Rehabilitation of Garafraxa Street Bridge, Durham

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West Grey

TRITON ENGINEERING SERVICES LIMITED

Consulting Engineers

Agenda

- Brief Introduction
- Review Project Scope of Work
- Project Information To-date
- Existing Bridge Railing
- Bridge Railings Considered
- New Bridge Railing Design
- Next Steps

Project Scope of Work

Bridge Deck Repair/Waterproofing

Bridge Soffit Repair

Sidewalk Repair

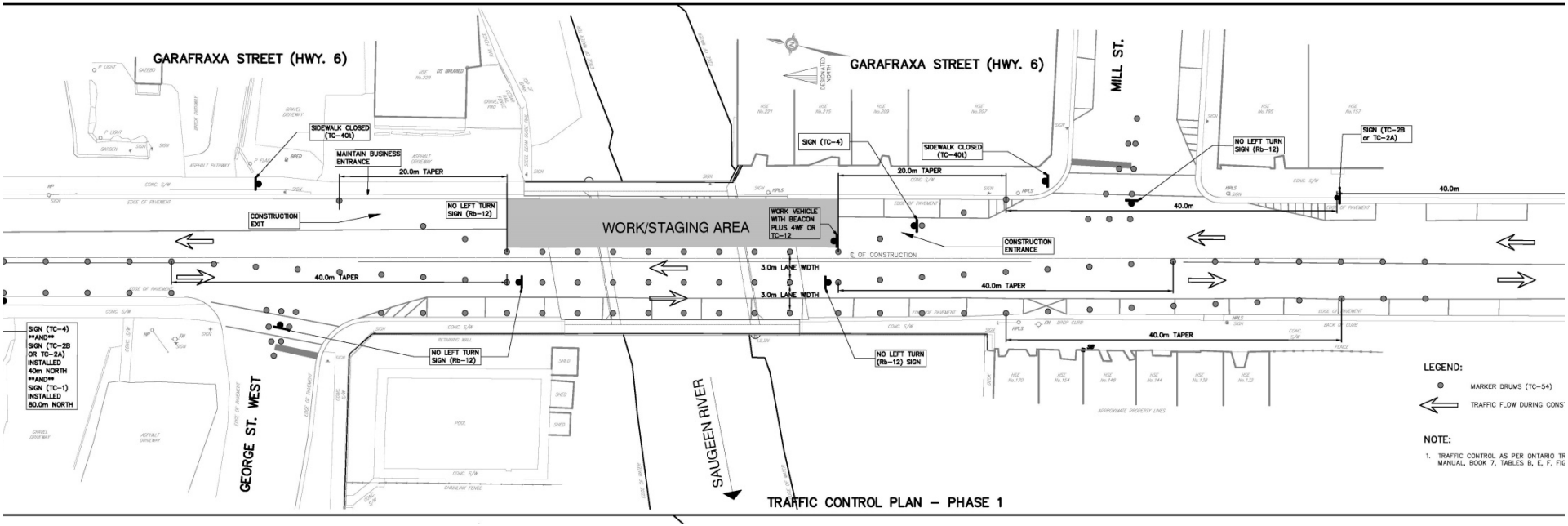
Railing Replacement

Project Information To-date

Traffic Control Plan

- Submitted to MTO as a courtesy/comments (MTO Connecting link Funded)

- Maintain two (2) lane traffic at all times during construction



Existing Bridge Railing

- Existing Bridge Railing is Sub-Standard
  - Existing railing system does not meet current Canadian Highway Bridge Design Code (CHBDC) for “Crash Test Standards”
  - Based on railing barrier classification type ***(Category C)*** and overall magnitude of structure rehabilitation ***(Level 2 – 3)***, CHDBC deems the current barrier railing to be inadequate (Updated Policy, Jan 2019) ***Therefore, railing must be replaced***
  - ***New policy supersedes previous engineering reporting and recommendations***
- Replacement Cost $$ Considerations
  - ***Note:*** Estimated railing replacement cost - similar to cost to reinstate existing railing – Potential for existing railing components to be reused by Municipality for other purposes (not involving vehicular bridge traffic)

Bridge Railings Considered

Various railing systems were considered including:

Metal Tube Railing System

Concrete Parapet with Metal Railing

Considerations:

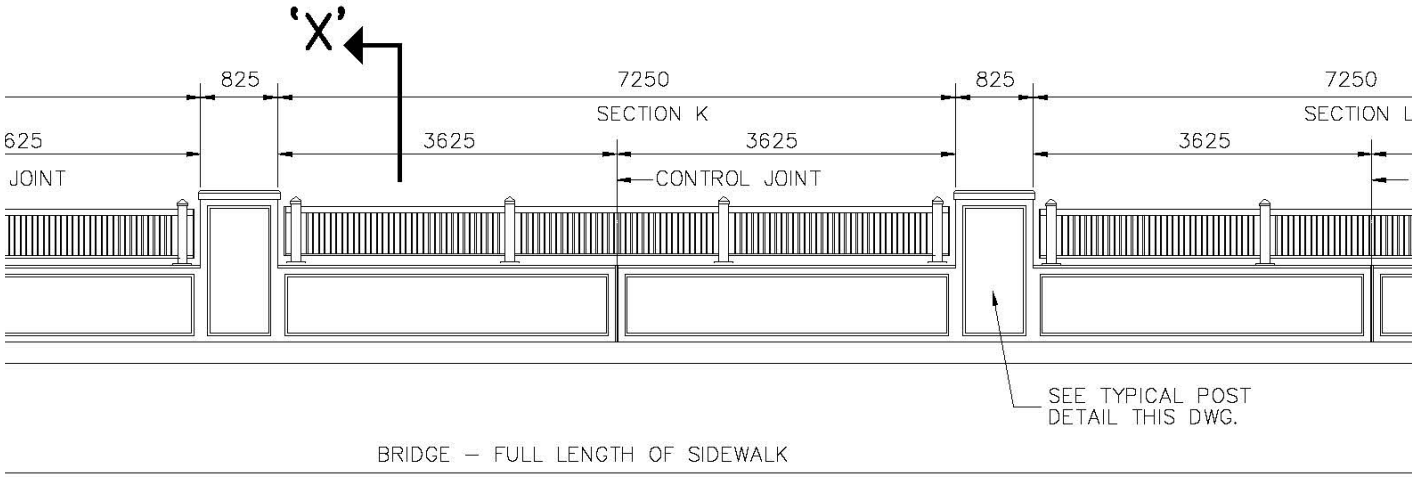
- Existing Deck Condition with increased load of railing
- Estimated remaining bridge lifespan (post-rehabilitation)
- Overall pedestrian and cyclist safety (not easily climbed)
- Cost, engineering design/constructability and longevity
- Maintain pedestrian “view” of the Saugeen River
- Aesthetically suitable for a Main Street/Downtown Core bridge

Similar New Bridge Railing

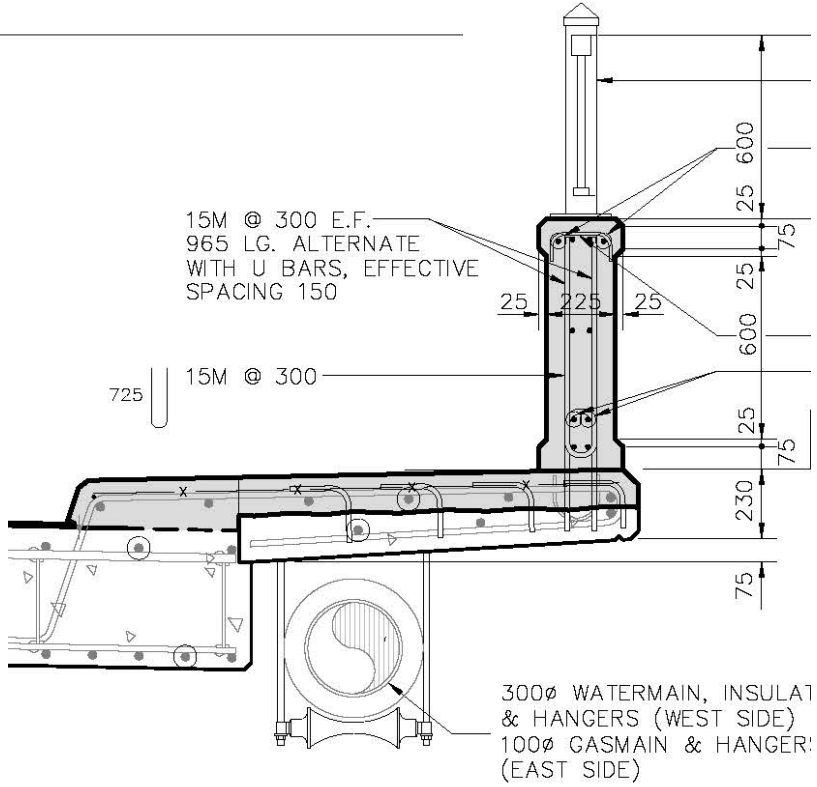
Optimal Railing which satisfies all considerations:

St David Street Bridge (Hwy 6), Centre Wellington (Fergus)

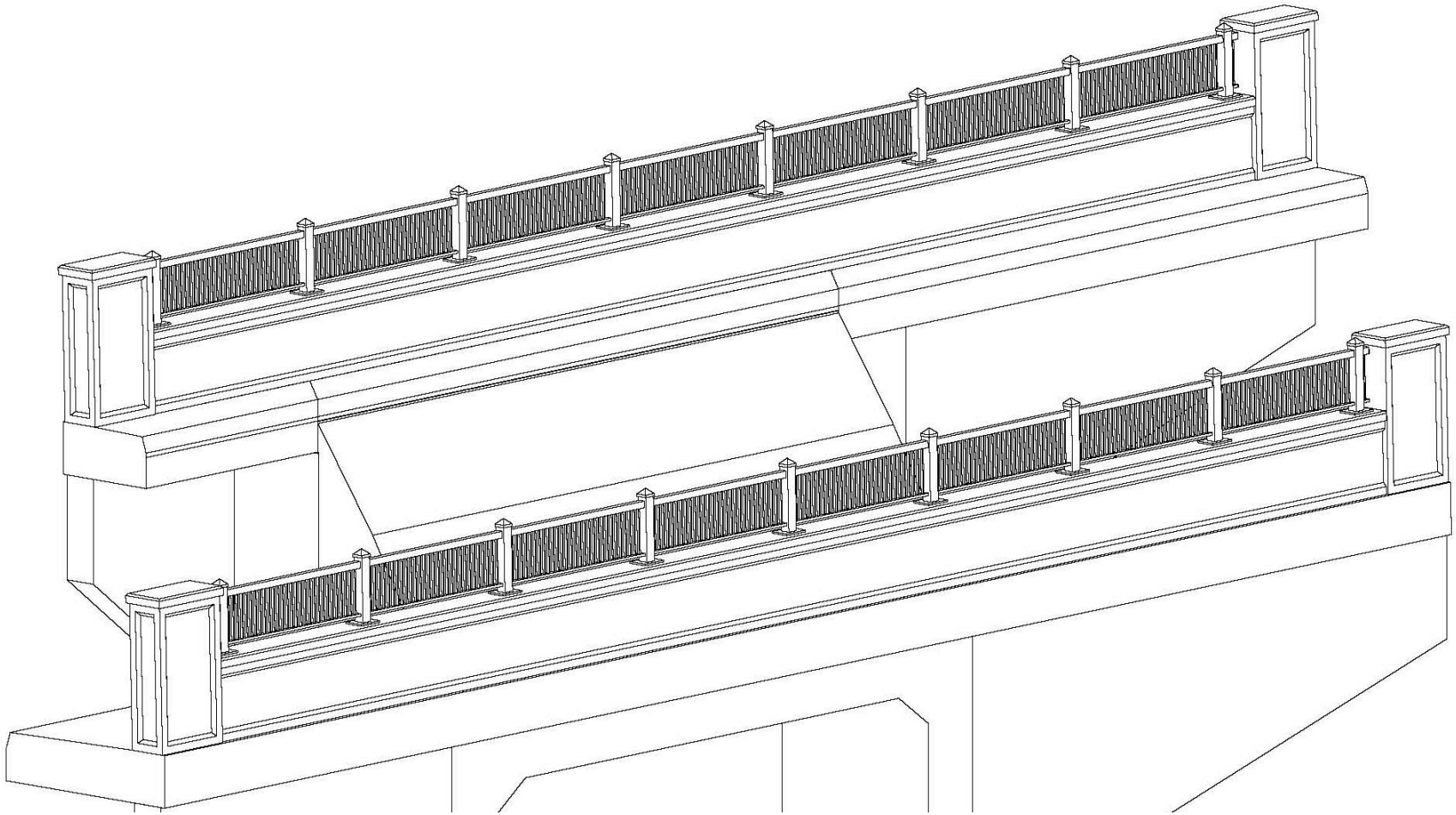
New Bridge Railing Design



- Simplified concrete parapet wall with fixed metal railing
- Metal railing maintains existing railing appearance while achieving CHBDC standards using concrete parapet wall



New Bridge Railing Design



Next Steps

Proceeding with Concrete Railing:

- Tender Issued May 11th, 2021
- Close and Review Tender Prices
- Award Contract (June 15th Council Meeting)
- Proceed with Bridge Rehabilitation (Start-Date - July 2021)
- Contract Completion (Early November 2021)

Questions?

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