Pedestrian and Cycling map, (**Figure 3**), the extension of bikeways along Broadview Avenue north of Eastern Avenue to Queen Street East was considered part of this functional design exercise.

Figure 3: TSMP EA Pedestrian and Cycling Network



Source: Port Lands + South of Eastern Transportation and Servicing Master Plan EA. 2017

1.2 MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (MCEA) AMENDMENT

On July 21, 2020, the Province passed Ontario Bill 197, *COVID-19 Economic Recovery Act*, 2020 (Bill 197) which made significant changes to the Class Environmental Assessment (EA) system in Ontario. The Class EA system sets out 10 simplified planning processes dedicated to groups of activities, with the aim to not require comprehensive, individual EAs. Bill 197 amends the *Environmental Assessment Act* (EAA) to replace the Class EA system in order to enable the creation of new streamlined regulations with consistent and standardized processes. In addition, the Municipal Environmental Assessment underwent a review in 2022-2023 to modernize/streamline the Municipal Class Environmental Assessment (MCEA) process. The Municipal Class EA sets out the procedure to be followed in order to plan municipal infrastructure projects, including roads, water, wastewater and transit projects, in a way that protects the environment.

The Municipal Class EA currently classifies projects into four categories:

- **Schedule A** projects generally include normal or emergency operational and maintenance activities;
- **Schedule A+** projects are similar to Schedule A projects, but the public must be advised prior to implementing A+ projects;

- **Schedule B** projects generally include improvements and minor expansion to existing facilities; and
- **Schedule C** projects generally includes the construction of new facilities and major expansions to existing facilities.

On June 6, 2019, as part of the *More Homes, More Choice Act*, the EAA was amended to exempt Class A and A+ projects from Municipal Class EA requirements, because they were considered to be low-impact projects with minimal environmental effects. Schedule B and C projects will continue to follow the Class EA process.

The amendments classify more projects as Schedule A and A+, which results in more projects being pre-approved and exempt from the requirements of the EAA. Schedule A+ projects are pre-approved activities and include cycle tracks/sidewalk installations, adding traffic control signals, and other maintenance and operational activities that require the public to be advised prior to project implementation in a manner that is appropriate.

In March of 2023, the Province of Ontario further updated the Municipal Class Environmental Assessment process. In doing so, it revised the classification of Schedule A and A+ projects to now be classified as exempt. While exempt, the guidance documentation recommended municipalities consider whether notification about the projects should be given or consultation carried out. Municipalities should also address any concerns raised with respect to the project, as appropriate, and would be responsible for obtaining any applicable permits, approvals, and authorization as part of implementation.

Based on the above, the project was originally classified as a Schedule A+ and followed a process with enhanced consultation in combination with Broadview Avenue Extension Schedule C MCEA public consultation program. Following the March 2023, projects the recommendations for the section of Broadview Avenue between Queen Street and Eastern Avenue can proceed to implementation as an exempt project.

2 PURPOSE OF THIS STUDY

Building on the recommendations set out in the Port Lands and South of Eastern TSMP, and the expectation of the redevelopment of 21 Broadview Avenue located at the northeast quadrant of Broadview Avenue and Eastern Avenue in the near-term, the main objective of this study is to conduct a feasibility study to determine how the Broadview Avenue right-of-way can be redesigned between Queen Street East and Eastern Avenue to accommodate bikeways, bringing the pedestrian facilities up to current standards.

In addition, this study was conducted to explore how the existing streetcar service on Broadview Avenue, north of Queen Street East, could be facilitated to make the connection south of Queen Street East to Eastern Avenue through the intersection before entering into the dedicated streetcar right-of-way south of Eastern Avenue, which is being designed as part of the Broadview Avenue Extension Environmental Assessment.

While identifying design requirements to extend the Broadview Avenue streetcar south of Queen Street East, this study also examined opportunities to improve the block of Broadview Avenue between Queen Street East

and Eastern Avenue to address deficiencies in the sidewalk space, and implement streetscaping and safer cycling connections. The results of this study tie directly into the Broadview Avenue Extension south of Eastern Avenue and will inform the design alternatives for the Broadview Avenue and Eastern Avenue intersection.

3 DESIGN CONSTRAINTS

Broadview Avenue between Eastern Avenue and Queen Street East includes two travel lanes of traffic, on-street parking on both the east and west sides of Broadview Avenue, and substandard sidewalk conditions with utility poles obstructing the sidewalk, thus not meeting AODA requirements of a 2.1 m wide sidewalk. In addition, there are no bikeways provided heading northbound or southbound along Broadview Avenue. During peak periods and in peak directions, the on-street parking is restricted and its use as a general purpose lane is permitted.

Design constraints were applied in a consistent manner to the alternatives that were developed to ensure the right-of-way reflects what will be possible to build in an “interim” and future “ultimate” condition. The interim condition is defined as redesigning Broadview Avenue within the existing 20.0 m right-of-way and providing, where feasible, options for parking, bikeways, buffer areas between parking lay-bys and bikeways, and providing sidewalks that meet AODA standards. It is also anticipated that redevelopment of 21 Broadview Avenue, the property in the northeast quadrant of the Broadview Avenue and Eastern Avenue intersection, will occur within the interim condition. This would provide the opportunity to widen the ROW by 3.0 m along the property’s frontage on the east side of Broadview Avenue on approach to Eastern Avenue.

The ultimate condition includes a consistent 3.0 m property taking along the entire east side segment of Broadview Avenue between Eastern Avenue and Queen Street East. This 3.0 m taking would result in the ultimate right-of-way increasing to 23.0 m in width, as property becomes available for redevelopment.

4 DESIGN CRITERIA

The following sections detail the design criteria identified for the development of alternatives for the interim and ultimate condition of Broadview Avenue between Eastern Avenue and Queen Street East.

4.1 INTERIM CONDITION

As part of the study design, the following design constraints were directed by the City of Toronto:

- The right-of-way of Broadway Avenue remains fixed at 20.0 m;
- Property on west side of Broadview Avenue is fixed and cannot be physically impacted;
- Active transportation must be incorporated into the right-of-way design; and,
- Pedestrian facilities must be designed to AODA specifics and incorporate a minimum 2.1m sidewalk width.

In order to facilitate a future streetcar service and provide active transportation facilities on both sides of the street, Broadview Avenue was designed with a design speed of 40 km/h. Two lanes of traffic would be maintained, with the streetcar service accommodated within mixed traffic. **Table 1** presents the design criteria for the interim condition.

Table 1: Design Criteria - Interim Condition

Design Criteria	Broadview Avenue Redesign
Design Speed	40 km/h
Posted Speed	50 km/h*
No. of Lanes and widths	In each direction: 2 TTC lanes @ 3.5 m + bike lane or cycle track
Provision for Pedestrians and Cyclists	Between 1.5 m and 1.8 m cycle tracks; 2.1 m AODA compliant sidewalks; between 0.6 to 0.8 m buffer space between cycle track and travel lane
Basic right-of-way (ROW)	20.0 m

**The existing speed limit is 50 km/h. It is recommended that the existing speed limit be reduced to match the design speed of 40 km/h at a minimum.*

4.2 ULTIMATE CONDITION

In addition to the interim condition, the City of Toronto wanted to understand what options could be considered for the ultimate right-of-way of approximately 23.0 m for this stretch of Broadview Avenue. The ultimate design includes a consistent 3.0 m property taking on the east side of Broadview Avenue for the full length of Broadview Avenue between Eastern Avenue and Queen Street East. Provision for pedestrians and cyclists would include AODA-compliant sidewalks and cycle tracks ranging in width from 1.5 m to 1.8 m, including a 0.6 m to 0.8 m buffer between the cycle track and travel lane.

Table 2: Design Criteria Ultimate Condition

Design Criteria	Broadview Avenue Redesign
Design Speed	40 km/h
Posted Speed	50 km/h*
No. of Lanes and widths	In each direction: 2 lanes, including a lane for TTC Streetcar @ 3.5 m + bike lane
Provision for Pedestrians and Cyclists	Between 1.5 m and 1.8 m cycle tracks; 2.1 m AODA compliant sidewalks; between 0.6 to 0.8 m buffer space between cycle track and travel lane
Basic right-of-way (ROW)	23.0 m
On-Street Parking	Provide short-term on-street parking

**The existing speed limit is 50 km/h. It is recommended that the existing speed limit be reduced to match the design speed of 40 km/h at a minimum.*

5 DESIGN ALTERNATIVES

Based on the identified design objectives, as well as the design proposed by the Broadview Avenue Extension EA for the new roadway south of Eastern Avenue, the following were assumed to be design constraints for all alternatives:

- A street centerline alignment consistent with the Broadview Avenue Extension alignment, connecting with the new roadway south of Eastern Avenue;
- One (1) shared vehicular and transit travel lane in each direction with a 3.5 m width;
- Cycle tracks between 1.5 m to 1.8 m in width; comprising of 1.5 m in width in constrained areas;
- A minimum buffer distance between the cycle tracks and roadway of 0.6 m;
- Pedestrian sidewalks with a minimum clearway of 2.1 m to meet AODA requirements.

The development of design alternatives considered locations where vehicle lay-bys could be incorporated into the design to provide some on-street parking opportunities on either side of Broadview Avenue. The design alternatives for the ultimate condition included identifying ways of providing both active transportation and pedestrian environments with or without vehicle lay-bys or parking opportunities within the 23.0 m wide ROW. The vehicle lay-bys were located away from existing driveways where there was a driveway present.

The following subsections describe the design alternatives developed for Broadview Avenue for both the interim 20.0 m ROW and ultimate 23.0 m ROW conditions. The mid-block design drawings are found in **Appendix A**.

5.1 INTERIM CONDITION

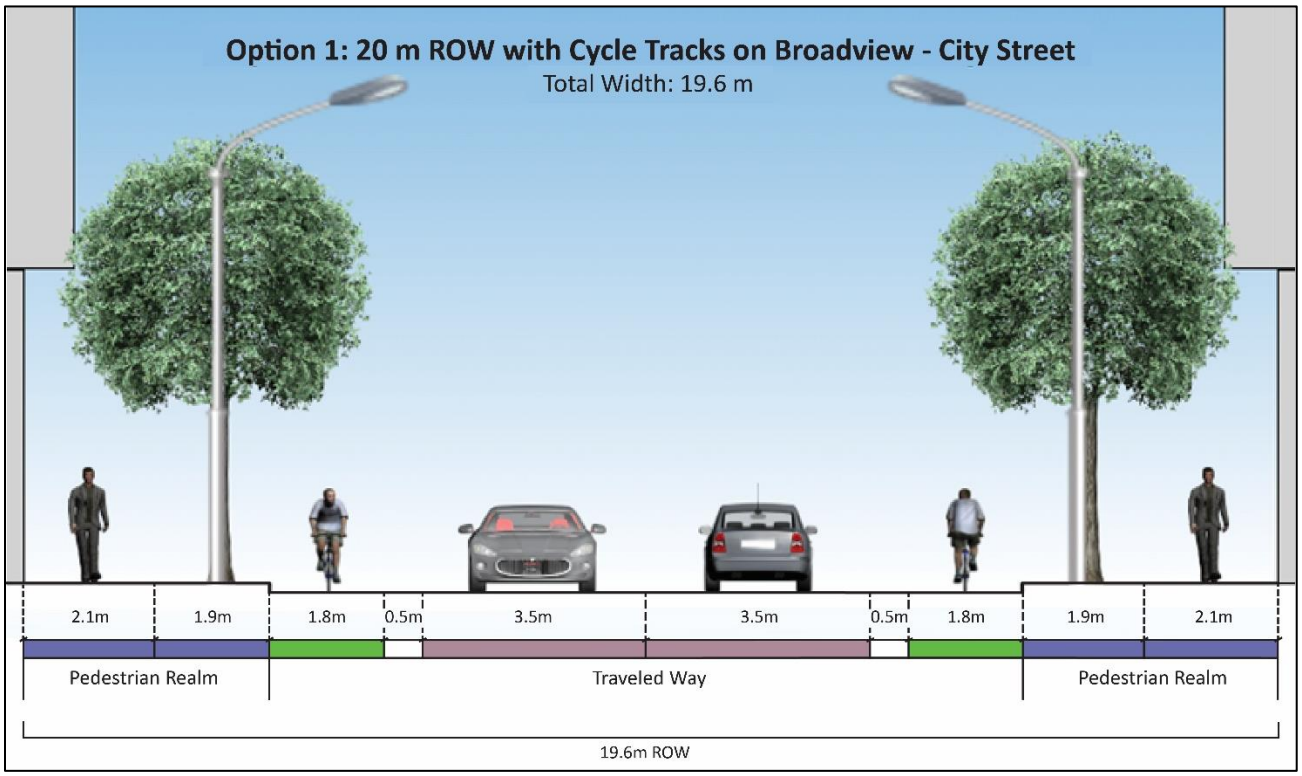
The mid-block design alternatives developed for the interim condition maintain a general 20.0 m ROW to reflect the existing conditions along Broadview Avenue prior to a potential 3.0 m widening along the entire east side of Broadview Avenue between Eastern Avenue and Queen Street East in the future. The preferred design alternative will tie into the preferred intersection alternative, as detailed in **Section 7 and 8**, as well as the Broadview Avenue Extension to the south.

5.1.1 Design Option 1 – Cycle Tracks Without Parking

Option 1 consists of a 2.1 m AODA-compliant sidewalk on both the east side and west side of Broadview Avenue, and includes a 1.9 m landscape/utility area on both the east and west sides of Broadview Avenue, which provides space to plant trees on either side of the street. Trees planted adjacent to both the sidewalk and cycle tracks provide an improved pedestrian realm by providing comfort through added shade but also by increasing the separation between the cyclists/vehicles, and pedestrians. Option 1 also includes a 1.8 m cycle track, together with a 0.6 m buffer zone, and two 3.5 m travel lanes with dedicated transit lanes on the north side. There is a dedicated ROW on the south side, and a dedicated northbound left turn lane. Within this option, on-street parking would not be provided on Broadview Avenue between Queen Street and Eastern Avenue.

Figure 4 illustrates the typical mid-block cross-section for Design Option A with a 20 m right-of-way.

Figure 4: Design Option 1 Cross-Section



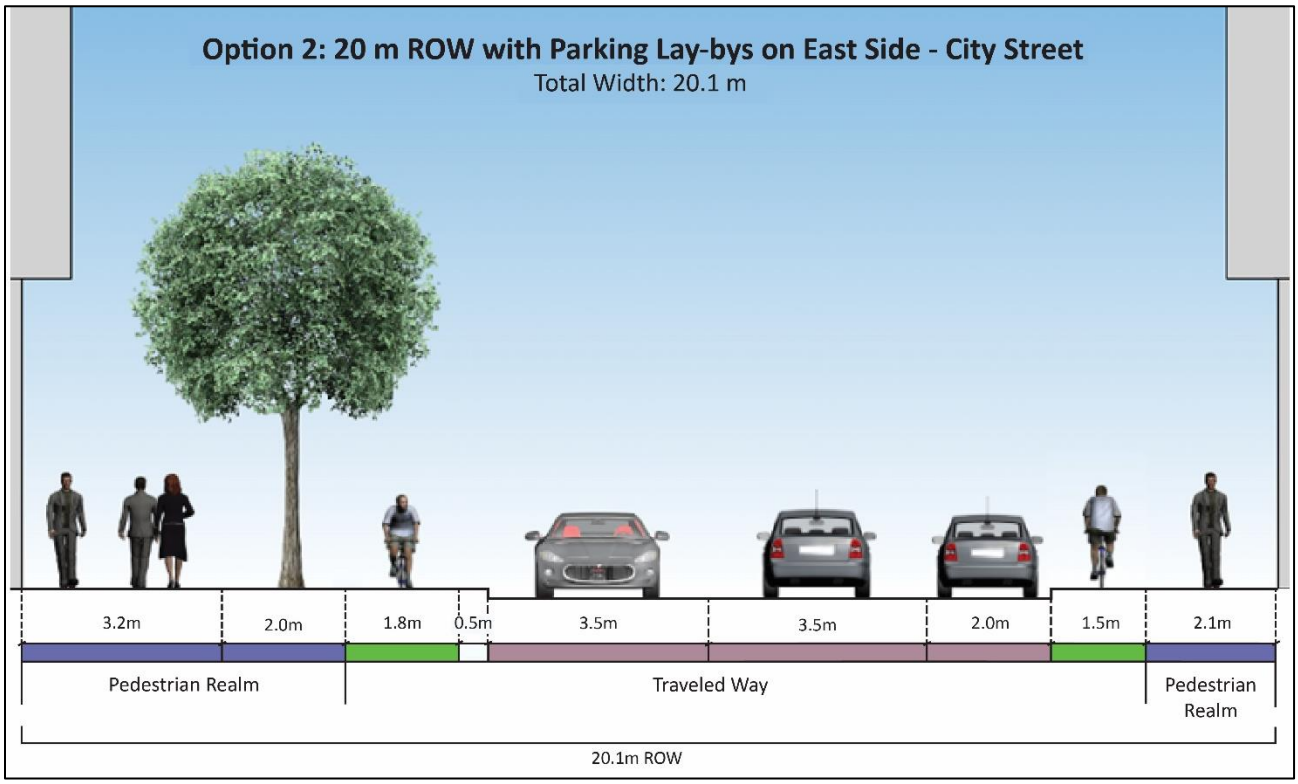
5.1.2 Design Option 2 – Parking Lay-bys on the East Side

Option 2 consists of minimum 2.1 m AODA-compliant sidewalks, with a 2.0 m landscape/utility area on the west side of Broadview Avenue, which provides space to plant street trees within the utility area. Street trees planted on the west side provide shade for both the cyclists utilizing the cycle track heading south and those on the west side sidewalk. The west side consists of a 1.8 m cycle track and 0.5 m buffer zone between the cycle track and the shared traffic/transit lane. The east side of Broadview Avenue consists of a 2.0 m parking lay-by lane, located adjacent to a cycle track with a reduced width of 1.5 m. It should be noted that with this option parking would not be provided along the entire length of Broadview Avenue, but in designated lay-bys. Outside of these lay-by areas, the bikeway width and separation to the sidewalk could be increased.

Figure 5 illustrates the typical mid-block cross-section for Design Option 2 with a 20 m right-of-way.

The figure shows the pedestrian realm contained to the west side of Broadview Avenue, providing a wider than AODA standard sized sidewalk to provide more space for pedestrians travelling along Broadview Avenue. Option 2 depicts a minimum buffer between the cycle track and the combined traffic/transit lane on the west side of Broadview Avenue. There is no buffer provided for the east side cycle track and parked car, or between the parked car lane and the combined traffic/transit lane.

Figure 5: Design Option 2 Cross-Section

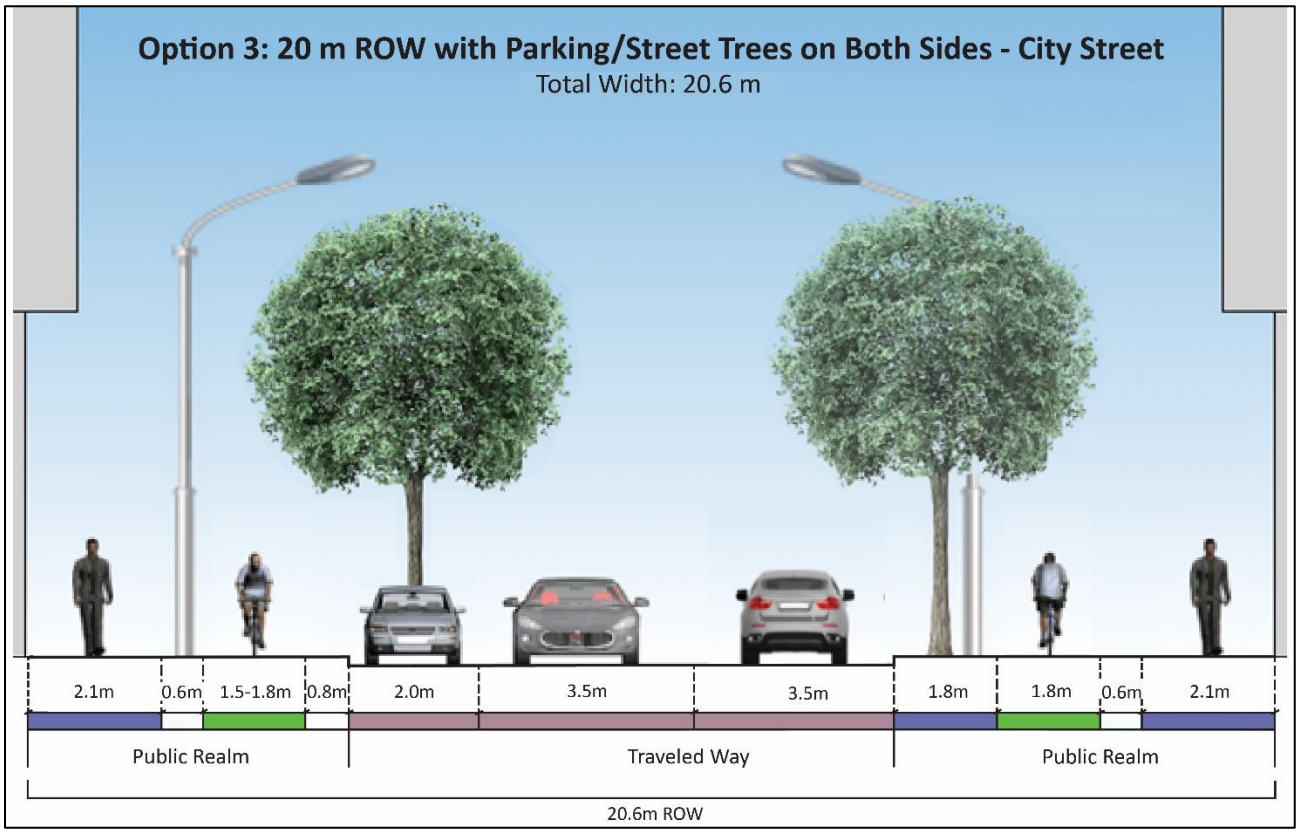


5.1.3 Design Option 3 – Parking Lay-bys/Street Trees on Both Sides

Option 3 maintains the 20.0 m right-of-way and includes cycle tracks and vehicle parking lay-bys bookended with street trees/landscaping on both sides of Broadview Avenue. This option includes a 2.1 m AODA sidewalk and a 0.6 m utility space/buffer, followed by a 1.5-1.8 m cycle track on either side of the street, depending on where the vehicle parking lay-by areas are located. A 0.8 m buffer separates the cycle track and vehicle lay-by area on the west side of the road. On the east side of the road in order to maintain the centreline alignment of the streetcar, the width of the cycle track and buffers would need be reduced between the cycle track and sidewalk where a lay-by is present. Where there are no lay-bys on the east side, there is a 1.8 m wide street tree/utility planting area, followed by a 1.8 m cycle track.

Figure 6 illustrates the typical mid-block cross-section for Design Option 3 with a 20.0 m right-of-way.

Figure 6: Design Option 3 Cross-Section



5.2 ULTIMATE CONDITION

The ultimate condition entails the widening of the interim condition preferred alternative by 3.0 m on the east side of Broadview Avenue and is expected to occur in the future as redevelopment occurs along the east side of Broadview Avenue. As noted in **Section 4**, the property along the west side of Broadview Avenue between Eastern Avenue and Queen Street East is considered to be fixed due to previous development constructed to the property line and cannot be impacted.

The ultimate condition has therefore been developed to include an additional parking lay-by opportunity and expanded public realm on the east side of Broadview Avenue and will tie into the preferred intersection alternative, as detailed in **Section 7 and 8.**

6 EVALUATION OF MID-BLOCK ALTERNATIVES

The assessment and evaluation of the design alternatives was based on a qualitative approach. As noted under the Municipal Class Environmental Assessment process, the evaluation of alternatives is not required as the proposed activities are classified as being exempt from the Municipal Class Environmental Assessment

process. This evaluation was prepared provide transparency in the project development decision making framework.

A number of design objectives were developed in order to consider the full range of opportunities to improve the public realm along Broadview Avenue between Queen Street East and Eastern Avenue. These include:

- Extend the cycling and pedestrian connectivity from the Broadview Avenue Extension across Eastern Avenue to connect with Queen Street East;
- Expand the existing sidewalk size to a minimum of 2.1 m, to meet AODA standards, and to provide space for all types of sidewalk users;
- Recommend locations for landscaping, including street trees (where feasible), to improve the comfort for both cyclists and pedestrians and improve the public realm; and
- Provide on street parking lay-bys (where feasible) to continue to provide short-term parking opportunities along Broadview Avenue.

The approach undertaken to conduct the qualitative evaluation utilizes the criteria developed for the Broadview Avenue Extension EA. The alternatives were evaluated against the following criteria:

- Prioritize safety and accessibility;
- Develop an attractive destination with high-quality public realm;
- Enhance networks and connectivity;
- Support sustainability; and,
- Provide flexibility and certainty in implementation.

Table 2 provides the evaluation objectives, criteria and measures used to determine the preferred design option for the Broadview Avenue Reconfiguration assessment.

Table 2: Evaluation of Design Options

Objective	Criteria	Measure	Option 1 – Cycle Tracks Without Parking	Option 2 – Parking Lay-bys on the East Side	Option 3 – Parking Lay-bys and/ or Street Trees on Both Sides
Develop an attractive destination with a high-quality public realm	Street character is vibrant, attractive and inclusive	Ability to achieve a large, healthy tree canopy Provides pedestrian and cycling spaces that are visible, well connected to surrounding routes, with clear sightlines and being well-lit to act as routes of choice for vulnerable road users	**Moderately Preferred:** option achieves tree canopy on both sides of the street. Pedestrians have AODA-compliant sidewalks with a tree canopy providing shade, therefore enhancing the public realm. Cycle tracks are provided that provide a buffer between the cyclist and the traffic/transit lane.	**Least Preferred:** option achieves tree canopy on one side of the street. Pedestrians have AODA-compliant sidewalks with the west side pedestrian realm featuring extra sidewalk width. Cycle tracks are designed with minimal width and minimal buffer between the cycle track and the traffic/transit lane.	**Most Preferred:** option achieves tree canopy on both the east and west sides of the street. Pedestrians have AODA-compliant sidewalks with tree canopy providing shade. Cyclists have the greatest buffers between cycle track and traffic/transit lane or parking lane
Prioritize safety and accessibility	Design prioritizes vulnerable road users	Provides appropriate separation of users Size of buffer between pedestrians and cyclists Size of buffer between cyclists and road	**Moderately Preferred:** Size of buffer between cyclists and traffic/transit lane is minimal at 0.5 m	**Least Preferred:** Size of buffer between cyclists and traffic/transit lane is minimal at 0.5 m No buffers are provided between the parked vehicles and cycle track and the cycle track and sidewalk on the east side.	**Most Preferred:** cyclist is protected from traffic/transit lane by vehicle lay-by parking areas or line of street trees 0.6m buffer is also provided between the cycle track and sidewalk
	Achieves comfortable and unobstructed cycling routes	Provides clear, direct and unobstructed cycling routes Potential for cycle track conflict with lay-bys/parking	**Most Preferred:** option does not include any potential for conflicts due to the lack of on-street parking provided on either the east or west sides of Broadview Avenue	**Least Preferred:** does not include any separation between the cycle track and parked vehicles increasing the likelihood of conflicts with cyclists	**Moderately Preferred:** option includes potential conflicts with cyclists and lay-bys/parking, but this is mitigated by the presence of a larger buffer The presence of lay-bys on the east side of the street may introduce some cyclist/ pedestrian conflicts due to the reduced buffer widths

Objective	Criteria	Measure	Option 1 – Cycle Tracks Without Parking	Option 2 – Parking Lay-bys on the East Side	Option 3 – Parking Lay-bys and/ or Street Trees on Both Sides
	Minimizes opportunities for conflict between users	Minimizes conflict points between users at signalized intersections	**No preference:** All options will include design features that minimizes potential conflict points and will help to manage traffic flow for all modes		
	Creates a safe environment for all users at all times of the day	Accommodates pick-up and drop-off needs of accessible transportation services (i.e. wheel trans)	**Least Preferred**: no lay-bys to provide opportunities for accessible transportation services	**Moderately Preferred:** lay-bys on the east side of the street provides opportunities for accessible transportation services limited to one side of the street	**Most Preferred:** lay-bys on both sides of the street increases opportunities for accessible transportation services that can access from either northbound or southbound lanes
Enhance networks and connectivity	Effects on travel operations	Enables acceptable levels of service, capacity, and operations	**No Preference:** All options provide a similar condition for levels of service, capacity and operations. The width and number of lanes for transit, auto, pedestrian and cycling users are the same for all options		
Support Sustainability in the South of Eastern area	Adaptability, resilience, and climate change	Promotes reduction of greenhouse gases and resilience for extreme weather events (e.g. through tree canopy)	**Moderately Preferred:** option provides adequate tree planning space to support trees for large tree canopy	**Least Preferred:** option provides tree planting space on the west side however it does not provide tree planting space on the west side	**Most Preferred:** option provides greatest space for tree plantings to achieve large tree canopy
	Streets are planned for different seasons	Ability to be cost-effective and functional to operate and maintain in all seasons	**Moderately Preferred:** constrained tree planting footprint may result in additional maintenance issues with tree health and viability Snow clearing will have to be managed on cycle tracks and sidewalks to support active transportation during all seasons	**Least preferred:** option has slightly larger space for tree planting footprint Snow clearing will have to be managed on parking lay-by and cycle track as well as sidewalks to support active transportation during all seasons	**Most Preferred:** option has a slightly larger space for tree planting footprint Snow clearing will have to be managed on cycle tracks as well as sidewalks to support active transportation during all seasons
	Promotes environmental health	Opportunities for net environmental gains			**Most Preferred:** provides the greatest amount of green street space with support for large tree

Objective	Criteria	Measure	Option 1 – Cycle Tracks Without Parking	Option 2 – Parking Lay-bys on the East Side	Option 3 – Parking Lay-bys and/ or Street Trees on Both Sides
	(compatibility with natural environment/ parks)		**Least Preferred:** options provide lowest potential for large tree canopy to support natural environment		canopy to support the natural environment
		Nature and extent of potential environmental impacts	**No Preference:** all options provide an improvement to the natural environment with limited potential for environmental impacts given that they are limited existing environmental features within the footprint of the ROW. Additional trees will be included in all of the options along the ROW to improve the overall tree canopy along this section of Broadview Avenue.		
	Noise and air quality conditions	Minimizes potential noise and air quality impacts	**No Preference:** all options present the same design to manage auto traffic and transit (shared lanes) and integrating active transportation (cycle tracks and AODA compliant sidewalks). All options also support tree canopies which help to reduce noise and help to mitigate pollutants.		
Provide flexibility and certainty in implementation	Maintenance/ Operating Costs and construction costs	Maintenance and operating costs	**Moderately Preferred:** existing ROW remains intact and the limited space for tree planting area on both sides of the street requires more maintenance to support healthy trees	**Least Preferred:** existing ROW remains intact and the tree planting only exists on one side of the street which requires less maintenance to support healthy trees	**Most Preferred:** Parking lay-bys provide larger tree planting area to help support healthy trees which would require less maintenance
	Design flexibility	Flexibility of design to accommodate future modifications while also securing design intention. Includes flexibility of design to accommodate future changes in travel behaviours (implications for design flexibility/future proofing)	**Least Preferred:** least flexibility to modify design in the future as ROWs are constrained		**Most Preferred:** maximum attainable ROW provides some design flexibility as properties will be acquired on the east side of Broadview in the future to enhance the public realm
		Overall Performance:	Option 3 is preferred overall.		

As shown in **Table 2**, Option 3 is preferred for the interim condition. Option 3 includes a 20.0 m ROW with the potential for parking lay-bys and/or street trees on both the east and west sides of Broadview Avenue. It provides a continuation of cycle tracks from the Broadview Avenue Extension south of Eastern Avenue through to Queen Street East, street trees on both the east and west sides, as well as additional street trees bookending the parking lay-by areas. The AODA-compliant sidewalks provide pedestrian protection from the roadway by having the cycle track and parking lane provide distance to the combined traffic/transit lanes where vehicles will be moving.

This option also provides a design configuration that is flexible for future detailed design as more properties become available for redevelopment in the future, allowing for the roadway to increase in ROW for its current constraints. An Official Plan Amendment to Map 3 for an additional 3.0 m of ROW would be needed on the east side to create wider sidewalks, more street trees, and wider cycling facilities under the ultimate condition when redevelopment occurs along the east side of Broadview Avenue.

7 EVALUATION OF INTERSECTION ALTERNATIVES

In addition to evaluating the mid-block alternatives, an evaluation of intersections for each of the four intersection design alternatives developed was conducted. The four alternatives include the following:

- **Option 1:** Dedicated northbound left-turn lane and dedicated southbound streetcar lane;
- **Option 2:** Shared left-turn and streetcar lanes;
- **Option 3:** Dedicated streetcar lanes with left-turn prohibition for other vehicles; and,
- **Option 4:** Dedicated northbound left-turn lane and dedicated southbound streetcar lane.

The intersection alternatives are found in **Appendix B**.

The intersection design alternatives were comparatively evaluated based on how well they accommodated the traffic movements through the intersection, accommodated pedestrian and cyclist movements, facilitated streetcar operations, and their resulting property implications.

Regarding vehicle operations, Option 2 provided the greatest accommodation of permitted movements by providing dedicated left turn lanes for both the north and southbound movements. However, in doing so this will require the north and southbound through streetcars to queue waiting for left turning vehicles. Options 1, 3 and 4 also accommodate a northbound left-turn lane, but do so by widening Broadview Avenue north of Eastern Avenue. Each achieves similar functions, but Option 4 accommodates the northbound left-turn lane but minimizes required roadway width by capitalizing on the alignment of the intersection. This would be achieved by streetcars operating in separate phases from the vehicles that are driving northbound along Broadview.

Overall Option 4 was preferred, it was found to create the best balance of facilitating the streetcar operations and permitting vehicle movements while minimizing the width of the roadway. By minimizing the width of the

roadway this allows for the space provided within the boulevard to be maximized for pedestrian and cyclist uses.

8 PREFERRED ALTERNATIVE INTERSECTION OPTION

As noted in **Section 7**, the Option 4 intersection was selected as the preferred alternative. However, in doing so, the implementation of Option 4 requires the right-of-way to be widened to accommodate the design of the intersection. While the Official Plan currently designates this section of Broadview Avenue to have a 20m right-of-way, the policies within Section 2.2 of the City of Toronto Official Plan permits the City to require additional property to facilitate implementing intersection designs. Based on the designs developed and the ultimate plan for the section of Broadview Avenue between Eastern Avenue and Queen Street, the right-of-way should be widened by 3m.

It is also recommended that through the next Official Plan review that the designated right-of-way be amended to reflect the ultimate preferred cross-section as outlined in **Section 5.2**.

9 OVERALL PREFERRED DESIGN

Overall, mid-block Option 3 and intersection Option 4 were selected as the preferred alternatives for the reconfiguration of Broadview Avenue between Eastern Avenue and Queen Street East. In the interim condition, the preferred design can be accommodated within the general 20.0 m ROW, with an additional 3.0 m of property required from 21 Broadview Avenue in accordance with the policies outlined in Section 2.2 of the City of Toronto Official Plan.

As redevelopment occurs along the east side of Broadview in the future, enabling the ultimate condition 23.0 m ROW between Eastern Avenue and Queen Street East, the design can be expanded to include an expanded public realm (i.e. additional buffers and sidewalk width) on the east side of Broadview Avenue. The preferred design for the interim and ultimate condition combining the preferred mid-block and intersection design alternatives are provided in **Appendix C.** An aerial view of the interim and ultimate conditions combining the preferred mid-block and intersection design alternatives is also shown in **Figure 7** and **Figure 8**.

Figure 7: Overall Preferred Design – Interim Condition

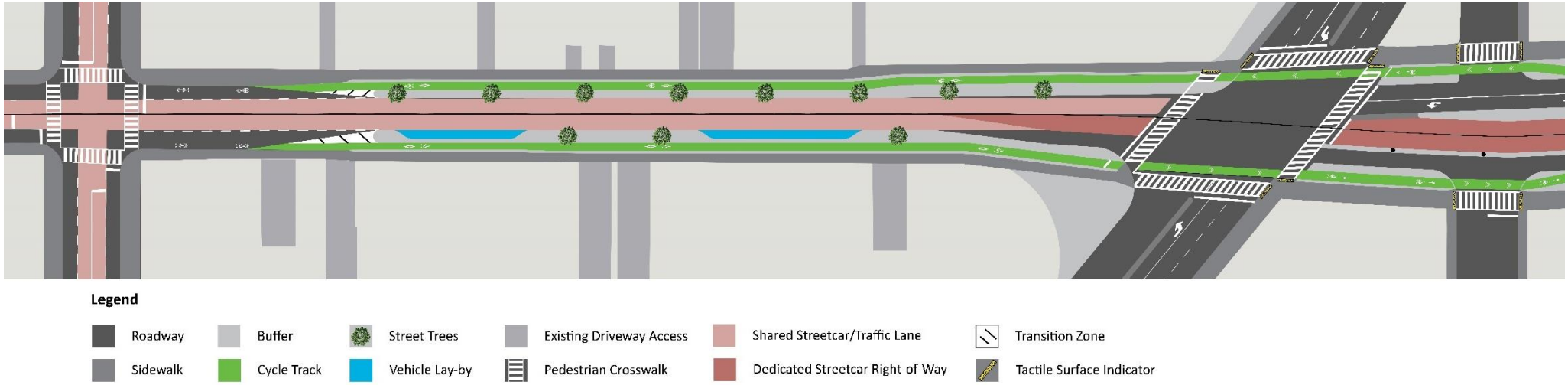
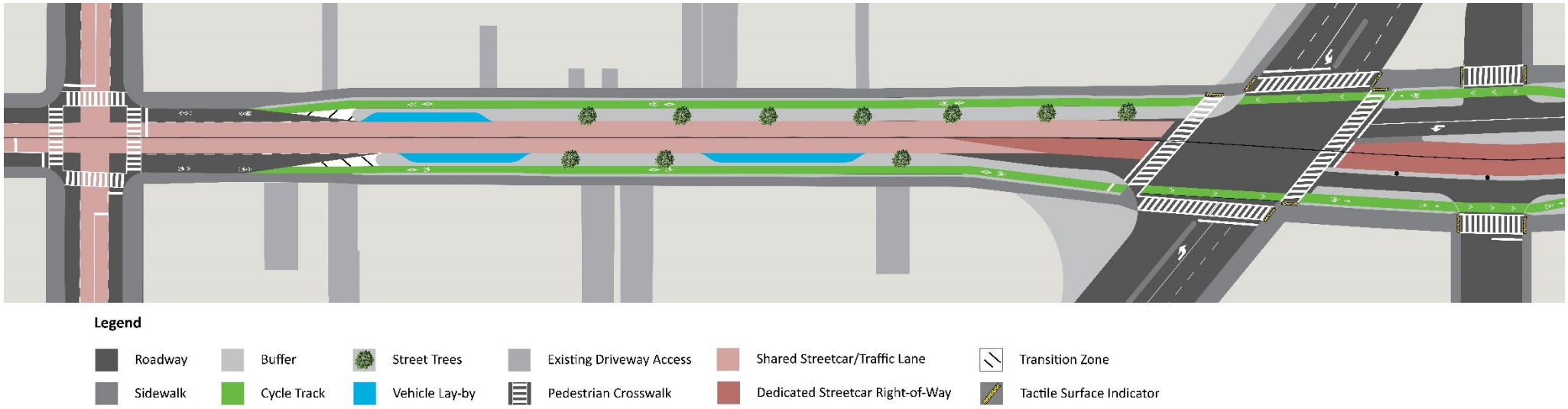


Figure 8: Overall Preferred Design – Ultimate Condition



10 CONCLUSIONS

Three mid-block design alternatives were assessed in this study for the interim condition along Broadview Avenue utilizing the evaluation criteria from the Broadview Avenue Extension EA, where applicable. Evaluation criteria included developing an attractive destination with a high-quality public realm, prioritizing safety and accessibility, enhancing the networks and connectivity, supporting sustainability, and providing flexibility and certainty in implementation. While all the alternatives included improvements to the pedestrian realm, including increased sidewalks that meet AODA guidelines, and extension of cycle tracks to Queen Street East, Option 3 met most of the criteria to provide a high-quality pedestrian realm, with street trees provided in between parking lay-bys on both sides of the street.

In addition, a design review of four intersection designs was conducted to determine which would best meet the proposed alignment of the new segment of Broadview Avenue south of Eastern Avenue as proposed in the Broadview Avenue Extension EA. A high-level design evaluation was conducted, in which intersection Option 4 was preferred. As the Broadview Avenue Reconfiguration ESR progresses to detailed design, the preferred intersection design may be revisited to ensure it aligns with the engineering required to provide both the traffic and transit needs of the skewed intersection of Broadview Avenue and Eastern Avenue.

As stated previously, as properties become available for redevelopment on the east side of Broadview Avenue, there will be greater opportunities to increase the overall ROW of Broadview Avenue to 23.0 m and implement the preferred design of Broadview Avenue between Eastern Avenue and Queen Street East.

Enclosed: **Appendix A:** Mid-Block Design Drawings
Appendix B: Intersection Design Drawings
Appendix C: Overall Preferred Design Drawings

APPENDIX A

Mid-Block Design Drawings

LEGEND

CITY OF TORONTO TSMP

CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & QUEEN - Option 1
19.6m ROW
WITHOUT ON-STREET PARKING

Design By	Date
C.W. / C.S.	NOV 02, 2023
Drawn By	**Checked By**
C.W.	C.S. / K.C. / M.B.
Project No.	**Drawing No.**
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\2. Drafting\19311.20 WF005A – 19.6m ROW.dwg

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\2. Drafting\19311.20 WF005B – 20m ROW.dwg

LEWIS STREET

EASTERN AVENUE

EASTERN AVENUE

EASTERN AVE (LEWIS ST TO ADELAIDE ST E)

DWG 004

ND LEFT-TURN LANE

EMOVAL OF EXISTING
REE FLOW ON-RAMP

DON VALLEY PARKWAY ON-RAMP

DON VALLEY PARKWAY ON-RAMP

BROADVIEW AVENUE

BROADVIEW AVENUE

SUNLIGHT PARK ROAD

SUNLIGHT PARK ROAD

T PARK ROAD

DEDICATED STREETCAR R

PUBLIC REALM IMPROVEMENT AREA

PUBLIC REALM IMPROVEMENT AREA

APPROX. EX. INTERSECTION PAVEMENT MARKINGS DRAWN AS PER AERIAL

NEW WESTBOUND LEFT-TURN LANE

ZEBRA CROSSING

21.00m PARKING LAY-BY

21.00m PARKING LAY-BY

21.00m PARKING LAY-BY

3.50m TRANSIT

4.10m

3.00m

1.85m

2.00m

2.30m

5.15m

R9.00m TYP.

EX. 3.85m

EX. 4.05m

EX. 3.00m

EX. 3.64m

EX. 4.39m

2.10m SIDEWALK

EX. 3.37m

EX. 3.68m

EX. 3.10m

EX. 3.73m

EX. 4.22m

2.10m SIDEWALK

45.66m SIDEWALK

1.90m STREET TREES

4.00m SIDEWALK

3.0m

3.00m

3.70m

3.30m

LANDSCAPING

3.30m

1.90m STREET TREES

4.00m SIDEWALK

1.0m STREETCAR POLES

LANDSCAPING

45.66m
26.0 M.

DEDICATED STREETCAR RIGHT OF WAY

APPROX. DRIVEWAY/LANEWAY

LEGEND

CITY OF TORONTO TSMP

CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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BROADVIEW EXTENSION
TORONTO ONTARIO

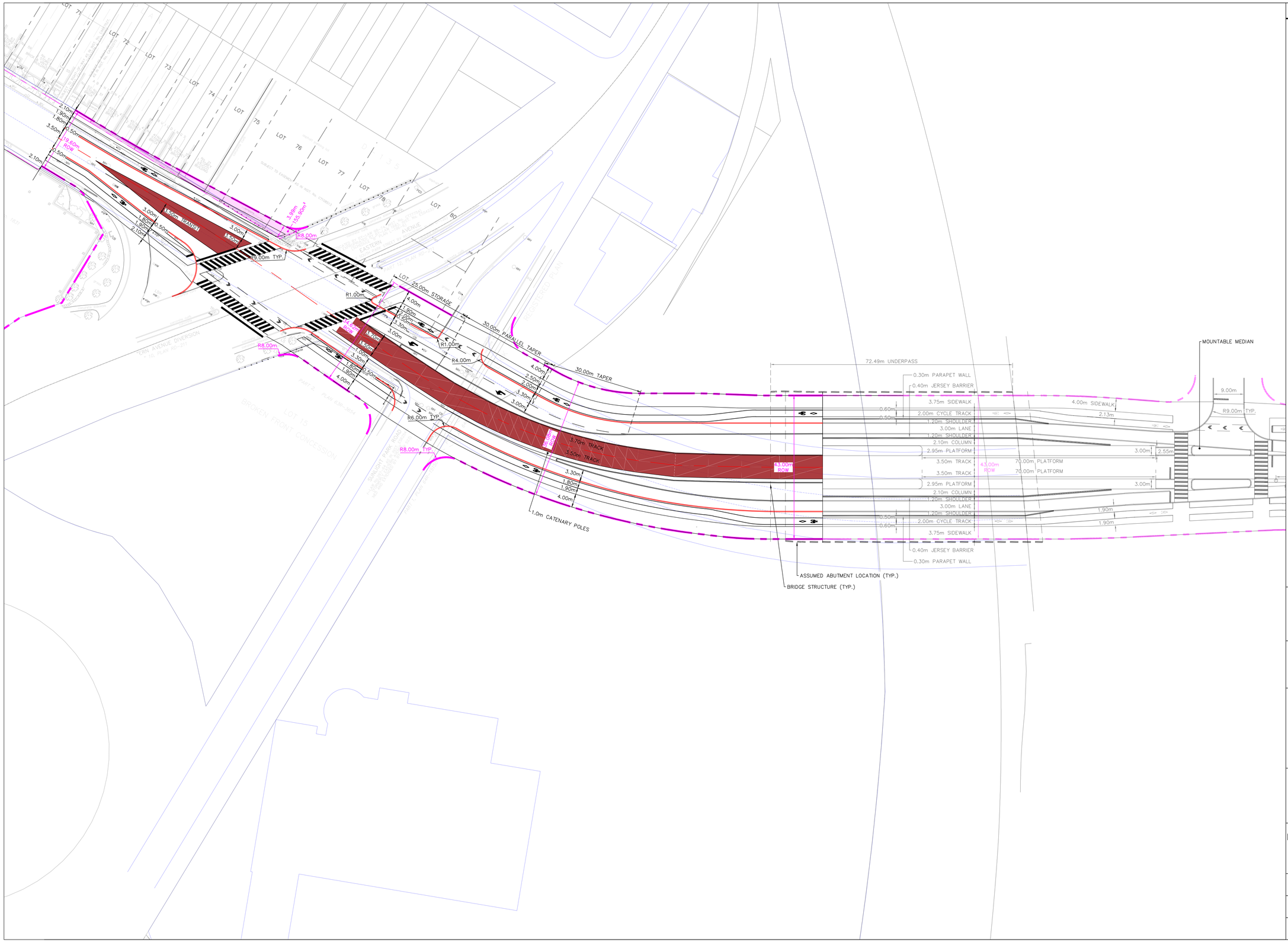
BROADVIEW & QUEEN - Option 3
20m ROW Interim Condition
WITH W SIDE ON-STREET PARKING

Design By	Date
C.W. / C.S.	NOV 01, 2023
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\2. Drafting\19311.20 WF005D – 20m ROW Parking W Side.dwg

APPENDIX B

Intersection Design Drawings



LEGEND

- CITY OF TORONTO TSMP
- CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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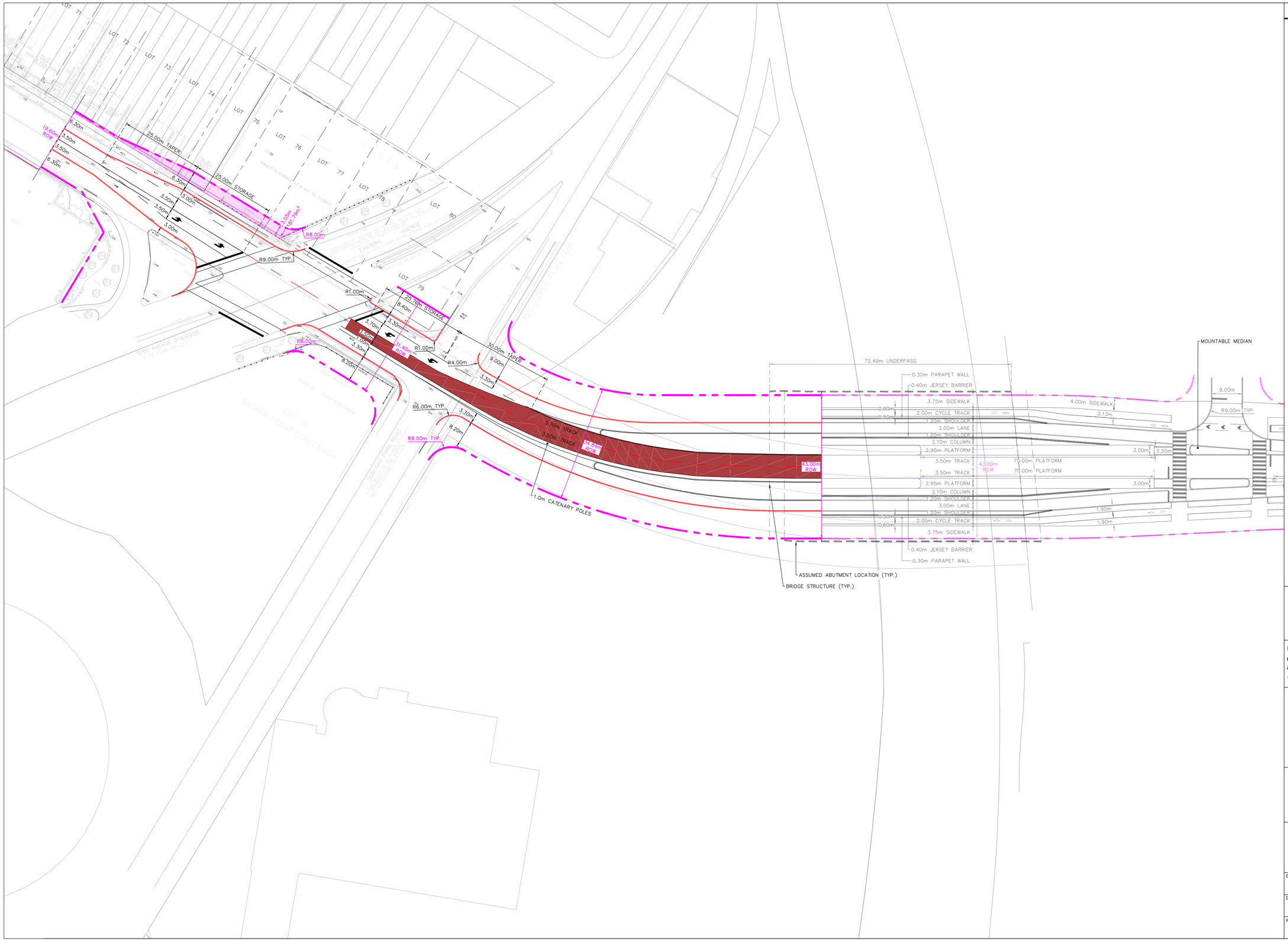
BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & EASTERN - Option 1
Dedicated NB Left Turn Lane
Dedicated SB Streetcar Lane

Design By	Date
C.W. / C.S.	JAN 27, 2022
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\Drafting\19311.20 WF003A.dwg



LEGEND

- CITY OF TORONTO TSMP
- CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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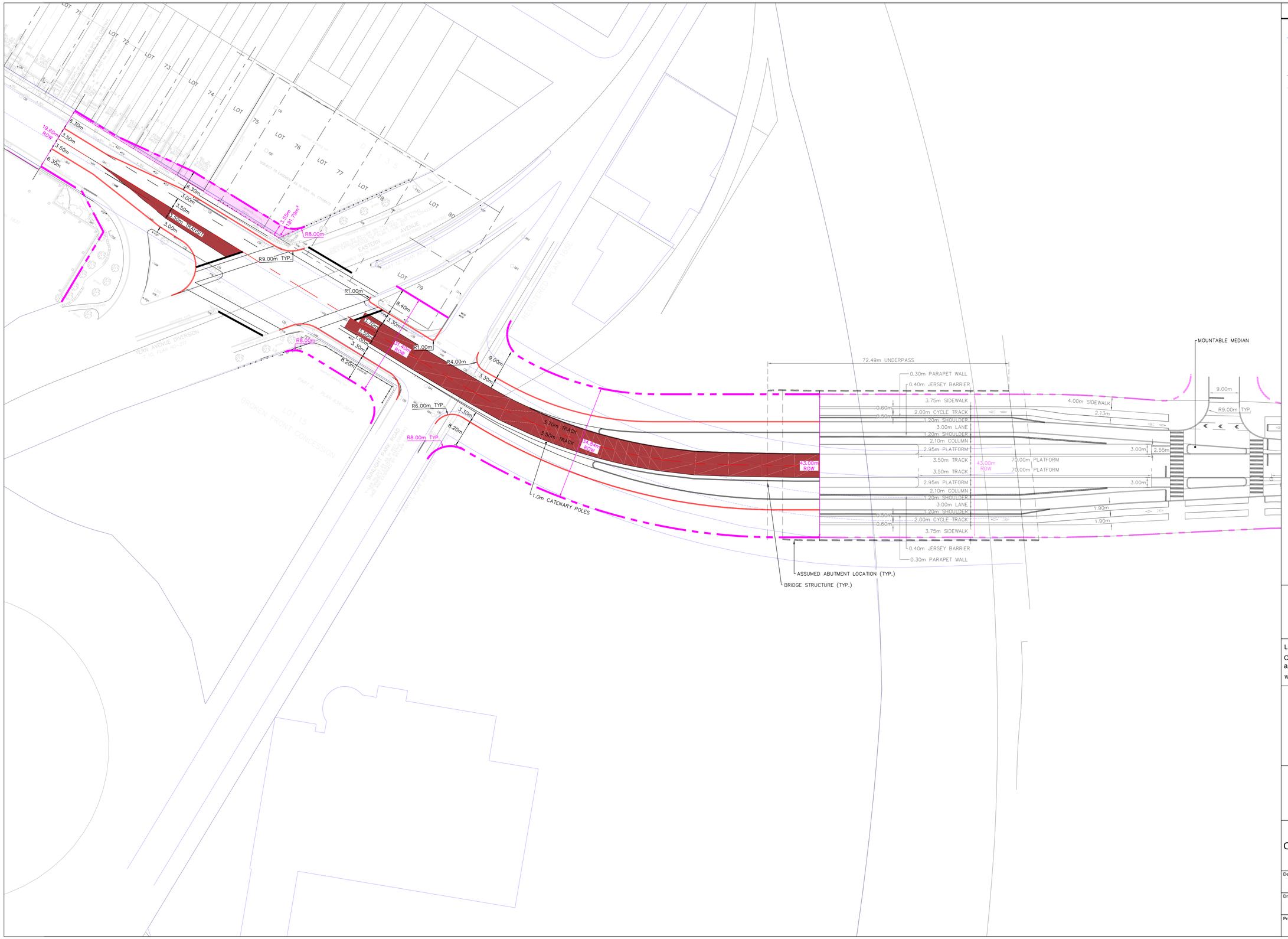
BROADVIEW EXTENSION

TORONTO ONTARIO

BROADVIEW & EASTERN
Option 2: Shared Left Turn & Streetcar Lanes

Design By	Date
C.W. / C.S.	JAN 28, 2022
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\Drafting\19311.20 WF003B.dwg



LEGEND

- CITY OF TORONTO TSMP
- CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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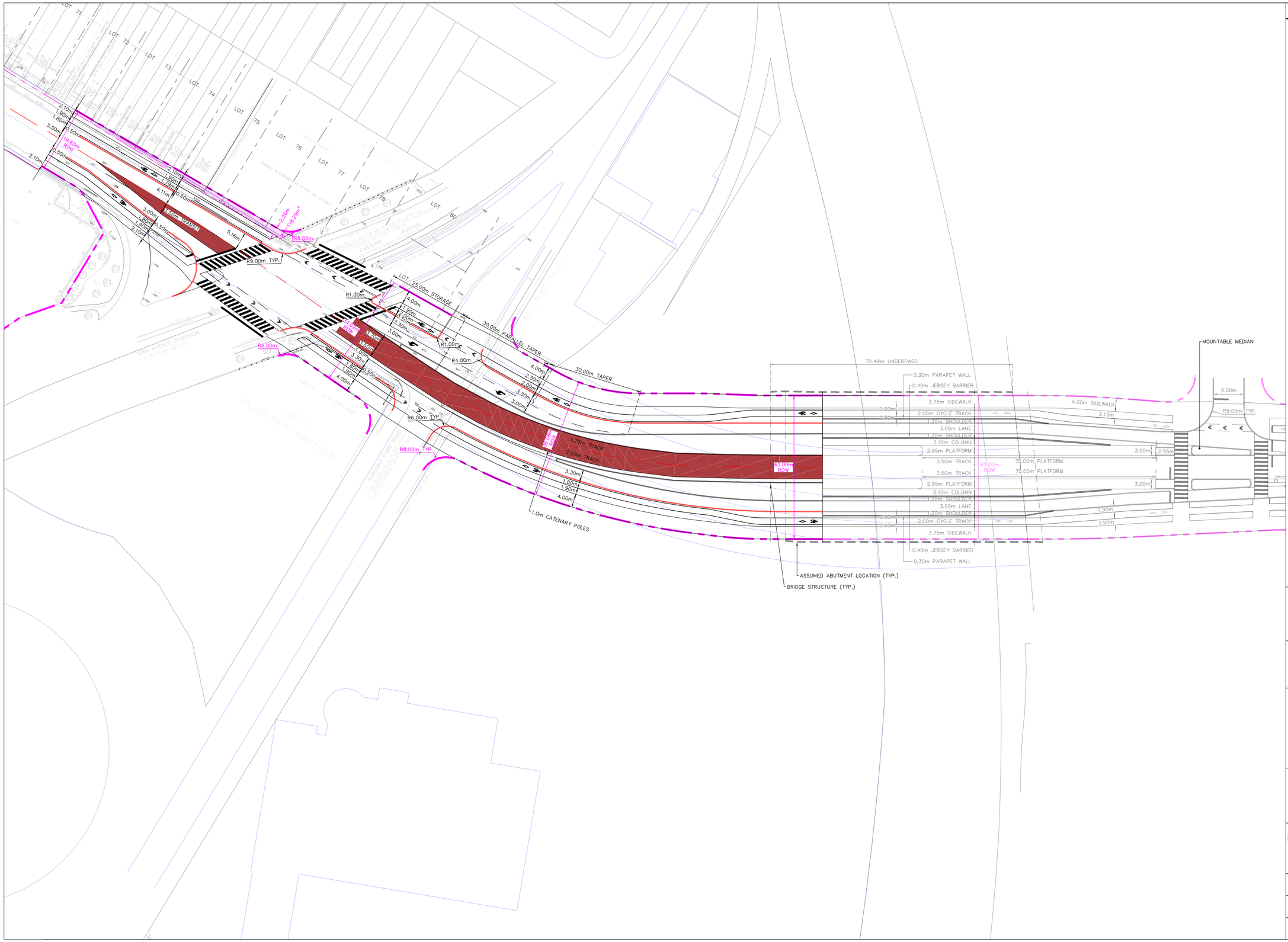
BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & EASTERN
Option 3: Dedicated Streetcar Lanes with LT Prohibition

Design By	Date
C.W. / C.S.	JAN 28, 2022
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\Drafting\19311.20 WF003C.dwg



LEGEND

- CITY OF TORONTO TSMP
- CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & EASTERN - Option 4
Dedicated NB Left Turn Lane
Dedicated SB Streetcar Lane

Design By	Date
C.W. / C.S.	JAN 27, 2022
Drawn By	**Checked By**
C.W.	C.S. / K.C. / M.B.
Project No.	**Drawing No.**
19311.20	001

DRAWING NAME: F:\19311\19311.20 – Broadview Avenue Reconfiguration\Drafting\19311.20 WF003D.dwg

APPENDIX C

Overall Preferred Design Drawings

LEWIS STREET

EASTERN AVENUE

EASTERN AVENUE

DON VALLEY PARKWAY ON RAMP

SUNLIGHT PARK ROAD

BROADVIEW AVENUE

DWG 004

EASTERN AVE (LEWIS ST TO ADELAIDE ST E)

ND LEFT-TURN LANE

EMOVAL OF EXISTING
REE FLOW ON-RAMP

DEDICATED STREETCAR R

APPROX. EX. INTERSECTION PAVEMENT MARKINGS DRAWN AS PER AERIAL

NEW WESTBOUND LEFT-TURN LANE

PUBLIC REALM IMPROVEMENT AREA

LANDSCAPING

20.43m ROW

20.61m ROW

35.00m R.O.W.

DEDICATED STREETCAR RIGHT OF WAY

LEGEND

CITY OF TORONTO TSMP

CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & QUEEN
Preferred Interim Condition

Design By	Date
C.W. / C.S.	NOV 02, 2023
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

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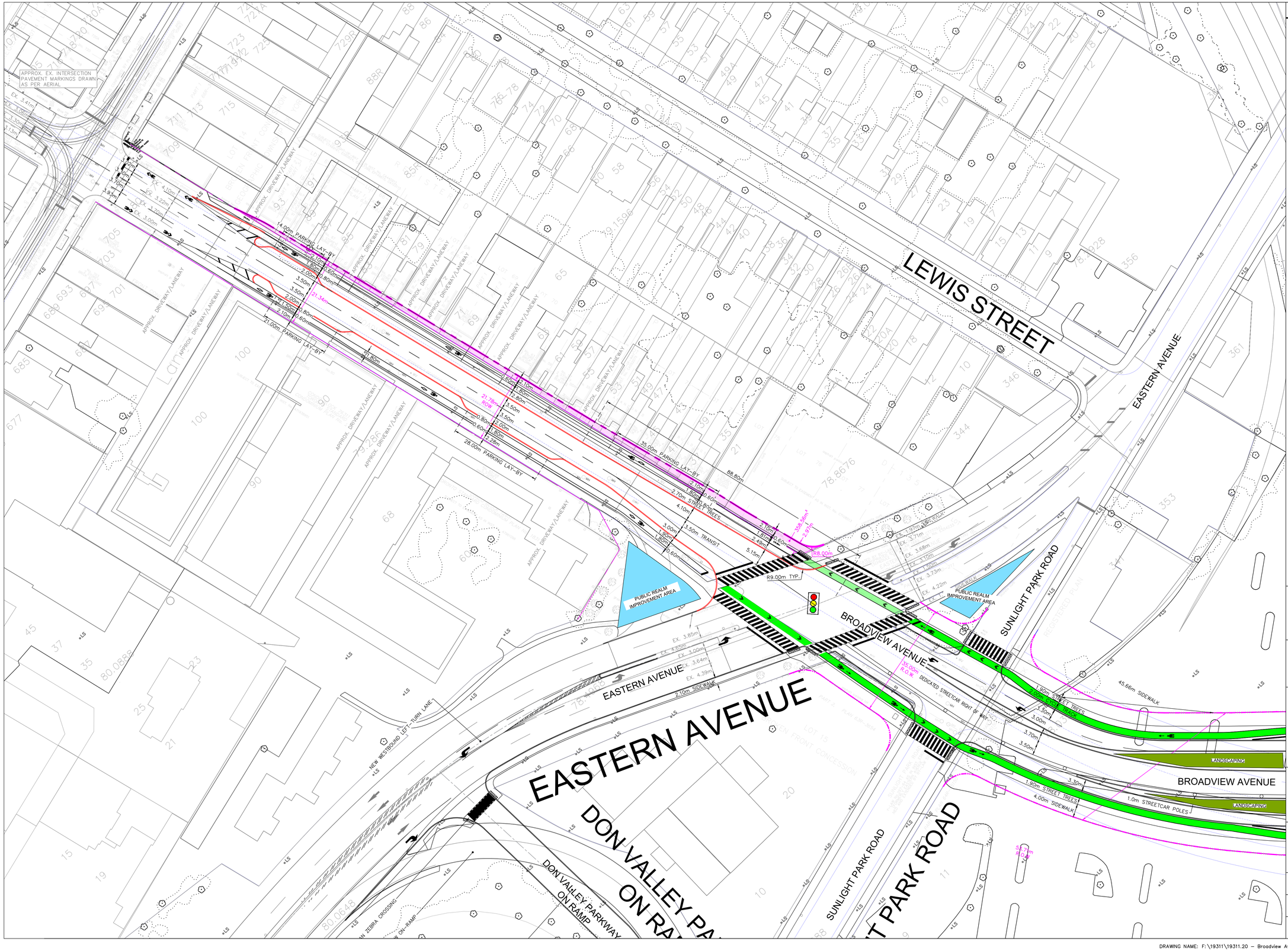

LEGEND

CITY OF TORONTO TSMP

CITY OF TORONTO PROPERTY MAPPING EASTERN SURVEY

SCALE 1: 500

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BROADVIEW EXTENSION
TORONTO ONTARIO

BROADVIEW & QUEEN
Preferred Ultimate Condition

Design By	Date
C.W. / C.S.	Nov 02, 2023
Drawn By	Checked By
C.W.	C.S. / K.C. / M.B.
Project No.	Drawing No.
19311.20	001

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