Element			Urban	Rural
Design Speed (mph)	Freeway	Acceptable	60 - 70	70 - 80
	Arterial/ Collector	Acceptable	30 - 60	45 - 65
	Local	Acceptable	20 – 30	30 - 60
	Ramp	*Acceptable*	*See AASHTO*	

Legend	
AASHTO	*2011 AASHTO Green Book*
T %	*Truck traffic percentage*
Bridge Width	*Defined as gutter line – gutter line*
DS	*Design Speed*
ADT	*Average Daily Traffic (vpd)*
TDDHV	*Truck Directional Design Hourly Volume*

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Element	Urban							Rural							
Lane Width (ft.)	Freeway	Acceptable		12				Freeway		12					
	Arterial and Collector	Preferred	Auxiliary and Through Lanes	12				Arterial, Collector, & Local	Preferred Through and Auxiliary Lanes	12					
		Acceptable		DS < 35 mph & T% ≤ 10	All other Cases			Auxiliary and Through Lanes							
			Through Lanes	10	11			Arterial	Acceptable	ADT (vpd)	Design Speed (mph) 45	50	55	60-65	
			Auxiliary Lanes	10						0-400	11			12	
										400-1500					
										1500-2000	11	12			
										2000+	12				
								Collector	Acceptable		45	50	55	60-65	
										0-400	10		11		
										400-1500	11				
										1500-2000	11		12		
										2000+	12				
	Local	Through Lane		T% > 15	Residential	All Others		Local	Acceptable		30-40	45-50	55-60		
			Preferred	12	11	11				0-400	9	10	11		
			Acceptable	11	9	10				400-1500	10	11			
		Auxiliary Lane		T% < 10	10 < T% < 15	T% > 15				1500-2000	11		12		
			Preferred	10	11	12				2000+	12				
			Acceptable	9											
	Ramp	Acceptable	Non Interstate	See AASHTO											
			Interstate	Use Case C from AASHTO											

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Element							
Shoulder Width (ft.)	**Urban & Rural**						
	Freeway			**4 – Lane**	**6 – Lane**		**Auxiliary Lane**
					T DDHV > 250 veh/hr	**T DDHV < 250 veh/hr**	
		Preferred	**Inside**	6	12	10	N/A
			Outside	10			Freeway shoulder width
		Acceptable	**Inside**	4	10		N/A
			Outside	10			Ramp shoulder width

	Urban			**Rural**						
	Arterial, Collector, & Local		**Curb**	**No Curb**	**Through Lanes (Inside/Outside)**					**Auxiliary Lanes**
								# of lanes		
						ADT (vpd)		**2**	**4**	**6**
		Preferred	4 ft. outside and 1 ft. inside	Refer to rural	**Arterial**	**Acceptable**	**< 400**	4	4/8	4/8 [1]
							400 – 1500	6		
							1500 – 2000	6		
							2000 +	8		
		Acceptable	1 ft. inside and outside	2 ft. inside and outside	**Collector**	**Acceptable**	**< 400**	2	4/8	4/8 [1]
							400 – 1500	5		
							1500 – 2000	6		
							2000 +	8		
					Local	**Acceptable**	**< 400**	2	4/8	4/8 [1]
							400 – 1500	5		
							1500 – 2000	6		
							2000 +	8		
					[1] 8/8 Preferred					
										Acceptable
										Design Speed > 45 mph
										6
										Design Speed ≤ 45 mph
										See through lane
		Inside dimensions are for multilane only								
	Ramp	See AASHTO								

Shoulder Type			**Urban**		**Rural**	
			Inside	**Outside**	**Inside**	**Outside**
	Freeway	**Preferred**	Paved	Paved	Paved	Paved
		Acceptable	4 ft. min paved on 4 lane facilities		4 ft. min paved on 4 lane facilities	
	Arterial & Collector	**Preferred**	Paved		Aggregate (2 ft. minimum paved)	Aggregate (4 ft. minimum paved)
		Acceptable			Aggregate (2 ft. minimum paved)	
	Local	**Preferred**	Paved		Aggregate (2 ft. minimum paved)	
		Acceptable			Aggregate	

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Element		Urban & Rural		
Bridge Width		**Non Freeway**		**Freeway**
		Curb	**Shoulder**	
	Preferable	Travel Lanes +4 ft (each side)	Approach Travel Lanes + Shoulder Width	Travel Lanes + Shoulder Width
	Acceptable	Approach Travel Lanes + Shoulder Width	Travel Lanes + 4 ft.(each side)	
		A positive median is preferred for single structure multi-lane bridges.		
Structural Capacity	**All Classifications**	See the *LADOTD Bridge Design and Evaluation Manual* for guidance		

Vertical Clearance (ft.)		**Minimum Required Roadway Vertical Clearance**
	Type of Roadway	**Acceptable**
	Freeway, Arterials, and all other Roads and Streets (Underpass and Overpass)	16.5
	Truss Portals/Sign Truss	18 bottom of sign, 20 to the bottom of truss
	Pedestrian Bridges	20
	Other Structures	20
	Trails/Bikeways (Underpass)	12
	Rail Road	*See the LADOTD Bridge Design and Evaluation Manual for guidance*

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<table>
<tr><th>Element</th><th colspan="5">Urban & Rural</th></tr>
<tr><td rowspan="7">Lateral Offset (Structures Excluded)</td><td colspan="5">Lateral Offset Based on Road Classification and Curbed (Measured From Face of Curb) or Uncurbed Shoulder</td></tr>
<tr><td rowspan="2">Road Classification</td><td colspan="2">Preferred</td><td colspan="2">Acceptable</td></tr>
<tr><td>Curb</td><td>Shoulder</td><td>Curb</td><td>Shoulder</td></tr>
<tr><td>Freeway</td><td colspan="4">Equal to Shoulder width</td></tr>
<tr><td>Arterial/Collector/Local Urban Non-Tangent Sections</td><td>6 ft. (8 ft. for DS>40 mph)</td><td>12 ft.</td><td rowspan="2">1.5 ft. (3 ft. at intersections and drives)</td><td rowspan="2">Shoulder width (4 ft. minimum)</td></tr>
<tr><td>Arterial/Collector/Local Urban Tangent Sections</td><td>4 ft.</td><td>8 ft.</td></tr>
<tr><td>Rural All Classifications</td><td colspan="4">1.5 ft</td></tr>
<tr><td>Ramp</td><td colspan="2">Right side = 10 ft.</td><td colspan="2">Right side = 6 ft.
Left side = 4 ft.</td></tr>
<tr><td>Clear Zone</td><td colspan="5">See Table 3-1 “Suggested Clear-Zone Distance from Edge of Through Traveled Lane” in the Roadside Design Guide.
Required for rural roadways and all freeways</td></tr>
</table>

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Element	Urban & Rural													
Superelevation	**Minimum Radius (ft.) Based on e_{max} and Design Speed**													
	Design Speed (mph)		**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**
	E_{max} = 4% (All Urban non Freeway)	**Normal Crown**	109	204	343	527	791	1080	7246	8768	10435				
		Reverse Crown	91	164	267	399	577	772	3474	4253	5110				
		Full Super	86	154	250	371	533	711	926	1190	1500				
	E_{max}=8% (Rural Roads, Ramp Proper, Freeway)	**Normal Crown**	1640	2370	3240	4260	5410	6710	8150	9720	11500	12900	14500	16305	18550
		Reverse Crown	944	1369	1876	2463	3133	3885	4770	5653	6678	7553	8495	9508	10596
		Full Super	76	134	214	314	444	587	758	960	1200	1480	1810	2210	2670

Cross slope	**Rate**			
	Rate (Tangent Sections)	**Travel Lane**	**Paved**	2.5%
			Unpaved	3.0%
		Shoulder		5.0%
	Roundabout			1.5%
	Max Cross-over Crown	**Travel Lanes**		5.0%
		Shoulder		7.0%
		Intersections	**Signalized**	2.5%
			Unsignalized	5.0%

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<table>
<tr><th>Element</th><th colspan="4">Urban & Rural</th></tr>
<tr><td rowspan="6">Longitudinal Grade</td><td>Freeway</td><td>Acceptable</td><td colspan="2">Max 3%</td></tr>
<tr><td rowspan="2">Arterial</td><td colspan="2">Urban</td><td>Rural</td></tr>
<tr><td>Acceptable</td><td colspan="2">Max 5 %</td><td>Max 3%</td></tr>
<tr><td rowspan="2">Collector & Local</td><td colspan="4">Urban & Rural</td></tr>
<tr><td>Acceptable</td><td colspan="3">Max 5%</td></tr>
<tr><td>Ramp</td><td>Upgrades & Downgrades</td><td>Acceptable</td><td colspan="2">Max 5%</td></tr>
</table>

It is preferable that grade be limited so that a speed reduction of no more than 10 mph is obtained for a heavy truck.

It is preferable that no more than a 3% grade is obtained through the functional area of an intersection. A maximum grade of 3% is acceptable for roundabouts.

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Element			Urban & Rural	
Slopes			**Fore Slope**	**Back Slope**
	Freeway	**Preferred**	6:1	4:1
		Acceptable	4:1	3:1
	Non Freeway	**Acceptable**	4:1	3:1
At Grade Median Width (ft.)			**Urban**	**Rural**
	Freeway	**Acceptable**	64[1]	
	Non-Interstate	**Preferred**	50	64[1]
		Acceptable	6	
	[1] Design speed ≥ 60 mph and median < 64 feet require a barrier.			
	Medians less than 20 ft. require a raised, paved median or maintenance agreement (non-interstate)			

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Element	Urban & Rural	
Stopping Sight Distance	**Acceptable**	See AASHTO

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Complete Streets Design Guide

Complete Streets require an (x) in the column for bicycles and an (x) in the column for pedestrians. Complete Streets must accommodate bikes on the roadway, so although bikes may be accommodated by a sidepath, this does not substitute for an on roadway facility. On a roadway with ADT < 1,000 – Pedestrians, bicycles and vehicles can utilize the same travel lane. No special provisions are required to accommodate bikes and pedestrians. By nature of the low volume, this road is already considered complete.

		Requirements Accommodations Meet (x)		Notes
		Bike	Pedestrian	
Accommodations	Sidewalk		x	
	Shoulder (4ft min paved)	x	x	
	Bike Lane	x		Raised objects shall not be used to separate bicycle lanes from adjacent travel lanes Shall be placed in both directions. Required paved shoulder width can be reduced by width of bike lane
	Cycle Track	x		Required paved shoulder width can be reduced by width of cycle track
	Sidepath		x	One way bike facility and 2 way pedestrian, and must be on both sides of the road. Two way bike facility is acceptable if all of the following is true; • most suitable on side path analysis chart • path is < ½ mile • path connects two other good, high quality trail sections that would otherwise could not be connected.
	Wider Outside Travel Lane (15 ft.)	x		

Element			Urban								Rural				
Complete Streets Widths and Offsets (ft.)	Freeway/ Expressway	Preferred	N/A								N/A				
		Acceptable													
	All Other Classifications		Sidewalk			Sidepath		Cycle Track Width		Bicycle Lane Width	Sidewalk		Sidepath	Cycle Track (One Way Only)		Bicycle Lane Width
			Offset of Sidewalk From Travel Lane	Usable Width	Width Adjacent to Curb	Usable Width	Offset of Sidepath From Travel Lane	Usable Width	Offset (From Through Lane)		Usable Width of Sidewalk	Offset of Sidewalk From Travel Lane		Usable Width	Offset of Cycle Track From Travel Lane	
		Preferred	≥ 8	5	7	10	5 ft. Landscaped buffer	5	5 ft. striped buffer	5	5	Clear zone	N/A	5	5 ft. striped buffer	5
		Acceptable	2									8				

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