

**Appendix K**  
*Impact Assessment of the N/S-W  
and E-N/S Ramp Realignments*

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<b>Subject</b>	<b>Impact Assessment of the N/S-W and E-N/S Ramp Realignments (Final - Rev A)</b>	<b>Project Name</b>	Hawkesbury Bridge Replacements
<b>Attention</b>	Brian Utigard (MTO)	<b>Project No.</b>	GWP 4203-15-00
<b>From</b>	Junaid Ahmed (Jacobs)		
<b>Date</b>	September 1, 2020		
<b>Copies to</b>	Frank Vanderlaan (MTO) Matthew McFadden (Jacobs) Douglas Raby (Jacobs) Vlad Manalastas (Jacobs) Tanya Cross (Dillon) Brendan Peterson (Dillon) Adele Mochrie (Dillon) Catherine Rebry (Dillon)		

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Jacobs submitted the 90% detailed design package for the Hawkesbury Bridge Replacements project to the Ministry of Transportation, Ontario (MTO) Eastern Region in March 2020. The submission was followed by a design complete presentation meeting on April 6, 2020. Throughout the detail design phase, various ramp configurations were evaluated at a high level for feasibility using the following criteria: technical compliance with the MTO Geometric Design Standards for Ontario Highways (GDSOH); construction costs; property impacts; utility conflicts; and environmental impacts. It was decided in the earlier stages of the detail design phase to proceed with a stop controlled right hand turn onto County Road 17 for the N/S-W Ramp, because it offered a balance of all evaluation criteria compared to other alternatives. During public consultation, Jacobs received requests from the public and elected officials to maintain the free flow ramp condition that is currently in place, and that the proposed N/S-W ramp was not preferred despite the significant cost savings and minimal impacts compared to a free flow interchange ramp. After further communications between the MTO and Jacobs with the Town of Hawkesbury, Champlain Township and United Counties of Prescott-Russel, it was decided to proceed with the stop controlled right hand turn configuration for the N/S-W ramp for the final design.

On April 22, 2020 the MTO requested Jacobs to undertake a functional design of an alternative configuration for the N/S-W interchange ramp with a free flow ramp design located further east from its existing position to accommodate a speed change lane terminating at approximate STA. 23+562. This would avoid the need for widening the replacement County Road 17 Underpass (Site No. 27X-0051/B0) and replacement Hawkesbury Creek and CNR Overhead (Site No. 27X-0050/B0). In order to do so, the E-N/S ramp would also need to be realigned.

For comparison, the length of the N/S-W ramp to be reconstructed in the 90% detail design is 120 m while the combined length of N/S-W ramp (inner loop) and E-N/S outer ramp for the proposed ramp realignments is 1300m which is approximately 11 times longer.

The objective of this memo is to develop a functional design for the alternative N/S-W and E-N/S ramp alignments to accommodate free flow conditions and to assess the associated impacts.

### 1. Geometric Design, Criteria and Assumptions

MTO GDSOH is adopted as the design standard for the N/S-W and E-N/S interchange ramp realignments.

The existing interchange between Highway 34 and County Road 17 is the variant of a Partial Cloverleaf (Parclo Type A-B) consisting of the N/S-W ramp (inner loop) and E-N/S outer ramp in the north-east quadrant of the interchange. The radius of the existing N/S-W interchange loop is approximately 55m that corresponds to a design speed of 40 km/h as per GDSOH Table F5-1. The existing outer E-N/S ramp ties in with existing N/S-W ramp with approx. radius of 90m and connects further east with County 17 road as a diverge ramp with approximate radius of 125m. The existing posted speed of the E-N/S ramp is 50 km/h.

Configuration and type of interchange, intersecting road and the design speed of the through road (County Road 17) establishes the criteria of adopting the design speed and geometry of the connecting roadways and free flow ramps. In accordance with GDSOH, County Road 17 is classified as Rural Arterial Undivided (RAU) with 90 km/h design speed. Considering the County 17 Road design speed of 90 km/h as a mainline, GDSOH Table F5-1 recommends minimum 50 km/h design speed with a corresponding radius of 90m for the connecting ramps. However, due to the larger area required for 90m radius of the ramp, impacts on the existing infrastructure, adjacent property, and location of the Highway 34 signalized junction (discussed in Section 2), a 55 m radius for a 40 km/h design speed was adopted for the proposed N/S-W ramp realignment (as shown in Table 1 below). The Recommended Design is illustrated on Sheets 26 and 26A in Appendix A. The proposed design speed and radius of the new alternative are also in line with the proposed design speed and geometry for the N/S-W ramp proposed in the 90% detailed design.

The proposed E-N/S ramp realignment was designed to accommodate the proposed N/S-W ramp realignment in accordance with the GDSOH Table F5-1 as shown in Table 1 below.

**Table 1 Proposed N-S/W and E-N/S Ramp realignment geometry**

Highway Design Speed (Km/h)	County 17 Road (km/h)	Ramps	Ramp Design Speed (km/h)	Minimum Radius (m) at $e_{max}=0.06$ m/m
	90	N/S-W Ramp (Inner Loop)	40	55
		E-N/S Ramp	60	130

The extent of the easterly shift of the N/S-W depends on the location of the Speed Change Lane (SCL) termination and the length of the SCL. To avoid the impacts to the new bridges, the SCL must be

terminated before the end of the County Road 17 Underpass approach slab (at Station 23+562). A minimum SCL length of 220m (including taper) is required in accordance with the GDSOH (Figure FA-5) using the design speeds established for the Recommended Design (described above).

The easterly shift of the N/S-W Ramp also requires realignment of the existing E-N/S Ramp, as illustrated in Appendix A. The easterly shift and realignment of E-N/S ramp meets the geometric requirements of the GDSOH (Figure FA-1). Total minimum SCL length according to the GDSOH (Figure FA-1) is 200m (including taper).

## 2. Impacts Summary

The following sub-sections outline the additional impacts that the proposed easterly shift and realignment of the N/S-W and E-N/S Ramps (to achieve a free flow ramp design) have compared to the stop controlled right hand turn onto County Road 17 for the N/S-W Ramp presented in the 90% detailed design package. The additional information, assessments and site investigations expected to be required to undertake a detail design of the proposed ramp realignments are also listed.

### 2.1 Traffic

As shown in the drawing Impacts Sketch (Appendix A), the east leg of the Highway 34-signalized junction requires approx. 5.0m shift to the north to tie-in tangentially to the proposed realignment of the N/S-W ramp. This will require modifications to the existing intersection including curb alignments, relocation of the stop bars, signs and possible relocation of the signal heads. Shifting of the signalized junction to the north can be avoided through realignment of the east leg (between the traffic signal on Highway 34 and start of the N/S-W ramp) with back to back reverse curves or tapering it to tie-in in advance of the intersection. However, this approach is not preferred from safety and geometric design perspective and a straighter alignment with tangential tie-in as shown on the Sheet 26A in Appendix A is recommend.

### 2.2 Utilities

#### 2.2.1 Aboveground

As shown in the Impact Sketch, the proposed realignment of both N/S-W and E-N/S ramps results in conflicts with the existing Hydro One corridor. A locate request for the areas impacted by the proposed ramps was submitted to Ontario One Call on June 10, 2020 (refer to Appendix C). Drawings received from the Ontario One Call locates request are included in the Appendix C. The Impacts Sketch (Appendix A) indicates that two Hydro One primary overhead wires cross over the realigned ramps. It is expected that at least two (2) existing hydro poles would need to be relocated. Additional survey would also be required to confirm conflicts and existing clearances. Further coordination with Hydro One would be required in detail design to confirm the clearance requirements to poles and overhead wires and to develop relocation plans of the hydro pole(s).

#### 2.2.2 Subsurface

As shown in the Impact Sketch (Appendix A) and in drawings included in Appendix C indicates that there is possible conflict with the COGECO crossing at the signalized junction due to the east leg of the Highway 34-signalized junction requires approx. 5.0m shift to the north. Subsurface Utility Engineering (SUE)

investigation of Quality Level 'B' or higher would be required to confirm the presence and location of possible subsurface utilities within the impacted area of the proposed realigned ramps.

### 2.3 Drainage and Hydrology

As shown in the Impact Sketch, the proposed realignment of both N/S-W and E-N/S ramps might change the drainage pattern in the area. Topographical survey, a hydrologic study, modification to the existing drainage design and relocation and/or replacement of existing culverts would be required during detail design.

### 2.4 Property

The footprint of the proposed realigned ramps extend beyond the MTO ROW and additional property would need to be acquired (approx. 1.8 hectares).

The Hawkesbury Veterinary Hospital and CNR at-grade crossing are not expected to be impacted by the proposed ramp realignments. The helicopter pad is located approximately 70 m north-east of the proposed E-N/S ramp. Further coordination would be required during detailed design to confirm if it is operational and to clarify compliance with safety requirements related to the proximity of vehicular traffic to the helicopter pad.

### 2.5 Environmental

Dillon Consulting Ltd. (Dillon) recently performed field investigations and completed a desktop study to update the existing conditions information presented in the original *Terrestrial Ecosystem Impact Assessment Report* (March 2019) and *Fish and Fish Habitat Impact Assessment Report* (February 2019) to include the expanded area required to accommodate the proposed N-S/W and E-N/S ramp realignments. The July 14, 2020 "*County Road 17 Bridge Replacements (GWP 4023-15-00) Natural Heritage Existing Conditions Update Memo*" is included in Appendix B. It includes findings related to the vegetation communities, the tributary to Hawkesbury Creek and Species at Risk (SAR) screening for the expanded area which is comprised of a variety of meadow, forest, wetland and thicket. It was observed that three SAR have the potential to occur within the expanded area and may be impacted by the proposed ramp realignments: barn swallows; butternut trees; and SAR bats. In addition to potential impacts to SAR and SAR habitat, a number of significant wildlife habitats that might be significantly impacted were identified, including: bat maternity colonies; special concern and rare wildlife species; area-sensitive breeding bird habitat; and turtle nesting area. Finally, wild parsnip was observed which presents a health and safety concern for individuals that might come into contact with it. Updates to the original terrestrial and aquatic impact assessments would need to be carried out in detail design to evaluate the potential impacts on SAR and the natural features within the expanded area so that mitigation measures can be developed for inclusion in the contract documentation.

Due to the presence of Butternut trees in the expanded area, a Butternut Health Assessment, tree inventory and tree removal plan would also have to be completed.

Finally, a combined Stage 1 and 2 archaeological assessment of the area would need to be undertaken in accordance with the *Ontario Heritage Act* and in compliance with the Ministry of Heritage, Sport, Tourism

and Culture Industries' 2011 *Standards and Guidelines for Consultant Archaeologists* to determine if there are archaeological resources in the area that would be impacted by the proposed improvements.

### 2.6 Electrical

If the Highway 34-signalized junction needs to be shifted north to accommodate the ramp realignments, then additional electrical design, including new PHM125 drawings, would be required. The interchange illumination design would also need to be modified for the proposed ramp realignments.

### 2.7 Additional Information Requirements

In summary, the following would be required (as a minimum) to support an update to the 90% detail design package (i.e. design criteria, roadside safety report, traffic management plan, laydown area plan, drawings, specifications, quantities, etc.) for the proposed ramp realignments:

- Topographical survey of the expanded area and the Highway 34-signalized junction (including signal heads, curb lines and pavement markings);
- Updated traffic counts and traffic analysis for the proposed interchange configuration;
- Design of the Highway 34-signalized junction shift to the north;
- Design details for the County Road 17 widening planned east of the interchange to Tupper St;
- SUE investigation (Quality Level 'B' or higher);
- Hydrological study;
- Terrestrial and aquatic impact assessments;
- Combined stage 1 and 2 archaeological assessment;
- Butternut health assessment, tree inventory and tree removal plan;
- Geotechnical and pavement engineering updates;
- Illumination design updates;
- Property negotiations;
- Public consultation;
- Indigenous consultation; and
- Permits & approvals.

### 3. Schedule

The timing and results of various investigations such as SUE investigations, geotechnical investigation, archaeological assessment, terrestrial/aquatic impact assessment, tree inventory, butternut health assessment, hydrology, property assessment and environmental impact of the vegetated/wooded are unknown at this time but they will have a significant impact on the design schedule. If the detailed design needs to be updated to incorporate these ramp realignments, then tender would likely be delayed by at least one year (with construction starting in 2023).

The length of the N/S-W ramp realignment in the 90% detail design was 120 m and estimated to take approximately 8 working days to construct. The total combined length of the proposed N/S-W and E-N/S ramp realignments is 1300 m. It is estimated that it will take between 80 additional working days (using the production rates from the 90% detail design) and 40 additional working days (using higher production rates in accordance with *MTO Production Rates [2016]*) to construct the proposed ramp realignments. This might have an impact on the construction schedule, specifically the full closure duration of County Road 17 (and hence, the duration that the detour route is in operation) and extend the closure period beyond the estimated four (4) weeks in the 90% detail design. The staging would have to be investigated in further detail to confirm if and what the construction schedule impacts are.

### 4. Cost Estimate

Updating the 90% detail design package for the proposed ramp realignments will result in additional costs associated with: undertaking site investigations, assessments, studies and survey; and updating the design, drawings, specifications, quantities and cost estimate.

In order to calculate a construction cost estimate range for the proposed ramp realignments, two approaches were taken:

- A lower bound approach using pro-rated quantities and refined item unit rates from the 90% detail design HICO cost estimate for the N/S-W ramp realignment (to a stop controlled right hand turn onto County Road 17) plus a 30% contingency results in an additional cost of approximately \$2.0 million. This excludes illumination, traffic signals, intersection modifications, drainage, permitting, utility relocations and property acquisition.
- An upper bound approach using the regional cost / centre Line KM rate in *Table 6 – New Construction (2 Lane)* from the *MTO Parametric Estimating Guide (2016)*, pro-rated for the proposed realigned ramp widths and total combined length, results in an additional cost of approximately \$3.1 million. This excludes structural work, permitting, utility relocations, intersection modifications and property acquisition.

Therefore, it is estimated that it will cost between \$2.0 million and \$3.1 million extra to construct the proposed N/S-W and E-N/S ramp realignments.

### 5. Conclusions

The functional design of an alternative configuration for the N/S-W interchange ramp with a free flow ramp design located further east from its existing position and realignment of the E-N/S ramp results in: relocation of the Highway 34-signalized junction; conflicts with the existing Hydro One corridor; impacts to the site drainage; impacts to property; impacts to environment (tree removals, butternut trees, wetlands); and potential conflicts with the planned widening of County Road 17 to the east.

It is estimated to take between 40 and 80 additional working days to construct the proposed free flow N/S-W ramp and E-N/S ramp realignment, compared to the estimated 8 days to construct the N/S-W ramp from the 90% detail design (stop controlled right hand turn onto County Road 17). This could result in a full closure duration of County Road 17 (and hence, the duration that the detour route is in operation) that extends beyond the estimated four (4) weeks in the 90% detail design.

It is estimated to cost between \$2.0 million and \$3.1 million extra to construct the proposed N/S-W and E-N/S ramp realignments, compared to the estimated \$160,000 to construct the N/S-W ramp from the 90% detail design (stop controlled right hand turn onto County Road 17). This does not include additional costs related to property acquisition, illumination, traffic signals, intersection modifications, drainage, permitting or utility relocations.

The findings of this memorandum confirm the assumptions that were made in the early phases of detail design when considering a free flow condition for the N/S-W ramp: greater impacts to cost, property, environment and schedule compared to the stop controlled right hand turn onto County Road 17.





## Memorandum

Impact Assessment of the N/S-W and E-N/S  
Ramp Realignment (Final - Rev A)

### **Appendix A – Alternative Ramp Alignment Drawings and Impacts Summary Sketch**

**GENERAL NOTES:**

A. REFER TO HIGHWAY 34 NEW CONSTRUCTION DRAWING FOR HIGHWAY 34 DETAILS.

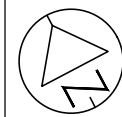
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- 1. WIDENING FOR TYPE M SBEAT AS PER OPSD 202.032.

CONT. No.  
WP No. 4203-15-00

NEW CONSTRUCTION  
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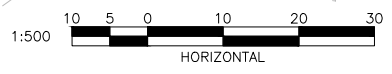
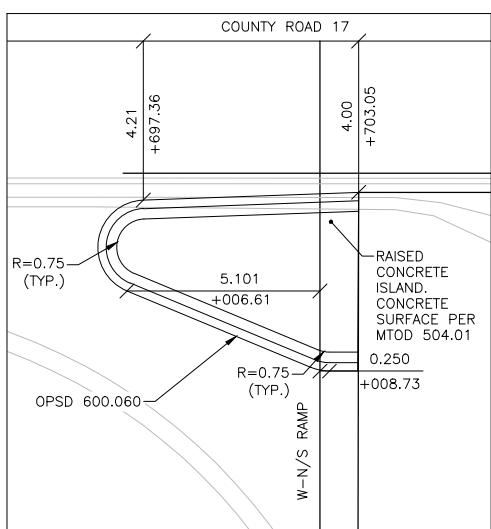
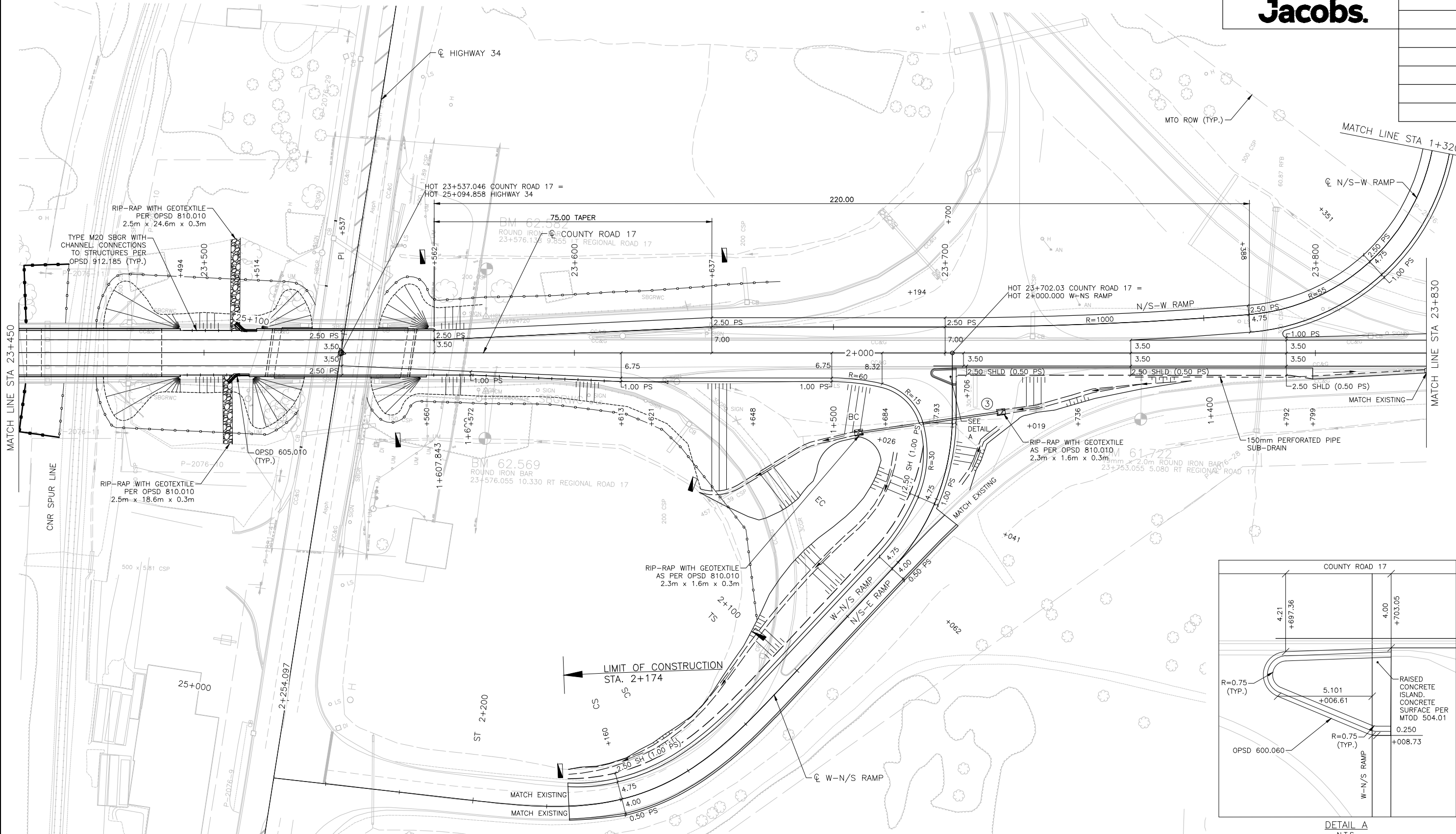
**Jacobs.**



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MINISTRY OF TRANSPORTATION, ONTARIO  
PR-D-707 88-05



**GENERAL NOTES:**

A. REFER TO HIGHWAY 34 NEW CONSTRUCTION DRAWING FOR HIGHWAY 34 DETAILS.

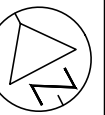
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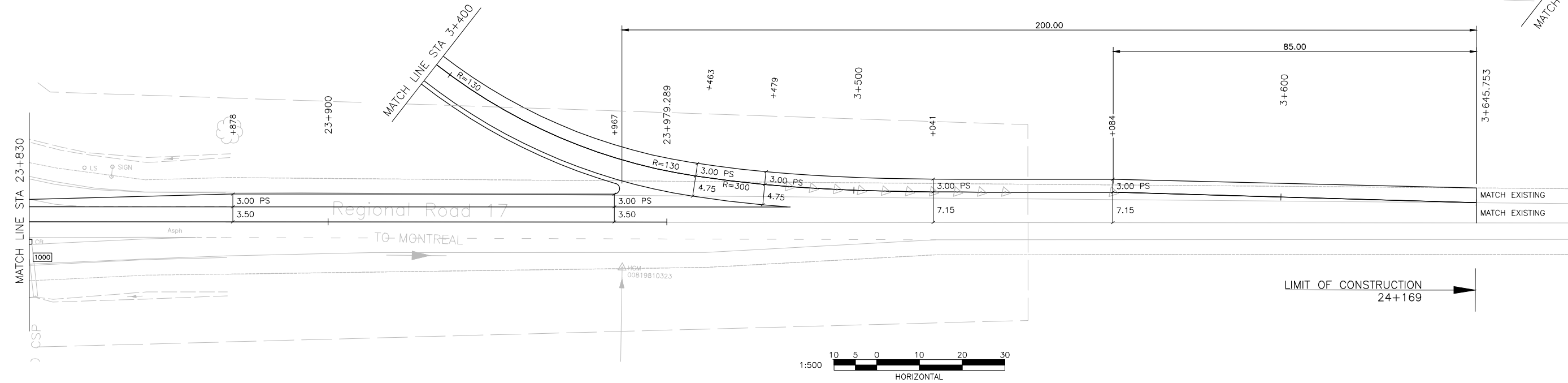
NEW CONSTRUCTION  
COUNTY ROAD 17 & RAMPS  
STA. 23+830 TO STA. 24+169

**Jacobs.**



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26A

MINISTRY OF TRANSPORTATION, ONTARIO  
PR-D-707 88-05



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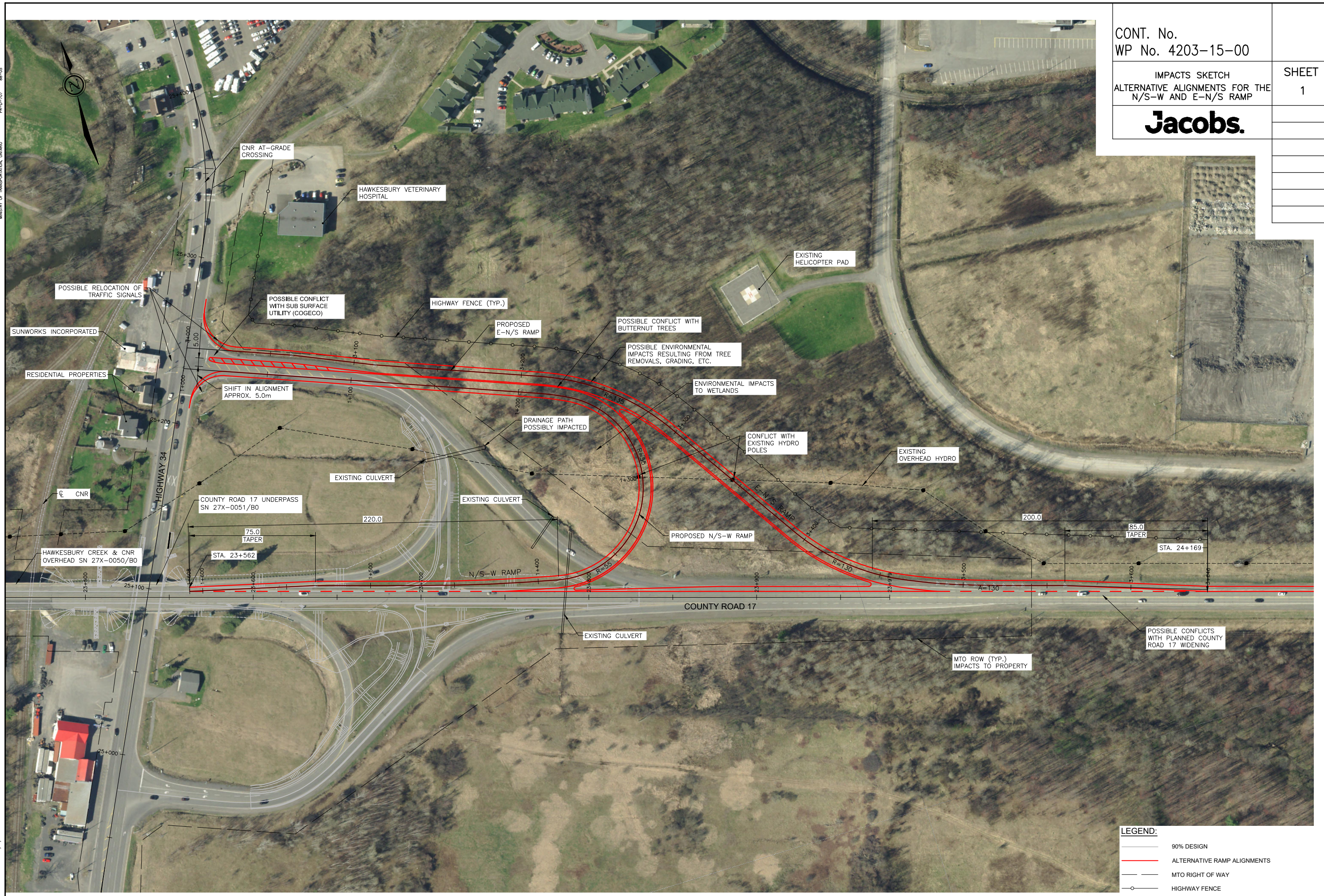
IMPACTS SKETCH  
ALTERNATIVE ALIGNMENTS FOR THE  
N/S-W AND E-N/S RAMP

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**Jacobs.**

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MINISTRY OF TRANSPORTATION, ONTARIO  
PR-D-707 88-05



- LEGEND:**
- 90% DESIGN
  - ALTERNATIVE RAMP ALIGNMENTS
  - MTO RIGHT OF WAY
  - HIGHWAY FENCE



## Memorandum

Impact Assessment of the N/S-W and E-N/S  
Ramp Realignment (Final - Rev A)

### **Appendix B – Natural Heritage Existing Conditions Update Memo**



# MEMO

TO: Brian Utigard, P.Eng, Ministry of Transportation, Ontario (MTO)  
FROM: Connor Edington, Dillon Consulting Limited (Dillon)  
cc: John Hanna, MTO  
Frank Vanderlaan, MTO  
Matthew McFadden, Jacobs  
Adele Mochrie, B.Sc., Dillon  
Dayna LeClair, Dillon  
Tanya Cross, P.Eng., Dillon  
Brendan Peterson, Dillon  
DATE: July 14, 2020  
SUBJECT: County Road 17 Bridge Replacements (GWP 4023-15-00)  
Natural Heritage Existing Conditions Update Memo  
OUR FILE: 17-5180

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## Introduction

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### Project Description

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The Ministry of Transportation, Ontario (MTO) retained Dillon Consulting Limited (Dillon) to complete a series of structural rehabilitations and replacements under Retainer in Eastern Ontario. The assignments are being completed following MTO's Class Environmental Assessment (EA) for Provincial Transportation Facilities (2000) and include both preliminary and detail design projects.

This project is being completed under the Retainer and includes the replacement of two structures on County Road 17 in the Town of Hawkesbury, namely, Hawkesbury Creek/CNR Overhead (Site No. 27-50) and Highway 34 Underpass at County Road 17 (Site No. 27-51) (Attachment 1, Figure 1) under GWP 4023-15-00.

In 2019, Dillon completed a Terrestrial Ecosystem Impact Assessment Report (TEIAR; March 2019) and a Fish and Fish Habitat Impact Assessment Report (February 2019) for the project. On April 22, 2020 the MTO requested the team undertake a functional design of an alternative configuration for the N/S-W interchange ramp with a free flow ramp design located further east from its existing position to accommodate a speed change lane terminating at approximately STA. 23+562. This would avoid the need for widening the replacement County Road 17 Underpass (Site No. 27X-0051/B0) and replacement of Hawkesbury Creek Bridge and CNR Overhead (Site No. 27X-0050/B0). In order to do so, the E-

N/S ramp will also need to be realigned. The shift of the E-N/S and N/S-E ramps further east results in additional impacts beyond the original Study Area. Based on the revised areas of impact, an extension of the original Study Area has been proposed to encompass additional lands east forming a revised area of investigation (Revised Study Area) as shown in (Attachment 1, Figure 1).

As such, to complete our natural environmental feasibility assessment, our team conducted a desktop study of the vegetation communities, the Tributary to Hawkesbury Creek and Species at Risk (SAR) screening for the new additional lands to the east as well as the existing TEIAR Study Area, along with a field investigation visit to ground truth our findings and to further update the existing conditions information for the Revised Study Area. This Natural Heritage Existing Conditions Update Memo (Memo) summarizes existing natural heritage features observed within the Revised Study Area.

## Natural Environment Background Information Review

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Background information was collected utilizing Dillon's SAR Generator which gathers the most up-to-date data from a variety of natural heritage resources databases such as the Ontario Ministry of Natural Resources and Forestry (MNRF), Natural Heritage Information Centre (NHIC), Environment Canada's Species at Risk (SAR) database, MNRF's NHIC Biodiversity Explorer database and various wildlife atlases. Applicable local Official Plans and available data from various aquatic resources databases were also reviewed to identify the potential for additional natural environment resources that may occur in the Revised Study Area. A review of the original TEIAR (Dillon, 2019), the Fish and Fish Habitat Impact Assessment Report (Dillon, 2019) and the Terrestrial Ecosystem Existing Conditions Report (MMM Group, 2017) was also undertaken to identify any available background information regarding potential SAR in the area.

The Revised Study Area required to accommodate the alternative ramp alignments consists of meadow within and adjacent to the interchange, with forest and wetland communities further northeast and southeast. Both the TEIAR and Revised Study Areas contain woodlands, wetlands, thicket and meadow. Hawkesbury Creek and a tributary of Hawkesbury Creek (Tributary #1 of Hawkesbury Creek) previously identified in the 2019 TEIAR (2019) also occur within the western portion of the TEIAR Study Area.

A determination of the significance of natural heritage features identified in the Revised Study Area is provided in this section. Wherever possible, an evaluation has been undertaken for features not previously evaluated including, the determination of significance for wildlife habitat and the presence of actual or potential SAR habitat observed in the Revised Study Area.

### Significant Woodlands

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The province delegates the responsibility of defining the evaluation criteria for significant woodlands to the local planning authority. Hawkesbury Official Plan does not identify evaluation criteria for determining significant woodlands. Additionally, the United Counties of Prescott and Russell Official Plan

(UCPROP) indicates that Significant Woodland mapped on Schedule B was based on information from a number of sources, including the MNRF (Section 5.2, UCPROP).

The potential for significant woodlands was identified by the Kemptville MNRF in a response to the information request completed for the 2017 Existing Conditions Report, received August 2015 and appended in the Dillon 2019 TEIAR. As such, the evaluation criteria utilized for the evaluation of woodlands within the TEIAR Study Area was generally based on the guidelines of the Natural Heritage Reference Manual (NHRM) (i.e., woodland size, ecological functions, uncommon characteristics and economic and social functional values). Based on woodland significance criteria defined by NHRM, woodlands associated with Hawkesbury Creek in the TEIAR Study Area and the woodland within the southeast portion of the Revised Study Area would be considered significant based on water protection criteria and woodland size criteria respectively.

### Significant Wetlands

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Provincially Significant Wetlands (PSWs) are identified by the MNRF, where they have been evaluated. The MNRF LIO database was reviewed to identify wetland occurrences within the Revised Study Area, and when possible, visual interpretation during the field investigation. Based on the background review, unevaluated wetlands occur within the Revised Study Area, however no PSWs occur within or adjacent to the Revised Study Area. Unevaluated wetlands identified by the MNRF LIO database are shown on Figure 2 in Attachment 1.

### Significant Wildlife Habitat

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The MNRF has developed guidelines to assist in the determination of significant wildlife habitat within the ecoregions of Ontario. There are four categories of significant wildlife habitat, with schedules to assist in the determination of significance. Using the ELC classifications and the guidelines for identifying significant wildlife habitat in the NHRM (MNR, 2010), the Significant Wildlife Habitat Technical Guide (MNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015), a preliminary evaluation of the Revised Study Area has been completed.

### Species at Risk

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A desktop review of available information sources was used to identify SAR listed as Endangered or Threatened under the ESA, 2007 with the potential to occur in and/or adjacent to the Revised Study Area based the habitat requirements defined by the Ministry of Environment, Conservation and Parks (MECP). Based on a desktop review of the current available habitat within and adjacent to the Revised Study Area, there is potential for the following species to occur:

- Barn Swallow (*Hirundo rustica*);
- Bobolink (*Dolichonyx oryzivorus*);
- Blanding's Turtle (*Emydoidea blandingii*);
- Butternut (*Juglans cinerea*);



- Eastern Meadowlark (*Sturnella magna*);
- Eastern Small-footed Myotis (*Myotis leibii*);
- Little Brown Myotis (*Myotis lucifugus*);
- Northern Myotis (*Myotis septentrionalis*); and,
- Tri-colored Bat (*Pipistrellus subflavus*).

## Field Investigations and Findings

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A Dillon terrestrial biologist completed field investigations on June 12, 2020, when weather conditions and timing were deemed suitable based on the survey protocols being implemented and in general accordance with Section 3.2.3 of the MTO Environmental Reference for Highway Design (ERD) (2013).

Field investigations for natural heritage features included the following:

- Identification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario; second approximation (Lee et al. 1998)
- A single Breeding Bird Survey (BBS) following the Ontario Breeding Bird Atlas protocol (BSC, 2001) and a migratory bird nest search of structures (i.e., utility buildings, box culverts, bridge structures) and vegetated areas within the Revised Study Area, if applicable;
- Documentation of sensitive/rare species, SAR, and/or associated habitat encountered in the field;
- Identification of watercourses with the potential to provide fish habitat; and,
- Documentation of incidental wildlife and wildlife habitat encountered in the field.

Refer to Attachment 2 for representative site photos.

## Ecological Land Classification

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Detailed vegetation community mapping was completed using ELC for the Revised Study Area based on interpretation of aerial photography and field observations. In addition, verification and updates (where applicable) of ELC communities previously reported within the TEIAR Study Area was undertaken. A total of 35 ELC communities were identified within the Revised Study Area, five of which are considered cultural (i.e., Business Sector (CVC\_1), Rural Property (CVR\_4)) and 30 which are considered natural vegetation communities. Based on the provincial rankings provided by the NHIC, none of the vegetation communities documented in the Revised Study Area are considered rare in Ontario.

ELC surveys included searches for SAR plant species identified in the background review, subject to seasonal identification constraints, along with habitat that may be considered SAR habitat based on habitat requirements defined MECP or significant wildlife habitat as defined under the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015). Natural features accessible from the MTO ROW were surveyed to confirm dominant species and the absence/presence of SAR trees (i.e. Butternut). Butternut observations are discussed in the SAR section below.

ELC communities in the TEIAR Study Area previously identified in the 2019 TEIAR (Dillon) remained largely the same with minor changes such as the gravel lot now occurs as a Golden Forb Meadow (23. MEFM1-1), a small isolated Fresh-Moist Poplar Deciduous Forest (10. FODM8-1) along Highway 34 now occurs as a Dry-Fresh Manitoba Maple Deciduous Forest (12. FODM4-5) and the Dry-Fresh Sugar Maple-Beech Deciduous Forest (8. FOD5-2) now contains a Fresh-Moist Manitoba Maple Lowland Deciduous Forest (14. FODM7-7) with frontage to Hawkesbury Creek.

ELC communities identified within the additional lands to form the Revised Study Area contained both new (11) and previously reported natural vegetation communities from the 2019 TEIAR (Dillon). ELC surveys found the eastern portion of the Revised Study Area to contain primarily forest communities such as: Dry-Fresh Manitoba Maple Deciduous Forest (12. FODM4-5), Dry-Fresh Poplar Deciduous Forest (6. FOD3-1), Fresh-Moist Poplar Deciduous Forest (10. FODM8-1), Dry-Fresh Poplar-White Birch Deciduous Forest (11. FODM3), as well as various wetland communities including Graminoid Mineral Meadow Marsh (17. MAMM1), Common Reed Graminoid Mineral Meadow Marsh (18. MAMM1-12), Cattail Graminoid Mineral Meadow Marsh (19. MAMM1-2), Cattail Mineral Shallow Marsh (21. MASM1-1), Common Reed Mineral Shallow Marsh (22. MASM1-12), Mineral Deciduous Swamp (29. SWDM4), Poplar Mineral Deciduous Swamp (29. SWDM4-5), and Willow Mineral Deciduous Thicket Swamp (32. SWTM3). In addition, one Butternut was observed within the Mineral Deciduous Swamp (SWDM4) in the northeast portion of the Revised Study Area.

Wild Parsnip, a noxious plant, was observed along the roadsides and within select meadow communities of the Revised Study Area and presents a health and safety concern. Contact with the leaves and sap can cause severe skin irritation. Anyone conducting future work onsite should wear protective clothing, take the necessary precautions to avoid sap exposure to the skin and be aware of first aid treatments available.

The descriptions of new ELC natural vegetation communities observed as part of verification of the TEIAR Study Area and the Revised Study Area are outlined in Table 1 in Attachment 3 and the boundaries and locations of these communities are shown on Figure 3 in Attachment 1. The descriptions of previously identified ELC communities that were verified as part of the June 12 field investigation are available in the 2019 TEIAR (Dillon). The general locations of Wild Parsnip are shown on Figure 5 in Attachment 1.

### Breeding Bird Survey and Migratory Bird Nest Search

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One Breeding Bird Survey (BBS) was completed at nine point-count monitoring stations across the Revised Study Area. In total 18 species were observed. Birds observed during the BBS are considered Secure (SRank of S5), Apparently Secure (SRank of S4) or not a suitable target for conservation activities (SRank of SNA) in Ontario. The BBS results are provided in Table 2 in Attachment 3.

As part of the migratory bird nest search, Barn Swallow habitat was considered. A survey for migratory bird nests was completed at the Hawkesbury Creek CNR Overhead, the Highway 34 Underpass, the exterior of the existing building on site (i.e., utility building) and the vegetated areas within the ROW by a Dillon biologist during the 2020 field investigation. One Barn Swallow nest was observed along the eastern abutment to the Hawkesbury Creek CNR Overhead. No other migratory bird nests were observed during the field investigation.

## Significant Wildlife Habitat

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In accordance with the Ecoregion 6E Criteria Schedules (MNRF 2015), a review of background data suggests the potential for significant wildlife habitat to exist within and adjacent to the Revised Study Area based on the woodlands, wetlands, meadows and watercourses that occur.

Targeted field studies to confirm the significance of candidate significant wildlife habitat (CSWH) were not included in the scope of this assessment, and as such, it will be assumed that the candidate habitats identified below are significant and should be mitigated from potential impacts. Areas of candidate SWH are shown on Figure 4 of Attachment 1.

Based on the background review and observations made during the field investigation, CSWH within the Revised Study Area includes:

- **Seasonal Concentration Areas of Animals**
  - Bat Maternity Colonies. Bat maternity colonies may be present in the wooded areas identified within the Revised Study Area that were observed to contain suitable bat roosting trees and snags ( $\geq 25$  centimetres diameter at breast-height (DBH)). Bat Maternity Colonies occur throughout the Revised Study Area.
- **Rare Vegetation Communities or Specialized Habitat for Wildlife**
  - Amphibian Breeding Habitat. Select wetlands in the form of marshes within the Revised Study Area were observed to contain shallow water habitat ideal for amphibian breeding.
  - *Area-sensitive Breeding Bird Habitat (Canada Warbler (Cardellina canadensis))*. The deciduous woodland within the southeast portion of the Revised Study Area is connected to a larger tract of woodland that meets size and interior habitat criteria for Canada Warbler.
  - *Turtle Nesting Areas (Snapping Turtle (Chelydra serpentina) and Northern Map Turtle (Graptemys geographica))*.  
The riparian area adjacent to Hawkesbury Creek in the Revised Study Area provides potential nesting habitat above the high water mark where vegetative cover is sparse and suitable nesting substrate was observed.
- **Habitat for Species of Conservation Concern**
  - Special Concern and Rare Wildlife Species (Eastern Wood-pewee (Contopus virens) (Provincial SC)) Habitat. Woodlands that contain ideal habitat for Eastern Wood-pewee occur throughout the Revised Study Area.

- Special Concern and Rare Wildlife Species (Wood Thrush (*Hylocichla mustelina*) (Provincial SC)) Habitat. Woodlands that contain ideal interior habitat and tree composition for Wood Thrush occur throughout the eastern portion of the Revised Study Area.

## Species at Risk

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During the field investigation, the Revised Study Area was reviewed for suitable habitat to support SAR. Based on their range, known occurrences, and/or the vegetation communities observed in the Revised Study Area, the following SAR were identified as having the potential to occur, based on the habitat observed within the Revised Study Area:

- **Barn Swallow**  
One Barn Swallow nest was observed along the top of the eastern abutment to the Hawkesbury Creek CNR Overhead.
- **Butternut**  
In total, seven Butternut trees were identified within the Revised Study Area, six of which were previously identified inside the TEIAR Study Area from the 2019 TEIAR (Dillon) and one occurs as a new observation. The new Butternut was observed as a sapling in excellent condition within the northeast portion of the Revised Study Area. Note: During field verification of Butternut occurrence, two Butternut trees previously observed as part of the 2019 TEIAR were not counted as part of the total as they were observed uprooted and now occur as deadfall. In addition, one new Butternut sapling in excellent condition was observed southwest and outside of the southwest border of the 2019 TEIAR Study Area nearby Hawkesbury Creek.
- **SAR Bats**  
Candidate SAR bat habitat was identified within select wooded communities within the Revised Study Area based on the observation of suitable bat roosting trees and snags ( $\geq 25$  centimetres DBH).

Location of candidate and confirmed SAR habitat is shown on Figure 5 of Attachment 1.

## Surface Water Features and Fish Habitat

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The existing conditions within Hawkesbury Creek and its tributary (Tributary #1 of Hawkesbury Creek) are well understood within the TEIAR Study Area and are outlined in the Fish and Fish Habitat Existing Conditions Report by MMM Group (2017) which available as part of the Fish and Fish Habitat Impact Assessment Report (Dillon, 2019). Hawkesbury Creek and the previously identified tributary (Tributary #1 of Hawkesbury Creek) are both documented as containing fish. While the thermal regime of Hawkesbury Creek is characterized as being warm water, Tributary #1 of Hawkesbury Creek is characterized as containing a coldwater thermal regime due to the presence of Watercress (*Nasturtium officinale*).

Identification of watercourses with the potential to provide fish habitat was undertaken within the Revised Study Area. During field investigation the extents of Tributary #1 of Hawkesbury Creek were further surveyed within the east portion of the Revised Study Area and were observed to extend until the entrance to the westbound County Road 17 offramp where the tributary also crosses County Road 17 via a concrete box culvert and continues southwest. The presence of fish within Tributary #1 of Hawkesbury Creek was confirmed by visual observation within pooling habitat east of the inlet to the box culvert that crosses Highway 34. Watercress was observed within some portions of the tributary that occur within the new portion of the Revised Study Area further supporting the tributary's designation as a coldwater thermal regime.

During verification of ELC within the TEIAR Study Area, a second unnamed tributary to Hawkesbury Creek (Tributary #2 of Hawkesbury Creek) was identified within and adjacent to the southwest boundary of the TEIAR Study Area. Tributary #2 of Hawkesbury Creek was observed to have low flow with a substrate dominated by muck/organics and abundant emergent vegetation. Thermal regime information for this tributary was unavailable on the Ministry of Agriculture, Food and Rural Affairs' AgMaps online application. However, an abundance of chemotrophic iron-oxidizing bacteria film was observed throughout Tributary #2 of Hawkesbury Creek which can be an indicator of coldwater thermal regime.

The extents of both Tributary #1 and Tributary #2 of Hawkesbury Creek are shown on Figures 3 to 5 in Attachment 1.

### Incidental Wildlife Observations

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A general wildlife assessment was completed through incidental observations while on site. Incidental observations of wildlife were noted as well as other wildlife evidence such as dens, tracks, and scat. These observations also helped to determine potential ecological functions, linkages, etc. within and adjacent to the Revised Study Area.

Incidental wildlife species observed within and adjacent to the Revised Study Area are listed in below. Each of the species observed are considered common in the United Counties of Prescott and Russell area.

- Eastern Gray Squirrel (*Sciurus carolinensis*)
- Gray Catbird (*Dumetella carolinensis*)
- Mallard (*Anas platyrhynchos*)
- Northern Flicker (*Colaptes auratus*)
- Wild Turkey (*Meleagris gallopavo*)
- Woodchuck (*Marmota monax*)

## Summary

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The June 12, 2020, field investigations included ELC, BBS, a migratory bird nest search, documentation and search for SAR and sensitive/rare species as well as any potential associated habitat, a watercourse and tributary survey and documentation of incidental wildlife and wildlife habitat encountered in the field. The Hawkesbury Creek/CNR Overhead (Site No. 27-50) and Highway 34 Underpass at County Road 17 (Site No. 27-51) Revised Study Area contains meadow located predominately adjacent to the interchange as well as forest, wetland and thicket throughout the western and northeast and southeast extents.

Based on their range, known occurrences, and/or the vegetation communities observed within the Revised Study Area, the following SAR were observed or have the potential to occur within the Revised Study Area:

- Barn Swallow (nest observed)
- Butternut (seven trees observed)
- SAR Bats (candidate habitat)

Potential impacts to these species and their habitat should be reviewed once the detailed designs have been identified (Figure 6 in Attachment 1). Potential impacts to SAR as a result of infrastructure rehabilitation and replacement works proposed by MTO can likely be addressed through Notice of Activity registrations under s23.18 of the O. Reg. 242/08 "Threats to health and safety; not imminent". As a result, s23.18 of O. Reg. 242/08 should be reviewed as part of the impact assessment during the subsequent design phases. Footprint impacts within 25 m of the seven documented Butternut would require the preparation of Butternut Health Assessments to determine classification of these trees and confirm next steps. A tree inventory and tree removal plan would also be required.

In addition to the potential impacts to SAR and SAR habitat in the Revised Study Area, the following significant wildlife habitats have been identified within the Revised Study Area:

- Bat Maternity Colonies
- Special Concern and Rare Wildlife Species (i.e. Eastern Wood-pewee and Wood Thrush)
- Area-sensitive Breeding Bird Habitat (Canada Warbler)
- Turtle Nesting Area (Snapping Turtle and Northern Map Turtle)

Impacts to significant wildlife habitat should be assessed during detailed design and appropriate mitigation measures developed accordingly.

Wild Parsnip, a noxious plant, was observed within the Revised Study Area along the roadsides and within the meadow communities, and presents a health and safety concern. Contact with the leaves and sap can cause severe skin irritation. Anyone conducting future work onsite should wear protective

clothing, take the necessary precautions to avoid sap exposure to the skin, and should be aware of first aid treatments available.

Once detailed design details are known, terrestrial and aquatic impact assessments are recommended to evaluate the potential impacts on SAR and the natural features within the Revised Study Area. At that time, detailed mitigation measures can be developed for inclusion in the contract documentation.

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


# Attachment 1

**MTO LARGE VALUE RETAINER - EAST REGION**

ASSIGNMENT No. 14 - HAWKESBURY

**STUDY AREA**


FIGURE 1

-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Road
-  Railway
-  Watercourse



0 10 20 40 m      SCALE 1:3,000

MAP DRAWING INFORMATION:  
 DATA PROVIDED BY MNR  
 MAP CREATED BY: PH MAP CHECKED BY: JW  
 MAP PROJECTION: NAD 1983 UTM Zone 18N






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**MTO LARGE VALUE RETAINER - EAST REGION**

ASSIGNMENT No. 14 - HAWKESBURY

**NATURAL HERITAGE FEATURES**

FIGURE 2

-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Road
-  Railway
-  Watercourse
-  MNRF approximate Wetlands (LIO, 2020)
-  MNRF approximate Woodlands (LIO, 2020)



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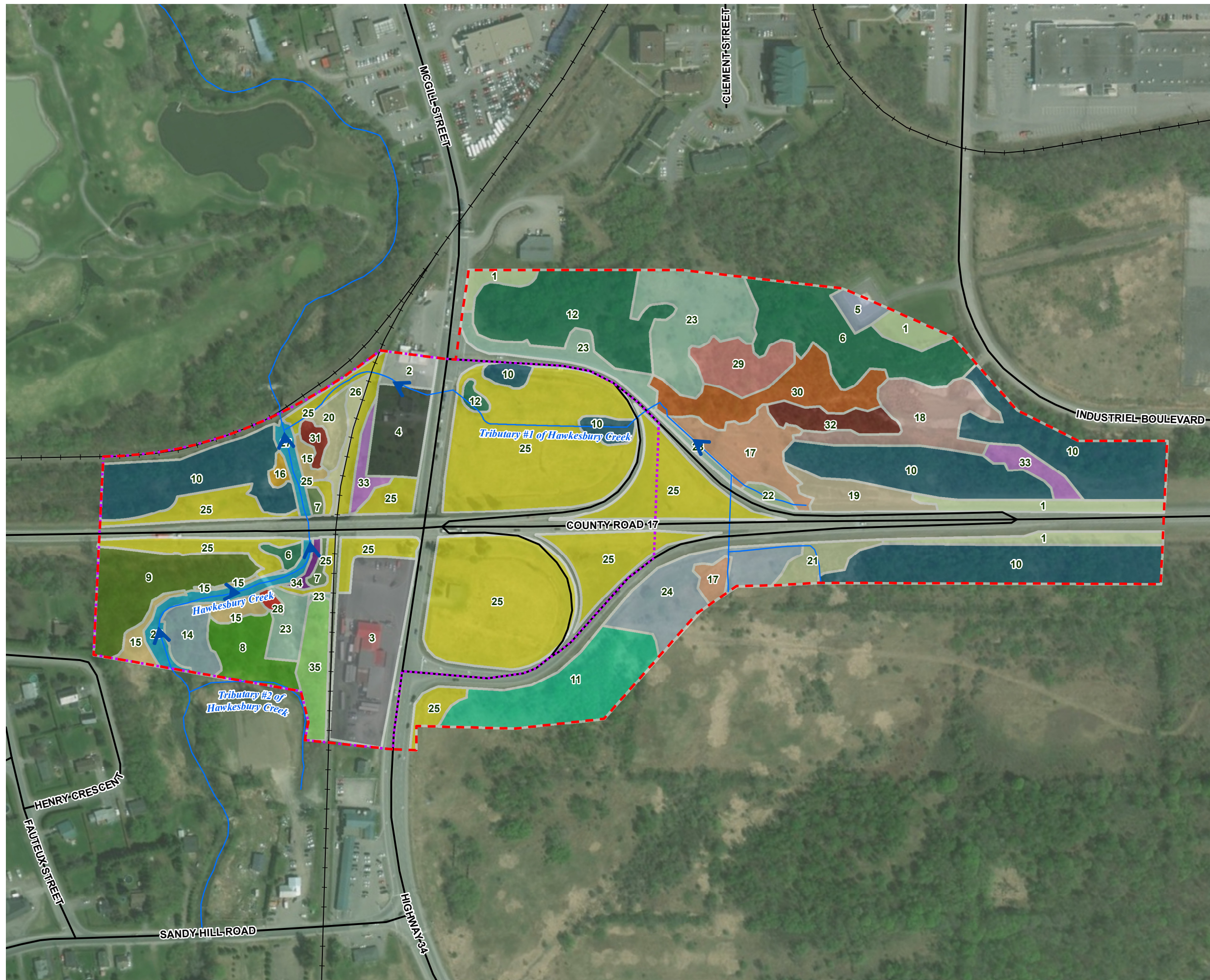








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
ASSIGNMENT No. 14 - HAWKESBURY

**NATURAL ENVIRONMENT SITE INVESTIGATION RESULTS**  
FIGURE 3



-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Road
-  Railway
-  Watercourse
-  Direction of Flow

**Ecological Land Classification**

-  1. CGL: Greenlands
-  2. CVC\_1: Business Sector
-  3. CVC\_2: Light Industry
-  4. CVR\_4: Rural Property
-  5. CVS\_2: Hospital
-  6. FOD3-1: Dry-Fresh Poplar Deciduous Forest
-  7. FOD5: Dry-Fresh Sugar Maple Deciduous Forest
-  8. FOD5-2: Dry-Fresh Sugar Maple-Beech Deciduous Forest
-  9. FOD7-1: Fresh-Moist White Elm Lowland Deciduous Forest
-  10. FODM8-1: Fresh Moist Poplar Deciduous Forest
-  11. FODM3: Dry-Fresh Poplar-White Birch Deciduous Forest
-  12. FODM4-5: Dry-Fresh Manitoba Maple Deciduous Forest
-  14. FODM7-7: Fresh-Moist Manitoba Maple Lowland Deciduous Forest
-  15. MAM2-10: Mixed Forb Mineral Meadow Marsh
-  16. MAM2-2: Reed-Canary Grass Graminoid Mineral Meadow Marsh
-  17. MAMM1: Graminoid Mineral Meadow Marsh
-  18. MAMM1-12: Common Reed Graminoid Mineral Meadow Marsh
-  19. MAMM1-2: Cattail Graminoid Mineral Meadow Marsh
-  20. MAS3-1: Cattail Organic Shallow Marsh
-  21. MASM1-1: Cattail Mineral Shallow Marsh
-  22. MASM1-12: Common Reed Mineral Shallow Marsh
-  23. MEFM1-1: Golden Forb Meadow
-  24. MEGM4: Fresh-Moist Graminoid Meadow
-  25. MEM: Mixed Meadow
-  26. MEMM4: Fresh-Moist Mixed Meadow Ecosite
-  27. OAO: Open Aquatic
-  28. SWD: Deciduous Swamp
-  29. SWDM4: Mineral Deciduous Swamp
-  30. SWDM4-5: Poplar Mineral Deciduous Swamp
-  31. SWT3-1: Speckled Alder Organic Deciduous Thicket Swamp
-  32. SWTM3: Willow Mineral Deciduous Thicket Swamp
-  33. THD: Deciduous Thicket
-  34. THDM5: Fresh-Moist Deciduous Thicket
-  35. WOD: Deciduous Woodland

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MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNR  
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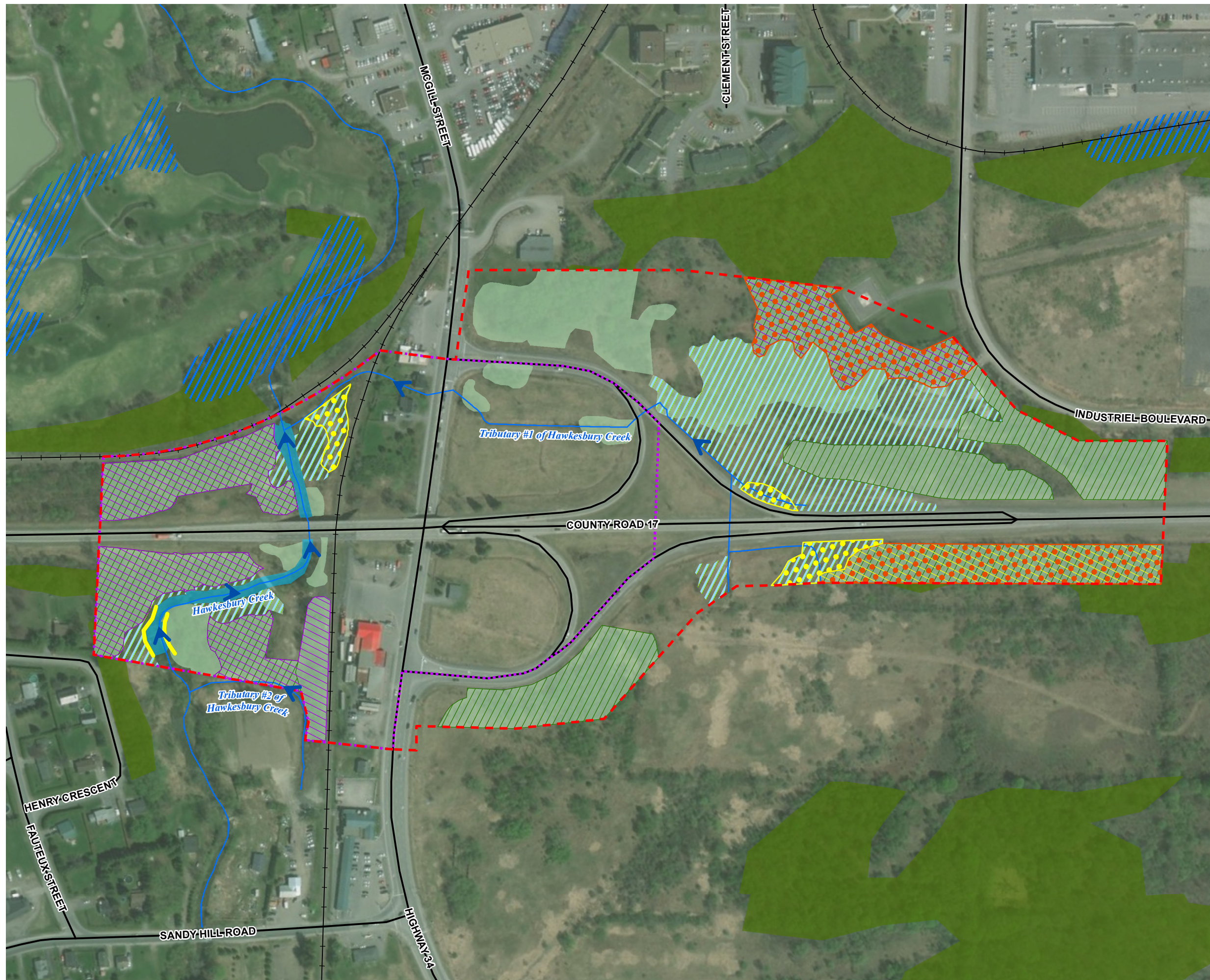


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STATUS: DRAFT  
DATE: 2020-07-13

**MTO LARGE VALUE RETAINER - EAST REGION**

ASSIGNMENT No. 14 - HAWKESBURY

**CANDIDATE SIGNIFICANT WILDLIFE HABITAT**  
FIGURE 4



-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Road
-  Railway
-  Watercourse
-  Direction of Flow
-  Dillon Delineated approximate Open Water
-  Dillon Delineated approximate Wetlands
-  MNR approximate Wetlands (LIO, 2020)
-  Dillon Delineated approximate Woodlands
-  MNR approximate Woodlands (LIO 2020)
-  Candidate Significant Wildlife Habitat for Turtle Nesting Habitat
-  Candidate Significant Wildlife Habitat for Amphibian Breeding Habitat
-  Candidate Significant Wildlife Habitat for Special Concern and Rare Wildlife Species (Wood Thrush)
-  Candidate Significant Wildlife Habitat for Bat Maternity Colonies
-  Candidate Significant Wildlife Habitat for Area-Sensitive Breeding Bird Habitat (Canada Warbler)
-  Candidate Significant Wildlife Habitat for Special Concern and Rare wildlife Species (Eastern Wood-Pewee)

0 10 20 40 m SCALE 1:3,000

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MAP CREATED BY: PH MAP CHECKED BY: JW  
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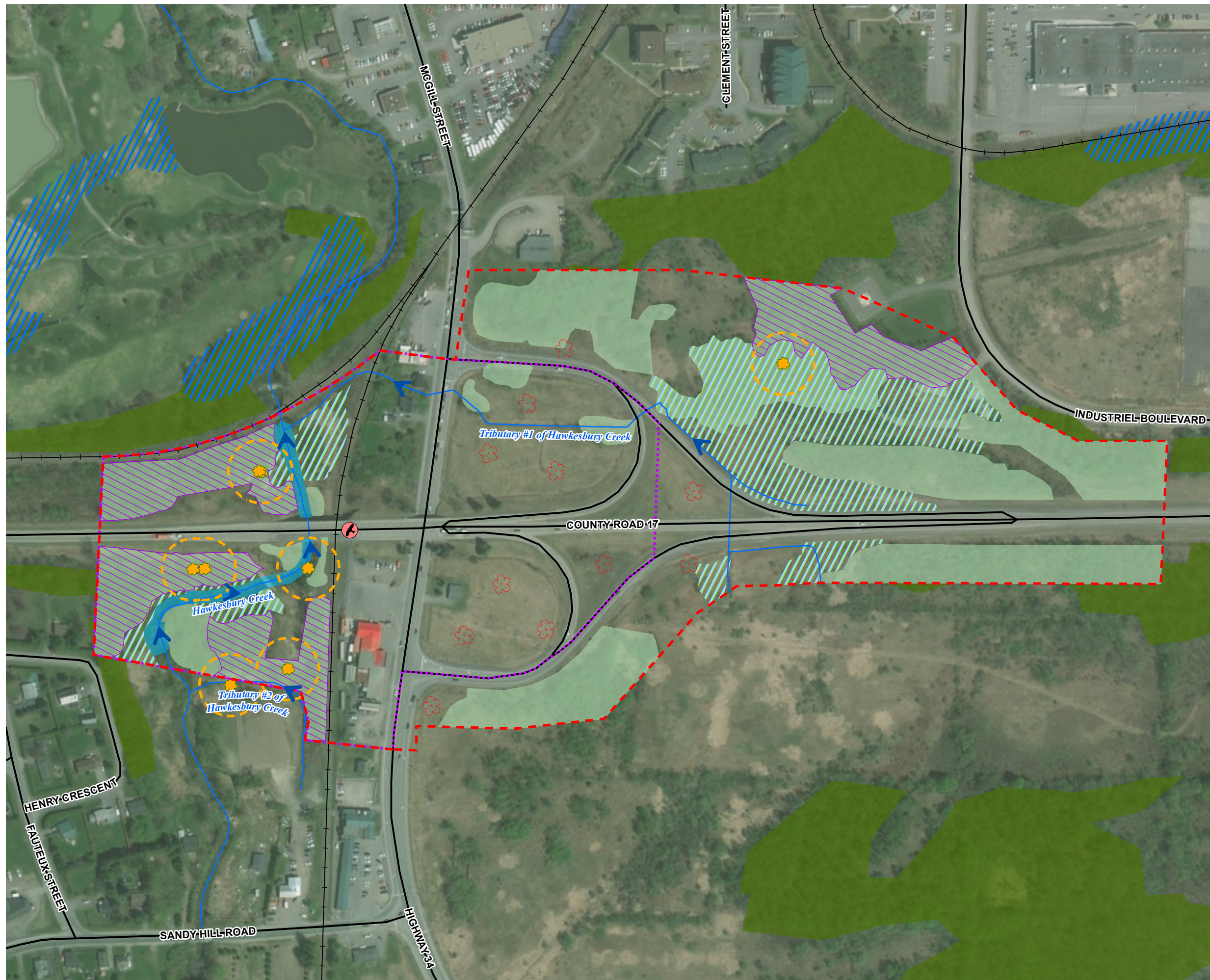


















PROJECT: 17-5180  
STATUS: DRAFT  
DATE: 7/11/2020

**MTO LARGE VALUE RETAINER - EAST REGION**

ASSIGNMENT No. 14 - HAWKESBURY

**ENVIRONMENTAL CONSTRAINTS AND SAR HABITAT**  
FIGURE 5



-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Road
-  Railway
-  Watercourse
-  Dillon Delineated approximate Open Water
-  Direction of Flow
-  Dillon Delineated approximate Wetlands
-  MNRF approximate Wetlands (LIO 2020)
-  Dillon Delineated approximate Woodlands
-  MNRF approximate Woodlands (LIO 2020)
-  Butternut Locations
-  Butternut 25m Buffer
-  Wild Parsnip
-  Barn Swallow Nest
-  Candidate SAR Bat Habitat

0 10 20 40 m SCALE 1:3,000

MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNRF  
MAP CREATED BY: PH MAP CHECKED BY: JW  
MAP PROJECTION: NAD 1983 UTM Zone 18N



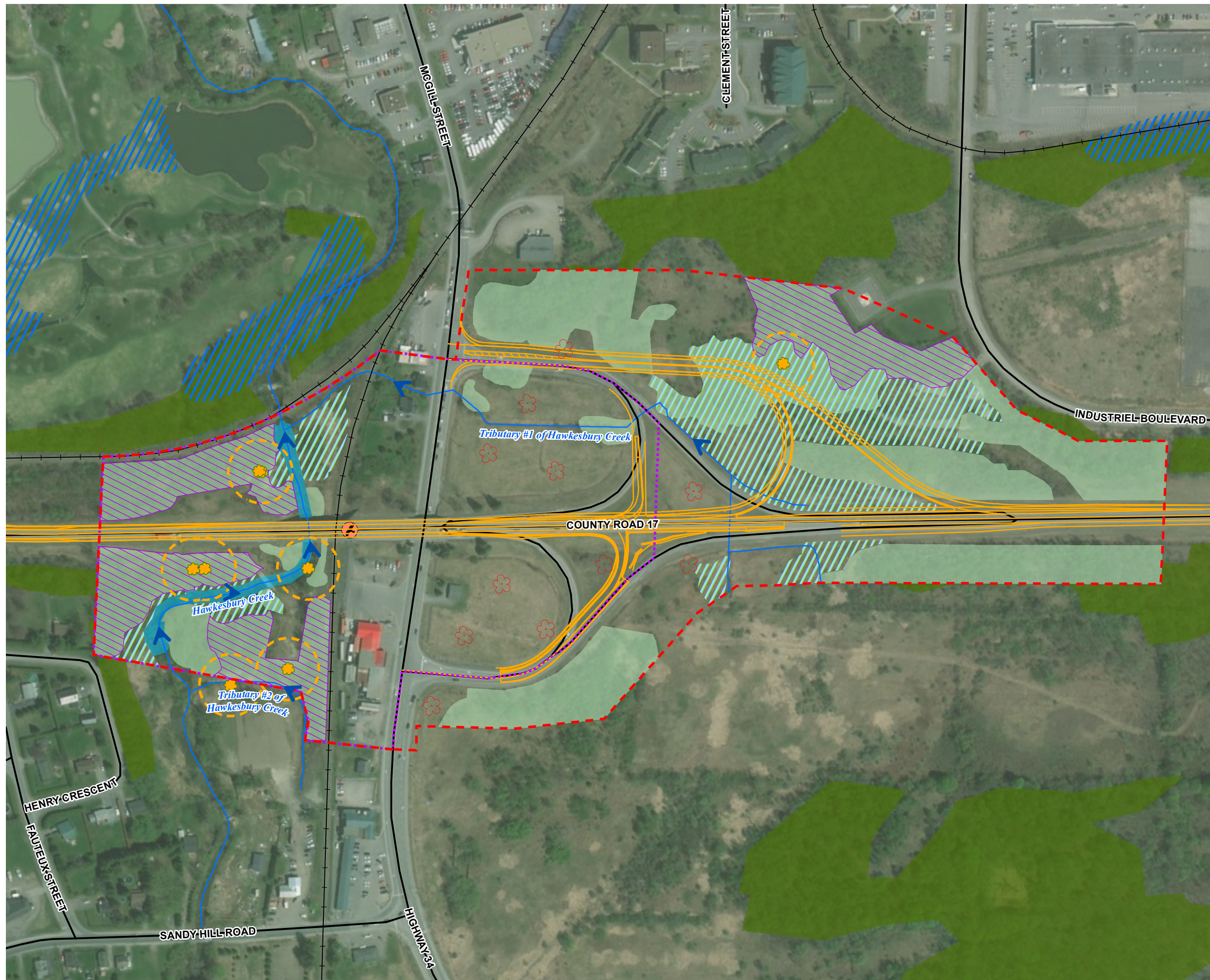
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













**MTO LARGE VALUE RETAINER - EAST REGION**

ASSIGNMENT No. 14 - HAWKESBURY

**PROPOSED IMPROVEMENTS**

FIGURE 6



-  Revised Study Area (2020)
-  TEIAR Study Area (2019)
-  Proposed Road Alignment
-  Road
-  Railway
-  Watercourse
-  Dillon Delineated approximate Open Water
-  Direction of Flow
-  Dillon Delineated approximate Wetlands
-  MNRD approximate Wetlands (LIO 2020)
-  Dillon Delineated approximate Woodlands
-  MNRD approximate Woodlands (LIO 2020)
-  Butternut Locations
-  Butternut 25m Buffer
-  Wild Parsnip
-  Barn Swallow Nest
-  Candidate SAR Bat Habitat

0 10 20 40 m SCALE 1:3,000

MAP DRAWING INFORMATION:  
 DATA PROVIDED BY MNRD  
 MAP CREATED BY: PH MAP CHECKED BY: JW  
 MAP PROJECTION: NAD 1983 UTM Zone 18N



PROJECT: 17-5180  
 STATUS: DRAFT  
 DATE: 7/12/2020

# Attachment 2



## Attachment 2: Photo Inventory


Photo Comments	Photo
<p>Photo #1 June 12, 2020</p> <p>Notes:</p> <p>CGL: Greenlands</p> <p>Facing east from eastern boundary of the Cattail Graminoid Mineral Meadow Marsh within the eastern portion of the Revised Study Area.</p>	 A photograph showing a wide, flat area of green and brown grasses. In the background, a paved road runs horizontally across the frame, with a white car visible in the distance. The road is bordered by a dense line of green trees. The sky is blue with scattered white clouds.

Photo #2  
June 12, 2020

Notes:

FOD3-1  
Dry-Fresh Poplar Deciduous Forest

Facing west from, interior of forest  
that occurs within the TEIAR Study  
Area.



Photo #3  
June 12, 2020

Notes:

FOD5-2  
Dry-Fresh Sugar Maple-Beech  
Deciduous Forest

Facing south from interior of the  
forest.



Photo #4  
June 12, 2020

Notes:

FODM8-1  
Fresh-Moist Poplar Deciduous Forest

Facing south at forest from Common Reed Graminoid Mineral Meadow Marsh (MAMM1-12) within the hydro-electric corridor that occurs within the Revised Study Area.



Photo #5  
June 12, 2020

Notes:

FODM3  
Dry-Fresh Poplar-White Birch  
Deciduous Forest

Facing east within the northwest boundary of the forest.



Photo #6  
June 12, 2020

Notes:

FODM4-5  
Dry-Fresh Manitoba Maple Deciduous  
Forest

Facing east within the interior of the  
forest.



Photo #7  
June 12, 2020

Notes:

FODM4-5  
Dry-Fresh Manitoba Maple Deciduous  
Forest

Facing northeast at forest from  
adjacent Mixed Meadow (MEM)  
north of County Road 17.



Photo #8  
June 12, 2020

Notes:

FODM7-7  
Fresh-Moist Manitoba Maple Lowland  
Deciduous Forest

Facing west from interior of the  
forest.

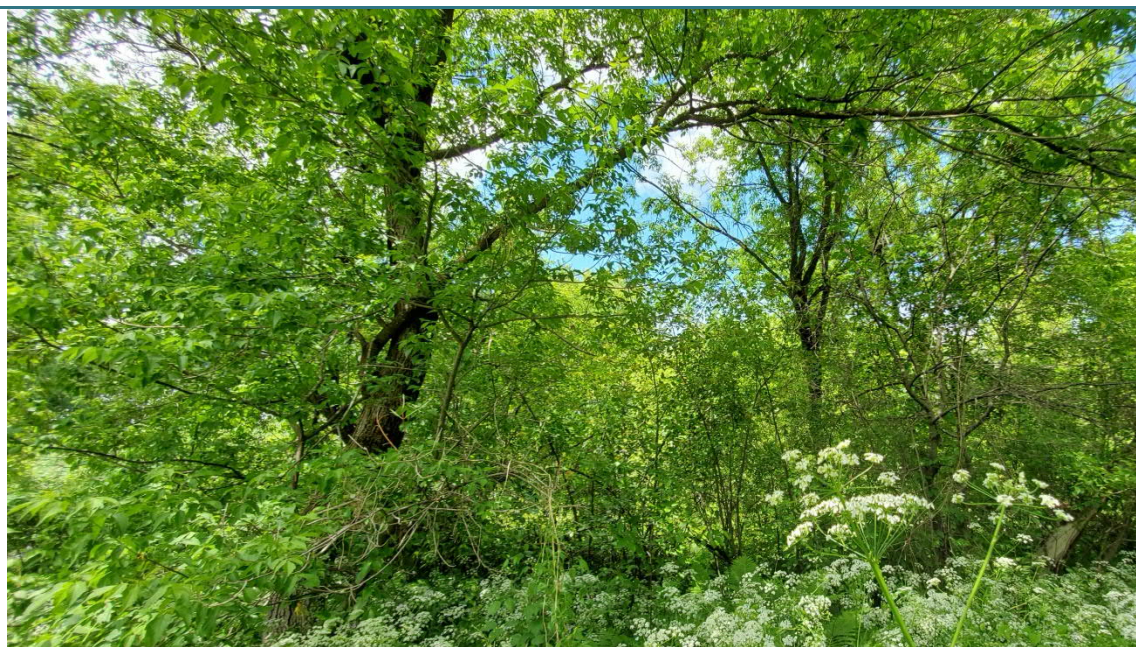


Photo #9  
June 12, 2020

Notes:

MAM2-10: Mixed Forb Mineral  
Meadow Marsh

Facing southwest from interior of the  
marsh from the southwest shore of  
Hawkesbury Creek.



Photo #10  
June 12, 2020

Notes:

MAM2-2  
Reed-Canary Grass Graminoid  
Mineral Meadow Marsh

Facing northeast from western  
boundary of marsh.



Photo #11  
June 12, 2020

Notes:

MAMM1  
Graminoid Mineral Meadow Marsh

Facing northeast from center of the  
marsh.

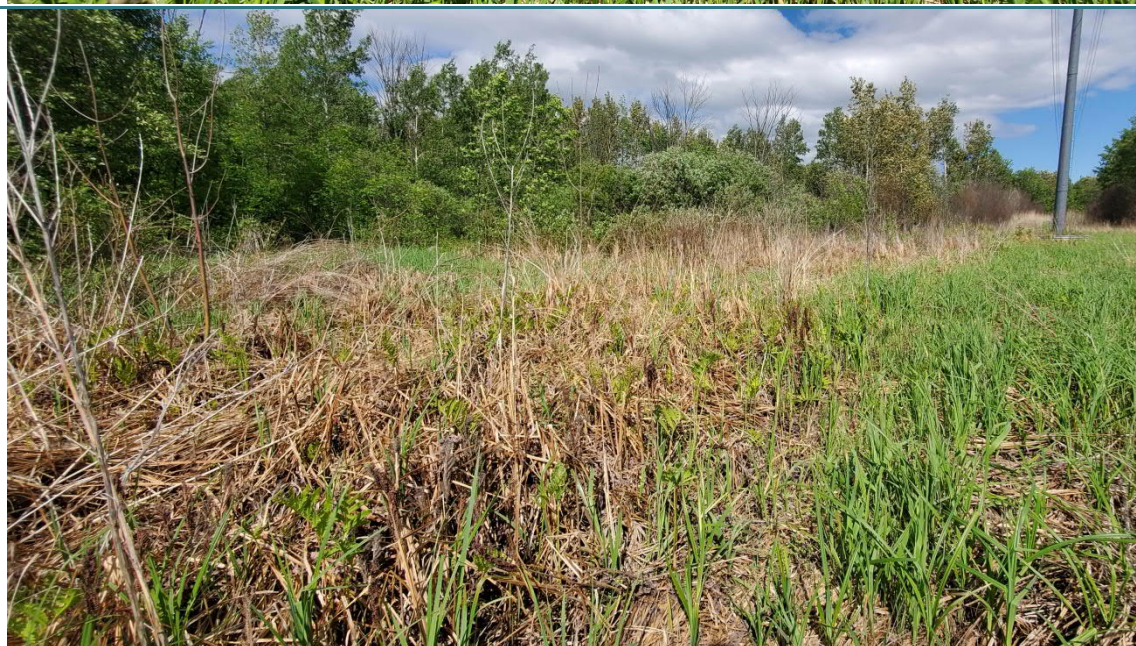


Photo #12  
June 12, 2020

Notes:

MAMM1-12  
Common Reed Graminoid Mineral  
Meadow Marsh



Photo #13  
June 12, 2020

Notes:

MAMM1-2  
Cattail Graminoid Mineral Meadow  
Marsh

Facing north at marsh from north  
shoulder of County Road 17  
westbound lane shoulder.



Photo #14  
June 12, 2020

Notes:

MAS3-1 Cattail Organic Shallow  
Marsh

Facing east from interior of the  
marsh.



Photo #15  
June 12, 2020

Notes:

MASM1-1  
Cattail Mineral Shallow Marsh

Facing southeast at marsh from south  
shoulder of County Road 17  
eastbound lane.

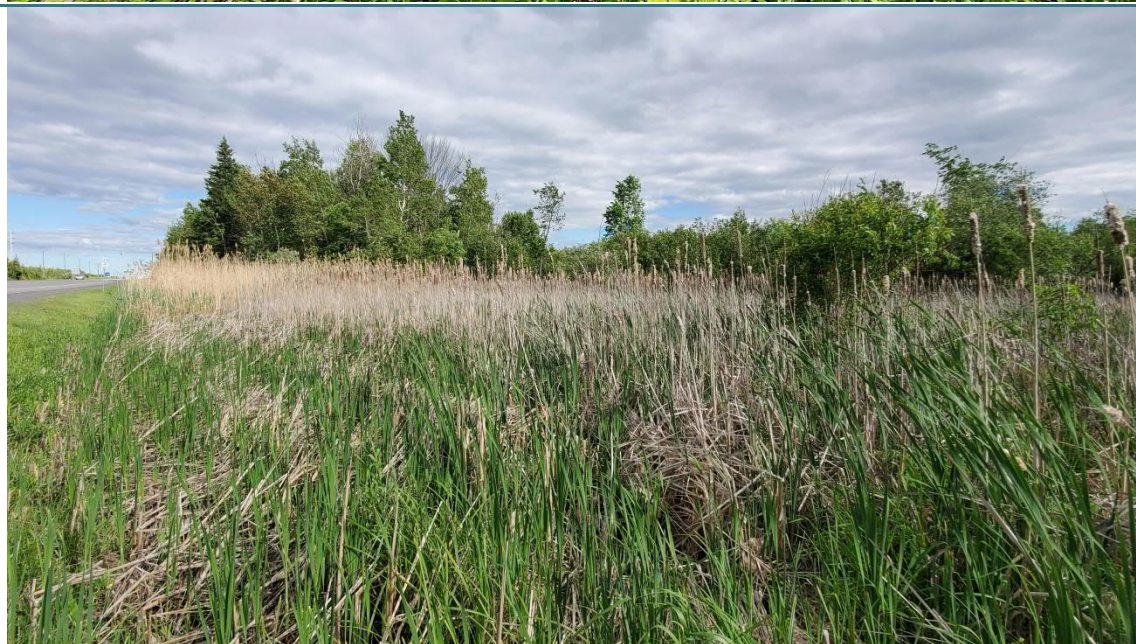




Photo #16  
June 12, 2020

Notes:

MASM1-12  
Common Reed Mineral Shallow  
Marsh

Facing northwest at marsh in the  
distance from north shoulder of the  
westbound lane of County Road 17.



Photo #17  
June 12, 2020

Notes:

MEFM1-1  
Golden Forb Meadow

Facing northeast from interior of  
meadow within the northeast portion  
of the Revised Study Area.



Photo #18  
June 12, 2020

Notes:

MEM  
Mixed Meadow

Facing northeast from interior of the meadow located within County Road 17 westbound onramp loop.



Photo #19  
June 12, 2020

Notes:

OAO  
Open Aquatic

Facing east (downstream) at Hawkesbury Creek from the southeast shore in the Mixed Forb Mineral Meadow Marsh (MAM2-10).



Photo #20  
June 12, 2020

Notes:

SWDM4  
Mineral Deciduous Swamp

Facing northwest from interior of  
swamp.



Photo #21  
June 12, 2020

Notes:

SWDM4-5  
Poplar Mineral Deciduous Swamp

Facing northwest within the interior  
of the forest.



Photo #22  
June 12, 2020

Notes:

SWT3-1  
Speckled Alder Organic Deciduous  
Thicket Swamp

Facing west along western boundary  
of the swamp.

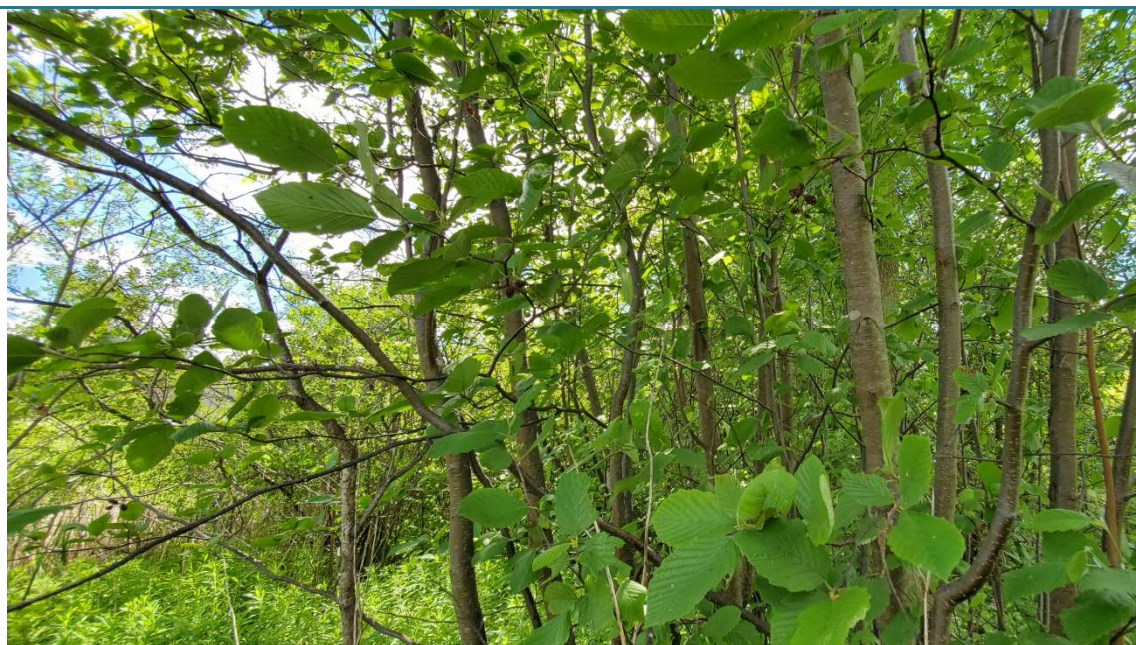


Photo #23  
June 12, 2020

Notes:

SWTM3  
Willow Mineral Deciduous Thicket  
Swamp

Facing east from interior of the  
swamp.



Photo #24  
June 12, 2020

Notes:

THD  
Deciduous Thicket

Facing north from north side of  
County Road 17 near the CNR  
overhead.



Photo #25  
June 12, 2020

Notes:

WOD  
Deciduous Woodland

Facing southwest from west side of  
the CNR railway within the TEIAR  
Study Area.

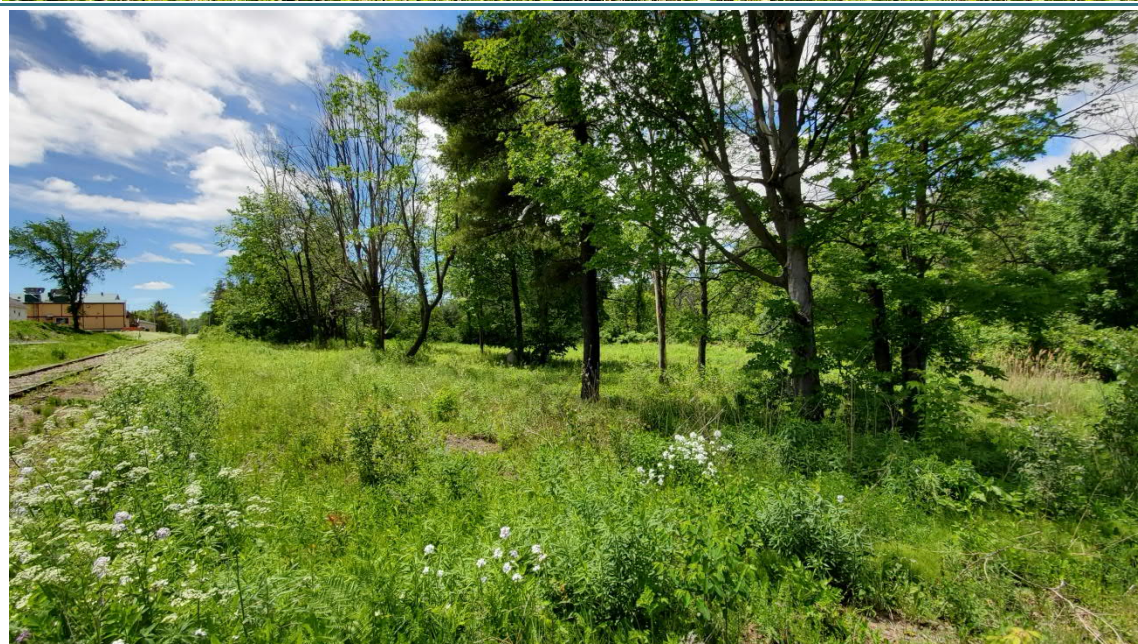


Photo #26  
June 12, 2020

Notes:

Tributary #1 of Hawkesbury Creek

Facing southeast (upstream) within  
Dry-Fresh Manitoba Maple Deciduous  
Forest east of Highway 34



Photo #27  
June 12, 2020

Notes:

Tributary #1 of Hawkesbury Creek

Facing southeast (upstream) along  
the segment of the tributary that  
runs parallel to the off ramp of  
westbound County Road 17.

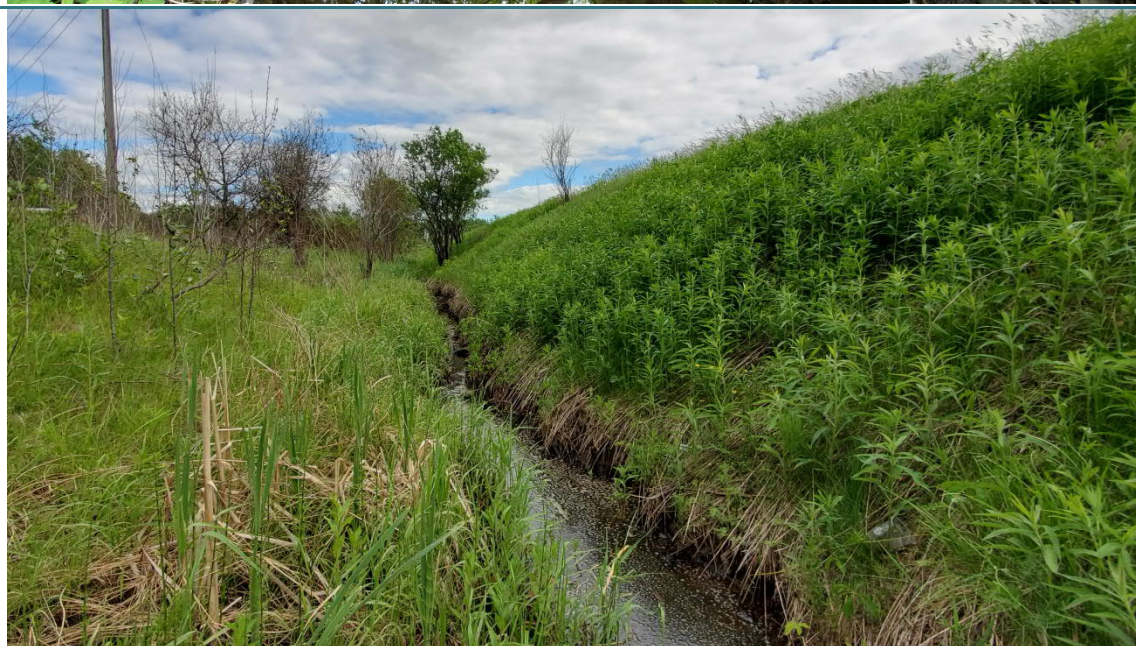


Photo #28  
June 12, 2020

Notes:

Tributary #1 of Hawkesbury Creek

Facing northwest (downstream) along the segment of the tributary that runs parallel to the off ramp of westbound County Road 17.



Photo #29  
June 12, 2020

Notes:

Tributary #1 of Hawkesbury Creek in the foreground and MAMM1: Graminoid Mineral Meadow Marsh and MEGM4: Fresh-Moist Graminoid Meadow in background

Facing south from the County Road 17 eastbound lane south shoulder



Photo #30  
June 12, 2020

Notes:

Tributary #2 of Hawkesbury Creek

Facing east (upstream) of Tributary #2  
from segment that occurs within and  
along the TEIAR Study Area.



Photo #31  
June 12, 2020

Notes:

Tributary #2 of Hawkesbury Creek

Facing west (downstream) at outlet of  
Tributary #2 where it discharges into  
Hawkesbury Creek.





Photo #32  
June 12, 2020

Notes:

Tributary #2 of Hawkesbury Creek

Facing east (upstream) at iron-oxidizing bacteria film on surface water of Tributary #2.



Photo #33  
June 12, 2020

Notes:

Hawkesbury Creek

Facing northeast at CNR overhead in the distance, and Fresh-Moist Deciduous Thicket (THDM5) along the east shore from ATV bridge crossing.



Photo #34  
June 12, 2020

Notes:

Hawkesbury Creek/CNR Overhead

Facing east at eastern abutment of the CNR overhead.

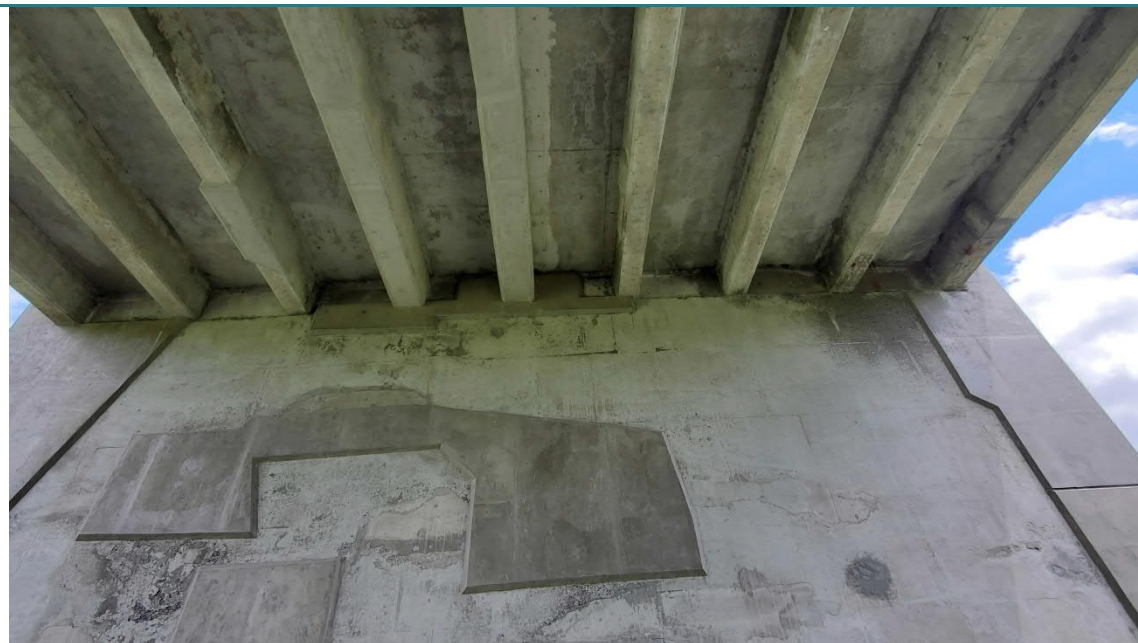


Photo #35  
June 12, 2020

Notes:

Hawkesbury Creek/CNR Overhead

Facing west at west abutment of the CNR overhead from east shore of Hawkesbury Creek.



Photo #36  
June 12, 2020

Notes:

Hawkesbury Creek/CNR Overhead

Facing east at Barn Swallow nest  
constructed against the east  
abutment to CNR Overhead



Photo #37  
June 12, 2020

Notes:

Facing southeast at Highway 34  
Underpass from the shoulder of the  
southbound lane.

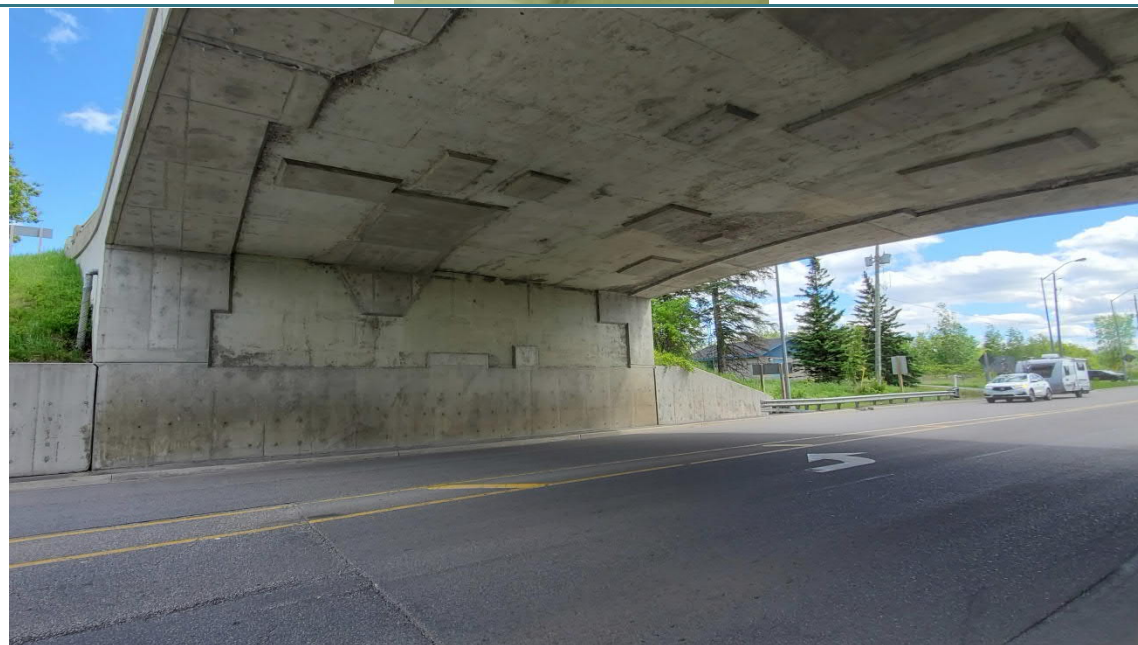


Photo #38  
June 12, 2020

Notes:

Facing west at Highway 34 Underpass from the shoulder of the southbound lane.



Photo #39  
June 12, 2020

Notes:

Beaver Dam  
Tributary #1 of Hawkesbury Creek

Facing northeast at active Beaver dam located within Tributary #1 of Hawkesbury Creek at outlet of culvert that crosses the westbound off ramp of County Road 17.



# Attachment 3

Table 1: Descriptions of ELC Communities within the Revised Study Area

Polygon #	ELC Code	Classification	Vegetation	Photo Reference (Attachment 2)
11.	FODM3	Dry-Fresh Poplar-White Birch Deciduous Forest	This forest community canopy and sub-canopy was dominated by Paper Birch ( <i>Betula papyrifera</i> ) with occasional to rare Trembling Aspen ( <i>Populus tremuloides</i> ). The ground layer contained an occasional abundance of sapling Trembling Aspen, Sensitive Fern ( <i>Onoclea sensibilis</i> ), Hairy Goldenrod ( <i>Solidago hispida</i> ) and rare Common Buckthorn ( <i>Rhamnus cathartica</i> ). The forest was observed to be a young to mid-age community with little to no snags.	5
12.	FODM4-5	Dry-Fresh Manitoba Maple Deciduous Forest	This forest community canopy and sub-canopy contained mixture of abundant Manitoba Maple ( <i>Acer negundo</i> ) and Staghorn Sumac ( <i>Rhus hirta</i> ) with occasional occurrences of Trembling Aspen, Wild Black Cherry ( <i>Prunus serotina</i> ) and rare occurrences of Sugar Maple ( <i>Acer saccharum</i> ). The understory and ground layers contained occasional Virginia Creeper ( <i>Parthenocissus quinquefolia</i> ), Common Buckthorn, Wild Black Currant ( <i>Ribes americanum</i> ) and sapling Green Ash ( <i>Fraxinus pennsylvanica</i> ), Sugar Maple and Alternate-leaved Dogwood ( <i>Cornus alternifolia</i> ). Garbage and remnants of dumping were observed throughout. Evidence of Emerald Ash Borer ( <i>Agrilus planipennis</i> ) (EAB) throughout with very rare snags and an abundance of deadfall.	6, 7
13.	FODM7-7	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	This forest community canopy is dominated by Manitoba Maple with a sub-canopy that contained occasional to rare Manitoba Maple and American Elm ( <i>Ulmus americana</i> ). The understory and ground layers are densely occupied by an abundant combination of Sensitive Fern, Common Buckthorn, Black Raspberry ( <i>Rubus occidentalis</i> ), Virginia Creeper ( <i>Parthenocissus quinquefolia</i> ) and Poison-hemlock ( <i>Conium maculatum</i> ).	8
17.	MAMM1	Graminoid Mineral Meadow Marsh	This marsh community was dominated by Lake-bank Sedge ( <i>Carex lacustris</i> ) with abundant Sensitive Fern and occasional to rare Purple Loosestrife ( <i>Lythrum salicaria</i> ) and Spotted Jewelweed ( <i>Impatiens capensis</i> ).	11
18.	MAMM1-12	Common Reed Graminoid Mineral Meadow Marsh	This marsh community was dominated by European Common Reed ( <i>Phragmites australis</i> ssp. <i>australis</i> ) with rare occurrences of Narrow-leaved Cattail.	12
19.	MAMM1-2	Cattail Graminoid Mineral Meadow Marsh	This marsh community was dominated by Narrow-leaved Cattail.	13
21.	MASM1-1	Cattail Mineral Shallow Marsh	This marsh community was dominated by Narrow-leaved Cattail. Very shallow standing water was observed within this community (<0.05m).	15

Polygon #	ELC Code	Classification	Vegetation	Photo Reference (Attachment 2)
22.	MASM1-12	Common Reed Mineral Shallow Marsh	This marsh community was dominated by European Common Reed. Very shallow standing water was observed within this community (<0.05m).	16
23.	MEFM1-1	Golden Forb Meadow	This meadow was dominated by Goldenrod species ( <i>Solidago</i> sp.) with occasional Reed Canary Grass ( <i>Phalaris arundinacea</i> ) and Canada Anemone ( <i>Anemone canadensis</i> ).	17
24.	MEGM4	Fresh-Moist Graminoid Meadow	This meadow community was dominated by Grass species ( <i>Poaceae</i> sp.) such as Reed Canary Grass, Common Timothy ( <i>Phleum pratense</i> ) and Fowl Mannagrass ( <i>Glyceria striata</i> ).	29
29.	SWDM4	Mineral Deciduous Swamp	This swamp community canopy was dominated by American Elm and Black Ash ( <i>Fraxinus nigra</i> ) with occasional Trembling Aspen. Ground layer contained occasional Sensitive Fern, Common Buckthorn and Canada Anemone and sapling Black Ash. Occasional Black Ash deadfall was observed on the ground layer. Evidence of EAB throughout.	20
30.	SWDM4-5	Poplar Mineral Deciduous Swamp	This swamp community canopy was dominated by Trembling Aspen with occasional to rare Balsam Poplar ( <i>Populus balsamifera</i> ) associates. Ground layer contained abundant Sensitive Fern and occasional Philadelphia fleabane ( <i>Erigeron philadelphicus</i> ).	21
32.	SWTM3	Willow Mineral Deciduous Thicket Swamp	This thicket was dominated by Peach-leaved Willow ( <i>Salix amygdaloides</i> ) with occasional Red-osier Dogwood ( <i>Cornus sericea</i> ssp <i>sericea</i> ) and Black Raspberry. The ground layer contained abundant Lake-bank Sedge with occasional Sensitive Fern and Purple Loosestrife.	23

Table 2: Breeding Bird Survey Results

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>2</sup>	SRANK <sup>3</sup>
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	---	---	S4
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B
<i>Catharus fuscescens</i>	Veery	---	---	S4B
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5
<i>Empidonax alnorum</i>	Alder Flycatcher	---	---	S5B
<i>Geothlypis trichas</i>	Common Yellowthroat	---	---	S5B
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B
<i>Mniotilta varia</i>	Black-and-white Warbler	---	---	S5B
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5
<i>Setophaga magnolia</i>	Magnolia Warbler	---	---	S5B
<i>Setophaga petechia</i>	Yellow Warbler	---	---	S5B
<i>Setophaga ruticilla</i>	American Redstart	---	---	S5B
<i>Spizella passerina</i>	Chipping Sparrow	---	---	S5B
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA
<i>Turdus migratorius</i>	American Robin	---	---	S5B
<i>Zonotrichia albicollis</i>	White-throated Sparrow	---	---	S5B

<sup>1</sup>Federal Species at Risk Act, 2002; <sup>2</sup>Provincial Endangered Species Act, 2007; <sup>3</sup>Provincial Sub-national Rank (S4 – Apparently Secure, S5 – Secure, SNA = Not Applicable - a conservation status rank is not applicable because the species is not a suitable target for conservation activities; N = non-breeding population; B = breeding population; -- - denotes no information or not applicable).





## Memorandum

Impact Assessment of the N/S-W and E-N/S  
Ramp Realignments (Final - Rev A)

### Appendix C – Ontario One Call Information

**G-tel Engineering Inc.**

1150 Frances St 2nd Floor  
London, Ontario  
N5W 5N5

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**Planning Request For:** HONI Planning (H1DPLAN),

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**Ticket #:** 2020312434

**Issued By:** G-tel Lookup Dept.

**Date:** 07/27/2020

**Time:** 20:25:34

**Requester:** JUNAID AHMED

**Requester's Email:** junaid.ahmed1@jacobs.com

**Requesting Company:** Jacobs

**Fax #:**

**Ticket Request Type:** Design And Planning

**Location:** MCGILL ST (HIGHWAY 34)

**Locate Details:**

CORLOT=U Realignment of existing Interchange Ramps. N/S-W Interchange Ramp - Inner Loop (Highway 34 to Highway 17 - West Bound)E/S-W Outer ramp (Highway 17 to Highway 34).

**Remarks:**

CORLOT=U Realignment of existing Interchange Ramps. N/S-W Interchange Ramp - Inner Loop (Highway 34 to Highway 17 - West Bound)E/S-W Outer ramp (Highway 17 to Highway 34).DEPTH UNKNOWN613 632

**Comments To Excavator:**

---

If you have any questions or concerns regarding your planning request, please call G-tel Engineering at 1-866-692-0208, dial 0 and request the lookup department.

CAUTION: The details provided are to be used solely for planning your design and not for excavation. You must call Ontario One Call at 1-800-400-2255 at least 1 week prior to excavation to obtain a physical locate.

See disclaimer document for further details.



### **Planning Request Disclaimer**

This letter is to indicate that the drawing(s) and information provided is the property of Hydro One and its licensees (all rights reserved), and is to be used for planning and design purposes only solely to assist you in reviewing your project. The drawing(s) and information is not to be altered or used for any other purpose.

Please note that the attached drawings represent Hydro One distribution lines.

The attached drawing(s) and information **do not** include Hydro One transmission line information and they do **not** include privately owned/third party owned conductor.

The drawing(s) and information is **not** to be used for excavation purposes. The distribution lines and equipment locations indicated should not be relied upon for construction purposes as being exact. The exact location, configuration and/or materials used may not be accurately represented.

The drawing(s) and information are not to be relied upon by any third parties. Hydro One assumes no liability for the incorrect reliance or use of the drawing(s) or information.

You understand that you must contact Ontario One Call (1-800-400-2255) for more details for your excavation purposes, and must contact Ontario One Call to obtain locates a minimum of 5 business days prior to your excavation needs.

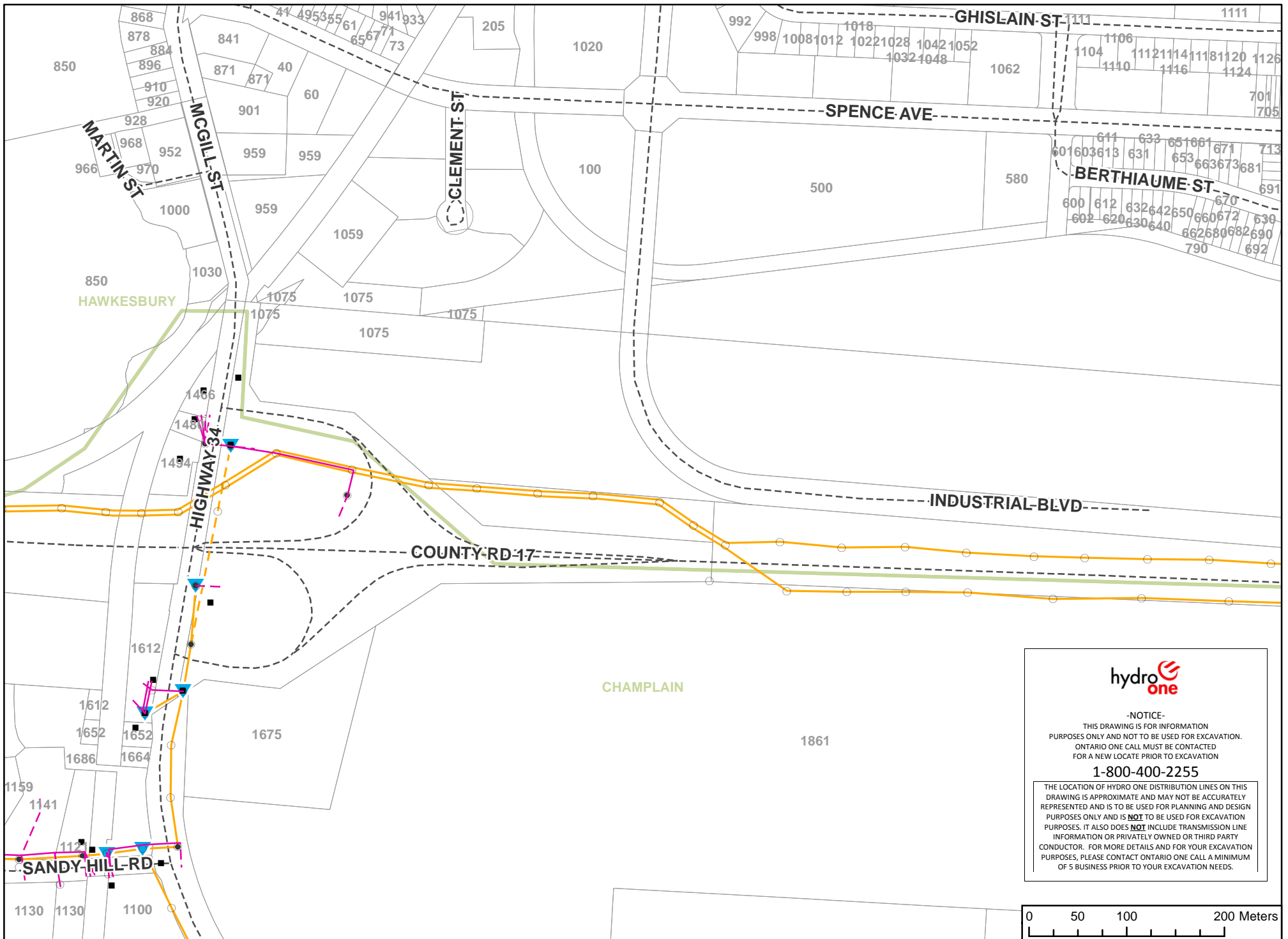
**Hydro One**  
**Distribution Damage Prevention Team**


### Hydro One Network

Layer name	Display	Description
PRI_UG_CONDUCTOR		Primary Underground – 2.4/4.16kV; 4.8/8.32 kV
		Primary Underground – 7.2/12.51 kV
		Primary Underground – 16.0/27.6 kV; 34.5 kV; 44 kV
		Primary Underground – All other voltage
PRI_OH_CONDUCTOR		Primary Overhead – 2.4/4.16kV; 4.8/8.32 kV
		Primary Overhead – 7.2/12.51 kV
		Primary Overhead – 16.0/27.6 kV; 44 kV
		Primary Overhead – All other voltage
SEC_UG_CONDUCTOR		Secondary Underground Conductor
SEC_OH_CONDUCTOR		Secondary Overhead Conductor
TRANSFORMER		Single Phase Underground
		Single Phase Overhead
POLES		Poles
AWITCHINGFACILITY		Structures: Pad, Vault and Other
BUSBAR		Shown same as Primary Underground
RISERS		PVC or Fiberglass type risers

### Hydro One Landbase

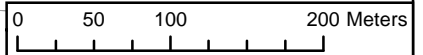
Layer name	Display	Description
STREETS		Centre line of road
PARCELS		Polygons representing parcel

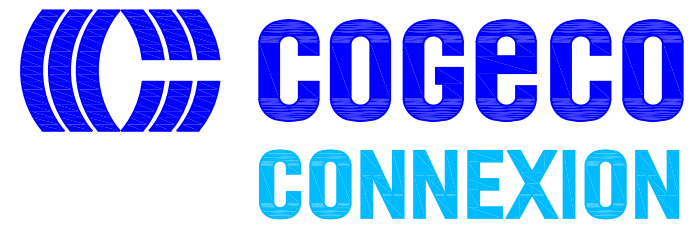




**-NOTICE-**  
 THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND NOT TO BE USED FOR EXCAVATION. ONTARIO ONE CALL MUST BE CONTACTED FOR A NEW LOCATE PRIOR TO EXCAVATION  
**1-800-400-2255**

THE LOCATION OF HYDRO ONE DISTRIBUTION LINES ON THIS DRAWING IS APPROXIMATE AND MAY NOT BE ACCURATELY REPRESENTED AND IS TO BE USED FOR PLANNING AND DESIGN PURPOSES ONLY AND IS **NOT** TO BE USED FOR EXCAVATION PURPOSES. IT ALSO DOES **NOT** INCLUDE TRANSMISSION LINE INFORMATION OR PRIVATELY OWNED OR THIRD PARTY CONDUCTOR. FOR MORE DETAILS AND FOR YOUR EXCAVATION PURPOSES, PLEASE CONTACT ONTARIO ONE CALL A MINIMUM OF 5 BUSINESS DAYS PRIOR TO YOUR EXCAVATION NEEDS.





COGECO #:	36353
HYDRO ONE #:	_____
LDC PERMIT #:	_____
BELL #:	_____
CITY #:	_____
_____:	_____
CONTRACTOR:	_____
FIELD AS-CONSTRUCT DATE:	_____
RECORD AS-CONSTRUCT DATE:	_____

**Site Name**      HWY 17 & HWY 34, HAWKESBURY  
**Construction Type:** MINISTRY OF TRANSPORTATION  
**Cogeco #**            36353  
**Project #**            158500202.308

### Drawing List

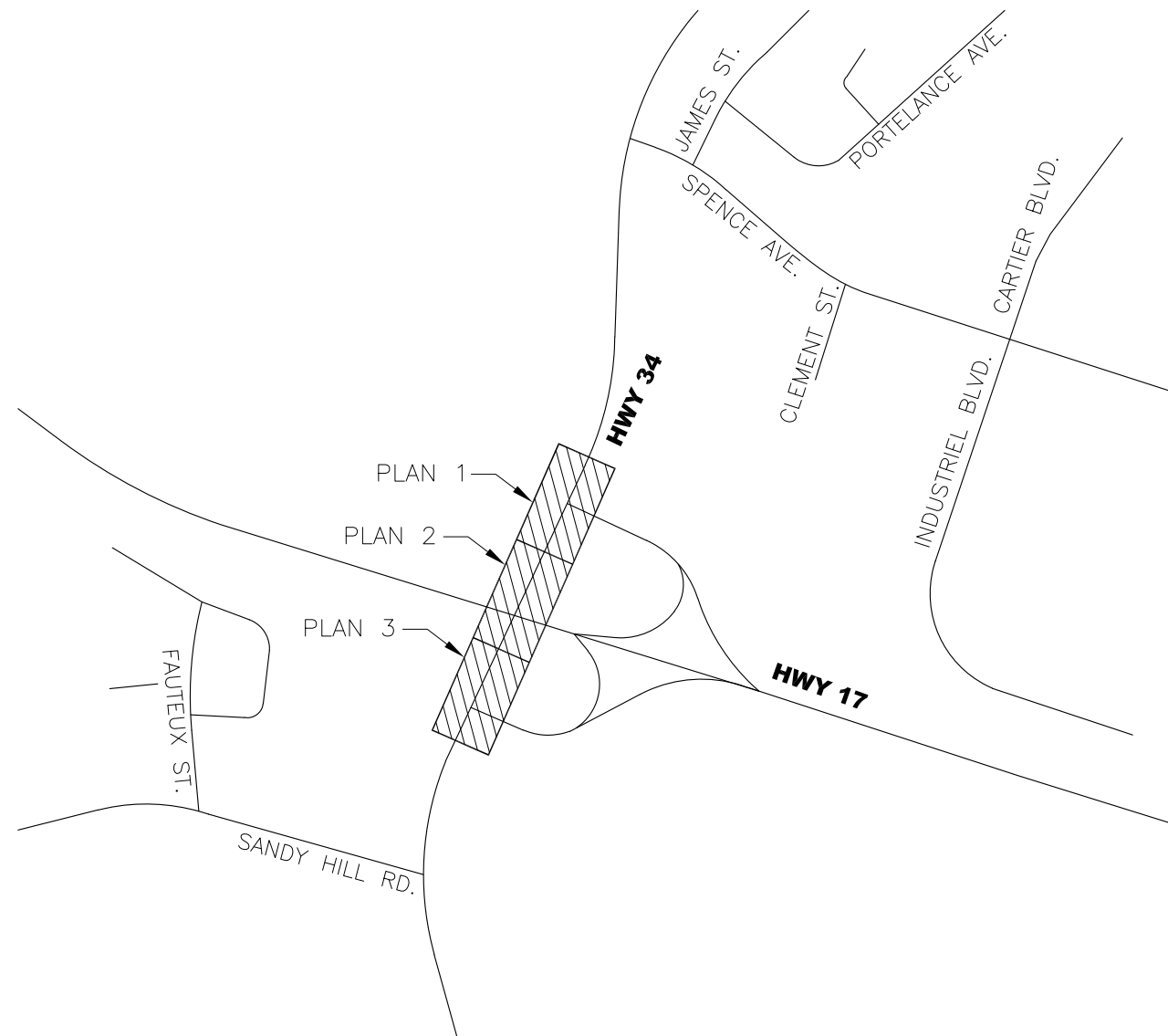
Site Specific Drawings	Sheet Number	Rev. #	Rev. Date	Rev. Description
DRAWING A - KEY MAP	A			
SCHEDULE B - GENERAL NOTES AND LEGEND	B1-2			
DRAWING C - TYPICAL DETAILS	C			
DRAWING D - BILL OF MATERIALS	D			
HWY 17 & HWY 34	1-3			

RECORD OF INSPECTION BY CONSTRUCTOR		
AS CONSTRUCTED <input type="checkbox"/> Aerial Installation <input type="checkbox"/> U/G Installation With changes shown on this Drawing		
Attachment Owner	Permit #	Date
	Company Name	
	Print Name	
	Position	
	Signature	
<input type="checkbox"/> This is to certify that the construction as recorded in this drawing is consistent with the approved plan, Standard Designs, or work instruction and that approved equipment has been used.		



DESIGNED: APRIL 2018

# DRAWING 'A' KEYMAP



DESCRIPTION: MINISTRY OF TRANSPORTATION

AREA: HWY 17 / HWY 34 - HAWKESBURY

ISSUE DATE: APR. 25/18	ISSUE # 1
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CONTRACTOR REF # 158500202.308	SCALE: N.T.S.
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SURVEYED BY:	CITY U FILE #	PAGE #
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COGECO # 36353	Q.C.:	DWG. A
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# DRAWING 'B'

## GENERAL NOTES

- ALL WORKSITE CONDITIONS, CLEARANCES, AND DIMENSIONS, BOTH EXISTING AND ASSUMED, ARE TO BE CHECKED AND VERIFIED BY THE CONSTRUCTOR. REPORT ANY DISCREPANCIES TO COGECO BEFORE PROCEEDING WITH ANY WORK.
- THE POSITION OF POLE LINES, CONDUITS, TELECOMMUNICATIONS CABLES, ELECTRICAL CABLES, NATURAL GAS LINES, PIPELINES, WATERMAINS, SANITARY/STORM SEWERS, AND ALL OTHER UNDERGROUND OR AERIAL UTILITIES AND INFRASTRUCTURES ARE NOT NECESSARILY SHOWN AS EXACT. DO NOT EXCAVATE OR DISTURB EXISTING GROUND SURFACES PRIOR TO OBTAINING LOCATES AND/OR CLEARANCES WITHIN THE WORK AREA, WHETHER ON PUBLIC OR PRIVATE PROPERTY. THE CONSTRUCTOR SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
- ALL CONSTRUCTION ACTIVITY SHALL BE IN FULL CONFORMANCE WITH APPLICABLE CANADIAN AND PROVINCIAL SAFETY STANDARDS AND REQUIREMENTS, INCLUDING BUT NOT LIMITED TO:
  - OCCUPATIONAL HEALTH AND SAFETY ACT
  - OHSC WORK PROTECTION CODE
  - CAN/CSA C22.3 NO. 1-10 OVERHEAD SYSTEMS
  - CAN/CSA C22.3 NO. 7-10 UNDERGROUND SYSTEMS
  - ONTARIO REGULATION 22/04
  - EUSA (ELECTRICAL UTILITIES SAFETY ASSOCIATION) RULEBOOK
  - ONTARIO TRAFFIC MANUAL BOOK 7
- ALL MATERIALS AND EQUIPMENT INSTALLED BY THE CONSTRUCTOR SHALL BE CSA (CANADIAN STANDARDS ASSOCIATION) APPROVED.

## UNDERGROUND CONSTRUCTION

- TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING INSTALLATION FROM DAMAGE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLAIMS DUE TO DAMAGE.
- MAKE GOOD ALL EXISTING FINISHES WHEN WORK IS COMPLETE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO STREETS, CURBS, ROADS, HIGHWAYS, SHOULDERS, DITCHES, EMBANKMENTS, CULVERTS, STORM DRAINS, BRIDGES OR OTHER PUBLIC OR PRIVATE PROPERTY OR FACILITY, REGARDLESS OF LOCATION OR CHARACTER, WHICH MAY BE CAUSED BY MOVING, HAULING OR OTHERWISE TRANSPORTING EQUIPMENT, MATERIALS OR MEN TO OR FROM THE WORK OF ANY SITE THEREOF, WHETHER BY HIM OR HIS SUBCONTRACTOR OR SUBCONTRACTORS.
- THE CONTRACTOR SHALL MAKE, WITHOUT DELAY, SATISFACTORY AND ACCEPTABLE ARRANGEMENTS WITH THE AGENCY OR AUTHORITY HAVING JURISDICTION OVER THE DAMAGED PROPERTY, SURFACE, STRUCTURE OR FACILITY CONCERNING IT'S REPAIR OR DAMAGE REPLACEMENT OR PAVEMENT COSTS INCURRED IN CONNECTION WITH SAID DAMAGE.
- ALL BRUSH AND DEBRIS WILL BE REMOVED FROM THE RIGHT-OF-WAY AT SOLE EXPENSE OF THE CONTRACTOR.
- ALL 90 DEGREE BENDS IN CONDUIT CONSTRUCTION WILL BE A MINIMUM 1000mm (39") RADIUS UNLESS SPECIFIED OTHERWISE.
- FOAM PLUG ENDS OF CONDUIT. TIE OFF PULL ROPE, PLUG/TAPE ENDS OF INNERDUCT.
- ALL TIE-IN MEASUREMENTS SHOWN THAT RELATE TO CURB, ARE TAKEN FROM BACK OF CURB.

## AERIAL CONSTRUCTION

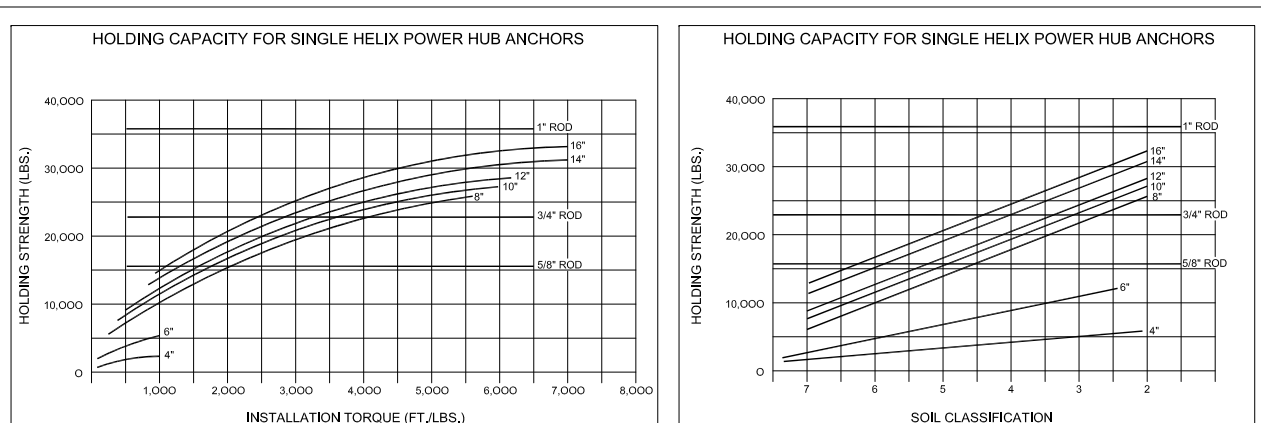
- CONSTRUCTOR TO VERIFY ON SITE THAT THE MINIMUM CABLE CLEARANCES SHOWN IN DRAWING "C", ITEM "F" CLEARANCE BETWEEN CABLE REQUIREMENTS - CSA C22.3 CAN BE COMPLIED WITH. CONTACT COGECO IF THESE REQUIREMENTS CANNOT BE SATISFIED.
- CONSTRUCTOR TO VERIFY ON SITE THAT THE MINIMUM GROUND CLEARANCES SHOWN IN DRAWING "C", ITEM "J" CABLE HEIGHT REQUIREMENTS - CSA C22.3 CAN BE COMPLIED WITH. CONTACT COGECO IF THESE REQUIREMENTS CANNOT BE SATISFIED.
- WHEN 1/4" (6.35mm) STRAND IS SPECIFIED IN DRAWING IT SHALL BE GRADE 180, 7 WIRE, ZINC COATED. INITIAL STRINGING TENSION SHALL BE 1,100lbf (4,893N) @ 15.6° C.
- WHEN 5/16" (7.95mm) STRAND IS SPECIFIED IN DRAWING IT SHALL BE GRADE 180, 7 WIRE, ZINC COATED. INITIAL STRINGING TENSION SHALL BE 1,400lbf (6,228N) @ 15.6° C.
- DOWN GUY STRAND SHALL BE 3/8" (9.53mm), GRADE 180, 7 WIRE, ZINC COATED, UNLESS OTHERWISE SPECIFIED.
- NEW DOWN GUYS SHALL BE PRE-TENSIONED TO NOT MORE THAN 225lbf (1,000N)
- ANCHORS SHALL BE POWER INSTALLED SCREW ANCHOR (P.I.S.A.) JOSLYN POWER HUB CAM ACTION, COMPRISED OF 10" (254mm) SINGLE HELIX (#J25996CAB.4) WITH 3/4" (19mm) x 7' (2134mm) ROD (#J12254R.3) (23,000lbf/102,309N TENSILE STRENGTH), WITH TRIPLEYE ANCHOR EYENUT OR EQUIVALENT. ANCHOR TO BE INSTALLED TO TORQUE SPECIFIED IN DETAIL 'X' (BELOW) SO AS TO ACHIEVE A MINIMUM 20,000lbf (88,964N) HOLDING STRENGTH. 3/4" (19mm) X 3 1/2' (1070mm) (#J12250) OR 3/4" (19mm) X 7' (2134mm) (#J12254) (23,000lbf/102,309N TENSILE STRENGTH) ANCHOR ROD EXTENSIONS TO BE USED IF REQUIRED TO ACHIEVE SPECIFIED INSTALLATION TORQUE.

- SHOULD P.I.S.A. ANCHORS AS SPECIFIED IN NOTE 7 ABOVE NOT BE APPROPRIATE DUE TO LOCAL CONDITIONS (ENCROACHING UNDERGROUND UTILITIES, ETC.) THE FOLLOWING SUBSTITUTIONS MAY BE CONSIDERED:
  - JOSLYN EXPANDING ANCHOR (#J8115), 115 sq. in. (742 sq. cm) AREA, 8" (203mm) HOLE SIZE (20,500lbf/9,299N HOLDING POWER IN SOIL CLASS 4)
  - JOSLYN CROSS PLATE ANCHOR (#J3516), 150 sq. in. (968 sq. cm) AREA, 16" (406mm) HOLE SIZE (22,500lbf/10,206N HOLDING POWER IN SOIL CLASS 4)

THESE ANCHORS SHALL BE COMBINED WITH ONLY 3/4" (19mm) x 7' (2134mm) TRIPLEYE JOSLYN (#J7327)(23,000lb/102,309N TENSILE STRENGTH) ANCHOR ROD.

A PULL OUT TEST TO PROVE MINIMUM HOLDING POWER OF 20,000lbf/88,965N FOR THE ABOVE SPECIFIED ANCHOR INSTALLATIONS MAY BE REQUIRED AT THE DISCRETION OF THE DESIGN ENGINEER

- POLE BOLT LENGTH SHALL BE SELECTED SO AS TO PROVIDE A MINIMUM 1" (25mm) OF EXPOSED THREAD UPON FINAL INSTALLATION.
- STRAND(S) ATTACHED/PROPOSED WITHIN 1.0m OF A STREET LIGHT REQUIRES THE STREET LIGHT TO BE GROUNDED BY THE STREET LIGHT OWNER
- POLE LOAD CALCULATIONS ARE PERFORMED USING A DETAILED METHODOLOGY. IN THE ABSENCE OF SPECIFIC AND/OR RECENT POLE CONDITION DATA FOR THE POLES CONTACTED IN THIS PROJECT, CALCULATIONS ARE BASED ON LOAD FACTORS AS PER CSA STANDARD C22.3-No. 1 WHICH WAS IN EFFECT AT THE TIME OF POLE LINE CONSTRUCTION. POLE STRENGTHS ARE DRAWN FROM CSA 0-15 FOR WOOD POLES AND CSA A-14 FOR CONCRETE POLES.
- THE POLE OWNER IS CONSIDERED TO BE MEETING ITS RESPONSIBILITIES AS DESCRIBED IN CSA 22.3-No. 1-10 SECTION 8.3.1.3 "WHEN THE STRENGTH OF A STRUCTURE HAS DETERIORATED TO 60% OF THE REQUIRED CAPACITY, THE STRUCTURE SHALL BE REINFORCED OR REPLACED."
- TELECOMMUNICATIONS CABLE, STRAND, DOWN GUY AND ANCHOR DATA CAPTURED BY GROUND LEVEL OBSERVATION. POWER CONDUCTOR, DOWN GUY AND ANCHOR DATA CAPTURED BY GROUND LEVEL OBSERVATION. UTILITY POLE DATA CAPTURED BY GROUND LEVEL OBSERVATION.



**HOLDING CAPACITY DETAIL - REFER TO NOTE 7 (AERIAL) FOR ANCHOR SPECIFICATIONS**  
SCALE: N.T.S.

STRAND DIAMETER	DESCRIPTION	STRAND TENSION AT INSTALLATION TEMPERATURE											
		0°F -17.8°C	10.0°F -12.2°C	20.0°F -6.7°C	30.0°F -1.1°C	40.0°F 4.4°C	50.0°F 10.0°C	60.0°F 15.6°C	70.0°F 21.1°C	80.0°F 26.7°C	90.0°F 32.2°C	100.0°F 37.8°C	
1/4"	180 GRADE, 7 WIRE GALV. BREAKING STRENGTH = 6,650lbs.	1550lbf 6895N	1474lbf 6558N	1440lbf 6227N	1324lbf 5890N	1250lbf 5560N	1175lbf 5227N	1100lbf 4893N	1001lbf 4452N	900lbf 4003N	863lbf 3838N	825lbf 3670N	
5/16"	180 GRADE, 7 WIRE GALV. BREAKING STRENGTH = 11,200lbs.	1905lbf 8474N	1820lbf 8096N	1736lbf 7722N	1651lbf 7344N	1568lbf 6975N	1484lbf 6601N	1400lbf 6228N	1318lbf 5863N	1237lbf 5502N	1156lbf 5142N	1076lbf 4786N	
3/8"	180 GRADE, 7 WIRE GALV. BREAKING STRENGTH = 15,400lbs.	2675lbf 11899N	2562lbf 11396N	2449lbf 10894N	2337lbf 10395N	2224lbf 9893N	2112lbf 9395N	2000lbf 8896N	1890lbf 8407N	1780lbf 7918N	1671lbf 7433N	1563lbf 6953N	

NOTES: -CALCULATIONS BASED ON A 45m RULING SPAN. -PLACE DOWNGUY AND ANCHORS BEFORE TENSIONING STRAND.



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COGECO#	Q.C.:	SCHEDULE B-1



# DRAWING 'B' LEGEND

## ENGINEERING SYMBOLS

WOODEN POLE	●
CONCRETE POLE	○
COMPOSITE POLE	◐
CONSTRUCTION WORK OPERATION	◀ 1 ▶
DUCT ALLOCATION	5 (USE DUCT #5)
DUCT STRUCTURE	3W4H (3 WIDE x 4 HIGH) (12 DUCTS TOTAL)
AS-BUILT FIBRE METER MARKS	METER READING
POLE DETAIL (HEIGHT OF EXISTING ATTACHMENTS UP TO PRIMARY PLUS NEW ATTACHMENT HEIGHT)	
STREET LIGHT / TRAFFIC LIGHT	SL TL
HEDGE	
SHRUB	
TREE	
STORM SEWER MANHOLE	(ST)
SANITARY SEWER MANHOLE	(SA)
GAS MANHOLE	(G)
HYDRO MANHOLE	(H)
WATER MANHOLE	(W)
FIRE HYDRANT	
CATCH BASIN	
TELEPHONE PEDESTAL	◼
HYDRO TRANSFORMER	▲
CABLE TV PEDESTAL	⊠
VAULT	VAULT
CABLE COIL	1 x 30m

## LINE TYPES

NEW COAX CABLE	- - - - -
EXISTING COAX CABLE	- - - - -
NEW FIBRE	- - - - -
EXISTING FIBRE	- - - - -
NEW STRAND	- - - - -
EXISTING STRAND	- - - - -
NEW CONDUIT	= = = = =
EXISTING CONDUIT	- - - - -
TRACE WIRE	- T/W - T/W - T/W - T/W - T/W -
FENCE	- x - x - x - x - x - x -
RAILROAD	+ + + + +
CENTERLINE	- CL - CL - CL - CL - CL -
PROPERTY LINE	- PL - PL - PL - PL - PL -

## EXISTING UNDERGROUND UTILITIES

BURIED POWER/HYDRO	- H - H - H -
BURIED TV (CATV)	- TV - TV - TV -
BURIED TELEPHONE	- B - B - B -
GAS	- G - G - G -
WATER	- W - W - W -
STORM SEWER	- ST - ST - ST -
SANITARY SEWER	- SA - SA - SA -
TRAFFIC SIGNAL	- TL - TL - TL -
STREET LIGHT	- SL - SL - SL -
ABANDONED UTILITY	- W - // - W - //

MULTI-GROUND NEUTRAL	-   MGN
VERTICAL BOND	-   VB
GROUNDING ELECTRODE	-   GR
TELECOM STRANDS BOND	-   TSB
TELECOM DOWN GUY AND ANCHOR	- >
TELECOM SIDEWALK ANCHOR AND DOWN GUY	- > EX
TELECOM ANCHOR	- >
HYDRO DOWN GUY AND ANCHOR	- >
HYDRO SIDEWALK ANCHOR AND DOWN GUY	- >
HYDRO ANCHOR	- >
AERIAL STORAGE SLACK (LOOP BACK)	∞
FIBRE OPTIC SPLICE ENCLOSURE (FOSC)	⊗
DIP LOCATION	J

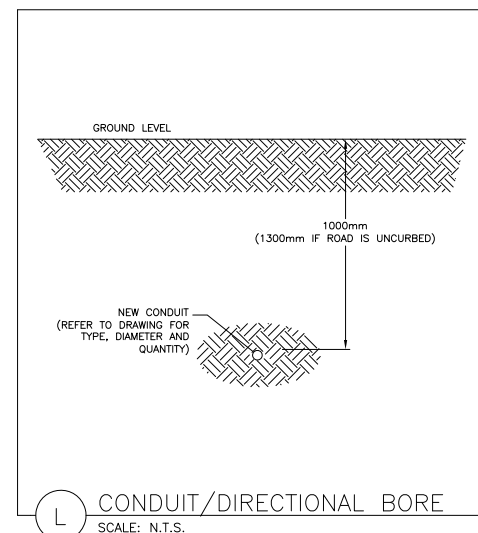
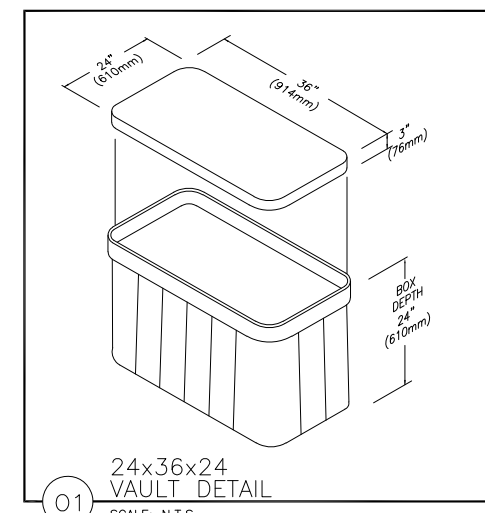
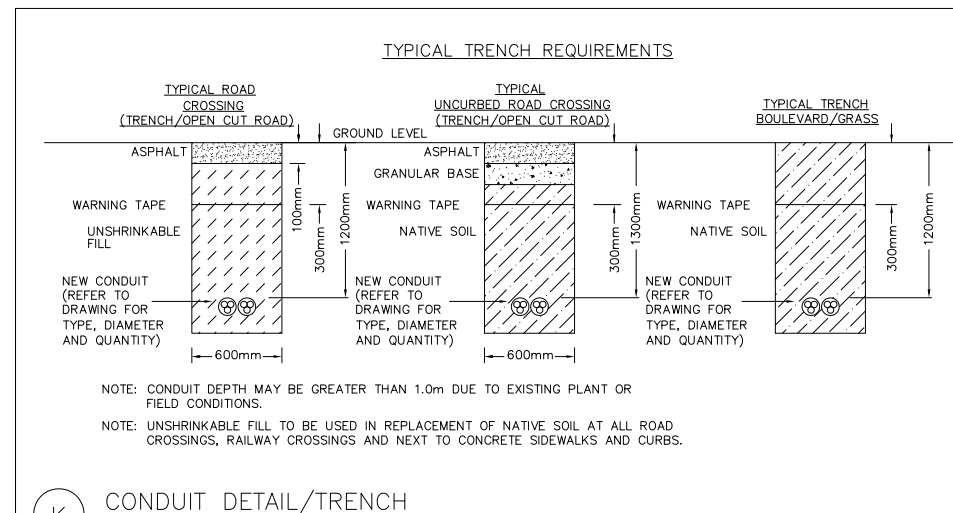
NEW	EXISTING
-   MGN	-   MGN
-   VB	-   VB
-   GR	-   GR
-   TSB	-   TSB
- >	- >
- > EX	- > EX
- >	- >
- >	- >
- >	- >
∞	∞
⊗	⊗
J	J

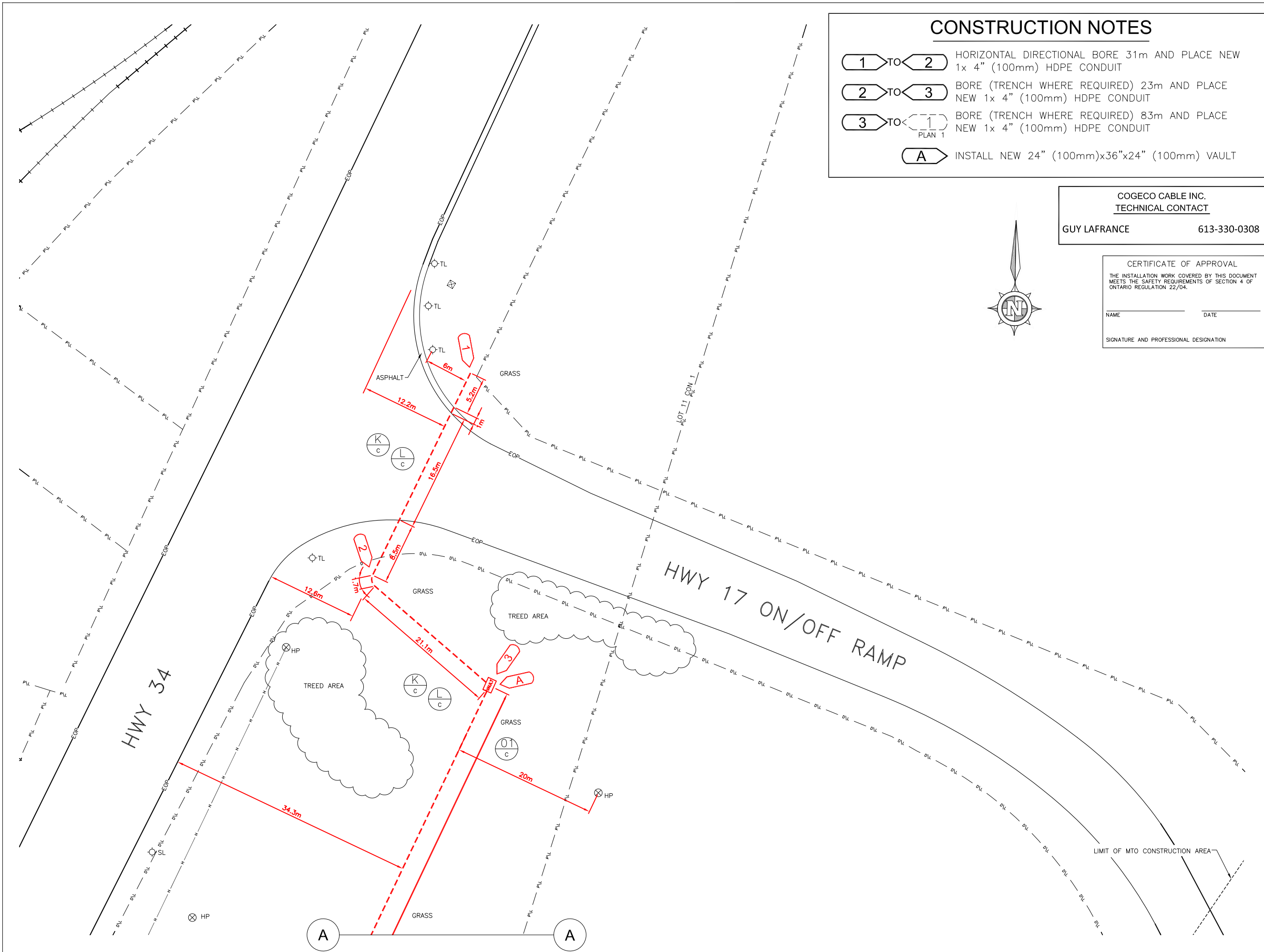

DRAWN BY: STANTEC	CITY U FILE #	PAGE #
COGECO#	Q.C.:	SCHEDULE B-2

# DRAWING 'C'

## TYPICAL UNDERGROUND / AERIAL DETAILS



DESCRIPTION: MINISTRY OF TRANSPORTATION	
AREA: HWY 17 / HWY 34 - HAWKESBURY	
ISSUE DATE: APR. 25/18	ISSUE # 1
CONTRACTOR REF # 158500202.308	SCALE: N.T.S.
SURVEYED BY:	CITY U FILE #
COGECO # 36353	Q.C.:
PAGE # DWG. C	



### CONSTRUCTION NOTES

**1 TO 2** HORIZONTAL DIRECTIONAL BORE 31m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT  
**2 TO 3** BORE (TRENCH WHERE REQUIRED) 23m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT  
**3 TO 1** BORE (TRENCH WHERE REQUIRED) 83m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT  
**A** INSTALL NEW 24" (100mm)x36"x24" (100mm) VAULT

**COGECO CABLE INC.  
TECHNICAL CONTACT**  
 GUY LAFRANCE                      613-330-0308

**CERTIFICATE OF APPROVAL**  
 THE INSTALLATION WORK COVERED BY THIS DOCUMENT MEETS THE SAFETY REQUIREMENTS OF SECTION 4 OF ONTARIO REGULATION 22/04.  
 NAME \_\_\_\_\_ DATE \_\_\_\_\_  
 SIGNATURE AND PROFESSIONAL DESIGNATION \_\_\_\_\_

*KEY MAP* (N.T.S.)

LEGEND			
NEW COAX CABLE	[Symbol]		
EXISTING COAX CABLE	[Symbol]		
NEW FIBRE	[Symbol]		
EXISTING FIBRE	[Symbol]		
NEW STRAND	[Symbol]		
EXISTING STRAND	[Symbol]		
NEW TELECOM DOWN GUY AND ANCHOR	[Symbol]		
EXISTING TELECOM DOWN GUY AND ANCHOR	[Symbol]		
NEW HYDRO DOWN GUY AND ANCHOR	[Symbol]		
EXISTING HYDRO DOWN GUY AND ANCHOR	[Symbol]		
NEW GROUND AND BOND LOCATION	[Symbol]		
EXISTING GROUND AND BOND LOCATION	[Symbol]		
NEW LOOP BACK	[Symbol]		
EXISTING LOOP BACK	[Symbol]		
NEW COIL	[Symbol]		
NEW FIBRE OPTIC SPLICE ENCLOSURE	[Symbol]		
EXISTING FIBRE OPTIC SPLICE ENCLOSURE	[Symbol]		
NEW DIP LOCATION	[Symbol]		
EXISTING DIP LOCATION	[Symbol]		
NEW CONDUIT	[Symbol]		
EXISTING CONDUIT	[Symbol]		
FENCE	[Symbol]		
RAILROAD	[Symbol]		
CENTRELINE	[Symbol]		
PROPERTY LINE	[Symbol]		
CATCH BASIN	[Symbol]		
TELEPHONE PEDESTAL	[Symbol]		
CABLE TV PEDESTAL	[Symbol]		
HYDRO TRANSFORMER	[Symbol]		
WOODEN POLE	[Symbol]		
CONCRETE POLE	[Symbol]		
COMPOSITE POLE	[Symbol]		
NEW HANDHOLE	[Symbol]		
EXISTING HANDHOLE	[Symbol]		
NEW MANHOLE	[Symbol]		
EXISTING MANHOLE	[Symbol]		

FIBER OPTIC CABLE METER READING:			
CABLE#	MANUFACTURER	TYPE	COUNT

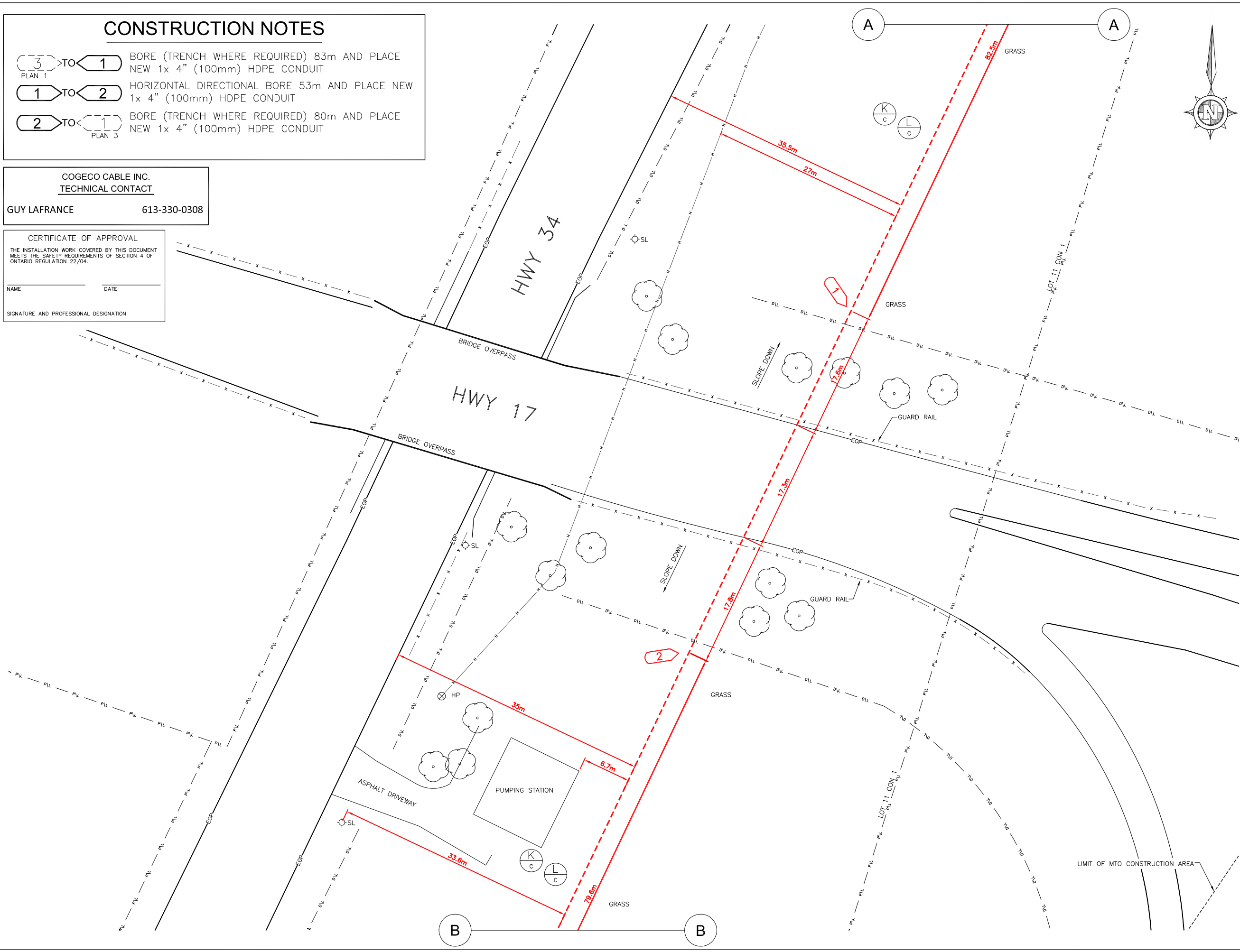
DESCRIPTION: MINISTRY OF TRANSPORTATION			
AREA: HWY 17 / HWY 34 - HAWKESBURY			
ISSUE DATE: APR. 25/18	ISSUE #		
CONTRACTOR REF # 158500202.308	SCALE: 1:500		
DESIGNED BY: STANTEC	QTY U FILE #	PAGE #	1
COGECO # 36353	Q.C.:		OF 3

# CONSTRUCTION NOTES

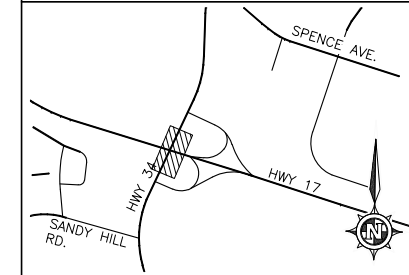
- 3 TO 1 BORE (TRENCH WHERE REQUIRED) 83m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT  
PLAN 1
- 1 TO 2 HORIZONTAL DIRECTIONAL BORE 53m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT
- 2 TO 1 BORE (TRENCH WHERE REQUIRED) 80m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT  
PLAN 3

COGECO CABLE INC.  
TECHNICAL CONTACT  
**GUY LAFRANCE** 613-330-0308

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NAME \_\_\_\_\_ DATE \_\_\_\_\_  
SIGNATURE AND PROFESSIONAL DESIGNATION \_\_\_\_\_



## KEY MAP (N.T.S.)



## LEGEND

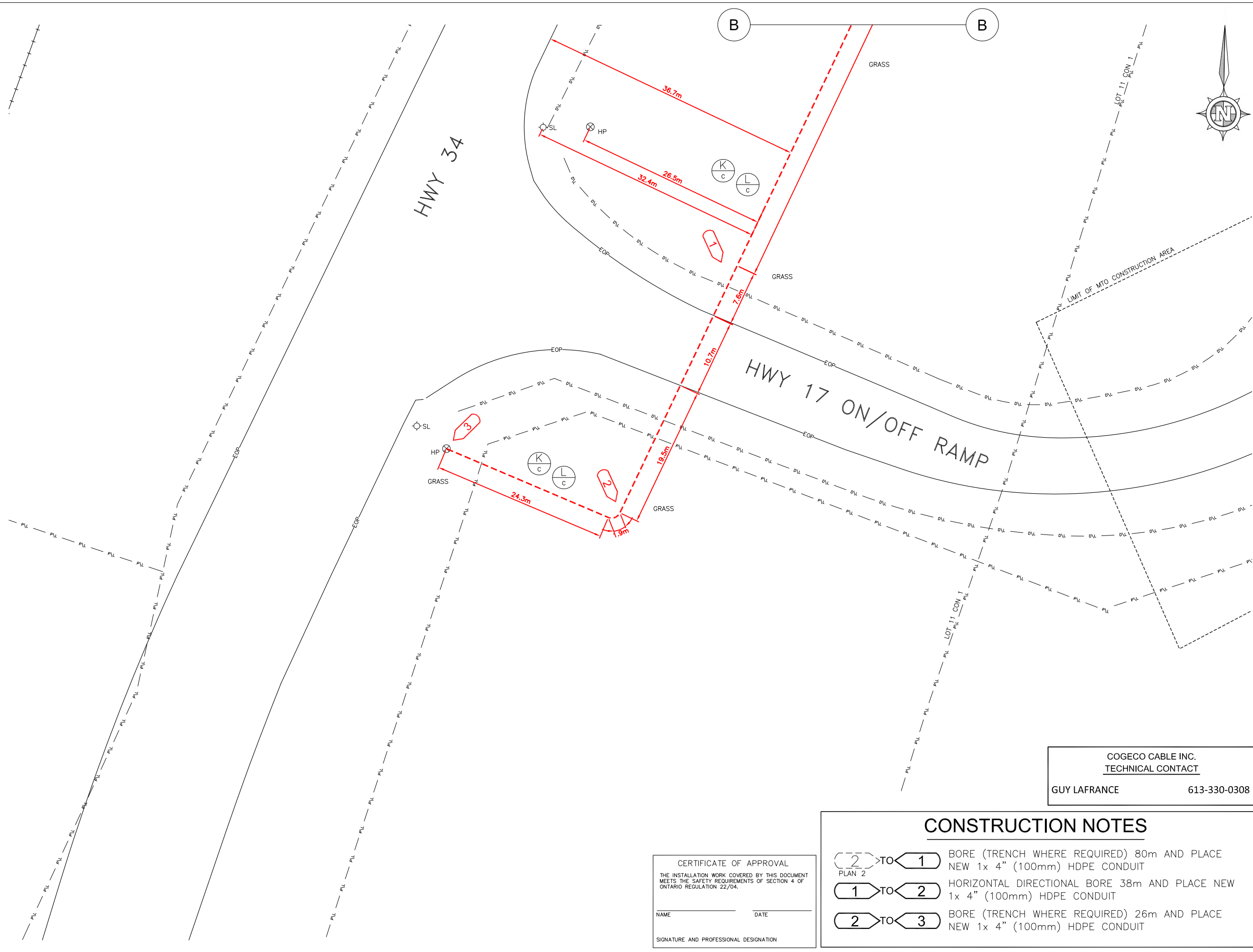
NEW COAX CABLE	---
EXISTING COAX CABLE	---
NEW FIBRE	---
EXISTING FIBRE	---
NEW STRAND	---
EXISTING STRAND	---
NEW TELECOM DOWN GUY AND ANCHOR	---
EXISTING TELECOM DOWN GUY AND ANCHOR	---
NEW HYDRO DOWN GUY AND ANCHOR	---
EXISTING HYDRO DOWN GUY AND ANCHOR	---
NEW GROUND AND BOND LOCATION	---
EXISTING GROUND AND BOND LOCATION	---
NEW LOOP BACK	---
EXISTING LOOP BACK	---
NEW COIL	---
NEW FIBRE OPTIC SPLICE ENCLOSURE	---
EXISTING FIBRE OPTIC SPLICE ENCLOSURE	---
NEW DIP LOCATION	---
EXISTING DIP LOCATION	---
NEW CONDUIT	---
EXISTING CONDUIT	---
FENCE	---
RAILROAD	---
CENTRELINE	---
PROPERTY LINE	---
CATCH BASIN	---
TELEPHONE PEDESTAL	---
CABLE TV PEDESTAL	---
HYDRO TRANSFORMER	---
WOODEN POLE	---
CONCRETE POLE	---
COMPOSITE POLE	---
NEW HANDHOLE	---
EXISTING HANDHOLE	---
NEW MANHOLE	---
EXISTING MANHOLE	---

FIBER OPTIC CABLE METER READING:			
CABLE#	MANUFACTURER	TYPE	COUNT

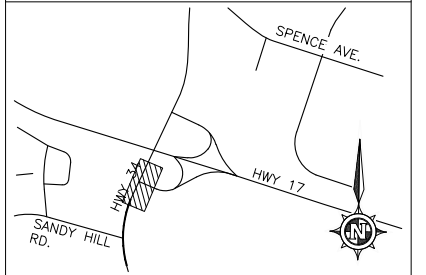
No.	DATE	REVISIONS	BY



DESCRIPTION: MINISTRY OF TRANSPORTATION	
AREA: HWY 17 / HWY 34 - HAWKESBURY	
ISSUE DATE: APR. 25/18	ISSUE #
CONTRACTOR REF # 158500202.308	SCALE: 1:500
DESIGNED BY: STANTEC	QTY U FILE # PAGE #
COGECO # 36353	Q.C. 2 OF 3



**KEY MAP (N.T.S.)**



**LEGEND**

NEW COAX CABLE	---
EXISTING COAX CABLE	---
NEW FIBRE	---
EXISTING FIBRE	---
NEW STRAND	---
EXISTING STRAND	---
NEW TELECOM DOWN GUY AND ANCHOR	---
EXISTING TELECOM DOWN GUY AND ANCHOR	---
NEW HYDRO DOWN GUY AND ANCHOR	---
EXISTING HYDRO DOWN GUY AND ANCHOR	---
NEW GROUND AND BOND LOCATION	---
EXISTING GROUND AND BOND LOCATION	---
NEW LOOP BACK	---
EXISTING LOOP BACK	---
NEW COIL	---
NEW FIBRE OPTIC SPLICE ENCLOSURE	---
EXISTING FIBRE OPTIC SPLICE ENCLOSURE	---
NEW DIP LOCATION	---
EXISTING DIP LOCATION	---
NEW CONDUIT	---
EXISTING CONDUIT	---
FENCE	---
RAILROAD	---
CENTRELINE	---
PROPERTY LINE	---
CATCH BASIN	---
TELEPHONE PEDESTAL	---
CABLE TV PEDESTAL	---
HYDRO TRANSFORMER	---
WOODEN POLE	---
CONCRETE POLE	---
COMPOSITE POLE	---
NEW HANDHOLE	---
EXISTING HANDHOLE	---
NEW MANHOLE	---
EXISTING MANHOLE	---

FIBER OPTIC CABLE METER READING:

CABLE#	MANUFACTURER	TYPE	COUNT

No.	DATE	REVISIONS	BY

COGECO CABLE INC.  
TECHNICAL CONTACT  
GUY LAFRANCE 613-330-0308

**CONSTRUCTION NOTES**

2 TO 1 BORE (TRENCH WHERE REQUIRED) 80m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT

1 TO 2 HORIZONTAL DIRECTIONAL BORE 38m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT

2 TO 3 BORE (TRENCH WHERE REQUIRED) 26m AND PLACE NEW 1x 4" (100mm) HDPE CONDUIT

**CERTIFICATE OF APPROVAL**  
THE INSTALLATION WORK COVERED BY THIS DOCUMENT MEETS THE SAFETY REQUIREMENTS OF SECTION 4 OF ONTARIO REGULATION 22/04.

NAME \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE AND PROFESSIONAL DESIGNATION \_\_\_\_\_

DESCRIPTION: MINISTRY OF TRANSPORTATION

AREA: HWY 17 / HWY 34 - HAWKESBURY

ISSUE DATE: APR. 25/18

CONTRACTOR REF # 158500202.308

DESIGNED BY: STANTEC

COGECO # 36353

SCALE: 1:500

PAGE # 3 OF 3

**Pelletier, Shana**

---

**From:** solutions@on1call.com  
**Sent:** July 27, 2020 11:29 AM  
**To:** HH - LOCATE  
**Subject:** Request 2020312434  
**Attachments:** 2020312434.PNG; 2020312434\_1.PNG

ONTARIO ONE CALL

NOTICE OF INTENT TO EXCAVATE Header Code:PLANNING  
Ticket No: 2020312434 Seq. No: 3295  
Update of:

Send To: HHI01 Seq No: 3295 Map Ref: 613 632

Original Call Date: 07/27/2020 Time: 11:27:46 AM OP: 1579  
Transmit Date: 07/27/2020 Time: 11:28:47 AM  
Work to Begin Date: 08/04/2020 Time: 12:00:00 AM

Company: Jacobs  
Contact Name: JUNAID AHMED Contact Phone: (613)667-1813  
Alternate Contact: Altern. Phone:  
Best Time to Call: Fax No:  
Cell Phone: (437)235-4253 Pager No:  
Caller Address: 1565 Carling Avenue  
Ottawa, ON K1Z8R1  
Email Address: junaid.ahmed1@jacobs.com

Reg/County: PRESCOTT & RUSS City: HAWKESBURY  
Address: , MCGILL ST (HIGHWAY 34)  
Lot/Unit#:  
To Address:  
Nearest Intersecting Street: SPENCE AVE  
2nd Intersecting Street: COUNTY ROAD 17  
Community:  
Nb of Segments: 1  
WAP No:  
Latitude: 45.59610150 Longitude: -74.61587750

Work Extent/Locn: CORLOT=U Realignment of existing Interchange Ramps  
. N/S-W Interchange Ramp - Inner Loop (Highway 34  
to Highway 17 - West Bound)E/S-W Outer ramp (Highw  
ay 17 to Highway 34).

Remarks: DEPTH UNKNOWN

Type of Work: DESIGN AND PLANNING

Depth: 0.00 FT

HHI Does not provide  
free locates for  
planning purpose

Michel Paulin  
Hydro Hawkesbury  
July 27, 2020

Public property: NO Mark & Fax: NO Area is Not Marked: YES Machine Dig: NO  
Private property: NO Site Meet Req.: NO Premarked: NO Hand Dig: NO  
Directional Drilling: NO

Work Being Done For:

Sending to: (listing of utilities tkt sent to)

BCPRE BELL CANADA - PLANNI H4OE01 G-TEL FOR HYDRO ONE  
COOE01 -C MULTIVIEW FOR COGECO CHPLW01 OCWA FOR TOWNSHIP OF  
HHI01 HYDRO HAWKESBURY (HH

Note: -C = Cleared, -S = Supressed, -L = Lookup center cleared, -A = Alternate Locate  
-R = Existing locate valid - maintain marks

2020312434

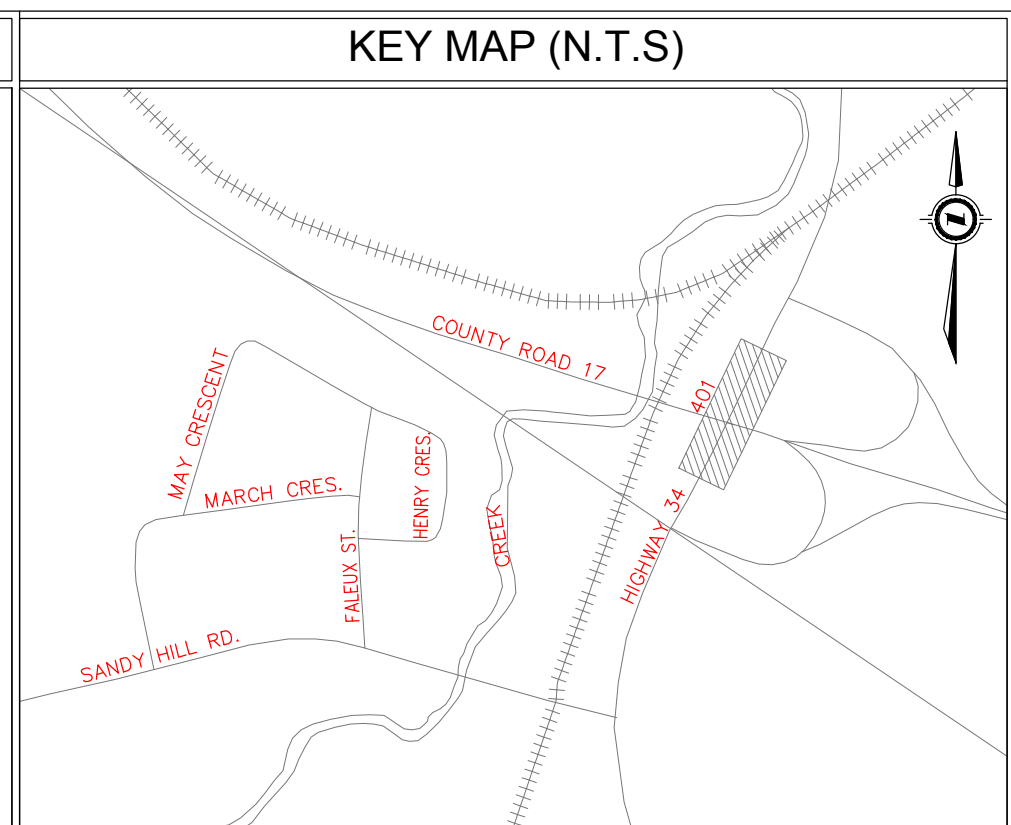
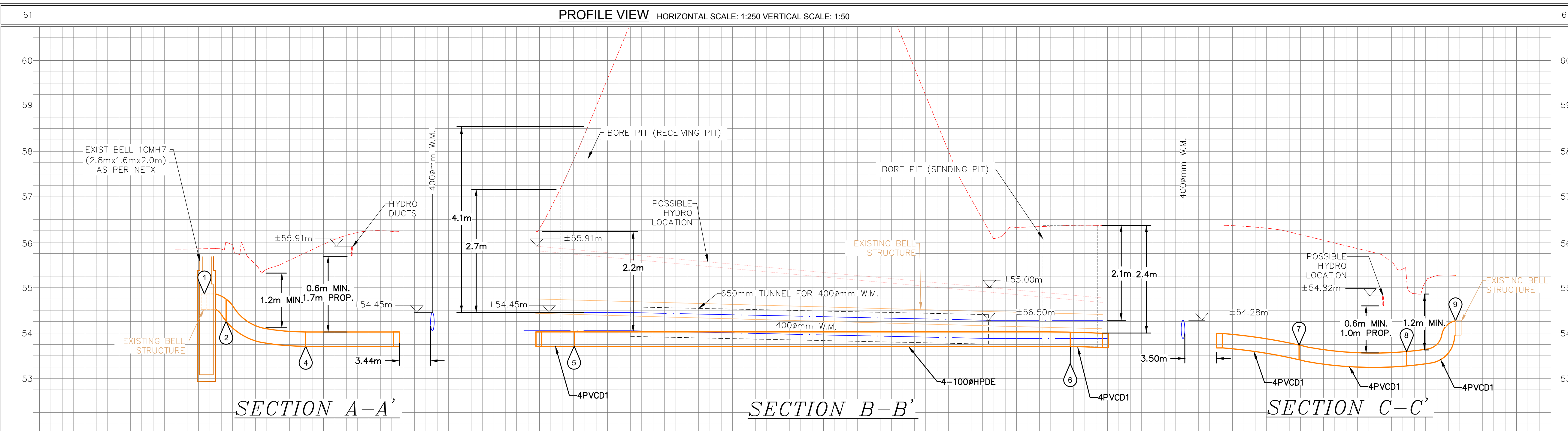


Map data ©2020 Google

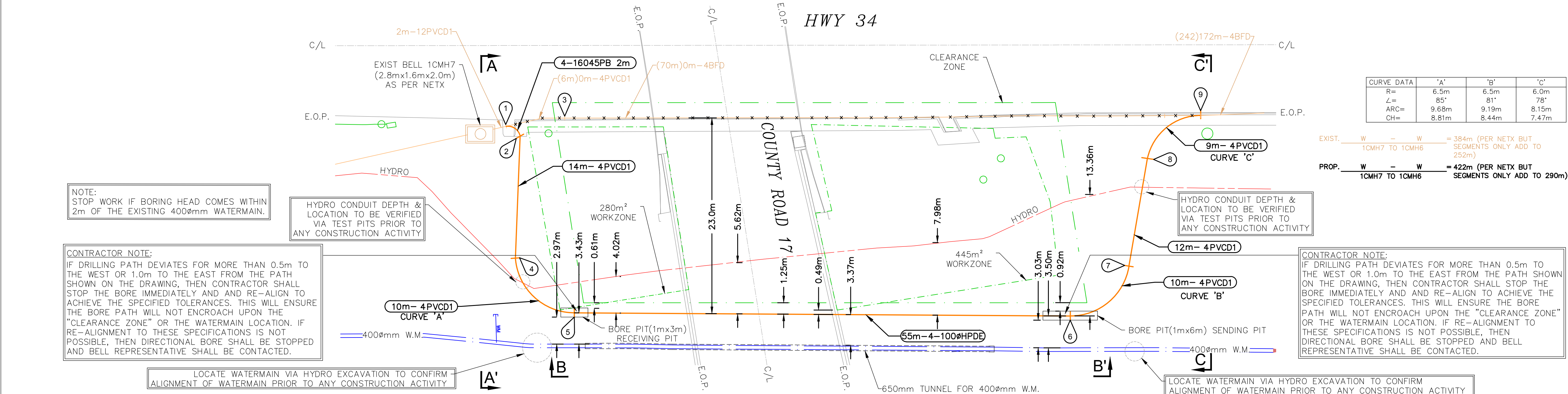
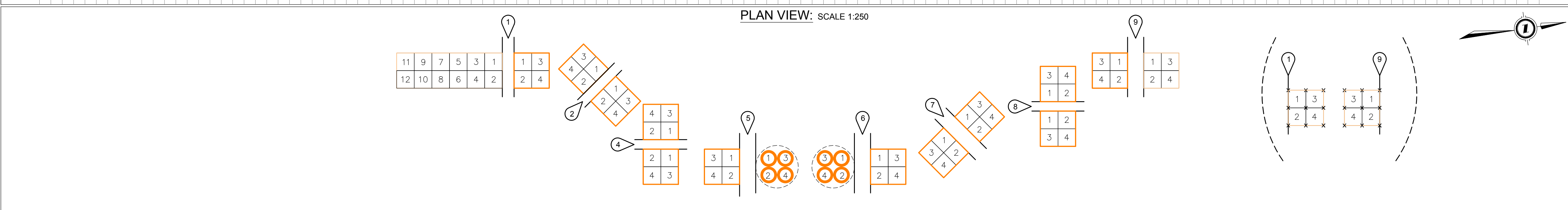
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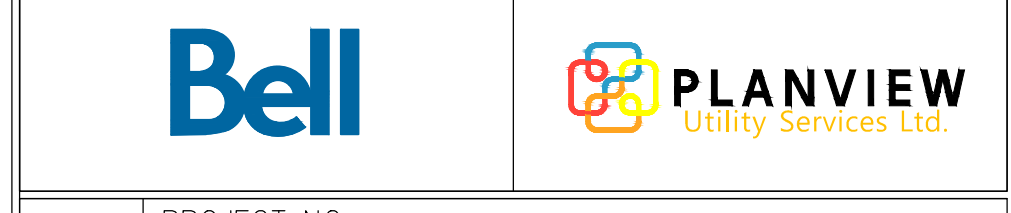


TRENCHING SUMMARY											
ABANDON											
FROM	TO	DO	LENGTH	#DUCTS	TYPE OF DUCT	SURFACE TYPE	YEAR	COVER (mm)	CABLE	SPLIT	EXCAVATION METHOD
1-3	AB	6	4	PVCD1	CONC./B LVD.	2007	-	-	-	-	OPEN-TRENCH
3-5	AB	70	4	BFD	CONC./B LVD.	1961	-	-	-	-	OPEN-TRENCH
TOTAL		76									
PLACEMENT											
FROM	TO	DO	LENGTH	#DUCTS	TYPE OF DUCT	SURFACE TYPE	YEAR	COVER (mm)	CABLE	SPLIT	EXCAVATION METHOD
1-2	PL	2	4	16045PB	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
2-4	PL	14	4	PVCD1	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
3-5	PL	10	4	PVCD1	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
5-6	PL	55	4	HPDE	CONC./B LVD.	2019	-	-	-	-	DIRECTIONAL BORE
6-7	PL	10	4	PVCD1	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
7-8	PL	12	4	PVCD1	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
8-9	PL	9	4	PVCD1	CONC./B LVD.	2019	-	-	-	-	OPEN-TRENCH
TOTAL		112									



PLANVIEW DRAFTER:	REXSAN DE VERA
PLANVIEW COORDINATOR:	NAUMAN QAIMKHANI
PLANVIEW COORDINATOR TELE.:	416-779-7911
BELL STRUCTURES MANAGER:	STEPHANIE DIOTTE
BELL STRUCTURES MANAGER TELE.:	613-298-4172
BELL CONSTRUCTION MANAGER:	COURTNEY COOPPER
BELL CONSTRUCTION MANAGER TELE.:	613-742-5693

REASON FOR WORK:  
**DUCT RELOCATION**  
**COUNTY RD. 17 & HWY. 34**



PROJECT NO.:  
**18-4-0724**

**CAUTION**  
 PROPERTY LINES ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION PURPOSES ONLY.  
 THE POSITION OF POLE LINES, WATERMANS, SEWERS AND OTHER UNDERGROUND AND ABOVE GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.  
 BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.  
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**NOT FOR CONSTRUCTION**

ISSUE NO.	DATE	INIT.	REASON FOR ISSUE	QC REF. #
04	24-APR-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000152
03	01-MAR-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000094
02	21-FEB-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000085
01	06-FEB-2019	RD	ISSUED FOR PRELIMINARY	QC19-0000052

- NOTES**
- FROM 1 TO 9 ABANDON DUCTS AS SHOWN.
  - FROM 1 TO 9 PLACE DUCTS AS SHOWN.
  - AT 1 AND 9 CONNECT TO EXISTING BELL DUCTS AS SHOWN. TO BE COMPLETED IN CONJUNCTION WITH CABLE SECTION THROW PER BELL IM KYLE TOUPIN (613) 293-5794.
  - THIS DRAWING WAS CREATED ON THE LANDBASE PROVIDED BY THE JACOBS.

**LEGEND**

HEAVY LINE INDICATES PROPOSED WORK	EXISTING BELL CANADA BURIED CABLE
EXISTING BELL CANADA M.H. & CONDUIT	SANITARY SEWER WITH MANHOLE
WATERMAIN & VALVE	STORM SEWER WITH MANHOLE
GASMAIN & VALVE	EXISTING BELL POLE & ANCHOR
BURIED HYDRO	EXISTING JOINT BELL - HYDRO POLE
ROGERS CABLE	EXISTING HYDRO POLE WITH ANCHOR
TELUS	HYDRANT
ALLSTREAM	TREE
TTC STREETCAR TRACKS	

R/W	MC AUTHORITY	DATE REC'D
BELL CANADA	XXXXXXX	NOV. XX, 2011
CLLI CODE		NETWORK NO.
HWBYON61		J35051
HORIZONTAL SCALE: 1:250		EXCHANGE OR TOLL ROUTE SWITCHING CENTRE
5 0 5		HAWKESBURY 632
VERTICAL SCALE: 1:50		STREET NAMES:
2 0 2		HWY 34 & COUNTY RD. 17
PLAN NO.		MC AUTHORITY:
401		CITY OF HAWKESBURY

## GENERAL NOTES

1. THESE GENERAL NOTES APPLY TO ALL PLANS IN THIS PROJECT. FOR SPECIFIC NOTES REFER TO THE INDIVIDUAL PLANS.
2. CONFLICTS TO BE ADDRESSED TO BELL STRUCTURES MANAGER.
3. ALL CONDUIT TO BE ROPED.
4. THE CONTRACTOR SHALL PLACE A "DETECTABLE PULLING TAPE (MULE TAPE WITH A TRACER WIRE)" BETWEEN ALL MANHOLES, IN A TOP DUCT, WHERE THERE ARE NO CABLES. THIS TAPE ALLOWS FOR THE LOCATION OF THE STRUCTURE.
5. MINIMUM COVER 1.0m UNLESS OTHERWISE INDICATED.
6. DEPTH OF EXISTING BELL CONDUIT MUST BE DETERMINED AT TIME OF CONSTRUCTION.
7. CONTRACTOR IS TO ELIMINATE ANY STANDING WATER AT THE CONSTRUCTION SITE IN ORDER TO MINIMIZE THE RISK OF WEST NILE VIRUS.
8. CONTRACTOR IS RESPONSIBLE FOR EXPOSING ALL UTILITIES THAT CROSS THE PROPOSED DUCT STRUCTURE AFTER THE UTILITIES LOCATES ARE MARKED IN FIELD.
9. ALL RESTORATION REQUIREMENTS INCLUDING BACKFILL AND COMPACTION TO MEET APPROPRIATE MUNICIPAL SPECIFICATIONS AND STANDARDS.
10. WHERE NO SEPARATION IS AVAILABLE, PLACE POLYETHYLENE SHEET BETWEEN NEW CONCRETE AND EXISTING UTILITIES TO PREVENT ADHESION.
11. BACKFILL AFTER CONCRETE HAS TAKEN ITS INITIAL SET, OR, IF BACKFILLING PRIOR TO SETTING OF THE CONCRETE PLACE A LAYER OF POLYETHYLENE OVER CONCRETE TO PREVENT ADHESION OF EARTH.
12. ALL PAVEMENT AND SIDEWALK CUTS TO HAVE STRAIGHT EDGES.
13. REPLACE SIDEWALK BY THE FULL SECTION.
14. CONTRACTORS TO TUNNEL ALL CURBS AND TREE ROOTS ENCOUNTERED.
15. MH BUILDS – THE CONTRACTOR SHALL PROVIDE DIGITAL PICTURES TO THE SATISFACTION OF THE CONTRACT INSPECTOR, SHOWING ALL INTERNAL HARDWARE, COMPONENTS ETC. HAVE BEEN BUILT TO BCP STANDARDS.
16. ON ALL MANHOLE REBUILDS THE DUCTS SHALL BE SPLAYED, TO THE SATISFACTION OF THE CONTRACTOR INSPECTOR, TO FACILITATE THE RE-RACKING OF ALL CABLES.
17. ALL MANHOLE LIDS TO BE 30", EXCEPT WHERE SURROUNDING CONDITIONS REQUIRE A 27" LID.
18. CONCRETE TESTING – SLUMPS, 7 DAY AND 28 DAY COMPRESSION, AIR ENTRAINMENT TESTING AS PER BCP 622-2002-105 LAB RESULTS TO BE SENT TO bellinspection@planview.ca
19. DRAWINGS ARE NOT TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ORIGINATOR BEFORE COMMENCING THE WORK.
20. ELEVATIONS ARE ARBITRARY UNLESS A VERTICAL BENCH MARK IS FOUND IN THE VICINITY OF THE PROPOSED WORK SITE.
21. WHEN BREAKING OUT EXISTING DUCTS, WITH CABLES INSIDE, A STEEL U-GUARD OR SIMILAR PROTECTIVE ELEMENT MUST BE SLID INTO THE DUCT TO PROTECT THE CABLE DURING BREAKOUT WITH JACK HAMMERS OR SIMILAR DEVICES.
22. CONTRACTOR MUST ENSURE DUCTS ARE CAPPED, PLUGGED, OR SEALED AS PER BCP STANDARDS

### CONTRACT INSPECTOR NOTES:

1. CALL ORIGINATOR TO VERIFY ALL R.O.W. APPROVALS PRIOR TO CONSTRUCTION START.
2. TO FORWARD AN "AS CONSTRUCTED" FIELD PLAN TO ORIGINATOR ON COMPLETION OF ORDER.
3. MH BUILDS – THE CONTRACTOR SHALL PROVIDE DIGITAL PICTURES TO THE SATISFACTION OF THE CONTRACT INSPECTOR, SHOWING ALL INTERNAL HARDWARE, COMPONENTS ETC. HAVE BEEN BUILT TO BCP STANDARDS.
4. ON ALL MANHOLE REBUILDS THE DUCTS SHALL BE SPLAYED, TO THE SATISFACTION OF THE CONTRACTOR INSPECTOR, TO FACILITATE THE RE-RACKING OF ALL CABLES.
5. CONCRETE TESTING – SLUMPS, 7 DAY AND 28 DAY COMPRESSION, AIR ENTRAINMENT TESTING AS PER BCP 622-2002-105 LAB RESULTS TO BE SENT TO bellinspection@planview.ca

### MATERIALS:

1. PVCD1 – RIGID PLASTIC 90mm DUCTS CONCRETE ENCASED – PLACED WITH OPEN TRENCH. DESIGN OF CHOICE UNLESS OTHERWISE SPECIFIED.
2. PVCD2 – RIGID PLASTIC 90mm DUCTS – PLACE WITH OPEN TRENCH UNLESS OTHERWISE SPECIFIED
3. HDPE – SEMI-FLEXIBLE 100mm PLASTIC DUCTS – PLACED BY DIRECTIONAL BORE

### SHORT FORMS

ASPH.	ASPHALT
BLVD.	BOULEVARD
BOB	BOTTOM OF BANK
C/L	CENTER LINE
CONC.	CONCRETE
D/W	DRIVEWAY
F/L	FENCE LINE
GVL	GRAVEL
INTR.	INTERLOCKING
P/L	PROPERTY LINE
S/W	SIDEWALK
TOB	TOP OF BANK

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03	01-MAR-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000094
02	21-FEB-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000085
01	06-FEB-2019	RD	ISSUED FOR PRELIMINARY	QC19-0000052
ISSUE NO.	DATE	INIT.	REASON FOR ISSUE	QC REF. #

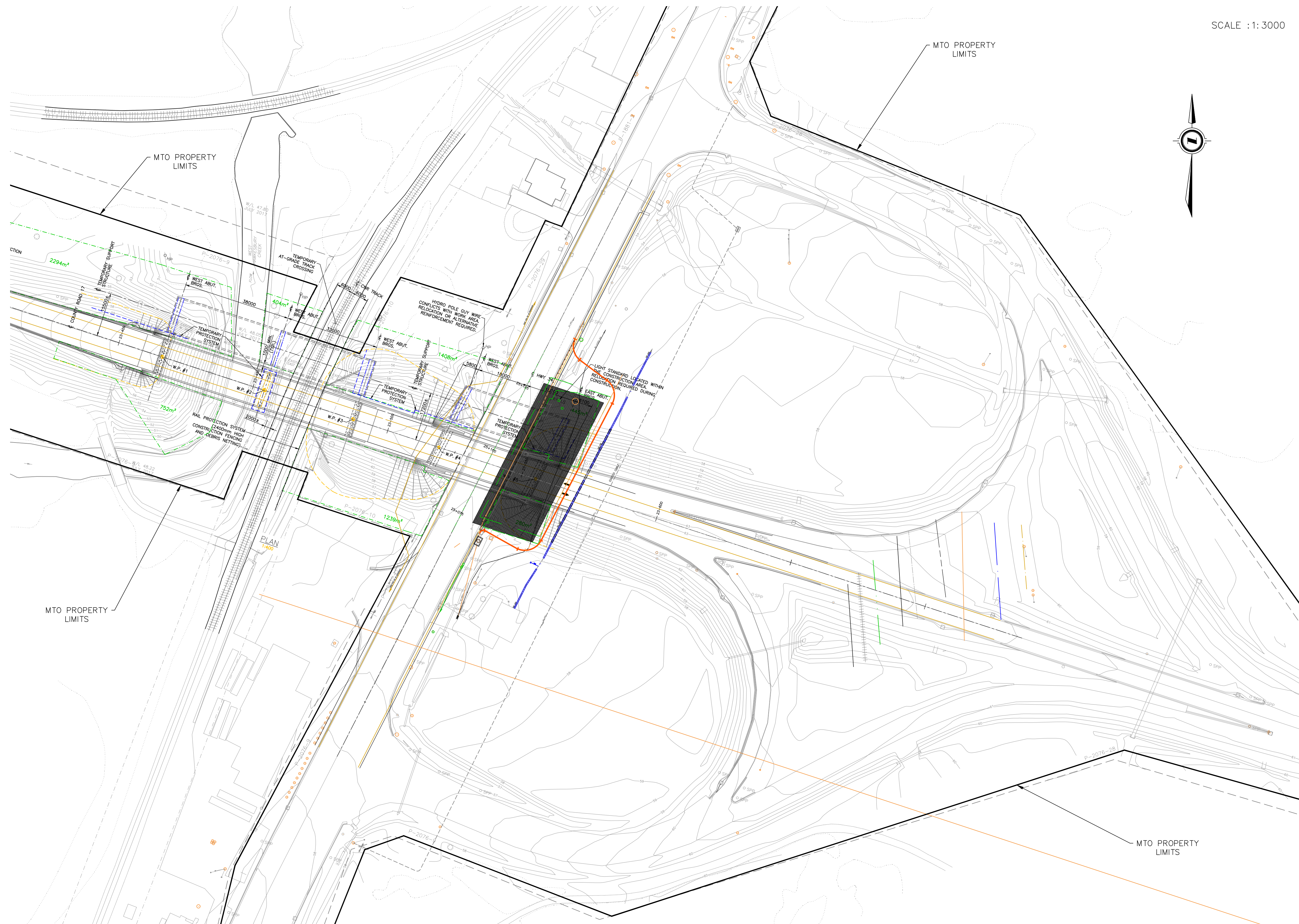
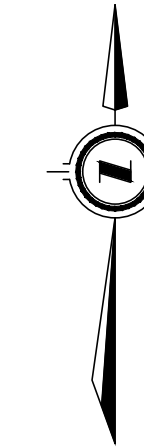
### LEGEND

HEAVY LINE INDICATES PROPOSED WORK	EXISTING BELL CANADA BURIED CABLE
EXISTING BELL CANADA M.H. & CONDUIT	SANITARY SEWER WITH MANHOLE
WATERMAIN & VALVE	STORM SEWER WITH MANHOLE
GASMAIN & VALVE	EXISTING BELL POLE & ANCHOR
BURIED HYDRO	EXISTING JOINT BELL - HYDRO POLE
ROGERS CABLE	EXISTING HYDRO POLE WITH ANCHOR
TELUS	HYDRANT
ALLSTREAM	TREE
TTC STREETCAR TRACKS	

R/W	MC AUTHORITY	DATE REC'D
BELL CANADA	XXXXXXX	NOV. XX, 2011

REASON FOR WORK: <b>DUCT RELOCATION COUNTY RD. 17 &amp; HWY. 34</b>	
PROJECT NO.: 18-4-0724	
GLLI CODE <b>HWBYON61</b>	NETWORK NO. <b>J35051</b>
HORIZONTAL SCALE: N.T.S. 	EXCHANGE OR TOLL ROUTE SWITCHING CENTRE HAWKESBURY 632
VERTICAL SCALE: N.T.S. 	STREET NAMES: HWY 34 & COUNTY RD. 17
PLAN NO. <b>701</b>	MC AUTHORITY: CITY OF HAWKESBURY

SCALE : 1:3000



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ISSUE NO.	DATE	INIT.	REASON FOR ISSUE	QC REF. #
04	24-APR-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000152
03	01-MAR-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000094
02	21-FEB-2019	RD	RE-ISSUED FOR PRELIMINARY	QC19-0000085
01	06-FEB-2019	RD	ISSUED FOR PRELIMINARY	QC19-0000052

NOT FOR CONSTRUCTION

MTO PROPERTY LIMITS

**LEGEND**

- HEAVY LINE INDICATES PROPOSED WORK
- EXISTING BELL CANADA M.H. & CONDUIT
- WATERMAIN & VALVE
- GASMAIN & VALVE
- BURIED HYDRO
- ROGERS CABLE
- TELUS
- ALLSTREAM
- TTC STREETCAR TRACKS
- EXISTING BELL CANADA BURIED CABLE
- SANITARY SEWER WITH MANHOLE
- STORM SEWER WITH MANHOLE
- EXISTING BELL POLE & ANCHOR
- EXISTING JOINT BELL - HYDRO POLE
- EXISTING HYDRO POLE WITH ANCHOR
- HP
- FH
- TREE

R/W	MC AUTHORITY	DATE REC'D
BELL CANADA	XXXXXXX	NOV. XX, 2011

REASON FOR WORK:  
**DUCT RELOCATION  
 COUNTY RD. 17 & HWY. 34**

PROJECT NO.:  
 18-4-0724

CLLI CODE <b>HWBYON61</b>	NETWORK NO. <b>J35051</b>
HORIZONTAL SCALE: 1:3000 5 0 5	EXCHANGE OR TOLL ROUTE HAWKESBURY
VERTICAL SCALE: 1:3000 2 0 2	SWITCHING CENTRE 632
PLAN NO. <b>702</b>	STREET NAMES: HWY 34 & COUNTY RD. 17
	MC AUTHORITY: CITY OF HAWKESBURY

# Ontario Clean Water Agency Agence Ontarienne des Eaux Inspection & Locate Record

Location of Inspection or Locate:

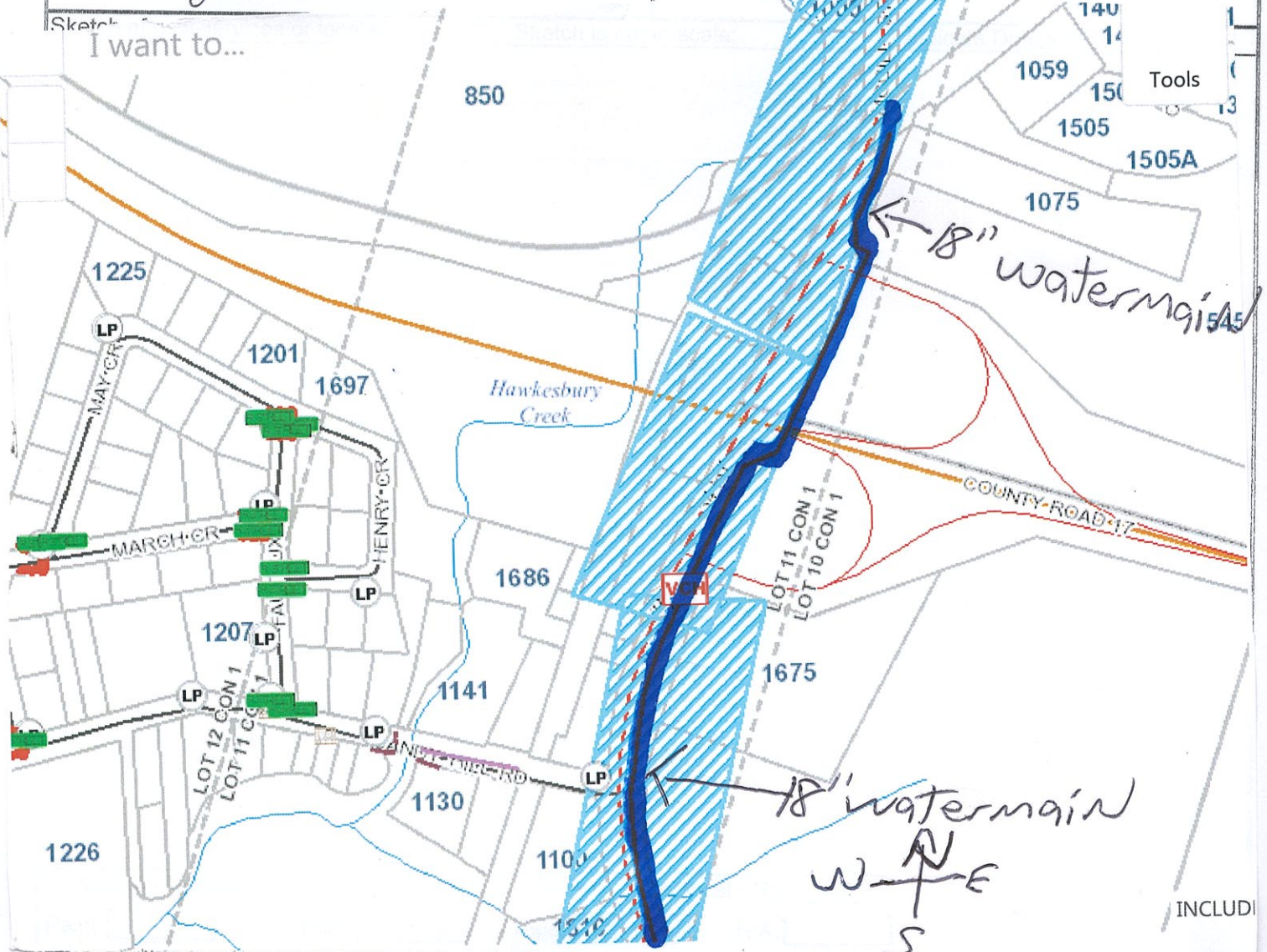
Name: Locate 2020312434  
 Address: Hwy 34  
 Town: VanKreek Hill/Hawkesbury  
 Telephone: \_\_\_\_\_  
 Date: July 30/20

Purpose of Inspection / Locate:

New services: Water: \_\_\_\_\_  
 Sewage: \_\_\_\_\_  
 Owner Locate Request: \_\_\_\_\_  
 Company Locate Request: eg Gas: \_\_\_\_\_  
 Contractor Locate Request: \_\_\_\_\_

Sketch:

I want to...



**Condition of Inspections and Locates:**

- 1 It is understood that the above information has been provided from our records and represents to the best of our knowledge the approximate location of the municipality's services.
- 2 It is the responsibility of the contractor/owner to exercise extreme caution when excavating in the vicinity of all underground services and where necessary locate by hand it's actual location. Liability for damages to municipal services rests with the contractor and owner.

Inspected by:

Name: Pat Boulerice  
 Print

Signature: Pat Boulerice



Bell Canada Municipal Operations Centre - C/O TELECON DESIGN INC.  
7777 Weston Rd,  
Vaughan, Ontario L4L 0G9  
Ph: (905) 569-2882

## **APPLICATION FOR PLANT LOCATION AND CONSENT**

**Applicant:** Jacobs  
**Mark Up #:**86998  
**Applicant Ref #:** 2020312434  
**Location:** McGill St from Spence Ave to County Rd 17  
**SwitchingCenter/NNX:** HAWKESBURY/632  
**Date Received From Applicant:** 2020-08-12  
**Marked By:** Amandeep Singh

## **APPLICATION FOR PLANT LOCATION AND REQUEST**

- Existing and/or proposed Bell Canada underground plant are indicated on the attached plan
- Our records show no existing and / or proposed underground plant within 2m of your proposed installation
- Conflict indicated
- Meets with our approval
- Not for PUCC approval - Mark up only
- If within 1 metre of Bell plant, hand dig

**REMARKS:** Call for locates 1.800.400.2255. Tie-in measurements are a guideline only and physical verification may be required by applicant to determine the true separation between plants. Maintain clearance of 0.6m. Hand dig when crossing Bell plant.

### PROCEDURES TO FOLLOW:

1. Request locates prior to construction 1-800-400-2255
2. If exact location and depth are critical - test pits are recommended
3. Bell Canada plant location information is approximate
4. If the location of your proposed design changes, it will be necessary to re-apply
5. Permits expire six(6) months from approval date

Signature:  
Amandeep Singh

Date:  
August 12, 2020

---



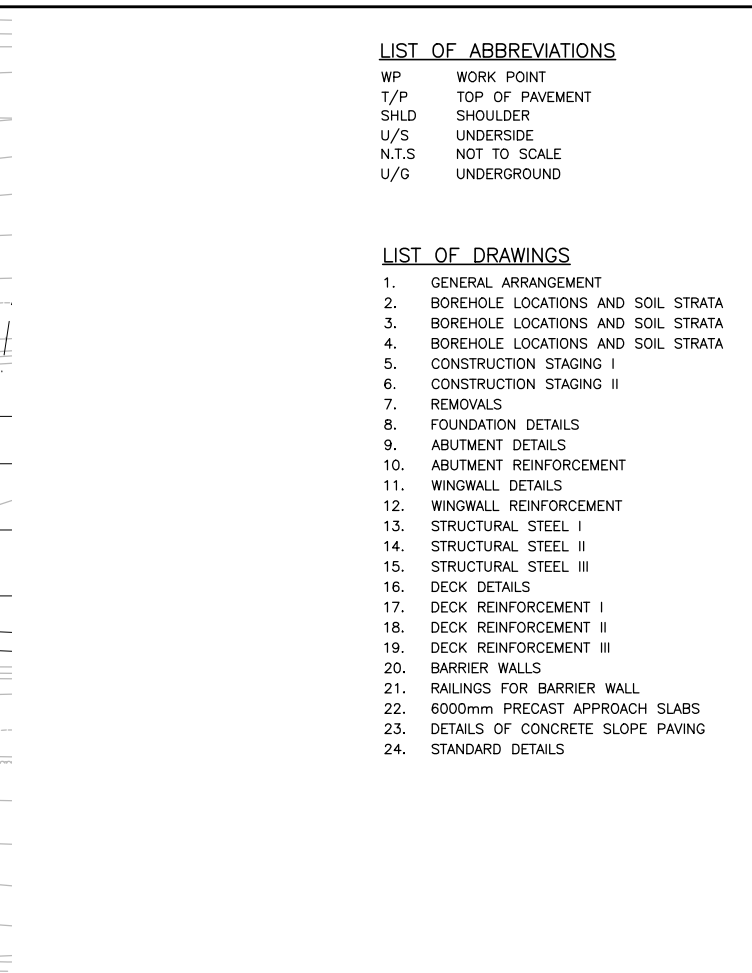
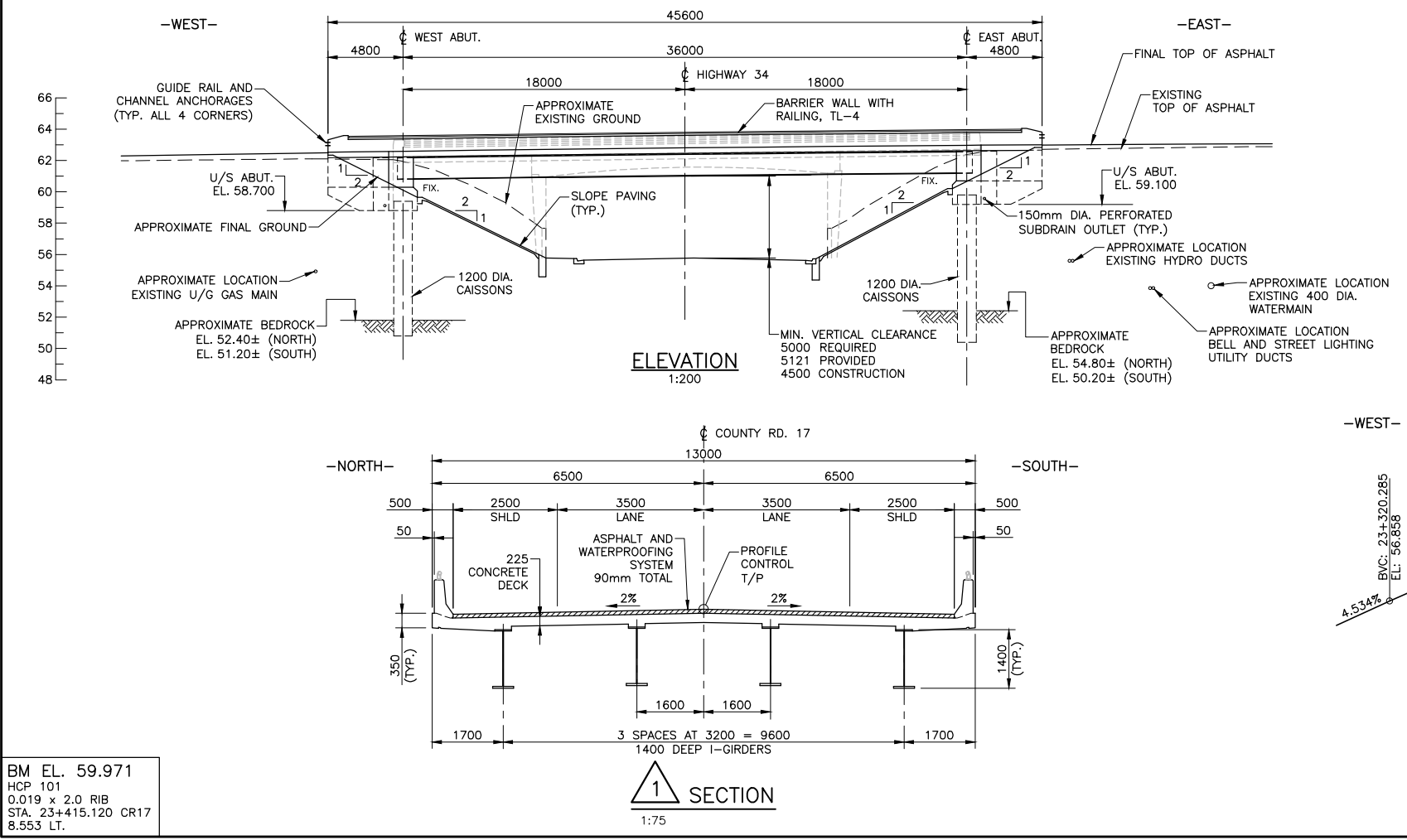
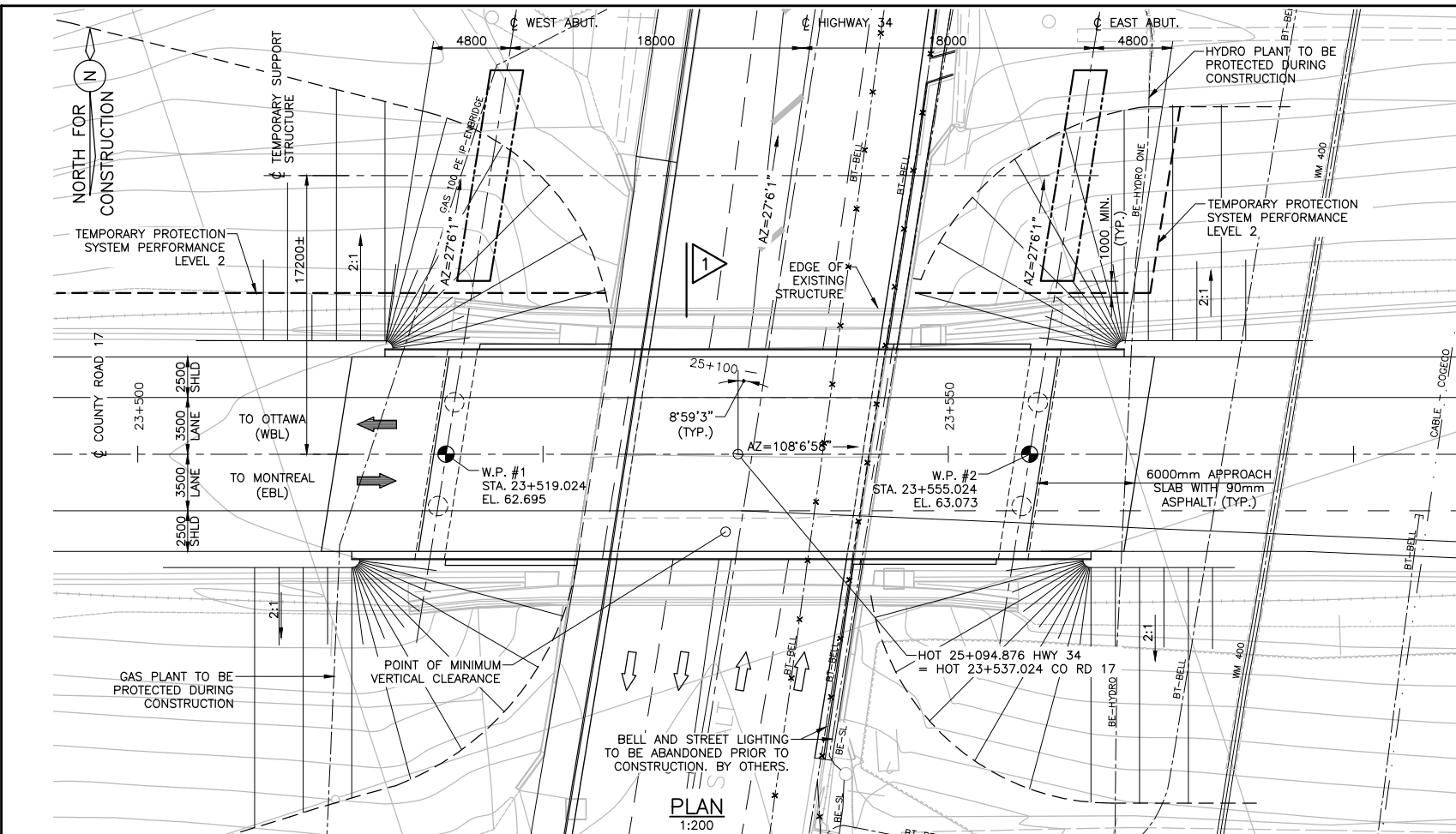
**BELL CANADA**  
 Municipal Operations Department  
 Floor 5 Blue, 100 Borough Drive  
 Scarborough, Ontario M1P 4K2  
**Ph. 416-299-8229**  
This plan is drawn to the property of Bell Canada and the copyright of which is retained by Bell Canada. This plan or any portion thereof may be used by others without the permission of Bell Canada, which may be withheld at Bell Canada's discretion.

**Bell Canada Legend Info**

**CALL FOR LOCATES**  
 1-800-469-2255  
**HAND DIG**  
 if within 1m of Bell plant  
**HAND DIG**  
 when crossing Bell plant  
 Maintain clearance of 0.6m  
 If further details required  
 You must acquire Locates or Test Pits

Draw # - 1  
 Mark Up # - 00008  
 CAD Text - Afterdark Singh

CAD FILE LOCATION AND NAME: C:\pwworkdir\dem001\11053547\1118783\89443-201\_General-Arrangement.dwg  
 MODIFIED: 3/20/2020 3:13:57 PM BY: TNS53547  
 DATE PLOTTED: 10/22/2020 11:23:22 AM BY: TNS53547  
 PR-0-707 88-05  
 MINISTRY OF TRANSPORTATION, ONTARIO



**LIST OF ABBREVIATIONS**

WP	WORK POINT
T/P	TOP OF PAVEMENT
SHLD	SHOULDER
U/S	UNDERSIDE
N.T.S	NOT TO SCALE
U/G	UNDERGROUND

**LIST OF DRAWINGS**

- GENERAL ARRANGEMENT
- BOREHOLE LOCATIONS AND SOIL STRATA
- BOREHOLE LOCATIONS AND SOIL STRATA
- BOREHOLE LOCATIONS AND SOIL STRATA
- CONSTRUCTION STAGING I
- CONSTRUCTION STAGING II
- REMOVALS
- FOUNDATION DETAILS
- ABUTMENT DETAILS
- ABUTMENT REINFORCEMENT
- WINGWALL DETAILS
- WINGWALL REINFORCEMENT
- STRUCTURAL STEEL I
- STRUCTURAL STEEL II
- STRUCTURAL STEEL III
- DECK DETAILS
- DECK REINFORCEMENT I
- DECK REINFORCEMENT II
- DECK REINFORCEMENT III
- BARRIER WALLS
- RAILINGS FOR BARRIER WALL
- 6000mm PRECAST APPROACH SLABS
- DETAILS OF CONCRETE SLOPE PAVING
- STANDARD DETAILS

CONT. No.  
WP No. 4140-16-01

HAWKESBURY BRIDGE REPLACEMENT  
HAWKESBURY CREEK - CNR O/H  
AND COUNTY ROAD 17 U/P

**Jacobs.**

SHEET 84  
METRIC

**GENERAL NOTES**

- CLASS OF CONCRETE**  
CLASS OF CONCRETE SHALL BE 30 MPa  
CLASS OF CONCRETE FOR PRECAST ELEMENTS IS SHOWN ON PRECAST ELEMENTS DRAWINGS.
- CLEAR COVER TO REINFORCING STEEL**  
CAISSONS 100 ± 25  
DECK TOP 70 ± 20  
BOTTOM 40 ± 10  
REMAINDER - UNLESS OTHERWISE NOTED 70 ± 20
- REINFORCING STEEL**  
REINFORCING STEEL SHALL BE GRADE 400W.  
UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B.  
STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500 MPa, UNLESS OTHERWISE SPECIFIED.  
BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.  
BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS12-1, UNLESS INDICATED OTHERWISE.  
MECHANICAL CONNECTORS SHALL BE SUPPLIED IN ACCORDANCE WITH MTO DESIGNATED SOURCES OF MATERIALS LIST DSM 9.65.58  
HEADED DEFORMED BARS SHALL BE IN ACCORDANCE WITH ASTM A970/A970M.
- STRUCTURAL STEEL**  
FOR STRUCTURAL STEEL DETAILS AND NOTES SEE DRAWING 13.
- CONSTRUCTION NOTES**  
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR PRIOR TO PROCEEDING WITH THE WORK.  
THE REPLACEMENT SUPERSTRUCTURE SHALL BE CONSTRUCTED TO THE NORTH OF THE EXISTING BRIDGE ON A TEMPORARY SUPPORT STRUCTURE. ONCE THE EXISTING BRIDGE IS DEMOLISHED AND THE NEW SUBSTRUCTURES ARE CONSTRUCTED, THE REPLACEMENT SUPERSTRUCTURE SHALL BE MOVED INTO FINAL POSITION USING LATERAL SLIDE TECHNIQUE.  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE EXISTING AND NEW BRIDGES THROUGHOUT ALL STAGES OF CONSTRUCTION.  
FOR STAGING AND MAINTENANCE OF TRAFFIC SEE ROADWAY STAGING DRAWINGS AND SPECIFICATIONS.  
BACKFILL SHALL NOT BE PLACED AGAINST ANY CONCRETE COMPONENT UNTIL CONCRETE HAS REACHED 75% OF ITS DESIGN STRENGTH  
THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY STRUCTURES, TEMPORARY PROTECTION SYSTEMS, CONSTRUCTION PLATFORMS, DEBRIS CONTAINMENT SYSTEMS ETC.  
THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL LOCATES AND PROTECTION OF ALL UTILITIES DURING CONSTRUCTION.

**NOT FOR CONSTRUCTION**

**APPLICABLE STANDARD DRAWINGS**

- OPSD 3370.100 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD
- OPSD 3419.100 BARRIERS AND RAILINGS, STEEL BEAM GUIDE RAIL AND CHANNEL ANCHORAGE

BM EL. 59.971  
HCP 101  
0.019 x 2.0 RIB  
STA. 23+415.120 CR17  
8.553 LT.

DRAWING NOT TO BE SCALED  
100mm ON ORIGINAL DRAWING

REVISIONS	DATE	BY	DESCRIPTION

DESIGN	MJM	CHK	MRM	CODE	S6-14	LOAD	CL-625-ONT	DATE	FEB 2020
DRAWN	TJN	CHK	MJM	SITE	27x-0051/80	STRUCT	SCHEME	DWG	1