

Appendix K

Highway 407 Interchange Design Criteria

PRELIMINARY DESIGN CRITERIA

WORK PROJECT NO. 3215102 Mavis Road EA HWY NO. 407ETR TYPE OF PROJECT Class EA Study

LOCATION Mavis Road from 280 m north of Twain Avenue to 330 m south of Ray Lawson Blvd LENGTH 1.0 km

LIMITS FROM STA NB 12+800 TO STA NB 13+820

MUNICIPAL JURISDICTIONS

City of Mississauga, City of Brampton, Region of Peel

		PRESENT CONDITIONS	DESIGN STANDARDS	PROPOSED STANDARDS
FUNCTIONAL CLASSIFICATION		UAU 80	UAU 80	UAU 80
MINIMUM STOPPING SIGHT DISTANCE (m)		140	135	140
EQUIVALENT MINIMUM "K" FACTOR	CREST	35	35	35
	SAG	40	30	40
GRADES MAXIMUM (%)		3.40	6.0 – 8.0	3.1
RADIUS	MINIMUM (m)	1000	250	1145
	DESIRABLE (m)	N/A	N/A	N/A
PAVEMENT WIDTH (m)		4 lanes @ 3.75 m	3.50 m	4 lanes @ 3.50 m 2 lanes @ 3.75 m
SHOULDER WIDTH (m)		None	1.5	1.5
SHOULDER ROUNDING (m)		N/A	N/A	N/A
RAISED MEDIAN WIDTH (m)		None	2.0	2.0
R.O.W. WIDTH (m)		N/A	N/A	N/A
POSTED SPEED (km/h)		70	70	70
MISCELLANEOUS		N/A	N/A	N/A

NOTES:

N/A

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Interchange Standards Table
Mavis Road and Highway 407 (Parclo A4 Interchange)

		RAMP NAME	PRESENT CONDITIONS	DESIGN STANDARDS	PROPOSED STANDARDS		
CROSSING ROAD DESIGN SPEED		Mavis Road	80 km/h	80 km/h	80 km/h		
CROSSING ROAD POSTED SPEED		Mavis Road	70 km/h	70 km/h	70 km/h		
RAMP DESIGN SPEED (Minimum-Standard) (S-E ramp located in Mississauga; lower Design Speed applies)		S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	N/A ^e N/A ^e 60 km/h 40 km/h 80-50 km/h N/A ^e	N/A ^e N/A ^e 60-80 km/h 40 km/h 60-80 km/h N/A ^e	N/A ^e N/A ^e 50 km/h 40 km/h 80-50 km/h N/A ^e		
SIGHT DISTANCE REQUIREMENT FOR TURNING MOVEMENTS AT THE CROSSING ROAD		W-N/S ^b E-N/S	250 N/A ^e	250 250	250 N/A ^e		
EQUIVALENT MINIMUM "K" FACTOR	Crest	S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	N/A ^e N/A ^e 25 35 35 N/A ^e	15-35 4 15-35 4 15-35 N/A ^e	N/A ^e N/A ^e 33 35 35 N/A ^e		
		Sag	S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	N/A ^e N/A ^e 30 30 35 N/A ^e	18-30 8 18-30 8 18-30 N/A ^e	N/A ^e N/A ^e 30 30 35 N/A ^e	
			GRADES MAXIMUM		S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	N/A ^e N/A ^e 5.3% 3.0% 5.6% N/A ^e	N/A ^e N/A ^e 6.0% 6.0% N/A ^e N/A ^e
			RADIUS MINIMUM (Minimum-Standard)		S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	95 m 60 m 130 m 85 m N/A ^e N/A ^e	130-250 m 50 m 130-250 m 50 m N/A ^e N/A ^e
			PAVEMENT WIDTH		S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	4.75 m 4.75 m 4.75 m 4.75 m 4.75 m 4.75 m	4.75 m 4.75 m 4.75 m 4.75 m 4.75 m 4.75 m
	SHOULDER WIDTH (Right / Left)		S-E S-W N-W ^a N-E ^a W-N/S ^b E-N/S	2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m	2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m 2.5 m / 1.0 m		
	SUPERELEVATION MAXIMUM RATE		S-E S-W N-W ^a N-E ^a	0.06 0.08 0.06 0.08	0.06 0.08 0.06 0.08		

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	W-N/S ^b	0.06	0.06	0.06
	E-N/S	0.06	0.06	0.06
ENTRANCE TERMINAL SPEED-CHANGE LANE LENGTH (S-E ramp located in Mississauga; lower Design Speed applies)	S-E	345 m ^c	85 m	250 m ^d
	S-W	340 m ^c	110 m	385 m ^c
	N-W ^a	110 m ^d	110 m	110 m ^d
	N-E ^a	110 m ^d	110 m	120 m ^d

NOTES:

^a Partial ramp replacement at entrance terminal, compound curve proposed.

^b Partial ramp replacement at entrance terminal.

^c Parallel lane.

^d Direct taper.

^e No changes with potential effects on this factor are proposed through this study.