



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

New Carlisle Intersection Study
Final Tech Memo

Appendix F: ODOT Recommended Turn Lane Length Calculations

Road Name: SR235
 Road Name # 1: SR235
 Road Name # 2: Church/Linden
 PID # NA
 DLZ Project # 1321-1005-04
 Prepared By: DGL
 Date: 7/17/2014
 Checked By:
 Date:



Input Cells
Length from Figure 401-10E
Total Calculated Length
Condition
Turn Lane Length to Use

Intersection Name SR235 & Linden Ave & Church St

Approach Street SR235 Northbound

Free Flow Approach (Y or N) Y

Design Speed MPH 40

Turn Volume 208

Total Approach Volume (Includes Turns) 690

Turn % 30

Figure 401-9E (L&D Vol. 1)						
Design Speed	30-35			40-45	50-60	
	High	Low*	High	Low*	High	Low*
Turn Demand Volume	FALSE	FALSE	A	A	FALSE	FALSE
Unsignalized Stopped Crossroad	FALSE	FALSE	C	B	FALSE	FALSE
Unsignalized Through Road	FALSE	FALSE			FALSE	FALSE

* Low is considered 10% or less of approach traffic volume

** Whichever is greater

Condition A Storage Only	
Length = 50' (diverging taper) + Storage Length (Figure 401-10E)	
Unsignalized Through Road	Stopped Crossroad
Required Length from Figure 401-10E	Required Length from Figure 401-10E
Total Length	Total Length

Condition B High Speed Deceleration	
Design Speed	Length*
40	125
45	175
50	225
55	285
60	345

*(Including 50' Diverging Taper)

Required Length	FALSE
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Condition C Moderate Speed Deceleration & Storage	
Design Speed	Length*
40	111 + Storage Length
45	125 + Storage Length
50	143 + Storage Length
55	164 + Storage Length
60	181 + Storage Length

*(Including 50' Diverging Taper)

Design Speed Length	111
Storage Length (401-10E)	175
Required Length	286

Total Turn Lane Length	286
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Road Name: SR235
 Road Name # 1: SR235
 Road Name # 2: Church
 PID # NA
 DLZ Project # 1321-1005-04
 Prepared By: DGL
 Date: 7/17/2014
 Checked By:
 Date:



Input Cells
Length from Figure 401-10E
Total Calculated Length
Condition
Turn Lane Length to Use

Intersection Name: SR235 & Church St

Approach Street: SR235 Northbound

Free Flow Approach (Y or N): Y

Design Speed MPH: 40

Turn Volume: 208

Total Approach Volume (Includes Turns): 690

Turn %: 30

Figure 401-9E (L&D Vol. 1)

Design Speed	30-35			40-45			50-60		
	High	Low*	High	Low*	High	Low*	High	Low*	
Turn Demand Volume	FALSE	FALSE	A	FALSE	FALSE	A	FALSE	FALSE	
Unsignalized Stopped Crossroad	FALSE	FALSE	C	FALSE	FALSE	B	FALSE	FALSE	
Unsignalized Through Road	FALSE	FALSE		FALSE	FALSE		FALSE	FALSE	

* Low is considered 10% or less of approach traffic volume

** Whichever is greater

Condition A Storage Only	
Length = 50' (diverging taper) + Storage Length (Figure 401-10E)	
Unsignalized Through Road	Stopped Crossroad
Required Length from Figure 401-10E	Required Length from Figure 401-10E
Total Length	Total Length

Condition B High Speed Deceleration	
Design Speed	Length*
40	125
45	175
50	225
55	285
60	345

*(Including 50' Diverging Taper)

Required Length	FALSE
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Condition C Moderate Speed Deceleration & Storage	
Design Speed	Length*
40	111 + Storage Length
45	125 + Storage Length
50	143 + Storage Length
55	164 + Storage Length
60	181 + Storage Length

*(Including 50' Diverging Taper)

Design Speed Length	111
Storage Length (401-10E)	175
Required Length	286

Total Turn Lane Length	286
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Road Name: SR235
 Road Name # 1: SR235
 Road Name # 2: Linden
 PID # NA
 DLZ Project # 1321-1005-04
 Prepared By: DGL
 Date: 7/17/2014
 Checked By:
 Date:



Input Cells
Length from Figure 401-10E
Total Calculated Length
Condition
Turn Lane Length to Use

Intersection Name: SR235 & Linden Ave

Approach Street: SR235 Northbound

Free Flow Approach (Y or N): Y

Design Speed MPH: 40

Turn Volume: 12

Total Approach Volume (Includes Turns): 690

Turn %: 2

Figure 401-9E (L&D Vol. 1)

Design Speed	30-35			40-45			50-60		
	High	Low*	High	High	Low*	High	Low*	High	Low*
Turn Demand Volume	FALSE	FALSE	A	A	A	FALSE	FALSE	FALSE	FALSE
Unsignalized Stopped Crossroad	FALSE	FALSE	C	C	B	FALSE	FALSE	FALSE	FALSE
Unsignalized Through Road	FALSE	FALSE							

* Low is considered 10% or less of approach traffic volume

** Whichever is greater

Condition A Storage Only

Length = 50' (diverging taper) + Storage Length (Figure 401-10E)	
Unsignalized Through Road	
Required Length from Figure 401-10E	FALSE
Total Length	FALSE
	Stopped Crossroad
Required Length from Figure 401-10E	FALSE
Total Length	FALSE

Condition B High Speed Deceleration	
Design Speed	Length*
40	125
45	175
50	225
55	285
60	345

* (Including 50' Diverging Taper)

Required Length	125
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Condition C Moderate Speed Deceleration & Storage	
Design Speed	Length*
40	111 + Storage Length
45	125 + Storage Length
50	143 + Storage Length
55	164 + Storage Length
60	181 + Storage Length

* (Including 50' Diverging Taper)

Design Speed Length	FALSE
Storage Length (401-10E)	FALSE
Required Length	FALSE

Total Turn Lane Length	125
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