Chapter 5 – Final Project Description

407 Transitway

407 TRANSITWAY – WEST OF HURONTARIO STREET TO EAST OF HIGHWAY 400

MINISTRY OF TRANSPORTATION - CENTRAL REGION

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5. FINAL PROJECT DESCRIPTION

The purpose of this Chapter is to describe the functional design of the infrastructure and system components for which MTO is seeking approval from the MECP, of this EPR.

The technically preferred Transitway alternative has been planned for the operation of an intermediate capacity, regional rapid transit service provided by BRT technology. The functional plan and design was developed allowing for conversion to LRT technology if required in the future. This EPR is seeking approval for the construction and operation of BRT. Should a conversion to LRT in the future be planned, MECP will be consulted pursuant to Section 15 (1) of the Transit Regulation to define the assessment process that would apply.

The primary components of the Transitway infrastructure are 24 kilometre of runningway and 7 station facilities. The runningway is a fully-grade separated guideway consisting of a two-lane road with paved shoulders and additional stopping lanes through station platforms. The fully fenced runningway will incorporate access for emergency response vehicles at stations and appropriate intervals.

5.1. Description of the Runningway Alignment and Cross-Sections

Following the alignment and station alternatives assessment described in Chapter 4: Identification of Alternatives and Evaluation Process, and the results of the detailed field investigations, the runningway alignment was defined. Plates 1 to 37 at the end of Chapter 5: Final Project Description, illustrate the preferred horizontal and vertical alignment and corresponding footprint based on the design of the facility. Figure 5.9 to Figure 5.15 illustrates the different typical cross-sections proposed along the runningway. The section below describes the alignment and proposed cross-sections of the runningway.

SEGMENT A: WEST OF HURONTARIO STREET TO EAST OF KENNEDY ROAD

SEGMENT B: EAST OF KENNEDY ROAD TO WEST OF TOMKEN ROAD

SEGMENT C: WEST OF TOMKEN ROAD TO EAST OF TORBRAM ROAD

SEGMENT D: EAST OF TORBRAM ROAD TO EAST OF GOREWAY DRIVE

SEGMENT E: EAST OF GOREWAY DRIVE TO EAST OF HIGHWAY 427

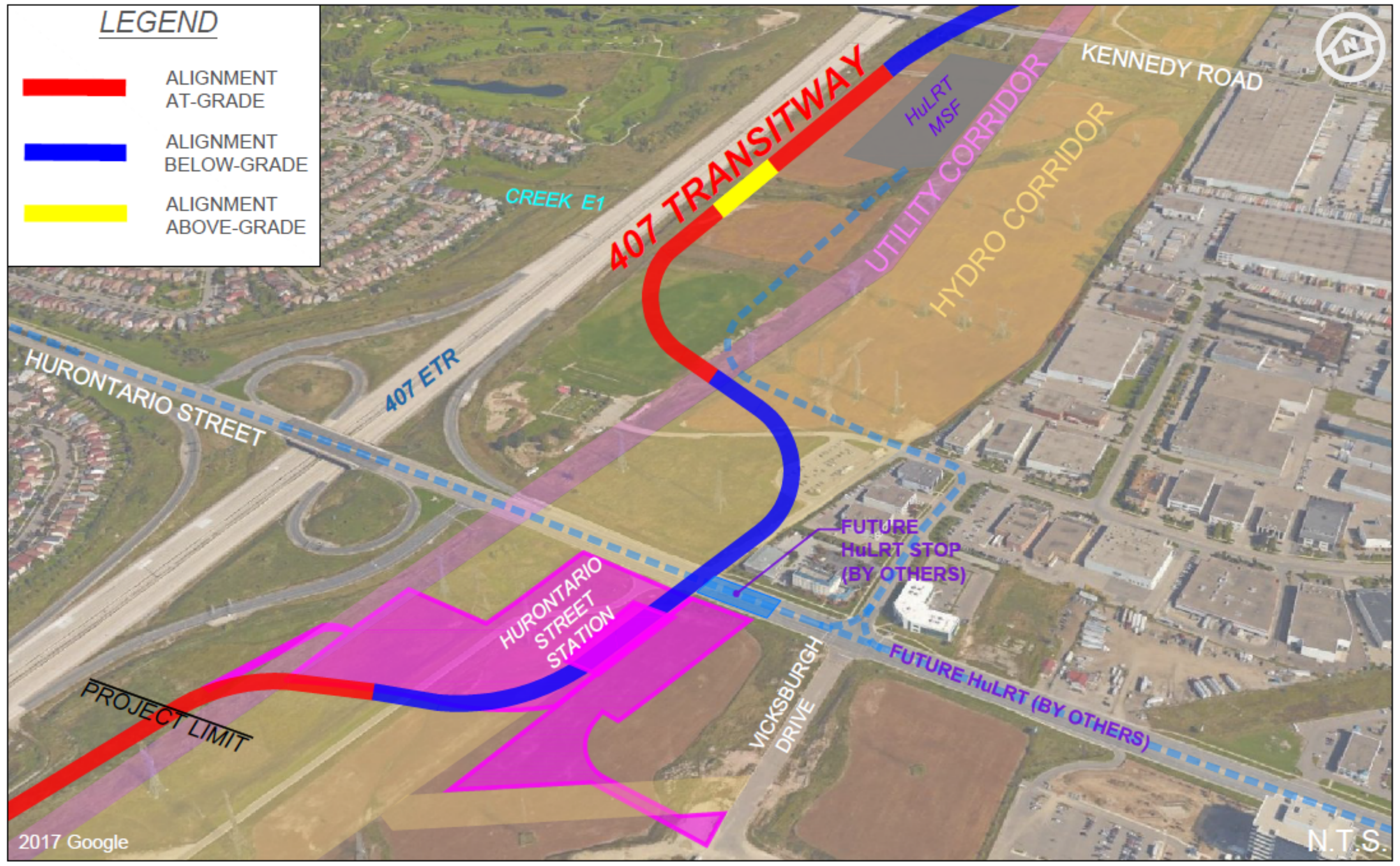
SEGMENT F: EAST OF HIGHWAY 427 TO EAST OF MARTIN GROVE ROAD

SEGMENT G: EAST OF MARTIN GROVE ROAD TO WEST OF ISLINGTON AVENUE

SEGMENT H: WEST OF ISLINGTON AVENUE TO EAST OF HIGHWAY 400

SEGMENT A: WEST OF HURONTARIO STREET TO EAST OF KENNEDY ROAD

FIGURE 5.1: SEGMENT A, WEST OF HURONTARIO STREET TO EAST OF KENNEDY ROAD ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

The runningway in this segment was developed with special consideration for integration with the Hurontario Light Rail Transit (HuLRT) alignment and its operational facilities near Hurontario Street. The Hurontario Street Station platform is situated 25 metres west of Hurontario Street and 300 metres south of the Highway 407 ETR W-N/S ramp, which provides a short transfer distance (less than 50 metres) to the adjacent HuLRT stop. The future HuLRT Maintenance & Storage Facility (HuLRT MSF) including the access road and yard lead tracks, located between Hurontario Street and Kennedy Road, are unaffected by the runningway. The reverse curves on either side of Hurontario Street allow for the alignment to avoid clearance impacts to any existing and future hydro towers while crossing the Utility and Hydro Corridors. The design speed along these curves is reduced to 60 kilometres per hour and 70 kilometres per hour, respectively. The runningway does not interfere with a potential future Hydro One transmission line on the south side of the Hydro Corridor. In this segment, five (5) private properties will be affected by the runningway.

VERTICAL ALIGNMENT

The runningway crosses under Hurontario Street with a short tunnel spanning approximately 60 metres, avoiding disruption during construction to the HuLRT operation. It remains below-grade as it traverses the Hydro Corridor, complying with Hydro One electromagnetic requirements. The alignment profile then rises to bridge over watercourse E1 before descending again to cross under Kennedy Road. Profile is illustrated in the Plan and Profile plates included in Plates 1 to 4.

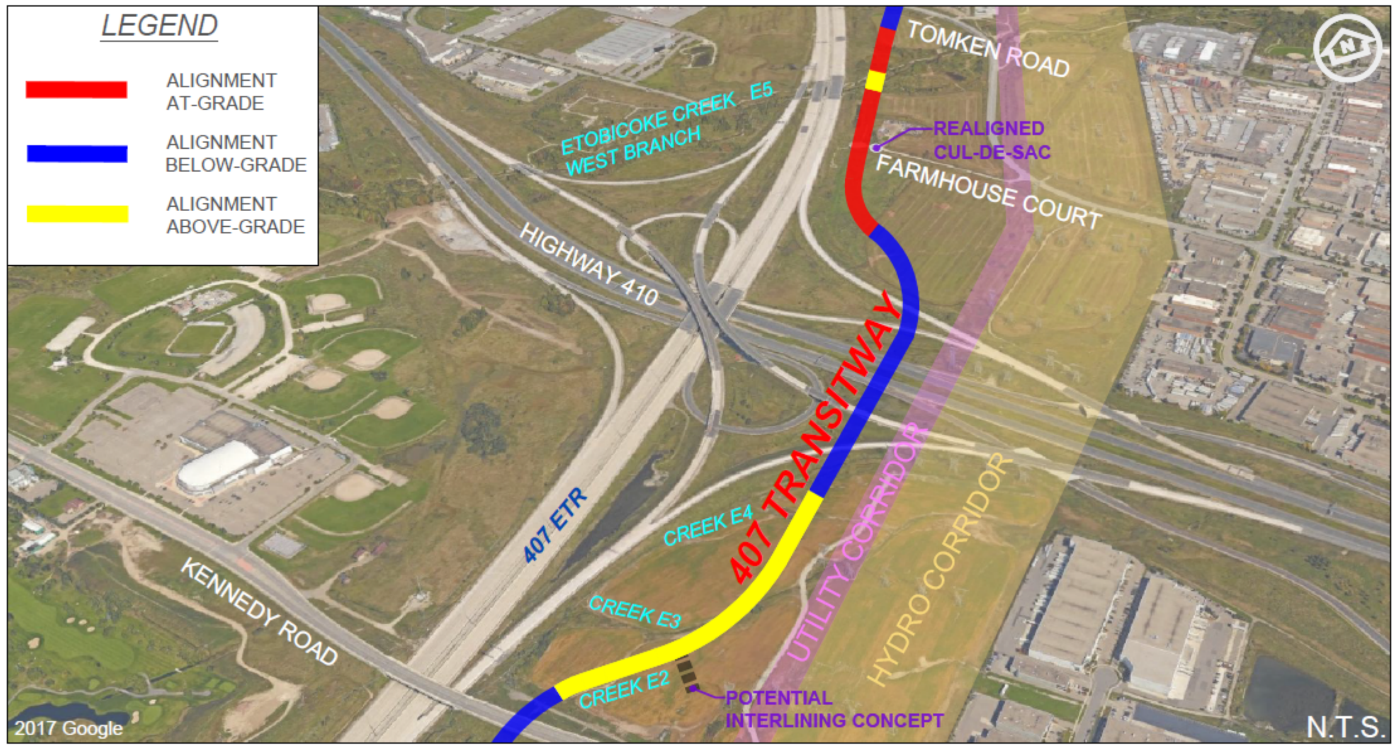
CROSS-SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross-sections are included in Figure 5.9 through Figure 5.15.

- From west limit of project to west of Hurontario Street Station area – see Figure 5.10.
- Through Hurontario Street Station platforms – see Figure 5.11.
- From east of Hurontario Street Station platforms to south of Utility Corridor crossing – see Figure 5.12.
- From south of Utility Corridor to just west of Kennedy Road crossing – see Figure 5.16.
- Kennedy Road crossing – see Figure 5.14.

SEGMENT B: EAST OF KENNEDY ROAD TO WEST OF TOMKEN ROAD

FIGURE 5.2: SEGMENT B, EAST OF KENNEDY ROAD TO WEST OF TOMKEN ROAD ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

In this segment, the alignment identified in the 1998 Transitway Corridor Protection Study was refined at the Highway 410 crossing to optimize the location of the grade separation. To simplify the construction of this crossing, the runningway travels in a tangent horizontal alignment south of the loop ramp in the southwest corner of the interchange and north of the Utility and Hydro Corridors. The design speed for the reverse curves west of Highway 410 is restricted to 80 kilometres per hour, and the design speed east of Highway 410 is restricted to 400 kilometres per hour. Existing cu-de-sac at end of Farmhouse Court will be realigned as part of this project.

To provide transit connectivity from the redevelopment of the Powerade Centre site to the 407 Transitway, a potential interlining concept connecting the 407 Transitway with Kennedy Road is being proposed.

VERTICAL ALIGNMENT

After crossing underneath Kennedy Road, the runningway bridges over watercourses E2, E3 and E4. It then crosses below Highway 410 and the interchange ramps via a tunnel spanning approximately 385m before rising to travel through the provincial lands at grade. After bridging over the Etobicoke Creek West Branch (watercourse E5), the alignment descends on the approach to Tomken Road. Profile is illustrated in the Plan and Profile plates included in Plates 4 to 7.

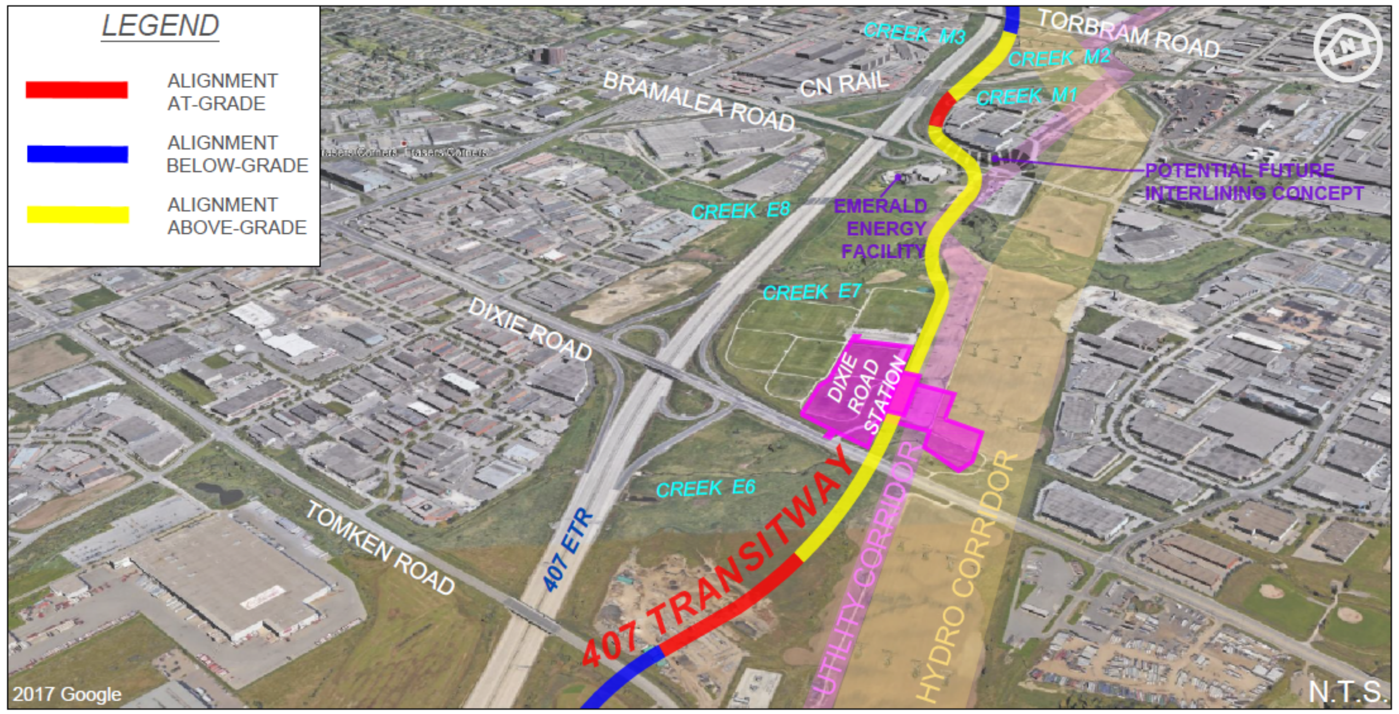
CROSS-SECTION

The types of typical cross-sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- From Kennedy Road to west of Highway 410 – See Figure 5.9.
- Crossing at Highway 410 – See Figure 5.15.
- From east of Highway 410 to Tomken Road – See Figure 5.10.

SEGMENT C: WEST OF TOMKEN ROAD TO EAST OF TORBRAM ROAD

FIGURE 5.3: WEST OF TOMKEN ROAD TO EAST OF TORBRAM ROAD ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

Between Tomken Road and Dixie Road, the runningway follows the 1998 Transitway Corridor Protection Study alignment. East of Dixie Road the runningway travels in a tangent alignment between the existing soccer/cricket fields and the Utility Corridor, minimizing the encroachment impacts to both while maintaining a full design speed of 110 kilometres per hour through this area. The Dixie Road Station platform is located approximately 150m east of Dixie Road. Further east, the alignment contains two reverse curves as it traverses the Spring Creek tributaries (watercourses E7 and E8) for which the design speed is reduced to 60 kilometres per hour. It then runs south of the Emerald Energy Plant and the Enbridge gas pipeline for approximately 250m. East of Bramalea Road, the runningway travels around an existing industrial facility with a set of two reverse curves with a reduced design speed of 80 kilometres per hour. Opposite the existing Emerald Energy Plant entrance, an interlining access road connects Bramalea Road to the runningway. The alignment continues to the east following the 1998 Transitway Corridor Protection Study alignment at the CN Rail crossing and through Torbram Road.

VERTICAL ALIGNMENT

The runningway crosses under Tomken Road and rises on a 2.5% grade to bridge over Dixie Road and over two tributaries of Spring Creek (E7 and E8). The runningway remains above grade and continues through to the Utility Corridor. The runningway bridges over Bramalea Road, the CN Railway and watercourses M1, M2 and M3. It then declines in grade to cross under Torbram Road. Profile is illustrated in the Plan and Profile plates included in Plates 8 to 14.

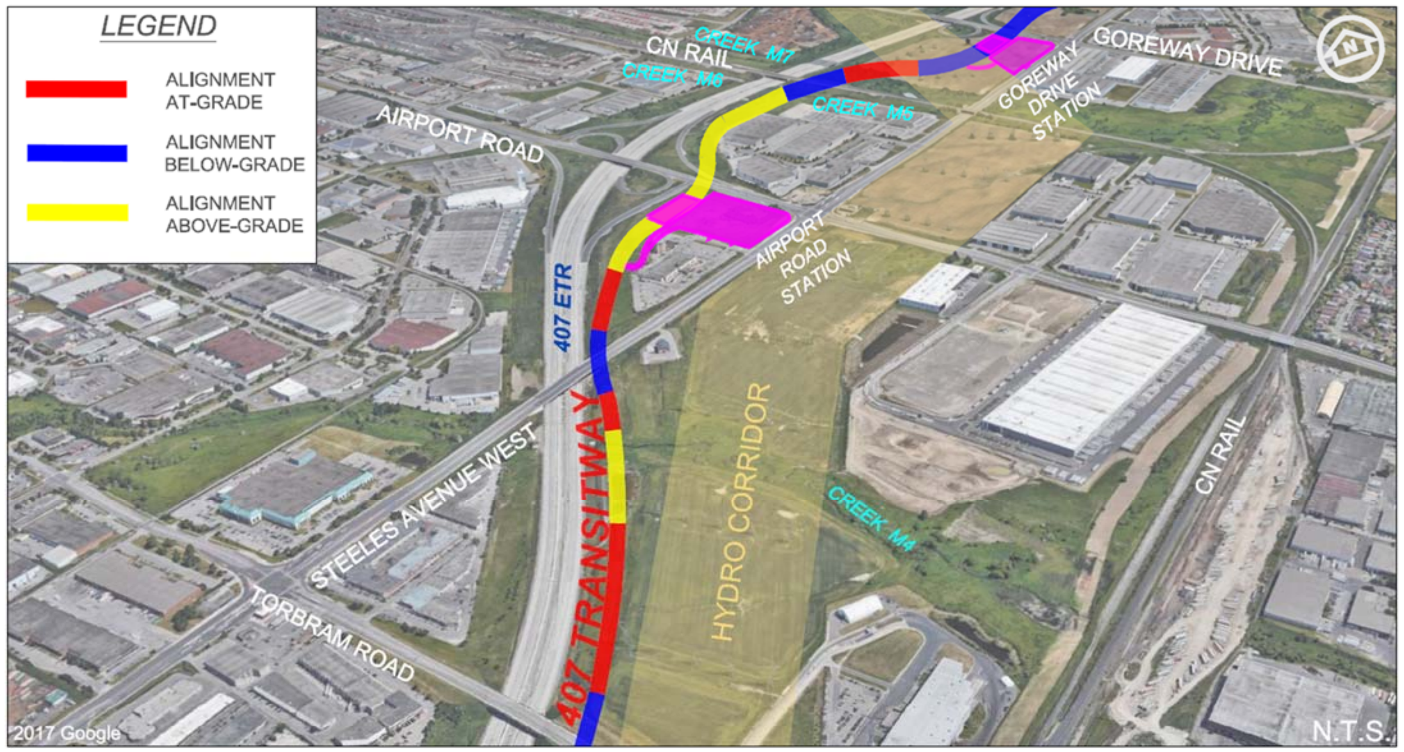
CROSS-SECTION

The types of typical cross-sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- Crossing at Tomken Road – See **Figure 5.14.**
- From Tomken Road to west of Dixie Road – See **Figure 5.10.**
- Crossing at Dixie Road – See **Figure 5.13.**
- Through Dixie Road Station platforms – See **Figure 5.11.**
- Just east of Dixie Road Station – See **Figure 5.12.**
- From east of Dixie Road Station to west of the Utility Corridor crossing – See **Figure 5.9.**
- From west of the Utility Corridor crossing to east of Bramalea Road – See **Figure 5.13.**
- Crossing at CN Rail – See **Figure 5.13.**
- Crossing at Torbram Road – See **Figure 5.14.**

SEGMENT D: EAST OF TORBRAM ROAD TO EAST OF GOREWAY DRIVE

FIGURE 5.4: SEGMENT D, EAST OF TORBRAM ROAD TO EAST OF GOREWAY DRIVE ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

The runningway in this segment is a refinement of the 1998 Transitway Corridor Protection Study alignment. The alignment was shifted to cross Steeles Avenue East as close to the 407 ETR as possible to utilize the easterly span of the Steeles Avenue East bridge for the runningway. Crossing the Hydro Corridor east of the CN Rail tracks, the runningway is shifted slightly westward to ensure clearance distances to adjacent Hydro One towers are satisfied. The runningway continues east in the protected corridor as it approaches the Goreway Drive Station platform located approximately 125m west of Goreway Drive.

VERTICAL ALIGNMENT

Following the underground crossing at Torbram Road, the runningway crosses over the 407 ETR storm water management pond and watercourse M4. It then crosses under Steeles Avenue East (utilizing the existing structure) at the same elevation as 407 ETR before climbing at a 4.5% grade on the approach to Airport Road Station. After bridging over Airport Road and the 407 ETR N-E ramp, the runningway descends on a -3.5% grade and crosses over tributaries of Mimico Creek (watercourses M5 and M6). It then tunnels below the CN Railway. The runningway enters a cut and cover section at the crossing of the Hydro Corridor to avoid electromagnetic interference. The alignment then descends at a -4.50% grade approaching the underground Goreway Drive Station platform and remains below grade to cross beneath Goreway Drive. Profile is illustrated in the Plan and Profile plates included in Plates 14 to 19.

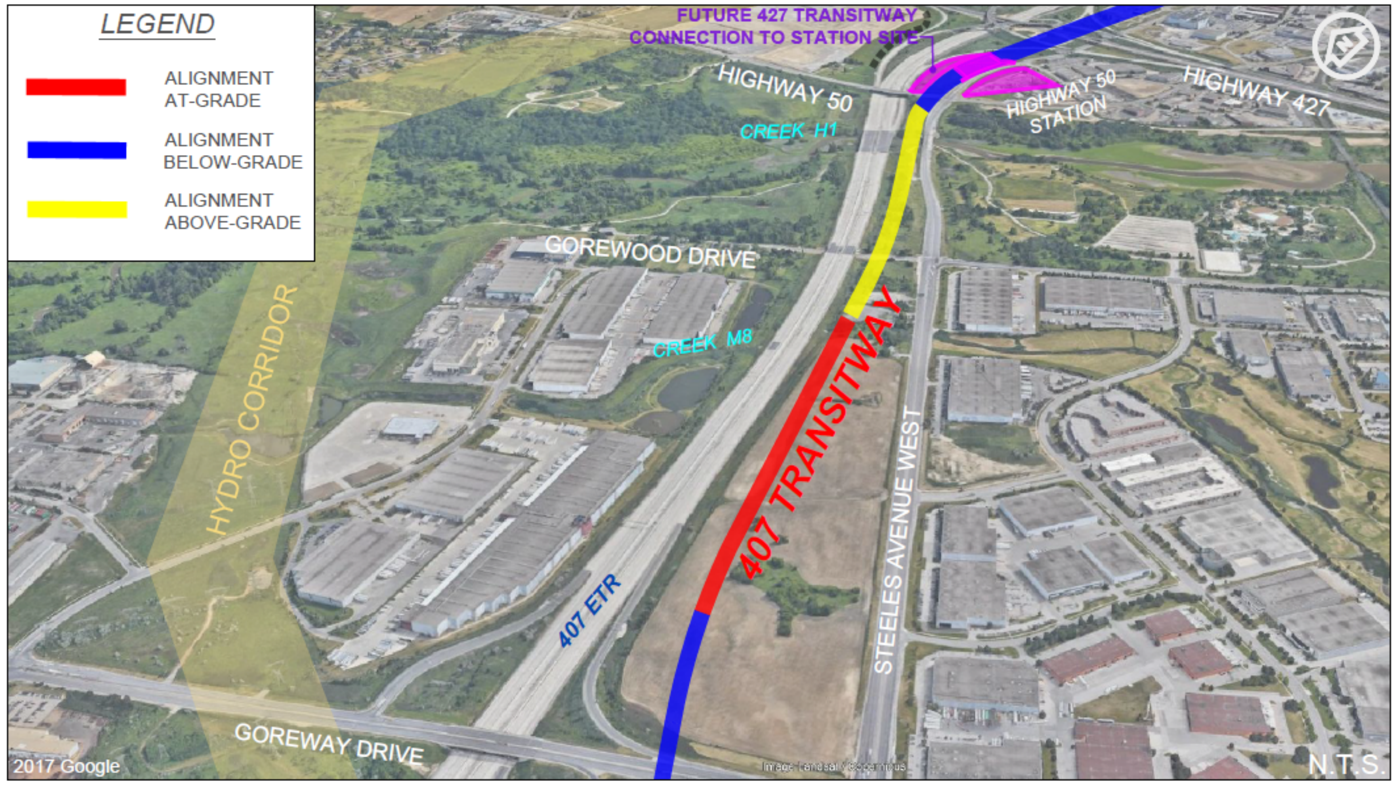
CROSS SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- From east of Torbram Road to Steeles Ave – See Figure 5.9.
- Crossing at Steeles Ave – See Figure 5.14.
- Just west of Airport Road Station – See Figure 5.12.
- Through Airport Road Station platforms – See Figure 5.11.
- Crossing at Airport Road – See Figure 5.13.
- From east of Airport Road to west of CN Rail – See Figure 5.9.
- Crossing at CN Rail – See Figure 5.14.
- Hydro Corridor crossing west of Goreway Drive – See Figure 5.12.
- Through Goreway Drive Station platforms – See Figure 5.11.
- Crossing at Goreway Drive – See Figure 5.14.

SEGMENT E: EAST OF GOREWAY DRIVE TO EAST OF HIGHWAY 427

FIGURE 5.5: SEGMENT E, EAST OF GOREWAY DRIVE TO EAST OF HIGHWAY 427 ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

The majority of the runningway in this segment follows the 1998 Transitway Corridor Protection Study alignment, travelling in a predominately tangent alignment parallel to 407 ETR, traversing through private lands. The alignment continues between Steeles Avenue East and 407 ETR crossing over Gorewood Drive and the West Humber Creek. The runningway continues north of Steeles Avenue across Highway 50 to the depressed Highway 50 Station and across the Highway 427 interchange approximately 85m north of the crossing proposed in the 1998 Transitway Corridor Protection Study alignment.

VERTICAL ALIGNMENT

The runningway maintains an at-grade profile east of the underpass at Goreway Drive until the crossing at watercourse M8, at which point it rises at a 2.0% grade to bridge over Gorewood Drive. The alignment then descends at a -1.2% grade, crosses over the West Humber Creek and underpasses Highway 50. In order to avoid disruption to the overlying roadways, the runningway profile remains below grade as it continues east through Highway 50 Station and tunnels under the Highway 427 interchange. Profile is illustrated in the Plan and Profile plates included in Plates 19 to 24.

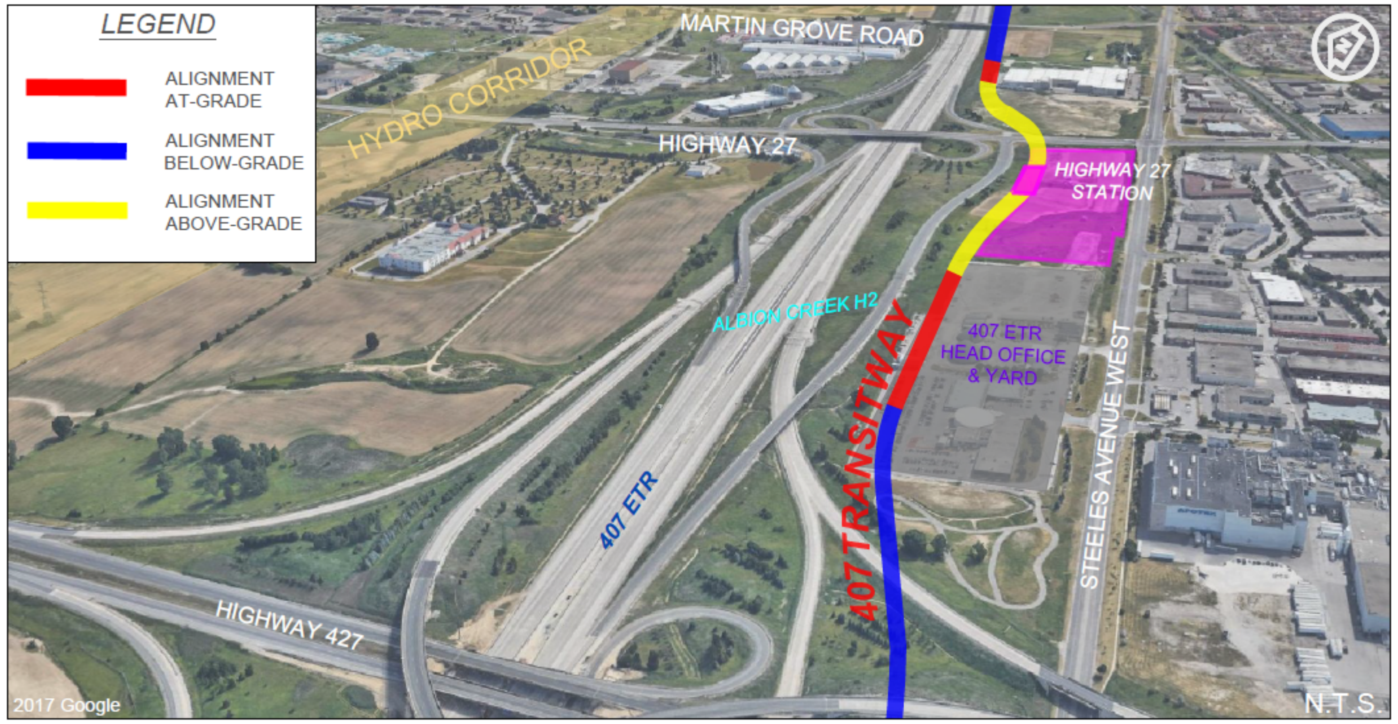
CROSS SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- From east of Goreway Drive to Gorewood Drive – See Figure 5.9.
- Crossing at Gorewood Drive – See Figure 5.13.
- From east of Gorewood Drive to west of Highway 50 – See Figure 5.9.
- Crossing at Highway 50 – See Figure 5.14.
- Just east of Highway 50 – See Figure 5.12.
- Through Highway 50 Station platforms – See Figure 5.11.
- Crossing at Highway 427 – See Figure 5.15.

SEGMENT F: EAST OF HIGHWAY 427 TO EAST OF MARTIN GROVE ROAD

FIGURE 5.6: SEGMENT F, EAST OF HIGHWAY 427 TO EAST OF MARTIN GROVE ROAD ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

East of the Highway 427 interchange, the runningway travels in a tangent alignment, following the 1998 Transitway Corridor Protection Study alignment, through the north side of the 407 ETR Head Office and Patrol Yard property and crosses the Highway 27 Interchange with reverse curves. The alignment then travels in close proximity to the 407 ETR to avoid impact to existing private properties and hydro towers to the south. The runningway parallels 407 ETR in a tangent alignment through Martin Grove Road.

VERTICAL ALIGNMENT

After the underpass at the Highway 427 interchange, the runningway climbs with a 2.8% grade to bridge over Albion Creek (watercourse H2). The runningway remains above grade through Highway 27 Station and crosses over Highway 27. After crossing over the Highway 27 interchange, the runningway descends at a grade of -2.6% to cross beneath Martin Grove Road. Profile is illustrated in the Plan and Profile plates included in Plates 25 to 28.

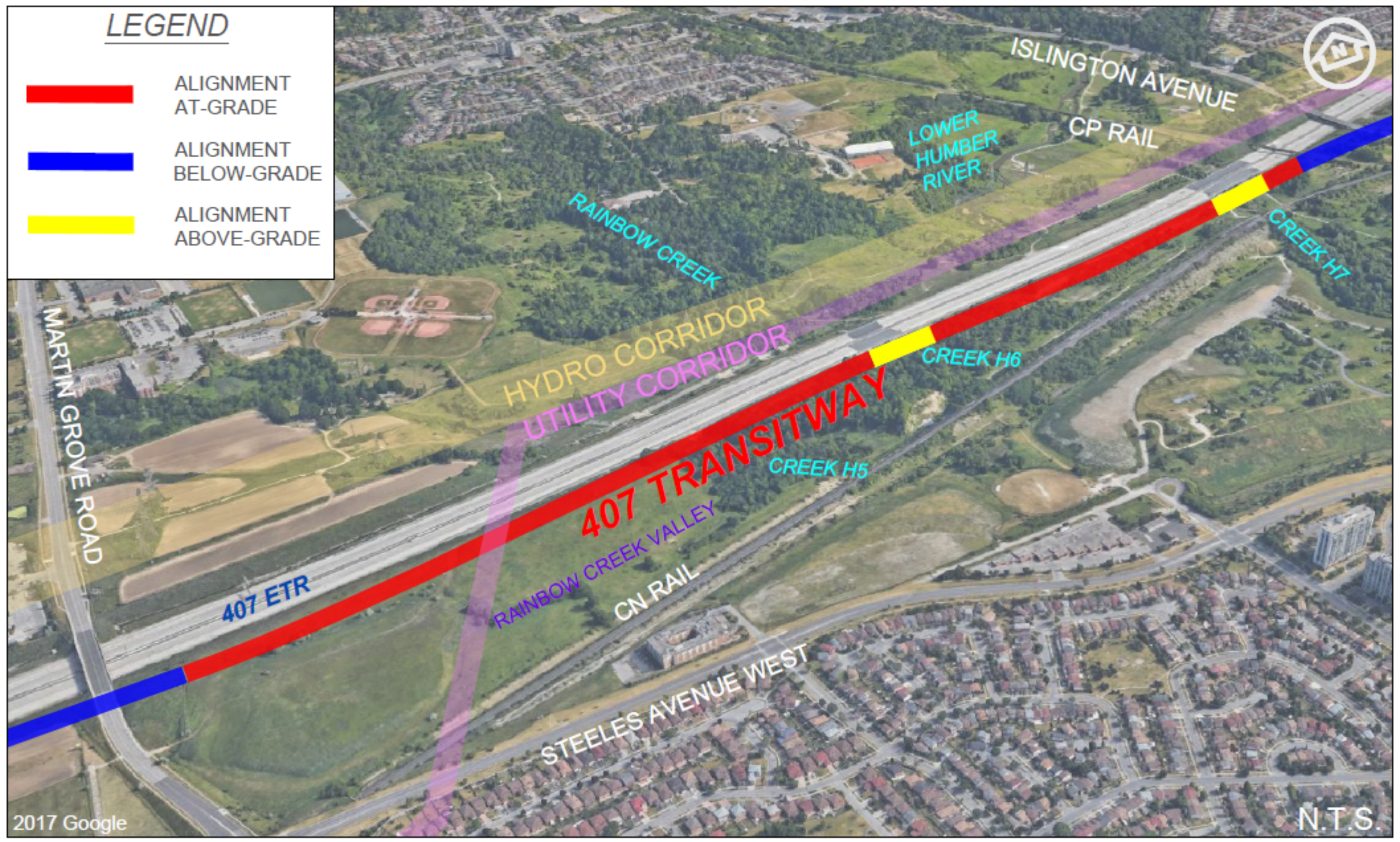
CROSS SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- From east of Highway 427 to west of Highway 27 Station – See Figure 5.9.
- Just west of Highway 27 Station – See Figure 5.12.
- Through Highway 27 Station platforms – See Figure 5.11.
- Crossing at Highway 27 – See Figure 5.13.
- Crossing at Martin Grove Rd – See Figure 5.14.

SEGMENT G: EAST OF MARTIN GROVE ROAD TO WEST OF ISLINGTON AVENUE

FIGURE 5.7: SEGMENT G, EAST OF MARTIN GROVE ROAD TO WEST OF ISLINGTON AVENUE ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

In this segment from Martin Grove Road to Islington Avenue, the runningway deviates from the 1998 Transitway Corridor Protection Study alignment and runs immediately to the south of 407 ETR to minimize impact to the Rainbow Creek Watershed, designated as an Environmentally Significant Area (ESA) and an Area of Natural and Scientific Interest (ANSI).

VERTICAL ALIGNMENT

After underpassing Martin Grove Road, the runningway continues to the east following a similar profile as the 407 ETR. After crossing over the tributaries of Rainbow Creek (watercourses H4, H5 and H6), the profile inclines slightly to bridge over the Lower Humber River (watercourse H7). The runningway climbs at a 2.5% grade but remains below grade to tunnel beneath the existing CP Rail tracks. Profile is illustrated in the Plan and Profile plates included in Plates 28 to 31.

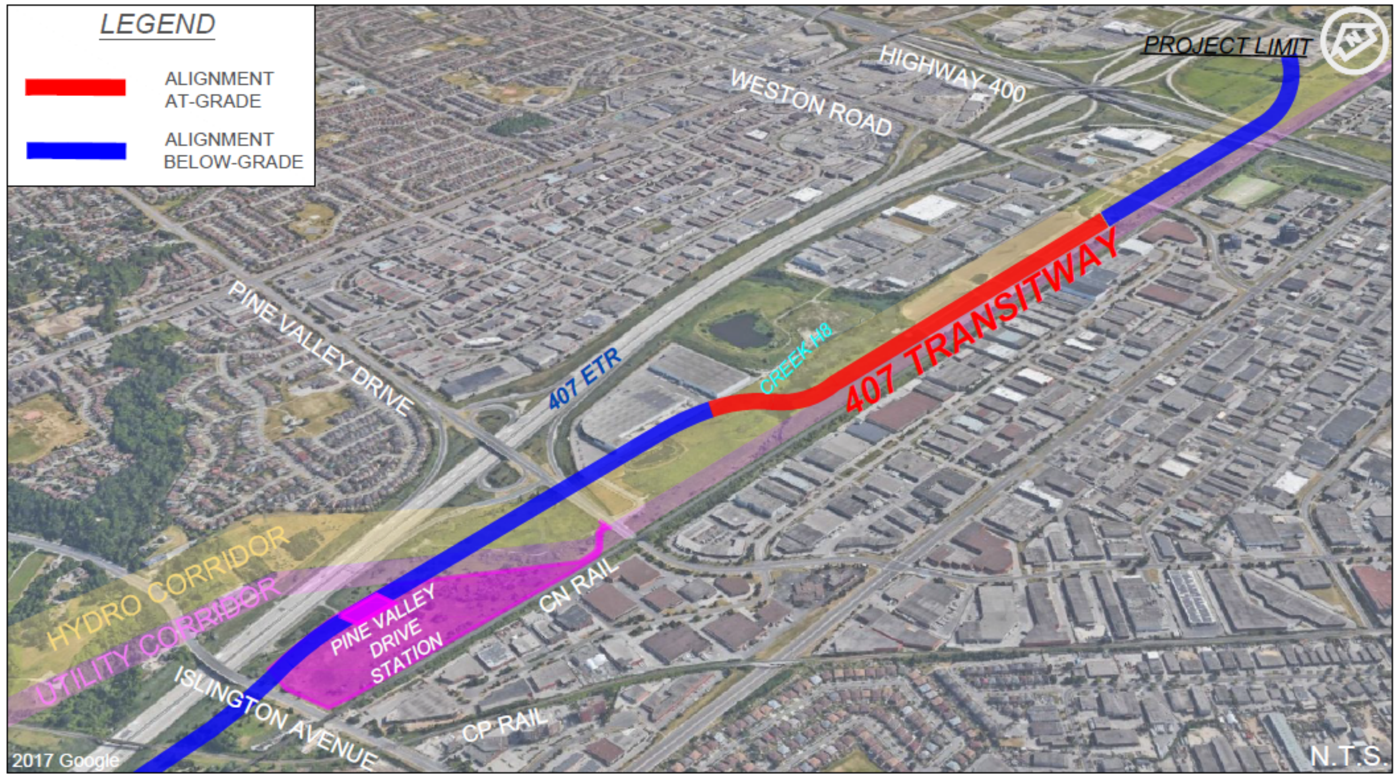
CROSS SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- From Martin Grove Road to Rainbow Creek – See Figure 5.10.
- From Rainbow Creek to west of the CP Rail Crossing – See Figure 5.9.
- Crossing at CP Rail – See Figure 5.14.

SEGMENT H: WEST OF ISLINGTON AVENUE TO EAST OF HIGHWAY 400

FIGURE 5.8: SEGMENT H, WEST OF ISLINGTON AVENUE TO EAST OF HIGHWAY 400 ALIGNMENT LAYOUT.



HORIZONTAL ALIGNMENT

The runningway continues across Islington Avenue through the Pine Valley Drive station in a tangent crossing the Utility Corridor, Hydro Corridor and Pine Valley Drive. With a pair of reverse curves, the alignment crosses to the south side of the Hydro Corridor while maintaining adequate clearance from the adjacent hydro towers. The runningway proceeds along the south edge of the Hydro Corridor in a tangent alignment to the Project East Limit to connect to the approved 407 Transitway alignment east of Highway 400 (407 Central Section – EPR approved in May 2011).

VERTICAL ALIGNMENT

The runningway maintains a depressed profile under Islington Avenue through Pine Valley Drive Station. The alignment crosses beneath Pine Valley Drive before it rises at a 3.0% grade to bridge over watercourse H8. It then runs at-grade through the Hydro Corridor without imposing any electromagnetic interference with the hydro towers. The runningway crosses below Weston Road with a cut and cover section followed by a tunnel under the Highway 400 interchange. Profile is illustrated in the Plan and Profile plates included in Plates 32 to 37.

CROSS SECTION

The types of typical cross sections through this segment is described below. Illustrations of these typical cross sections are included in Figure 5.9 through Figure 5.15.

- Crossing at Islington Avenue – See Figure 5.14.
- Just east of Islington Avenue – See Figure 5.12.
- Through Pine Valley Drive Station platforms – See Figure 5.11.
- Utility and Hydro Corridor crossing west of Pine Valley Drive – See Figure 5.10.
- Crossing at Pine Valley Drive – See Figure 5.14.
- From east of Pine Valley Drive to Weston Road – See Figure 5.10.
- Crossing at Weston Road – See Figure 5.14.
- From Weston Road to Highway 400 – See Figure 5.10.
- Crossing at Highway 400 – See Figure 5.15.
- From Highway 400 to east limit of project – See Figure 5.10.

FIGURE 5.9: FILL SECTION BETWEEN STATIONS

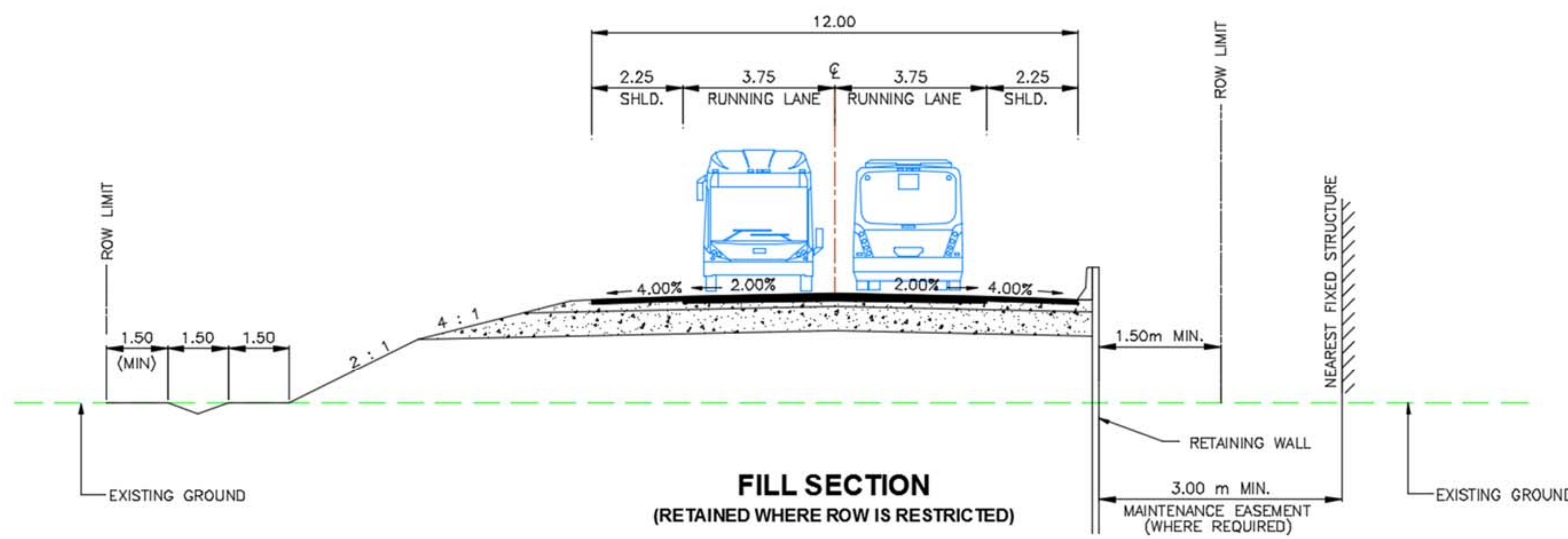


FIGURE 5.10: CUT SECTION BETWEEN STATIONS

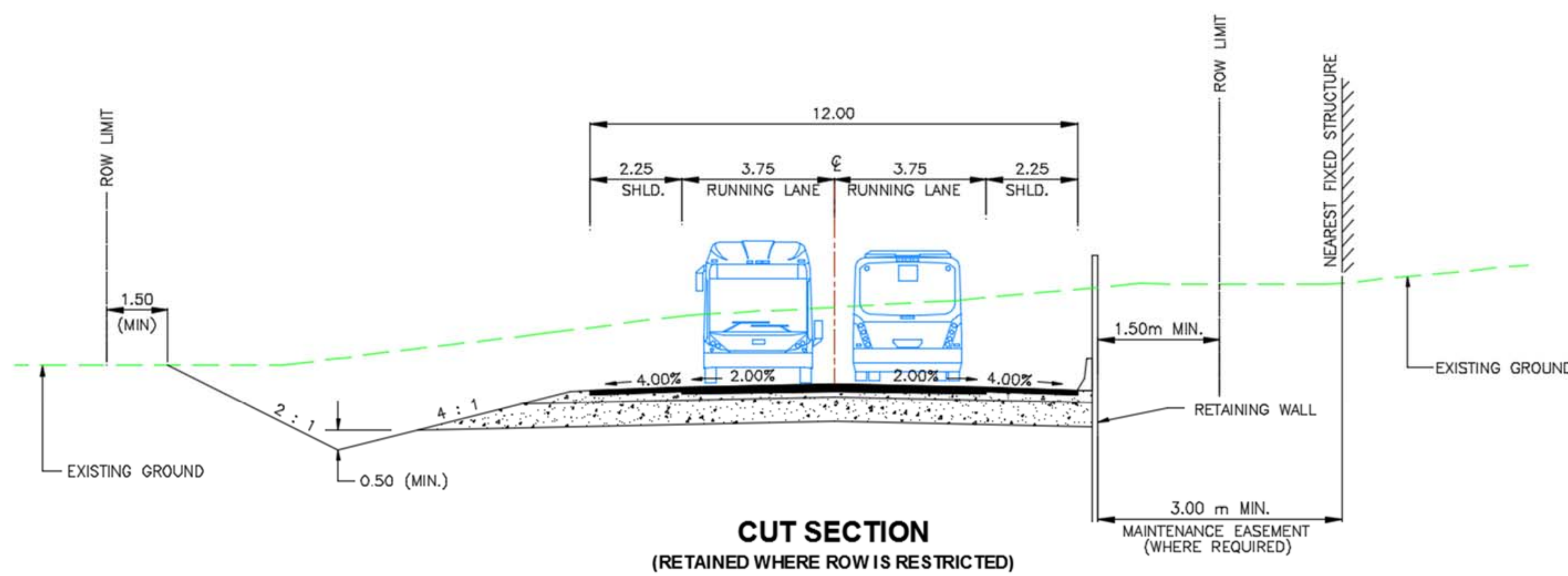


FIGURE 5.11: CROSS-SECTION THROUGH STATION PLATFORMS

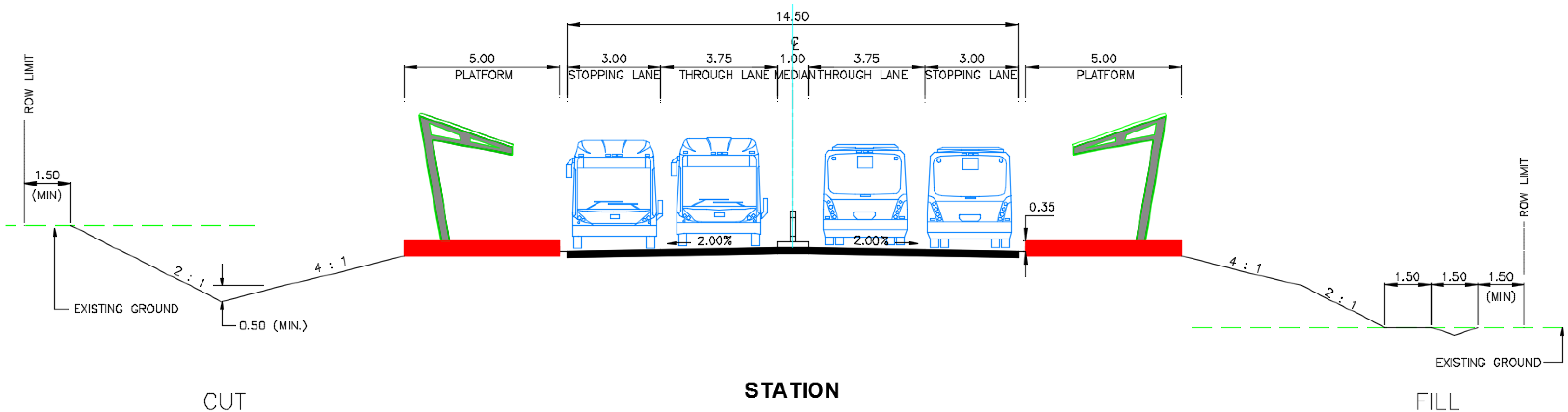


FIGURE 5.12: CROSS-SECTION AT STATION APPROACH

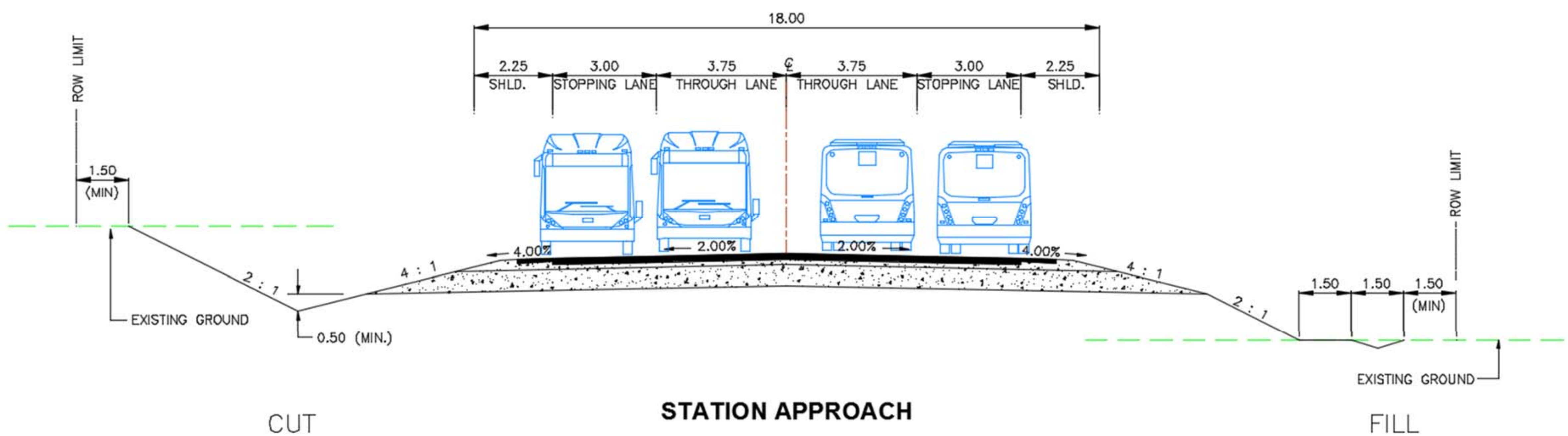


FIGURE 5.13: CROSS-SECTION ON OVERPASS

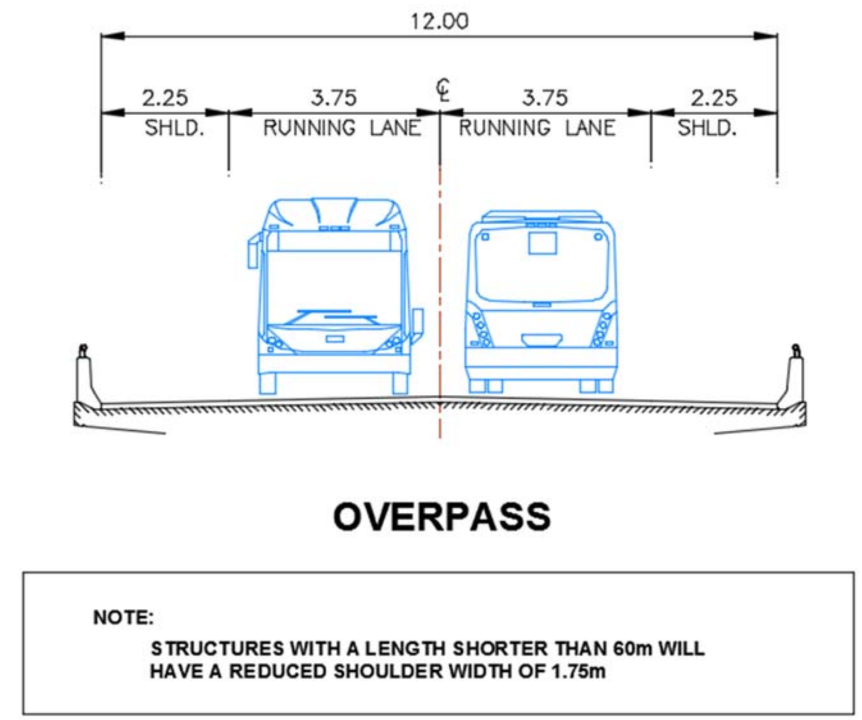


FIGURE 5.14: CROSS-SECTION THROUGH UNDERPASS

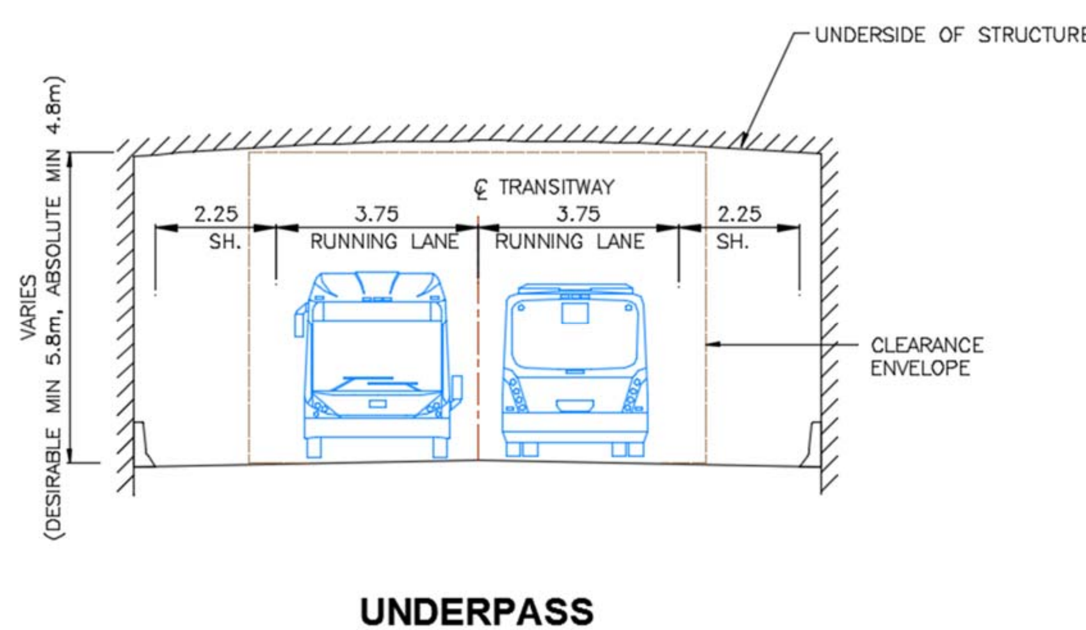


FIGURE 5.15: CROSS-SECTION THROUGH TUNNEL SECTION

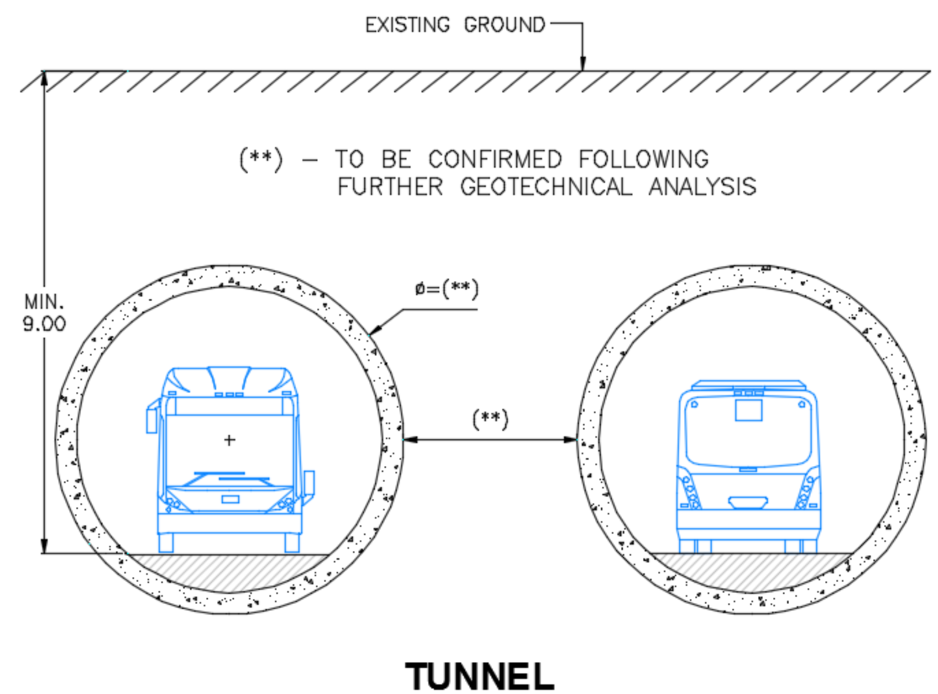
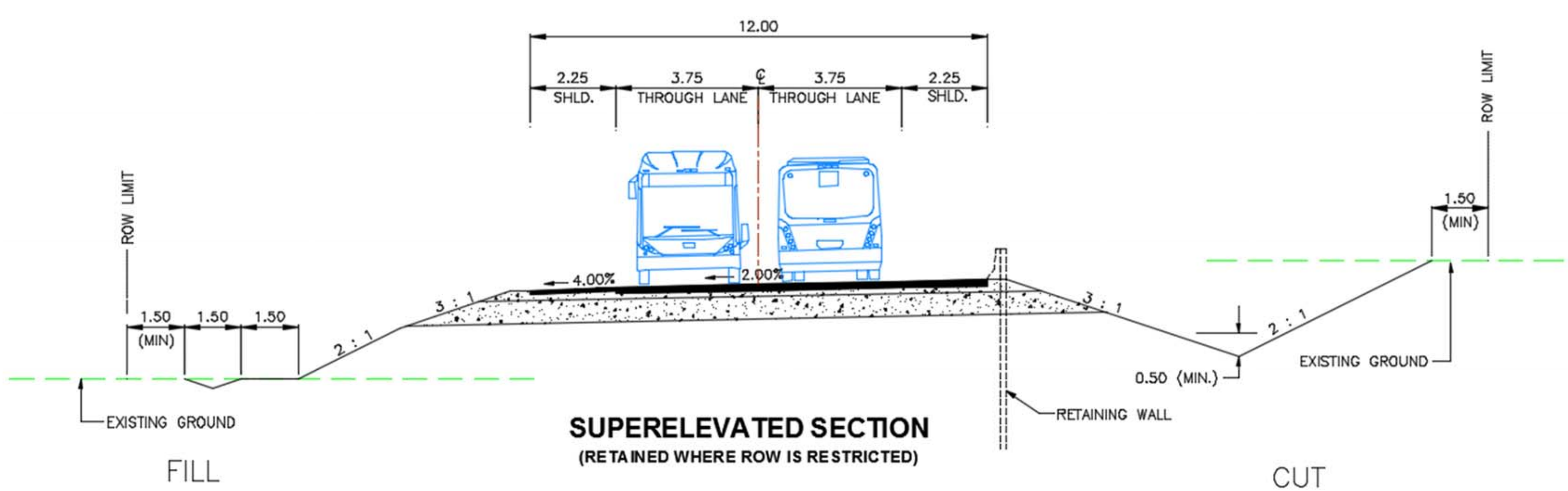


FIGURE 5.16: SUPERELEVATED SECTION BETWEEN STATIONS



5.2. Stations

5.2.1. Conclusions and Recommendations of Station Sites Evaluation

5.2.1.1. Station Nodes Evaluation Results

As a result of the initial screening discussed in Chapter 4, of all existing or future ETR interchanges, the potential station nodes located at Highway 410 and at Weston Road were not carried forward due to forecast low ridership forecast, and unfeasible access to the site in the case of the Highway 410 location and insufficient space to locate stop platforms in the case of the Weston Road location.

5.2.1.2. Station Sites Evaluation Results

The evaluation of sites for the nodes selected in the initial screening described in Chapter 4: Identification of Alternatives and Evaluation Process, was conducted based on detailed environmental field investigations, traffic studies, ridership sensitivity assessments, adequate vehicular and pedestrian accessibility, transit connectivity, implementation strategy, constructability, future considerations, and discussions with stakeholders and the public. As a result of the evaluation, the following sites were selected (all located on the south side of 407 ETR) to be carried forward:

HURONTARIO STREET STATION	WEST SIDE OF HURONTARIO STREET
DIXIE ROAD STATION	EAST SIDE OF DIXIE ROAD
AIRPORT ROAD STATION	WEST SIDE OF AIRPORT ROAD
GOREWAY DRIVE STATION	WEST SIDE OF GOREWAY DRIVE
HIGHWAY 50 STATION	SOUTHEAST SIDE OF HIGHWAY 50 – HIGHWAY 407 ETR INTERCHANGE *(previously approved 427 transportation corridor environmental assessment study (2015) site for the combined 427/407 transitway station)*
HIGHWAY 27 STATION	WEST SIDE OF HIGHWAY 27
PINE VALLEY DRIVE STATION	WEST SIDE OF PINE VALLEY DRIVE

Torbram Road Station was not carried forward due to inability to make a direct connection to the Bramalea GO Station. Martin Grove Road Station was not carried forward due to access challenges to the site. These sites are not considered for station facilities and are being protected for environmental compensation and environmental benefits, as discuss in Section 5.11 below.

5.2.2. Stations Design Principles

The design principles for transit station facilities support the ultimate goal of enhancing user experience, minimizing negative environmental impacts, including potential Climate Change effects. The EPR includes a functional design of the station and a design of the surface components, including vehicular and pedestrian access and major circulation patterns, and SWM ponds location and sizing. The EPR also includes architectural details and amenity requirements that shall be followed during the implementation of the project. It is important to note that any new station design standards, environmental guidelines and specific requirements in place following completion of this EPR, shall be followed during project implementation. Table 5.1 describes the Design Principles being followed by the 407 Transitway Stations.

TABLE 5.1: STATION CONSIDERATION FACTORS AND DESIGN PRINCIPLES

COMPONENT	STATION DESIGN PRINCIPLES
Passenger	Clear, direct (single point of transfer) and / or short transfers between transit modes, services and routes by minimizing walking distances and removing physical barriers within transit stations. Stations and station areas that are universally accessible and that can accommodate the needs of all members of society in accordance with The Accessibility for Ontarians with Disabilities Act (AODA).
Active Transportation and Pedestrian Safety	Prioritized, safe and direct pedestrian and cycling routes to rapid transit stations from major destinations and regional cycling and pedestrian networks. Convenient, comfortable, direct and safe pedestrian linkages to and from all transit stations in order to support a walkable station area and promote the use of transit. A high level of pedestrian priority, safety and amenities within and around the transit facility to enhance customer comfort, safety and information.
Vehicular Facilities	Clearly marked and protected access for pedestrians and cyclists at station areas to minimize conflicts, particularly at PPUDOs, bus facilities and parking access points. PPUDO located to utilize the parking circulation system while unloading pedestrians close to the station or transit plaza. Parking lots and PPUDOs designed to promote easy navigability with sufficient queuing distances at intersections. Carpooling and alternate fuel vehicles priority parking in close proximity to the station entrance. Well-lit parking lots and station areas with unobstructed sightlines. Layby and looping bus facilities for local and regional buses entering the station. Bus stops at the crossing arterial road will also be provided for buses not entering the facility.
Recommendations for Station Architecture Design	A high-quality station architecture and public realm that is sensitive to the surrounding built context and projects a clear, identifiable 407 Transitway brand and vision. Transitway bridges, structures and retaining walls as prominent visual elements with good design potential. Extensive use of glass in shelters and station areas to enhance the natural surveillance and lighting of these areas.
Station Design	Weather-protected station areas through the use of plant screens, wall canopies and heated station areas for waiting. Station and plaza oriented to maximize levels of natural lighting. Legible and permeable transit stations through consistency and clarity in station entrances and interfaces, spaces, layout and visual cues connected by barrier-free movement spaces. A unified way-finding and signage strategy to support the legibility and permeability of the transit station.

COMPONENT	STATION DESIGN PRINCIPLES
	Station and the Transitway elements to act as landmarks both locally and for passing transit Extending the design continuity of the transit station areas, including paving patterns, colours and materials, to adjacent sidewalks, plazas and pedestrian crossings. A high level architectural and landscape design for parking facilities to reduce its environmental impact and to improve pedestrian connections and access. Other amenities - ITS equipment, such as fare collection and passenger information systems to display service status will be accommodated Prioritization and implementation of proven and innovative sustainable energy, water, landscape and waste management practices in the design of intermodal station, transit facilities and station areas. High-quality materials in both the station and landscape design that will "stand the test of time" and continue to maintain a positive image of the system. Mitigating visual presence of parked cars by concealing them appropriately through screening, landscaping, or design treatments.
Community Effect	Facilities designed to minimize traffic and noise impacts on adjacent neighbourhoods.

5.2.3. Station Layouts

This sub-section describes the preferred alternative layout for the seven selected stations. The general criterion used to size the different station elements is focused on meeting the ridership demand for 2041. Station expansion areas were identified to accommodate parking and PPUDO for the projected demand of 2051. This criterion was achieved in stations where the available land permitted.

In sites with insufficient land availability, the station layout is providing as many parking and PPUDO spaces as possible. The sizing and capacity allocated to the bus facilities is conceptual since it is premature for the local and regional transit agencies to provide future requirements. The station layouts may be optimized once design requirements, particularly those relating to the provision of bus loops, are determined.

HURONTARIO STREET STATION

LOCATION AND TRANSPORTATION FUNCTION

The Hurontario Street Station will be located on the west side of Hurontario Street between 407 ETR and VIcksburgh Drive, as shown in Plate S-1A. The station will serve as a key transit hub providing connectivity to the Hurontario Light Rail Transit (HuLRT), local transit (e.g. Brampton Transit and MiWay), as well as serving employment and residential populations located within walking distance of the station.

TYPE OF FACILITIES AND SERVICES

Hurontario Street Station facilities, detailed in Table 5.2, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a close connection to the HuLRT, as well as a bus loop and a direct access to the Transitway allowing for interlining opportunities. In providing adequate parking, consideration has been given to interim parking spaces to accommodate the increased demand as a terminus station.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the north side, fully accessible/unisex washrooms (TBD), elevators and bridge/walkway for access to both canopied platforms. As shown in Plate S1-B, the station truss structure spans the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 9.5m below the elevation of the north entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.2: DESIGN ELEMENTS AT HURONTARIO STREET STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	3
Parking Spaces	632 (as terminus station)	597
Accessible Parking Spaces	10 (1.5%)	10 (1.5%)
PPUDO (linear meters/spaces)	190m/31 spaces	180m/30 spaces
Opportunity to add more Parking	-	Yes (Within the Hydro Corridor)
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated ‘palette’ of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided at Hurontario Street. Pedestrian and cyclist access will be provided directly opposite the proposed signalized pedestrian crossing serving the platform of the Hurontario Street LRT, approximately 150 north of the Vicksburgh Drive intersection. Bike shelters will be accommodated at the station.

Vehicular access to the site will provided via a right-in/right-out access from the southbound lanes on Hurontario Street, approximately 150 metres south of 407 ETR W-N/S ramp signalized intersection, and a full access from Derrycrest Drive at Vicksburg Drive, approximately 250 metres west of Hurontario Street. The access from Derrycrest Drive will serve both the Hurontario Street Station and the hydro transformer station to the west (replacing the existing right-in/right-out access at Hurontario Street which serves the hydro transformer station).

ACCESSIBILITY FROM 407 ETR

Good access is available from 407 ETR via the full interchange at Hurontario Street. Given this configuration, the station will enable staged implementation of the Transitway with buses operating on 407 ETR, if necessary.

STORMWATER MANAGEMENT

There will be two SWM ponds that will serve the station; one pond on each side of the Transitway. Drainage design information is included in Appendix C of the EPR.

DIXIE ROAD STATION

LOCATION AND TRANSPORTATION FUNCTION

The Dixie Road Station will be located in the southeast quadrant of the 407 ETR/Dixie Road interchange, as shown in Plate S-2A. The stations primary function is to serve as a park and ride and PPUDO facility. It will also provide connectivity to Brampton Transit and MiWay services along Dixie Road. The existing Dixie – 407 Sports Fields (i.e. soccer / cricket fields) located within the quadrant are partially located on leased Provincial lands and will be impacted by the implementation of the station.

TYPE OF FACILITIES AND SERVICES

Dixie Road Station's facilities, detailed in Table 5.3, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities. Pedestrian access will also be provided from bus stops along Dixie Road at the site access.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the north and south sides, fully accessible/ unisex washrooms (TBD), elevators and underpass/walkway for access to both canopied platforms. The station building, as shown in Plate S-2B, offers a highly visual anchor and obvious destination for anyone entering the site. The station underpass crosses the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 7.4 metres above the elevation of the north and south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.3: DESIGN ELEMENTS AT DIXIE ROAD STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	3
Parking Spaces	431	780 (274 West Lot, 234 East Lot, 272 shared use with soccer field)
Accessible Parking Spaces	9 (2.0%)	12 (1.5%)
PPUDO (linear meters/spaces)	130m /21 spaces	240m /40 spaces
Opportunity to add more Parking	-	Yes (Within the Hydro Corridor)
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided at Dixie Road via a new signalized access on Dixie Road, approximately 190 metres south of the 407 ETR W-N/S ramp intersection. Pedestrian and cyclist access will be provided from this intersection and bus stops along Dixie Road to the station building and surrounding recreational facilities. Bike shelters will be accommodated at the station.

All vehicular access will be accommodated through the new signalized access on Dixie Road. Dixie Road will be widened to accommodate a left turn lane into the site (the existing right turn lane will be maintained). Transit stops will be provided at the site access along Dixie Road. Bus loop is accommodated on site, north of the Hydro Corridor.

ACCESSIBILITY FROM 407 ETR

Good access is available from 407 ETR via a full interchange at Dixie Road. Given this configuration, the station will enable staged implementation of Transitway with buses operating on 407 ETR, if necessary.

STORMWATER MANAGEMENT

There will be two SWM ponds that will serve the station; one pond on each side of the Transitway, both draining to Etobicoke Creek (West Branch). Drainage design information is included in Appendix C of the EPR.

AIRPORT ROAD STATION

LOCATION AND TRANSPORTATION FUNCTION

The Airport Road Station will be located in the northwest quadrant of the Airport Road/Steeles Avenue intersection, as shown in Plate S-3A. The station's primary function is to serve as a park and ride and PPUDO facility. It will also provide connectivity to Brampton Transit and MyWay along Steeles Avenue and Airport Road, as well as provide walk-in and cycling opportunity to local businesses.

TYPE OF FACILITIES AND SERVICES

Airport Road Station's facilities, detailed in Table 5.4, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities. Pedestrian access will also be provided from bus stops along Steeles Avenue and Airport Road.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the south side, fully accessible/ unisex washrooms (TBD), elevators and underpass/walkway for access to both canopied platforms. As shown in Plate S-3B, the station underpass crosses the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 8.4 metres above the elevation of the south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.4: DESIGN ELEMENTS AT AIRPORT ROAD STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	3
Parking Spaces	488	560
Accessible Parking Spaces	10 (2.0%)	10 (1.5%)
PPUDO (linear meters/spaces)	147/24 spaces	234/39 spaces
Opportunity to add more Parking	-	Yes (South of Steeles Avenue within the Hydro Corridor)
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided from both Airport Road and Steeles Avenue. Pedestrian and cyclist access to the station building will be provided via a shared walkway (multi-use path) alongside the station access from Steeles Avenue. A similar shared walkway connection will also be provided from Airport Road immediately south of the 407 W-N/S ramp. Bike shelters will be accommodated at the station.

Vehicular access to the site will provided via a right-in/right-out access from the southbound lanes on Airport Road, approximately 190 metres south of 407 ETR W-N/S ramp signalized intersection, and a full access at Steeles Avenue, approximately 220 metres west of Airport Road. The signalized access from Steeles Avenue will be shared with the Pearson Convention Centre, located immediately west of the site.

ACCESSIBILITY FROM 407 ETR

Good access is available from 407 ETR via a full interchange at Airport Road. Given this configuration, the station will enable staged implementation of Transitway with buses operating on 407 ETR, if necessary.

STORMWATER MANAGEMENT

The site will drain to a SWM pond located on the south side of the station. Drainage design information is included in Appendix C of the EPR.

GOREWAY DRIVE STATION

LOCATION AND TRANSPORTATION FUNCTION

The Goreway Drive Station will be located in the northwest quadrant of the Goreway Drive/Steeles Avenue intersection south of Highway 407, as shown in Plate S-4A. The station's primary function is to serve as a park and ride and PPUDO facility. It will also provide connectivity to Brampton Transit and MyWay along Steele Avenue and Goreway Drive, as well as provide walk-in and cycling opportunity to local businesses.

TYPE OF FACILITIES AND SERVICES

Goreway Drive Station's facilities, detailed in Table 5.5, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities. Pedestrian access will also be provided from bus stops along Steeles Avenue and Goreway Drive.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the south side, fully accessible/ unisex washrooms (TBD), elevators and bridge/walkway for access to both canopied platforms. As shown in Plate S4-B, the station truss structure spans the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 8.1 metres below the elevation of the south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.5: DESIGN ELEMENTS AT GOREWAY DRIVE STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	3
Parking Spaces	775	795
Accessible Parking Spaces	12 (1.5%)	12 (1.5%)
PPUDO (linear meters/spaces)	233m/38 spaces	234m/39 spaces
Opportunity to add more Parking	-	No
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided from both Goreway Drive and Steeles Avenue. Pedestrian and cyclist access to the station building will be provided via a shared walkway (multi-use path) alongside the station access from Steeles Avenue. A similar shared walkway connection will also be provided from Goreway Drive immediately south of the Transitway crossing of Goreway Drive. Bike shelters will be accommodated at the station.

Vehicular access to the site will provided via a right-in/right-out access from the southbound lanes on Goreway Drive approximately 140 metres north of the Steeles Avenue/ Goreway Road intersection, and a full access provided at Steeles Avenue, approximately 280 metres west of Goreway Drive. The signalized access from Steeles Avenue will be located directly opposite the entrance to the commercial/ light industrial property on the south side of Steeles Avenue.

ACCESSIBILITY FROM 407 ETR

Limited access is available from 407 ETR via a partial interchange (to/from the east) at Goreway Drive. This configuration is not well suited for staged implementation of Transitway with buses operating on 407 ETR.

STORMWATER MANAGEMENT

The site will drain to a SWM pond located on the south west side of the station Drainage design information is included in Appendix C of the EPR.

HIGHWAY 50 STATION

LOCATION AND TRANSPORTATION FUNCTION

The station will be located between Highway 50 and Highway 427, north of Steeles Avenue, south of Highway 407 as shown in Plate S-5A. The stations primary function is a transit hub integrating the 407 Transitway with the future 427 Transitway facility, which is planned to operate along Highway 427. The station will also serve as a park and ride and PPUDO facility, as well as provide walk-in and cycling opportunity to local businesses.

Given the limitations on the size of the site, all parking will be accommodated on the south side of Steeles Avenue with the exception of the bus loop, PPUDO and accessible parking areas. An underpass will be provided to move pedestrians from the parking lot south of Steeles Avenue to the station north of Steeles Avenue. The station layout provides direct access to the Highway 427 southbound ramp to allow transit routes to Pearson International Airport from the combined 427/407 Transitway Station facility.

TYPE OF FACILITIES AND SERVICES

Highway 50 Station's facilities, detailed in Table 5.6, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities. Pedestrian access will also be provided from bus stops along Steeles Avenue.

The station will be fully accessible, with a portal building and underground connection provided on the south side of Steeles Avenue to accommodate access from the parking area. The station building on the north side of Steeles Avenue will feature ticketing facilities upon entry on the south side, fully accessible/ unisex washrooms (TBD), elevators and bridge/walkway for access to both canopied platforms. As shown in Plate S-5B, the station truss structure spans the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 7.2 metres below the elevation of the south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.6: DESIGN ELEMENTS AT HIGHWAY 50 STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	5
Parking Spaces	1235	645
Accessible Parking Spaces	13 (1.0%)	10 (1.5%)
PPUDO (linear meters/spaces)	371m/61 spaces	216m/36 spaces
Opportunity to add more Parking	-	No
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided from Steeles Avenue. Pedestrian and cyclist access to the station building will be provided via a shared walkway (multi-use path) alongside the station access from Steeles Avenue. Bike shelters will be accommodated at the station.

Vehicular access to the site will provided via internal road connection to the Alcide Street / Steeles Avenue signalized intersection, located approximately 400 metres east of the Steeles Avenue/Highway 50 intersection. The Transitway station, bus loop, PPUDO area, and accessible parking area will be located on the north side of Steeles Avenue. Given the limited spacing available, all park-and-ride spaces will be located on the south of Steeles Avenue and accessible via Alcide Street and Codlin Crescent. A pedestrian underpass will be provided to accommodate the high pedestrian crossing demands that will result.

ACCESSIBILITY FROM 407 ETR

No local access is available from 407 ETR, and therefore the station is suited for staged implementation of Transitway with buses operating on 407 ETR. Page 5-25Page

Property requirements for the station and runningway are illustrated on property plates in Appendix Q.

STORMWATER MANAGEMENT

The site will have one SWM pond on the south of Steeles Avenue to accommodate drainage of the parking lot; and a second SWM pond north of Steeles Avenue will be provided to accommodate drainage from the accessible parking area, PPUDO, bus loop, and other internal access roads.

Drainage design information is included in Appendix C of the EPR.

HIGHWAY 27 STATION

LOCATION AND TRANSPORTATION FUNCTION

The Highway 27 Station will be located in the northwest quadrant of the Highway 27/Steeles Ave intersection, south of Highway 407 and adjacent to the 407 ETR Concession Company Ltd office and yard (immediately west of the station), as shown in Plate S-6A. The station's primary function is to serve as a park and ride and PPUDO facility. It will also provide connectivity to York Region and TTC transit along Steele Avenue and Highway 27, as well as provide walk-in and cycling opportunity to local businesses.

TYPE OF FACILITIES AND SERVICES

Highway 27 Station's facilities, detailed in Table 5.7, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities. Pedestrian access will also be provided from bus stops along Steeles Avenue and Highway 27.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the south side, fully accessible/ unisex washrooms (TBD), elevators and underpass/walkway for access to both canopied platforms. As shown in Plate S-6B, the station underpass crosses the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 8metres above the elevation of the south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.7: DESIGN ELEMENTS AT HIGHWAY 27 STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	4
Parking Spaces	747	692
Accessible Parking Spaces	(12) 1.5%	14 (1.5%)
PPUDO (linear meters/spaces)	225/37 spaces	264/44 spaces
Opportunity to add more Parking	-	No
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

Access to/from the station site, by car, bus, bicycle or walking is provided from Steeles Avenue. Pedestrian and cyclist access to the station building will be provided via a shared walkway (multi-use path) alongside the two station accesses from Steeles Avenue. Bike shelters will be accommodated at the station.

Vehicular access to the site will provided via a right-in/right-out on Steeles Avenue, approximately 200 metres west of Highway 27, and a full access on Steeles Avenue opposite Steinway Boulevard, approximately 470 metres west of Airport Road. The signalized intersection at Steinway Boulevard will be reconfigured to accommodate left and right turn lanes in and out of the site.

ACCESSIBILITY FROM 407 ETR

Good access is available from 407 ETR via a full interchange at Highway 27. Given this configuration, the station is will enable staged implementation of Transitway with buses operating on 407 ETR, if necessary.

STOMWATER MANAGEMENT

The site will drain to two SWM ponds located on either side of the low point at centre of the site. Drainage design information is included in Appendix C of the EPR.

PINE VALLEY DRIVE STATION

LOCATION AND TRANSPORTATION FUNCTION

The Pine Valley Drive Station will be located between Pine Valley Drive and Islington Avenue, south of Highway 407, immediately north of the existing the rail corridor, as shown in Plate S-7A. The station's primary function is to serve as a park and ride and PPUDO facility. It will also provide connectivity to York Region and TTC transit along Pine Valley Drive and/or Islington Avenue, as well as provide walk-in and cycling opportunity to local businesses.

TYPE OF FACILITIES AND SERVICES

Pine Valley Drive Station's facilities, detailed in Table 5.8, will include a passenger parking area and a PPUDO (number of spaces provided for both a function of land availability, configuration of the facility and access). Integration with local transit services will be achieved through a bus loop and a direct access to the Transitway allowing for interlining opportunities Pedestrian access will also be provided from bus stops along Pine Valley Drive and Islington Avenue.

The station will be fully accessible, and the station building will feature ticketing facilities upon entry on the south side, fully accessible/ unisex washrooms (TBD), elevators and bridge/walkway for access to both canopied platforms. As shown in Plate S-7B, the station truss structure spans the runningway and utilizes stairs and a pair of elevators, one at the south and the other on the north side of the runningway, both provide full accessibility to the eastbound and westbound platforms. The runningway is approximately 8metres below the elevation of the south entry and parking area of the station site. A continuous canopy along both the westbound and eastbound platforms provides weather protection.

TABLE 5.8: DESIGN ELEMENTS AT PINE VALLEY DRIVE STATION

DESIGN ELEMENTS	REQUIRED	PROVIDED
Bus Bays	TBD	4
Parking Spaces	431	760
Accessible Parking Spaces	9 (2.5%)	12 (1.5%)
PPUDO (linear meters/spaces)	130m/21spaces	240m/40 spaces
Opportunity to add more Parking	-	No
Interlining / Runningway Access	-	Yes

The outdoor area will be designed to provide the public with a safe, well defined pedestrian environment, outdoor amenity areas, and an aesthetically pleasing environment. This will be accomplished using a variety of landscape techniques including, species diversity, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

VEHICULAR AND ACTIVE TRANSPORTATION ACCESSIBILITY FROM LOCAL ROAD NETWORK

The main access to the site will be located at the Galcat Drive/Pine Valley Drive intersection and will be signalized with left and right turn lanes, both entering and exiting the site. This access will cut through the hydro and utility corridors. A secondary right-in/right-out access will be from Islington Avenue.

Pedestrian and cyclist access will be provided via a shared walkway (multi-use path) alongside the main station access road a connecting bike path and bike shelters will be installed.

ACCESSIBILITY FROM 407 ETR

Good access is available from 407 ETR via a full interchange at Pine Valley Drive. Given this configuration, the station is will enable staged implementation of Transitway with buses operating on 407 ETR, if necessary.

STORMWATER MANAGEMENT

The site will drain to a SWM pond located on the west side of the site and adjacent Islington Avenue. Drainage design information is included in Appendix C of the EPR.

5.3. Structures

Since the runningway is an at-grade separated facility, a bridge or underpass was identified for every road or railway crossing. Crossings of watercourses will be bridged. There is a total of 41 new structures identified along this section of the Transitway.

5.3.1. Overpasses and Underpasses

A total of 30 new structures have been identified along the Transitway route. Bridge and underpass widths were defined based on lanes and sidewalk widths and side clearances following the *407 Transitway Design Standards*.

Where applicable, the existing structures of the 407 ETR were used for comparison purposes. The profile of the Transitway was designed following the profile of the Highway wherever possible. Exceptions were made at specific locations due to presence of major underground utilities or natural features that prevented the runningway to cross under existing arterial roads. Factors such as capital cost, life cycle cost, durability, constructability and traffic staging, future maintenance and widening were assessed in determining the optimum solution for each road crossing structure.

The proposed crossing structures have been classified in four categories: Watercourse crossings, arterial and minor road crossings, and rail crossings.

Watercourse crossings: The crossing configuration was determined through an assessment of ecological constraints, and both hydraulic and structural requirements. A hydraulic analysis (refer to Appendix C) was undertaken to establish the design flood levels at the crossing, the opening required for the watercourse through the bridge and the required bridge deck clearance. This information was used to identify the preferred structure type and prepare the preliminary design. Prior to construction, the actual bridge spans will be confirmed based on additional field surveying, updated hydraulic modelling, the actual shape of the section under the bridge, a detailed assessment of long-term channel movement (via meander belt analysis), erosion effects, and provision for wildlife and fish passage.

Arterial and other minor road crossings: A grade separation in which the Transitway will pass over or under an intersecting road. As explained above, at most road crossings the Transitway is proposed to travel under the intersecting road. This category includes the on and off ramps for 407 ETR. Chapter 7: Implementation describes the conceptual construction staging of the underpasses, necessary to minimize traffic effects on the affected roadways.

Rail crossing: Grade separations whereby the Transitway will grade separate a railway. There are three (3) rail crossings of the Transitway along this segment including the Metrolinx and CN Halton rail lines between Bramalea Road and Torbram Road, the CN intermodal track crossing between Airport Road and Goreway Drive and the CP Rail line west of Islington Avenue in the Humber Valley. Similar to road crossings, crossing over/under the track was assessed considering various operational, physical and environmental factors. In the case of the Metrolinx Kitchener Rail Line crossing, due to topographic and vertical geometric design reasons, it was determined to cross on a bridge, over the rail line. The decision to cross over the rail line was based on the existing grade differential between the rail line and 407 ETR.

Using the crossing categories described above, Table 5.9 summarizes the proposed structures for all crossings.

TABLE 5.9: PROPOSED STRUCTURES

STRUCTURE REFERENCE NO.	STATIONING	LOCATION	CROSSING CLASSIFICATION	PROPOSED STRUCTURE TYPE
5.1.1	1+254.47	Structure under Hurontario Street	Arterial	* Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.
5.1.2	2+826.85	Structure under Kennedy Road	Arterial	Reinforced Concrete Rigid Frame Box
5.1.3	3+615.00	Structure under Highway 410-NB & SB and Ramps	Freeway	* Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.
5.1.4	4+720.47	Bridge over Etobicoke Creek (WC-E5)	Watercourse - Bridge	3-Span (50m-60m-50m) Slab on Steel Plate I-Girders.
5.1.5	5+119.70	Structure under Tomken Road	Arterial	Reinforced Concrete Rigid Frame Box
5.1.6	5+859.00	Bridge over Dixie Road and creek (WC-E6)	Arterial	2 Span (50 m-50 m) Slab-on-Steel Trapezoidal Box Girders with Semi-Integral Abutments
5.1.7	7+027.13	Bridge over Spring Creek (WC-E8)	Watercourse - Bridge	2-Span (120m) Slab on Steel Plate I-Girders
5.1.8	7+400.10	Structure over Bramalea Road	Arterial	3 Span (60m-60m-60m) Slab-on-Steel Trapezoidal Box Girders.
5.1.9	8+120.00	Bridge over CNR (Georgetown Line)	Railway Crossing	2 Span (60 m-60 m) Slab-on-Steel Trapezoidal Box Girders with Semi-Integral Abutments
5.1.10	8+999.97	Structure under Torbram Road	Arterial	Reinforced Concrete Rigid Frame Box
5.1.11	9+842.06	Transitway under Steeles Avenue – 407 ETR Bridge	Collector	**Transitway at grade under south end span of existing bridge over 407 ETR
5.1.12	10+677.50	Structure over Airport Road & Airport Road S-E Ramp to 407 ETR	Arterial	2 Span (40 m-35 m) Slab-on-Steel Trapezoidal Box Girders with Semi-Integral Abutments
5.1.13	11+414.52	Structure under CNR	Railway Crossing	Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.

STRUCTURE REFERENCE NO.	STATIONING	LOCATION	CROSSING CLASSIFICATION	PROPOSED STRUCTURE TYPE
5.1.14	11+583.58	Bridge over Mimico Creek (WC-M7)	Watercourse - Bridge	3-Span (20m-20m-20m) Slab on CPCI or NU Pre-stressed Girders.
5.1.15	12+148.72	Structure under Goreway Drive & Goreway Drive S-E Ramp to 407 ETR	Arterial	Reinforced Concrete Rigid Frame Box
5.1.16	13+524.15	Bridge over Gorewood Drive	Arterial	1-Span (30m) Slab-on-pre-stressed box girders with semi-integral abutments.
5.1.17	14+228.02	Bridge over West Humber River (WC-H1) and Park Road	Watercourse - Bridge	2-Span (60m-60m) Slab on Steel Plate I-Girders.
5.1.18	14+550.87	Structure under Highway 50	Arterial	Reinforced Concrete Rigid Frame Box
5.1.19	15+286.50	Structure under Highway 427 NB & SB and Ramps	Freeway	* Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.
5.1.20	16+690.09	Structure over Highway 27 & Highway 27 S-E Ramp	Arterial	1 Span (55 m) Slab-on-Steel Trapezoidal Box Girders with Semi-Integral Abutments
5.1.21	17+579.69	Structure under Martin Grove Road	Arterial	Reinforced Concrete Rigid Frame Box
5.1.22	18+710.10	Bridge over Humber River Tributary and Trails (WC-H6)	Watercourse - Bridge	1-Span (55m) Slab on Steel Plate I-Girders
5.1.23	19+589.42	Bridge over Humber River and Trails (WC-H7)	Watercourse - Bridge	3-Span (52m-52m-52m) Slab on Steel Plate I-Girders
5.1.24	19+790.00	Bridge under CPR (Mactier Subdivision)	Railway Crossing	Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.
5.1.25	19+969.86	Bridge under Islington Avenue	Collector	Reinforced Concrete Rigid Frame Box
5.1.26	20+709.78	Bridge under Pine Valley Drive	Arterial	Reinforced Concrete Rigid Frame Box
5.1.27	21+309.35	Structure over creek (WC-H8)	Watercourse - Bridge	1-Span slab on CPCI Girders
5.1.28	22+842.66	Structure under Weston Road	Arterial	Reinforced Concrete Rigid Frame Box
5.1.29	23+547.10	Structure under Highway 400 NB & SB and Ramps	Freeway	* Reinforced Concrete Rigid Frame Box or Bored Tunnel with precast liners.
5.1.30	7+168.01	Viaduct west of Bramalea Road	Over Utility Corridor	11-Span Slab on CPCI Girders

**High Volume Crossing ** Structure not required, Transitway at grade*

5.3.2. Culverts

Within the project limits there will be a total of 10 structural culverts (summarized inTable 5.10). These culverts will be reinforced concrete open footing rigid frame structures. The main advantages for using this type of structure are:

- They minimize impact on aquatic life as a temporary flow passage can be maintained between the culvert footings;
- The flow is maintained in the stream during construction as works are located outside the limits of the stream; and,
- Removal of water by pumping is reduced.
- Pipe culvert will be assessed in the next design phase of the project.

TABLE 5.10: PROPOSED STRUCTURAL CULVERTS

STATION	WATER CROSSING NO.	CULVERT TYPE	SIZE
2+138.08	E1	Reinforced Concrete Rigid Frame Open Footing Culvert	3.5 m x 2.5 m
3+010.68	E3	Reinforced Concrete Rigid Frame Open Footing Culvert	3.0 m x 2.2 m
6+814.95	E7	Twin Reinforced Concrete Rigid Frame Open Footing Culvert	2 x 4.62 m x 2.85 m
8+204.17	M1	Twin Reinforced Concrete Rigid Frame Open Footing Culvert	2 x 7.2 m x 2.7 m
8+435.56	M2	Reinforced Concrete Rigid Frame Open Footing Culvert	2.5 m x 1.5 m
8+813.39	M3	Reinforced Concrete Rigid Frame Open Footing Culvert	4.7 m x 2.55 m
9+617.48	M4	Twin Reinforced Concrete Rigid Frame Open Footing Culvert	2 x 4.0 m x 3.0 m
11+343.04	M5	Twin Reinforced Concrete Rigid Frame Open Footing Culvert	2 x 6.0 m x 2.0 m
11+371.61	M6	Reinforced Concrete Rigid Frame Open Footing Culvert	6.3 m x 1.5 m
13+209.00	M8	Reinforced Concrete Rigid Frame Open Footing Culvert	6.0 m x 2.0 m
16+161.99	H2	Reinforced Concrete Rigid Frame Open Footing Culvert	5.0 m x 2.0 m

5.4. Stormwater Management and Drainage

The proposed 407 Transitway falls predominately in the jurisdiction of the Toronto and Region Conservation Authority (TRCA), with a small segment extending into the jurisdiction of the Credit Valley Conservation (CVC). The segment within TRCA limits crosses three watersheds: Etobicoke Creek, Mimico Creek, and Humber River. There are twenty-four (24) watercourses within the study limits, out of which twenty-one (21) cross the Transitway. The remaining watercourses were identified as minor conveyance features with small localized tributary areas that the proposed Transitway will not impact because of grade difference. Refer to Drainage Study Area Map in Figure 5.17.

The complete Drainage, Hydrology, Stormwater Management, and Floodplain Hydraulics Report (referred here in as "Drainage Report") is included in Appendix C of the EPR. The purpose of this study was to analyze and characterize the existing and potential site drainage and SWM facilities associated with the proposed 407 Transitway. This study focused on the development of a drainage and stormwater management plan for the proposed Transitway that minimizes impacts on the existing watercourses and existing drainage patterns. Hydrologic and hydraulic analysis were undertaken for the proposed water crossings and mitigation measures were recommended where necessary.

The study included the following:

- hydrologic analysis of the proposed Transitway to assess any negative impacts on the existing watercourses;
- possible measures to minimize stormwater runoff impacts to fisheries, surface water, groundwater and wetlands;
- design of SWM ponds for each station site to provide quantity and/or quality control;
- determination of storage requirements of proposed stormwater management facilities;
- update of existing HEC-RAS models provided by TRCA to establish base models that could be used to assess the impact of the proposed 407 Transitway;
- new HEC-RAS models created from scratch for water crossings that are not included in the TRCA hydraulic models found within the study area;
- hydraulic analysis of proposed 407 Transitway structures;
- review and update existing floodplain mapping within the study area received from TRCA to include the proposed 407 Transitway to ensure no increases in water levels are expected beyond the MTO property; and,
- floodplain maps within the study limits for the creek crossings analyzed from scratch.

The drainage report illustrated how the drainage system is affected by the proposed 407 Transitway and identified possible mitigation measures required to ensure the stormwater management criteria can be met.

5.4.1. Hydrologic Analysis and Stormwater Management Strategy

A hydrologic analysis was undertaken for the study area using Visual OTTHYMO software for three different routing conditions: existing, post-development without SWM and post-development condition with SWM to confirm the need of stormwater management facilities. Detailed modelling results are presented in the Drainage Report included in Appendix C of the EPR.

The 12-hour AES design storm was selected for application in the Etobicoke Creek and Mimico Creek watersheds hydrologic modelling, and 6-hour AES was applied in the Humber River watershed hydrologic modelling following TRCA's design criteria.

The proposed SWM strategy for the project was developed for the Transitway sub-areas as well as for the proposed stations.

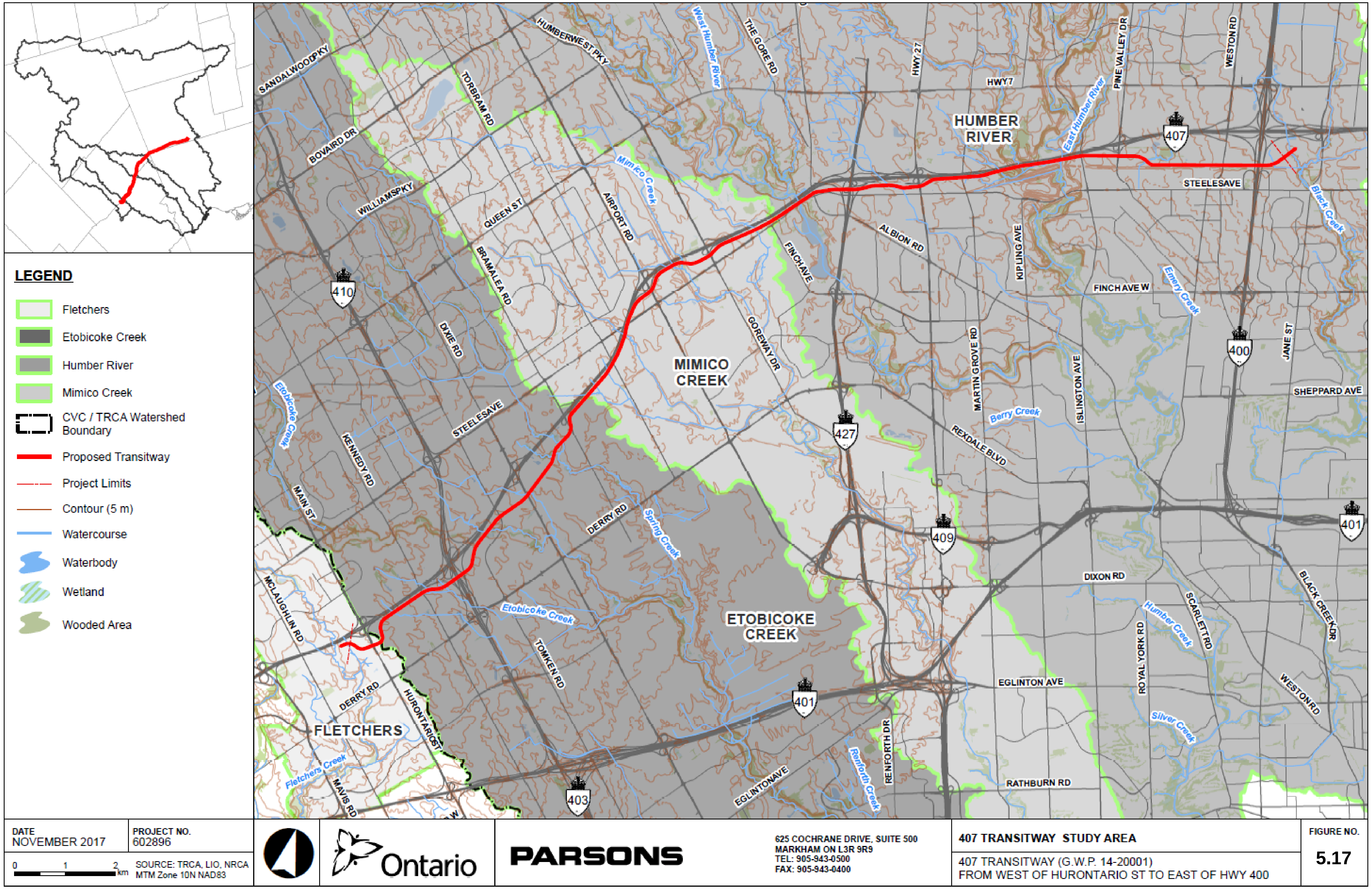
5.4.2. Transitway Sub-Drainage Areas

The drainage areas along the proposed 407 Transitway were delineated based on the high points and low points along the road profile. The drainage area maps are included in Appendix C of the EPR.

The methodology for determining the post-development controlled peak flow rates for the Transitway sub-areas was conducted as follows:

- In post-development condition the assumption is sub-areas are draining from high points to low points, in cases where a sub-area crosses a potential water feature, the strategy was to discharge at such point. If this was the case the area was further subdivided.
- The resulting sub-areas could potentially cross-over two or more larger subwatersheds.
- For sub-areas that drain within the Mimico Creek, the release rates are based on the pre-development peak flow for the Transitway sub-area within the larger subwatershed where the discharge point is located.
- For Etobicoke Creek and Humber River watersheds, the release rates are set at each sub-area based on the outlet/low point location using the designated unit rates.

FIGURE 5.17: DRAINAGE STUDY AREA MAP



Modelling results indicate that SWM facilities are required to meet the existing/allowable release rates within each subwatershed. A treatment train approach is implemented consisting of grassed embankments to promote sheet flow and enhanced grassed swales on both sides of the Transitway before each outlet from the Transitway.

Grassed swales are proposed along the entire length of the Transitway. Since the swales follow the slope of the road, which in some instances is steep, segments of enhanced swales are proposed before any stormwater discharge to a watercourse or other type of outlet. The enhanced swales would be approximately 50 metres in length and are designed to have a trapezoidal cross-section, flat bottom (4 metres wide), 2:1 side slopes and a depth of 1.5 m. A longitudinal slope of maximum 0.2% is proposed for all swales to provide settlement of sediment and to reduce flow velocities from upstream segments. In order to increase the retention time of the swales and to promote infiltration, two cells were designed with a 0.5 metres layer of clear stone covered by 0.3 metres of topsoil below the invert of the swale. The enhanced swales were designed in the form of dry ponds with a formal outlet control structure to provide quality and quantity control for the Transitway sub-areas. Due to different controls required for each subwatershed, there are a few outlet control structures designed for the enhanced swales. Details of outlet type selected for swales in different 407 Transitway sub-areas are shown in notes of Table 4-2 to Table 4-4 in Appendix C of the EPR. Swale details (plan view, cross-section and longitudinal profile) are shown in Figure C.2 in Appendix C of the Drainage Report. Addition details related to outlet control structures are included in Appendix C of the Drainage Report.

Modelling results indicate that no increases in peak flows are expected and in some instances the volumes required are expected to be less than the maximum volume provided by the swale. The approach is conservative since the minimum allowable orifice is used and more storage is provided than required.

Table 5.11 to Table 5.13 show the modelling results for all Transitway subareas analyzed including post-development-controlled discharges at the outlet of the enhanced swales. Plates C-1 to C-3 show the location of all swales identified along the Transitway.

The stormwater management strategy recommends that flows from several enhanced swales be directed to the existing 407 ETR ditches and ultimately to the nearby water courses.

TABLE 5.11: PROPOSED CONDITION WITHOUT SWM PEAK FLOWS (M^3/S) - 407 TRANSITWAY SUB-AREAS (FLETCHERS AND ETOBICOKE CREEKS WATERSHED - 12HR AES).

Return Period (12hr-AES)	Swale Area	ES-1				ES-2				ES-3, ES-4				ES-5			
	Stations	HP:	0+750	LP:	0+948.40	LP:	1+585.52	HP:	2+072.18	HP:	2+072.18	LP:	3+355.20	LP:	3+925	HP:	4+197.13
	Contributing TWY Sub-Areas	100-TWY-1, 100-TWY-2				603-TWY-2, 603-TWY-3				251-TWY-1, 251-TWY-2, 251-TWY-3				248-TWY-2			
		Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}
	A (ha)	1.02	1.01	1.01		2.84	1.43	1.43		1.84	3.23	3.23		1.13	1.73	1.73	
	2-yr	0.031	0.037	0.023	-25.81%	0.110	0.065	0.030	-72.80%	0.071	0.144	0.034	-52.41%	0.044	0.069	0.025	-43.02%
	5-yr	0.046	0.052	0.035	-23.91%	0.147	0.088	0.042	-71.50%	0.095	0.194	0.057	-40.30%	0.059	0.096	0.036	-38.60%
	10-yr	0.058	0.063	0.043	-25.86%	0.173	0.104	0.050	-71.03%	0.112	0.228	0.087	-22.19%	0.069	0.114	0.050	-27.19%
	25-yr	0.071	0.077	0.053	-25.35%	0.205	0.123	0.074	-63.83%	0.133	0.270	0.124	-6.44%	0.081	0.138	0.074	-9.08%
	50-yr	0.081	0.087	0.061	-24.69%	0.228	0.137	0.093	-59.27%	0.148	0.303	0.151	2.08%	0.091	0.155	0.091	0.18%
	100-yr	0.092	0.097	0.069	-25.00%	0.252	0.152	0.110	-56.39%	0.163	0.335	0.177	8.30%	0.100	0.173	0.108	7.61%

Return Period (12hr-AES)	Swale Area	ES-6				ES-7				ES-8			
	Stations	HP:	4+197.13	HP:	5+627.12	HP:	5+627.12	HP:	7+428.68	HP:	7+428.68	HP:	8+821.45
	Contributing TWY Sub-Areas	227-TWY-1, 227-TWY-2				179-TWY-1, 179-TWY-2				700-TWY-1, 700-TWY-2			
		Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}
	A (ha)	3.88	4.85	4.85		1.72	4.04	4.04		1.280	1.26	1.26	
	2-yr	0.126	0.205	0.041	-67.40%	0.054	0.183	0.036	-33.93%	0.041	0.065	0.017	-58.08%
	5-yr	0.171	0.279	0.085	-50.35%	0.074	0.244	0.049	-34.02%	0.055	0.085	0.042	-24.01%
	10-yr	0.203	0.330	0.131	-35.32%	0.088	0.287	0.070	-20.42%	0.065	0.099	0.059	-9.87%
	25-yr	0.243	0.394	0.201	-17.11%	0.106	0.340	0.093	-11.87%	0.079	0.116	0.077	-1.95%
	50-yr	0.272	0.442	0.251	-7.86%	0.119	0.380	0.111	-6.51%	0.088	0.128	0.090	1.86%
	100-yr	0.303	0.490	0.301	-0.53%	0.132	0.420	0.128	-3.09%	0.098	0.141	0.102	3.77%

TABLE 5.12: PROPOSED CONDITION WITHOUT SWM PEAK FLOWS (M³/S) - 407 TRANSITWAY SUB-AREAS (MIMICO CREEK WATERSHED - 12HR AES).

Return Period (12hr-AES)	Swale Area	ES-9, ES-10				ES-11, ES-12				ES-13, ES-14			
	Stations	HP:	8+244.93	HP:	10+441.07	HP:	10+441.07	LP:	11+709	LP:	12+300	HP:	13+584.71
	Contributing TWY Sub-Areas	123-TWY-1, 123-TWY-2, 123-TWY-3, 123-TWY-4				122-TWY-1, 122-TWY-2, 122-TWY-3				120-TWY-1, 120-TWY-2, 120-TWY-3			
		Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}
	A (ha)	**3.68**	**4.91**	**4.91**		**2.14**	**4.46**	**4.46**		**3.51**	**3.59**	**3.59**	
	2-yr	0.151	0.224	0.051	-66.225%	0.088	0.182	0.057	-35.227%	0.109	0.154	0.030	-72.477%
	5-yr	0.206	0.302	0.099	-51.942%	0.120	0.252	0.084	-30.000%	0.157	0.211	0.073	-53.503%
	10-yr	0.245	0.354	0.162	-33.878%	0.142	0.299	0.102	-28.169%	0.191	0.249	0.108	-43.455%
	25-yr	0.293	0.420	0.237	-19.113%	0.170	0.359	0.165	-2.941%	0.234	0.297	0.150	-35.897%
	50-yr	0.329	0.469	0.290	-11.854%	0.191	0.403	0.207	8.377%	0.266	0.334	0.179	-32.707%
	100-yr	0.365	0.519	0.343	-6.027%	0.213	0.448	0.247	15.962%	0.298	0.370	0.219	-26.510%

TABLE 5.13: PROPOSED CONDITION WITHOUT SWM PEAK FLOWS (M³/S) - 407 TRANSITWAY SUB-AREAS (HUMBER RIVER WATERSHED - 6HR AES).

Return Period (6hr-AES)	Swale Area	ES-15				ES-16				ES-17				ES-18, ES-19					
	Stations	HP:	13+584.71	LP:	14+500	LP:	15+530.09	HP:	16+457.60	HP:	16+457.60	LP:	19+923	LP:	21+100		HP:		23+700
	Contributing TWY Sub-Areas	45.11-TWY				45.09-TWY-2				26.01-TWY-1, 26.01-TWY-2				27.07-TWY-2, 27.07-TWY-3					
		Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	Q_{p-prop}	% Increase Prop Q_{peak}	Q_{p-ex}	$Q_{p-unctrl}$	$Q_{p-ex-underground}$	$Q_{p-prop-vo}$	Q_{p-prop}	% Increase Prop Q_{peak}
	A (ha)	**1.33**	**1.56**	**1.56**		**2.04**	**1.92**	**1.92**		**4.02**	**5.78**	**5.78**		**6.03**	**6.21**	**2.10**	**4.11**	**6.21**	
	2-yr	Quantity Control Not Required	0.141	0.012	Quantity Control Not Required	Quantity Control Not Required	0.156	0.033	Quantity Control Not Required	0.037	0.491	0.042	13.863%	0.038	0.445	0.015	0.030	0.045	17.247%
	5-yr		0.189	0.016			0.212	0.047		0.057	0.661	0.057	0.346%	0.057	0.611	0.022	0.041	0.063	11.140%
	10-yr		0.220	0.019			0.250	0.056		0.070	0.776	0.067	-3.807%	0.069	0.723	0.027	0.048	0.075	8.551%
	25-yr		0.260	0.023			0.298	0.069		0.088	0.921	0.080	-8.878%	0.086	0.873	0.034	0.057	0.091	5.052%
	50-yr		0.290	0.025			0.334	0.078		0.103	1.030	0.089	-13.551%	0.100	0.984	0.039	0.064	0.103	3.051%
	100-yr		0.319	0.028			0.370	0.087		0.116	1.138	0.098	-15.495%	0.114	1.094	0.045	0.070	0.115	0.564%

5.4.1.1. Proposed Stations

Seven stations are proposed along the study limits at the following locations: Hurontario Road, Dixie Road, Airport Road, Goreway Drive, Highway 50, Highway 27, and Pine Valley Drive. Parsons undertook a hydrologic analysis to determine volume requirements for SWMFs. The drainage area maps and pond details including outlet control structure schematic of all stations are included in Figure F1 to F7 in Appendix F of drainage report.

The Ministry of Transportation (MTO) Drainage, TRCA, and CVC were consulted to evaluate the stormwater management criteria that will apply to the 407 Transitway and stations. Table 5.14 shows the quantity, quality, erosion control, as well as thermal considerations and water balance criteria derived from the multiple agencies that will be reviewing and approving the proposed stormwater management plans.

TABLE 5.14: STORMWATER MANAGEMENT CRITERIA

Quantity Control	**CVC:** Fletchers Creek Watershed: Post to Pre-control of peak flows to the appropriate watershed. **TRCA:** • Mimico Creek Watershed: Control post-development peak flows to pre-development levels for all storms up to and including the 100-year storm (Mimico Hydrology Update, Marshall Macklin Monaghan, 2009). • Etobicoke Creek Watershed: Unit flow rates have been established and should be used for all sites that require control (TRCA Stormwater Management Criteria, V 1.0, Aug 2012). • Humber River Watershed: Control post-development peak flows to pre-development levels for all storms up to and including the 100-year storm (i.e., 2, 5, 10, 25, 50, and 100 year storms) except for the main branches of the Lower, Main, East, Upper and West. Unit flow relationships have been established and should be used for all other sites located in the Humber River Watershed not discharging to the main channels listed above. (Humber River Watershed Hydrology Update, Aquafor Beech Ltd., Nov. 2002).
Quality Control	Enhanced protection (Level-1) criteria to determine the minimum permanent pool size for wet pond facilities. Table 3.2 of the Stormwater Management Planning and Design Manual (MECP, 2003). Where applicable, water quality controls should be further informed by goals and objectives arising out of applicable subwatershed studies and source water protection plans. [CVC SWM criteria, 2012).
Erosion Control	At minimum, 5 mm retention and 25 mm – 48hr retention for each station area, as per TRCA SWM Criteria (2012) **CVC:** • At minimum detail 5 mm on site where conditions do not warrant a detailed analysis. • For sites with SWM ponds, 25 mm – 48hr detention may be required, depending on the results of the erosion assessment.
Thermal Considerations	**MNRF:** 3m permanent pool depth and others (e.g.: cooling trenches). (Guidance for Development Activities in Redside Dace Protected Habitat, MNRF V 1.1 (2014). To minimize thermal impacts, preventative measures (i.e. LID practices) and mitigation measures should be applied) (CVC, 2012).
Water Balance	For low volume groundwater recharge areas (LGRA), site specific water balance analyses are typically not required, and best efforts to maintain recharge are expected. For natural features (woodlands, wetlands, watercourses) maintain hydrologic regimes and hydroperiods. Planning and design of infiltration facilities must consider soil conditions, depth of water table, and the presence of vulnerable areas such as Wellhead Protection Areas (WHPA's). Infiltration of untreated stromwater from some sources (e.g, industrial facilities, roads, parking lots) to the groundwater may be prohibited. Consultation with TRCA is required to establish water balance methodologies and criteria, particularly for sensitive ecological features where baseline monitoring is necessary to establish appropriate criteria.

The SWM measures proposed for each station were based on the station drainage areas and the criteria outlined in Table 5.14. Each SWM facility will outlet to nearby existing ditch or directly to nearby watercourses. A summary of the SWM facilities and their outlet details are provided in Table 5.15 and Table 5.16. Further details for station SWM design can be found in Appendix C of the EPR. The facilities within the study limits meet most of the stormwater management criteria, with one exception: the criterion for 48-hour retention of the 25mm event could not be achieved at SWMF-1A and 1B, SWMF-2B, SWMF-5A and 5B, SWMF-6, because the orifice diameter required to meet this criterion is smaller than the 75 mm minimum required to prevent clogging. However, 75 mm orifice as minimum requirement (MECP SWM Planning and Design Manual, 2003) is still used in the outlet design for all of the above-mentioned ponds to achieve 24-hour detention time.

TABLE 5.15 STORMWATER MANAGEMENT FACILITY OUTLET DETAILS

SWM FACILITY	TYPE	407 TWY STATION	DRAINAGE AREA (HA)	WATER QUALITY PROTECTION LEVEL	OUTLET CHARACTERISTIC	TRCA/CVC TRIBUTARY NAME	FLOW/THERMAL REGIME
SWMF-1A	Wet Pond	Hurontario Street Station	3.84	Enhanced	Ditch	Fletchers Creek	Coldwater - Permanent
SWMF-1B	Wet Pond	Hurontario Street Station	2.20	Enhanced	Ditch	Fletchers Creek	Coldwater - Permanent
SWMF-2A	Wet Pond	Dixie Road Station	4.43	Enhanced	Creek	Etobicoke Creek (West Branch)	Warmwater - Permanent
SWMF-2B	Wet Pond	Dixie Road Station	1.42	Enhanced	Creek	Etobicoke Creek (West Branch)	Warmwater - Permanent
SWMF-3	Wet Pond	Airport Road Station	5.20	Enhanced	Ditch	Mimico Creek	Warmwater - Permanent
SWMF-4	Wet Pond	Goreway Drive Station	7.84	Enhanced	Ditch	Mimico Creek	Warmwater - Permanent

SWM FACILITY	TYPE	407 TWY STATION	DRAINAGE AREA (HA)	WATER QUALITY PROTECTION LEVEL	OUTLET CHARACTERISTIC	TRCA/CVC TRIBUTARY NAME	FLOW/THERMAL REGIME
SWMF-5A	Wet Pond	Highway 50 Station	3.82	Enhanced	Ditch	West Humber River	Warmwater - Permanent
SWMF-5B	Wet Pond	Highway 50 Station	3.16	Enhanced	Ditch	West Humber River	Warmwater - Permanent
SWMF-6A	Wet Pond	Highway 27 Station	2.29	Enhanced	Open Channel	Albion Creek	Warmwater - Intermittent
SWMF-6B	Wet Pond	Highway 27 Station	2.79	Enhanced	Open Channel	Albion Creek	Warmwater - Intermittent
SWMF-7	Wet Pond	Pine Valley Drive Station	6.47	Enhanced	Ditch	Humber River	Warmwater - Permanent

TABLE 5.16: SUMMARY OF PROPOSED STORMWATER MANAGEMENT PONDS WITHIN THE STUDY LIMITS

SWM FACILITY	LOCATION	TOTAL POND VOLUME PROVIDED (M3)	POND VOLUME REQUIRED (M3)	QUALITY AND QUANTITY CONTROL
SWMF-1A	Hurontario Street Station	3312	1325	Yes
SWMF-1B	Hurontario Street Station	2156	1155	Yes
SWMF-2A	Dixie Road Station	1825	1274	Yes
SWMF-2B	Dixie Road Station	1007	397	Yes
SWMF-3	Airport Road Station	2680	1821	Yes
SWMF-4	Goreway Drive Station	3277	2554	Yes
SWMF-5A	Highway 50 Station	1331	1853	Quality Control Only
SWMF-5B	Highway 50 Station	1845	2127	Quality Control Only
SWMF-6A&6B	Highway 27 Station	1097	1877	Quality Control Only
SWMF-7	Pine Valley Drive Station	5226	3688	Yes

5.4.3. Hydraulic Analysis

The proposed 407 Transitway contains twenty-four (24) watercourses within the study limits, out of which twenty-one (21) will cross the Transitway corridor. The remaining watercourses were identified as minor conveyance features with small localized tributary areas that the proposed Transitway will not impact because of grade difference. A hydraulic analysis using HEC-RAS was undertaken for the twenty-one (21) water crossings within the study limits. Parsons received several HEC-RAS models from TRCA; each model was reviewed carefully and the approximate location of Transitway was identified. For those crossings that have been covered under TRCA models, the cross sections located within the Transitway corridor were updated based on recent surveys completed by J.D. Barnes. For water crossings without any available HEC-RAS models, a new geo-referenced model was created. The HEC-RAS model was created using the flows determined in the hydrologic analysis using TRCA's rainfall for each watershed. In addition, the regional floodline was delineated for all crossings within the study limits.

The modeling results provided in Appendix C of the EPR. show that there are no increases in water levels beyond MTO's ROW and that small increases are limited to areas within MTO's property. Proposed structures have been sized to ensure compliance with MTO Highway Drainage Design Standards (January 2008). In all cases regrading of the channels is needed and wingwalls are required to improve inlet flow conditions. Table 5.17 summarizes the proposed hydraulic structure details and their performance.

The freeboard and clearance for most of the structures exceed the required amounts by more than 1m in most instances. Therefore, there is flexibility in the future to consider climate change impacts. All proposed 407 Transitway structures have an equal or larger span compared to the existing 407 ETR structures. For more detailed tables please refer to Appendix C of the EPR.

- M7 –The span of the structure is 60m which represents the larger opening of all structures that cross over M7 in the vicinity of the Transitway. The two (2) culverts downstream, on Steels Avenue and Goreway Drive are smaller and do not have sufficient capacity to convey the upstream flows. However, increase of water level is not noted at the Transitway crossing. Further investigation to be conducted prior to implementation will confirm MTO's criteria compliance.
- H8 – Transitway profile has been raised at this location to match the maximum possible elevation. Due to electromagnetic restrictions under the Hydro Corridor, the Transitway profile cannot be raised any more. Prior to implementation, measures such as lowering the channel may needed to be investigated when additional survey of the creek becomes available to achieve MTO's clearance criteria compliance.

TABLE 5.17: 407 TRANSITWAY – WATERCOURSE CROSSINGS (CULVERTS/BRIDGES) DESIGN PARAMETERS AND STRUCTURE PERFORMANCE

GENERAL INFO			HIGHWAY 407 ROADWAY DATA			EX 407 ETR STR*	Flow Data (12hr AES)				PROP 407 TWY STRUCTURE DESIGN PARAMETERS						
WATER CROSSING No.	Type	Proposed Transitway Station	CL Elev.	EOTL Elev	Lowest Point of the Soffit	Size /span	50-yr	100-yr	Check Flow	Regional Flow	Inverts Upstr	Inverts Downstr	Length	Slope	Span x Rise	Opening	Diameter
			(m)	(m)	(m)	(mm)	(m^3/s)	(m^3/s)	(m^3/s)	(m^3/s)	(m)	(m)	(m)	(%)	(m)	(m)	(m)
E1	Structural Box Culvert	2+138.08	204	203.85	--	3.5 x 2.5	3.08	3.56	4.62	7.56	198.40	198	20.00	2.0%	3.5x 2.5	3.5	-
E3	Structural Box Culvert	3+010.68	196.00	195.85	--	3 x 2.2	5.10	5.73	7.45	11.13	192.00	191.50	15.00	3.3%	3x2.2	3.0	-
E4	Pipe	3+290.41	199.50	199.35	-	1.00	0.39	0.44	0.58	1.17	189.93	189.56	15.00	2.5%	-	1.0	1.000
E5	Middle Bridge	4+720.47	189.04	188.89	186.51	68000	79.62	90.27	132.96	270.64			15.00				-
E6	Bridge	5+859.00	180.20	180.05	--	5.5 x 2.8	47.06	50.94	66.22	81.23			15.00				
E7	Structural Twin Box Culvert	6+814.95	183.60	183.45	--	4.62 x 2.85	7.37	8.13	10.66	11.52	175.87	175.76	19.00	0.6%	4.62 x 2.85	9.2	-
E8	South and North Bridge	7+027.13	184.32	184.17	184.79	43000	97.08	108.96	157.10	314.67			15.00				-
M1	Twin Box Culvert	8+204.17	194.74	194.59	--	7.2 x 2.7	3.73	4.17	5.42	6.15	179.15	179.10	20.00	0.3%	7.2 x 2.7	14.4	-
M2	Pipe	8+435.56	190.53	190.38	--	1.20	0.45	0.50	0.65	0.71	180.07	179.34	20.00	3.6%	2.5 x 1.5	2.5	-
M3	Box Culvert	8+813.39	181.37	181.22	--	4.7 x 2.55	7.34	8.13	10.57	11.44	177.70	177.59	15.00	0.7%	4.7 x 2.55	4.7	-
M4	Twin Box Culvert	9+617.48	181.59	181.44	--	4 x 3	47.00	55.00	71.50	87.40	175.86	175.74	20.00	0.6%	4 x 3	8.0	-
M5	Twin Box Culvert	11+343.04	176.67	176.52	--	4.5 x 3.5	17.78	19.77	44.26	25.70	172.25	172.19	15.00	0.4%	6 x 2	12.0	-
M6	Box Culvert	11+371.61	176.67	176.52	--	6.3 x 1.5	7.14	7.93	10.31	11.32	172.27	172.11	15.00	1.1%	6.3 x 1.5	6.3	-
M7	North Bridge	11+583.58	176.17	176.02	173.00	48800	28.20	33.70	43.81	100.80							
M8	Box Culvert	13+209	175.48	175.33	--	6 x 2	24.61	27.69	35.997	34.66	171.27	171.22	15.00	0.3%	6 x 2	6.0	-
H1	South Bridge	14+228.02	174.09	173.94	171.00	141692	172.62	197.78	257.11	672.76							
H2	Box Culvert	16+161.99	180.63	180.48	--	5 x 2	46.91	53.00	68.90	36.85	170.50	170.30	20.00	1.0%	5 x 2	5.0	-
H5	Pipe	18+338.04	155.47	155.32	--	1.00	30.69	37.99	49.39	25.70	150.30	150.25	10.00	0.5%	-	1.0	1.000
H6	South Bridge	18+710.10	145.18	145.03	143.00	52100	1.20	1.41	1.83	4.99			15.00				
H7	South Bridge	19+589.42	143.85	143.70	141.51	13165	229.90	268.10	348.5	920.30			15.00				
H8	Bridge	21+309.35	163.16	163.01	160.92	1000	30.45	33.88	44.04	49.67			15.00				

GENERAL INFO	PROP 407 TWY STRUCTURE DESIGN PARAMETERS (cont.)					Design Flow		HYDRAULICS				CULVERT/BRIDGE PERFORMANCE							
WATER CROSSING No.	CL-Elev.	EOTL-Elev.	Span	Lowest point on the Soffit	Material	HDDS 2008 (WC-1) Span > 6m ?	HDDS 2008 (WC-1) Return Period	Computed HW Elevation (m) 50-yr	100-yr	Regional	Check Flow	Freeboard at Bridges (STD WC-2)	Clearance at Bridges (STD WC-2)	Freeboard at Culverts (STD WC-7)	EOTL - Check Flow WL at Briges (STD WC-2)	Compliance to Standard: Freeboard at Bridges	Compliance to Standard: Clearance at Bridges	Compliance to Standard: Freeboard at Culverts >1	Compliance to Standard: At Bridges
	(m)	(m)	(m)	(m)			(yr)					(m)	(m)			>1	>1		WL < EOTL
E1	204.1	204.0			Conc	no	50	199.75	199.77	199.94	199.83	-	-	4.23	-	-	-	yes	-
E3	197.512	197.362			Conc	no	50	193.02	193.11	193.72	193.32	-	-	4.34	-	-	-	yes	-
E4	196.005	195.855			Conc.	no	50	190.44	190.47	190.87	190.56	-	-	8.91	-	-	-	yes	-
E5	187.147	186.997	160	185.500	Conc	yes	100	181.74	181.82	183.42	182.06	5.18	3.68	-	4.94	yes	yes	-	yes
E6	190.607	190.457	100	188.600	Conc	yes	100	179.86	179.92	180.37	180.17	10.54	8.68	-	10.29	yes	yes	-	yes
E7	182.600	182.450			Conc	yes	100	179.61	179.68	180.54	179.94	-	-	2.77	-	-	-	yes	-
E8	186.400	186.250	120	183.900	Conc	yes	100	180.09	180.19	181.33	180.53	6.06	3.71	-	5.72	yes	yes	-	yes
M1	192.878	192.728			Conc	yes	100	179.66	179.70	179.80	179.76	-	-	13.03	-	-	-	yes	-
M2	190.483	190.333			Conc	no	50	180.26	180.28	180.33	180.32	-	-	10.07	-	-	-	yes	-
M3	182.830	182.680			Conc	no	50	178.97	179.01	179.17	179.12	-	-	3.71	-	-	-	yes	-
M4	182.175	182.025			Conc	yes	100	177.87	178.48	179.43	178.98	-	-	3.55	-	-	-	yes	-
M5	175.220	175.070			Conc	no	50	173.02	173.08	173.68	173.22	-	-	2.05	-	-	-	yes	-
M6	174.936	174.786			Conc	yes	100	172.91	172.94	173.05	173.09	-	-	1.85	-	-	-	yes	-
M7	175.257	175.107	60	173.000	Conc	yes	100	172.60	172.80	174.05	173.34	2.31	0.20	–	1.77	yes	no	-	yes
M8	175.351	175.201			Conc	no	50	173.16	173.32	173.80	174.22	-	-	2.04	-	-	-	yes	-
H1	172.890	172.740	120	170.200	Conc	yes	100	166.58	166.55	168.20	166.62	6.19	3.65	-	6.12	yes	yes	-	yes
H2	180.630	180.480			Conc	no	50	171.54	171.64	172.43	171.86	-	-	8.94	-	-	-	yes	-
H5	159.271	159.121			Conc	no	50	-	154.05	-	-	-	-	5.071	-	-	-	yes	-
H6	145.684	145.534	45	142.900	Conc	yes	100	136.96	136.99	137.28	137.03	8.54	5.91	-	8.50	yes	yes	-	yes
H7	143.678	143.528	45	141.530	Conc	yes	100	137.27	137.59	141.36	139.31	5.94	3.94	-	4.22	yes	yes	-	yes
H8	164.125	163.975	45	163.000	Conc	yes	100	162.21	162.30	162.65	162.53	1.67	0.70	-	1.44	yes	no	-	yes

(*) Based on background data review (to be confirmed during detailed design)
(**) in these cases the vertical alignment of the corridor slopes to the underground and measures are needed to avoid water entering the underground portion of the corridor
(***) Controlled flow results from SWM Pond Upstream - Refer to report

Notes:
Culverts/bridges with a total span less than or equal to 6.0m are designed for 50yr storm (MTO Standard WC-1)
Culverts/bridges with a total span greater than 6.0 are design for the 100 yr storm (MTO Standard WC-1)
Freeboard calculated as the difference between the WL generated by the design flow and the EOTR
Clearance calculated as the difference between the lowest point on the soffit and the design flow
Check flow criteria was assessed for crossing included in the HEC-RAS ROUGE model (HEC.prj) created by Parsons
Check flow criteria for TRCA models assessed in the report
[1] Flood Depth at culverts is calculated as follows:

5.5. Utility Relocation

The majority of the alignment lies on vacant strips of land located to the south of 407 ETR. Potential requirement of utility and municipal service relocation only occurs at the grade separation crossings with York and Peel Region's arterial roads and some local municipal roads.

Chapter 6: Impact Assessment, Mitigation and Monitoring includes the effects and proposed mitigation measures for utilities that may be affected by the Transitway, for cases considered significant due to size and importance of the facility or degree of relocation difficulty and/or complexity during the construction stage.

Hydro One has a list of general requirements for facilities to be built near their transmission lines to ensure the compliance of safety regulations, electromagnetic clearances and maintenance access to their structures. These requirements have been considered during the evaluation of alternatives and preliminary design of the Transitway, following discussions and coordination with Hydro One.

In case the regional and local municipalities propose future water and sewer services that may affect the 407 Transitway proposed facilities, MTO will discuss and coordinate solutions with the corresponding municipality or agency to ensure the design of the Transitway is maintained.

5.5.1. Emergency Response Services (ERS) Considerations

Along the Transitway, access to and egress from the runningway will be available for buses and emergency response vehicles at specific locations. Such locations will occur at each Transitway station by way of a circulation road and/or a restricted access point from specific arterial roads that surround the Transitway. However, emergency response vehicles and access points will not be allowed through private property or residential neighborhoods regardless of the compatibility of the arterial road.

In order to increase the safety factor of the Transitway, the route will have access/egress points in between stations, where presence of adjacent streets will allow, and where physically possible. Prior to construction, the location of these points will be defined in coordination with the corresponding municipalities. The purpose of these points will be to provide enter/exit opportunity to emergency response vehicles such as fire trucks, emergency medical response vehicles (ambulances), and police cars to the Transitway as efficiently as possible.

5.6. Illumination

Illumination for the Transitway facilities will follow Metrolinx and MTO (OPS) Guidelines and Standards. Along the runningway, only the stop platforms and the underpasses longer than 60m. will be illuminated, since the Transitway runs basically parallel to 407 ETR, consequently the runningway will be illuminated by light spillage from the high mast lighting of the Highway.

All station facility components will be illuminated including vehicular and pedestrian access and circulation roads and paths, bus facilities, commuter and PPUDO parking facilities and station platforms, as well as interior elements such as public areas within station building, ticket/passenger information areas, etc., which will be defined in the Architectural Design of the station interior. The design criteria for exterior illumination, as well as hardware, will follow Metrolinx standards as listed in Table 5.18.

TABLE 5.18: METROLINX STANDARDS FOR ILLUMINATION

LOCATION	POLES	LUMINAIRES	ILLUMINATION LEVEL (LUX)
Transitway Platforms	6.0m Steel poles	Approved LED Luminaire equivalent of 250W HPS	50
Bus Loops, Access Roads & Platforms	12m Steel poles	Approved LED Luminaire equivalent of 250W HPS	20
Underpasses and Tunnels	NA	Approved Linear LED equivalent of Fluorescent Luminaires with 1219mm long TS lamps	150

Illumination of parking areas should be in accordance with MTO standards as outlined in Table 5.19.

TABLE 5.19: MTO STANDARDS FOR ILLUMINATION OF PARKING LOTS

LOCATION	POLES & LUMINAIRES	ILLUMINATION LEVEL	UNIFORMITY	LIGHTING CONTROL
Parking lots where more than 35 vehicles park on a regular basis and there is a transit stop within or adjacent to the parking lot.	12.0m Steel poles with Approved LED Luminaire equivalent of 250W HPS 25m High Mast Approved LED Luminaire equivalent of 750W HPS	Full Enhanced 25 lux	Avg/Min – 3:1 Max/Min – 6:1	Adaptive lighting controls to enhance energy conservation by reducing lighting levels to 10 lux between. 11 PM and 4 AM

High mast poles should not be used at parking areas located beneath hydro transmission lines unless required Hydro One clearances can be achieved. Interior illumination will also follow GO Transit guidelines and standards and will be coordinated with the station architectural design. Life Cycle Cost Analysis will be done for Conventional Illumination and High Mast Illumination and recommendations will be made considering the two options.

5.7. Intelligent Transportation Systems

The incorporation of ITS is the application of technology to address the operational needs of transportation agencies. ITS has become synonymous with safety, cost effectiveness and operational efficiency in higher order transit systems such as that envisioned for the 407 Transitway. Pre-planning ensures that the maximum benefits can be appreciated by the widest number of users. The 407 Transitway ITS is expected to include: management of transit fare collection; common electronic payment; interactive traveler information; parking management and information; transit signal priority; real-time operations monitoring; and, passenger security.

5.8. Landscaping

The landscape design for this new transit facility will focus on mitigating the impacts of the corridor and station sites on the local natural and cultural environments. The design will also strive to integrate the facility into the urban fabric and natural landscape surrounding the corridor and station sites.

The proposed landscape treatments for the project are to be divided into two distinct components, one for the transit corridor and the other for the station sites. The landscape design (including figures presenting the existing landscape composition analysis and the proposed planting layout) is presented in Appendix L.

The general intent of the corridor landscape treatment is to utilize the available lands along the corridor as an opportunity to provide an ecologically diverse planted environment. The corridor provides an excellent opportunity to increase canopy cover and enhance the local vegetation diversity through an ecological planting program. This is to be accomplished by planting a variety of locally native, non-invasive, trees shrubs and grasses.

The landscape planting treatments are to be designed to accomplish a number of functions including: slope stabilization; compensation for vegetation removal; stream crossing, wetland, and woodland edge restoration; providing naturalization planting; creating visual/wind buffers; and, generally improving the general aesthetics of the corridor.

The outdoor environments in the vicinity of the stations and the associated parking facilities are to be designed to optimize the aesthetics for the station sites, providing 'greening' landscape solutions in available open spaces. These 'greening' initiatives may include: permeable paving, surface water retention, green roofs, solar reflective surface materials, the use of recycled materials, and the introduction of 'soft' landscape treatments where space is available. The landscape treatments will provide the public with a safe and pedestrian friendly environment and outdoor amenity areas, in an overall environment that is aesthetically pleasing. This is to be accomplished using a variety of landscape techniques including, a diversity of plants and other landscape materials, upgraded pedestrian paving and a coordinated 'palette' of outdoor furnishings.

Thoughtful landscape design of the Transitway corridor, station sites and associated parking areas will be an important component in the development of this new infrastructure as a visual and environmental asset to the surrounding natural and cultural environment. Landscaping may also occur in the protected sites for environmental benefits.

5.9. Maintenance and Storage Facility

The main Maintenance and Storage Facility approved by MECP in 2011 as part of the 407 Transitway Central Section – Highway 400 to Kennedy Road TPAP will serve the Hurontario to Highway 400 section of the Transitway. The assessment process used to obtain approval for this Maintenance and Storage Facility considered the operational needs and associated effects of the proposed Transitway Project as a whole.

5.10. Flexibility in the Design of the Proposed Footprint

Assessment of existing environmental conditions and detailed field investigations covered an area sufficiently broad to minimize potential addenda to the TPAP in case of station facility expansions and/or variations in the footprint of the runningway and associated facilities. For all cases where further field investigations may be required prior to construction e.g.: Archeological Stages 3 and 4, conceptual alignment options were assessed to ensure alternate opportunities are feasible if necessary. If variations to the design included in this EPR are proposed in the future, Section 15.1 of the Ontario Regulation 231/08 Transit Projects and Metrolinx Undertakings would be followed.

5.11. Sites Protected for Environmental Compensation

The station sites protected by MTO through the 1998 Corridor Protection Study and not selected for a station facility following the evaluation of alternatives, described in Chapter 5, are being protected for environmental compensation. These sites include:

- Land originally protected for the Hurontario Street Station, east of Hurontario Street. Note that the new site selected for the Hurontario Street Station is located west of Hurontario Street.
- Land protected for the Highway 410 Station, west of Tomken Road
- Land protected for the Torbram Road Station, east of CNR Halton
- Land protected for the Weston Road Station, west of Weston Road

Additional sites being protected for environmental compensation include:

- Site located east of Kennedy Road, west of the ETR W-E ramp to Highway 410, and north of the Utility Corridor.
- Site located east of the ETR S-E ramp from Highway 410, north of the 407 Transitway alignment, and west of Farmhouse Court.
- Site located west of Spring Creek.
- Site located west of Steeles Avenue East.
- Site located east of Goreway Drive.
- Site located north of Steeles Avenue East and West of Highway 427.
- Site located east of Highway 27.
- Site located west of Islington Avenue, south of 407 ETR, and north of the CN Rail Line.

All sites being protected for environmental compensation are illustrated in Plate P-1 to P-12. As discussed in Section 6.2.1, compensation/offsets will be provided at a compensation ratio to be determined through further discussion with regulatory agencies (e.g., MNRF, TRCA), as part of implementing the project.

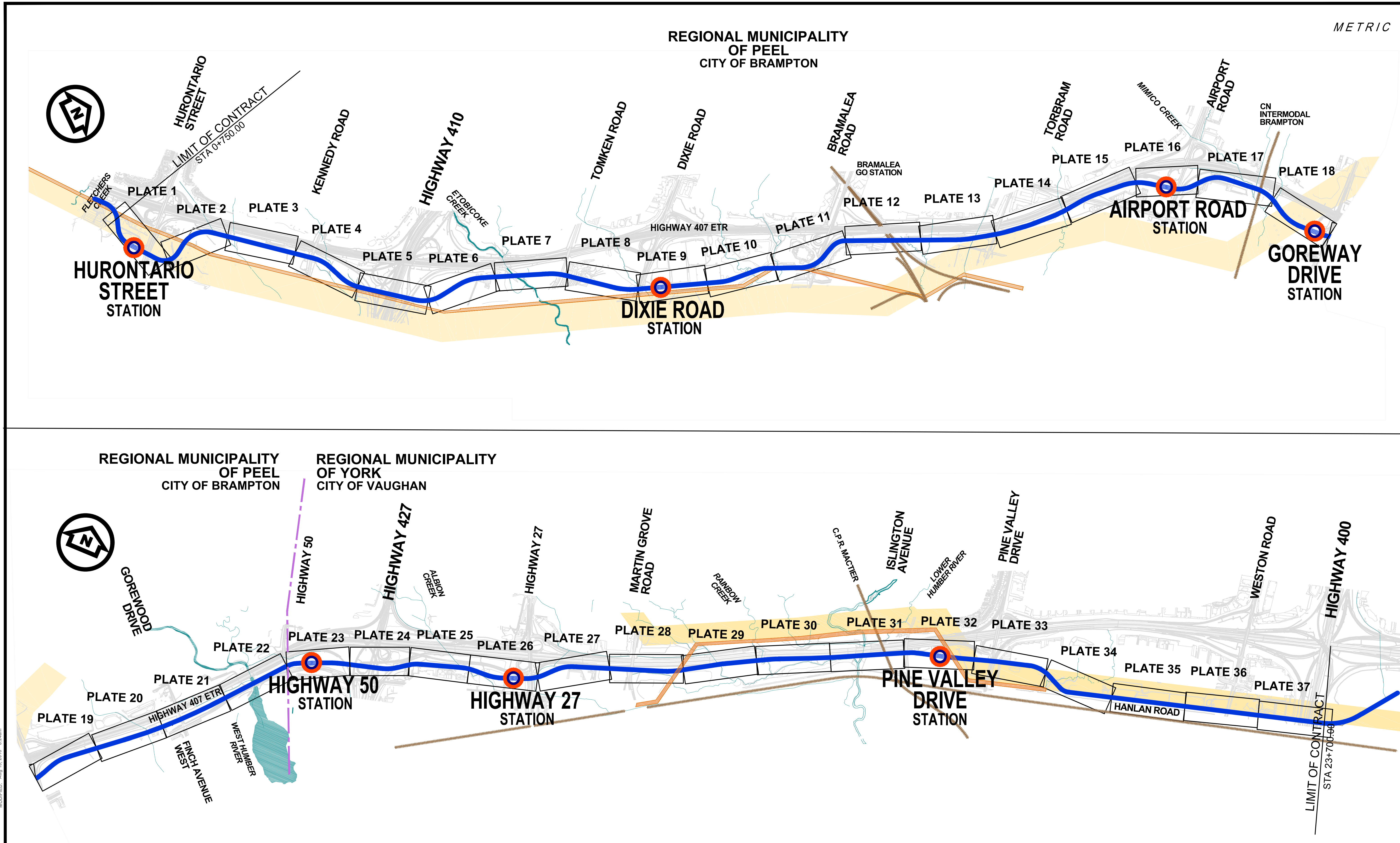
5.12. Property affected by the 407 Transitway

Table 5.20 summarizes the type of ownership of the land being affected by the footprint of the proposed 407 Transitway facilities. Appendix Q of the EPR includes a detailed information of the property owners and illustrates the affected property. Most of the 407 Transitway facilities footprint fall within provincial lands protected by MTO through the 1998 Corridor Protection Study.

TABLE 5.20: OVERALL PROPERTY IMPACT

SEGMENT DESIGNATION	SEGMENT DESCRIPTION	TYPE OF OWNERSHIP	APPROX. AFFECTED AREA (ac)
A	WEST OF HURONTARIO STREET TO EAST OF KENNEDY ROAD	PROVINCIAL PRIVATE MUNICIPAL	21.6 5.8 0.8
B	EAST OF KENNEDY ROAD TO WEST OF TOMKEN ROAD	PROVINCIAL MUNICIPAL	13.9 0.4
C	WEST OF TOMKEN ROAD TO EAST OF TORBRAM ROAD	PROVINCIAL PRIVATE MUNICIPAL FEDERAL	34.6 2.2 2.8 0.3
D	EAST OF TORBRAM ROAD TO EAST OF GOREWAY DRIVE	PROVINCIAL PRIVATE MUNICIPAL FEDERAL	41.5 2.8 0.7 0.4
E	EAST OF GOREWAY DRIVE TO EAST OF HIGHWAY 427	PROVINCIAL PRIVATE MUNICIPAL	33.8 12.4 8.3
F	EAST OF HIGHWAY 427 TO EAST OF MARTIN GROVE ROAD	PROVINCIAL MUNICIPAL	23.3 2.1
G	EAST OF MARTIN GROVE ROAD TO WEST OF ISLINGTON AVENUE	PROVINCIAL MUNICIPAL FEDERAL	9.3 0.1 0.2
H	WEST OF ISLINGTON AVENUE TO EAST OF HIGHWAY 400	PROVINCIAL PRIVATE MUNICIPAL FEDERAL	34.4 1.4 0.4 0.2

Runningway Plan & Profile Plates



Ontario

PARSONS

IBI GROUP

SCALE

500m 0 1000m

LEGEND

- PROPOSED 407 TRANSITWAY
- MUNICIPALITY BOUNDARY
- RAILWAY CORRIDOR
- WATER COURSE
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- STATION

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 0+750.00 TO STA 23+700.00

DRAWING SET

KEY PLAN

PLATE **00**

DATE 08/20/2018

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY
STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 0+750.00 TO STA 1+450.00

DRAWING SET
PLAN and PROFILE

PLATE
1

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_1.dwg
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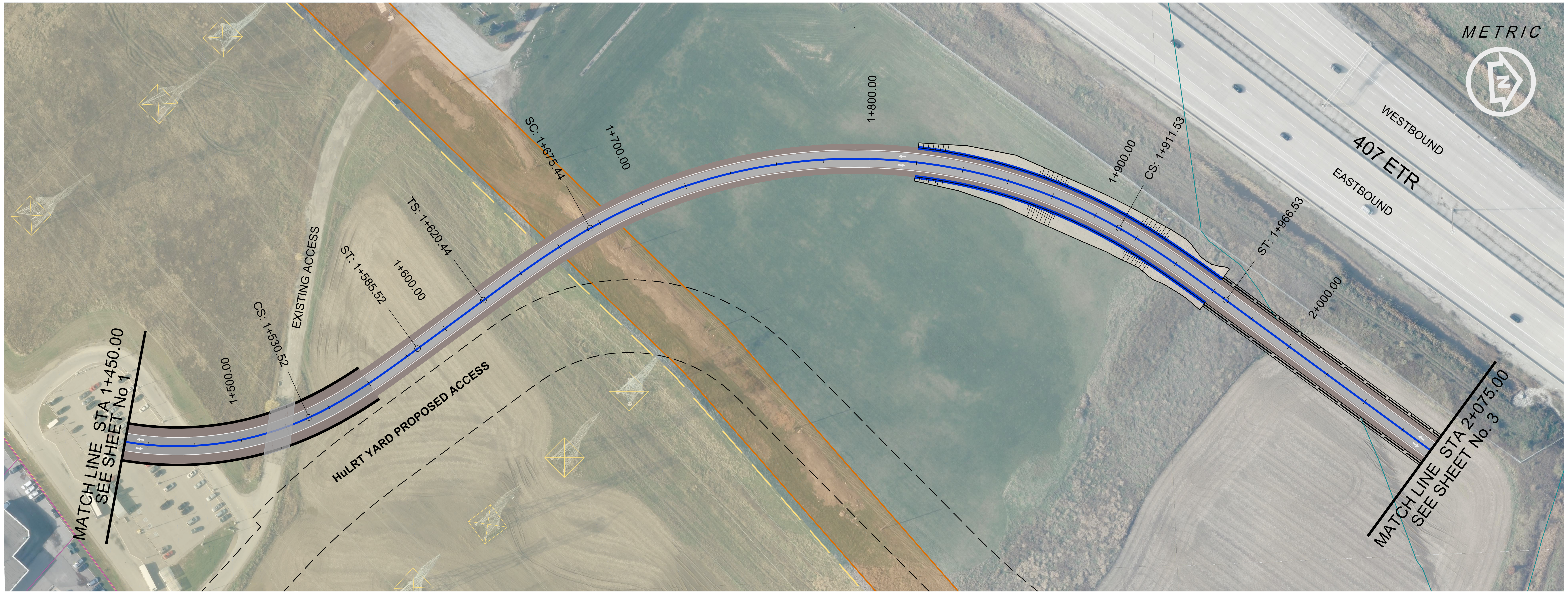
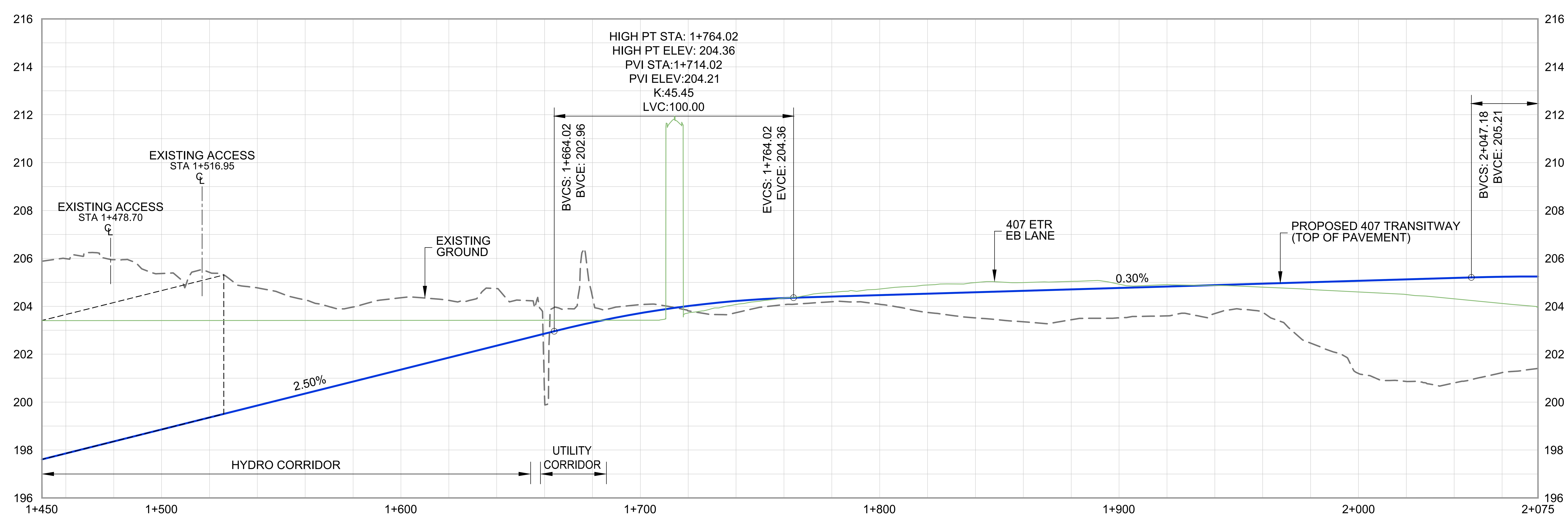




Ontario

PARSONS

IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

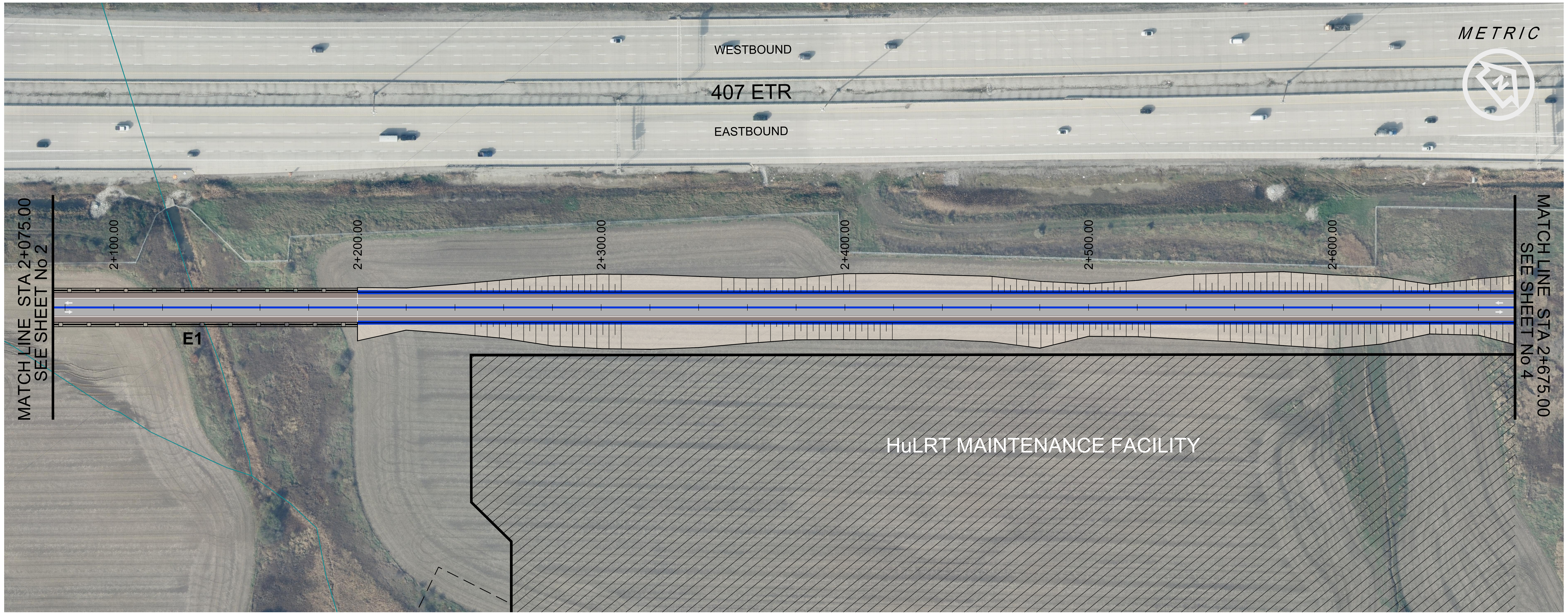
LEGEND
FILL SECTION
CUT SECTION
RETAINING WALL
TRANSITWAY STATION PLATFORM
UNDERPASS
STRUCTURE SECTION
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

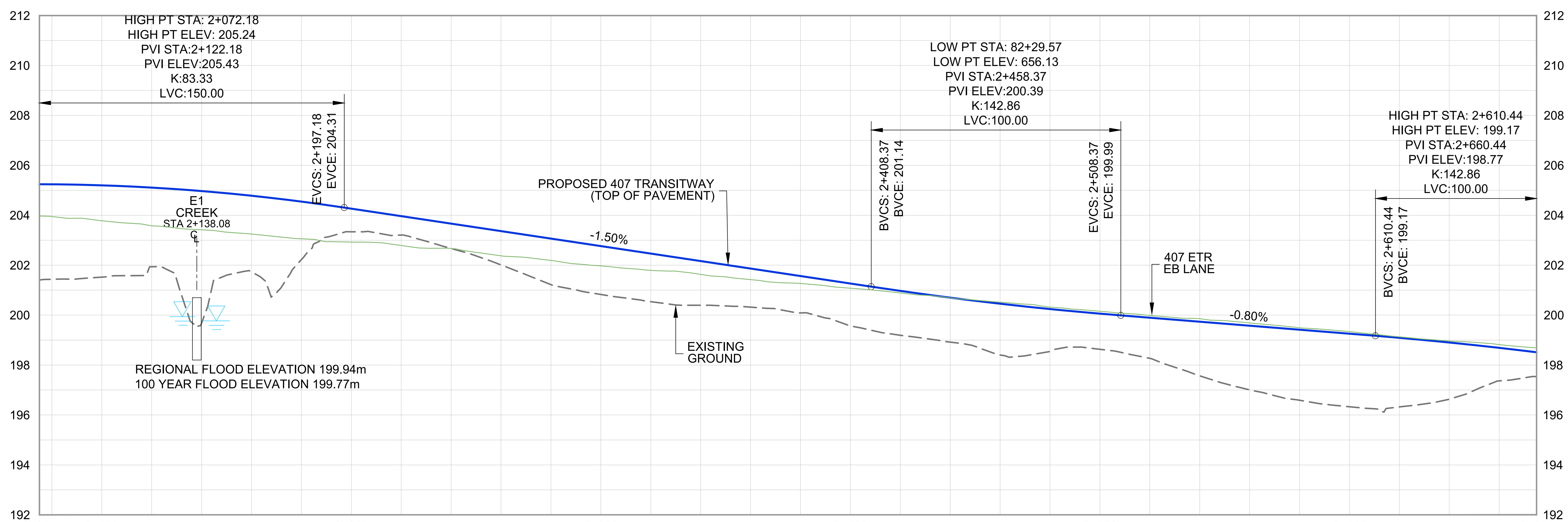
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 1+450.00 TO STA 2+075.00

DRAWING SET
PLAN and PROFILE

PLATE
2

DATE
08/20/2018





Ontario PARSONS IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND
RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 2+075.00 TO STA 2+675.00

DRAWING SET
PLAN and PROFILE

PLATE
3

DATE
08/20/2018

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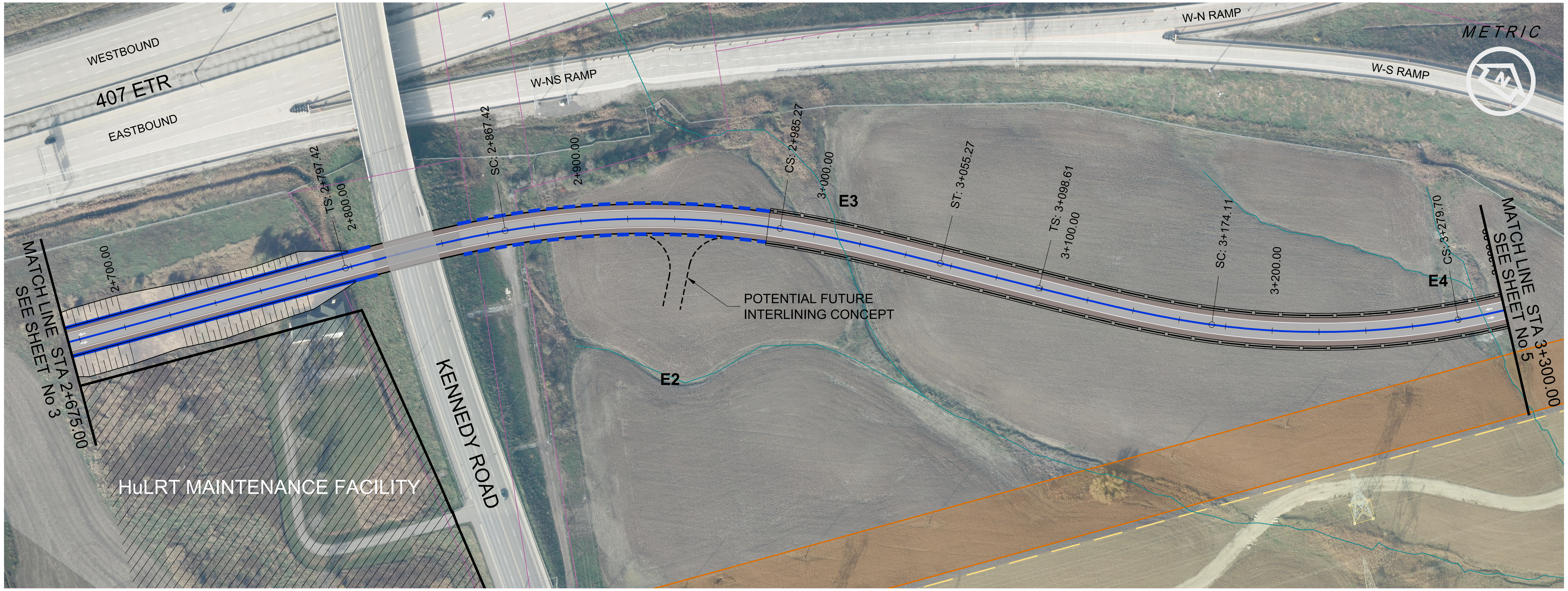
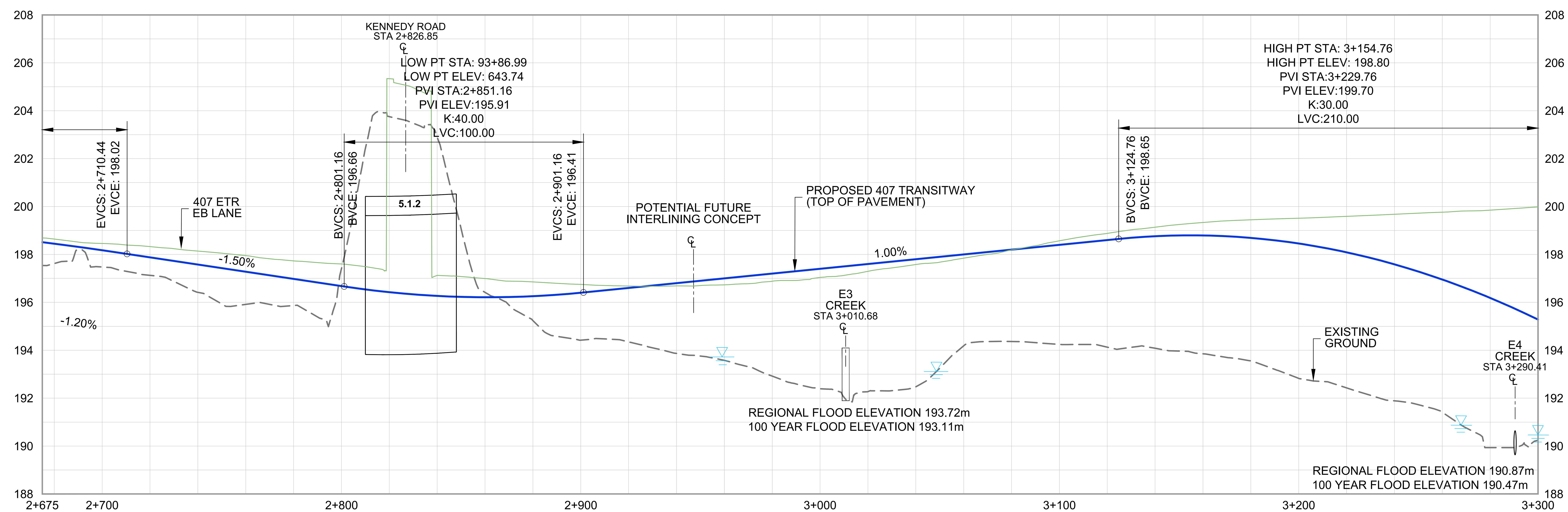
CREATED: RM3





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION · TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER · HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

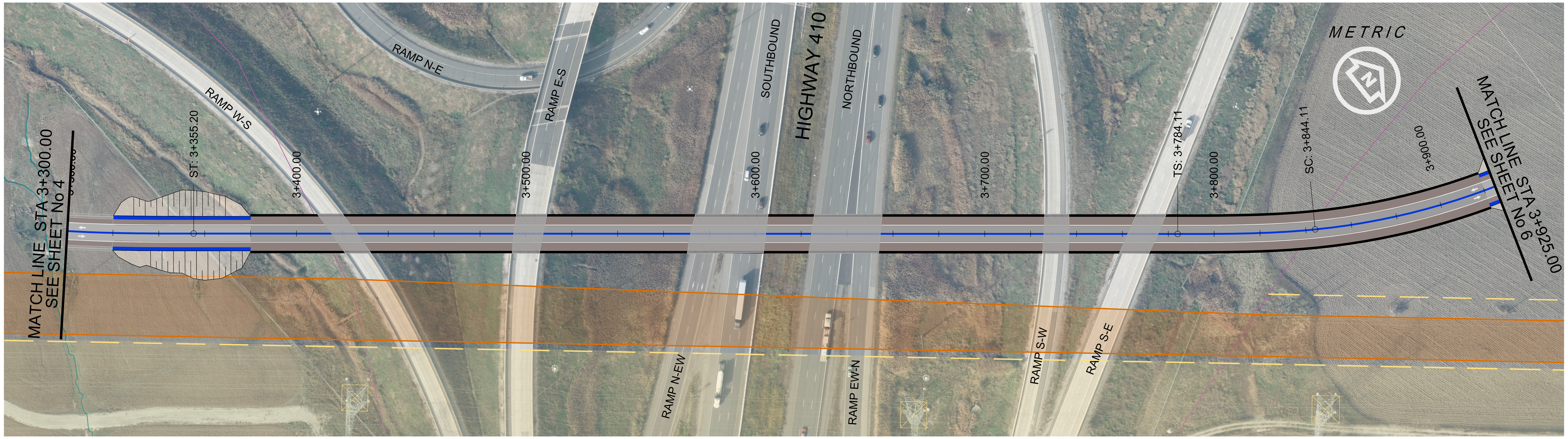
STA 2+675.00 TO STA 3+300.00

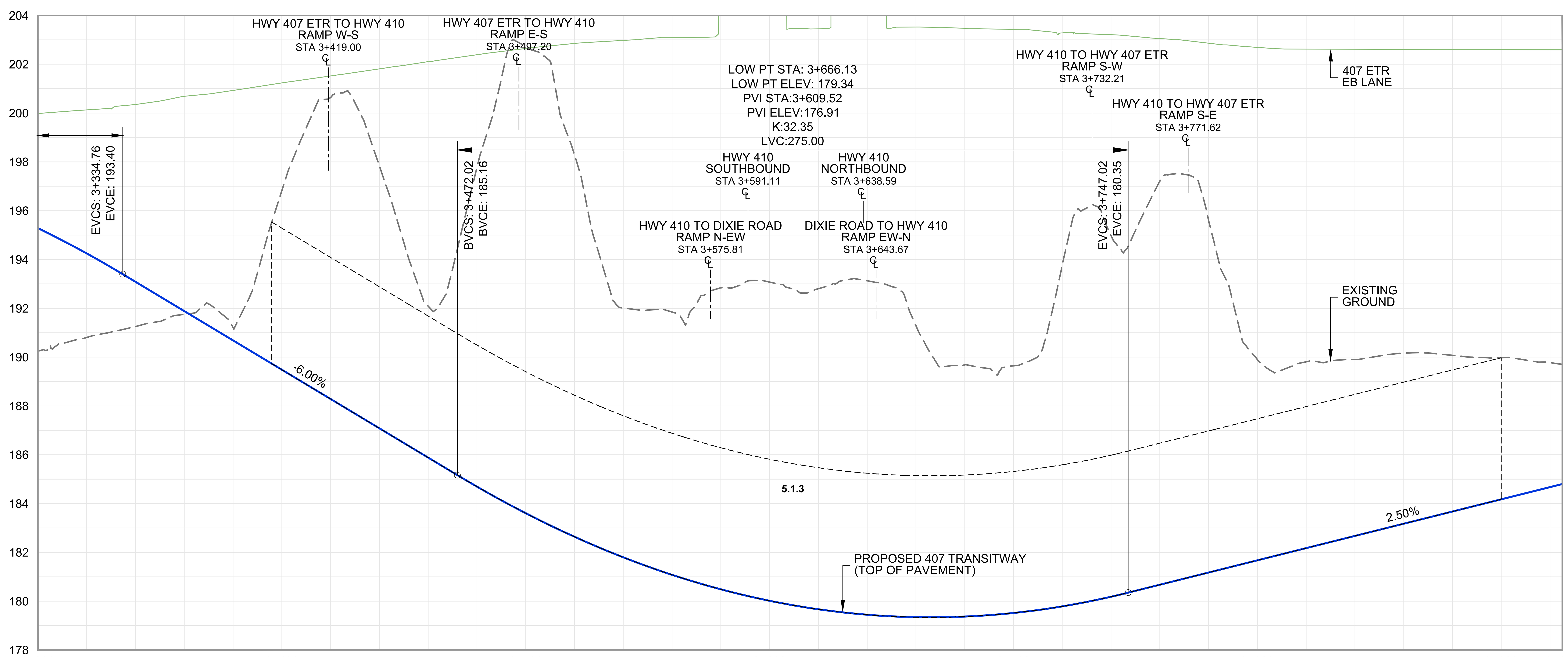
DRAWING SET

PLAN and PROFILE

PLATE 4

DATE 08/20/2018





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL; FILL SECTION; CUT SECTION; TRANSITWAY; STATION PLATFORM; STRUCTURE SECTION; UNDERPASS; BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

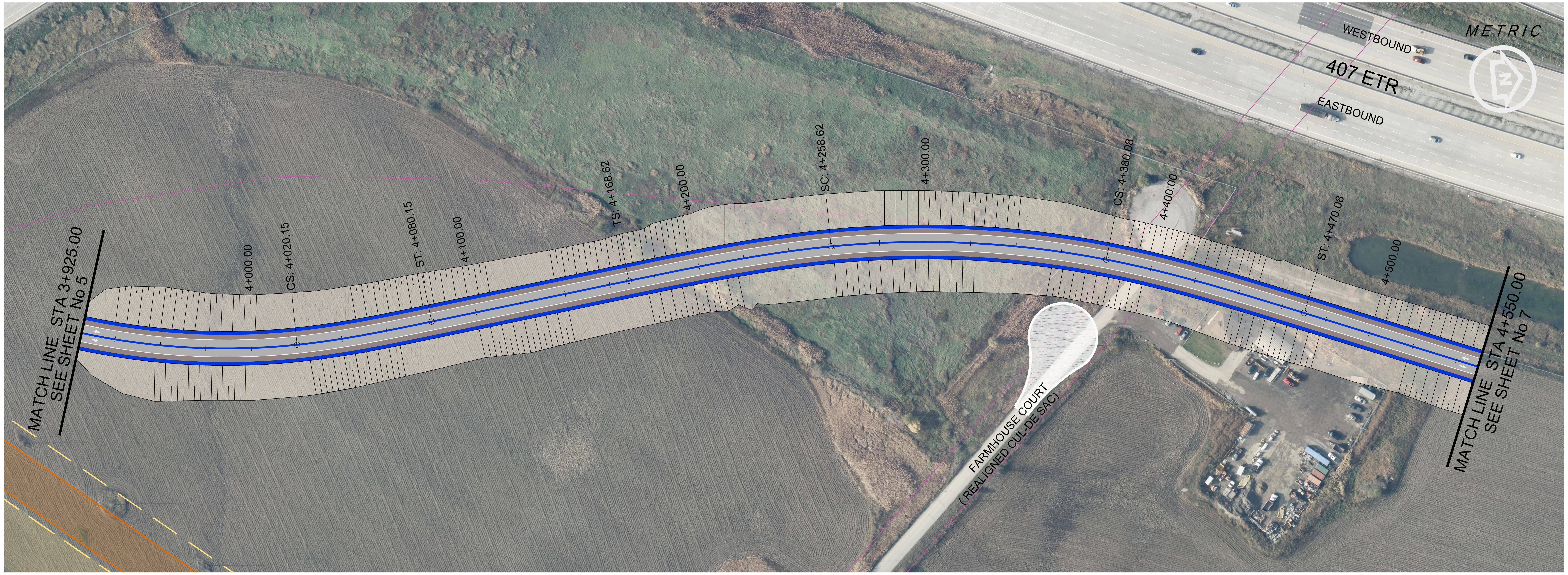
407 TRANSITWAY

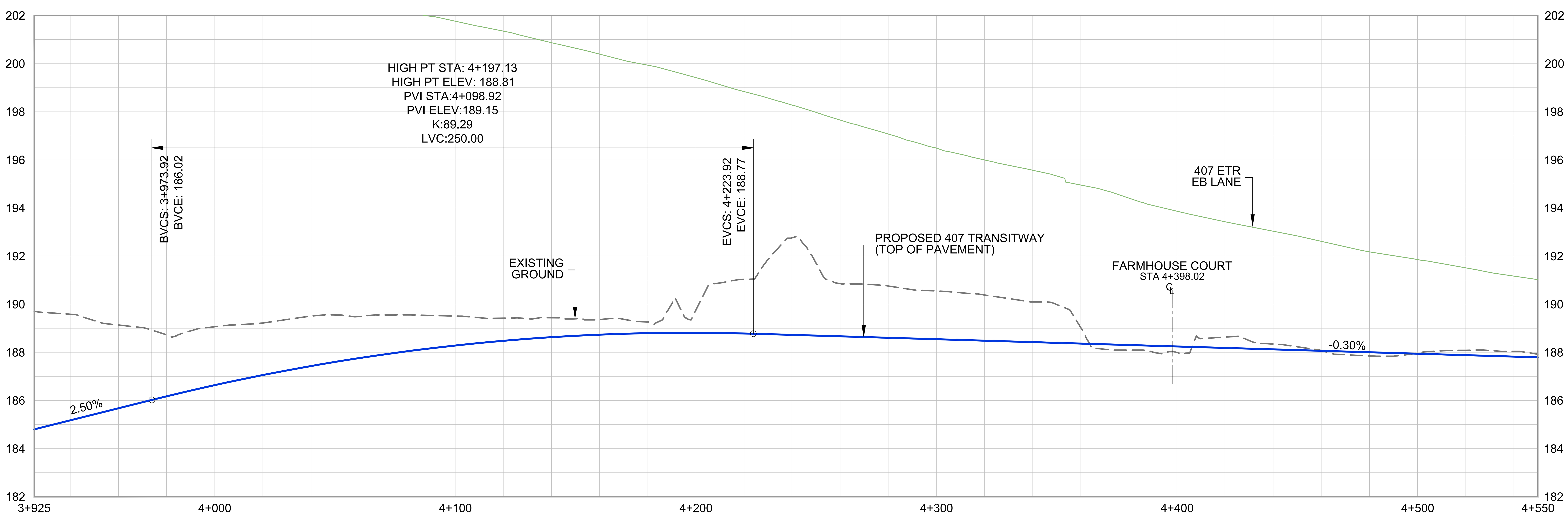
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 3+300.00 TO STA 3+925.00

DRAWING SET
PLAN and PROFILE

PLATE
5

DATE
08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

FILL SECTION · CUT SECTION · RETAINING WALL · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION

TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER

HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 3+925.00 TO STA 4+550.00

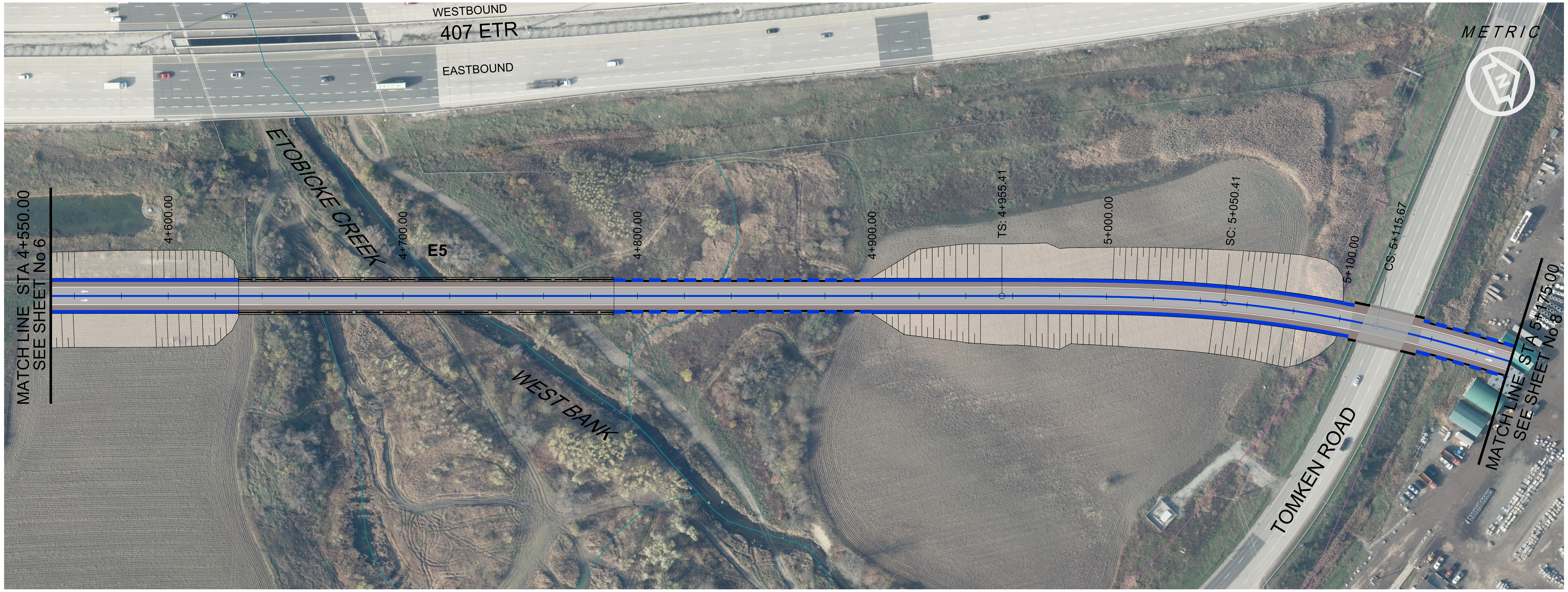
DRAWING SET

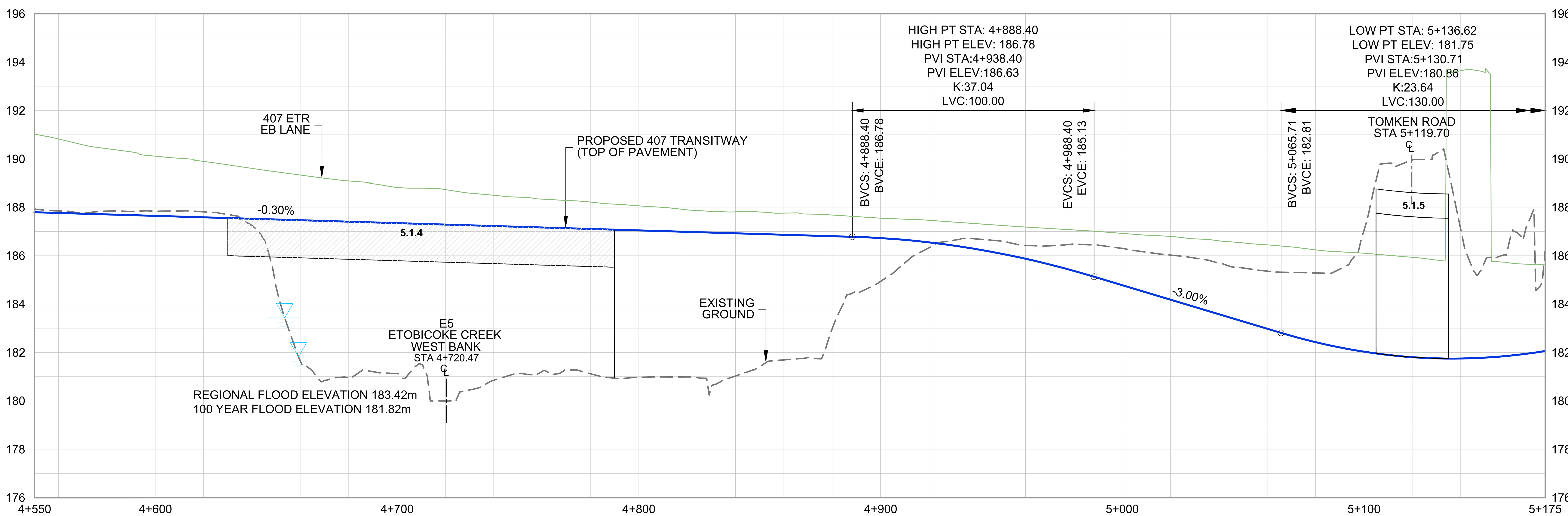
PLAN and PROFILE

PLATE **6**

DATE 08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_7.dwg
CREATED: RM3
MODIFIED: Aug 03, 2018 12:07pm





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
TRANSITWAY
STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

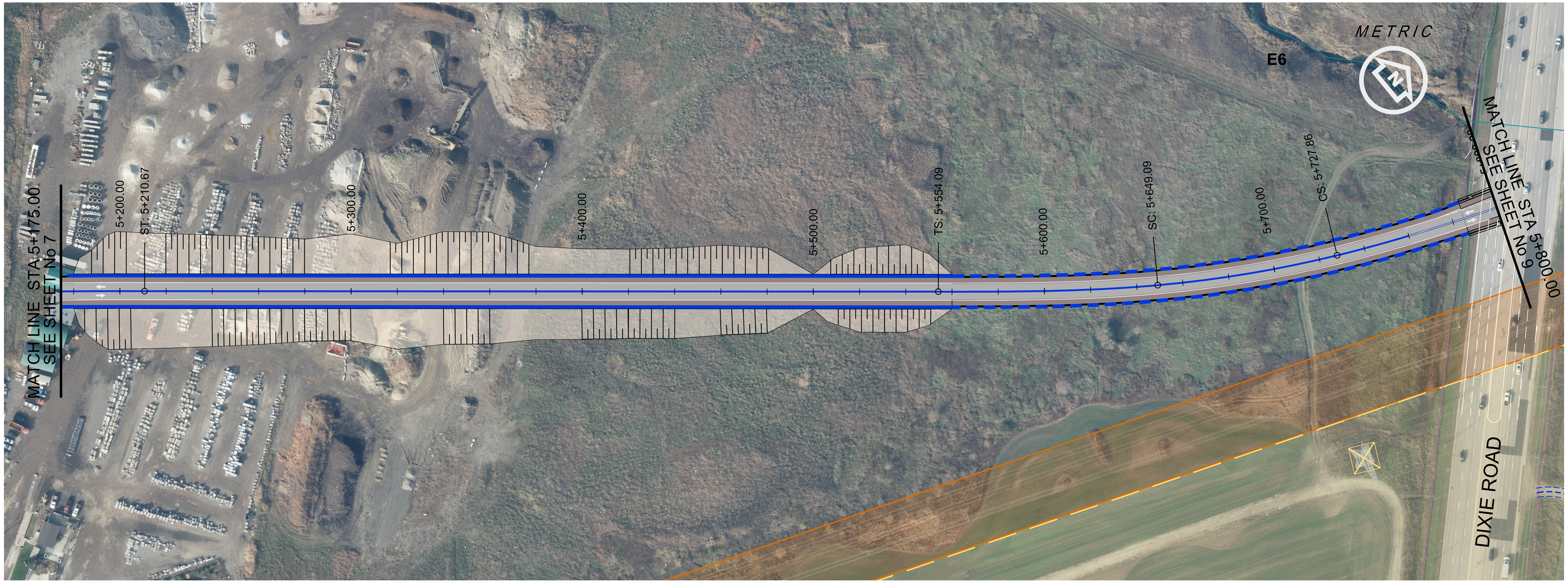
407 TRANSITWAY

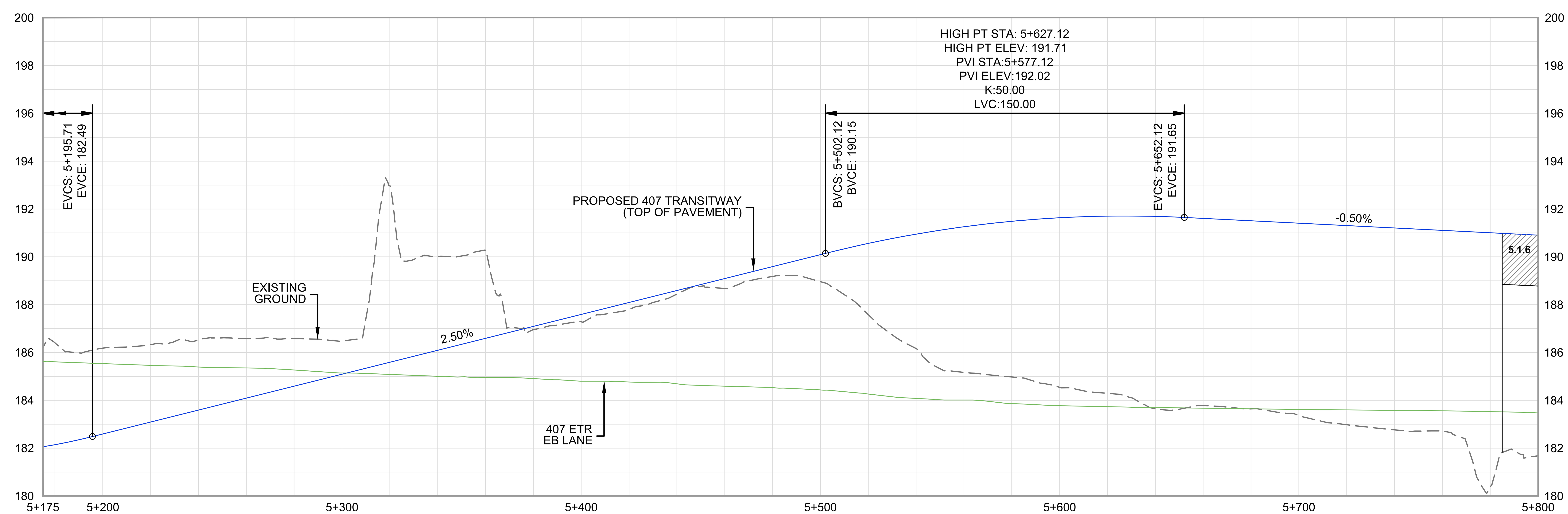
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 4+550.00 TO STA 5+175.00

DRAWING SET
PLAN and PROFILE

PLATE
7

DATE
08/20/2018





Ontario | PARSONS | IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL · TRANSITWAY STATION PLATFORM · UNDERPASS · FILL SECTION · CUT SECTION · STRUCTURE SECTION · BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

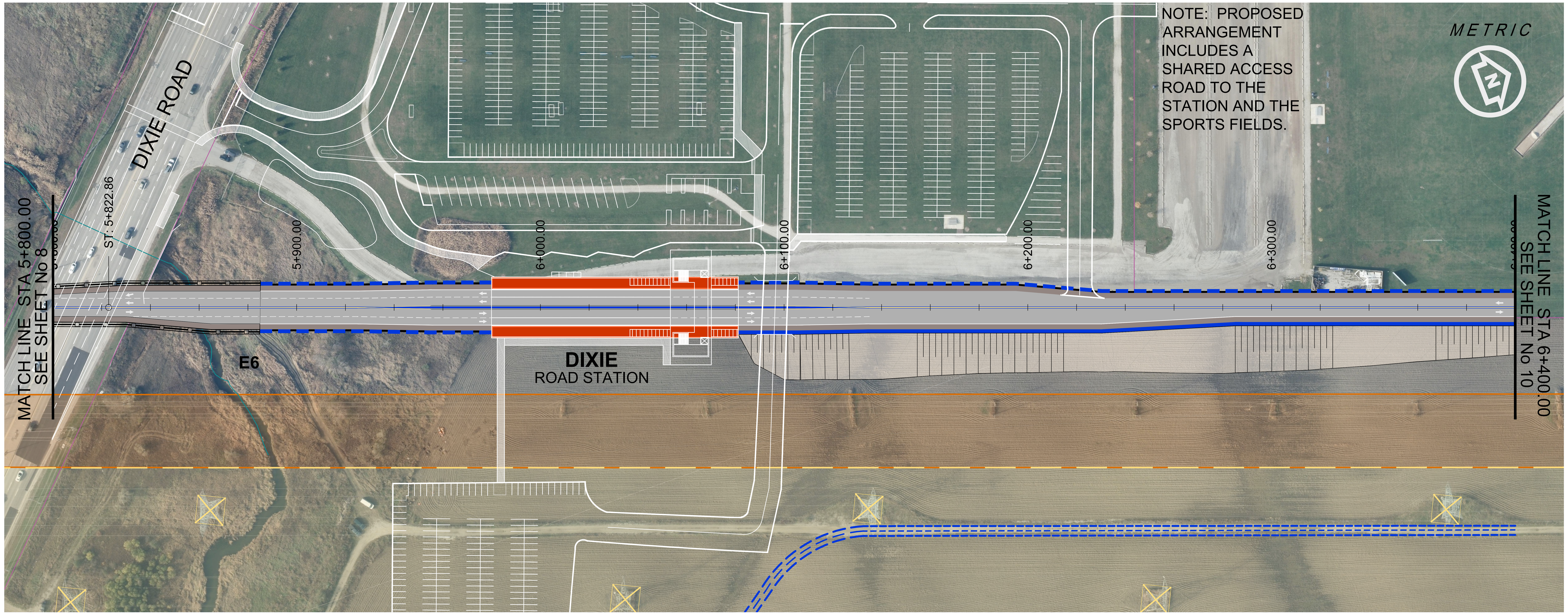
407 TRANSITWAY

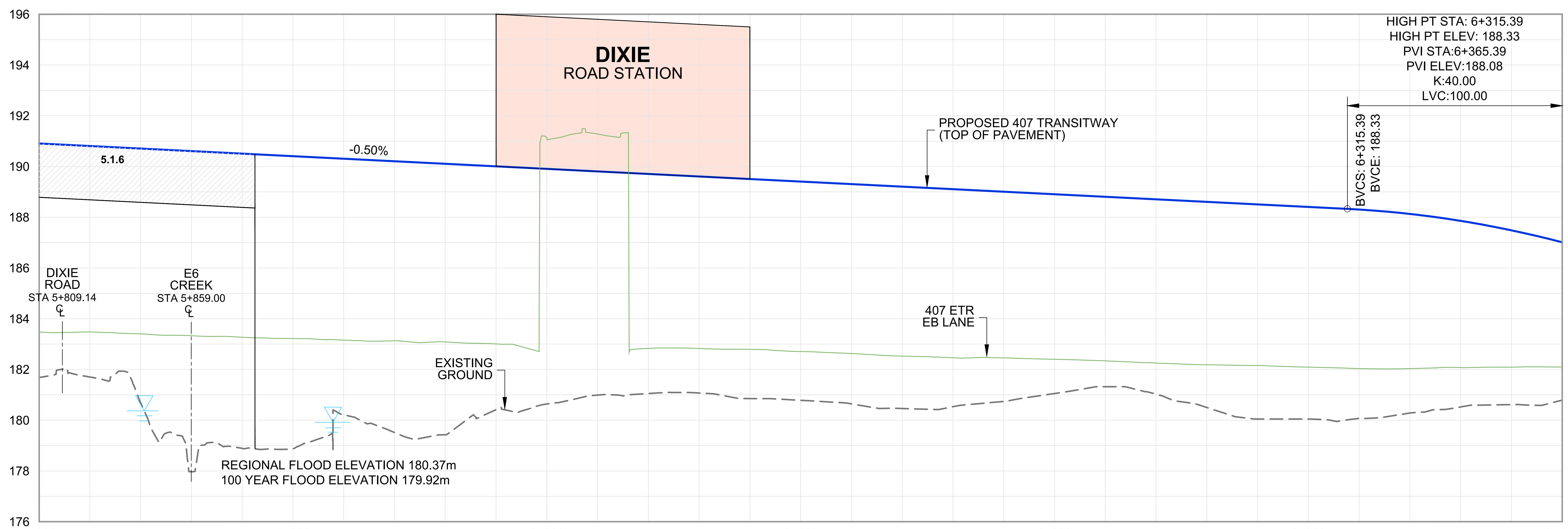
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 5+175.00 TO STA 5+800.00

DRAWING SET
PLAN and PROFILE

PLATE
8

DATE
08/20/2018





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL; FILL SECTION; CUT SECTION; TRANSITWAY STATION PLATFORM; STRUCTURE SECTION; UNDERPASS; BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

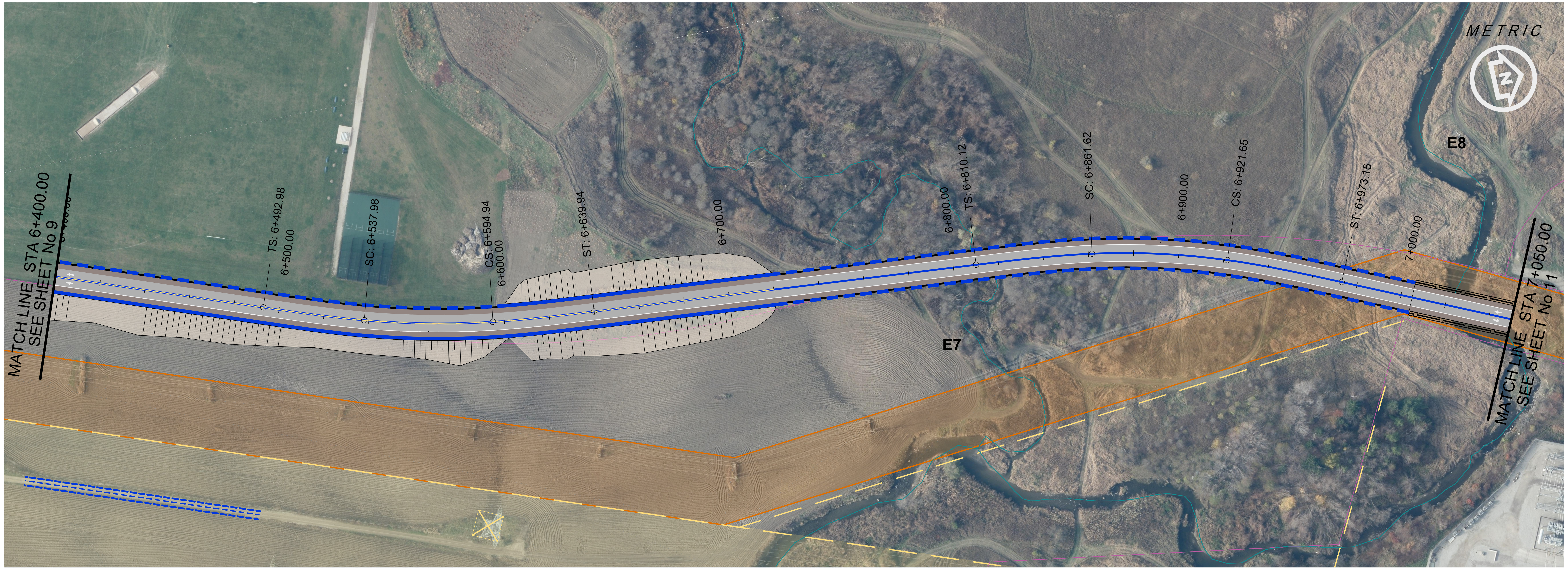
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 5+800.00 TO STA 6+400.00

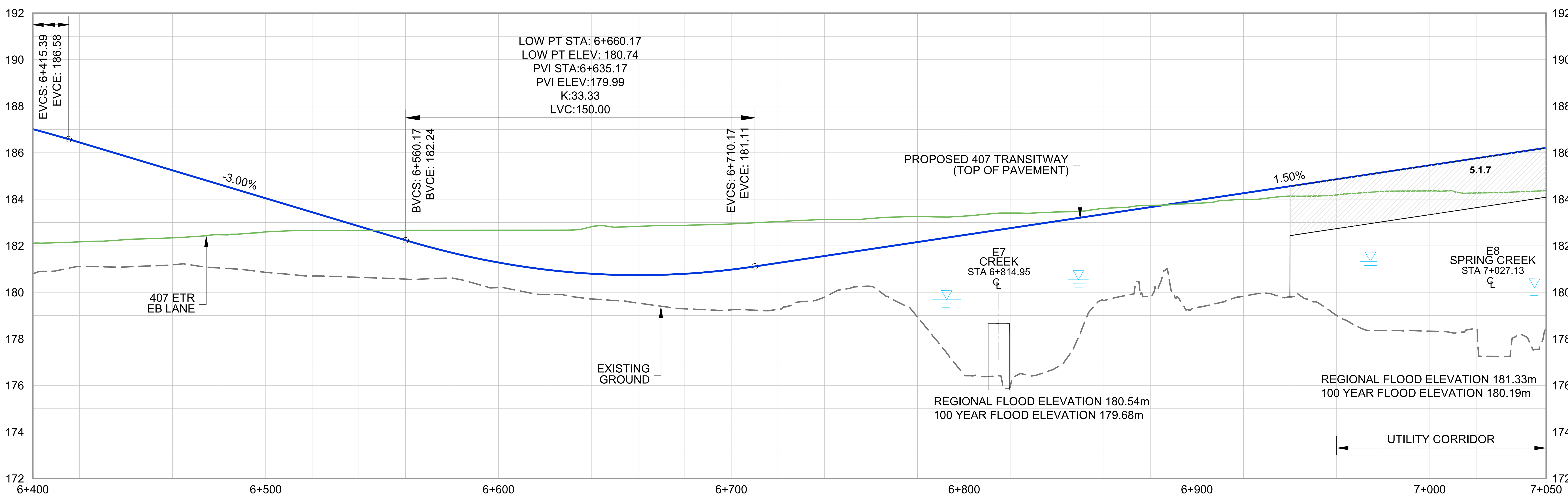
DRAWING SET

PLAN and PROFILE

PLATE **9**

DATE 08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

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1m 0 2m Vertical

LEGEND

FILL SECTION · RETAINING WALL · TRANSITWAY · STATION PLATFORM · UNDERPASS · CUT SECTION · STRUCTURE SECTION · BELOW GRADE SECTION

TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER

HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

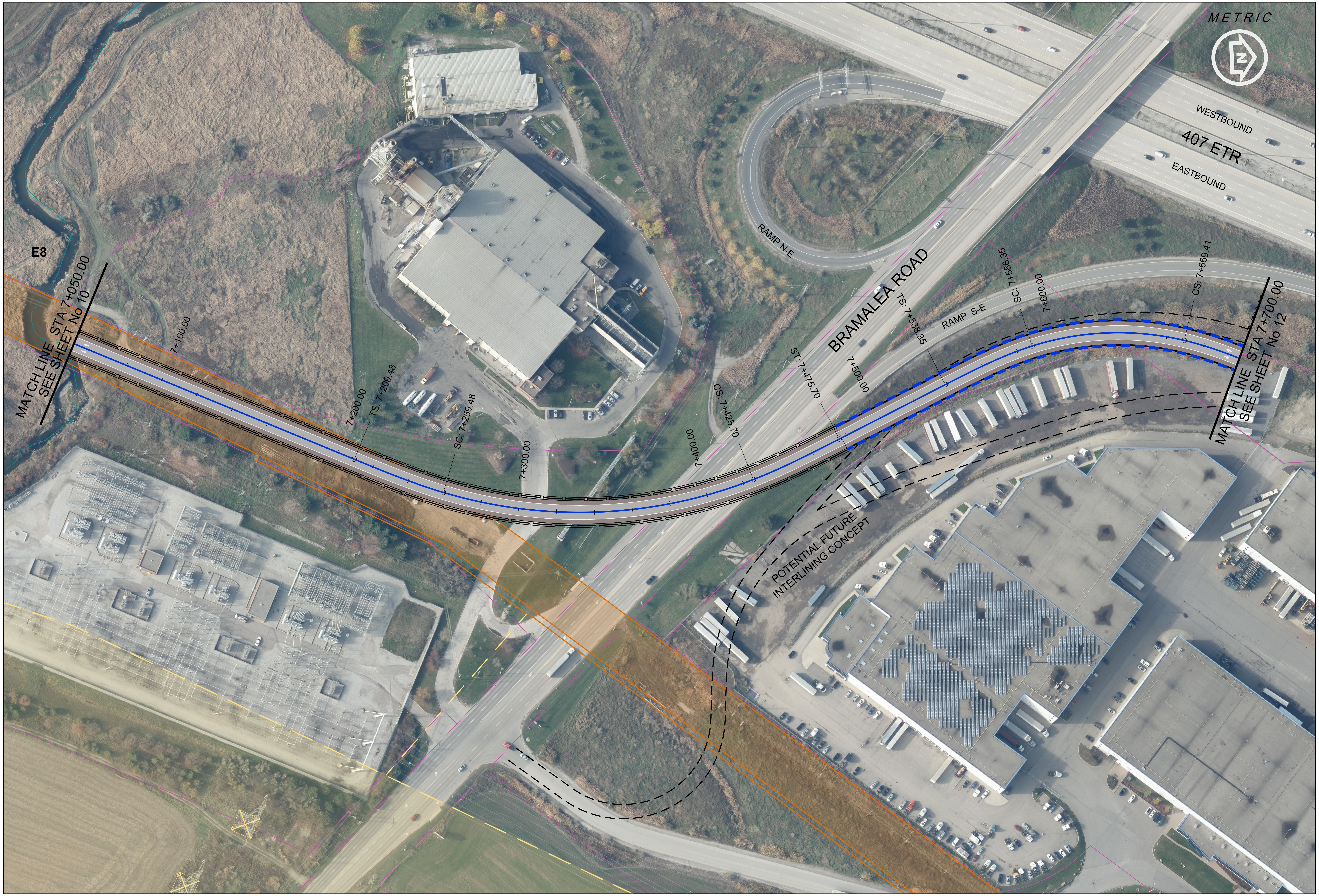
STA 6+400.00 TO STA 7+050.00

DRAWING SET

PLAN and PROFILE

PLATE **10**

DATE 08/20/2018



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CREATED: RM3
MODIFIED: Aug 13, 2018 4:45pm

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

RETAINING WALL
TRANSITWAY
STATION PLATFORM
UNDERPASS
FILL SECTION
CUT SECTION
STRUCTURE SECTION
BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 7+050.00 TO STA 7+700.00

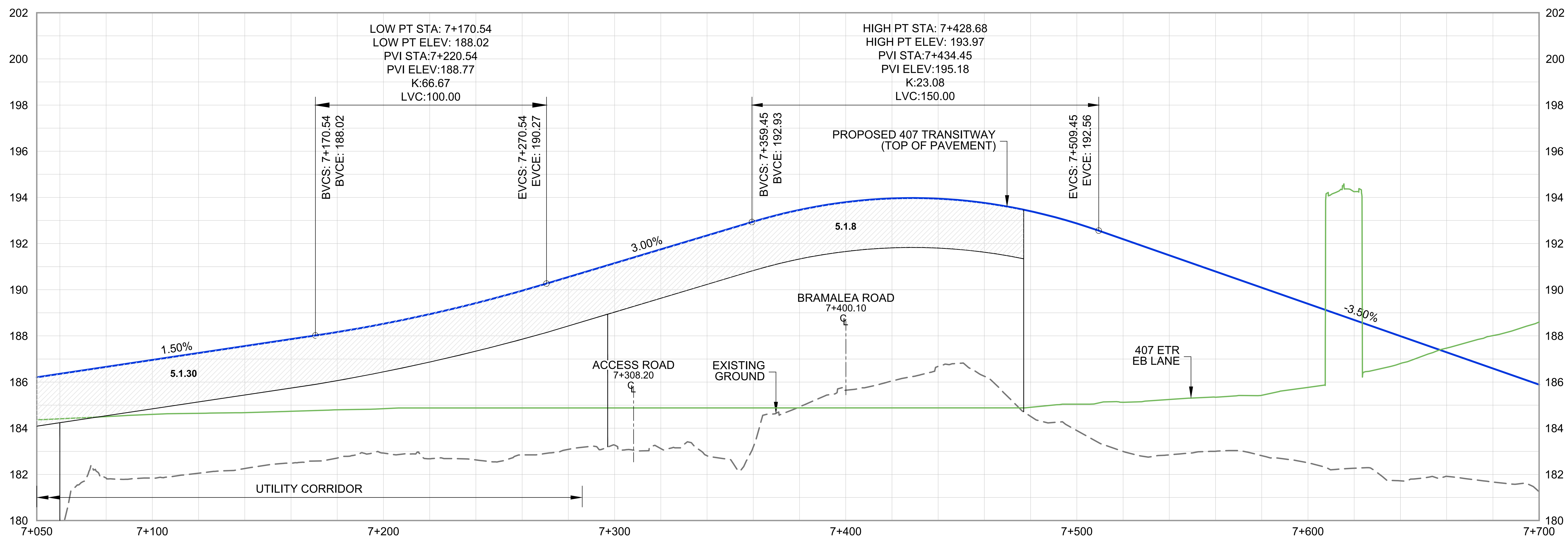
DRAWING SET

PLAN and PROFILE

PLATE

11A

DATE
08/20/2018



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CREATED: RM3
MODIFIED: Aug 13, 2018 9:29am

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

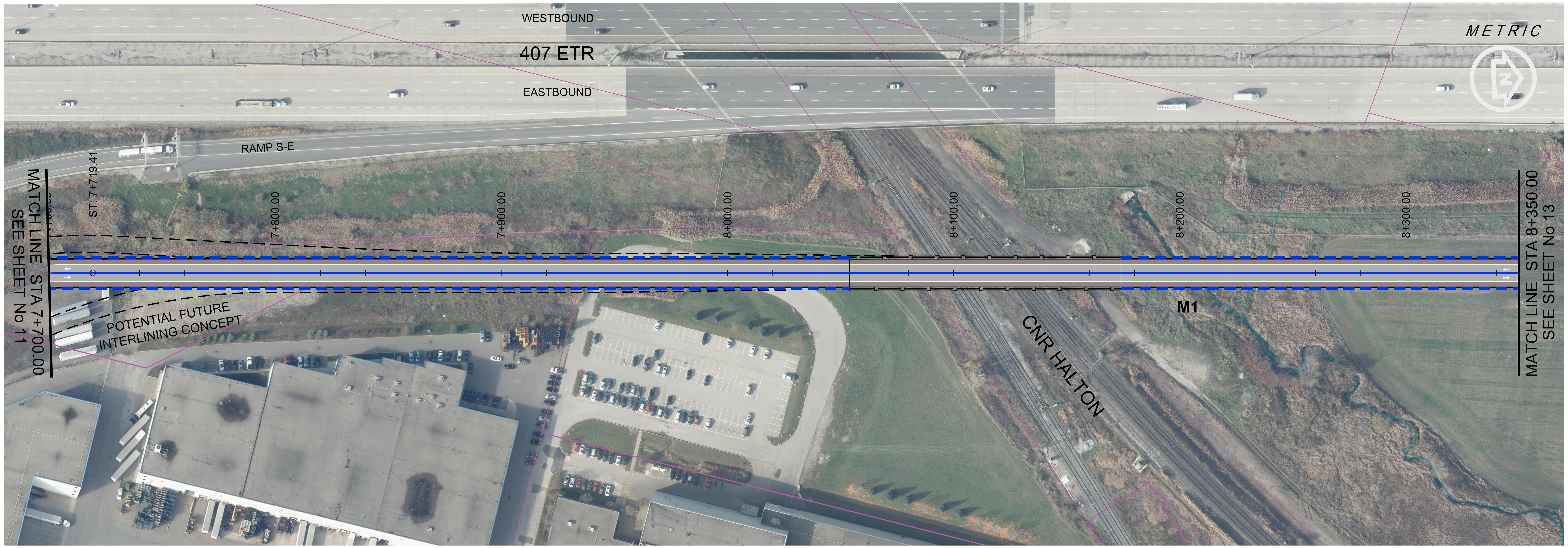
407 TRANSITWAY

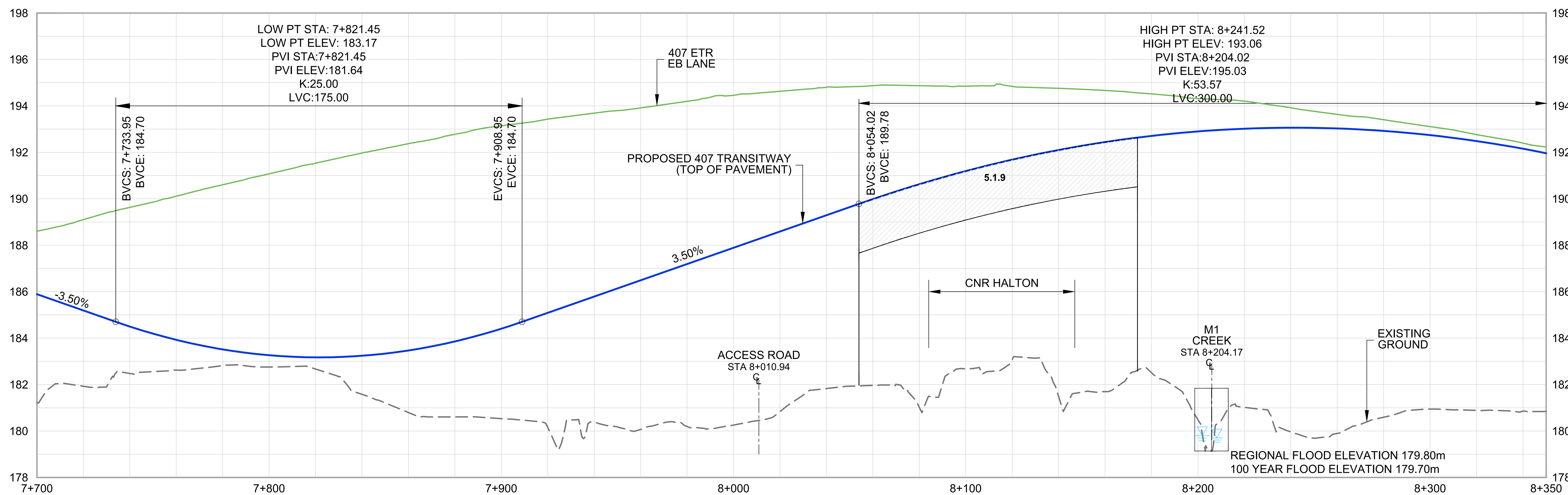
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 7+050.00 TO STA 7+700.00

DRAWING SET
PLAN and PROFILE

PLATE
11B

DATE
08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION

TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER

HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 7+700.00 TO STA 8+350.00

DRAWING SET

PLAN and PROFILE

PLATE

12

DATE

08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_12.dwg
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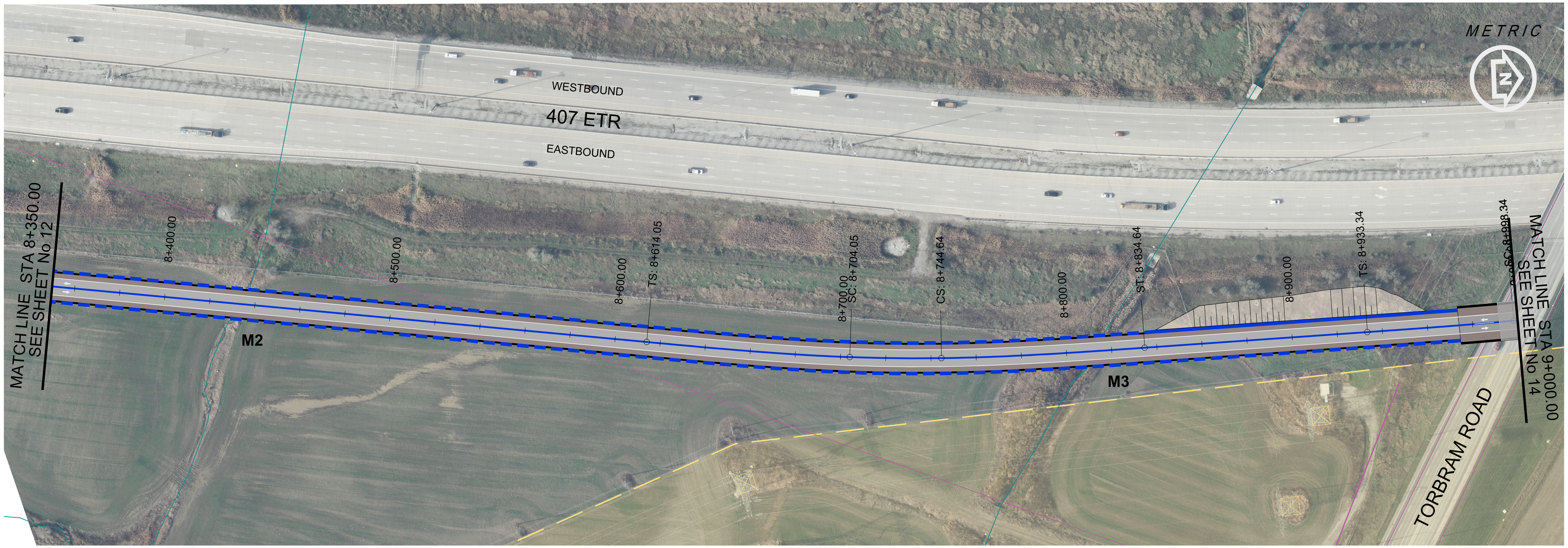

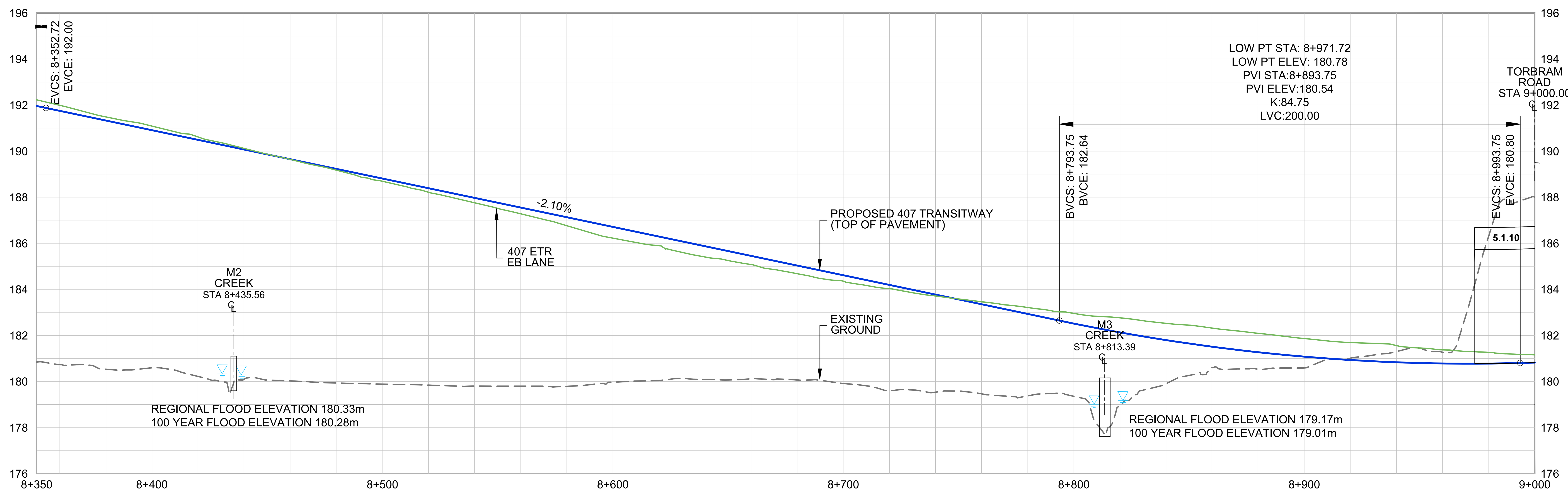

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MODIFIED: Aug 03, 2018 12:22pm
CREATED: RM3

Ontario | PARSONS | IBI GROUP

SCALE
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Horizontal
1m 0 2m
Vertical

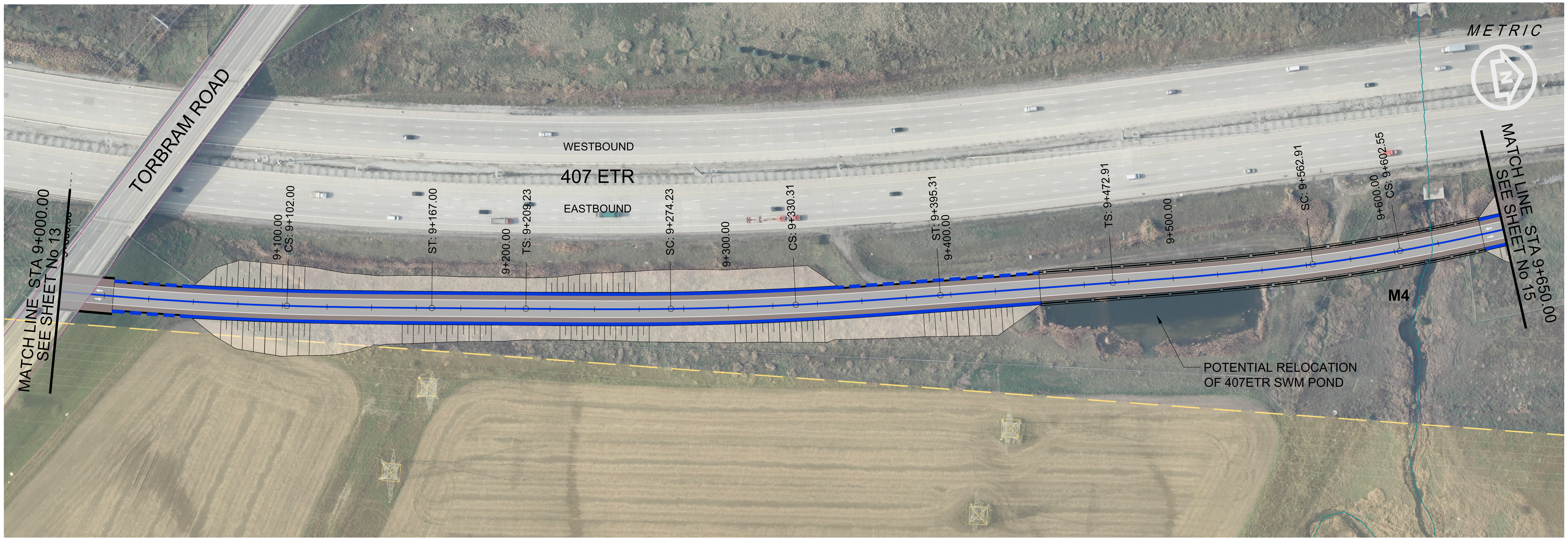
LEGEND
FILL SECTION; CUT SECTION; RETAINING WALL; TRANSITWAY STATION PLATFORM; STRUCTURE SECTION; UNDERPASS; BELOW GRADE SECTION; TRANSIT MOVEMENT; RAILWAY CORRIDOR; EXISTING PROPERTY LINE; WATER COURSE; HYDRO TOWER; HYDRO CORRIDOR; UTILITY CORRIDOR; E5 WATER CROSSING; 5.1.1 STRUCTURE REFERENCE NUMBER

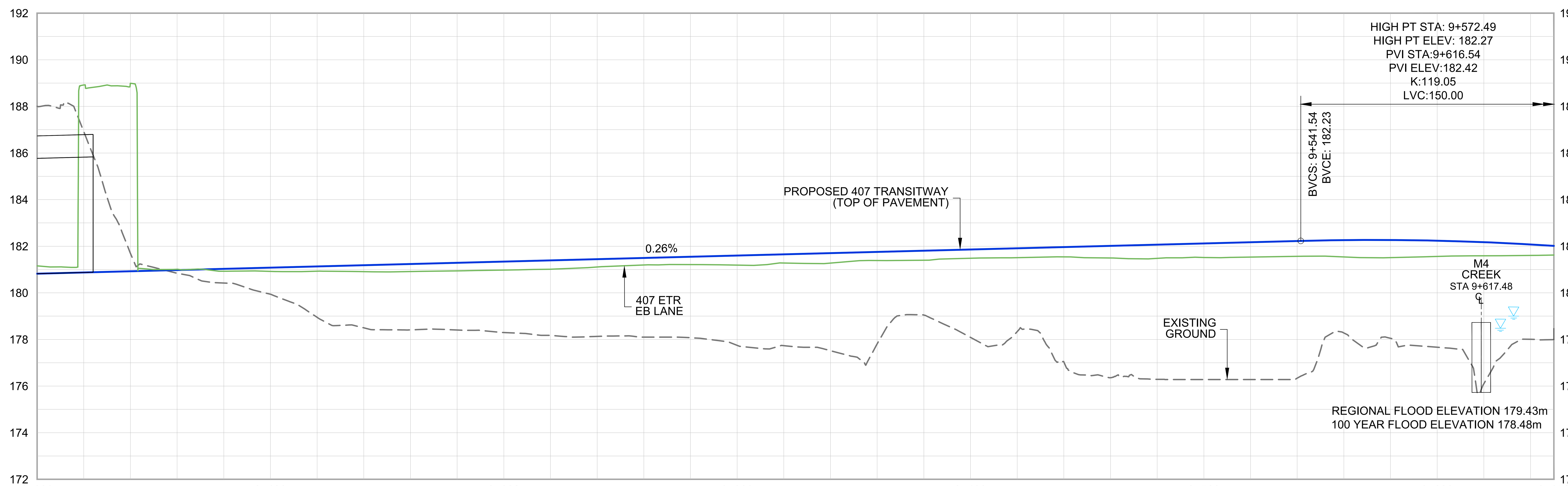
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 8+350.00 TO STA 9+000.00

DRAWING SET
PLAN and PROFILE

PLATE
13

DATE
08/20/2018





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO ROAD TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 9+000.00 TO STA 9+650.00

DRAWING SET

PLAN and PROFILE

PLATE
14

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWAY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_14.dwg
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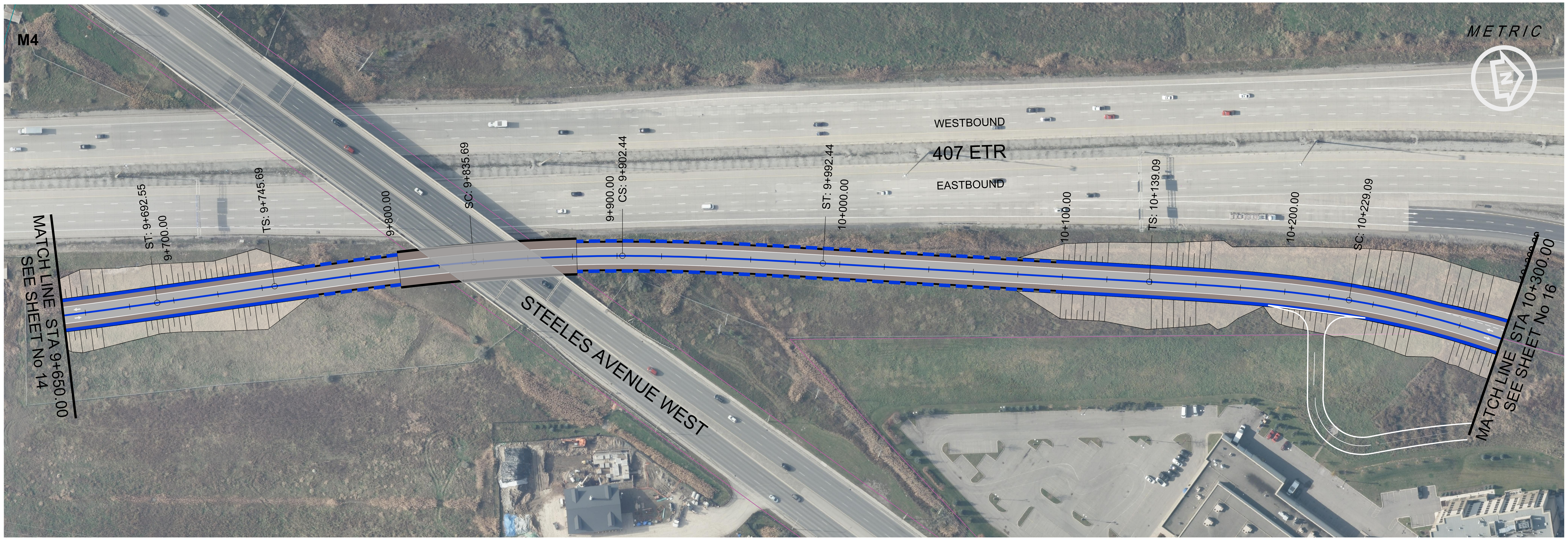
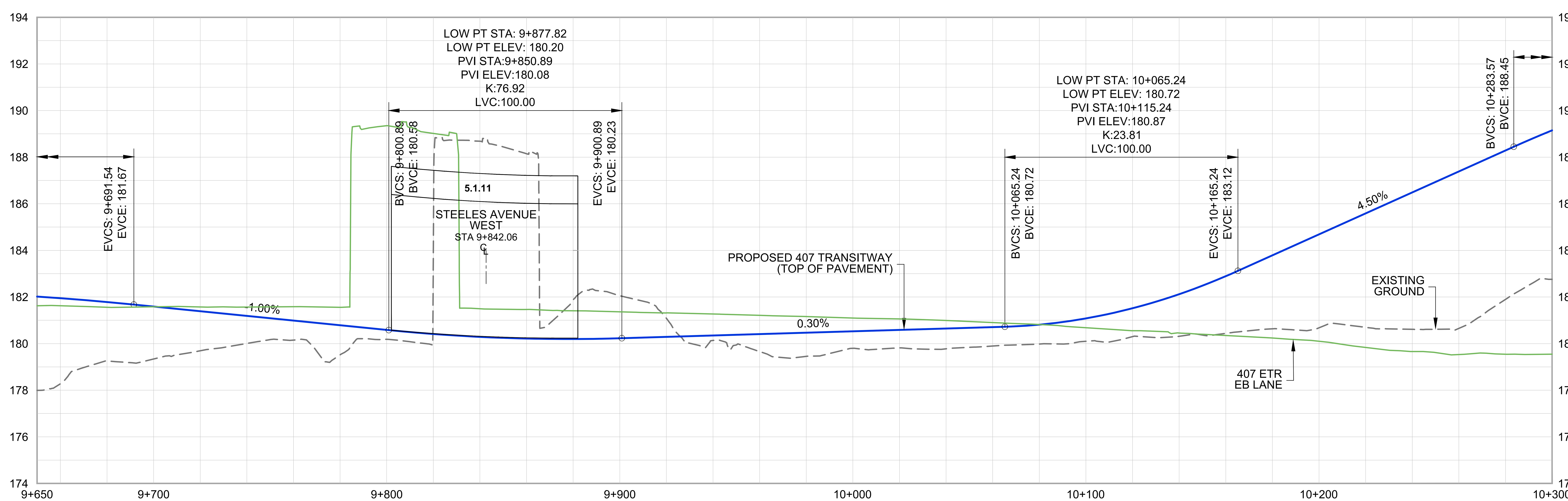




Ontario
PARSONS
IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

- FILL SECTION
- CUT SECTION
- RETAINING WALL
- TRANSITWAY STATION PLATFORM
- STRUCTURE SECTION
- UNDERPASS
- BELOW GRADE SECTION
- TRANSIT MOVEMENT
- RAILWAY CORRIDOR
- EXISTING PROPERTY LINE
- WATER COURSE
- HYDRO TOWER
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- E5 WATER CROSSING
- 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

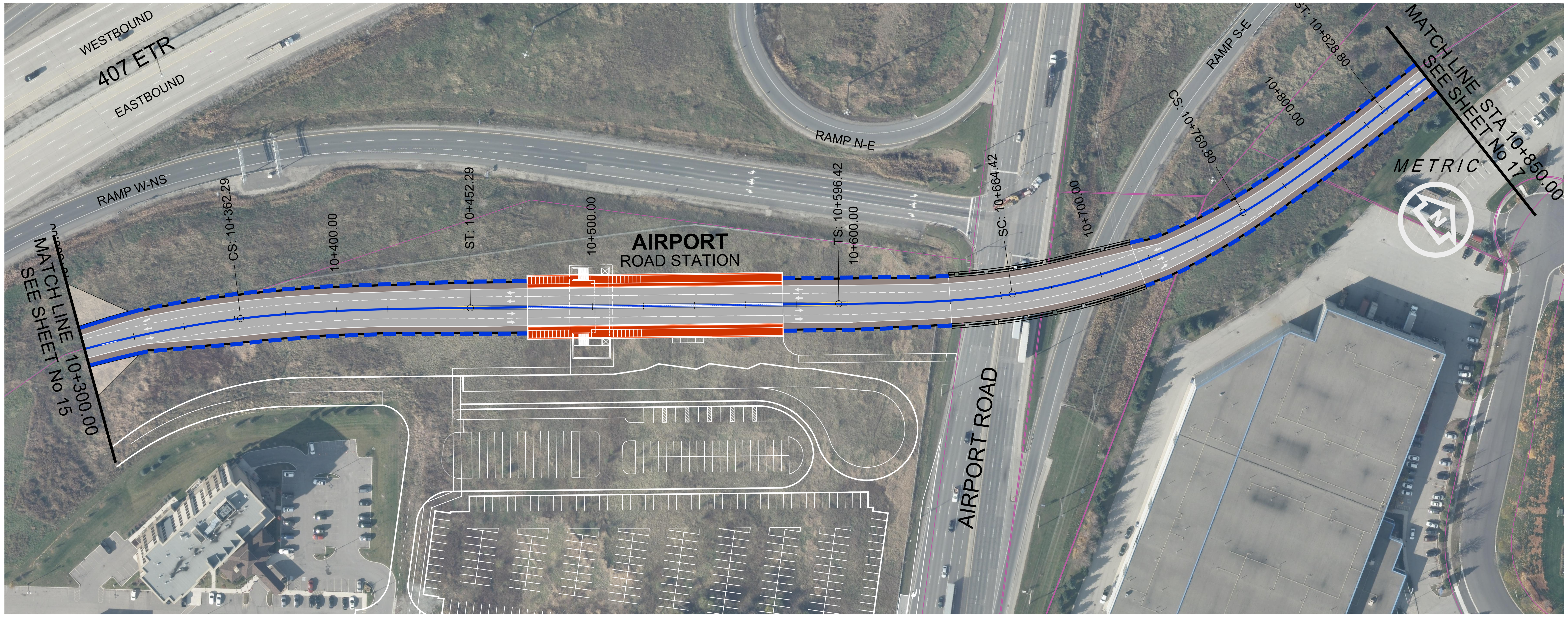
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 9+650.00 TO STA 10+300.00

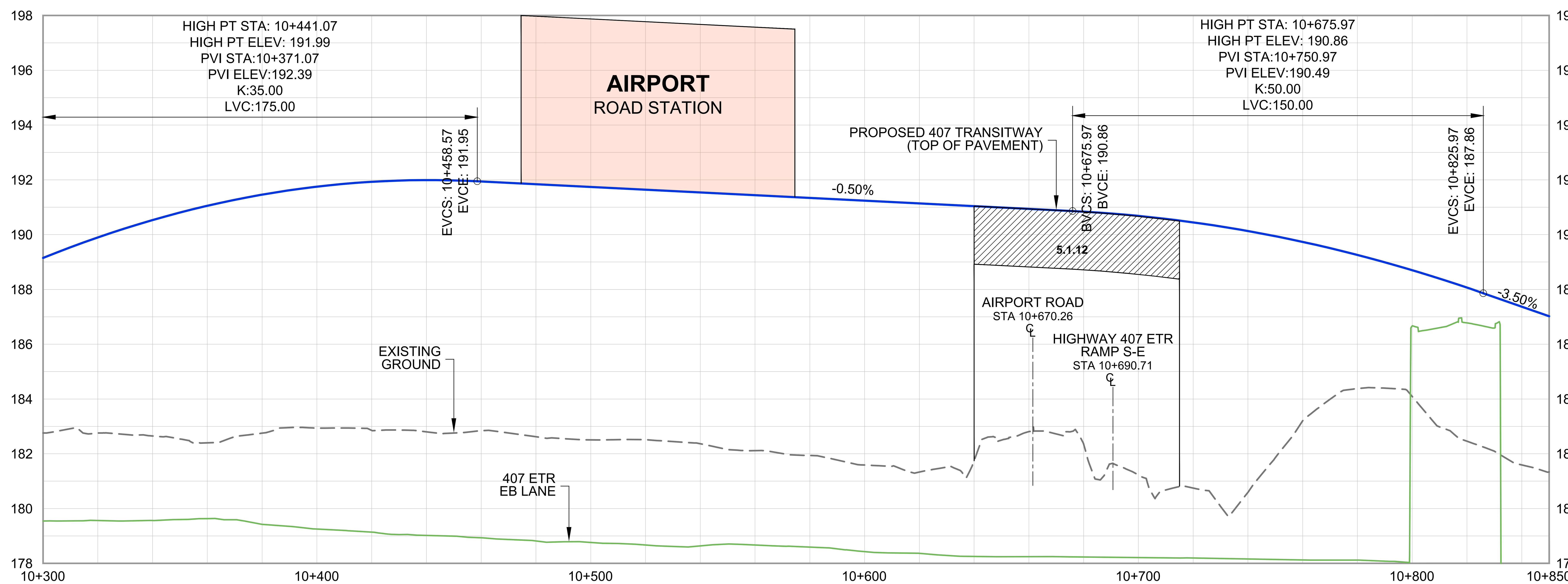
DRAWING SET

PLAN and PROFILE

PLATE
15

DATE
08/20/2018





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CREATED: RM3
MODIFIED: Aug 03, 2018 12:29pm

Ontario | PARSONS | IBI GROUP

SCALE

10m 0 20m — Horizontal

1m 0 2m — Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY · STATION PLATFORM · UNDERPASS · STRUCTURE SECTION · BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 10+300.00 TO STA 10+850.00

DRAWING SET

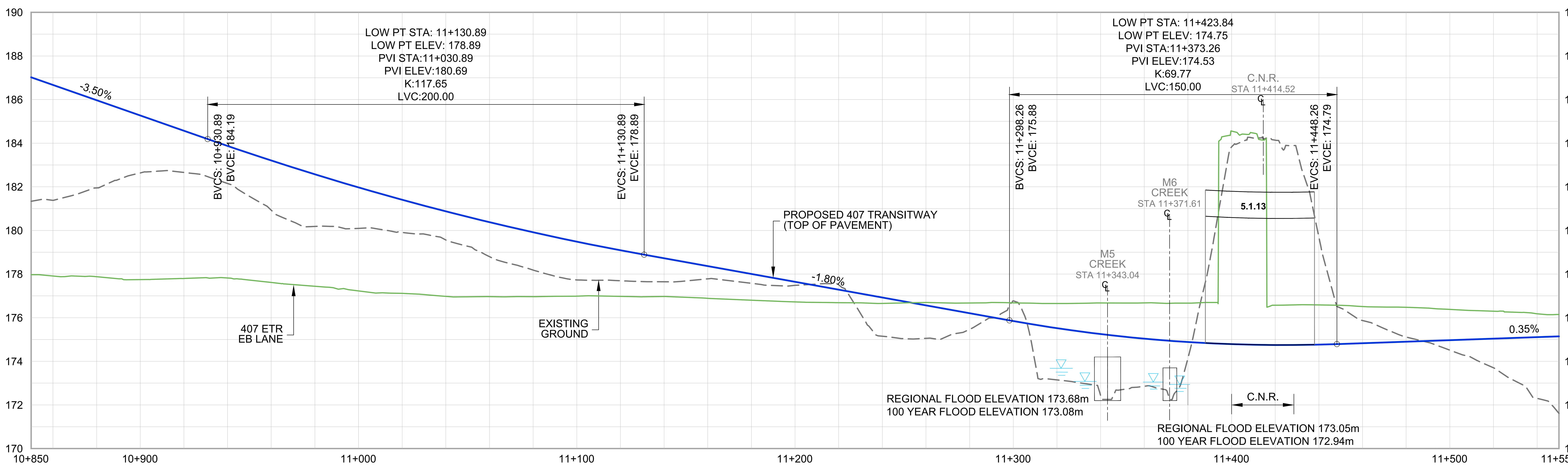
PLAN and PROFILE

PLATE

16

DATE

08/20/2018



Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

FILL SECTION · RETAINING WALL · TRANSITWAY STATION PLATFORM · UNDERPASS · CUT SECTION · STRUCTURE SECTION · BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 10+850.00 TO STA 11+550.00

DRAWING SET

PLAN and PROFILE

PLATE
17

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 OH-MTO 407 TRANSITWAY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_17.dwg
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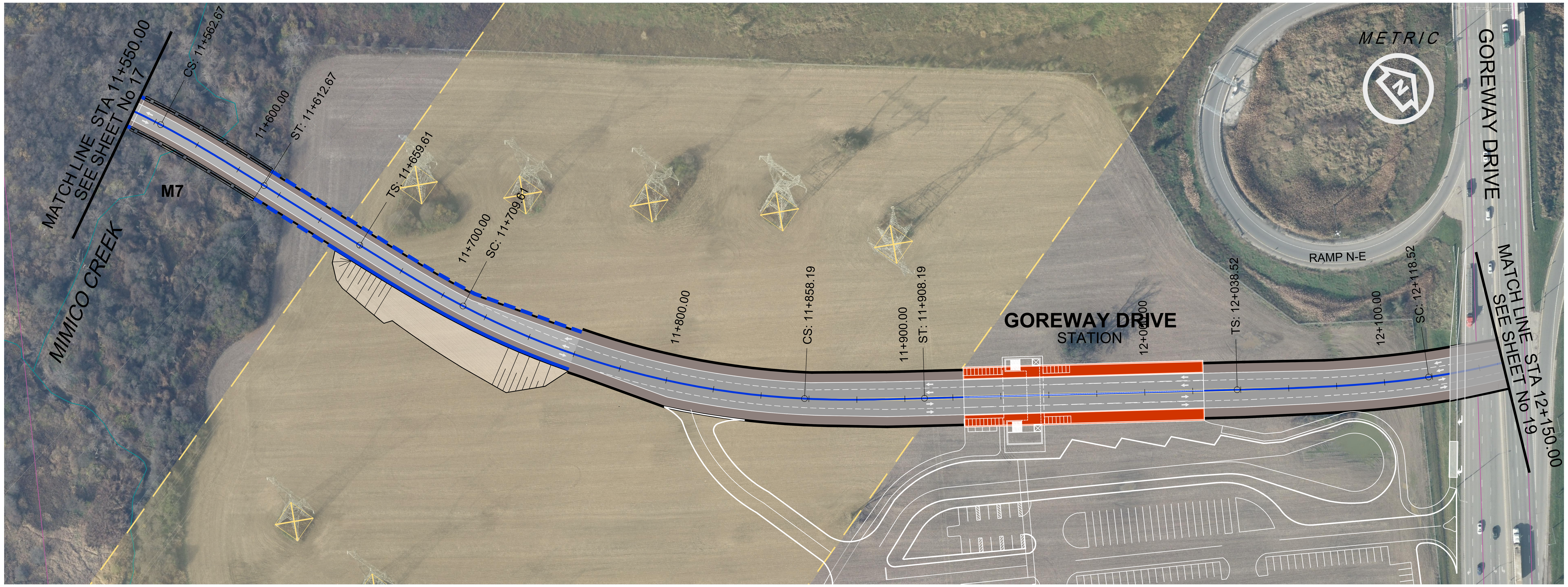

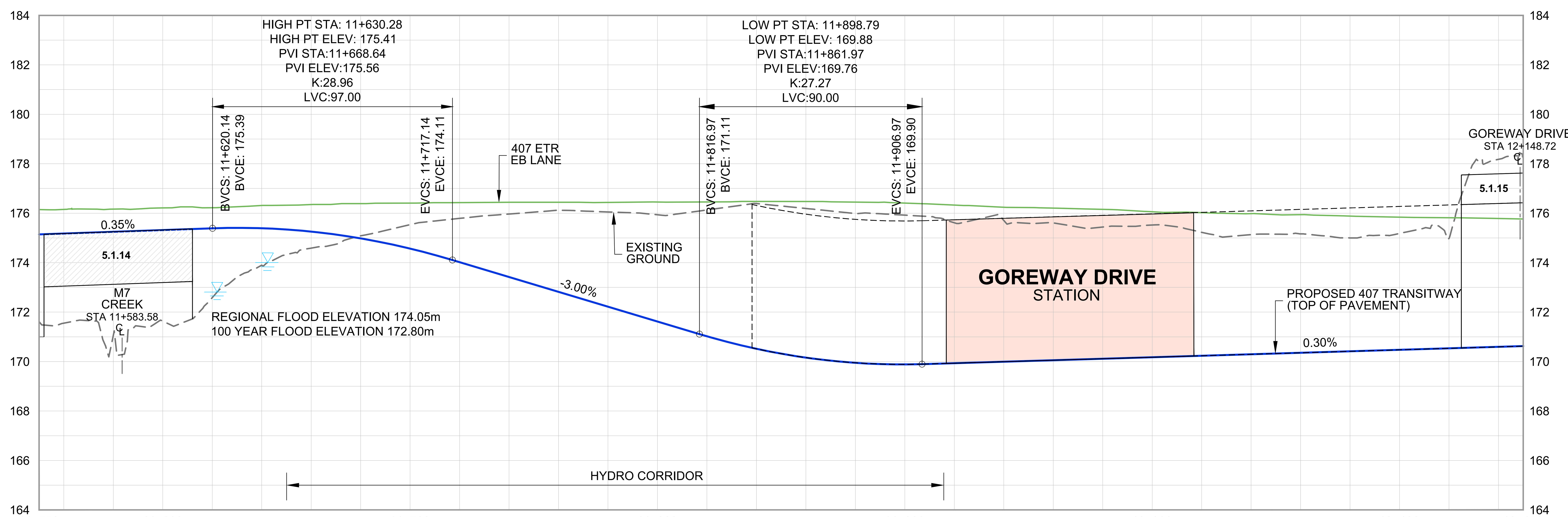

Ontario PARSONS IBI GROUP

SCALE
10m 0 20m Horizontal
1m 0 2m Vertical

LEGEND
FILL SECTION
CUT SECTION
RETAINING WALL
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 11+550.00 TO STA 12+150.00

DRAWING SET
PLAN and PROFILE

PLATE
18

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT15 General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_18.dwg
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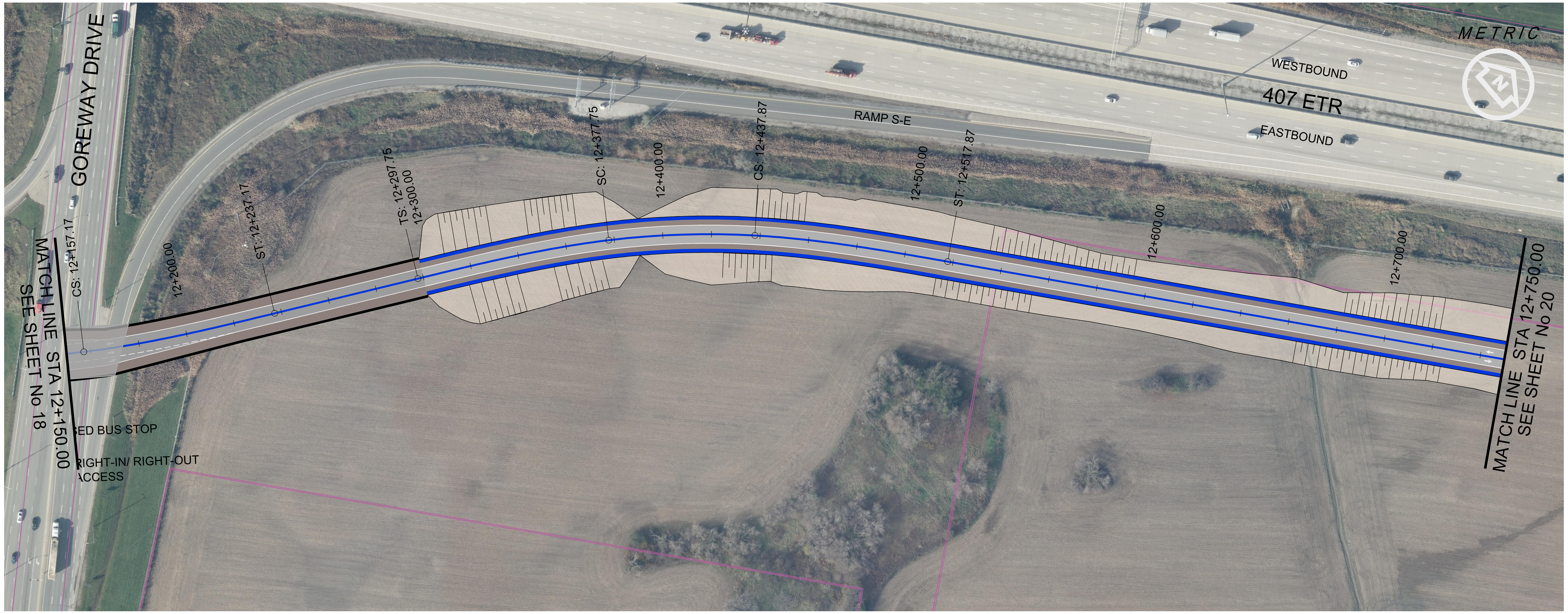

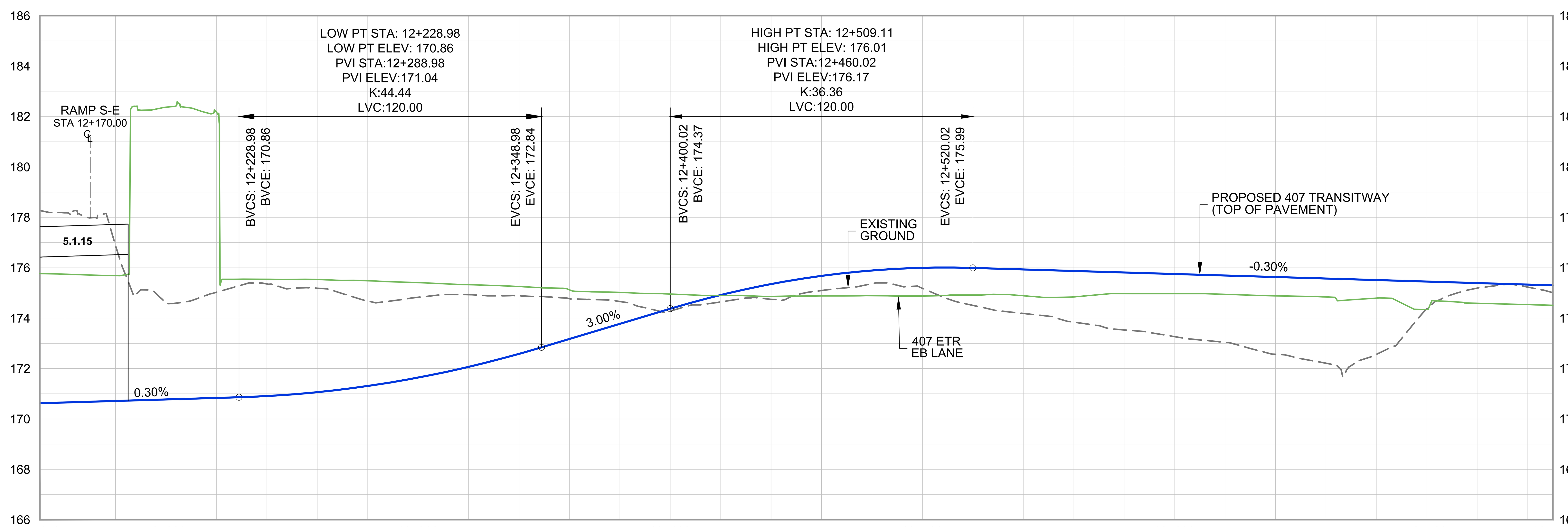

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION, CUT SECTION, RETAINING WALL, TRANSITWAY STATION PLATFORM, STRUCTURE SECTION, UNDERPASS, BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 12+150.00 TO STA 12+750.00

DRAWING SET
PLAN and PROFILE

PLATE
19

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWAY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_19.dwg
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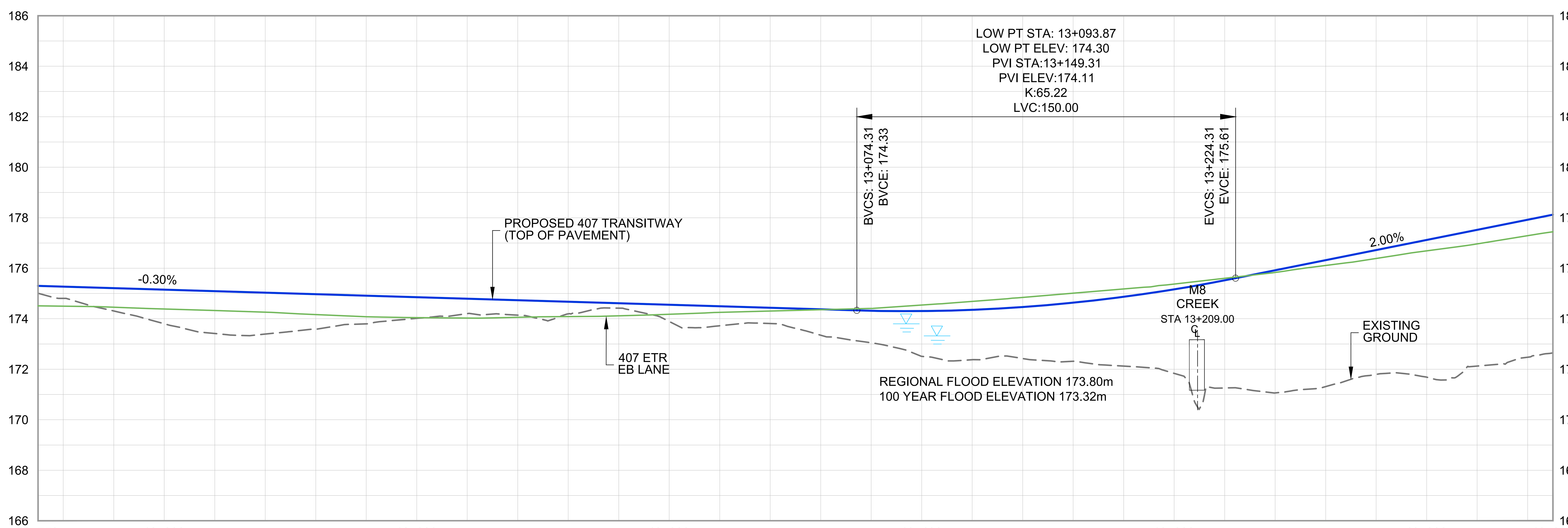

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 12+750.00 TO STA 13+350.00

DRAWING SET

PLAN and PROFILE

PLATE
20

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT5 General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_20.dwg
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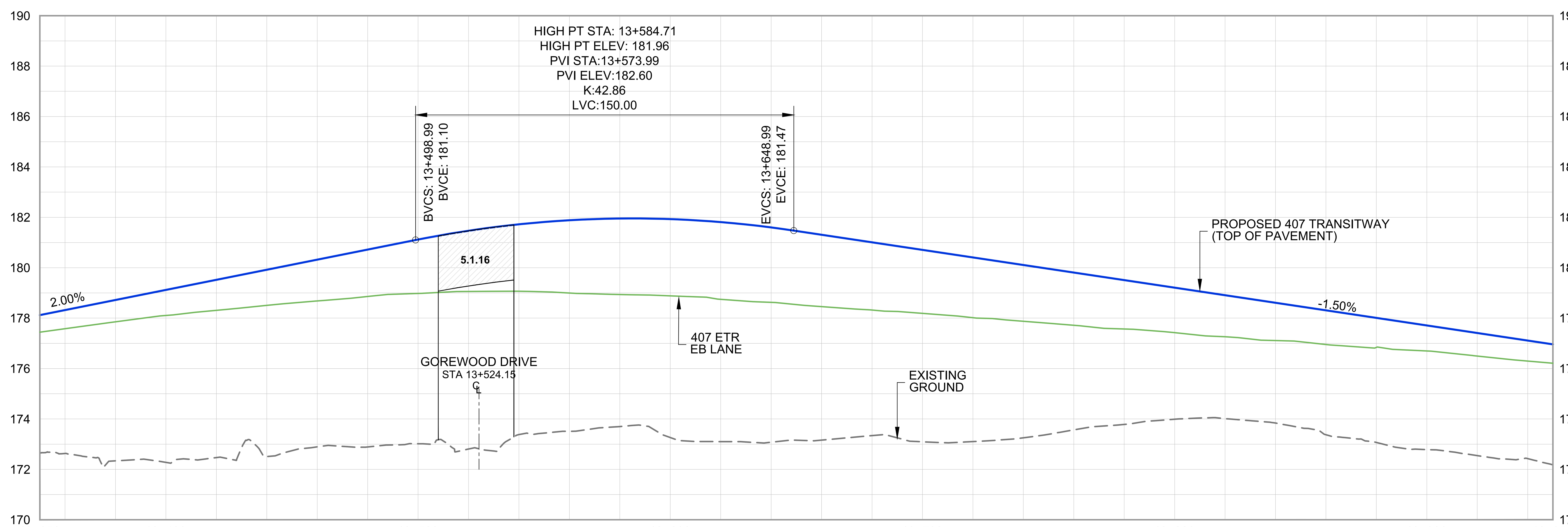


Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY
STATION PLATFORM
UNDERPASS
STRUCTURE SECTION
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

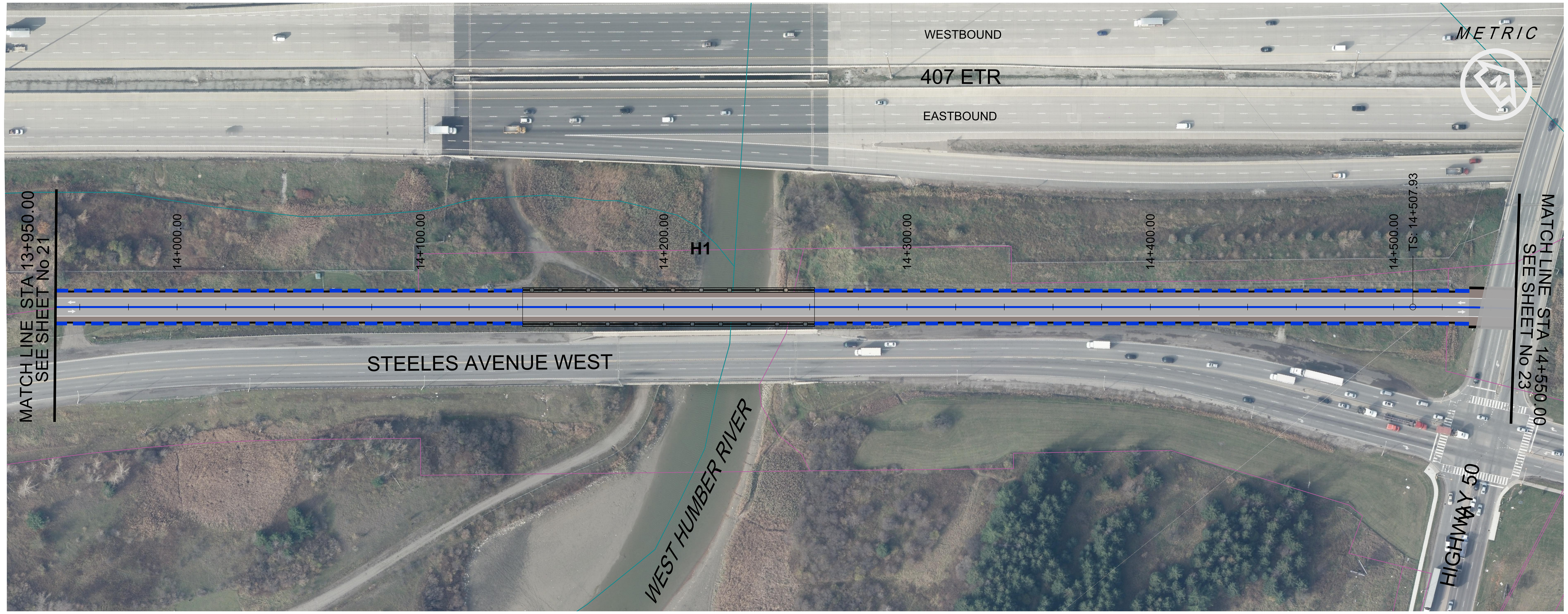
407 TRANSITWAY

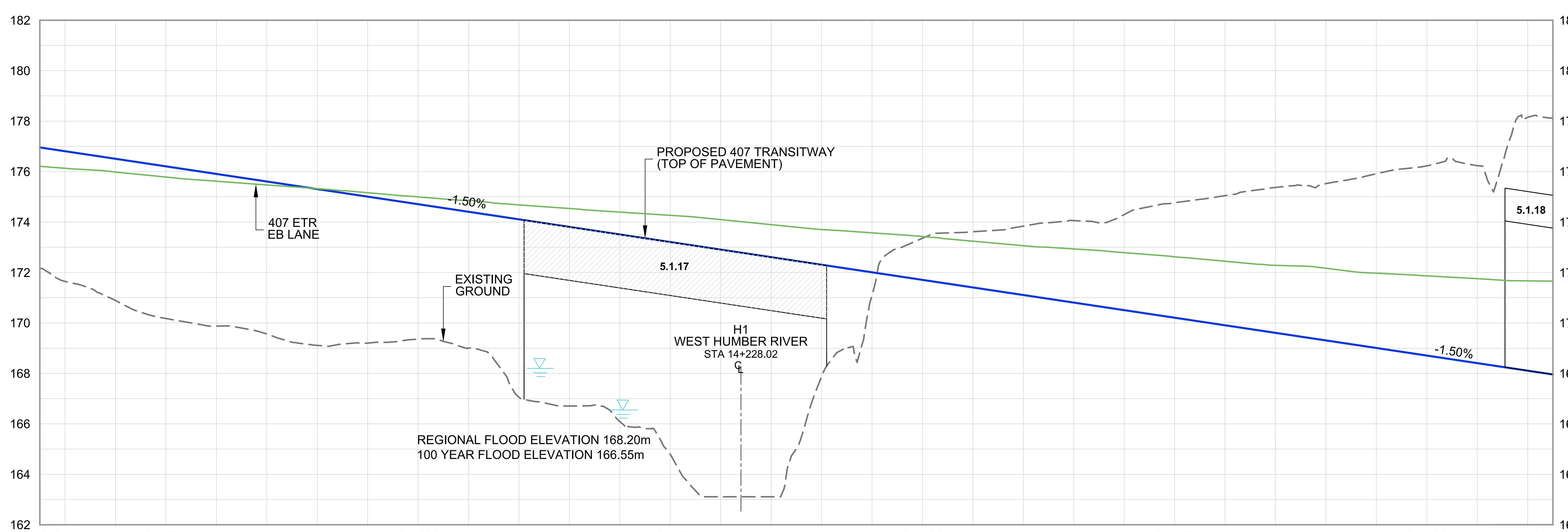
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 13+350.00 TO STA 13+950.00

DRAWING SET
PLAN and PROFILE

PLATE
21

DATE
08/20/2018





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION

TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER

HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 13+950.00 TO STA 14+550.00

DRAWING SET

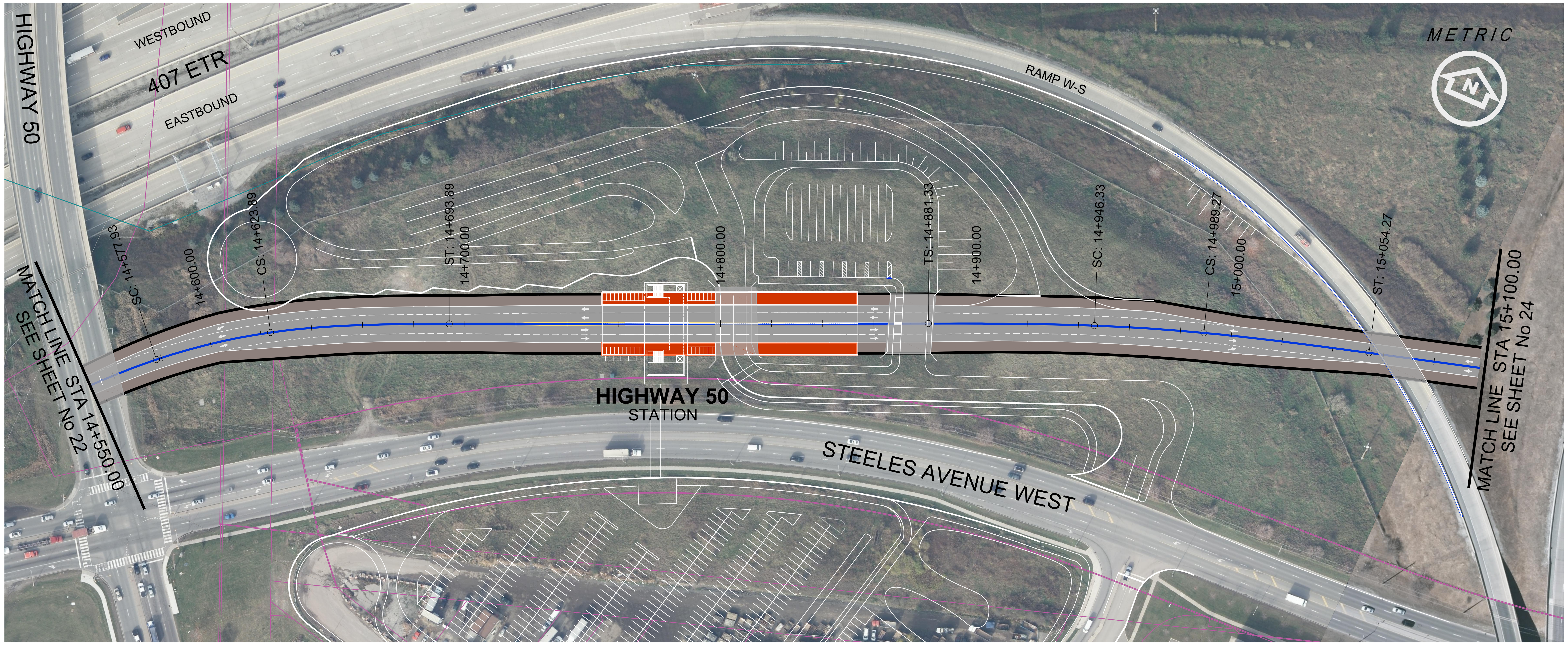
PLAN and PROFILE

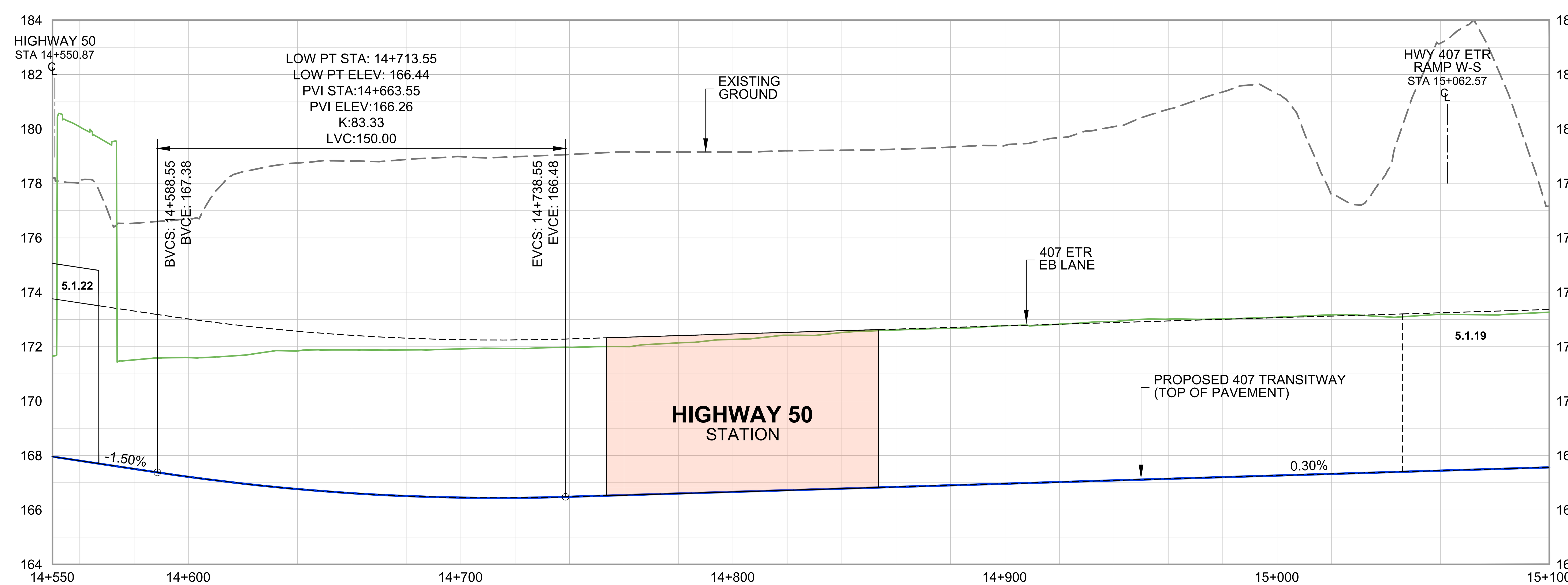
PLATE

22

DATE

08/20/2018





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal
1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY · STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION

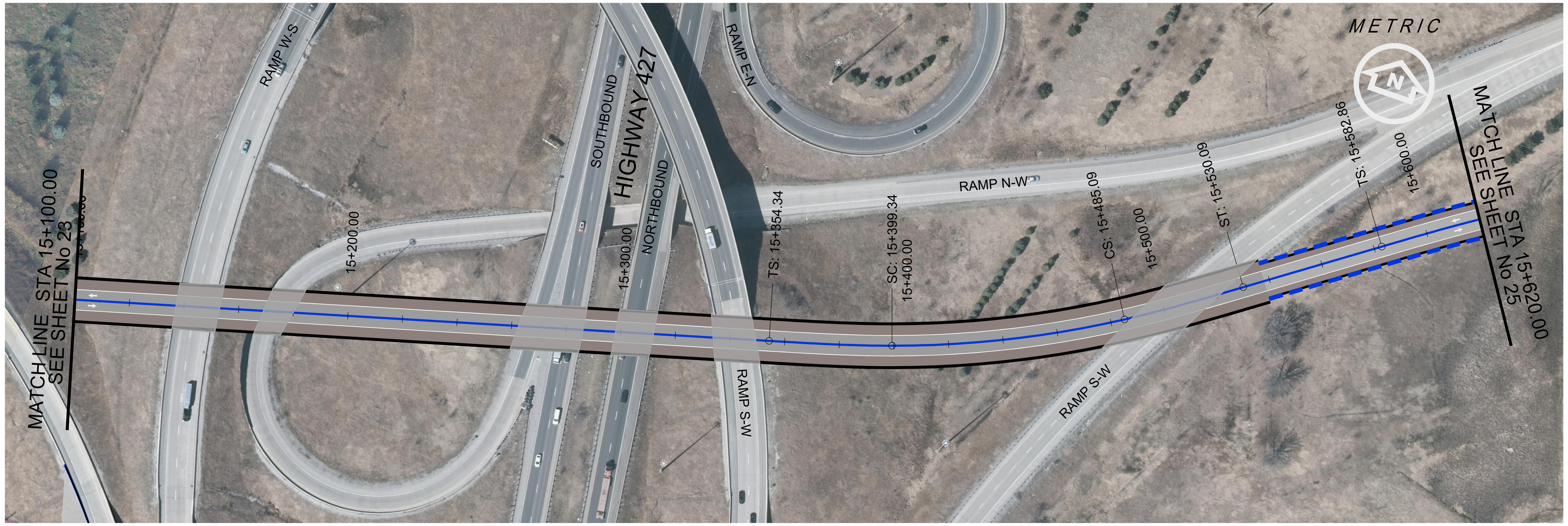
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

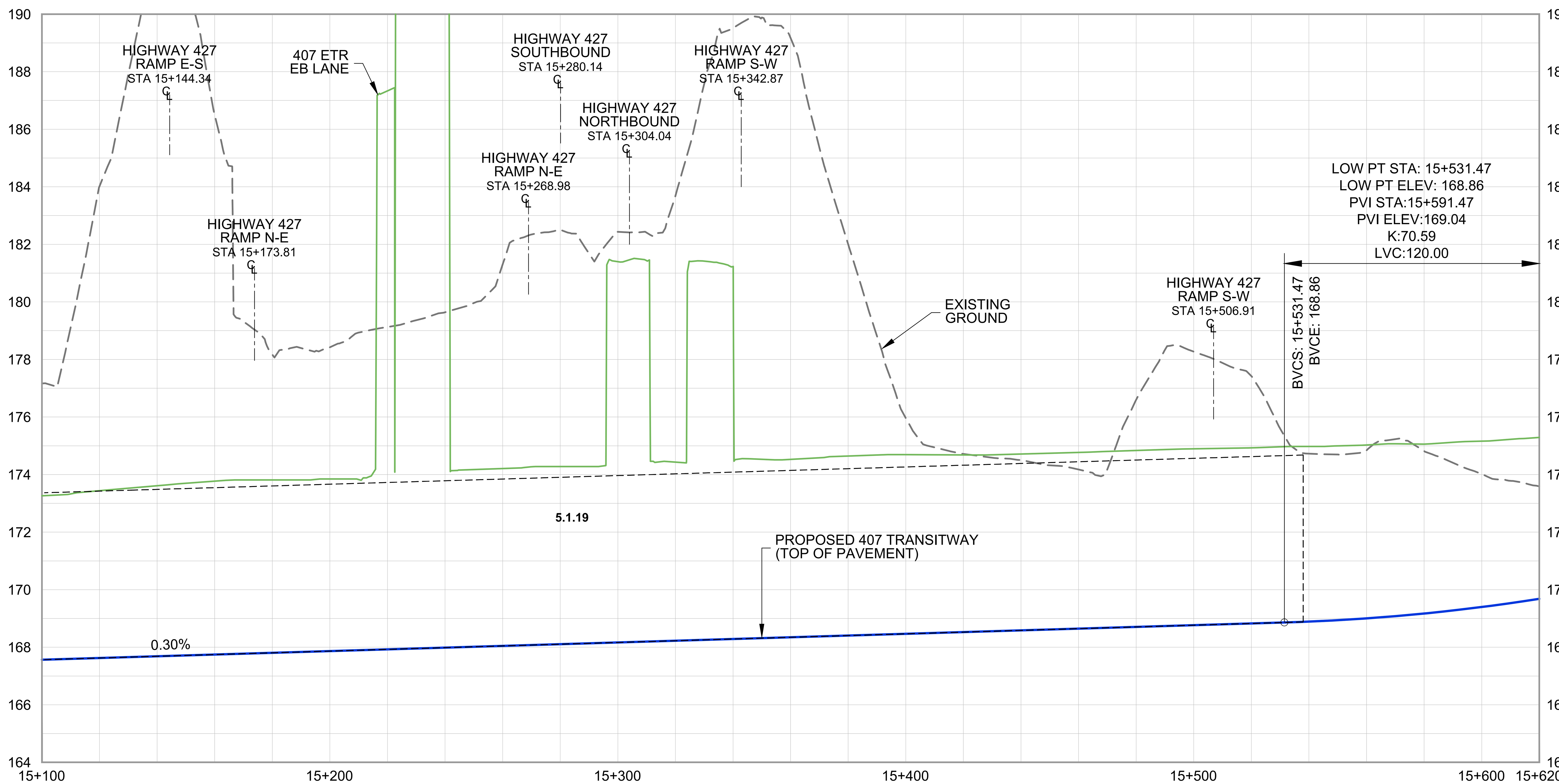
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 14+550.00 TO STA 15+150.00

DRAWING SET
PLAN and PROFILE

PLATE
23

DATE
08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 15+100.00 TO STA 15+620.00

DRAWING SET
PLAN and PROFILE

PLATE
24

DATE
08/20/2018

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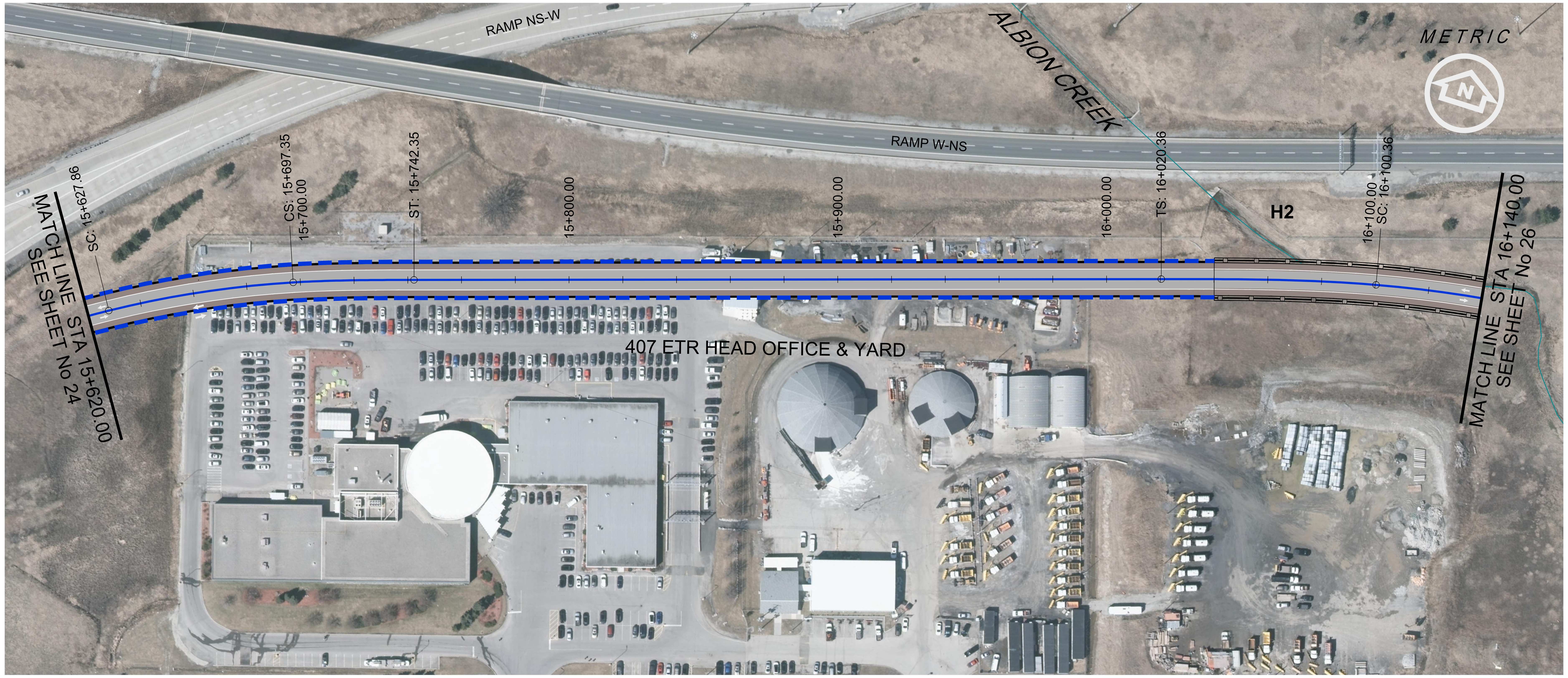
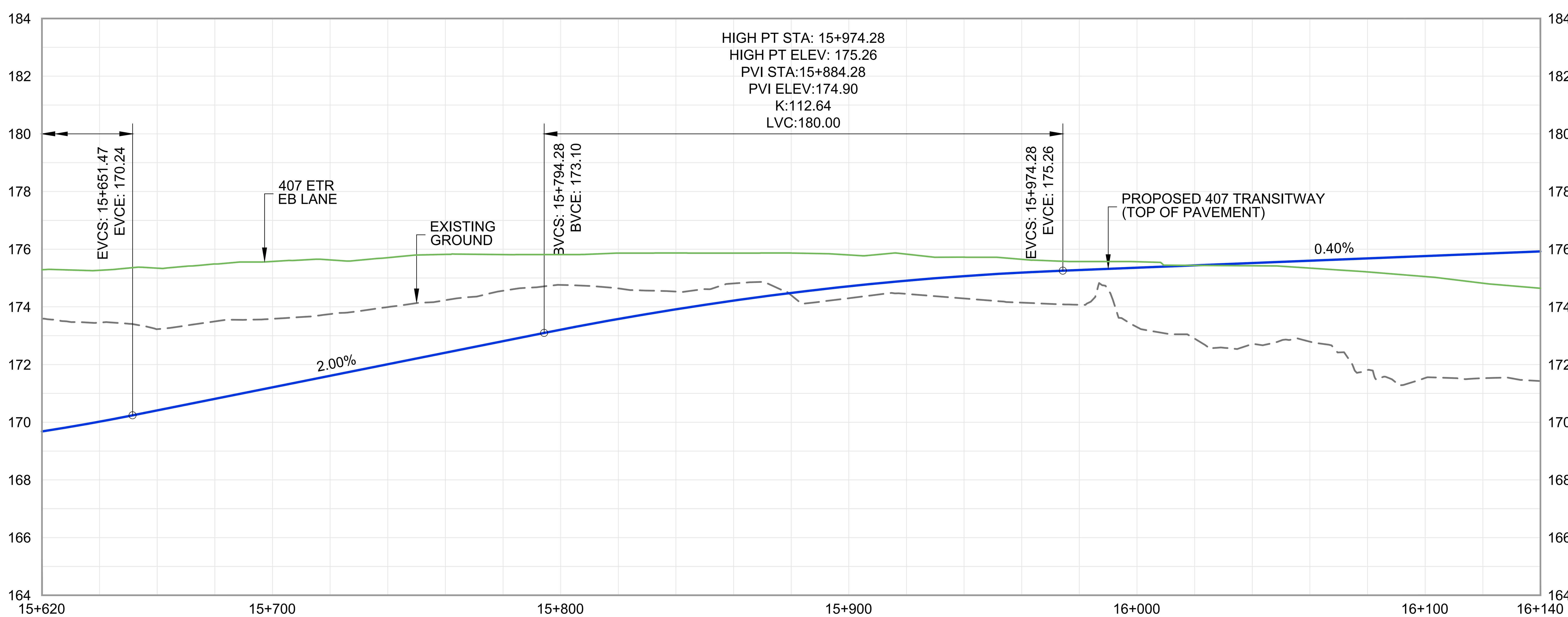
CREATED: RM3





Ontario PARSONS IBI GROUP

SCALE
10m 0 20m Horizontal
1m 0 2m Vertical

LEGEND
FILL SECTION
RETAINING WALL
TRANSITWAY STATION PLATFORM
UNDERPASS
CUT SECTION
STRUCTURE SECTION
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 15+620.00 TO STA 16+140.00

DRAWING SET

PLAN and PROFILE

PLATE

25

DATE

08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_25.dwg
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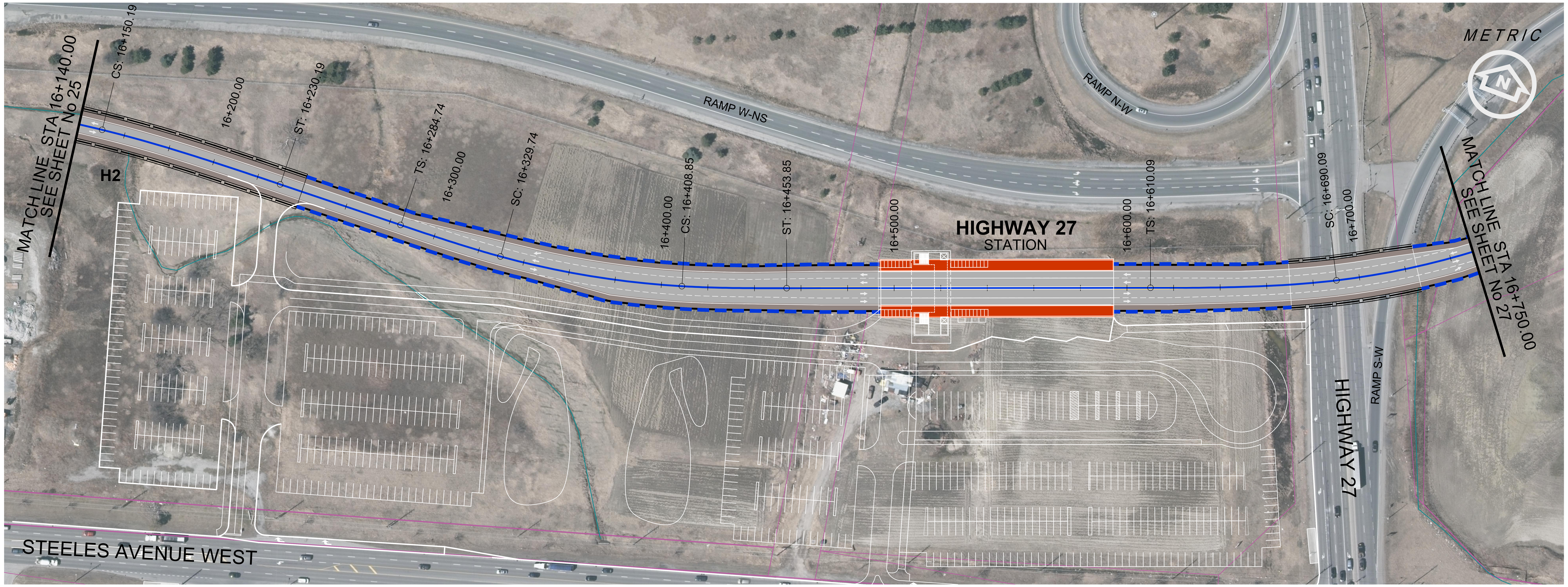

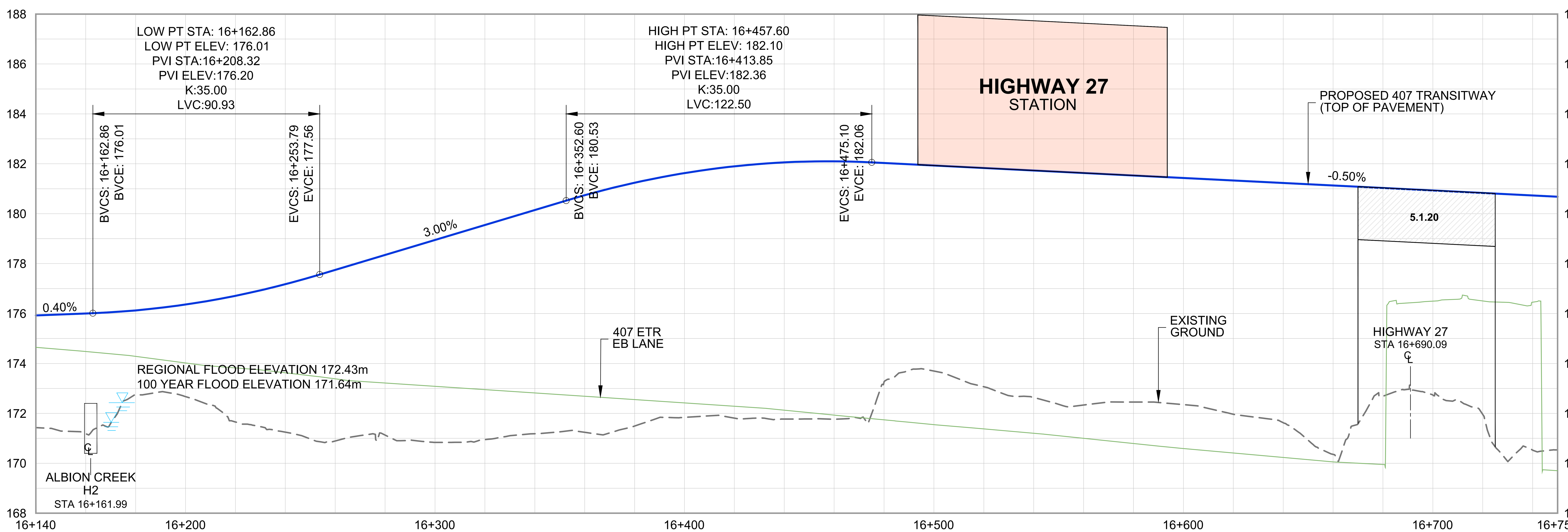

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CREATED: RM3 MODIFIED: Aug 03, 2018 1:36pm

Ontario | PARSONS | IBI GROUP

SCALE
10m 0 20m Horizontal
1m 0 2m Vertical

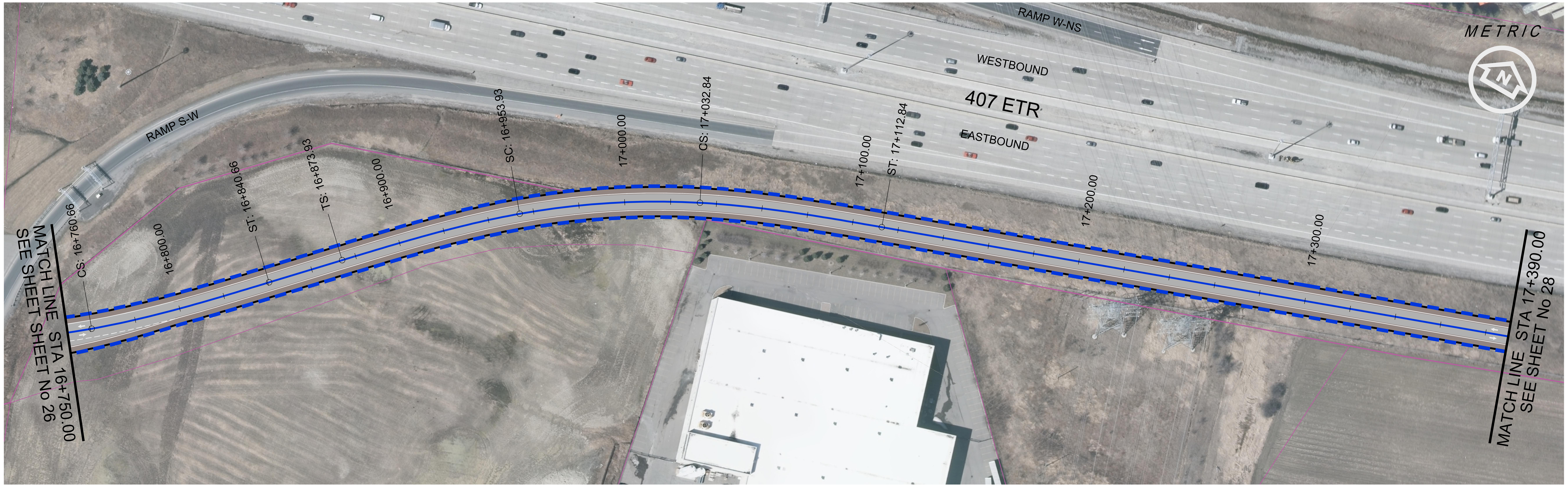
LEGEND
RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

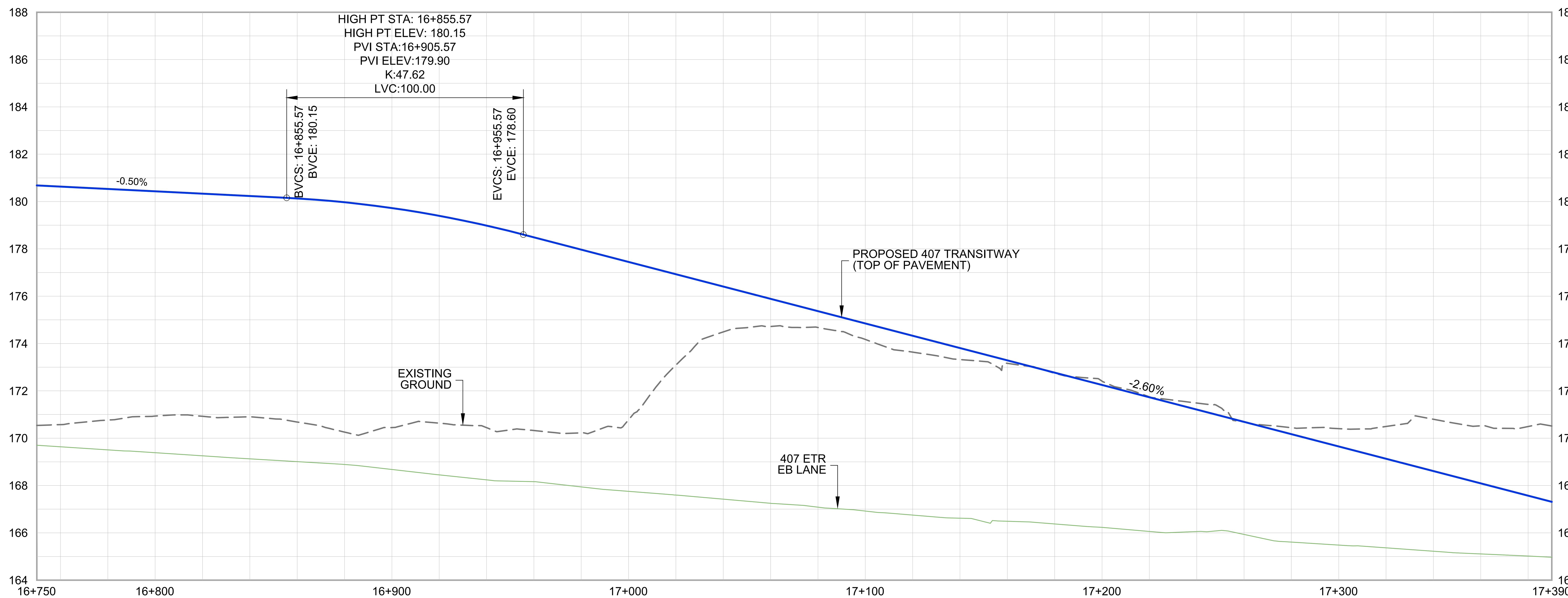
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 16+140.00 TO STA 16+750.00

DRAWING SET
PLAN and PROFILE

PLATE
26

DATE
08/20/2018



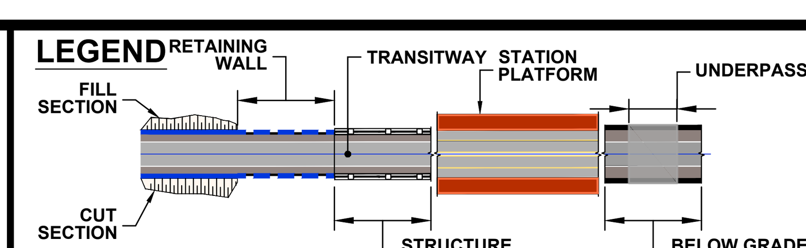


Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND



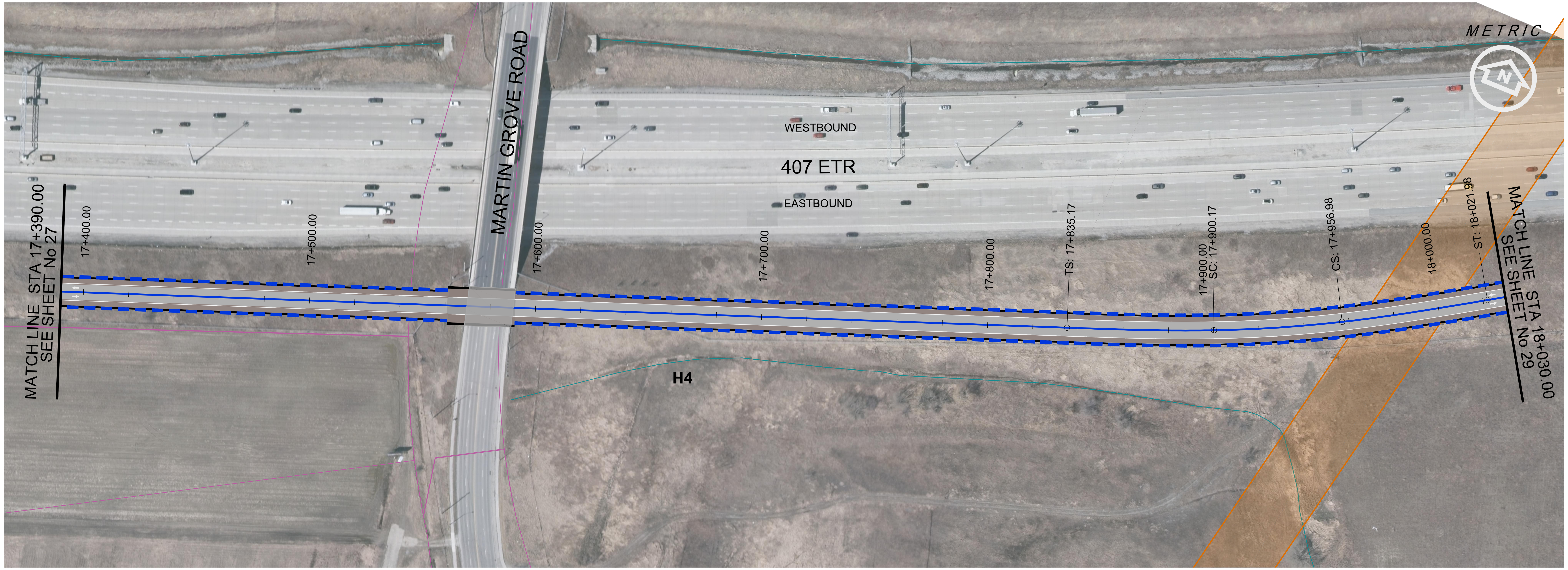
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

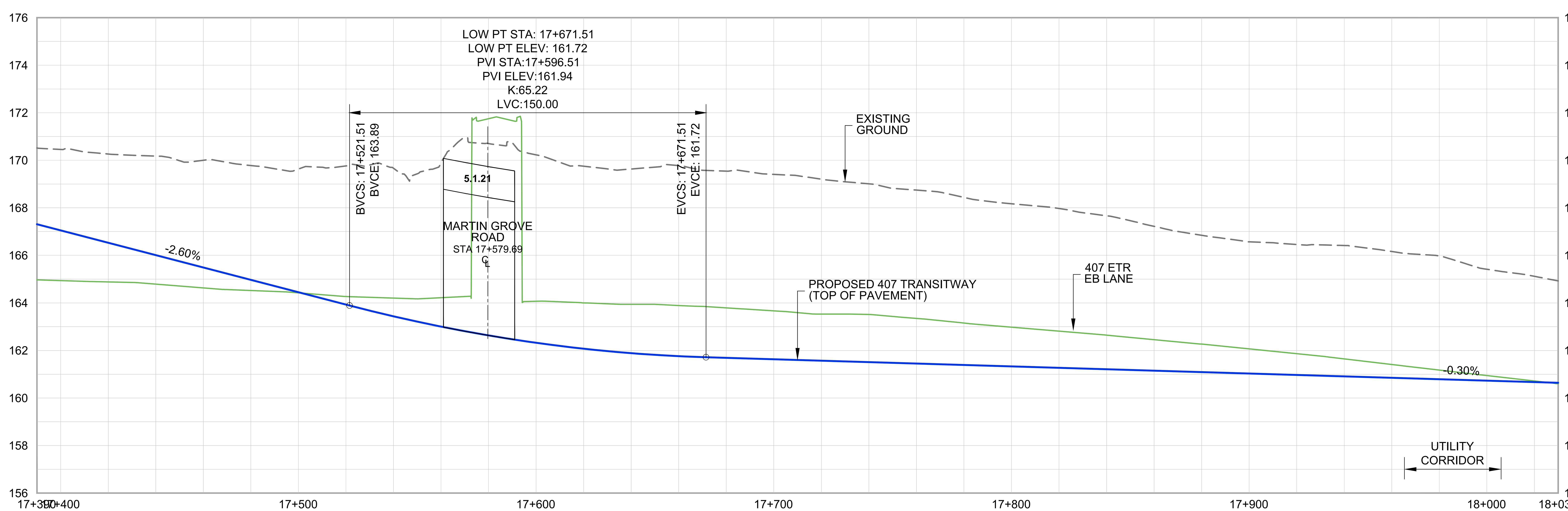
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 16+750.00 TO STA 17+390.00

DRAWING SET
PLAN and PROFILE

PLATE
27

DATE
06/05/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY
STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 17+390.00 TO STA 18+030.00

DRAWING SET

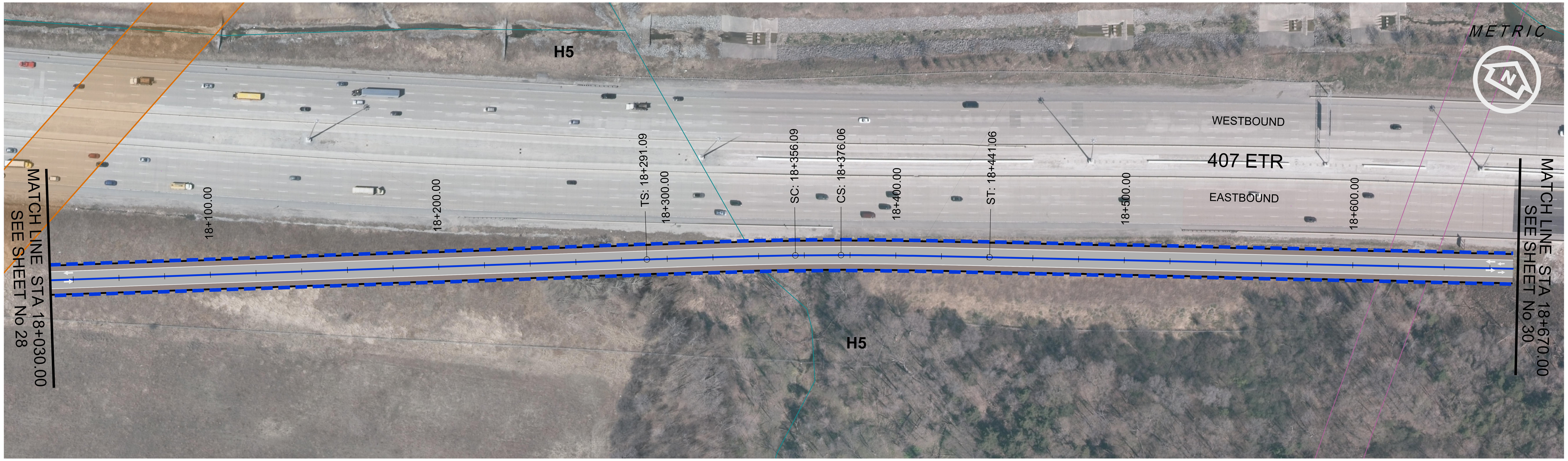
PLAN and PROFILE

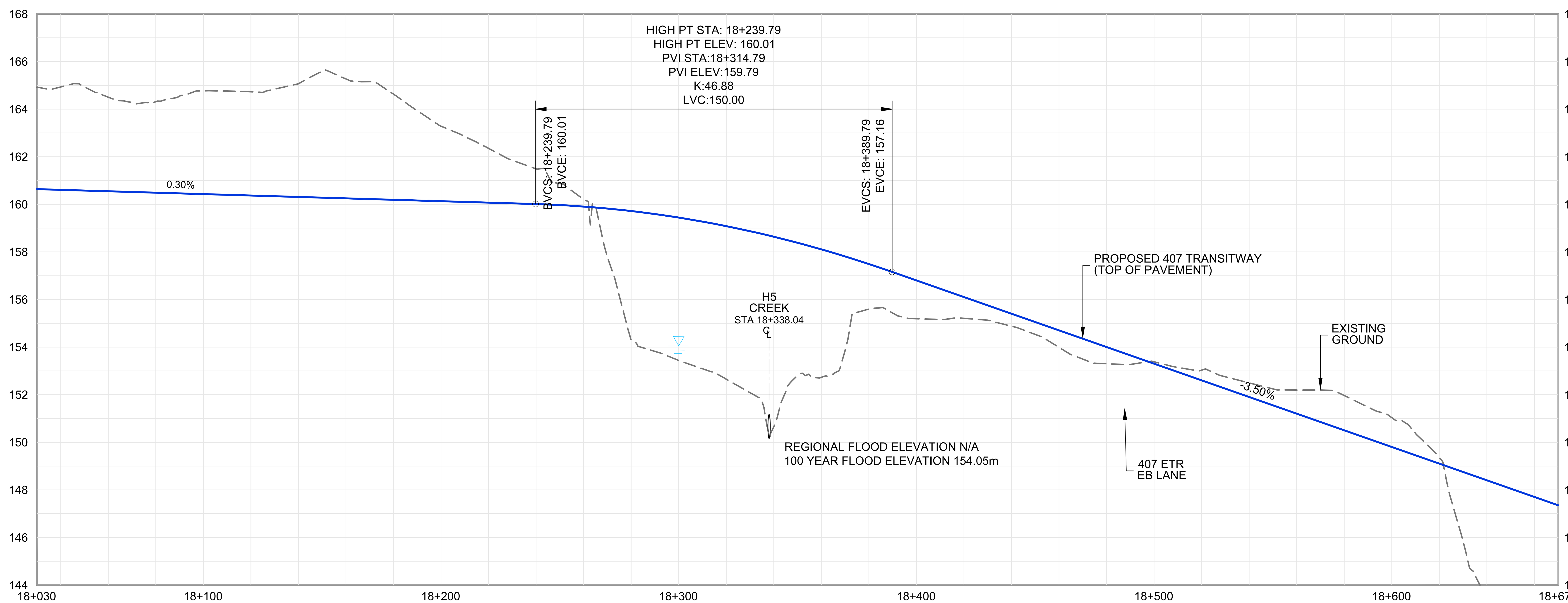
PLATE

28

DATE

08/20/2018





Ontario PARSONS IBI GROUP

SCALE
10m 0 20m Horizontal
1m 0 2m Vertical

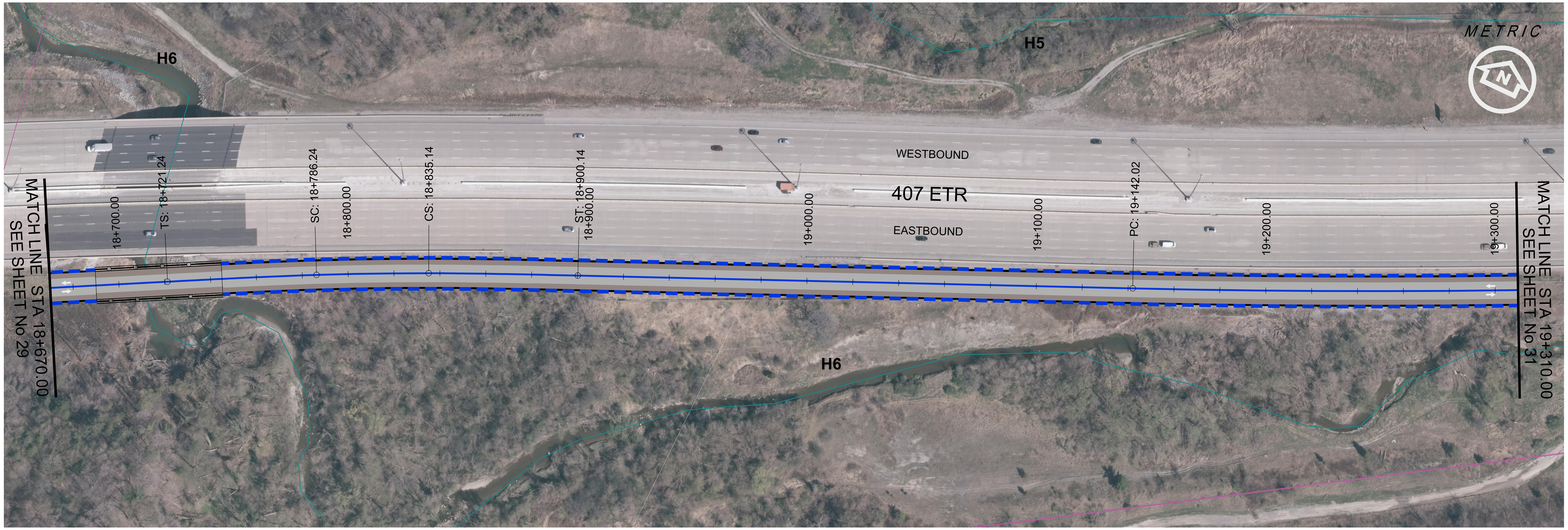
LEGEND
RETAINING WALL, FILL SECTION, CUT SECTION, TRANSITWAY, STATION PLATFORM, STRUCTURE SECTION, UNDERPASS, BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

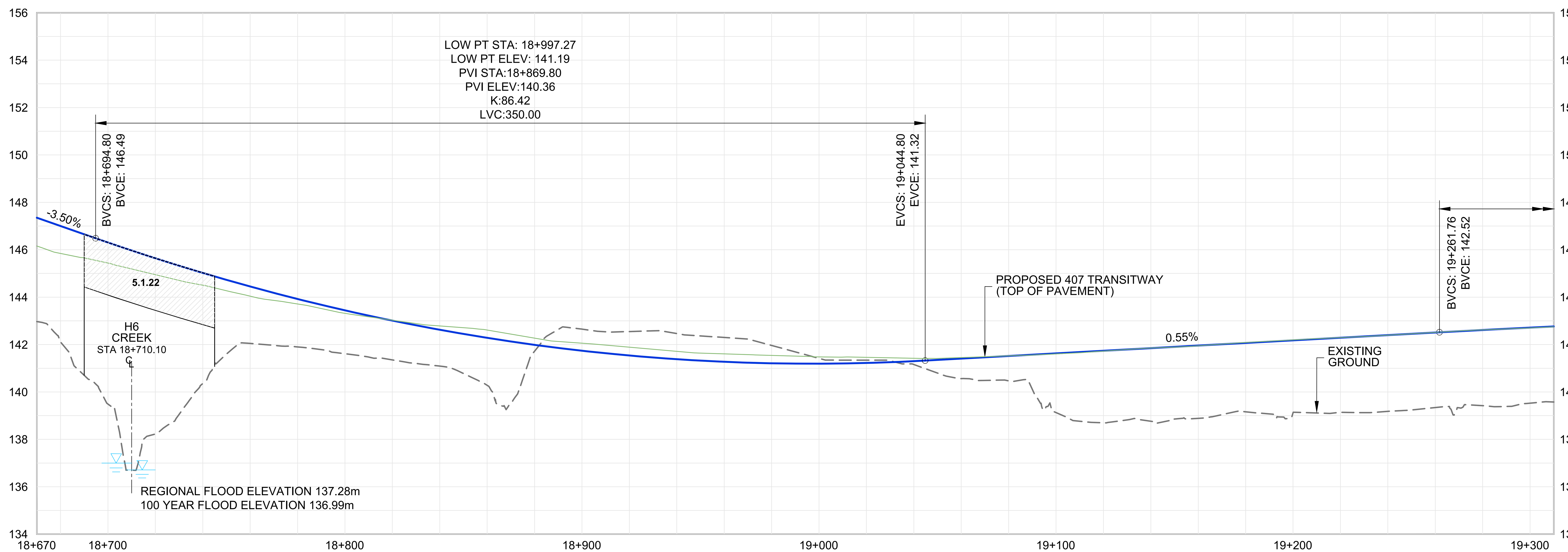
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 18+030.00 TO STA 18+670.00

DRAWING SET
PLAN and PROFILE

PLATE
29

DATE
12/08/2017





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL, FILL SECTION, CUT SECTION, TRANSITWAY STATION PLATFORM, STRUCTURE SECTION, UNDERPASS, BELOW GRADE SECTION, TRANSIT MOVEMENT, RAILWAY CORRIDOR, EXISTING PROPERTY LINE, WATER COURSE, HYDRO TOWER, HYDRO CORRIDOR, UTILITY CORRIDOR, E5 WATER CROSSING, 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 18+670.00 TO STA 19+310.00

DRAWING SET
PLAN and PROFILE

PLATE **30**

DATE 08/20/2018

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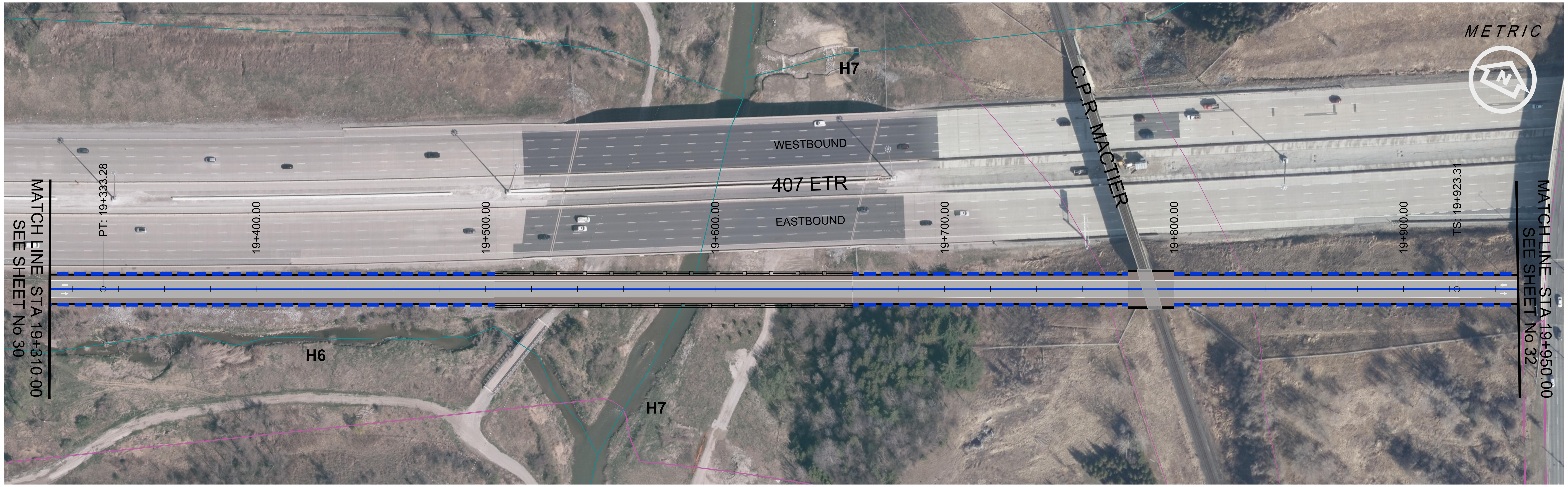
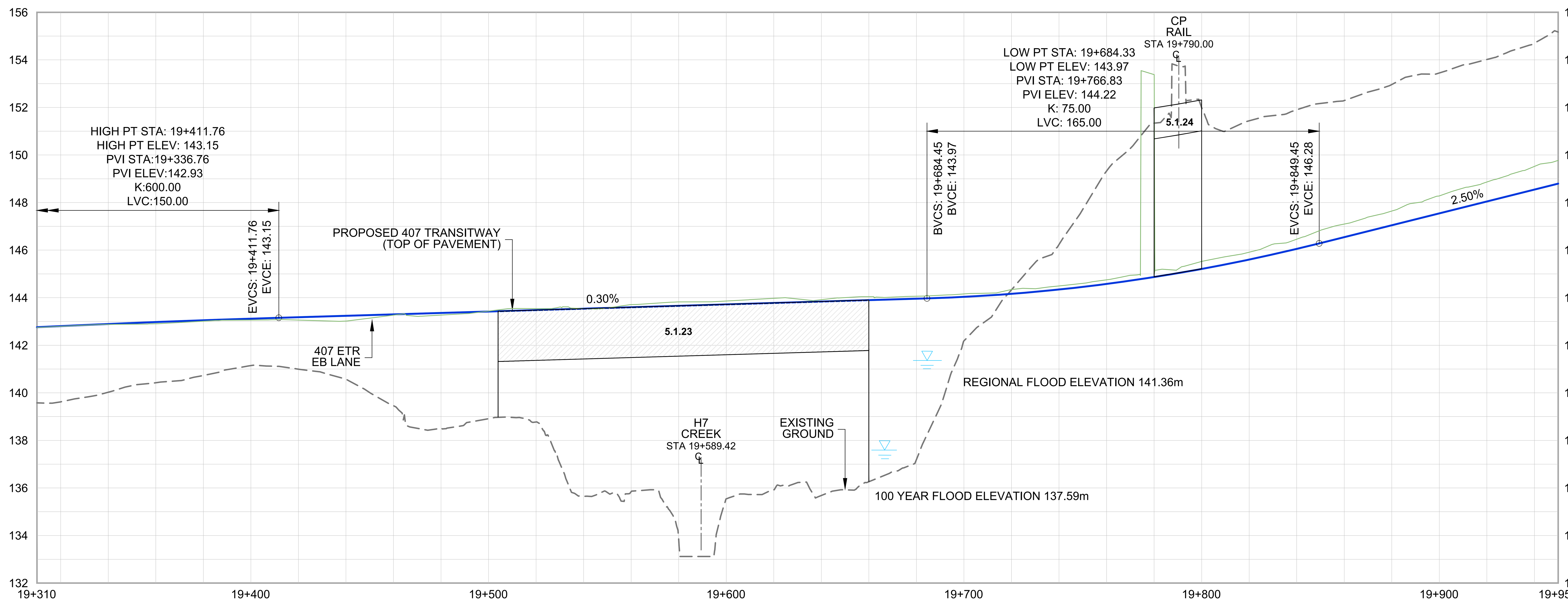
CREATED: RM3





Ontario | PARSONS | IBI GROUP

SCALE
10m 0 20m Horizontal
1m 0 2m Vertical

LEGEND
RETAINING WALL, FILL SECTION, CUT SECTION, TRANSITWAY STATION PLATFORM, STRUCTURE SECTION, UNDERPASS, BELOW GRADE SECTION, TRANSIT MOVEMENT, RAILWAY CORRIDOR, EXISTING PROPERTY LINE, WATER COURSE, HYDRO TOWER, HYDRO CORRIDOR, UTILITY CORRIDOR, E5 WATER CROSSING, 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 19+310.00 TO STA 19+950.00

DRAWING SET
PLAN and PROFILE

PLATE
31

DATE
08/20/2018

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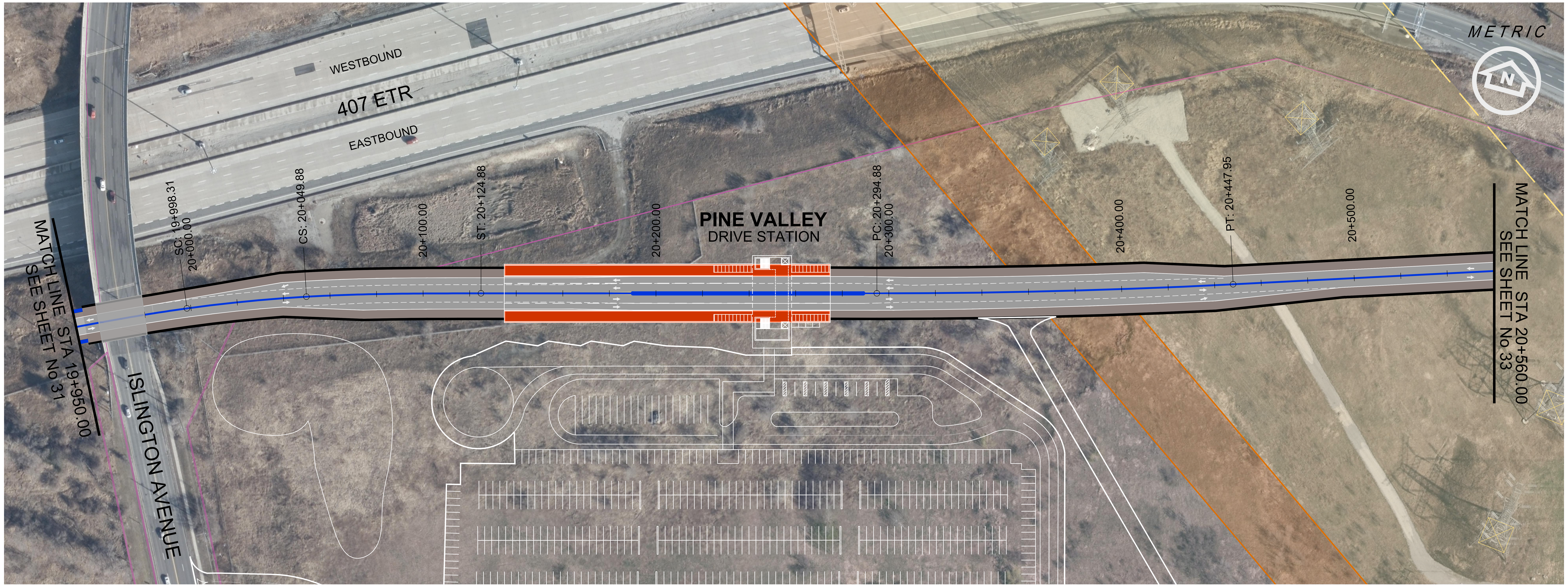
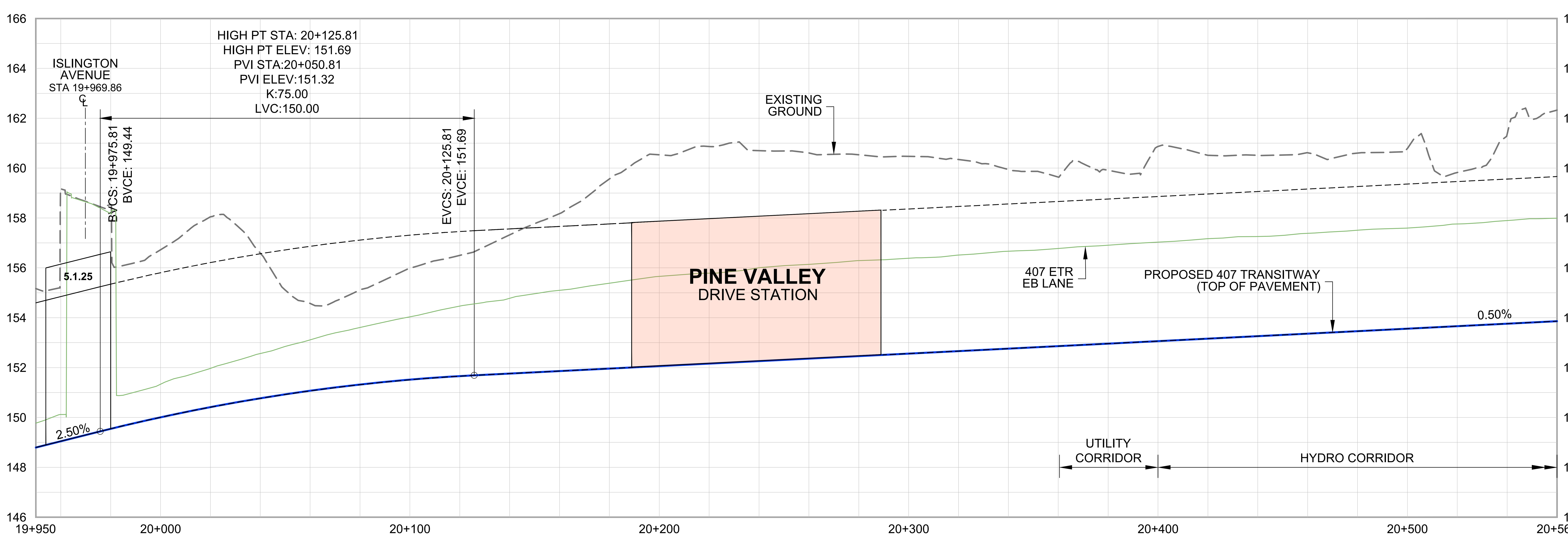




Ontario PARSONS IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

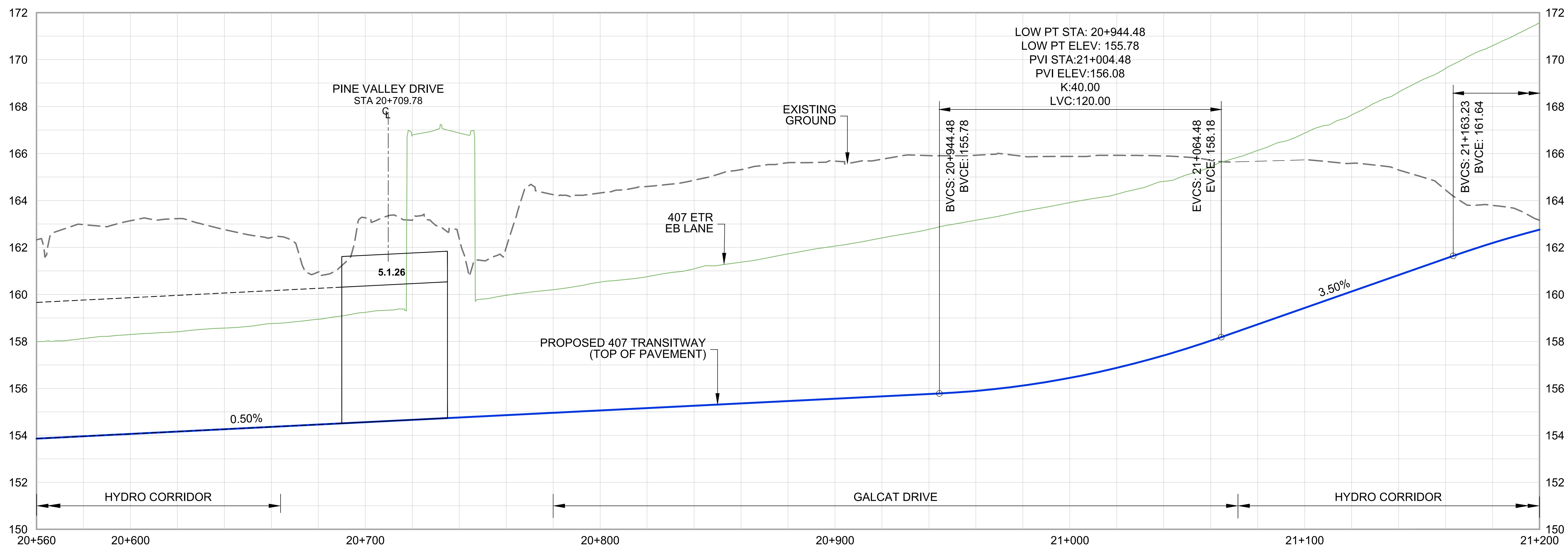
LEGEND
RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 19+950.00 TO STA 20+560.00

DRAWING SET
PLAN and PROFILE

PLATE
32

DATE
08/20/2018



Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

RETAINING WALL; FILL SECTION; CUT SECTION; TRANSITWAY; STATION PLATFORM; STRUCTURE SECTION; UNDERPASS; BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 20+560.00 TO STA 21+200.00

DRAWING SET
PLAN and PROFILE

PLATE
33

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_33.dwg
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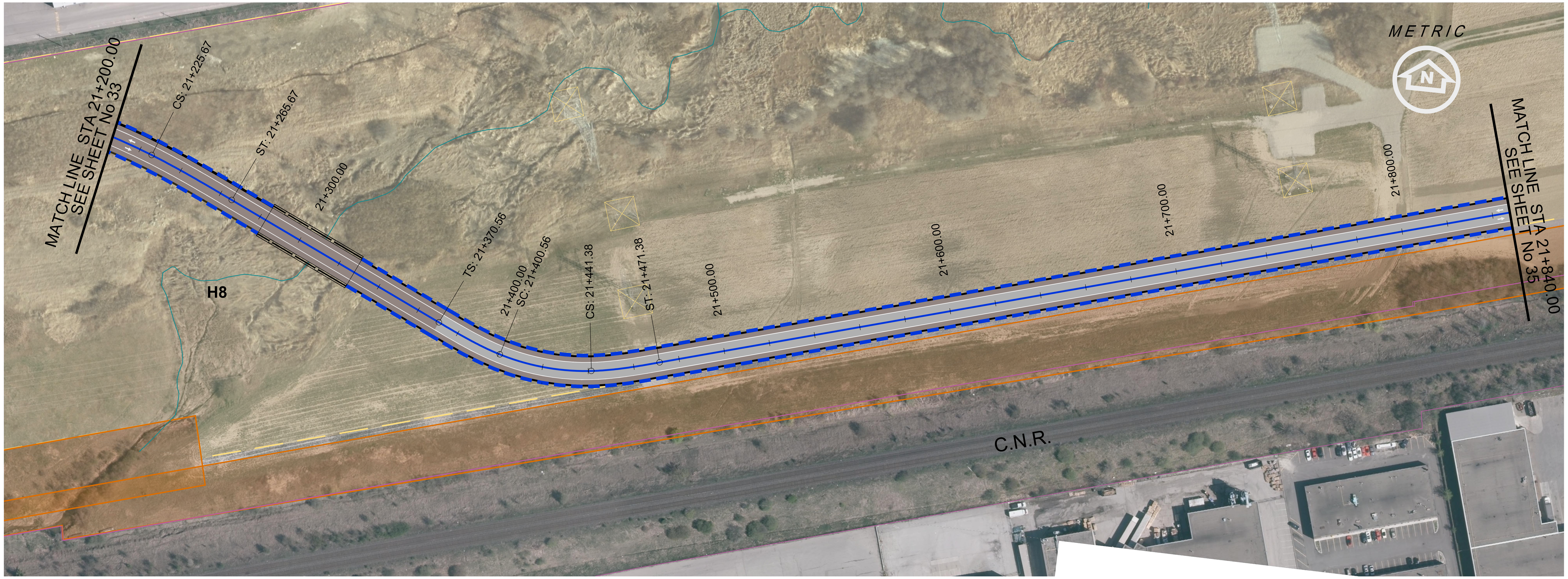
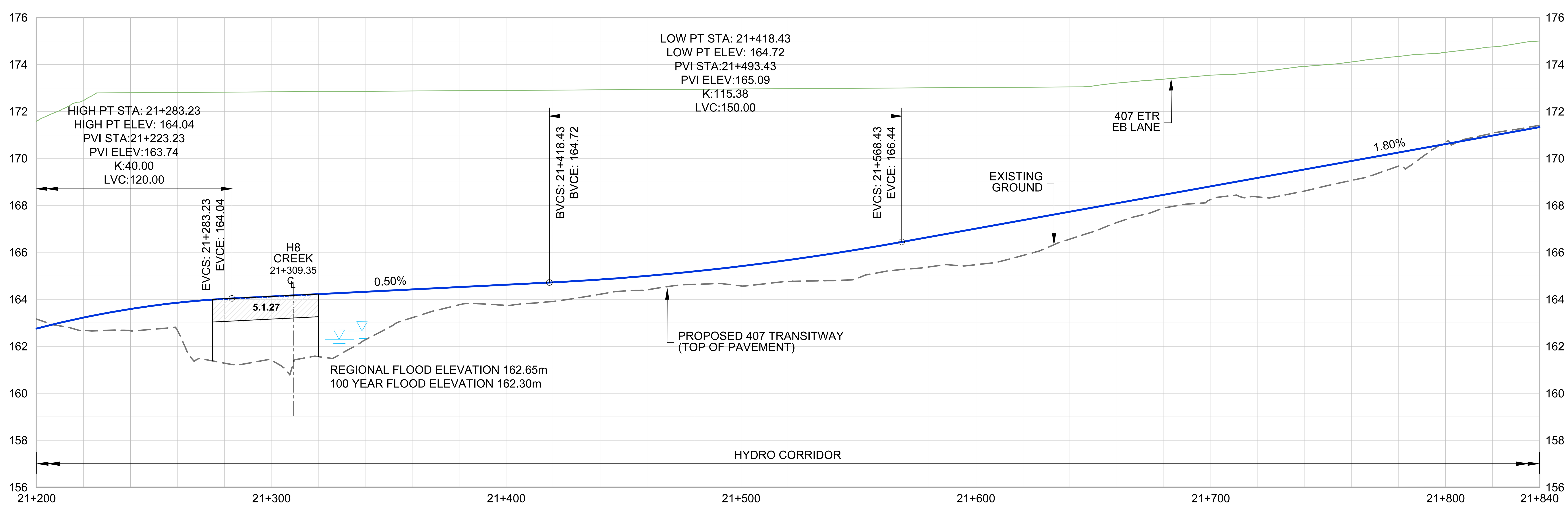




Ontario PARSONS IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND
RETAINING WALL
FILL SECTION
CUT SECTION
TRANSITWAY STATION PLATFORM
STRUCTURE SECTION
UNDERPASS
BELOW GRADE SECTION
TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

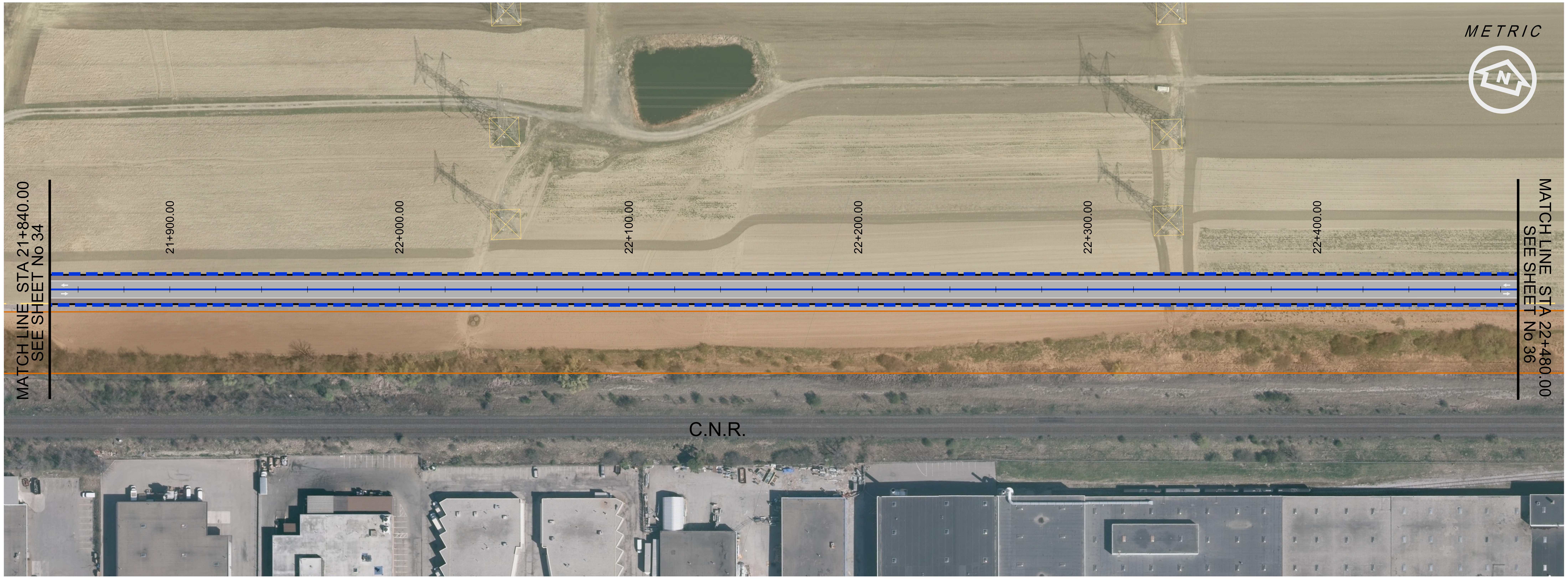
407 TRANSITWAY

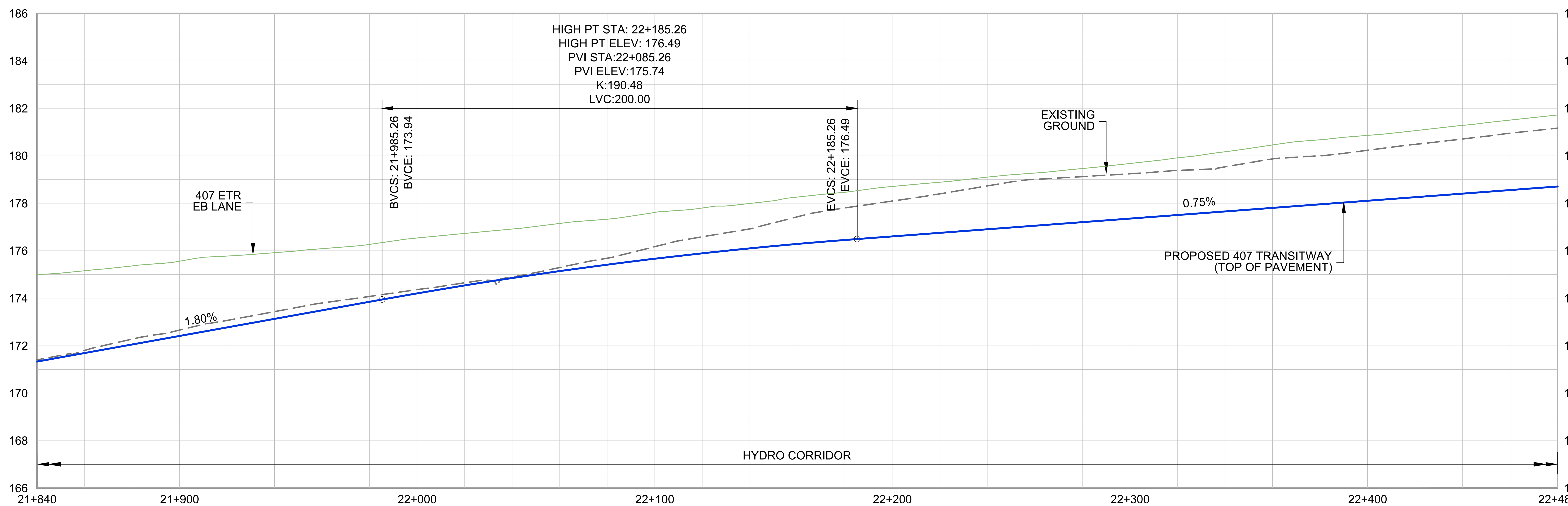
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 21+200.00 TO STA 21+840.00

DRAWING SET
PLAN and PROFILE

PLATE
34

DATE
08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION

TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER

HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

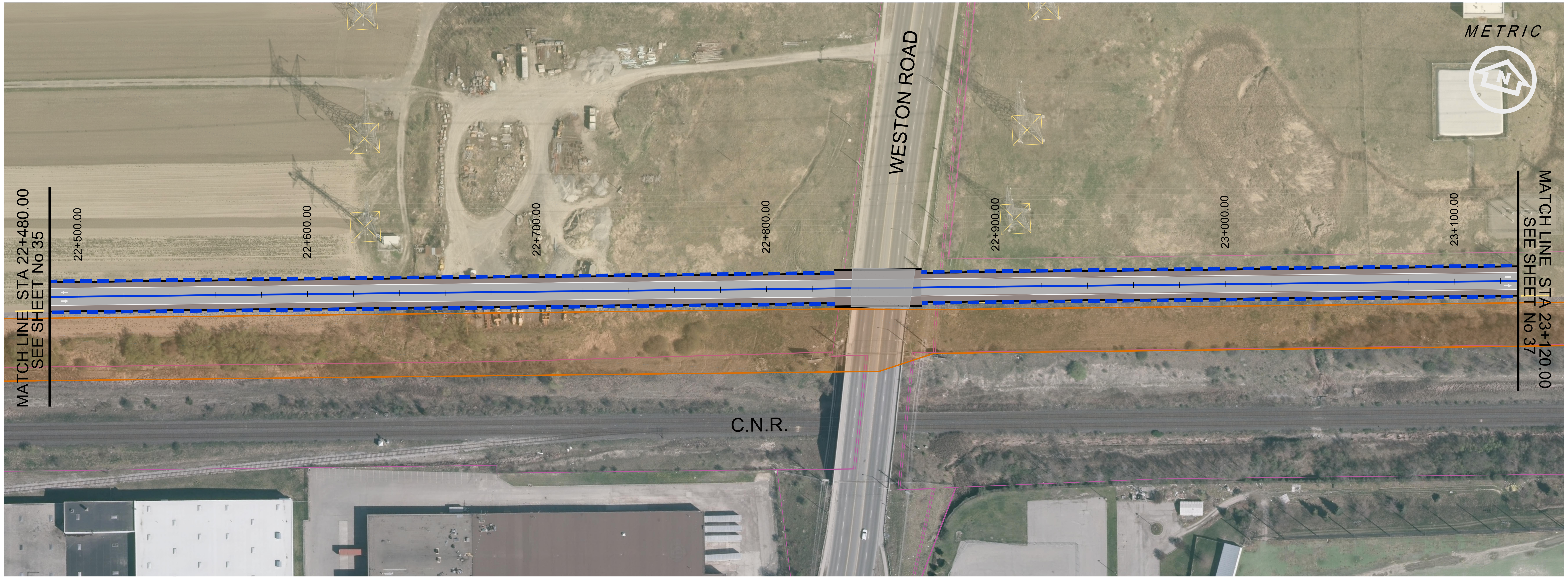
STA 21+840.00 TO STA 22+480.00

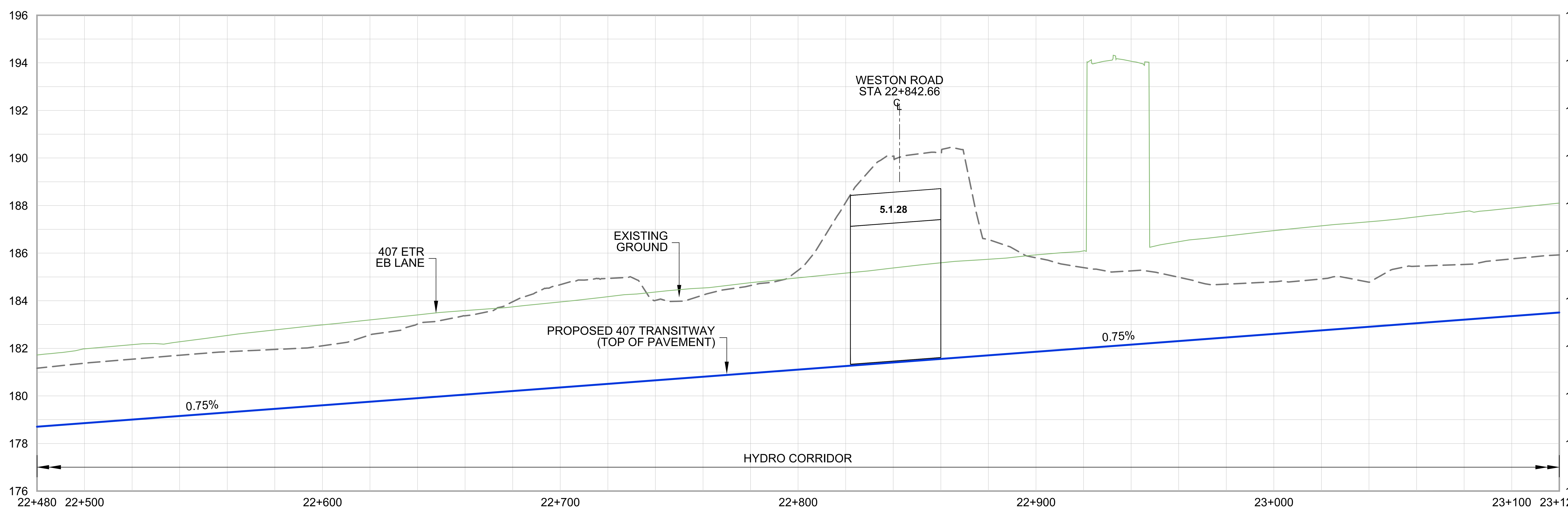
DRAWING SET

PLAN and PROFILE

PLATE **35**

DATE 08/20/2018





Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION | RETAINING WALL | TRANSITWAY STATION PLATFORM | UNDERPASS | CUT SECTION | STRUCTURE SECTION | BELOW GRADE SECTION

TRANSIT MOVEMENT
RAILWAY CORRIDOR
EXISTING PROPERTY LINE
WATER COURSE
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
E5 WATER CROSSING
5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

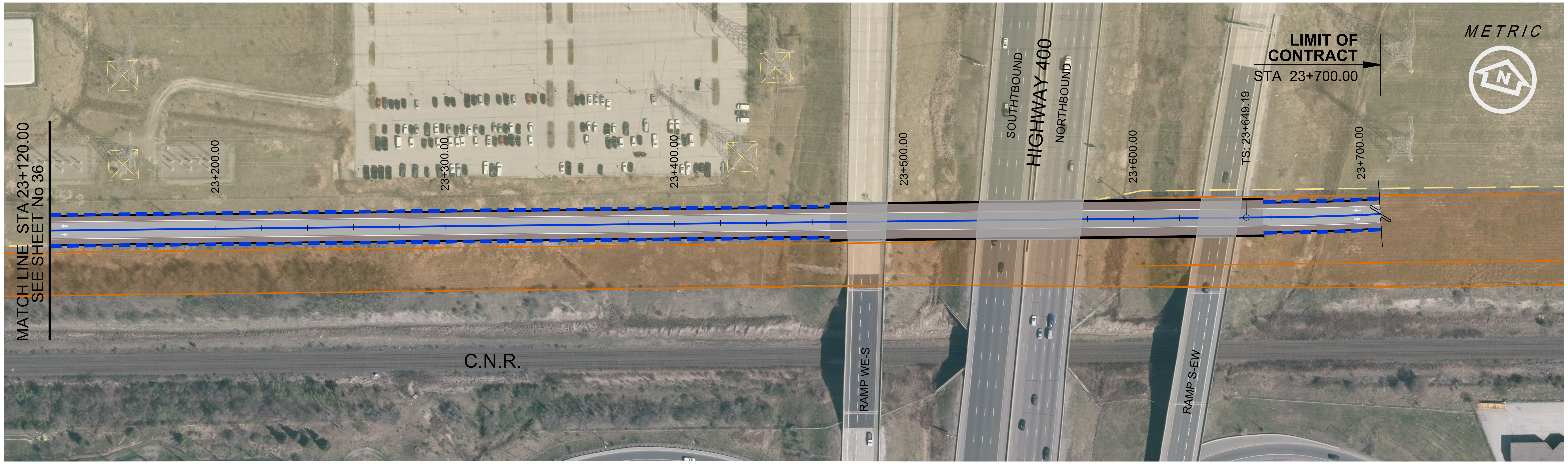
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 22+480.00 TO STA 23+120.00

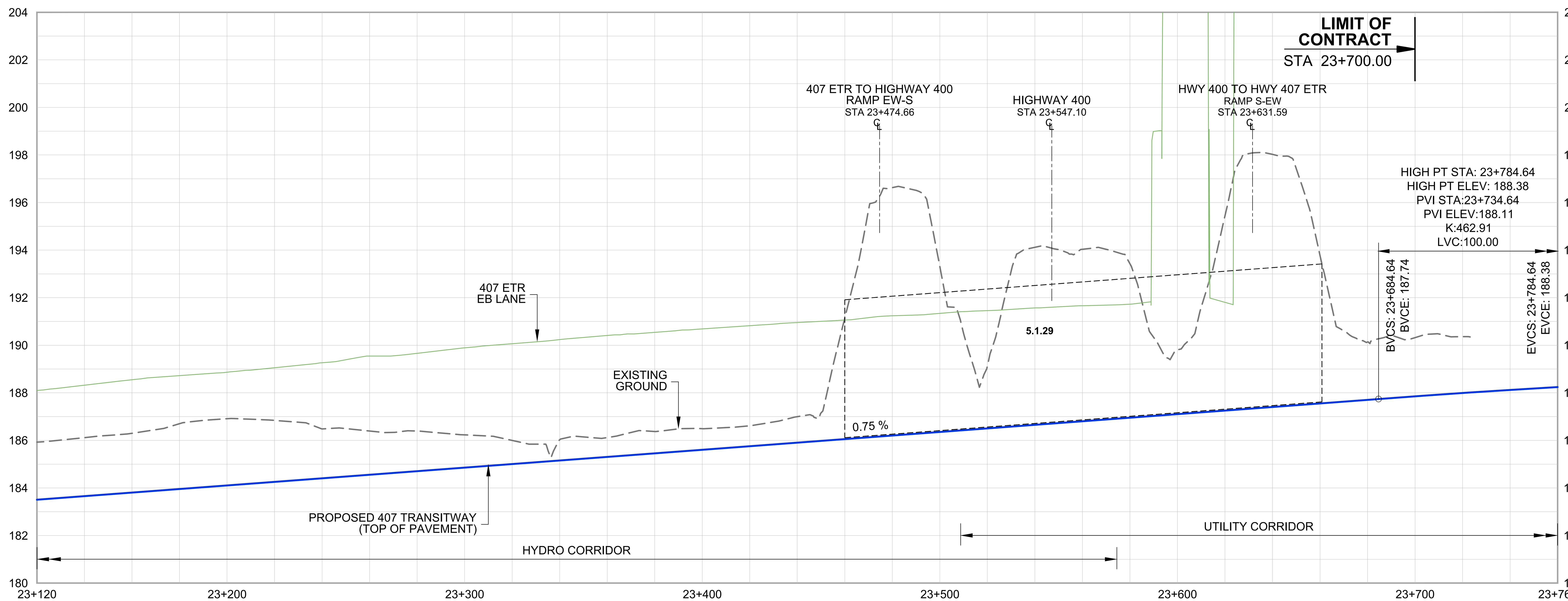
DRAWING SET
PLAN and PROFILE

PLATE
36

DATE
08/20/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TTS General\03 - Drawings\6 - Plates\EPR Plates\CURRENT\407 TW3_PLATE_36.dwg
MODIFIED: Aug 03, 2018 1:21pm
CREATED: RM3





Ontario PARSONS IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND

RETAINING WALL · FILL SECTION · CUT SECTION · TRANSITWAY STATION PLATFORM · STRUCTURE SECTION · UNDERPASS · BELOW GRADE SECTION · TRANSIT MOVEMENT · RAILWAY CORRIDOR · EXISTING PROPERTY LINE · WATER COURSE · HYDRO TOWER · HYDRO CORRIDOR · UTILITY CORRIDOR · E5 WATER CROSSING · 5.1.1 STRUCTURE REFERENCE NUMBER

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STA 23+120.00 TO STA 23+760.00

DRAWING SET

PLAN and PROFILE

PLATE

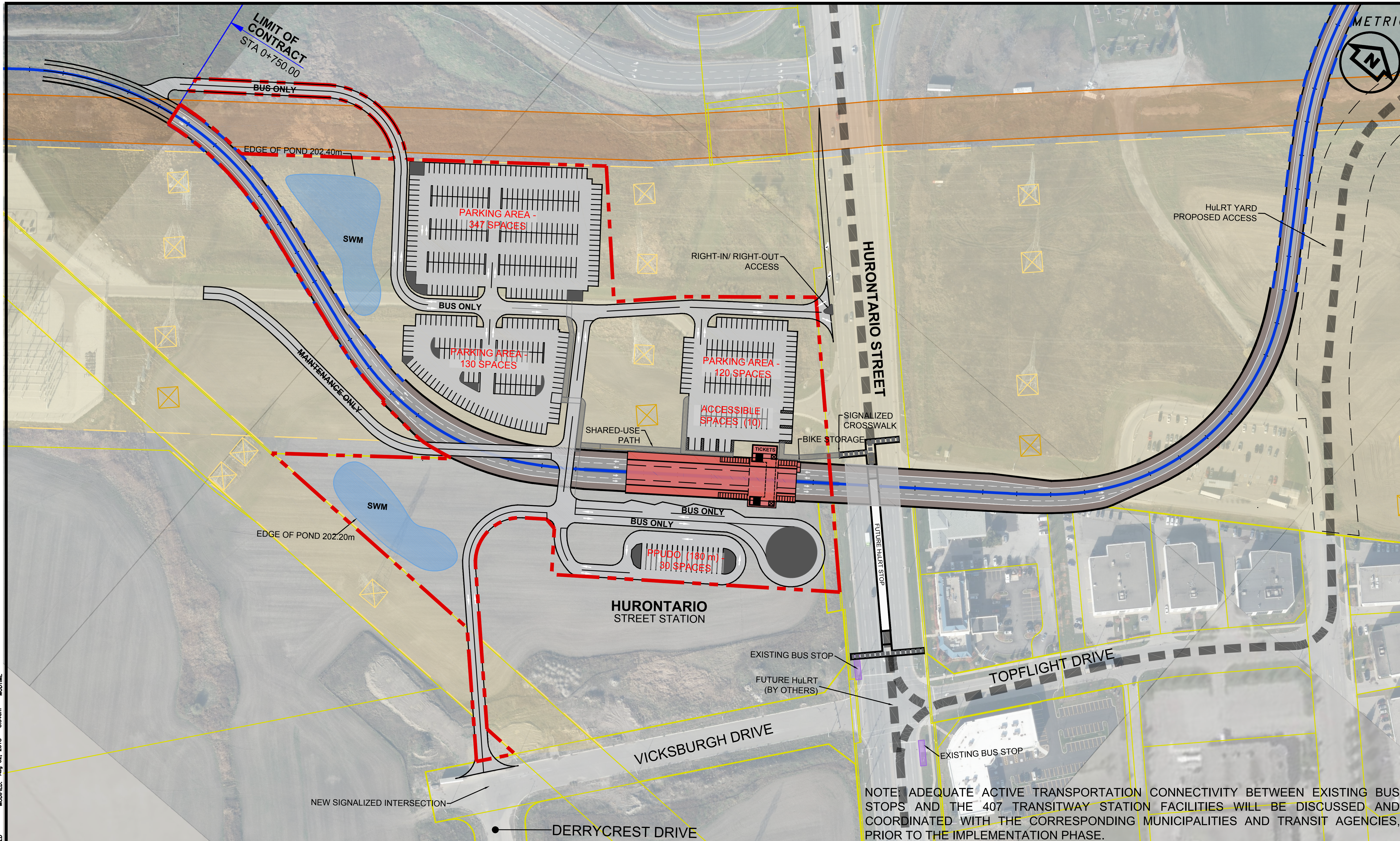
37

DATE

08/20/2018

Station Plans

Transitway



NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario PARSONS IBI

SCALE
20m 0 40m
Horizontal

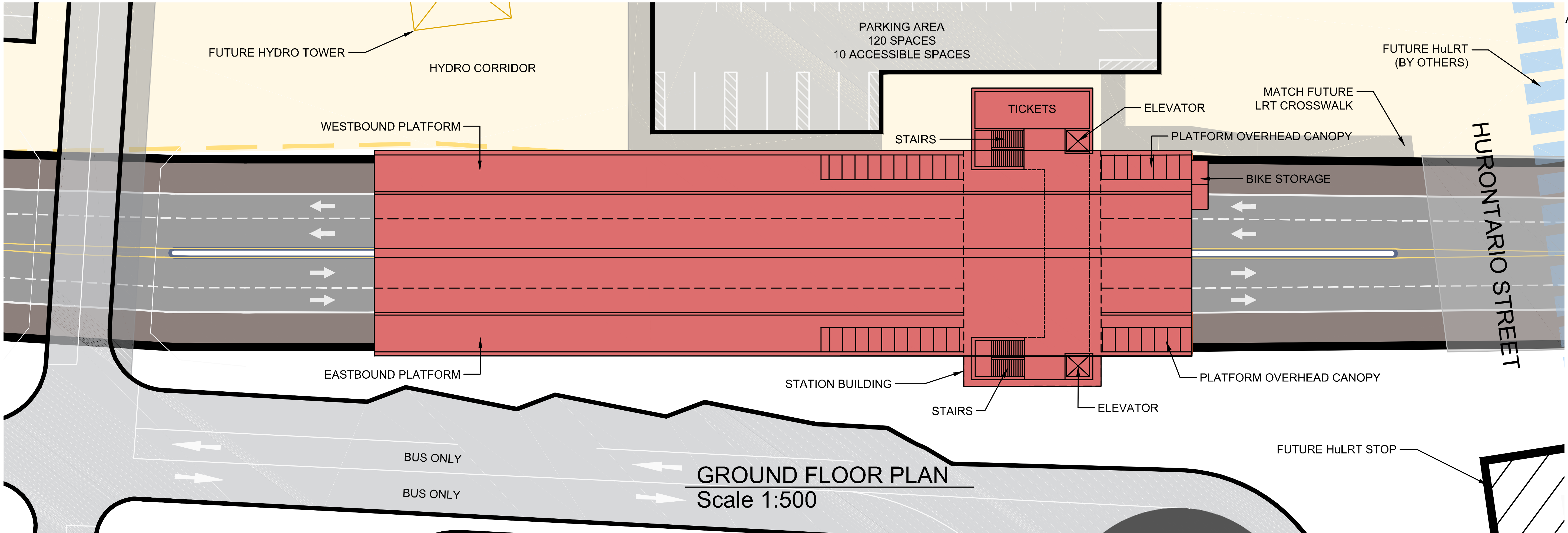
FILL SECTION | RETAINING WALL | STATION PLATFORM | TRANSITWAY | CUT SECTION | STRUCTURE SECTION | UNDERPASS SECTION

TRAFFIC LANES AND MOVEMENT
EXISTING BUS STOP
STATION BOUNDARY
PROPERTY LINE
SWM POND
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
WALKWAY/SHARED USE PATH

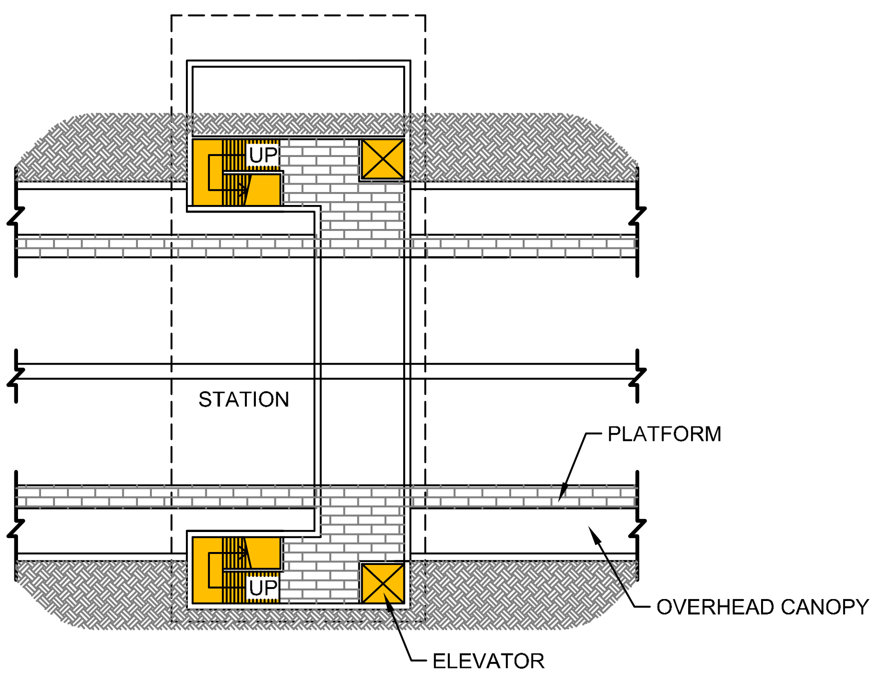
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

HURONTARIO STREET STATION

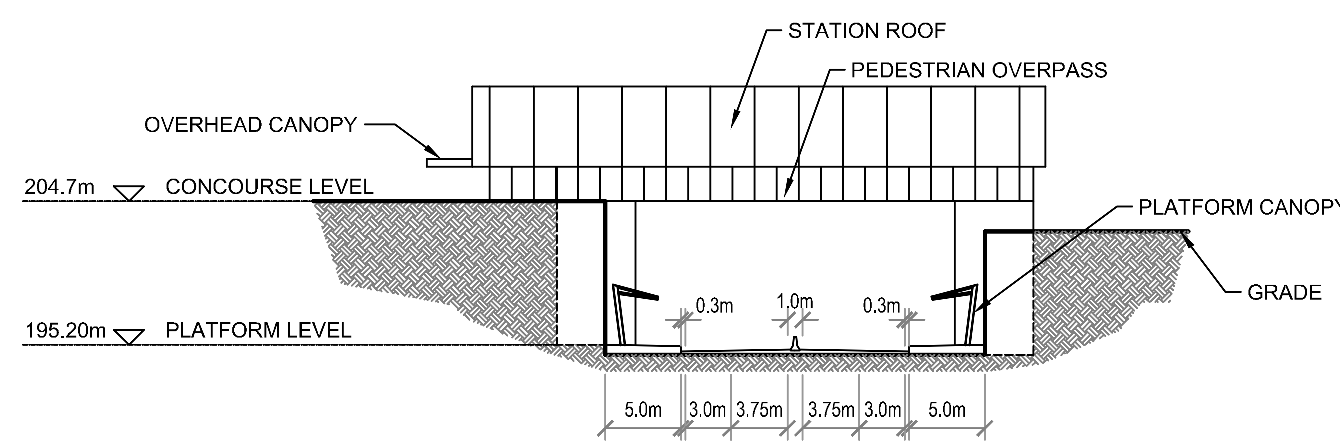
PLATE
S-1A
DATE
06/18/2018



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500



SECTION A-A
Scale 1:500

Ontario PARSONS IBI GROUP

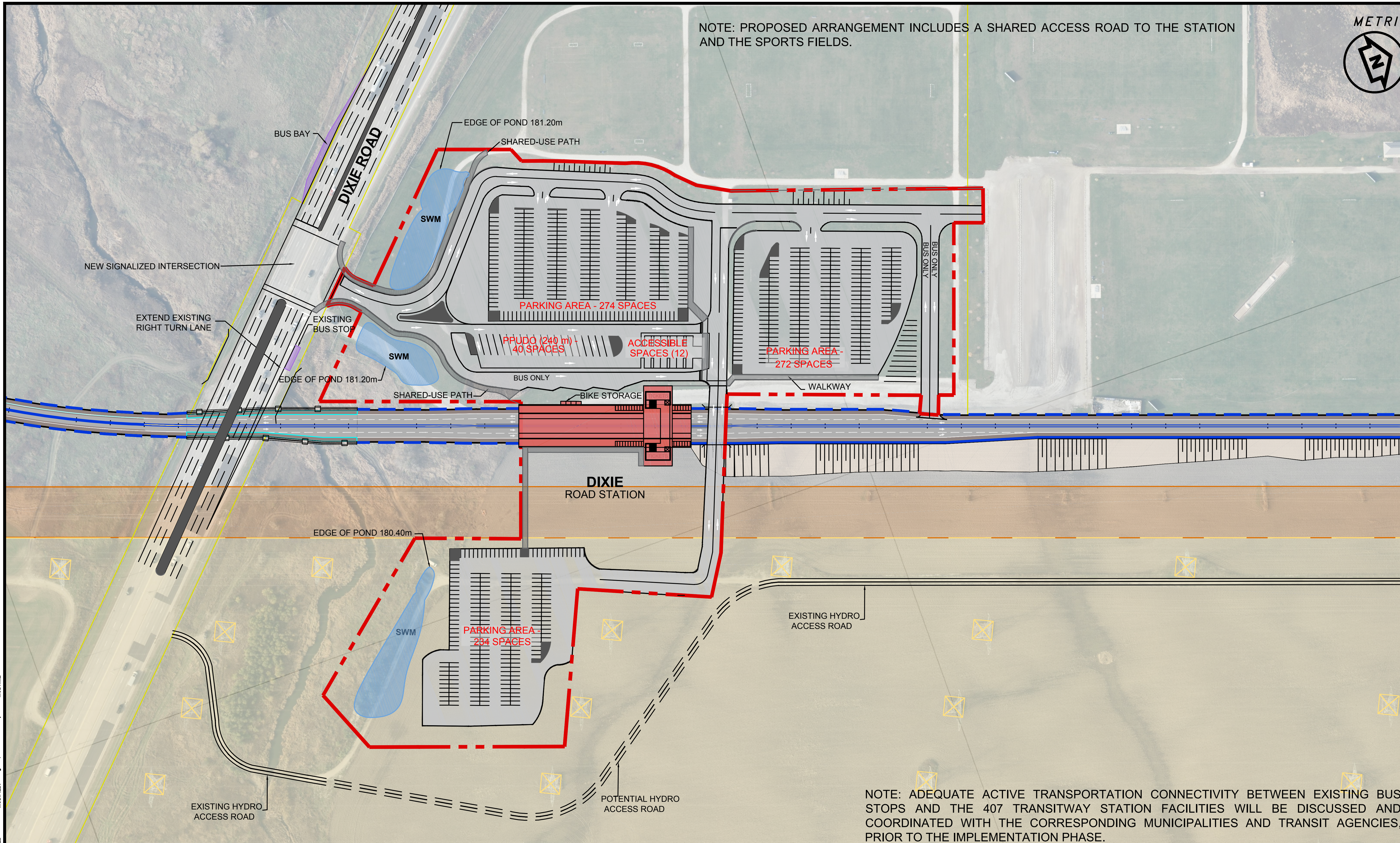
SCALE	LEGEND		
1:500	RETAINING WALL, FILL SECTION, CUT SECTION, STATION PLATFORM, TRANSITWAY, STRUCTURE SECTION, UNDERPASS SECTION	TRAFFIC LANES AND MOVEMENT; HYDRO TOWER; HYDRO CORRIDOR; WALKWAY / SHARED-USE PATH	

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

HURONTARIO STREET STATION

PLATE **S-1B**

DATE 12/08/2017



Ontario PARSONS IBI

SCALE
20m 0 40m
Horizontal

FILL SECTION · RETAINING WALL · STATION PLATFORM · TRANSITWAY · CUT SECTION · STRUCTURE SECTION · UNDERPASS SECTION

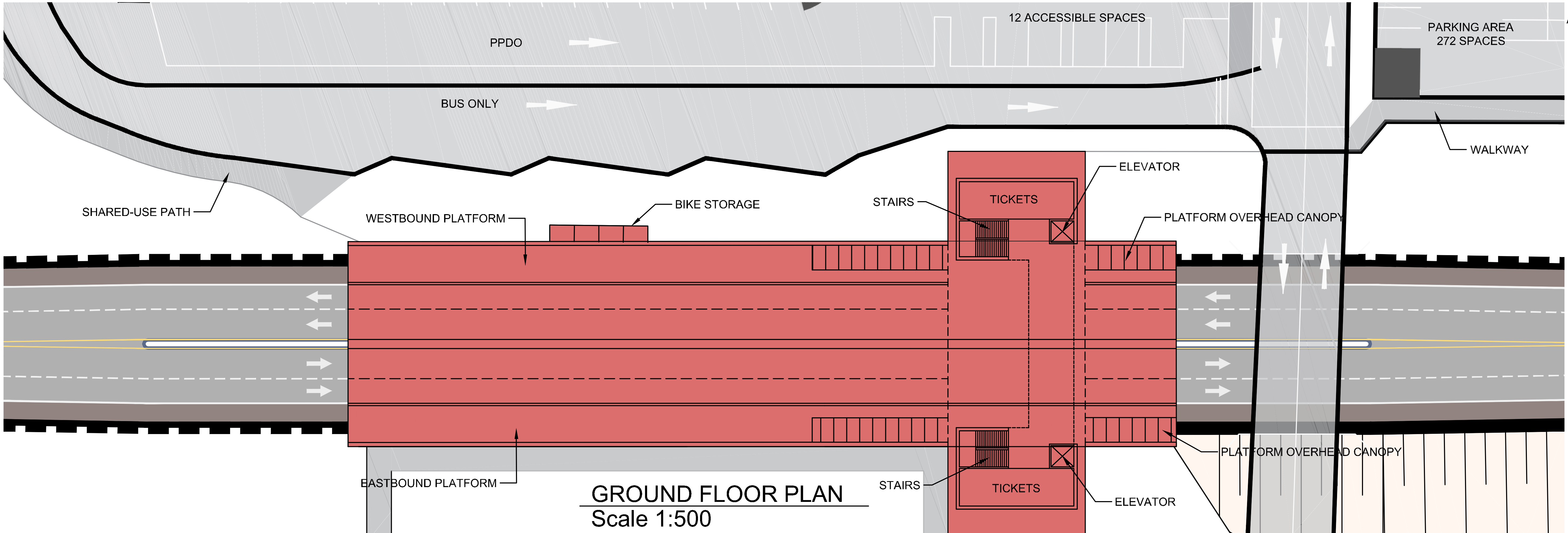
TRAFFIC LANES AND MOVEMENT
EXISTING BUS STOP
STATION BOUNDARY
PROPERTY LINE
SWM POND
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
WALKWAY/SHARED USE PATH

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

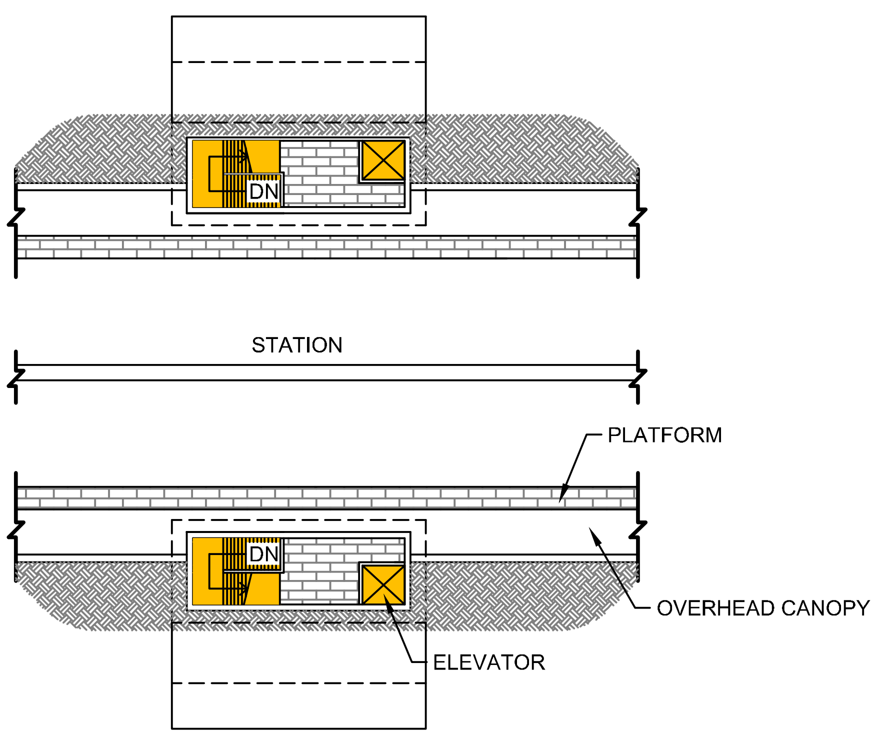
DIXIE ROAD STATION

PLATE
S-2A
DATE
12/11/2017

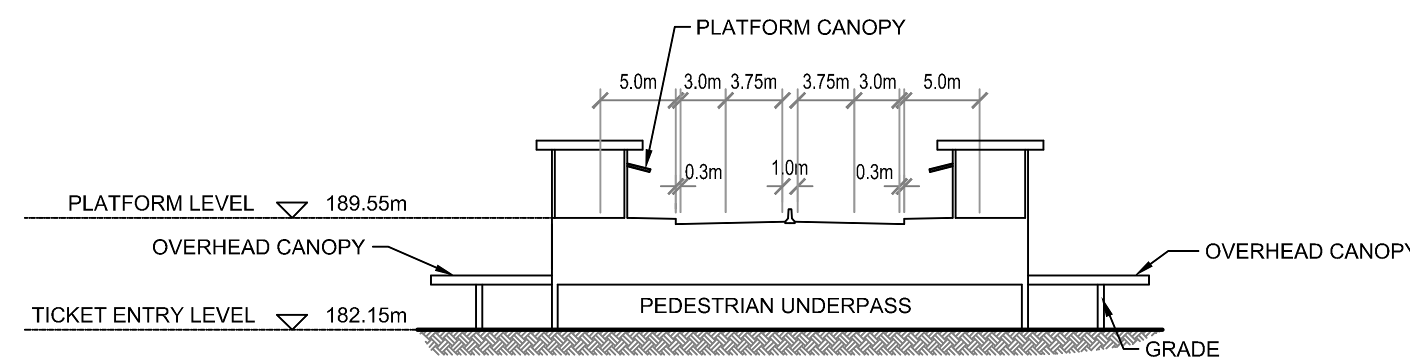
METRIC



GROUND FLOOR PLAN
Scale 1:500

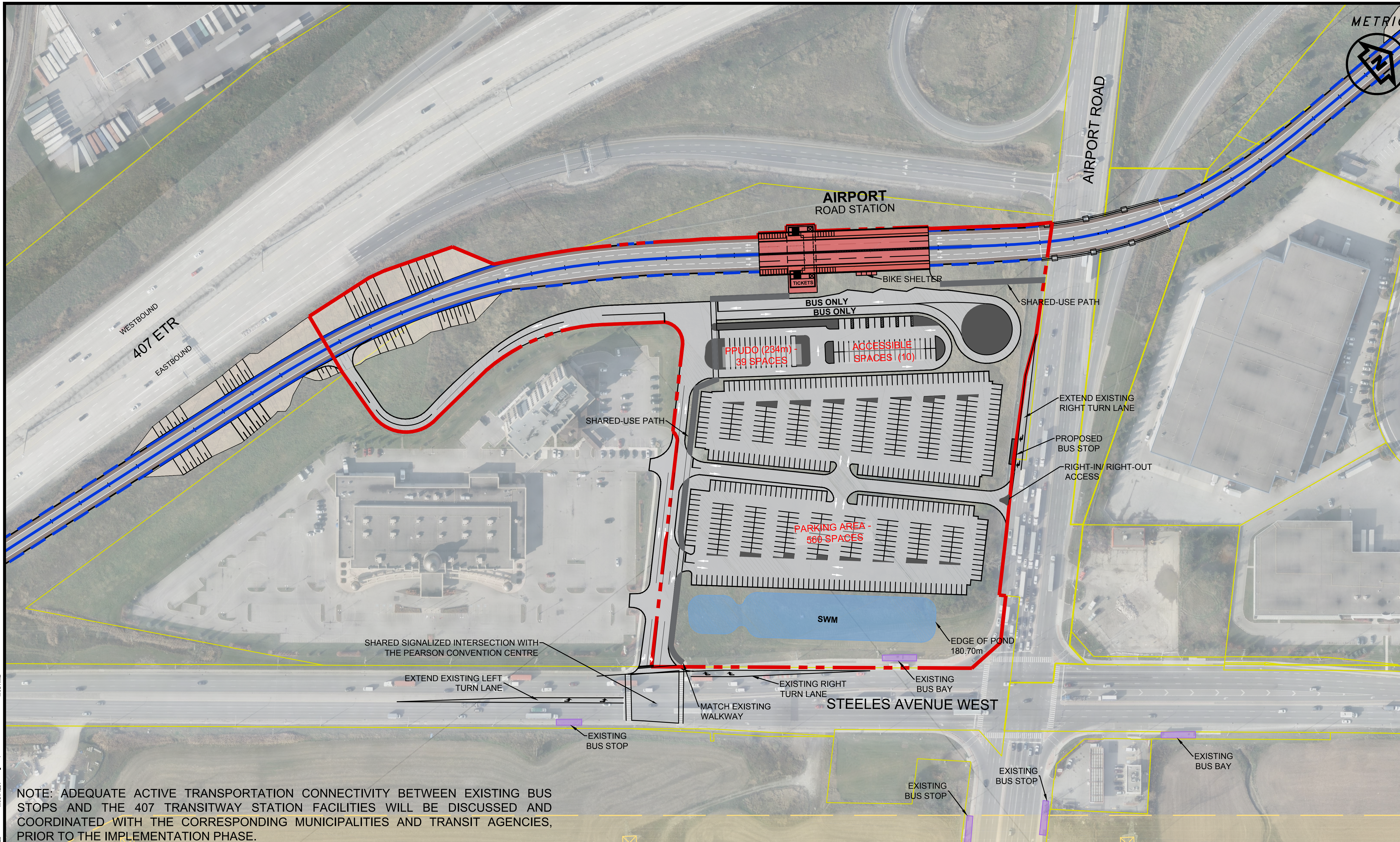


PLATFORM LEVEL PLAN
Scale 1:500



SECTION A-A
Scale 1:500

Ontario PARSONS IBI GROUP	SCALE 1:500	LEGEND FILL SECTION · RETAINING WALL · STATION PLATFORM · TRANSITWAY · CUT SECTION · STRUCTURE SECTION · UNDERPASS SECTION TRAFFIC LANES AND MOVEMENT · HYDRO TOWER · HYDRO CORRIDOR · WALKWAY / SHARED-USE PATH	**407 TRANSITWAY** **WEST OF HURONTARIO STREET TO EAST OF HWY 400** **G.W.P. 14-20001, CA 2014-E-0013** **STATIONS**	**DIXIE ROAD STATION**	PLATE **S-2B**	DATE 12/08/2017



NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario PARSONS IBI

SCALE

20m 0 40m

Horizontal

FILL SECTION | RETAINING WALL | STATION PLATFORM | TRANSITWAY | CUT SECTION | STRUCTURE SECTION | UNDERPASS SECTION

- TRAFFIC LANES AND MOVEMENT
- EXISTING BUS STOP
- STATION BOUNDARY
- PROPERTY LINE
- SWM POND
- HYDRO TOWER
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- WALKWAY/SHARED USE PATH

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

STATIONS

AIRPORT ROAD STATION

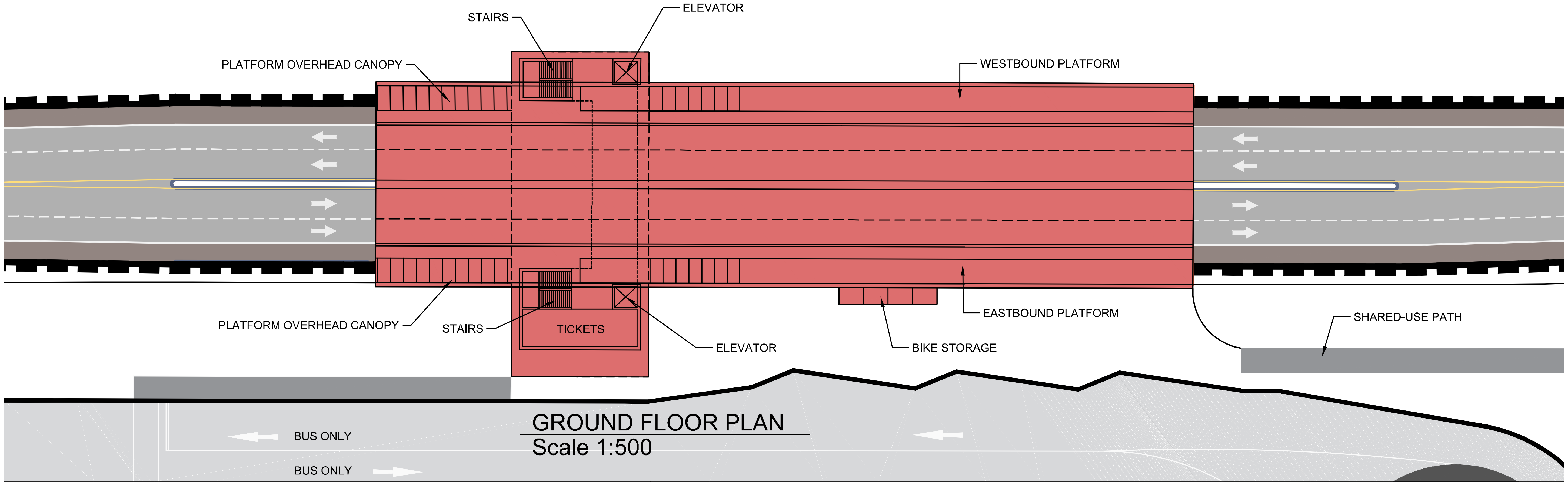
PLATE **S-3A**

DATE 12/11/2017

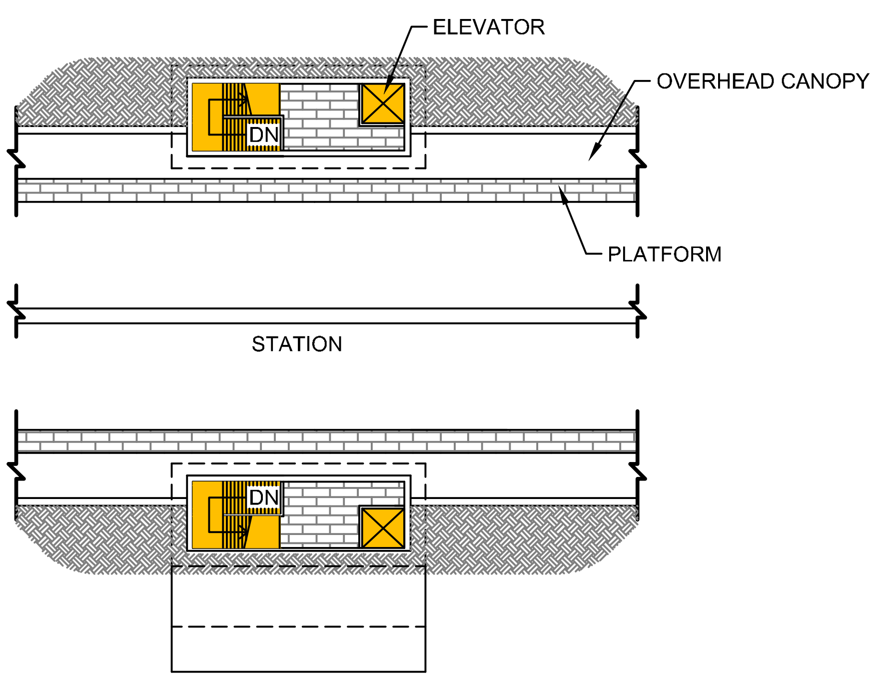
DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\9 - Stations\AllStations.dwg

CREATED: CREATED MODIFIED: Aug 02, 2018 - 8:44am MODTIME

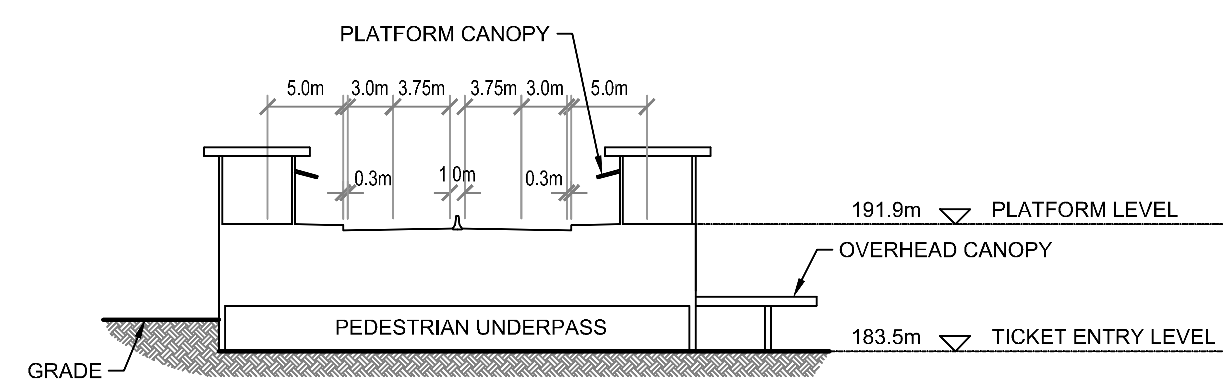
METRIC



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500

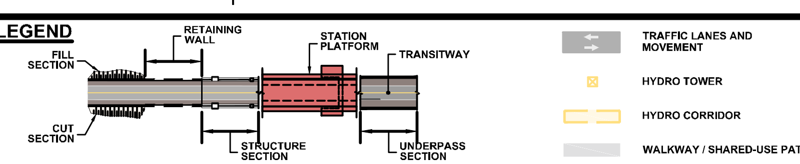


SECTION A-A
Scale 1:500

Ontario PARSONS IBI GROUP

SCALE
1:500

LEGEND

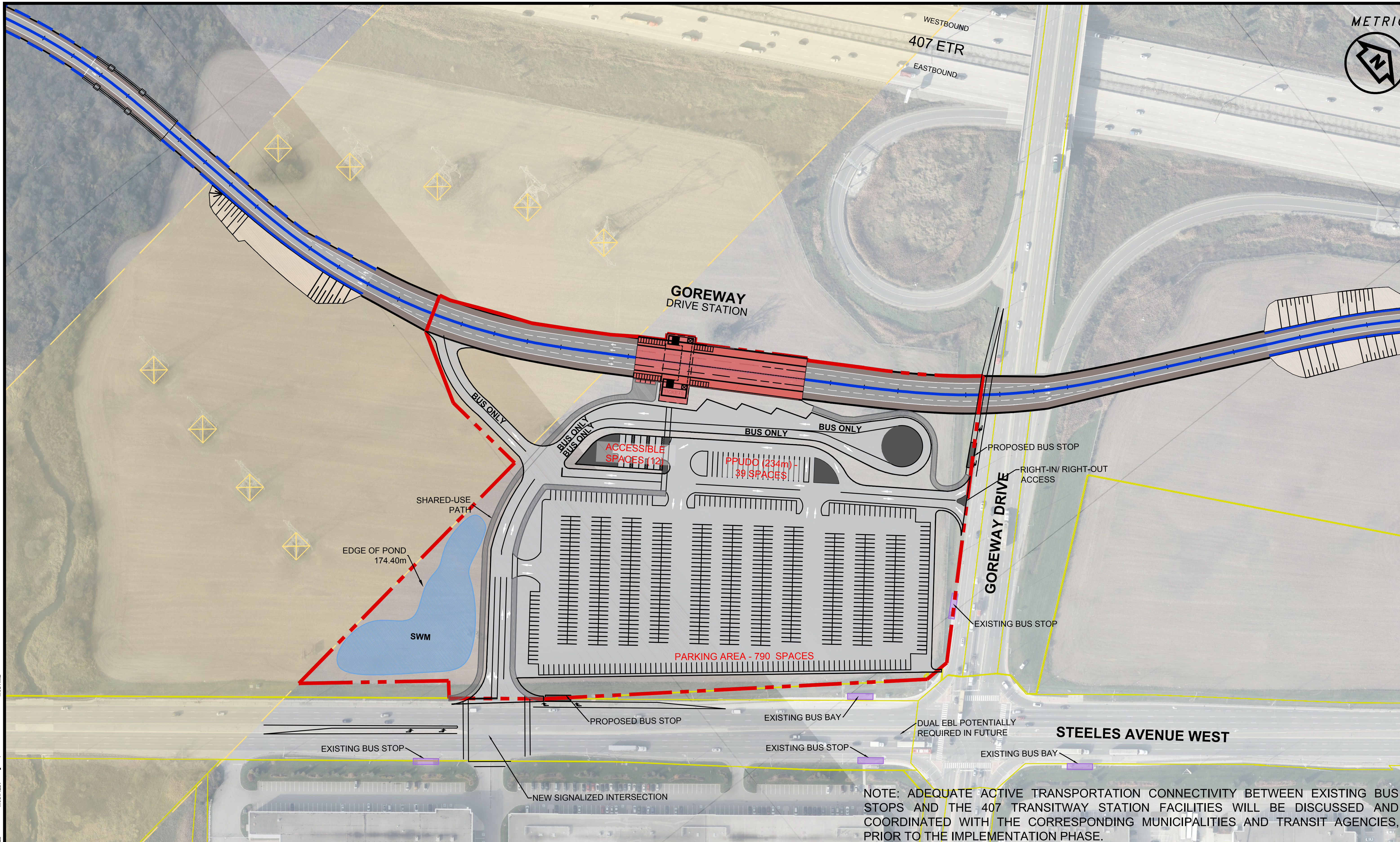


407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

AIRPORT ROAD STATION

PLATE **S-3B**

DATE 12/08/2017



NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario PARSONS IBI

SCALE

20m 0 40m

Horizontal

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION

TRAFFIC LANES AND MOVEMENT
EXISTING BUS STOP
STATION BOUNDARY
PROPERTY LINE
SWM POND
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
WALKWAY/SHARED USE PATH

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

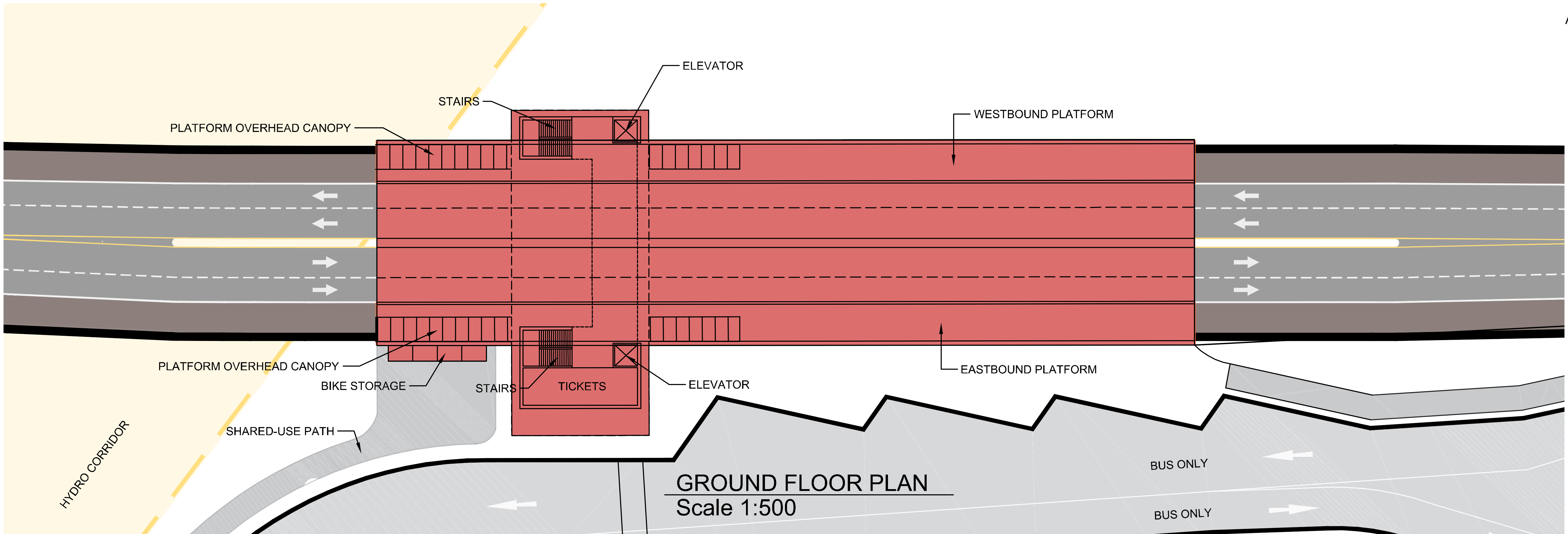
GOREWAY DRIVE STATION

PLATE
S-4A

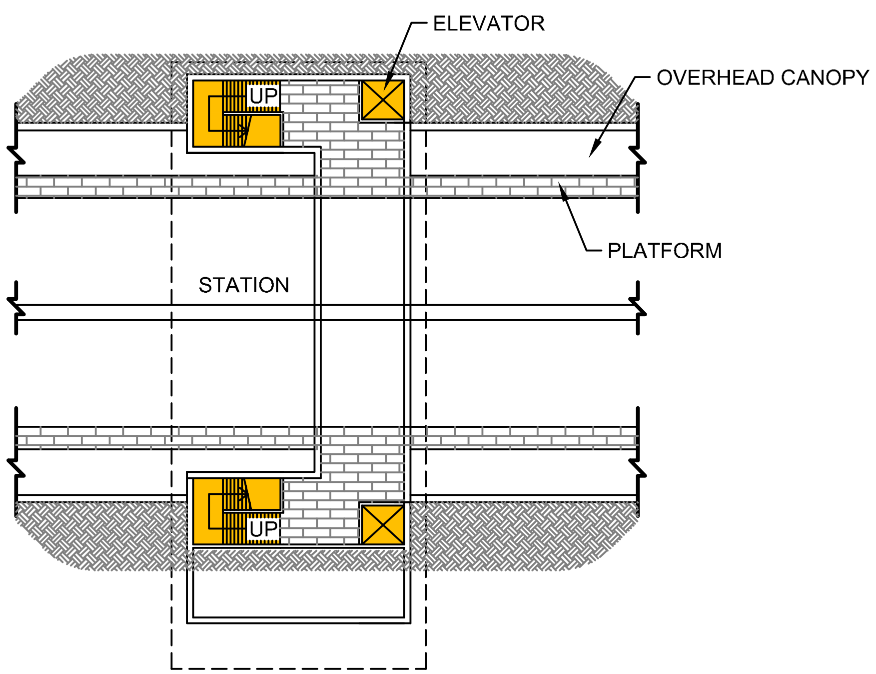
DATE
12/11/2017

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\9 - Stations\AllStations.dwg
CREATED: CREATED MODIFIED: Aug 02, 2018 - 9:55am MODTIME

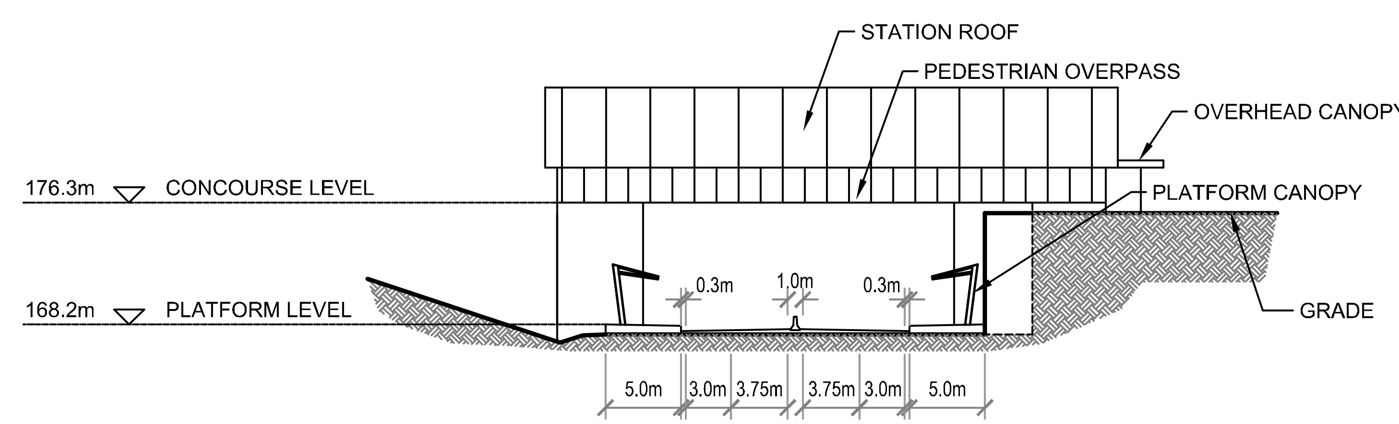
METRIC



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500

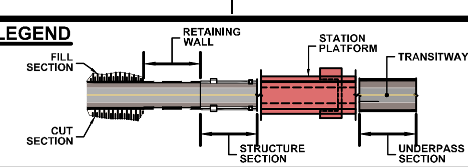


SECTION A-A
Scale 1:500

Ontario
PARSONS
IBI GROUP

SCALE
1:500

LEGEND



TRAFFIC LANES AND MOVEMENT
HYDRO TOWER
HYDRO CORRIDOR
WALKWAY / SHARED-USE PATH

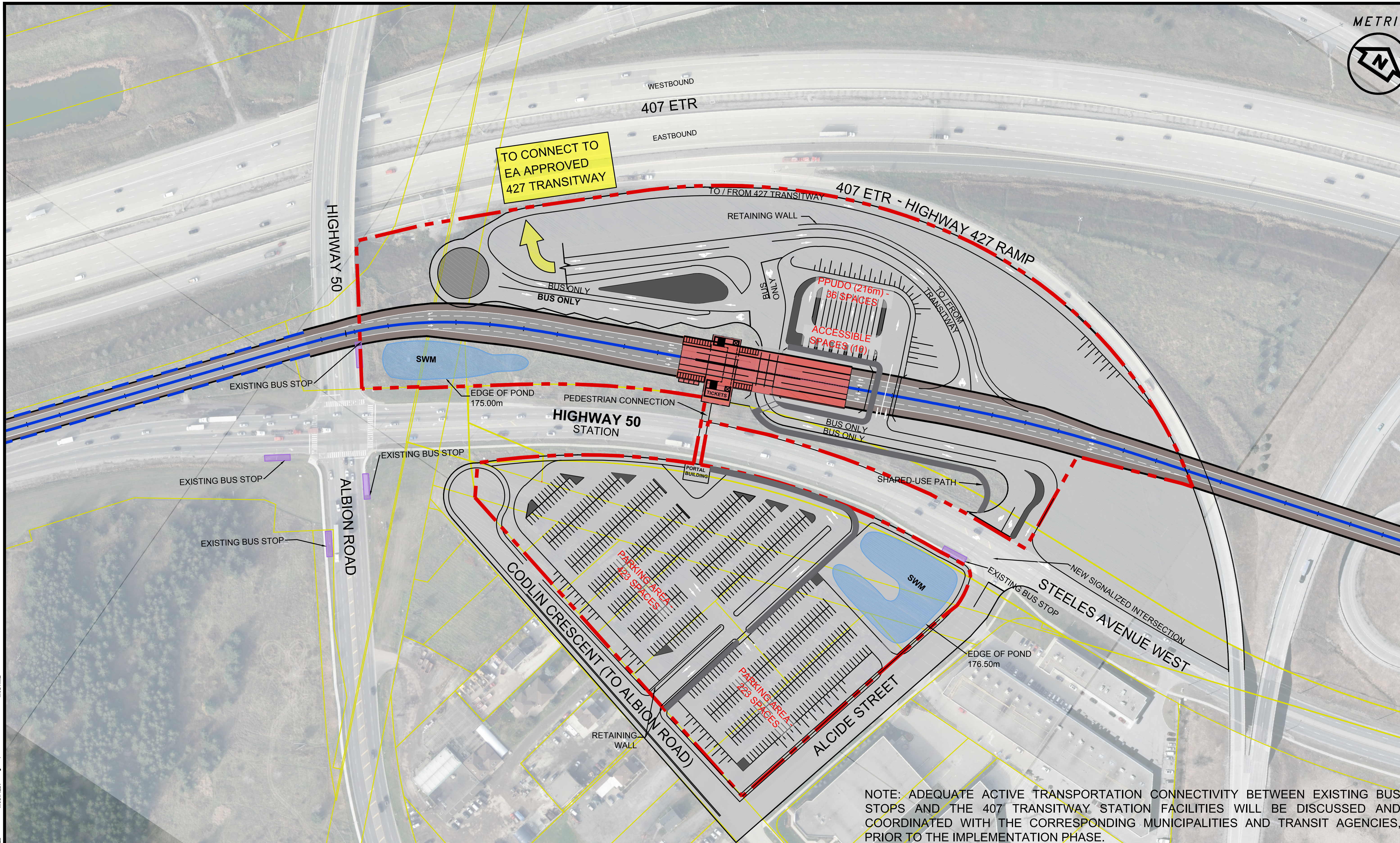
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

GOREWAY DRIVE STATION

PLATE
S-4B

DATE
12/08/2017

DRAWING NAME: C:\Users\p007847C\appdata\local\temp\AcPublish_11112\Station_Details_EPR Draft 2.dwg
CREATED: RM3 MODIFIED: Dec 08, 2017 1:45pm



NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario | PARSONS | IBI

SCALE: 20m 0 40m Horizontal

Legend: FILL SECTION; RETAINING WALL; STATION PLATFORM; TRANSITWAY; CUT SECTION; STRUCTURE SECTION; UNDERPASS SECTION; TRAFFIC LANES AND MOVEMENT; EXISTING BUS STOP; STATION BOUNDARY; PROPERTY LINE; SWM POND; HYDRO TOWER; HYDRO CORRIDOR; UTILITY CORRIDOR; WALKWAY/SHARED USE PATH

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

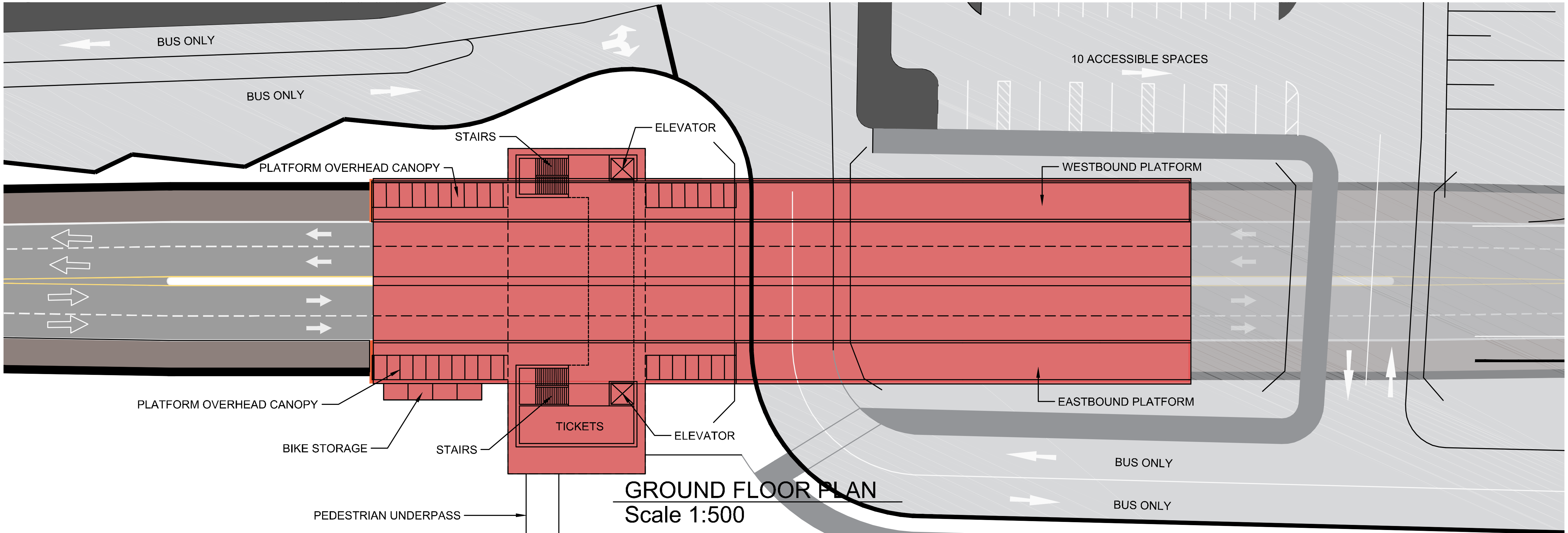
STATIONS

HIGHWAY 50 STATION

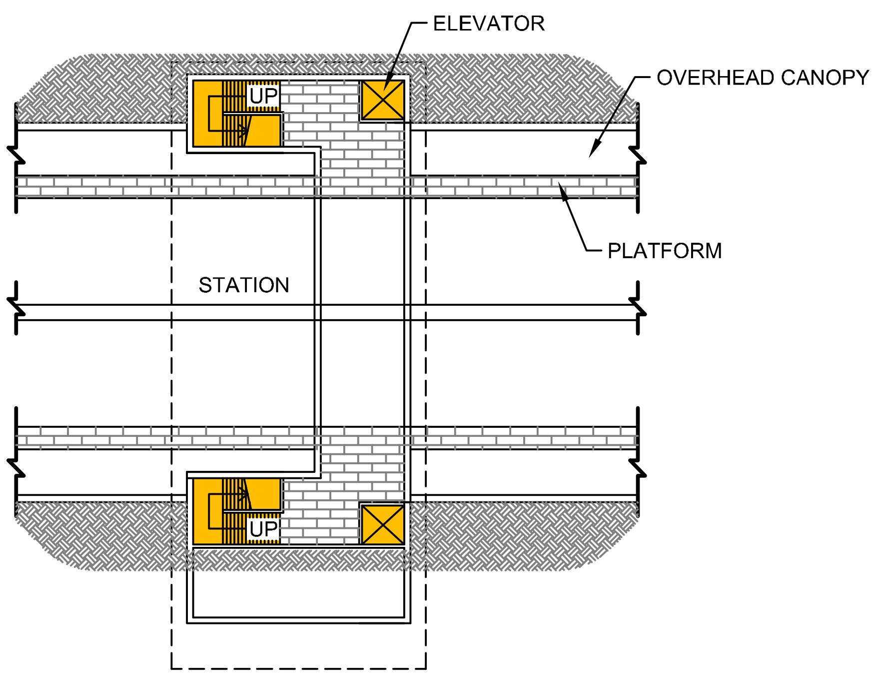
PLATE **S-5A**

DATE 12/11/2017

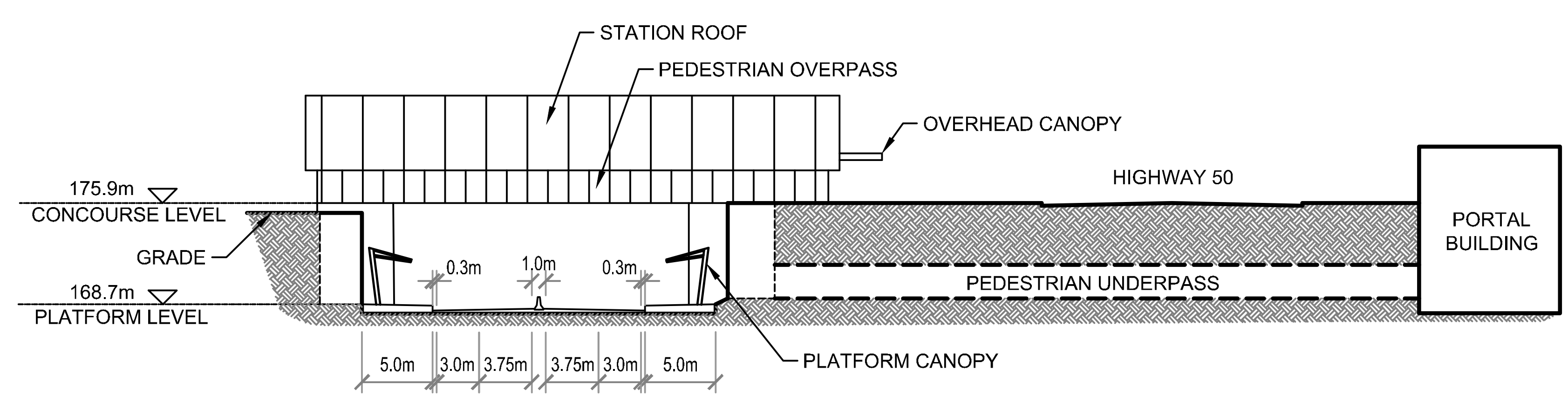
METRIC



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500

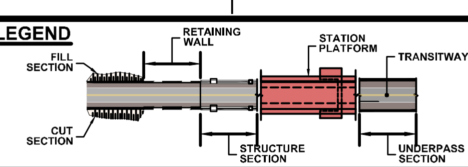


SECTION A-A
Scale 1:500

Ontario
PARSONS
IBI GROUP

SCALE
1:500

LEGEND



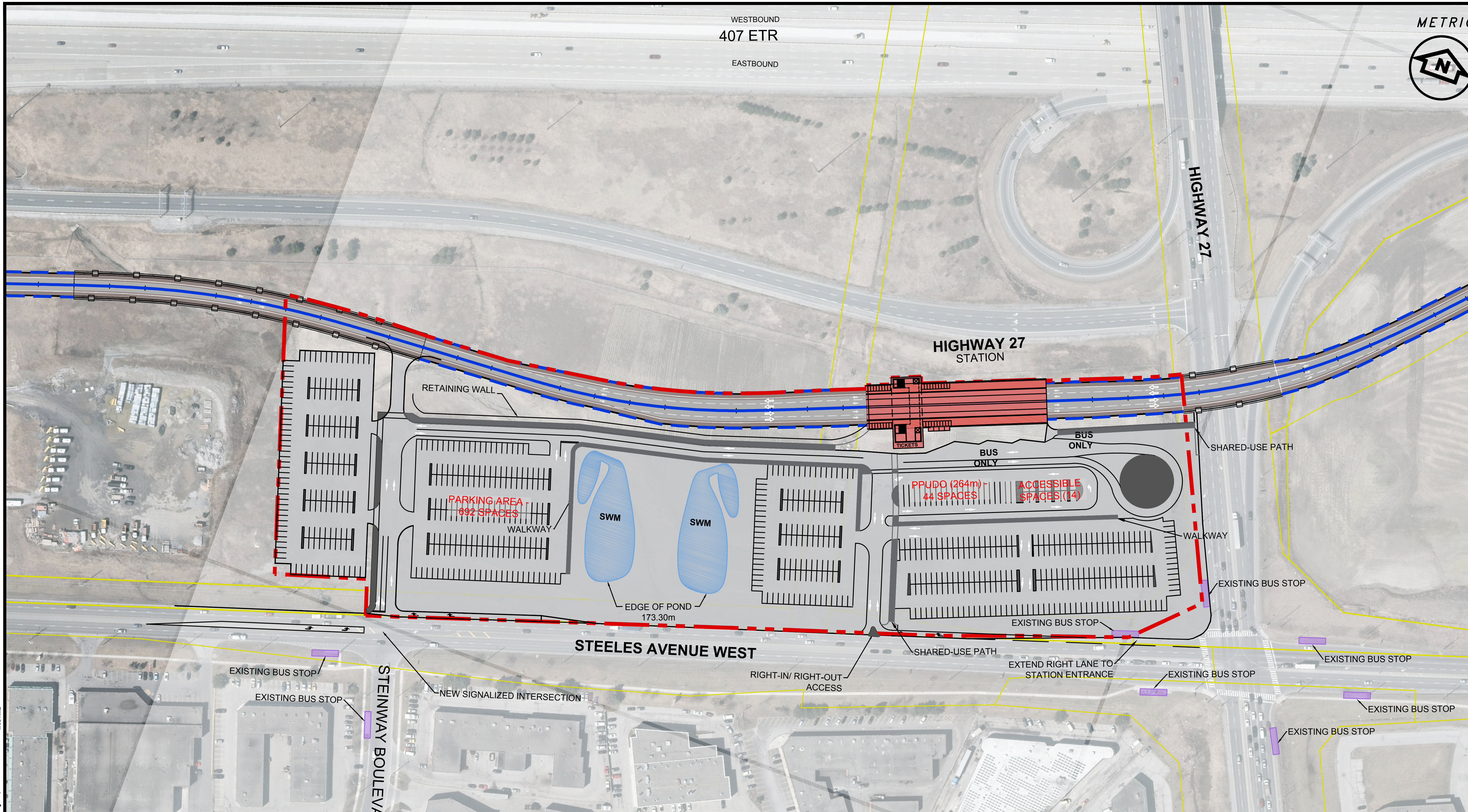
TRAFFIC LANES AND MOVEMENT
HYDRO TOWER
HYDRO CORRIDOR
WALKWAY / SHARED-USE PATH

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

HIGHWAY 50 STATION

PLATE
S-5B

DATE
12/08/2017



NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario PARSONS IBI

SCALE
20m 0 40m
Horizontal

RETAINING WALL; STATION PLATFORM; TRANSITWAY; FILL SECTION; CUT SECTION; STRUCTURE SECTION; UNDERPASS SECTION

TRAFFIC LANES AND MOVEMENT
EXISTING BUS STOP
STATION BOUNDARY
PROPERTY LINE
SWM POND
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
WALKWAY/SHARED USE PATH

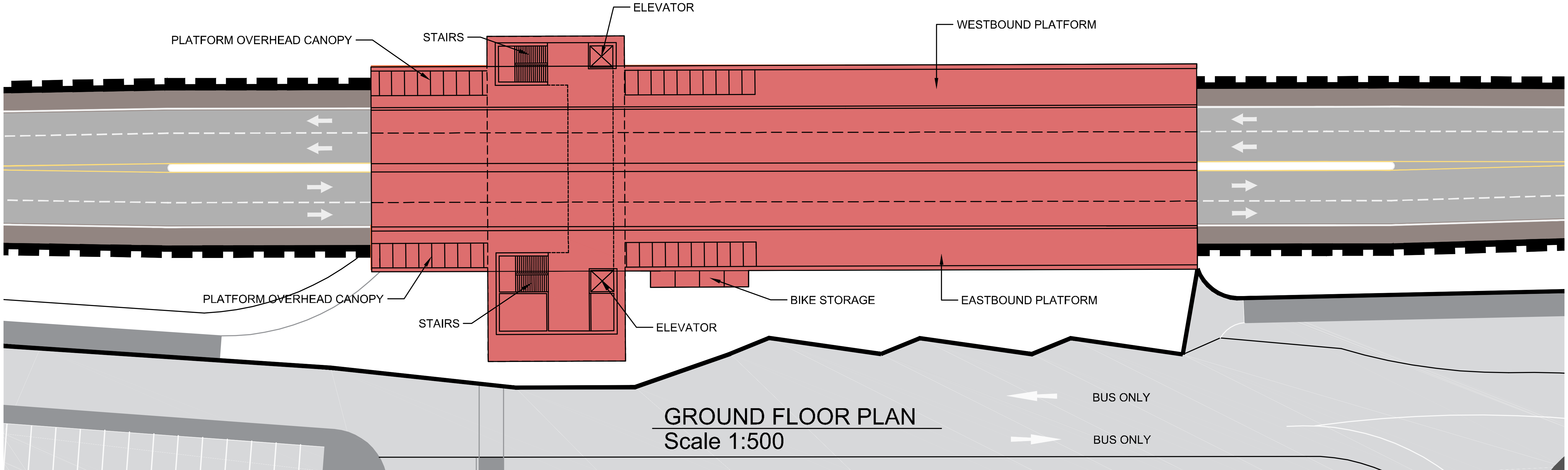
407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

HIGHWAY 27 STATION

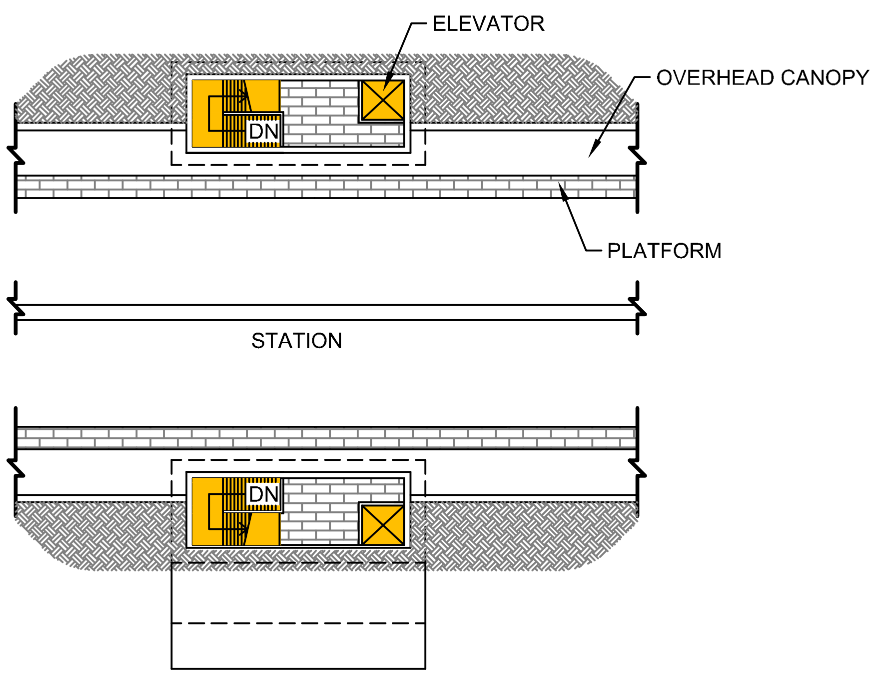
PLATE
S-6A

DATE
04/10/2018

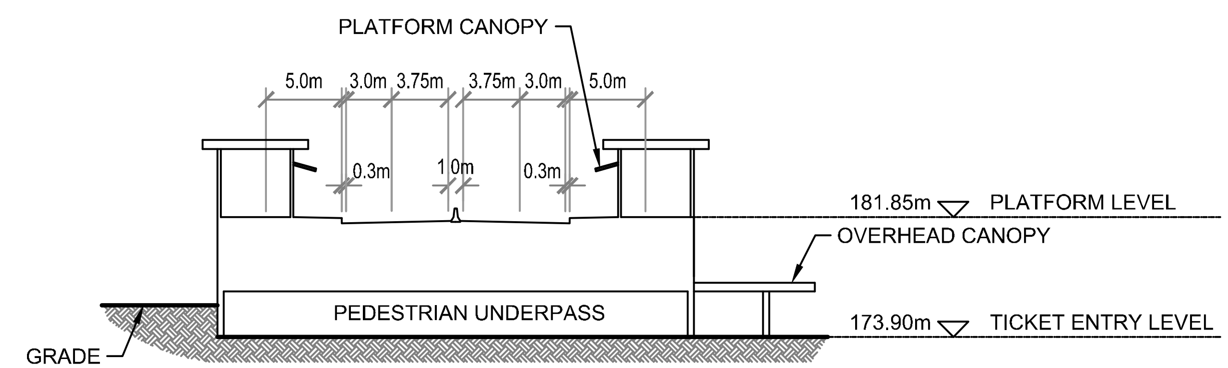
METRIC



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500



SECTION A-A
Scale 1:500

Ontario PARSONS IBI GROUP

SCALE
1:500

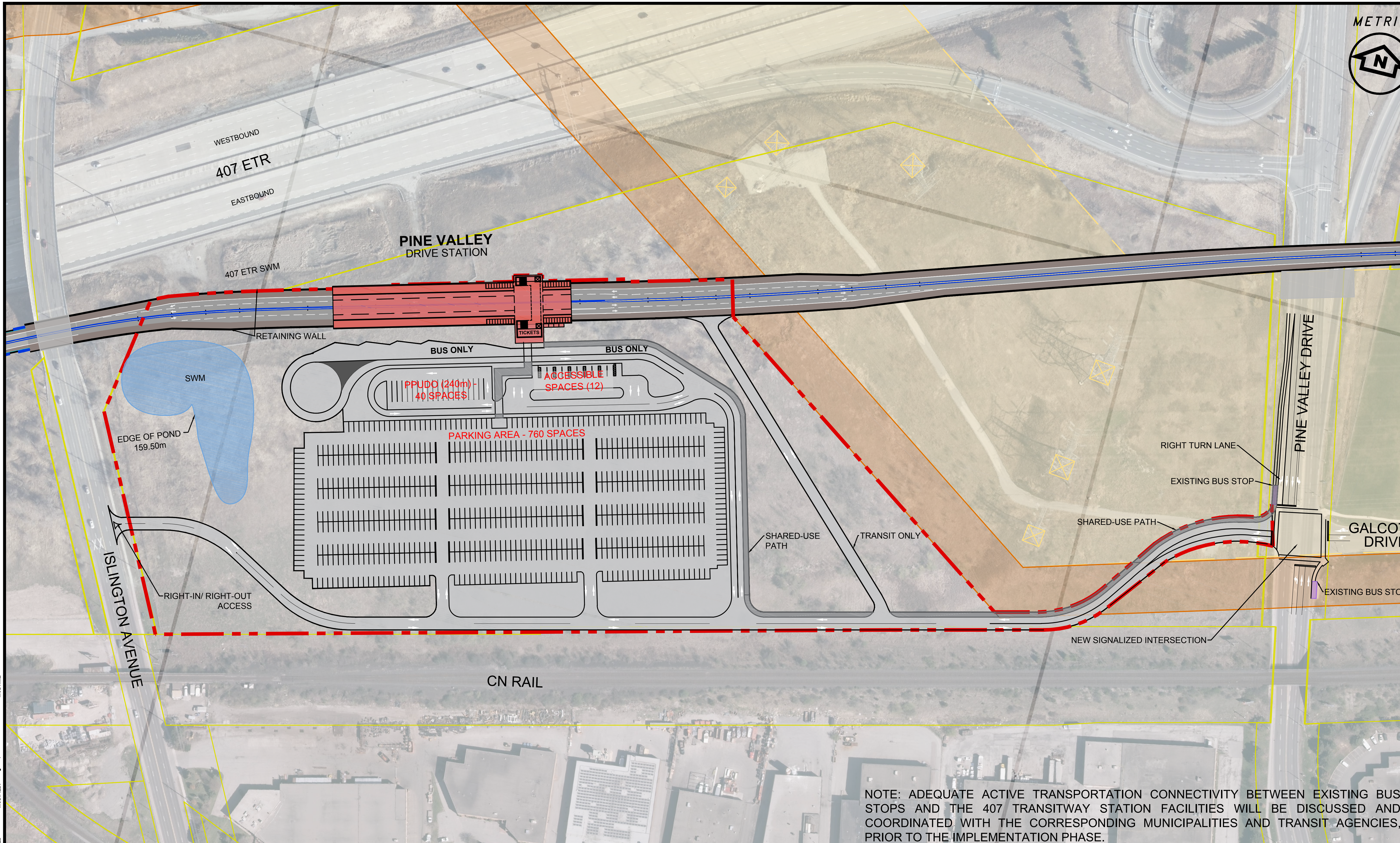
LEGEND
FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
TRAFFIC LANES AND MOVEMENT
HYDRO TOWER
HYDRO CORRIDOR
WALKWAY / SHARED-USE PATH

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

HIGHWAY 27 STATION

PLATE
S-6B

DATE
12/08/2017



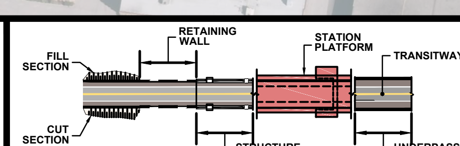
NOTE: ADEQUATE ACTIVE TRANSPORTATION CONNECTIVITY BETWEEN EXISTING BUS STOPS AND THE 407 TRANSITWAY STATION FACILITIES WILL BE DISCUSSED AND COORDINATED WITH THE CORRESPONDING MUNICIPALITIES AND TRANSIT AGENCIES, PRIOR TO THE IMPLEMENTATION PHASE.

Ontario PARSONS IBI

SCALE

20m 0 40m

Horizontal



TRAFFIC LANES AND MOVEMENT
EXISTING BUS STOP
STATION BOUNDARY
PROPERTY LINE
SWM POND
HYDRO TOWER
HYDRO CORRIDOR
UTILITY CORRIDOR
WALKWAY/SHARED USE PATH

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STATIONS

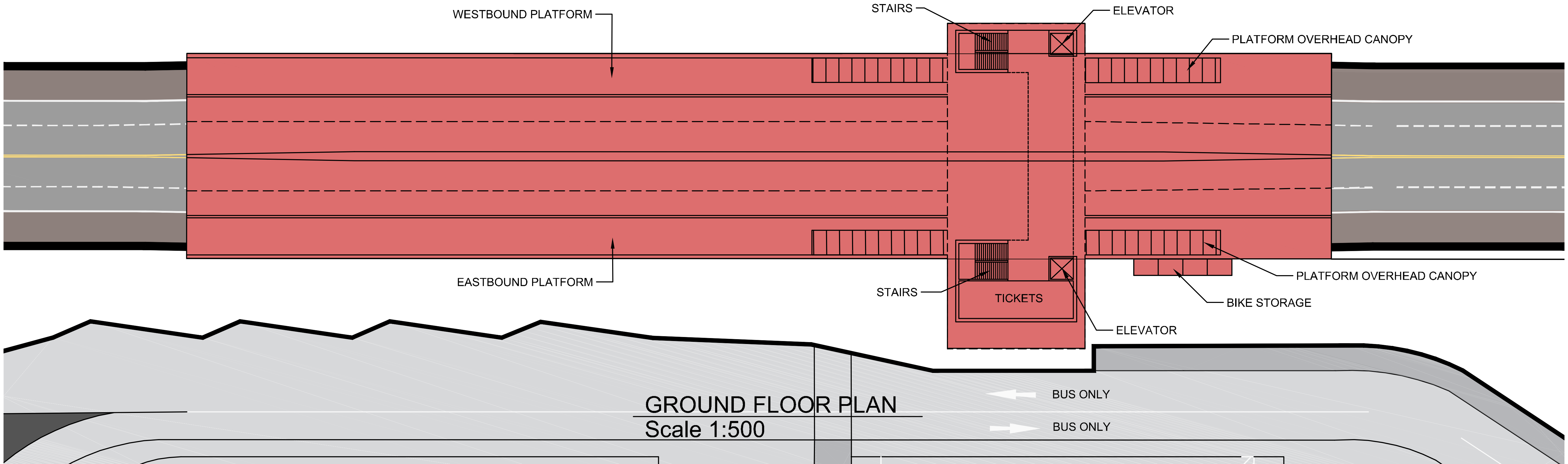
PINE VALLEY DRIVE STATION

PLATE
S-7A

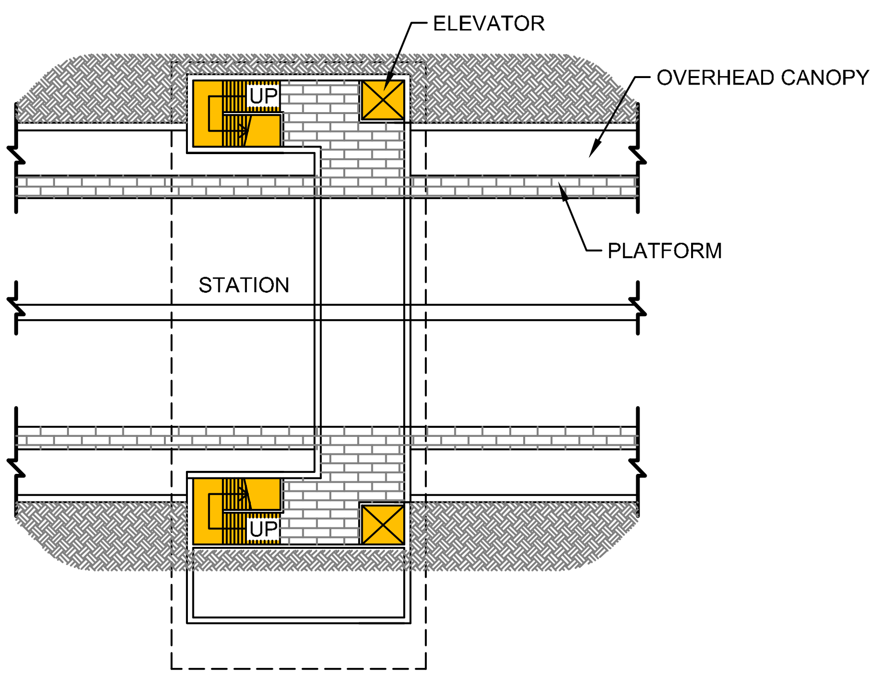
DATE
12/11/2017

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\9 - Stations\AllStations.dwg
CREATED:
MODIFIED: Aug 02, 2018 - 9:47am

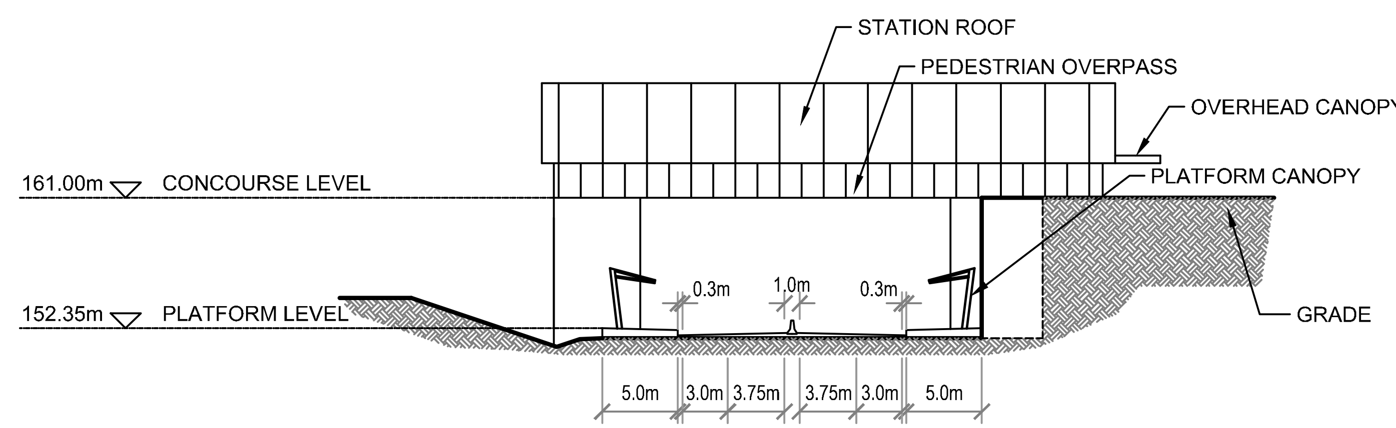
METRIC



GROUND FLOOR PLAN
Scale 1:500



PLATFORM LEVEL PLAN
Scale 1:500



SECTION A-A
Scale 1:500

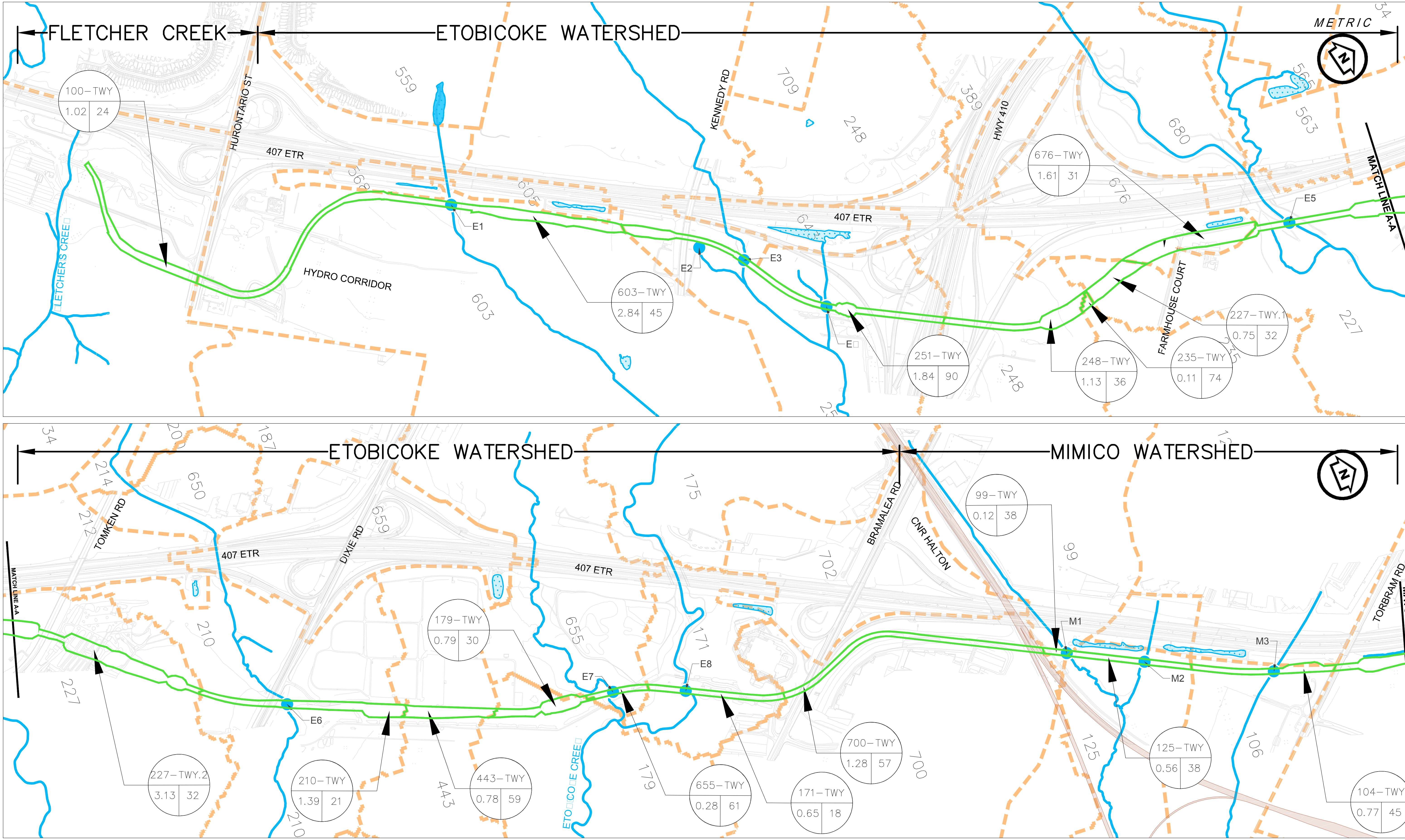
Ontario PARSONS IBI GROUP	SCALE 1:500	LEGEND	407 TRANSITWAY WEST OF HURONTARIO STREET TO EAST OF HWY 400 G.W.P. 14-20001, CA 2014-E-0013 STATIONS	PINE VALLEY DRIVE STATION	PLATE S-7B DATE 12/08/2017

LEGEND: RETAINING WALL; FILL SECTION; CUT SECTION; STRUCTURE SECTION; STATION PLATFORM; TRANSITWAY; UNDERPASS SECTION; TRAFFIC LANES AND MOVEMENT; HYDRO TOWER; HYDRO CORRIDOR; WALKWAY / SHARED-USE PATH

DRAWING NAME: C:\Users\p007847C\appdata\local\temp\AcPublish_11112\Station_Details_EPR Draft 2.dwg
CREATED: RM3 MODIFIED: Dec 08, 2017 1:48pm

Drainage Area Map

Transitway



Ontario PARSONS IBI GROUP

SCALE

0 100m 200m

1:2000

LEGEND

- TRANSITWAY LIMITS
- WATER COURSE
- WATERCOURSE CROSSING E8
- SUBWATERSHED DRAINAGE AREA BOUNDARY 123
- EXISTING POND
- AREA ID 98-1; AREA (ha) 0.44; % IMPERVIOUS 90

407 TRANSITWAY
PRO□ECT N□. □02□□□
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
E□ISTING CONDITIONS

DRAWING SET
DRAINAGE AREA MAP

FIGURE
B-1

DATE
□UNE 201□

DRAWING NAME: J:\Division\TT\Drainage\602896 -407_Transitway Hurontario\CAD\Design\Drainage Mosaic\602896- Drainage Mosaic - EX-COND.dwg
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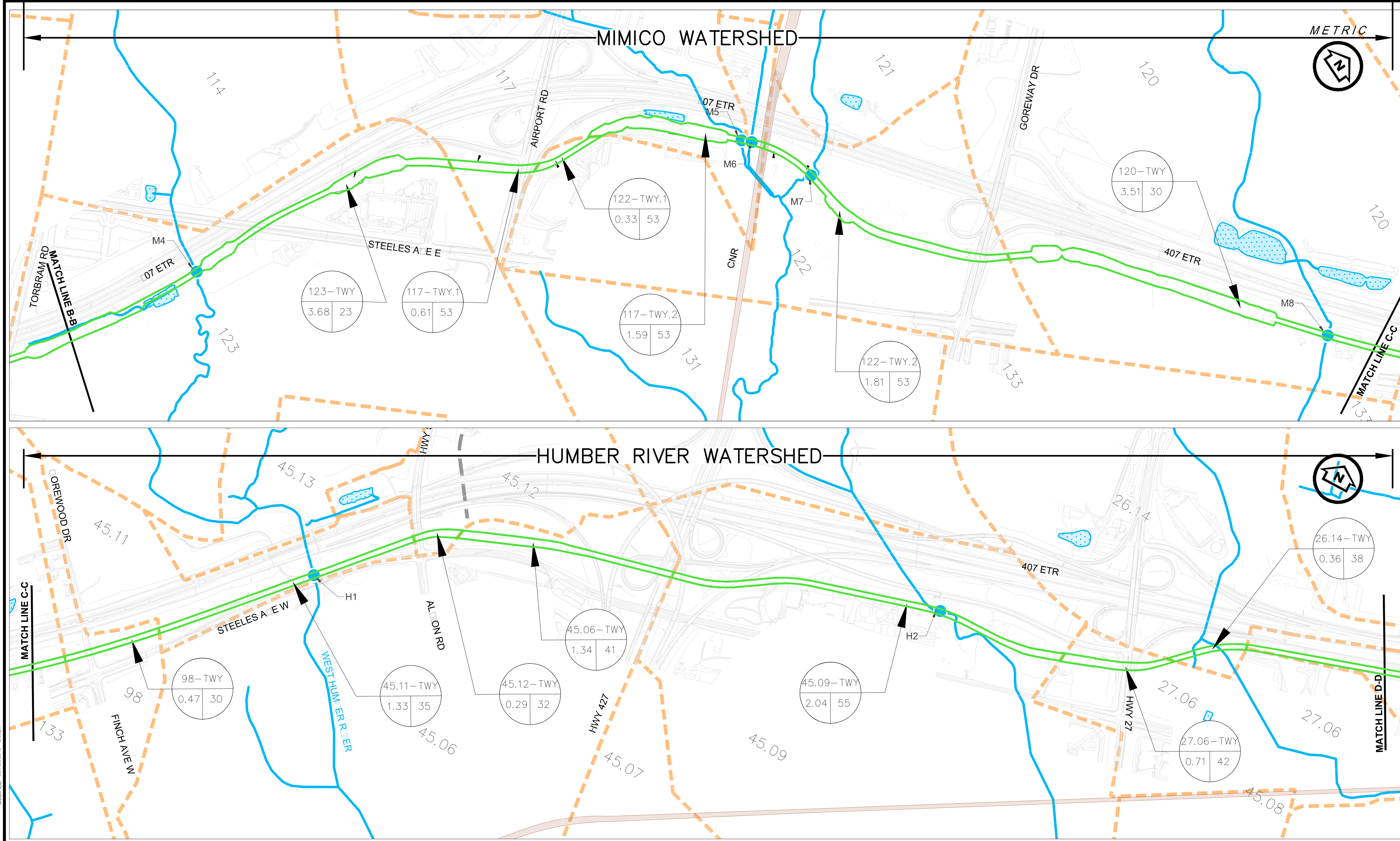

Ontario

PARSONS

IBI GROUP

SCALE

0 100m 200m

1:2000

LEGEND

TRANSITWAY LIMITS

WATER COURSE

WATERCOURSE CROSSING E8

SUBWATERSHED DRAINAGE AREA BOUNDARY 123

EXISTING POND

AREA ID 98-1

AREA (ha) 0.44 | 90 % IMPERVIOUS

407 TRANSITWAY

PRO□ECT N□. □02□□□

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

E□ISTING CONDITIONS

DRAWING SET

DRAINAGE AREA MAP

FIGURE

B-2

DATE

□UNE 201□

DRAWING NAME: J:\Division\TT\Drainage\602896 - 407_Transitway Hurontario\CAD\Design\Drainage Mosaic\602896- Drainage Mosaic - EX-COND.dwg

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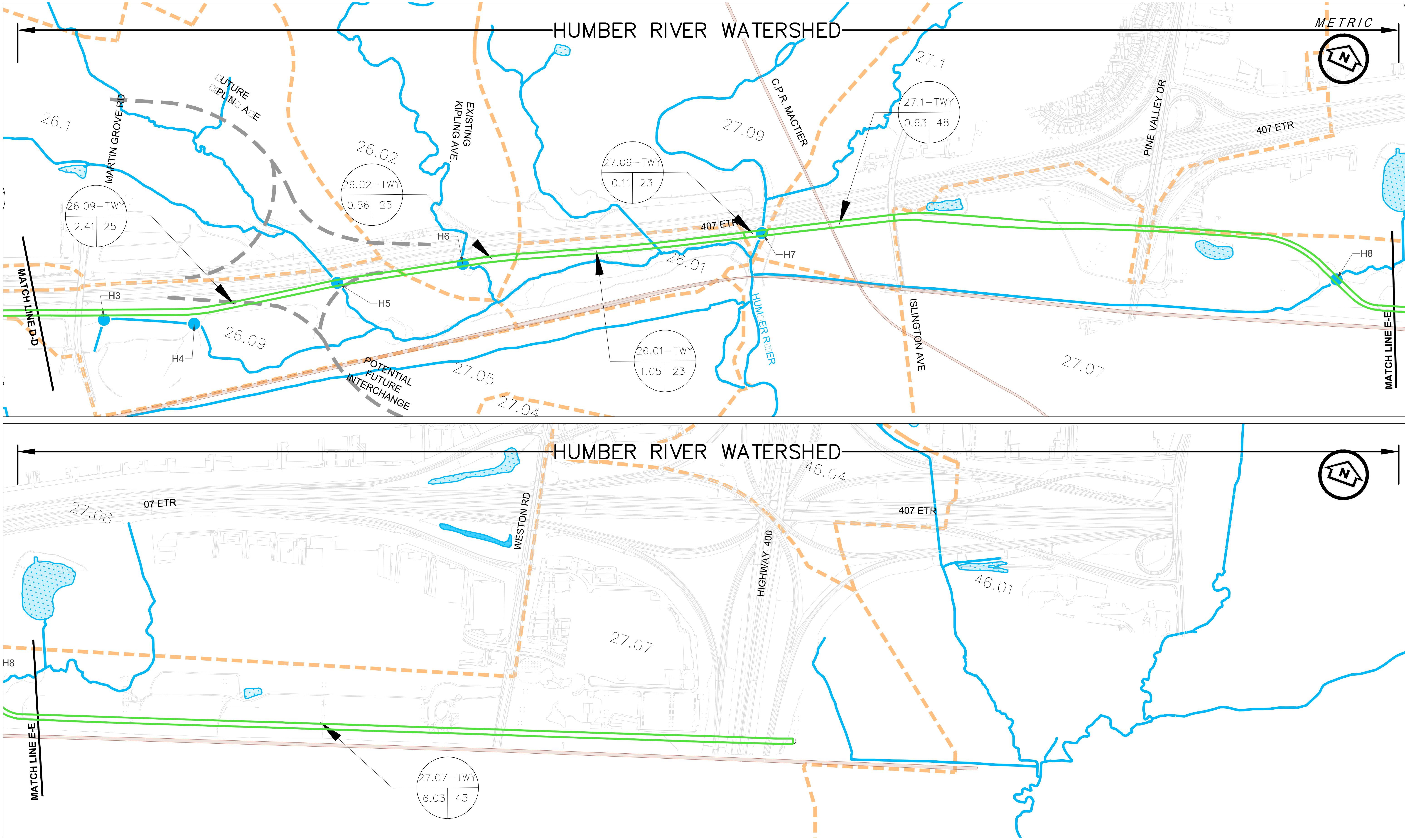


Ontario

PARSONS

IBI GROUP

SCALE

0 100m 200m

LEGEND

TRANSITWAY LIMITS

WATER COURSE

WATERCOURSE CROSSING E8

SUBWATERSHED DRAINAGE AREA BOUNDARY 123

EXISTING POND

AREA (ha) AREA ID % IMPERVIOUS

98-1 0.44 90

407 TRANSITWAY

PRO□ECT N□. □02□□□

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

E□ISTING CONDITIONS

DRAWING SET

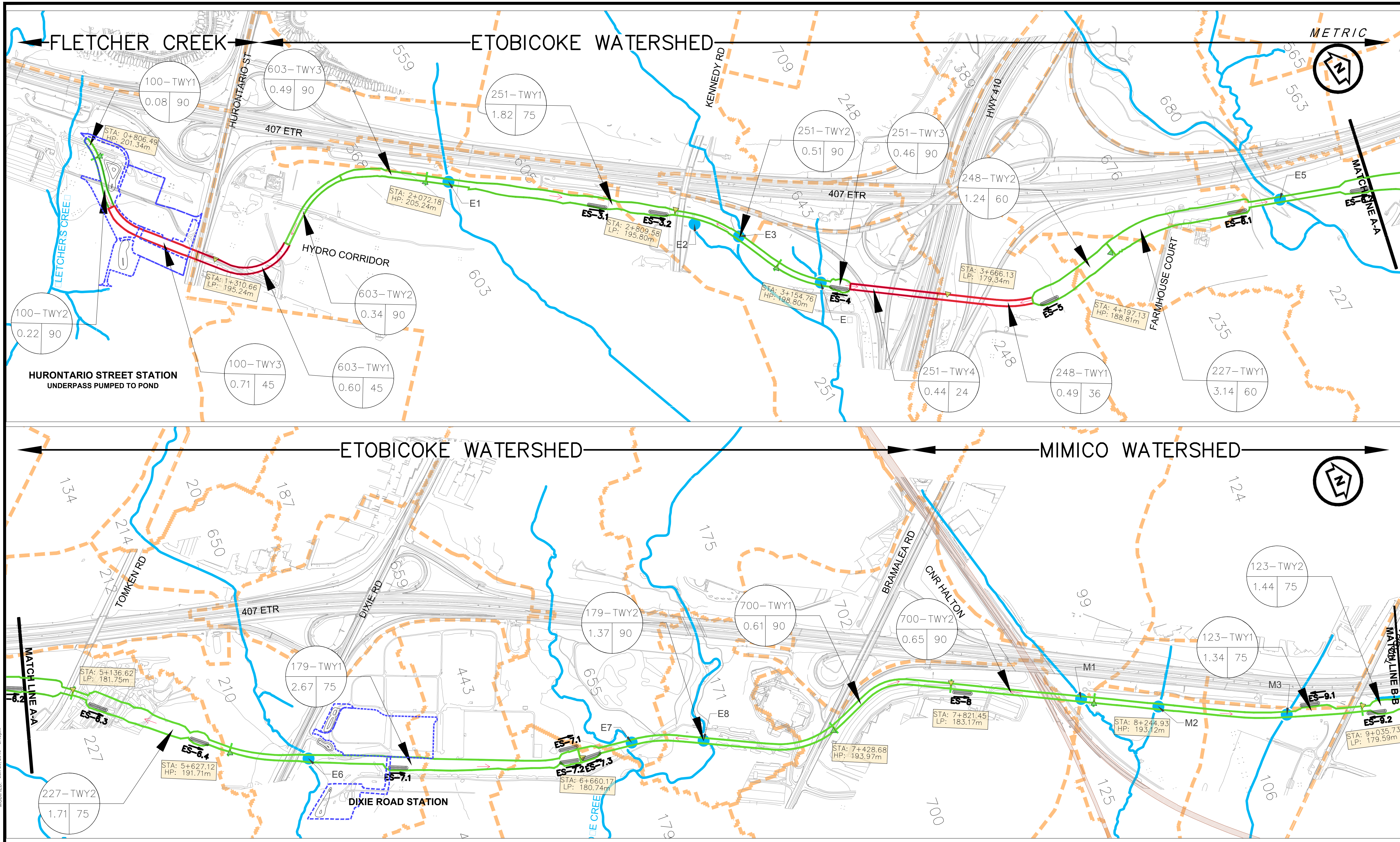
DRAINAGE AREA MAP

FIGURE

B-3

DATE

□UNE 201□



SCALE

0 100m 200m

1:2000

LEGEND

TRANSITWAY LIMITS	SUBWATERSHED DRAINAGE AREA BOUNDARY
ENCLOSED TRANSITWAY	OVERLAND FLOW ROUTE
PROPOSED 407 TRANSITWAY	STATION DRAINAGE AREA
WATER COURSE	WATERCOURSE CROSSING

ENHANCED SWALE — ES–1.2

HIGH POINT

LOW POINT

AREA ID — 98-1

AREA (ha) — 0.44

% IMPERVIOUS — 90

Ontario

PARSONS

IBI GROUP

407 TRANSITWAY

PRO□ECT N□. □02□□□

WEST OF HURONTARIO STREET TO EAST OF HWY 400

G.W.P. 14-20001, CA 2014-E-0013

PROPOSED CONDITION

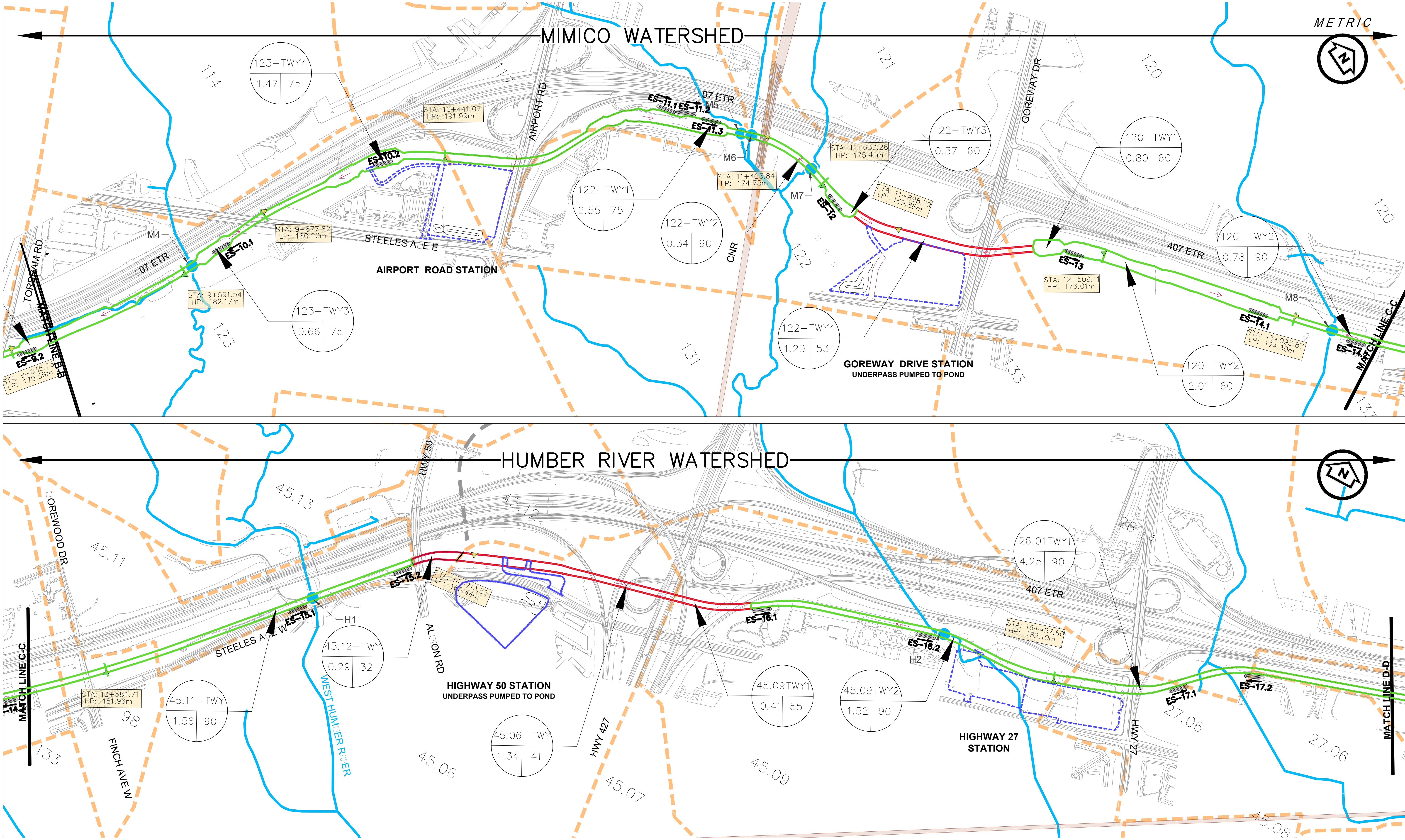
DRAWING SET

DRAINAGE AREA MAP

FIGURE C-1

DATE □UNE 201□

DRAWING NAME: J:\Division\TT\Drainage\602896 - 407_Transitway Hurontario\CAD\Design\Drainage Mosaic\602896 - Drainage Mosaic - PROP-COND.dwg
MODIFIED: Jun 20, 2018 5:43pm
CREATED: RM3



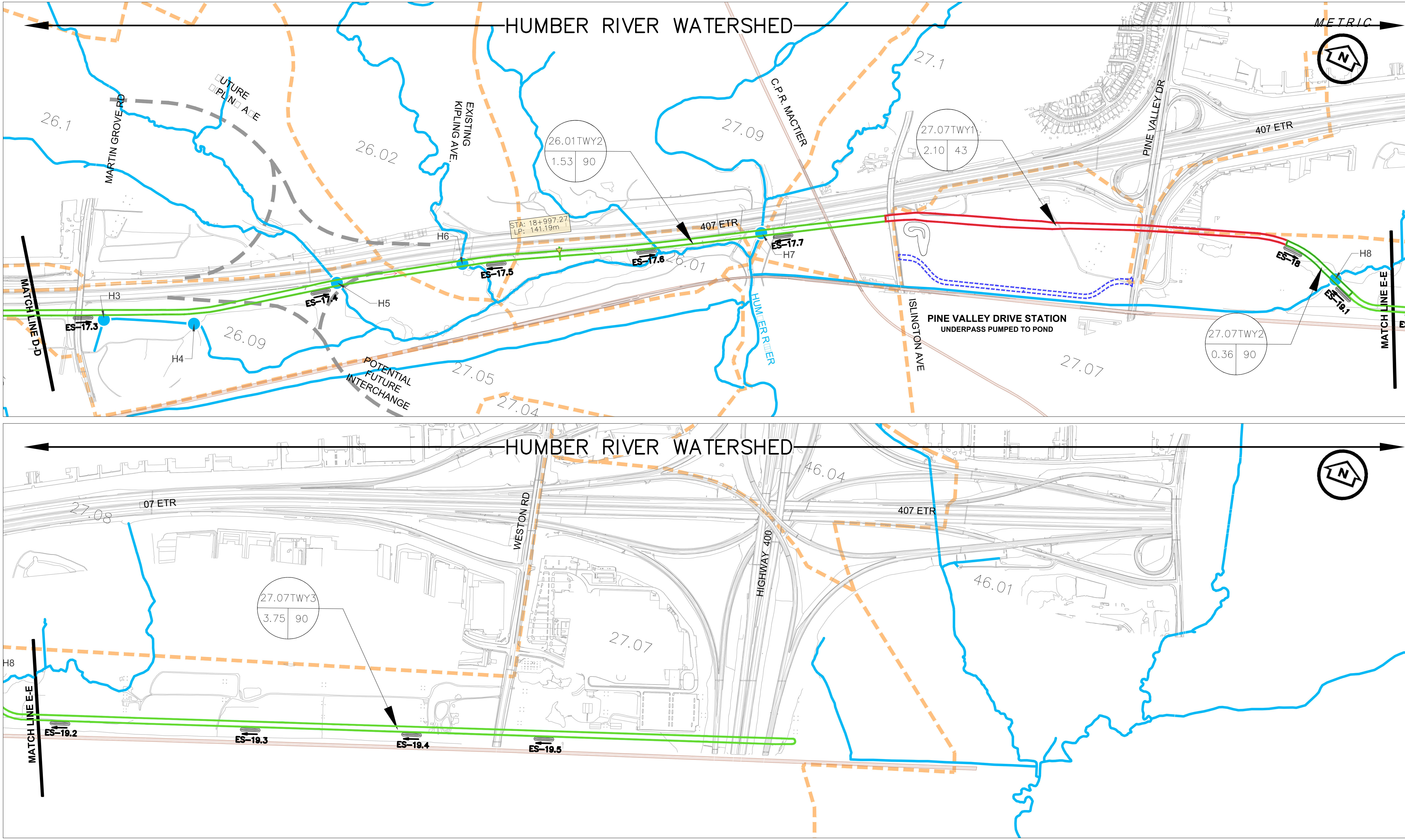
SCALE	LEGEND					
0 100m 200m	TRANSITWAY LIMITS		SUBWATERSHED DRAINAGE AREA BOUNDARY	123	ENHANCED SWALE	ES-1.2
1:2000	ENCLOSED TRANSITWAY		OVERLAND FLOW ROUTE		HIGH POINT	
	PROPOSED 407 TRANSITWAY		STATION DRAINAGE AREA		LOW POINT	
	WATER COURSE		WATERCOURSE CROSSING	E8	AREA (ha) / AREA ID / % IMPERVIOUS	98-1 0.44 90

Ontario
PARSONS
IBI GROUP

407 TRANSITWAY
PRO□ECT N□. □02□□□
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
PROPOSED CONDITION

DRAWING SET
DRAINAGE AREA MAP

FIGURE
C-2
DATE
□UNE 201□



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CREATED: RM3 MODIFIED: Jun 20, 2018 5:52pm

Ontario

PARSONS

IBI GROUP

SCALE

0 100m 200m

1:2000

LEGEND

TRANSITWAY LIMITS		SUBWATERSHED DRAINAGE AREA BOUNDARY	123	ENHANCED SWALE	ES-1.2
ENCLOSED TRANSITWAY		OVERLAND FLOW ROUTE		HIGH POINT	
PROPOSED 407 TRANSITWAY		STATION DRAINAGE AREA		LOW POINT	
WATER COURSE		WATERCOURSE CROSSING	E8	AREA ID / AREA (ha) / % IMPERVIOUS	98-1 / 0.44 / 90

407 TRANSITWAY
PRO□ECT N□. □02□□□
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
PROPOSED CONDITION

DRAWING SET

DRAINAGE AREA MAP

FIGURE

C-3

DATE

□UNE 201□

Protected Sites

SUMMARY OF PROTECTED PROPERTY SITES						
PLATE NUMBER	PIN NUMBER	LOCATION	OWNER	TYPE OF OWNERSHIP	TYPE OF PROTECTED SITE	APPROX. AFFECTED AREA (ac)
1	140291352	EAST OF HURONTARIO STREET	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	8.62
2	143000197	EAST OF KENNEDY ROAD	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	13.55
3	143000171	WEST SIDE OF FARMHOUSE COURT (1)	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF TRANSPORTATION AND COMMUNICATIONS;	Provincial	Proposed Environmental Compensation Site	9.60
3	143000049	WEST SIDE OF FARMHOUSE COURT (2)	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	15.38
4	140280344	WEST OF TOMKEN ROAD	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF PUBLIC INFRASTRUCTURE RENEWAL;	Provincial	Proposed Environmental Compensation Site	11.06
5	140280396	WEST OF SPRING CREEK	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	3.07
6	140260325	EAST OF CNR HALTON	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	12.62
7	140260317	WEST OF STEELES AVENUE EAST	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	8.26
8	Unknown	EAST OF GOREWAY DRIVE	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	8.02
9	032200044	NORTH OF STEELES AVENUE EAST AND WEST OF HWY427	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	6.10
10	032210162	EAST OF HIGHWAY 27	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF TRANSPORTATION;	Provincial	Proposed Environmental Compensation Site	1.44
11	032220705	WEST OF ISLINGTON AVENUE	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF ENERGY AND INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	14.18
12	Unknown	WEST OF WESTON ROAD	HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF INFRASTRUCTURE;	Provincial	Proposed Environmental Compensation Site	9.06

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROPERTY_PLATE_0.dwg
CREATED:
MODIFIED: Aug 09, 2018 - 9:27am

Ontario PARSONS IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013

DRAWING SET
PROTECTED SITES

PLATE
P-0

DATE
05/08/2018

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

- FILL SECTION
- CUT SECTION
- RETAINING WALL
- STRUCTURE SECTION
- STATION PLATFORM
- TRANSITWAY
- UNDERPASS SECTION
- HYDRO TOWER TOLERANCE PERIMETER
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- WATER COURSE
- PROPERTY LINE
- ENVIRONMENTAL COMPENSATION SITE
- ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 1+300.00 TO STA 2+200.00

DRAWING SET	PLATE
PROTECTED SITE	P-1
	DATE 12/15/2017

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROTECTED_SITE_PLATE_1.dwg
CREATED: RM3 MODIFIED: Aug 01, 2018 8:23am

Ontario PARSONS IBI GROUP

SCALE
10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND
FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION

HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 2+700.00 TO STA 3+500.00

DRAWING SET
PROTECTED SITE

PLATE
P-2

DATE
12/15/2017

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\1TG General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROTECTED_SITE_PLATE_2.dwg
CREATED: RM3
MODIFIED: Jul 31, 2018 3:05pm

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 3+800.00 TO STA 4+650.00

DRAWING SET
PROTECTED SITE

PLATE
P-3

DATE
05/07/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROTECTED_SITE_PLATE_3.dwg
CREATED: RM3 MODIFIED: Aug 01, 2018 1:22pm

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal

1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION

HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE

PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 4+650.00 TO STA 5+450.00

DRAWING SET
PROTECTED SITE

PLATE
P-4

DATE
05/07/2018

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CREATED: RM3
MODIFIED: Aug 01, 2018 1:33pm

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 6+320.00 TO STA 7+130.00

DRAWING SET
PROTECTED SITE

PLATE
P-5

DATE
05/08/2018

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 7+900.00 TO STA 8+700.00

DRAWING SET
PROTECTED SITE

PLATE
P-6

DATE
05/08/2018

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CREATED: RM3 MODIFIED: Aug 01, 2018 2:06pm

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 9+400.00 TO STA 10+180.00

DRAWING SET
PROTECTED SITE

PLATE
P-7

DATE
12/15/2017

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION
HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 12+050.00 TO STA 12+850.00

DRAWING SET
PROTECTED SITE

PLATE
P-8

DATE
12/15/2017

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROTECTED_SITE_PLATE_8.dwg
CREATED: RM3 MODIFIED: Aug 01, 2018 2:12pm

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

- FILL SECTION
- CUT SECTION
- RETAINING WALL
- STRUCTURE SECTION
- STATION PLATFORM
- TRANSITWAY
- UNDERPASS SECTION
- HYDRO TOWER TOLERANCE PERIMETER
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- WATER COURSE
- PROPERTY LINE
- ENVIRONMENTAL COMPENSATION SITE
- ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 14+100.00 TO STA 15+300.00

DRAWING SET
PROTECTED SITE

PLATE
P-9

DATE
05/10/2018

Ontario

PARSONS

IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION

HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY
WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 16+550.00 TO STA 17+370.00

DRAWING SET
PROTECTED SITE

PLATE
P-10

DATE
04/12/2018

DRAWING NAME: J:\TOR\602896 ON-MTO 407 TRANSITWY HURONTARIO-HWY 400\TT\5 General\03 - Drawings\7 - Property\PROTECTED SITE PLATES\407 TW3_PROTECTED_SITE_PLATE_10.dwg
CREATED: RM3 MODIFIED: Aug 01, 2018 8:28am

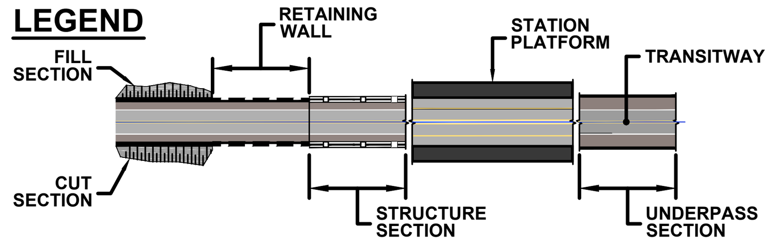
Ontario
PARSONS
IBI GROUP

SCALE

10m 0 20m Horizontal

1m 0 2m Vertical

LEGEND



- HYDRO TOWER TOLERANCE PERIMETER
- HYDRO CORRIDOR
- UTILITY CORRIDOR
- WATER COURSE
- PROPERTY LINE
- ENVIRONMENTAL COMPENSATION SITE
- ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 18+800.00 TO STA 20+000.00

DRAWING SET
PROTECTED SITE

PLATE
P-11

DATE
04/12/2018

DRAWING NAME:
CREATED: RM3
MODIFIED:

Ontario PARSONS IBI GROUP

SCALE

10m 0 20m
Horizontal
1m 0 2m
Vertical

LEGEND

FILL SECTION
CUT SECTION
RETAINING WALL
STRUCTURE SECTION
STATION PLATFORM
TRANSITWAY
UNDERPASS SECTION

HYDRO TOWER TOLERANCE PERIMETER
HYDRO CORRIDOR
UTILITY CORRIDOR
WATER COURSE
PROPERTY LINE
ENVIRONMENTAL COMPENSATION SITE
ENHANCED SWALES

407 TRANSITWAY

WEST OF HURONTARIO STREET TO EAST OF HWY 400
G.W.P. 14-20001, CA 2014-E-0013
STA 22+400.00 TO STA 23+200.00

DRAWING SET
PROTECTED SITE

PLATE
P-12

DATE
12/15/2017

DRAWING NAME:
CREATED: RM3
MODIFIED: