

WELCOME TO PUBLIC INFORMATION CENTRE #3

Detail Design and Class Environmental Assessment Study for the Highway 427 Expansion Project

At this PIC, you will have a chance to review:

An overview of the Project

The steps in the Environmental Assessment (EA) process

The Detail Design and Construction Activities

The Existing Conditions in the Project Lands

Potential Environmental Impacts and Proposed Mitigation

This information will be documented in a Design and Construction Report (DCR), which will be made available for public review as part of the Environmental Assessment process.



Project Description

The overall detail design scope of the Highway 427 Expansion Project includes the following:

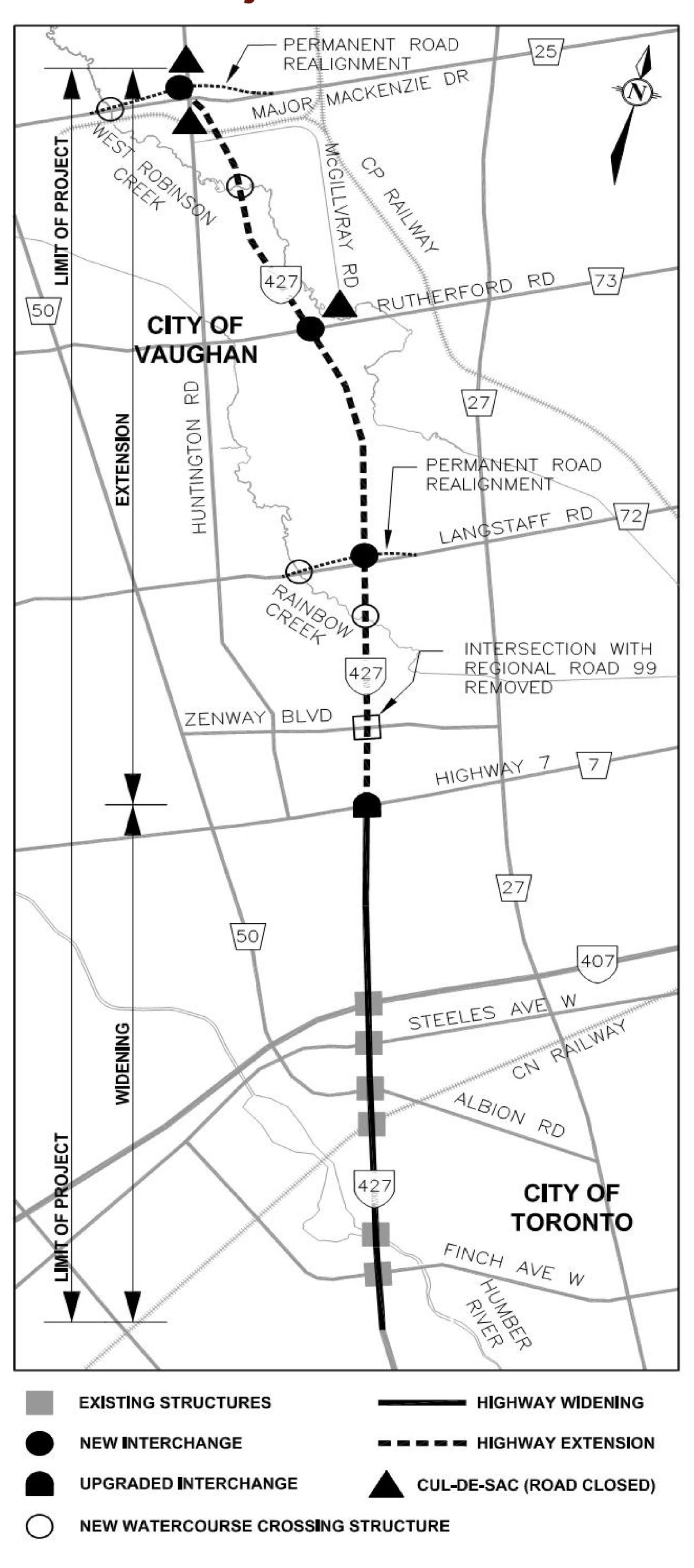
4.0 km Highway Widening from Finch Avenue to Highway 7:

- from six to eight lanes between Finch Avenue to south of Steeles Avenue;
- from four to eight lanes, from south of Steeles Avenue to Highway 7; and
- new median managed lanes.

New 6.6 km Highway Extension from Highway 7 to Major Mackenzie Drive with:

- eight lanes from Highway 7 to Rutherford Road;
- six lanes from Rutherford Road to Major Mackenzie Drive;
- three new interchanges (Langstaff Road, Rutherford Road and Major Mackenzie Drive); and
- new median managed lanes.

Project Limits





Environmental Assessment Process – Preliminary Design

This project is based on the following previous Preliminary Design and Environmental Assessment (EA) studies that together document the key elements of the Project:

- **427 Transportation Corridor Environmental Assessment Report (January 2010)**, for the extension of Highway 427 from its existing terminus at Highway 7 to Major Mackenzie Drive.
- Highway 427 from Albion Road to Highway 7 Preliminary Design and Class EA Study Transportation Environmental Study Report (November 2013), Group 'B' Class EA for the widening of the existing Highway 427 from 1.5 km south of Albion Road to Highway 7.
- Transportation Environmental Assessment Report, Highway 427 Extension Widening From Highway 7 to Major Mackenzie Drive (January 2016), Group 'B' Class EA to widen the planned extension of Highway 427 from Highway 7 to Major Mackenzie Drive.

Individual EA
Highway 427
Extension (Highway 7
to Major Mackenzie
Drive)
January 2010

TESR
Widening of Existing
Highway 427 (Albion
Road to Highway 7)
November 2013

TESR
(Update to 2010 EA)
Widening of Highway
427 Extension (Hwy 7
to Major Mackenzie
Drive)
January 2016





<u>Environmental Assessment Process – Detail Design</u>

- This project is being carried out in accordance with the approved environmental planning process for Group 'A' projects under the MTO Class Environmental Assessment for Provincial Transportation Facilities (Class EA).
- Based on the Design-Build / AFP Approach to this project, Detail Design will progress in a staged manner making it necessary to document the process in more than one Design and Construction Report (DCR).
- A series of DCRs are being prepared to document the Detail Design process for the various project components:
 - DCR #1 was prepared for advanced clearing and filed for public review in December, 2017.
 - PIC #1 was held in January, 2018 and documented the works in DCR #2.
 - o DCR #2 was filed for public review from April 10, 2018 to May 11, 2018.
 - o PIC #2 was held in May, 2018 and documented the works included in DCR #3.
 - o DCR #3 was filed for public review from August 2, 2018 to August 31, 2018.
 - The works associated with DCR #4 are being presented at this PIC.

Detail Design Notice of Study Commencement August 2017 **DCR #1** December 2017 **PIC #1** January 2018 **DCR #2** 30-day Public Review Period **April 2018 PIC #2** May 2018 **DCR #3**

30-day Public Review

Period

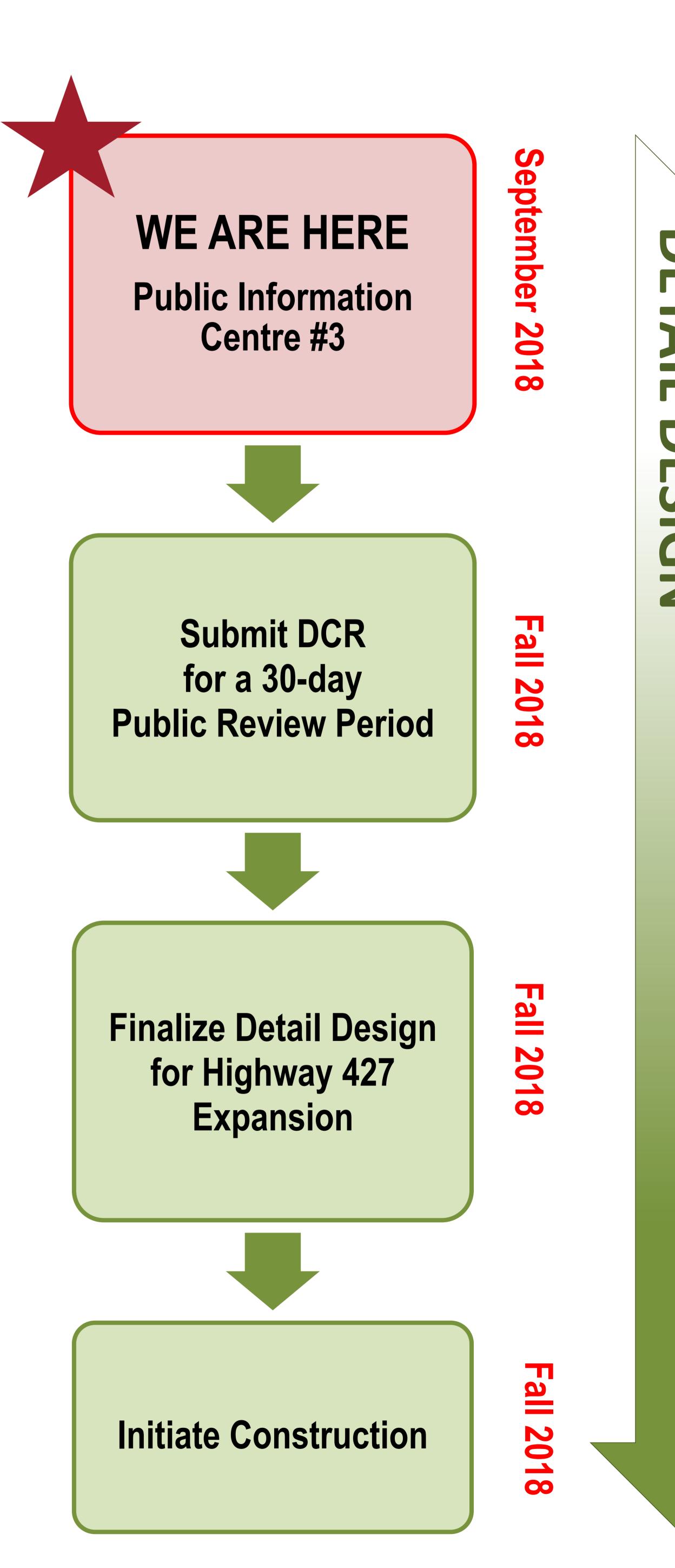
August 2018



Environmental Assessment Process – Detail Design

This PIC presents the Detail Design process that will be documented in the upcoming Design and Construction Report (DCR) which will include the following:

- An overview of the project and the EA process;
- A summary of consultation activities undertaken;
- A detailed description of the undertakings;
- A description of potential effects on the environment, as well as proposed mitigation measures; and
- Commitments to future work and monitoring.
- In accordance with the MTO Class EA, the next DCR will be submitted for a 30-day public review period in Fall 2018.
- The detail designs for the construction works addressed by the next DCR will be finalized taking into consideration comments received.
- Construction will commence on the works contained in the next DCR in 2019.





Overview of the Proposed Construction Works

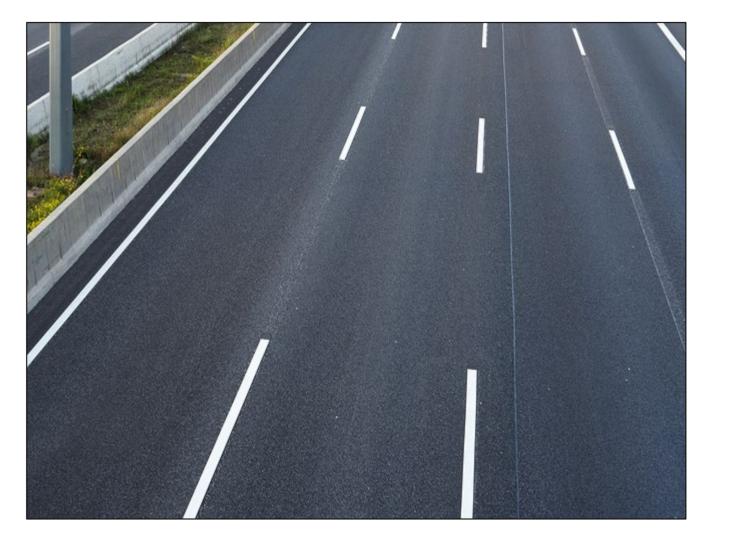
The following is an overview of the proposed construction works presented as part of this PIC and DCR #4:

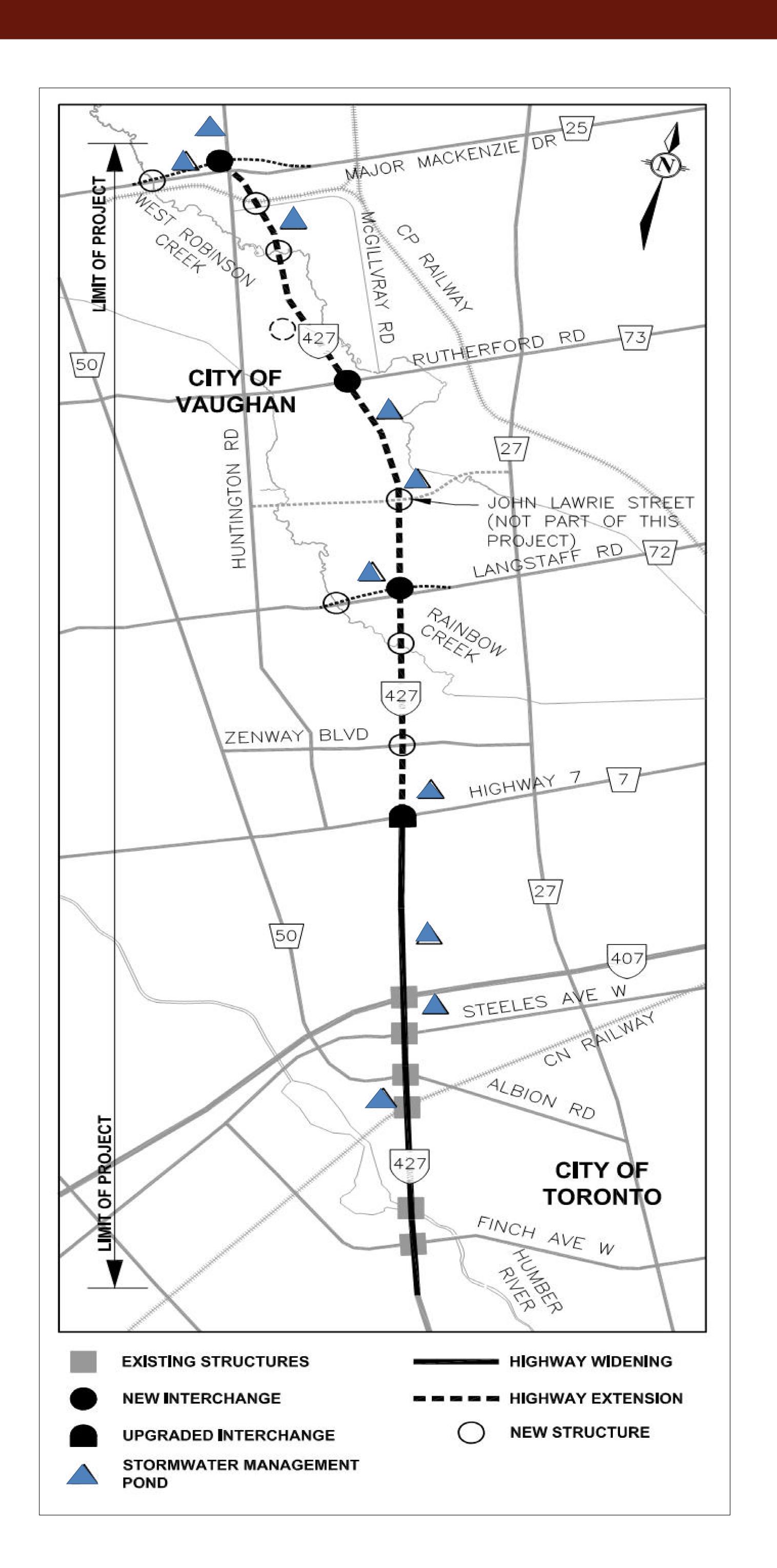
- The construction of new Overpasses at the future extension of John Lawrie Street and Rutherford Road.
- Electrical (street lighting, traffic lights etc.) for the Widening and Extension of Highway 427
- Intelligent Transport Systems (ITS) for the Widening and Extension of Highway 427
- Guiderail and barriers for the Extension of Highway 427
- Pavement Markings & Traffic Signage for the Extension of Highway 427
- Water Resources / Stormwater Ponds for the Extension of Highway 427











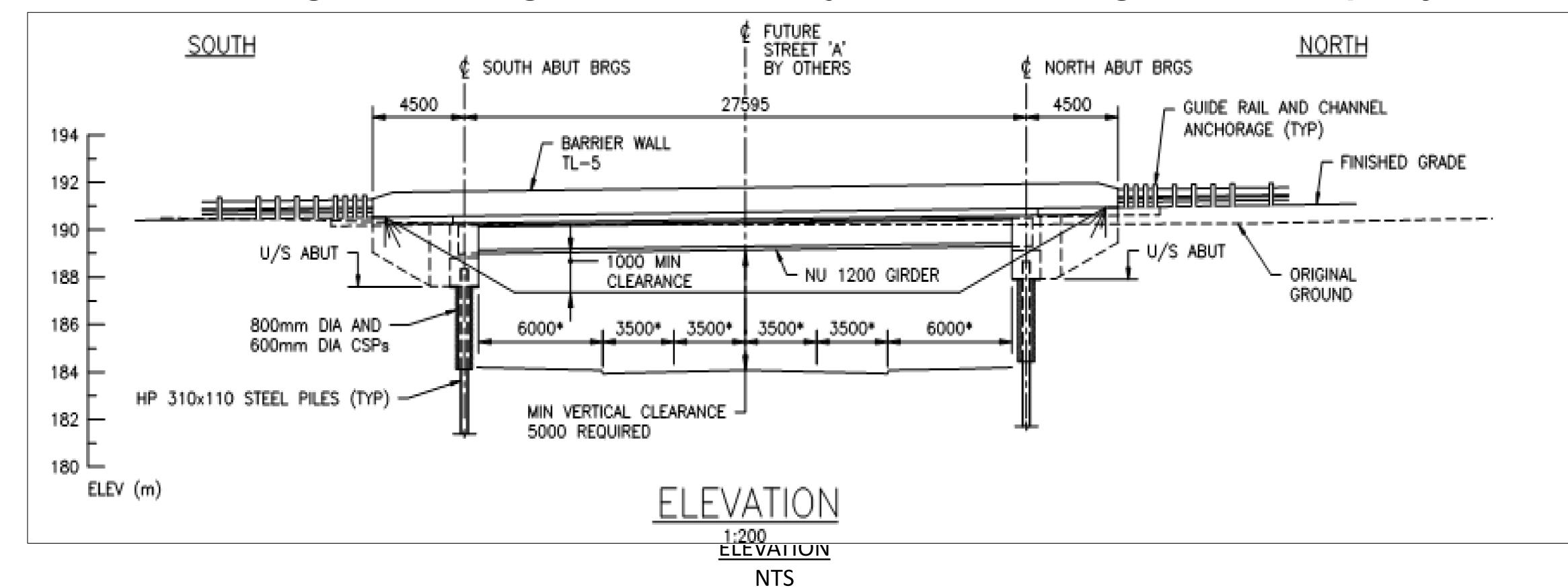


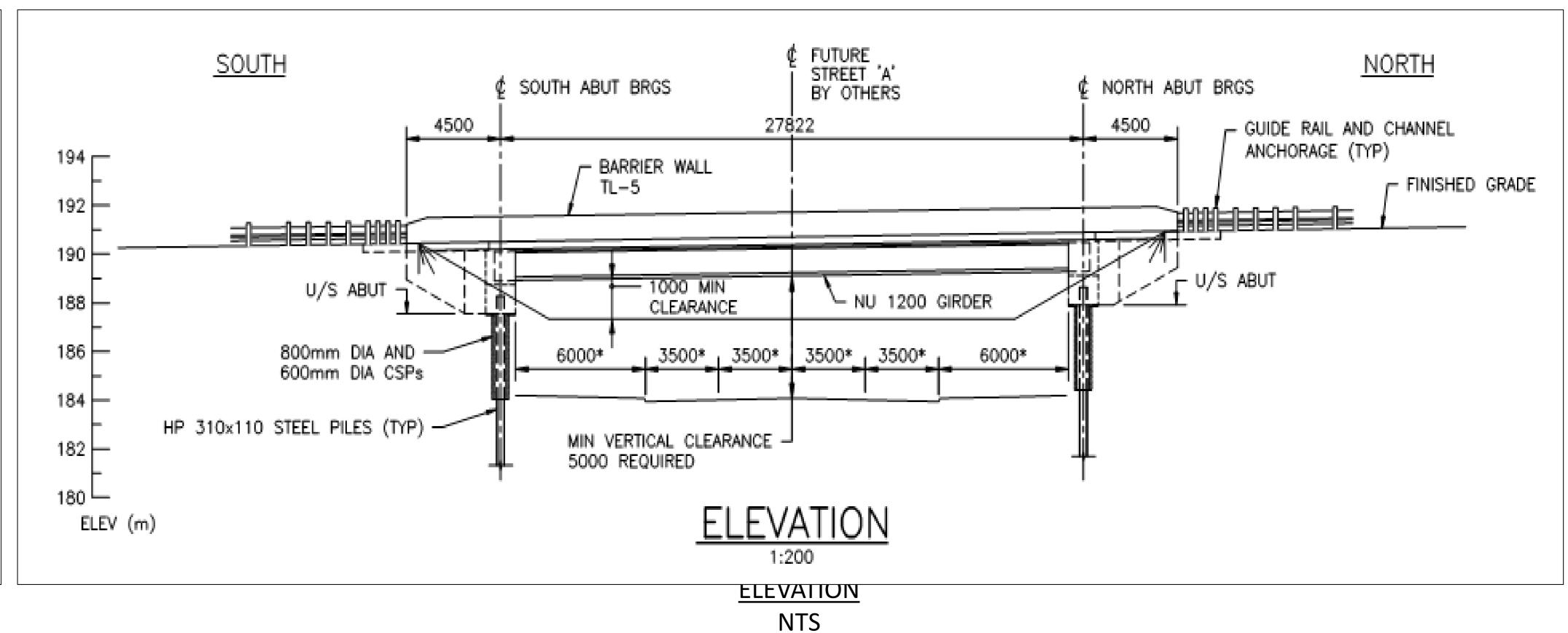
Highway 427 Overpass at Future John Lawrie Street

- 1 New Structure (Northbound Lanes)
 - Single-span bridge with a total length of 27.6 m.
 - 1 Ramp Lane, 3 General Purpose Lanes, and 1 Managed Lane in the northbound direction towards Rutherford Road.
 - 1.0 m minimum height will be provided to ground level, designed to provide a 5.0 m minimum height to John Lawrie St. (access to future development).
 - The detail design process has resulted in a reduction of the bridge span from 42 m to 27.6 m. This does not result in any change to the future John Lawrie Street road surface dimensions.
- New Structure (Southbound Lanes)
 - Single-span bridge with a total length of 27.8 m.
 - 1 Ramp Lane, 3 General Purpose Lanes, and 1 Managed Lane in the southbound direction towards Langstaff Road.
 - 1.0 m minimum height will be provided to ground level, designed to provide a 5.0 m minimum height to John Lawrie St. (access to future development).
 - The detail design process has resulted in a reduction of the bridge span from 42 m to 27.8 m. This does not result in any change to the future John Lawrie Street road surface dimensions.

OVERPASSES FOR FUTURE JOHN LAWRIE STREET

These 50% designs are being reviewed in conjunction with Regional Municipality of York and the City of Vaughan







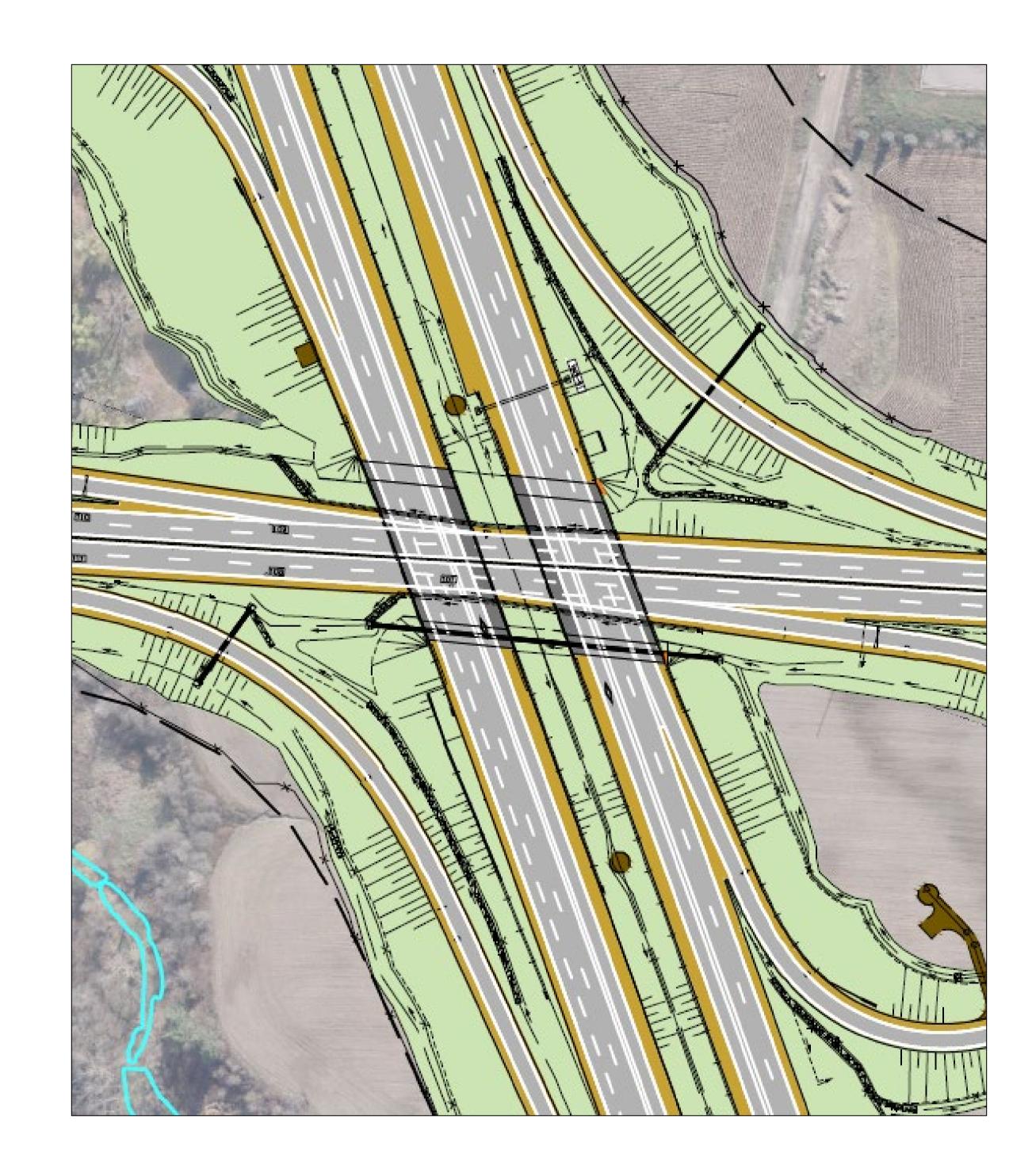
Highway 427 Overpass at Rutherford Road

1 New Structure (Northbound Lanes)

- The detail design process has resulted in a reduction from a 68 m two span bridge to a single-span bridge with a total length of 42.8 m and a minimum height of 5.85 m.
- Structure carries 1 Ramp Lane, 2 General Purpose Lanes, and 1 Managed Lane in the northbound direction towards Major Mackenzie Drive.
- No short-term traffic impacts to the travelling public as there will be no lane reductions at Rutherford Road. However, some nightwork for construction staging will occur.
- No long-term traffic impacts to the travelling public are expected as a part of these works.
- The Design accounts for future expansion of Rutherford road, which accommodates 6 lanes of traffic and future 1.9 m boulevards on both sides of the road, a sidewalk on the north side and a multi-use path on the south.

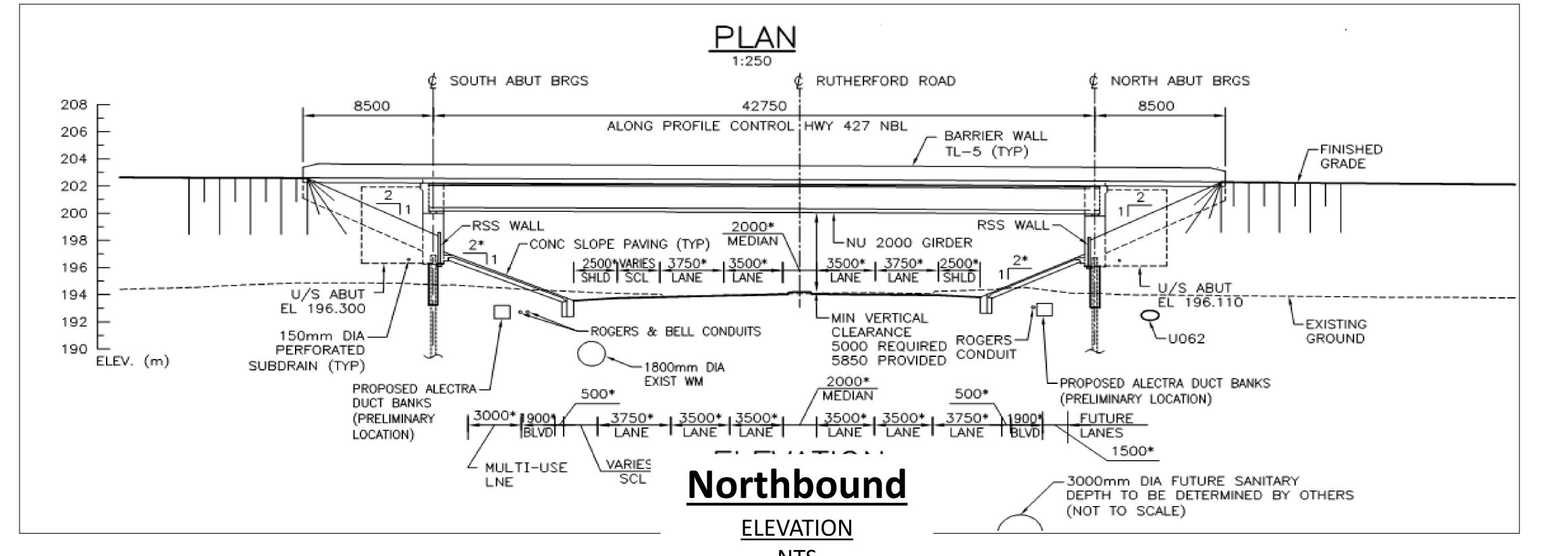
New Structure (Southbound Lanes)

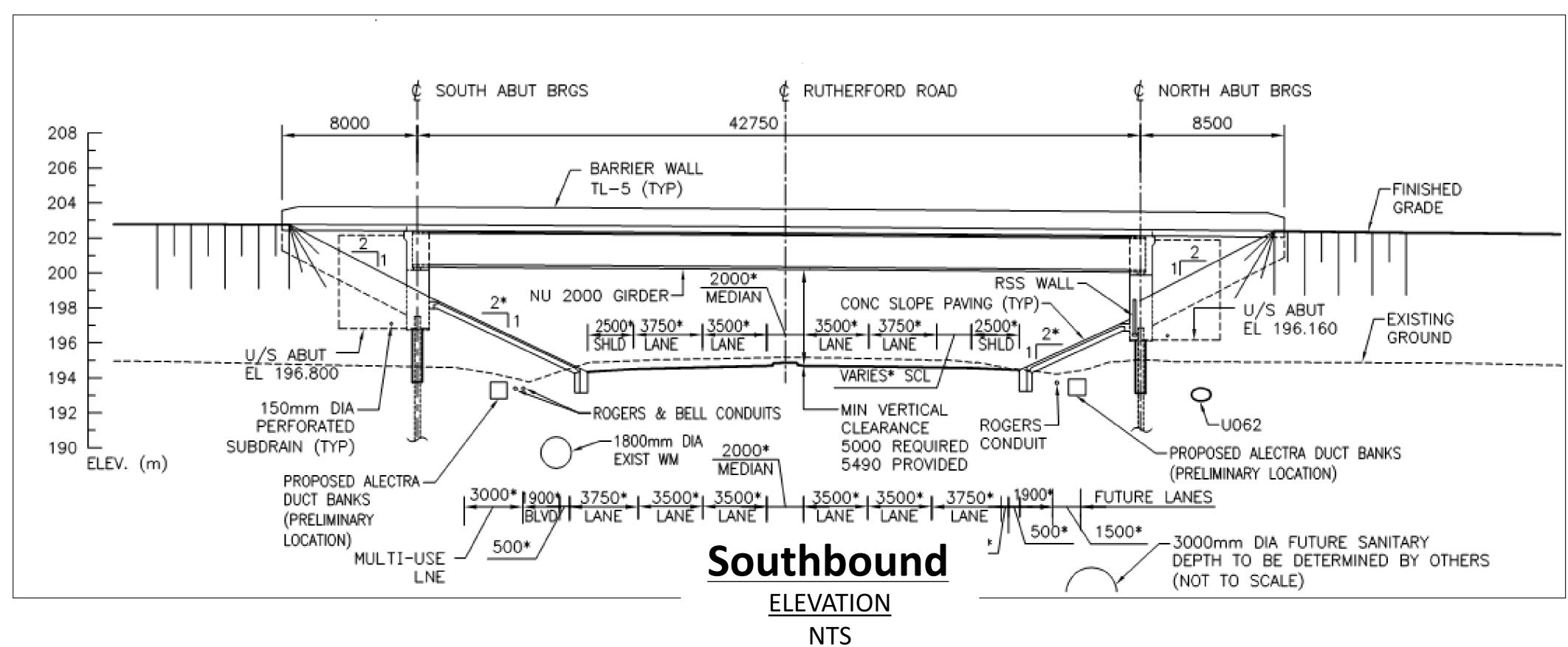
- The detail design process has resulted in a reduction from a 68 m two span bridge to a single-span bridge with a total length of 42.8 m and a minimum height of 5.49 m
- Structure carries 1 Ramp Lane, 2 General Purpose Lanes, and 1 Managed Lane in the northbound direction towards Langstaff Road.
- No short-term traffic impacts to the travelling public as there will be no lane reductions at Rutherford Road. However, some nightwork for construction staging will occur.
- No long-term traffic impacts to the travelling public are expected as a part of these works.
- The Design accounts for future expansion of Rutherford road, which accommodates 6 lanes of traffic and future 1.9 m boulevards on both sides of the road, a sidewalk on the north side and a multi-use path on the south.



These 50% designs are being reviewed in conjunction with

Regional Municipality of York and the City of Vaughan

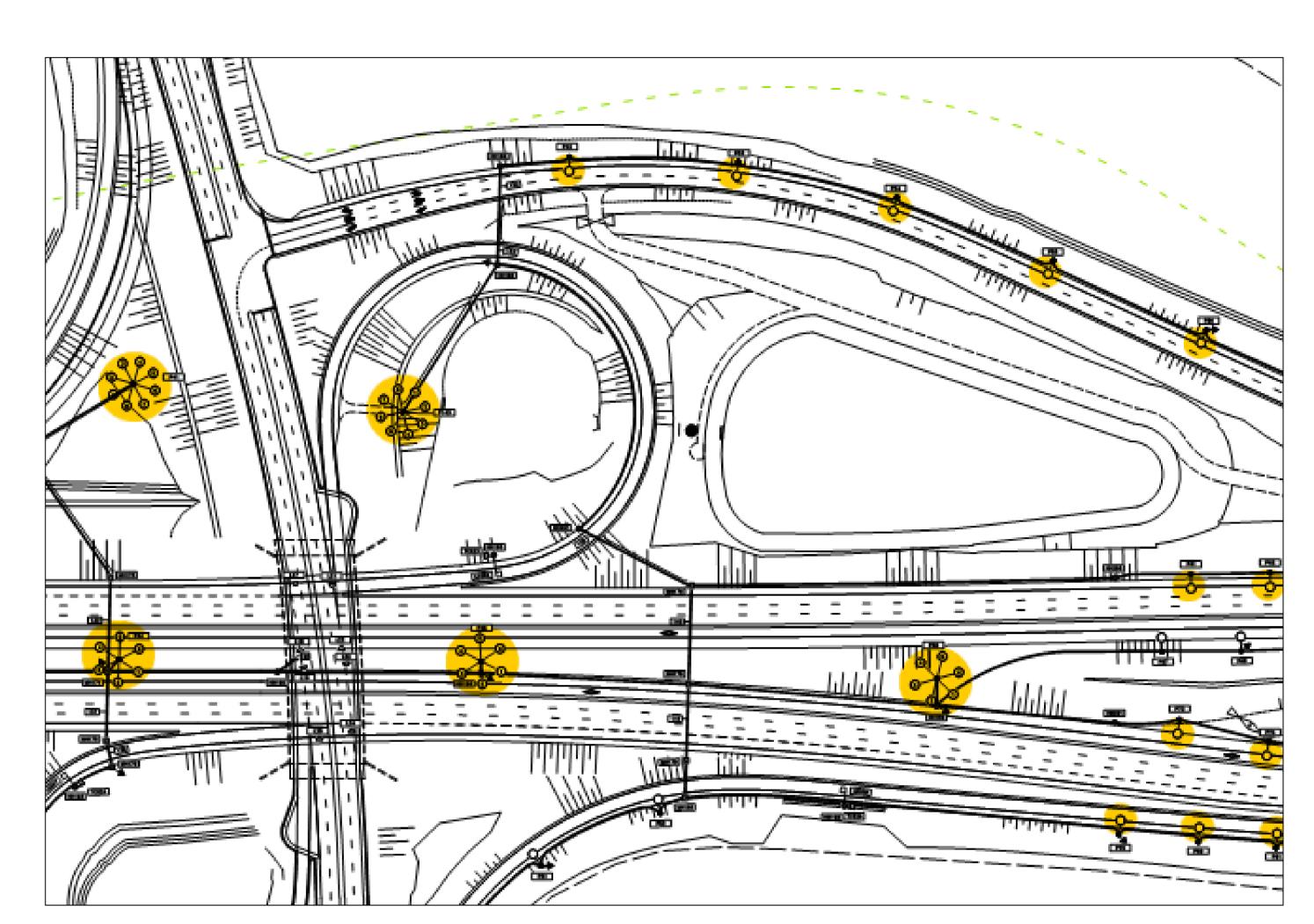






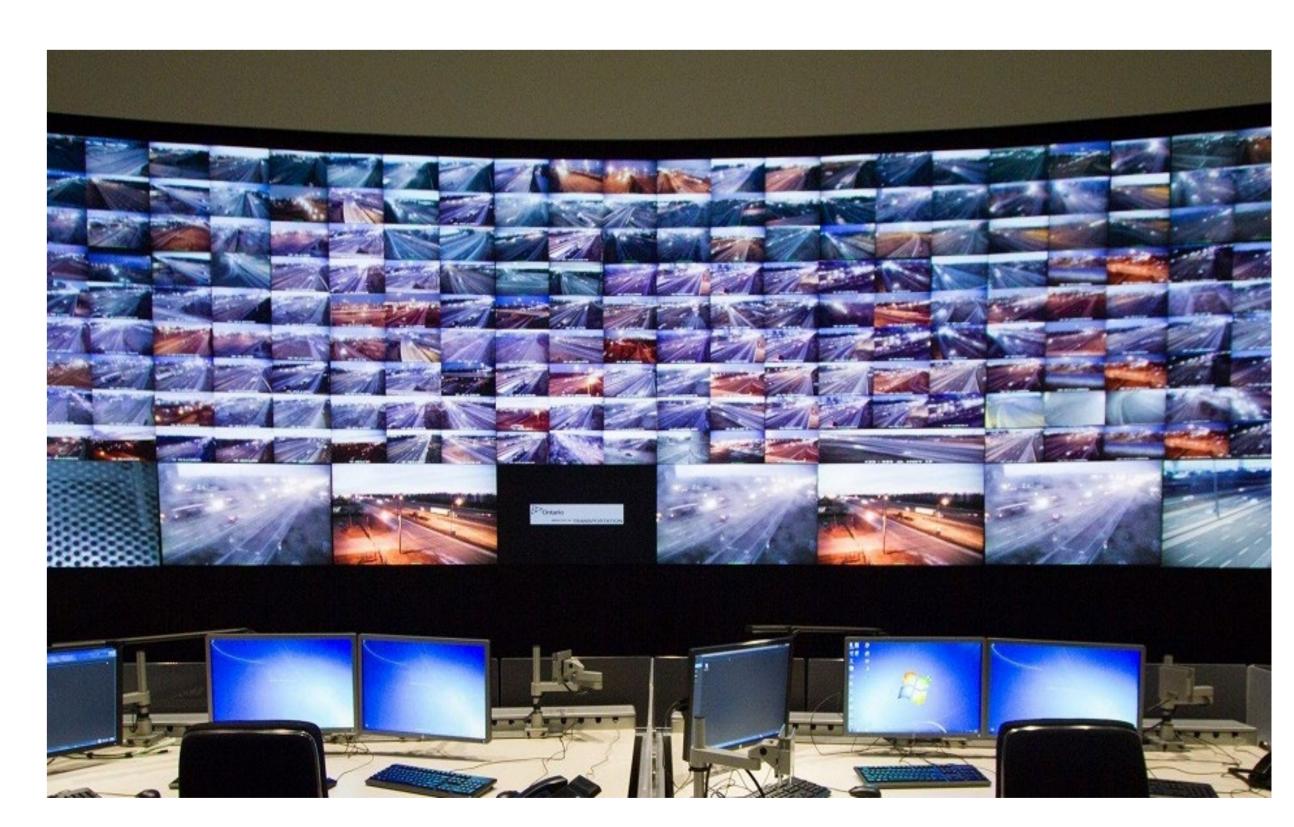
Electrical (street lighting, traffic lights etc.)

- The Highway 427 Expansion project will be fully illuminated with a combination of High Mast Lighting poles as well as typical street light poles and luminaires.
- Lighting throughout will be Light Emitting Diode (LED) with the exception of Zenway Boulevard where municipal standards will be used.
- As part of the new interchanges at Langstaff Road, Rutherford Road, and Major Mackenzie Drive, upgrades will also include new signalized intersections at highway ramps to manage movements of traffic exiting the highway.



Intelligent Transport Systems (ITS)

- LINK427 will provide ITS for the entire project limits of the Highway 427 Expansion.
- ITS elements will include the following Subsystems: electrical power supply, variable message signs, vehicle detection, queue warning, closed circuit television and video/data communication.
- Elements of the ITS will provide rapid detection, response and dissemination of incidents, roadway condition and travel time information to all users including local communities, emergency service providers, commercial fleets, and broadcast media.
- LINK will also provide civil provisions for a future Managed Lane system.



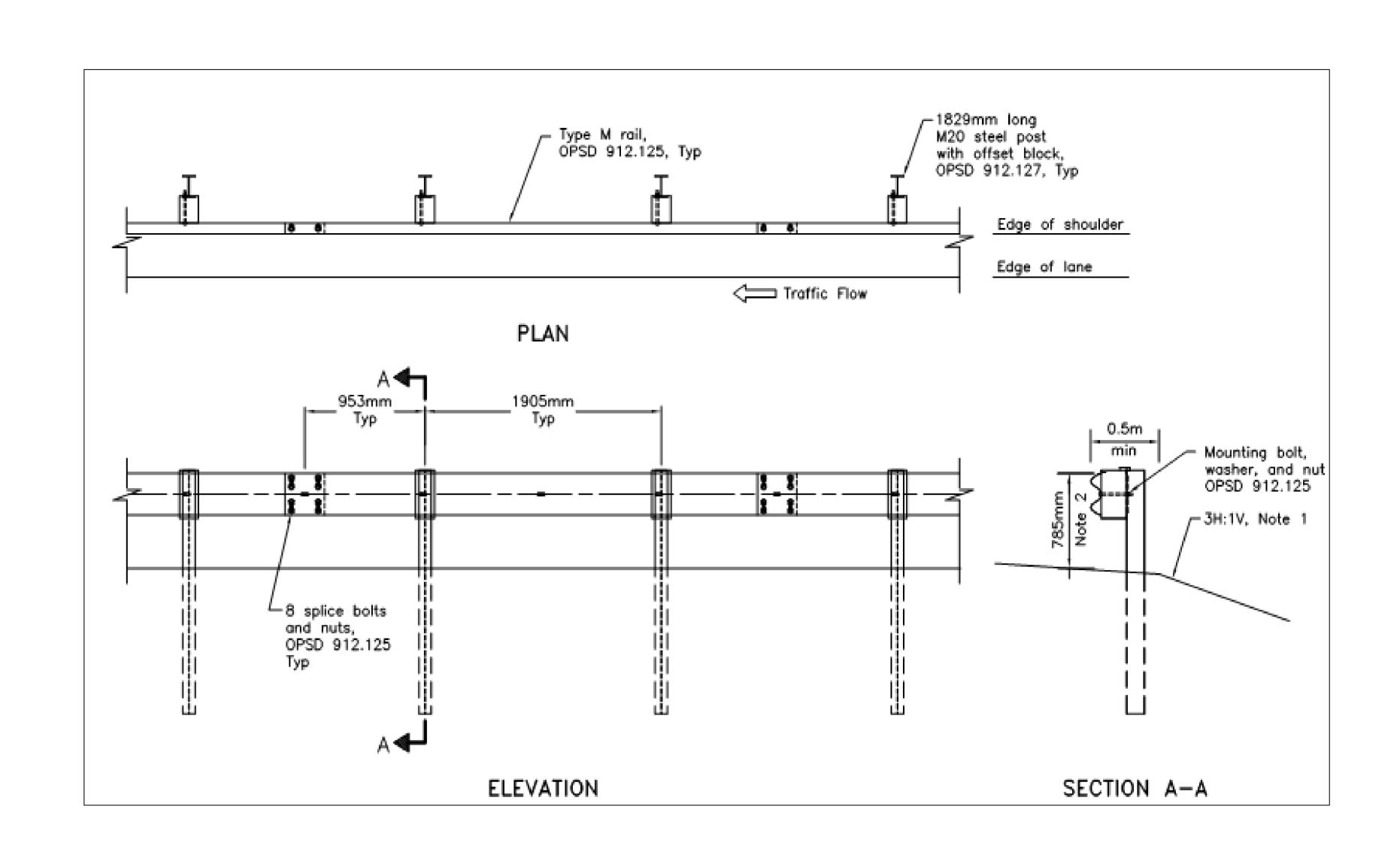
MTO Traffic Operations Centre (CRCTMC)

http://futurebnd.com/project/ministry-of-transportation-ontario-its/



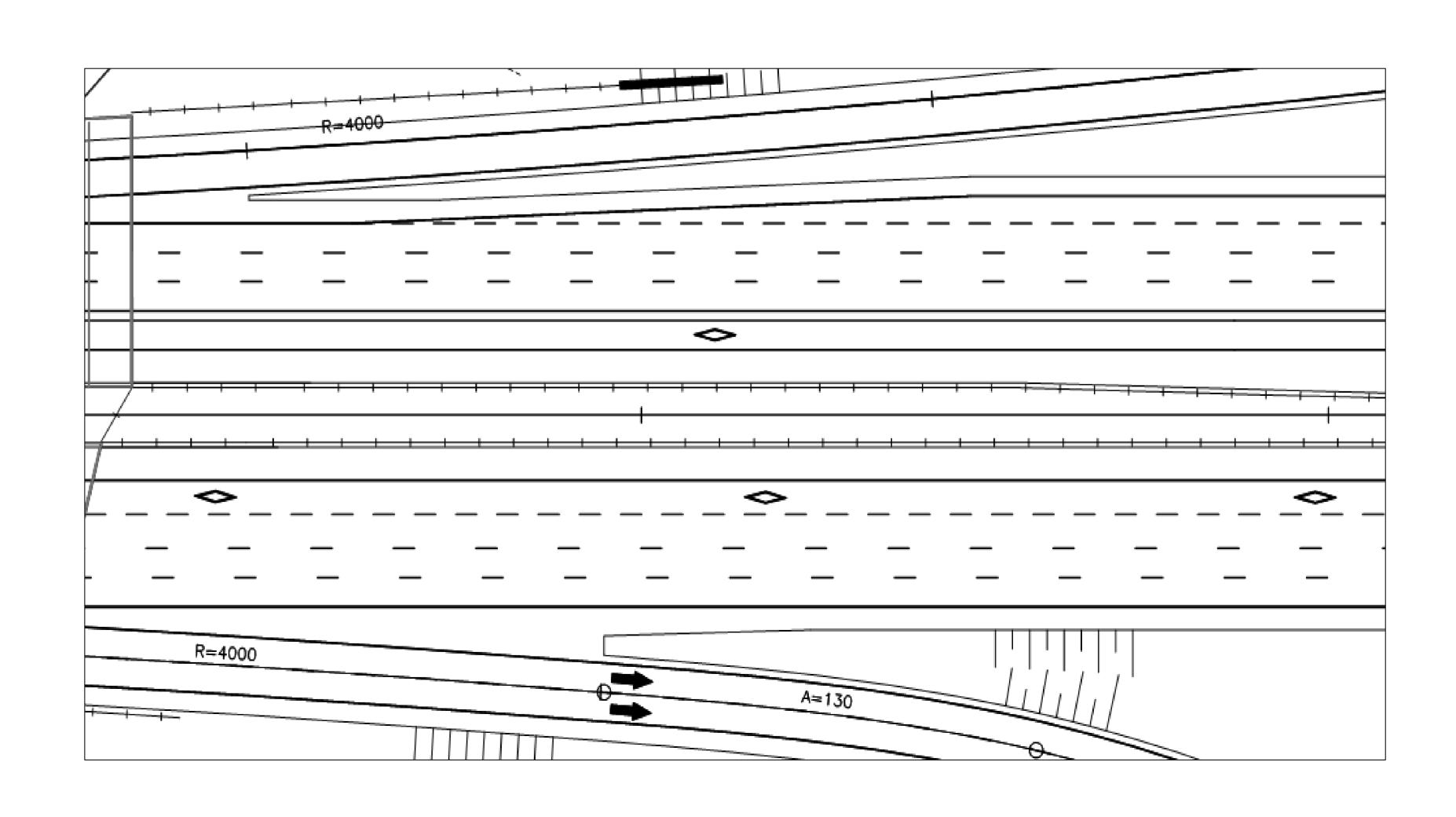
Guiderail and Barriers

- The design of the new extension of Highway 427 includes guiderails and barriers where necessary.
- North of Highway 7, Steel Beam Guiderail is primarily utilized to ensure user safety.
- All barriers, guiderails and crash systems/attenuators will comply with MTO guidelines.



Pavement Markings & Signage

- Pavement markings combined with road signs provide important information about the direction of traffic, regulations, and driving conditions. This work will be taking place during the night to minimize traffic impacts with existing traffic and during the day for the segments of the highway expansion that currently have no existing traffic.
- LINK427 will provide signage (overhead, ground mounted) at all approaches to and from the highway at each interchange.
- LINK427 will provide signage and line markings to delineate and identify Managed Lanes along the entire project limits of the Highway 427 Expansion.
- Line markings will assist in vehicle guidance, and will comply with MTO and CSA standards.





PRELIMINARY DESIGN STORMWATER MANAGEMENT (SWM)

- The Preliminary Design Stormwater Management (SWM) strategy consists of utilizing flat-bottomed grassed swales and stormwater management ponds to provide quality and quantity control to runoff.
- The SWM ponds were sized to meet the pre-development peak stormwater release rates.
- The SWM strategy provides enhanced level quality control.
- The following ponds were proposed (2016 TESR):
 - North of Highway 7: 7 wet ponds and 2 enhanced grassed swales

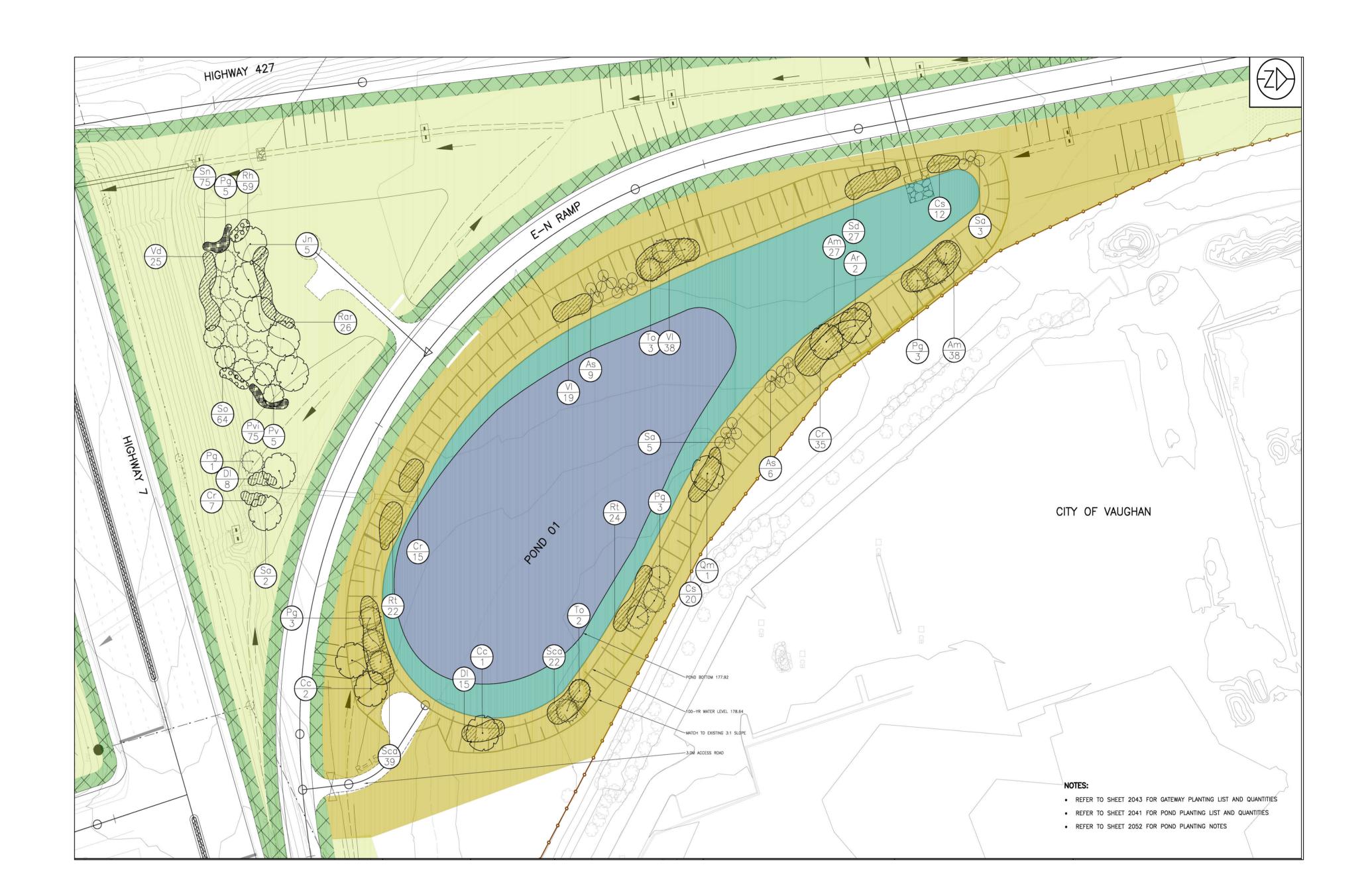
DETAIL DESIGN STORMWATER MANAGEMENT

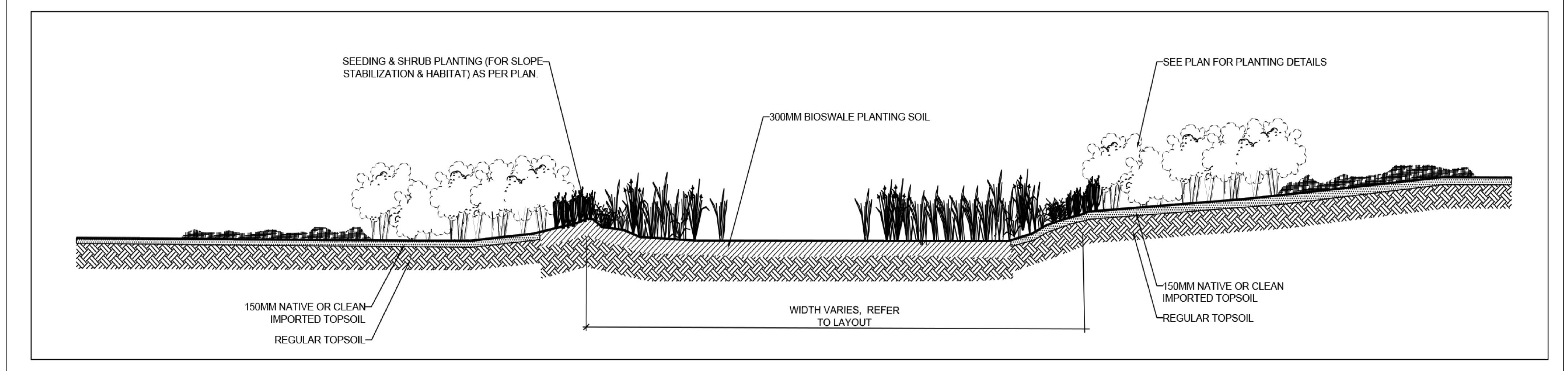
- The Detail Design stormwater management strategy consists of utilizing a multiple step approach by means of flat-bottomed grassed swales, grassed embankments, oil grit separators (OGSs), enhanced grassed swales and stormwater management ponds to provide quality and quantity control to runoff.
- The SWM ponds were sized to meet pre-development peak stormwater release rates.
- The SWM strategy provides enhanced level quality control consistent with the preliminary design.
- The following ponds are now proposed:
 - North of Highway 7: 8 dry ponds and 6 enhanced grassed swales
 - The additional dry pond is located at the north east quadrant of Highway 7 and Highway 427.
 - The 2 preliminary enhanced swales have been reconfigured into 5 swales and there is 1 additional swale located at the south east quadrant of West Robinson Creek and Highway 427.
 - Meadow marsh planting has been incorporated into the dry pond design.



Water Resources / Stormwater Ponds

- Similar to the existing Highway 427 corridor, the proposed stormwater management strategy for the new extension consists of using flat-bottomed grassed swales in all locations and implementation of stormwater management ponds to provide quality and quantity control to runoff.
- Quality controls will provide enhanced level quality protection.
- The dry ponds being proposed control peak flows of runoff and are lined with vegetation on the bottom as they only hold water temporarily after rain events to allow settlement of pollutants.





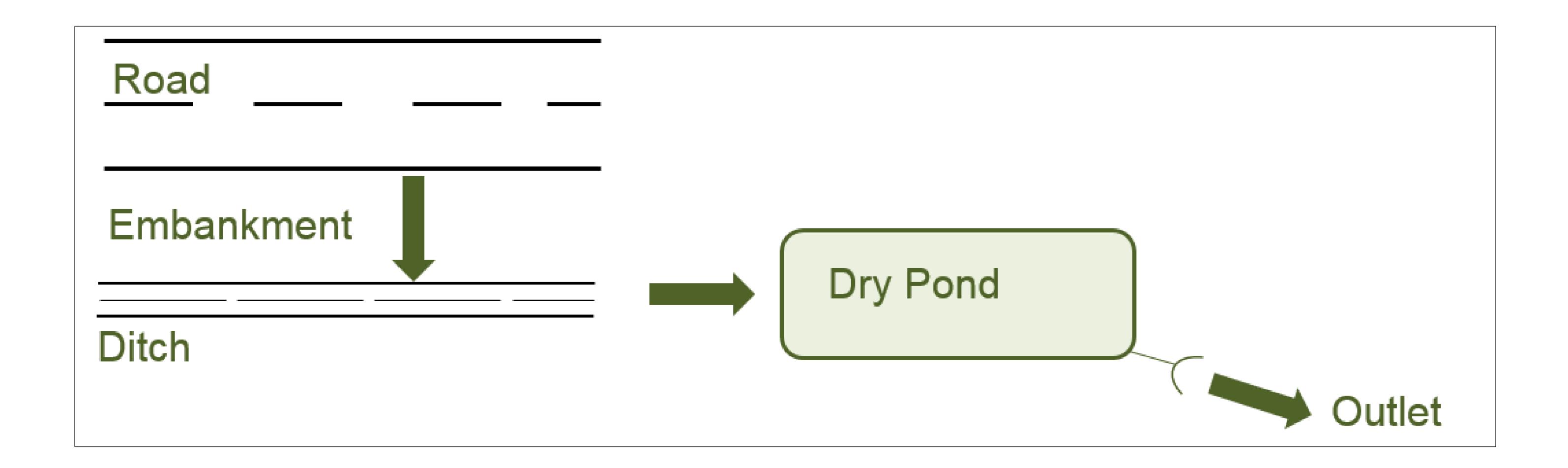
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MEADOW MARSH/SHALLOW MARSH CROSS SECTION, TYP.



REASON FOR CHANGES FROM PRELIMINARY DESIGN TO DETAIL DESIGN

- In every project there is an advancement in the design as the undertaking transitions from Preliminary Design to Detail Design. This is based on the greater level of detail and additional information available in Detail Design.
- According to the greater level of information available in Detail Design, such as updated geotechnical considerations; a more refined grading plan; an updated understanding of the spatial limitations and interactions with the groundwater table; a better understanding of utility conflicts; etc.
- As part of the Detail Design analysis, it was decided that the use of dry ponds was more desirable.
- Dry ponds mitigate thermal effects of stormwater runoff. Wet ponds introduce inherent thermal impacts to receiving waterbodies due to warming of the permanent pool between rainfall events, whereas a dry pond has no permanent pool.
- The same level of quality treatment and quantity control provided by wet ponds will be afforded by the proposed stormwater management strategy, which takes a multiple-step approach to address water quality treatment involving: vegetated embankments, grassed swales, enhanced grassed swales and dry ponds. According to the MECP guidelines, the multiple step approach meets the criteria for water balance, water quantity, erosion control and water quality. Quality control measures of the proposed multiple step approach meet the MECP Enhanced Level Treatment for 80% total suspended solids (TSS) removal.





REASON FOR CHANGES FROM PRELIMINARY DESIGN TO DETAIL DESIGN

- The dry ponds will discharge into existing watercourses and the appropriate erosion control measures/protection will be applied to mitigate potential erosion impacts, as per the Toronto and Region Conservation Authority (TRCA) stormwater management criteria.
- There will be no change in impact to the environment with the proposed changes.

Consultation with MNRF, TRCA and MECP

- As a result of consultation with MNRF and TRCA, the following modifications in the detail design stormwater management strategy have occurred:
 - Meadow marsh areas at the bottom of the dry ponds have been included to enhanced quality control of stormwater runoff.
 - The outlet of Pond-4 has been relocated from discharging directly into Robinson Creek to discharging into a tributary of Robinson Creek, which addressed potential erosion concerns related to the steep embankment.
 - Pond-5 has been moved southwards to avoid encroachment with an existing wetland.
 - Pond-3 outlet channel has been designed with stabilization measures to avoid potential erosion concerns due to increase in discharge rates from the pond.
 - Consultation with MECP is ongoing.



Existing Environmental Conditions

VEGETATION

- Within the Extension section of the project, vegetation is concentrated within the main valley crossings, as well as three small, isolated farm woodlots. There is a high proportion of non-native plant species, which is likely due to the high level of disturbance in the surrounding area.
- Vegetation that will be affected between Highway 7 and Major Mackenzie Drive is dominated by cultural meadow, hedgerows and agricultural fields, with more natural vegetation limited to the main valley crossings and three isolated farm woodlots.

WILDLIFE AND SPECIES AT RISK (SAR)

- Wildlife recorded are generally common, generalist species tolerant of urban or semi-urban conditions.
- No significant wildlife habitat has been identified.
- No SAR amphibians (i.e., Western Chorus Frog) have been confirmed.
- Barn Swallow SAR have been found to be nesting in two barns.
- Four SAR bat species (i.e., Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis and Tricoloured Bat) have been found in two barns and woodland habitat.

FISH AND FISH HABITAT

- The two main watercourses are Rainbow Creek and West Robinson Creek which are tributaries of the Humber River. There is also the East Robinson Creek and several smaller tributaries of Rainbow and West Robinson Creek.
- No aquatic SAR have been observed within the watercourses or identified by the MNRF or DFO.



Existing Environmental Conditions

GROUNDWATER AND HYDROGEOLOGY

- The project is within the Humber River Watershed
- The regional groundwater flow direction is to the southwest, south and southeast.
- Potable water supply in the area is comprised of municipal water supply and private well water supplies. A municipal water supply well (the Kleinberg Well) is located to the north. The limits of the Wellhead Protection Zone for this well are located approximately 800 m north of the intersection of Major Mackenzie Drive and Huntington Road to the north.

LAND USE

Existing land uses are a mix of agriculture, residential, industrial/commercial and recreational. Commercial/light industrial land uses are on the south side of Rutherford Road and east side of the CP Rail track.

ARCHAEOLOGICAL RESOURCES

- A Stage 1 Archaeological Assessment of the entire Highway 427 Transportation Corridor was completed as part of the Individual EA (2010).
- Stage 2 Archaeological Assessments were completed in 2015 in areas determined to have archaeological potential. The results of the Stage 2 indicated that the project is clear of archaeological potential and no further archaeological assessments are required.
- A Stage 3 Mechanical Top Soil Removal was completed at the Coleraine Cemetery in July 2016. No further assessment is recommended for the site.

CULTURAL LANDSCAPES

Cultural Heritage Evaluation and Documentation Reports were completed for the Highway 427 Expansion project during the Individual EA (2010) and subsequent TESRs (2013 and 2016). The construction activities to be covered in this DCR do not impact any built or cultural heritage landscapes.



Proposed Environmental Mitigation Measures

VEGETATION

- The limits of the construction zone have been delineated and fenced to protect the vegetation that is not identified for removal.
- Tree/shrub debris will be stored outside identified protected vegetation.
- In the event that adjacent vegetation communities or planted trees are accidently damaged during construction activities, LINK427 will implement appropriate contingency measures such as pruning tree limbs or roots that are accidently damaged using proper arboricultural techniques.
- A Vegetation Restoration and Landscape Plan (VRP) is being prepared to revegetate disturbed areas following construction and to provide compensation for loss of vegetation within the new alignment.
- A Landscape Plan is also being prepared and will include the planting at stormwater ponds which are designed to stabilize inlet and outflow areas and provide shading and bank stabilization.

WILDLIFE AND SAR

- Construction works will be conducted outside of the migratory bird nesting window (April 15 to August 15). If work is scheduled during this window, it will be
 preceded by a survey by a qualified avian biologist to identify active nests. Active nests will not be disturbed.
- All construction workers are required to be trained in advance of starting work regarding potential to encounter wildlife and SAR while undertaking their activities, and the appropriate response if an encounter occurs.
- Any wildlife encountered will not be knowingly harmed.
- Vegetation debris will be removed or mulched as soon as possible, especially prior to the breeding bird season (April 15 to August 15) in order to prevent birds from nesting in debris piles.
- An Overall Benefit Permit has been obtained under the Endangered Species Act (2007) for SAR bat habitat removal.
- Registration under the Endangered Species Act (2007) was completed for the removal of breeding habitat for Barn Swallow



Proposed Environmental Mitigation Measures

FISH AND FISH HABITAT

- The warmwater permissible in-water timing window of July 1st to March 31st will be implemented. All in-water works will be done in isolation of flowing water with a fish rescue undertaken from within the isolated area in all fish baring watercourses.
- Any temporarily stockpiled soil, debris or other excess materials, and any construction-related materials, will be properly contained in areas separated at least 30 m from all watercourses.
- All construction-related activities will be controlled to prevent entry of any petroleum products, debris or other potential contaminants/deleterious substances.
- The construction access, work areas and associated requirements for removal of riparian vegetation will be minimized to the extent required for the construction activities, and these areas will be delineated in the field using properly installed protective silt fencing. All temporarily disturbed areas will be re-stabilized following construction using appropriate means.

GROUNDWATER AND HYDROGEOLOGY

- A Groundwater Monitoring Program is being implemented, in accordance with the EA commitments.
- The selection of construction machinery, choice of construction methods and phasing of construction will be used in order to reduce water taking requirements.
- An Environmental Activity and Sector Registry (EASR) for the entire project will be required.
- Potential to impact nearby environmental features is very low due to anticipated low volume pumping.

EROSION AND SEDIMENT CONTROL

- The construction period Drainage and Sediment Management Plan(s) (DSMP) incorporate each watercourse crossing. The purpose of the DSMPs is to provide water quality treatment of the runoff generated within all drainage catchment areas before water is discharged to any watercourse.
- The Erosion and Sediment Control Plan (ESCP) for the project documents the environmental protection measures for preventing and controlling erosion and sedimentation during construction works. The Erosion and Sediment Control (ESC) measures required for the works are industry standard proven techniques.
- A Surface Water Monitoring Program will verify that ESC measures are functioning as intended.
- Disturbed floodplain areas to be covered with topsoil, seeded with a native mix, and stabilized with a biodegradable erosion control blanket.



Proposed Environmental Mitigation Measures

NOISE

- LINK427 will keep idling of construction equipment to a minimum and will maintain equipment in good working order to reduce the noise emitted from construction activities.
- As some construction activities are expected to be undertaken during nighttime and/or weekends, exemptions from local Noise Bylaws have been obtained from the City of Toronto and City of Vaughan.
- While no significant adverse noise and vibration effects are anticipated, the Construction Noise and Vibration Plan will be implemented as per the EA Conditions of Approval throughout the construction period.

ARCHAEOLOGY & CULTURAL HERITAGE

- Archaeological Assessments have been completed and it is unlikely that archaeological resources are present.
- In the event that deeply buried archaeological deposits are discovered, the Ministry of Tourism, Culture and Sport will be notified immediately. In the event that human remains are encountered, LINK427 will immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services.
- The Coleraine Burying Grounds (Coleraine Cemetery) and the Coleraine Schoolhouse Site located on the south side of Major Mackenzie Drive will be protected during construction activities.



Proposed Environmental Mitigation Measures

WASTE MANAGEMENT AND CONTAMINATION

- Based on the findings of the Contamination Overview Study (COS), Phase I and II Environmental Site Assessments (ESAs) and subsequent environmental investigations and delineation programs it was confirmed that ground water quality meets the applicable Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standards (SCS).
- In the event that unknown contamination is discovered during the course of construction activities, procedures and steps outlined in the Waste and Contamination Management Plan (WCMP) will be implemented and procedures for working in contaminated areas will apply.
- While the construction works are not anticipated to result in the production of any excess soils that require offsite management, should there be excess materials generated during construction, they will be managed in accordance with the project's Earth Management Plan, the WCMP and OPSS 180 (Management of Excess Materials).
- Identified designated substances within the building structures will be removed and disposed of in accordance with the WCMP, MECP regulations and OSHA requirements. Additional Designated Substance Surveys (DSS) and/or sampling programs will be completed (as required) if suspected designated substances or hazardous materials are suspected to be present.
- Excess materials generated during construction activities will be managed in an environmentally acceptable manner, recycled and/or processed and disposed according to current legislation and practices in accordance with Ontario Provincial Standard Specification (OPSS) 180 and the project's Earth Management Plan.



Communication Opportunities

Highway 427 Expansion Project Website

■ The Highway 427 Expansion project website (<u>www.427expansion.ca</u>) will be the central portal for communication providing updates and information on traffic disruptions, construction activities and progress.

One-Window Communication

- LINK427 has established a one-window communication system for public enquiries, complaints and comments. Members of the public may contact LINK by telephone: 1-888-352-8085 (French Language line: 1-888-595-3152) or by email at ask@427expansion.ca.
- Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, Appelez le Bureau des services en français au: 1-888-595-3152.

Variable Message Panels

Portable variable messaging signs (PVMS) will be used at key locations and updated as needed to communicate, in real time, key information related to traffic management.

Notices & Bulletins

- Notices of upcoming consultations or other project activities will be delivered via the Project Mailing List, E-mail List, Project website, and local newspapers. Notices will also be mailed to residents and businesses that reside in a 2km radius of the project boundary.
- Project Bulletins will be prepared monthly, or more frequently if required and may include information on PICs, construction activities, traffic detours and other relevant information. These bulletins will be sent via email and available on the Project website.



Next Steps

Following this Public Information Centre (PIC), we will:

- Review and respond to comments received.
- Refine the Detail Design and mitigation measures based on comments received.
- Prepare the Design and Construction Report for public review.

Thank you for attending this Public information Centre. We welcome your comments. Please fill out the Comment Sheet you were provided when you entered and submit it before you leave, or e-mail / mail it to the address below by **October 25, 2018**. If you have questions about the Project or wish to be added to the mailing list, please contact:

Mr. Aitor Arbesu

Project Director
LINK427

1 Royal Gate Blvd., Suite G
Woodbridge, ON L4L 8Z7

Phone: 1-888-352-8085 E-mail: ask@427Expansion.ca Mr. Paul Neals

Environmental Director
LINK427

1 Royal Gate Blvd., Suite G
Woodbridge, ON L4L 8Z7
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E-mail: ask@427Expansion.ca

Comments and information regarding the project are being collected to assist LINK427 in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation. LINK427 will adhere to the privacy protection rules established in the Freedom of Information and Protection of Privacy Act (FIPPA). With the exception of personal information, all comments will become part of the public record.