WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN DIRECTIVE

DD-601
GEOMETRIC DESIGN CRITERIA FOR RURAL HIGHWAYS

March 23, 2017

FUNCTIONAL CLASSIFICATION OF HIGHWAYS

The AASHTO functional classification system is to be used as the highway type for design purposes. This system consists of arterials, collectors, and local roads. Upon determining the functional classification of the highway, the criteria as established in this directive which has been derived from the 2011 AASHTO publication *"A Policy on Geometric Design of Highways and Streets"* and the 2005 AASHTO publication *"A Policy on Design Standards – Interstate System"* as applicable is to be used in all design unless otherwise directed. As required, the AASHTO publication, *"Guideline for Geometric Design of Very Low – Volume Local Roads (ADT≤ 400) 2001"*, shall be referenced. The Designer should refer to the above referenced AASHTO publications for other geometric design criteria not established in this directive.

Attachment

DEFINITIONS

Exhibits

All exhibits referenced are from the 2011 AASHTO Publication, "A Policy on Geometric Design of Highways and Streets" using the U.S. Customary portion thereof with all applicable footnotes.

Traveled Way

The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Roadway

The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

Graded Shoulder

The width of shoulder from the edge of the traveled way to the intersection of the shoulder slope and foreslope.

Usable Shoulder

The width of shoulder that can be used when a driver parks or makes an emergency stop. If the sideslope is 4:1 or flatter, the usable shoulder width is the same as the graded shoulder width. If the sideslope is steeper than 4:1 and a roadside barrier is not present, the limit of the usable shoulder is the beginning of the rounding of the shoulder and foreslope. If a roadside barrier is present, the usable shoulder is limited to two feet from the face of the barrier.

National Highway System (NHS)

The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the Department of Transportation (DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). For verification of a N.H.S. roadway designation, contact Intermodal and Special Project Section of the Program Planning and Administration Division.

Very Low-Volume Local Road

A road that is functionally classified as a local road and has a design average daily traffic volume of 400 vehicles per day or less. Collectors with volumes of 400 vehicles per day or less and that serve primarily local or repeat drivers may also use very low-volume design criteria.

Access Roads

A road that is designed to restore service to ten (10) or fewer parcels where access was affected by the design of a project. The roadway section will be replaced in-kind or in accordance with the typical section for Access Roads shown in Figure 1 of this DD, whichever is greater.

RURAL ARTERIALS

The highest classification of highways is the arterial. Arterials are expected to provide a high degree of mobility for the longer trip length. They should have a high operating speed and level of service. Since access to abutting property is not their function, access control to enhance mobility is desired. Arterials may be two-lane or multilane, divided or undivided.

A special class of arterial is the freeway. Freeways require full access control. The Interstate System is an example of a freeway. The Appalachian Development Highway (APD) System is not a freeway as it allows at-grade intersections.

Criteria is therefore established for three different sections for arterials: (1) Freeway; (2) Other Divided Arterials; and (3) Two-Lane Arterials.

1. FREEWAY CRITERIA

CRITERIA	DESIGN SPEED (MPH)						
	50	**55**	**60**	**65**	**70**	**75**	**80**
Min. Radius (feet)	758	960	1200	1483	1815	2206	2670
Min. Stopping Sight Distance (ft) for Arterials & Two Lane Highways	425	495	570	645	730	820	910
Maximum Grade (Percent)Type Terrain*							
Level	4	4	3	3	3	3	3
Rolling	5	5	4	4	4	4	4
Mountainous	6	6	6	5	5	-	-

*Grades 1 percent steeper than the value shown may be used for extreme cases in urban areas where development precludes the use of flatter grades and for one-way downgrades except in mountainous terrain.

See Tables 3-7, 7-1, and 8-1

Number of Lanes

The number of lanes should be sufficient to accommodate the selected DHV of an acceptable level of service, determined on the basis of service volumes for applicable conditions. Four will be the minimum number. The most recent approved and adopted edition of the "Highway Capacity Manual" and level of service will help determine the number of lanes. See Tables 2-4 and 2-5 of the 2011 AASHTO Geometric Design of Highway and Streets for levels of service.

Lane Width

Lane width shall be 12 feet.

1. FREEWAY CRITERIA (Continued)

Paved Shoulder Width

Useable shoulders to the right of traffic will be 10 feet minimum. Twelve feet should be considered if truck traffic exceeds 250 DDHV. The minimum may be reduced to 8 feet in mountainous terrain.

Useable shoulders to the left of traffic and along auxiliary lanes will be 4 feet minimum. For six or more lanes, 10 feet should be provided and if truck traffic exceeds 250 DDHV, 12 feet should be considered.

Paving of the useable shoulder with concrete or asphalt is required.

Clear Width of Bridge

The clear width on a bridge will be the same as the clear roadway width of approach. This may be reduced for bridges longer than 200 feet in length which will be analyzed individually. The offset from the edge of pavement to the barrier face both left and right of traffic will be 4 feet minimum.

Existing bridges may remain in place as long as the bridge cross section consists of 12-foot lanes, a 10-foot shoulder on the right and a 3.5-foot shoulder on the left. For bridges longer than 200 feet, the offset to the face of parapet or bridge railing shall be a minimum of 3.5 feet from the edge of the nearest traveled lane. Bridge railing shall meet or be upgraded to current standards.

Horizontal Clearance to Obstructions

The width of the clear recovery area will be as per the most recent approved and adopted edition of the AASHTO Roadside Design Guide.

Bridge Design Loading

Bridge Design Loading will be HL 93 using LRFD Bridge Design Specifications.

Minimum Vertical Clearance

Clear height of structures shall not be less than 16 feet over the entire roadway and usable shoulder width. There shall be an additional 6 inch allowance for future resurfacing on new structures. The vertical clearance to pedestrian overpasses and sign trusses shall be minimum 17 feet. The vertical clearance from the bridge deck to cross bracing on through trusses shall also be minimum 17 feet.

Typical Section

A sample typical section is shown in Figure 2 of this DD.

RURAL ARTERIALS (Continued)

2. DIVIDED ARTERIAL CRITERIA

CRITERIA Max. Grade (Percent) Type Terrain	DESIGN SPEED (MPH)						
	30	**35**	**40**	**45**	**50**	**55**	**60**
Level	8	7	7	6	6	5	5
Rolling	9	8	8	7	7	6	6
Mountainous	11	10	10	9	9	8	8

Table 7-4 Maximum Grades for Urban Arterials

CRITERIA Max. Grade (Percent) Type Terrain	DESIGN SPEED (MPH)								
	40	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**
Level	5	5	4	4	3	3	3	3	3
Rolling	6	6	5	5	4	4	4	4	4
Mountainous	8	7	7	6	6	5	5	5	5

Table 7-2 Maximum Grades for Rural Arterials

Access Control

At-grade intersections with public roads are permitted. Direct access to abutting property will be permitted when: (1) Total intersections do not generally exceed two per side of the road per mile; and (2) sufficient additional corner right of way at each intersection at-grade is acquired to ensure that access connections on the crossroad or driveway are sufficiently removed to minimize interference with the arterial.

Number of Lanes

The number of lanes should be sufficient to accommodate the selected DHV of an acceptable level of service, determined on the basis of service volumes for applicable conditions. Four will be the minimum number. See Tables 2-4 and 2-5 of the 2011 AASHTO Design of Highway and Streets for levels of service.

RURAL ARTERIALS (Continued)

2. DIVIDED ARTERIAL CRITERIA (Continued)

Lane Width

Lane width shall be 12 feet.

Usable Shoulder Width

Usable shoulders to the right of traffic will be 8 feet minimum. Usable shoulders to the left of traffic will be 4 feet minimum. For six or more lanes, full width shoulders of 8 feet should be provided. Paving of the usable shoulder is preferred.

Clear Width of Bridge

The clear width on a bridge will be the same as the clear roadway width of approach. This may be reduced for bridges longer than 200 feet in length, which will be analyzed individually. The offset from the edge of pavement to the barrier face both left and right of traffic will be 4 feet minimum.

Horizontal Clearance to Obstructions

The horizontal clearance to obstructions will be as per the most recent approved and adopted edition of the AASHTO Roadside Design Guide.

Bridge Design Loading

Bridge Design Loading will be HL 93 using AASHTO LRFD Bridge Design Specifications.

Minimum Vertical Clearance

Clear height of structures shall not be less than 16 feet over the entire roadway and usable shoulder width. There shall be an additional 6 inch allowance for future resurfacing on new structures. The vertical clearance to pedestrian overpasses and sign trusses shall be minimum 17 feet. The vertical clearance from the bridge deck to cross bracing on through trusses shall also be minimum 17 feet.

Typical Section

A sample typical section is shown in Figure 3 of this DD.

RURAL ARTERIALS (Continued)

3. TWO-LANE ARTERIAL CRITERIA

CRITERIA	DESIGN SPEED (MPH)			
	40	50	60	70
Min. Radius (feet)	See Table 3-7 *			
Min. Stopping Sight Distance (ft)	See Table 7-1 *			
Min. Passing Sight Distance (ft)	See Table 7-1 *			
Max. Grade (Percent) Type Terrain	See Table 7-2 *			

* 2011 AASHTO "A Policy on Geometric Design of Highways and Streets"

Minimum width of traveled way(ft)[a] for specified design volume (veh/day)				
Design Speed (mph)	**Under 400**	**400-1500**	**1500-2000**	**Over 2000**
40	22	22	22	24
45	22	22	22	24
50	22	22	24	24
55	22	22	24	24
60	24	24	24	24
65	24	24	24	24
70	24	24	24	24
75	24	24	24	24
All speeds		**Width of usable shoulder (ft)[b]**		
	4	6	6	8

[a] On roadways to be reconstructed, an existing 22-ft traveled way may be retained where alignment is satisfactory and there is no crash pattern suggesting the need for widening.

[b] Preferably, usable shoulders on arterials should be paved; however, where volumes are low or a narrow section is needed to reduce construction impacts, the paved shoulder may be a minimum of 2 ft. provided that bicycle use is not intended to be accommodated on the shoulder.

Table 7-3 Minimum Width Traveled Way and Usable Shoulder for Rural Arterials

Clear Width of Bridge

The clear width on a bridge will be the same as the clear roadway width of approach. This may be reduced for bridges longer than 200 feet in length which will be analyzed individually. The offset from the edge of pavement to the barrier face both left and right of traffic will be 4 feet minimum.

RURAL ARTERIALS (Continued)

3. TWO-LANE ARTERIAL CRITERIA (Continued)

Horizontal Clearance to Obstructions

The horizontal clearance to obstructions will be as per the most current and adopted edition of the AASHTO Roadside Design Guide.

Bridge Design Loading

Bridge Design Loading will be HL 93 using AASHTO LRFD Bridge Design Specifications.

Minimum Vertical Clearance

Clear height of structures shall not be less than 16 feet over the entire roadway and usable shoulder width. There shall be an additional 6 inch allowance for future resurfacing on new structures. The vertical clearance to pedestrian overpasses and sign trusses shall be minimum 17 feet. The vertical clearance from the bridge deck to cross bracing on through trusses shall also be minimum 17 feet.

Typical Section

A sample typical section is shown in Figure 4 of this DD.

RURAL COLLECTORS

Collectors serve dual purposes as they feed the arterials as well as service abutting property. Collector roads that serve primarily local or repeat drivers, with very low-volume (ADT ≤ 400) may use the AASHTO publication, "Guidance for Geometric Design of Very Low – Volume Local Roads (ADT ≤ 400) 2001" (VLVLR) in lieu of Guidelines in the latest edition of the Green Book. See below section titled VERY LOW-VOLUME LOCAL OR COLLECTOR ROADS (≤ 400 ADT) for more information.

Minimum Design Speed

Minimum design speeds (MPH) as a function of traffic demand and terrain type are as follows:

Type Terrain	Design Speed (mph) for specified design volume (veh/day)		
	0-400	400-2000	Over 2000
Level	40	50	60
Rolling	30	40	50
Mountainous	20	30	40

Table 6-1 Minimum Design Speeds for Rural Collectors

Minimum Radius

Minimum Radius is a function of design speed and maximum superelevation (e max=0.08). See: AASHTO 2011 Geometric Design of Highways and Streets Tables 3-8 through 3-10a.

Sight Distance

Minimum sight distances (stopping and passing) and K values as a function of design speed are as follows:

Design Speed (MPH)	Stopping			Passing (See Note)	
	Feet	[a] K for Crest	[a] K for Sag	Feet	[a] K for Crest
15	80	3	10		
20	115	7	17	400	57
25	155	12	26	450	72
30	200	19	37	500	89
35	250	29	49	550	108
40	305	44	64	600	129
45	360	61	79	700	175
50	425	84	96	800	229
55	495	114	115	900	289
60	570	151	136	1000	357
65	645	193	157	1100	432

[a] Rate of vertical curvature, K, is the length of curve per percent algebraic difference in the intersecting grades; i.e., K=L/A.

Table 6-3 Design Controls for Stopping Sight Distance and for Crest and Sag Vertical Curves
Table 6-4 Design Controls for Crest Vertical Curves Based on Passing Sight Distance

RURAL COLLECTORS (Continued)

Maximum Grades

Type Terrain	Maximum grade (%) for specifications Design Speed (MPH)								
	20	25	30	35	40	45	50	55	60
Level	7	7	7	7	7	7	6	6	5
Rolling	10	10	9	9	8	8	7	7	6
Mountainous	12	11	10	10	10	10	9	9	8
Note: Short lengths of grade in rural areas, such as grades less than 500 ft in length, one-way downgrades, and grades on low-volume rural collectors may be up to 2 percent steeper than the grades shown above.									

Table 6-2 Maximum Grades for Rural Collectors

Number of Lanes

Two lanes are appropriate.

Width of Traveled Way and Graded Shoulder

The minimum widths (feet) of traveled way and graded shoulder as a function of design speed and traffic demand are as follows:

Minimum width of traveled way (ft) for specific design volume (veh/day)[a]				
Design speed (MPH)	Under 400	400-1500	1500-2000	Over 2000
20	20[b]	20	22	24
25	20[b]	20	22	24
30	20[b]	20	22	24
35	20[b]	22	22	24
40	20[b]	22	22	24
45	20	22	22	24
50	20	22	22	24
55	22	22	24	24
60	22	22	24	24
65	22	22	24	24
All speeds	**Width of shoulder on each side of road (ft)**			
	2.0	5.0[c]	6.0	8.0

[a] On roadways to be reconstructed, a 22 ft traveled way may be retained where the alignment is satisfactory and there is no crash pattern suggesting the need for widening.

[b] An 18 ft minimum width may be used for roadways with design volumes under 250 veh/day.

[c] Shoulder width may be reduced for design speeds greater than 30 mph provided that a minimum roadway width of 30 ft is maintained.

Table 6-5 Minimum Width of Traveled Way and Shoulders

RURAL COLLECTORS (Continued)

Design volume (veh/day)	Minimum clear roadway width for bridges [a]	Design loading structural capacity
400 and under	Traveled way + 2 ft (each side)	HL-93
400-1500	Traveled way + 3 ft (each side)	HL-93
1500-2000	Traveled way + 4 ft (each side) [b]	HL-93
Over 2000	Approach roadway (width) [b]	HL-93

[a] Where the approach roadway width (traveled way plus shoulders) is surfaced, that surface width should be carried across the structures.
[b] For bridges in excess of 100 ft in length, the minimum width of traveled way plus 3 ft on each side is acceptable.

Table 6-6 Minimum Roadway Widths and Design Loadings for New and Reconstructed Bridges

Horizontal Clearances to Obstructions

Design Speed ≤ 45 mph	Clearance: 10 feet from edge of traveled way
Design Speed ≥ 50 mph	Clearance: Refer to the most current adopted edition of the AASHTO Roadside Design Guide

Bridge Design Loading

The minimum design loading for bridges on collector roads should be HL 93 LRFD. The minimum roadway widths for new and reconstructed bridges should be as shown in Table 6-6.

Minimum Vertical Clearance

Minimum vertical clearance should be 14'–6" over the entire roadway width. There shall be an additional 6 inch allowance for future resurfacing on new structures.

Typical Section

A sample typical section is shown in Figure 5 of this DD.

LOCAL ROADS (> 400 ADT)

Local roads have relative short trip lengths and their main function is property access. This section pertains to local roads with an ADT > 400.

Design speed (mph) for specified design volume (veh/day)			
Type of Terrain	**400-1500**	**1500-2000**	**2000 and over**
Level	50	50	50
Rolling	40	40	40
Mountainous	30	30	30

Minimum Design Speeds for Local Rural Roads (> 400 ADT) – Adapted from Table 5-1

Minimum Radius

Minimum Radius is a function of design speed and maximum superelevation (emax=0.08) (See AASHTO 2011 Geometric Design of Highways and Streets Tables 3-8 through 3-10b.)

Initial speed (mph)	Design stopping sight distance (ft)	Rate of vertical curvature, K[a] (ft/%)	
		Crest	Sag
15	80	3	10
20	115	7	17
25	155	12	26
30	200	19	37
35	250	29	49
40	305	44	64
45	360	61	79
50	425	84	96
55	495	114	115
60	570	151	136
65	645	493	157

[a] Rate of vertical curvature, K, is the length of curve per percent algebraic difference in the intersecting grades (i.e., K=L/A).

Table 5-3 Design Controls for Stopping Sight Distance and for Crest and Sag Vertical Curves

LOCAL ROADS (>400 ADT) (Continued)

Design speed (mph)	Design passing sight distance (ft) (See Note)	Rate of vertical curvature, K[a] (ft/%) (See Note)
20	400	57
25	450	72
30	500	89
35	550	108
40	600	129
45	700	175
50	800	229
55	900	289
60	1000	357

[a] Rate of vertical curvature, K, is the length of curve per percent algebraic difference in the intersecting grades (i.e., K=L/A).

Table 5-4 Design Controls for Crest Vertical Curves Based on Passing Sight Distance
Note – See NCHRP Report 605 for rationale behind new Passing Sight Distance Criteria

Maximum Grade – is a function of design speed and terrain Maximum grade (%) for specified design speed (mph)									
Type of terrain	**15**	**20**	**25**	**30**	**40**	**45**	**50**	**55**	**60**
Level	9	8	7	7	7	7	6	6	5
Rolling	12	11	11	10	10	9	8	7	6
Mountainous	17	16	15	14	13	12	10	10	-

Table 5-2 Maximum Grades for Local Rural Roads

Minimum width of traveled way (ft) for specific design volume (veh/day)			
Design speed (mph)	**400-1500**	**1500-2000**	**Over 2000**
15	20[a]	20	22
20	20[a]	22	24[b]
25	20[a]	22	24[b]
30	20[a]	22	24[b]
40	20[a]	22	24[b]
45	22	22	24[b]
50	22	22	24[b]
55	22	24[b]	24[b]
60	22	24[b]	24[b]
65	22	24[b]	24[b]
All speeds	**Width of shoulder on each side of road (ft)**		
	5 [a, c]	6	8

[a] For roads in mountainous terrain with design volume of 400 to 600 veh/day, use 18ft traveled way width and 2ft shoulder width.
[b] Where the width of the traveled way is shown as 24ft, the width may remain at 22ft on reconstructed highways where there is no crash pattern suggesting the need for widening.
[c] May be adjusted to achieve a minimum roadway width of 30ft for design speeds greater than 40 mph.

Adapted from Table 5-5 Minimum Width of Traveled Way and Shoulders

LOCAL ROADS (>400 ADT) (Continued)

Clear Width of Bridge		
Design volume (veh/day)	**Minimum clear roadway width for bridges [a]**	**Design loading structural capacity**
400-2000	Traveled way + 3 ft (each side)	HL-93
Over 2000	Approach roadway (width) [b]	HL-93

[a] Where the approach roadway width (traveled way plus shoulders) is surfaced, that surface width should be carried across the structures.
[b] For bridges in excess of 100 ft in length, the minimum width of traveled way plus 3 ft on each side is acceptable.

Adapted from Table 5-6 Minimum Clear Roadway Widths and Design Loadings for New and Reconstructed Bridges

Horizontal Clearance to Obstructions

Clearance shall be 7 feet to 10 feet minimum.

Minimum Vertical Clearance

Minimum vertical clearance should be 14 feet over the entire roadway. There shall be an additional 6 inch allowance for future resurfacing on new structures.

Typical Section

A sample typical section for local roads is shown in Figure 6 of this DD.

VERY LOW-VOLUME LOCAL OR COLLECTOR ROADS (≤ 400 ADT)

Very low-volume local or collector roads have relatively short trip lengths and their main function is property access. This section pertains to very low-volume local or collector roads. Very low-volume roads shall be defined as a road classified as a local road or collector road with an ADT ≤ 400.

Design guidelines for very low-volume local or collector roads are the incorporation of substantial design flexibility based on the exercise of judgment by qualified engineering professionals who are familiar with site conditions and local experiences.

The design criteria and guidance in the AASHTO publication, "Guidance for Geometric Design of Very Low – Volume Local Roads (ADT ≤ 400) 2001" (VLVLR) will be used as minimum criteria for very low-volume local or collector roads. The guidelines in this DD are intended for application in the design of suitable very low-volume roads including applications in both improvements and new construction of existing roads; and new construction of new roads, including both rural and urban areas.

Minimum Vertical Clearance

Minimum vertical clearance should be 14 feet over the entire roadway width. There shall be an additional 6 inch allowance for future resurfacing on new structures.

Existing Very Low-Volume Roads

Rehabilitation and Reconstruction

These projects may include reconstruction, resurfacing, rehabilitation, restoration, relocation, bridge replacement and other improvements. The criteria for "improvements of existing roads" and "existing bridges" from the VLVLR shall be used on these projects

The design speed to be used for improvement and new construction of existing very low-volume roads will be the existing posted speed limit.

Safety

For replacement of an existing bridge only on a very low-volume road the previous accident history of that segment of roadway shall be examined. An analysis of several years of accident data is to be made by the designer. If no accident data is available, the segment of roadway is to be visually inspected for signs of crashes, such as scarred trees; damage to guardrail, bridge parapet ends, or other roadside features; recent skidmarks; etc. Also, the District Maintenance Engineer should be consulted to determine if there have been any past repair

issues with roadside features due to crashes in that segment. Severity of crashes will be considered in this analysis also. If any of these analyses reveal the segment has ongoing safety problems, or for any bridge of less than 12' clear width, then approval from the Deputy State Highway Engineer/Development is required for a bridge width less than that given in the Desirable Minimum Clear Width of Bridge table below.

These issues must be a part of the Location and Design (L & D) Approval request (See Design Directive 206, Guidance for Location and Design Approvals for more guidance concerning L & D Approval).

New Construction of New Roads

These projects include new construction where no road existed before, or when the character of the traffic has changed. The criteria for "new construction" from the VLVLR shall be used on these projects. Bridge width shall be less than 16' or greater than 18'.

Typical Section (New Construction of New Roads)

A sample typical section for new construction of new roads is shown in Figure 6 of this DD. A 2 foot preferred minimum shoulder (Dimension "B" in Figure 6) should be utilized for new construction of new roads that are very low-volume roads.

Design Speeds (mph)			
Type of Terrain	**Specified Design Volume (veh/day)**		
	Under 50	**50-250**	**250-400**
Level	30	30	40
Rolling	20	30	30
Mountainous	20	20	20

VERY LOW-VOLUME LOCAL OR COLLECTOR ROADS (≤ 400 ADT) (Continued)

Clear Width of Bridges for New Construction of New Low-Volume Local or Collector Roads

Desirable Minimum Clear Width (ft) of Bridge [a, b]				
Design Speed (mph)	**Specified Design Volume (veh/day)**			
	Under 25	**26-100**	**100-250**	**250-400**
20	12	15	22	24
30	12	15	22	24
40	22	22	24	24

[a] Bridge width shall not be less than the total roadway width. (roadway width = travel way width + shoulder widths)
[b] Bridge width shall be less than 16' or greater than 18'.

Conditions for one lane 15' clear bridge widths on new construction of new roads :

- ADT < 100. See VLVLR Page 21.
- Speed ≤ 30 mph.
- Recommended that bridge length is less than 100'.
- Intervisible pull-offs should be provided at each end of bridge. See VLVLR Page 21.
- There should be low potential for commercial or residential development. Property owners and other users of the existing bridge should be consulted with before the bridge width is set to ascertain whether any major development is proposed. Also, for a bridge on a VLVLR leading to only one parcel, as in the case of a US Forest Service road for example, that property owner should be consulted with to determine the type of facility desired. The character of traffic expected to use the facility must be considered. For example, if the bridge is on a VLVLR which serves a commercial enterprise, large trucks may be the majority of the traffic using the bridge, and could impact the choice of the bridge width.
- Total sight distance should be double the distance shown in Exhibit 12, on Page 39 of VLVLR.
- Roadway shall meet the requirements for a two-way single-lane road as shown on Page 52 of VLVLR.

Conditions for one lane 12' clear bridge widths on new construction of new roads:

Although structures with a minimum clear width of 15’ wide are strongly encouraged, 12’ clear width one lane bridges may be used in locations with exceptionally low traffic volumes.

One lane bridges with 12’ clear widths may be used when:

- ADT ≤ 25
- Speed ≤ 30 mph.
- The bridge is not on the National Highway System and is not a concrete-slab-on deck-girder type, a TL1 approved barrier according to ~~NCHRP 350 and/ or~~ MASH (latest edition) may be used, with consideration being given to the entire section of roadway, not just the bridge location. (Note – all bridge railings shall conform to the latest edition of MASH beginning with projects to be let after December 31, 2019.)
- All other conditions for a 15’ wide structure are met.