

King Street East Bolton Bridge Replacement over the Humber River



September 28, 2022

Project Justification

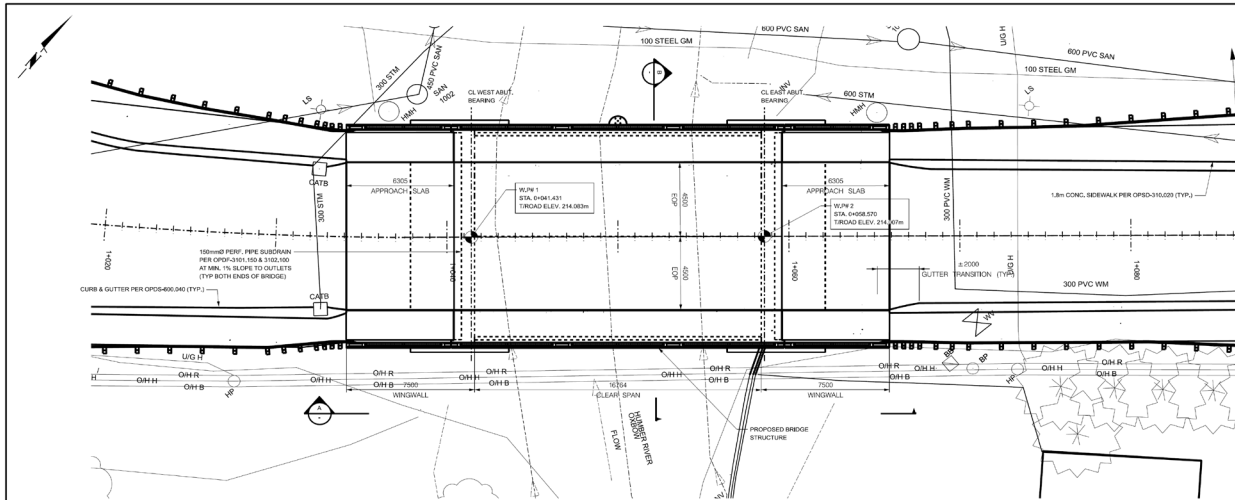
- In 2017, the Region of Peel identified that the King Street Bridge (east of Humber Lea Road) required rehabilitation, based on the Biennial Inspection Report
- Upon commencing the detailed design, it was discovered that the bridge was in worse condition than expected with severe deterioration
- A detailed life-cycle costing was completed which found that the bridge is beyond the point of economic rehabilitation and that replacement would have a lower long-term cost
- Replacement of the bridge addresses primarily its structural deterioration, but also provides an opportunity for wider sidewalks, safety improvements and compliance with updated standards

Project Details

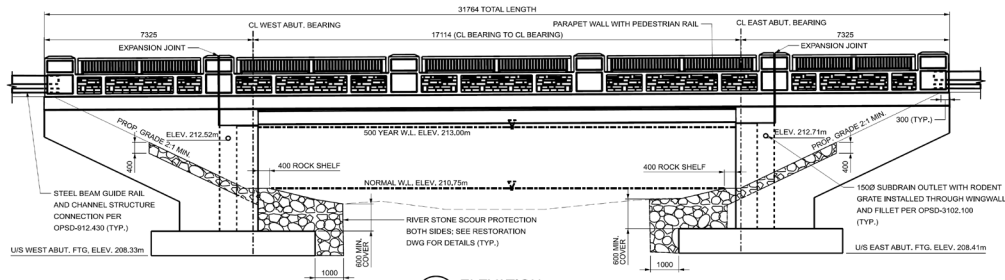
- Demolishing and removing the entire existing bridge
- Constructing a new bridge with:
 - 2 lanes of traffic
 - 1 metre separation between traffic lanes and sidewalk (currently only 0.3 metres)
 - 2.0 metres new sidewalks on both sides (currently only 1.2 metres)
 - No expansion joints, which will reduce future deterioration, lower maintenance needed
 - Improved road drainage on the bridge approaches
 - 1.4 metre high decorative parapet walls with pedestrian railings (to comply with upgraded standards)
 - 75 year design life



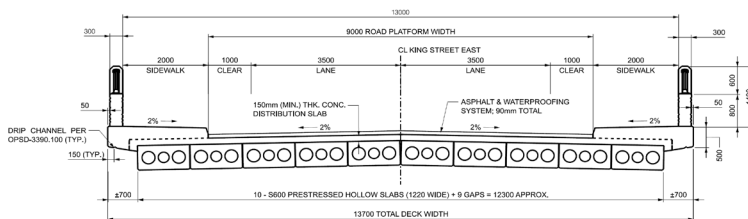
New Bridge General Arrangement



BRIDGE PLAN
SCALE: 1:125



A ELEVATION
SCALE: 1:75



B SECTION
SCALE: 1:50

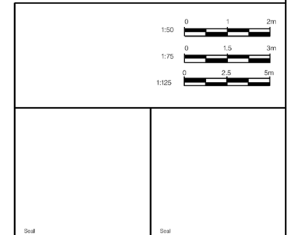
REVISIONS			
DATE	DETAILS		BY
OCTOBER 8 2020	60% SUBMISSION		DMR
MARCH 25 2021	90% SUBMISSION		DMR

GENERAL NOTES

- ALL ELEVATIONS ARE IN METERS AND DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.
- ALL DESIGN IN ACCORDANCE WITH CANCSA-66-14 (CRBCL).
- CLASS OF CONCRETE: CAST-IN-PLACE: 35 MPa, CLASS C-1 EXPOSURE PRECAST: 50 MPa, CLASS C-1 EXPOSURE
- CLEAR COVER TO REINFORCING STEEL:
FOOTINGS - BOTTOM: 100 ± 25
DECK - TOP: 75 ± 20
DECK - BOTTOM: 40 ± 10
REINFORCING: 75 ± 10 UNO
- REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
- BARS MARKED WITH PREFIX 'R' DENOTE STAINLESS STEEL BARS. STAINLESS STEEL REINFORCING BARS SHALL BE TYPE 316LN OR DUPLEX 2205 WITH A MIN. YIELD STRENGTH OF 500 MPa UNO.
- ALL REINFORCING BAR HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH CANCSA-66-14 (CRBCL) UNO.
- ALL REINFORCEMENT AND LAP SPICE LENGTHS NOT INDICATED ON THE CONTRACT DRAWINGS SHALL BE IN ACCORDANCE WITH CANCSA-66-14 (CRBCL) WITH LAP SPICE LENGTHS BASED ON CLASS 'B' TENSORS LAP SPICES UNO.

APPLICABLE STANDARD DRAWINGS

- | | |
|----------------|--|
| OPSD-101: 100 | WALLS - ABUTMENT, BACKFILL - UNIFORM CIRCULAR REQUIREMENT |
| OPSD-102: 100 | WALLS - ABUTMENT - BACKFILL DRAIN |
| OPSD-302: 100 | DECK REINFORCEMENT SUPPORTS FOR REINFORCING STEEL FOR SLAB DEPTH 150mm OR LESS |
| OPSD-3370: 100 | DECK WATERPROOFING - HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD |
| OPSD-3370: 101 | DECK WATERPROOFING - HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm WIDE AND CONSTRUCTION JOINTS |
| OPSD-3396: 100 | DECK - DRIP CHANNEL |
| OPSD-3396: 101 | BARRIERS AND RAILINGS - STEEL BEAM - GUIDE RAIL AND CHANNEL ANCHORAGE |
| OPSD-3960: 100 | JOINTS - CONCRETE EXPANSION AND CONTRACTION ON STRUCTURE |



Anley CONSULTING ENGINEERS PLANNERS

Region of Peel
working with you

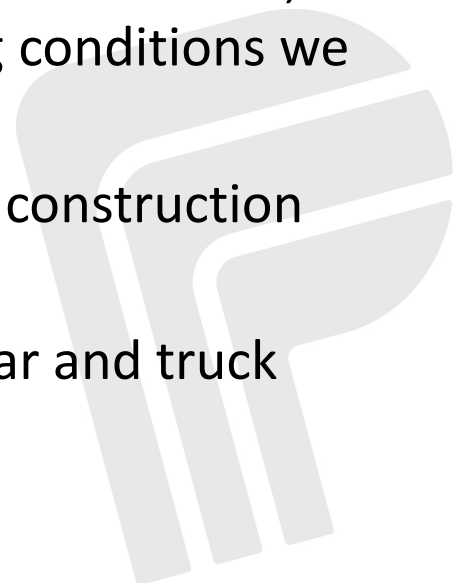
KING ST. EAST (REGIONAL ROAD 9)
BRIDGE No. 090140 REPLACEMENT BRIDGE
GENERAL ARRANGEMENT

Drawn: AS NOTED	Checked: By J. GARDNER	Project No.: 19-0400
Date: MAY 2020	Sheet: 7 of 10	Checked: By BRW/DMR/ECG
		Plan No.: 00000-D

NOT FOR CONSTRUCTION

Full Road Closure Justification

- The existing bridge is too narrow and does not have sufficient width to accommodate a staged construction (e.g. close and work on eastbound lane leaving westbound lane open to traffic using signals at each approach to the bridge)
- There are intersections at both ends of the bridge which present challenges to properly provide signals for a staged construction
- Working in the Humber River is permitted only within a relatively short in-water works window, per Ministry of the Environment, Conservation and Parks regulations and permitting conditions we need to comply with
- Safety issues for vehicles, pedestrians, cyclists and construction workers
- Local and global detours will be in place to guide car and truck traffic



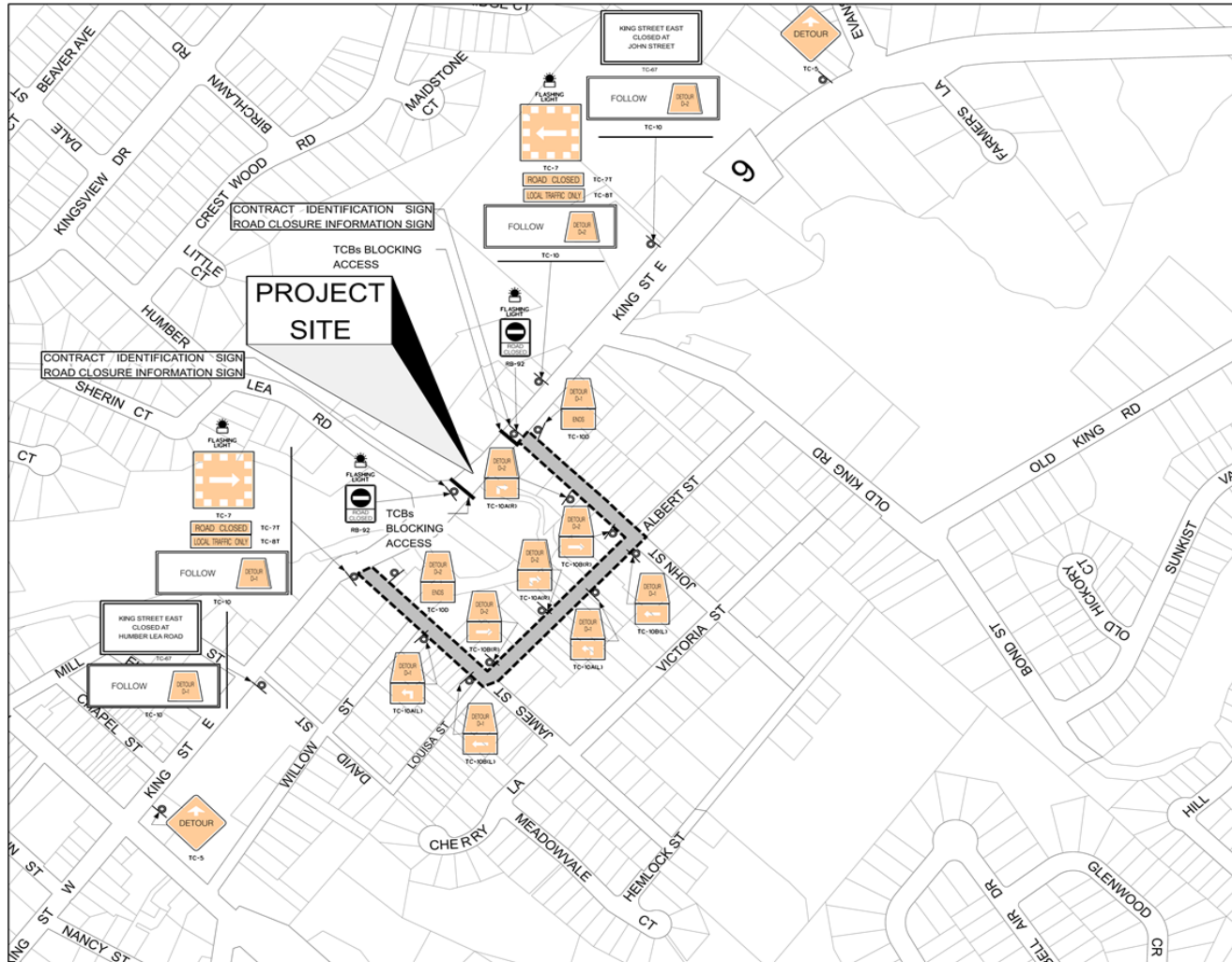
Local Detour Route

➤ For use by local traffic



REVISIONS		
DATE	BY	DETAILS
OCTOBER 8, 2009	WFL	SUBMISSION
NOVEMBER 16, 2009	WFL	SUBMISSION

**KING STREET EAST
TO BE CLOSED**
HUMBER LEA RD TO JOHN ST.
MONTH, YEAR TO MONTH, YEAR

CONTRACT IDENTIFICATION SIGN
TO BE PROVIDED BY REGION OF PEEL

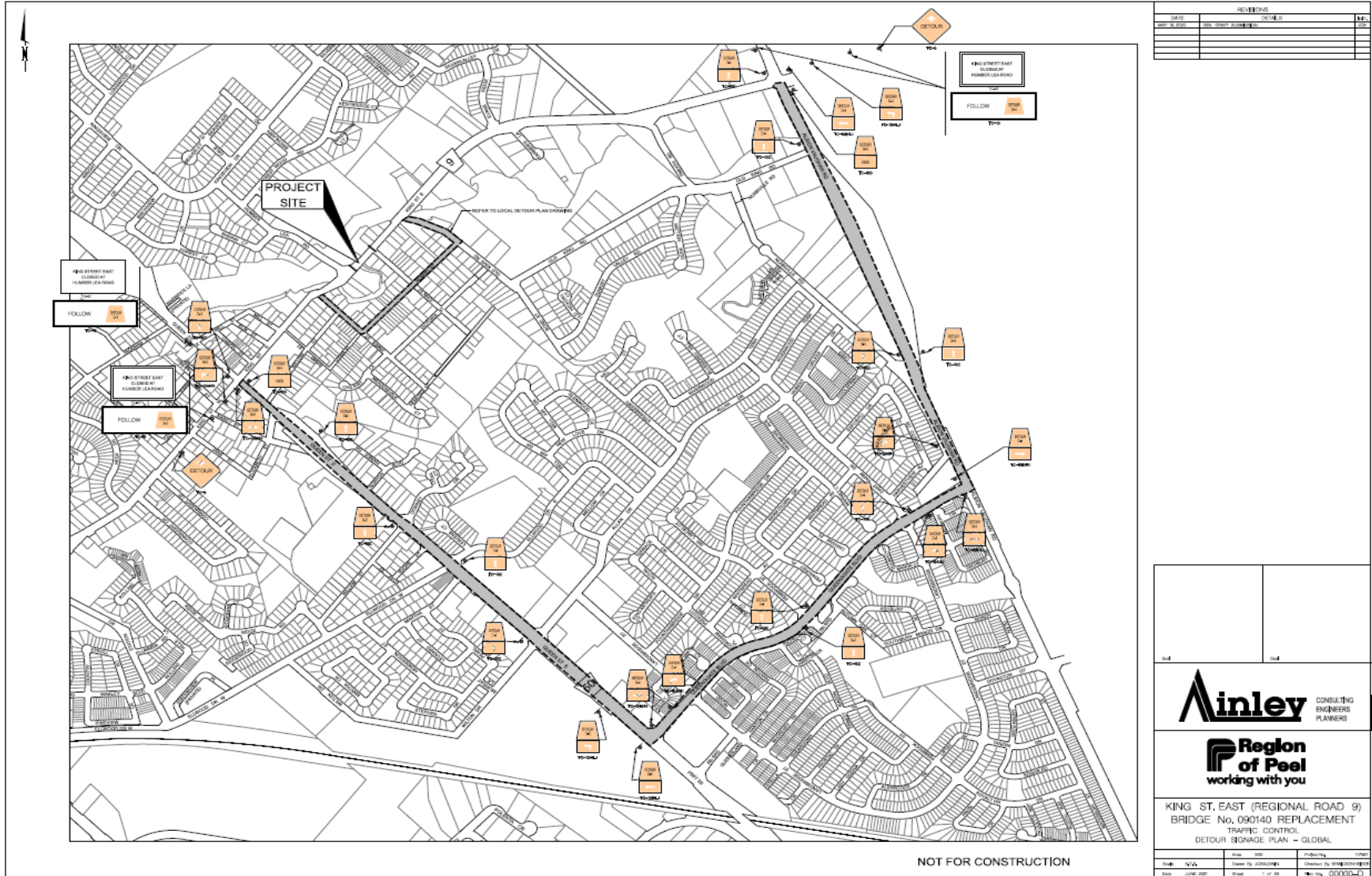


NOT FOR CONSTRUCTION

	
	
KING ST. EAST (REGIONAL ROAD 9) BRIDGE No. 090140 REPLACEMENT TRAFFIC CONTROL DETOUR SIGNAGE PLAN - LOCAL	
Scale: N.T.S.	Drawn By: JCH/12489
Date: JUNE 2009	Sheet: 1 of 02
Project No.: 05-4833	Drawn By: BRW/24747/0209
Plan No.: 00000-D	

Global Detour Route

➤ For use by traffic coming from outside of Bolton



Project Schedule & Contacts

- Construction is tentatively scheduled to commence Spring 2023 and anticipated to be completed by the end of 2023

For additional information, please contact:

Jerry Tan, C.E.T.
Project Manager
Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9
905-791-7800 ext. 7916
jerry.tan@peelregion.ca

Brian R. Wickenheiser, P.Eng., P.E.
Bridges and Structures Group Lead
Ainley Group
705-729-3371 ext. 240
brian.wickenheiser@ainleygroup.com

