Appendix C

Memo

To:	Mr. Tim DelGreco
From:	Wayne Ormshaw, P.Eng.
Date:	October 21, 2020
Subject:	Replacement of Sumac Drive Pedestrian Bridge in Kingsville, ON
Dillon File:	20-3522

Background

Dillon was requested to assist the Town of Kingsville in estimating the costs for design and construction for replacement of the Pedestrian Bridge over Scratch Wigle Drain between Sumac Drive and Mill Creek Crescent in the Town of Kingsville.

The existing bridge is constructed from a steel frame with a pressure treated wood deck all supported by reinforced concrete caissons and on grade at each approach. The height of the deck is approximately 1.2m above the ground elevation at each side of the drain.

Two options for replacement were requested as follows:

Option 1:	Replacement based on the current sizes and span designed to current standards
Option2:	Replacement approximately 6 -12m span sections to limit the amount of foundation and piers to be constructed. Access from the each road grade will be designed to current standards with accessibility designs per AODA.

Site Visit and Observations

The area was visited by Wayne Ormshaw, P.Eng. of Dillon Consulting Limited (Dillon) on October 16, 2020. The purpose of the site visit was to review the site features and assess likely constructible options available.

The following observation were made during the visit:

- Access from Sumac Drive measures approximately 2m wide between current tree/shrub growth along the residential property flanking the access. This access width could limit the maximum size/weight of construction material based on the limitations of the heavy lifting and access equipment.
- Hydro power lines are located along the western boundary and are located approximately 3m above grade at road level on each side. Again this constraint could limit the maximum size/weight of construction items based on the limitations of the heavy lifting and access equipment and its ability to swing into placed without temporarily de-energizing the lines.
- Grade change from top of embankments to current bridge deck low point is approximately 3m and will be used to identify the length of ramps necessary for AODA compliance

Probable Costs

Dillon reached out to Ironbridge Fabrication Inc. (Ironbridge) for budget costs to; design, fabricate, supply and install the above two replacement bridge options. A local general contractor would engage Ironbridge, removed the existing bridge and construct the piers and approach support systems. It has

been found on numerous projects, Ironbridge offer the most competitive costs for pedestrian bridges of this type.

Using Ironbridge products, it is anticipated that both options would require a supporting approach slab at each end.

For Option 1, it is assumed that existing foundations piers can be repurposed for the new deck support, whereas for Option 2, it is expected that new foundation supports will be required throughout and will be placed with the lowest section of the bridge at approximately 1m above the original bridge elevation.

Both design options have been priced using weathering steel (corten) to limit any ongoing and future maintenance for coating of the steel and to help blend in with the surrounding habitat. The deck will be constructed using pressure treated wood decking boards to approximately 2.0m wide.

In line with the above, the following table provides an estimate of probable costs for design and contract administration of each replacement option:

	Option 1	Option 2
Survey, utilities etc.	**$4,000**	**$4,000**
Geotechnical report	-	**$6,000**
Biologist, Hydraulic review	-	**$10,000**
Design & CA	**$20,000**	**$35,000**
Materials testing	**$3,000**	**$6,000**
Construction (including 10% for contingencies)	**$127,000**	**$750,000**
Total	**$150,000**	**$811,000**

It should be recognized that the major element of cost in both options pertain to the steel bridge structure itself and relates closely to current steel prices. As the last few years have witnessed an extremely volatile steel markets regarding price fluctuations, Dillon requested that Ironbridge provide their high level costs based on their feel for the markets over the next 12 months.

Although we have used Ironbridge for budget costs, a public tender of the project is likely to provide the most competitive prices for the project.

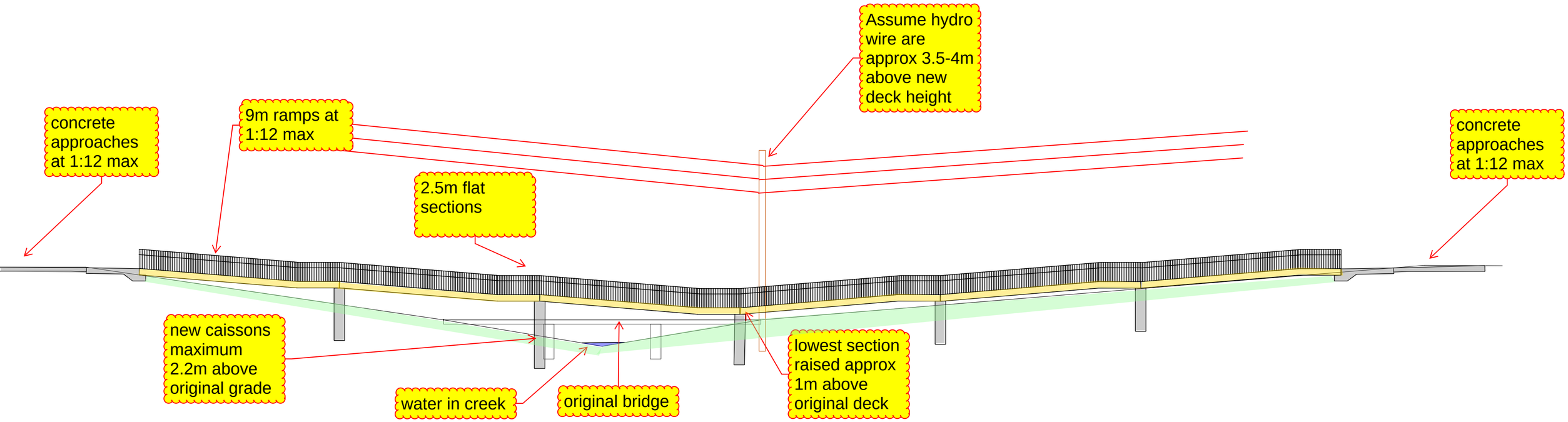
Closure

We hope this cost estimate is satisfactory for your needs at this time, please do not hesitate to reach out if any clarification or additional information is needed.

Yours sincerely,

DILLON CONSULTING LIMITED

Wayne Ormshaw, P. Eng.


concrete approaches at 1:12 max
9m ramps at 1:12 max
Assume hydro wire are approx 3.5-4m above new deck height
2.5m flat sections
concrete approaches at 1:12 max
new caissons maximum 2.2m above original grade
water in creek
original bridge
lowest section raised approx 1m above original deck