
APPENDIX I

**PRELIMINARY CONCEPTS, PROPERTY REQUIREMENTS AND
COST ESTIMATES**



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MEMO

TO: Robert Hunton
FROM: Michel Bisson
DATE: October 15, 2009
COPIES: Tim Dickinson
OUR FILE: 7499-4025
SUBJECT: West Transitway Extension – Bayshore Station to Moodie Drive
Preliminary Concepts, Estimate of Property Requirements and Construction Costs

The purpose of this memo is to present the initial concept drawings and provide a preliminary estimate of property requirements and construction cost for the Queensway North (Options A and B) and Queensway South route alternatives.

Preliminary concept drawings were prepared for the Queensway North and South routes to establish potential property impacts and to provide a basis for calculating a rough-order magnitude cost estimate. Concept plan drawings of the North and South route alternatives are included in a separate file <Preliminary Concept Plan Drawings.pdf>.

Assumptions and Methodology

The following process was followed to determine the preliminary property requirements and cost estimate for each of the route options.

A design template was developed with a constant 13m urban cross-section consisting of two 4m lanes with a 2.5m maintenance strip on each side (outside shoulders). An urban cross-section was elected over a rural section to minimize potential effects to MTO and NCC Greenbelt lands. The template was applied to preliminary horizontal and vertical alignments to generate a “design surface” for each option. The design surface was applied to the existing ground surface and the Transitway “footprint” was determined by projecting a 3:1 slope down (fill section) or up (cut section) to original ground.

Preliminary locations of retaining walls and toe walls were manually drawn-in at locations where cut or fill slopes would not be acceptable such as at bridge approaches or deep cuts adjacent to the highway. Other locations which potentially require a wall (for mitigation purposes) were identified and manually drawn-in – these are subject to change during the design phase. A closed drainage system was assumed for the entire length of the Transitway including a storm water pipe with catch basins spaced 40m apart. Additional drainage requirements for partial drainage of Highway 417 were factored into the estimates as required. Should an open drainage system

using ditches be considered for the Transitway, additional property and/or mitigation may be required to accommodate an urban-rural or fully rural cross-section.

Unless indicated otherwise in Tables 1a-1d (Property Requirements) or in Tables 2a-2b (Cost Estimates) below, a self-contained transit station with no external vehicular access was assumed. The total station area was calculated as 200m long by 30m wide or 6000m² (0.6 ha). Additional property may be required for construction staging (conversion from interim to ultimate plan) or for local bus access to/from Corkstown Road.

Property calculations exclude temporary limited interest (TLI) for construction or property requirements for the realignment/modifications to the Trans-Canada Trail and Stillwater Creek.

Table 1a Preliminary Property Requirements – Queensway North (Option A)

	Estimated Property Requirement (m ²)		
	MTO	NCC	Private Property
Transitway	47,300	500	0
Station (At NE quadrant near Corkstown Rd)	Included Above	10,500	0
Relocation of Corkstown Rd - East	0	310	0
Relocation of Corkstown Rd - West	0	17,300	0
Total:	47,300 (4.7 ha)	28,610 (2.9 ha)	0 (0.0 ha)

Table 1b Preliminary Property Requirements – Queensway North (Option B)

	Estimated Property Requirement (m ²)		
	MTO	NCC	Private Property
Transitway	55,050	700	0
Station (Under Moodie Drive)	6,000	0	0
Relocation of Corkstown Rd - East	0	310	0
Relocation of Corkstown Rd - West	0	0	0
Total:	61,050 (6.1 ha)	1,010 (0.1 ha)	0 (0.0 ha)

Table 1c Preliminary Property Requirements – Queensway North (Option B)

	Estimated Property Requirement (m ²)		
	MTO	NCC	Private Property
Transitway	55,050	700	0
Station (At NE quadrant near Corkstown Rd)	Include Above	10,750	0
Relocation of Corkstown Rd - East	0	310	0

Relocation of Corkstown Rd - West	0	0	0
Total:	55,050 (5.5 ha)	11,760 (1.2 ha)	0 (0.0 ha)

Table 1d Preliminary Property Requirements – Queensway South

	Estimated Property Requirement (m ²)		
	MTO	NCC	Private Property
Transitway	65,400	20,400	0
Station (Under Moodie Drive)	Include Above	0	0
Relocation of Corkstown Rd - East	Not Required		
Relocation of Corkstown Rd - West	Not Required		
Total:	65,400 (6.5 ha)	20,400 (2.0 ha)	0 (0.0 ha)

Preliminary Cost Estimate Calculations

The preliminary cost estimate (refer to Tables 2a-2c below) for each alternative was calculated using per-unit costs derived from past projects and the MTO Highway Costing (HiCo) application. The following assumptions were used to determine the cost estimates:

- A 30% contingency was applied to all estimates to account for the level of accuracy in tender quantities at the preliminary design stage and for the variability of unit prices.
- Items such as width and depth of the pavement structure, size of storm water sewer, average height of retaining walls and shoring, and length of fencing, barriers, and glare screening were assumed and applied to all options equally.
- Volumetric quantities such as earth excavation, granulars, and asphalt pavement were determined directly from volumetric reports generated from the preliminary design surfaces in Bentley InRoads.
- The cost for various structures (grade separations, culverts, etc.) were derived using a per square-meter cost consistent with other structures similar in size and type.
- The lump-sum cost for items such as utility relocations, storm water management facilities, landscaping, interim and ultimate transit station, and modifications to existing intersections were derived based on past experience and applied to all options as required.



PRELIMINARY COST ESTIMATE - QUEENSWAY NORTH OPTION A

WBS No.	Item	Quantity	Units	Unit Cost	Total
10	Property and Right of Way				
10.1	Property Acquisition	TBD - not included in cost estimate			
10.2	ROW Preparation				
10.3	Property Maintenance				
10.4	Recovery				
10.99	Contingency	30% (see below)			
		WBS 10 Subtotal			
20.1.01	Clearing & Removals				
	Transitway	3,369	m	\$375.00	\$1,263,375.00
	Corkstown Rd	845	m	\$375.00	\$316,875.00
	Recreational pathway	300	m	\$150.00	\$45,000.00
20.1.02	Grading				
	Transitway - cut (incl. rock ex)	56,000	m3	\$35.00	\$1,960,000.00
	Transitway - fill (incl. rock ex)	69,000	m3	\$35.00	\$2,415,000.00
	Recreational path way - cut / fill	420	m3	\$25.00	\$10,500.00
20.1.03	Drainage & Erosion Control				
	600mm storm sewer	3,369	m	\$250.00	\$842,250.00
	Catch basins - 2 @ 40m spacing	168	each	\$2,700.00	\$454,815.00
	Catch basin leads @ 40m spacing	1,685	m	\$230.00	\$387,435.00
	Ditching	3,369	m	\$50.00	\$168,450.00
20.1.04	SWM Management & Natural Environment				
	SWM facility	1	LS	\$500,000.00	\$500,000.00
	Mitigation measures	1	LS	\$300,000.00	\$300,000.00
20.1.05	Roadway				
	Asphalt pavement:				
	Transitway	10,070	t	\$110.00	\$1,107,693.51
	Corkstown Road realignment	2,484	t	\$110.00	\$273,273.00
	Recreational path	98	t	\$110.00	\$10,780.00
	Sidewalk / maintenance strip	16,845	m2	\$50.00	\$842,250.00
	Granular 'A':				
	Transitway	21,023	t	\$16.00	\$336,360.96
	Corkstown Road realignment	3,042	t	\$16.00	\$48,672.00
	Recreational pathway	538	t	\$16.00	\$8,601.60
	Granular 'B':				
	Transitway	51,748	t	\$12.00	\$620,974.08
	Corkstown Road realignment	6,692	t	\$12.00	\$80,308.80
	Top soil - imported				
	Transitway	2,021	m3	\$36.00	\$72,770.40
	Corkstown Road realignment	507	m3	\$36.00	\$18,252.00
	Recreational path	120	m3	\$36.00	\$4,320.00
	Sod				
	Transitway	13,476	m2	\$6.00	\$80,856.00
	Corkstown Road realignment	3,380	m2	\$6.00	\$20,280.00
	Recreational path	1,600	m2	\$6.00	\$9,600.00
	Concrete curb	6,738	m	\$75.00	\$505,350.00
	Concrete barrier	1,875	m	\$205.00	\$384,375.00
	Glare screen	1,875	m	\$750.00	\$1,406,250.00
	Chain link fencing	3,369	m	\$70.00	\$235,830.00
20.1.06	Utility Relocations				
	High-mast light poles	2	each	\$100,000.00	\$200,000.00
	Hydro poles w/ wiring		each	\$2,500.00	\$0.00
	Water, storm water, sanitary		m	\$0.00	\$0.00
	Gas		m	\$0.00	\$0.00
	Cable, telephone, other communications		m	\$0.00	\$0.00
	Other (LS item to include TBD items)	1	LS	\$100,000.00	\$100,000.00
20.1.07	Structures				
	Pipe culvert - extensions	15	m	\$250.00	\$3,750.00
	Structural culvert - extensions	36	m	\$7,500.00	\$270,000.00
	Crossing Roads:				
	Holly Acres Road underpass	1,000	m2	\$3,200.00	\$3,200,000.00
	Moodie Drive overpass	650	m2	\$5,000.00	\$3,250,000.00



PRELIMINARY COST ESTIMATE - QUEENSWAY NORTH OPTION A

WBS No.	Item	Quantity	Units	Unit Cost	Total
20.1.80	Ramps:				
	Holly Acres S-W underpass	1,500	m2	\$2,500.00	\$3,750,000.00
	Retaining walls	3,550	m2	\$750.00	\$2,662,500.00
	Toe walls	515	m2	\$750.00	\$386,250.00
	Shoring / roadway protection	4,080	m2	\$300.00	\$1,224,000.00
20.1.80	Landscaping				
	Creek realignment / erosion protection	1	LS	\$350,000.00	\$350,000.00
	Landscaping	1	LS	\$200,000.00	\$200,000.00
WBS 20 Subtotal					\$30,326,997.35
30.1	Facilities, Storage Yards, Maintenance				
30.2	Stations				
	Moodie Station - ultimate configuration	1	LS	\$3,000,000.00	\$3,000,000.00
	Moodie Station - interim configuration	1	LS	\$500,000.00	\$500,000.00
	Bus stop modifications	1	LS	\$100,000.00	\$100,000.00
30.3	Associated Works				
	Modify existing Moodie interchange (interim stn)	1	LS	\$1,000,000.00	\$1,000,000.00
	Modify / restore Holly Acres intersection	1	LS	\$300,000.00	\$300,000.00
	Removal of interim station	1	LS	\$300,000.00	\$300,000.00
30.4	Park and Ride Lots				
WBS 30 Subtotal					\$5,200,000.00
50.3.04	Communication System	3369	m	\$300.00	\$1,010,700.00
WBS 50 Subtotal					\$1,010,700.00
SECTION TOTAL					\$36,537,697.35
	EA Approval, Engineering and Proj Mgt (Ultimate Configuration)	5%			\$1,826,884.87
	Contingency	30%			\$10,961,309.21
PROJECT TOTAL					\$49,325,891.42

Rounded Total: **\$49,300,000**

Notes:

- Noise mitigation requirements have not yet been determined - cost have not been included in this estimate.



PRELIMINARY COST ESTIMATE - QUEENSWAY NORTH OPTION B

WBS No.	Item	Quantity	Units	Unit Cost	Total
10	Property and Right of Way				
10.1	Property Acquisition	TBD - not included in cost estimate			
10.2	ROW Preparation				
10.3	Property Maintenance				
10.4	Recovery				
10.99	Contingency	30% (see below)			
WBS 10 Subtotal					
20.1.01	Clearing & Removals				
	Transitway	3,309	m	\$375.00	\$1,240,875.00
	Corkstown Rd	320	m	\$375.00	\$120,000.00
	Recreational pathway	300	m	\$150.00	\$45,000.00
20.1.02	Grading				
	Transitway - cut (incl. rock ex)	103,000	m3	\$35.00	\$3,605,000.00
	Transitway - fill (incl. rock ex)	52,000	m3	\$35.00	\$1,820,000.00
	Recreational path way - cut / fill	420	m3	\$25.00	\$10,500.00
20.1.03	Drainage & Erosion Control				
	600mm storm sewer	3,309	m	\$250.00	\$827,250.00
	Catch basins - 2 @ 40m spacing	165	each	\$2,700.00	\$446,715.00
	Catch basin leads @ 40m spacing	1,655	m	\$230.00	\$380,535.00
	Ditching	3,309	m	\$50.00	\$165,450.00
20.1.04	SWM Management & Natural Environment				
	SWM facility	1	LS	\$500,000.00	\$500,000.00
	Mitigation measures	1	LS	\$300,000.00	\$300,000.00
20.1.05	Roadway				
	Asphalt pavement:				
	Transitway	9,891	t	\$110.00	\$1,087,966.11
	Corkstown Road realignment	941	t	\$110.00	\$103,488.00
	Recreational path	98	t	\$110.00	\$10,780.00
	Sidewalk / maintenance strip	16,545	m2	\$50.00	\$827,250.00
	Granular 'A':				
	Transitway	20,648	t	\$16.00	\$330,370.56
	Corkstown Road realignment	1,152	t	\$16.00	\$18,432.00
	Recreational pathway	538	t	\$16.00	\$8,601.60
	Granular 'B':				
	Transitway	50,826	t	\$12.00	\$609,914.88
	Corkstown Road realignment	2,534	t	\$12.00	\$30,412.80
	Top soil - imported				
	Transitway	1,985	m3	\$36.00	\$71,474.40
	Corkstown Road realignment	192	m3	\$36.00	\$6,912.00
	Recreational path	120	m3	\$36.00	\$4,320.00
	Sod				
	Transitway	13,236	m2	\$6.00	\$79,416.00
	Corkstown Road realignment	1,280	m2	\$6.00	\$7,680.00
	Recreational path	1,600	m2	\$6.00	\$9,600.00
	Concrete curb	6,618	m	\$75.00	\$496,350.00
	Concrete barrier	1,875	m	\$205.00	\$384,375.00
	Glare screen	1,875	m	\$750.00	\$1,406,250.00
	Chain link fencing	3,309	m	\$70.00	\$231,630.00
20.1.06	Utility Relocations				
	High-mast light poles	3	each	\$100,000.00	\$300,000.00
	Hydro poles w/ wiring		each	\$2,500.00	\$0.00
	Water, storm water, sanitary		m	\$0.00	\$0.00
	Gas		m	\$0.00	\$0.00
	Cable, telephone, other communications		m	\$0.00	\$0.00
	Other (LS item to include TBD items)	1	LS	\$100,000.00	\$100,000.00
20.1.07	Structures				
	Pipe culvert - extensions	10	m	\$250.00	\$2,500.00
	Structural culvert - extensions	36	m	\$7,500.00	\$270,000.00
	Crossing Roads:				
	Holly Acres Road overpass	1,000	m2	\$3,200.00	\$3,200,000.00
	Moodie Drive overpass	500	m2	\$5,000.00	\$2,500,000.00



PRELIMINARY COST ESTIMATE - QUEENSWAY NORTH OPTION B

WBS No.	Item	Quantity	Units	Unit Cost	Total
	Ramps:				
	Holly Acres S-W underpass	1,500	m2	\$2,500.00	\$3,750,000.00
	Moodie E-NS overpass	1,000	m2	\$2,500.00	\$2,500,000.00
	Moodie S-W overpass	160	m2	\$7,500.00	\$1,200,000.00
	Moodie N-W overpass	500	m2	\$2,500.00	\$1,250,000.00
	Retaining walls 1030m length x 5m avg. depth	5,150	m2	\$750.00	\$3,862,500.00
	Toe walls 575m length x 1m avg. depth	575	m2	\$750.00	\$431,250.00
	Shoring / roadway protection 1000m length x 8m avg. depth	8,000	m2	\$300.00	\$2,400,000.00
20.1.80	Landscaping				
	Creek realignment / erosion protection	1	LS	\$350,000.00	\$350,000.00
	Landscaping	1	LS	\$200,000.00	\$200,000.00
	WBS 20 Subtotal				\$37,502,798.35
30.1	Facilities, Storage Yards, Maintenance				
30.2	Stations				
	Moodie Station - ultimate configuration BRT w/ 6m platforms, shelters, elevators	1	LS	\$2,500,000.00	\$2,500,000.00
	Moodie Station - interim configuration At-grade stops w/ shelters	1	LS	\$500,000.00	\$500,000.00
	Bus stop modifications Local service stops on Moodie Dr.	1	LS	\$100,000.00	\$100,000.00
30.3	Associated Works				
	Modify existing Moodie interchange (interim stn) Rem. E-N ramp, new lanes, signals, roadway	1	LS	\$1,000,000.00	\$1,000,000.00
	Modify / restore Holly Acres intersection At-grade crossing	1	LS	\$300,000.00	\$300,000.00
	Removal of interim station Tie-in to new alignment, staging, etc.	1	LS	\$300,000.00	\$300,000.00
30.4	Park and Ride Lots				
	WBS 30 Subtotal				\$4,700,000.00
50.3.04	Communication System	3309	m	\$300.00	\$992,700.00
	WBS 50 Subtotal				\$992,700.00
	SECTION TOTAL				\$43,195,498.35
	EA Approval, Engineering and Proj Mgt (Ultimate Configuration)	5%			\$2,159,774.92
	Contingency	30%			\$12,958,649.51
	PROJECT TOTAL				\$58,313,922.77

Rounded: **\$58,300,000**

Premium for cut & cover tunnel from Holly Acres to 300m east of Moodie Drive: 30,800 m2 \$4,900 **\$151,000,000**

Approx. 2,200m x 14m cross section = 30,800 m2 (see Note 2)

Rounded Total (with cut & cover tunnel): **\$210,000,000**

Notes:

- Noise mitigation requirements have not yet been determined - cost have not been included in this estimate.
- Base cut & cover cost is \$2,800 per m2, plus 75% contingency for ventilation, special drainage, water proofing, and emergency access req'ts.



PRELIMINARY COST ESTIMATE - QUEENSWAY SOUTH OPTION

WBS No.	Item	Quantity	Units	Unit Cost	Total
10	Property and Right of Way				
10.1	Property Acquisition	TBD - not included in cost estimate			
10.2	ROW Preparation				
10.3	Property Maintenance				
10.4	Recovery				
10.99	Contingency	30% (see below)			
WBS 10 Subtotal					
20.1.01	Clearing & Removals				
	Transitway	3,326	m	\$375.00	\$1,247,250.00
	Corkstown Rd	0	m	\$375.00	\$0.00
	Recreational pathway	0	m	\$150.00	\$0.00
20.1.02	Grading				
	Transitway - cut (incl. rock ex)	139,020	m3	\$35.00	\$4,865,700.00
	Transitway - fill (incl. rock ex)	95,400	m3	\$35.00	\$3,339,000.00
	Recreational path way - cut / fill	0	m3	\$25.00	\$0.00
20.1.03	Drainage & Erosion Control				
	600mm storm sewer	3,326	m	\$250.00	\$831,500.00
	Catch basins - 2 @ 40m spacing	166	each	\$2,700.00	\$449,010.00
	Catch basin leads @ 40m spacing	1,663	m	\$230.00	\$382,490.00
	Ditching	3,326	m	\$50.00	\$166,300.00
20.1.04	SWM Management & Natural Environment				
	SWM facility	1	LS	\$500,000.00	\$500,000.00
	Mitigation measures	1	LS	\$300,000.00	\$300,000.00
20.1.05	Roadway				
	Asphalt pavement:				
	Transitway	9,941	t	\$110.00	\$1,093,555.54
	Corkstown Road realignment	0	t	\$110.00	\$0.00
	Recreational path	0	t	\$110.00	\$0.00
	Sidewalk / maintenance strip	16,630	m2	\$50.00	\$831,500.00
	Granular 'A':				
	Transitway	20,754	t	\$16.00	\$332,067.84
	Corkstown Road realignment	0	t	\$16.00	\$0.00
	Recreational pathway	0	t	\$16.00	\$0.00
	Granular 'B':				
	Transitway	51,087	t	\$12.00	\$613,048.32
	Corkstown Road realignment	0	t	\$12.00	\$0.00
	Top soil - imported				
	Transitway	1,996	m3	\$36.00	\$71,841.60
	Corkstown Road realignment	0	m3	\$36.00	\$0.00
	Recreational path	0	m3	\$36.00	\$0.00
	Sod				
	Transitway	13,304	m2	\$6.00	\$79,824.00
	Corkstown Road realignment	0	m2	\$6.00	\$0.00
	Recreational path	0	m2	\$6.00	\$0.00
	Concrete curb	6,652	m	\$75.00	\$498,900.00
	Concrete barrier	625	m	\$205.00	\$128,125.00
	Glare screen	625	m	\$750.00	\$468,750.00
	Chain link fencing	3,326	m	\$70.00	\$232,820.00
20.1.06	Utility Relocations				
	High-mast light poles	4	each	\$100,000.00	\$400,000.00
	Hydro poles w/ wiring		each	\$2,500.00	\$0.00
	Water, storm water, sanitary		m	\$0.00	\$0.00
	Gas		m	\$0.00	\$0.00
	Cable, telephone, other communications		m	\$0.00	\$0.00
	Other (LS item to include TBD items)	1	LS	\$100,000.00	\$100,000.00
20.1.07	Structures				
	Pipe culvert - extensions	14	m	\$250.00	\$3,500.00
	Structural culverts- new / extensions	90	m	\$7,500.00	\$675,000.00
	Crossing Roads:				
	Holly Acres Road underpass	1,000	m2	\$3,200.00	\$3,200,000.00
	Moodie Drive overpass	500	m2	\$5,000.00	\$2,500,000.00
	Hwy 417 WBL underpass (East end)	1,350	m2	\$6,500.00	\$8,775,000.00
	Hwy 417 EBL underpass (East end)	1,000	m2	\$6,500.00	\$6,500,000.00
	Hwy 417 cut & cover tunnel (West end)	2,200	m2	\$4,900.00	\$10,780,000.00



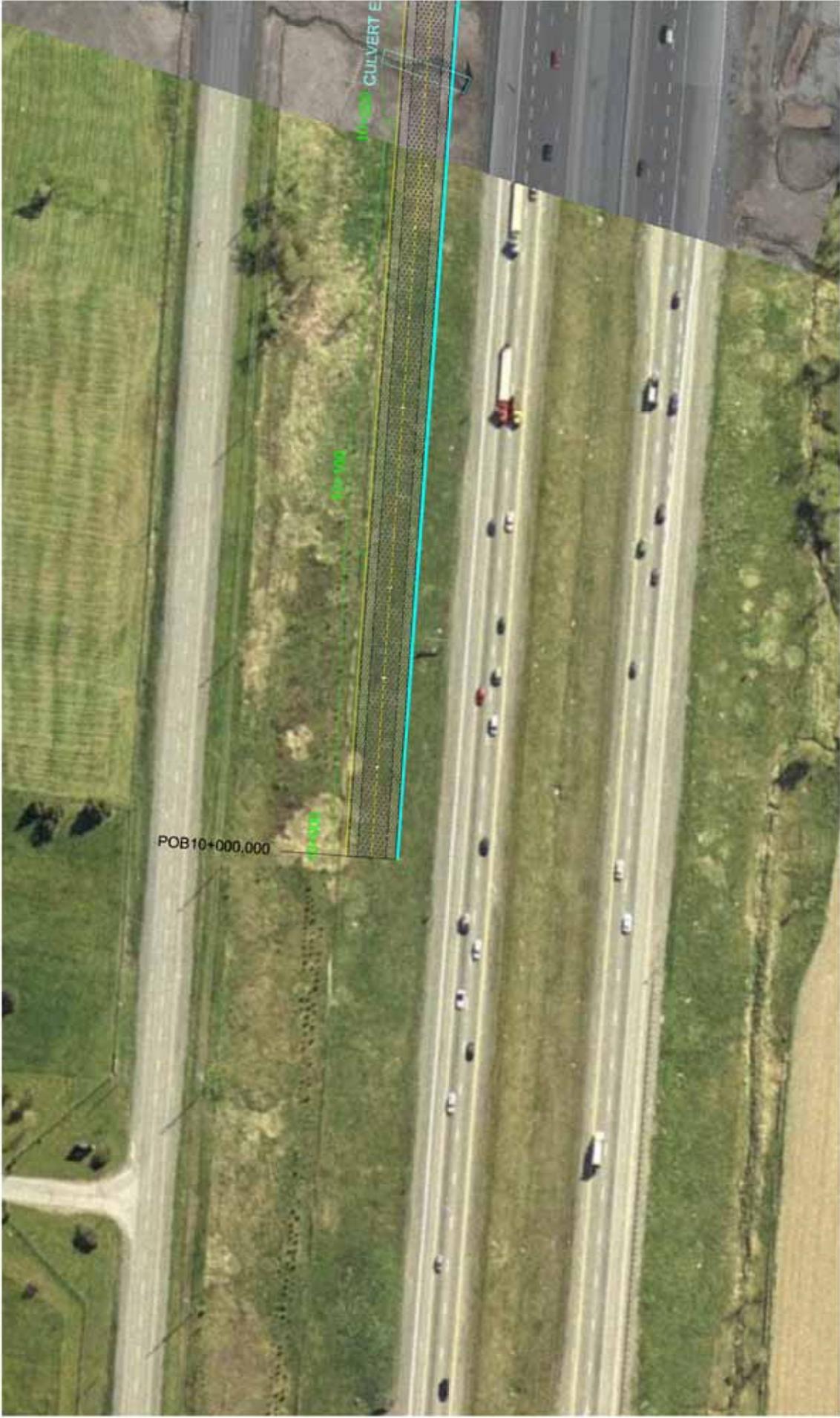
PRELIMINARY COST ESTIMATE - QUEENSWAY SOUTH OPTION

WBS No.	Item	Quantity	Units	Unit Cost	Total
	Ramps:				
	Holly Acres S-W underpass	1,500	m2	\$2,500.00	\$3,750,000.00
	Moodie W-NS overpass	250	m2	\$7,500.00	\$1,875,000.00
	Moodie N-E overpass	200	m2	\$7,500.00	\$1,500,000.00
	Moodie S-E overpass	520	m2	\$2,500.00	\$1,300,000.00
	Retaining walls 850m length x 5m avg. depth	4,250	m2	\$750.00	\$3,187,500.00
	Toe walls Not required	0	m2	\$750.00	\$0.00
	Shoring / roadway protection 1200m length x 8m avg. depth	9,600	m2	\$300.00	\$2,880,000.00
20.1.80	Landscaping				
	Creek realignment / erosion protection	1	LS	\$200,000.00	\$200,000.00
	Landscaping	1	LS	\$200,000.00	\$200,000.00
	WBS 20 Subtotal				\$64,257,682.30
30.1	Facilities, Storage Yards, Maintenance				
30.2	Stations				
	Moodie Station - ultimate configuration BRT w/ 6m platforms, shelters, elevators	1	LS	\$2,500,000.00	\$2,500,000.00
	Moodie Station - interim configuration At-grade stops w/ shelters	1	LS	\$500,000.00	\$500,000.00
	Bus stop modifications Local service stops on Moodie Dr.	1	LS	\$100,000.00	\$100,000.00
30.3	Associated Works				
	Modify existing Moodie interchange (interim stn) New lanes, signals, roadway	1	LS	\$1,000,000.00	\$1,000,000.00
	Modify / restore Holly Acres intersection At-grade crossing	1	LS	\$300,000.00	\$300,000.00
	Removal of interim station Tie-in to new alignment, staging, etc.	1	LS	\$300,000.00	\$300,000.00
30.4	Park and Ride Lots				
	WBS 30 Subtotal				\$4,700,000.00
50.3.04	Communication System	3326	m	\$300.00	\$997,800.00
	WBS 50 Subtotal				\$997,800.00
	SECTION TOTAL				\$69,955,482.30
	EA Approval, Engineering and Proj Mgt (Ultimate Configuration)	5%			\$3,497,774.12
	Contingency	30%			\$20,986,644.69
	PROJECT TOTAL				\$94,439,901.11

Notes:

- Noise mitigation requirements have not yet been determined - cost have not been included in this estimate.
- Base cut & cover cost is \$2,800 per m2, plus 75% contingency for ventilation, special drainage, water proofing, and emergency access req'ts.

Rounded: **\$94,400,000**



POB10+000.000

10000 CULVERT E

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WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH A

MPC
 MCDONALD'S RANDIN
 CORPORATION
 AECOM

DATE: OCTOBER 19, 2019

SCALE: 1:1000

PAGE NO. 1

OTTAWA
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08/09 84934

08/11



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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH A**

MPC MCDONALD'S RANBYN CORPORATION
 AECOM

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08/09 84394

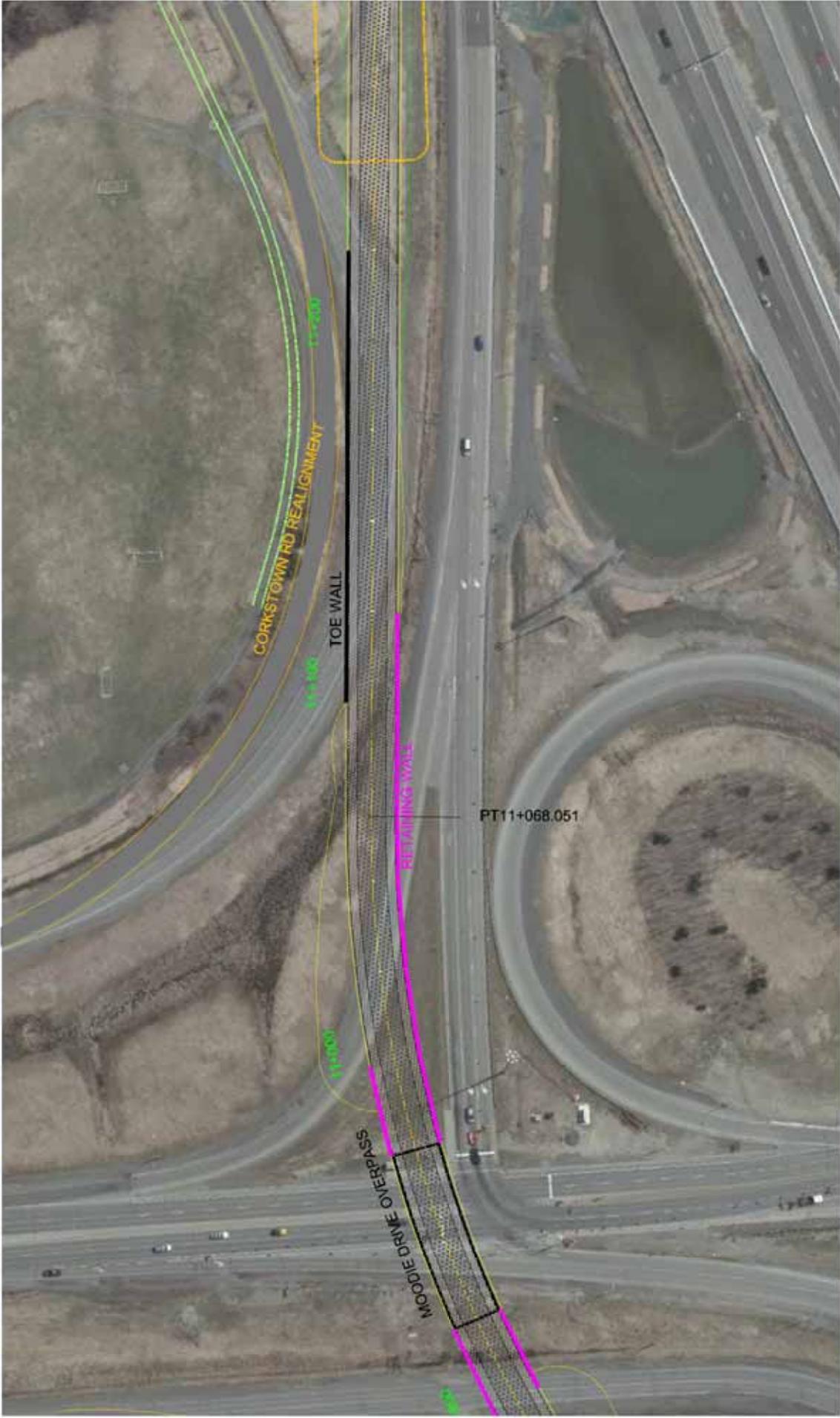
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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH A**

MPC MCDONALD & RANDIN
 CORPORATION
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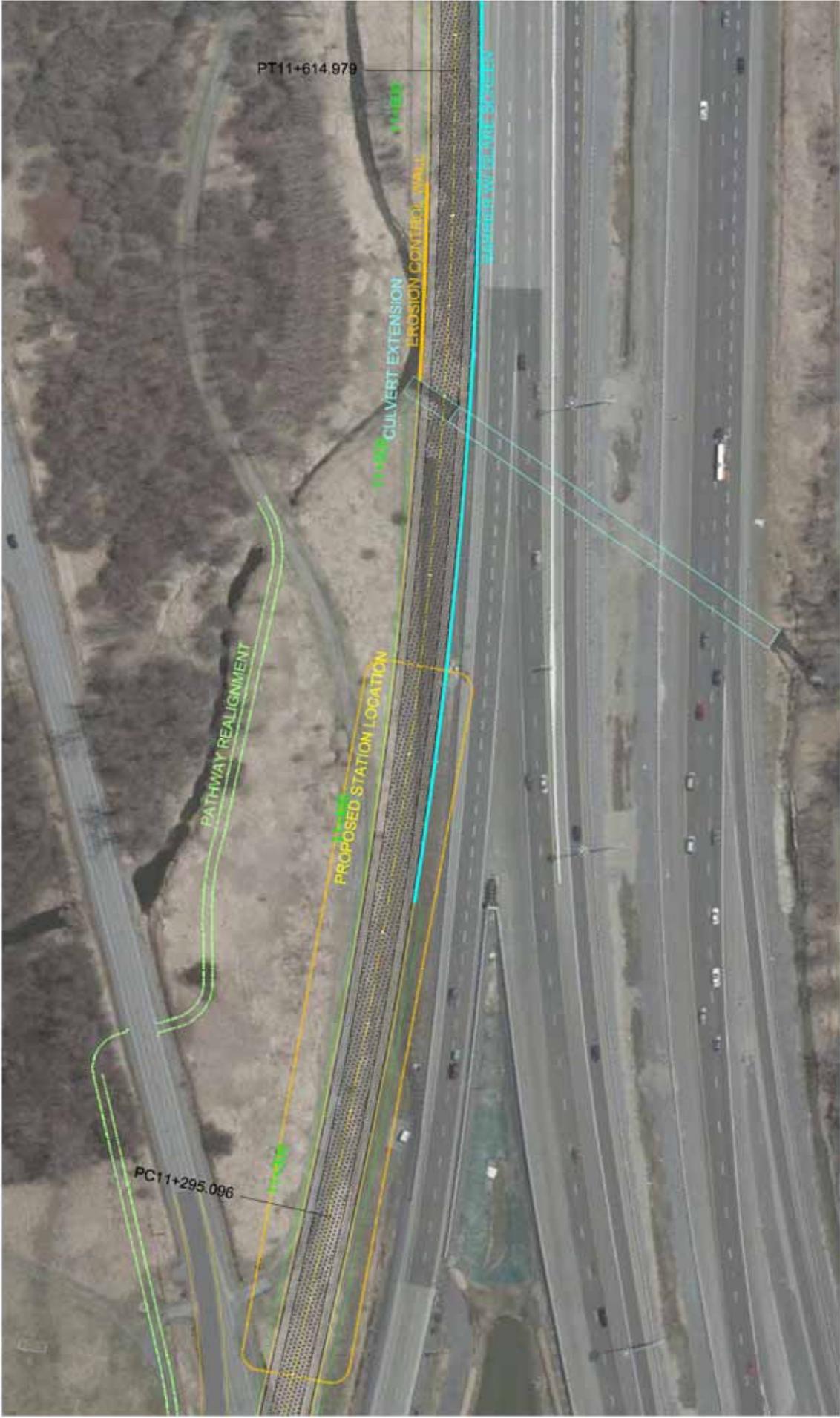
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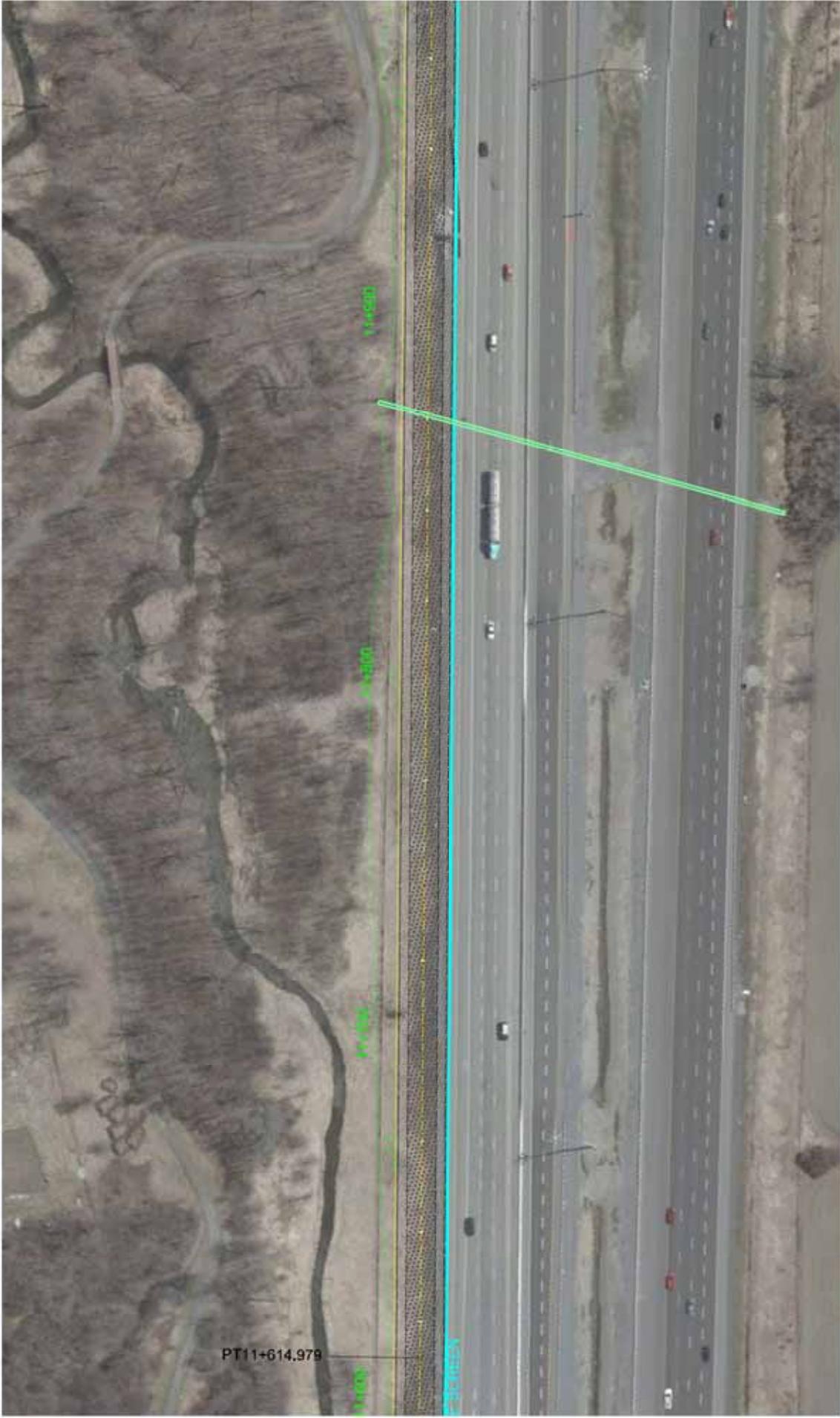
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 INFRASTRUCTURE SERVICES DEPARTMENT

10/15/2019

10/15/2019





PT11+614.979

E. GREEN

11+6500

11+6000

11+5500

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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH A**

MPC MCDONALD'S RANKIN
 CORPORATION
 AECOM

DATE: OCTOBER 19, 2019
 SCALE: 1"=100'

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08/09 8474

DATE: 11/19 84.1



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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH A**

MPC MCDONALD & RANDIN
 CORPORATION
 CONSULTANTS

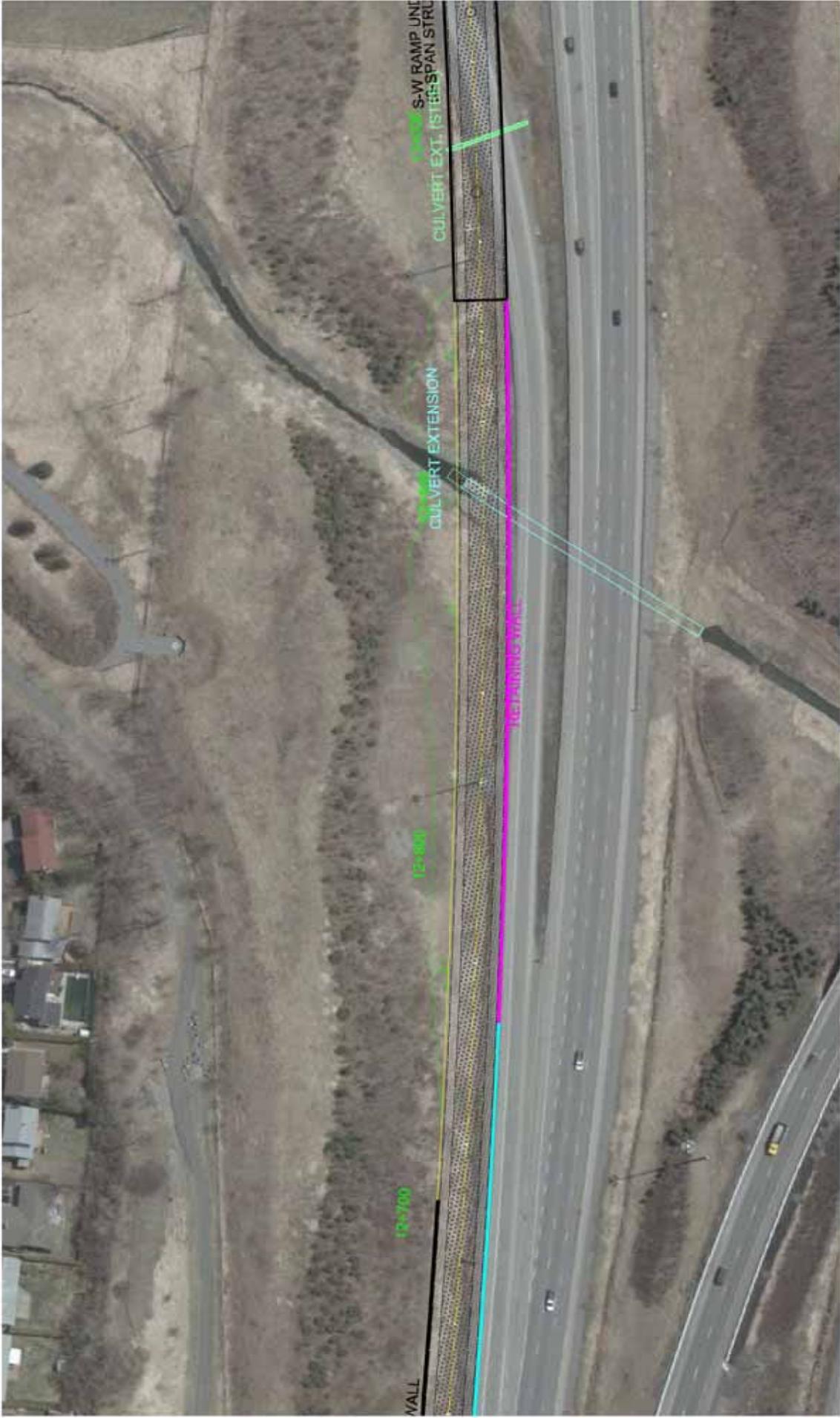
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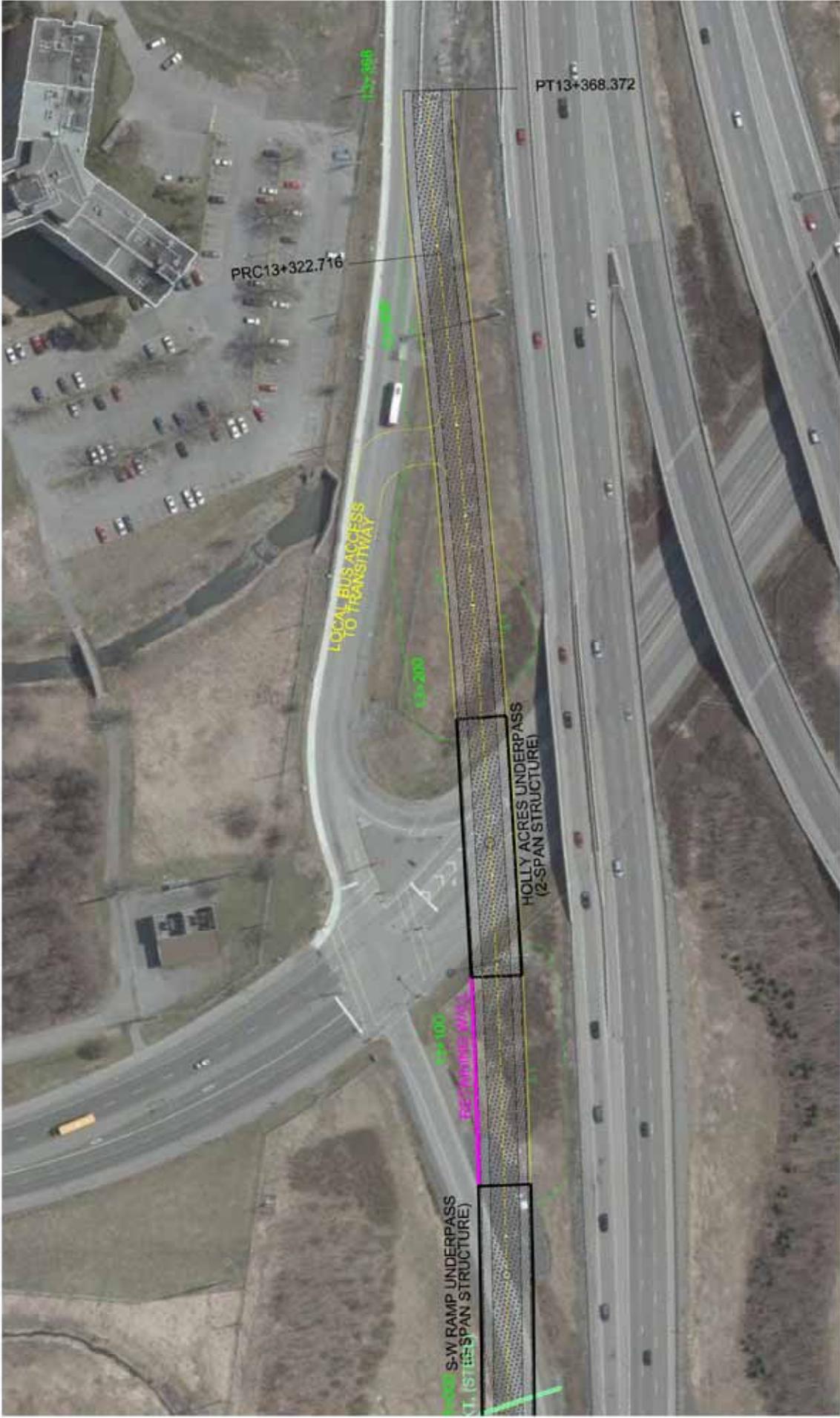
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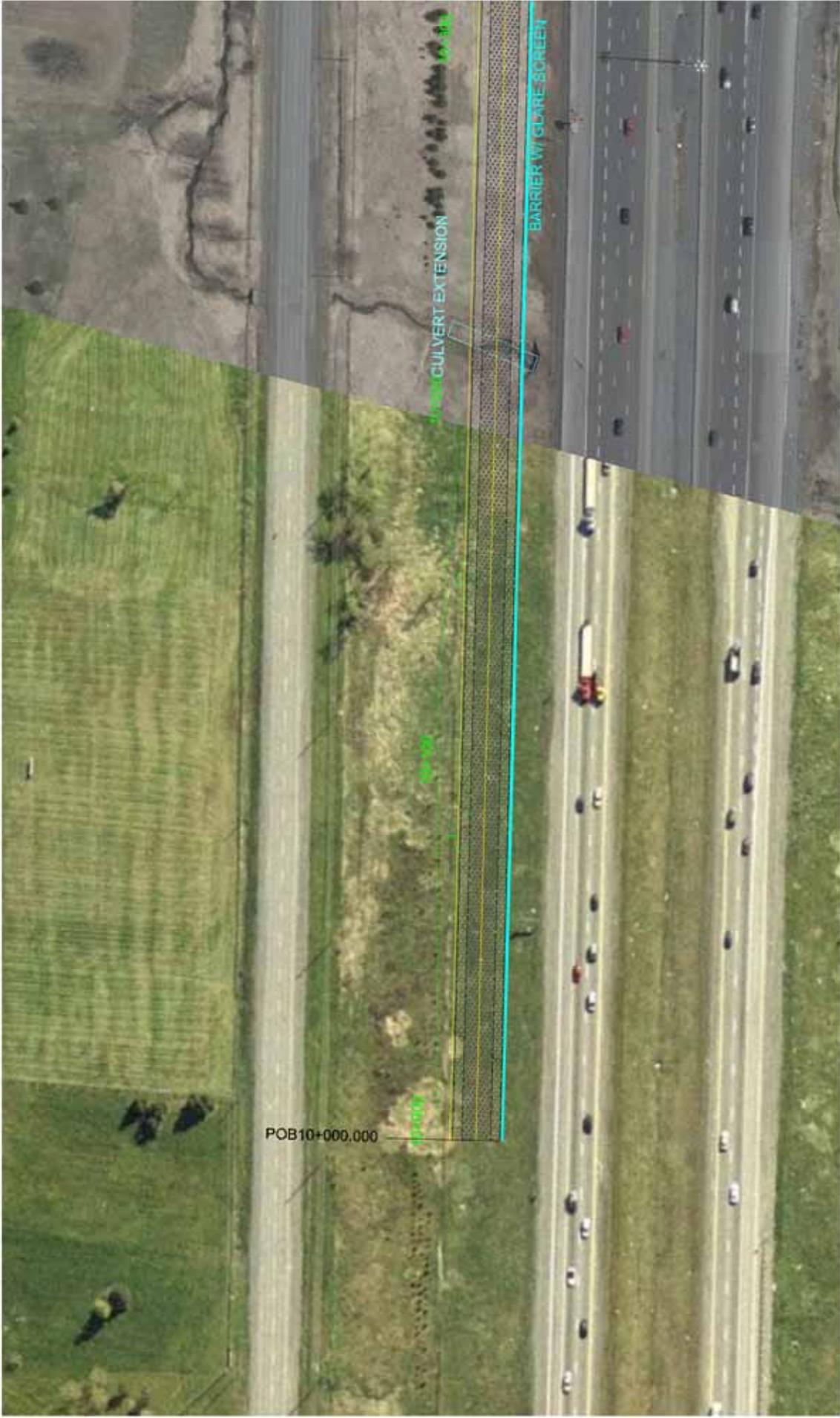
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WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY NORTH A

DATE: 11/15/18

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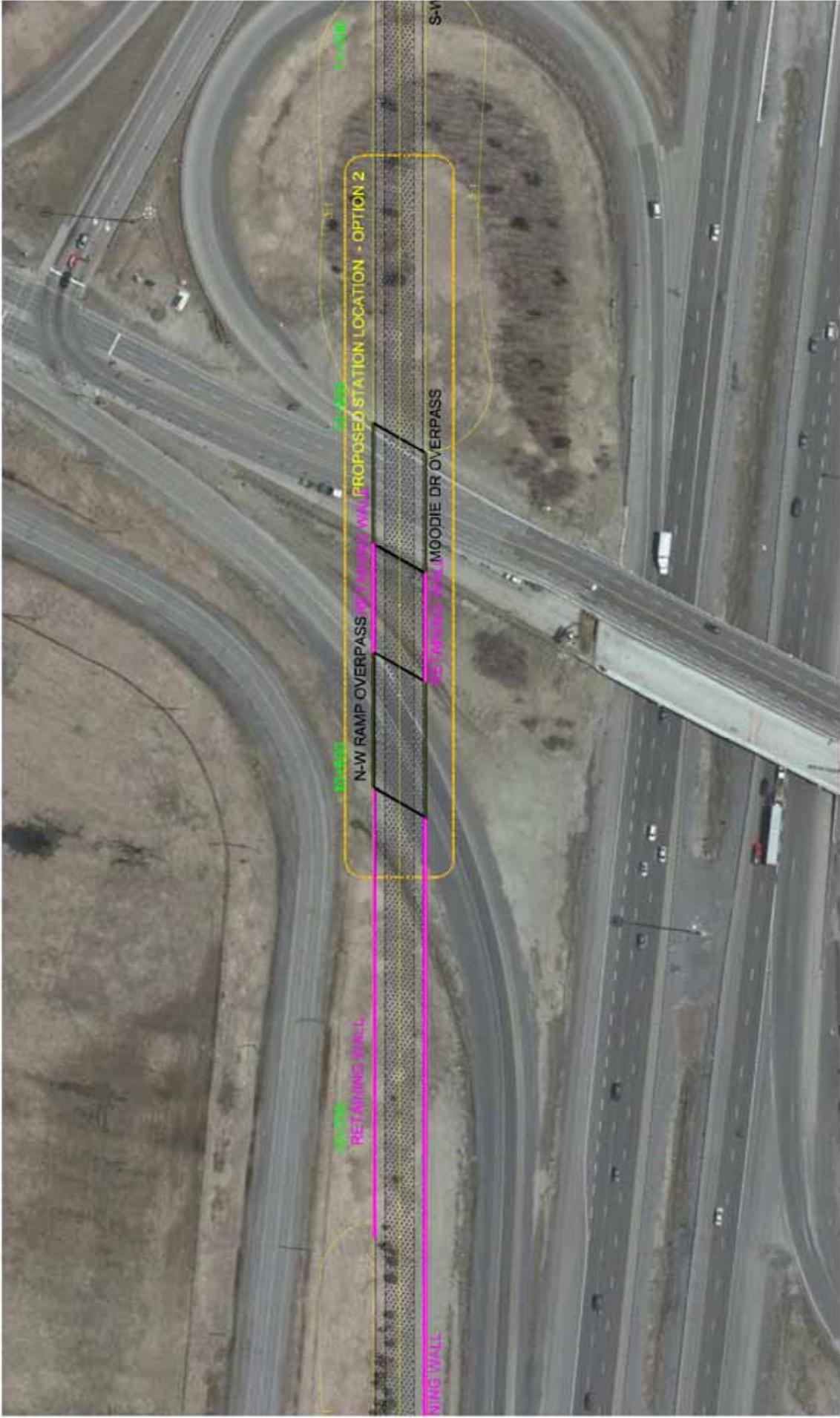


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 Project: INFRASTRUCTURE SERVICES DEPARTMENT

WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY NORTH B

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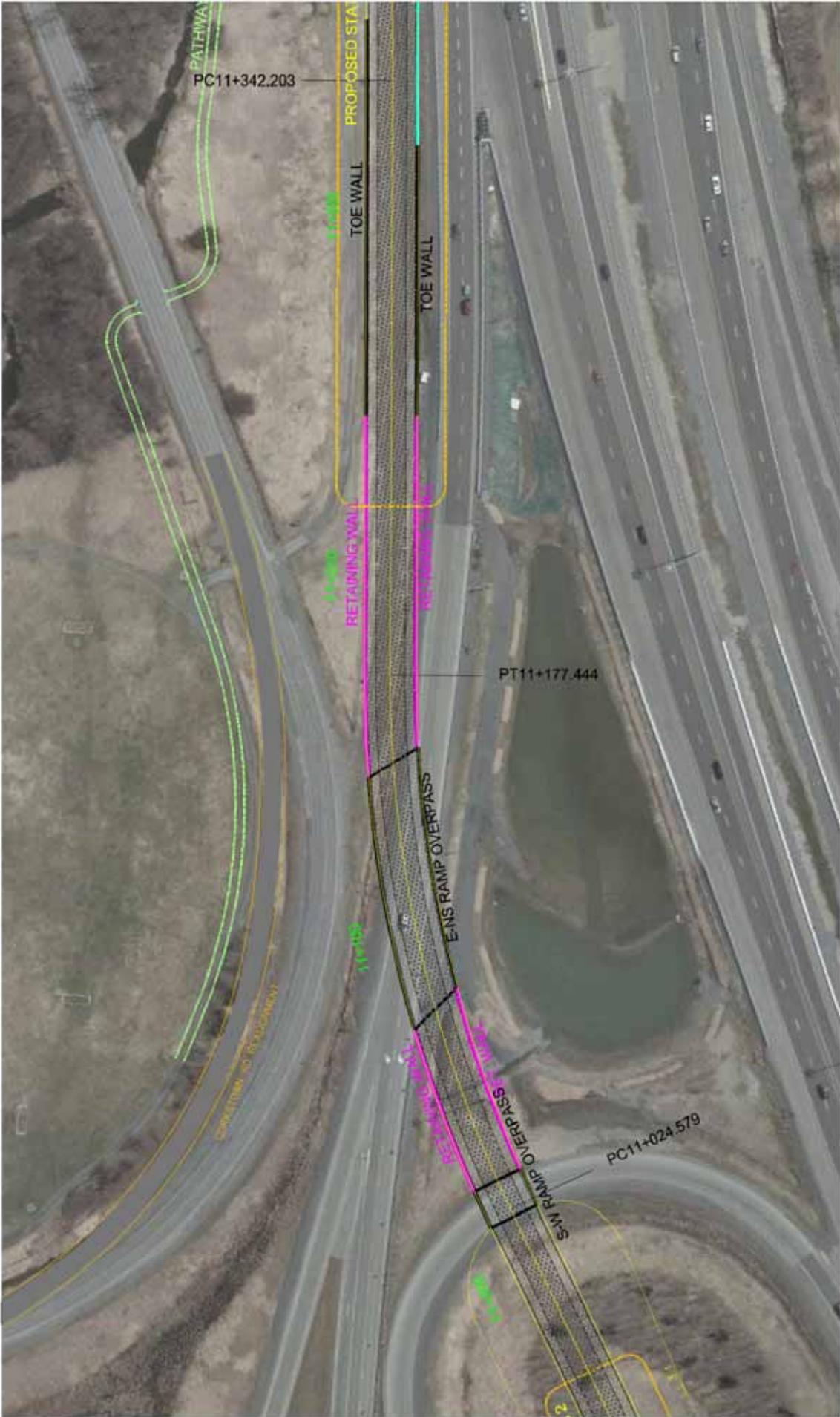




**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**

MPC MCDONALD & RANDIN CORPORATION
 CHIEF ENGINEER
 Date: OCTOBER 19, 2018

PLAT NO. **3**



WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY NORTH B

8000 8478



**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**



BARRIER WIRE SCREEN

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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**

MPC McQUINN & RANBY
 CORPORATION
 ARCHITECTS

DATE: OCTOBER 19, 2018

SCALE: 1:1000

PAGE NO: 6



08/09 8474

DATE: 07/18 04.1



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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**

MPC MCDONALD'S RANDIN
 CORPORATION
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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**

MPC MCDONALD & RANDIN
 CORPORATION
 AECOM

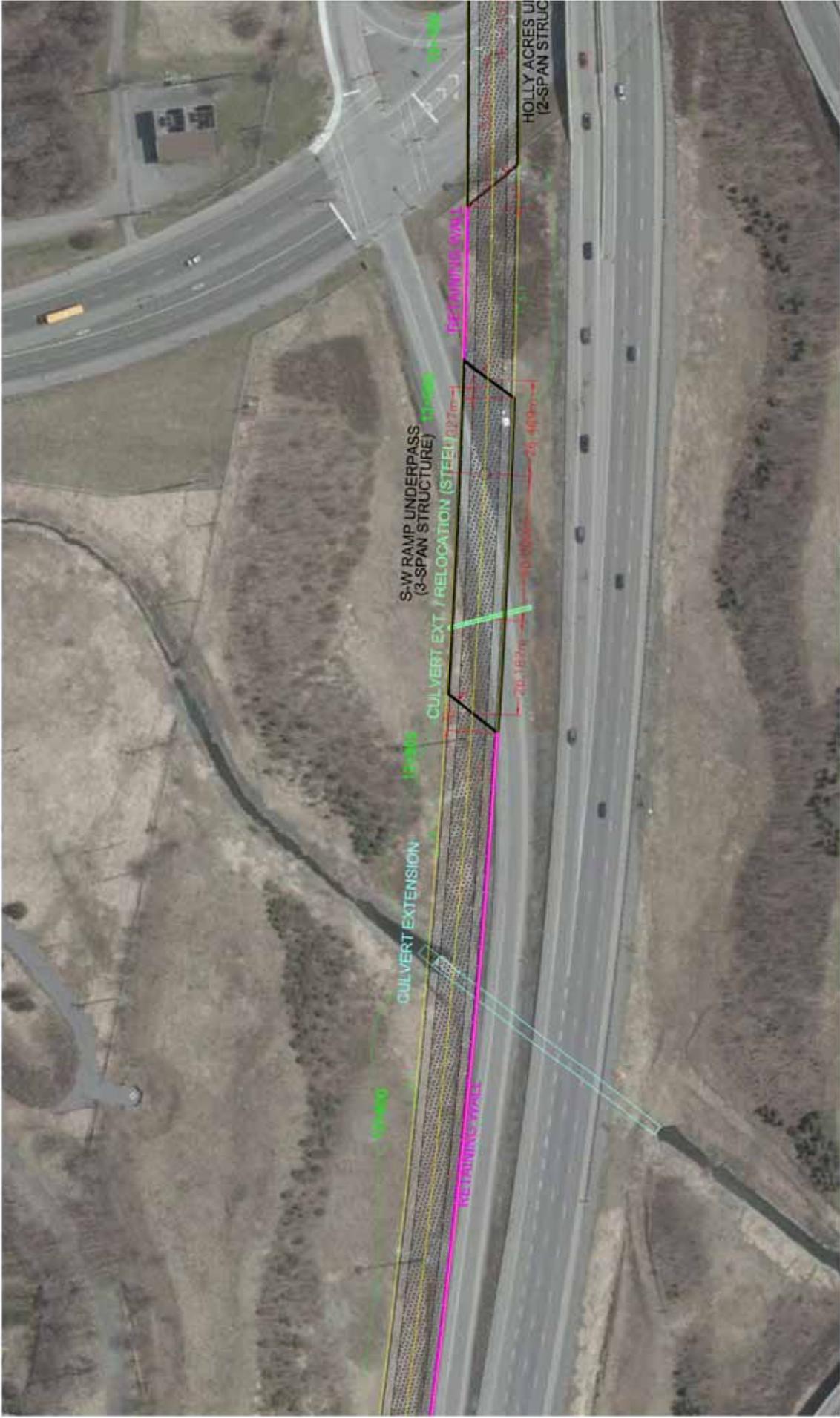
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 INFRASTRUCTURE SERVICES DEPARTMENT

08/09 84193

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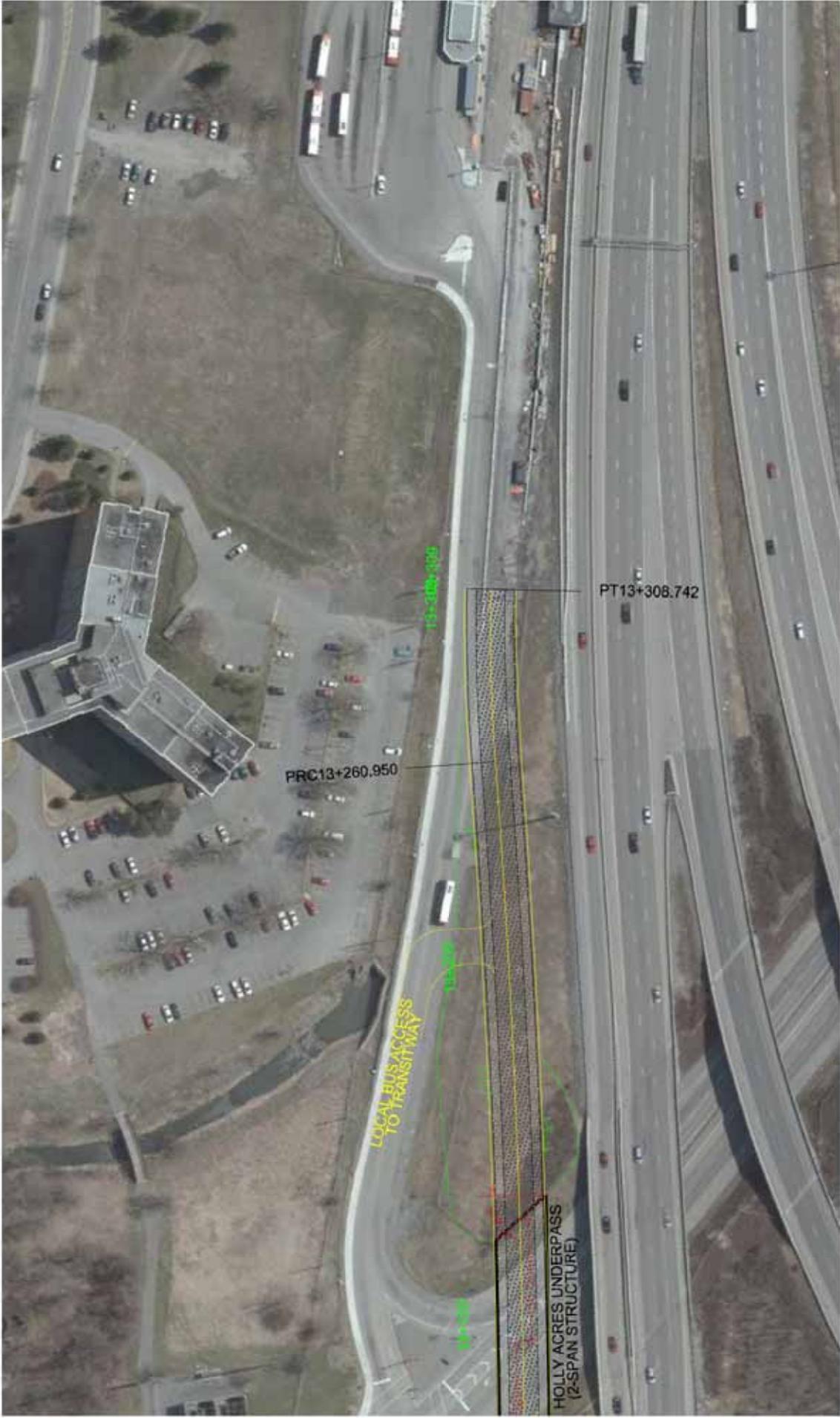
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WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B

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Date: OCTOBER 19, 2019			Scale: 1"=100'	

**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY NORTH B**

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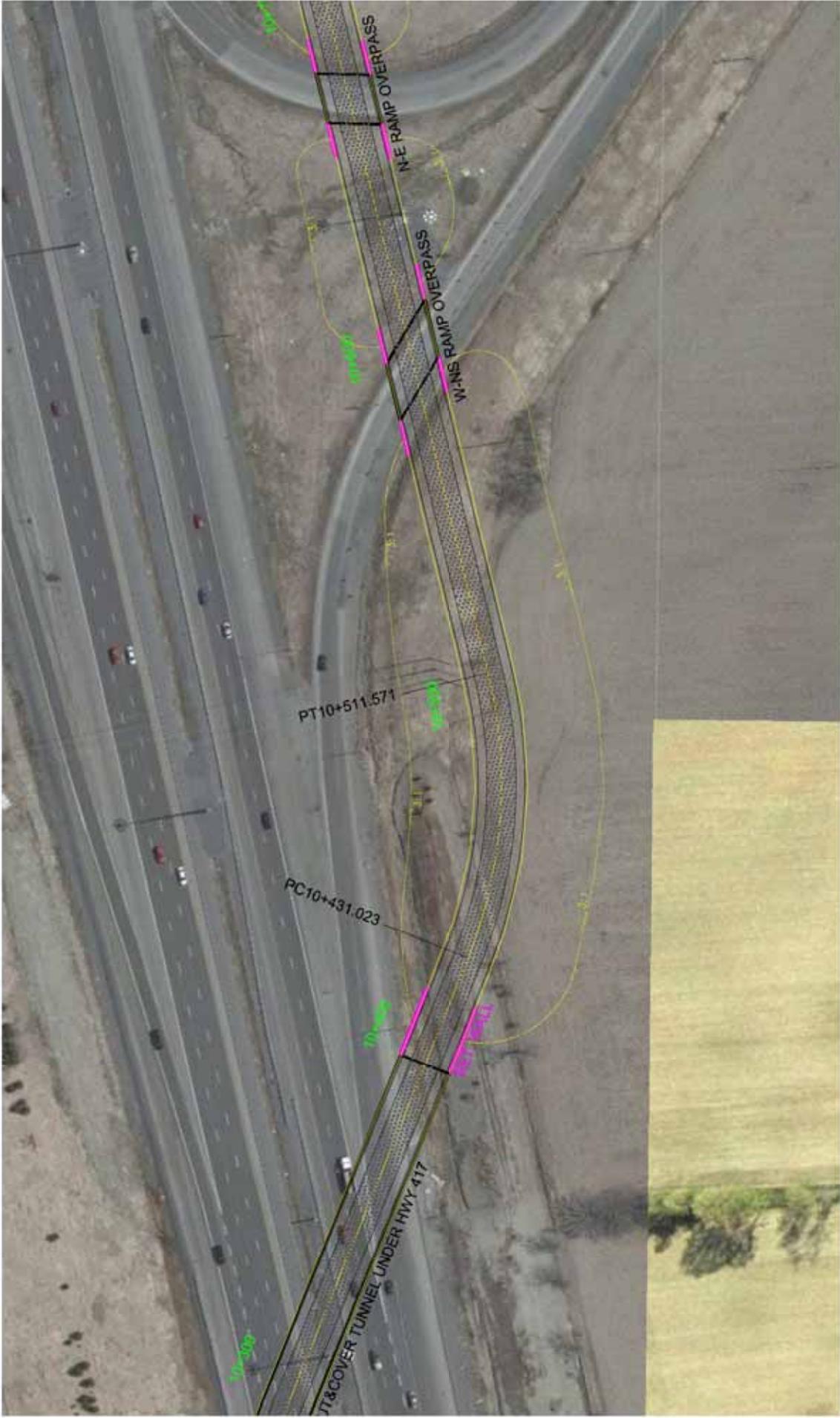
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Date: OCTOBER 19, 2018
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INFRASTRUCTURE SERVICES DEPARTMENT

WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY SOUTH

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**WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY SOUTH**

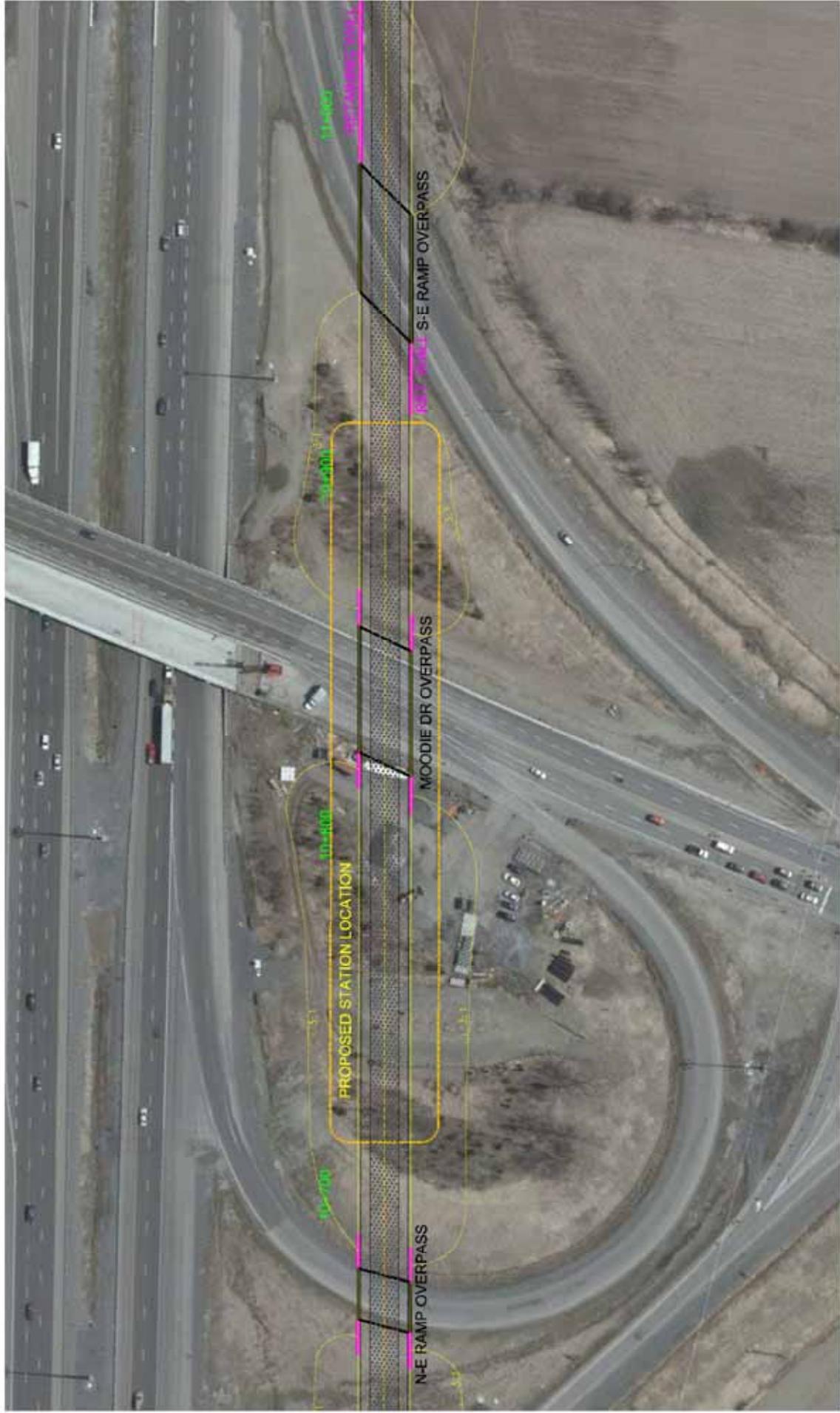
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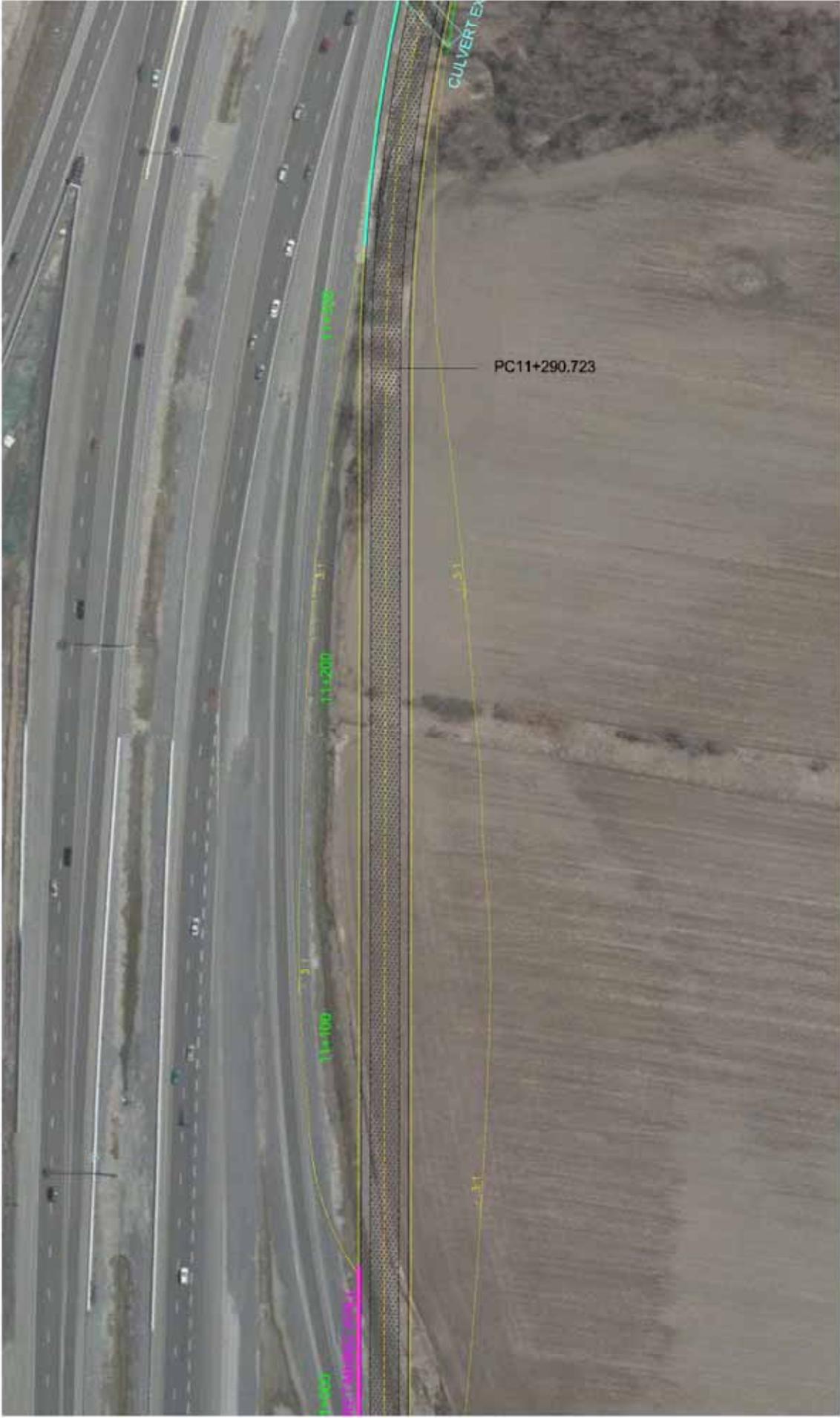
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WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY SOUTH

MPC
 McEDWARDS RANDELL
 CORPORATION
 AECOM

Date: OCTOBER 19, 2018
 Date: OCTOBER 19, 2018

Scale: 1:1000
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 INFRASTRUCTURE SERVICES DEPARTMENT

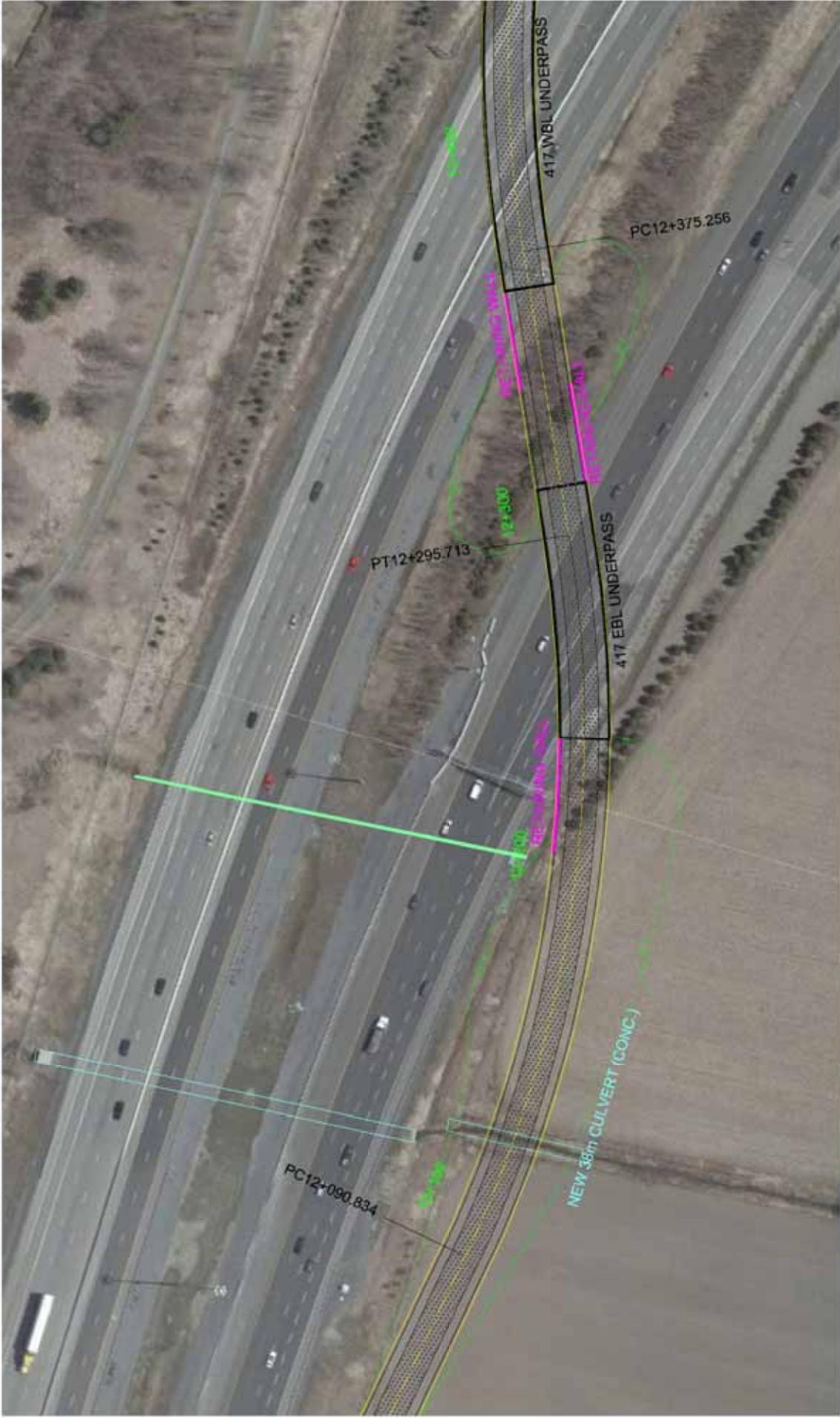
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WEST TRANSITWAY EXTENSION
 BAYSHORE TO MOODIE DRIVE
 QUEENSWAY SOUTH

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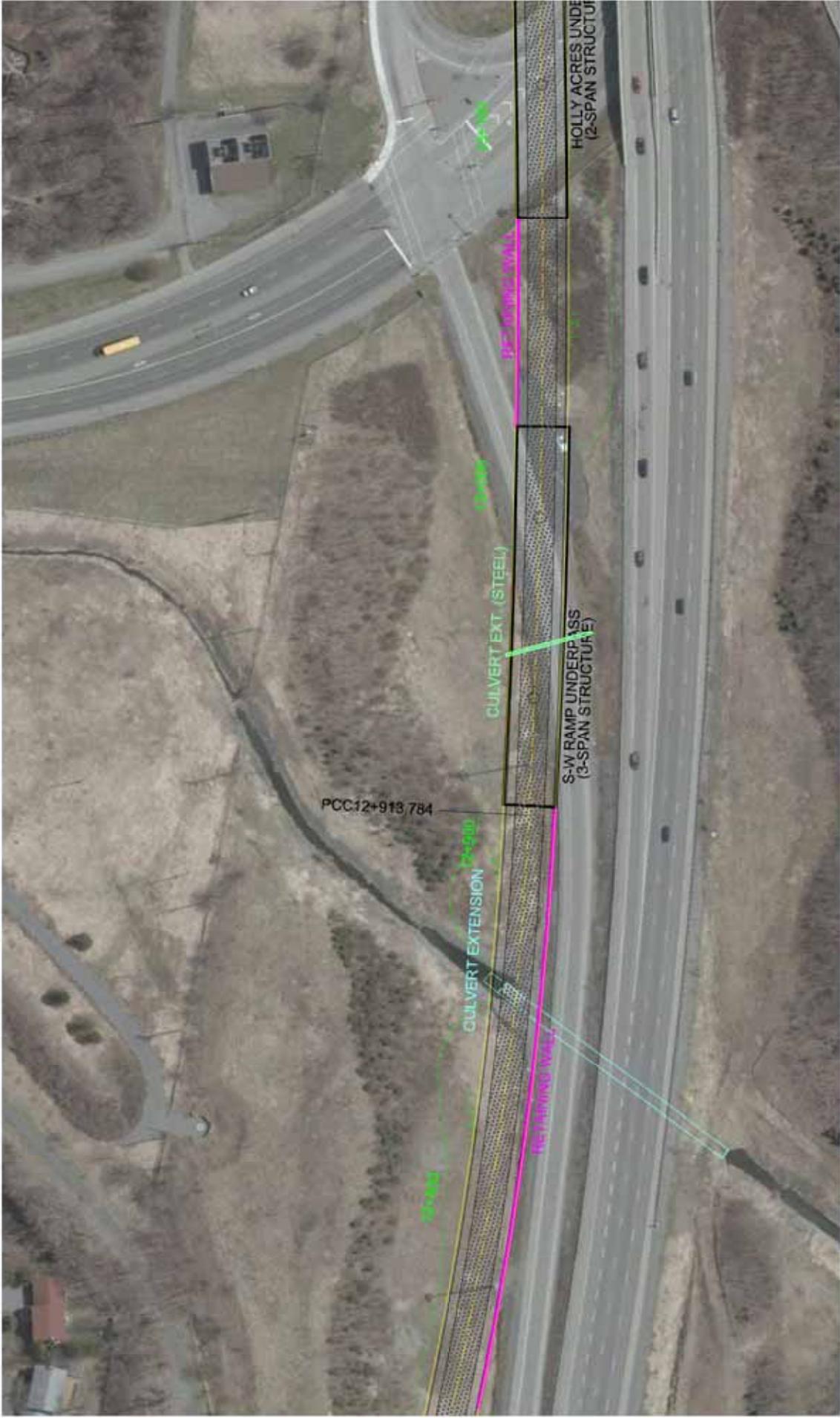
**WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY SOUTH**

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MPC MCDONALD'S RANDELL CORPORATION
 CHIEF ENGINEER
 DATE: OCTOBER 19, 2018

PAGE NO. **8**
 SCALE: 1"=100'

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WEST TRANSITWAY EXTENSION BAYSHORE TO MOODIE DRIVE QUEENSWAY SOUTH		
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WEST TRANSITWAY EXTENSION
BAYSHORE TO MOODIE DRIVE
QUEENSWAY SOUTH

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