

Appendix O Structural Memo

- Inspection Reports
- 407 ETR and Culvert General Arrangements



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.	Fulithelle	MAY 27/15
Reviewed By	J.Luckai, P.Eng	Att Juli	my 27/15
Approved By	C.Pasqualino, P.Eng	Wazel	NAT 28/15

Municipal Structure Inspection Form Structure Number: 19-1196390 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	v. Other					
Cross. Type Under	Road Rail Ped Nav. V Non-Nav	v. Other	1	1.013			
Road Name	Winston Churchill Blvd		2				
Structure Location	2.70 km North of Steeles Avenue		-	64			
Northing	595206.0 Easting 4830795.0 Cur.Rep.Value		*	And the second s			
Owner(s) / %	Region of Halton 50%			S-100 B (100 F)			
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 Number					
Structure Material	Reinforced Precast Concrete	Design Load Code		CHBDC			
Total Deck Length	11.90 m Road Width 17.70 m	Interchange Structu	ıre Number				
Overall Width	25.0 m Vert. Clear 0.00 m	Detour Length	0 km	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				
·	Value is based on in kind replacement of the existing struct s and requirements for widening or lengthening of the struc	_	enchmark costs. Cap	oital planning should consider			
•							
Span Name	Span Lengths S	pan Name	Snan l	Lengths			
Span 1	11.0 m	рап мате	Spani	Lengths			
	11.0 III						
Historical Data							
Year Built		ear of Last Major Rehal	b	уууу			
Last OSIM Inspection	10/09/2012 mm/dd/yyyy C	ontract No. When Built	: [
Last Enhanced OSIM	mm/dd/yyyy L	ast Evaluation		mm/dd/yyyy			
Last Enhanced Acces	smm/dd/yyyy C	urrent Load Limit	t	tt			
Last Underwater Ins		oad Limit By-Law No.	ad Limit By-Law No.				
Last Condition Surve	ymm/dd/yyyy B	y-Law Expiry Date		mm/dd/yyyy			
Rehab History							
Rehab Date	Rehab Description						
2011	Replacement of structure.						



6/1/2015 1/19

Region	of Ha	lton
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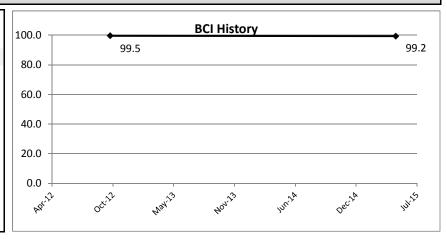
Municipal Structur	re inspection Form		Structure Num	ber: 19	-1196390 BR01
Field Inspection In	formation				
Inspection Date	05/06/2015 mm/dd/yyyy	Multi Day Inspection	✓ OSIM 🗌	Enhanced OSIM	BCI 99.2
Inspector	C.Chan, E.I.T.	Eng. Responsil	J.Luckai, P.Eng	g	
Others in Party	J.Hallett, E.I.T.				
Access Equip.	Lift Ladder Boat Bridge	Master Other			
Other Equip.	Hammer, Camera, Measuring Tape				
Weather	Sunny		Temperature		20 °C
Additional Investig	gation Required:				
Investigation			Priority		Estimated Cost
		None	Normal	Urgent	
Detailed Deck Cond	dition Survey	✓			\$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				\$0
Underwater Investi	gation				\$0
Fatigue Investigation	on	_			\$0
Seismic Investigation	on	V			\$0
Structure Evaluatio	n	✓			\$0
Monitoring of Defo	rmation, Movements and Settlements	✓			\$0
Monitoring of Cracl	k Widths				\$0
Investigation Notes	s			Total Cost	t \$0
Overall Structure N					
Timing of Recomme		✓ s			
	I 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	t	tt



6/1/2015 2/19

Structure Number: 19-1196390 BR01

Inspection Date	BCI	Inspector
9-Oct-12	99.5	D.Kelly
6-May-15	99.2	J.Luckai



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

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity	06 Bearing not uniformly loaded/unstable	12 Slippery surfaces
02 Excessive deformations (deflections & rotations)	07 Jammed expansion joint	13 Flooding/channel blockage
03 Continuing settlement	08 Pedestrian/vehicular hazard	14 Undermining of foundation
04 Continuing movements	09 Rough riding surface	15 Unstable embankments

05 Seized bearings 10 Surface ponding 16 Other 11 Deck drainage

Maintenance Needs

06 Bridge Bearing Maintenance

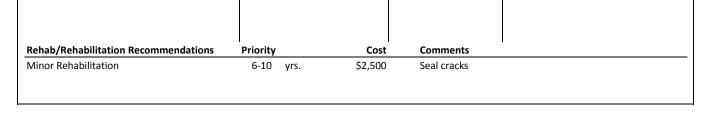
01 Lift and Swing Bridge Maintenance	07 Repair to Structural Steel	13 Erosion Control at Bridges
02 Bridge Cleaning	08 Repair of Bridge Concrete	14 Concrete Sealing
03 Bridge Handrail Maintenance	09 Repair of Bridge Timber	15 Rout and Seal
04 Painting Steel Bridge Structures	10 Bailey bridges - Maintenance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

12 Bridge Surface Repair



6/1/2015 3/19

<u> </u>	re Inspection Form		Structi	ıre Number	: 19-1196390 BF	R01		
Approaches - Wea	ring 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				Environment				
Protection System	None			☐ Benign				
Condition Data	Units Excell.	Good Fair	Poor	☐ Modera ✓ Severe				
	sq.m 166.40	45.00 1.00	0.00					
Comments								
- Crack along both	approach joints							
Performance Defic	iencies	Maintenance Needs	Priority	Com	ments			
None		None						
	ion Recommendations	Priority Cos						
None		yrs. \$	0					
Barriers - Barrier/F	Parapet Wall							
Element Group	Barriers			Length	23.90 Width	0.00		
Element Name	Barrier/Parapet Wall	Interior		Height	0.95 Count	2.00		
Location	Both Sides				Total Quantity	45.41		
Material	Cast-in-place Concrete			Limited	Inspection			
Element Type	Safety Shape without railing	ng		Environment				
Protection System	None			Benign				
Condition Data	Units Excell.	Good Fair	Poor	Modera	te			
	sq.m 26.41	15.00 3.00	1.00	✓ Severe				
Comments								
- Wide crack on we	est barrier - 10.5m and 16.7r							
- Wide crack on we	est barrier - 10.5m and 16.7r st barrier - 10.5m and 16.5m ling, more concentrated on l	from south end of barrier						
- Wide crack on we	st barrier - 10.5m and 16.5m ling, more concentrated on	from south end of barrier	Priority	Com	ments			





6/1/2015 4/19

Region of Halton Municipal Structure	e Inspection F	orm					Struct	ure Numl	per:	19-1196390	BR01
Barriers - Barrier/P	•										
Element Group	Barriers							Length		23.90 Width	0.00
Element Name	Barrier/Parapo	ot Mall		Eve	terior						2.00
Location	Both Ends	et wan			terioi			Height		0.80 Count Total Quantity	38.24
		C								- 1	30.24
Material	Cast-in-place (Limited Inspection			
Element Type	Safety Shape v	without railin	ıg					Environ	ment nign		
Protection System	None							✓ Moderate			
Condition Data	Units	Excell.	Good	Fai	ir	Poor		Sev	ere		
Comments	sq.m	31.24		5.00	1.00		1.00				
- Wide crack on we	st barrier - 10.5	im and 16.7n	n from Sout	h end of b	arrier						
- Wide crack on eas	t barrier East -	10.5m and 1	6.5m from s	outh end	of barrier						
- Light scaling			-								
Performance Defici	encies		Maintenan	ce Needs		Priority		C	omments		
None			None								
Rehab/Rehabilitation		dations	Priority		Cost		omment				
Minor Rehabilitation	П		6-10 y	rs.	\$2,500	50	eal cracks	S.			
Abutments - Abutn	nent Walls										
Element Group	Abutments							Length		Width	25.00
Element Name	Abutment Wa	ills						Height		1.45 Count	2.00
Location	North and Sou	uth sides								Total Quantity	72.50
Material	Precast Concr	ete						Lim	ited Inspec	tion	
Element Type	Legs of rigid fr	rame						Environ	ment		
Protection System	None							✓ Ber	ign		
Condition Data	Units	Excell.	Good	Fai	ir	Poor		☐ Mod	derate		
	sq.m	72.50		0.00	0.00		0.00	∐ Sev	ere		
Comments											
Performance Defici	encies		Maintenan	ce Needs		Priority		lo	omments		
None			None								
Rehab/Rehabilitati	on Recommend	dations	Priority		Cost	 C	omment	s			

yrs.



None

6/1/2015 5/19

Region of Halton

wunicipai Structure	e inspection Form			Stru	cture Number:	19-1196390 BK01		
Foundation - Found	dation (below ground lev	el)						
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					Environmen	t		
Protection System	None				Benign			
Condition Data	Units Excell.	Good Fa	air	Poor	☐ Moderate	2		
	0.00	0.00	0.00	0.00	Severe			
Comments Limit Inspection.								
Limit inspection.								
Performance Defici	encies	Maintenance Needs	s	Priority	Comm	nents		
None		None						
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments				
Approaches - Appro	1							
Element Group	Approaches	1 [Length	6.00 Width 17.70		
Element Name	Approach Slab				Height	0.00 Count 2.00		
Location	Both Ends					Total Quantity 212.40		
Material	Cast-in-place Concrete				Limited Inspection			
Element Type					Environment			
Protection System	Hot rubberized asphalt me	mbrane			☐ Benign ✓ Moderati	<u>a</u>		
Condition Data	Units Excell.	Good Fa	air	Poor	Severe			
	sq.m 212.40	0.00	0.00	0.00				
Comments								
Performance Defici	encies	Maintenance Needs	s	Priority	Comm	nents		
_ , , ,			_	_				
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments		_		



6/1/2015 6/19

Region of Halton Structure Number: 19-1196390 BR01 **Municipal Structure Inspection Form** Decks - Deck Top (with Thick Slab) **Element Group** Decks Length 11.90 Width 25.00 **Element Name** Deck Top (with Thick Slab) Height 0.00 **Count** 297.50 Location Above structure **Total Quantity** Material Precast Concrete Limited Inspection **Element Type** Precast solid or void without concrete topping **Environment** Benign **Protection System** Hot Rubberized asphalt membrane ✓ Moderate **Condition Data** Units Excell. Good Fair Poor Severe 297.50 0.00 0.00 sq.m 0.00 Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None **Priority** Rehab/Rehabilitation Recommendations Cost Comments **Decks - Soffit - Thick Slab Element Group** 11.00 Width 3.70 Decks Length Exterior **Element Name** Soffit - Thick Slab Height Count Underside of deck Location **Total Quantity** 40.70 Precast Concrete Material Limited Inspection **Element Type Environment** Benign Protection System None ✓ Moderate **Condition Data** Units Excell. Good Fair Poor Severe 38.70 1.00 1.00 0.00 sq.m Comments Medium scaling along edge (west side) **Performance Deficiencies Maintenance Needs** Priority Comments

Cost Comments



Rehab/Rehabilitation Recommendations

Priority

6/1/2015 7/19

Region of Halton 19-1196390 BR01 **Municipal Structure Inspection Form** Structure Number: **Decks - Soffit - Thick Slab Element Group** Decks 11.00 Width 23.00 Length **Element Name** Soffit - Thick Slab Interior Height Count 253.00 Location Underside of deck **Total Quantity** Precast Concrete Material Limited Inspection **Element Type Environment** √ Benign **Protection System** None Moderate **Condition Data** Units Excell. Good Fair Poor Severe 248.00 3.00 1.00 1.00 sq.m Comments - 3rd box from West End, 2.5 m from South Abutment Wall: 300mmx500mm delaminated piece of concrete - Some joints have light spalling and light scaling - foam has been forced out from between some joints (East Side) **Performance Deficiencies Maintenance Needs** Priority Comments None None Rehab/Rehabilitation Recommendations Priority **Cost Comments** Minor Rehabilitation \$3,500 Removal and patch repair concrete **Decks - Wearing Surface Element Group** 11.90 Width 17.70 Decks Length 0.00 **Count Element Name** Wearing Surface Height Location Above structure **Total Quantity** 210.63 Asphalt Material Limited Inspection **Element Type Environment** Benign **Protection System** None Moderate **Condition Data** Units Excell. Good Fair Poor ✓ Severe 160.63 50.00 0.00 0.00 sq.m Comments **Performance Deficiencies Maintenance Needs** Priority Comments

Cost Comments



Rehab/Rehabilitation Recommendations

Priority

6/1/2015 8/19

Region of Halton

wunicipai Structur	e inspection For	rm			Str	ucture Number:	19-119	1639U B	KUI
Embankments & St	reams - Emban	kments							
Element Group	Embankments &	Streams				Length	w	idth _	
Element Name	Embankments					Height	Co	ount	4.00
Location	All Quadrants						Total Qua	antity	4.00
Material	Other					Limited	Inspection		
Element Type						Environmer			
Protection System	None					Benign			
Condition Data	Units E	xcell.	Good	Fair	Poor	Modera			
	Each	0.00	4.00	0.00	0.00	Severe			
Comments			,		-				
Performance Defici	encies	ı	Maintenance Ne	eds	Priority	Comr	nents		_
None		N	lone						
Rehab/Rehabilitation	on Recommenda	tions F	Priority	Cost	Comments	· ·			
Embankments & St	reams - Slope P	rotection							
Element Group	Embankments &	Streams				Length	W	idth	
Element Name	Slope Protection	ı				Height	Co	ount	4.00
Location	All Quadrants						Total Qua	antity	4.00
Material	Vegetation					Limited Inspection			
Element Type						Environmer			
Protection System	None					Benign			
Condition Data	Units E	xcell.	Good	Fair	Poor	Modera	te		
	Each	0.00	4.00	0.00	0.00	Severe			
Comments									
									•
Performance Defici	encies	r	Maintenance Ne	eds	Priority	Comr	nents		
Performance Defici	encies	r	Maintenance Ne	eeds	Priority	Comr	ments		
Performance Defici	encies	r	Maintenance Ne	eeds	Priority	Comr	nents		
Performance Defici	encies	P	Maintenance Ne	eeds	Priority	Comr	nents		
Performance Defici			Maintenance Ne		Priority Comments	Comr	nents		
						Comr	nents		



6/1/2015 9/19

Region of Halton 19-1196390 BR01 **Municipal Structure Inspection Form** Structure Number: Sidewalks/Curbs - Curbs **Element Group** Sidewalks/Curbs Length 11.90 Width 0.55 **Element Name** Curbs Headwalls Height 0.20 **Count** 2.00 17.85 Location East and West Sides **Total Quantity** Material Cast-in-place Concrete Limited Inspection **Element Type Environment** Benign **Protection System** None Moderate **Condition Data** Units Excell. Good Fair Poor ✓ Severe 17.85 0.00 0.00 sq.m 0.00 Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None **Priority** Rehab/Rehabilitation Recommendations Cost Comments Embankments & Streams - Streams & Waterways **Element Group Embankments & Streams** Width Length 1.00 **Element Name** Streams & Waterways Height Count Location Through structure **Total Quantity** 1.00 Material Limited Inspection **Element Type Environment** Benign Protection System None Moderate **Condition Data** Units Excell. Good Fair Poor Severe ΑII 0.00 1.00 0.00 0.00 Comments -Ponding at east corners of structure - Regrade to provide positive drainage **Performance Deficiencies Maintenance Needs** Priority Comments Drainage through structure needs to be regraded Bridge Deck Drainage 1-5 years

Cost Comments



Rehab/Rehabilitation Recommendations

Priority

6/1/2015 10/19

Municipal Structure Inspection Form Structure Number: 19-1196390 BR01 **Abutments - Wingwalls Element Group** Abutments Length 1.15 Width **Element Name** Wingwalls Height 1.78 **Count** 2.00 East Side **Total Quantity** 4.09 Location Material Cast-in-place Concrete Limited Inspection **Element Type** Reinforced Concrete **Environment** Benign **Protection System** None ✓ Moderate **Condition Data** Units Excell. Good Fair Poor Severe 4.09 0.00 0.00 0.00 sq.m Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Rehab/Rehabilitation Recommendations **Priority** Cost Comments **Retaining Walls - Walls Element Group** Retaining Walls 6.00 Width Length Walls 1.00 **Count** 2.00 **Element Name** Height Location East Side **Total Quantity** 12.00 Precast Concrete Material Limited Inspection **Element Type** Retained soil systems **Environment** Benign **Protection System** None ✓ Moderate **Condition Data** Units Excell. Good Poor Fair Severe 12.00 0.00 0.00 0.00 sq.m Comments **Performance Deficiencies Maintenance Needs** Priority Comments Rehab/Rehabilitation Recommendations **Priority** Cost Comments



6/1/2015 11/19

Region of Halton

funicipal Structure Inspection Form					St	Structure Number: 19-1196390 B		
Approaches - Appr	oach Guidera	il						
Element Group	Approaches					Length	Width	
Element Name	Approach Guiderail Extruder End					Height	Count	4.00
Location	All Quadrants	All Quadrants					Total Quantity	4.00
Material	Steel					Limited I	nspection	
Element Type						Environment	· •	
Protection System	Hot dip galva	nized				Benign		
Condition Data	Units Excell. Good Fair				Poor	Moderate		
	Each	0.00	4.00	0.00	0.00	✓ Severe		
Comments	<u></u>	<u></u>		· <u></u>		•		
					1			
Performance Defici	iencies		Maintenance N	eeds	Priority	Comm	ents	
None			None					
Rehab/Rehabilitati	on Recommen	dations	Priority	Cost	Comments	ı		
			-					



6/1/2015 12/19



East Elevation



West Elevation



6/1/2015 13/19



Looking East (Note Scaling on Exterior Soffit)



Typical Joint



6/1/2015 14/19



Form at Joint (several joints near East End)



Spall at Second Joint from East End



6/1/2015 15/19



Delamination in third panel from West End



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



6/1/2015 16/19



Typical Wingwall / Retaining Wall



Typical RSS



6/1/2015 17/19



Extension and Header Wall on West Side



Crack on Approach Wearing Surface



6/1/2015 18/19



Looking North at Bridge



Looking South at Bridge



6/1/2015 19/19



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 Numb	er:	336921

	Name, Title	Signature	Date
Prepared By	J.Hallett, E.I.T.	Julitallelle	MAY 27/15
Reviewed By	J.Luckai, P.Eng	Att Juli	may 27/15
Approved By	C.Pasqualino, P.Eng	Rayul-	may 28/15

Municipal Structur	e Insp	ection Fo	rm							Struc	ture Number:	19-1196	390 BR03
Inventory Data													
Structure Name	Wins	ton Church	ill Blvd,	Lot 3, 0	Conc XI		Hwy No	. [19		Key Photo		
Cross. Type Over	✓ F	toad R	al Pe	ed 🗌	Nav. Wa	ter	☐ No	n-Nav	. Water	Other			A TABLET
Cross. Type Under	☐ R	oad 🗌 R	tal∏ Pe	ed 🗌	Nav. Wa	ter	✓ No	n-Nav	. Water	Other	30863	M. W. 100	THE PERSON NAMED IN
Road Name	Wins	ton Church	ill Blvd									The Control	
Structure Location	1.7 kı	m North of	Steeles	Avenu	е								The same of the sa
Northing	5959	918.0 East i	ing	4830	0092.0 C	ur.Re	ep.Value				*	· WEEK	
Owner(s) / %	Regio	n of Haltor	า				50%						05-20 to 100 ft
Shared	Regio	nal Munici	pality of	Peel			50%	Н	eritage Stat	us	Not Considered 1	for Designation	
MTO Region	Centr	al						R	oad Side En	v.	Rural		
MTO District	Centr	al						R	oad Class		Arterial		
County	Halto	n						La	ane Type				
Geographic Twp.								P	osted Speed	t l	80	No. of Lanes	2
Structure Category	Bridg	e						A	ADT		12,625	Pct. Trucks	2
Struct.SubCategory	Fram	e											
Structure Type	Rigid	Frame, Ve	rtical Le	gs				In	nterchange I	Numbe	er		
Structure Material	Reinf	orced Prec	ast Cond	rete				D	esign Load (Code			CHBDC
Total Deck Length		6.11 m	Road V	Vidth	10	6.57	m	In	terchange S	Structu	ıre Number		
Overall Width		25.0 m	Vert. C	lear	(0.00	m	D	etour Lengt	:h	0 km	Skew Angle	0 °
Total Deck Area	1!	52.75 m ²	No. of	Spans		1		Fi	ill on Structı	ure	0.4 m	Struct. Dir.	North/South
Special Routes	П	ransit 🗸	School		Γruck [Bio	cycle	In	nsp. Duratio	n	1 hr		
*Current Replacement site specific cost factors									d calculated	using be	enchmark costs. Ca	pital planning sh	nould consider
	anu re	quireilleilts	TOT WILLE	illig oi	ienguiem	ilig Oi	the struc	ture					
Spans													
Span Name			Span L	_	i		S	pan N	Name		Span	Lengths	
Span 1			5.2	m									
Historical Data													
Year Built				2011	уууу		Y	ear o	f Last Major	r Rehal	o		уууу
Last OSIM Inspection	1		10/09	/2012	mm/dd,	/уууу	· c	ontra	ct No. Whe	n Built			
Last Enhanced OSIM					mm/dd,	/уууу	L	ast Ev	/aluation				mm/dd/yyyy
Last Enhanced Acces	s				mm/dd,	/уууу	· c	urren	nt Load Limi	t	t	t	t
Last Underwater Ins	ρ.				mm/dd,	/уууу	L	oad L	imit By-Law	No.			mm/dd/yyyy
Last Condition Surve	у				mm/dd,	/уууу	В	y-Lav	v Expiry Dat	e			mm/dd/yyyy
Rehab History													
1													



6/1/2015 1/20

Region	of	Ha	lton

Municipal Structur	re Inspection Form	Structure Num	196390 BR03		
Field Inspection In	formation				
Inspection Date	05/06/2015 mm/dd/yyyy	Multi Day Inspection	osiw[Enhanced OSIM	BCI 99.6
Inspector	C.Chan, E.I.T.	Eng. Respons	ible J.Luckai, P.En	g	
Others in Party	J.Hallett, E.I.T.				
Access Equip.	Lift Ladder Boat Brid	lge Master Other			
Other Equip.	Hammer, Camera, Measuring Tape				
Weather	Sunny		Temperature	20]°C
Additional Investig	Pation Required:				
Investigation	oution nequineur		Priority		Estimated Cost
congunon		None	•	Urgent	Estimated Cost
Detailed Deck Cond	dition Survey	J			\$0
Delamination Surve	ey of Asphalt-Covered Deck	7			\$0
Concrete Substruct	ure Condition Survey	✓			\$0
Detailed Coating Co	ondition Survey	J			\$0
Post-Tensioned Str	and Investigation	✓			\$0
Underwater Investi	gation	J			\$0
Fatigue Investigation	on	J			\$0
Seismic Investigation	on	J			\$0
Structure Evaluatio	n	7			\$0
Monitoring of Defo	rmation, Movements and Settlements	J			\$0
Monitoring of Crac	k Widths	J			\$0
Investigation Note	s			Total Cost	\$0
Overall Structure I	Notes:				
Recommended Wor	k on Structure			:	
Timing of Recomme	nded Work				
Overall Comments					
BCI Change Justification	neous input on 9-Oct-12 Inspection Repor	t			
Next Inspection	05/06/2017 mm/dd/yyyy	Estim	ated Load Limit	t	tt

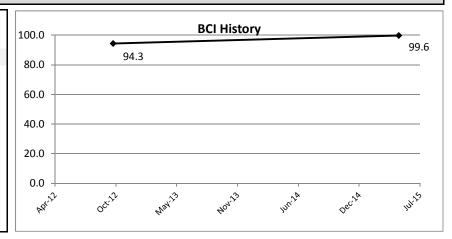


6/1/2015 2/20

Structure Number: 19-1196390 BR03

BCI History

Inspection Date	BCI	Inspector
9-Oct-12	94.3	D.Kelly
9-Oct-12 6-May-15	99.6	J.Luckai



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

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity 06 Bearing not uniformly loaded/unstable 12 Slippery surfaces
02 Excessive deformations (deflections & rotations) 07 Jammed expansion joint 13 Flooding/channel blockage
03 Continuing settlement 08 Pedestrian/vehicular hazard 14 Undermining of foundation
04 Continuing movements 09 Rough riding surface 15 Unstable embankments

05 Seized bearings 10 Surface ponding 16 Other

11 Deck drainage

Maintenance Needs

01 Lift and Swing Bridge Maintenance 07 Repair to Structural Steel 13 Erosion Control at Bridges

02 Bridge Cleaning08 Repair of Bridge Concrete14 Concrete Sealing03 Bridge Handrail Maintenance09 Repair of Bridge Timber15 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



6/1/2015 3/20

Region of Halton Structure Number: 19-1196390 BR03 **Municipal Structure Inspection Form Approaches - Wearing Surface (Approach) Element Group** Approaches Length 6.00 Width 16.57 **Element Name** Wearing Surface (Approach) Height 0.00 **Count** 2.00 198.84 Location **Both Ends Total Quantity** Material Cast-in-place Concrete Limited Inspection **Element Type Environment Protection System** Hot rubberized asphalt membrane Benign **Condition Data** Units Excell. Good Fair Poor Moderate 0.00 0.00 sq.m 198.84 0.00 ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None **Priority** Rehab/Rehabilitation Recommendations Cost Comments None yrs. **Barriers - Barrier/Parapet Wall Element Group** Barriers 18.11 Width 0.00 Length Barrier/Parapet Wall Interior 0.95 **Count** 2.00 **Element Name** Height Location **Both Sides Total Quantity** 34.41 Limited Inspection Material Cast-in-place Concrete **Element Type** Safety Shape without railing **Environment Protection System** None Benign **Condition Data** Units Excell. Good Poor Fair Moderate 24.41 9.00 1.00 0.00 sq.m ✓ Severe Comments - Light scaling **Performance Deficiencies Maintenance Needs** Priority Comments None

Cost

Comments



Rehab/Rehabilitation Recommendations

None

Priority

yrs.

6/1/2015 4/20

Region of Halton											
Municipal Structure	e Inspection F	orm				St	ructure Nui	mber:	19-1	196390	BR03
Barriers - Barrier/P	arapet Wall										
Element Group	Barriers						Lengtl	h	18.11	Width	0.00
Element Name	Barrier/Parape	et Wall		Exte	erior		Heigh	t	0.80	Count	2.00
Location	Both Ends]		Total (Quantity	28.98
Material	Cast-in-place (Concrete						Limited	I Inspection		
Element Type	Safety Shape without railing						Enviro	onmen	t		
Protection System	None							Benign			
Condition Data	Units	Excell.	Good	Fair		Poor		Modera	ate		
	sq.m	25.98	2	2.00	1.00	0.00	~	Severe			
Comments											
- Light Scaling	- Light scaling										
Performance Defici	Performance Deficiencies Maintenance Needs Priority						Comn	nents			
None			None								
Rehab/Rehabilitation	on Recommend	dations	Priority		Cost		nents				
None			yr	S.	\$0)					
Abutments - Abutn	nent Walls						_			_	
Element Group	Abutments						Lengt	h		Width	25.00
Element Name	Abutment Wa	lls					Heigh	t	1.50	Count	2.00
Location	North and Sou	ıth Sides]		Total (Quantity	75.00
Material	Precast Concre	ete						Limited	Inspection		
Element Type	Legs of rigid fr	ame					Enviro	onmen	t		
Protection System	None						V	Benign			
Condition Data	Units	Excell.	Good	Fair		Poor		Modera	ate		
	sq.m	75.00	C	0.00	0.00	0.00		Severe			
Comments											
Performance Defici	encies		Maintenand	e Needs		Priority		Comn	nents		
None			None								
						1					

Cost

Comments



Rehab/Rehabilitation Recommendations

None

Priority

yrs.

6/1/2015 5/20

Region of Halton

iviunicipai Structur	e inspection Form		Stru	icture Number:	19-1196390 BKU3		
Foundation - Found	dation (below ground lev	/el)					
Element Group	Foundation			Length	Width		
Element Name	Foundation (below ground	i level)		Height	Count		
Location	Below Structure				Total Quantity 0.00		
Material				✓ Limited	Inspection		
Element Type				Environmen	t .		
Protection System	None			Benign			
Condition Data	Units Excell.	Good Fair	Poor	Moderate			
	0.00	0.00	0.00	Severe			
Comments			- ,				
Limited Inspection							
Performance Defici	encies	Maintenance Needs	Priority	Comm	nents		
None		None					
	on Recommendations	Priority C	ost Comments				
None			l				
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 Inspection			
Element Type				Environment			
Protection System	Hot Rubberized asphalt me	embrane		Benign			
Condition Data	Units Excell.	Good Fair	Poor	✓ Modera	te		
	sq.m 198.84	0.00	0.00	Severe			
Comments							
Performance Defici	encies	Maintenance Needs	Priority	Comm	nents		
None		None					
Rehab/Rehabilitation	D	Deignitus	ost Comments				
	on Recommendations	Priority C	ost comments				
None	on Recommendations	Priority	ost comments				



6/1/2015 6/20

Region of Halton Structure Number: 19-1196390 BR03 **Municipal Structure Inspection Form** Decks - Deck Top (with Thick Slab) 6.11 Width **Element Group** Decks Length 25.00 **Element Name** Deck Top (with Thick Slab) Height 0.00 **Count** Location Above structure **Total Quantity** 152.75 Material Precast Concrete Limited Inspection **Element Type** Precast solid or void without concrete topping **Environment Protection System** Hot Rubberized asphalt membrane Benign **Condition Data** Units Excell. Good Fair Poor ✓ Moderate 0.00 0.00 sq.m 152.75 0.00 Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Priority Rehab/Rehabilitation Recommendations Cost Comments **Decks - Soffit - Thick Slab Element Group** 5.20 Width 3.80 Decks Length Exterior **Element Name** Soffit - Thick Slab Height Count Location Underside of Deck **Total Quantity** 19.76 Precast Concrete Material Limited Inspection **Element Type Environment** Protection System None Benign **Condition Data** Units Excell. Poor Good Fair ✓ Moderate 19.76 0.00 0.00 0.00 sq.m Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments

Cost Comments



Rehab/Rehabilitation Recommendations

Priority

6/1/2015 7/20

Municipal Structure	e Inspection Form			Struct	ture Number:	19-1196390 BR03		
Decks - Soffit - Thic	k Slab							
Element Group	Decks				Length	5.20 Width 23.00		
Element Name	Soffit - Thick Slab		Interior		Height	Count		
Location	Underside of deck					Total Quantity 119.60		
Material	Precast Concrete				Limited	Inspection		
Element Type					Environment			
Protection System	None				✓ Benign			
Condition Data	Units Excell.	Good	Fair	Poor	Modera	te		
l	sq.m 119.60	0.00	0.00	0.00	Severe			
Comments								
,								
Performance Defici	encies	Maintenance No	eeds	Priority	Comm	nents		
None		None						
	on Recommendations	Priority	Cost	Comments				
None								
Decks - Wearing Su								
Element Group	Decks	1			Length	18.10 Width 16.57		
Element Name	Wearing Surface				Height	0.00 Count		
Location	Above structure					Total Quantity 299.92		
Material	Asphalt				Limited Inspection			
Element Type					Environmen	t		
Protection System	None				Benign			
Condition Data	Units Excell.	Good	Fair	Poor	Modera	te		
	sq.m 274.92	25.00	0.00	0.00	✓ Severe			
Comments								
	,			1				
Performance Defici	encies	Maintenance No	eeds	Priority	Comm	nents		
Debek /Dahahiliasai	5	S. Laudau.	Cont					
Renab/Renabilitation	on Recommendations	Priority	Cost	Comments				
				I				



6/1/2015 8/20

Municipal Structure	e Inspection Form		Structure Nu	ımber: 19-1196390 BR03			
Embankments & St	reams - Embankments						
Element Group	Embankments & Streams		Leng	th Width			
Element Name	Embankments		Heig	ht Count 4.00			
Location	All Quadrants			Total Quantity 4.00			
Material	Vegetation			Limited Inspection			
Element Type			Envir	ronment			
Protection System	None			Benign			
Condition Data	Units Excell.	Good Fair	Poor	Moderate			
	Each 0.00	4.00 0.00	0.00	Severe			
Comments							
Performance Defici	encies	Maintenance Needs	Priority	Comments			
None		None					
Rehab/Rehabilitation	on Recommendations	Priority Cost	Comments				
			I				
	reams - Slope Protection						
Element Group	Embankments & Streams	1 [Leng				
Element Name	Slope Protection		Heig				
Location	All Quadrants			Total Quantity 4.00			
Material	Vegetation			Limited Inspection			
Element Type			Envir	ronment			
Protection System	None			Benign			
Condition Data	Units Excell.	Good Fair	Poor	Moderate			
	Each 0.00	4.00 0.00	0.00	Severe			
Comments							
Performance Defici	encies	Maintenance Needs	Priority	Comments			
Rehab/Rehabilitation	on Recommendations	Priority Cost	Comments				
			1				



6/1/2015 9/20

Municipal Structure	e Inspection Form			Structure Number: 19-1196390 BR03				
Sidewalks/Curbs - 0	Curbs							
Element Group	Sidewalks/Curbs				Length	18.10 Width 0.55		
Element Name	Curbs		Headwalls		Height	0.20 Count 1.00		
Location	East and West sides					Total Quantity 13.58		
Material	Cast-in-place Concrete				Limited	Inspection		
Element Type					Environmen	t		
Protection System	None				Benign			
Condition Data	Units Excell. Good Fair Poor			Poor	☐ Modera	ate		
	sq.m 0.0	13.58	0.00	0.00	Severe			
Comments						1		
- Light abrasions								
Performance Defici	encies	Maintenance N	eeds	Priority	Comn	nents		
None		None						
_								
Rehab/Rehabilitation	on Recommendations	Priority	Cost	Comments				
				I				
Fbl	Churana O Wat							
	reams - Streams & Wat	erways			Longth	VA/: deb		
Element Group	Embankments & Streams		1		Length	Width		
Element Name	Streams & Waterways				Height	Count 1.00		
Location	Through Structure					Total Quantity 1.00		
Material					_	Inspection		
Element Type					Environmen	t		
	None				Benign			
Condition Data	Units Excell.	Good	Fair	Poor	☐ Modera			
Comments	AII 0.0	1.00	0.00	0.00	Severe			
	ners of structure - Regrade	to provide positi	ve drainage					
		1 .		1	1.			
Performance Defici	encies	Maintenance N Bridge Deck Drainag		Priority 1-5 years	Comn Drainas	nents ge through structure needs to be regraded		
		blidge Deck Dialilag	;c	1-5 years				
Rehah/Rehahilitatio	on Recommendations	 Priority	Cost	Comments				
Kenab/ Kenabintatio	on recommendations	FIIOTILY	COST	Comments				



6/1/2015 10/20

Region of Halton Municipal Structure Inspection Form Str							ucture Number: 19-1196390 BR03				
Abutments - Wings	walls										
Element Group	Abutments						Length		1.10 Width		
Element Name	Wingwalls						Height	Height 2.30 Count 2.			
Location	East Side								Total Quantity	5.06	
Material	Cast-in-place Concrete							imited In	spection		
Element Type							Environment				
Protection System	None						Пв	Benign			
Condition Data	Units Excell. Good Fair Poor Moderate										
	sq.m	5.06	0.00		0.00	0.00		Severe			
Comments				- I							
Performance Defici	Performance Deficiencies			Maintenance Needs			Comme		nts		
None		1	None								
Rehab/Rehabilitati	on Recommend	dations	Priority		Cost	Comments					
						l					
Retaining Walls - V											
Element Group	Retaining Walls						Length	L	6.20 Width		
Element Name	Walls						Height		1.40 Count	2.00	
Location	East Side Total Quantity 17										
Material	Precast Concrete						Limited Inspection				
Element Type	Retained soil systems						Environment				
Protection System	None						B	Benign			
Condition Data	Units Excell. Good			Fair Poor			✓ M	✓ Moderate			
	sq.m	17.40	0.00		0.00	0.00	□ S	Severe			
Comments											
Performance Deficiencies			Maintenance Needs			Priority		Comments			

Cost Comments



Rehab/Rehabilitation Recommendations

Priority

6/1/2015 11/20

Region of Halton

Municipal Structure Inspection Form Structure Number: 19-1196390 BR03 Approaches - Approach 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 Environment **Element Type** Protection System Hot dip galvanized Benign **Condition Data** Units Excell. Good Fair Poor Moderate Each 0.00 4.00 0.00 0.00 ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Rehab/Rehabilitation Recommendations **Priority** Cost Comments



6/1/2015 12/20



East Elevation



West Elevation



6/1/2015 13/20



Looking North at Bridge



Looking South



6/1/2015 14/20



South East Abutment



North East Abutment



6/1/2015 15/20



Typical Soffit



Typical Joint and South Abutment Wall



6/1/2015 16/20



Pounding (Typical on East Side)



Looking East Through the Structure



6/1/2015 17/20



Deck Slab Joint (Typical)



Extension on West Side



6/1/2015 18/20



Disintegrated Concrete at RSS Connection



Looking Downstream



6/1/2015 19/20



Typical Joint on Barrier Wall



Typical Scaling on Barrier Wall



6/1/2015 20/20



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.	Juled Boll	Tollre PAM
Reviewed By	J.Luckai, P.Eng	At Juli	May 27/15
Approved By	C.Pasqualino, P.Eng	(Bayela	MAY 28/15

Municipal Structur	e Inspection Fo	rm				Struc	ture Number:	19-1196	390 BR05
Inventory Data									
Structure Name	Winston Church	ill Blvd, Lot 1,	Conc XI	Hwy No.	19	ı	Key Photo		
Cross. Type Over	✓ Road ☐ Ra	ail Ped	Nav. Water	r No	n-Nav. Water	Other			
Cross. Type Under	Road R	ail Ped	Nav. Water	r 🗸 No	n-Nav. Water	Other		A CHILLIAN	18 18 18
Road Name	Winston Church	ill Blvd						the same of	The same of
Structure Location	0.5 km North of	Steeles Avenu	ie						
Northing	596708.0 Easti	ng 4829	9286.0 Cu ı	r.Rep.Val	ıe	2	*		100
Owner(s) / %	Region of Haltor	า		50%			THE NAME OF THE PARTY OF THE PA		18-95 2015 09 49
Shared	Regional Munici	pality of Peel		50%	Heritage Stat	us	Not Considered	for Designatio	า
MTO Region	Central				Road Side En	v.	Rural		
MTO District	Central				Road Class		Arterial		
County	Halton				Lane Type				
Geographic Twp.					Posted Speed	j [60	No. of Lanes	4
Structure Category	Bridge				AADT		12,625	Pct. Trucks	2
Struct.SubCategory	Frame								
Structure Type	Rigid Frame, Ve	rtical Legs			Interchange I	Numbe	r		
Structure Material	Reinforced Prec	ast Concrete			Design Load (Code			CHBDC
Total Deck Length	11.30 m	Road Width	17.80	m	Interchange S	Structu	re Number		
Overall Width	25.14 m	Vert. Clear	0.00	m	Detour Lengt	:h [0 km	Skew Angle	0
Total Deck Area	284.08 m ²	No. of Spans	1		Fill on Struct	ure	0 m	Struct. Dir.	North/South
Special Routes	☐ Transit ✓	School	Truck	Bicycle	Insp. Duratio	n [1 hr		
*Current Replacement consider site specific co						ed using	g benchmark costs	s. Capital plannii	ng should
Spans									
Span Name		Span Length	5	S	oan Name		Span	Lengths	
Span 1		10.4 m							
Historical Data									
Year Built		2011	уууу	Y	ear of Last Major	r Rehal	,		уууу
Last OSIM Inspection	n	10/09/2012	mm/dd/y	ууу С	ontract No. Whe	n Built			
Last Enhanced OSIM	I		mm/dd/y	yyy La	st Evaluation				mm/dd/yyyy
Last Enhanced Acces	ss		mm/dd/y	ууу С	urrent Load Limi	t	t	t	t
Last Underwater Ins	sp.		mm/dd/y	yyy Lo	oad Limit By-Law	No.			mm/dd/yyyy
Last Condition Surve	еу		mm/dd/y	уууу В	y-Law Expiry Dat	te			mm/dd/yyyy
Rehab History									



6/1/2015 1/23

Region	of I	Lم⊔	ton
Negion	UI I	Ia	ton

Municipal Structur	re Inspection Form		Structure Num	ber: 19-1	196390 BR05
Field Inspection In	formation				
Inspection Date	05/06/2015 mm/dd/yyyy	Multi Day Inspection	n	Enhanced OSIM	BCI 98.9
Inspector	C.Chan, E.I.T.	Eng. Respons	ible J.Luckai, P.Eng	g	
Others in Party	J.Hallett, E.I.T.				
Access Equip.	Lift Ladder Boat Brid	lge Master Other			
Other Equip.	Hammer, Camera, Measuring Tape				
Weather	Sunny		Temperature	20	°C
Additional Investig	vation Required:				
Investigation	gation Required.		Priority		Estimated Cost
mvestigation		None	•	Urgent	Estimated Cost
Detailed Deck Cond	dition Survey	J			\$0
Delamination Surve	ey of Asphalt-Covered Deck	4			\$0
Concrete Substruct	ure Condition Survey	✓			\$0
Detailed Coating Co	ondition Survey	J			\$0
Post-Tensioned Str	and Investigation	J			\$0
Underwater Investi	gation	√			\$0
Fatigue Investigation	on	J			\$0
Seismic Investigation	on	J			\$0
Structure Evaluatio	n	✓			\$0
Monitoring of Defo	rmation, Movements and Settlements	J			\$0
Monitoring of Crac	k Widths	J			\$0
Investigation Note	s			Total Cost	\$0
Overall Structure I	Notes:				
Recommended Wor	k on Structure			:	
Timing of Recomme	nded Work				
Overall - Pat Comments	ch repair at PVC outlet				
BCI Change Justification					
Next Inspection	05/06/2017 mm/dd/yyyy	Estim	ated Load Limit	t	t t



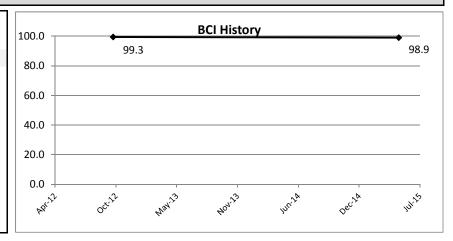
6/1/2015 2/23

Municipal Structure Inspection Form

Structure Number: 19-1196390 BR05

BCI History

Inspection Date	BCI	Inspector
9-Oct-12	99.3	D.Kelly
6-May-15	98.9	J.Luckai



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

Standard Codes

Suspected Performance Deficiencies

01 Load carrying capacity 06 Bearing not uniformly loaded/unstable 12 Slippery surfaces
02 Excessive deformations (deflections & rotations) 07 Jammed expansion joint 13 Flooding/channel blockage
03 Continuing settlement 08 Pedestrian/vehicular hazard 14 Undermining of foundation
04 Continuing movements 09 Rough riding surface 15 Unstable embankments
05 Seized bearings 10 Surface ponding 16 Other

11 Deck drainage

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

 05 Bridge Deck Joint Repair
 11 Animal/Pest Control
 17 Scaling (Loose Concrete or ACR Steel)

 06 Bridge Bearing Maintenance
 12 Bridge Surface Repair



6/1/2015 3/23

Region of Halton	a laan aatian F						C4.	ata Ni		10 1106300	N D D O F
Municipal Structur	-						Sti	ructure Nu	mber:	19-1196390	J BKU5
Approaches - Wear		Approacn)									
Element Group	Approaches							Lengt	_	6.00 Width	17.80
Element Name	Wearing Surfa	ice (Approach	1)					Heigh	t	0.00 Count	2.00
Location	Both Sides									Total Quantity	213.60
Material	Asphalt								Limited In	spection	
Element Type								Enviro	onment		
Protection System	None								Benign		
Condition Data	Units	Excell.	Good	Fair		Poor			Moderate		
	sq.m	174.60	39.00		0.00		0.00	√	Severe		
Comments											
Performance Defici	encies		Maintenance N	leeds		Priori	ty		Commen	nts	
None			None								
Rehab/Rehabilitati		dations	Priority		Cost		Comm				
Minor Rehabilitation	n		1-5 yrs.		\$1,000		Patch	repair at rou	ınd PVC o	utlet	
Barriers - Barrier/P	arapet Wall										
Element Group	Barriers							Lengt	h	23.24 Width	0.00
Element Name	Barrier/Parap	et Wall		Interio	or			Heigh	t	1.10 Count	2.00
Location	Both sides									Total Quantity	51.13
Material	Cast-in-place (Concrete							Limited In:	spection	
Element Type	Parapet Wall v	with single ra	iling					Enviro	onment		
Protection System	None	-							Benign		
Condition Data	Units	Excell.	Good	Fair		Poor			Moderate		
	sq.m	33.13	17.00		1.00		0.00		Severe		
Comments								ت	Severe		
- Medium spall on N		5mm dia., 30.	7 m from NE co	rner of b	arrier						
- Light scaling elsew - Light hairline crack											
	-					l			<u> </u>		
Performance Defici	encies		Maintenance N	leeds		Priori	ty		Commen	its	
None			HOILE								
Rehab/Rehabilitati	on Pacamman	lations	Driority		Cost		Comm	onts			
renab/kenabilitati	on kecommend	ations	Priority		Cost		Comm	ients			

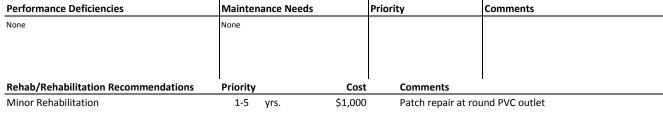
yrs.



None

6/1/2015 4/23

Region of Halton									
Municipal Structur	e Inspection F	orm			St	ructure Nu	mber:	19-1196390 B	R05
Barriers - Barrier/P	arapet Wall								
Element Group	Barriers					Lengt	h	23.24 Width	0.00
Element Name	Barrier/Parap	et Wall		Exterior		Heigh	ıt	0.83 Count	2.00
Location	Both Sides]		Total Quantity	38.58
Material	Cast-in-place	Concrete					Limited 1	Inspection	
Element Type	Parapet Wall	with single rai	ling			Envir	onment		
Protection System	None						Benign		
Condition Data	Units	Excell.	Good	Fair	Poor	V	Moderate	e	
	sq.m	36.58	2.00	0.00	0.00		Severe		
Comments									
- Some light scaling									
Performance Defici	encies	I	Maintenance N	leeds	Priority		Comme	ents	
None Rehab/Rehabilitati	on Recommen		Priority	Cos	t Comr	nents			
None	<u></u>	uutions	yrs.	\$1					
Abutments - Abutn	nent Walls								
Element Group	Abutments					Lengt	h [6.00 Width	25.14
Element Name	Abutment Wa	ılls				Heigh	ıt [1.50 Count	2.00
Location	North and sou	uth sides]		Total Quantity	75.42
Material	Precast Concr	ete					Limited 1	Inspection	
Element Type	Legs of rigid f	rame				Envir	onment		
Protection System	None					_ 	Benign		
Condition Data	Units	Excell.	Good	Fair	Poor		Moderate	e	
	sq.m	73.42	2.00	0.00	0.00		Severe		
Comments - Spalling around PV - Staining on some j		uth Wall							
Performance Defici	encies		Maintenance N	leeds	Priority		Comme	ents	





6/1/2015 5/23

Region of Halton

wunicipai Structur	e inspection Form		Structure	Number	19-1196390 BK05			
Foundation - Found	dation (below ground lev	rel)						
Element Group	Foundation		Le	ength	0.00 Width 0.00			
Element Name	Foundation (below ground	l level)	Н	eight	0.00 Count 0.00			
Location	Below structure				Total Quantity 0.00			
Material				✓ Limited	d Inspection			
Element Type			Er	nvironmer	nt			
Protection System	None			Benign				
Condition Data	Units Excell.	Good Fair	Poor	Moderate				
	0 0.00	0.00	0.00	Severe	2			
Comments								
Limited inspection.								
Performance Defici	encies	Maintenance Needs	Priority	Comr	ments			
None		None						
	on Recommendations	Priority Cos						
None		yrs. \$)					
Approaches - Appro	oach Slab							
Element Group	Approaches		Le	ength	6.00 Width 17.80			
Element Name	Approach Slab		H	eight	0.00 Count 2.00			
Location	Both ends				Total Quantity 213.60			
Material	Cast-in-place Concrete			Limited Inspection				
Element Type			Er	nvironmer	nt			
Protection System	Hot rubberized aphalt mer	mbrane		Benigr	1			
Condition Data	Units Excell.	Good Fair	Poor	✓ Moder	ate			
	sq.m 213.60	0.00	0.00	Severe	2			
Comments								
Performance Defici	encies	Maintenance Needs	Priority	Comr	nents			
None		None						
·	on Recommendations	Priority Cos	t Comments					
		Lunc A	1					
None		yrs. \$)					



6/1/2015 6/23

Region of Halton Structure Number: 19-1196390 BR05 **Municipal Structure Inspection Form** Decks - Deck Top (with Thick Slab) **Element Group** Decks Length 11.30 Width 25.14 **Element Name** Deck Top (with Thick Slab) Height 0.00 **Count** 284.08 Location Above structure **Total Quantity** Material Precast Concrete Limited Inspection **Element Type** Precast solid or void without concrete topping **Environment Protection System** Hot rubberized asphalt membrane Benign **Condition Data** Units Excell. Good Fair Poor ✓ Moderate 0.00 sq.m 284.08 0.00 0.00 Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Priority Rehab/Rehabilitation Recommendations Cost Comments None yrs. \$0 **Decks - Soffit - Thick Slab Element Group** 10.40 Width 3.80 Decks Length Exterior **Element Name** Soffit - Thick Slab Height Count Location Underside of Deck **Total Quantity** 39.52 Precast Concrete Limited Inspection Material **Element Type Environment Protection System** None Benign **Condition Data** Units Excell. Poor Good Fair ✓ Moderate 37.02 2.50 0.00 0.00 sq.m Severe Comments - Honeycombing along edge - Hairline cracks on vertical face - Lighr scaling on vertical face **Maintenance Needs Performance Deficiencies** Priority Comments None

Cost

Comments



Rehab/Rehabilitation Recommendations

None

Priority

yrs.

6/1/2015 7/23

Region of Halton **Municipal Structure Inspection Form** Structure Number: 19-1196390 BR05 **Decks - Soffit - Thick Slab Element Group** Decks Length 11.30 Width 23.14 **Element Name** Soffit - Thick Slab Interior Height Count 261.48 Location Underside of deck **Total Quantity** Material Precast Concrete Limited Inspection **Element Type Environment** None **Protection System** ✓ Benign Units **Condition Data** Excell. Good Fair Poor Moderate 256.48 3.00 1.00 1.00 sq.m Severe Comments - Some joints with light honeycombing, scalling, spalling, and/or staining **Performance Deficiencies Maintenance Needs** Priority Comments None None **Priority** Rehab/Rehabilitation Recommendations Cost Comments None yrs. **Decks - Wearing Surface Element Group** Decks Length 11.30 Width 17.80 Wearing Surface 0.00 **Count Element Name** Height Location Above structure **Total Quantity** 201.14 Material Asphalt Limited Inspection **Element Type Environment** Protection System None Benign **Condition Data** Units Excell. Good Poor Fair Moderate 161.14 40.00 0.00 0.00 sq.m ✓ Severe Comments

Performance Deficiencies	Maintenance Needs	;	Priority	
None	None			
Rehab/Rehabilitation Recommendations	Priority	Cost	Comments	
None	yrs.	\$0		



6/1/2015 8/23

Municipal Structure Inspection Form

Municipal Structure	e Inspection Form		Structure Number: 19-1196390 BR05					
Embankments & St	reams - Embankments							
Element Group	Embankments & Streams		Leng	th	0.00 Width 0.00			
Element Name	Embankments		Heig	ht	0.00 Count 4.00			
Location	All Quadrants			Т	Total Quantity 4.00			
Material	Vegetation			Limited Inspect	ion			
Element Type			Envi	Environment				
Protection System	Vegetation			Benign				
Condition Data	Units Excell.	Good Fair	Poor	Moderate				
	Each 0.00	4.00 0.00	0.00	Severe				
Comments	· · · · · · · · · · · · · · · · · · ·							
Performance Defici	encies	Maintenance Needs	Priority	Comments				
None		None						
-	on Recommendations	Priority Cost	Comments					
None		yrs. \$0						
Embankments & St	reams - Slope Protection	1						
Element Group	Embankments & Streams		Leng	th	23.24 Width 0.00			
Element Name	Slope Protection		Heig	ht	1.10 Count 4.00			
Location	All Quadrants			T	Total Quantity 4.00			
Material	Vegetation			Limited Inspection				
Element Type			Envi	ronment				
Protection System	None			Benign				
Condition Data	Units Excell.	Good Fair	Poor	Moderate				
	Each 0.00	4.00 0.00	0.00	Severe				
Comments								
Performance Defici	encies	Maintenance Needs	Priority	Comments	,			
None		None						
-	on Recommendations	Priority Cost	Comments	•				
None		yrs. \$0						



6/1/2015 9/23

Region of Halton											
Municipal Structur		orm						Str	ructure Nu	ımber:	19-1196390 BR05
Sidewalks/Curbs - 0	Curbs										
Element Group	Sidewalks/Cur	rbs							Leng	th	6.00 Width 0.1
Element Name	Curbs								Heig	ht	0.15 Count 2.0
Location	Both Sides										Total Quantity 3.6
Material	Cast-in-place	Concrete								Limited	d Inspection
Element Type									Envi	ronmen	t
Protection System	None									Benign	
Condition Data	Units	Excell.	Good		Fair		Poor			Modera	ate
	sq.m	2.60		1.00		0.00		0.00	4	Severe	
Comments											
Performance Defici	encies		Maintena	ance Ne	eds		Priori	ty		Comn	nents
None			None								
Rehab/Rehabilitati	on Recommend	dations	Priority			Cost		Comm	ents	•	
None				yrs.		\$0					
Embankments & St	reams - Strea	ms & Wate	rways								
Element Group	Embankments	s & Streams							Leng	th	0.00 Width 0.0
Element Name	Streams & Wa	aterways							Heig	ht	0.00 Count 1.0
Location	Through Struc	ture									Total Quantity 1.0
Material										Limited	d Inspection
Element Type									Envi	ronmen	t
Protection System	None									Benign	
Condition Data	Units	Excell.	Good		Fair		Poor			Modera	ate
	All	0.00		1.00		0.00		0.00		Severe	
Comments											
- Ponding at east co	rners of structu	ire - regrade i	to provide	e positiv	e draina	age					
Performance Defici	encies		Maintena	ance Ne	eds		Priori	tv		Comn	nents
None			Bridge Deck				1- 5 y			_	age through structure needs to be
										regrad	ded
Rehab/Rehabilitati	on Recommend	dations	Priority			Cost	I	Comm	ents	1	

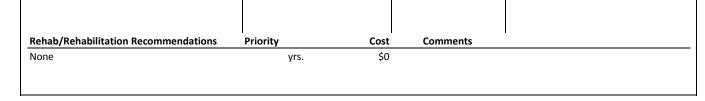
yrs.



None

6/1/2015 10/23

Region of Halton **Municipal Structure Inspection Form** Structure Number: 19-1196390 BR05 **Abutments - Wingwalls Element Group** Abutments Length 1.60 Width **Element Name** Wingwalls Height 3.10 **Count** 4.00 19.84 Location All Quadrants **Total Quantity** Material Cast-in-place Concrete Limited Inspection **Element Type** Reinforced Concrete **Environment Protection System** None Benign **Condition Data** Units Excell. Good Fair Poor ✓ Moderate 17.84 1.00 1.00 sq.m 0.00 Severe Comments - Hairline cracks - Medium / Light scaling **Performance Deficiencies Maintenance Needs** Priority Comments None None Priority Rehab/Rehabilitation Recommendations Cost Comments None yrs. **Retaining Walls - Walls Element Group** Retaining Walls Length 6.00 Width Walls 0.83 **Count** 4.00 **Element Name** Height Location All Quadrants **Total Quantity** 19.92 Precast Concrete Limited Inspection Material **Element Type** Retained soil systems **Environment Protection System** None Benign **Condition Data** Units Excell. Good Poor Fair Moderate 19.92 0.00 0.00 0.00 sq.m Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None





6/1/2015 11/23

Region of Halton Structure Number: 19-1196390 BR05 **Municipal Structure Inspection Form** Approaches - Approach Guiderail **Element Group** Approaches Length Width **Element Name** Approach Guiderail Extruder End Height Count 1.00 1.00 Location South East Quadrant **Total Quantity** Material Steel Limited Inspection **Element Type Environment Protection System** Hot dip Galvanized Benign **Condition Data** Units Excell. Good Fair Poor Moderate 0.00 1.00 0.00 Each 0.00 ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None **Priority** Rehab/Rehabilitation Recommendations Cost Comments None yrs. Sidewalks/Curbs - Sidewalk and medians **Element Group** Sidewalks/Curbs 11.24 Width 3.20 Length Sidewalk 0.15 **Count** 2.00 **Element Name** Sidewalk and medians Height Location Both sides **Total Quantity** 75.31 Limited Inspection Material Cast-in-place Concrete **Element Type Environment Protection System** None Benign **Condition Data** Units Excell. Poor Good Fair Moderate 60.31 15.00 0.00 0.00 sq.m ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None

Cost

Comments



Rehab/Rehabilitation Recommendations

None

Priority

yrs.

6/1/2015 12/23

Region of Halton

iviunicipai Structur	e inspection F	·orm					Struc	ture Numbe	er:	19-1196390	BKU5	
Retaining Walls - B	arrier System	s on Walls										
Element Group	Retaining Wal	ls						Length		6.00 Width	0.15	
Element Name	Barrier System	ns on Walls		Exter	ior			Height		0.83 Count	4.00	
Location	All Quadrants									Total Quantity	19.92	
Material	Cast-in-place (Concrete						Limi	ted Inspe	ection		
Element Type	Parapet Wall v	with single rai	ling					Environm	ent			
Protection System	None							Benign				
Condition Data	Units	Excell.	Good	Fair		Poor		✓ Moderate				
	sq.m	19.92	0.00		0.00		0.00	Seve	ere			
Comments											1	
Performance Defici	encies	I	Maintenance N	eeds		Priori	ty	Cor	nments			
None		ľ	None									
Rehab/Rehabilitation	on Recommend	dations I	Priority yrs.		Cost \$0		Commen	ts				
None			угз.		ŞŪ							
Retaining Walls - B	-						1			6 00 145 141	2.20	
Element Group	Retaining Wal			1				Length		6.00 Width	4.00	
Element Name	Barrier System			Inter	or							
Location	All Quadrants									Total Quantity	26.40	
Material	Cast-in-place (Limited Inspection				
Element Type	Parapet Wall v	with single rai	ling					Environm —	ent			
Protection System	None							Ben	gn			
Condition Data	Units	Excell.	Good	Fair		Poor		Mod	erate			
Comments	sq.m	21.40	5.00] [0.00		0.00	✓ Seve	ere			
		1.				<u> </u>						
Performance Defici	encies		Maintenance N	eeds		Priori	ty	Cor	nments			
Rehab/Rehabilitatio	on Recommend	dations	Priority		Cost		Commen	ts				
Rehab/Rehabilitation	on Recommend	dations	Priority yrs.		Cost \$0		Commen	ts				



6/1/2015 13/23

Structure Number: 19-1196390 BR05 **Municipal Structure Inspection Form Barriers - Hand Railings Element Group** Barriers Length 23.24 Width Hand Railings **Element Name** Height Count 2.00 46.48 Location **Both Sides Total Quantity** Material Steel Limited Inspection **Element Type Environment Protection System** Hot dip galvanized Benign **Condition Data** Units Excell. Good Fair Poor Moderate 37.28 9.20 0.00 0.00 m ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Rehab/Rehabilitation Recommendations **Priority** Cost Comments None yrs. Coatings - Barrier Systems / Hand Railings **Element Group** Coatings Length Width **Element Name** Barrier Systems / Hand Railings Height Count Location Both sides **Total Quantity** 14.60 Material Limited Inspection **Element Type** Hot dip galvanized **Environment Protection System** None Benign **Condition Data** Units Excell. Good Poor Fair Moderate 11.60 3.00 0.00 0.00 m ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None Rehab/Rehabilitation Recommendations **Priority** Cost Comments

yrs.



None

6/1/2015 14/23

Region of Halton

Municipal Structure Inspection Form Structure Number: 19-1196390 BR05 **Approaches - Curbs and gutters Element Group** Approaches Length 6.00 Width **Element Name** Curbs and gutters Height 0.15 **Count** 4.00 Location All Quadrants **Total Quantity** 24.00 Material Cast-in-place Concrete Limited Inspection Environment **Element Type** Protection System None Benign **Condition Data** Units Excell. Good Fair Poor Moderate m 17.50 6.50 0.00 0.00 ✓ Severe Comments **Performance Deficiencies Maintenance Needs** Priority Comments None None Rehab/Rehabilitation Recommendations Priority Cost Comments None yrs. \$0



6/1/2015 15/23



East Elevation



West Elevation



6/1/2015 16/23



Looking South at Bridge



Looking North at Bridge



6/1/2015 17/23



Looking West Under Structure



Typical Ponding at Abutment Corners



6/1/2015 18/23



Typical Soffit



Typical Soffit Edge



6/1/2015 19/23



Honeycombing at Soffit



Typical Wingwall



6/1/2015 20/23



Typical Joint



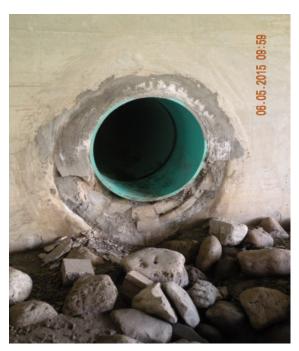
Joint with Staining and Scaling



6/1/2015 21/23



Spall at Soffit Joint



Spalling around PVC Inlet



6/1/2015 22/23



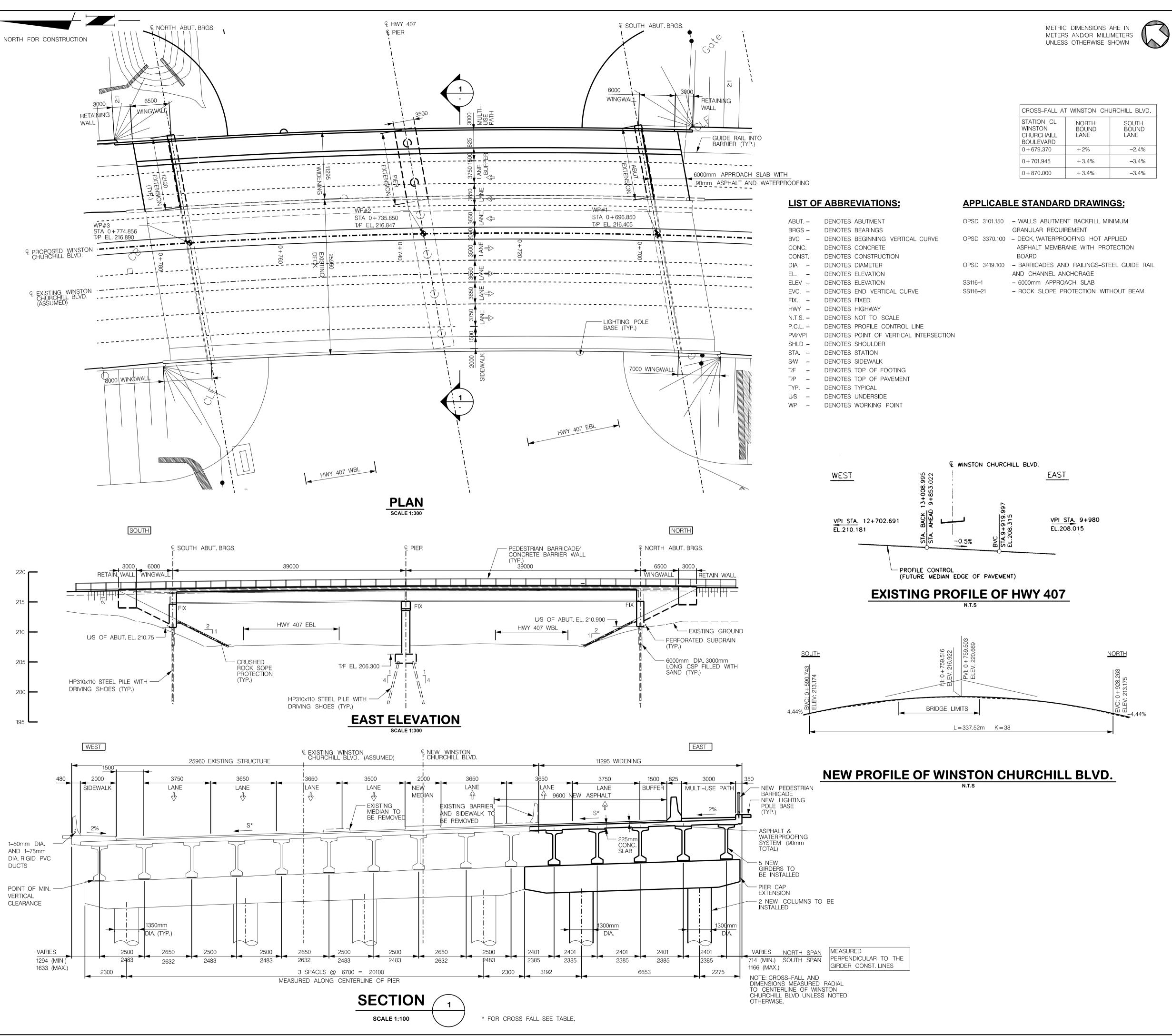
Narrow Crack on Interior Parapet Wall

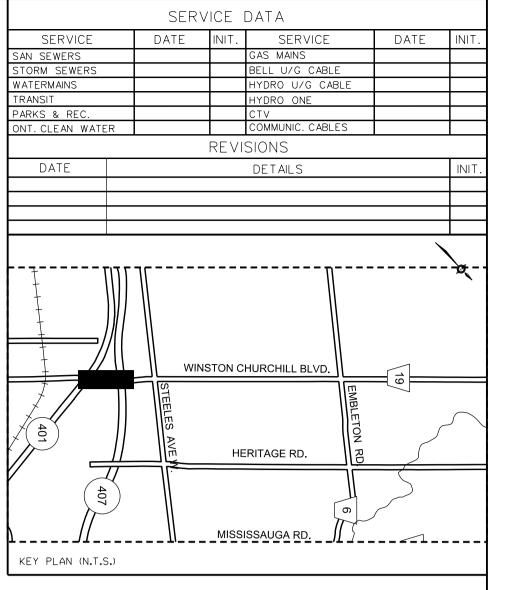


Spall on Interior Parapet Wall



6/1/2015 23/23





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:

PRESTRESSED GIRDERS — 45MPa

REMAINDER — 30MPa

CLEAR COVER TO REINFORCING STEEL:

FOOTINGS —

DECK ——TOP —— REMAINDER UNLESS OTHERWISE NOTED — 70±20mm

REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.

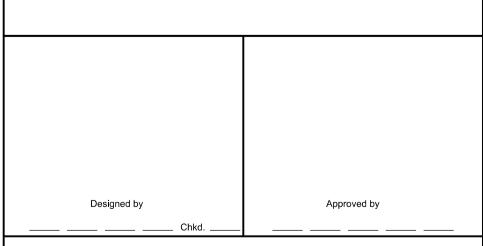
2. BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS.

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.





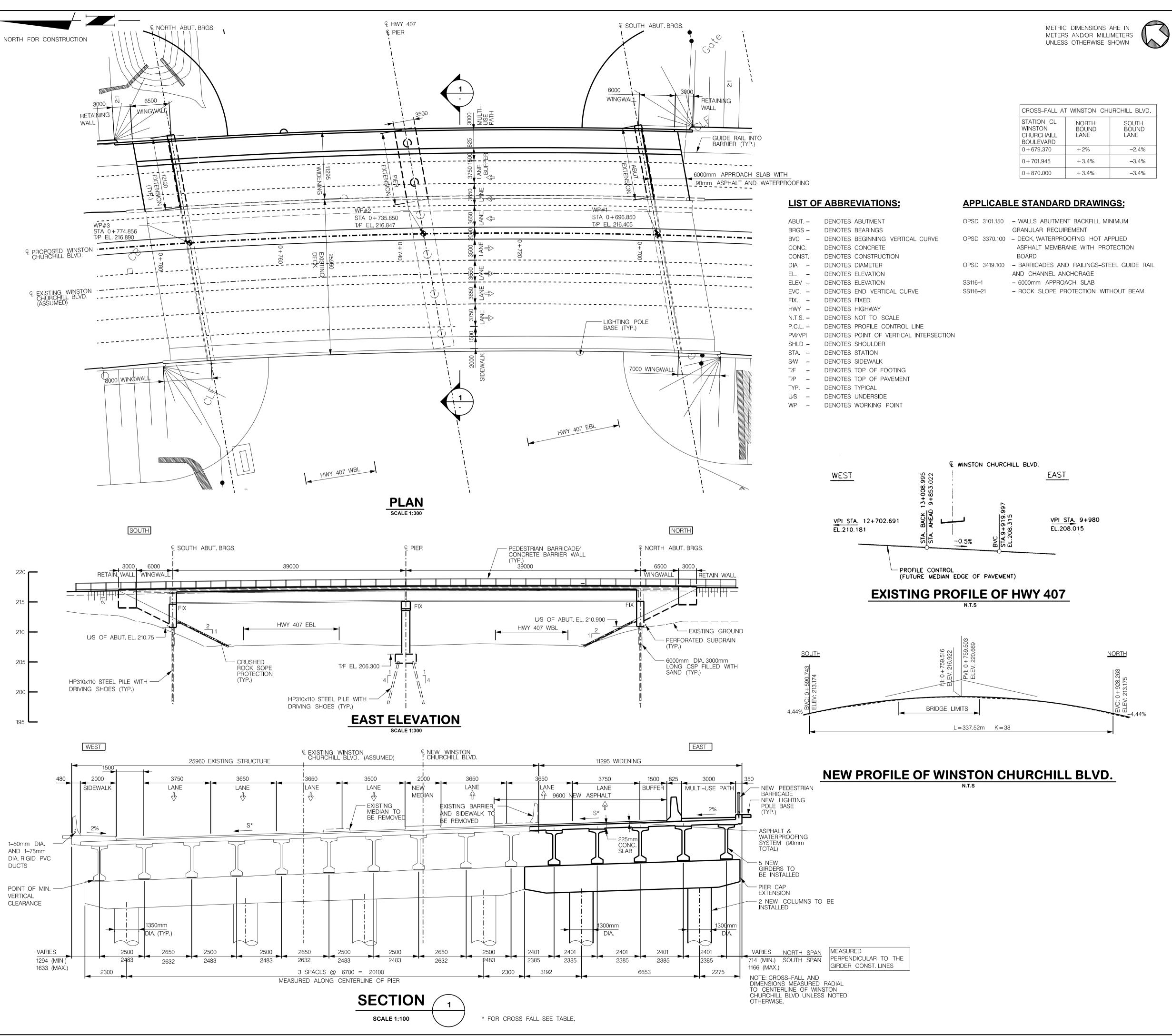


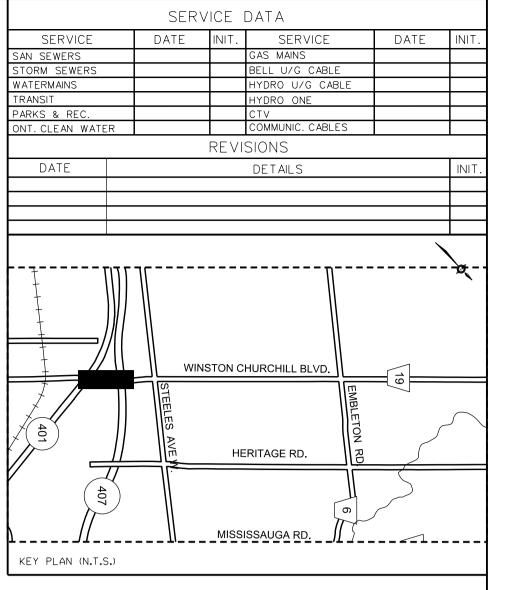
Region of Peel Working for you

WINSTON CHURCHILL BLVD.

STRUCTURE No. B10 **GENERAL ARRANGEMENT**

cked by	Drawn by		Plan No.	11 1290	
cked by	Drawn by Sheet		Plan No.	14-4380	
			Project No.	XX-XXXX	
O Area –	Area	-	Duningt No.	VV VVVV	





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:

PRESTRESSED GIRDERS — 45MPa

REMAINDER — 30MPa

CLEAR COVER TO REINFORCING STEEL:

FOOTINGS —

DECK ——TOP —— REMAINDER UNLESS OTHERWISE NOTED — 70±20mm

REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.

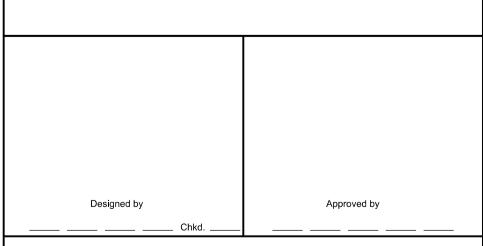
2. BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS.

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.





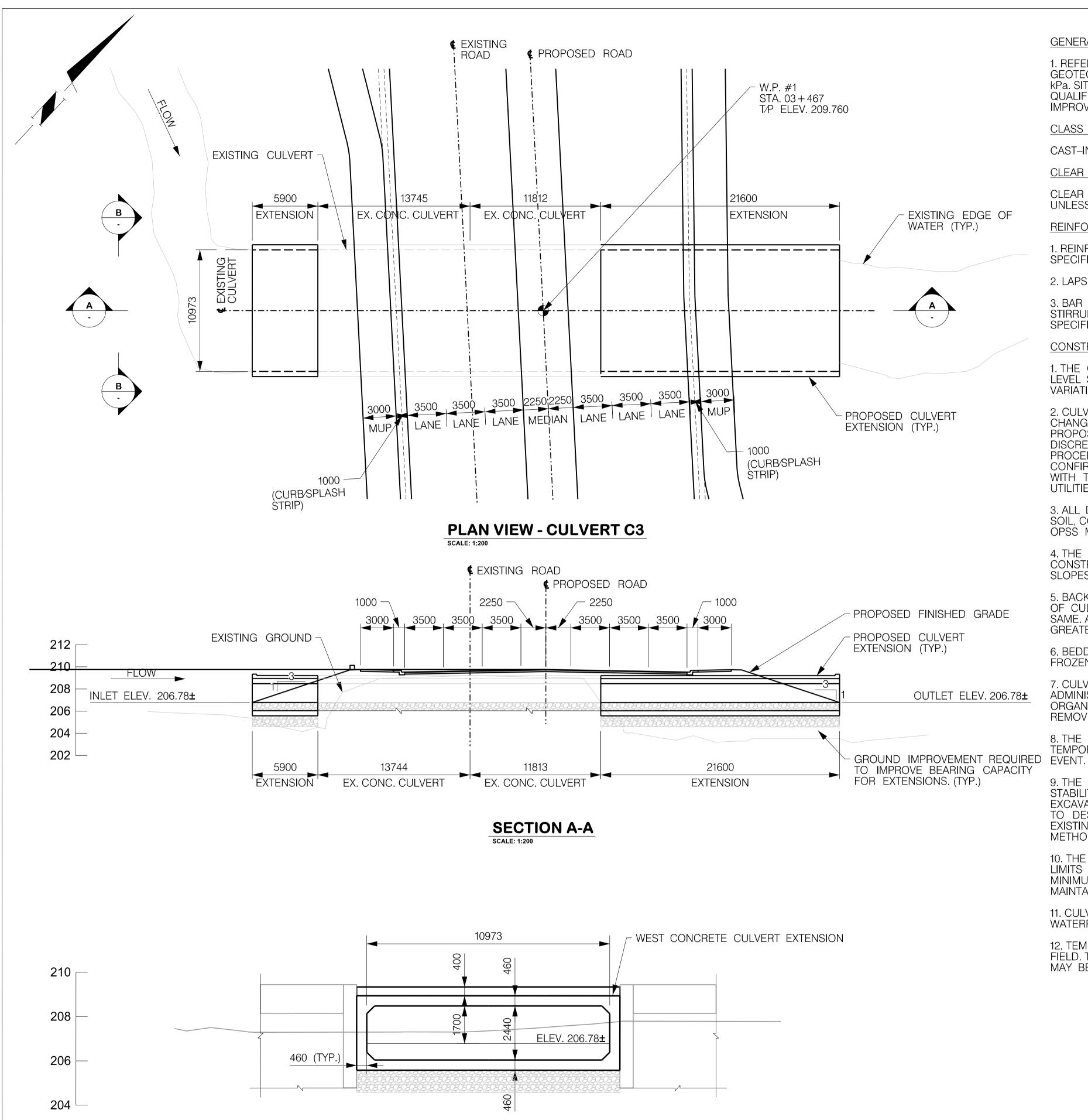


Region of Peel Working for you

WINSTON CHURCHILL BLVD.

STRUCTURE No. B10 **GENERAL ARRANGEMENT**

cked by	Drawn by		Plan No.	11 1290	
cked by	Drawn by Sheet		Plan No.	14-4380	
			Project No.	XX-XXXX	
O Area –	Area	-	Duningt No.	VV VVVV	



SECTION B-B

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.

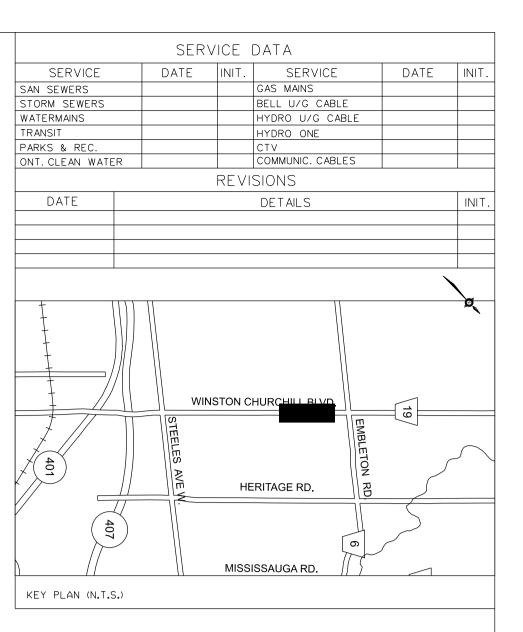
8. THE CONTRACTOR IS TO DETERMINE THE SIZE OF THE TEMPORARY DIVERSION CHANNEL/PIPE BASED ON 2 YEAR STORM

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.

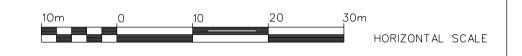
10. THE CONTRACTOR HAS THE OPTION TO ALTER EXCAVATION LIMITS BY PROVIDING TEMPORARY EXCAVATION SUPPORT. HOWEVER, MINIMUM DIMENSIONS AND LIMIT OF FROST TAPERS MUST BE MAINTAINED.

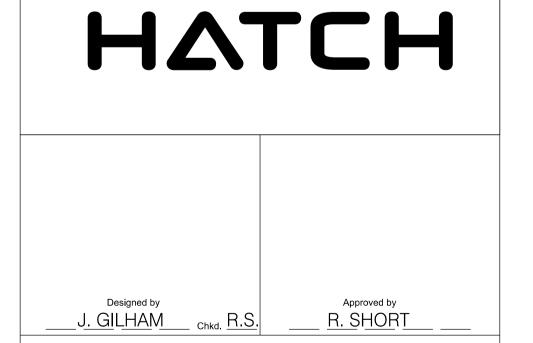
11. CULVERT CONNECTIONS TO BE SEALED WITH SELF-ADHESIVE WATERPROOFING MEMBRANE.

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



NOT FOR CONSTRUCTION



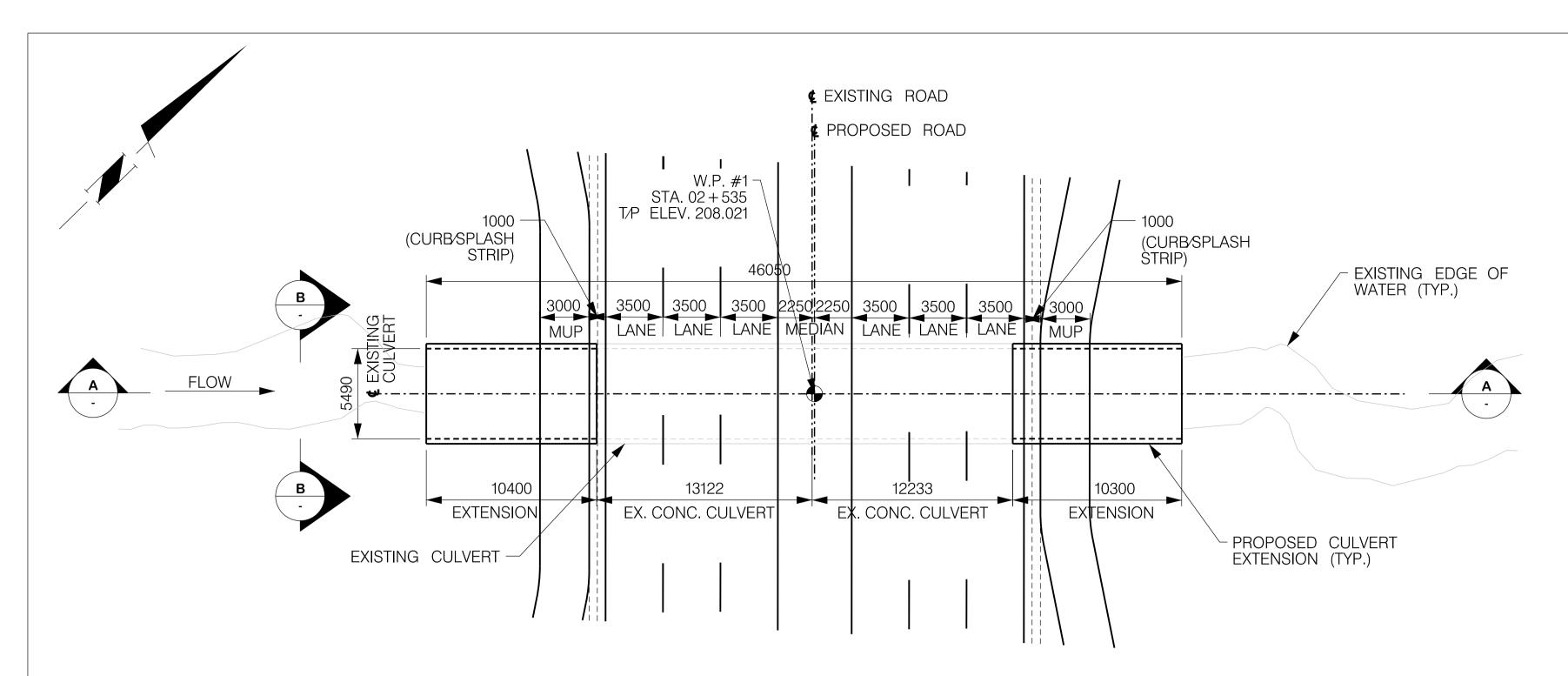


Region of Peel Working for you

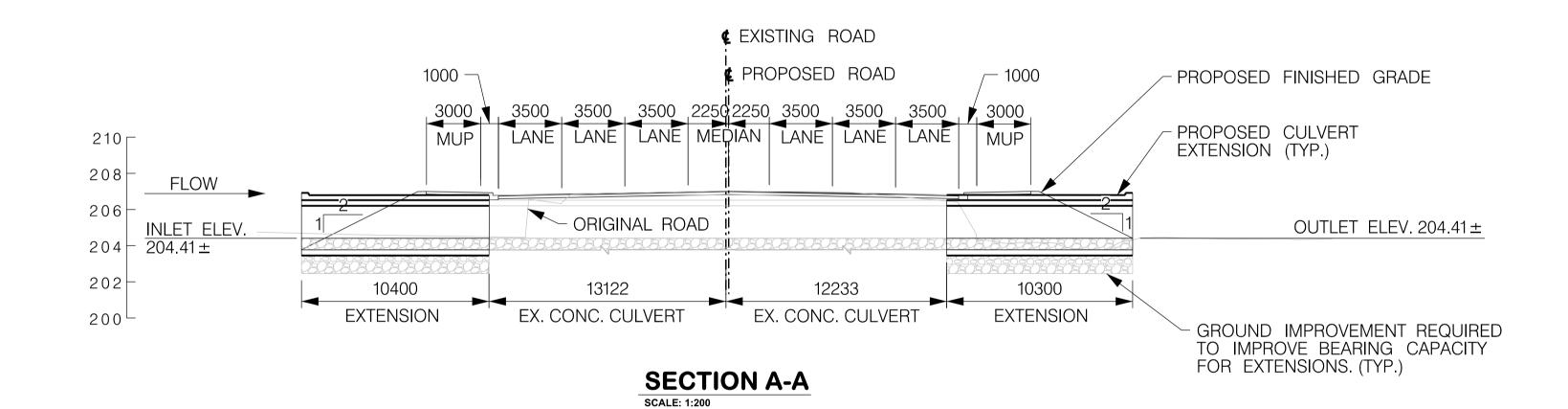
WINSTON CHURCHILL BLVD.

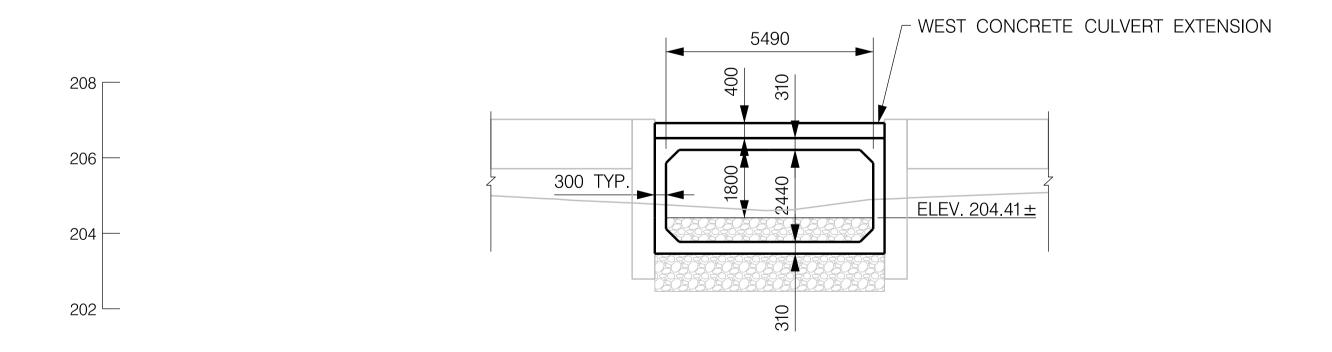
(FROM HIGHWAY 401 TO EMBLETON ROAD)
PROPOSED CULVERT EXTENSION
CULVERT C3
PLAN, PROFILE & SECTION

CAD Area	-	Area -		Project No.	xx-xxxx
Checked by	J.G.	Drawn by	T.B.	Plan No.	7017001
Date	2022–08–25	Sheet	of	- Hairino.	4



PLAN VIEW - CULVERT C8





SECTION B-B

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.

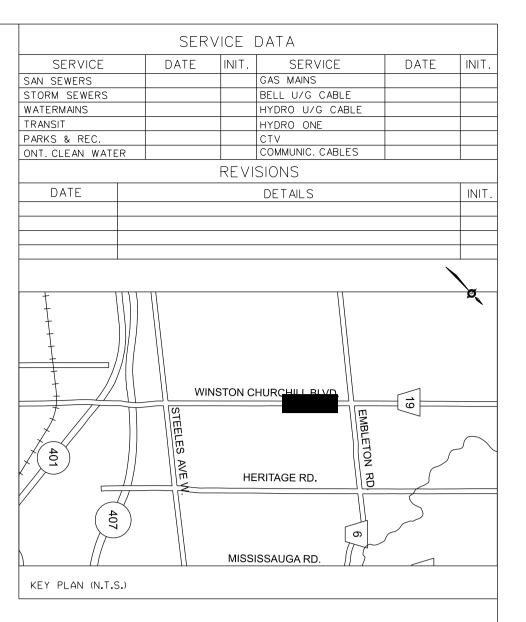
8. THE CONTRACTOR IS TO DETERMINE THE SIZE OF THE TEMPORARY DIVERSION CHANNEL/PIPE BASED ON 2 YEAR STORM

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.

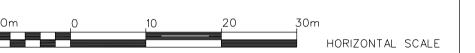
10. THE CONTRACTOR HAS THE OPTION TO ALTER EXCAVATION LIMITS BY PROVIDING TEMPORARY EXCAVATION SUPPORT. HOWEVER, MINIMUM DIMENSIONS AND LIMIT OF FROST TAPERS MUST BE MAINTAINED.

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

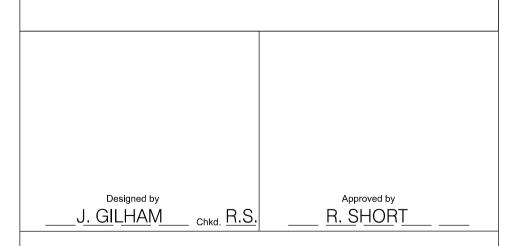
12. TEMPORARY DIVERSION CHANNEL ROUTE TO BE CONFIRMED IN FIELD. TEMPORARY ENCROACHMENT BEYOND CONSTRUCTION LIMIT MAY BE REQUIRED.



NOT FOR CONSTRUCTION



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Region of Peel Working for you

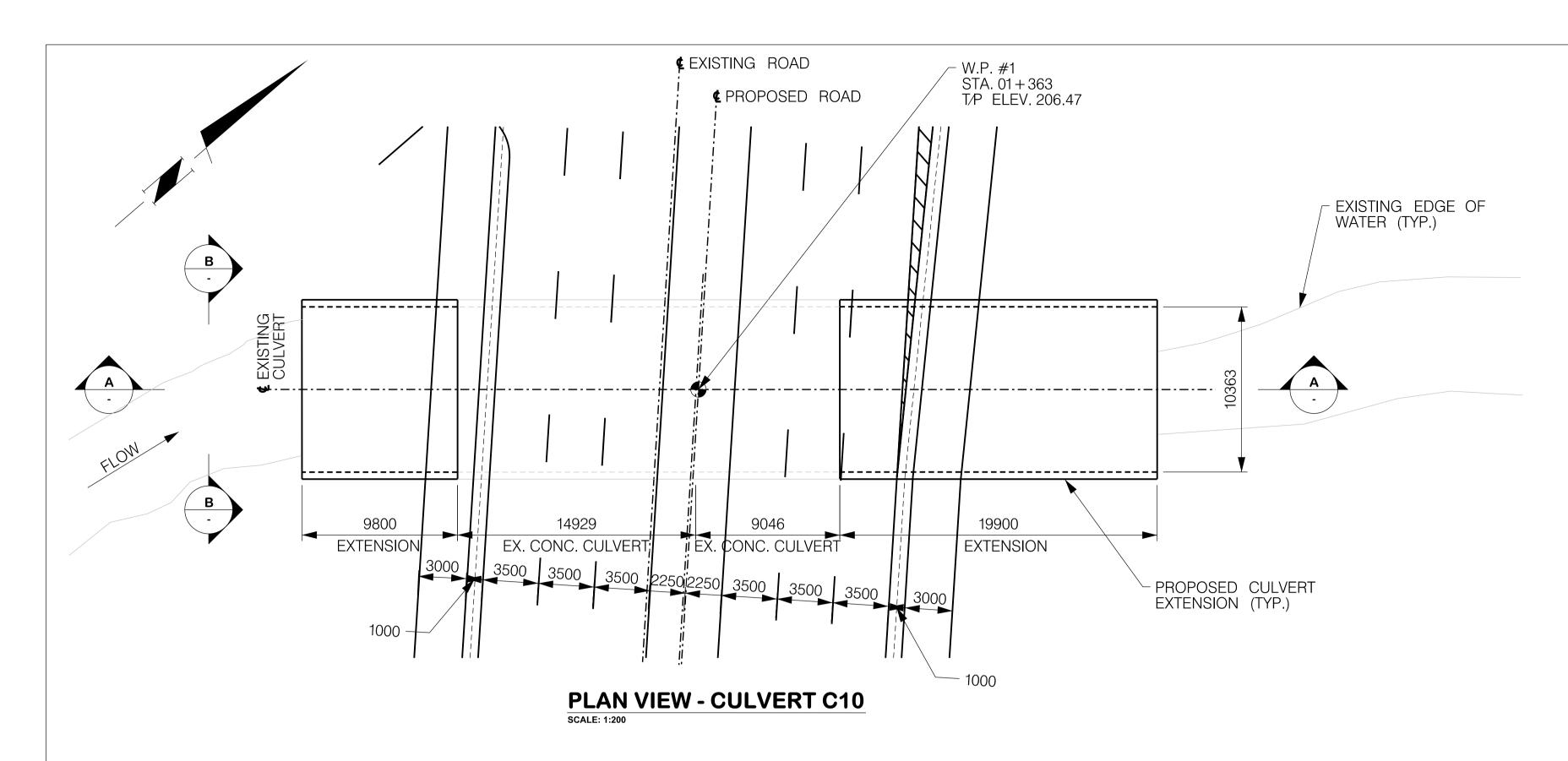
WINSTON CHURCHILL BLVD.

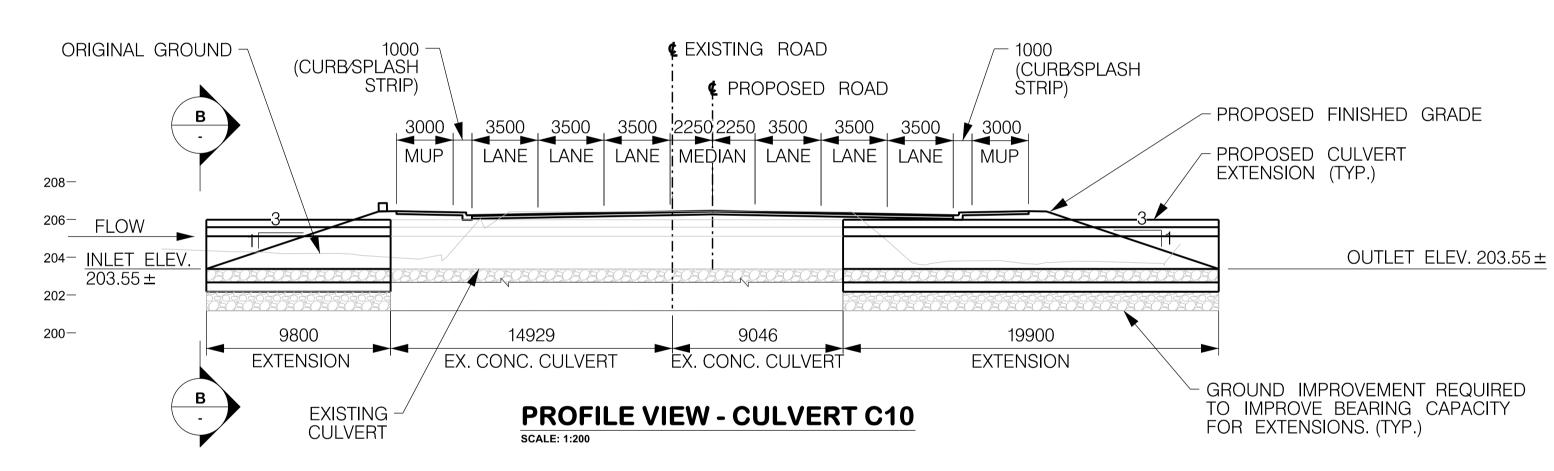
PROPOSED CULVERT EXTENSION

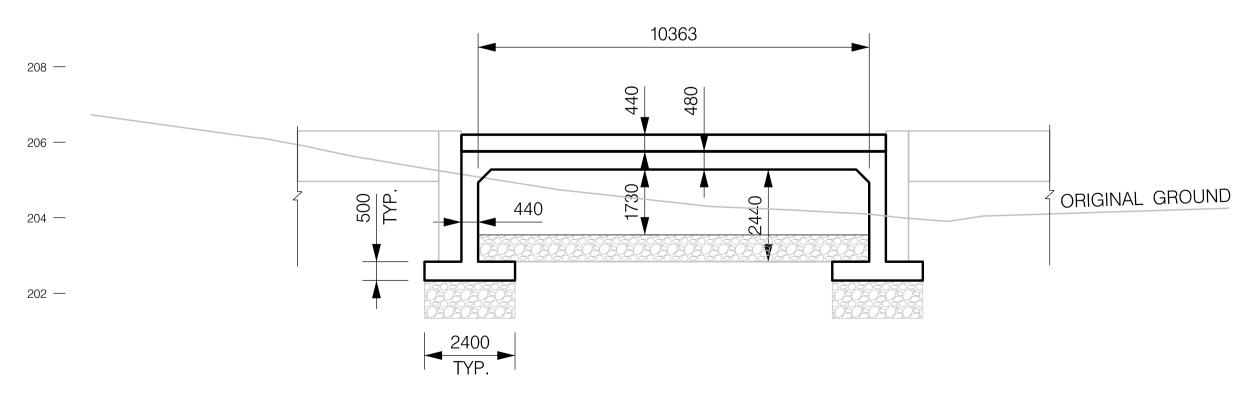
CULVERT C8

PLAN, PROFILE & SECTION

CAD Area	-	Area	-	Project No.	xx-xxxx
Checked by	J.G.	Drawn by	T.B.	Plan No.	
Date	2022–08–25	Sheet	of	Tiairivo.	4







SECTION A-A
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 CONCRETE.....35 MPa

CLEAR COVER TO REINFORCEMENT

CLEAR COVER TO REINFORCING STEEL SHALL BE $60 \pm 10 \text{ mm}$ 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.

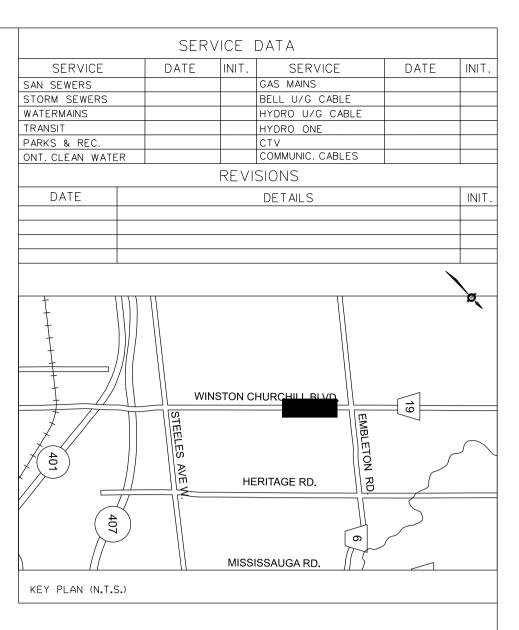
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9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE EXISTING STRUCTURES AT ALL TIMES INCLUDING EXCAVATION, BACKFILL, REMOVALS, INSTALLATIONS, ETC. CONTRACTOR TO DESIGN AND PROVIDE ANY TEMPORARY SUPPORT SYSTEMS FOR EXISTING AND NEW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

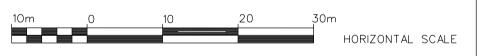
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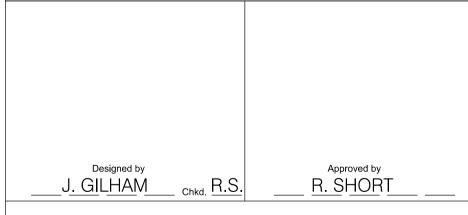
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NOT FOR CONSTRUCTION







Region of Peel Working for you

WINSTON CHURCHILL BLVD.

(FROM HIGHWAY 401 TO EMBLETON ROAD)
PROPOSED CULVERT EXTENSION
CULVERT C10
PLAN, PROFILE & SECTION

CAD Area	-	Area	-	Project No.	xx-xxxx	
Checked by	J.G.	Drawn byR.	St.bORT	,	70170001	
Date	2022-08-25	Sheet	of	Plan No.	4	