



Appendix O Structural Memo

Inspection Reports
407 ETR and Culvert General Arrangements

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Region of Halton OSIM Inspection Forms

For the Bridge on Winston Churchill Blvd Located 2.70 km North of Steeles Avenue Structure No. 19-1196390 BR01

Prepared by:

Hatch Mott MacDonald 2800 Speakman Drive Mississauga, ON, Canada L5K 2R7 T: 905 403 4455 F: 905 855 2607 Project Number: 336921

	Name, Title	Signature	Date
Prepared By	J.Hallett, E.I.T.	Fulithell	MAY 27/15
Reviewed By	J.Luckai, P.Eng	Attachi	May 27/15
Approved By	C.Pasqualino, P.Eng	agal	NAT 28/15

Municipal Structur	e Inspection Form	Stru	cture Number:	19-1196	390 BR01
Inventory Data					
Structure Name	Winston Churchill Blvd, Lot 5, Conc XI Hwy No.	19	Key Photo		
Cross. Type Over	🗸 Road 🗌 Rail 🗌 Ped 🗌 Nav. 🗌 Non-Nav	. 🗌 Other			
Cross. Type Under	🗌 Road 🗌 Rail 🗌 Ped 🗌 Nav. 🗸 Non-Nav	. 🗌 Other			R BIA
Road Name	Winston Churchill Blvd		100	and the second s	
Structure Location	2.70 km North of Steeles Avenue				
Northing	595206.0 Easting 4830795.0 Cur.Rep.Value]*	-73	Carlo and
Owner(s) / %	Region of Halton 50%				8-8-01 4-14/
Shared	Regional Municipality of Peel 50%	Heritage Status	Not Considered fo	or Designation	
MTO Region	Central	Road Side Env.	Rural		
MTO District	Central	Road Class	Arterial		
County	Halton	Lane Type			
Geographic Twp.		Posted Speed	80	No. of Lanes	2
Structure Category	Bridge	AADT	12,625	Pct. Trucks	0
Struct.SubCategory	Frame				
Structure Type	Rigid Frame, Vertical Legs	Interchange Numb	ber		
Structure Material	Reinforced Precast Concrete	Design Load Code			CHBDC
Total Deck Length	11.90 m Road Width 17.70 m	Interchange Struct	ture Number		
Overall Width	25.0 m Vert. Clear 0.00 m	Detour Length	0 km 9	Skew Angle	0 °
Total Deck Area	297.50 m ² No. of Spans 1	Fill on Structure	0 m .	Struct. Dir.	North/South
Special Routes	🗌 Transit 🗸 School 🗌 Truck 🗌 Bicycle	Insp. Duration	1 hr		

*Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure

Spans

Span Name	Span Lengths	Span Name	Span Lengths
Span 1	11.0 m		
Historical Data			
Year Built	2011 уууу	Year of Last Major Rehab	уууу
Last OSIM Inspection	10/09/2012 mm/dd/yyyy	Contract No. When Built	
Last Enhanced OSIM	mm/dd/yyyy	Last Evaluation	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	Current Load Limit	t t t
Last Underwater Insp.	mm/dd/yyyy	Load Limit By-Law No.	mm/dd/yyyy
Last Condition Survey	mm/dd/yyyy	By-Law Expiry Date	mm/dd/yyyy
Rehab History			
Rehab Date R	ehab Description		
2011 R	eplacement of structure.		



Region of Halton				
Municipal Structur	-		Structure Number:	19-1196390 BR01
Field Inspection In	formation			
Inspection Date	05/06/2015 mm/dd/yyyy	Multi Day Inspection	✓ OSIM 🗌 Enh	nanced OSIM BCI 99.2
Inspector	C.Chan, E.I.T.	Eng. Responsib	ole J.Luckai, P.Eng	
Others in Party	J.Hallett, E.I.T.			
Access Equip.	Lift Ladder Boat Bridge I	Master Other		
Other Equip.	Hammer, Camera, Measuring Tape			
Weather	Sunny		Temperature	20 °C
Additional Investig	ation Required:			
Investigation			Priority	Estimated Cost
-		None	Normal Ur	gent
Detailed Deck Cond	lition Survey	7		\$0
Delamination Surve	ey of Asphalt-Covered Deck	✓ 		\$0
Concrete Substruct	ure Condition Survey	✓		\$0
Detailed Coating Co	ondition Survey	✓ ✓		\$0
Post-Tensioned Stra	and Investigation	ر ا		\$0
Underwater Investi	gation			\$0
Fatigue Investigatio	n			\$0
Seismic Investigation	on	~		\$0
Structure Evaluation	n	7		\$0
Monitoring of Defo	rmation, Movements and Settlements	7		\$0
Monitoring of Crack	< Widths			\$0
Investigation Notes	5			Total Cost \$0
Overall Structure N	Notes:			
Recommended Worl	k on Structure None 🗸 Minor F	Rehab 🗌 Major Rehab	Replace Re	move
Timing of Recommen	nded Work	✓ 6 to 10 years		
	l wide cracks in barrier wall ch repair concrete on soffit			
BCI Change				
Justification				
Next Inspection	05/06/2017 mm/dd/yyyy	Estima	ted Load Limit	
		Lotinu		



Structure Number:	19-11

12 Slippery surfaces

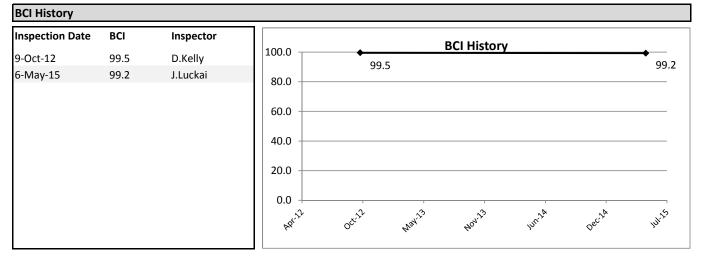
16 Other

13 Flooding/channel blockage

14 Undermining of foundation

15 Unstable embankments

19-1196390 BR01



All Bci values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated

06 Bearing not uniformly loaded/unstable

07 Jammed expansion joint

09 Rough riding surface

10 Surface ponding

11 Deck drainage

08 Pedestrian/vehicular hazard

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity

- 02 Excessive deformations (deflections & rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

01 Lift and Swing Bridge Maintenance	07 Repair to Structural Steel	13 Erosion Control at Bridges
02 Bridge Cleaning	08 Repair of Bridge Concrete	14 Concrete Sealing
03 Bridge Handrail Maintenance	09 Repair of Bridge Timber	15 Rout and Seal
04 Painting Steel Bridge Structures	10 Bailey bridges - Maintenance	16 Bridge Deck Drainage
05 Bridge Deck Joint Repair	11 Animal/Pest Control	17 Scaling (Loose Concrete or ACR Steel)
06 Bridge Bearing Maintenance	12 Bridge Surface Repair	

Hatch Mott MacDonald

wunicipal Structure	e Inspection Form			Stru	cture Number:	19-1196390	BR01
Approaches - Wear	ing Surface (Approach)						
Element Group	Approaches				Length	6.00 Width	17.70
Element Name	Wearing Surface (Approac	h)			Height	0.00 Count	2.00
Location	Above structure					Total Quantity	212.40
Material	Asphalt				✓ Limited	Inspection	
Element Type					Environmen	t	
Protection System	None				Benign		
Condition Data	Units Excell.	Good Fa	ir	Poor	Moderat	e	
	sq.m 166.40	45.00	1.00	0.00			
Comments	nnroach iointe						
- Crack along both a	pproach joints						
Performance Defici	encies	Maintenance Needs	;	Priority	Comn	nents	
None		None					
	on Recommendations	Priority	Cost	Comme	nts		,
None		yrs.	\$0				
Barriers - Barrier/P	arapet Wall						
Element Group						,	
Element Group	Barriers				Length	23.90 Width	0.00
Element Name	Barriers Barrier/Parapet Wall	In	terior		Length Height	23.90 Width 0.95 Count	0.00
-		In	terior		-		
Element Name	Barrier/Parapet Wall	In	terior		Height	0.95 Count	2.00
Element Name	Barrier/Parapet Wall Both Sides		terior		Height	0.95 Count Total Quantity	2.00
Element Name Location Material	Barrier/Parapet Wall Both Sides Cast-in-place Concrete		terior		Height	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir				Height Limited 1 Environmen Benign Moderat	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railin None	ng Good Fa		Poor 1.00	Height	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railin None Units Excell. sq.m 26.41	ng Good Fa	iir 3.00		Height Limited 1 Environmen Benign Moderat	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on west	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell.	ng Good Fa 15.00	iir 3.00		Height Limited 1 Environmen Benign Moderat	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on eas	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m	Good Fa	iir 3.00		Height Limited 1 Environmen Benign Moderat	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on eas	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on l	Good Fa	iir 3.00 (parrier arrier		Height Limited 1 Environmen Benign Moderat	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on eas - Light/medium scal	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on l	Good Fa	iir 3.00 (parrier arrier	1.00	Height Limited Environmen Benign Moderati Severe	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on wes - Uight/medium scall Performance Deficie	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on l	Ing Good Fa 15.00 [In from South end of b from south end of b pottom leg of barrer Maintenance Needs	iir 3.00 (parrier arrier	1.00	Height Limited Environmen Benign Moderati Severe	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on wes - Uight/medium scall Performance Deficie	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on l	Ing Good Fa 15.00 [In from South end of b from south end of b pottom leg of barrer Maintenance Needs	iir 3.00 (parrier arrier	1.00	Height Limited Environmen Benign Moderati Severe	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Uide crack on eas - Light/medium scall Performance Deficit None	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on I encies	Good Fa Good Fa 15.00 n from South end of b n from south end of b boottom leg of barrer Maintenance Needs None Priority	nir 3.00 parrier arrier	1.00 Priority Comme	Height Limited 1 Environmen Benign Moderati Severe Comn nts	0.95 Count Total Quantity Inspection t	2.00
Element Name Location Material Element Type Protection System Condition Data Comments - Wide crack on wes - Wide crack on eas - Light/medium scall Performance Deficie None	Barrier/Parapet Wall Both Sides Cast-in-place Concrete Safety Shape without railir None Units Excell. sq.m 26.41 st barrier - 10.5m and 16.7m t barrier - 10.5m and 16.5m ing, more concentrated on I encies	Good Fa	iir 3.00 (barrier arrier	1.00 Priority	Height Limited 1 Environmen Benign Moderati Severe Comn nts	0.95 Count Total Quantity Inspection t	2.00



Structure Number:	19-1196390 BR01

Barriers - Barrier/P	arapet Wall						
Element Group	Barriers				Length	23.90 Width	0.00
Element Name	Barrier/Parapet Wall		Exterior		Height	0.80 Count	2.00
Location	Both Ends					Total Quantity	38.24
Material	Cast-in-place Concrete				🗌 Lim	ited Inspection	
Element Type	Safety Shape without railin	g			Environ	ment	
Protection System	None				Ben	-	
Condition Data	Units Excell.	Good	Fair	Poor	✓ Moo	derate	
Comments	sq.m 31.24	5.00	1.00	1.00			
	st barrier - 10.5m and 16.7n t barrier East - 10.5m and 1						
Performance Defici	encies	Maintenance Ne	eeds	Priority	Co	omments	
None		None					
	on Recommendations	Priority	Cost				
Minor Rehabilitation	1	6-10 yrs.	\$2,500	Seal cr	racks.		
Abutments - Abutn	nent Walls						
Abutments - Abutn Element Group	Abutments				Length	Width	25.00
					Length Height	1.45 Count	2.00
Element Group	Abutments				-		2.00
Element Group Element Name	Abutments Abutment Walls North and South sides Precast Concrete				Height	1.45 Count	2.00
Element Group Element Name Location	Abutments Abutment Walls North and South sides				Height	1.45 Count Total Quantity ited Inspection ment	2.00
Element Group Element Name Location Material	Abutments Abutment Walls North and South sides Precast Concrete				Height	1.45 Count Total Quantity ited Inspection ment ign	2.00
Element Group Element Name Location Material Element Type	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame	Good	Fair	Poor	Height	1.45 Count Total Quantity ited Inspection ment ign derate	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None		Fair 0.00	Poor 0.00	Height Limi Environr Imi Moc	1.45 Count Total Quantity ited Inspection ment ign derate	2.00
Element Group Element Name Location Material Element Type Protection System	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell.		·		Height Limi Environr Imi Moc	1.45 Count Total Quantity ited Inspection ment ign derate	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell.		·		Height Limi Environr Imi Moc	1.45 Count Total Quantity ited Inspection ment ign derate	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50		0.00		Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign derate	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50	0.00	0.00	0.00	Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign Jerate ere	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50	0.00 Maintenance Ne	0.00	0.00	Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign Jerate ere	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50	0.00 Maintenance Ne	0.00	0.00	Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign Jerate ere	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments Performance Defici None	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50	0.00 Maintenance No None Priority	eeds Cost	0.00 Priority Comm	Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign Jerate ere	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Abutments Abutment Walls North and South sides Precast Concrete Legs of rigid frame None Units Excell. sq.m 72.50 encies	0.00 Maintenance Ne	eeds	0.00 Priority Comm	Height Height Limi Environr Ben Moc Sev	1.45 Count Total Quantity ited Inspection ment ign Jerate ere	2.00



Structure Number:	19-1196390 BR01
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wunicipal Structur	•				Stru		19-1196390	
oundation - Found	dation (below gr	ound leve	l)					
Element Group	Foundation					Length	Width	
Element Name	Foundation (belo	w ground l	evel)			Height	Count	
Location	Below Structure						Total Quantity	0.00
Material						✓ Limited 1	Inspection	
Element Type							it	
Protection System	None					Benign		
Condition Data	Units Ex	cell.	Good	Fair	Poor	Moderate	e	
		0.00	0.00	0.00	0.00	Severe		
Comments								
Limit Inspection.								
Performance Defici	encies	r	Maintenance Ne	eds	Priority	Comm	nents	
None		N	lone					
Rehab/Rehabilitati	on Recommendati	ions F	Priority	Cost	Comments	I		
Approaches - Appro	oach Slab							
Approaches - Appro Element Group	oach Slab Approaches					Length	6.00 Width	17.70
	<u> </u>					Length Height	6.00 Width	17.70
Element Group	Approaches					-		
Element Group Element Name	Approaches Approach Slab	ncrete				Height	0.00 Count	2.00
Element Group Element Name Location	Approaches Approach Slab Both Ends	ncrete				Height	0.00 Count Total Quantity	2.00
Element Group Element Name Location Material	Approaches Approach Slab Both Ends		nbrane			Height	0.00 Count Total Quantity	2.00
Element Group Element Name Location Material Element Type	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as		nbrane	Fair	Poor	Height Limited Environmen Benign Moderat	0.00 Count Total Quantity Inspection	2.00
Element Group Element Name Location Material Element Type Protection System	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as	sphalt men		Fair 0.00	Poor 0.00	Height Limited Environmen Benign	0.00 Count Total Quantity Inspection	2.00
Element Group Element Name Location Material Element Type Protection System	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as Units Ex	sphalt men «cell.	Good		·	Height Limited Environmen Benign Moderat	0.00 Count Total Quantity Inspection	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as Units Ex	sphalt men «cell.	Good		·	Height Limited Environmen Benign Moderat	0.00 Count Total Quantity Inspection	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as Units Ex	sphalt men «cell.	Good		·	Height Limited Environmen Benign Moderat	0.00 Count Total Quantity Inspection	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as Units Ex sq.m	sphalt men ccell. 212.40	Good	0.00	·	Height Limited Environmen Benign Moderat	0.00 Count Total Quantity Inspection It	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as Units Ex sq.m	sphalt men ccell. 212.40	Good 0.00	0.00	0.00	Height Height Limited Environmen Benign Ø Moderat Severe	0.00 Count Total Quantity Inspection It	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized a: Units Ex sq.m	sphalt men ccell. 212.40	Good 0.00	0.00	0.00	Height Height Limited Environmen Benign Ø Moderat Severe	0.00 Count Total Quantity Inspection It	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized a: Units Ex sq.m	sphalt men ccell. 212.40	Good 0.00	0.00	0.00	Height Height Limited Environmen Benign Ø Moderat Severe	0.00 Count Total Quantity Inspection It	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as sq.m	sphalt men ccell. 212.40	Good 0.00	0.00	0.00	Height Height Limited Environmen Benign Ø Moderat Severe	0.00 Count Total Quantity Inspection It	2.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments Performance Defici	Approaches Approach Slab Both Ends Cast-in-place Con Hot rubberized as sq.m	sphalt men ccell. 212.40	Good 0.00	0.00	0.00 Priority	Height Height Limited Environmen Benign Ø Moderat Severe	0.00 Count Total Quantity Inspection It	2.00



Structure Number:	19-1196390 BR01

Decks - Deck Top (v	vith Thick Slab)				
Element Group	Decks			Length	11.90 Width 25.00
Element Name	Deck Top (with Thick Slab)			Height	0.00 Count
Location	Above structure				Total Quantity 297.50
Material	Precast Concrete			Limited	Inspection
Element Type	Precast solid or void witho	ut concrete topping		Environmen	
Protection System	Hot Rubberized asphalt me	embrane		Benign	
Condition Data	Units Excell.	Good Fair	Poor	✓ Moderat	e
	sq.m 297.50	0.00 0.00	0.00	Severe	
Comments					
Performance Defici	encies	Maintenance Needs	Priority	Comm	nents
None		None			
Rehab/Rehabilitation	on Recommendations	Priority Cost	Comments		
Decks - Soffit - Thic	k Slab				
Element Group	Decks			Length	11.00 Width 3.70
Element Name	Soffit - Thick Slab	Exterior		Height	Count
Location	Underside of deck				Total Quantity 40.70
Material	Precast Concrete			Limited	Inspection
Element Type				Environmen	t
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	✓ Moderat	e
	sq.m 38.70	1.00 1.00	0.00	Severe	
Comments	ag adga (wast sida)				
Medium scaling alor	ig euge (west side)				
Performance Defici	encies	Maintenance Needs	Priority	Comn	nents
Rehab/Rehabilitation	on Recommendations	Priority Cost	Comments		



Region of Halton ction E

Municipal Structure	e Inspection Form			Stru	cture Number:	19-1196390 BR01
Decks - Soffit - Thic	k Slab					
Element Group	Decks				Length	11.00 Width 23.00
Element Name	Soffit - Thick Slab		Interior		Height	Count
Location	Underside of deck					Total Quantity 253.00
Material	Precast Concrete				Limited	Inspection
Element Type					Environmen	t
Protection System	None				J Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Moderat	e
	sq.m 248.00	3.00	1.00	1.00	Severe	
Comments		• <u> </u>				
	: End, 2.5 m from South Abu ght spalling and light scalin		mmx500mm del	aminated piece	of concrete	
	ced out from between some		e)			
Performance Defici	encies	Maintenance N	eeds	Priority	Comm	nents
None		None				
Rehab/Rehabilitatio	on Recommendations	Priority	Cost	Comments	Ι	
Minor Rehabilitation	ı	1-5 yrs	\$3,500	Removal and p	atch repair concr	ete
Decks - Wearing Su	rface					
Element Group	Decks				Length	11.90 Width 17.70
Element Name	Wearing Surface				Height	0.00 Count
Location	Above structure					Total Quantity 210.63
Material	Asphalt				Limited I	nspection
Element Type					Environmen	
Protection System	None				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Moderate	2
condition Data	·		·	0.00	✓ Severe	
Comments	sq.m 160.63	50.00	0.00	0.00		
Deaf and a second Deffect				Duit a site of		
Performance Defici	encies	Maintenance N	eeds	Priority	Comm	nents
Performance Defici	encies	Maintenance No	eeds	Priority	Comm	nents
Performance Defici	encies	Maintenance No	eeds	Priority	Comn	nents
					Comm	nents
	encies on Recommendations	Maintenance No		Priority Comments	Comm	nents
					Comm	nents



Municipal Structure	e Inspection Form			Str	ructure Number:	19-1196390 BR01
Embankments & St	reams - Embankments					
Element Group	Embankments & Streams				Length	Width
Element Name	Embankments				Height	Count 4.00
Location	All Quadrants					Total Quantity 4.00
Material	Other				Limited	Inspection
Element Type					Environmen	t
Protection System	None				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Modera	te
	Each 0.00	4.00	0.00	0.00	Severe	
Comments						
Performance Defici	encies	Maintenance Ne	eds	Priority	Comn	nents
None		None				
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments	•	
Embankments & St	reams - Slope Protectio	n				
Element Group	Embankments & Streams				Length	Width
Element Name	Slope Protection				Height	Count 4.00
Location	All Quadrants					Total Quantity 4.00
Material	Vegetation				Limited	Inspection
Element Type					Environmen	t
Protection System	None				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Modera	te
	Each 0.00	4.00	0.00	0.00	Severe	
Comments						
Performance Defici	encies	Maintenance Ne	eds	Priority	Comn	nents
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments	I	



Municipal Structur	e Inspection Form			Str	ucture Number:	19-1196390	BR01
Sidewalks/Curbs - (Curbs						
Element Group	Sidewalks/Curbs				Length	11.90 Width	0.55
Element Name	Curbs		Headwalls		Height	0.20 Count	2.00
Location	East and West Sides					Total Quantity	17.85
Material	Cast-in-place Concrete				Limited	Inspection	
Element Type					Environmen	t	
Protection System	None				Benign		
Condition Data	Units Excell.	Good	Fair	Poor	Moderat	e	
	sq.m 17.85	0.00	0.00	0.00	Jevere		
Comments							
Performance Defici	encies	Maintenance Ne	eds	Priority	Comr	nents	
None		None					
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments			
				I			
	a . a						
	reams - Streams & Wate	rways					
Element Group	Embankments & Streams				Length	Width	
Element Name	Streams & Waterways				Height	Count	1.00
Location	Through structure				_	Total Quantity	1.00
Material					Limited	Inspection	
Element Type					Environmen	t	
Protection System	None				Moderat	e	
Condition Data	Units Excell.	Good	Fair	Poor	Severe		
Comments	All 0.00	1.00	0.00	0.00			
	ners of structure - Regrade	to provide positiv	e drainage				
		I		1			
Performance Defici	encies	Maintenance Ne		Priority	Comr	nents ge through structure needs t	to be regraded
		Bridge Deck Drainage		1-5 years	Drama		o be regraded
Dohoh /Dohohilitot	on Decommendations	Drievity	0	Commente			
kenad/kenabilitatio	on Recommendations	Priority	Cost	Comments			
				1			



Region of Halton ction E

Municipal Structur	e Inspection Form		Struct	ure Number:	19-1196390 BR01
Abutments - Wing	walls				
Element Group	Abutments			Length	1.15 Width
Element Name	Wingwalls			Height	1.78 Count 2.00
Location	East Side				Total Quantity 4.09
Material	Cast-in-place Concrete			Limited Insp	pection
Element Type	Reinforced Concrete			Environment	
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	✓ Moderate	
	sq.m 4.09	0.00 0.00	0.00	Severe	
Comments					
Performance Defici	iencies	Maintenance Needs	Priority	Commen	ts
None		None			
Rehab/Rehabilitati	on Recommendations	Priority Co	ost Comments		
			I		
Retaining Walls - W					
Element Group	Retaining Walls			Length	6.00 Width
Element Name	Walls			Height	1.00 Count 2.00
Location	East Side				Total Quantity 12.00
Material	Precast Concrete			Limited Ins	pection
Element Type	Retained soil systems				
				Environment	
Protection System	None			Benign	
Protection System Condition Data	,	Good Fair	Poor	Benign Moderate	
Condition Data	None		_	Benign	
	None Units Excell.		_	Benign Moderate	
Condition Data	None Units Excell.		_	Benign Moderate	
Condition Data	None Units Excell.		_	Benign Moderate	
Condition Data	None Units Excell. sq.m 12.00		_	Benign Moderate	ts
Condition Data Comments	None Units Excell. sq.m 12.00	0.00 0.00	0.00	 □ Benign ✓ Moderate □ Severe 	ts
Condition Data Comments	None Units Excell. sq.m 12.00	0.00 0.00	0.00	 □ Benign ✓ Moderate □ Severe 	ts
Condition Data Comments Performance Defici	None Units Excell. sq.m 12.00	0.00 0.00 Maintenance Needs) 0.00 Priority	 □ Benign ✓ Moderate □ Severe 	ts
Condition Data Comments Performance Defici	None Units Excell. sq.m 12.00	0.00 0.00	0.00	 □ Benign ✓ Moderate □ Severe 	ts
Condition Data Comments Performance Defici	None Units Excell. sq.m 12.00	0.00 0.00 Maintenance Needs) 0.00 Priority	 □ Benign ✓ Moderate □ Severe 	ts



Municipal Structure	e Inspection Form			St	ructure Number:	19-1196390 BR01
Approaches - Appro	oach Guiderail					
Element Group	Approaches				Length	Width
Element Name	Approach Guiderail		Extruder End		Height	Count 4.00
Location	All Quadrants					Total Quantity 4.00
Material	Steel				Limited 1	Inspection
Element Type					Environmen	t
Protection System	Hot dip galvanized				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Moderate	e
	Each 0.00	4.00	0.00	0.00	✓ Severe	
Comments						
Performance Defici	encies	Maintenance Ne	eds	Priority	Comm	nents
None		None				
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments	•	

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East Elevation



West Elevation



Structure Number: 19-1196390 BR01



Looking East (Note Scaling on Exterior Soffit)



Typical Joint





Form at Joint (several joints near East End)



Spall at Second Joint from East End





Delamination in third panel from West End



Wide Crack and Scaling on Barrier Wall (typical both sides)





Typical Wingwall / Retaining Wall



Typical RSS





Extension and Header Wall on West Side



Crack on Approach Wearing Surface



Structure Number: 19-1196390 BR01



Looking North at Bridge



Looking South at Bridge





Region of Halton **OSIM Inspection Forms**

For the Bridge on Winston Churchill Blvd Located 1.7 km North of Steeles Avenue Structure No. 19-1196390 BR03

Prepared by:

Hatch Mott MacDonald 2800 Speakman Drive Mississauga, ON, Canada L5K 2R7 T: 905 403 4455 F: 905 855 2607 Project Number: 336921

	Name, Title	Signature	Date
Prepared By	J.Hallett, E.I.T.	Julitatett	MAY 27/15
Reviewed By	J.Luckai, P.Eng	Ath Juli	MAY 27/15
Approved By	C.Pasqualino, P.Eng	Bayme .	nay 28/15

Region of Halton

Municipal Structur	e Inspection Form	Stru	cture Number: 19-1196390 BR03
Inventory Data			
Structure Name	Winston Churchill Blvd, Lot 3, Conc XI Hwy No.	19	Key Photo
Cross. Type Over	🗸 Road 🗌 Ral 🗌 Ped 🗌 Nav. Water 🗌 Non	n-Nav. Water 🗌 Other	
Cross. Type Under	🗌 Road 🗌 Ral 🗌 Ped 🗌 Nav. Water 🗸 Non	n-Nav. Water 🗌 Other	34863
Road Name	Winston Churchill Blvd		
Structure Location	1.7 km North of Steeles Avenue		
Northing	595918.0 Easting 4830092.0 Cur.Rep.Value]*
Owner(s) / %	Region of Halton 50%		
Shared	Regional Municipality of Peel 50%	Heritage Status	Not Considered for Designation
MTO Region	Central	Road Side Env.	Rural
MTO District	Central	Road Class	Arterial
County	Halton	Lane Type	
Geographic Twp.		Posted Speed	80 No. of Lanes 2
Structure Category	Bridge	AADT	12,625 Pct. Trucks 2
Struct.SubCategory	Frame		
Structure Type	Rigid Frame, Vertical Legs	Interchange Numb	er
Structure Material	Reinforced Precast Concrete	Design Load Code	CHBDC
Total Deck Length	6.11 m Road Width 16.57 m	Interchange Struct	ure Number
Overall Width	25.0 m Vert. Clear 0.00 m	Detour Length	0 km Skew Angle 0
Total Deck Area	152.75 m ² No. of Spans 1	Fill on Structure	0.4 m Struct. Dir. North/South
Special Routes	☐ Transit 🗸 School 🗌 Truck 🗌 Bicycle	Insp. Duration	1 hr

*Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure

Spans

5.2 m			
2011 уууу	Year of Last Major Rehab		уууу
10/09/2012 mm/dd/yyyy	Contract No. When Built		
mm/dd/yyyy	Last Evaluation		mm/dd/yyyy
mm/dd/yyyy	Current Load Limit	t t	t
mm/dd/yyyy	Load Limit By-Law No.		mm/dd/yyyy
mm/dd/yyyy	By-Law Expiry Date		mm/dd/yyyy
	10/09/2012 mm/dd/yyyy mm/dd/yyyy mm/dd/yyyy mm/dd/yyyy	10/09/2012 mm/dd/yyyy Contract No. When Built mm/dd/yyyy Last Evaluation mm/dd/yyyy Current Load Limit mm/dd/yyyy Load Limit By-Law No.	10/09/2012 mm/dd/yyyy Contract No. When Built mm/dd/yyyy Last Evaluation mm/dd/yyyy Current Load Limit mm/dd/yyyy Load Limit By-Law No.



Region of Halton Municipal Structur	e Inspection Form		Structure Nu	mber	19-1196390 BR03
			Structure Nu		19-1190390 BR03
Field Inspection Inf				M Enhanced	
Inspection Date	05/06/2015 mm/dd/yyyy	Multi Day Inspection			OSIM BCI 99.6
Inspector	C.Chan, E.I.T.	Eng. Respon	sible J.Luckai, P.	Eng	
Others in Party	J.Hallett, E.I.T.		_		
Access Equip.	Lift Ladder Boat Brid	dge Master Other			
Other Equip.	Hammer, Camera, Measuring Tape				
Weather	Sunny		Temperatu	ıre	20 °C
Additional Investig	ation Required:				
Investigation			Priority		Estimated Cost
_		Non	e Normal	Urgent	
Detailed Deck Cond	ition Survey	7			\$0
Delamination Surve	y of Asphalt-Covered Deck	7			\$0
Concrete Substruct	ure Condition Survey	7			\$0
Detailed Coating Co	ndition Survey	7			\$0
Post-Tensioned Stra	and Investigation	1			\$0
Underwater Investig	gation	√			\$0
Fatigue Investigatio	n	7			\$0
Seismic Investigatio	n	7			\$0
Structure Evaluation	n	✓			\$0
Monitoring of Defor	rmation, Movements and Settlements	✓			\$0
Monitoring of Crack	Widths	7			\$0
Investigation Notes				Total C	Cost \$0
	,			101010	,
Overall Structure N	lotes:				
Recommended Work	on Structure 🗸 None 🗌] Minor Rehab 🗌 M	ajor Rehab 🗌 R	eplace 🗌 Rem	ove
Timing of Recommer	nded Work J to 5 yea	rs 🗌 6	to 10 years		
Overall					
Comments					
BCI Change Erron	eous input on 9-Oct-12 Inspection Repo	×+			
Justification	leous input on 9-Oct-12 inspection Repo	rt			
Next Inspection	05/06/2017 mm/dd/yyyy	Estir	nated Load Limit	tt [t t



Structure Nu	umber:	19-

12 Slippery surfaces

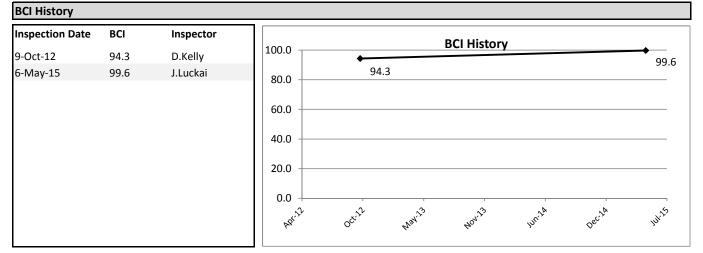
16 Other

13 Flooding/channel blockage

14 Undermining of foundation

15 Unstable embankments

9-1196390 BR03



All Bci values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated

06 Bearing not uniformly loaded/unstable

07 Jammed expansion joint

09 Rough riding surface

10 Surface ponding

11 Deck drainage

08 Pedestrian/vehicular hazard

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity

- 02 Excessive deformations (deflections & rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

01 Lift and Swing Bridge Maintenance	07 Repair to Structural Steel	13 Erosion Control at Bridges
02 Bridge Cleaning	08 Repair of Bridge Concrete	14 Concrete Sealing
03 Bridge Handrail Maintenance	09 Repair of Bridge Timber	15 Rout and Seal
04 Painting Steel Bridge Structures	10 Bailey bridges - Maintenance	16 Bridge Deck Drainage
05 Bridge Deck Joint Repair	11 Animal/Pest Control	17 Scaling (Loose Concrete or ACR Steel)
06 Bridge Bearing Maintenance	12 Bridge Surface Repair	

Hatch Mott MacDonald

Structure Number:	19-1196390 BR03

Approaches - Wear	ing Surface (Approach)							
Element Group	Approaches				Lengt	h	6.00 Width	16.57
Element Name	Wearing Surface (Approac	n)			Heigh	t	0.00 Count	2.00
Location	Both Ends]		Total Quantity	198.84
Material	Cast-in-place Concrete					Limited	Inspection	
Element Type					Enviro	onment	t	
Protection System	Hot rubberized asphalt me	mbrane				Benign		
Condition Data	Units Excell.	Good	Fair	Poor		Modera	te	
	sq.m 198.84	0.00	0.00	0.00	1	Severe		
Comments								
Performance Defici	encies	Maintenance N	eeds	Priority		Comm	ients	
None		None						
_								
Rehab/Rehabilitation	on Recommendations	Priority yrs.	Cost \$0		nents			
Hone		<i>y</i> 13.	γu					
/2								
Barriers - Barrier/P					1.			0.00
Element Group	Barriers				Lengt		18.11 Width	0.00
Element Name	Barrier/Parapet Wall		Interior		Heigh	t	0.95 Count	2.00
Location	Both Sides						Total Quantity	34.41
Material	Cast-in-place Concrete						Inspection	
Element Type	Safety Shape without railir	g			Enviro	onment	t	
Protection System	None					Benign		
Condition Data	Units Excell.	Good	Fair	Poor		Modera	te	
Comments	sq.m 24.41	9.00	1.00	0.00	7	Severe		
- Light scaling								
				1		1		
Performance Defici	encies	Maintenance N None	eeds	Priority		Comm	ients	
None		None						
Robah/Robahilitati	on Recommendations	Priority	Cost	Comm	ante			
None		rioncy	COSL	Comm	iciits			
None		yrs.	\$0					
None		yrs.	\$0					



Region of Halton Muni

Municipal Structure	e Inspection Form			Sti	ructure Num	ber:	19-1196390	BR03
Barriers - Barrier/P	arapet Wall							
Element Group	Barriers				Length		18.11 Width	0.00
Element Name	Barrier/Parapet Wall		Exterior		Height		0.80 Count	2.00
Location	Both Ends]		Total Quantity	28.98
Material	Cast-in-place Concrete					imited Insp	pection	
Element Type	Safety Shape without ra	iling			Environ	ment		
Protection System	None				В	enign		
Condition Data	Units Excell.	Good	Fair	Poor	M	loderate		
	sq.m 25.	98 2.00	1.00	0.00	. √ s	evere		
Comments]
- Light scaling								
Performance Defici	encies	Maintenance N	leeds	Priority	c	Comment	S	
None		None						
	on Recommendations	Priority	Cost		ients			
None		yrs.	\$0	1				
Abutments - Abutm	nent Walls							
Element Group	Abutments				Length		Width	25.00
Element Name	Abutment Walls				Height		1.50 Count	2.00
Location	North and South Sides]		Total Quantity	75.00
Material	Precast Concrete					imited Insp	pection	
Element Type	Legs of rigid frame				Environ	ment		
Protection System	None				√ в	enign		
Condition Data	Units Excell.	Good	Fair	Poor	M	loderate		
	sq.m 75.	00 0.00	0.00	0.00] 🗌 s	evere		
Comments								
Performance Defici	encies	Maintenance N	leeds	Priority	c	Comment	s	
None		None						

Hatch Mott MacDonald

Rehab/Rehabilitation Recommendations

None

Cost

\$0

Comments

Priority

yrs.

Municipal Structure	e Inspection Form		Struct	ure Number:	19-1196390 BR0	3
Foundation - Found	lation (below ground lev	vel)				
Element Group	Foundation			Length	Width	
Element Name	Foundation (below ground	level)		Height	Count	
Location	Below Structure				Total Quantity	0.00
Material				✓ Limited I	nspection	
Element Type				Environment		
Protection System	None			Benign		
Condition Data	Units Excell.	Good Fair	Poor	Moderate	2	
	0.00	0.00 0.00	0.00	Severe		
Comments						
Limited Inspection						
Performance Defici	encies	Maintenance Needs	Priority	Comme	ents	
None		None				
	on Recommendations	Priority Cos	t Comments			
None			I			
Approaches - Appro	oach Slab					
Element Group	Approaches			Length	6.00 Width	16.57
Element Name	Approach Slab			Height	0.95 Count	2.00
Location	Both Ends				Total Quantity	198.84
Material	Cast-in-place Concrete			Limited I	nspection	
Element Type				Environment		
Protection System	Hot Rubberized asphalt me	embrane		Benign		
Condition Data	Units Excell.	Good Fair	Poor	✓ Moderate	2	
	sq.m 198.84	0.00 0.00	0.00	Severe		
Comments						
Performance Defici	encies	Maintenance Needs	Priority	Comme	ents	
None		None				
	on Recommendations	Priority Cos	t Comments			
None			Ι			



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Structure Number:	19-1196390 BR03

Decks - Deck Top (v	vith Thick Slab)						
Element Group	Decks				Length	6.11 Width	25.00
Element Name	Deck Top (with Thick Slab)				Height	0.00 Count	
Location	Above structure					Total Quanti	t y 152.75
Material	Precast Concrete					nited Inspection	
Element Type	Precast solid or void without concrete topping				Environn	nent	
Protection System	Hot Rubberized asphalt me	embrane			Ber	nign	
Condition Data	Units Excell.	Good	Fair	Poor	✓ Mo	derate	
Comments	sq.m 152.75	0.00	0.00	0.00	Sev	vere	
Performance Defici	encies	Maintenance Ne	eeds	Priority	Co	omments	
None		None					
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments			
Decks - Soffit - Thic Element Group	k Slab				Length	5.20 Width	a 3.80
Element Name	Soffit - Thick Slab		Exterior		Height	Count	
Location	Underside of Deck		<u> </u>		Ū.	Total Quanti	t y 19.76
Material	Precast Concrete				🗌 Lim	nited Inspection	
Element Type					Environn	nent	
Protection System	None				Bei	nign	
Condition Data	Units Excell.	Good	Fair	Poor	✓ Mo	derate	
Comments	sq.m 19.76	0.00	0.00	0.00	Sev	vere	
Performance Defici	encies	Maintenance Ne	eds	Priority	Co	omments	
Rehab/Rehabilitatio	on Recommendations	Priority	Cost	Comments			
				I			



			Structure	Number: 19-1196390 BR03
Decks - Soffit - Thic	k Slab			
Element Group	Decks		Lei	ngth 5.20 Width 23.00
Element Name	Soffit - Thick Slab	Interior	Не	ight Count
Location	Underside of deck			Total Quantity 119.60
Material	Precast Concrete		[Limited Inspection
Element Type			En	vironment
Protection System	None			✓ Benign
Condition Data	Units Excell.	Good Fair	Poor	Moderate
	sq.m 119.60	0.00 0.00	0.00	Severe
Comments				
Performance Defici	encies	Maintenance Needs	Priority	Comments
None		None		
	on Recommendations	Priority Cos	t Comments	
None			I	
Decks - Wearing Su	rface			
Element Group	Decks		Lei	ngth 18.10 Width 16.57
Element Name	Wearing Surface		He	ight 0.00 Count
Location	Above structure			
	Above structure			Total Quantity 299.92
Material	Asphalt		[Total Quantity 299.92 Limited Inspection
Material Element Type			[
			[Limited Inspection
Element Type	Asphalt	Good Fair	[En [Poor [Limited Inspection
Element Type Protection System Condition Data	Asphalt None	,,,	Poor [Limited Inspection vironment Benign
Element Type Protection System	Asphalt None Units Excell.		Poor [Limited Inspection vironment Benign Moderate
Element Type Protection System Condition Data	Asphalt None Units Excell.		Poor [Limited Inspection vironment Benign Moderate
Element Type Protection System Condition Data	Asphalt None Units Excell.		Poor [Limited Inspection vironment Benign Moderate
Element Type Protection System Condition Data	Asphalt None Units Excell. sq.m 274.92		Poor [Limited Inspection vironment Benign Moderate
Element Type Protection System Condition Data Comments	Asphalt None Units Excell. sq.m 274.92	25.00 0.00	Poor [0.00 [Limited Inspection vironment Benign Moderate Severe
Element Type Protection System Condition Data Comments	Asphalt None Units Excell. sq.m 274.92	25.00 0.00	Poor [0.00 [Limited Inspection vironment Benign Moderate Severe
Element Type Protection System Condition Data Comments Performance Defici	Asphalt None Units Excell. sq.m 274.92 encies	Maintenance Needs	Poor [0.00 [Priority	Limited Inspection vironment Benign Moderate Severe
Element Type Protection System Condition Data Comments Performance Defici	Asphalt None Units Excell. sq.m 274.92	Maintenance Needs	Poor [0.00 [Limited Inspection vironment Benign Moderate Severe
Element Type Protection System Condition Data Comments Performance Defici	Asphalt None Units Excell. sq.m 274.92 encies	Maintenance Needs	Poor [0.00 [Priority	Limited Inspection vironment Benign Moderate Severe

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Municipal Structure	e Inspection Form		Str	ucture Number:	19-1196390 BR03
Embankments & St	reams - Embankments				
Element Group	Embankments & Streams			Length	Width
Element Name	Embankments			Height	Count 4.00
Location	All Quadrants				Total Quantity 4.00
Material	Vegetation			Limited	Inspection
Element Type				Environment	:
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	Modera	te
	Each 0.00	4.00 0.00	0.00	Severe	
Comments					
Performance Defici	encies	Maintenance Needs	Priority	Comm	ents
None		None			
Rehab/Rehabilitation	on Recommendations	Priority Cost	Comments		
Embankments & St	reams - Slope Protection	l			
Element Group	Embankments & Streams			Length	Width
Element Name	Slope Protection			Height	Count 4.00
Location	All Quadrants				Total Quantity 4.00
Material	Vegetation			Limited	Inspection
Element Type				Environment	:
Protection System					
	None			Benign	
Condition Data	None Units Excell.	Good Fair	Poor	Benign	te
		, <u> </u>	Poor 0.00		te
	Units Excell.	,,,,,		Modera	te
Condition Data	Units Excell.	,,,,,		Modera	te
Condition Data	Units Excell.	,,,,,		Modera	te
Condition Data	Units Excell. Each 0.00	,,,,,		Modera	
Condition Data Comments	Units Excell. Each 0.00	4.00 0.00	0.00	Modera Severe	
Condition Data Comments	Units Excell. Each 0.00	4.00 0.00	0.00	Modera Severe	
Condition Data Comments	Units Excell. Each 0.00	4.00 0.00	0.00	Modera Severe	
Condition Data Comments Performance Defici	Units Excell. Each 0.00	4.00 0.00	0.00	Modera Severe	
Condition Data Comments Performance Defici	Units Excell. Each 0.00 encies	4.00 0.00	0.00	Modera Severe	



Municipal Structur	e Inspection Form			Structu	re Number:	19-1196390	BR03
Sidewalks/Curbs -	Curbs						
Element Group	Sidewalks/Curbs				Length	18.10 Width	0.55
Element Name	Curbs	Headw	valls		Height	0.20 Count	1.00
Location	East and West sides					Total Quantity	13.58
Material	Cast-in-place Concrete				Limited	Inspection	
Element Type					Environment	t	
Protection System	None				Benign		
Condition Data	Units Excell.	Good Fair	Poor		Modera	te	
	sq.m 0.00	13.58	0.00	0.00	Severe		
Comments							
- Light abrasions							
Performance Defici	encies	Maintenance Needs	Prio	ity	Comm	ients	
None		None					
Rehab/Rehabilitati	on Recommendations	Priority	Cost Com	ments			
			I				
	reams - Streams & Wate	rways					
Element Group	Embankments & Streams				Length	Width	
Element Name	Streams & Waterways				Height	Count	1.00
Location	Through Structure					Total Quantity	1.00
Material					Limited	Inspection	
Element Type					Environment	t	
Protection System	None				Benign		
Condition Data	Units Excell.	Good Fair	Poor		Modera	te	
	All 0.00	1.00	0.00	0.00	Severe		
Comments	mers of structure - Regrade	to provide positive draina	ge				
			80				
Performance Defici	encies	Maintenance Needs	Prio	ity	Comm		<u> </u>
		Bridge Deck Drainage	1-5 ye	ars	Drainag	e through structure needs to	o be regraded
Rehab/Rehabilitati	on Recommendations	Priority	Cost Com	ments			
			I				



Municipal Structure	e Inspection Form			Str	ucture Number:	19-1196390 BR03
Abutments - Wingv	walls					
Element Group	Abutments				Length	1.10 Width
Element Name	Wingwalls				Height	2.30 Count 2.00
Location	East Side					Total Quantity 5.06
Material	Cast-in-place Concrete				Limited	Inspection
Element Type					Environmen	t
Protection System	None				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	✓ Modera	ate
	sq.m 5.0	6 0.00	0.00	0.00	Severe	
Comments	· · ·					
Performance Defici	encies	Maintenance Nee	eds	Priority	Comr	nents
None		None				
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments	I	
Retaining Walls - W	Valls					
Retaining Walls - W Element Group	Valls Retaining Walls				Length	6.20 Width
	1				Length Height	6.20 Width 1.40 Count2.00
Element Group	Retaining Walls					
Element Group Element Name	Retaining Walls Walls				Height	1.40 Count 2.00
Element Group Element Name Location	Retaining Walls Walls East Side				Height	1.40 Count 2.00 Total Quantity 17.40 Inspection
Element Group Element Name Location Material	Retaining Walls Walls East Side Precast Concrete				Height	1.40 Count 2.00 Total Quantity 17.40 Inspection t
Element Group Element Name Location Material Element Type	Retaining Walls Walls East Side Precast Concrete Retained soil systems	Good	Fair		Height Limited Environmen Benign	1.40 Count 2.00 Total Quantity 17.40 Inspection
Element Group Element Name Location Material Element Type Protection System	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell.		Fair 0.00	Poor 0.00	Height Limited Environmen Benign V Modera	1.40 Count 2.00 Total Quantity 17.40 d Inspection t
Element Group Element Name Location Material Element Type Protection System	Retaining Walls Walls East Side Precast Concrete Retained soil systems None		·		Height Limited Environmen Benign	1.40 Count 2.00 Total Quantity 17.40 d Inspection t
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell.		·		Height Limited Environmen Benign V Modera	1.40 Count 2.00 Total Quantity 17.40 d Inspection t
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell.		·		Height Limited Environmen Benign V Modera	1.40 Count 2.00 Total Quantity 17.40 d Inspection t
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.4	0 0.00	0.00	0.00	Height Limited Environmen Benign V Modera Severe	1.40 Count 2.00 Total Quantity 17.40 d Inspection it
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.4		0.00		Height Limited Environmen Benign V Modera	1.40 Count 2.00 Total Quantity 17.40 d Inspection it
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.4	0 0.00	0.00	0.00	Height Limited Environmen Benign V Modera Severe	1.40 Count 2.00 Total Quantity 17.40 d Inspection it
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.4	0 0.00	0.00	0.00	Height Limited Environmen Benign V Modera Severe	1.40 Count 2.00 Total Quantity 17.40 d Inspection it
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.4	0 0.00	0.00	0.00	Height Limited Environmen Benign V Modera Severe	1.40 Count 2.00 Total Quantity 17.40 d Inspection it
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls East Side Precast Concrete Retained soil systems None Units Excell. sq.m 17.44 encies	0 0.00	0.00	0.00 Priority	Height Limited Environmen Benign V Modera Severe	1.40 Count 2.00 Total Quantity 17.40 d Inspection it



Municipal Structur	e Inspection Form			St	ructure Number:	19-1196390 BR03
Approaches - Appro	oach Guiderail					
Element Group	Approaches				Length	Width
Element Name	Approach Guiderail		Extruder End		Height	Count 4.00
Location	All Quadrants]	Total Quantity 4.00
Material	Steel				Limited	Inspection
Element Type					Environment	t
Protection System	Hot dip galvanized				Benign	
Condition Data	Units Excell.	Good	Fair	Poor	Modera	te
	Each 0.0	0 4.00	0.00	0.00	✓ Severe	
Comments						
Performance Defici	encies	Maintenance Ne	eeds	Priority	Comm	nents
None		None				
Rehab/Rehabilitati	on Recommendations	Priority	Cost	Comments		



Structure Number: 19-1196390 BR03



East Elevation



West Elevation



Structure Number: 19-1196390 BR03



Looking North at Bridge



Looking South



Structure Number: 19-1196390 BR03



South East Abutment



North East Abutment





Typical Soffit



Typical Joint and South Abutment Wall





Pounding (Typical on East Side)



Looking East Through the Structure



Structure Number: 19-1196390 BR03



Deck Slab Joint (Typical)



Extension on West Side





Disintegrated Concrete at RSS Connection



Looking Downstream





Typical Joint on Barrier Wall



Typical Scaling on Barrier Wall





Region of Halton **OSIM Inspection Forms**

For the Bridge on Winston Churchill Blvd Located 0.5 km North of Steeles Avenue Structure No. 19-1196390 BR05

Prepared by:

Hatch Mott MacDonald 2800 Speakman Drive Mississauga, ON, Canada L5K 2R7 T: 905 403 4455 F: 905 855 2607 Project Number: 336921

7	Name, Title	Signature	Date
Prepared By	J.Hallett, E.I.T.	Fuldellal	MA4 27/15
Reviewed By	J.Luckai, P.Eng	Att Juli	May 27/15
Approved By	C.Pasqualino, P.Eng	agagela	MAY 28/15

Region of Halton

Municipal Structur	re Inspection Form	Stru	cture Number:	19-1196	390 BR05
Inventory Data					
Structure Name	Winston Churchill Blvd, Lot 1, Conc XI Hwy No	o. 19	Key Photo		
Cross. Type Over	🗸 Road 🗌 Rail 🔤 Ped 🗌 Nav. Water 📃 N	lon-Nav. Water 🗌 Other	_		
Cross. Type Under	🗌 Road 🗌 Rail 🗌 Ped 🗌 Nav. Water 🗸 N	lon-Nav. Water 🗌 Other	1	A DOWN	445.73
Road Name	Winston Churchill Blvd			1 Production	4000
Structure Location	0.5 km North of Steeles Avenue				
Northing	596708.0 Easting 4829286.0 Cur.Rep.Va	alue	*	New York	and the second
Owner(s) / %	Region of Halton 50%		and the state of t		18-05 2015 09 49
Shared	Regional Municipality of Peel 50%	Heritage Status	Not Considered	for Designatior	า
MTO Region	Central	Road Side Env.	Rural		
MTO District	Central	Road Class	Arterial		
County	Halton	Lane Type			
Geographic Twp.		Posted Speed	60	No. of Lanes	4
Structure Category	Bridge	AADT	12,625	Pct. Trucks	2
Struct.SubCategory	Frame				
Structure Type	Rigid Frame, Vertical Legs	Interchange Numb	ber		
Structure Material	Reinforced Precast Concrete	Design Load Code			CHBDC
Total Deck Length	11.30 m Road Width 17.80 m	Interchange Struct	ure Number		
Overall Width	25.14 m Vert. Clear 0.00 m	Detour Length	0 km	Skew Angle	0 °
Total Deck Area	284.08 m ² No. of Spans 1	Fill on Structure	0 m	Struct. Dir.	North/South
Special Routes	Transit 🗸 School 🗌 Truck 🗌 Bicycle	Insp. Duration	1 hr		

*Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure

Spans

Span Name	Span Lengths	Span Name	Span Lengths
Span 1	10.4 m		
Historical Data			
Year Built	2011 уууу	Year of Last Major Rehab	уууу
Last OSIM Inspection	10/09/2012 mm/dd/yyyy	Contract No. When Built	
Last Enhanced OSIM	mm/dd/yyyy	Last Evaluation	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	Current Load Limit	t t t
Last Underwater Insp.	mm/dd/yyyy	Load Limit By-Law No.	mm/dd/yyyy
Last Condition Survey	mm/dd/yyyy	By-Law Expiry Date	mm/dd/yyyy
Rehab History			



Region of Haltor Municipal Struct	ղ ture Inspection Form	S	Structure Number:	19-1196390 BR05
Field Inspection		-		
Inspection Date	· · · · · · · · · · · · · · · · · · ·	Multi Day Inspection	✓ OSIM En	hanced OSIM BCI 98.9
Inspector	C.Chan, E.I.T.	Eng. Responsib	le J.Luckai, P.Eng	
Others in Party	J.Hallett, E.I.T.			
Access Equip.	🗌 Lift 🗌 Ladder 🗌 Boat 🗌 Br	idge Master Other		
Other Equip.	Hammer, Camera, Measuring Tape			
Weather	Sunny		Temperature	20 °C
Additional Inves	stigation Required:			
Investigation			Priority	Estimated Cost
		None	Normal Urg	
Detailed Deck Co	ondition Survey	7		\$0
Delamination Su	rvey of Asphalt-Covered Deck	7		\$0
	ucture Condition Survey	7		\$0
Detailed Coating	condition Survey	✓ 		\$0
Post-Tensioned	Strand Investigation	✓		\$0
Underwater Inve	estigation	✓ 		\$0
Fatigue Investiga	ation	✓		\$0
Seismic Investiga	ation	7		\$0
Structure Evalua	tion	✓ 		\$0
Monitoring of De	eformation, Movements and Settlements			\$0
Monitoring of Cr	rack Widths	✓		\$0
Investigation No	otes			Total Cost \$0
Overall Structur	a Natac:			
Recommended W		/ Minor Rehab 🗍 Major	r Rehab 🗌 Replace 🗌	Remove
Timing of Recomm			.0 years	
	Patch repair at PVC outlet			
Comments				
BCI Change Justification				
Next Inspection	05/06/2017 mm/dd/yyyy	Estimat	ted Load Limit	t t t



Region of Halton Municipal Structure Inspection Form

Structure Number:	19-11
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12 Slippery surfaces

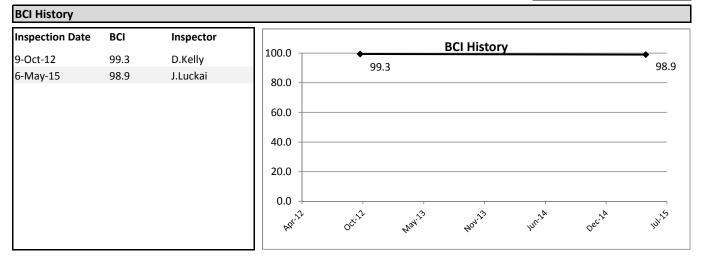
16 Other

13 Flooding/channel blockage

14 Undermining of foundation

15 Unstable embankments

-1196390 BR05



All Bci values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated

06 Bearing not uniformly loaded/unstable

07 Jammed expansion joint

09 Rough riding surface

10 Surface ponding

11 Deck drainage

08 Pedestrian/vehicular hazard

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity

- 02 Excessive deformations (deflections & rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

07 Repair to Structural Steel	13 Erosion Control at Bridges
08 Repair of Bridge Concrete	14 Concrete Sealing
09 Repair of Bridge Timber	15 Rout and Seal
10 Bailey bridges - Maintenance	16 Bridge Deck Drainage
11 Animal/Pest Control	17 Scaling (Loose Concrete or ACR Steel)
12 Bridge Surface Repair	
	08 Repair of Bridge Concrete 09 Repair of Bridge Timber 10 Bailey bridges - Maintenance 11 Animal/Pest Control

Hatch Mott MacDonald Region of Halton Municipal Structure Inspection Form

Municipal Structur	e Inspection I	Form				Sti	ructure Nun	nber:	19-1196390	BR05
Approaches - Wear	ing Surface (Approach)								
Element Group	Approaches						Length	· [6.00 Width	17.80
Element Name	Wearing Surfa	ace (Approach	ו)				Height		0.00 Count	2.00
Location	Both Sides								Total Quantity	213.60
Material	Asphalt							Limited I	inspection	
Element Type							Enviro	nment		
Protection System	None							Benign		
Condition Data	Units	Excell.	Good	Fair		Poor		Moderate	2	
	sq.m	174.60	39.00		0.00	0.00	V 9	Severe		
Comments										
Performance Defici	encies		Maintenance N	eeds		Priority		Comme	ents	
None			None							
Rehab/Rehabilitati	on Recommen	dations	Priority		Cost	Comm	ients			
Minor Rehabilitation			1-5 yrs.		\$1,000	Patch	repair at roui			
Element Group	Barriers						Length	, [23.24 Width	0.00
Element Name	Barrier/Parap	et Wall		Interio	r		Height	: [1.10 Count	2.00
Location	Both sides								Total Quantity	51.13
Material	Cast-in-place	Concrete						Limited I	nspection	
Element Type	Parapet Wall	with single ra	iling				Enviro	nment		
Protection System	None							Benign		
Condition Data	Units	Excell.	Good	Fair		Poor		Moderate	2	
	sq.m	33.13	17.00		1.00	0.00		Severe		
Comments - Medium spall on N - Light scaling elsew - Light hairline crack	here	5mm dia., 30.	7 m from NE coi	rner of ba	rrier					
Performance Defici	encies		Maintenance N	eeds		Priority		Comme	ents	
None			None							
Rehab/Rehabilitation	on Recommen	dations	Priority yrs.		Cost \$0	Comm	ients			



Region of Halton otio n E Μı

Municipal Structur	e Inspection F	orm						Stru	cture Nu	mber:		19-119639) BRC)5
Barriers - Barrier/P	arapet Wall													
Element Group	Barriers								Lengt	h	2	23.24 Width		0.00
Element Name	Barrier/Parape	et Wall			Exteri	ior			Heigh	t		0.83 Count		2.00
Location	Both Sides										т	otal Quantity	/	38.58
Material	Cast-in-place (Concrete								Limited	Inspecti	on		
Element Type	Parapet Wall v	with single ra	iling						Envir	onment	t			
Protection System	None									Benign				
Condition Data	Units	Excell.	Good		Fair		Poor		7	Modera	te			
	sq.m	36.58		2.00		0.00		0.00		Severe				
Comments														
- Some light scaling														
Performance Defici	encies		Maintena	ance Ne	eds		Priori	ty		Comm	ents			
None			None											
Rehab/Rehabilitati	on Recommend	lations	Priority			Cost		Comme	nts					
None				yrs.		\$0								
Abutments - Abutn	nent Walls												·	
Element Group	Abutments								Lengt	h		6.00 Width		25.14
Element Name	Abutment Wa	lls							Heigh	t		1.50 Count		2.00
Location	North and sou	th sides									т	otal Quantity	/	75.42
Material	Precast Concre	ete								Limited	Inspecti	on		
Element Type	Legs of rigid fr	ame							Envir	onment	t			
Protection System	None								7	Benign				
Condition Data	Units	Excell.	Good		Fair		Poor			Modera	te			
	sq.m	73.42		2.00		0.00		0.00		Severe				
Comments - Spalling around PV	(Coutlet on Sou	ith Wall												
- Staining on some j														
Performance Defici	encies		Maintena	ance Ne	eds		Priori	ty		Comm	ents			
None			None											
Rehab/Rehabilitatio		lations	Priority	1/10		¢1 000		Comme		ind DV	- out-t-+			
Minor Rehabilitation	I		1-5	yrs.		\$1,000		Patch re	pair at rou		, outlet			



Region of Halton Municipal Structure Inspection Form

Structure Number:	19-1196390 BR05
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Foundation - Found	dation (below ground lev	vel)			
Element Group	Foundation		Le	ength	0.00 Width 0.00
Element Name	Foundation (below ground	level)	Не	eight	0.00 Count 0.00
Location	Below structure				Total Quantity 0.00
Material				✓ Limited	Inspection
Element Type			Er	nvironmen	t
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	Modera	ite
	0 0.00	0.00 0.00	0.00	 Severe	
Comments					
Limited inspection.					
Performance Defici	encies	Maintenance Needs	Priority	Comn	nents
None		None			
Rehab/Rehabilitati	on Recommendations	Priority Cost	t Comments	I	
None		yrs. \$C)		
Approaches - Appr	oach Slab				
Element Group	Approaches		Le	ength	6.00 Width 17.80
Element Name	Approach Slab		н	eight	0.00 Count 2.00
Location	Both ends				Total Quantity 213.60
Material	Cast-in-place Concrete			Limited	Inspection
Element Type			Er	nvironmen	t
Protection System	Hot rubberized aphalt mer	nbrane		Benign	
Condition Data	Units Excell.	Good Fair	Poor	Modera	
	UTILS LACEIL				
		,,,	·		
Comments	sq.m 213.60	,,,,	0.00	Severe	
Comments		,,,	·		
Comments		,,,	·		
	sq.m 213.60	0.00 0.00	0.00	Severe	
Comments Performance Defici	sq.m 213.60	,,,	·		
Performance Defici	sq.m 213.60	0.00 0.00 Maintenance Needs	0.00	Severe	
Performance Defici	sq.m 213.60	0.00 0.00 Maintenance Needs	0.00	Severe	
Performance Defici	sq.m 213.60	0.00 0.00 Maintenance Needs	0.00 Priority	Severe	
Performance Defici	sq.m 213.60	0.00 0.00 Maintenance Needs None	0.00 Priority t Comments	Severe	
Performance Defici None Rehab/Rehabilitati	sq.m 213.60	0.00 0.00 Maintenance Needs None Priority Cost	0.00 Priority t Comments	Severe	



Region of Halton Municipal Structure Inspection Form

Structure Number:	19-1196390 BR05

Decks - Deck Top (v	vith Thick Slab)							
Element Group	Decks				Length		11.30 Width	25.14
Element Name	Deck Top (with Thick Slab)				Height		0.00 Count	2.00
Location	Above structure						Total Quantity	284.08
Material	Precast Concrete				🗌 L	imited I	Inspection	
Element Type	Precast solid or void witho	ut concrete toppi	ng		Enviror	nment		
Protection System	Hot rubberized asphalt me	embrane			E	Benign		
Condition Data	Units Excell.	Good	Fair	Poor	V N	loderate	e	
Comments	sq.m 284.08	0.00	0.00	0.00	<u> </u>	Severe		
Performance Defici	encies	Maintenance Ne	eds	Priority	c	Comme	ents	
None		None						
Rehab/Rehabilitation	on Recommendations	Priority	Cost		its			
None		yrs.	\$0					
Decks - Soffit - Thic	k Slab							
Decks - Soffit - Thic Element Group	k Slab Decks				Length		10.40 Width	3.80
			Exterior		Length Height		10.40 Width	3.80 0.00
Element Group	Decks		Exterior		-			0.00
Element Group Element Name	Decks Soffit - Thick Slab		Exterior		Height		0.00 Count	0.00
Element Group Element Name Location	Decks Soffit - Thick Slab Underside of Deck		Exterior		Height	imited 1	0.00 Count Total Quantity	0.00
Element Group Element Name Location Material	Decks Soffit - Thick Slab Underside of Deck		Exterior		Height	imited 1	0.00 Count Total Quantity	0.00
Element Group Element Name Location Material Element Type	Decks Soffit - Thick Slab Underside of Deck Precast Concrete	Good	Exterior	Poor	Height	imited I	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None			Poor 0.00	Height	imited 1 nment Benign	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02	, <u> </u>	Fair		Height	imited 1 nment Benign 10derate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face	, <u> </u>	Fair		Height	imited 1 nment Benign 10derate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face	, <u> </u>	Fair		Height	imited 1 nment Benign 10derate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on ve - Lighr scaling on ve Performance Defici	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face rtical face	2.50 Maintenance Ne	Fair 0.00		Height	imited 1 nment Benign 10derate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on - Lighr scaling on ve	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face rtical face	2.50	Fair 0.00	0.00	Height	imited 1 nment Benign Aoderate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on ve - Lighr scaling on ve Performance Defici	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face rtical face	2.50 Maintenance Ne	Fair 0.00	0.00	Height	imited 1 nment Benign Aoderate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on ve Lighr scaling on ve Performance Defici None	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face encies	2.50 Maintenance Ne	Fair 0.00	0.00 Priority	Height L Enviror Enviror S S	imited 1 nment Benign Aoderate	Count Total Quantity Inspection	0.00
Element Group Element Name Location Material Element Type Protection System Condition Data Comments - Honeycombing alo - Hairline cracks on ve Lighr scaling on ve Performance Defici None	Decks Soffit - Thick Slab Underside of Deck Precast Concrete None Units Excell. sq.m 37.02 ng edge vertical face rtical face	2.50 Maintenance Ne	Fair 0.00	0.00 Priority Commen	Height L Enviror Enviror S S	imited 1 nment Benign Aoderate	Count Total Quantity Inspection	0.00



Region of Halton Municipal Structure Inspection F

Municipal Structur	e Inspection Form			Stru	acture Number:	19-1196390 BR05
Decks - Soffit - Thic	k Slab					
Element Group	Decks				Length	11.30 Width 23.14
Element Name	Soffit - Thick Slab		Interior		Height	0.00 Count 0.00
Location	Underside of deck					Total Quantity 261.48
Material	Precast Concrete				Limited	Inspection
Element Type					Environmen	t
Protection System	None				✓ Benign	I
Condition Data	Units Excell.	Good	Fair	Poor	Modera	ate
	sq.m 256.4	18 3.00	1.00	1.00	Severe	
Comments						
- Some joints with li	ght honeycombing, scallir	ig, spalling, and/or	staining			
Performance Defici	encies	Maintenance No	eeds	Priority	Comr	nents
None		None				
	on Recommendations	Priority	Cost		ents	
None		yrs.	\$0			
Decks - Wearing Su	irface					
Element Group	Decks				Length	11.30 Width 17.80
Element Name	Wearing Surface				Height	0.00 Count 1.00
Location	Above structure					Total Quantity 201.14
Material	Asphalt				Limited	Inspection
Element Type					Environmen	t
Protection System	None				Benign	I
Condition Data	Units Excell.	Good	Fair	Poor	Modera	ate
	sq.m 161.2	40.00	0.00	0.00	Severe	
Comments						
Performance Defici	encies	Maintenance No	eeds	Priority	Comr	nents
None		None				
	on Recommendations	Priority	Cost		ents	
Rehab/Rehabilitation	on Recommendations	Priority yrs.	Cost \$0		ents	

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Region of Halton

Municipal Structur	e Inspection Form	1		Sti	ructure Numbe	r: 19-1196390 BR05	
Embankments & St	reams - Embankn	nents					
Element Group	Embankments & S	treams				Length	0.00 Width 0.00
Element Name	Embankments					Height	0.00 Count 4.00
Location	All Quadrants						Total Quantity 4.00
Material	Vegetation					Limit	ted Inspection
Element Type						Environm	ent
Protection System	Vegetation					🗌 Beni	gn
Condition Data	Units Exc	ell.	Good	Fair	Poor	Mod	erate
	Each	0.00	4.00	0.00	0.00	Seve	ere
Comments							
Performance Defici	encies	r	Maintenance Ne	eds	Priority	Con	nments
None		Ν	lone				
Rehab/Rehabilitati	on Recommendatio	ons F	Priority	Cost		ients	
None			yrs.	\$0			
Embankments & St	reams - Slope Pro	tection					
Element Group	Embankments & S	treams				Length	23.24 Width 0.00
Element Name	Slope Protection					Height	1.10 Count 4.00
Location	All Quadrants						Total Quantity 4.00
Material	Vegetation					Limi	ted Inspection
Element Type						Environm	ent
Protection System	None					Beni	gn
Condition Data	Units Exc	ell.	Good	Fair	Poor	Mod	erate
	Each	0.00	4.00	0.00	0.00	Seve	re
Comments							
Performance Defici	encies	r	Maintenance Ne	eds	Priority	Con	nments
None		Ν	lone				
Rehab/Rehabilitati	on Recommendatio	ons F	Priority	Cost		ients	
None			yrs.	\$0			



Region of Halton Municipal Structure Inspection

Municipal Structur	e Inspection Form		Str	ucture Number:	19-1196390 BR05
Sidewalks/Curbs - (Curbs				
Element Group	Sidewalks/Curbs			Length	6.00 Width 0.15
Element Name	Curbs		Height	0.15 Count 2.00	
Location	Both Sides				Total Quantity 3.60
Material	Cast-in-place Concrete			Limited	Inspection
Element Type				Environmen	t
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	Modera	te
	sq.m 2.	60 1.00 0.00	0.00	✓ Severe	
Comments					
Performance Defici	encies	Maintenance Needs	Priority	Comm	nents
None		None			
	on Recommendations	Priority Cos		ents	
None		yrs. \$	U		
Embankments & St	treams - Streams & Wa	terways			
Element Group	Embankments & Stream	IS		Length	0.00 Width 0.00
Element Name	Streams & Waterways			Height	0.00 Count 1.00
Location	Through Structure				Total Quantity 1.00
Material				Limited	Inspection
Element Type				Environmen	t
Protection System	None			Benign	
Condition Data	Units Excell.	Good Fair	Poor	Modera	te
	All 0.	00 1.00 0.00	0.00	Severe	
Comments	rners of structure - regra	de to provide positive drainage			
Performance Defici	encies	Maintenance Needs	Priority	Comm	
None		Bridge Deck Drainage	1- 5 yrs	Draina regrac	age through structure needs to be led
				0	
· · · · · ·	on Recommendations	Priority Cos		ents	
Rehab/Rehabilitati None	on Recommendations	Priority Cos yrs. \$		ents	



Region of Halton Municipal Structure Inspection F

Municipal Structur	e Inspection Form				St	ructure Nu	mber:	19-1196390 B	3R05
Abutments - Wing	walls								
Element Group	Abutments					Lengt	h	1.60 Width	3.80
Element Name	Wingwalls					Heigh	t	3.10 Count	4.00
Location	All Quadrants]		Total Quantity	19.84
Material	Cast-in-place Concret	te					Limited	Inspection	
Element Type	Reinforced Concrete					Enviro	onment		
Protection System	None						Benign		
Condition Data	Units Excell	I.	Good	Fair	Poor	~	Moderat	e	
	sq.m	17.84	1.00	1.00	0.00		Severe		
Comments					-	_			
 Hairline cracks Medium / Light sca 	aling								
,	8								
Performance Defici	encies	Ν	/laintenance Ne	eds	Priority		Comm	ents	
None		N	one						
	on Recommendations	P	riority	Cos		nents			
None			yrs.	\$	0				
Retaining Walls - W	Valls								
Retaining Walls - W Element Group	Valls Retaining Walls					Lengt	h [6.00 Width	23.14
] Lengt		6.00 Width	23.14
-	Retaining Walls					1			23.14 4.00 19.92
Element Group Element Name	Retaining Walls Walls					1	t [0.83 Count	
Element Group Element Name Location	Retaining Walls Walls All Quadrants	5 5				Heigh	t [0.83 Count Total Quantity Inspection	
Element Group Element Name Location Material	Retaining Walls Walls All Quadrants Precast Concrete	s				Heigh	t [Limited	0.83 Count Total Quantity Inspection	
Element Group Element Name Location Material Element Type	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems		Good	Fair	Poor	Heigh	t [Limited Donment Benign	0.83 Count	
Element Group Element Name Location Material Element Type Protection System	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell		Good 0.00	Fair 0.00	Poor 0.00	Heigh	t [Limited onment Benign Moderat	0.83 Count	
Element Group Element Name Location Material Element Type Protection System	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell	l.			-	Heigh	t [Limited Donment Benign	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell	l.			-	Heigh	t [Limited onment Benign Moderat	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell	l.			-	Heigh	t [Limited onment Benign Moderat	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2	I. 19.92		0.00	0.00	Heigh	t [Limited onment Benign Moderat	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2	I. 19.92	0.00	0.00	-	Heigh	t [Limited Donment Benign Moderat Severe	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2	I. 19.92	0.00	0.00	0.00	Heigh	t [Limited Donment Benign Moderat Severe	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2	I. 19.92	0.00	0.00	0.00	Heigh	t [Limited Donment Benign Moderat Severe	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2	I. 19.92	0.00	0.00	0.00 Priority	Heigh Enviro	t [Limited Donment Benign Moderat Severe	0.83 Count	
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Retaining Walls Walls All Quadrants Precast Concrete Retained soil systems None Units Excell sq.m 2 iencies	I. 19.92	0.00 Maintenance Ne	0.00	0.00 Priority it Comn	Heigh Enviro	t [Limited Donment Benign Moderat Severe	0.83 Count	



Region of Halton

Municipal Structure	e Inspection Form			Sti	ructure Number	: 19-1196390 BR05
Approaches - Appro	oach Guiderail					
Element Group	Approaches				Length	6.00 Width 0.00
Element Name	Approach Guiderail		Extruder End		Height	0.83 Count 1.00
Location	South East Quadrant					Total Quantity 1.00
Material	Steel				Limite	d Inspection
Element Type					Environmer	nt
Protection System	Hot dip Galvanized				Benigr	1
Condition Data	Units Excell.	Good	Fair	Poor	Moder	ate
	Each 0.00	1.00	0.00	0.00	Severe	2
Comments						
Performance Defici	encies	Maintenance Ne	eeds	Priority	Comr	nents
None		None				
	on Recommendations	Priority	Cost		ients	,
None		yrs.	\$0			
	Sidewalk and medians				1	
Element Group	Sidewalks/Curbs				Length	11.24 Width 3.20
Element Name	Sidewalk and medians		Sidewalk		Height	0.15 Count 2.00
Location	Both sides					Total Quantity 75.31
Material	Cast-in-place Concrete				Limite	d Inspection
Element Type					Environmer	nt
Protection System	None				Benigr	1
Condition Data	Units Excell.	Good	Fair	Poor	Moder	ate
	sq.m 60.31	15.00	0.00	0.00	Severe	2
Comments						
Performance Defici	encies	Maintenance Ne	eeds	Priority	Comr	nents
None		None				
		.	_		.	
Rehab/Rehabilitation	on Recommendations	Priority yrs.	Cost \$0		ients	
		113.	φu			



Region of Halton Municipal Structo .

Municipal Structure	e Inspection F	orm				S	tructure Nu	mber:	19-1196390	BR05
Retaining Walls - B	arrier Systems	s on Walls								
Element Group	Retaining Wall	s					Lengt	h	6.00 Width	0.15
Element Name	Barrier System	ns on Walls		Exteri	or		Heigh	t	0.83 Count	4.00
Location	All Quadrants								Total Quantity	19.92
Material	Cast-in-place C	Concrete						Limited	Inspection	
Element Type	Parapet Wall v	vith single ra	iling				Enviro	onment		
Protection System	None							Benign		
Condition Data	Units	Excell.	Good	Fair		Poor	\checkmark	Moderat	e	
	sq.m	19.92	0.	00	0.00	0.00	0	Severe		
Comments										
Performance Defici	encies		Maintenance	Needs		Priority		Comm	ents	
None			None							
Rehab/Rehabilitati	on Recommend	lations	Priority		Cost	Com	ments	I		
None			yrs.		\$0	1				
Retaining Walls - B	arrier Systems	s on Walls								
Element Group	Retaining Wall	s					Lengt	h	6.00 Width	3.20
Element Name	Barrier System	ns on Walls		Interi	or		Heigh	t	1.10 Count	4.00
Location	All Quadrants						Ī	F	Total Quantity	26.40
Material	Cast-in-place C	Concrete						Limited	Inspection	
Element Type	Parapet Wall v	vith single ra	iling				Enviro	onment		
Protection System	None							Benign		
Condition Data	Units	Excell.	Good	Fair		Poor		Moderat	te	
	sq.m	21.40	5.	00	0.00	0.00	0 7	Severe		
Comments										
Performance Defici	encies		Maintenance	Needs		Priority		Comm	ents	
None			None							

Perf None Rehab/Rehabilitation Recommendations Priority Cost Comments None yrs. \$0



Region of Halton ction E

Municipal Structur	e Inspection Form		Structu	ure Number:	19-1196390 BR05
Barriers - Hand Rai	lings				
Element Group	Barriers			Length	23.24 Width 0.00
Element Name	Hand Railings			Height	0.00 Count 2.00
Location	Both Sides				Total Quantity 46.48
Material	Steel			Limited	Inspection
Element Type				Environment	
Protection System	Hot dip galvanized			Benign	
Condition Data	Units Excell.	Good Fair	Poor	Moderat	te
	m 37.28	9.20 0.00	0.00	✓ Severe	
Comments					
Performance Defici	iencies	Maintenance Needs	Priority	Comm	ents
None		None			
	on Recommendations	Priority Cost		5	
None		yrs. \$C			
	systems / Hand Railings				
Coatings - Barrier S Element Group	Coatings			Length	6.00 Width 0.00
		ilings		Length [1.10 Count 1.00
Element Group	Coatings	ilings			
Element Group Element Name	Coatings Barrier Systems / Hand Rai	ilings		Height	1.10 Count 1.00
Element Group Element Name Location	Coatings Barrier Systems / Hand Rai	ilings		Height	Total Quantity 14.60 Inspection
Element Group Element Name Location Material	Coatings Barrier Systems / Hand Rai Both sides	ilings		Height [Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized	ilings	Poor	Height [Total Quantity 14.60
Element Group Element Name Location Material Element Type Protection System Condition Data	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None	Good Fair	Poor 0.00	Height [Limited Environment Benign	Count Total Quantity 14.60
Element Group Element Name Location Material Element Type Protection System	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell.	Good Fair		Height [Limited Environment Benign Moderat	Count Total Quantity 14.60
Element Group Element Name Location Material Element Type Protection System Condition Data	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell.	Good Fair		Height [Limited Environment Benign Moderat	Count Total Quantity 14.60
Element Group Element Name Location Material Element Type Protection System Condition Data	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell.	Good Fair		Height [Limited Environment Benign Moderat	Count Total Quantity 14.60
Element Group Element Name Location Material Element Type Protection System Condition Data	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair		Height [Limited Environment Benign Moderat	Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type Protection System Condition Data	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair 3.00 0.00	0.00	Height Limited Environment Benign Moderat Severe	Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair 3.00 0.00 Maintenance Needs	0.00	Height Limited Environment Benign Moderat Severe	Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair 3.00 0.00 Maintenance Needs	0.00	Height Limited Environment Benign Moderat Severe	Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type Protection System Condition Data Comments Performance Defici None Rehab/Rehabilitati	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair 3.00 0.00 Maintenance Needs None Priority Cost	0.00 Priority Comments	Height Limited Environment Benign Moderat Severe Comm	Total Quantity 14.60 Inspection
Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Coatings Barrier Systems / Hand Rai Both sides Hot dip galvanized None Units Excell. m 11.60	Good Fair 3.00 0.00 Maintenance Needs None	0.00 Priority Comments	Height Limited Environment Benign Moderat Severe Comm	Total Quantity 14.60 Inspection



Region of Halton

Municipal Structure	e Inspection	Form				St	ructure Number	: 19-1196390 BR05	5
Approaches - Curbs	and gutters								
Element Group	Approaches						Length	6.00 Width	3.2
Element Name	Curbs and gu	itters					Height	0.15 Count	4.0
Location	All Quadrant	S]	Total Quantity	24.0
Material	Cast-in-place	Concrete					Limite	d Inspection	
Element Type							Environme	nt	
Protection System	None						Benig	n	
Condition Data	Units	Excell.	Good	Fair		Poor	Mode	rate	
	m	17.50		6.50	0.00	0.00	Sever	e	
Comments					•	-			
Performance Defici	encies		Maintenan	ce Needs		Priority	Com	ments	
None			None						
Rehab/Rehabilitation	on Recommen	ndations	Priority		Cost	Comr	nents		
None			У	rs.	\$0				





East Elevation



West Elevation



Structure Number: 19-1196390 BR05



Looking South at Bridge



Looking North at Bridge





Looking West Under Structure



Typical Ponding at Abutment Corners





Typical Soffit



Typical Soffit Edge





Honeycombing at Soffit



Typical Wingwall





Typical Joint

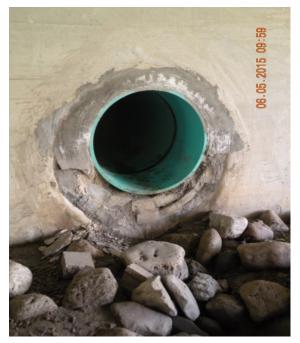


Joint with Staining and Scaling





Spall at Soffit Joint



Spalling around PVC Inlet



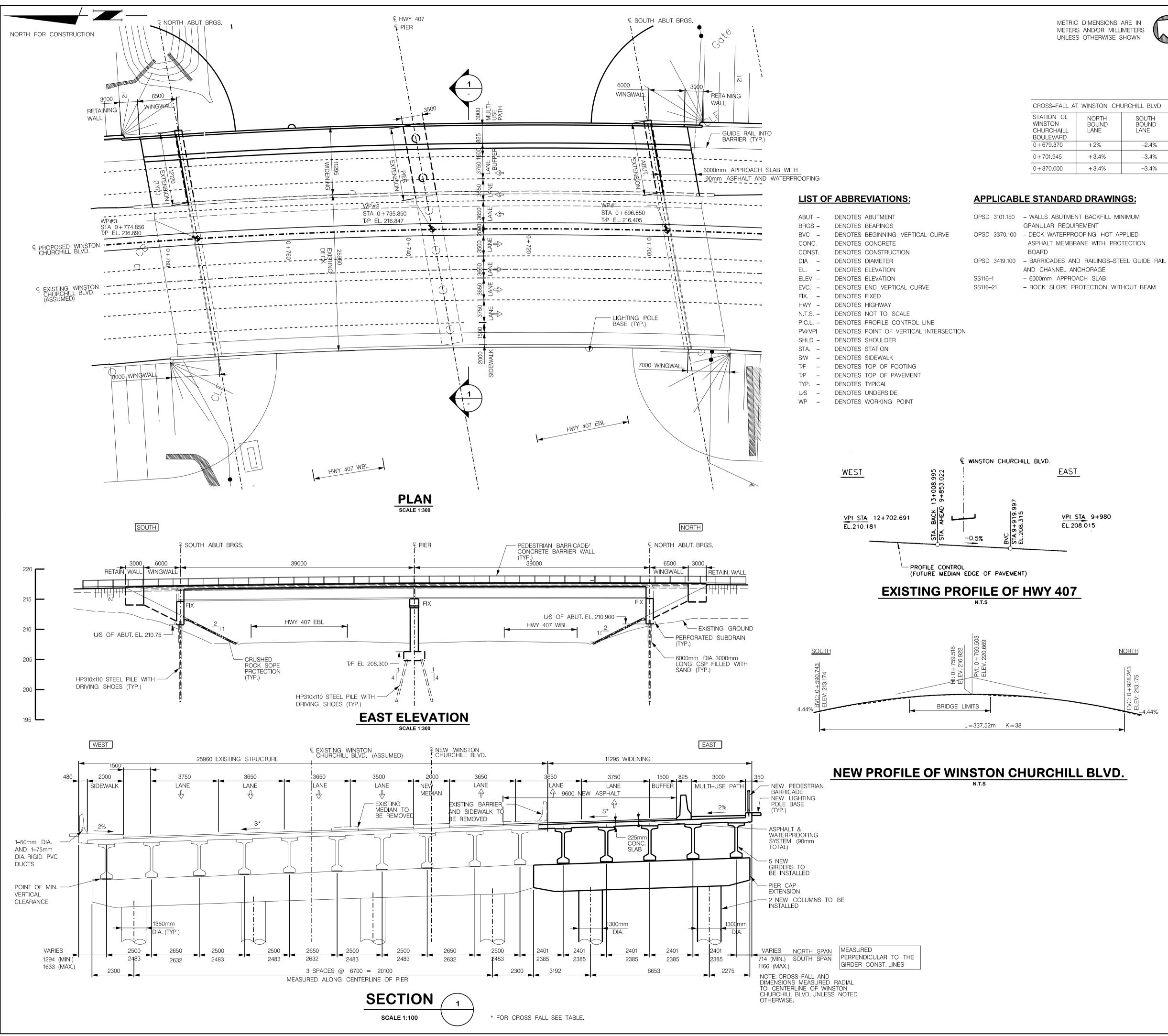


Narrow Crack on Interior Parapet Wall



Spall on Interior Parapet Wall







. A ⁻	r winston	CHURCHILL BLVD.
	NORTH BOUND LANE	SOUTH BOUND LANE
	+2%	-2.4%
	+3.4%	-3.4%
	+34%	-3.4%

DATE INIT. DATE SERVICE SERVICE N SEWERS GAS MAINS FORM SEWERS BELL U/G CABLE ATERMAINS HYDRO U/G CABLE HYDRO ONE ARKS & REC COMMUNIC. CABLES NT. CLEAN WATER REVISIONS DATE DETAILS WINSTON CHURCHILL BLVD. HERITAGE RD. KEY PLAN (N.T.S.)

SERVICE DATA

GENERAL NOTES:

LOCATION OF EXISTING CENTERLINES OF WINSTON CHURCHILL BLVD. AND HWY 407 DRAWN ARE ESTIMATED FROM RECORD DRAWINGS. LOCATION OF HWY 407 LANES ESTIMATED FROM RECORD DRAWINGS CLASS OF CONCRETE.

CLASS OF CONCRETE:	
PRESTRESSED GIRDERS	—— 45MPa
REMAINDER	30MPa

CLEAR COVER TO REINFORCING STEEL:

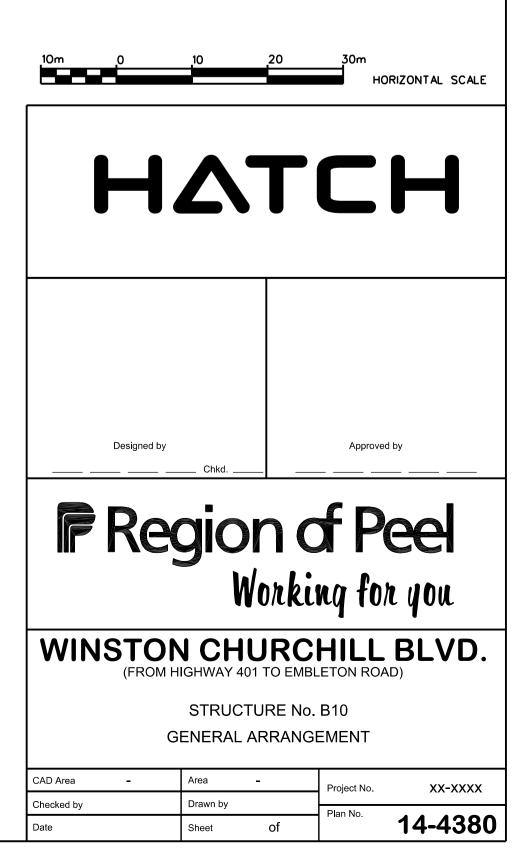
FOOTINGS	100 ± 25mm
DECK ——ТОР ————	70 ± 20mm
ВОТТОМ	40 ± 10 mm
REMAINDER UNLESS OTHERWISE NOTED	70 ± 20 mm

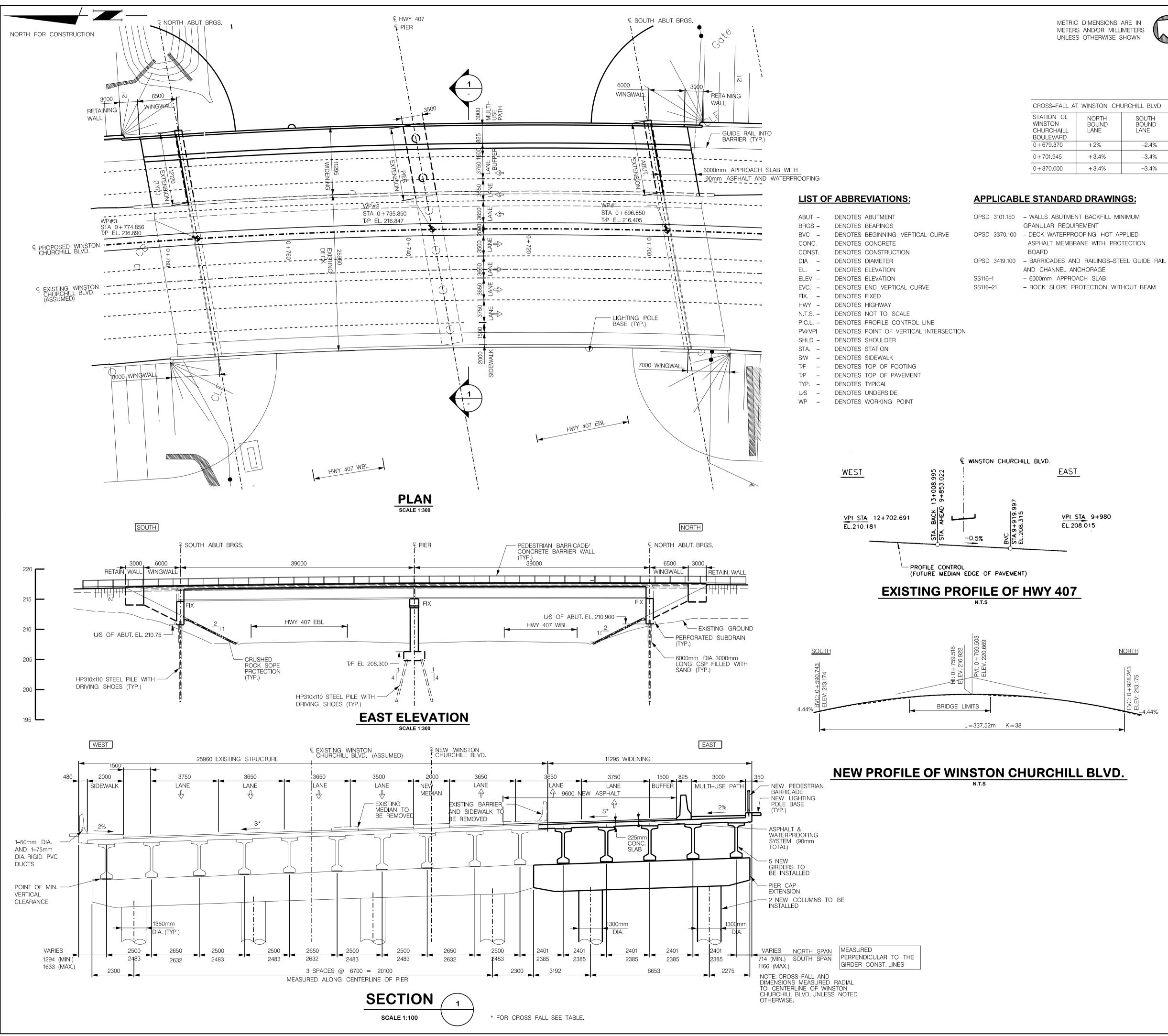
REINFORCING STEEL:

- 1. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.
- 2. BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS.

CONSTRUCTION NOTES:

- 1. THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESS FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESS ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA. THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.
- 2. CONSTRUCT ABUTMENT AND WINGWALL TO THE BEARING SEAT ELEVATIONS. THE CONTRACTOR SHALL SUPPLY TEMPORARY LATERAL BEARING FOR THE ABUTMENTS, FORMWORK AND LATERAL BRACING SHALL NOT BE REMOVED UNTILL THE CONCRETE DECK HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH.
- 3. COMPACTED FILL MAXIMUM GRAIN SIZE 75mm SHALL BE PLACED UP TO THE BOTTOM OF FOOTING ELEVATION PRIOR TO DRIVING PILES.
- 4. NO BACKFILL SHALL BE PLACED BEHIND ABUTMENTS UNTIL DECK CONCRETE HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH
- 5. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 0.5m.







. A ⁻	r winston	CHURCHILL BLVD.
	NORTH BOUND LANE	SOUTH BOUND LANE
	+2%	-2.4%
	+3.4%	-3.4%
	+34%	-3.4%

DATE INIT. DATE SERVICE SERVICE N SEWERS GAS MAINS FORM SEWERS BELL U/G CABLE ATERMAINS HYDRO U/G CABLE HYDRO ONE ARKS & REC COMMUNIC. CABLES NT. CLEAN WATER REVISIONS DATE DETAILS WINSTON CHURCHILL BLVD. HERITAGE RD. KEY PLAN (N.T.S.)

SERVICE DATA

GENERAL NOTES:

LOCATION OF EXISTING CENTERLINES OF WINSTON CHURCHILL BLVD. AND HWY 407 DRAWN ARE ESTIMATED FROM RECORD DRAWINGS. LOCATION OF HWY 407 LANES ESTIMATED FROM RECORD DRAWINGS CLASS OF CONCRETE.

CLASS OF CONCRETE:	
PRESTRESSED GIRDERS	—— 45MPa
REMAINDER	30MPa

CLEAR COVER TO REINFORCING STEEL:

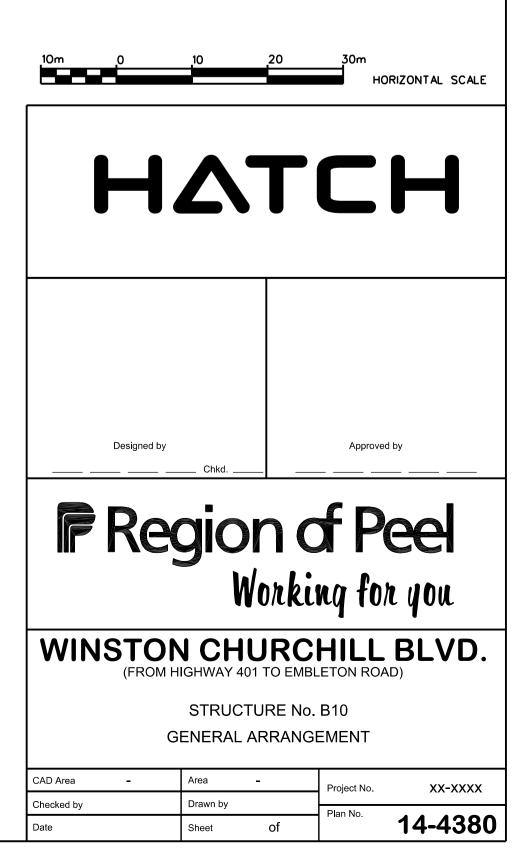
FOOTINGS	100 ± 25mm
DECK ——ТОР ————	70 ± 20mm
ВОТТОМ	40 ± 10 mm
REMAINDER UNLESS OTHERWISE NOTED	70 ± 20 mm

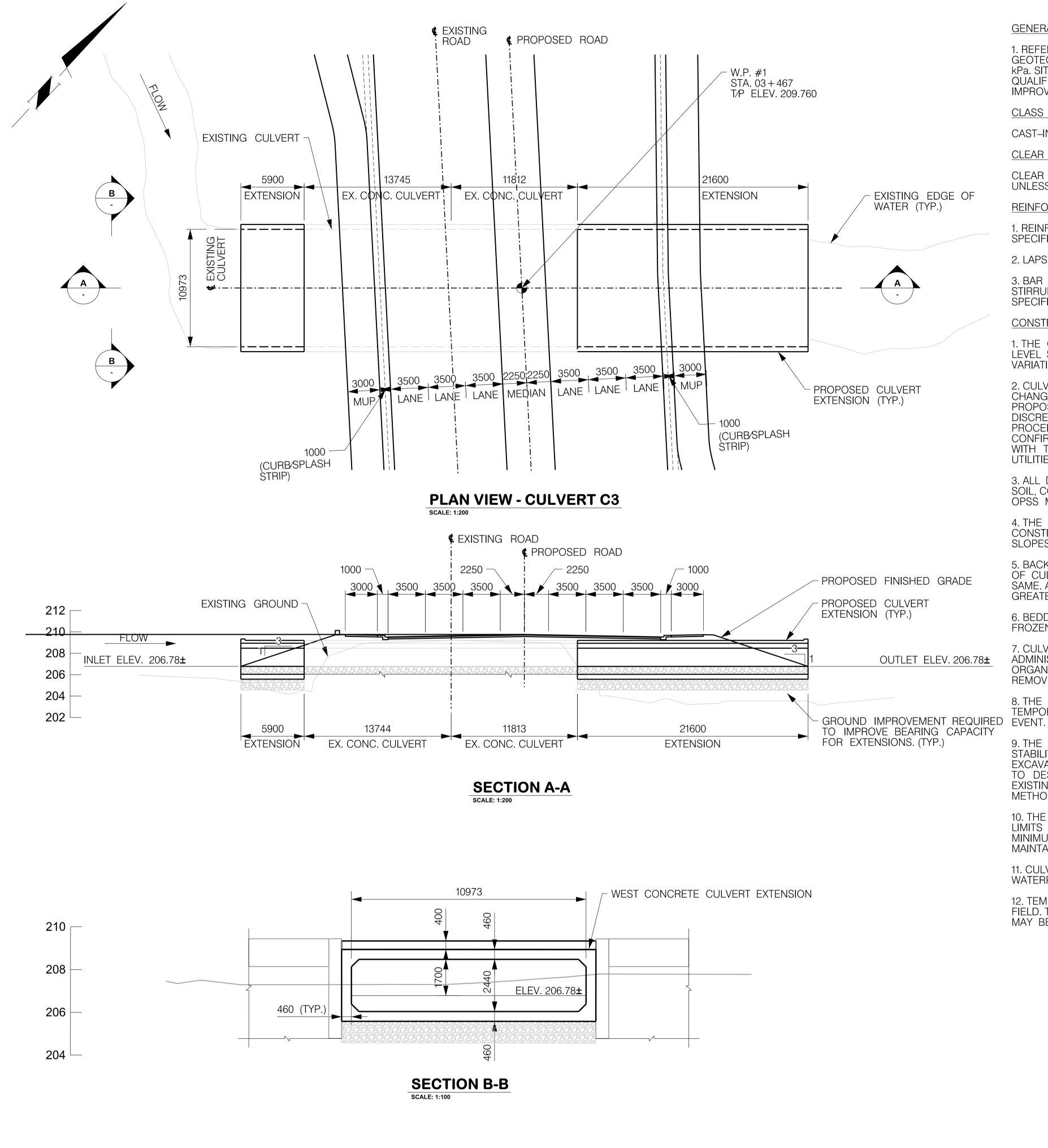
REINFORCING STEEL:

- 1. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.
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CONSTRUCTION NOTES:

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- 2. CONSTRUCT ABUTMENT AND WINGWALL TO THE BEARING SEAT ELEVATIONS. THE CONTRACTOR SHALL SUPPLY TEMPORARY LATERAL BEARING FOR THE ABUTMENTS, FORMWORK AND LATERAL BRACING SHALL NOT BE REMOVED UNTILL THE CONCRETE DECK HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH.
- 3. COMPACTED FILL MAXIMUM GRAIN SIZE 75mm SHALL BE PLACED UP TO THE BOTTOM OF FOOTING ELEVATION PRIOR TO DRIVING PILES.
- 4. NO BACKFILL SHALL BE PLACED BEHIND ABUTMENTS UNTIL DECK CONCRETE HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH
- 5. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 0.5m.





GENERAL NOTES

1. REFERENCE GEOTECHNICAL AXIAL RESISTANCE AT ULS: 225 kPa GEOTECHNICAL REACTION AT SLS FOR 25 MM OF SETTLEMENT: 150 kPa. SITE GEOTECHNICAL CONDITIONS TO BE CONFIRMED BY A QUALIFIED GEO-TECHNICAL ENGINEER, INCLUDING REQUIRED GROUND IMPROVEMENT MEASURES, IF APPLICABLE.

CLASS OF CONCRETE

CAST-IN-PLACE CONCRETE.35 MPa

CLEAR COVER TO REINFORCEMENT

CLEAR COVER TO REINFORCING STEEL SHALL BE 60 ± 10 mm UNLESS OTHERWISE NOTED.

REINFORCEMENT

1. REINFORCING STEEL TO BE GRADE 400W UNLESS OTHERWISE SPECIFIED.

2. LAPS NOT INDICATED ON DRAWING SHALL BE CLASS B. 3. BAR HOOKS, WHERE REQUIRED, SHALL BE MINIMUM LENGTH AND STIRRUPS SHALL HAVE MINIMUM HOOKS AS PER MANUFACTURER?S SPECIFICATIONS.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS ADVISED NOT TO RELY ON THE WATER LEVEL SHOWN ON THE DRAWINGS. THE WATER LEVEL IS SUBJECT TO VARIATIONS.

2. CULVERT GEOMETRY SHOWN IS PRELININARY AND SUBJECT TO CHANGE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF THE PROPOSED WORK AND ALL DETAILS ON SITE AND REPORT AND DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ALSO CONFIRM UTILITY LOCATIONS IN THE FIELD BEFORE PROCEEDING WITH THE WORK. PROTECTION AND TEMPORARY RELOCATION OF UTILITIES, IF REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR,

3. ALL DISTURBED EARTH SLOPES SHALL BE TREATED WITH TOP SOIL, COVER, AND SEED, IN ACCORDANCE WITH OPSS MUNI 802 AND OPSS MUNI 804.

4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE DESIGN. CONSTRUCTION METHODS AND PERFORMANCE OF THE TEMPORARY SLOPES, PROTECTION SYSTEM, AND WORKS

5. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH SIDES OF CULVERT, KEEPING THE HEIGHT OF BACKFILL APPROXIMATELY THE SAME AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500 MM.

6. BEDDING MATERIAL SHALL NOT BE PLACED ON A DISTURBED OR FROZEN EARTH GRADE.

7. CULVERT SUBGRADE TO BE INSPECTED BY CONTRACT ADMINISTRATOR FOLLOWING SUB-EXCAVATION TO ENSURE THAT ALL ORGANICS AND OTHER UNSUITABLE MATERIALS HAVE BEEN REMOVED.

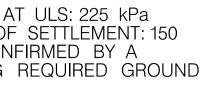
8. THE CONTRACTOR IS TO DETERMINE THE SIZE OF THE TEMPORARY DIVERSION CHANNEL/PIPE BASED ON 2 YEAR STORM

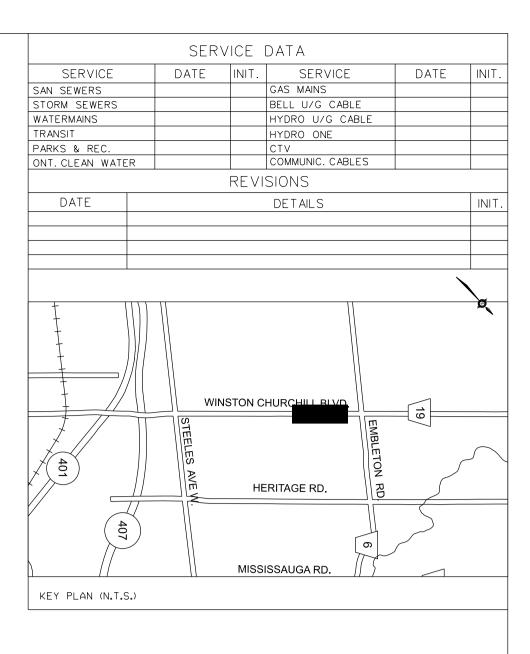
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE EXISTING STRUCTURES AT ALL TIMES INCLUDING EXCAVATION, BACKFILL, REMOVALS, INSTALLATIONS, ETC. CONTRACTOR TO DESIGN AND PROVIDE ANY TEMPORARY SUPPORT SYSTEMS FOR EXISTING AND NEW STRUCTURES AS REQUIRED TO SUIT THEIR METHOD OF CONSTRUCTION.

10. THE CONTRACTOR HAS THE OPTION TO ALTER EXCAVATION LIMITS BY PROVIDING TEMPORARY EXCAVATION SUPPORT. HOWEVER, MINIMUM DIMENSIONS AND LIMIT OF FROST TAPERS MUST BE MAINTAINED.

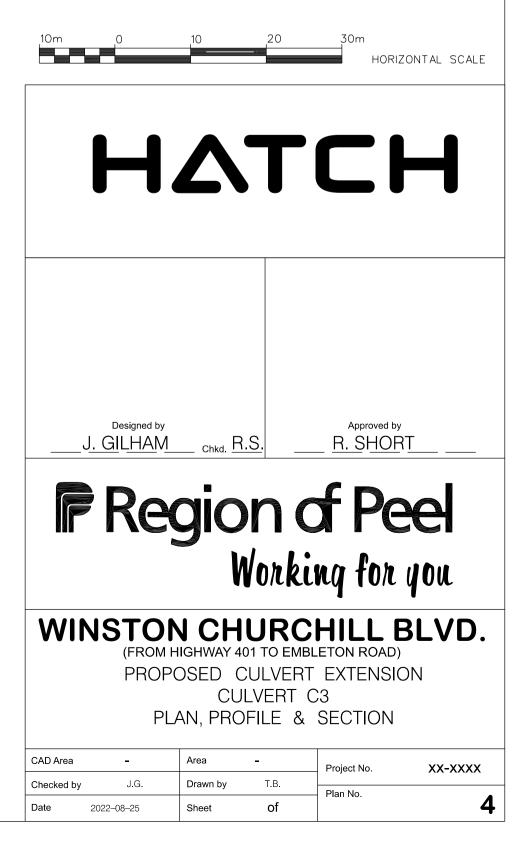
11. CULVERT CONNECTIONS TO BE SEALED WITH SELF-ADHESIVE WATERPROOFING MEMBRANE.

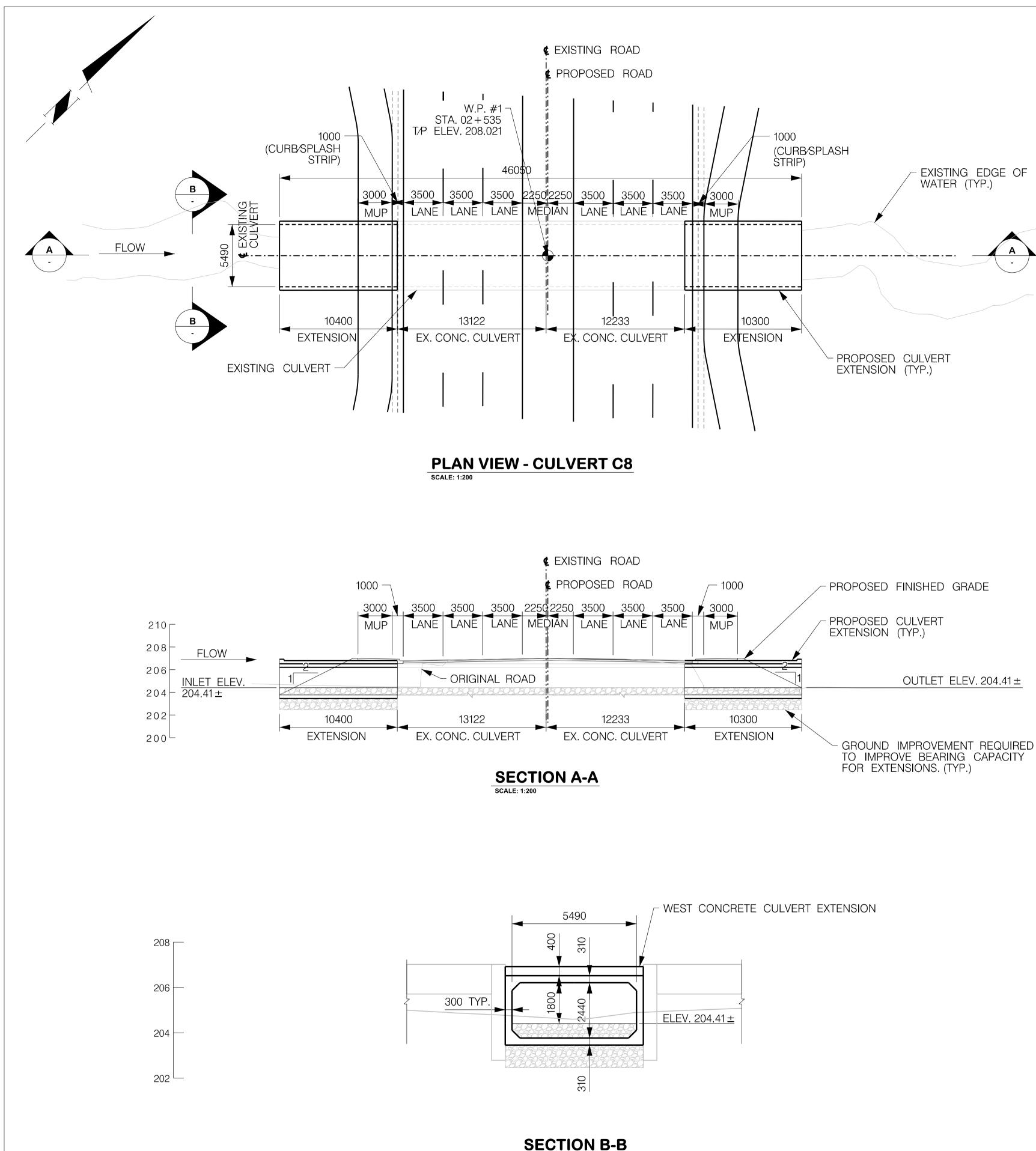
12. TEMPORARY DIVERSION CHANNEL ROUTE TO BE CONFIRMED IN FIELD. TEMPORARY ENCROACHMENT BEYOND CONSTRUCTION LIMIT MAY BE REQUIRED.











SCALE: 1:100

GENERAL NOTES

1. REFERENCE GEOTECHNICAL AXIAL RESISTANCE AT ULS: 225 kPa GEOTECHNICAL REACTION AT SLS FOR 25 MM OF SETTLEMENT: 150 kPa. SITE GEOTECHNICAL CONDITIONS TO BE CONFIRMED BY A QUALIFIED GEO-TECHNICAL ENGINEER, INCLUDING REQUIRED GROUND IMPROVEMENT MEASURES, IF APPLICABLE.

CLASS OF CONCRETE

CAST-IN-PLACE CONCRETE35 MPa

CLEAR COVER TO REINFORCEMENT

CLEAR COVER TO REINFORCING STEEL SHALL BE 60 ± 10 mm UNLESS OTHERWISE NOTED.

REINFORCEMENT

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CONSTRUCTION NOTES

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2. CULVERT GEOMETRY SHOWN IS PRELININARY AND SUBJECT TO CHANGE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF THE PROPOSED WORK AND ALL DETAILS ON SITE AND REPORT AND DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ALSO CONFIRM UTILITY LOCATIONS IN THE FIELD BEFORE PROCEEDING WITH THE WORK. PROTECTION AND TEMPORARY RELOCATION OF UTILITIES, IF REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

3. ALL DISTURBED EARTH SLOPES SHALL BE TREATED WITH TOP SOIL, COVER, AND SEED, IN ACCORDANCE WITH OPSS MUNI 802 AND OPSS MUNI 804

4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE DESIGN. CONSTRUCTION METHODS AND PERFORMANCE OF THE TEMPORARY SLOPES, PROTECTION SYSTEM, AND WORKS.

5. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH SIDES OF CULVERT, KEEPING THE HEIGHT OF BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500 MM.

6. BEDDING MATERIAL SHALL NOT BE PLACED ON A DISTURBED OR FROZEN EARTH GRADE.

7. CULVERT SUBGRADE TO BE INSPECTED BY CONTRACT ADMINISTRATOR FOLLOWING SUB-EXCAVATION TO ENSURE THAT ALL ORGANICS AND OTHER UNSUITABLE MATERIALS HAVE BEEN REMOVED.

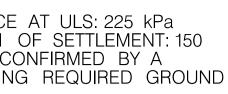
8. THE CONTRACTOR IS TO DETERMINE THE SIZE OF THE TEMPORARY DIVERSION CHANNEL/PIPE BASED ON 2 YEAR STORM EVENT.

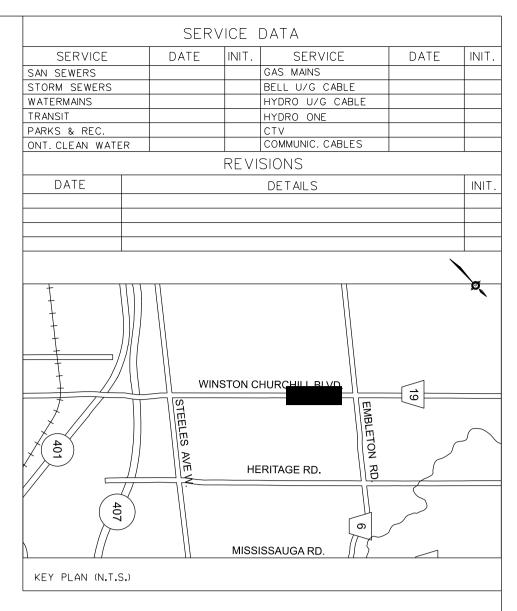
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE EXISTING STRUCTURES AT ALL TIMES INCLUDING EXCAVATION, BACKFILL, REMOVALS, INSTALLATIONS, ETC. CONTRACTOR TO DESIGN AND PROVIDE ANY TEMPORARY SUPPORT SYSTEMS FOR EXISTING AND NEW STRUCTURES AS REQUIRED TO SUIT THEIR METHOD OF CONSTRUCTION.

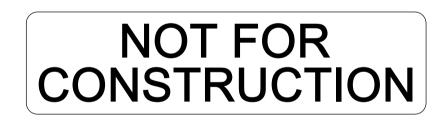
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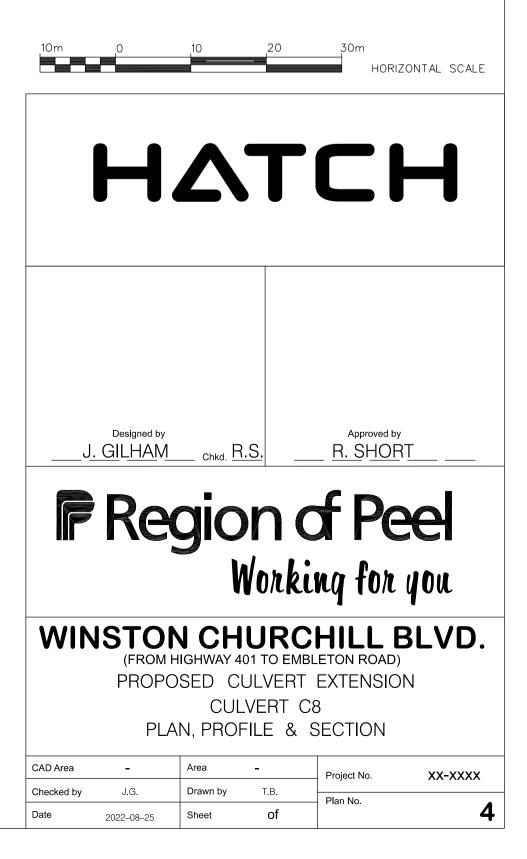
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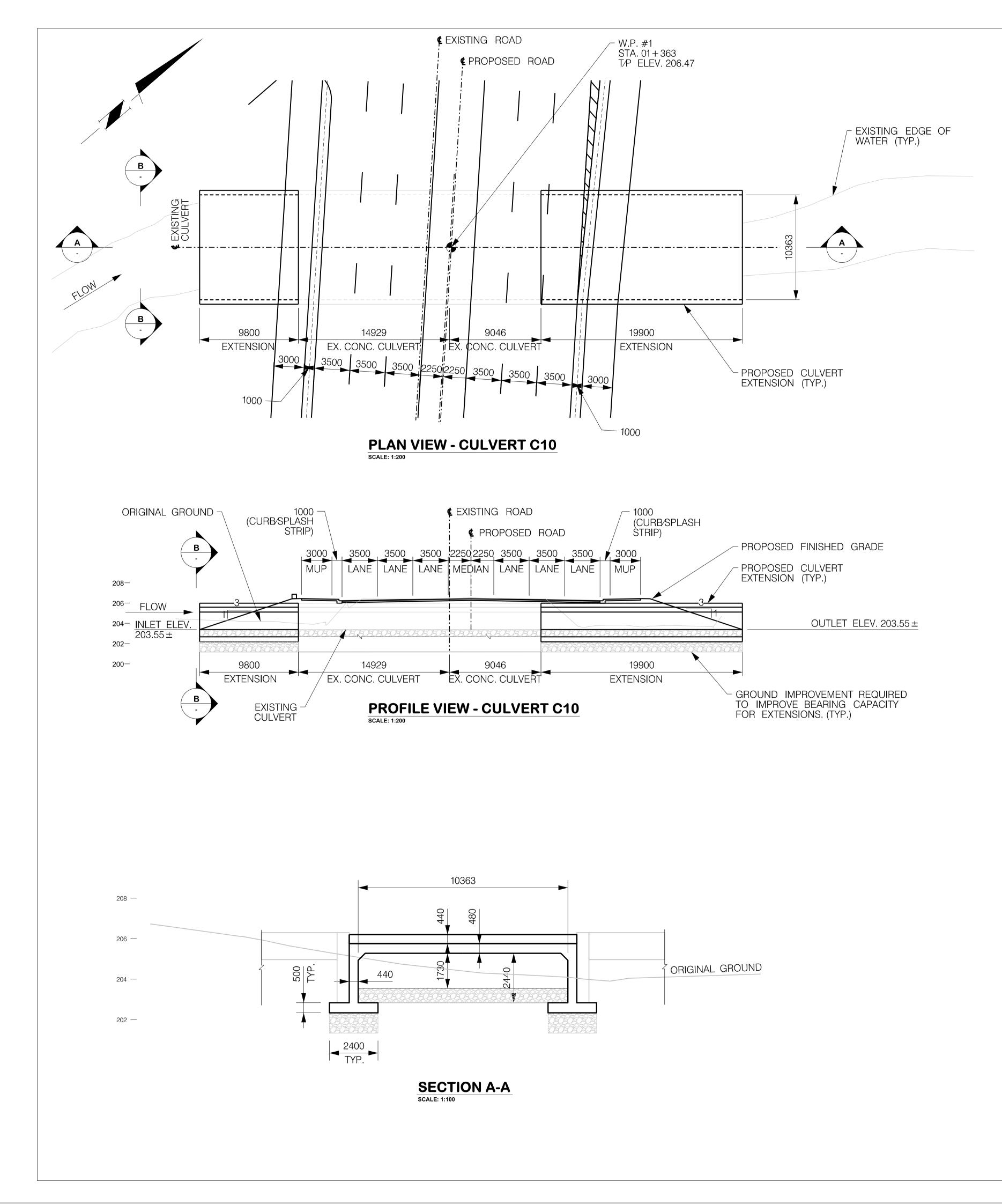
12. TEMPORARY DIVERSION CHANNEL ROUTE TO BE CONFIRMED IN FIELD. TEMPORARY ENCROACHMENT BEYOND CONSTRUCTION LIMIT MAY BE REQUIRED.











GENERAL NOTES

1. REFERENCE GEOTECHNICAL AXIAL RESISTANCE AT ULS: 225 kPa GEOTECHNICAL REACTION AT SLS FOR 25 MM OF SETTLEMENT: 150 kPa. SITE GEOTECHNICAL CONDITIONS TO BE CONFIRMED BY A QUALIFIED GEO-TECHNICAL ENGINEER, INCLUDING REQUIRED GROUND IMPROVEMENT MEASURES IF APPLICABLE.

CLASS OF CONCRETE

CAST-IN-PLACE CONCRETE35 MPa

CLEAR COVER TO REINFORCEMENT

CLEAR COVER TO REINFORCING STEEL SHALL UNLESS OTHERWISE NOTED.

REINFORCEMENT

1. REINFORCING STEEL TO BE GRADE 400W UNLESS OTHERWISE SPECIFIED.

2. LAPS NOT INDICATED ON DRAWING SHALL BE CLASS B.

3. BAR HOOKS, WHERE REQUIRED, SHALL BE MINIMUM LENGTH AND STIRRUPS SHALL HAVE MINIMUM HOOKS AS PER MANUFACTURER?S SPECIFICATIONS.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS ADVISED NOT TO RELY ON THE WATER LEVEL SHOWN ON THE DRAWINGS. THE WATER LEVEL IS SUBJECT TO VARIATIONS.

2. CULVERT GEOMETRY SHOWN IS PRELININARY AND SUBJECT TO CHANGE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF THE PROPOSED WORK AND ALL DETAILS ON SITE AND REPORT AND DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ALSO CONFIRM UTILITY LOCATIONS IN THE FIELD BEFORE PROCEEDING WITH THE WORK. PROTECTION AND TEMPORARY RELOCATION OF UTILITIES, IF REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

3. ALL DISTURBED EARTH SLOPES SHALL BE TREATED WITH TOP SOIL, COVER, AND SEED, IN ACCORDANCE WITH OPSS MUNI 802 AND OPSS MUNI 804.

4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE DESIGN, CONSTRUCTION METHODS AND PERFORMANCE OF THE TEMPORARY SLOPES, PROTECTION SYSTEM, AND WORKS

5. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH SIDES OF CULVERT, KEEPING THE HEIGHT OF BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500 MM.

6. BEDDING MATERIAL SHALL NOT BE PLACED ON A DISTURBED OR FROZEN EARTH GRADE.

7. CULVERT SUBGRADE TO BE INSPECTED BY CONTRACT ADMINISTRATOR FOLLOWING SUB-EXCAVATION TO ENSURE THAT ALL ORGANICS AND OTHER UNSUITABLE MATERIALS HAVE BEEN REMOVED.

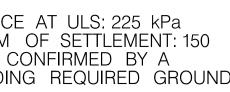
8. THE CONTRACTOR IS TO DETERMINE THE SIZE OF THE TEMPORARY DIVERSION CHANNEL/PIPE BASED ON 2 YEAR STORM EVENT.

9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE EXISTING STRUCTURES AT ALL TIMES INCLUDING EXCAVATION, BACKFILL, REMOVALS, INSTALLATIONS, ETC. CONTRACTOR TO DESIGN AND PROVIDE ANY TEMPORARY SUPPORT SYSTEMS FOR EXISTING AND NEW STRUCTURES AS REQUIRED TO SUIT THEIR METHOD OF CONSTRUCTION.

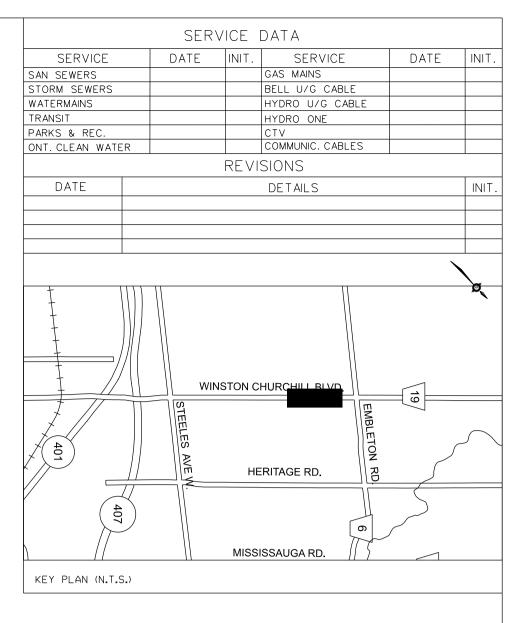
10. THE CONTRACTOR HAS THE OPTION TO ALTER EXCAVATION LIMITS BY PROVIDING TEMPORARY EXCAVATION SUPPORT. HOWEVER, MINIMUM DIMENSIONS AND LIMIT OF FROST TAPERS MUST BE MAINTAINED.

11. CULVERT CONNECTIONS TO BE SEALED WITH SELF-ADHESIVE WATERPROOFING MEMBRANE.

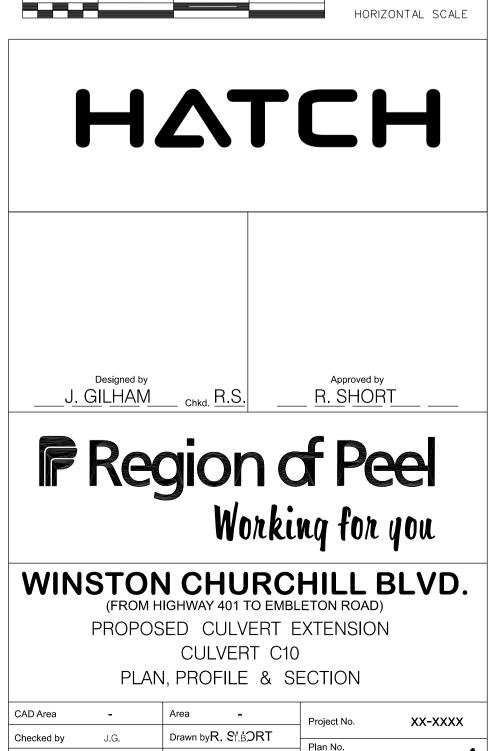
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