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Issued by: Jeffrey Luckai  
Name

Jul. 8, 2013  
Date

  
Signature

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**Project:** Windsor-Essex Parkway  
**Document:** TB-7 - Trail Bridge over Cousineau Rd.  
**Doc No.:** 285380-03-127-0053

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## 1 Design Package Description

This submission contains design drawings and geotechnical recommendations associated with Trail Bridge #7 over Cousineau road. This is the 60% Interim IDR submission for the structure deliverables.

### 1.1 Name and Location of Structure

Trail Bridge #7 carries pedestrian traffic over Cousineau Rd./Sandwich PKWY and Cahill Drain.

## 2 Proposed Structure

### 2.1 Description of Structure

TB-07 is a single span, truss bridge (TBD). The 4.7m wide and 3.525m (Center-to-center) deep truss is to span 60 metres. A pedestrian railing with rub rail and balustrades is to run the length.

#### Structural Summary

Structure Type:	Steel truss continuously between two concrete Semi integral abutments.
Span Arrangement:	One span with length of 60 m, aligned east-west and parallel to the centreline of Cousineau Rd.
West Abutment:	Reinforced concrete 5.2m x 6.9m shallow foundation (high abutment)
East Abutment:	Reinforced concrete 5.2m x 6.9m shallow foundation (high abutment)
Span Articulation:	Superstructure is not integral with the abutments.
Barrier Type:	Pedestrian railing with vertical safety rails.

### 2.2 Proposed Means for Inspection and Maintenance

All exposed elements are accessible through the use of scaffolding and / or mobile manlifts.

### 2.3 Materials and Finishes

#### 2.3.1 Cast-In-Place Concrete

Substructure: Minimum compressive strength at 28 days: 30 MPa.

Deck: Minimum compressive strength at 28 days: xx MPa.

### 2.3.2 Reinforcing Steel

Plain reinforcing steel bars:	CAN/CSA G30.18-M92; Grade 400W
Stainless steel reinforcing bars:	Type 316LN or Duplex 2205 or Type XM-28; Grade 500

### 2.3.3 Structural Steel

CAN/CSA-G40.20/G40.21; Grade 340A

### 2.3.4 Finishes

Concrete finishes shall comply with the applicable requirements of Project Agreement, Schedule 15-2.

## 3 Design/Assessment Criteria

### 3.1 Live Loading and Clearances

#### 3.1.1 Design Live Loading

Maintenance vehicle in accordance with CAN/CSA-S6-06.

#### 3.1.2 Other Live Loading

Uniformly distributed 4 kPa pedestrian loading.

#### 3.1.3 Provision for Exceptional Abnormal Loads

None

#### 3.1.4 Any Special Loading Not Covered

None

#### 3.1.5 Minimum Clearance Provided

Vertical: 5.3 m for Cousineau Road

#### 3.1.6 Authorities Consulted and Any Special Conditions Required

None

### 3.2 List of Relevant Design Documents

Design Criteria in accordance with Part 2 of Project Agreement - Schedule 15-2:

Article 1 - Highway Geometrics Design Criteria

Article 3 - Structural Design Criteria

Article 5 - Geotechnical and Foundation Design Criteria

In the event of discrepancy, the hierarchy of referenced documents shall be as instructed.

## 4 Structural Analysis

### 4.1 Methods of Analysis

#### 4.1.1 Superstructure

Superstructure design is the responsibility of the supplier.

#### 4.1.2 Substructure and Foundations

Analysis and design of the abutments using a combination of hand calculations and spreadsheets was used to determine reinforcing steel requirements and checking stresses.

### 4.2 Calculation of Structural Stiffness

Structural stiffness was calculated according to CAN/CSA-S6-06.

### 4.3 Earth Pressure Coefficients

TBD

## 5 Ground Design Considerations

### 5.1 Ground Conditions

TBD

### 5.2 Geotechnical Design Parameters

TBD

### 5.3 Differential Settlement

TBD

### 5.4 Anticipated Ground Movements or Settlement

TBD

### 5.5 Groundwater Conditions and Mitigative Measures

TBD

### 5.6 Variance from Geotechnical Memo Recommendations

None.

## 6 Construction Considerations

TBD

## 7 Drawings and Documents

### 7.1 List of Drawings (included in this submission)

Drawing No.	Revision	Drawing Title
285380-03-060-SEG1-6700	A	COVER SHEET, SITE PLAN, AND KEY PLAN
285380-03-060-SEG1-6701	A	GENERAL ARRANGEMENT
285380-03-060-SEG1-6702	A	GENERAL NOTES
285380-04-090-SEG1-6703	A	BOREHOLE LOCATIONS & SOIL STRATA
285380-04-091-SEG1-6704	A	SOIL STRATIGRAPHY
285380-03-060-SEG1-6705	A	GROUND IMPROVEMENTS - PLAN
285380-03-060-SEG1-6706	A	GROUND IMPROVEMENTS - SECTIONS
285380-04-094-SEG1-6707	A	GROUND IMPROVEMENTS - BACKFILL
285380-04-094-SEG1-6708	A	GROUND IMPROVEMENTS - LWF
285380-03-061-SEG1-6709	A	FOUNDATION LAYOUT AND DETAILS I
285380-03-061-SEG1-6710	A	FOUNDATION LAYOUT AND DETAILS II
285380-03-061-SEG1-6711	A	ABUTMENT LAYOUT AND DETAILS I
285380-03-061-SEG1-6712	A	ABUTMENT LAYOUT AND DETAILS II
285380-03-061-SEG1-6713	A	RSS WINGWALL LAYOUT AND DETAILS I
285380-03-061-SEG1-6714	A	RSS WINGWALL LAYOUT AND DETAILS II
285380-03-061-SEG1-6715	A	NORTH/WEST RSS WALL – PLAN AND PROFILE
285380-03-061-SEG1-6716	A	NORTH/WEST RSS WALL – SECTIONS
285380-03-061-SEG1-6717	A	S/E RETAINING WALL – PLAN & PROFILE
285380-03-061-SEG1-6718	A	S/E RETAINING WALL – SECTIONS
285380-03-062-SEG1-6719	A	BEARINGS, LIGHTS AND RAILING DETAILS
285380-03-064-SEG1-6720	A	DECK LAYOUT AND DETAILS
285380-03-065-SEG1-6721	A	PEDESTRIAN BARRICADES LAYOUT AND DETAILS
285380-03-065-SEG1-6722	A	STRIP SEAL EXPANSION JOINT ASSEMBLY
285380-03-065-SEG1-6723	A	STRIP SEAL EXPANSION JOINT TYPE "C" DETAILS
285380-03-065-SEG1-6724	A	6000 mm APPROACH SLABS
285380-03-066-SEG1-6725	A	STANDARD DETAILS
285380-07-067-SEG1-6726	A	EMBEDDED ELECTRICAL WORK

7.2 List of Documents (included in this submission)

Document No.	Revision	Description

7.3 List of Reference Drawings and Documents (not included in this submission)

See Appendix A.

## 8 Checking and Review

### 8.1 Independent Check

Independent check is required as per Project Agreement – Schedule 15-2, Part 2, Article 3 3.2 (c) (i).

Independent Checking Team: INTERNATIONAL BRIDGE TECHNOLOGIES.

### 8.2 Responsible Design Personnel

Originator:

Checker:

Reviewer:

**The above TAF is submitted for review**

Signed: .....

Design/Construction Manager

Name: BILJANA RAJLIC

Engineering Qualifications: .....

Date: .....

Professional Registration Number: .....

Affix Professional Seal:

Signed: .....

Project Co Representative

Name: .....

Date: .....

Professional Registration Number: .....

Affix Professional Seal:

## 9 Appendix A - Referenced Drawings and Documents

### Referenced Drawing(s)

Drawing No.	Revision	Drawing Title

### Certificate(s)

Certificate No.	Revision	Certificate Name

### Special Provision(s)

Document No.	Revision	Description