DURHAM – SCARBOROUGH
Bus Rapid Transit

Appendix A2 –
BRT Stops Architecture

Prepared for Metrolinx
by IBI Group & Parsons

Stops Architecture Report

Durham-Scarborough Bus Rapid Transit (DS BRT)

Prepared for Metrolinx by
IBI Group with Parsons
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1 Design Criteria

1.1. Introduction

In 2018, Metrolinx completed the Durham-Scarborough Bus Rapid Transit (DS BRT) Initial Business Case. The study recommended a preferred Bus Rapid Transit (BRT) alignment between Downtown Oshawa (in Durham Region) and Scarborough Centre (in the City of Toronto). The project has now advanced to the Preliminary Design Business Case and Environmental Assessment/Transit Project Assessment Process (TPAP) phase in accordance with the Metrolinx Business Case Framework, for capital investment projects. IBI Group and Parsons are managing the project on behalf of Metrolinx.

The Durham-Scarborough Bus Rapid Transit project proposes approximately 36 kilometres of dedicated transit infrastructure, connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. This project builds on the existing PULSE service and will provide more dedicated transit infrastructure along Highway 2 and Ellesmere Road to connect to Scarborough Centre. The corridor has varied traffic, land use conditions and constraints. With rapid growth in the past decade, and an expectation for this growth to continue into the future, travel demand along the corridor will continue to increase and higher capacity transit will be needed to link communities and employment on both sides of the Toronto-Durham boundary. Transit infrastructure will include a range of design solutions in different segments of the corridor. The preliminary design concept includes segments with buses operating with transit priority measures, and segments with dedicated curbside or centre-median transit lanes. The design concept varies by segment based on available space, travel demand, and land use context.

This report documents the development of design concepts for the DS BRT stops. As part of the preliminary design, architectural design concepts were developed for the curbside and centre-median BRT stops. The Conceptual stop designs were developed with input from Metrolinx, Toronto Transit Commission (TTC) and Durham Region Transit (DRT) staff. The BRT stop designs are conceptual and may be modified during detail design.

1.2. Design Vision

To guide the development of the BRT stop design, a design vision was developed in consultation with Metrolinx, TTC and DRT. The design vision includes the following features:

- **Design Excellence**: all elements to deliver a consistent elevated level of design and function appropriate for high-order transportation;
- **Sustainable**: resilient, easy to maintain with high quality materials;
- **Safe**: uncluttered, clear sightlines and intuitive to use;
- **Accessible**: supportive of all types of active mobility and universal accessibility; and,
- **Placemaking**: an uplifting passenger experience that establishes a positive connection to the surrounding urban context.

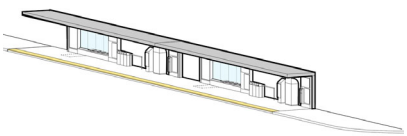
These elements are included in the conceptual design.

1.3. Platform Layouts

In total, three platform layouts were developed for the BRT stop design. As part of the DS BRT design, there are two types of stops: curbside and centre-median BRT stops. Curbside and centre-median platforms function differently, which necessitated the development of two different designs. In addition to the separate designs for the curbside and centre-median platforms, a pass-through version of the centre-median platform was developed at the request of DRT. The pass-through concept would only be applied in Durham Region.

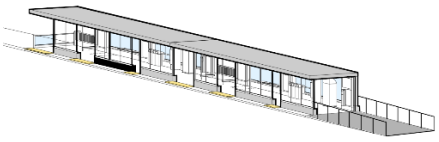
Public education campaigns will be developed to inform the public about the different shelter types prior to opening day. The public education campaigns will focus on the shelter elements that may vary by stop location to proactively raise awareness and inform future customers.

The five features of the design vision, outlined in Section 1.2, were also integrated into the design of the platform layout. As a result, the design is modular, meaning it has the flexibility to be modified according to levels of service or number of passengers.



Curbside Platform

Centre-median Platform Open Canopy



Centre-median Platform Pass-through

1.4. Platform Design Criteria

Design criteria was developed to inform the BRT stop design. The design criteria include:

- Platforms are generally located at the far side of the intersection. The location of the platforms will be refined as the design is developed.
- The typical platform length of 40 m accommodates two 18 m articulated buses. Multiple bus types may serve the stop.
- The typical median platforms widths are 4.2 m for the preferred sites and 3.6 m for the constrained sites.
- Shelter heights are 3.0 m to allow for perpendicular Next Vehicle Arrival System signage.
- The preliminary design protects for a sloped walkway (1:20 slope) to provide access to the centre-median platforms.
- At constrained curbside locations, the platform may be reduced to 20 m in length and 3..2 to 3.6 m wide. The following locations require further review in detail design:
    1. Bond Street at Centre Street
    2. Bond Street at Simcoe Street
    3. King Street at Centre Street
    4. King Street at Simcoe Street
- Buses are to stop at the end of the platform. In the case of the pass-through design, fixed openings require bus driver accuracy and coordinated bus stop locations.
- Typical platform height varies between centre-median and curbside stops. In both Toronto and Durham Region, typical platform height for centre-median platforms is 14” above finished road surface to accommodate full-level boarding. For curbside stops, the platform height is 6” (152 mm) above finished road surface consistent with typical sidewalk height. See Appendix
- The slope of the platform follows the GO Design Requirements Manual (GO DRM) and is a maximum cross slope of 2% and a maximum longitudinal slope of 1%.

1.5. Design Approach

A number of principles informed the design approach. The principles include:

- **Legible design**: Create a hierarchy of design elements and organize the elements in a clear and rational manner. This will help make the platforms easy to navigate and seamless transitions to other modes of transportation. Section 2.1 covers this strategy in further detail.

- **Welcoming design**: Provide wide accesses and waiting areas with clear connections to the street and surrounding areas.
- **Sense of public ownership**: Create a high-quality and unique shelter design that provides a sense of identity and community pride.
- **Maintenance**: Use materials that are robust and easy to maintain and wash (this is consistent with the vision of sustainability). The design also includes concealed fasteners and conduits to discourage vandalism. The platform will be free of obstacles to allow for easy snow removal. A maintenance program should be developed during detail design.

1.6. Accessibility

All elements of the BRT design will be accessible. This section outlines the design principles that were applied to help enhance accessibility. When developing the design, the most stringent measures of the Accessibility for Ontarians with Disabilities Act (AODA), the Ontario Building Code (OBC), the City of Toronto Accessibility Design Guidelines, the Metrolinx Universal Design Standard (DS-02) and Wayfinding Design Standard and Metrolinx Sign Implementation Manuals (DS-03) were used. Typical universal design strategies for transit design were also followed.

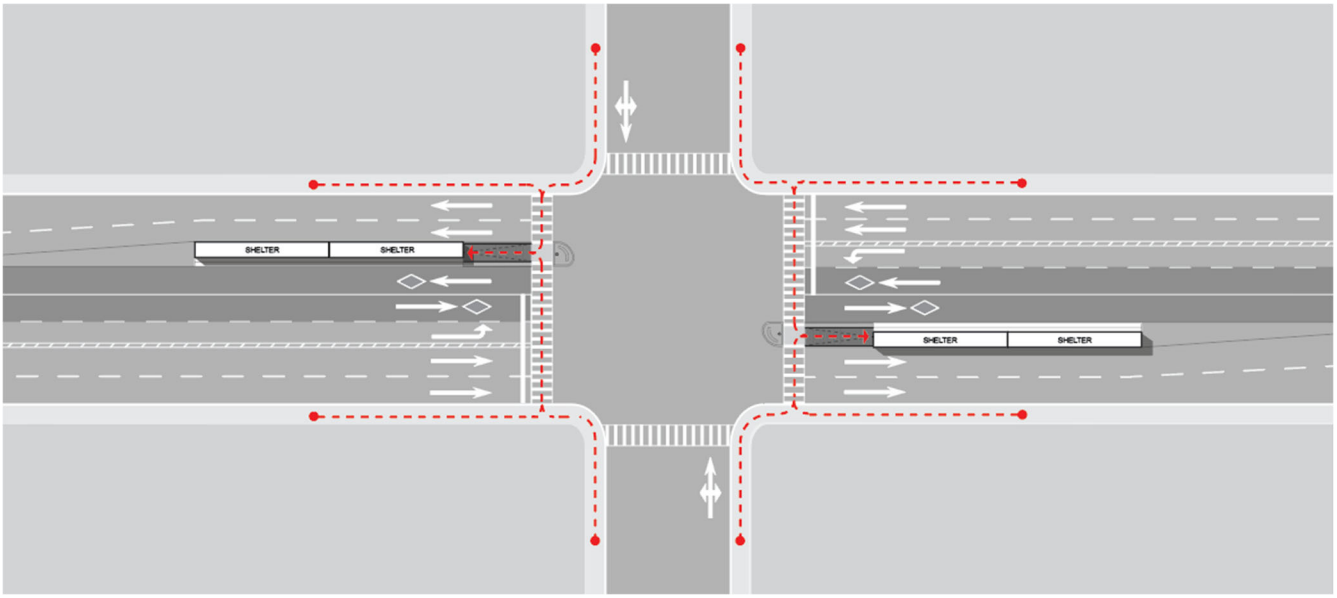
- **Stops access and circulation path**: A clear and simple path will be provided to guide pedestrians between the street and the platform. The sloped walkway access will be located perpendicular to the crosswalks and parallel to existing curbs. The main access will be located as close as possible to the intersection and be emphasized through the composition of architectural design elements.

  Centre-median platforms will include pedestrian crossings that comply with applicable municipal standards

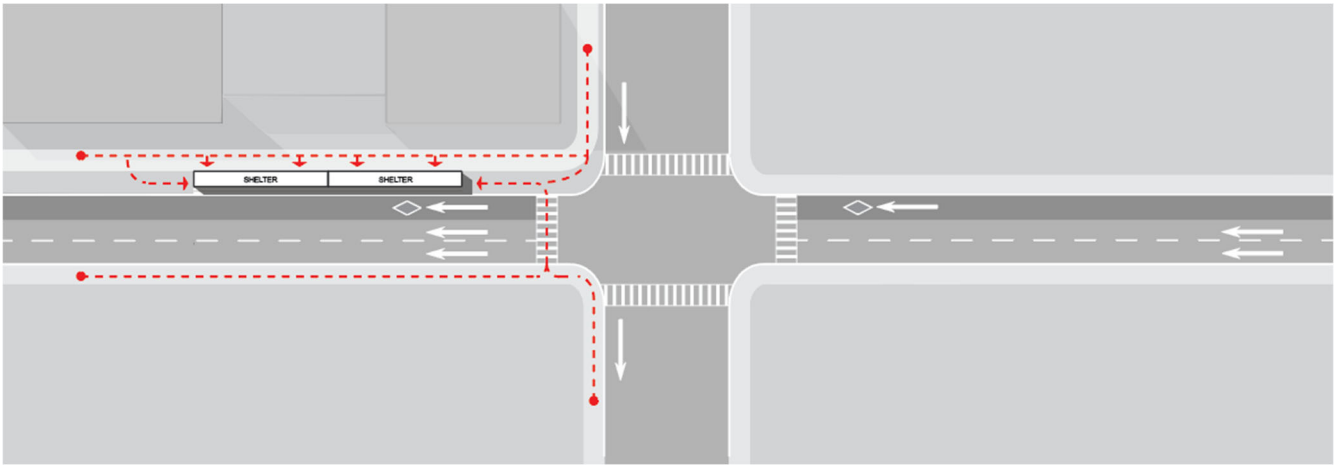
  Curbside platforms will have connections to pedestrian crossings using adjacent sidewalks. Adjacent sidewalk widths will be a minimum of 1.8 m in the Durham Region and 2.1 m in the City of Toronto. The shelter is design to allow access from the sidewalk into the shelter at various points along the platform.

  The "pedestrian refuge area" at the bottom of the access sloped walkway to the platform will be gently sloped to allow for drainage and will include tactile warning tiles at both edges to warn pedestrians they are about to enter the pedestrian crossing for the roadway.

  Accessible pedestrian signal (APS) controls shall be in a consistent location at all BRT stops for ease of detection and access by pedestrians. The APS controls shall meet applicable municipal standards, applicable requirements under the AODA and the Transportation Association of Canada's "Guidelines for Understanding, Use and Implementation of Accessible Pedestrian Signals”.



Centre-median platform showing access points across public right-of-way



Curbside platform showing access points across public right-of-way and adjacent sidewalk

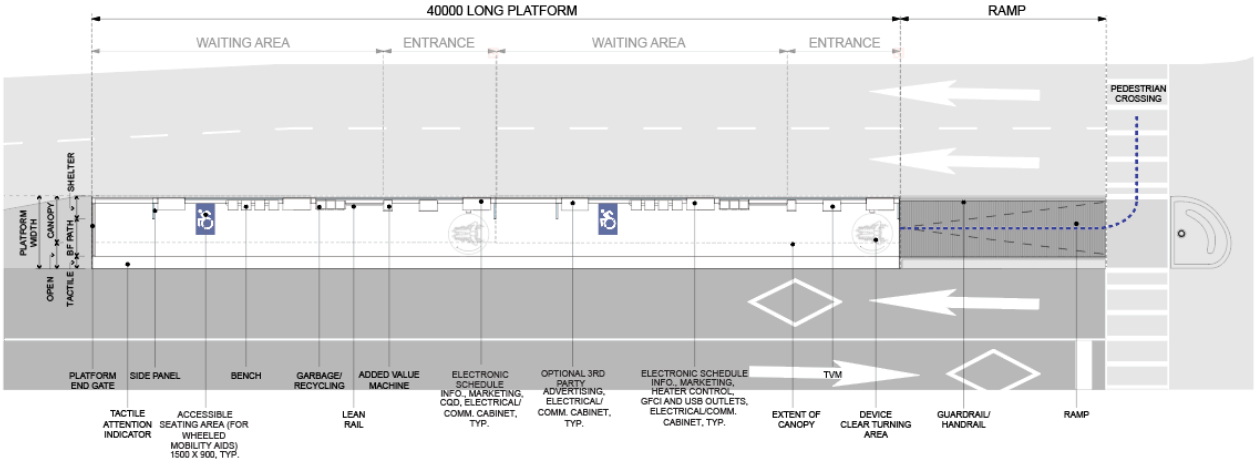
- **Platform access and circulation path**: All BRT stops will be located at signalized intersections. In most circumstances, centre-median platforms will be located on the farside of the intersection and accessed by existing pedestrian crosswalks to maximize efficiency and passenger safety.

  The platform area complies with the Metrolinx DS-02 minimum 1800 mm for unobstructed paths of travel and the 2000 mm for turning radius areas. The 3.6 m wide pass-through design in Durham Region includes a 1700 mm turning radius, as per OBC.

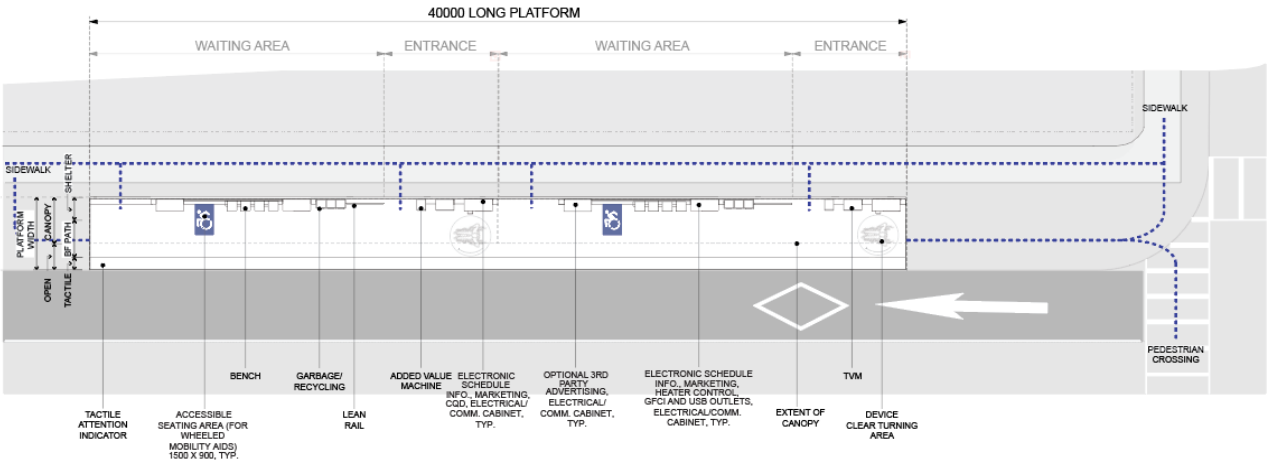
  The design includes designated seating areas beside benches, to allow those with wheelchairs or travelling with a stroller or mobility device to stop beside a

companion seated on a bench. All platform sloped walkways will have a maximum slope of 1:20 to meet accessibility requirements.

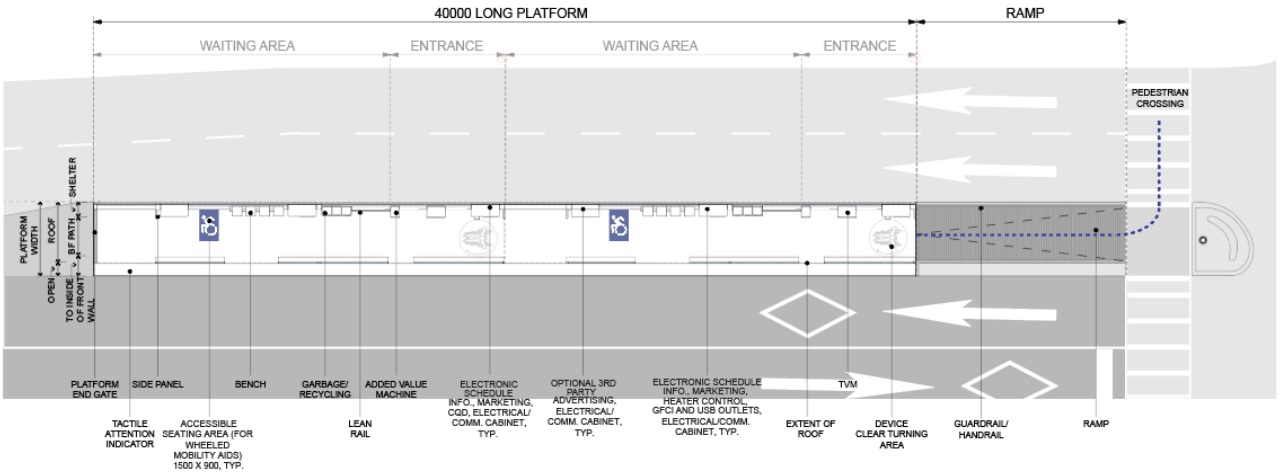
Accessible pedestrian signal push buttons will be easy to locate at all intersections. Curb ramps and tactile indicators will also be provided.



Potential accessible features of the centre-median platform open canopy design



Potential accessible features of the curbside platform



Potential accessible features of the centre-median platform pass-through design

- **Floor finishes**: The platforms will feature non-slip concrete finishes following AODA requirements. Coloured contrasted tactile tiles shall achieve 70 LRV (or 50 LRV if the tactile tiles are yellow). The sloped walkway finishes will comply with Metrolinx DS-02 requirements.
- **Protruding objects**: Objects will be integrated onto the back wall to eliminate tripping hazards. Protruding objects (e.g. side panels) will not exceed the maximum height of 0.680 m for cane detectability, per Metrolinx DS-02.
- **Benches**: GO Standard benches will be used, which comply with the Metrolinx DS-02. Seat depths will be 485 mm, and heights will comply with CSA B651 and other applicable requirements. Seat height will vary depending on site grading. At minimum one bench in each shelter will include a built-in backrest. The shelter's glazing will function as a backrest for the other benches. These benches should include armrests for those who need assistance sitting down except at one end of the bench, to allow customers to transfer from a mobility aid to the bench.
- **Access**: Sloped walkway from the crosswalk will have a maximum slope of 1:20, as required by the Metrolinx DS-02. To achieve full-level boarding, some sloped walkways may be longer than 9 m length. These areas will be addressed on a site-by-site basis in detail design. Sloped walkways will have handrails on both sides to maximize the safety of pedestrians travelling along the walkway.
- **Guardrail**: A continuous guardrail will be provided on both sides of the access. The shape and colour will be determined in detail design, but the size and height (including top and secondary handrail) will comply with the Metrolinx DS-02.
- **End Gate**: End gates will be provided at the end of the platform and developed in detail design. End gates could be increased to full-height gates to improve wind & weather protection. This can be determined in detail design.

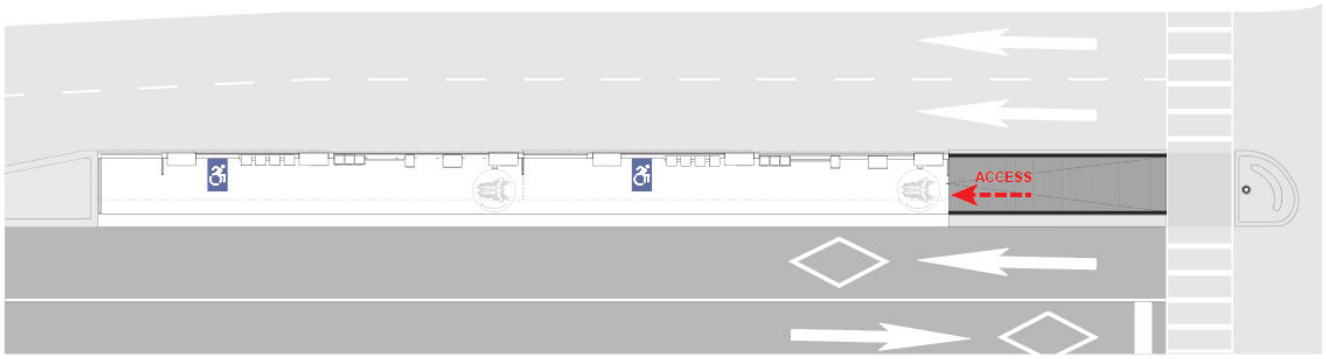
1.7. Safety and Security

The BRT stop design fosters a safe and secure environment by embedding principles from the Crime Prevention Through Environmental Design (CPTED) design approach. CPTED involves implementing a series of strategies to enhance safety and deter criminal activity. The following CPTED principles have been incorporated in the conceptual stop design:

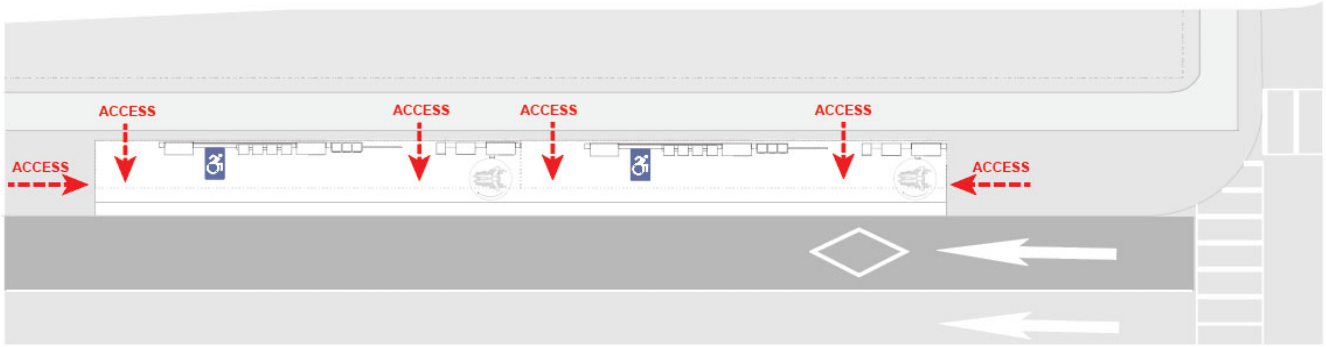
- **Natural surveillance:** Maximize visibility by including transparent glazing so passengers can see and be seen. Provide adequate illumination at night and a surveillance system visible to potential offenders. CCTV locations will be determined in detail design. Locations will be selected to make sure that CCTV views are not blocked by furniture, signage, and video displays. Effort will be made to eliminate all dark corners and hiding places.
- **Natural access control**: Discourage access to dangerous or private areas by clearly designating entrance, exit, and boarding areas. Although there will be one main entrance/exit for all platforms, the centre-median and curbside stops feature different access points.

  At centre-median platforms, to discourage jay-walking, a continuous guardrail and integrated curb and crash barrier will be integrated with platform edge adjacent to the general traffic lanes. An end gate will be located at the end of the platform.

  The curbside platform has an open canopy with backwall openings to maximize access and visibility. Site specific access issues will be addressed in detail design.



Centre-median stop access



Curbside stop access

1.8. Illumination

To maintain clear sightlines and a clutter-free design, the lighting fixtures will be integrated onto the shelter canopy or roof. This placement will keep lighting out of reach for vandal-resistance. The Illuminating Engineering Society of North America (IESNA) minimum light levels will be satisfied in detail design.

Lighting will also be used to emphasize the location of the vending and passenger assistance equipment, wayfinding and information signage, and the platform edge. The platform edge will be uniformly lit. The platform area should act as a beacon at night, while simultaneously minimizing distraction and glare to passengers, motorists or bus drivers. Lighting will be contained within the boundaries of the platform to avoid “light spills”. To minimize energy consumption and additional light pollution, up-lighting will be avoided.

Lighting details will be developed in detail design.

1.9. Cultural Heritage

Cultural heritage is integral to some of the neighbourhoods the BRT stops will be located with. Select BRT stop elements can be adjusted to minimize visual impacts on local cultural heritage features (examples are included in Appendix 1). These opportunities will be further explored in detail design, in consultation with the public and municipal staff.

2 Stops Design

2.1. Functional Design

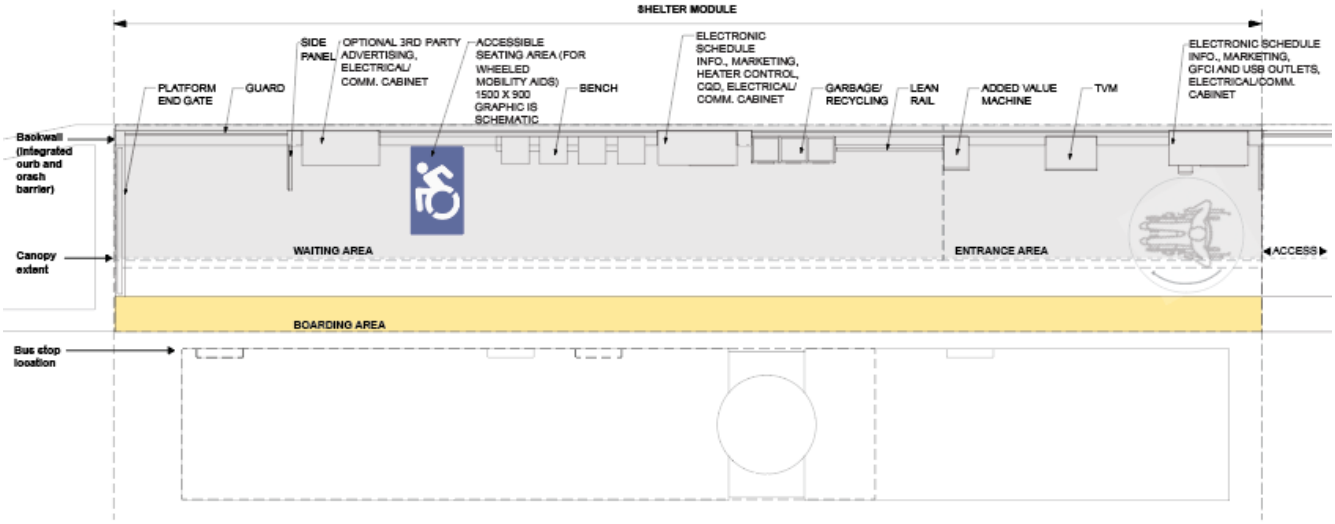
Safety, efficiency, intuitiveness and accessibility are top priorities for the BRT stop design. To achieve these priorities, right-hand-flow principles were considered when organizing the platform elements. Standing and resting areas are located on the right, with a progression of activity leftwards to the edge of the platform. This principle is consistent with standard practices of passenger flow models for transit. These models anticipate the tendency of passengers to stop to the right, either to pause on their journey or access service areas (ticketing, maps, etc.), and allows other passengers to continue circulating to the left.

The platform organization also provides a logical sequence as passengers arrive and depart. Each stop will consist of two identical canopy or pass-through modules, arranged side-by-side. Module duplication improves visual consistency, adaptability to site constraints, and cost efficiency. The modular approach also allows for some flexibility. At constrained sites, one shelter module could be implemented instead of two, if required. The modular approach also allows the design to be implemented in a phased approach. For example, in areas with low ridership, one module could be in place for opening day and additional shelters can be added as ridership increases. Phasing is further discussed in Section 2.2.

The same principles can be applied with the pass-through shelters planned for Durham Region.

In each of the shelter modules, the passengers will travel through the following three areas:

1. Entrance Area
2. Waiting Area
3. Boarding Area

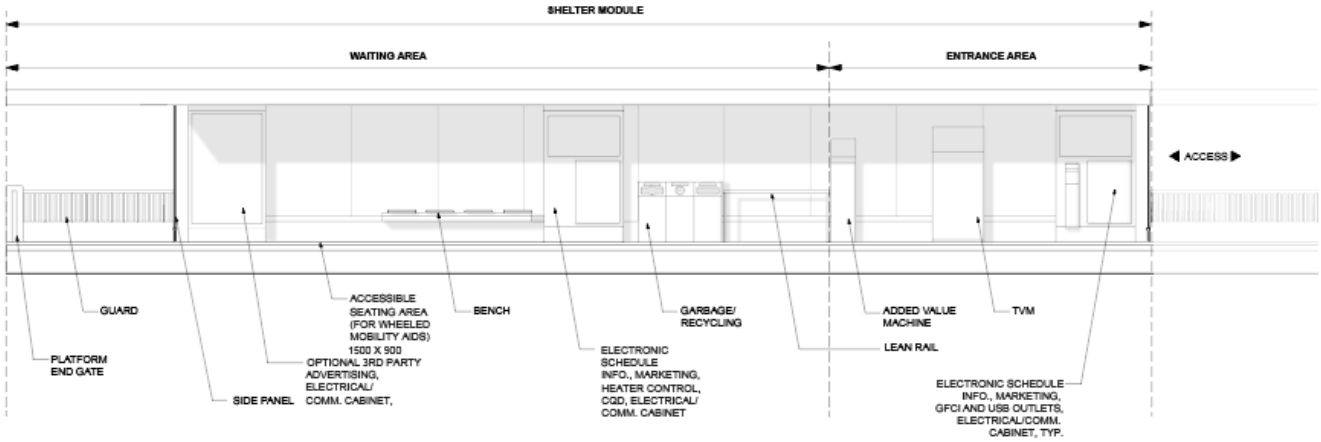


Functional plan layout of the platform module

The entrance area is the first section that a passenger will access. This area is accessed from the sloped walkway or sidewalk. It is sheltered from rain and wind by the platform canopy, a slim sidewall and a transparent glazed backwall that organizes the amenities and passenger flows to the right-hand side of the platform. In the pass-through configuration, additional weather protection is provided by full height glazing at the front of the platform. Amenities included in this area are vending machines (TVM), card query devices (CQD), schedule information and added value machines.

After passing through the entrance area, the passenger enters the waiting area. This area shares the platform canopy, sidewalls and transparent glazed backwall. The waiting area includes benches, lean rails, and a designated accessible seating area. Optional 3rd party advertising panels can also be provided in this area. Similar to the entrance area, the waiting space is provided on the right-hand side of the platform and is organized to provide a minimum 1800 mm clear path of travel on the left side of the platform, per Metrolinx DS-02.

Through the waiting area, passengers can access the boarding area at the platform edge.



Functional elevation of the platform module

Each shelter module provides clear and direct passenger flows independently, while the platform connects the two modules into a cohesive element. The modular approach also allows the platform to accommodate two buses at once. The modules provide a consistent and high-quality passenger experience throughout the line.

The consistent 1220 mm module will be used for glazing sizing and the placement of columns throughout the platform, providing cost and maintenance efficiencies as well as visual consistency throughout the platform.

2.2. Phasing

The modular design can allow shelters to be developed in a phased approach, if desired. Or example, a single module could be located on a full-length platform on opening day. As ridership increases and more capacity is needed at the BRT stop, a second module can be added to the platform. This design methodology is efficient and responsive to the evolving ridership of the DS BRT over time. With phased installation, a handrail should be provided along the entrance area to guide passengers to the shelter.

Functional elevation of the platform

2.3. Amenities

A list of BRT stop amenities was developed in consultation with Metrolinx, TTC and DRT. The amenities are listed below:

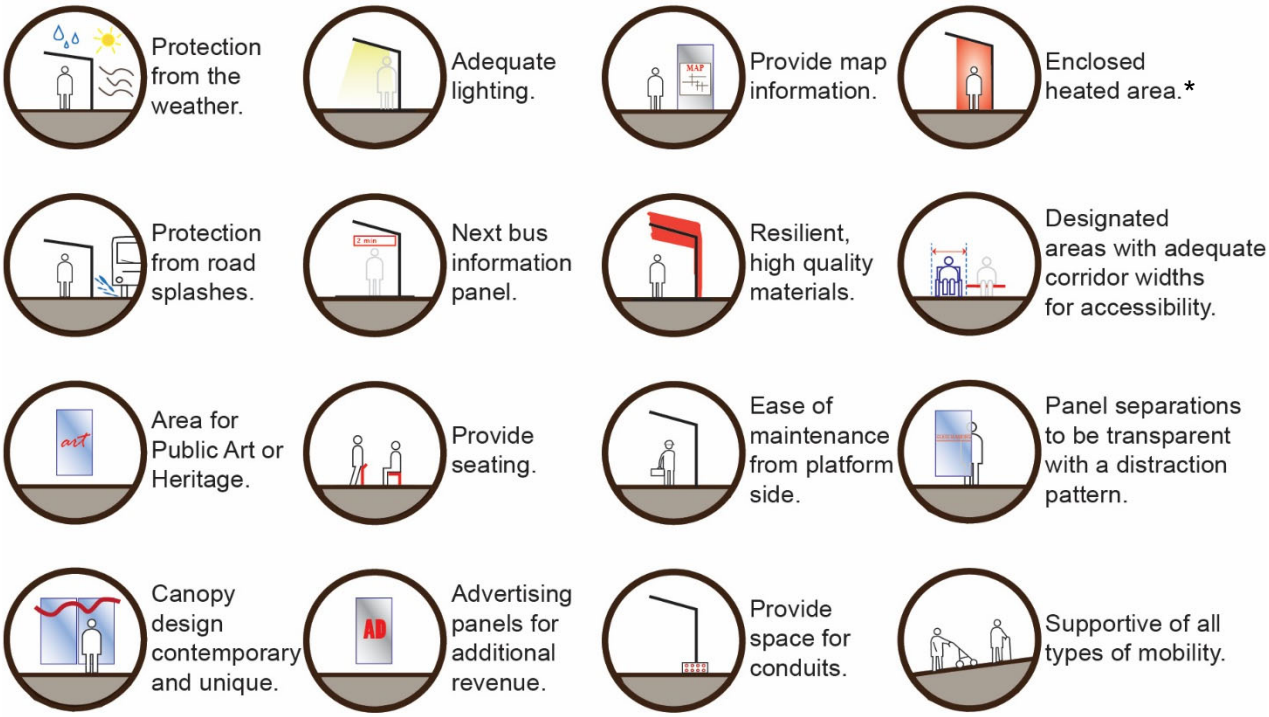
- Digital maps, schedules & amenities, including stop markers, at all stops
- Interdictory Signage (e.g. "no smoking")
- Seating
- Fare systems
- Integrated garbage / recycling
- Lean rails
- Optional 3rd party advertising, with future conduit provided
- Variable Message Sign (VMS) / Info panel
- Accessible seating area (for wheeled mobility aids)

The shelter design located all amenities against the backwall, which is consistent with the right-hand-flow principles that were described in Section 2.1. CQD, scheduling and marketing information will be consolidated into integrated panels to provide the maximum amount of clear glazed area. Added value and Ticket Vending Machines (TVMs) represent minimal disruptions to the glazing along the backwall and will be located adjacent to the CQD to consolidate the fare systems in one area.

Conduits will be concealed by embedding them along the back curb and in the floor at curbside locations. From the back curb, canopy lighting and signage conduits can be concealed in the solid panels and the structural columns to increase the amount of unobstructed glazing.

Waiting area amenities, such as benches and wheelchair accessible seating areas, are also located along the backwall. The benches are supported by the back curb. The use of the backwall as a collecting spine for the amenities helps to maintain a consistent and intuitive passenger experience.

The following diagram summarizes the amenities and design elements that were considered when developing the design. Providing an enclosed heated area was considered but ruled out in the development of shelter conceptual design. Instead, the platform edge glazing was suggested to provide additional weather protection.

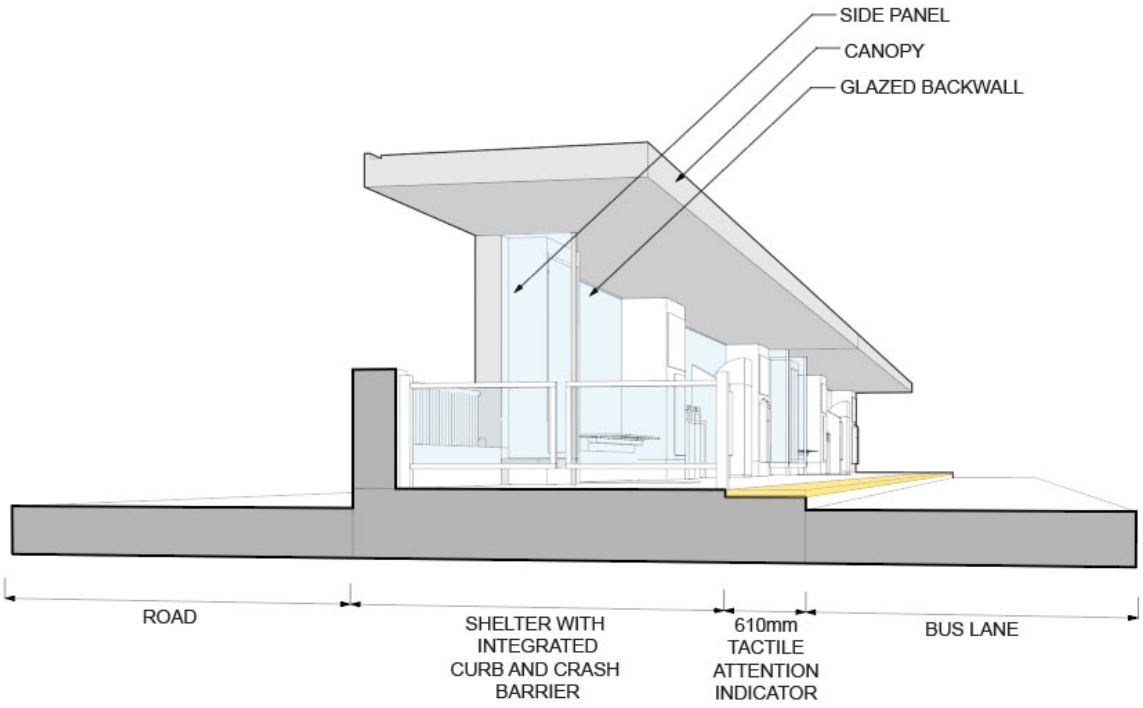


*Enclosed heated area was not carried forward

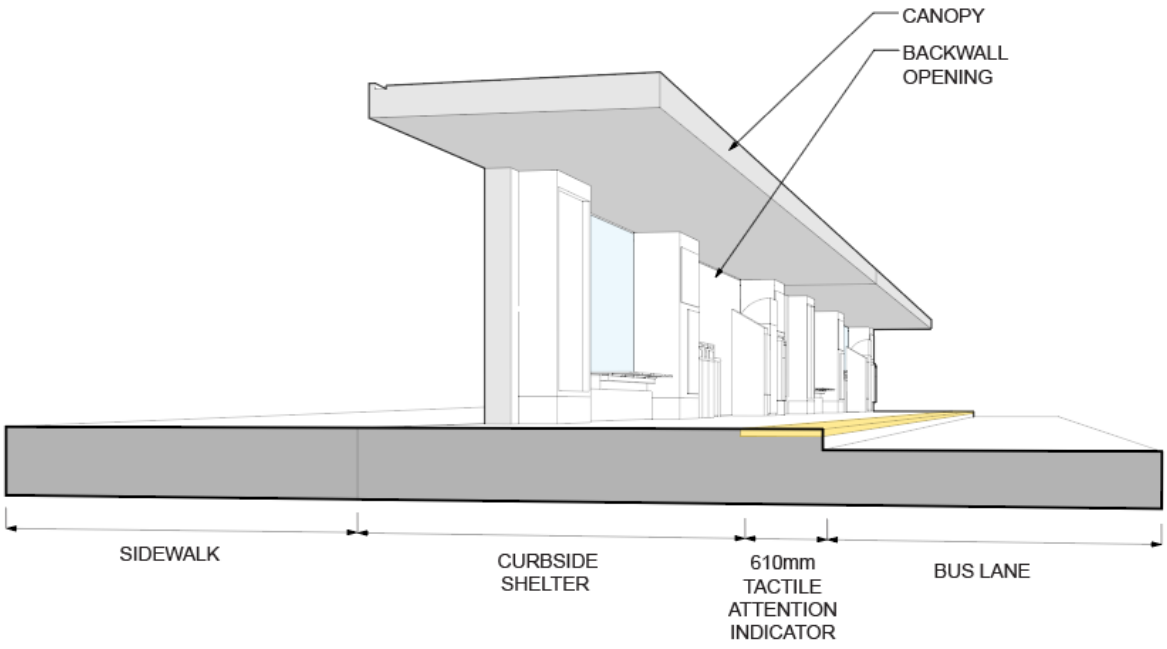
2.4. Design Concept

The shelter design strives to create an iconic and impactful BRT stop. The goal is to create a functional layout with a focus on ease of maintenance and a commitment to the standards published by Metrolinx and other stakeholders on the project.

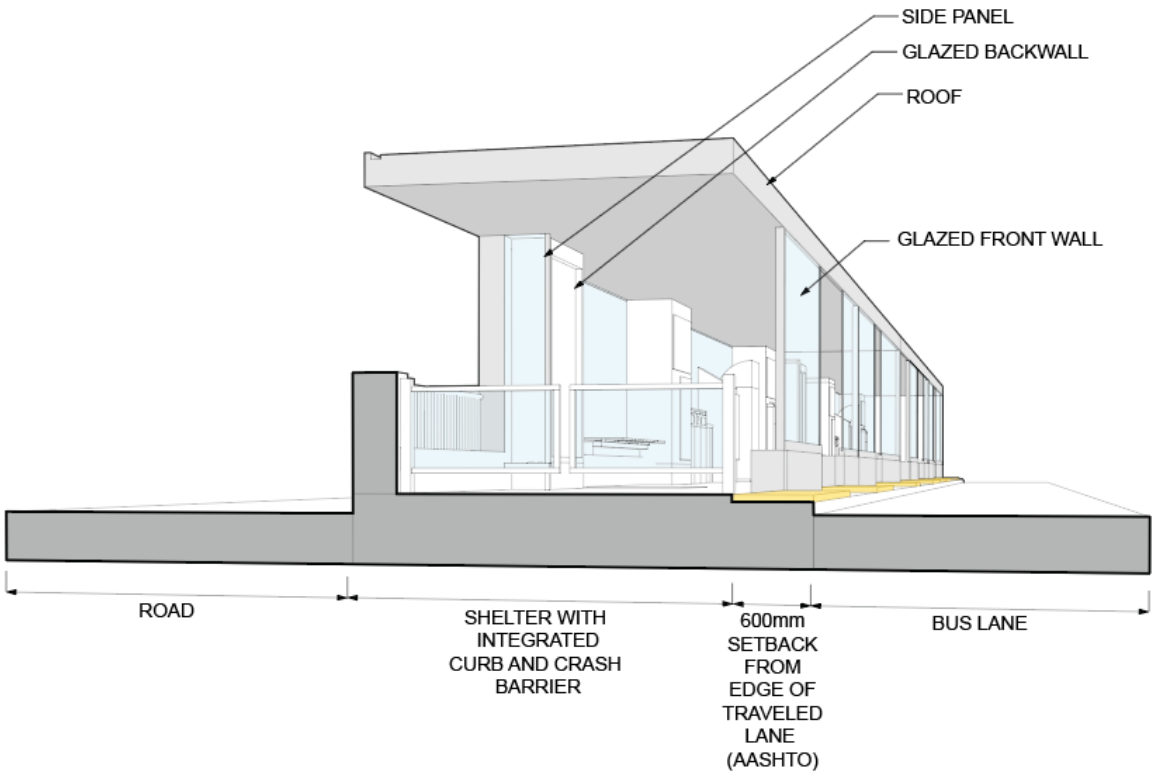
To accomplish this, the design provides a clean, orthogonal platform module that floats over a backwall that is predominantly glass. This backwall provides weather-protection, while simultaneously organizing amenities and passenger flows in alignment with right-hand-flow principles. Slim sidewalls further protect passengers from rain and wind and demarcate the entrance and waiting areas from the clear exterior path of travel that also functions as a boarding area. The sidewalls are extended into a glazed enclosure for pass-through stops. Curbside shelters are similar in layout to the open canopy stops. Backwalls provide weather protection at the seating areas only. By excluding the sidewalls, passengers have free access from both sides of the platform. Openings in the backwall allow flow-through pedestrian access from the sidewalk. Each platform module has been designed to allow for easy construction and maintenance.



Concept study for centre-median open canopy design



Concept study for curbside platform



Concept study for centre-median pass-through design

Each typical platform is comprised of two shelter modules. This symmetrical approach is not only aesthetically pleasing, but also allows for cost and maintenance efficiencies. The design also allows the platform to accommodate up to two buses at once.

Concept render for City of Toronto stops – open canopy

A “kit-of-parts” approach was used in the development of the module. This allows stops to be modified to respond to their location, resulting in a context-sensitive design. The design language and functional layouts that drive the centre-median shelters will be translated to curbside stops, providing an aesthetic and functional consistency throughout the corridor.

Concept render for curbside stops

While pass-through stops provide a more comprehensive enclosure, the glazed panels and structural elements are consistent with those in the open canopy and curbside designs. Furthermore, the functional plan of these stops, while adjusted slightly to accommodate the additional panels, follows the same three stage process and right-hand flow rules that guide the open canopy and curbside options.

Concept render for Durham Region stops – pass-through

Therefore, while each of these platform types vary in their relationship to the public right-of-way, collectively they provide a strong, consistent and iconic architectural language. This consistency extends beyond aesthetics and into the functional layout, with modular platform units providing a series of cost and maintenance efficiencies. The result is a high-quality passenger experience, grounded firmly in the standards established by the Metrolinx DS-02, that will serve the needs of the community well into the future.

2.5. Materials and Colour

The materials palette will be developed during detail design. The following conceptual recommendations are provided based on good practice and universal standards for BRT.

The platform floor will be concrete, which is a durable floor material and is easy to maintain and repair. The concrete should be light coloured to enhance light during the day and reduce light energy usage at night.

Maximizing glazing panels on the backwall is recommended. It is recommended that solid backwall panels be neutral to enhance light and to allow the platform amenities to stand out. The canopy colour can be customized, either at the soffit, the nose edge, or some combination. Bird friendly frit and colour contrasted distraction pattern will be applied to glazing in accordance with municipal requirements, and Metrolinx design standards (DS-03, DS-02) and AODA requirements. This will be included in the glazing specifications during detail design.

Furniture selection, glazing specifications, bird injury mitigation measures, canopy design and support columns are all have associated cost implications that will be explored in detail design.

The following requirements will be considered in detail design:

- Wayfinding and signage shall conform to the Metrolinx DS-03 Wayfinding Design Standard: Part 1: Wayfinding Design Standard, Part 2a: Sign Implementation Manual - GO Transit Edition, DSB-003 Train Spotting Marker Signs, Part 2b: Sign Implementation Manual - LRT/Subway Edition
- Stop markers shall be included and conform to the Wayfinding and signage shall conform to the DS-03 Wayfinding Design Standard, Part 1: Wayfinding Design Standard, Part 2a: Sign Implementation Manual - GO Transit Edition, DSB-003 Train Spotting Marker Signs, Part 2b: Sign Implementation Manual - LRT/Subway Edition
- Next vehicle screens and digital signage shall conform to the Metrolinx Digital Signage Standard in development and Metrolinx DS-03 Wayfinding Design Standard: Part 1: Wayfinding Design Standard, Part 2b: Sign Implementation Manual - LRT/Subway Edition. These signs shall be installed and suspended from the canopy in at least two locations perpendicular to the roadway (use CSA signage viewing distance guidelines to determine exact quantity and locations).

- Stop Identification signage (Stop ID): shall be included and conform to the Wayfinding and signage shall conform to the DS-03 Wayfinding Design Standard: Part 1: Wayfinding Design Standard, Part 2a: Sign Implementation Manual - GO Transit Edition, DSB-003 Train Spotting Marker Signs, Part 2b: Sign Implementation Manual - LRT/Subway Edition.

3 Next Steps

The following is a list of items that should be considered in detail design.

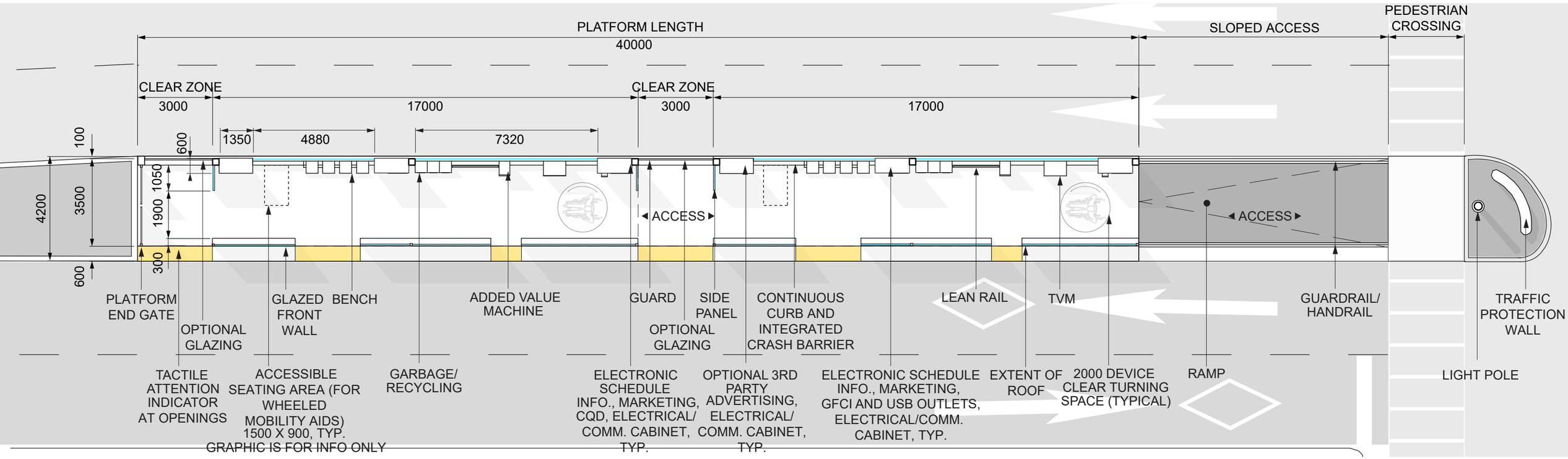
- Confirm the shelter prototypes required based on the different types of platforms at specific locations along the BRT line. This would facilitate design, construction and prefabrication, which results in budget and construction efficiencies.
- Involve the following specialists in the detail design stage: lighting designer, electrical, systems/communications, structural, mechanical, civil and code consultant.
- Wayfinding and signage for BRT stops shall conform to the Metrolinx DS-03, Part 1 and Part 2A and Part2B Sign Implementation Manuals
- Consider canopy and shelter drainage when the design is advanced in detail design.
- Establish a material and colour palette in consultation with TTC, DRT and Metrolinx.
- Review opportunities to adjust shelter elements to minimize visual impacts on local cultural heritage features.
- Continue to establish different modules that can be prefabricated. This could include consultation with a chosen manufacturer so the detail design can be coordinated according to the contractor’s strengths.
- Develop access sloped walkway options early in the detail design stage and on a site-by-site basis in order to evaluate impacts to platform design, property take, pedestrian access and street layouts.
- Consider differentiating the floor finish in curbside shelters from the sidewalk.
- Determine material, location and design of amenities such as the lean rail, benches, end gates, stop markers, stop IDs, pedestrian signals, and Passenger Assistance Intercom in detail design.
- Public education campaigns will be developed to inform the public about the different shelter types prior to opening day. The public education campaigns will focus on the shelter elements that may vary by stop location to proactively raise awareness and inform future customers.

Centre-median, open canopy

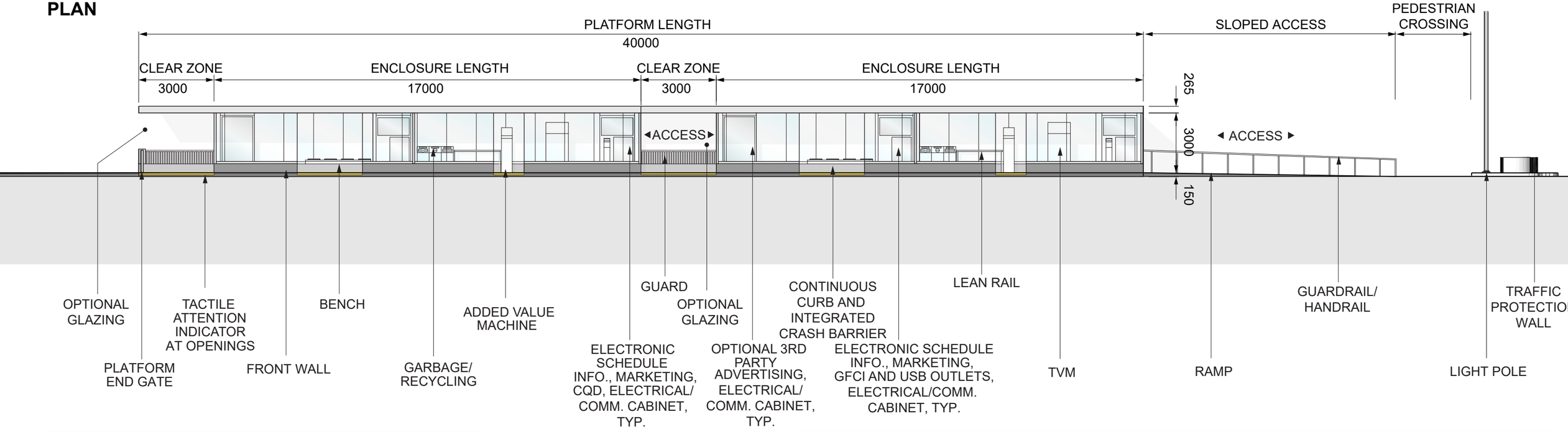
Centre-median, pass-through

Curbside, pass-through

4 Additional Drawings



PLAN



ELEVATION

NOTE: FULL-LEVEL BOARDING PLATFORMS (14") MAY RESULT IN LONGER RAMPS AT SOME LOCATIONS

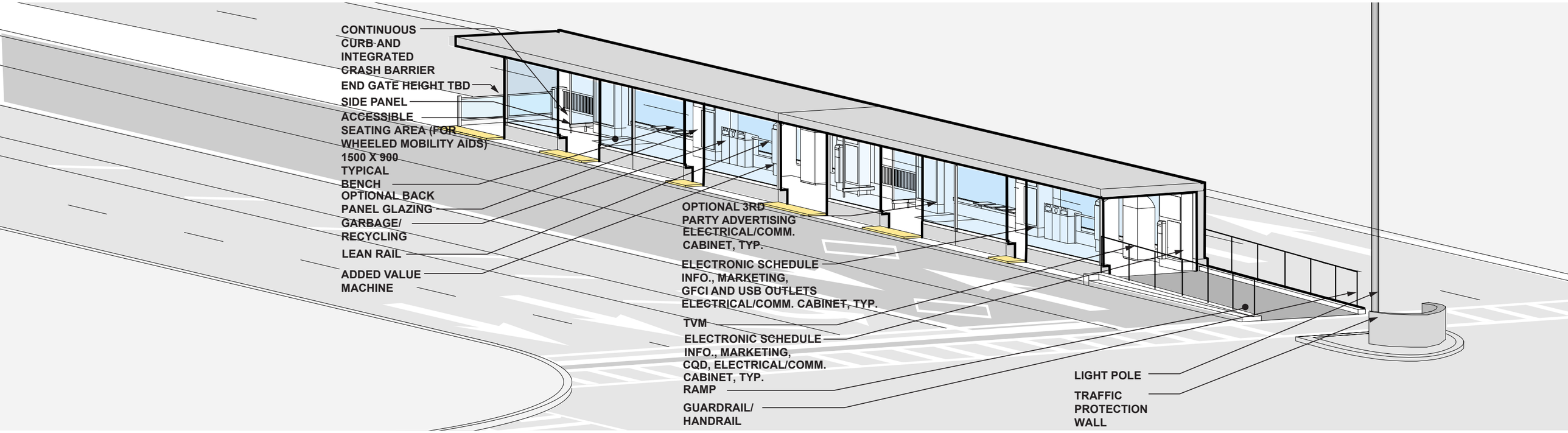
CENTRE-MEDIAN PREFERRED - OPEN PASS-THROUGH

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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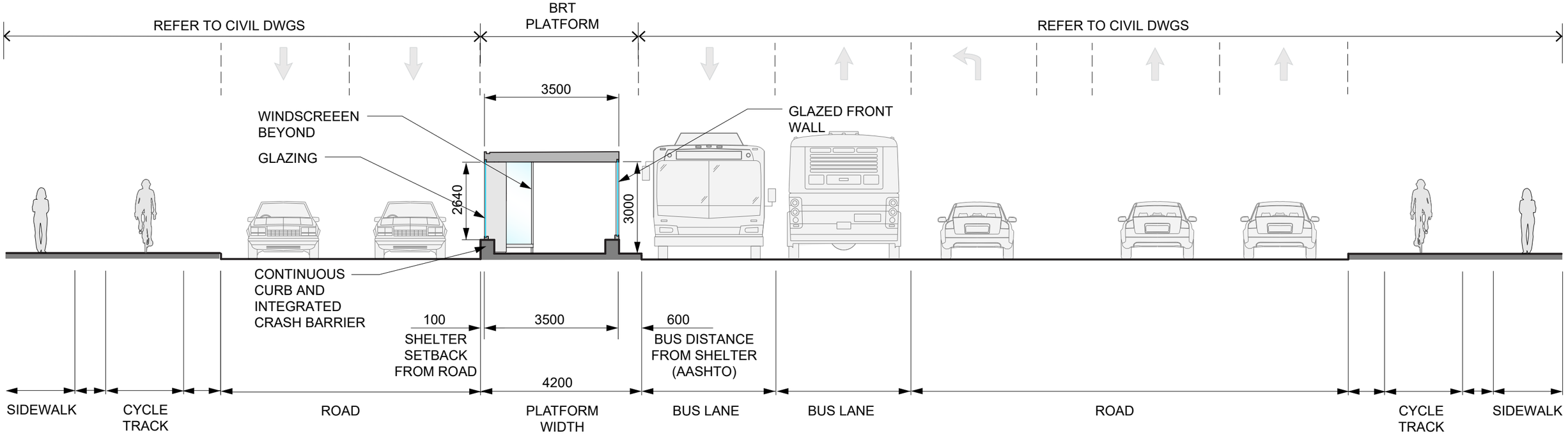


SECTION

NOTE: FULL-LEVEL BOARDING PLATFORMS (14") MAY RESULT IN LONGER RAMPS AT SOME LOCATIONS

CENTRE-MEDIAN PREFERRED - OPEN PASS-THROUGH

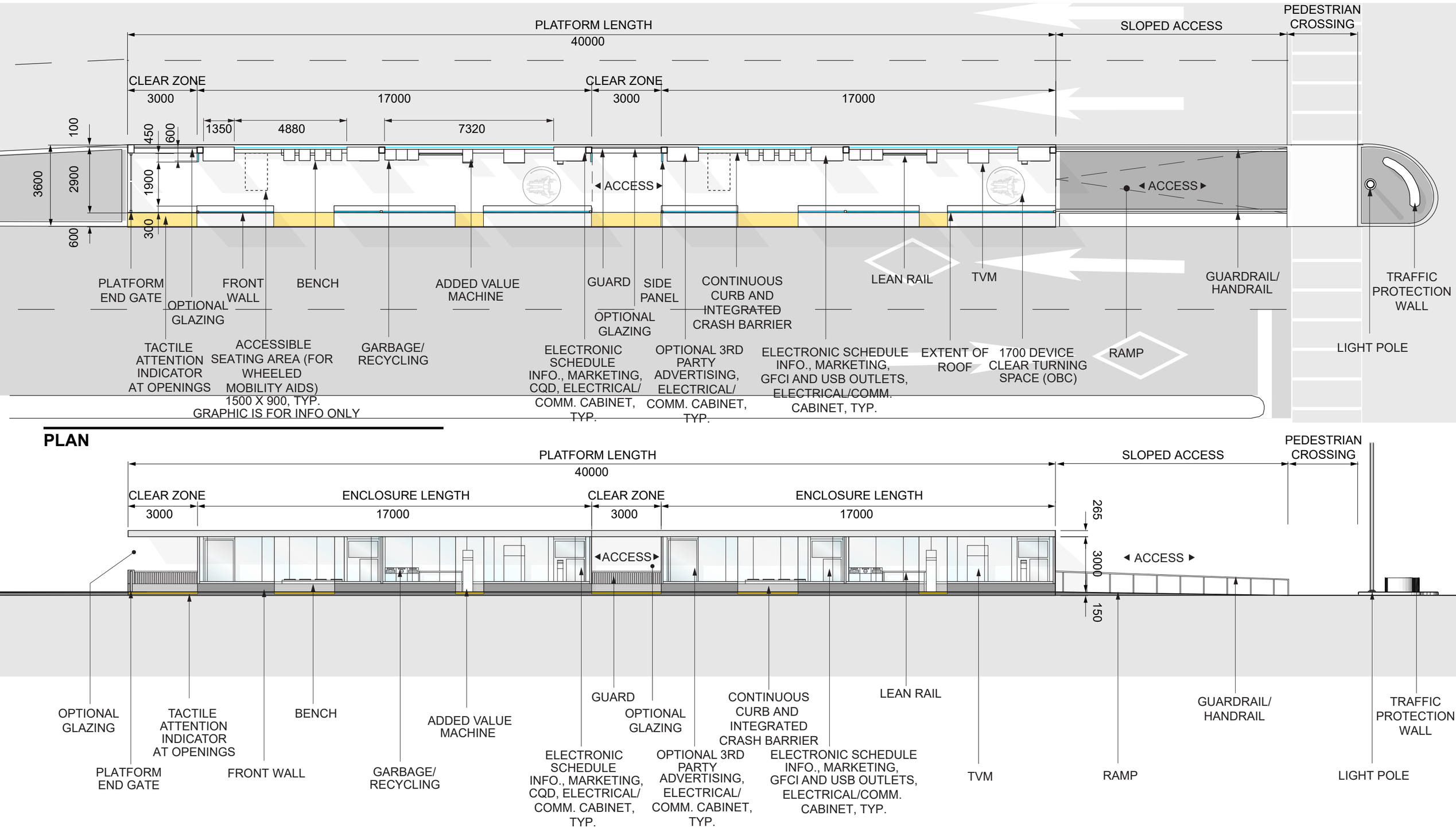
Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS

PLAN



ELEVATION

NOTE: FULL-LEVEL BOARDING PLATFORMS (14") MAY RESULT IN LONGER RAMPS AT SOME LOCATIONS

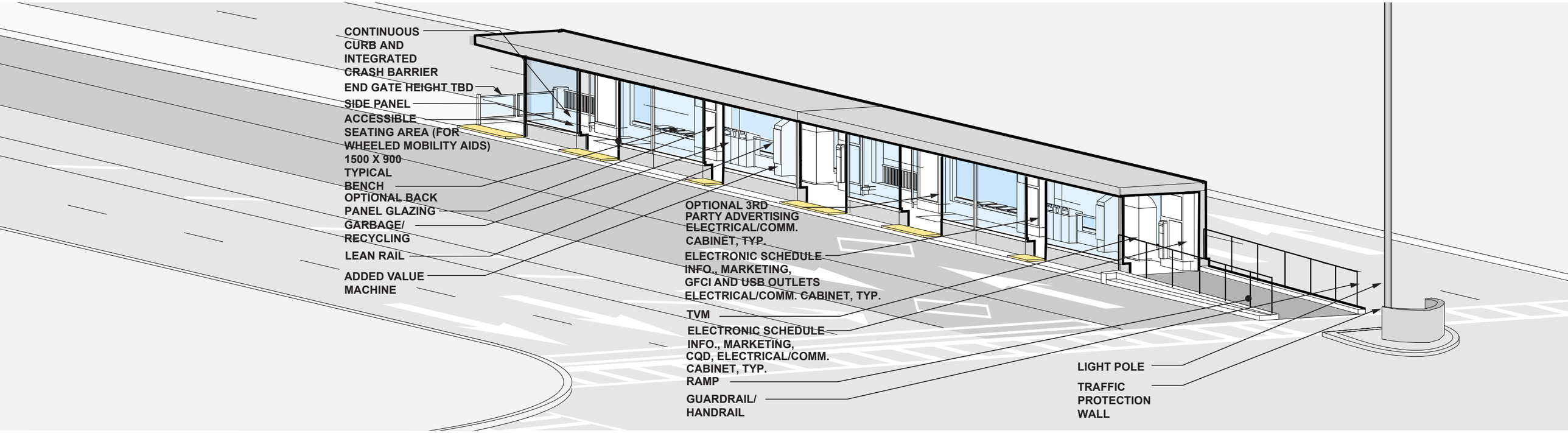
CENTRE-MEDIAN NARROW - OPEN PASS-THROUGH

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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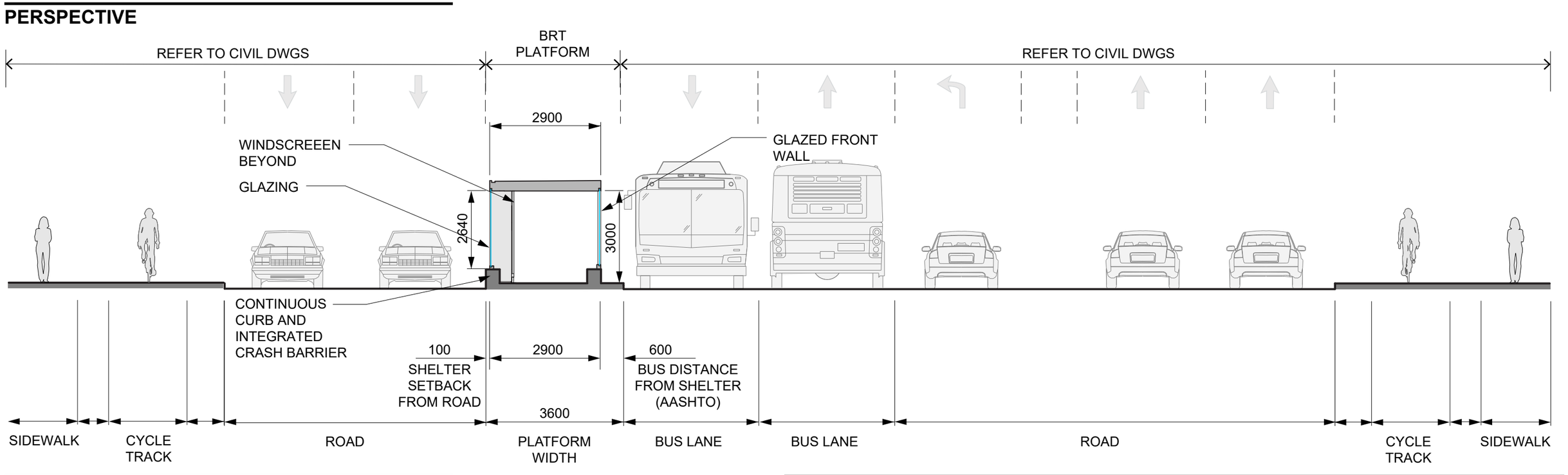


SECTION

NOTE: FULL-LEVEL BOARDING PLATFORMS (14") MAY RESULT IN LONGER RAMPS AT SOME LOCATIONS

CENTRE-MEDIAN NARROW - OPEN PASS-THROUGH

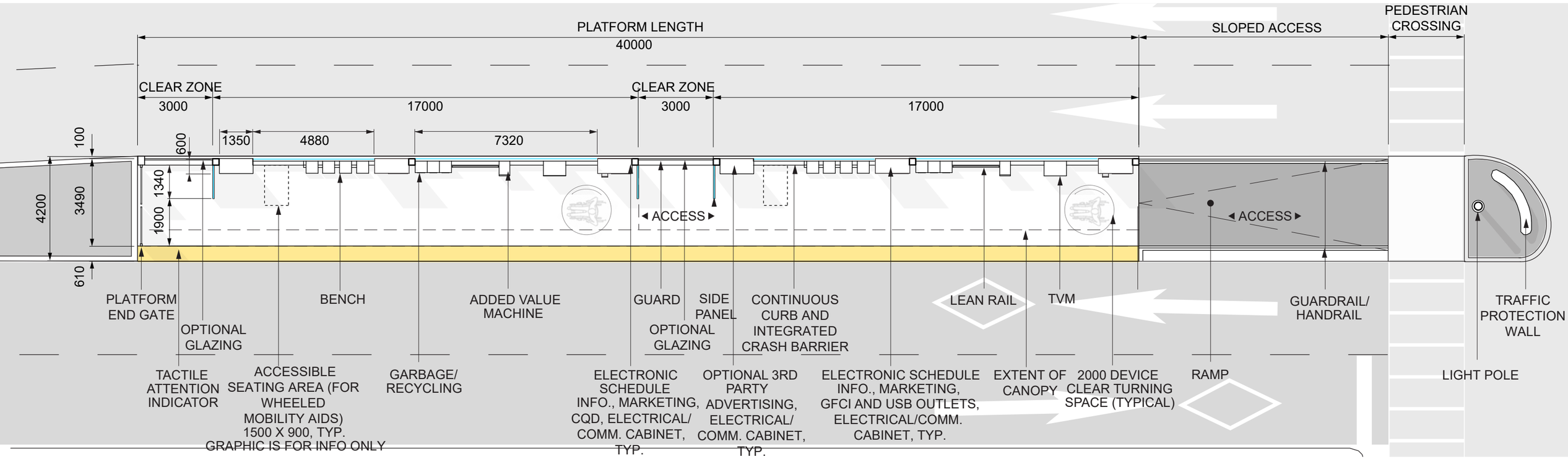
Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS

PLAN



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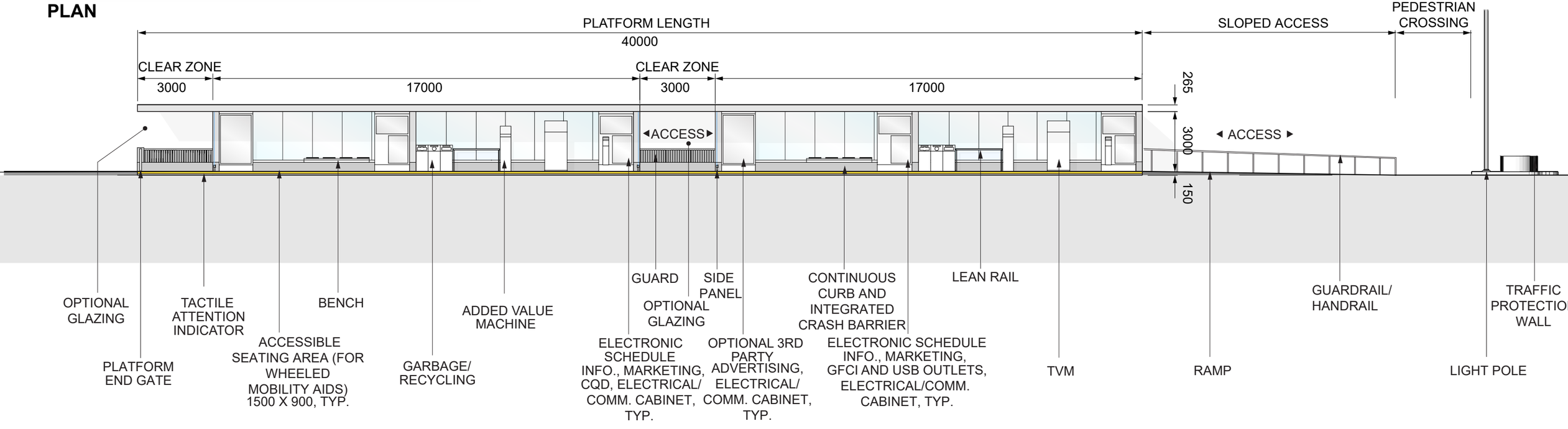


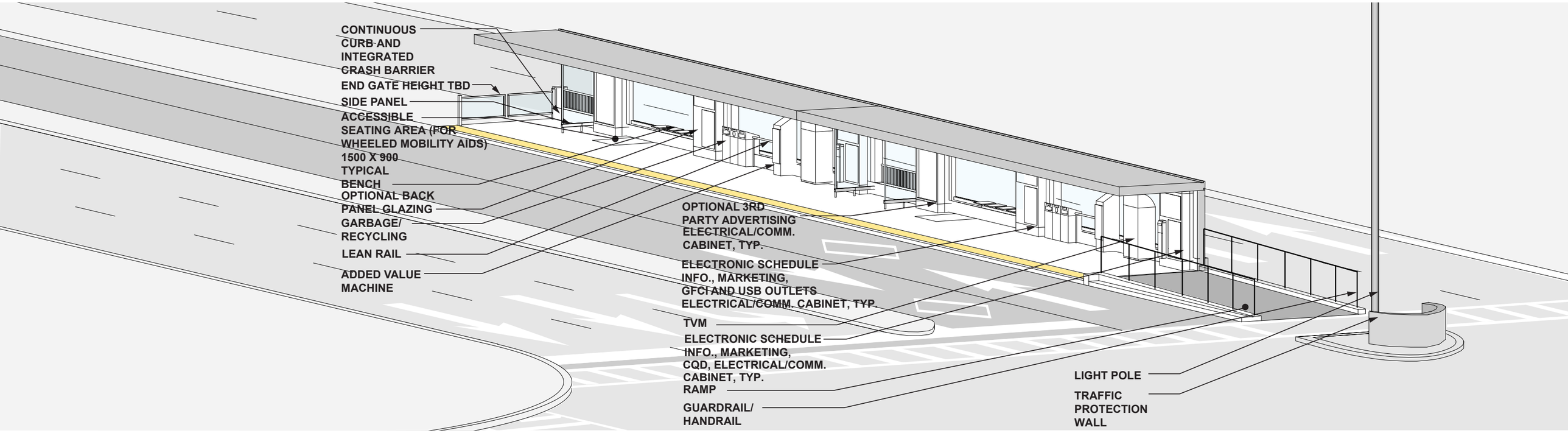
CENTRE-MEDIAN PREFERRED - OPEN CANOPY

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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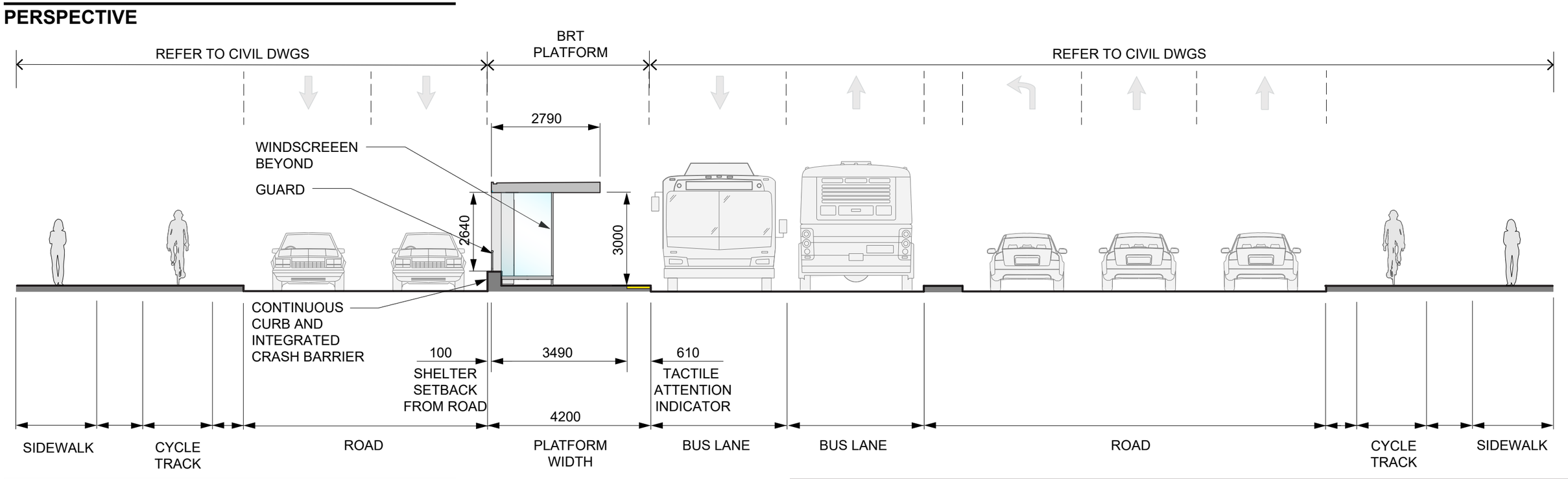


SECTION

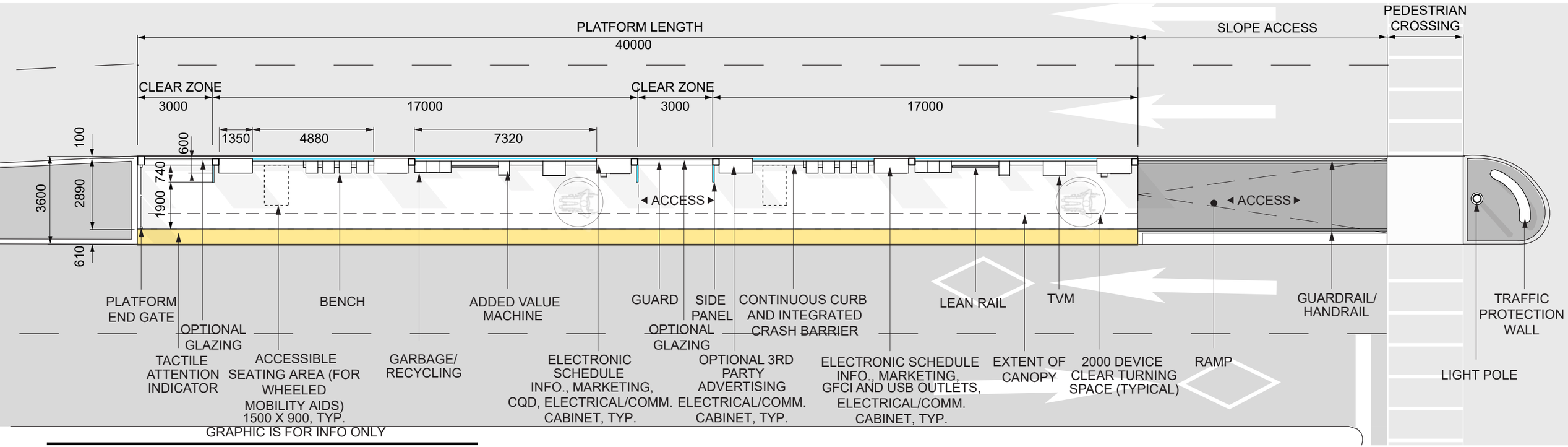
CENTRE-MEDIAN PREFERRED - OPEN CANOPY

Date: MARCH 2021

Scale: N.T.S.

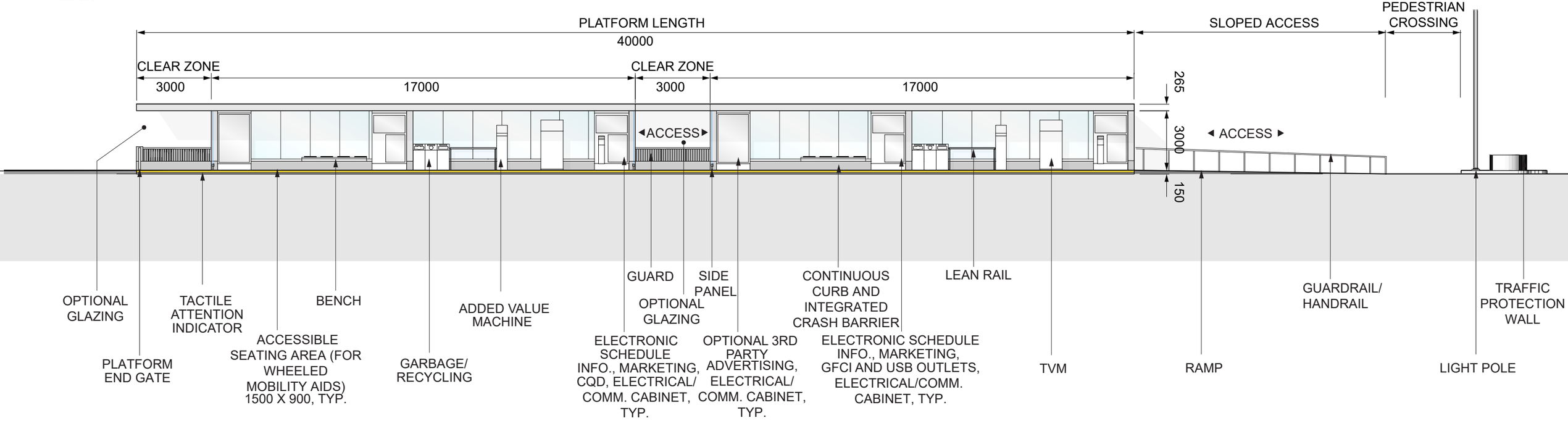
METROLINX

IBI PARSONS



GRAPHIC IS FOR INFO ONLY

PLAN



ELEVATION

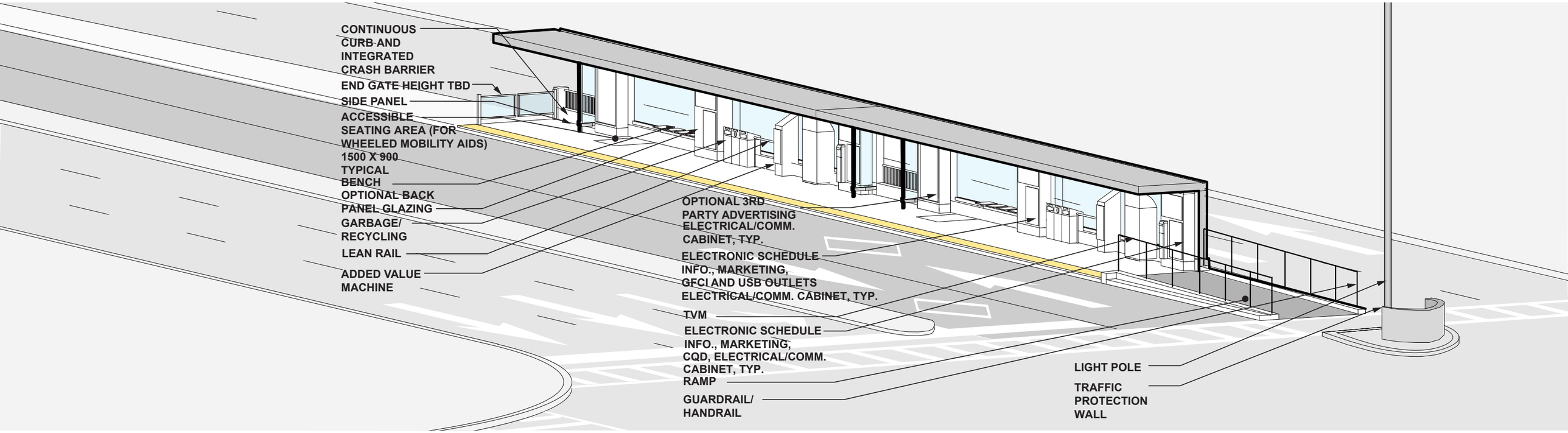
CENTRE-MEDIAN NARROW - OPEN CANOPY

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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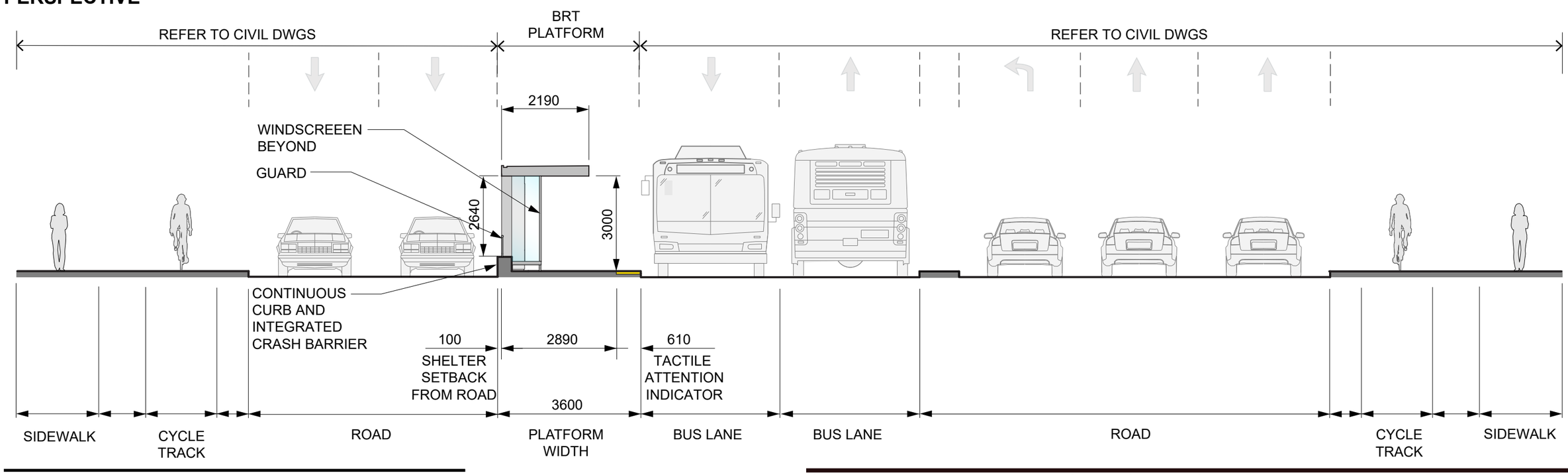


SECTION

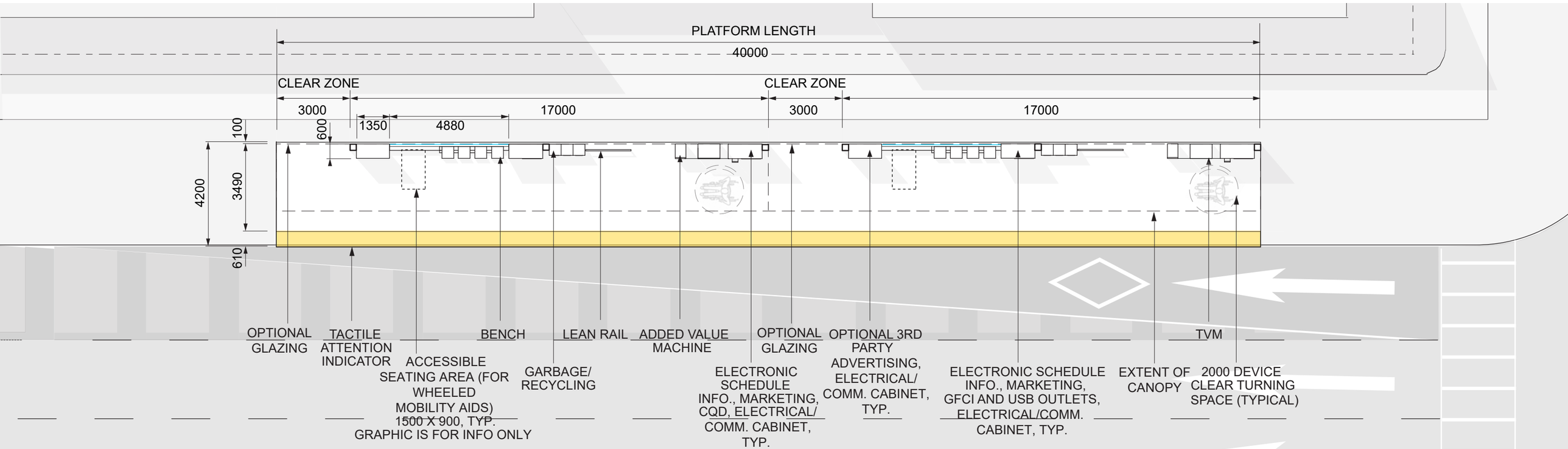
CENTRE-MEDIAN NARROW - OPEN CANOPY

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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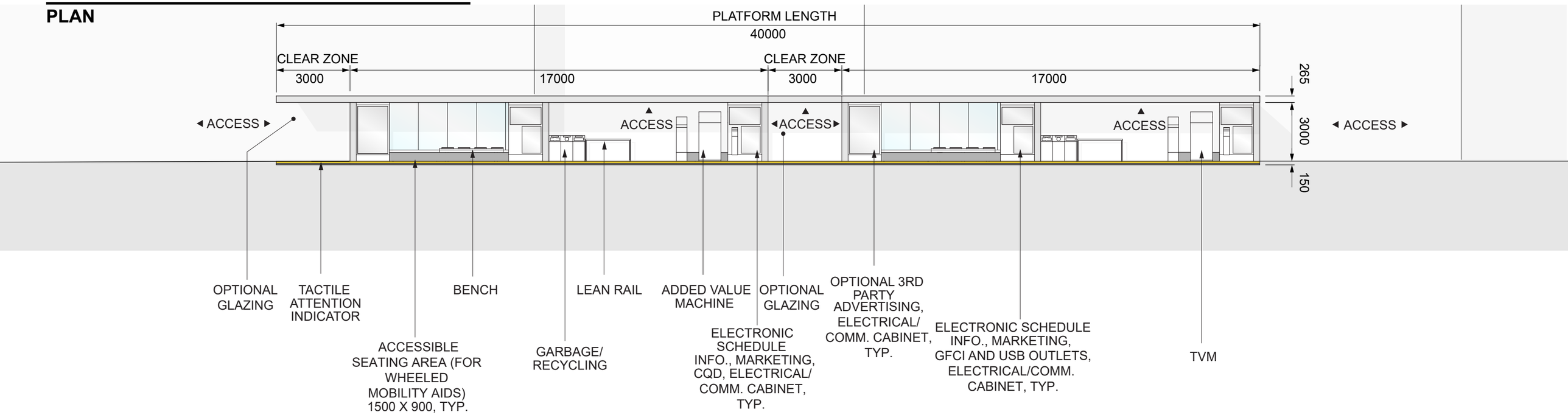


ELEVATION

Note: TAI tiles are shown schematically and will be confirmed during detailed design

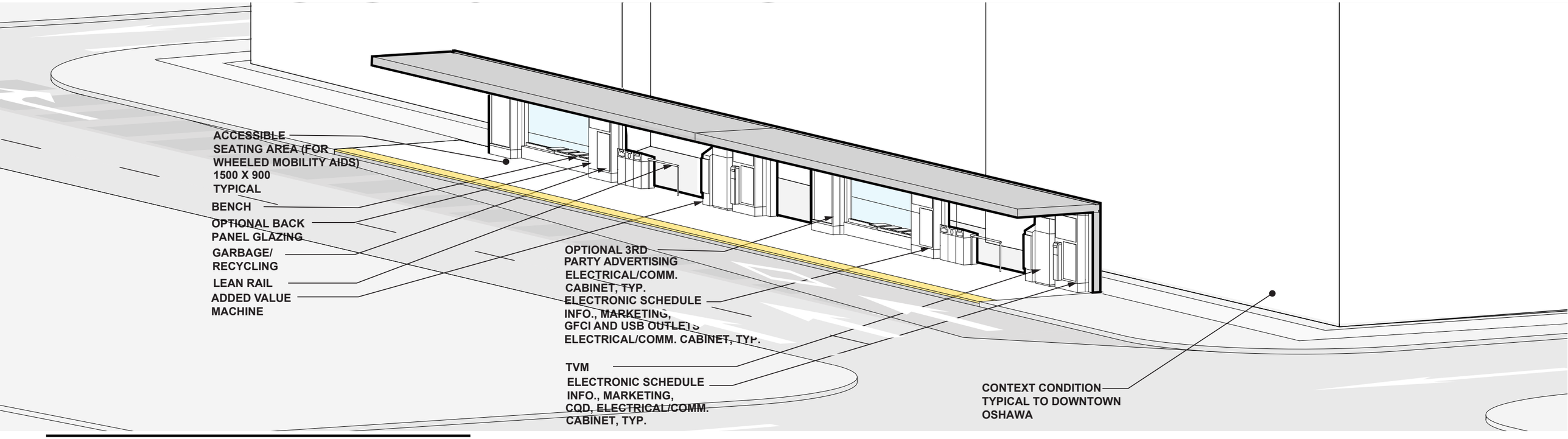
CURBSIDE PREFERRED

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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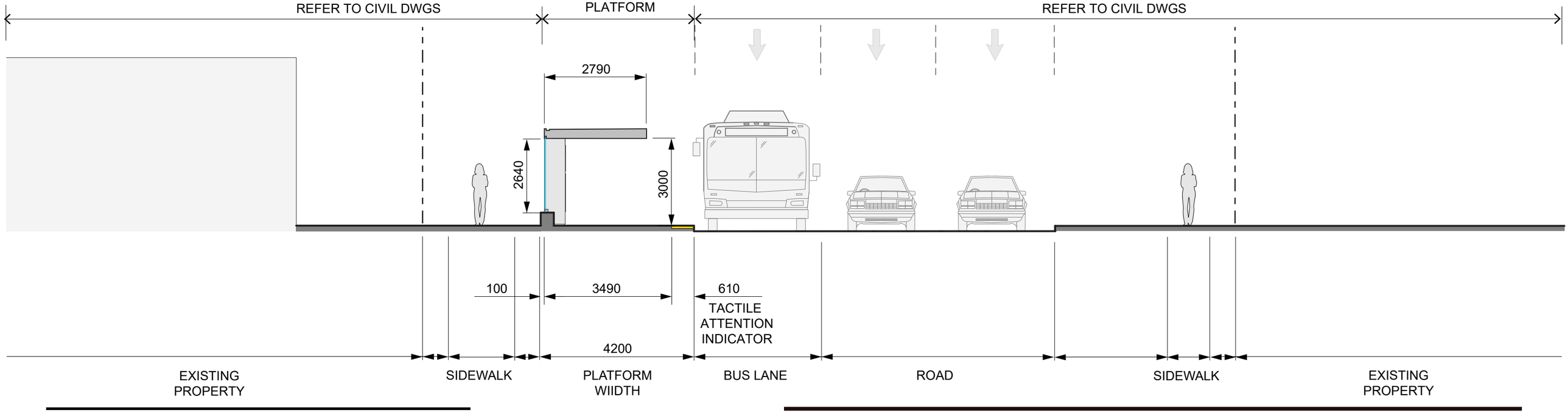


SECTION

Note: TAI tiles are shown schematically and will be confirmed during detailed design

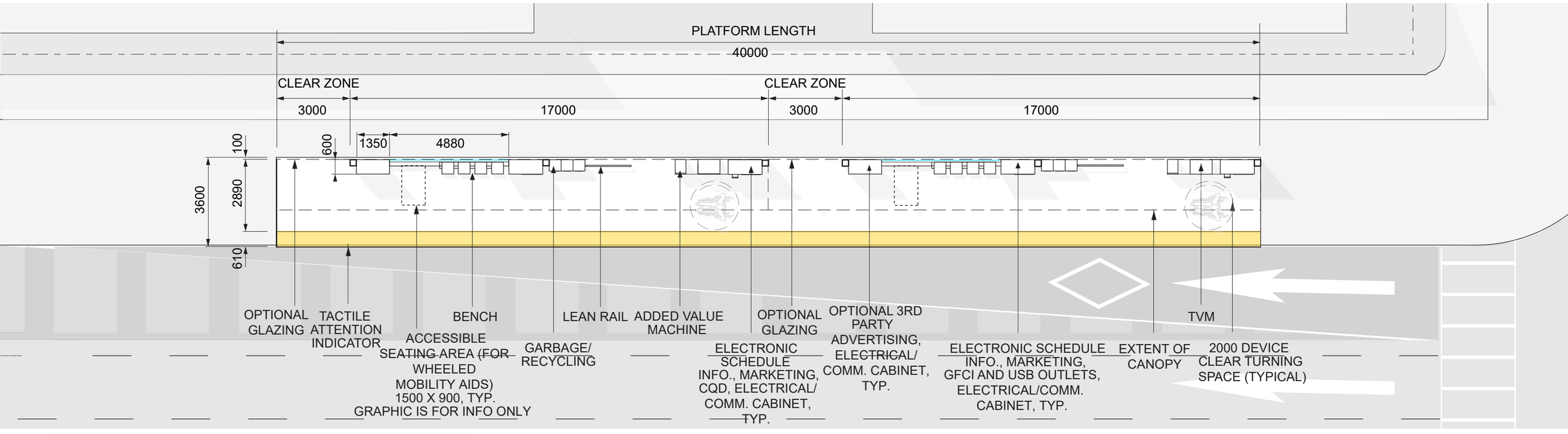
CURBSIDE PREFERRED

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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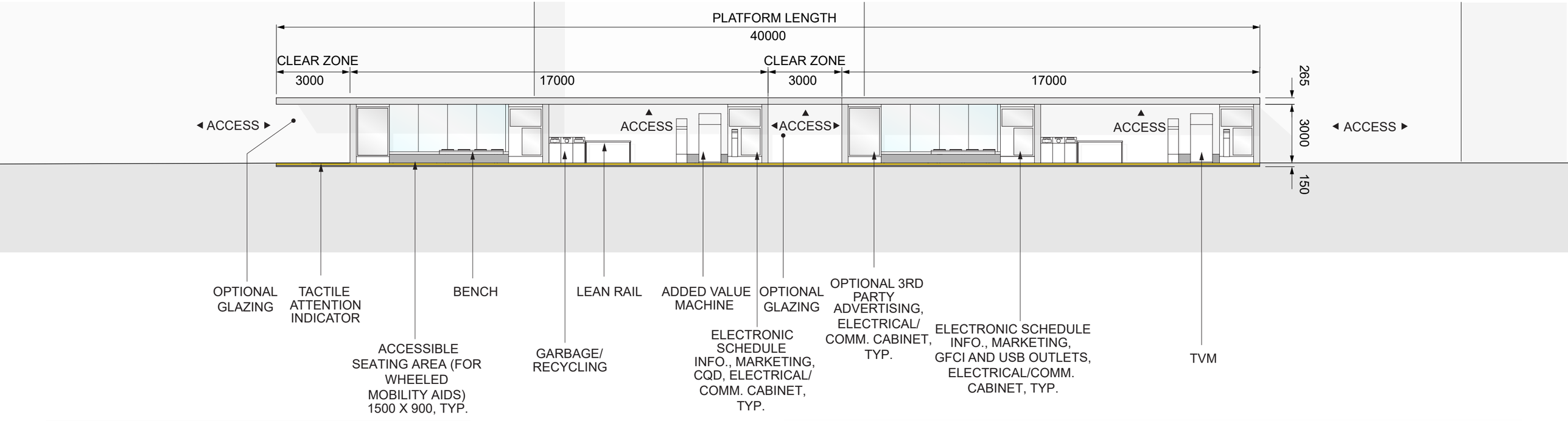


ELEVATION

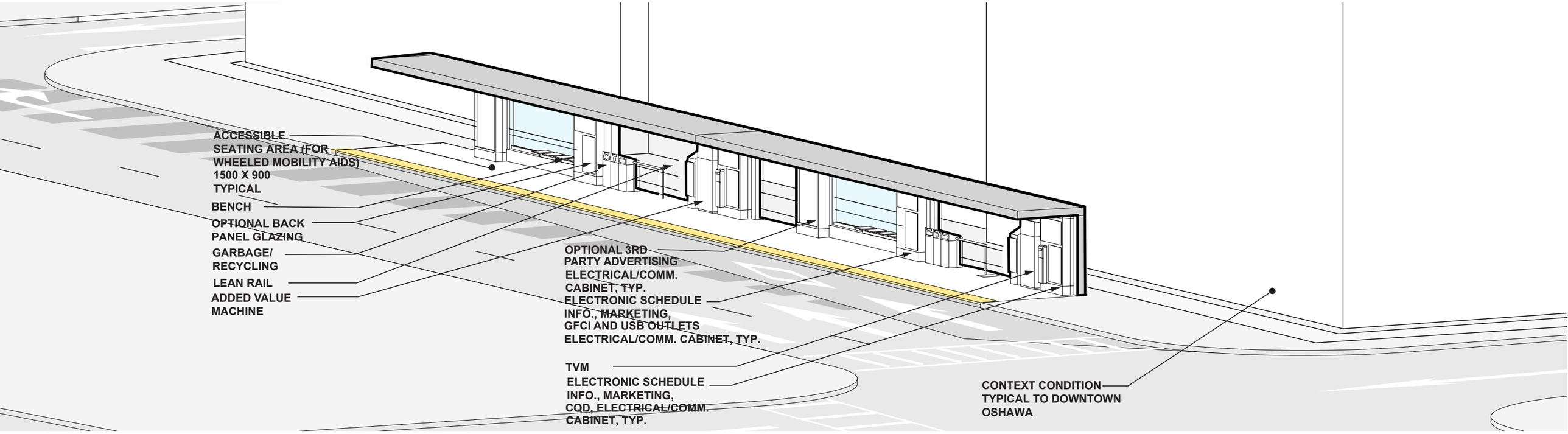
CURBSIDE NARROW

Date: MARCH 2021

Scale: N.T.S.

METROLINX

IBI PARSONS



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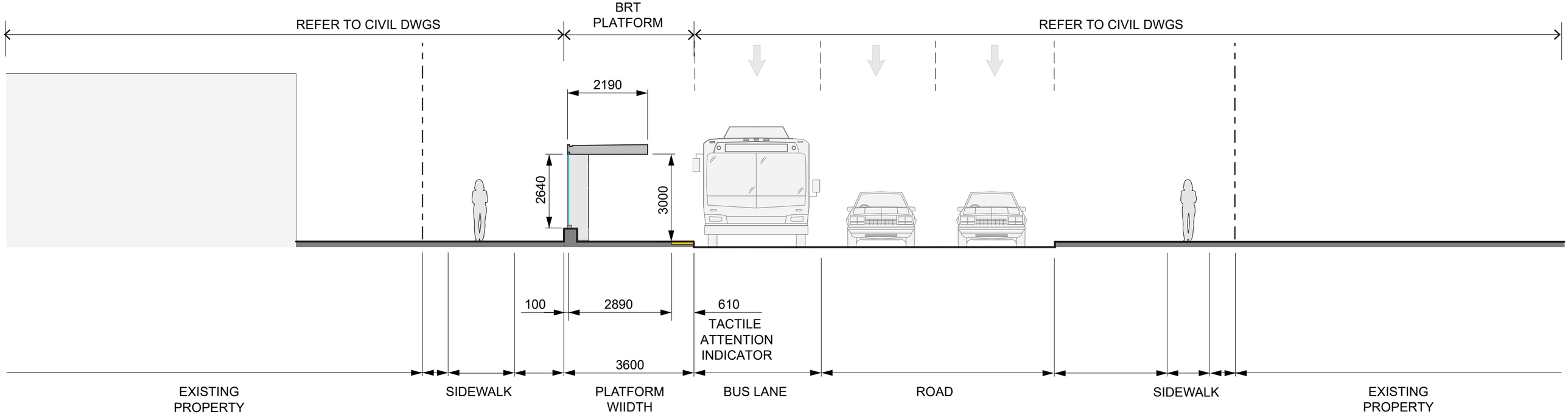


SECTION

CURBSIDE NARROW

Date: MARCH 2021

Scale: N.T.S.

METROLINX

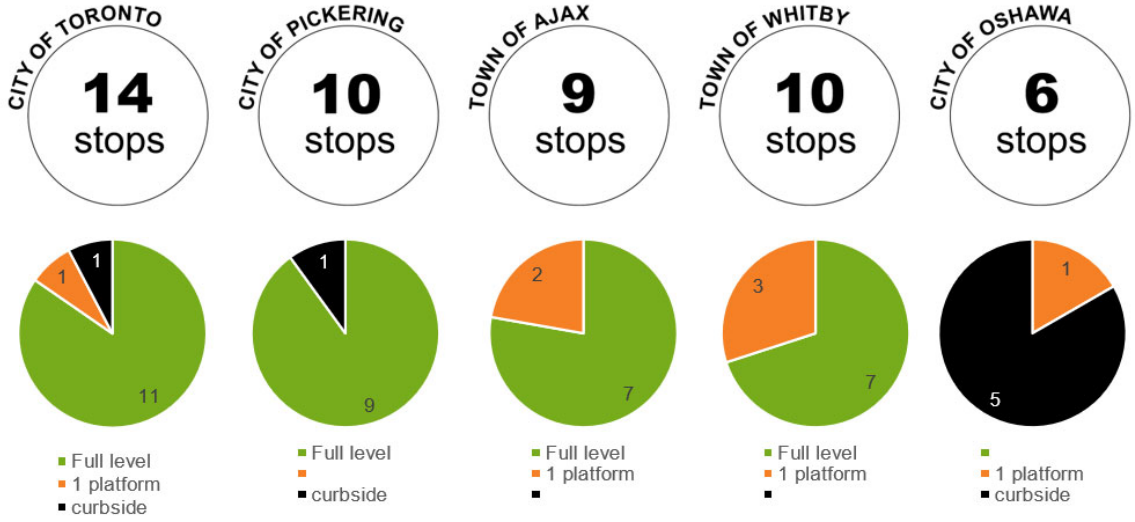
IBI PARSONS

Appendix 1: Examples of Transit Stops in Heritage Areas

Photo of Ion LRT Stop in Kitchener, Ontario

Rendering of a BRT Stop in Calgary, Alberta

Appendix 2: Level Boarding Platforms



Full level, both platforms	Full level, 1 platform	Not full level
TORONTO		
Parkington Bellamy Dolly Varden Markham Gander/Dormington Orton Park/Military Neilson Conlins Morrish Meadowvale Port Union	Morningside (WB ok, EB 20m sloped walkway and 6" platform)	Military Trail (curbside) Not listed: Scarborough Centre
PICKERING		
Rosebank Whites Fairport Dixie Liverpool Glenanna Valley Farm Brock Notion	none	Altona (curbside)

Full level, both platforms	**Full level, 1 platform**	**Not full level**
AJAX		
Church Rotherglen Westney Harwood Salem Alexander's Crossing Lakeridge	Ritchie (WB ok, EB 20 m sloped walkway and 6" platform) Galea (EB ok, WB 15 m sloped walkway and 10" platform)	none
WHITBY		
Des Newman WhiteOaks/McQuay Anderson Thickson Garrard	Cochrane (WB ok, EB 6" platform with 12 m sloped walkway) Henry (WB ok, EB 10" platform) Brock (EB ok, WB curbside) Garden (EB ok, WB 6" platform with 16 m sloped walkway)	
OSHAWA		CURBSIDE
none	Thornton (WB ok, EB 6" platform with 15 m sloped walkway)	Stevenson Gibbons Park Centre Simcoe