

Design and Construction Report

Highway 427 Expansion Project

Project Number 16M-01172-11

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Original

November 30, 2017

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THE PUBLIC RECORD

This Design and Construction Report (DCR) is being carried out in accordance with the approved environmental planning process for projects under the Ontario Ministry of Transportation (MTO) *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)*.

A copy of this document has been submitted to the following office of the Ontario Ministry of the Environment and Climate Change (MOECC) to fulfill the requirements of the MTO Class EA.

Ministry of the Environment and Climate Change

Central Region Office
5775 Yonge Street, 8th Floor
North York, Ontario M2M 4J1

This report is available online for review at www.427expansion.ca, as well as the following review locations between **December 5, 2017 to January 8, 2018** during regular business hours:

MOECC EA File #: TC-CE-02

<p>Ministry of Environment & Climate Change Environmental Approvals Branch 135 St. Clair Avenue West, 1st Floor, Toronto, ON M4V 1P5 Tel: (416) 314-8001</p>	<p>Ministry of Transportation Central Region Major Projects Office 159 Sir William Hearst Avenue, 7th Floor, Toronto, ON M3M 0B7 Tel: (416) 235-4299</p>
<p>City of Vaughan Clerk's Office 2141 Major Mackenzie Drive, Vaughan, ON L6A 1T1 Tel: (905) 832-2281</p>	<p>Regional Municipality of York Clerk's Office 17250 Yonge St., Newmarket, ON L3Y 6Z1 Tel: (905) 895-1231</p>
<p>Kleinburg Library 10341 Islington Avenue N., Vaughan, ON L0C 1C0 Tel: (905) 653-7323</p>	<p>Toronto Public Library – Humberwood Library 850 Humberwood Boulevard, Etobicoke, ON M9W 7A6 Tel: (416) 394-5210</p>
<p>Etobicoke Civic Centre 399 The West Mall, Toronto, ON M9C 2Y2 Tel: (416) 338-4386</p>	<p>LINK427 Project Office 1 Royal Gate Boulevard, Woodbridge, ON L4L 8Z7</p>
<p>Regional Municipality of Peel Clerk's Office 10 Peel Centre Drive, Brampton ON L6T 4B9 Tel: (905-791-7800)</p>	<p>LINK427 Project Website www.427expansion.ca</p>

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HOW TO COMMENT

Interested persons are encouraged to review this DCR and provide comments by **January 8, 2018**.

Comments and information are being collected to assist LINK427 in meeting the requirements of the Ontario Environmental Assessment Act. Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act.

With the exception of personal information, all comments will become part of the public record. Comments on this DCR can be provided by mail, e-mail, or online to:

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If you have any accessibility requirements to participate in this project, please contact one of the Project Team members listed above.

Des renseignements sont disponibles en français en composant 1-888-595-3152.

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ACRONYMS

AFP	Alternative Financing & Procurement
ANSI	Area of Natural and Scientific Interest
CEAA	Canadian Environmental Assessment Act
CMP	Compliance Monitoring Program
dBA	A-weighted decibels
DCR	Design and Construction Report
EA	Environmental Assessment
EAA	Environmental Assessment Act
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
EMS	Environmental Management System
ESA	Environmentally Significant Areas
ESCP	Erosion and Sediment Control Plan
IEA	Individual Environmental Assessment
IO	Infrastructure Ontario
ITS	Intelligent Transport Systems
MAG	Municipal Advisory Group
MBR	Migratory Bird Regulations
MBCA	Migratory Birds Convention Act
MNRF	Ministry of Natural Resources and Forestry
MOECC	Ministry of Environment and Climate Change
MTO	Ministry of Transportation
OEAA	Ontario Environmental Assessment Act
OPSS	Ontario Provincial Standard Specification
PIC	Public Information Centre
PSW	Provincially Significant Wetlands
PTTW	Permit to Take Water
ROW	Right-Of-Way
SAR	Species at Risk
TESR	Transportation Environmental Study Report
TRCA	Toronto and Region Conservation Authority
TSS	Total Suspended Solids
WCMP	Waste and Contamination Management Plan
WFP	Wildlife Fence Plan

Executive Summary

This project is being carried out in accordance with the approved environmental planning process for Group 'A' projects under the Ministry of Transportation (MTO) Class Environmental Assessment for Provincial Transportation Facilities (2000) (MTO Class EA) and builds upon the approved Environmental Assessment Report (EA) (January 2010) for the Highway 427 Extension. The project was later updated through completion of a Transportation Environmental Study Report (TESR) in 2016 to add additional lanes to the proposed Highway 427 extension. A separate TESR was completed in 2013 for the widening of existing Highway 427 between Albion Road to Highway 7.

This Design Construction Report (DCR) includes an overview of public consultation, an assessment of the potential effects of the proposed project and identification of measures required to mitigate the anticipated adverse effects. This DCR has been posted for a 30-day review period from December 5, 2017 to January 8, 2018. A notice has been issued to advise the public, project stakeholders and agencies of the start of the review period and locations where the DCR will be available for review.

This DCR documents the advance vegetation clearing works associated with the Highway 427 Expansion detail design project within the City of Vaughan and the City of Toronto. The construction works addressed by this DCR include the advance clearing of vegetation / brush within the project limits, and soil preloading and grubbing for approach ramps at the Rutherford Road Overpass, and Major Mackenzie Drive Interchanges, as well as the CP Rail / McGillivray Road Overpass. This DCR also includes the stockpiling of concrete on the south side of Langstaff Road for future re-use on the project. This concrete will be free of contaminants and will be contained by jersey barriers and reinforced silt fence on three sides. Finally, some advance utility work is also included in this DCR to enable relocations necessary for future construction activities.

Public and stakeholder consultation, carried out in accordance with the approved environmental planning process for Group 'A' projects under the MTO Class EA. This involved issuing a Notice of Commencement for detail design and construction, which included newspaper notifications, a project website and letters to project contacts/stakeholders carried forward from the preliminary design phase of the project. Consultation was also carried out with Indigenous Communities, the Ministry of Natural Resources and Forestry, the Ministry of Environment and Climate Change, Toronto and Region Conservation Authority, municipalities, utility companies and property owners within a 2.0 km radius of the project.

The Project Lands are composed largely of agricultural, residential, industrial, commercial and recreational land uses. There are no Provincially Significant Wetlands (PSWs), provincially or regionally Significant Areas of Natural or Scientific Interest (ANSIs) or Environmentally Significant Areas (ESAs) within the Lands. There are two main vegetated valley crossings within the Lands: Rainbow Creek and West Robinson Creek. There are also several isolated woodlots and hedgerows scattered throughout the northern portion of the Lands where agricultural lands still exist. The expansion of Highway 427 will require vegetation removal and result in temporary construction disturbance within the existing Lands. Appropriate tree clearing and tree protection practices will be implemented, and where possible rare species will be salvaged and relocated.

Appropriate mitigation measures will be implemented to minimize potential impacts to wildlife and wildlife habitat. The contractor will avoid works within the migratory bird nesting period and will follow best management practices related to encounters with wildlife during construction. Within the Lands, studies identified the presence of species protected under the Provincial Endangered Species Act, 2007 (ESA), as well as the presence of Species at Risk (SAR) habitat. SAR bat habitat was found within the Lands as well as barn swallow habitat. Mitigation measures have been incorporated into this DCR to minimize potential impacts to these species, in accordance with the ESA 2007, Notice of Activity for Barn Swallow and the forthcoming Overall Benefit Permit for SAR bats from the Ministry of Natural Resources and Forestry. Components of the project specifically related to SAR species mitigation include: timing window restrictions for structural removal and tree clearing to avoid sensitive periods, and habitat compensation, revegetation and planting plans to mitigate impacts to habitat.

Key aquatic features include two main tributaries of the Humber River: West Robinson Creek and Rainbow Creek, as well as their associated valley systems. With the appropriate implementation of mitigation measures, no direct impacts on either of these watercourses is anticipated from the works.

No noise by-law exemptions are anticipated for DCR #1. Night work construction is not required in the City of Vaughan or the City of Toronto, all works within the City of Vaughan and City of Toronto that are included in this DCR will be completed adhering to Noise Control By-laws.

For DCR #1 mitigation measures to minimize impacts to air quality are focused on managing equipment and vehicles since dust generation by the advance works is not anticipated to be significant in the winter months (most of the works will be completed during the winter when the ground is frozen or wet). Standard dust suppression methods will be applied during spring.

1. Project Overview

1.1 Project Team and Background

LINK427 has been selected by the Ministry of Transportation (MTO) and Infrastructure Ontario (IO) to undertake the design, build, finance and maintenance of the Highway 427 Expansion project within the City of Vaughan and the City of Toronto.

The Project has been procured as an Alternative Financing & Procurement (AFP) project. Which is an innovative way of financing and procuring large, complex infrastructure projects. Under AFP, provincial ministries and/or project owners establish the scope and purpose of a project while design and construction work is financed and carried out by the private sector. In the case of the Highway 427 Expansion, LINK427 will be responsible for the maintenance, construction, lifecycle repair and renewal of the highway for the next 30 years.

The LINK427's team includes:

- Developer: ACS Infrastructure Canada Inc. and Brennan Infrastructures Inc. (a member of the Miller Group of Companies)
- Construction: Dragados Canada Inc., Brennan Infrastructures Inc. and BOT Infrastructure Ltd.
- Design: WSP Canada Group Ltd. and Thurber Engineering Ltd.
- Maintenance: ACS Infrastructure Canada Inc. and Brennan Infrastructures Inc.

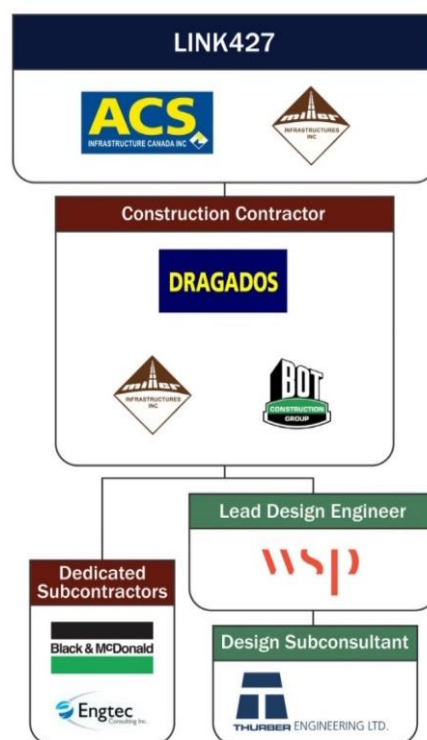
In November 2010, the Ontario Minister of Environment and Climate Change (MOECC) with the approval of Cabinet made a decision to allow the Highway 427 Extension Transportation Corridor Environmental Assessment Report (EA) (January 2010) to proceed, subject to conditions. The approval was for a 6.6 km transportation corridor from Highway 7 to Major Mackenzie Drive, including a highway, dedicated transitway, located in the City of Vaughan, York Region.

The MTO has continued to study the Highway 427 Corridor, in order to provide the effective movement of people and goods within the context of the province's Growth Plan for the Greater Golden Horseshoe (2006). This project encompasses the following EA studies which together provide the foundation for the key elements of the Expansion:

Highway 427 Extension Transportation Corridor Environmental Assessment Report (EA) (January 2010): Key elements included extending Highway 427 (6.6 km) to Major Mackenzie Drive, 6 lanes from Highway 7 to Rutherford Road, 4 lanes from Rutherford Road to Major Mackenzie Drive, a 60 metre wide transitway right-of-way (ROW) from Highway 7 to north of Major Mackenzie Drive and commuter parking lot facilities.

Highway 427 from Albion Road to Highway 7, Preliminary Design and Class EA Study, Transportation Environmental Study Report (TESR) (November 2013): Key elements included widening existing Highway 427 from 4 to 8 lanes from 1.5 km south of Albion Road to Highway 7 (4.0 km), median managed lanes and widening, and rehabilitation of existing bridges - where required, to accommodate the widened Highway 427 footprint.

Figure 1: Organization Structure



Highway 427 Extension Widening from Highway 7 to Major Mackenzie Drive, (TESR) (January 2016): Key elements included widening Highway 427 Extension by one additional lane in each direction (to a total of 8 lanes from Highway 7 to Rutherford Road, and 6 lanes from Rutherford Road to Major Mackenzie Drive), median managed lanes, and drainage and illumination improvements.

These three (3) documents conducted environmental investigations on natural features (terrestrial and aquatic), social-economic factors (noise, air quality, land use, and contaminated soils) and cultural factors (archaeology, built heritage and cultural landscapes). The Highway 427 Widening and Extension EA's and the factor specific Impact Assessment Reports describe, in detail, the existing conditions, impacts and mitigation measures for the Expansion.

The environmental commitments identified through the previous EA processes have been carried forward into this DCR, and will also be included in future DCRs, as applicable to the works contained within each DCR. As the project is being implemented following a Design-Build approach, LINK427 will ensure that these commitments are incorporated into the detail design carried forward to construction.

1.2 Summary of Description of the Undertaking

This project is being carried out in accordance with the approved environmental planning process for Group 'A' projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)* and builds upon the approved Environmental Assessment Report (EA) (January 2010). The project was later updated through completion of a Transportation Environmental Study Report (TESR) in 2016 to add additional lanes to the proposed Highway 427 extension. A separate TESR was completed in 2013 for the widening of existing Highway 427 between Albion Road to Highway 7.

The overall Highway 427 Expansion project includes the design and construction of the following:

- A 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);
 - new median managed lanes.
- A 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;
 - new median managed lanes.

The key map is shown in **Figure 2**.

A series of Design and Construction Reports (DCR) will be prepared to document the detail design process for various project components as outlined in **Table 1**. Other than the works addressed by this DCR #1, Public Information Centres (PICs) will be held during the Detail Design process to allow stakeholders and the public to review and comment. DCR #1 has been prepared to document the Detail Design process for advance clearing of vegetation / brush throughout the project limits, ground grubbing and soil preloading at new interchanges, concrete stockpiling at Langstaff Road, and some advanced utility works. This DCR documents how previous EA commitments are being met and outlines the project process, design details, consultation process, environmental investigations, potential environmental impacts, proposed mitigation measures, commitments to future work and monitoring. Future DCRs will be prepared and filed to document the detail design process for the remaining works of the project, as summarized in **Table 1** below.

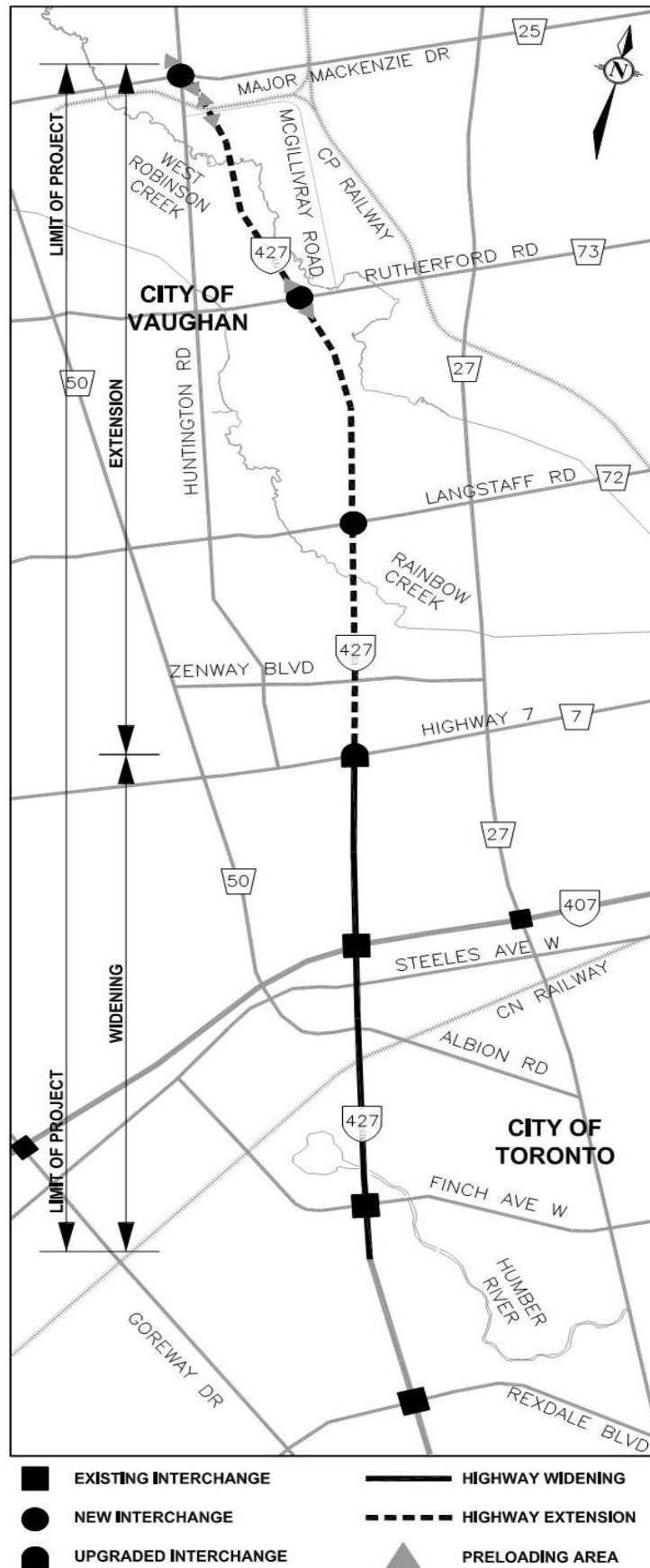
This section also describes and documents how the commitments outlined in the Highway 427 Extension Transportation Corridor Environmental Assessment Report (EA) (January 2010), TESR (November 2013), TESR (January 2016) and

the associated Ministry of the Environment and Climate Change (MOECC) Notice of Approval (November, 2010) have been addressed with respect to the works proposed within DCR #1.

Table 1 – Preliminary DCR Phasing

DCR #	Project Area	Construction Work to be Addressed
1	<ul style="list-style-type: none"> Finch Avenue to Major Mackenzie Dr. 	<ul style="list-style-type: none"> Vegetation / brush clearing Preloads (including grubbing) at the Major Mackenzie Drive and Rutherford Road Interchanges and CP Rail / McGillivray Road overpass. Concrete stockpiling south of Langstaff Road within the lands Advanced utility works
2	<ul style="list-style-type: none"> South of Finch Avenue to Major Mackenzie Drive 	<ul style="list-style-type: none"> Construction Staging including Detours Rehabilitation and Widening Vegetation restoration Electrical (street lighting, traffic lights etc.) Fencing (wildlife, security etc.) Foundations (bridge footings) Grubbing, stripping of top soil, ditching, highway construction and final grading Highway Drainage (storm sewers and culverts) Removals of existing roads, existing drainage structures etc. Pavement (asphalt) Structures (overpass and underpass) Traffic (lane closures) Utility Relocation (Zenway) Water Resources (Culverts) Seeding and sodding
3	<ul style="list-style-type: none"> Highway 7 to Major Mackenzie Drive 	<ul style="list-style-type: none"> All works addressed above specific to the following structures: Highway 427 overpass at Rainbow Creek Structures Highway 427 overpass at West Robinson Creek Structures Langstaff overpass at Rainbow Structure Major Mackenzie Dr. overpass at West Robinson Creek Structure
4	<ul style="list-style-type: none"> South of Finch Avenue to Major Mackenzie Drive 	<ul style="list-style-type: none"> Construction Staging including Detours Electrical (street lighting, traffic lights etc.) Guiderail and barriers Intelligent Transport Systems (ITS) Landscaping (planting of trees and shrubs) Vegetation Restoration Pavement Markings Traffic Signage Water Resources / Stormwater Ponds

Figure 2: Project Limits Key Map



1.3 Purpose of the Design and Construction Report

Design and Construction Reports (DCRs) are prepared under the MTO Class EA process to document the Detail Design process. Four DCRs will be prepared for this project because of the staged detail design approach. An overview of the DCRs can be found in **Table 1**.

This DCR has been prepared in accordance with the requirements of the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* for Group 'A' projects.

DCR #1 documents how previous EA commitments are being met and the potential project – environment interactions associated with the following construction activities:

- Advance clearing of vegetation and brush within the project limits (Appendix A);
- Soil preloading and grubbing for approach ramps at the Rutherford Road and Major Mackenzie Drive interchanges, as well as the CP Rail / McGillivray Road Overpass (Appendix B);
- Concrete stockpiling south of Langstaff Road; and
- Advance utility work

DCR #1 has been prepared to provide a description of the project and its purpose; document how environmental commitments as outlined in the Individual EA Report / TESRs have been addressed; an overview of consultation; major features of the proposed work; anticipated environmental effects and proposed mitigation measures; and commitments to monitoring associated with the implementation of the project.

Subsequent DCRs will be prepared to document additional components of the project as the detail design progresses. **Table 1** provides a summary of the construction works that will be addressed by each DCR.

As required under the Class EA, this DCR is being made available to the public, stakeholders, agencies and Indigenous Communities for a 30-day review period between December 5, 2017 to January 8, 2018 online at www.427expansion.ca as well as the following review locations:

- Ministry of Environment and Climate Change, Environmental Approvals Branch
- Ministry of Transportation, Major Projects Office, Central Region
- City of Vaughan (Clerk's Office)
- Regional Municipality of York (Clerk's Office)
- Kleinberg Library, Vaughan
- Toronto Public Library – Humberwood Library
- Regional Municipality of Peel (Clerk's Office)
- Etobicoke Civic Centre
- LINK427 Project Office

Any concerns during this review period should be discussed with LINK427 and all comments will be considered by LINK427. Significant concerns will be resolved through ongoing consultation with concerned/ affected stakeholder and additional studies will be undertaken to address concerns if required. If significant concerns are not identified during the review period, further documentation will not be prepared and LINK427 may commence construction of the elements as described in this DCR without further notice and subject to conditions as specified in this DCR.

2. Environmental Assessment Process

2.1 Ontario Environmental Assessment Act

The purpose of *Ontario's Environmental Assessment Act* (OEAA) is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management of the environment. For projects subjects to the OEAA, an environmental assessment involves identifying and planning for environmental issues and effects prior to implementing a project. An EA document is prepared and is subject to review by the public and government agencies before project approval is given.

The MTO Class *Environmental Assessment for Provincial Transportation Facilities (2000) (Class EA)* process is a planning process approved under the EA Act that provides a streamlined process that must be followed for projects or activities within a defined "class". The *Class EA* requirements must be met before a project can be implemented.

The Individual EA Report (January 2010) for the Highway 427 Extension was approved, with conditions, by the Ministry of Environment and Climate Change (MOECC) in November 2010. The project was later updated through completion of a Transportation Environmental Study Report (TESR) in 2016 to add additional lanes to the proposed Highway 427 extension. A separate TESR was completed in 2013 for the widening of existing Highway 427 between Albion Road to Highway 7. This project (which focuses on the expansion of Highway 427) is following the planning process for a Group 'A' project under the MTO Class EA process.

Provided conditions and commitments of the Individual EA and the principles and the planning process of the *Class EA*, no formal approval is required under the *EA Act*. This project has complied with the requirements of the MTO *Class EA* for a Group 'A' project.

2.2 Canadian Environmental Assessment Act

On July 6, 2012 *CEAA* (2012) came into effect which focuses on assessment of "designated projects". Projects can be designated projects under *CEAA* (2012) if they meet the criteria for physical activities under the schedule, Sections 2 to 4.

The expansion of Highway 427 is not considered a 'designated project'. Therefore, an assessment under *CEAA* is not required.

3. Consultation Process

3.1 Consultation During Previous Environmental Assessments

Extensive consultation was undertaken as part of the previous environmental assessments. Opportunities for two-way communication were provided with interested stakeholders including external agencies, municipalities, Indigenous Communities and the public throughout the previous environmental assessments. Consultation activities also enabled the identification of potentially significant environmental issues early in the decision making process and ensured that they were given appropriate consideration.

Throughout these previous EA studies, stakeholders were able to choose their level of involvement through the project websites, Public Information Centres and direct contact with the project team.

Indigenous Communities Consultation

Indigenous Communities were sent notification letters throughout the previous EA studies, including Study Commencement, Public Information Centre (PIC) notifications and Notices of Completion.

External Agency Consultation

The Project Team consulted and held meetings with federal and provincial agencies, elected officials, municipalities, utilities, interest groups and held Municipal Advisory Group (MAG) meetings during previous EA studies. The MAG included the Region of Peel, City of Brampton, Town of Caledon, York Region and City of Vaughan. Meetings with GO Transit / Metrolinx, TTC, 407 ETR were also held as outlined in the TESR (November 2013). Meetings were also held with the Ministry of Environment and Climate Change (MOECC), the Ministry of Natural Resources and Forestry (MNRF) as well as the Toronto and Region Conservation Authority (TRCA) regarding various elements of the Highway 427 Extension and proposed widening as outlined in the TESR (January 2016).

Public Information Centres

Three rounds of PICs were held during the Individual EA study (January 2010). The PICs were arranged as drop-in centres (open house format) to allow the public to see results, exchange information and ask one-on-one questions of the Project Team.

PICs were also held during the two subsequent EAs (2013 and 2016). The PICs were held as informal “open house” drop-in style events. The Project Team addressed questions and/or provided information on a one-on-one basis with individuals in attendance.

Prior to the PICs held during the previous EA studies, preview sessions were held to present agencies with an opportunity to view the displays and discuss the project with the Project Team.

3.2 Consultation During Detail Design

Consultation is an integral component of the EA process. In keeping with the consultation undertaken in the previous EA studies, the Detail Design and DCR process involves consultation with external agencies, municipalities, Indigenous Communities and the public with the purpose of promoting engagement in the study and soliciting input throughout the study process.

The consultation program will be carried out based on the following principles:

- All reasonable efforts are made to ensure that potentially affected or interested parties are given the opportunity to participate in the consultation process;
- Stakeholders may provide input at any time during the study; however, structured opportunities for input occur at key study stages;
- LINK427 shall constructively address input received during the consultation process;
- LINK427 shall make reasonable efforts to resolve concerns; and

- Consultation plans and processes are sufficiently flexible to permit responses to new issues that arise as the study proceeds.

Throughout the project, stakeholders may choose their level of involvement from one or more of the following options:

- Project Website (www.427expansion.ca);
- Public Information Centres; and
- Direct contact with the project team via mail, email, telephone or in person.

Public Information Centres

While not part of DCR #1, two Public Information Centres (PICs) will be held at later stages in the detail design process to allow the public, external agencies, Indigenous Communities and other stakeholders an opportunity to review and comment on project details. Information will be presented to stakeholders and members of the public with an opportunity to review and comment on the proposed design, potential impacts and proposed mitigation for the Highway 427 Expansion Project and provide feedback to the project team. The PICs are designed as informal drop-in centres with the members of LINK427 available at the events to answer questions and provide feedback when required. There will be a 2-week public comment period following the PICs. A written response will be provided by LINK427 to any written comments provided.

Notification of PICs will be published in local newspapers, distributed by email invitation letters and posted on the project website. Notification will also be mailed or emailed to MPs, MPPs and City Clerks. Notice will be posted 15-30 days in advance of the PICs.

Notification

LINK427 will distribute notices throughout the project in accordance with the Class EA, and approvals and commitments including, but not limited to:

- Public Information Centres;
- Notice of DCR Submission; and
- Other required notices.

Stakeholder Consultation

LINK427 will conduct meetings with key stakeholders including Agencies, Municipalities, Emergency Services and property owners. Meetings will be arranged and led by LINK427 or scheduled upon request. Examples of when stakeholder meetings may take place include:

- A request from an Agency to meet;
- PIC, related to DCR;
- To consult on aspects of the project; and
- To obtain permit required by the project.

DCR Notice of Submission

A Notice of Submission will be provided at the time the DCR is released for public review. The notice will announce the beginning of the 30-day public and agency review. Notices will be published in local newspapers, on the Project website www.427expansion.ca and distributed by mail to those on the project contact list advising of the start of each review period and locations where each DCR will be available for review.

Community and stakeholder feedback will be tracked and logged as part of DCR #1.

The following sections outline the consultation process implemented for this DCR. Copies of relevant consultation materials including letters and notices are provided in **Appendix C**.

3.2.1 Notice of Commencement of Detail Design and Construction

The Notice of Commencement of Detail Design and Construction was advertised in the *Toronto Star* and *Etobicoke Guardian* on August 23, 2017, the *Vaughan Citizen* and *Brampton Guardian* on August 24, 2017 and *L'Express* on August 29, 2017. Project notifications were also posted on the Project website www.427expansion.ca.

Notification letters were also sent to contacts on the project contact list to announce the commencement of the Detail Design and Construction stage of the project. The letters provided an opportunity to express any concerns or provide any comments on the project.

A copy of the newspaper Notice of Detail Design and Construction as well as Notification letters are available in **Appendix C**.

A summary of the public comments received since the Notice of Detail Design and the responses provided are presented in **Table 2** below.

Table 2 – Summary of Comments Received and Responses

Comment	Response
Member of the public unhappy that the Notice of Detail Design and Construction was not available in French.	Member of the public was contacted and assured that a French translation of the notice is available on the project website and was published in the weekly French language newspaper, L'Express.
Policy inquiry about how a highway expansion fits within the climate change objectives of reducing emissions by 80-95% by 2050.	There is provision in the existing 427 Corridor and the Expansion of 427 to protect for a transit corridor and commuter parking lots. This transit corridor, when completed, will contribute to the reduction of greenhouse gases.
Member of the public expressed preference for Highway 427 to extend North of Major Mackenzie.	Member of the public was contacted and advised that the EA only received approval for an extension to Major Mackenzie Drive.
Multiple requests to be added to project mailing list for updates on the project.	Requests were added to the project mailing list.
Requested information on construction timeline (i.e. start and finish).	Email response advising of current project status and expectation of preliminary work commencing in winter 2018.

3.2.2 Consultation with External Agencies and Municipalities

Provincial, federal and municipal agencies were contacted to inform them of the proposed work and involve them in the detail design and construction study process. Letters were mailed to each contact as part of the Commencement of Detail Design and Construction. A copy of a sample letter is found in **Appendix C**. The following list identifies those who were notified and include, but are not limited to:

- Environment Canada
- Canadian Pacific Railway
- CN Rail
- Transport Canada
- Trans Canada Pipe Line
- Fisheries and Oceans Canada
- Ministry of Natural Resources and Forestry
- Ministry of Health & Long-Term Care
- Ministry of Tourism, Culture and Sport
- Ministry of Agriculture, Food & Rural Affairs
- Ministry of the Environment and Climate Change
- Ministry of Indigenous Relations and Reconciliation
- Ministries of Citizenship, Immigration & International Trade
- Ministry of Community Safety and Correctional Services
- Ministry of Municipal Affairs and Housing
- Ministry of Energy
- Metrolinx
- Infrastructure Ontario
- City of Brampton
- City of Vaughan
- Regional Municipality of Peel
- Town of Caledon
- City of Toronto
- Regional Municipality of York
- Township of King
- Toronto Transit Commission (TTC)
- York Catholic District School Board
- Conseil scolaire de district catholique Centre-Sud
- Credo Christian School
- Toronto District School Board
- Conseil scolaire Viamonde
- Toronto and Region Conservation Authority (TRCA)
- Greater Toronto Airports Authority
- York Federation of Agriculture
- Toronto Environmental Alliance
- Toronto Coalition for Active Transportation
- MPP – Dufferin-Caledon
- MPP – Etobicoke North
- MPP – Vaughan
- MPP – Bramalea-Gore-Malton
- MPP – Brampton West
- MPP – Brampton-Springdale
- MPP – Mississauga-Brampton South
- MPP – York West
- MPP – Mississauga-Erindale
- MPP – York-Simcoe
- MPP – Etobicoke Centre
- MP – Dufferin-Caledon
- MP – Etobicoke North
- MP – Vaughan-King
- MP – Mississauga-Malton
- MP – Brampton South
- MP – Brampton East
- MP – Etobicoke Centre

Meetings, teleconferences and email exchanges were carried out with the municipalities and stakeholders to discuss the details of the project. The following is a summary of the meetings and consultation carried out.

MOECC – July 10, 2017

- LINK427 delivered background information on the detail design and construction of the Highway 427 Expansion project.
- LINK427 presented information on the Advanced Works DCR process, which consists of clearing and preloading.

MNRF / TRCA – July 12, 2017

- LINK427 delivered background information on the detail design and construction of the Highway 427 Expansion project.
- LINK427 presented information on the Advanced Works DCR process, which consists of clearing and preloading.

York Region & City of Vaughan – September 18, 2017

- LINK427 delivered background information on the detail design and construction of the Highway 427 expansion project.
- Concerns about noise and dust were identified.
 - Construction night work will not be carried out in the City of Vaughan or the City of Toronto for DCR #1
 - Municipal roads will be kept clean from dust and debris
 - Preload areas will be seeded in the spring

TRCA – October 10, 2017

- The DCR #1 construction works were presented.
- Related to the DCR #1 construction works, LINK427 discussed vegetation protection processes, plant salvage measures, and measures to be implemented to ensure plants identified for retention are protected.

Municipal Communications Meeting – October 11, 2017

- Meeting held with Vaughan, Region of York, City of Toronto, City of Brampton, Region of Peel.
- Design Construction Reports (DCRs) and associated Public Information Centres were discussed as well as the next steps.
- Road closures, detours and lane reductions for the project were outlined along with the proposed methods for notification.

MNRF – October 23, 2017

- The DCR #1 construction works were presented.
- Related to the DCR #1 construction works, LINK427 discussed vegetation protection processes, plant salvage measures, and measures to be implemented to ensure plants identified for retention are protected.

Utilities

Consultation has included coordinating advance utility works, ongoing discussions regarding advance utility works.

CP Rail

LINK427 has been in consultation with CP Rail and they have raised no concerns with the proposed activities.

Consultation with 407 ETR

407ETR has been provided with details of clearing activities and have provided no comments to LINK427 on DCR#1.

3.2.3 Indigenous Communities Consultation

MTO provided letters and notices to the following Indigenous Communities at the commencement of Detail Design and Construction and submission of DCR 1:

- Mississaugas of Scugog Island
- Chippewas of Rama First Nation
- Hiawatha First Nation
- Alderville First Nation
- Huron-Wendat Nation
- Six Nations of the Grand River Territory
- Wahta Mohawks First Nation
- Oneida Nation of the Thames
- Association of Iroquois and Allied Indians
- Chippewas of Georgina Island First Nation
- Beausoleil First Nation
- Curve Lake First Nation
- Mississaugas of the New Credit First Nation
- Huron-Wendat Nation
- Kawartha Nishnawbe First Nation
- Mohawks of the Bay of Quinte
- Union of Ontario Indians

Copies of these letters are included in **Appendix C**.

In response to the Notice of Commencement of Detail Design and Construction, two comments were received from Huron-Wendat Nation requesting copies of the Archaeological Assessments related to the Highway 427 Expansion. The Archaeological Reports were provided. No requests for meetings with Indigenous Communities have been received at this time.

4. Detailed Description of the Undertaking

This section of the report describes the major features of the proposed work included in this DCR, identifies the environmental issues and commitments, and provides a summary of the potential environmental effects and proposed mitigation.

4.1 Advance Clearing

Advance vegetation clearing is proposed to ensure that the clearing of trees and brush occurs during the winter of 2018 as weather permits, when it will not conflict with environmental protection requirements (e.g., timing windows for migratory bird nesting and SAR bat roosting), will minimize the potential for soil disturbance and associated erosion, and will facilitate utility relocations in advance of the future grading for this project. Works are anticipated to commence mid-January 2018 and run to the end of March. Vegetation clearing will be completed from Finch Avenue to north of Major Mackenzie Drive, as seen in **Appendix A**. This will include vegetation clearing in the Rainbow Creek Valley and the West Robinson Creek Valley.

As noted, advance clearing will occur during the winter when the ground is frozen in order to avoid exposing and disturbing the soil. In keeping with this objective, the clearing activities will be undertaken largely through manual (non-mechanized) means by workers with the use of chainsaws and other hand-held equipment. Vegetation will not be removed flush to the ground but will intentionally be cut several inches from the surface leaving stubble/stumps and roots in order to avoid exposing and disturbing the soil. Similarly, felled material will be removed by hand or with rubber tired machinery to avoid exposing and disturbing the soil.

All cleared vegetation will be taken to a central location for each interchange where it will be chipped in place. Larger tree trunks may be removed whole for offsite disposal. Design drawings in **Appendix A** show tree storage areas where the chippers will be placed and where tree trunks will be stored.

The principles identified below will guide the preparation of the advance vegetation clearing for DCR #1 in order to provide for the protection of natural features.

Principles:

1. Advance vegetation clearing areas are identified in the Design Drawings (**Appendix A**).
2. Tree removal will be limited to the areas required for the main highway, connections and interchanges.
3. The ROW (Right-of-Way) limits will be clearly marked prior to clearing and all areas beyond the ROW will be protected from impacts by workers and machinery during the clearing activities.
4. Portions of sensitive areas within the ROW may be cleared or crossed to access adjacent areas within the ROW, with the following caveats:
 - a. Protection measures will be implemented to minimize impacts from erosion and sedimentation. Control measures will be in place and maintained in order to prevent potential water-related transfer of impacts off-site both during clearing activities and during subsequent spring freshet and run-off events.
 - b. In-water (i.e., non-frozen water bodies) impacts to fish-bearing watercourses is not permitted, and fish movement in the fish-bearing watercourses will not be obstructed in any way.
 - c. Clearing activities will be Conducted outside the migratory bird breeding window (i.e., April 15 to August 15) and outside of the bat maternity roosting (April 30 to September 1) season within Southern Ontario.
 - d. No burning of vegetation will occur.
 - e. All debris, including tree tops / 'slash' etc. will be removed from site or chipped in place.
5. Clearing will be conducted outside the migratory bird breeding season.

4.2 Preloading

In addition to the vegetation clearing, preloading for this phase of construction will also be completed. The purpose of preloading is to meet and accommodate ground settling requirements and to prepare for future construction. Grubbing of root materials, and vegetation, and topsoil removal will only be carried out in the areas to be preloaded. A total of approximately 60,000 cubic metres of preloading material, from third party borrow sites within the GTA will be distributed at the preloading locations over a three (3) over a 3 month period. The preloading areas are listed below and shown in Appendix E.

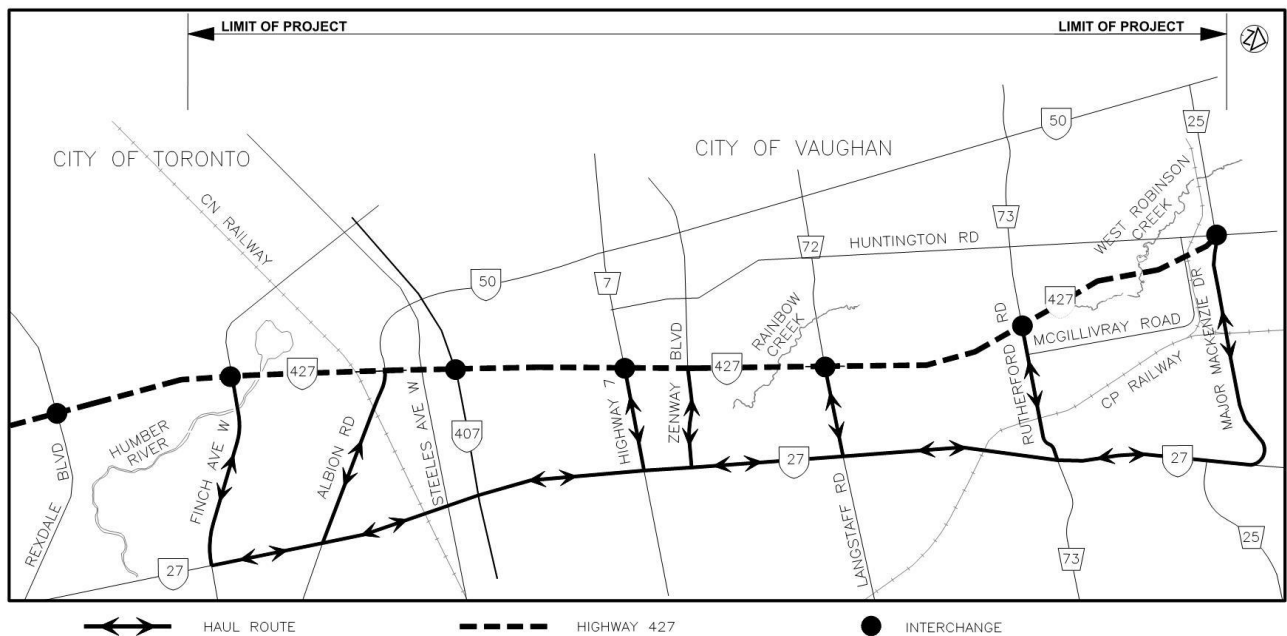
- Rutherford Road Interchange – pile height approximately six (6) metres.
- CP Rail/ McGillivray Road Overpass – pile height approximately eight (8) metres.
- Major Mackenzie Drive Interchange – pile height approximately nine (9) metres.

Erosion and Sediment Control (ESC) measures will be installed around the preload areas. The preload areas will be sprayed with seed and mulch for stabilization. Preloading will not be carried out within the Rainbow Creek Valley, or West Robinson Creek Valley

4.3 Construction Staging during DCR # 1 Works

Traffic and access to local roads will be maintained during this construction phase of the Highway 427 Expansion project. The majority of the work will occur within the new extended Highway 427 ROW, well away from existing roadways, thereby minimizing local traffic impacts. Construction access will be via existing municipal roads, and haul routes will be via major roadways as seen in **Figure 4**. Access for the works between Finch Avenue and Zenway Boulevard will be conducted using temporary lane closures for short durations to either provide safe work areas or for the unloading and loading of equipment.

Figure 4: Haul Routes



While there are not expected to be any significant traffic delays, construction staging measures will include the following, to minimize traffic impacts:

- Advance signage will be provided where required for temporary lane closures in order to notify motorists of construction.
- All lane reductions and or traffic delays will be implemented outside of peak hours.
- Emergency services, OPP, school boards, transit authorities and municipalities will be advised directly a minimum of 7 days prior to the implementation of traffic control measures. Notice of traffic disruptions will also be posted on the project website.
- Access will be via existing municipal roads.

4.4 Utilities

Enbridge, Hydro One, Alectra, Rogers and Bell will be impacted by the proposed construction at the locations listed below, but no service outages are anticipated.

- Zenway Boulevard – discussions with Enbridge suggest that it may be possible to cut and terminate the gas line before the bulk of relocations. In an effort to minimize environmental impacts, the gas main will need to be terminated at New Enterprise Way. The severed gas main will remain buried until the bulk of relocations can begin, minimizing environmental impacts.
- Highway 7 – The pole relocation will involve 3 (three) utility companies, Alectra, Rogers and Hydro One.
- Major Mackenzie Drive – The Bell Outside Plant Interface (OPI) will require relocation including splicing requirements for the cables. There will also be some trenching involved for this work.
- Albion Road – relocation of 1 (one) Toronto Hydro pole and some ancillary electrical work.
- Steeles Avenue – relocation of 3 (three) Toronto Hydro / Hydro One poles and minor ancillary electrical work.

These utility companies undertake their construction activities using industry standard good construction practices, including all appropriate mitigation measures necessary to protect any sensitive environmental features; however, no sensitive environmental features are currently identified in these three areas.

4.5 Concrete Stockpiling

LINK427 will be stockpiling concrete materials (i.e., concrete reclaimed from demolition of curbs, sidewalk, etc.) for future re-use on the project. It is estimated that up to 10,000 cubic meters of concrete will be stockpiled on an established paved/graveled lay down area located on the south side of Langstaff Road, within the project limits, as seen in **Figure 3**. The concrete stockpile will not be located on areas that were previously identified as having potential contamination. Jersey barrier and reinforced silt fence and filter fabric will be placed on three sides of the stockpile in order to contain the material and prevent migration off the laydown area.

The source of material are from construction sites operated by consortium partners of the LINK427 Construction Team. Those sites will undertake the appropriate precautionary measures before any material is removed from their site to ensure that only appropriate concrete materials suitable for re-use on the Highway 427 project are delivered. Additional detail on the use of this material will be supplied in future DCR's.

Figure 3: Location of Concrete Stockpiling for Future Re-Use



5. Environmental Impacts, Mitigation Measures and Commitments

This section of the DCR identifies the impacts to the natural, socio-economic and cultural environments associated with the construction of the components of the Highway 427 Expansion included in this DCR # 1, and the proposed measures to mitigate potential effects during construction. Mitigation includes planning decisions, design features, construction requirements, construction constraints and the potential for follow-up monitoring requirements.

This section also describes and documents how the commitments outlined in the Highway 427 Extension Transportation Corridor Environmental Assessment Report (EA) (January 2010), TESR (November 2013), TESR (January 2016) and the associated Ministry of the Environment and Climate Change (MOECC) Notice of Approval (November, 2010) have been addressed with respect to the works proposed within DCR #1.

Construction works associated with this DCR will not commence until applicable permits, approvals and authorizations are in place.

A number of commitments for additional work or environmental impact mitigation measures related to this project have been identified and are summarized in the following sections below.

The key to ensuring effective environmental quality control and risk management during the project is the development and proactive implementation of an approach that:

- Identifies the environmental sensitivities;
- Presents the environmental protection measures in a way that can be translated into requirements and for which compliance can be verified; and,
- Includes a monitoring program that verifies that the environmental protection measures are being implemented and are effective.

LINK427 is committed to ensuring that this approach is applied proactively, and consistently throughout the project. LINK427 has developed an Environmental Management System and an Environmental Quality Management Plan to oversee implementation of this commitment.

5.1 Natural Environment

5.1.1 Terrestrial Ecosystems

Terrestrial field investigations were undertaken for the Individual EA (January 2010), TESR (2013) and in 2015 in accordance with the Environmental Reference for Highway Design (2013). Vegetation communities were classified based on the *Ecological Land Classification (ELC) System for Ontario* and breeding bird surveys were completed according to the *Ontario Breeding Bird Atlas Field Program*.

Vegetation within the Lands is concentrated within the main valley crossings, as well as a few isolated farm woodlots and hedgerows. Plant species are represented by a high proportion of non-native species, which is likely due to the high level of disturbance in the surrounding area.

Previous correspondence with the MNRF indicated the potential for Butternut (*Juglans cinerea*) to occur within the Lands. Butternut is a Species at Risk (SAR) listed as Endangered under the Endangered Species Act (ESA); however, no Butternut trees were observed during field investigations conducted as part of the Individual EA (January 2010), TESR (2013) or by AECOM in 2015 or LINK427 in 2017. No other SAR plant species have been documented or observed within the Project Lands.

The EA (2010) notes a number of L-ranked (local ranking system developed by the TRCA) and regionally rare plant species have been documented within the Lands. LINK427 conducted targeted searches for L-ranked and regionally rare plants in September 2017 and documented two L-ranked species that will be impacted within the Lands: Running Strawberry-bush (*Euonymus obovatus*, L3) and Shagbark Hickory (*Carya ovata* var. *ovata*, L3) at two locations.

The EA (2010) also recommended reviewing the locations of mature Bur Oak trees at West Robinson Creek in order to determine if they could be retained. LINK427 surveyed these locations and has made an effort to revise the grading limits to retain eight (8) of the nine (9) of the trees identified.

The clearing required by the works described in this DCR will result in the removal of existing vegetation. In the area between Finch Avenue and Highway 7, the vegetation clearing activities will be limited to scattered trees and shrubs within roadside cultural meadow, most of which are non-native and/or planted species. This roadside vegetation is already heavily disturbed by ongoing highway operation and maintenance activities. There are large areas of the invasive Common Reed (*Phragmites australis*) in the ditch lines which may also be cut during the advance clearing works. This material will be disposed of separately, according to the Invasive Species Management Program.

Vegetation that will be cleared between Highway 7 and Major MacKenzie Drive is also dominated by cultural meadow and agricultural fields, with more natural vegetation limited to the main valley crossings and three small, isolated farm woodlots (identified in the EA as FO-15, FO-17b and FO-19). One of the farm woodlots (FO17b) will be removed completely, while the others will be partially retained and protected with fencing (see mitigation measures below). The Highway 427 crossing of Rainbow Creek (identified in the EA as FO-21), is a young, deciduous forest community that has a high proportion of non-native species, including a ground layer dominated by the invasive Dog-Strangling Vine. The Highway 427 crossing of West Robinson Creek (identified in the EA as FO-11) is classified as a cultural meadow with scattered large trees and shrubs.

When undertaking the vegetation clearing and the preloading activities, there is the potential for damage to the natural heritage features adjacent to the areas defined for clearing and/or otherwise identified for retention. In order to prevent unintended impacts to adjacent vegetation, all vegetation not requiring removal will be protected and will be fenced prior to the initiation of the clearing works identified in this DCR. The identified mitigation measures designed to protect and limit the impacts to vegetation are provided below.

Mitigation Measures:

- LINK 427 will protect and retain existing vegetation and trees, within an identified protected vegetation area.
- Grading limits have been refined to retain as much vegetation as possible, including a number of mature trees at West Robinson Creek.
- Clearing, grubbing and follow-up construction activities will be carefully planned prior to the start of construction in order to foresee and mitigate any environmental issues before they occur.
- Vegetation removal (i.e., tree/shrub clearing, grubbing) will be restricted to within the Lands, as identified in the design drawings.
- Plant salvage, transplant and seed collection will occur in advance of the clearing work documented within this DCR, according to Rare Plant Salvage Plan. Locations of rare plants are included in the design drawings. Many of the identified Shagbark Hickory trees are not salvageable due to their size, however seedlings < 0.5 m tall will be salvaged and seed will be collected for use in restoration areas.
- Areas within the Lands with a high proportion of invasive species that will be removed as part of the advance clearing within DCR #1 (i.e., Buckthorn and *Phragmites*) will be delineated in the field by LINK427 Plant Ecologist/Botanist(s) prior to the start of clearing activities. These species will be removed and disposed of separately in accordance with the Invasive Species Management Program to avoid the spread of these species with the Lands.
- The boundaries of the Lands will be clearly delineated on construction specifications and will be fenced prior to the start of works associated with DCR #1.
- Protected vegetation will be clearly delineated in both the design drawings and will be fenced prior to the start of works associated with DCR #1.
- Vegetation removals shall take place outside of the appropriate timing windows for breeding birds and bats.

- LINK427 will ensure the use of appropriate vegetation clearing techniques (e.g. trees to be felled away from the retained natural area)
- Prior to heavy machinery working adjacent to identified natural areas and vegetation communities, tree protection barrier shall be installed outside the drip-line of the significant features to protect any vegetation that is to be retained and is in the vicinity of exposure to damage by machinery or other sources. This includes, but is not limited to, where vegetation removals will occur within forested communities. LINK427 shall ensure that all protection fencing conforms to the Ontario Provincial Standard Specification (OPSS) for the Protection of Trees (OPSS 801.07.02) and that the fencing is installed outside of the drip-line of the identified vegetation communities or natural heritage features.
- Tree stumps will not be cut flush to the ground and grubbing will be avoided to minimize soil disturbance, particularly in erosion prone areas. Tree grubbing will be restricted to the preload areas.
- In the event that adjacent vegetation communities or planted trees are accidentally damaged during construction activities, LINK427 will implement appropriate contingency measures such as pruning tree limbs or roots that are accidentally damaged using proper arboricultural techniques.
- Any trees/shrubs that are felled will be removed or mulched as soon as possible, especially during the breeding bird season¹ in order to prevent birds from nesting.
- Tree/shrub debris will be stored outside identified protected vegetation.
- LINK427 will restrict earth movement immediately adjacent to woodlands during periods of high dust generation. Dust suppressants will be applied during dry periods to those areas which generate large amounts of dust.
- Construction vehicle access will be limited to existing roadways and construction paths, away from the identified protected vegetation.
- For areas immediately adjacent to the identified protected vegetation, periodic supervision of the construction will be undertaken.
- Vehicle re-fueling stations will be located within a centralized location on-site away from the protected vegetation.
- Rare species salvage and seed collection will be carried out, prior to advance clearing, according to the Rare Plant Salvage and Relocation Plan.
- There shall be no storage of materials within adjacent natural areas.
- LINK427 shall undertake environmental inspection during construction to ensure that protection measures are implemented, maintained and repaired and remedial measures are initiated where warranted.
- Ensure appropriate clearing and vegetation disposal of all construction-related debris following construction.
- A Vegetation Restoration Plan (VRP) is under development as part of the project and will be used as the guiding document for future vegetation restoration activities. VRP is being developed in collaboration with MNRF and TRCA, and its development is a condition of MOECC Notice of Approval.
- A Landscape Plan is under development in consultation with MNRF and TRCA, and its development is an EA commitment.

¹ As per the 2010 EA, vegetation clearing (including grubbing) shall not occur during the breeding bird season April 15 to August 15. If vegetation clearing cannot be scheduled outside the breeding bird season, then an Avian Biologist will be employed to conduct a nest survey in the area to be cleared.

- LINK427 shall ensure that equipment working in the identified invasive species locations will be thoroughly cleaned prior to moving from the site in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013) and in accordance with the Invasive Species Management Program.

5.1.2 Wildlife and Wildlife Habitat and SAR

As per the EA (January 2010), no significant wildlife habitat was identified by MNRF within the Lands.

Recent field investigations completed in 2015 and 2016, confirmed five (5) Species at Risk (SAR) within the Lands. The 2015 field investigations identified Barn Swallow and the spring 2016 field investigations confirmed the presence of four (4) SAR bat species (Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis and Tricoloured Bat).

Barn Swallow

Barn Swallow was observed foraging over the Lands and nesting in two barn structures, as noted in the TESR (2016). Registration under the ESA (2007) was completed by the MTO for the removal of breeding habitat for Barn Swallow (i.e., the two barns). The barn structures will be removed to accommodate the Highway 427 Expansion, but will not be removed by the works contained within DCR #1. However, the heritage barn (i.e., the Kellam Barn) may be boarded up to help preserve it until later in the project. This work will be done outside of the Barn Swallow active season (i.e., April 15 to August 15 of any given year) and LINK427 will provide alternative housing structures (i.e., nesting kiosks) prior to the next Active Barn Swallow Season (i.e., April 15).

Mitigation measures to address potential impacts to Barn Swallow include:

- Removal of the two barn structures with confirmed Barn Swallow nesting habitat will occur outside of the Barn Swallow active season (i.e., April 15 to August 15).
- LINK427 will provide alternative housing structures (i.e., nesting kiosks) prior to the next Active Barn Swallow Season (i.e., April 15). LINK427 will be installing alternative nesting structures prior to April 15, 2018.

Although not part of DCR # 1, LINK427 will implement all mitigation measures outlined in the Barn Swallow Mitigation and Restoration Record prepared in support of the Barn Swallow registration under the ESA, 2007.

SAR Bats

An Overall Benefit permit under the ESA (2007) is currently being obtained for SAR bat habitat removal. Vegetation clearing activities that are proceeding as part of DCR#1 will remove identified SAR bat habitat (ELC Ecosites: FO-19, FO-17b, FO-21 and Barn Structure #1 and #2). Vegetation clearing cannot be undertaken until the ESA Overall Benefit permit has been received. Temporary fencing to delineate SAR bat habitat at Rainbow Creek will be installed to ensure that habitat is not impacted prior to obtaining the permit. Fencing locations are provided in **Appendix A**.

The Kellam Barn will be removed to accommodate the Highway 427 Expansion, but will not be removed by the works contained within DCR #1.

Mitigation measures to address potential impacts to SAR Bats include:

- The Kellam Barn will be boarded up to help preserve it until later in the project. This work will be done outside of the bat maternity roosting season (i.e., April 1st to September 30th of any given year) and LINK427 will provide alternative housing structures (i.e., bat boxes) prior to the next bat maternity roosting season (i.e., April 30th).
- All conditions outlined in the forthcoming Overall Benefit Permit for SAR bats will be implemented, and will be done so in accordance with timing requirements outlined therein. It is anticipated that measures outlined in the forthcoming permit will include:
 - Wherever possible, the removal of cavity trees will be scheduled outside of the maternity roosting season for bats, which occurs from April 1st to September 30th of any calendar year which a strict “no vegetation” removal between June 1 and July 31.

- Removal of anthropogenic structures (that support roosting bats) will be completed strictly outside of the maternity roosting season (April 1st to September 30th).
- A strict 'no vegetation' removal period between June 1st and July 31st for all woodland bat habitat.
- Should cavity trees require removal between April 30th to May 31st or from August 1st to September 1st, a night exit survey will be conducted 24 hours prior to tree removal to determine the presence of SAR bats. If no bats are recorded during the survey, the removal of the tree must take place immediately the following day. If any bats are observed using the cavity tree, a 30 m buffer will be put in place and the tree will be retained until the bats have vacated the area.
- Regular monitoring during vegetation removal within the confirmed habitat features slated for removal and the two anthropogenic structures will take place by an environmental monitor.
- Any construction activities within 30m of known cavity trees or identified structures shall be restricted to daylight hours when possible, to minimize negative impacts on resident bats.
- Although not part of DCR #1, LINK427 will implement overall benefit measures for SAR bats including habitat enhancement and habitat restoration. Such as the installation of Bat Boxes and Bat Bark to be installed as compensatory habitat.

Migratory Birds

Nesting migratory birds are protected under the *Migratory Birds Convention Act* (MBCA 1994). No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), the wounding or killing of birds, of species protected under the MBCA 1994 and / or Regulations under that Act.

Mitigation measures to address potential impacts to Migratory Birds include:

- Advance clearing and other construction activities which may be disruptive to migratory birds will comply with the *Migratory Birds Convention Act* (MBCA 1994) and Migratory Bird Regulations (MBR 2012). Timing restrictions will be complied with, during construction activities, particularly vegetation clearing. Specifically, clearing of vegetation will occur outside of the *Regional Nesting Period* for migratory birds, currently identified by Environment and Climate Change Canada (ECCC) as 'late March to late August'.
- Where vegetation clearing and grubbing cannot be conducted outside of the Regional Nesting Period (late March – late August), a qualified Avian Biologist will be retained and shall conduct a nest survey, according to MBCA guidance.
- Clearing shall only be undertaken if no active nests or active breeding pairs are identified within the clearing area by the qualified Avian Biologist.

General Wildlife Protection

The landscape mosaic within the study area provides habitat for tolerant, urban-adapted and open-country species (e.g. open-country / generalist birds and mammals). Habitat characteristics are suitable for typical species including Grey Squirrel, Woodchuck, Raccoon, Eastern Cottontail, White-tailed Deer and Striped Skunk.

Mitigation measures to address potential impacts to general wildlife include:

- Any wildlife incidentally encountered during construction will not be knowingly harmed.
- Under no circumstances will any animal (e.g., bird, reptiles, mammals etc.) be knowingly harmed, harassed or otherwise disturbed. If an animal is encountered, it will be allowed to move away on its own.
- If small wildlife (e.g. turtles, amphibians) are stranded within the construction zone the CA will be contacted and the animals will be captured and released by a qualified individual (e.g., LINK427 SAR Biologist).

- In the event that small wildlife encountered does not move away from the construction zone, and construction activities are such that continuing construction in the area would result in harm to the animal, all activities will stop and the CA will be notified immediately.

Encounters with Species at Risk (SAR)

In the event that SAR wildlife is encountered in the immediate work area, the protocol outlined below shall be followed:

- Work in the immediate vicinity of the observation must come to a stop.
- Should an Ecologist/Biologist not be on-site, one will be contacted immediately. Contact details below.
- Ecologist/Biologist will notify the District MNRF Biologist within 48 hours of any observation of Endangered and Threatened species and/or immediately for any species going to a wildlife custodian.
- It is not necessary to notify the District MNRF Biologist with observations of Special Concern species or general wildlife sightings (deer, raccoon etc.).
- A 30 m setback from the area of the species location will be applied to allow the species to vacate the area naturally within a 24 hour period and then exclusionary fence is to be installed if appropriate.
- Should a SAR be encountered during construction activities completed during the winter months (e.g. dislodged from hibernation), the species will immediately be placed in appropriate containers and stored in a dark, warm, quiet place and be transported to an appropriate wildlife sanctuary/rehabilitation facility as soon as possible. Onsite Ecologists/Biologist will advise of the transportation arrangements and consult with MNRF to notify them of the transportation.
- Work is to not commence again in the immediate area of the observation until further instructed by an onsite Ecologist/Biologist.

5.1.3 Fish and Fish Habitat

Background information provided through the EA studies and documented in the EA Report (January 2010) along with AECOM's subsequent investigations identified the predominant natural environmental features within the study area as those areas associated with the West Robinson Creek and Rainbow Creek watercourses and their respective valley systems. Surface water features within the study area originate as first order headwater drainages, which contribute ephemeral flow, sediments and nutrients to downstream habitat. Second order drainages, including Rainbow Creek and West Robinson Creek, contain intermittent or permanent flow and provide spawning, rearing, feeding and migratory habitat for fish and generally support a wider variety of ecological features and functions. There are no aquatic SAR within the Lands.

None of the DCR #1 works are proposed to impact the watercourses and/or drainage features that traverse the Lands, including the major watercourses of Rainbow Creek and West Robinson Creek. There will be clearing in the West Robinson Creek Valley; however, this work will be done by hand and there will be no heavy equipment in the valley. As indicated previously, no clearing will occur in the Rainbow Creek Valley until the ESA Overall Benefit Permit is received. Because there will not be any grubbing in the valley, the stumps and roots from the cleared vegetation will be left in place. Additionally, this work will occur during the winter months while the ground is frozen, so soil disturbance will be minimized.

In general, because there will be no direct impact to fish and fish habitat as a result of DCR #1, the potential adverse effects can be addressed through standard mitigation measures. Mitigation measures that will be applied at water crossings that support fish use include:

- LINK427 will install perimeter silt fence between the work areas and all reaches of those watercourses adjacent to clearing activities, including ditch and drainage works that drain to watercourses that support fish habitat (as per OPSD 219.130 Heavy-Duty Silt Fence Barrier – see **Appendix E**).
- The silt fencing will be properly installed and regularly inspected and maintained, including after rain events. It will be left in place and maintained until all surfaces contributing drainage to these watercourses are fully stabilized.
- No in-stream crossings will be permitted for the clearing operations.
- All salvaged or stockpiled materials will be located a safe distance from the watercourses (i.e., greater than 30 m) and stabilized to prevent migration of any sediment or other material to the watercourses.
- Protected vegetation will be retained, including vegetation around the watercourses, with the exception of large trees below the structure at West Robinson Creek that will be cleared by hand and there will be no heavy equipment in the valley. Because there will not be any grubbing in the valley, the stumps and roots from the cleared vegetation will be left in place. Additionally, this work will occur during the winter months while the ground is frozen, so soil disturbance will be minimized.
- A qualified environmental inspector will be on-site as required throughout the works associated with DCR #1, and will be, responsible for ensuring the sediment and erosion control measures are functioning and all of the mitigation measures are being implemented.

5.1.4 Groundwater and Hydrogeology

Existing groundwater conditions and the impact assessment for the Highway 427 Expansion project has been documented in detail in the previous EA documents.

The DCR #1 works will not affect groundwater or hydrogeology.

A groundwater monitoring program is being implemented, in accordance with EA commitments, to establish baseline conditions and to identify potential adverse impacts to groundwater, environmentally sensitive features or water sources (such as private water wells) related to DCR #1 construction activities. Monitoring and subsequently prepared hydrogeology study report will provide a detail monitoring plan and will also identify adverse impacts related to construction dewatering early so that (proactive and/or reactive) mitigation actions can be taken, if necessary. GW monitoring will start with DCR#1 and continue through the life of the project.

5.1.5 Drainage and Stormwater Management

The dominant hydrologic features within the Lands include the Rainbow Creek and Robinson Creek that are part of the Humber River Watershed.

There are no anticipated direct impacts or permanent / temporary drainage effects for the clearing and preloading work as part of the works covered by this DCR.

The proposed stormwater management strategy includes quality treatment and quantity control. The following summarizes the key elements of the drainage and stormwater strategy:

- LINK427 shall regularly monitor water quality throughout construction.
- A Surface Water Monitoring Plan will be implemented as per the EA Conditions of Approval.

5.1.6 Erosion and Sediment Control

LINK427 will develop an Erosion and Sediment Control Plan (ESCP) for the project in order to document the environmental protection measures for preventing and controlling erosion and sedimentation. The ESCP is intended to provide the knowledge, awareness and methods necessary to complete the required work tasks in a manner that avoids or minimizes erosion and the potential impacts to the environment from sediment. The ESCP lays out the framework for ensuring that the design and construction activities are carried out in compliance with the terms and conditions of any project level permits, licenses, authorizations or agreements.

For this first phase of advance works, the ESC measures required are industry standard proven techniques to be used during pre-construction to prevent erosion of exposed soils and the transport of sediment from construction areas to retained natural areas, in particular, watercourses.

The project has two approaches to erosion and sediment control based on qualitative risk:

1. General ESC for areas with moderate to low risk, and
2. Site specific ESC for areas of concern (i.e., near watercourses).

The general *erosion* control measures for areas with moderate to low risk that will be applied are as follows:

- Existing vegetation that is not identified to be removed is to be retained and protected.
- Soil exposure is to be minimized to the extent practical, including:
 - ◆ Remove only the vegetation above the ground and do so during the winter months when the ground is frozen (weather permitting if possible);
 - ◆ Grubbing only in the preload areas;
 - ◆ Maintain vegetation wherever possible; and
 - ◆ Minimize the amount of area exposed at one time.
- All exposed soils and newly constructed surfaces are to be stabilized within 45 days of disturbance using the appropriate means in accordance with the characteristics of the soil material and slope conditions by methods such as hydro-seeding, sodding, polymer soil stabilizers/tackifiers, riprap, mulch, geotextiles and erosion control blankets (methods involving re-vegetation can only be done during the growing season). This technique will be applied to the identified preload areas for this DCR.
- A qualified environmental inspector will be on-site as required throughout construction, responsible for ensuring the erosion control measures are functioning and all of the mitigation measures are being implemented.

The general *sediment* control measures for areas with moderate to low risk that will be applied are as follows:

- All ESC measures are to be installed following OPSS 805 or manufacturer's instructions.
- All sediment control measures will be installed prior to construction and will be maintained as per OPSS 805 or manufactures instructions.
- Straw bale flow check dams (OPSD 219.180 - see **Appendix E**), rock flow check dams (OPSD 219.210 and 219.211 - see **Appendix E**), silt fence flow check dams (OPSD 219.190 - see **Appendix E**) and/or other suitable measures will be provided in temporary construction ditches and swales, as required, to control flow rates and promote settling of sediments within swales prior to discharge.
- All onsite stormwater conveyance channels for temporary ESC purposes are to have adequate capacity and protection to prevent erosion during storm and runoff events.
- Stormwater outlets shall be stabilized prior to any upstream land disturbing activities.
- Minimize water velocity with the use of constructed ditches, berms, and check dams.

- Site entrances will be protected by gravel or other means so that sediment is not tracked off site.
- All storm sewer inlets which are made operable during construction or which drain stormwater runoff from a construction site are to be protected from sediment deposition by the use of filters.
- Where sediment-laden standing water must be removed it will be disposed of by the appropriate means to contain sediment (e.g., sediment bags, sediment trap (OPSD 219.240) and no direct discharge to watercourses will be allowed.
- A qualified environmental inspector will be on-site as required throughout construction, responsible for ensuring the sediment control measures are functioning and all of the mitigation measures are being implemented.

5.2 Socio-Economic Environment

5.2.1 Air Quality

The DCR #1 works are limited in the anticipated air emissions and will be of relatively short duration so any such emissions are not anticipated to have any long-lasting effects on the surrounding area. The following best management practices for controlling air emissions are proposed for implementation during construction where practical:

- Regular cleaning of construction sites to remove construction debris that may emit dust.
- Preload areas will be sprayed with seed and mulch and the start of the growing season to avoid dust generation.
- Dust suppression will be used on unpaved haul roads and other traffic areas susceptible to emitting dust (the appropriate dust suppression techniques are subject to the area being free of sensitive plants, nearby watercourses or other ecosystems that may be affected).
- Trucks will cover their loads when hauling fine-grained materials.
- Various methods to prevent trucks and other vehicles from tracking soil, mud or dust onto paved streets or roads.
- Prompt cleaning of paved streets/roads where tracking of soil mud or dust has occurred.
- Compliance with posted speed limits and, as appropriate, further reductions in speeds when travelling at sites with unpaved surfaces.
- Regular maintenance of all motorized equipment/vehicles, including emission control devices where installed by the manufacturer, to ensure emissions from internal combustion engines is minimized.
- No excessive idling of equipment and no idling of equipment that is not in immediate use.

5.2.2 Land Use

The proposed clearing and preloading works are being carried out within the existing MTO ROW and therefore there are no direct impacts to land uses.

Existing land uses within, and surrounding the project Lands are a mix of agriculture, residential, industrial/commercial and recreational.

Future land uses within the study area are governed by the Regional Municipality of York and the City of Vaughan Official Plans, which were both updated in 2010 after approval of the *Highway 427 Transportation Corridor EA Report (January 2010)*. The project Lands are bisected by Highway 427, natural heritage features, including tributaries to the Humber River, and a major hydro transmission corridor.

There are no impacts to the existing or future land uses within the Lands as a result of the proposed Highway 427 Expansion as these works are contained within the ROW outlined in the previous EAs. No additional property is required for the construction works proposed in DCR #1, therefore no mitigation measures are required.

5.2.3 Noise and Vibration

It is anticipated that the DCR #1 construction works will be a temporary source of localized noise. The nature of the construction activities is such that the noise levels will vary temporally and spatially as different activities take place and as the location of the activities moves around the Lands.

While no significant adverse noise and vibration effects are anticipated due to the limited nature of the activities, a Construction Noise and Vibration plan has been developed and implemented as per the EA Conditions of Approval.

Implementation of the following measures will help to mitigate any potential noise and vibration impacts:

- LINK427 will be required to keep idling of construction equipment to a minimum and to maintain equipment in good working order to reduce noise from construction activities.
- Noise emissions from construction equipment will also be subjected to the limits set out in the MOECC Publication NPC-115 and the *Noise Control Guideline for Class Environmental Assessment of Undertakings*.
- The MTO Environmental Guide for Noise (October 2006) will be followed.
- Heavily loaded trucks will be routed away from residential streets, where possible, in order to limit vibration impacts.
- Ensure that separation distance between the construction staging areas and nearby receptors be maximized to the greatest extent possible to reduce noise and vibration impacts.
- Response to Noise and Vibration complaints will be done in accordance with the project's Complaint Protocol.
- In the presence of persistent noise and vibration complaints, all construction equipment shall be verified to comply with MOECC NPC-115, NPC-118 and Ontario Model Municipal Noise Control By-Law guidelines.

5.2.4 Waste Management/ Contaminated Property/ Excess Materials Management

Management of Excess Material and Waste Disposal

Excess woody/vegetative material will be generated during construction from the clearing of shrubs and trees. This excess material will either be sold to a mill (i.e., the larger trunk logs) or chipped on site and disposed of off site. This work will be done once the ground is frozen therefore eliminating soil disturbance in areas of potential contamination.

The construction activities for DCR #1 will not involve the production of any excess soils that require offsite management. However, should there be any excess soils, they will be managed in accordance with the project's Waste and Contamination Management Plan and with OPSS 180 (Management of Excess Materials – see **Appendix D**).

In the event that contaminated soil or groundwater is found during construction activities within the project Lands, the project will comply with the Ontario *Environmental Protection Act* and the MOECC spills response and contaminated procedures. A project specific Spills Response Plan will be developed and implemented.

5.3 Cultural Environment

5.3.1 Archaeological Resources

A Stage 1 Archaeological Assessment was conducted to document the archaeological features found within the study area in the previous 427 EA Report (January 2010). Additional Stage 2 archaeological assessment work was conducted in 2015 and concluded that the project Lands are clear of archaeological potential. A Stage 3 Mechanical Top Soil Removal was completed at the Coleraine Cemetery in July 2016.

During construction, the Coleraine Burying Grounds (Coleraine Cemetery) and the Coleraine Schoolhouse Site located on the south side of Major Mackenzie Drive will be protected to ensure protection from construction activities.

However, during construction there is the low possibility of encountering deeply buried archaeological resources. In the event the following situations are encountered during construction, work must stop immediately and the actions undertaken as listed below:

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources will cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
- In the event that human remains are encountered during construction, the proponent or person discovering human remains will immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services at (416) 326-8393.
- The *Cemeteries Act*, R.S.O. 1990, c.C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

5.3.2 Built Heritage and Cultural Landscapes

Cultural Heritage Evaluation and Documentation Reports were completed for the Highway 427 Expansion project during the EA and subsequent phases.

The construction activities DCR #1 do not impact any built or cultural heritage landscapes within the Lands.

6. Summary of Environmental Concerns, Mitigation Measures and Commitments

Table 4 below summarizes the commitments for mitigation and future work for the project developed to address specific concerns with the proposed design changes. The EA Commitments and compliance monitoring detailed below build upon those made as part of the EA Report (January 2010), the TESR (2013) and TESR (2016) and will be expanded during future works to ensure the appropriate mitigation measures and design features are consistent with the commitments outlined in the EA Report (January 2010), the TESR (2013) and TESR (2016).

Approvals associated with the work under this DCR include the:

- Overall Benefit permit for SAR bats under the *Endangered Species Act* legislation.

All permitting and approval requirements will be confirmed and obtained in a staged manner during subsequent design stages of the project.

Table 3 – Summary of Environmental Concerns, Mitigation Measures and Commitments

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
<i>Natural Environment</i>		
Vegetation	MTO MNR TRCA MOECC	<p>Recommended mitigation measures to address potential impacts include but are not limited to the following:</p> <ul style="list-style-type: none"> ■ LINK 427 will protect and retain existing vegetation and trees, within an identified protected vegetation area. ■ Grading limits have been refined to retain as much vegetation as possible, including a number of mature trees at West Robinson Creek. ■ Clearing, grubbing and follow-up construction activities will be carefully planned prior to the start of construction in order to foresee and mitigate any environmental issues before they occur. ■ Vegetation removal (i.e., tree/shrub clearing, grubbing) will be restricted to within the Lands, as identified in the design drawings. ■ Plant salvage, transplant and seed collection will occur in advance of the clearing work documented within this DCR, according to Rare Plant Salvage Plan. Locations of rare plants are included in the design drawings. Many of the identified Shagbark Hickory trees are not salvageable due to their size, however seedlings < 0.5 m tall will be salvaged and seed will be collected for use in restoration areas. ■ Areas within the Lands with a high proportion of invasive species that will be removed as part of the advance clearing within DCR #1 (i.e., Buckthorn and Phragmites) will be delineated in the field by LINK427 Plant Ecologist/Botanist(s) prior to the start of clearing activities. These species will be removed and disposed of separately in accordance with the Invasive Species Management Program to avoid the spread of these species with the Lands. ■ The boundaries of the Lands will be clearly delineated on construction specifications and will be fenced prior to the start of works associated with DCR #1. ■ Protected vegetation will be clearly delineated in both the design drawings and will be fenced prior to the start of works associated with DCR #1. ■ Vegetation removals shall take place outside of the appropriate timing windows for breeding birds and bats.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<ul style="list-style-type: none"> ■ LINK427 will ensure the use of appropriate vegetation clearing techniques (e.g. trees to be felled away from the retained natural area) ■ Prior to heavy machinery working adjacent to identified natural areas and vegetation communities, tree protection barrier shall be installed outside the drip-line of the significant features to protect any vegetation that is to be retained and is in the vicinity of exposure to damage by machinery or other sources. This includes, but is not limited to, where vegetation removals will occur within forested communities. LINK427 shall ensure that all protection fencing conforms to the Ontario Provincial Standard Specification (OPSS) for the Protection of Trees (OPSS 801.07.02) and that the fencing is installed outside of the drip-line of the identified vegetation communities or natural heritage features. ■ Tree stumps will not be cut flush to the ground and grubbing will be avoided to minimize soil disturbance, particularly in erosion prone areas. Tree grubbing will be restricted to the pre-load areas. ■ In the event that adjacent vegetation communities or planted trees are accidentally damaged during construction activities, LINK427 will implement appropriate contingency measures such as pruning tree limbs or roots that are accidentally damaged using proper arboricultural techniques. ■ Any trees/shrubs that are felled will be removed or mulched as soon as possible, especially during the breeding bird season² in order to prevent birds from nesting. ■ Tree/shrub debris will be stored outside identified protected vegetation. ■ LINK427 will restrict earth movement immediately adjacent to woodlands during periods of high dust generation. Dust suppressants will be applied during dry periods to those areas which generate large amounts of dust. ■ Construction vehicle access will be limited to existing roadways and construction paths, away from the identified protected vegetation. ■ For areas immediately adjacent to the identified protected vegetation, periodic supervision of the construction will be undertaken.

² As per the 2010 EA, vegetation clearing (including grubbing) shall not occur during the breeding bird season April 15 to August 15. If vegetation clearing cannot be scheduled outside the breeding bird season, then an Avian Biologist will be employed to conduct a nest survey in the area to be cleared.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<ul style="list-style-type: none"> ■ Vehicle re-fueling stations will be located within a centralized location on-site away from the protected vegetation. ■ Rare species salvage and seed collection will be carried out, prior to advance clearing, according to the Rare Plant Salvage and Relocation Plan. ■ There shall be no storage of materials within adjacent natural areas. ■ LINK427 shall undertake environmental inspection during construction to ensure that protection measures are implemented, maintained and repaired and remedial measures are initiated where warranted. ■ Ensure appropriate clearing and vegetation disposal of all construction-related debris following construction. ■ A Vegetation Restoration Plan (VRP) is under development as part of the project and will be used as the guiding document for future vegetation restoration activities.
Wildlife and Wildlife Habitat	MTO MNRF TRCA MOECC	<p>Recommended mitigation measures to address potential impacts to Wildlife and Wildlife Habitat include but are not limited to the following:</p> <ul style="list-style-type: none"> ■ Removal of the two barn structures with confirmed Barn Swallow nesting habitat will occur outside of the Barn Swallow active season (i.e., April 15 to August 15). ■ LINK427 will provide alternative housing structures (i.e., nesting kiosks) prior to the next Active Barn Swallow Season (i.e., April 15th). LINK427 will be installing alternative nesting structures prior to April 15, 2018. ■ All conditions outlined in the forthcoming Overall Benefit Permit for SAR bats will be implemented, and will be done so in accordance with timing requirements outlined therein. It is anticipated that measures outlined in the forthcoming permit will include: <ul style="list-style-type: none"> ■ A strict 'no vegetation' removal period between June 1st and July 31st for woodland bat habitat. ■ Should cavity trees require removal between April 1st to September 30th, a night exit survey will be conducted 24 hours prior to tree removal to determine the presence of SAR bats. ■ Regular monitoring during vegetation removal within the confirmed habitat features slated for removal and the two anthropogenic structures will take place by an environmental monitor.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<ul style="list-style-type: none"> ■ Any construction activities within 30m of known cavity trees shall be restricted to daylight hours when possible, to minimize negative impacts on resident bats. ■ Although not part of DCR #1, LINK427 will implement overall benefit measures for SAR bats including habitat enhancement and habitat restoration. ■ Advance clearing and other construction activities which may be disruptive to migratory birds will comply with the <i>Migratory Birds Convention Act</i> (MBCA 1994) and Migratory Bird Regulations (MBR 2012). Timing restrictions will be complied with, during construction activities, particularly vegetation clearing. Specifically, clearing of vegetation will occur outside of the <i>Regional Nesting Period</i> for migratory birds, currently identified by Environment and Climate Change Canada (ECCC) as 'late March to late August'. ■ Where vegetation clearing and grubbing cannot be conducted outside of the Regional Nesting Period (late March – late August), a qualified Avian Biologist will be retained and shall conduct a nest survey, according to MBCA guidance. ■ Clearing shall only be undertaken if no active nests or active breeding pairs are identified within the clearing area by the qualified Avian Biologist. ■ Any wildlife incidentally encountered during construction will not be knowingly harmed. ■ Under no circumstances will any animal (e.g., birds, reptiles, mammals etc.) be knowingly harmed, harassed or otherwise disturbed. If an animal is encountered, it will be allowed to move away on its own. ■ If small wildlife (e.g. turtles, amphibians) are stranded within the construction zone the CA will be contacted and the animals will be captured and released by a qualified individual (e.g., LINK427 SAR Biologist). ■ In the event that small wildlife encountered does not move away from the construction zone, and construction activities are such that continuing construction in the area would result in harm to the animal, all activities will stop and the CA will be notified immediately.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
Fish and Fish Habitat	MTO MNRF TRCA DFO	<p>Mitigation measures to address potential impacts to fish and fish habitat include but are not limited to the following:</p> <ul style="list-style-type: none"> ■ LINK427 will install perimeter silt fence between the work areas and all reaches of those watercourses adjacent to clearing activities, including ditch and drainage works that drain to watercourses that support fish habitat (as per OPSD 219.130 Heavy-Duty Silt Fence Barrier – see Appendix E). ■ The silt fencing will be properly installed and regularly inspected and maintained, including after rain events. It will be left in place and maintained until all surfaces contributing drainage to these watercourses are fully stabilized. ■ No in-stream crossings will be permitted for the clearing operations. ■ All salvaged or stockpiled materials will be located a safe distance from the watercourses (i.e., greater than 30 m) and stabilized to prevent migration of any sediment or other material to the watercourses. ■ Protected vegetation will be retained, including vegetation around the watercourses, with the exception of large trees below the structure at West Robinson Creek that will be cleared by hand and there will be no heavy equipment in the valley. Because there will not be any grubbing in the valley, the stumps and roots from the cleared vegetation will be left in place. Additionally, this work will occur during the winter months while the ground is frozen, so soil disturbance will be minimized. ■ A qualified environmental inspector will be on-site as required throughout the works associated with DCR #1, and will be, responsible for ensuring the sediment and erosion control measures are functioning and all of the mitigation measures are being implemented.
Groundwater & Hydrology	MTO MOECC TRCA Property Owner	<ul style="list-style-type: none"> ■ The clearing and preloading works will not affect groundwater or hydrogeology.
Drainage & Stormwater Management	MTO MOECC MNRF TRCA DFO	<ul style="list-style-type: none"> ■ LINK427 shall regularly monitor water quality throughout construction. ■ A Surface Water Monitoring Plan will be implemented as per the EA Conditions of Approval.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
<p>Erosion and Sediment Control</p>	<p>MTO MNRF TRCA MOECC</p>	<p>Mitigation measures will be used for erosion and sediment control to prevent sediment from entering natural areas during construction. The primary principles associated with sedimentation and erosion protection measures are to: (1) minimize the duration of soil exposure, (2) retain existing vegetation, where feasible, (3) encourage re-vegetation, (4) divert runoff away from exposed soils, (5) keep runoff velocities low, (6) trap sediment as close to the source as possible.</p> <p>Below is a list of erosion and sediment control measures:</p> <ul style="list-style-type: none"> ■ Existing vegetation that is not identified to be removed is to be retained and protected. ■ Soil exposure is to be minimized to the extent practical, including: <ul style="list-style-type: none"> ◆ Remove only the vegetation above the ground and do so during the winter months when the ground is frozen (weather permitting if possible); ◆ Grubbing only in the preload areas; ◆ Maintain vegetation wherever possible; and ◆ Minimize the amount of area exposed at one time. ■ All exposed soils and newly constructed surfaces are to be stabilized within 45 days of disturbance using the appropriate means in accordance with the characteristics of the soil material and slope conditions by methods such as hydro-seeding, sodding, polymer soil stabilizers/tackifiers, riprap, mulch, geotextiles and erosion control blankets (methods involving re-vegetation can only be done during the growing season). This technique will be applied to the identified preload areas for this DCR. ■ A qualified environmental inspector will be on-site as required throughout construction, responsible for ensuring the erosion control measures are functioning and all of the mitigation measures are being implemented. ■ All ESC measures are to be installed following OPSS 805 or manufacturer's instructions. ■ All sediment control measures will be installed prior to construction and will be maintained as per OPSS 805 or manufactures instructions. ■ Straw bale flow check dams (OPSD 219.180 - see Appendix E), rock flow check dams (OPSD 219.210 and 219.211 - see Appendix E), silt fence flow check dams (OPSD 219.190 - see Appendix

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<p>E) and/or other suitable measures will be provided in temporary construction ditches and swales, as required, to control flow rates and promote settling of sediments within swales prior to discharge.</p> <ul style="list-style-type: none"> ■ All onsite stormwater conveyance channels for temporary ESC purposes are to have adequate capacity and protection to prevent erosion during storm and runoff events. ■ Stormwater outlets shall be stabilized prior to any upstream land disturbing activities. ■ Minimize water velocity with the use of constructed ditches, berms, and check dams. ■ Site entrances will be protected by gravel or other means so that sediment is not tracked off site. ■ All storm sewer inlets which are made operable during construction or which drain stormwater runoff from a construction site are to be protected from sediment deposition by the use of filters. ■ Where sediment-laden standing water must be removed it will be disposed of by the appropriate means to contain sediment (e.g., sediment bags, sediment trap (OPSD 219.240) and no direct discharge to watercourses will be allowed. ■ A qualified environmental inspector will be on-site as required throughout construction, responsible for ensuring the sediment control measures are functioning and all of the mitigation measures are being implemented.
Socio-Economic Environment		
Air Quality	MTO MOECC MNRF	<p>The following mitigation measures are to be complied with:</p> <ul style="list-style-type: none"> ■ Regular cleaning of construction sites to remove construction debris that may emit dust. ■ Preload areas will be sprayed with seed and mulch and the start of the growing season to avoid dust generation. ■ Dust suppression will be used on unpaved haul roads and other traffic areas susceptible to emitting dust (the appropriate dust suppression techniques are subject to the area being free of sensitive plants, nearby watercourses or other ecosystems that may be affected). ■ Trucks will cover their loads when hauling fine-grained materials. ■ Various methods to prevent trucks and other vehicles from tracking soil, mud or dust onto paved streets or roads. ■ Prompt cleaning of paved streets/roads where tracking of soil mud or dust has occurred.

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<ul style="list-style-type: none"> ■ Compliance with posted speed limits and, as appropriate, further reductions in speeds when travelling at sites with unpaved surfaces. ■ Regular maintenance of all motorized equipment/vehicles, including emission control devices where installed by the manufacturer, to ensure emissions from internal combustion engines is minimized. ■ No excessive idling of equipment and no idling of equipment that is not in immediate use.
Land Use	MTO	<ul style="list-style-type: none"> ■ The study area resides within MTO's existing ROW therefore no mitigation measures are required.
Noise and Vibration	MTO MOECC	<p>The following mitigation measures are recommended to minimize and manage construction related noise during construction:</p> <ul style="list-style-type: none"> ■ LINK427 will be required to keep idling of construction equipment to a minimum and to maintain equipment in good working order to reduce noise from construction activities. ■ Noise emissions from construction equipment will also be subjected to the limits set out in the MOECC Publication NPC-115 and the <i>Noise Control Guideline for Class Environmental Assessment of Undertakings</i>. ■ The MTO Environmental Guide for Noise (October 2006) will be followed. ■ Heavily loaded trucks will be routed away from residential streets, where possible, in order to limit vibration impacts. ■ Ensure that separation distance between the construction staging areas and nearby receptors be maximized to the greatest extent possible to reduce noise and vibration impacts. ■ Response to Noise and Vibration complaints will be done in accordance with the project's Complaint Protocol. ■ In the presence of persistent noise and vibration complaints, all construction equipment shall be verified to comply with MOECC NPC-115, NPC-118 and Ontario Model Municipal Noise Control By-Law guidelines.
Waste Management / Contaminated Property / Excess Materials Management	MTO MNR TRCA DFO	<p>To minimize the potential for waste, contamination and excess materials impacts, the following mitigations measures will be implemented:</p>

Environmental Issues / Concern	Agencies	Proposed Mitigation / Commitments to Future Work
		<ul style="list-style-type: none"> ■ Excess material will require proper management (removal, storage, and disposal). Materials will be managed in accordance with <i>Ontario Standard Specification (OPSS) 180 – General Specification for Management of Excess Materials</i>. ■ The project will follow the requirements of the Waste and Contamination Management Plan (WCMP)
Cultural Environment		
Archaeological Resources	MTO MTCS	<p>The following mitigation measures are proposed:</p> <ul style="list-style-type: none"> ■ Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the <i>Ontario Heritage Act</i>. The proponent or person discovering the archaeological resources will cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out fieldwork, in compliance with Section 48 (1) of the <i>Ontario Heritage Act</i>. ■ In the event that human remains are encountered during construction, the proponent or person discovering human remains will immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services at (416) 326-8393. ■ The <i>Cemeteries Act</i>, R.S.O. 1990, c.C.4 and the <i>Funeral, Burial and Cremation Services Act</i>, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.
Built Heritage and Cultural Landscapes	MTO	<ul style="list-style-type: none"> ■ No impacts are anticipated to built and cultural landscapes as part of DCR #1.

7. Project Monitoring

During construction, LINK427 will ensure that mitigation measures and key design features are implemented and remain consistent with the Project Agreement (PA). External notifications and consultation will also be consistent with any commitments that may have been made earlier. In addition, LINK427 will assess the effectiveness of the environmental mitigation measures to ensure the following:

- Mitigation measures are providing the intended control and/or protection;
- The control and/or protection provided by mitigation measures is adequate;
- Additional mitigation measures are provided, as required, for any unanticipated environmental problems that may develop during construction;
- Information is available regarding required mitigation measures; and
- Environmental monitoring, after a project is completed, may involve follow-up monitoring of significant measures and/or significant concerns.

Condition 8 of the MOECC Notice of Approval (November 2010) outlines the requirements for a Complaint Protocol. The Complaint Protocol, established for the Highway 427 Expansion project addresses how LINK427 will respond to complaints made during the construction and operation of the project. During construction and operation of the Highway 427 Expansion project, this Protocol will act as a tool to ensure that all complaints are addressed, recorded, tracked and handled in an expeditious and efficient manner.

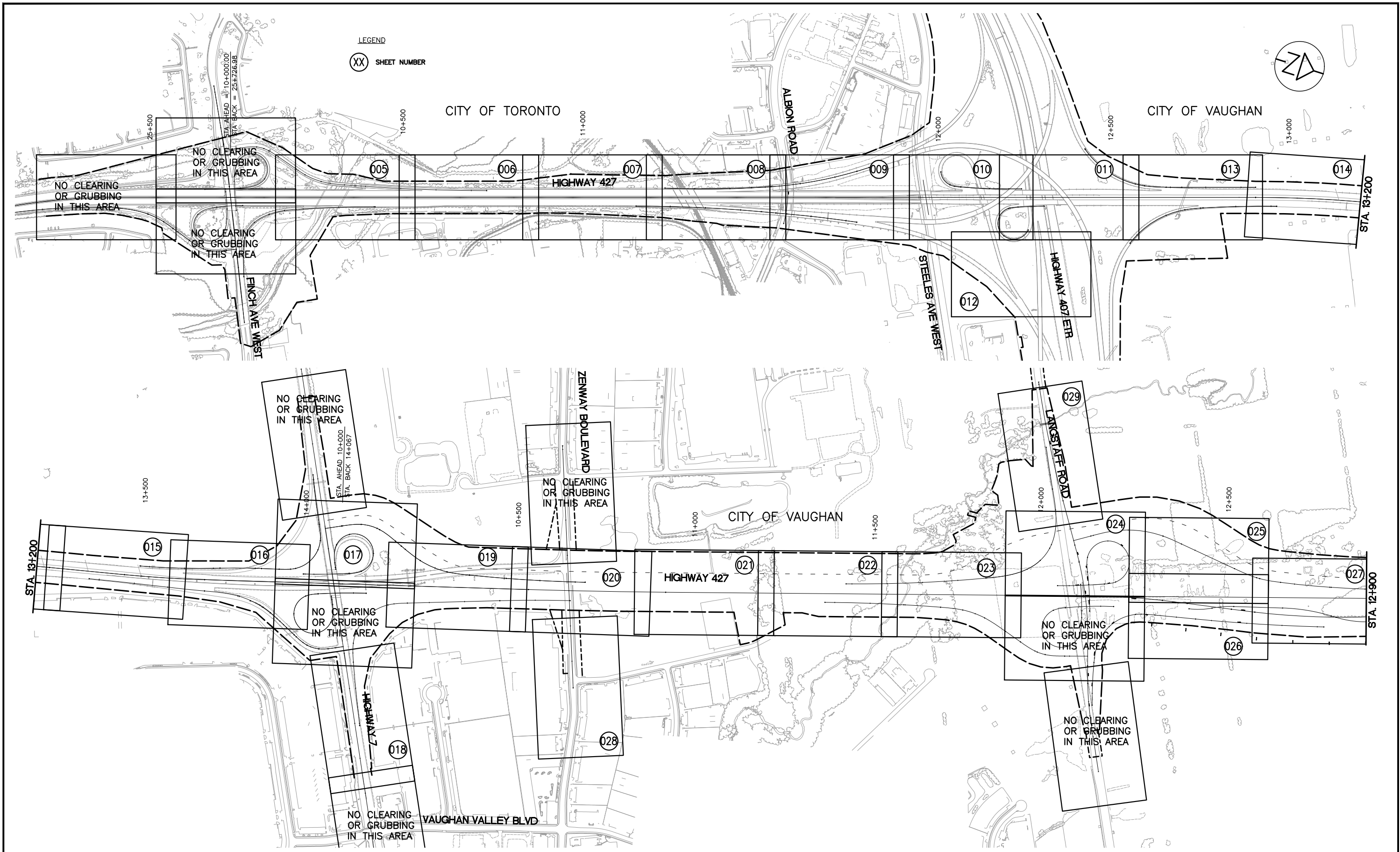
Per Condition 4 and 5 of the MOECC Notice of Approval (November 2010), a Compliance Monitoring Program (CMP) was developed and an Annual Compliance Report was submitted to MOECC on October 30, 2015. The purpose of the CMP is to enable the monitoring of the fulfillment of the provisions of the EA. The CMP identifies the parties responsible for project compliance monitoring and provides the program scope and actions required during the project's detail design, construction, operation and maintenance stages. The Annual Compliance Report describes its compliance with the conditions of approval set out and describes the results of the CMP. Per Condition 5 of the MOECC Notice of Approval and IEA (2010), Annual Compliance reporting which describes compliance with the conditions in the Notice of Approval is being submitted to MOECC annually on or before September 30th of each year.

LINK427 has also developed an Environmental Management System (EMS), for the Highway 427 Expansion Project that complies with the ISO 14001:2004 Standard and will be applied throughout the Project Term.

Construction is subject daily to general on-site inspection to ensure the execution of the environmental component of the work and to deal with environmental problems that develop during construction. This is the primary method for compliance monitoring.

Appendices

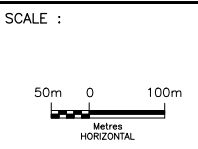
Appendix A: Advance Vegetation Clearing Areas



LEGEND
 (XX) SHEET NUMBER



NO.	DATE	REVISIONS	BY	CHK.	LEAD. DISC.	PROJ. MAN.



DESIGNED	BARRY McCANDLESS	
DRAWN	BARRY McCANDLESS	
CHECKED	DUNCAN CAMPBELL	
APPROVED LEAD ENGINEER	JONATHAN MOHACSI	
APPROVED PROJ. MANAGER	PETER BAMFORTH	
CONSULTANT		
	NAME (PRINT)	INIT. DATE

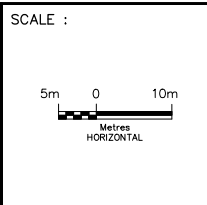


C:\project\wsp-ca\wsp_sarahroberts\dms02946\Link_427_Logo.jpg

HWY 427 EXPANSION							
PLATE INDEX							
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B				DWG 0003	



NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PRD. MAN.

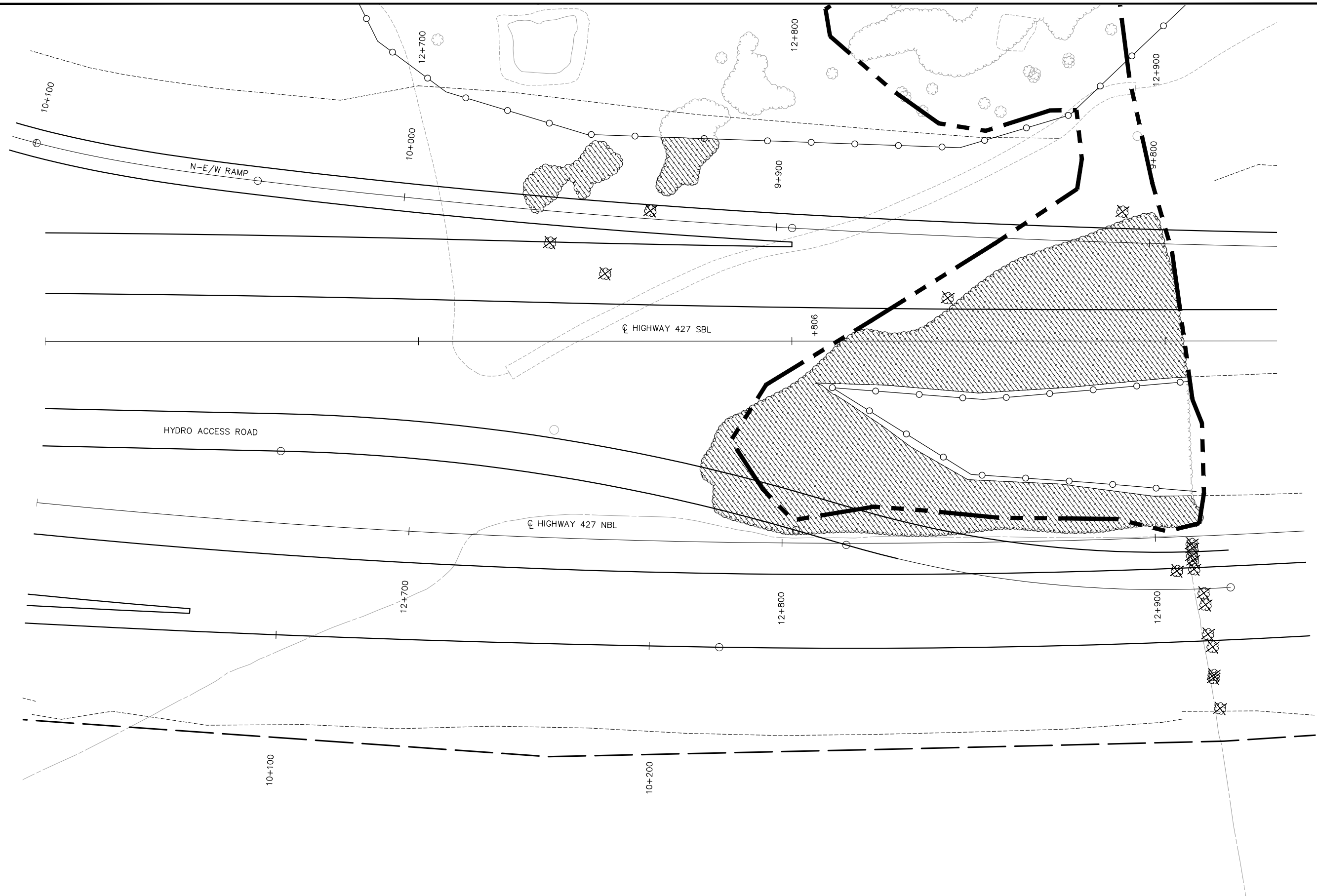


DESIGNED	MICHAEL ETINGEN		
DRAWN	MICHAEL ETINGEN		
CHECKED	DUNCAN CAMPBELL		
APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
APPROVED PROJ. MANAGER	PETER BAMFORTH		
NAME (PRINT)		INIT.	DATE

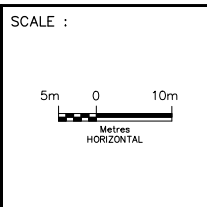
CONSULTANT	



HWY 427 EXPANSION						
CLEARING						
STA. 11+200 TO STA. 11+550						
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER
H427-D		9B			DWG	0008



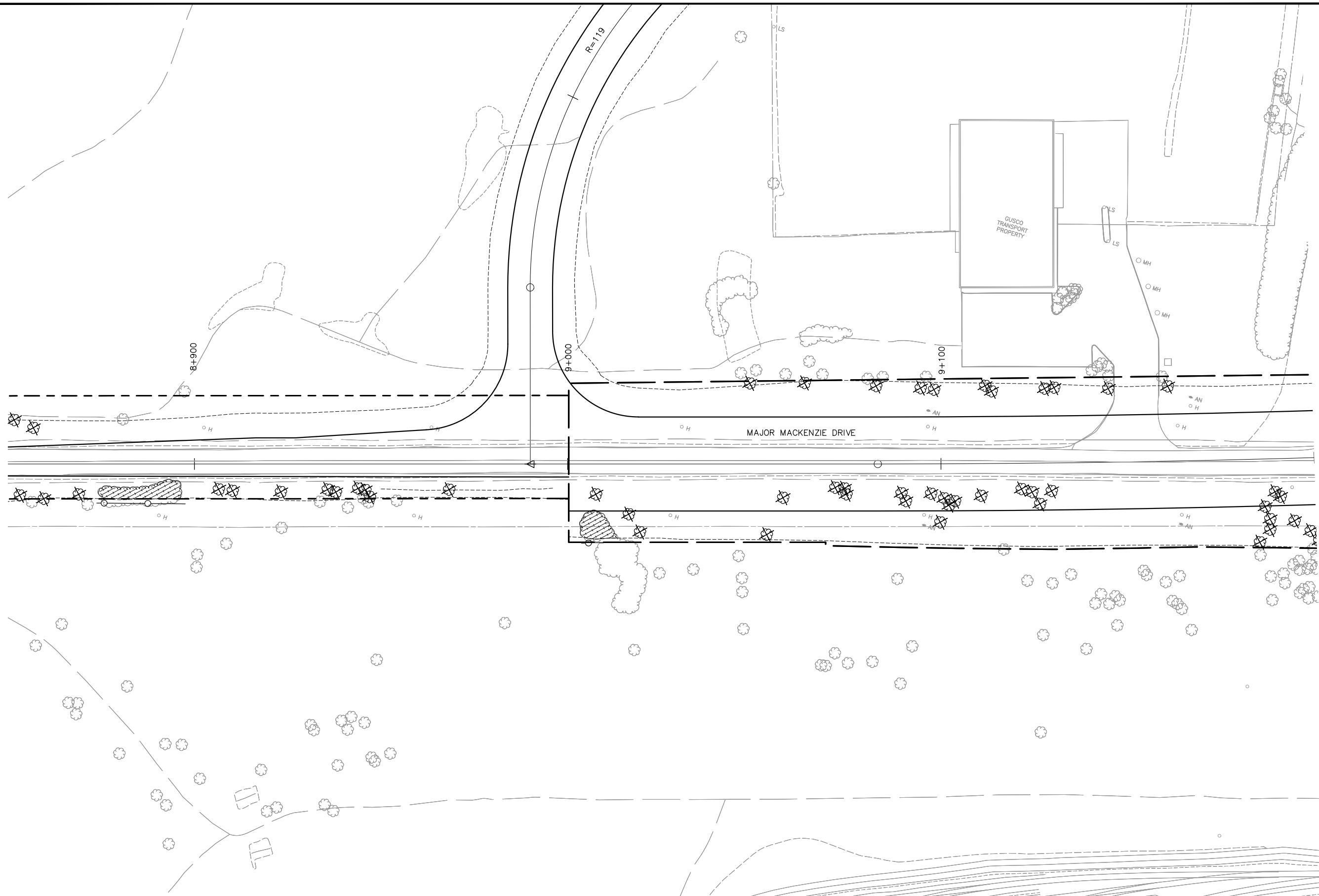
NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PRJL MAN.



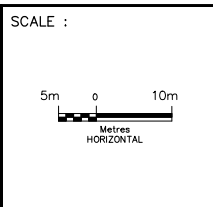
CONSULTANT	DESIGNED	MICHAEL ETINGEN		
	DRAWN	MICHAEL ETINGEN		
	CHECKED	DUNCAN CAMPBELL		
	APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
	APPROVED PRJL. MANAGER	PETER BAMFORTH		
	NAME (PRINT)		INIT.	DATE



HWY 427 EXPANSION						
CLEARING						
STA. 12+600 TO STA. 12+930 SBL						
STA. 12+600 TO STA. 12+940 NBL						
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER
H427-D		9B			DWG	0027



NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PRJL MAN.



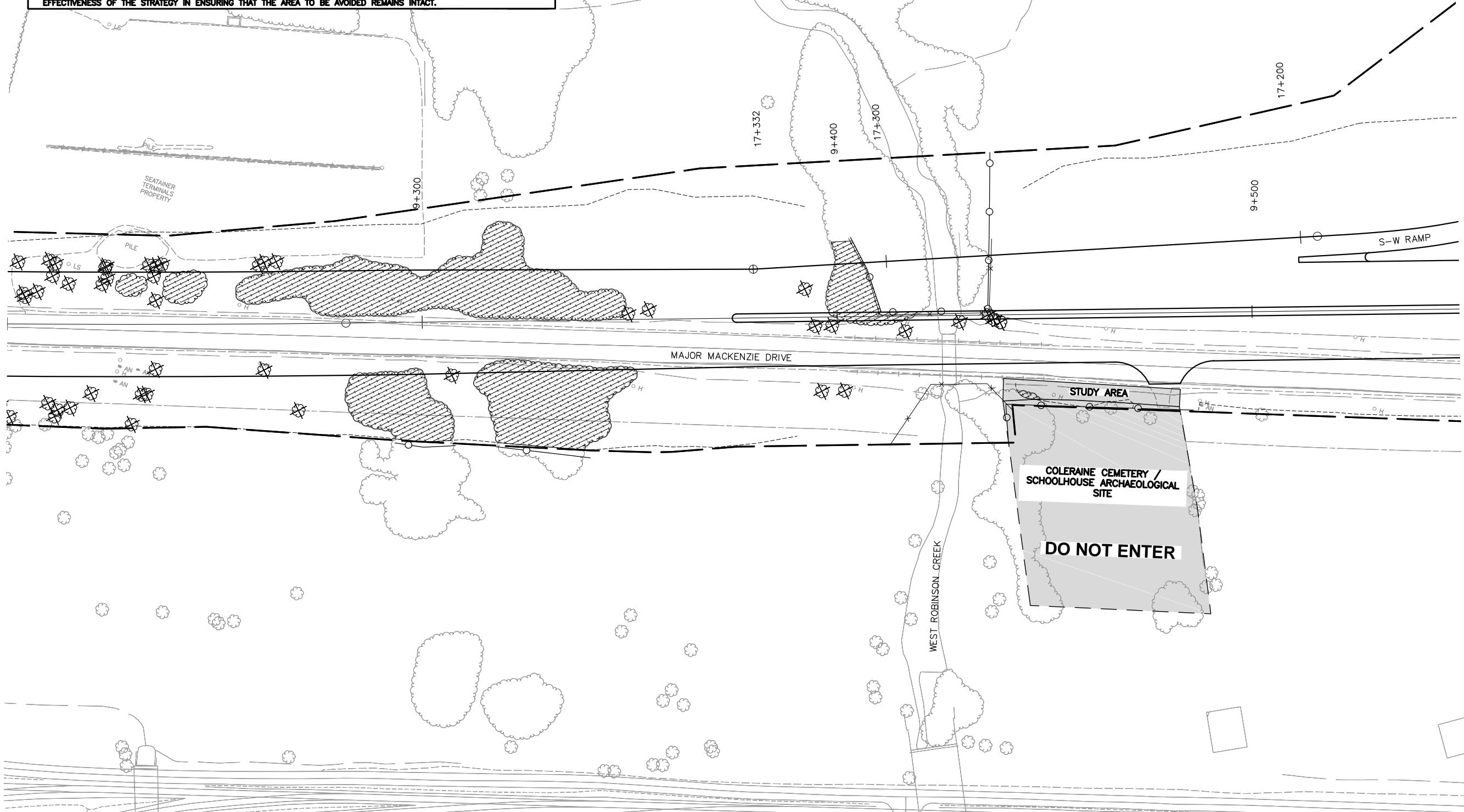
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DRAWN	MICHAEL ETINGEN		
CHECKED	DUNCAN CAMPBELL		
APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
APPROVED PROJ. MANAGER	PETER BAMFORTH		



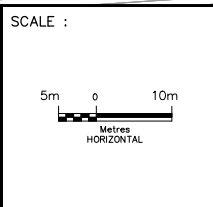
HWY 427 EXPANSION						
CLEARING						
STA. 8+850 TO STA. 9+200						
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER
H427-D		9B			DWG	0043

COLERAINE BURYING GROUNDS (COLERAINE CEMETERY) NOTES:

- ERECT A TEMPORARY BARRIER ALONG THE NORTHERN EDGE OF THE AREA TO BE AVOIDED (THE PRESENT CEMETERY PROPERTY LIMITS). PROJECTCO SHALL NOT ENTER THE CEMETERY AND SHALL NOT RELOCATE THE MONUMENT. THE TEMPORARY BARRIER SHALL BE ERECTED OUTSIDE THE CEMETERY. ADDITIONALLY PROJECTCO SHALL ADHERE TO SCHEDULE 15-2 PART 3 (TRAFFIC MANAGEMENT) SECTION 1.2(M) WITH REGARDS TO THE COLERAINE CEMETERY DRIVEWAY.
- ISSUE 'NO GO' INSTRUCTIONS TO ALL ON SITE CONSTRUCTION CREWS, ENGINEERS, ARCHITECTS OR OTHERS INVOLVED IN DAY-TO-DAY DECISIONS DURING CONSTRUCTION.
- SHOW THE LOCATION OF THE AREA TO BE AVOIDED ON ALL CONTRACT DRAWINGS, WHEN APPLICABLE.
- BEFORE GRADING AND OTHER SOIL DISTURBING ACTIVITIES, INSPECT TO CONFIRM THAT THE PLACEMENT OF BARRIERS CONFORMS TO THE LOCATION AND EXTENT OF THE AREA TO BE AVOIDED.
- DURING GRADING AND OTHER SOIL DISTURBING ACTIVITIES, INSPECT AND MONITOR THE AREA TO BE AVOIDED TO VERIFY THE EFFECTIVENESS OF AVOIDANCE STRATEGIES. IF ALTERATION OF THE ARCHAEOLOGICAL SITE IS OBSERVED AT ANY TIME DURING CONSTRUCTION, NOTIFY THE MINISTRY IMMEDIATELY.
- AFTER COMPLETION OF THE GRADING AND OTHER SOIL DISTURBING ACTIVITIES, INSPECT AND REPORT TO THE MTCS ON THE EFFECTIVENESS OF THE STRATEGY IN ENSURING THAT THE AREA TO BE AVOIDED REMAINS INTACT.



NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PRD. MAN.



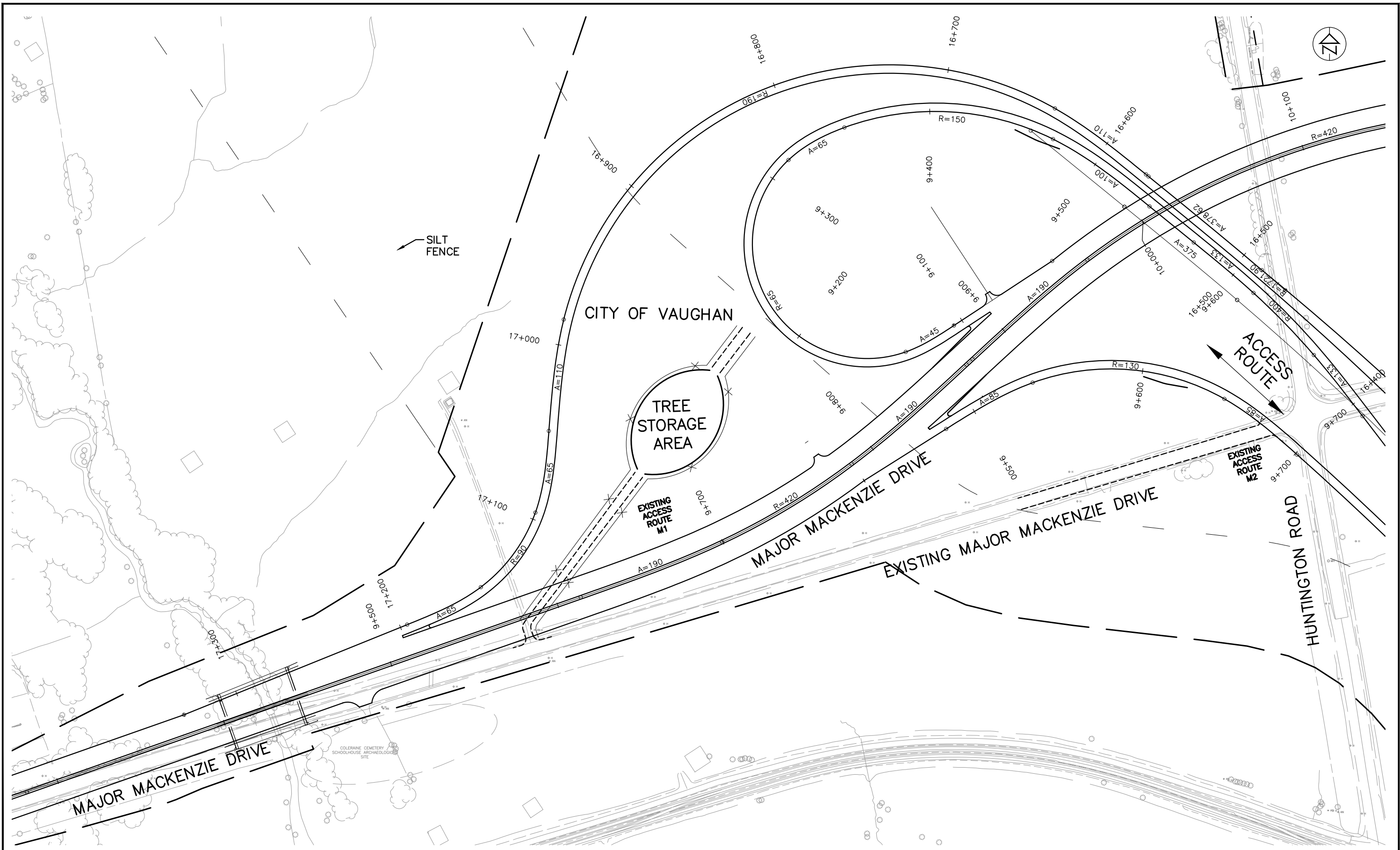
CONSULTANT	DESIGNED	MICHAEL ETINGEN		
	DRAWN	MICHAEL ETINGEN		
	CHECKED	DUNCAN CAMPBELL		
	APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
	APPROVED PROJ. MANAGER	PETER BAMFORTH		

NAME (PRINT)	INIT.	DATE

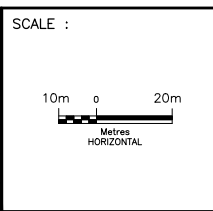


HWY 427 EXPANSION
CLEARING AND GRUBBING
STA. 9+200 TO STA. 9+550

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B				DWG0044	

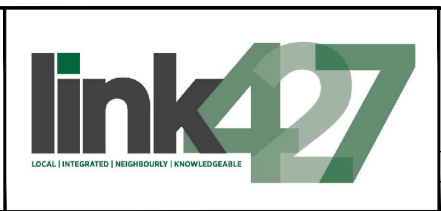


NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.



DESIGNED	MICHAEL ETINGEN		
DRAWN	MICHAEL ETINGEN		
CHECKED	DUNCAN CAMPBELL		
APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
APPROVED PROJ. MANAGER	PETER BAMFORTH		

CONSULTANT			
NAME (PRINT)		INIT.	DATE

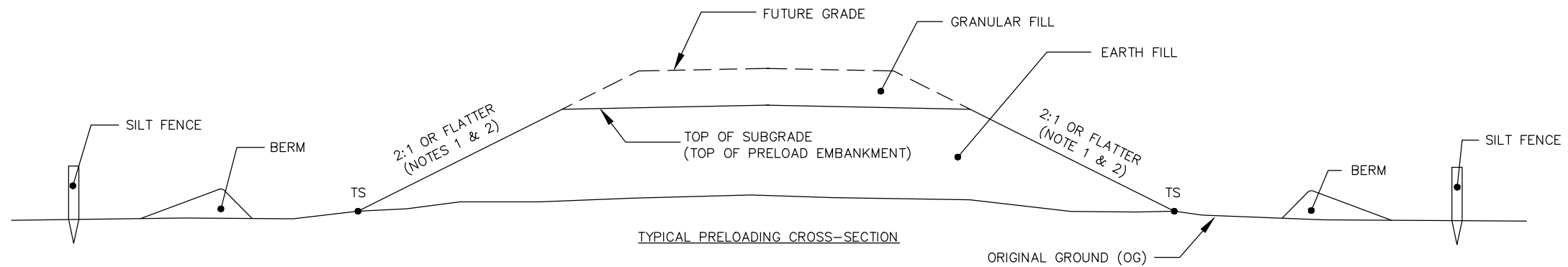


HWY 427 EXPANSION							
CONSTRUCTION ACCESS							
MAJOR MACKENZIE DRIVE							
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B			DWG	0051	

Appendix B: Preloading and Grubbing Areas

PRELOAD NOTES:

1. AT THE EMBANKMENT BASE LEVEL, THE LATERAL EXTENT OF THE PRELOAD EMBANKMENT SHALL COVER FINAL EMBANKMENT FOOTPRINT. AT THE LEVEL OF FINISHED ROAD GRADE, THE LATERAL EXTENT SHALL COVER THE DESIGN EMBANKMENT WIDTH. THE DESIGN EMBANKMENT WIDTH SHALL INCLUDE AN OVERBUILD (I.E PLATFORM WIDENING) OF 100-200mm AT EACH SIDE OF THE EMBANKMENT TO ACCOMMODATE FUTURE SETTLEMENT.
2. SLOPES TO BE SPRAYED WITH HYDROSEED.
3. INSTALLATION OF EMBANKMENT MONITORING INSTRUMENTS SHALL BE COMPLETED PRIOR TO CONSTRUCTING THE PRELOAD EMBANKMENT.
4. THE ANTICIPATED WAITING PERIOD UNDER PRELOAD EMBANKMENT IS PROVIDED IN TABLE 1. THE ACTUAL DURATION OF THE PRELOADING PERIOD SHALL BE GOVERNED BY THE FOUNDATION BEHAVIOR ASSESSED FROM THE MONITORING DATA.
5. CONSTRUCTION ACCESS AND WORK IN EXPANSION AREAS TO COMPLY WITH APPLICABLE CLOSURE TIMES AND OHSA.
6. BERM BARRIER (OPSD 219.231) AND HEAVY DUTY SILT FENCE PROTECTION TO BE PLACED DOWN THE SLOPE FROM PRELOAD EMBANKMENT, RESPECTIVELY. BERM TO HAVE 500mm MIN HEIGHT, AND SILT FENCE TO BE PLACED IMMEDIATELY AT THE END OF THE BERM. MINIMUM OF 1.2m TO BE KEPT BETWEEN ABUTMENT TOE OF SLOPE AND AND BERM.



NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.

DESIGNED	MICHAEL ETINGEN		
DRAWN	MICHAEL ETINGEN		
CHECKED	DUNCAN CAMPBELL		
APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
APPROVED PROJ. MANAGER	PETER BAMFORTH		
CONSULTANT			



HWY 427 EXPANSION							
MISCELLANEOUS DETAILS							
PRELOADING							
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B			DWG	0054	

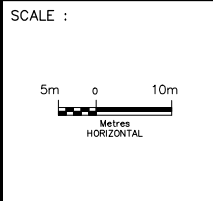


CITY OF VAUGHAN



- NOTES:
1. ESC PRELIMINARY WHERE SHOWN, ESC TO BE DEVELOPED IN ACCORDANCE WITH PA REQUIREMENTS

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PRD. MAN.



CONSULTANT	DESIGNED	DRAWN	CHECKED	APPROVED LEAD ENGINEER	APPROVED PROJ. MANAGER
	MICHAEL ETINGEN	MICHAEL ETINGEN	DUNCAN CAMPBELL	JONATHAN MOHACSI	PETER BAMFORTH

NAME (PRINT)	INIT.	DATE

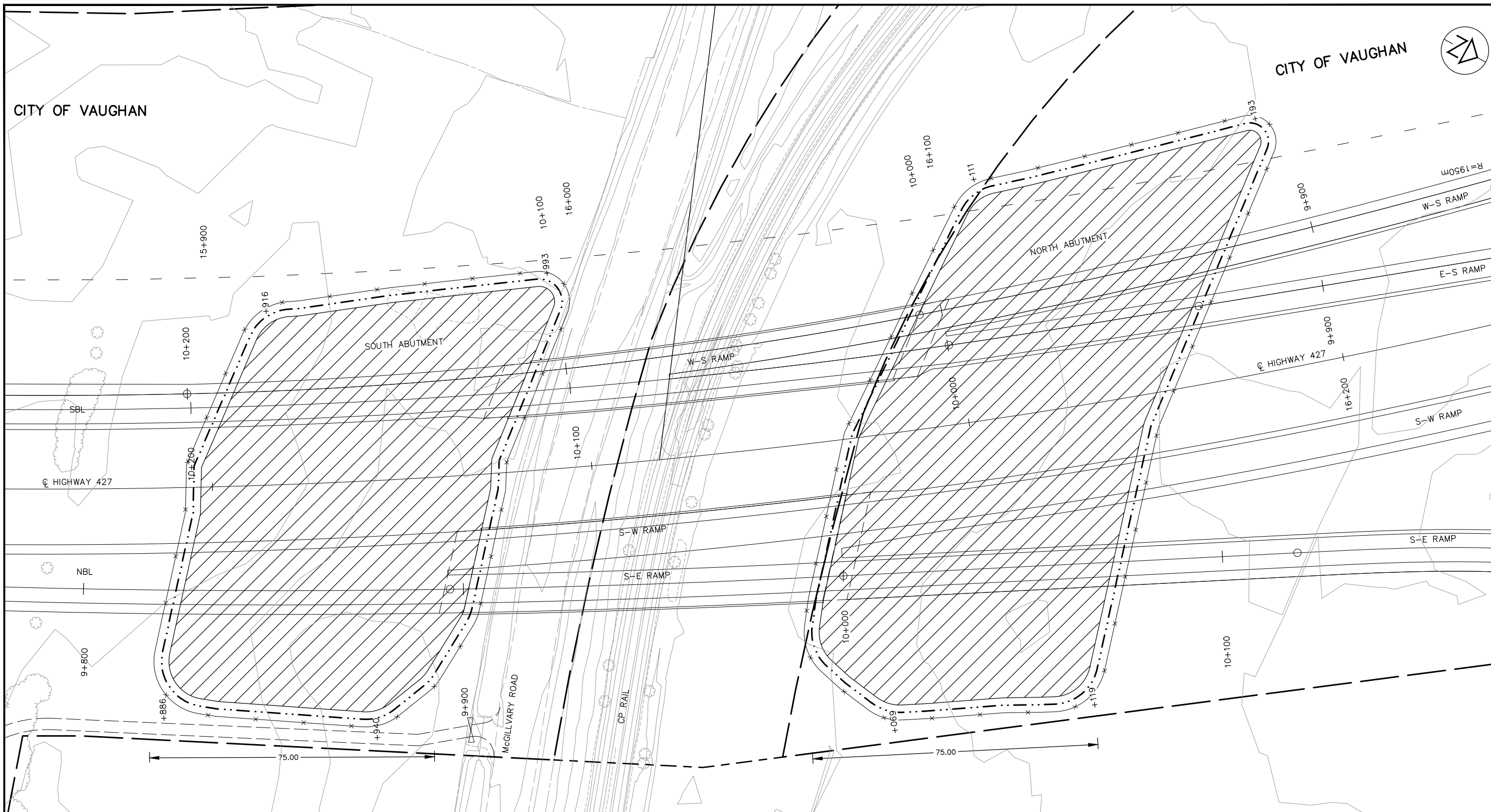


HWY 427 EXPANSION
PRELOADING AREAS
RUTHERFORD ROAD OVERPASS

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B			DWG	0055	

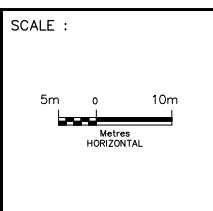
CITY OF VAUGHAN

CITY OF VAUGHAN



NOTES:
 1. ESC PRELIMINARY WHERE SHOWN, ESC TO BE DEVELOPED IN ACCORDANCE WITH PA REQUIREMENTS

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC	PRD MAN



CONSULTANT	DESIGNED	MICHAEL ETINGEN		
	DRAWN	MICHAEL ETINGEN		
	CHECKED	DUNCAN CAMPBELL		
	APPROVED LEAD ENGINEER	JONATHAN MOHACSI		
	APPROVED PROJ. MANAGER	PETER BAMFORTH		
	NAME (PRINT)	INIT.	DATE	



HWY 427 EXPANSION							
PRELOADING AREAS							
CPR/MCGILLIVARY ROAD							
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D		9B				DWG0056	

Appendix C – Study Notification Material



August 23, 2017

**RE: NOTICE OF COMMENCEMENT
HIGHWAY 427 EXPANSION, DETAIL DESIGN AND CONSTRUCTION**

LINK427 has been selected by the Ministry of Transportation (MTO) and Infrastructure Ontario (IO) to undertake the design, build, finance and maintenance of the Highway 427 Expansion project within the City of Vaughan and the City of Toronto.

Please see the attached Notice of Commencement for additional information and a key plan.

The purpose of this letter is to notify you of this project and provide you with an opportunity to identify any interests you may have.

This project is being carried out in accordance with the approved environmental planning process for projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)* and has now progressed to Detail Design. Design and Construction Reports (DCRs) will be prepared to document the Detail Design process, including environmental investigations, potential environmental effects, proposed mitigation measures, commitments to future work and monitoring. The DCRs will each be made available for a 30-day public and agency review period. Notices will be published in local newspapers, on the Project website (www.427expansion.ca) and distributed by mail to those on the project contact list to clearly identify the start and end dates of the review period, list locations where the DCR may be reviewed, and describe the process for submitting comments, including Project Team contact information.

Public Information Centres (PICs) will be held during the detail design process to allow the public an opportunity to review and comment on the project.

We encourage you to actively participate in the study by visiting our project website (www.427expansion.ca), or by contacting the staff identified on the attached "Notice of Commencement" with your comments or information requests.

Under the *Freedom of Information and Protection of Privacy Act (FOIPPA)* and the *Access to Information Act*, comments and information regarding this project, with the exception of personal information, will become part of the public record. If you have accessibility requirements in order to participate in this project, please contact the undersigned.

Yours truly,

Aitor Arbesu Iglesias
Project Director

Encl. Notice of Commencement

cc: Chris Tschirhart, Environmental Director – LINK427



23 Août 2017

**RE: AVIS DE LANCEMENT
PROLONGEMENT DE L'AUTOROUTE 427, DÉTAILS CONCERNANT LA CONCEPTION
ET LA CONSTRUCTION**

Le Ministère des transports (MTO) et Infrastructure Ontario ont choisi **LINK427** pour entreprendre la conception, la construction, le financement et l'entretien du projet de prolongement de l'autoroute 427 dans la Ville de Vaughan et de Toronto.

Veuillez trouver ci-joint l'Avis de lancement pour des renseignements complémentaires et le plan d'ensemble.

L'objectif de cette lettre est de vous faire part de ce projet et de vous donner la chance d'identifier des intérêts que vous pourriez avoir à ce sujet.

Ce projet est effectué conformément au processus de planification environnementale autorisé pour les projets en vertu des normes d'évaluation environnementale du Ministère des transports (MTO) pour les routes provinciales (2000), devenu maintenant une conception détaillée. Les Rapports de conception et de construction (RCC) seront préparés pour élaborer le processus de conception détaillée, comprenant des enquêtes environnementales, la prise en compte d'effets environnementaux potentiels, les mesures d'atténuation proposées, les engagements envers les futurs travaux et la surveillance. Tous les RCC seront mis à la disposition du grand public et aux agences lors d'une période d'examen de 30 jours. Des avis seront publiés dans les journaux locaux, sur le site Web du projet (www.427expansion.ca) et distribués par courrier à celles et ceux qui sont sur la liste de distribution du projet, pour leur signaler du début de la période d'examen et des emplacements où chaque RCC sera mis à disposition, ainsi qu'une description du processus pour soumettre des commentaires, y compris les coordonnées de l'équipe de projet.

Des Centres d'information publique (CIP) se tiendront pendant toute la durée du processus de conception détaillée pour permettre au grand public d'évaluer et de commenter sur les détails du projet.

Nous vous encourageons à participer activement à l'étude en visitant le site web du projet (www.427expansion.ca) ou en contactant le personnel indiqué dans « l'Avis de lancement » avec vos commentaires et vos demandes d'information.

En vertu de la Loi sur l'accès à l'information et la protection de la vie privée, les commentaires et les informations associés à ce projet, avec l'exception des renseignements personnels, seront divulgués au public. Avec l'exception des renseignements personnels, tous les commentaires seront divulgués au public. Si vous avez des exigences en termes d'accessibilité pour participer à ce projet, veuillez contacter la personne ci-dessous.

Cordialement,

Aitor Arbesu Iglesias
Directeur de projet

P.J. Avis de lancement

cc: Chris Tschirhart, Directeur en charge de l'environnement – LINK427

NOTICE OF COMMENCEMENT FOR DETAIL DESIGN AND CONSTRUCTION

Highway 427 Expansion

THE PROJECT

LINK427 has been selected by the Ministry of Transportation (MTO) and Infrastructure Ontario (IO) to undertake the design, build, finance and maintenance of the Highway 427 Expansion project within the City of Vaughan and the City of Toronto. The *Highway 427 Transportation Corridor Environmental Assessment (EA)* received approval from the Ministry of Environment and Climate Change (MOECC) in November 2010. The project was updated through completion of a Transportation Environmental Study Report (TESR) in 2016 to add additional lanes to the proposed Highway 427 extension. A separate TESR was completed in 2013 for the widening of existing Highway 427 between Albion Road to Highway 7.

The Highway 427 Expansion project includes the design and construction of the following:

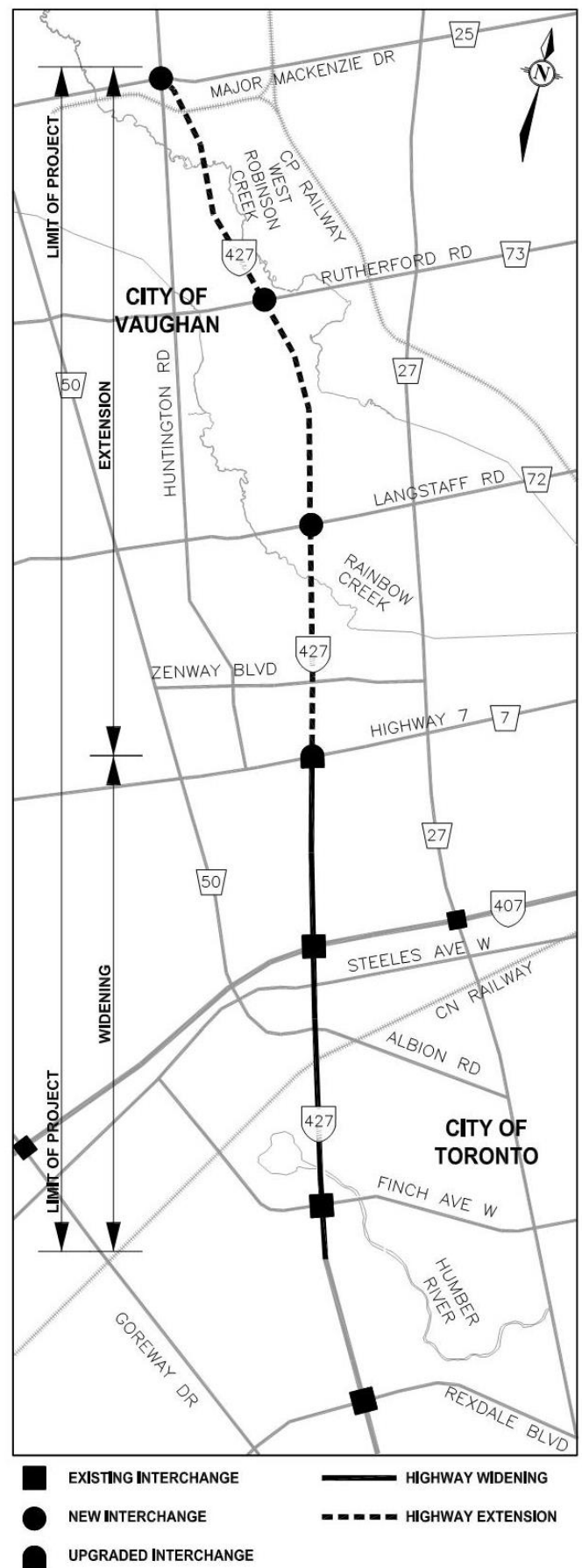
- A new 6.6 km extension from Highway 7 to Major Mackenzie Drive with:
 - eight lanes from Highway 7 to Rutherford Road;
 - six lanes from Rutherford Road to Major Mackenzie Drive;
 - three new interchanges (Langstaff Road, Rutherford Road and Major Mackenzie Drive);
 - new median High Occupancy Toll (HOT) lanes.
- A 4.0 km road 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;
 - new median High Occupancy Toll (HOT) lanes.

THE PROCESS

This project is being carried out in accordance with the approved environmental planning process for projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities* (2000) and has now progressed to Detail Design.

Public Information Centres (PICs) will be held throughout the detailed design process to allow the public an opportunity to review and comment on project details.

Design and Construction Reports (DCRs) will be prepared to document the Detail Design process, including environmental investigations, potential environmental effects, proposed mitigation measures, commitments to future work and monitoring. The DCRs will each be made available for a 30-day public and agency review period and notices will be published in local newspapers, on the Project website www.427expansion.ca and



distributed by mail to those on the project contact list advising of the start of each review period and locations where each DCR will be available for review.

COMMENTS

We are interested in hearing any comments that you may have regarding this project. If you wish to obtain additional information, provide comments or sign up for the project mailing list please contact those listed below, or visit the project website at www.427expansion.ca.

If you have any accessibility requirements in order to participate in this project please contact one of the Project Team members listed below.

Mr. Chris Tschirhart
LINK427
Environmental Director
1 Royal Gate Blvd.
Woodbridge, ON. L4L 8Z7
Ph: 1-888-352-8085
Email: ask@427Expansion.ca

Mr. Aitor Arbesu Iglesias
LINK427
Project Director
1 Royal Gate Blvd.
Woodbridge, ON. L4L 8Z7
Ph: 1-888-352-8085
Email: ask@427Expansion.ca

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* and the *Access to Information Act*. With the exception of personal information, all comments will be part of the public record.

Des renseignements sont disponibles en français en composant 1-888-595-3152.

AVIS DE LANCEMENT DES DÉTAILS DE CONCEPTION ET DE CONSTRUCTION

Prolongement de l'autoroute 427

LE PROJET

Le Ministère des transports (MTO) et Infrastructure Ontario ont choisi **LINK427** pour entreprendre la conception, la construction, le financement et l'entretien du projet de prolongement de l'autoroute 427 dans la Ville de Vaughan et de Toronto. L'évaluation environnementale du corridor de transport de l'autoroute 427 a été approuvée par le Ministère de l'environnement et du changement climatique en novembre 2010. Le projet a été mis à jour par l'achèvement du Rapport d'étude environnementale sur les transports (REET) en 2016 dans le but d'ajouter de nouvelles voies au prolongement suggéré de l'autoroute 427. Un autre REET avait été achevé en 2013 pour l'élargissement de l'autoroute 427, entre Albion Road et la route 7.

Le projet de prolongement de l'autoroute 427 comprend la conception et la construction de ce qui suit :

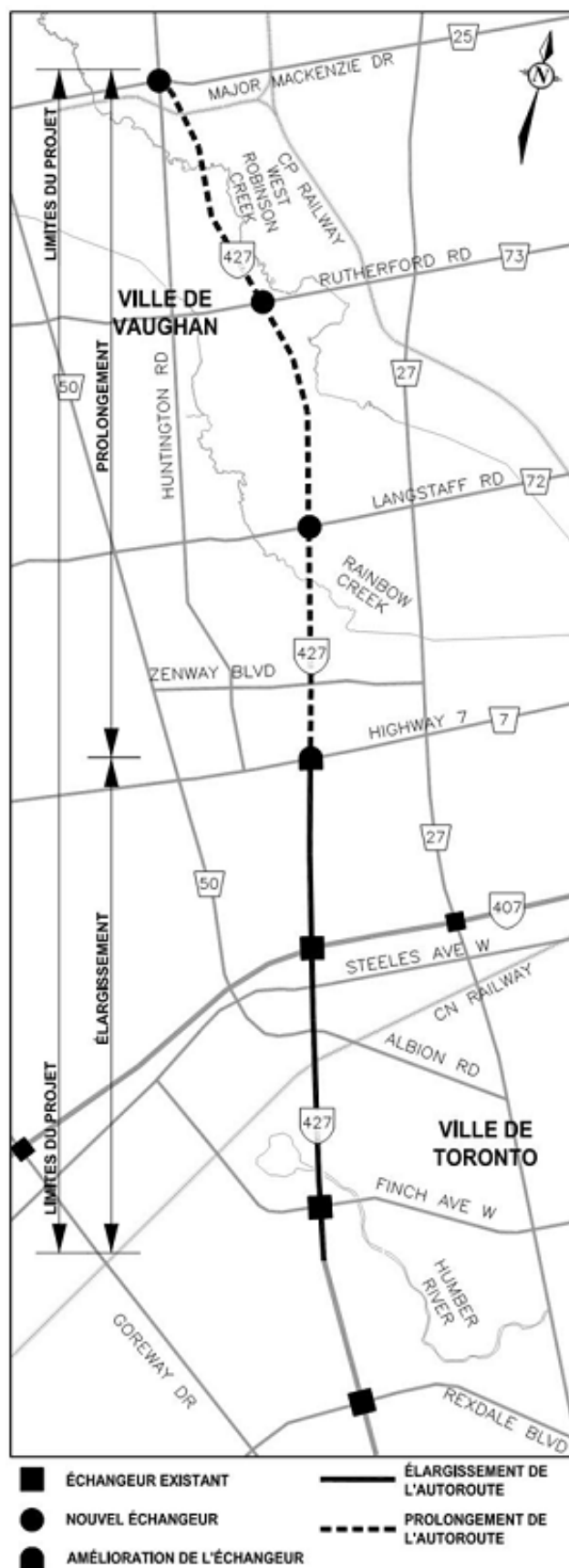
- Un nouveau tronçon de 6,6 kilomètres de la route 7 à Major Mackenzie Drive comportant
 - huit voies de la route 7 à Rutherford Road;
 - six voies de Rutherford Road à Major Mackenzie Drive;
 - trois échangeurs à Langstaff Road, Rutherford Road et Major Mackenzie Drive;
 - nouvelles voies médianes réservées aux véhicules multioccupants à accès spécial tarifé (VMOT)".
- Une route de 4 kilomètres qui s'élargit au de l'avenue Finch à la route 7
 - passant de six à huit voies, de l'avenue Finch au sud de l'avenue Steeles;
 - passant de quatre à huit voies, de l'avenue Steeles à la route 7;
 - nouvelles voies médianes réservées aux véhicules multioccupants à accès spécial tarifé (VMOT)".

LE PROCESSUS

Ce projet est effectué conformément au processus de planification environnementale autorisé pour les projets en vertu des normes d'évaluation environnementale du Ministère des transports (MTO) pour les routes provinciales (2000), devenu maintenant une conception détaillée.

Des Centres d'information publique (CIP) se tiendront pendant toute la durée du processus de conception détaillée pour permettre au grand public d'évaluer et de commenter sur les détails du projet.

Les Rapports de conception et de construction (RCC) seront préparés pour élaborer le processus de conception détaillée, comprenant des enquêtes environnementales, la prise en compte d'effets environnementaux potentiels, les mesures d'atténuation proposées, les engagements envers les futurs travaux et la surveillance. Tous les RCC seront mis à disposition au grand public et aux



agences lors d'une période d'examen de 30 jours. Des avis seront publiés dans les journaux locaux, sur le site Web du projet (www.427expansion.ca) et distribués par courrier à celles et ceux qui sont sur la liste de distribution du projet, pour leur signaler du début de la période d'examen et des emplacements où chaque RCC sera mis à disposition.

COMMENTAIRES

Nous aimerions recevoir vos commentaires à l'égard de ce projet. Si vous désirez obtenir des renseignements supplémentaires, fournir des commentaires ou faire partie de la liste de distribution du projet, veuillez contacter les

personnes ci-dessous ou visiter le site Web du projet à www.427expansion.ca.

Si vous avez des exigences en termes d'accessibilité pour participer à ce projet, veuillez contacter un des membres de l'équipe de projet ci-dessous.

M. Chris Tschirhart
LINK427

Directeur en charge de l'environnement

1 Royal Gate Blvd.

Woodbridge, ON. L4L 8Z7

Tel : 1-888-352-8085

Courriel : ask@427Expansion.ca

M. Aitor Arbesu Iglesias
LINK427

Directeur de projet

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Courriel : ask@427Expansion.ca

Les informations seront recueillies conformément à la *Loi sur l'accès à l'information et la protection de la vie privée*. Avec l'exception des renseignements personnels, tous les commentaires seront divulgués au public.

Des renseignements sont disponibles en français en composant 1-888-595-3152.

Ministry of Transportation
Major Projects Office
Central Region

159 Sir William Hearst Avenue
Building D, 7th Floor
Toronto, ON M3M 0B7
Tel.: 416-235-3749
Fax: 416-235-3576

Ministère des Transports
Bureau grands projets
Région du Centre

7^e étage, édifice D
159, avenue Sir William Hearst
Toronto, ON M3M 0B7
Tél.: 416-235-3749
Télééc. 416-235-3576



August 23, 2017

«Name»
«Organization»
«Address»

Dear «Greeting»:

**Re: Notice of Commencement, Highway 427 Expansion Project
Detail Design and Construction
Ministry of Transportation**

LINK427 has been selected by the Ministry of Transportation (MTO) and Infrastructure Ontario (IO) to undertake the design, build, finance and maintenance of the Highway 427 Expansion project within the City of Vaughan and the City of Toronto.

The purpose of this letter is to notify you of project start-up and inquire if your community has an interest in this study. We also welcome the opportunity to meet with you to discuss this project.

This project is being carried out in accordance with the approved environmental planning process for projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)* and has now progressed to Detail Design. Design and Construction Reports (DCRs) will be prepared to document the Detail Design process, including environmental investigations, potential environmental effects, proposed mitigation measures, commitments to future work and monitoring. The DCRs will each be made available for a 30-day public and agency review period. Notices will be published in local newspapers, on the Project website (www.427expansion.ca) and distributed by mail to those on the project contact list to clearly identify the start and end dates of the review period, list locations where the DCR may be reviewed, and describe the process for submitting comments. Public Information Centres (PICs) will be held during the detail design process to allow an opportunity to review and comment on the project.

As part of the Environmental Assessments for the Highway 427 Expansion, a complete Archaeological Assessment was undertaken. LINK427 will follow all protocols as outlined in the Environmental Assessments regarding informing and contacting Indigenous communities regarding any archaeological artefacts that may be found as a result of construction activities.

Under the *Freedom of Information and Protection of Privacy Act* and the *Access to Information Act*, comments and information regarding this project, with the exception of personal information, will become part of the public record. If you have accessibility requirements in order to participate in this project, please contact the undersigned.

If you would like to provide comments, or if you require further information regarding this project, please feel free to contact me by phone at 416-235-4188 or by e-mail at Pauline.VanRoon@ontario.ca. In addition, if you are interested in meeting as a result of receiving this letter, please contact me to arrange a meeting at your earliest convenience.

Sincerely,
Ministry of Transportation

Pauline Van Roon
Head, Planning & Engineering

cc: C. Copeland - MTO Environmental Planner
A. Arbesu - LINK427

Encl.: Notice of Commencement

Appendix D – Ontario Provincial Standard Specifications (OPSS)



**GENERAL SPECIFICATION FOR
THE MANAGEMENT OF EXCESS MATERIALS**

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180.07	CONSTRUCTION
180.08	QUALITY ASSURANCE - Not Used
180.09	MEASUREMENT FOR PAYMENT - Not Used
180.10	BASIS OF PAYMENT

APPENDICES

180-A Commentary

180.01 SCOPE

This specification covers requirements for the management of excess materials.

Where the management of excess material requirements of other Ontario Provincial Standard Specifications differs from this specification, the requirements of this specification will take precedence.

180.01.01 Specification Significance and Use

This specification has been developed for use in provincial-oriented Contracts. The administration, testing, and payment policies, procedures, and practices reflected in this specification correspond to those used by the Ontario Ministry of Transportation.

Use of this specification or any other specification shall be according to the Contract Documents.

180.01.02 Appendices Significance and Use

Appendices are not for use in provincial contracts as they are developed for municipal use, and then, only when invoked by the Owner.

Appendices are developed for the Owner's use only.

Inclusion of an appendix as part of the Contract Documents is solely at the discretion of the Owner. Appendices are not a mandatory part of this specification and only become part of the Contract Documents as the Owner invokes them.

Invoking a particular appendix does not obligate an Owner to use all available appendices. Only invoked appendices form part of the Contract Documents.

The decision to use any appendix is determined by an Owner after considering their contract requirements and their administrative, payment, and testing procedures, policies, and practices. Depending on these considerations, an Owner may not wish to invoke some or any of the available appendices.

180.02 REFERENCES

When the Contract Documents indicate that provincial-oriented specifications are to be used and there is a provincial-oriented specification of the same number as those listed below, references within this specification to an OPSS shall be deemed to mean OPSS.PROV, unless use of a municipal-oriented specification is specified in the Contract Documents. When there is not a corresponding provincial-oriented specification, the references below shall be considered to be to the OPSS listed, unless use of a municipal-oriented specification is specified in the Contract Documents.

This specification refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 206 Grading
OPSS 209 Swamp Excavation

Ontario Provincial Standard Specification, Material

OPSS 1004 Aggregates - Miscellaneous

Canadian and Provincial Statutes

Environmental Protection Act, R.S.O. 1990, c.E.19 & R.R.O. 1990, Regulation 347
Transportation of Dangerous Goods Act, 1992, S.C. 1992, c. 34
Fire Protection and Prevention Act, 1997, S.O. 1997, CHAPTER 4

180.03 DEFINITIONS

For the purpose of this specification, the following definitions apply:

Bituminous Pavement means any combination of asphaltic material and aggregate, excluding asbestos modified asphaltic material.

Commercial Waste means waste described as commercial waste in Regulation 347, under the Environmental Protection Act, Ontario.

Concrete means concrete mixtures produced with Portland cement and may include blended hydraulic cement, supplementary cement materials, spent debris and silica sand abrasive blasting media from abrasive cleaning of concrete and reinforcing steel, and concrete brick and block and associated mortar. It may include embedded steel and excludes asbestos modified Portland cement concrete mixtures.

Disposable Fill means excess material other than that disposed of at a certified disposal site and that is managed in berms and mounds and as fill other than in road embankments.

Earth means earth as defined in OPSS 206.

Excess Material means material removed under the Work specified in the Contract Documents for which management is not specified and includes surplus and unsuitable materials.

Fabricated Metal and Plastic Products means metal and plastic products such as culverts, fence materials, and guide rails. It does not include containers, other packaging materials, storage tanks, septic tanks and ancillary equipment associated with sanitary sewage systems, septic systems, and fuel or lubricant dispensing and storage systems.

Groundwater means subsurface water and water that occurs beneath the water table in soils and rock formations that are fully saturated.

Manufactured Wood means wood that is not entirely natural wood.

Masonry means clay brick and associated mortar.

Natural Wood means stumps, trunks, branches, debris from tree and shrub removal, and wood products that are not treated, coated, or glued.

Non-Hazardous Solid Industrial Waste means waste described as non-hazardous solid waste in Regulation 347, under the Environmental Protection Act, Ontario.

Re-Use means using, processing, re-processing, or recycling of excess material into a construction material or other useful product and managed by these means for the Contract and other work.

Rock means rock as defined in OPSS 206.

Subject Waste means waste defined as subject waste in Regulation 347, under the Environmental Protection Act, Ontario.

Swamp Material means swamp material as defined in OPSS 209.

Waste means excess material that is not managed by re-use, open burning, or as disposable fill and includes any excess material.

Waterbody means waterbody as defined in OPSS 182.

180.04 DESIGN AND SUBMISSION REQUIREMENTS

180.04.01 Submission Requirements

180.04.01.01 Notification of Site Selection, and Property Owner Release

A copy of the completed MTO form PH-CC-181, Site Selection Notification for Stockpiling Materials Managed Through Re-Use, or MTO form PH-CC-182, Site Selection Notification for Material Managed as

Disposable Fill or both shall be submitted to the Contract Administrator and the property owner at least two weeks prior to the use of the property. These forms are not required for property owned by the Owner or designated for use in the Contract Documents.

At the completion of such work, a completed copy of the MTO form PH-CC-183, Property Owner's Release, shall be provided to the Contract Administrator.

180.04.01.02 Verification of Management by Disposal as Non-Hazardous Solid Industrial or Commercial Waste

When excess material is managed by disposal as non-hazardous solid industrial or commercial waste, a copy of the weigh ticket or receipt provided by the disposal site operator shall be submitted to the Contract Administrator on a weekly basis. When such documentation is not available, written confirmation that the waste has been received shall be obtained from the operator of the disposal site and submitted to the Contract Administrator within two weeks after disposal activities are complete.

Within three weeks of the completion of all disposal activities associated with the work, a completed copy of the MTO form PH-CC-184, Waste Quantity Report, shall be submitted to the Contract Administrator and shall account for all excess material managed by disposal as solid non-hazardous industrial or commercial waste.

180.04.01.03 Notification of Forest Resource Licensees

Forest resource licensees identified in the Contract Documents shall be notified at least two weeks prior to commencement of open burning.

180.04.01.04 Environmental Compliance Approval

When Environmental Compliance Approval(s)/Certificates of Approval for a Waste Management System or a Waste Disposal Site are required, a copy of such approval shall be submitted to the Contract Administrator prior to transporting excess material or waste from the Working Area.

180.04.01.05 Subject Waste Documentation

For each subject waste specified in the Contract Documents that is being shipped from the Working Area to a waste disposal site, the following shall be completed:

- a) The Contract Administrator shall be notified at least two weeks prior to the first shipment of subject waste, and at least 24 hours prior to each subsequent shipment of subject waste.
- b) A Regulation 347 manifest with Part B completed by the carrier for each truckload of subject waste, shall be submitted to the Contract Administrator for Part A completion. Copies #1 and #2 of the manifest with Part A and B completed shall be retained by the Contract Administrator and the remaining copies #3 to #6 returned to the carrier.
- c) Copy #6 of the Regulation 347 manifest shall be submitted to the Contract Administrator at the mailing address indicated on Part A of the manifest, within four weeks of the shipment of subject waste from the Working Area.

For each subject waste that is generated by the Contractor's operations and that is not specified in the Contract Documents that is being shipped from the Working Area to a waste disposal site, the following documentation shall be submitted to the Contract Administrator.

- a) Prior to shipment of the subject waste:

- i. Test results from testing to determine the Regulation 347 waste class and characteristics of the subject waste from the Canadian Association for Laboratory Accreditation (CALA) accredited laboratory selected by the Contractor;
- ii. Notification from the Ministry of the Environment and Climate Change (MOECC) Hazardous Waste Information Network (HWIN) of the registration of the subject waste to obtain a Regulation 347 Generator Registration Number (GRN); and
- iii. A duplicate of Copy #2 of the Regulation 347 manifest with Parts A and B completed and signed by the generator and carrier respectively.

b) After shipment of the subject waste:

- i. Notification of payment of all registration, manifest, and tonnage fees associated with the shipment from the MOECC HWIN;
- ii. A duplicate of Copy #6 of the Regulation 347 manifest with Part C completed and signed by the receiver; and
- iii. Notification of de-activation of the Regulation 347 GRN in the MOECC HWIN.

A record of all test sample numbers and sample dates shall be kept and submitted to the Contract Administrator upon request.

180.04.01.06 Excess Material Audit or Inventory Document

When an excess material audit or inventory is imposed by statute or is a condition specified in the Contract Documents, a copy of the audit or inventory documents shall be provided to the Contract Administrator.

180.04.01.07 Alternative Management Condition Approvals

When certain excess material is to be managed according to the conditions approved in writing by the local District office of the MOECC and such conditions differ from those specified in Table 1, a copy of such approval shall be submitted to the Contract Administrator at least two weeks prior to commencement of the work governed by the condition.

180.07 CONSTRUCTION

180.07.01 Conditions on Management of Excess Material - General

Management of excess material shall be as described in Tables 1 and 2 and the appropriate subsections of this specification, unless prior alternative management conditions are approved in writing by the MOECC.

When an excess material is a mixture of materials, it shall be managed in compliance with the most stringent conditions associated with any of the constituent excess material.

When excess material includes asbestos waste, the asbestos waste shall be managed as specified in the Contract Documents.

Excess materials shall not be permitted in waterbodies, and environmentally sensitive areas as identified in the Contract Documents, except when re-used according to the appropriate Ontario Provincial Standard.

180.07.02 Conditions on Management by Re-Use

Management of excess material by re-use for incorporation into the Work or for other designated re-use shall be as specified in the Contract Documents.

Management by re-use shall otherwise be outside the Owner's property.

Distance separations described in Table 2 do not apply for the following:

- a) Re-use of excess materials for the same purpose.
- b) Re-use of bituminous pavement, concrete, and masonry within a road right-of-way.
- c) Re-use of concrete as aggregate in bituminous pavement.
- d) Re-use of concrete as rip-rap, gabion stone, or rock protection according to the requirements of OPSS 1004.

Except cutting for construction purposes, excess material consisting of manufactured wood shall not be reprocessed.

180.07.03 Conditions on Management as Disposable Fill

Management of excess material as disposable fill, including sidecasting of swamp material, within the Owner's property and on other property designated in the Contract Documents shall be as specified in the Contract Documents.

Natural wood and debris from open fires may be managed as disposable fill only within a road right-of-way or on property with a boundary common to a road right-of-way, both within the Contract limits.

Such material shall be top covered by at least 300 mm of earth or topsoil.

180.07.04 Conditions on Management by Open Burning

Management of excess material by open burning is permitted only when specified in the Contract Documents. Where management by open burning is permitted, it shall be subject to the following conditions and conducted according to the Fire Protection and Prevention Act, 1997 where it applies, and with any applicable, local, municipal by-law(s):

- a) A permit from the Ministry of Natural Resources and Forestry (MNRF) under the Fire Protection and Prevention Act, and/or applicable local or municipal by-law shall be obtained by the Contractor for open burning, as required.
- b) Open burning is prohibited in areas subject to a restricted fire zone order as issued by MNRF or to a smog alert advisory as issued by MOECC.

180.07.05 Conditions on Management by Disposal as Non-Hazardous Solid Industrial or Commercial Waste

Management of excess material by disposal as non-hazardous solid industrial or commercial waste at receiving sites designated in the Contract Documents shall be as specified in the Contract Documents.

When receiving sites are not specified in the Contract Documents for management by disposal as non-hazardous solid industrial or commercial waste, such material shall be disposed of at sites identified by the Contractor.

Non-hazardous solid industrial or commercial waste shall be transported from the Working Area directly to a site that has an Environmental Compliance Approval/ Certificate of Approval for a Waste Disposal Site that is valid for non-hazardous solid industrial or commercial waste.

180.07.06 Conditions on Management by Stockpiling

Management of excess material by stockpiling within the Owner's property and on other property designated in the Contract Documents shall be as specified in the Contract Documents.

Stockpiling shall otherwise be outside the Owner's property.

Stockpiles of bituminous pavement, concrete, and masonry shall be separated according to Table 2 unless either of the following occurs:

- a) Stockpiles are located within a road right-of-way or on property with a boundary common to a right-of-way, both within the Contract limits for a period not exceeding 120 Days.
- b) Stockpiles are located within a provincial or municipal works yard or in a commercially licensed pit or quarry.

For all other excess materials, where Table 1 indicates that stockpiling is subject to management conditions in Table 2, such management conditions shall only apply to stockpiles that are to be in place for a period exceeding 120 Days.

180.07.07 Conditions on Management by Disposal as Subject Waste

When an excess material is identified as a dangerous goods waste, or a subject waste specified in the Contract Documents, management shall be as follows:

- a) Subject waste shipments shall be manifested and transported directly to a certified waste disposal site.
- b) When the subject waste is also a dangerous good as defined in the Transportation of Dangerous Goods Act (TDGA), the carrier shall provide all necessary TDGA labels and placards.

When an excess material generated by the Contractor's operations may be subject waste and it is not specified in the Contract Documents, the Contractor shall be responsible to manage it according to the following:

- a) Conduct sampling and testing using a laboratory certified by the CALA selected by the Contractor to determine whether it is subject waste and to determine the Regulation 347 waste class and characteristics.
- b) Register all subject waste in the MOECC HWIN and obtain a Regulation 347 GRN for disposal.
- c) Package and label all subject waste for transportation and disposal.
- d) Arrange for shipment of all subject waste to a certified waste disposal site using a certified carrier.
- e) Complete Part A of a Regulation 347 manifest including the GRN obtained from the MOECC HWIN and provide the manifest to the certified carrier for completion of Part B.
- f) Provide a duplicate of Copy #2 of the Regulation 347 manifest to the Contract Administrator with Parts A and B completed and signed.
- g) Pay all registration, manifest and tonnage fees associated with subject waste disposal in the MOECC HWIN.

- h) De-activate the GRN in the MOECC HWIN after shipment of all subject waste to a certified waste disposal site is complete and acceptance of the subject waste is acknowledged by the receiver completing and signing Part C of the Regulation 347 manifest.
- i) Provide a duplicate of Copy #6 of the Regulation 347 manifest to the Contract Administrator upon receipt from the receiver.

When an excess material is tested and found not to be a dangerous good waste or a subject waste, it shall be managed by disposal as Non-Hazardous Solid Industrial or Commercial Waste according to this specification.

180.10 BASIS OF PAYMENT

Payment for the management of excess material shall be included in the tender items requiring such management and shall include all costs associated with acquiring approvals, releases, and agreements.

Payment for the management of excess material that is subject waste generated by the Contractor's operations and not specified in the Contract Documents by the Owner, and is in addition to the cost of disposal as non-hazardous, solid industrial, or commercial waste, shall be administered as a Change in the Work, with provisions subject to testing to verify that the excess material is subject waste.

**Table 1
Excess Material Management Conditions**

EXCESS MATERIAL DESCRIPTION	Subsection in This Specification				
	Conditions on Management by Re-Use	Conditions on Management as Disposable Fill	Conditions on Management by Open Burning	Conditions on Management by Disposal as Non-hazardous Solid Industrial or Commercial Waste	Conditions on Management by Stockpiling
EARTH	Yes	Yes	n/a	Yes	Yes
SWAMP MATERIAL	Yes	Yes TABLE 2	n/a	Yes	Yes TABLE 2
AGGREGATE	Yes	Yes	n/a	Yes	Yes
ROCK	Yes	Yes	n/a	Yes	Yes
BITUMINOUS PAVEMENT	Yes TABLE 2	Not Permitted	n/a	Yes	Yes
CONCRETE	Yes TABLE 2	Not Permitted	n/a	Yes	Yes
MASONRY	Yes TABLE 2	Not Permitted	n/a	Yes	Yes
MANUFACTURED WOOD	Yes	Not Permitted	Not Permitted	Yes	Yes TABLE 2
NATURAL WOOD	Yes	Yes TABLE 2	Yes	Yes	Yes TABLE 2
DEBRIS FROM OPEN FIRES	n/a	Yes TABLE 2	n/a	Yes	Yes TABLE 2
METAL/PLASTIC POLYSTYRENE PRODUCTS	Yes	Not Permitted	Not Permitted	Yes	Yes
SUBJECT WASTE	Subject waste shall be managed as specified in the subsection for Conditions on Management by Disposal as Subject Waste.				
MATERIALS SUSPECTED OF BEING CONTAMINATED	When excess materials that were not generated by the Contractor's operations and are not specified in the Contract Documents, are suspected of being contaminated, direction on their management shall be obtained from the Contract Administrator.				
OTHER MATERIALS	Excess materials that are not listed above shall be managed as specified in the subsection for Conditions on Management by Disposal as Non-Hazardous Solid Industrial or Commercial Waste, unless prior alternative management conditions are approved in writing by the MOECC.				

**Table 2
Excess Material Management Distance Separation Requirements**

Adjacent Feature	Minimum Distance Separation
Groundwater	2 m (Above)
Waterbodies	30 m
Water Wells	100 m
Residences	100 m

**Appendix 180-A, November 2016
FOR USE WHILE DESIGNING MUNICIPAL CONTRACTS**

Note: This is a non-mandatory Commentary Appendix intended to provide information to a designer, during the design stage of a contract, on the use of the OPS specification in a municipal contract. This appendix does not form part of the standard specification. Actions and considerations discussed in this appendix are for information purposes only and do not supersede an Owner's design decisions and methodology.

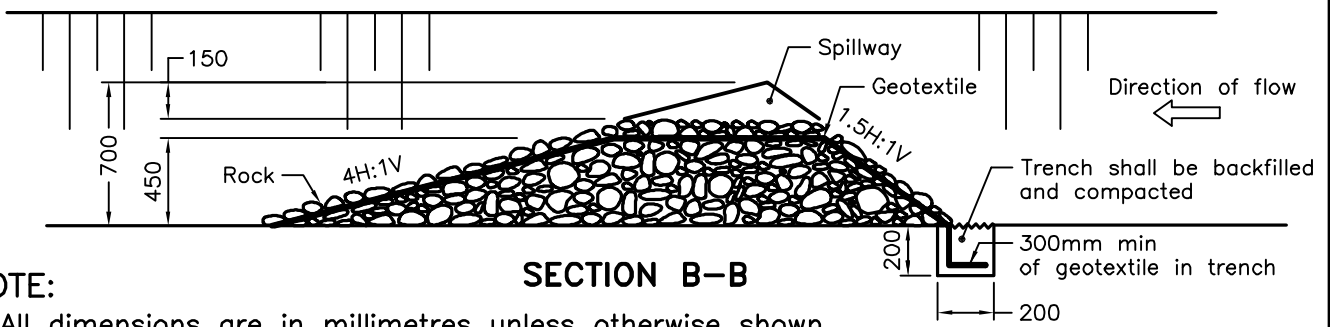
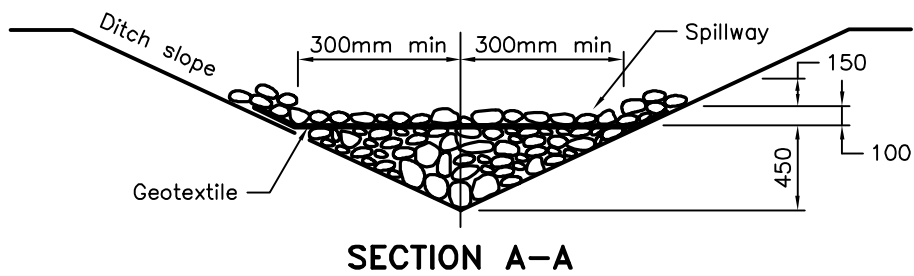
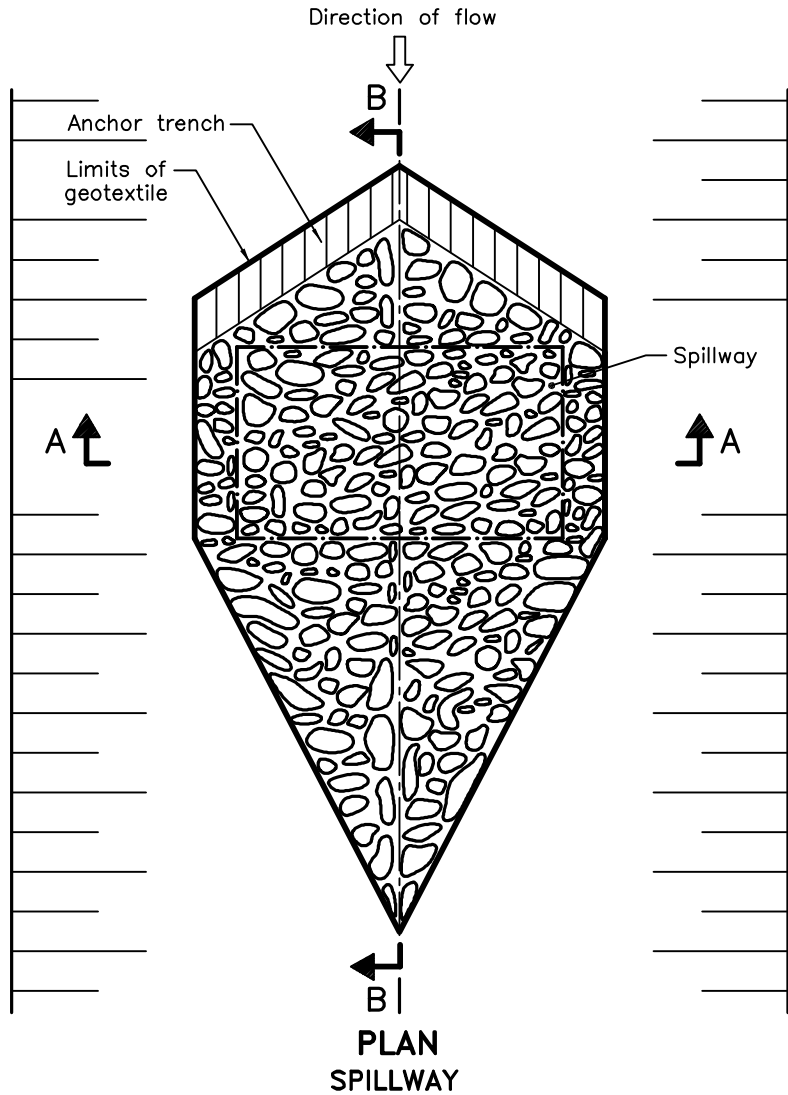
Designer Action/Considerations

No information provided here.

Related Ontario Provincial Standard Drawings

No information provided here.

Appendix E – Ontario Provincial Standard Drawings (OPSD)



NOTE:
A All dimensions are in millimetres unless otherwise shown.

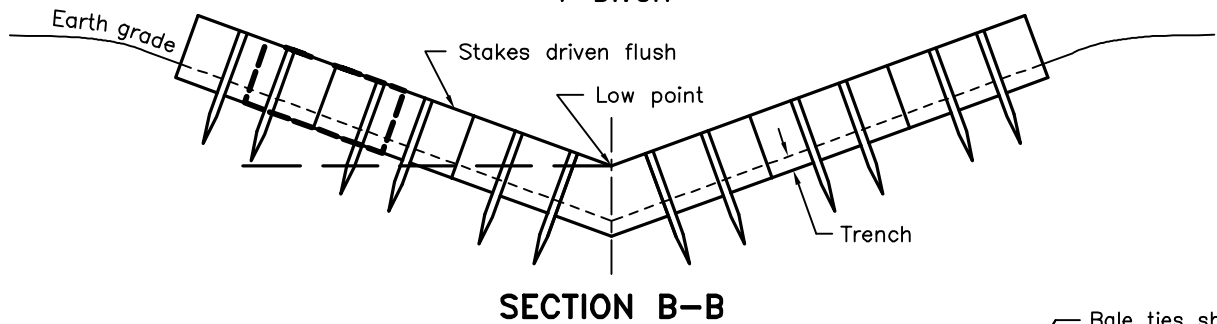
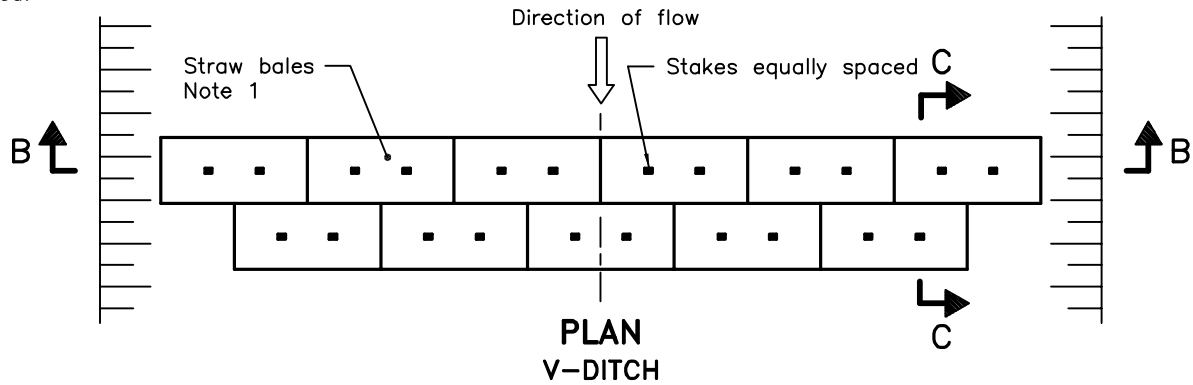
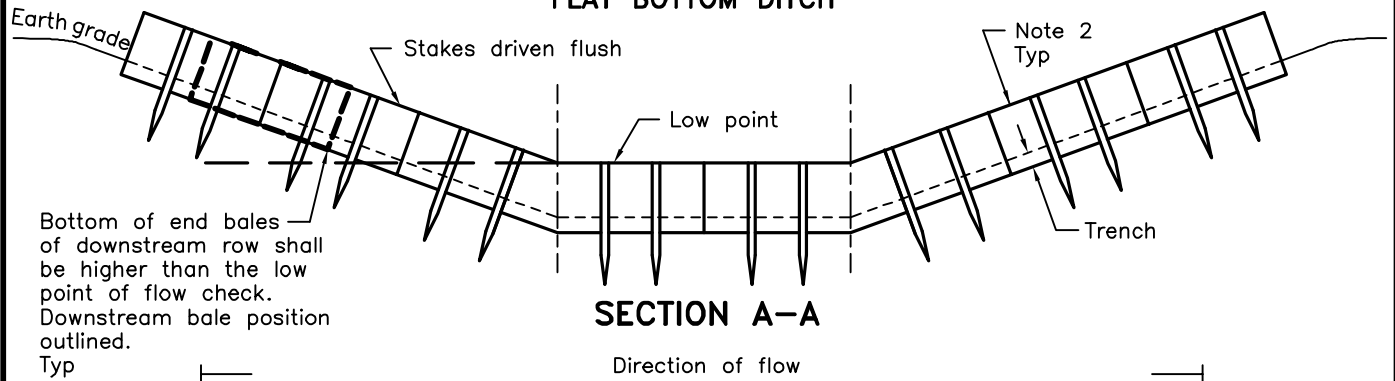
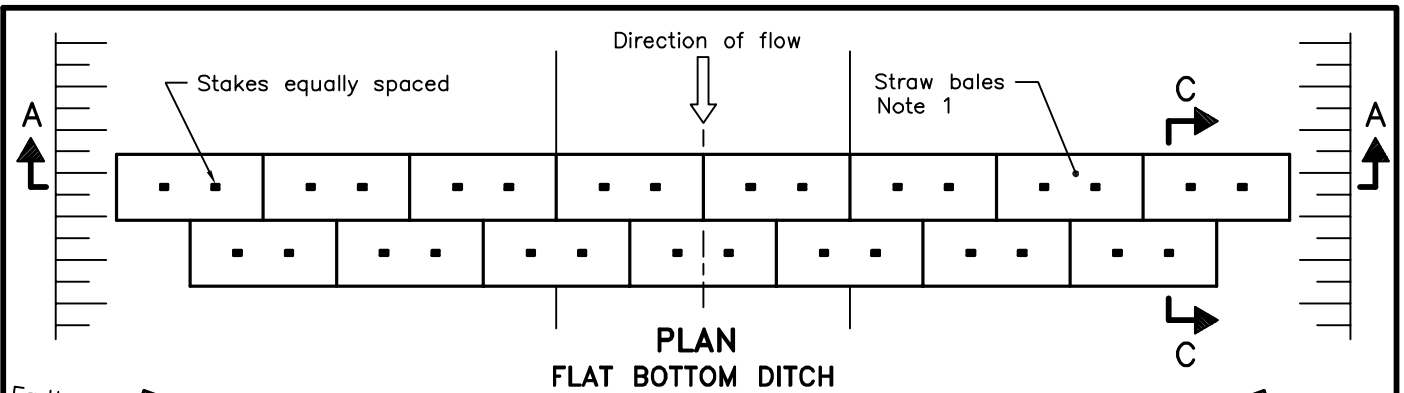
ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2015 Rev 2

**TEMPORARY
ROCK FLOW CHECK DAM
V-DITCH**



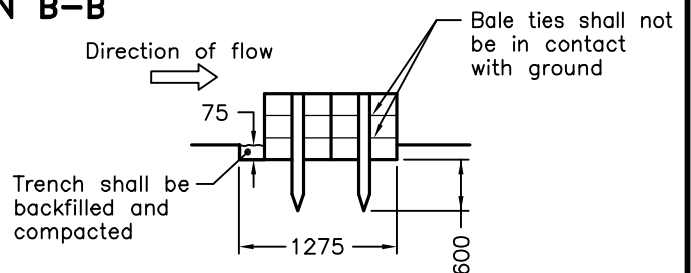
OPSD 219.210



NOTES:

- 1 Number of bales varies and shall suit ditch.
- 2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.

A All dimensions are in millimetres unless otherwise shown.



SECTION C-C

ONTARIO PROVINCIAL STANDARD DRAWING

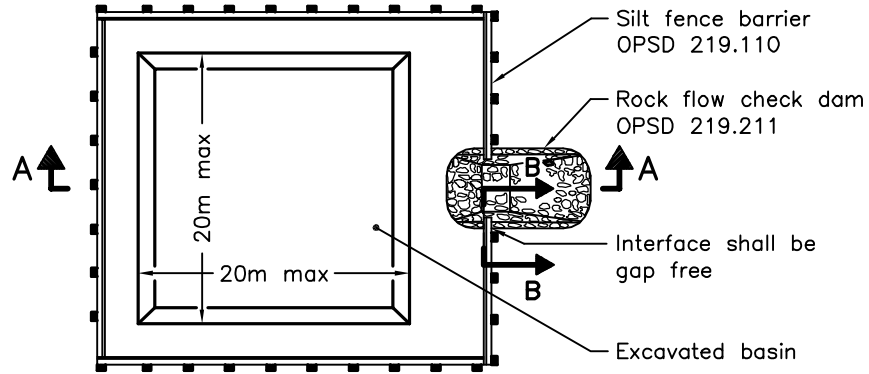
Nov 2015

Rev 2

STRAW BALE FLOW CHECK DAM

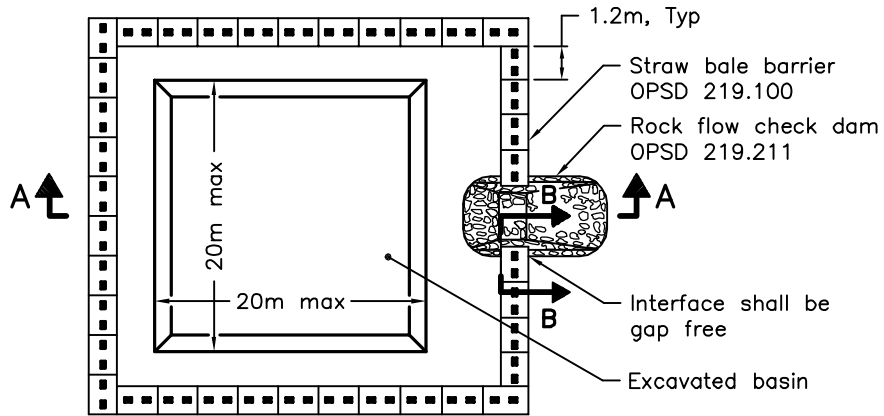


OPSD 219.180



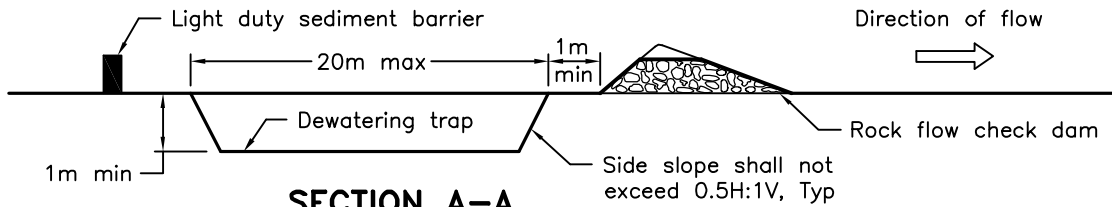
PLAN

DEWATERING TRAP WITH SILT FENCE

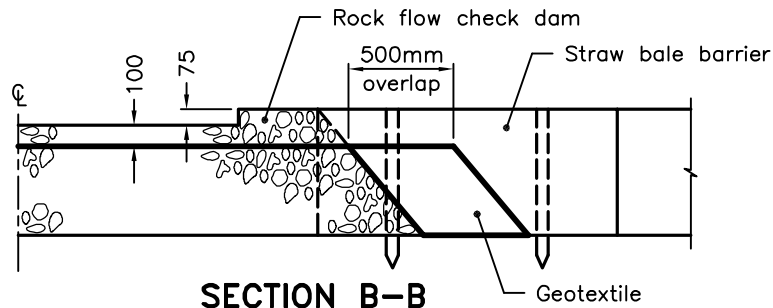


PLAN

DEWATERING TRAP WITH STRAW BALES



SECTION A-A



SECTION B-B

STRAW BALE BARRIER SHOWN

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

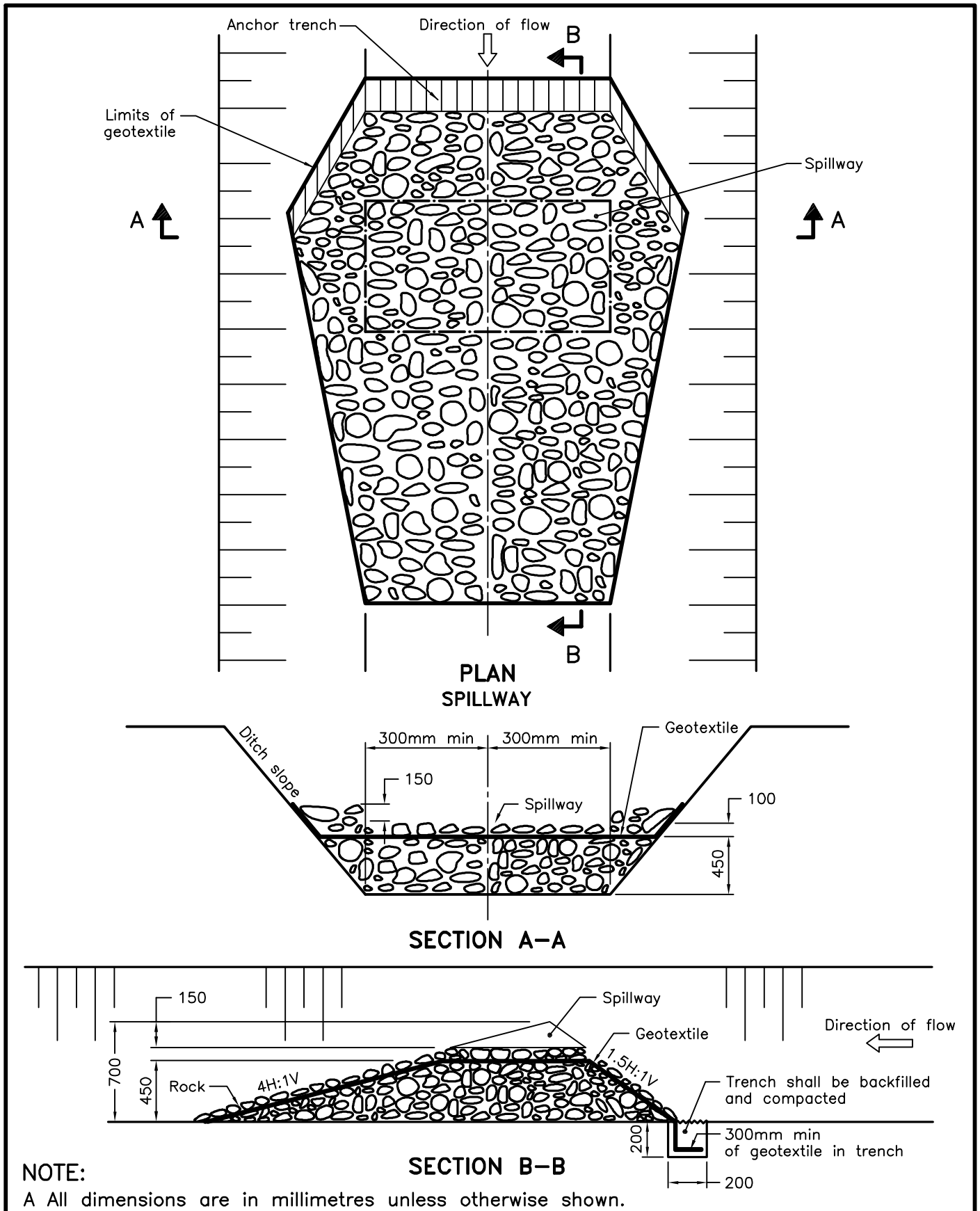
Nov 2015

Rev 2

SEDIMENT TRAP FOR DEWATERING




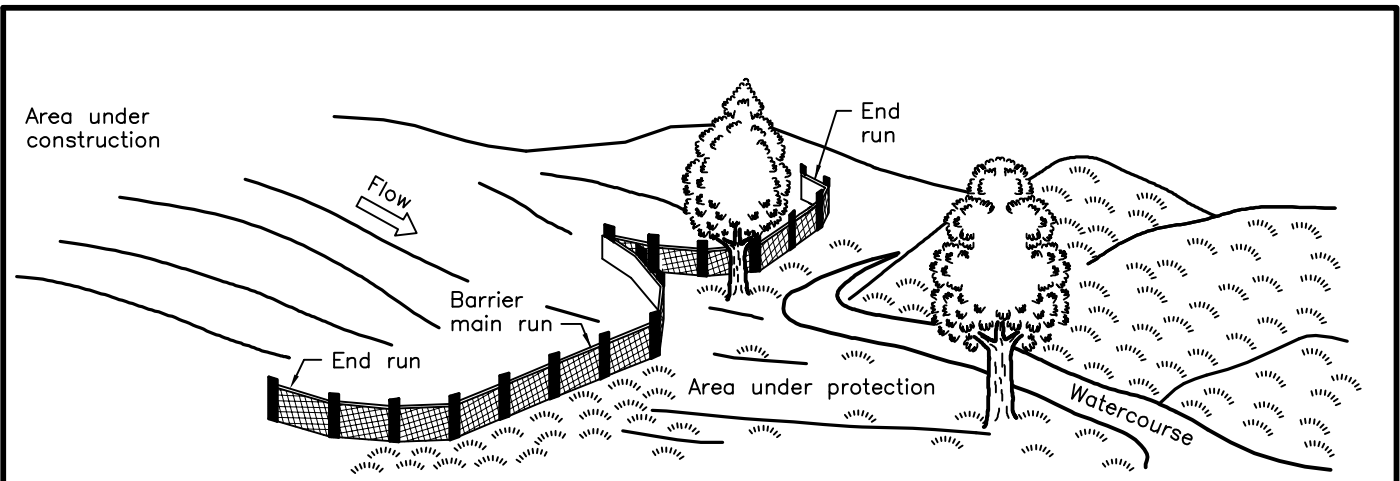
OPSD 219.240



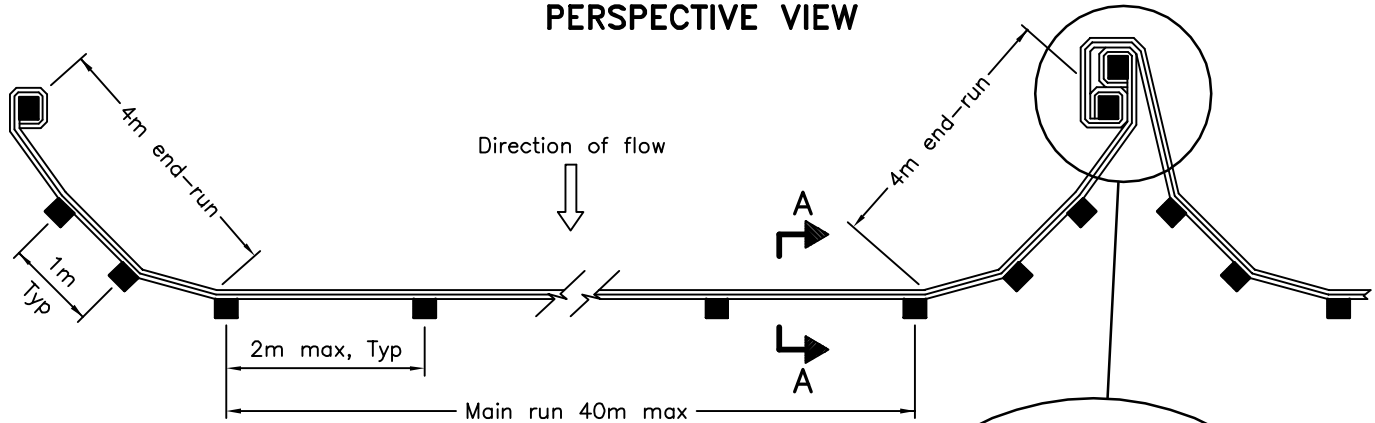
NOTE:

A All dimensions are in millimetres unless otherwise shown.

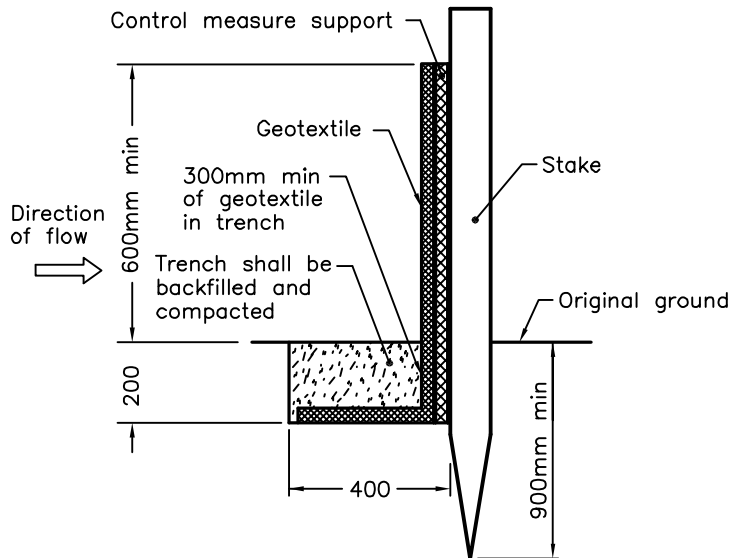
ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2015	Rev 2
<p>TEMPORARY ROCK FLOW CHECK DAM FLAT BOTTOM DITCH</p>			
		<p>OPSD 219.211</p>	



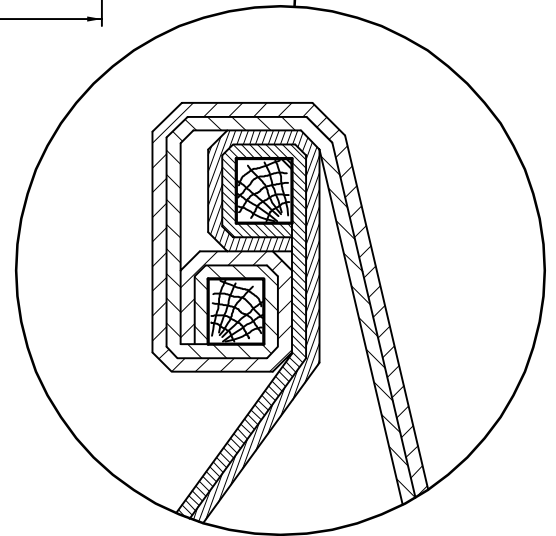
PERSPECTIVE VIEW



PLAN




SECTION A-A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2	
<h2>HEAVY-DUTY SILT FENCE BARRIER</h2>	<p>-----</p> <p>-----</p>		
<h1>OPSD 219.130</h1>			