Design Criteria for Rural State Trunk Highways
Functionally Classified as Arterials (Level Terrain)

Traffic Volume		Roadway Width Dimensions				Bridges	
Design Class	Design AADT	Design Speed (mph)	Traveled Way Width (feet)	Shoulder Width (feet)	Roadway Width (feet)[2]	Minimum Design Loading	Clear Roadway Width of Bridges (feet)[2, 3]
A1	Under 3500	55-60	24	6	36	[5]	36
A2[1] (2 lanes)	3,500–8,700[A] 3,500–15,000[C]	55-60	24	8-10	40-44	[5]	40-44
A3[1] (4 lane divided)	8,700[A] - 44,000[A] 8,700[B] - 53,500[B] 15,000[C] - 60,000[C]	65-70[4]	2 at 24	4-6LT 10RT[6]	2 at 38-40	[5]	2 at 40
A3[1] (6 lane divided)	44,000[A] - 69,000[A] 53,500[B] - 85,000[B] 60,000[C] - 90,000[C]	70[4]	2 at 36	10 LT and RT[7]	2 at 56	[5]	2 at 56

[A] for Non-Freeway Corridors 2030 Backbone and Connector Routes, LOS threshold is C/D or 4.0.

[B] for Freeway Corridors 2030 Backbone Route, LOS threshold is C/D or 4.0.

[C] for Other Principal and Minor Arterials, LOS threshold is D/E or 5.0.

[1] The top of the traffic volume range for design class A2 is 8,700 AADT for Corridors 2030 Routes and 15,000 AADT for Non-corridors 2030 routes. These volumes are based on the 2000 Highway Capacity Manual assuming; level terrain, 12-foot lanes, ≥ 6-foot shoulders, 80% passing, 10% trucks, K30 design factor, and 60/40 directional split. In cases where reduced levels of service are determined to be acceptable and the uses of passing lanes are found to be adequate treatment for the facilities, the 8,700 AADT value for C2030 Connector Routes may be increased to 12,000 AADT. Design class A3 assumptions: level terrain, 12-foot lanes ≥ 6-foot shoulders, 10% trucks, K30 design factor, 61/39 directional split, 2 access points per mile, except freeways. See FDM 11-5-3 for additional information on level of service thresholds for different facility types and the respective numerical values.

[2] Normally provide full widths of approach roadways across all new bridges. Justifications may be made when the bridges are considered major structures on which design dimensions are subject to individual economic studies because of high unit costs.
See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.

[3] Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

[4] See FDM 11-10-1.

[5] See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loading.

[6] Use 12-foot paved shoulders (right) on 4-lane freeways if truck traffic >250 DHV, or if the facilities experience a high degree of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

[7] Use 12-foot paved shoulders (left & right) on 6-lane freeways if truck traffic > 250 DHV or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

Design Criteria for Rural State Trunk Highways Functionally Classified as Arterials (Rolling Terrain)

Traffic Volume		Roadway Width Dimensions						Bridges[3,4]	
			Traveled Way Width Based On Design Speed (feet)			Roadway Width Based On Design Speed (feet)[3]			
Design Class	Design ADT	Design Speed (mph)[2]	55 mph or less	60 mph or greater	Shoulder Width (feet)	55 mph or less	60 mph or greater	Design Loading	Bridge Clear Roadway Width (feet)
A1	0-1500	50-60	22-24	24	6	34-36	36	[5]	36
	1500-3500		24	24	6	36	36	[5]	36
A2[1] (2 lanes)	3,500-8,700[A] 3,500-15,000[C]	50-60	24	24	8-10	40-44	40-44	[5]	40-44
A3 [1,B] (4 lane divided)	8,700 - 40,000[A] 15,000 - 55,000[C]	60-70[6]		2 at 24	4-6 LT 10 RT[7]		2 at 38-40	[5]	2 at 40
A3 [1,B] (6 lane divided)	40,000 – 63,000[A] 55,000 - 82,000[C]	60-70		2 at 36	10 LT & RT[8]		2 at 56	[5]	2 at 56

A for Non-Freeway Corridors 2030 Backbone and Connector Routes, LOS threshold is C/D or 4.0.
B Level terrain design criteria apply to Freeway Corridors 2030 Backbone Routes, LOS threshold is C/D or 4.0.
C for Other Principal and Minor Arterials, LOS threshold is D/E or 5.0.

1 The top of the traffic volume range for design class A2 is 8,700 AADT for Corridors 2030 Routes (LOS threshold of 4.0) and 15,000 AADT for Non-corridors 2030 Routes (LOS threshold of 5.0). These volumes are based on the 2000 Highway Capacity Manual assuming; rolling terrain, 12-foot lanes, ≥ 6-foot shoulders, 80% passing, 10% trucks, K30 design factor, and 60/40 directional split. In cases where reduced levels of service are determined to be acceptable and the use of passing lanes are found to be adequate treatments for the facilities, the 8,700 AADT value for C2030 Connector Routes may be increased to12,000 AADT. Design class A3 assumptions: rolling terrain, 12-foot lanes, >6-foot shoulders, 10% trucks, K30 design factor, 61/39 directional split, 2 access points per mile, except Freeways. See FDM 11-5-3 for additional information on level of service thresholds for different facility types and the respective numerical values.
2 Design Speeds should typically be 5 mph greater than the posted speeds.
3 Normally provide full widths of approach roadways across all new bridges. Justifications may be made when the bridges are considered major structures on which design dimensions are subject to individual economic studies because of high unit costs.
See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.
4 Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.
5 See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.
6 See FDM 11-10-1.
7 Use 12-foot paved shoulders (right) on 4-lane freeways if truck traffic >250 DHV, or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.
8 Use 12-foot paved shoulders (left and right) on 6-lane freeways if truck traffic > 250 DHV or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

Design Criteria for Rural State Trunk Highways Functionally Classified as Collectors (Level Terrain)

Traffic Volume			Roadway Width Dimensions [1,6]						Bridges [3,4]	
				Traveled Way Width Based on Design Speed (feet)			Roadway Width[3] Based on Design Speed (feet)			
Design Class	Current ADT	Design ADT	Design Speed (mph)[2]	50 mph or less	55 mph or greater	Shoulder Width (feet)	50 mph or less	55 mph or greater	Min. Design Loading	Clear Roadway Width of Bridges
C1	0 - 400		40-60	20-24	22-24	2-4	24-32	26-32	5	26-30
C2	401 - 750	Under 1500	50-60	22-24	22-24	5-6	32-36	32-36	5	28-30
C3		1500-2000	50-60	22-24	24	6	34-36	36	5	32-34
		2000-3500	60		24	6		36	5	36
C4		Over 3500	60		24	8		40	5	40

1 Where ranges of widths are shown, the smaller numbers are the lower range of the widths and the larger numbers are the upper range of the widths eligible for federal or state project participation.

2 Design Speeds should typically be 5 mph greater than the posted speeds.

3 Bridges in Design Classes C3 and C4 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet. See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.

4 Lateral clearance design criteria for roadways under bridges are included in FDM 11-35-1.

5 See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

6 Lane widths shall be 12 feet on Federally Designated Long Truck Routes (i.e. the "National Network" as defined in 23 CFR Part 658).

Design Criteria for Rural State Trunk Highways
Functionally Classified as Collectors (Rolling Terrain)

Traffic Volume			Roadway Width Dimensions[1,6]						Bridges[3,4]	
				Traveled Way Width Based on Design Speed (feet)			Roadway Width 3 Based on Design Speed (feet)			
Design Class	Current ADT	Design ADT	Design Speed (mph)[2]	50 mph or less	55 mph or greater	Shoulder Width (feet)	50 mph or less	55 mph or greater	Design Loading	Clear Roadway Width of Bridges
C1	0-400		30-60	20-24	22-24	2-4	24-28	26-28	[5]	26-30
C2	401-750	Under 1500	40-60	22-24	22-24	5-6	32-36	32-36	[5]	28-30
C3		1500-2000	40-60	22-24	24	6	34-36	36	[5]	32-34
		2000-3500	50-60	24	24	6	36	36	[5]	36
C4		Over 3500	50-60	24	24	8	40	40	[5]	40

[1] Where ranges of widths are shown, the smaller numbers are the lower range of the widths and the larger numbers are the upper range of the widths eligible for federal or state project participation.

[2] Design Speeds should typically be 5 mph greater than the posted speeds.

[3] Bridges in Design Classes C3 and C4 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet. Bridges in Design Classes C3 and C4 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet. See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.

[4] Lateral clearance design criteria for roadways under bridges are included in FDM 11-35-1.

[5] See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

[6] Lane widths shall be 12 feet on Federally Designated Long Truck Routes (i.e. the "National Network" as defined in 23 CFR Part 658).

Design Criteria for Rural State Trunk Highways Functionally Classified as Local Roads (Level Terrain)

Traffic Volume			Roadway width Dimensions [1]								Bridges [1,3,4]		
				Traveled Way Width Based on Design Speed (feet)				Roadway Width [3], Based on Design Speed (feet)				Clear Roadway Width of Bridges Based on Design Speed (feet)	
Design Class	Current ADT	Design ADT	Design Speed (mph) [2]	40 mph or less	45-50 mph	55 mph or more	Shoulder Width (feet)	40 mph or less	45-50 mph	55 mph or more	Design Load	50 mph or less	55 mph or more
L1	0-250		30-60	18-22	20-22	22	2-4	22-26	24-26	26	[5]	24-28	26-28
L2	250-400		40-60	18-22	20-22	22	2-4	22-30	24-30	26-30	[5]	26-30	26-30
L3	400-750	Under 1500	50-60		22-24	22-24	5-6		32-36	32-36	[5]	28-30	28-30
L4		1500-2000	50-60		22-24	24	6		34-36	36	[5]	30-34	30-34
		2000-3500			24	24	6		36	36	[5]	36	36
L5		Over 3500	50-60		24	24	8			40	[5]	40	40

[1] Where ranges of widths are shown, the lower numbers are the lower range of widths and the larger are the upper range of widths eligible for federal or state project participation.

[2] Design Speeds should typically be 5 mph greater than the posted speeds.

[3] Bridges in Design Classes L4 and L5 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet. See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.

[4] Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

[5] See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

Design Criteria for Rural State Trunk Highways
Functionally Classified as Local Roads (Rolling Terrain)

Traffic Volume			Roadway width Dimensions [1]								Bridges [1,3,4]		
				Traveled Way Width Based on Design Speed (feet)				Roadway Width [3], Based On Design Speed (feet)				Clear Roadway Width of Bridges Based on Design Speed (feet)	
Design Class	Current ADT	Design ADT	Design Speed (mph) [2]	40 mph or less	45-50 mph	55 mph or more	Shoulder Width (feet)	40 mph or less	45-50 mph	55 mph or more	Design Load	50 mph or less	55 mph or more
L1	0-250		30-60	18-22	20-22	22	2-4	22-26	24-26	26	[5]	24-28	26-28
L2	250-400		40-60	18-22	20-22	22	2-4	22-26	24-26	26	[5]	26-30	26-30
L3	400-750	Under 1500	40-60	20-24	22-24	22-24	5-6	30-36	32-36	32-36	[5]	28-30	28-30
L4		1500-2000	40-60	22-24	22-24	24	6	34-36	34-36	36	[5]	30-34	30-34
		2000-3500		24	24	24	6	36	36	36	[5]	36	36
L5		Over 3500	40-60	24	24	24	8	40	40	40	[5]	40	40

[1] Where ranges of widths are shown, the lower numbers are the lower range of widths and the larger are the upper range of widths eligible for federal or state project participation.

[2] Design Speeds should typically be 5 mph greater than the posted speeds.

[3] Bridges in Design Classes L4 and L5 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet. See FDM 11-26-30.5.13.3 for Roadway Widths, Clear Roadway Widths of Bridges, and Underpasses between Closely Spaced Roundabouts.

[4] Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

[5] See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

Design Criteria for Town Roads
(New Construction Only)

Design Class	Traffic Volume	Roadway							Structure	
	AADT Current	Roadway Width (feet)	Surfacing Width (feet)	Minimum Shoulder Width (feet)	Horizontal Curve (Degrees/Radius)		% Grade		Highway Load	Clear Roadway Width for Structures (feet)**
					Upper Min (°/ft)	Min (°/ft)	Des. Max	Max		
T1	Local Service Intermittent Traffic	20, 22*	16, 18*	2					*	24
T2	Under 100	24	18	3			9	11	*	24
T3	100 - 250	26	20	3			8	11	*	24
T4	251 - 400	32	22	5	6°/960’	12.25°/485’	6	8	*	26
T5	401 - 1000	34	22	6	5°/1190’	12.25°/485’	5	8	*	28
T6	1001-2400	44	24	10	4.5°/1330’	7.5°/758’	5	7	*	30
T7	Over 2400	USE STATE TRUNK DESIGN CRITERIA								

* See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

** For federal-aid funded projects with design hourly volumes greater than 400, the clear roadway widths for structures shall equal the approach roadway widths.

Source: Section 82.50(1) Wisconsin Statutes Except Maximum Horizontal Curve Values are from Table 3-7, Page 3-34, 2018 GDHS (GDHS hyperlink is only available to WisDOT staff.)

Design Criteria for Reconstruction* of Town Roads[1]

TRAFFIC		DESIGN SPEED[2] (MPH)	ROADWAY WIDTH DIMENSIONS		
Design Class	Current AADT		Traveled Way Width (feet)	Shoulder Width (feet)	Roadway Width (feet)
RT1	0 - 250	40 or less	18-20	2-3	22-26
		45-50	20	2-3	24-26
		55 or greater	22	2-3	26-28
RT2	251 - 400	40 or less	18-22	2-4	22-30
		45-50	20-22	2-4	24-30
		55 or greater	22	2-4	26-30
	401 - 750	(50)	22	6	34
		55 or greater	22	6	34
RT3	Over 750	50 or less	22-24	6	34-36
		55 or greater	24	6	36

* Note: Reconstruction means total rebuilding of existing town roads to improve maintainability, safety, geometrics and traffic service. Design criteria for construction of new town roads are shown on page 1 of this attachment. To avoid confusion in the terminology used to label design classes for the two design criteria, the design classes for town road "Reconstruction" begin with the letter "R".

[1] Source: TRANS 204, Existing Town Road Criteria.

[2] Design Speeds should typically be 5 mph greater than the posted speeds. Lower design speeds equal to the posted speed limits are acceptable.

RURAL STATE TRUNK HIGHWAY
PAVED SHOULDER WIDTH CRITERIA [1]

DESIGN CLASS		PAVED SHOULDER WIDTHS (reconstruction, new construction, or pavement replacement projects)
A1		3 feet on concrete roadways 5 feet on asphalt roadways
C3, L4		3 feet on concrete roadways 5 feet on asphalt roadways
A2		3 feet on concrete roadways 5 feet on asphalt roadways
C4, L5		3 feet on concrete roadways 5 feet on asphalt roadways
A3	4 - LANE DIVIDED EXPRESSWAY	R[2] - 8 feet L - 3 feet
A3	6 - LANE DIVIDED EXPRESSWAY	R - 8 feet L - 8 feet
A3	4 - LANE INTERSTATE OR FREEWAY	R[3] - 10 feet L - 4 feet
A3	6 - LANE INTERSTATE OR FREEWAY	R[4] - 10 feet L[4] - 10 feet
A3	1 - LANE RAMPS	R - 5 feet L - 3 feet

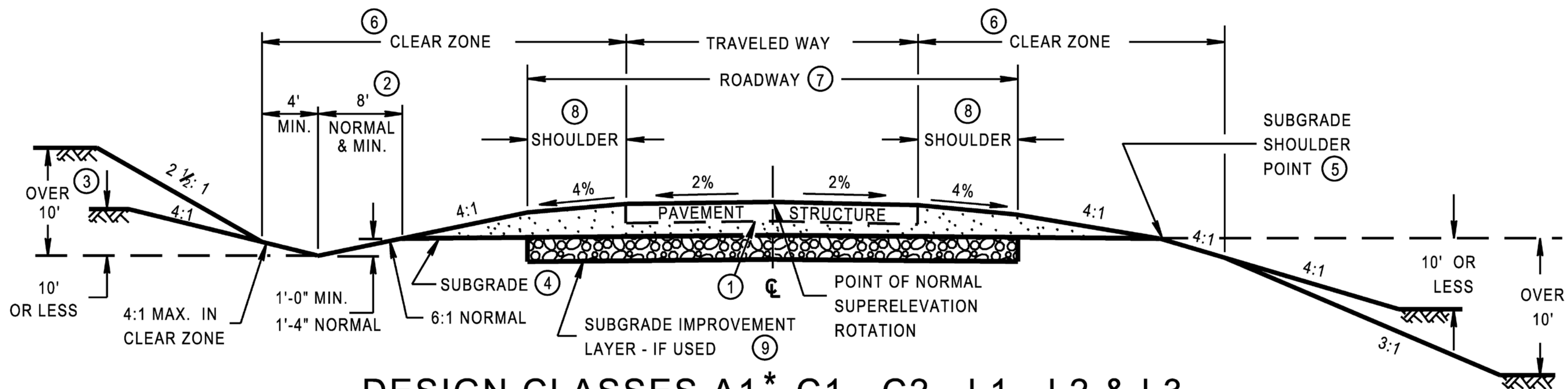
1 See FDM 11-15-5 for shoulder width criteria for projects on the Great River Road. See FDM 11-46-15 for shoulder criteria to accommodate bicycles.

2 These shoulder widths also apply to initial two-lane roadways of ultimate four-lane highways except when construction of the second roadways are not expected for at least six years. In these cases, initially pave only 3 feet right along concrete roadways and 5 feet right along asphaltic roadways.

3 Use 12-foot paved shoulders (right) on 4-lane freeways if truck traffic >250 DHV, or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

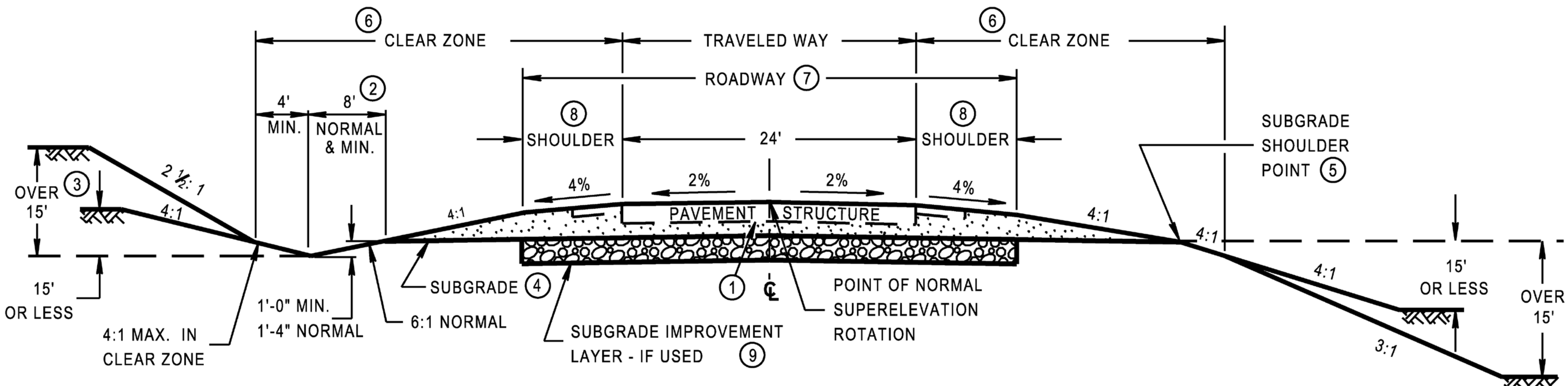
4 Use 12-foot paved shoulders (left and right) on 6-lane freeways if truck traffic > 250 DHV or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

TYPICAL SECTIONS FOR TWO LANE RURAL HIGHWAYS



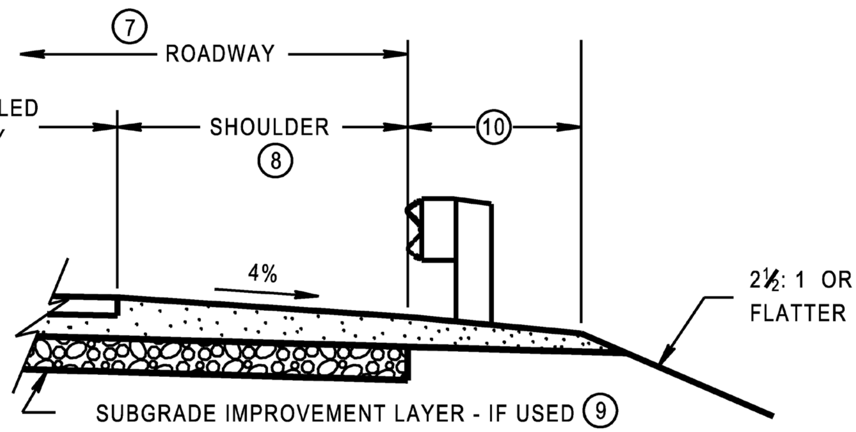
DESIGN CLASSES A1,* C1, C2, L1, L2 & L3

* DESIGN ADT UNDER 1500



DESIGN CLASSES A1,** A2, C3, C4, L4 & L5

** DESIGN ADT OVER 1500



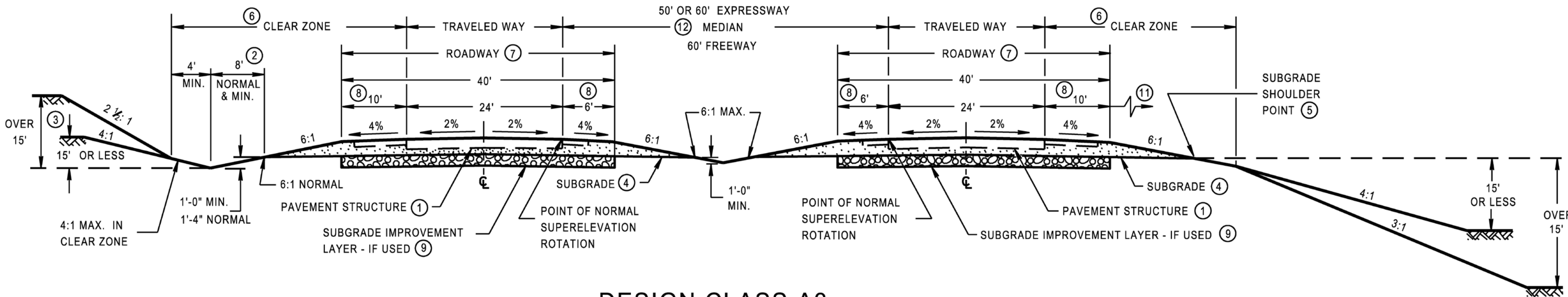
PARTIAL TYPICAL SECTION

WITH A BARRIER SYSTEM AT EDGE OF SHOULDER

NOTES:

1. Pavement structure elements vary depending on the pavement designs.
2. If special ditch grades or greater ditch capacities are necessary for longitudinal drainage then vary the widths or side slopes (not steeper than upper values) of the ditches.
3. Use combinations of flat slopes and rounding to blend earth cut back slopes into the natural topography. The designs of cut-to-fill transitions also require special attention to ensure gradually steepened slopes to produce natural and aesthetically pleasing cross sections.
4. Subgrade slopes are parallel to pavement structures.
5. See FDM 11-15-1.7 for guidance on subgrade widths and locating subgrade shoulder points.
6. See FDM 11-15 Attachments 1.9, 1.10 or 1.11 for clear zone distances.
7. See FDM 11-15 Attachments 1.1, 1.2, 1.3, 1.4, 1.15, 1.16 and 1.17 for traveled way widths and roadway width criteria.
8. See FDM 11-15-1.4 for guidance on shoulders. See FDM 11-15 Attachments 1.1, 1.2, 1.3, 1.4, 1.15, 1.16 and 1.17 for total shoulder width criteria. See FDM 11-15-1.4.2 and FDM 11-15 Attachment 1.5 for policy and criteria on paved shoulders.

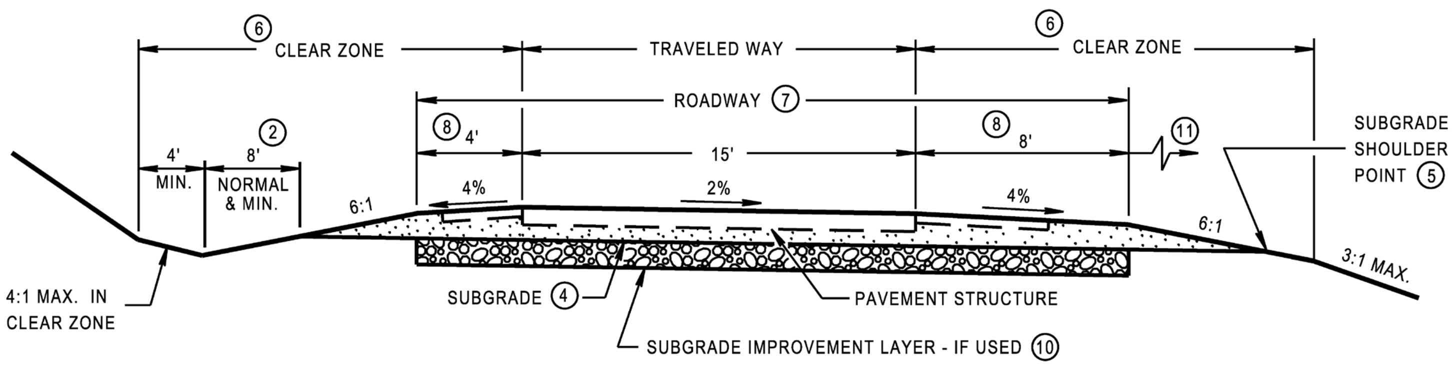
   See FDM 11-15-1.4 for guidance on shoulder cross slopes - including conditional use of 2% on asphaltic and concrete shoulders.
9. See FDM 11-5-15 for guidance on subgrade improvement layers. WisDOT policy requires using select materials in the upper portions of subgrades developed from soils that are difficult for subgrade construction. Drain these select materials with relief trenches at all sag points and at intervals between sag points.
10. Provide additional roadway widening for barrier systems. See other sections of the FDM for guidance.



DESIGN CLASS A3

(FOR UNGRADED MEDIANS, THE MEDIAN SLOPES SHOULD CONFORM TO THE NORMAL CUT OR FILL SLOPES.)

TYPICAL SECTION FOR FOUR LANE DIVIDED HIGHWAY



TYPICAL SECTION ONE-LANE RAMP

NOTES:

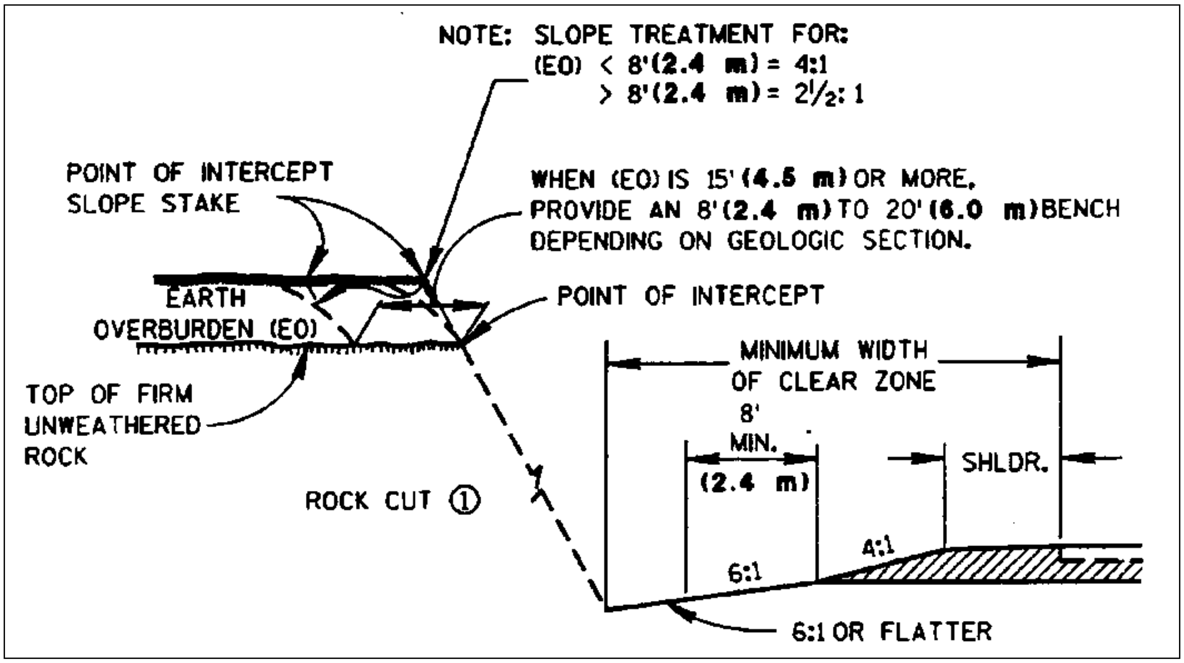
1. Pavement structure elements vary depending on the pavement designs.
2. If special ditch grades or greater ditch capacities are necessary for longitudinal drainage then vary the widths or side slopes (not steeper than upper values) of the ditches.
3. Use combinations of flat slopes and rounding to blend earth cut back slopes into the natural topography. The design of cut-to-fill transitions also requires

special attention to ensure gradually steepened slopes to produce natural and aesthetically pleasing cross sections.

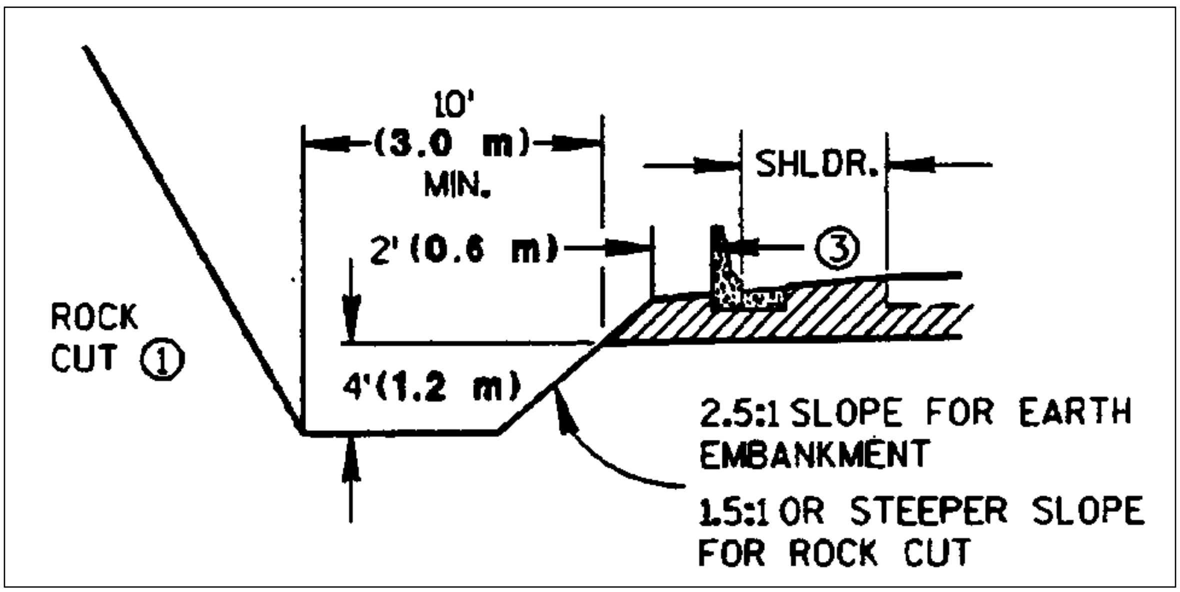
4. Subgrade slopes are parallel to pavement structures.
5. See FDM 11-15-1.7 for guidance on subgrade widths and locating subgrade shoulder points.
6. See FDM 11-15 Attachments 1.9, 1.10 or 1.11 for clear zone distances.
7. See FDM 11-15 Attachments 1.1, and 1.15, for traveled way widths and roadway width criteria for Design Class A3.
8. See FDM 11-15-1.4 for guidance on shoulders. See FDM 11-15, Attachments 1.1, and 1.15, for total shoulder width criteria for Design Class A3. See FDM 11-15-1.4.2 and FDM 11-15 Attachment 1.5 for policy and criteria on paved shoulders.

   See FDM 11-15-1.4 for guidance on shoulder cross slopes – including conditional use of 2% on asphaltic and concrete shoulders.

   If the mainline pavement structures are PC concrete then 2-foot monolithic shoulders are required on the right (i.e., outside) shoulder (excluding ramps).
9. See FDM 11-5-15 for guidance on subgrade improvement layers. WisDOT policy requires using select materials in the upper portions of subgrades developed from soils that are difficult for subgrade construction. Drain these select materials with relief trenches, special trenching with pipe underdrain systems, or a combination of both, at all sag points and at intervals between sag points.
10. See FDM 11-5-15 for guidance on subgrade improvement layers, including their lateral drainage. Use of subgrade layers are at the discretion of the designers in consultation with the region soils engineer.
11. Provide additional roadway widening for barrier systems. See other sections of the FDM for guidance.
12. The median widths shall be 60 ft. on expressways with posted speeds greater than 55 mph. Do not steepen side slopes to achieve lesser ditch depths below subgrade shoulders.



ROADWAY SECTION IN ROCK CUT



ALTERNATE DITCH SECTION IN ROCK CUT

NOTES:

1. When rock cuts are less than 15’, backslopes should generally be treated the same as backslopes in earth cuts. When rock cuts are 15’ or more, slopes should be as steep as practical for the particular types of rock on the projects. A commonly used design criteria slope for rock cuts is 1/2:1. Consult with the region soils engineer when determining roadway cross sections in rock cuts.
2. Alternate ditch sections may be used when warranted on the basis of cost/benefit analyses.
3. Traffic barriers should be used to shield the ditches. Steel plate beam guard may be used as alternatives to the concrete shoulder barriers. Removable barrier sections should be provided at approximately 200’ intervals for maintenance access to the ditches.

Clear Zone Distance Table (in Feet from Edge of Traveled Way)

Ref. (2) Table 3.1, pages 3-6

(U.S. Customary Units)

Design Speed (MPH)	**Design ADT**	**Foreslopes**			**Backslopes**		
		IV:6H Or flatter	**IV:5H To IV:4H**	**IV:3H**	**IV:3H**	**IV:5H To IV:4H**	**IV:6H or flatter**
40 or less	Under 750 (B)	7-10	7-10	(D)	7-10	7-10	7-10
	750-1500	10-12	12-14	(D)	12-14	12-14	12-14
	1500-6000	12-14	14-16	(D)	14-16	14-16	14-18
	Over 6000	14-16	16-18	(D)	16-18	16-18	16-18
45-50	Under 750 (B)	10-12	12-14	(D)	8-10	8-10	10-12
	750-1500	14-16	16-20	(D)	10-12	12-14	14-16
	1500-6000	16-18	20-26	(D)	12-14	14-16	16-18
	Over 6000	20-22	24-28	(D)	14-16	18-20	20-22
55	Under 750 (B)	12-14	14-18	(D)	8-10	10-12	10-12
	750-1500	16-18	20-24	(D)	10-12	14-16	16-18
	1500-6000	20-22	24-30	(D)	14-16	16-18	20-22
	Over 6000	22-24	26-32(C)	(D)	16-18	20-22	22-24
60	Under 750(B)	16-18	20-24	(D)	10-12	12-14	14-16
	750-1500	20-24	26-32(C)	(D)	12-14	16-18	20-22
	1500-6000	26-30	32-40(C)	(D)	14-18	18-22	24-26
	Over 6000	30-32(C)	36-44(C)	(D)	20-22	24-26	26-28
65-70 (A)	Under 750(B)	18-20	20-26	(D)	10-12	14-16	14-16
	750-1500	24-26	28-36(C)	(D)	12-16	18-20	20-22
	1500-6000	28-32(C)	34-42(C)	(D)	16-20	22-24	26-28
	Over 6000	30-34(C)	38-46(C)	(D)	22-24	26-30	28-30

(A) Review Attachment 1.20 on roads with posted speed of 70 mph.

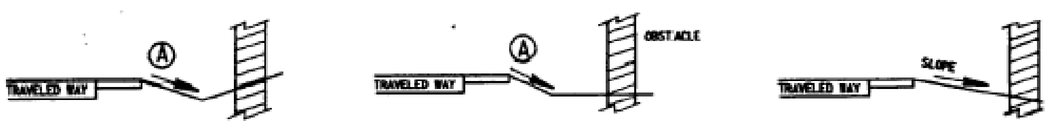
(B) For roadways with low-volumes (ADT <400 local roads and streets) it may not be practical to apply even the minimum values found in the table above.

(C) When a site-specific investigation indicates a high probability of continuing crashes or when such occurrences are indicated by crash history, the designer may provide clear-zone distances greater than the clear zone shown in table above. Clear zones may be limited to 30 ft for practicality and to provide a consistent roadway template if previous experience with similar projects or designs indicates satisfactory performance.

(D) Because recovery is less likely on the unshielded, traversable 1V:3H fill slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high-speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of slope. Determination of the width of the recovery area at the toe of slope should consider right-of-way availability, environmental concerns, economic factors, safety needs, and crash histories. Also, the distance between the edge of the through traveled lane and the beginning of the 1V:3H slope should influence the recovery area provided at the toe of slope. While the application may be limited by several factors, the foreslope parameters that may enter into determining a maximum desirable recovery area are illustrated in following attachment. A 10-ft recovery area at the toe of slope should be provided for all traversable, non-recoverable fill slopes.

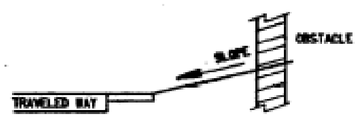
* Clear zone widths greater than 30 feet as indicated are beginning points for new construction and major reconstruction and where site-specific investigations indicates high probabilities of continuing crashes or where such occurrences are indicated by crash history. Clear zones may be limited to 30 feet for practicality and to provide consistent roadway templates if previous experiences with similar projects or designs indicates satisfactory performance and if justified by the SOCDs or DSR DJs.

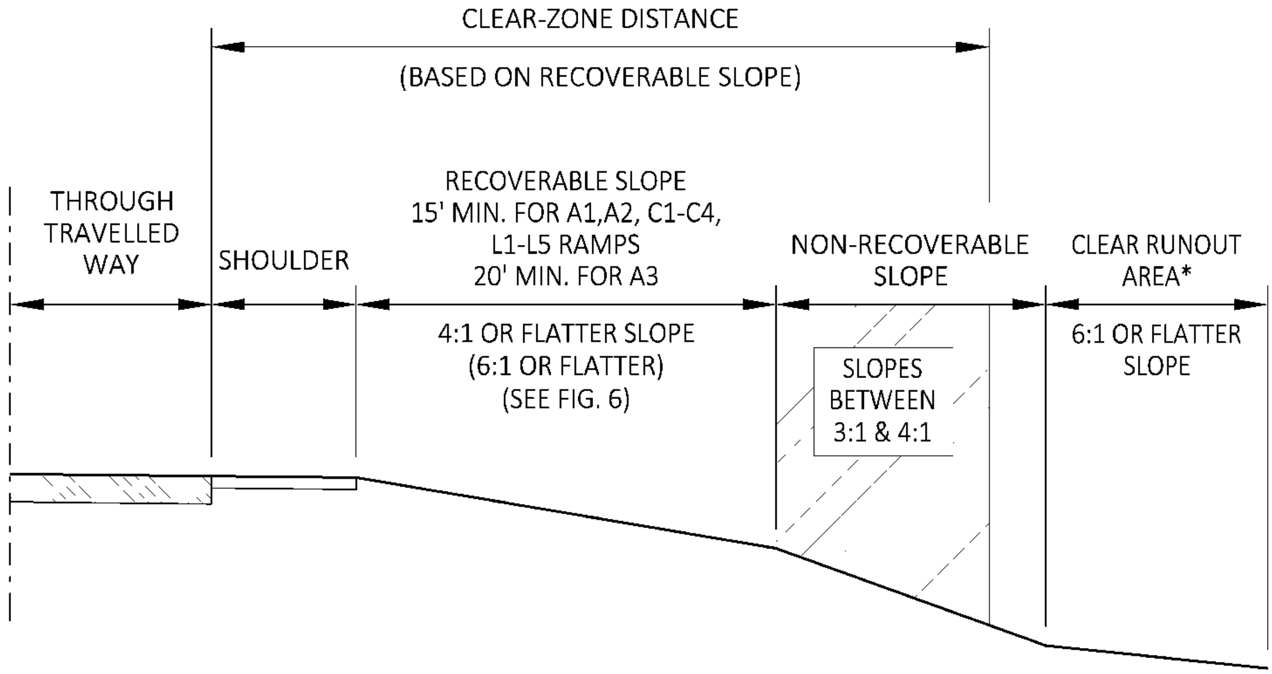
** Since recovery is less likely on unshielded, traversable 3:1 slopes, fixed objects should not be present in the vicinity of the toes of these slopes. Recoveries of high-speed vehicles that encroach beyond the edges of shoulders may be expected to occur beyond the toes of slopes. The method for determining the widths of recovery are described on page 2 of this Attachment.



SLOPES SLOPING TOWARDS OBSTACLE (A) See clear zone discussion on variable slope determination)

SLOPES SLOPING AWAY FROM OBSTACLE





* The clear runout area is additional clear-zone space that is needed because a portion of the clear zone (shade area) falls on a non-recoverable slope. These configurations are not the first choice because of the difficulty of maintaining the clear runout areas. Provide the entire required clear zone widths adjacent to finished shoulders, if at all possible. The widths of the clear runout areas are equal to those portions of the clear zone distances that are located in the non-recoverable slopes, or 10 feet, whichever is greater.

The clear runout areas may be reduced in width based on existing conditions or site investigations. Such variable sloped typical sections are often used as compromises between roadside safety and economics. By providing relatively flat recovery areas immediately adjacent to the roadways, most errant motorists can recover before reaching the steeper slopes beyond. Round the slope break points liberally so encroaching vehicles do not become airborne. Make the steeper slopes as smooth as practical and rounded at the bottoms.

Kcz (Curve Correction Factors)

Ref. (2) Table 3.2, Page 3-7

Radius (ft)	Design Speed (mph)						
	40	45	50	55	60	65	70
2860	1.1	1.1	1.1	1.2	1.2	1.2	1.3
2290	1.1	1.1	1.2	1.2	1.2	1.3	1.3
1910	1.1	1.2	1.2	1.2	1.3	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4	1.5
1430	1.2	1.2	1.3	1.3	1.4	1.4	---
1270	1.2	1.2	1.3	1.3	1.4	1.5	---
1150	1.2	1.2	1.3	1.4	1.5	---	---
950	1.2	1.3	1.4	1.5	1.5	---	---
820	1.3	1.3	1.4	1.5	---	---	---
720	1.3	1.4	1.5	---	---	---	---
640	1.3	1.4	1.5	---	---	---	---
570	1.4	1.5	---	---	---	---	---
380	1.5	---	---	---	---	---	---

Note:

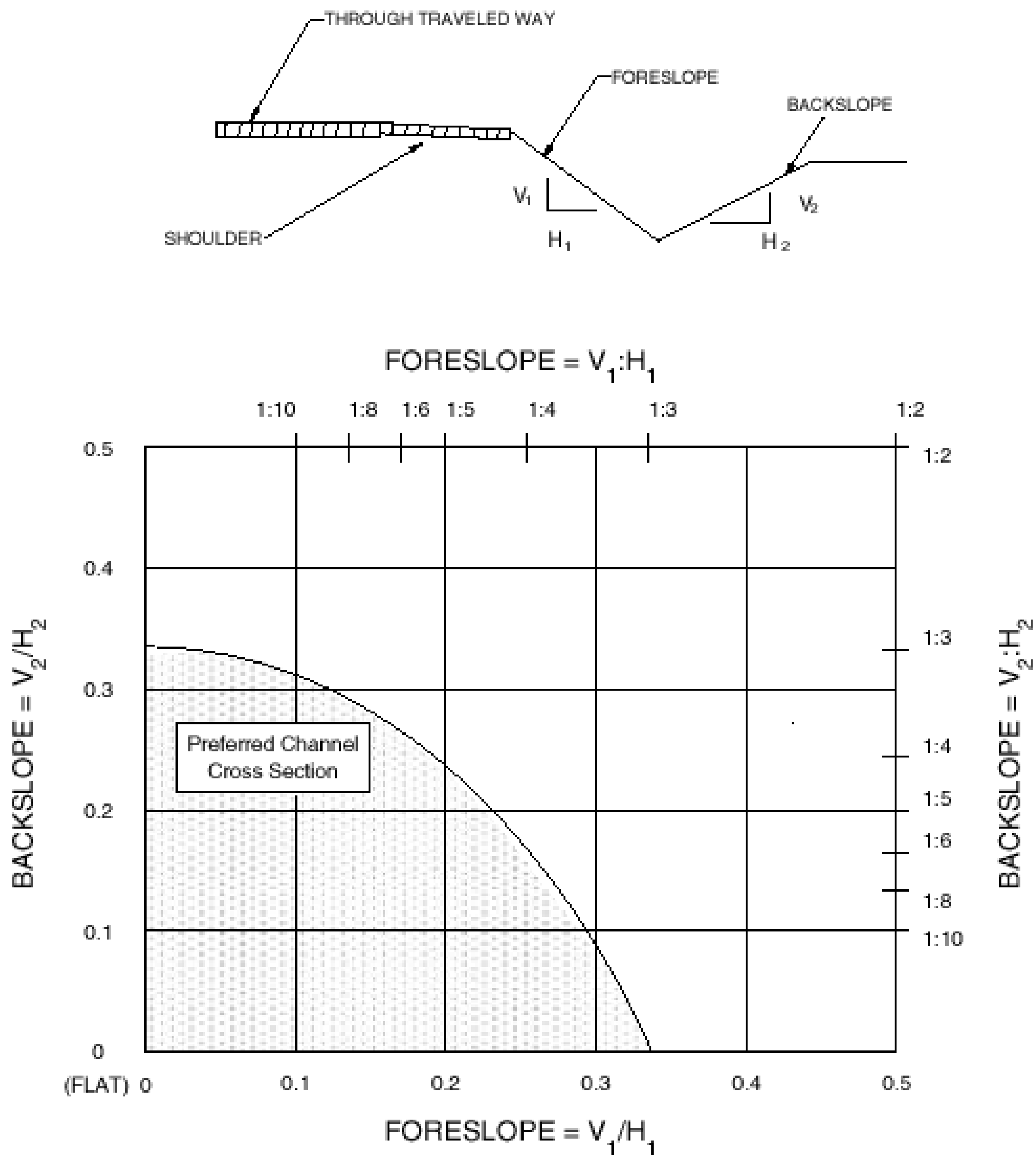
The clear zone correction factors are applied to the outsides of curves only. Curves flatter than 2860 feet do not need to provide adjusted clear zones.

CZc = (Lc) (Kcz)

Where: CZc = clear zone on outside of curvature,

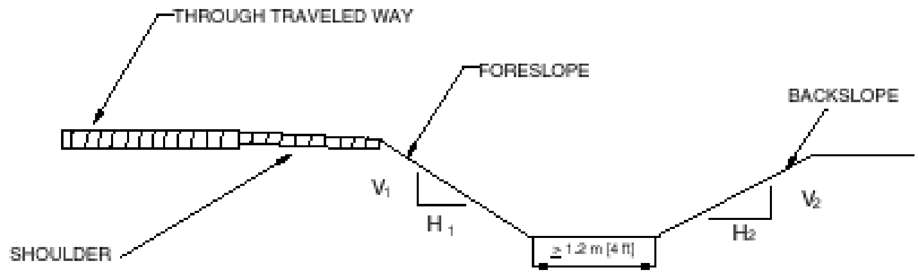
Lc = clear zone tangent section,

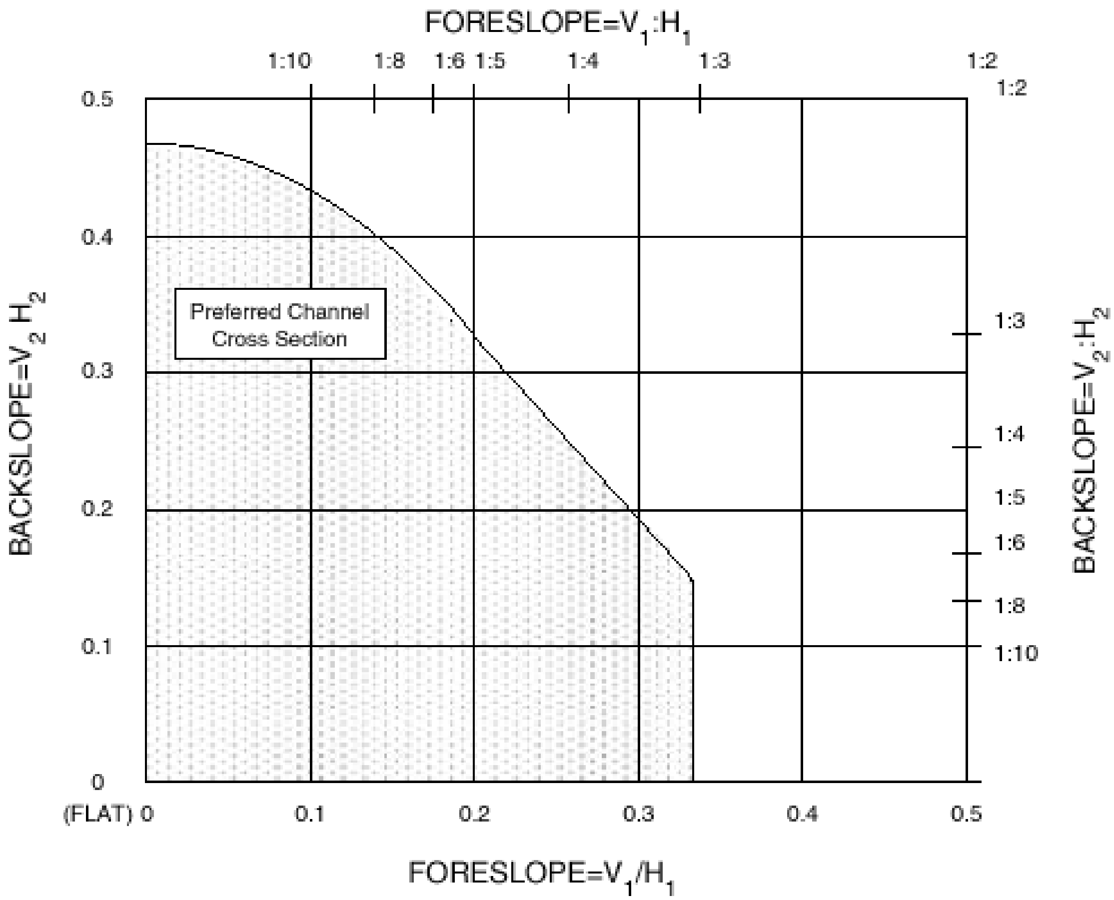
Kcz = curve correction factor



*This chart is applicable to all Vee ditches, rounded channels with a bottom width less than 2.4 m [8 ft] and trapezoidal channels with bottom widths less than 1.2 m [4 ft].

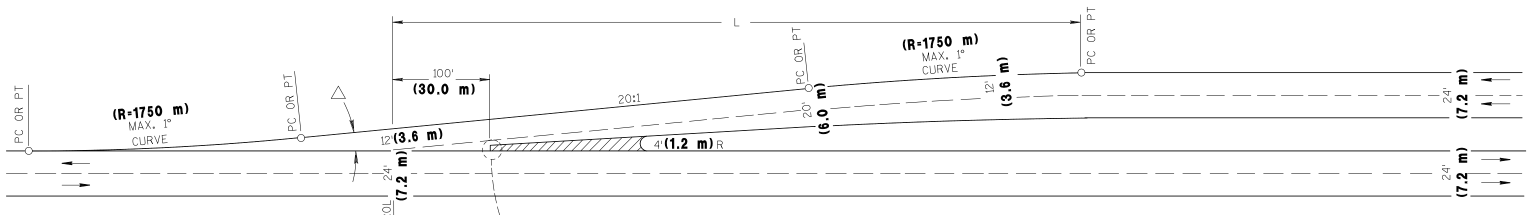
Ref. (2) Figure 3.6, Page 3-11



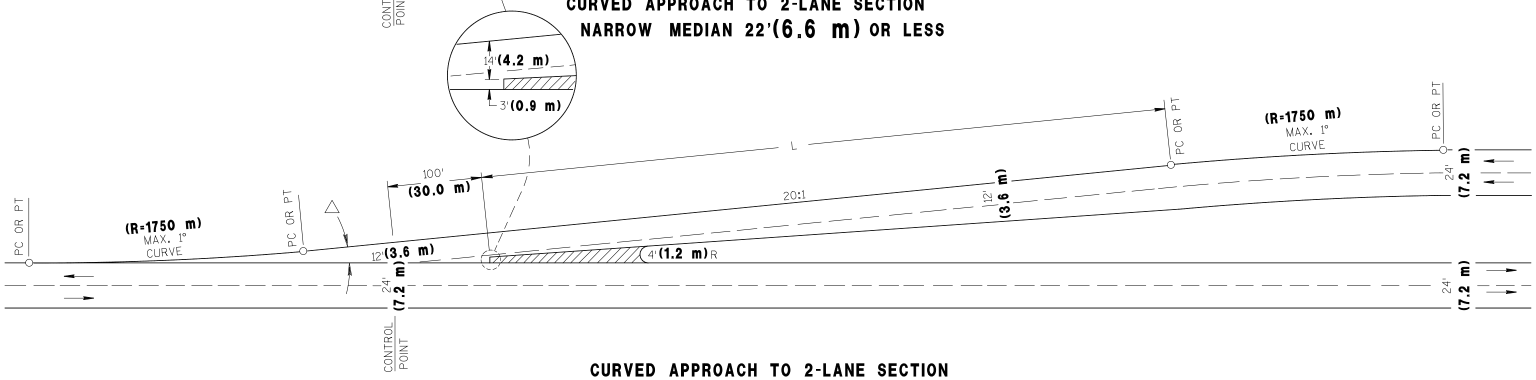


*This chart is applicable to rounded channels with bottom widths of 2.4 m [8 ft] or more and to trapezoidal channels with bottom widths equal to or greater than 1.2 m [4 ft].

Ref. (2) Figure 3.7, Page 3-12



CURVED APPROACH TO 2-LANE SECTION
NARROW MEDIAN 22'(6.6 m) OR LESS



CURVED APPROACH TO 2-LANE SECTION
WIDE MEDIAN OVER 22'(6.6 m)

NOTES

△ CAN VARY BETWEEN 3°-00' AND 5°-00', BUT NOT LESS THAN 2°-30'.

TRANSITIONS BETWEEN TWO-LANE HIGHWAYS AND FOUR-LANE HIGHWAYS SHALL BE DESIGNED TO DIRECT DRIVERS APPROACHING THE DIVIDED SECTION INTO THE INTENDED PATH TO THE RIGHT OF THE MEDIAN WITHOUT ANY APPRECIABLE CHANGE IN DIRECTION. ANY SIGNIFICANT CHANGE IN DIRECTION SHALL BE MADE BY DRIVERS LEAVING THE DIVIDED SECTION.

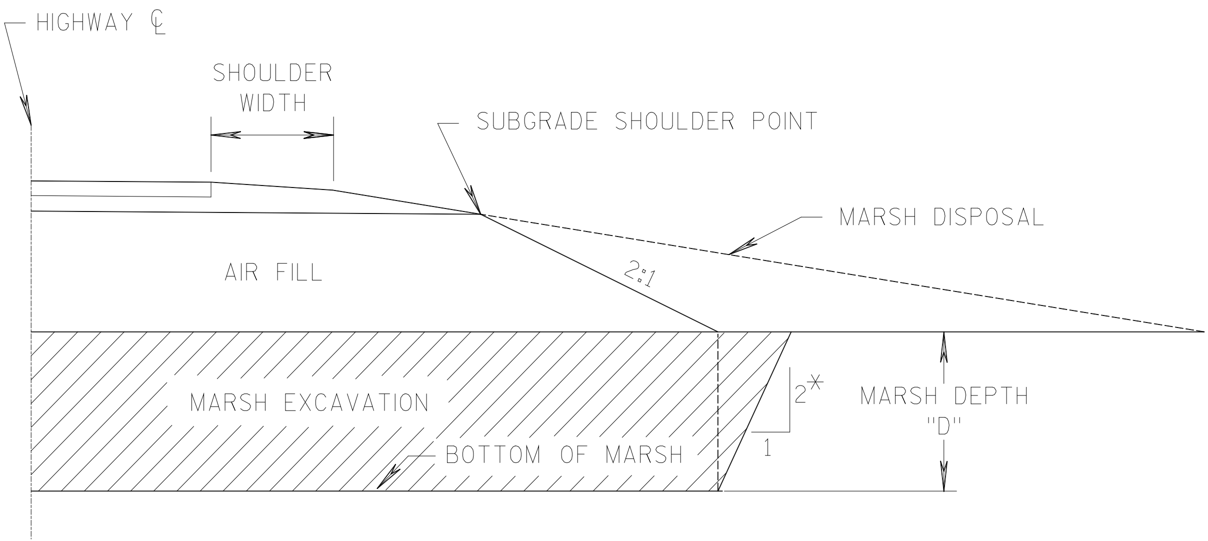
THE LANE DROP SHALL TAKE PLACE ON THE LEFT IN THE DIRECTION OF TRAFFIC. MOST DRIVERS STAY TO THE RIGHT EXCEPT WHEN PASSING AS REQUIRED BY WISCONSIN'S TRAFFIC REGULATION. IT IS ASSUMED, THEREFORE, THAT THERE WILL BE FEWER VEHICLES IN THE LEFT LANE AND DRIVERS USING THE LEFT LANE WILL PROBABLY BE IN A PASSING MANUEVER AND MORE ALERT TO THE CHANGE IN LANE WIDTH.

TRANSITIONS SHALL BE AVOIDED BEFORE INTERCHANGES AND AT LOCATIONS WITH HORIZONTAL OR VERTICAL SIGHT DISTANCE RESTRICTIONS.

SEE 11-30-1 FOR MORE DETAILED INTERCHANGE GEOMETRY.

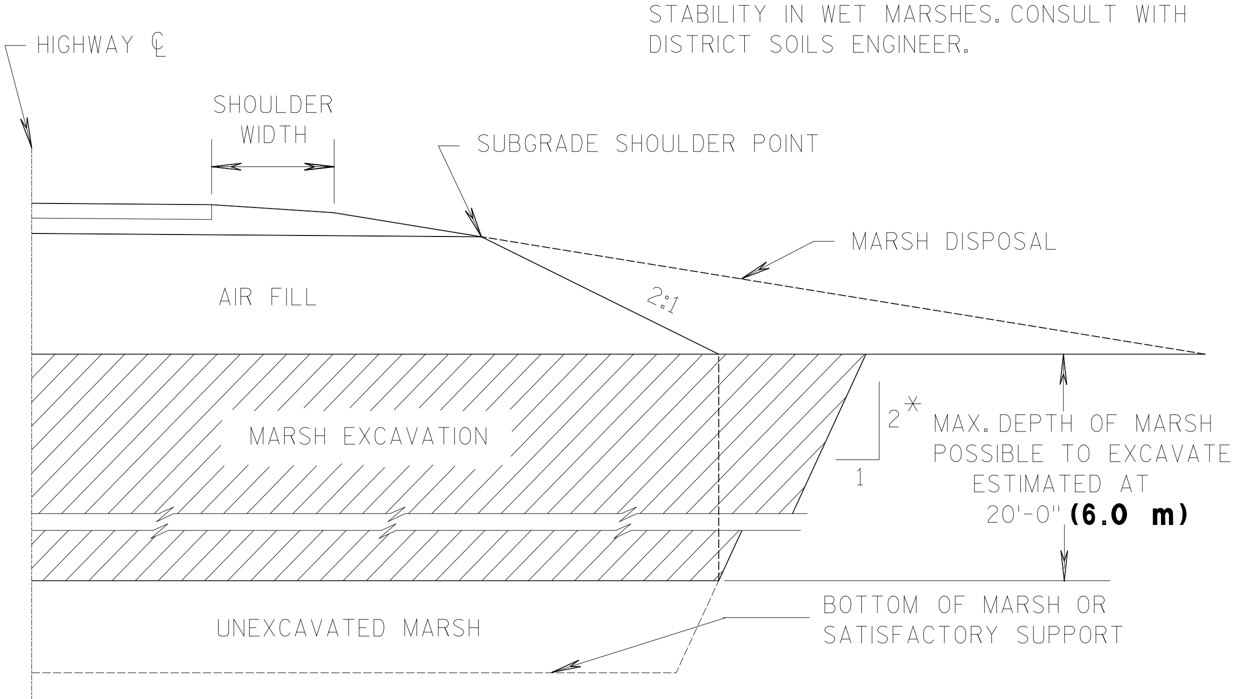
	L	V
L=12V	LENGTH OF VARIABLE WIDTH TRAVELED WAY (ft)	DESIGN SPEED (mph)
L=2.27V	LENGTH OF VARIABLE WIDTH TRAVELED WAY (m)	DESIGN SPEED (km/h)

TYPICAL TWO TO FOUR-LANE TRANSITION



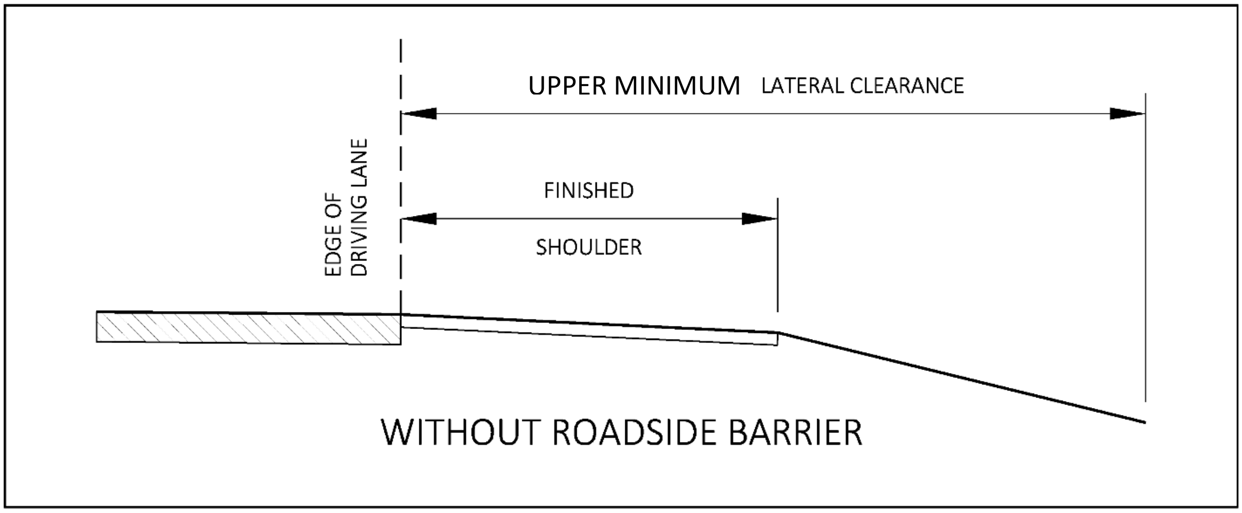
COMPLETE MARSH EXCAVATION

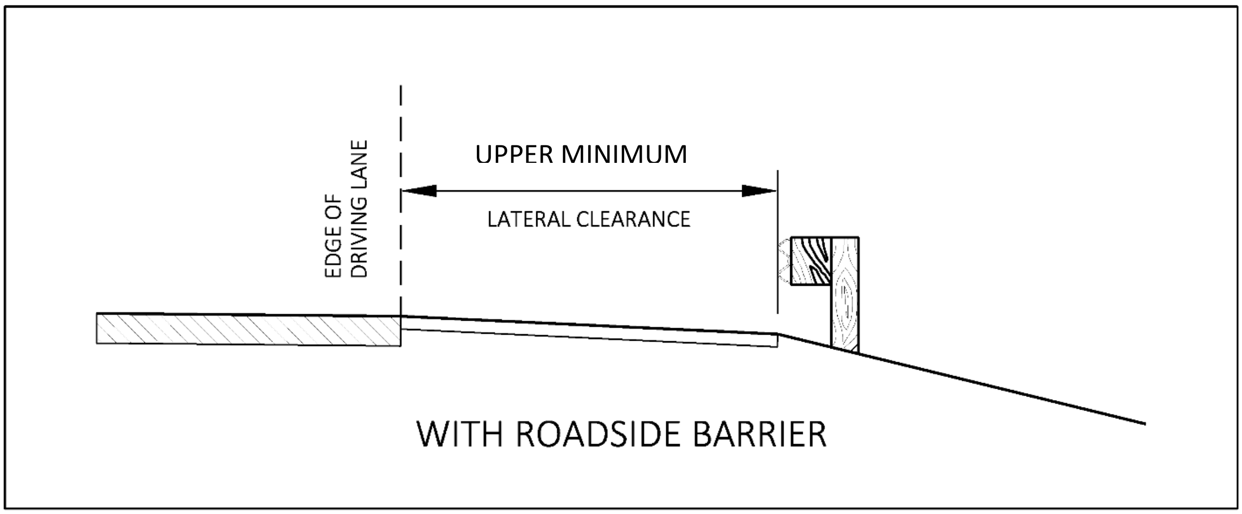
*A FLATTER SLOPE MAY BE NECESSARY FOR STABILITY IN WET MARSHES. CONSULT WITH DISTRICT SOILS ENGINEER.



PARTIAL MARSH EXCAVATION

TYPICAL MARSH SECTIONS





Lateral Clearance on Rural Roadways

Design Criteria for County Trunk Highways Functionally Classified as Arterials

TRAFFIC VOLUME		ROADWAY				BRIDGES[2]	
Design Class	Design AADT	Design Speed	Traveled Way Width	Shoulder Width	Roadway Width	Minimum Design Loading	Clear Roadway Width of Bridges[3]
A1	Under 3500	60 mph [4]	24’	6’	36’	[5]	36’
A2[1]	3500-15000	60 mph	24’	10’	44’	[5]	44’
A3	Over 15000	70 mph [6]	24’ (2)	6’ L 10’ R	40’ (2)	[5]	40’

1 The top of the traffic volume range for design class A2 is 15,000 AADT (LOS trigger of 5.0.) The volume is based on the 2000 Highway Capacity Manual assuming; level terrain, 12-foot lanes, $\geq$ 6-foot shoulders, 80 percent passing, 10 percent trucks, K30 design factor, and directional split of 60/40. See FDM 11-5-3 for additional information on threshold triggers, levels of service for different facility types and the respective numerical values.

2 The full widths of approach roadways should normally be provided across all new bridges. Design Justifications may be made when bridges are considered major structures on which design dimensions should be subject to individual economic studies because of the high unit costs.

3 Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

4 For County Highways in design class A1 the design speeds should typically be 60 mph; however, lower design speeds of 55 mph are acceptable if justified by a safety analysis and documented in the DSR as a Design Justification (DJ).

5 See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

6 See discussion in FDM 11-10-1.

Source: For County Trunk Highway Design Criteria see TRANS 205.

Design Criteria for County Trunk Highways
Functionally Classified as Collectors

TRAFFIC VOLUME			ROADWAY[1] WIDTH DIMENSIONS					BRIDGES[1,4]
Design Class	**Current ADT**	**Design ADT**	**Design Speed**	**Traveled Way**	**Shoulder**	**Roadway**	**Minimum Design Loading**	**Clear Roadway Width of Bridges**
C1	0-400		40 MPH	22'-24'	2'-4'	26'-32'	5	26'-30'
C2	400-750	Under 1500	50 MPH	22'-24'	6'	34'-36'	5	28'-30'
C3		1500-3500	60 MPH[3]	24'	6'	36'	5	32'-34' [2]
C4		Over 3500	60 MPH	24'	8'	40'	5	40' [2]

1 Where ranges of widths are shown, the smaller numbers are the lower range of widths and the larger numbers are the upper range of widths eligible for federal or state project participation.

2 Bridges in Design Classes C3 and C4 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet.

3 For County Trunk Highways in design class C3, design speeds of 55 mph are acceptable.

4 Lateral clearance design criteria for roadways under bridges are included in FDM 11-35-1.

5 See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

Source: Administrative Rule Trans 205, "County Trunk Highway Standards"

Design Criteria for County Trunk Highways
Functionally Classified as Local Roads

TRAFFIC VOLUME			ROADWAY[1] WIDTH DIMENSIONS					BRIDGES[1,4]
Design Class	Current ADT	Design ADT	Design Speed	Traveled Way	Shoulder	Roadway	Minimum Design Loading	Clear Roadway Width of Bridges
L1	0-250		40 MPH	20'-22'	2'-4'	24'-30'	[5]	24'-28'
L2	250-400		40 MPH	22'	2'-4'	26'-30'	[5]	26'-30'
L3	400-750	Under 1500	50 MPH	22'-24'	6'	34'-36'	[5]	28'-30'
L4		1500-3500	60[2] MPH	24'	6'	36'	[5]	30'-34' [3]
L5		Over 3500	60 MPH	24'	8'	40'	[5]	40' [3]

1 Where ranges of widths are shown, the smaller numbers are the lower range of widths and the larger numbers are the upper range of widths eligible for federal or state project participation.

2 For County Trunk Highways in design class L4, design speeds of 55 mph are acceptable.

3 Bridges in Design Classes L4 and L5 with total lengths over 100 feet may be designed with clear roadway widths of 30 feet.

4 Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

5 See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loadings.

Source: Administrative Rule Trans 205, “County Trunk Highway Standards”

Design Criteria for Interstate Highways

Number of Travel Lanes (Total Both Directions)		4-Lane	6-Lane or More
Sideslopes		4:1 or flatter (Recoverable) or 3:1 maximum (Traversable) with Recovery Area meeting FDM 11-15 Attachment 1.9	
Traffic Lanes	Widths	12 feet	12 feet
	Cross Slope	2%	2%
	Superelevation	6%maximum	6% maximum
Shoulders	Widths	10 feet Right[1] / 4 feet Left	10 feet Right and Left [2]
	Cross Slope	4%	4%
New and Replacement Bridges	Vertical Clearance	16 feet minimum. See FDM 11-35 Attachment 1.8	
	Roadway Width[3]	Full Approach Roadway Width except Major Long Span Structures shall provide 4-foot minimum from edge of traffic lanes to parapets[3]	
	Design Loading Structural Capacity[4]	HL-93 (HS-20) minimum [4]	HL-93 (HS-20) minimum[4]
Bridges to Remain in Place	Lane Widths (Feet)	12 feet	12 feet
	Shoulder Widths (Feet)	10 feet Right / 3.5 feet Left minimum except 3.5 feet Left and Right minimum for Major Long Span Structures	10 feet Right and Left minimum except 3.5 feet Left and Right minimum for Major Long Span Structures
Lateral Clearance[5]		See FDM 11-15 Table 1.2 [5]	
Roadside Design	Curb or Curb and Gutter	Barrier curbs shall not be used. Mountable curbs, when used, should be located at the outer edge of the shoulder. Also, where guardrail is used, the face of the curb should be flush with the face of guardrail or behind it.	
	Clear Zone Widths and Fixed Objects	FDM 11-15 Attachment 1.9 and the AASHTO Roadside Design Guide should be used for guidance regarding warranted clear zone widths. Fixed Objects within the clear zone should be removed, made breakaway or made safe through shielding by a roadside barrier, crash cushion, or a combination of both.	
	Median Inlets and Ditch Checks	Median inlets should have 6:1 or flatter traversable grates and 10:1 or flatter ditch checks.	
	Median and Maintenance Crossovers	Median/Maintenance Crossovers should be eliminated whenever possible or constructed to have 10:1 or flatter side slopes.	
	Construction Crossovers	Removed after project completion unless they are planned to be used for future maintenance or other traffic control operations. Construction crossovers left-in-place should 10:1 or flatter side slopes and appropriate safety devices installed along their length to minimize the potential for median-crossing crashes and unauthorized U-turns.	
Traffic Control Devices/Signing		Shall be in conformance with the current Manual on Uniform Traffic Control Devices (MUTCD) and the Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD).	
Access Control		Right-of-way fencing, or other appropriate measures, shall be incorporated into all Interstate projects to address any access control issues within the proposed project limits.	

Notes:

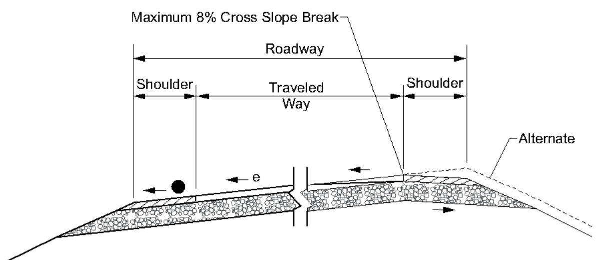
1 Use 12-foot paved shoulders (right) on 4-lane freeways if truck traffic >250 DHV, or if the facilities experience a high degree of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

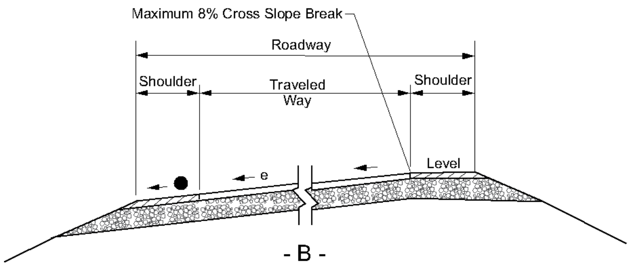
[2] Use 12-foot paved shoulders (left and right) on 6-lane freeways if truck traffic > 250 DHV or if the facilities experience high degrees of congestion and incidents. The roadway widths and clear roadway widths on bridges are increased accordingly.

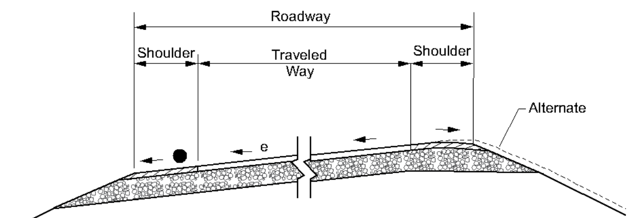
[3] Normally provide full widths of approach roadways across all new bridges. Justifications may be made when the bridges are considered major structures on which design dimensions are subject to individual economic studies because of high unit costs.

[4] See WisDOT Bridge Manual and consult with Bureau of Structures for appropriate Bridge Design Loading.

[5] Lateral clearance design criteria for underpass bridges are included in FDM 11-35-1.

Shoulder Treatment Options **in Areas of High Side Superelevation**	**[2018 GDHS, Figure 4-2]**	**Description**	**Pros**	**Cons**
 - A -	Case A	Shoulder on high side of superelevated roadway breaks down and away from roadway superelevation at the edge of the traveled way with a maximum of 8% cross slope break (e.g., +6% roadway SE / -2% shoulder SE)	• Fully addresses potential safety issue due to "black ice" (i.e., plowed snow sitting on the high side shoulder can thaw and refreeze across the adjacent driving lanes)	• Slightly complicates design (though CIVIL 3D can handle with a setting change) • Slightly complicates construction • Potential safety issue due to errant vehicles having to deal with a crossover slope break at the edge of the traveled way • Beam guard and/or concrete barrier height varies with respect to the elevation at edge of traveled way. This elevation differential can alter the trajectory of an errant vehicle and affect the performance of the roadside hardware. Additional engineering is required to design the roadside hardware. In this case, direct the issue to the design oversight engineer. • Need to transition to full width superelevation at bridges
	Case A (Alternate)	Extend full superelevation across entire roadway (i.e., traveled way and shoulders)	• Ease of design • Ease of construction • Errant vehicles do not have to deal with a crossover slope break at the edge of the traveled way • Beam guard and/or concrete barrier height is constant with respect to the elevation at edge of traveled way • Bridges are constructed this way; no need to transition to a different shoulder cross slope at structures	• Potential safety issue due to "black ice" (i.e., plowed snow sitting on the high side shoulder can thaw and refreeze across the adjacent driving lanes)

Shoulder Treatment Options in Areas of High Side Superelevation	[2018 GDHS, Figure 4-2]()	Description	Pros	Cons
 	Case B	Shoulder on high side of superelevated roadway is level with a maximum of 8% cross slope break (e.g., +6% roadway SE / -0% shoulder SE) NOT RECOMMENDED	• Partially addresses potential safety issue due to "black ice" (i.e., plowed snow sitting on the high side shoulder can thaw and refreeze across the adjacent driving lanes)	• Slightly complicates design (though CIVIL 3D can handle with a setting change) • Slightly complicates construction • Potential safety issue due to errant vehicles having to deal with a crossover slope break at the edge of the traveled way • Beam guard and/or concrete barrier height varies with respect to the elevation at edge of traveled way. This elevation differential can alter the trajectory of an errant vehicle and affect the performance of the roadside hardware. Additional engineering is required to design the roadside hardware. In this case, direct the issue to the design oversight engineer. • Need to transition to full width superelevation at bridges

Shoulder Treatment Options in Areas of High Side Superelevation	2018 GDHS, Figure 4-2	Description	Pros	Cons
 - C - ● = Superelevation Rate (e) Where Greater Than Normal Shoulder Slope	Case C	Shoulder on high side of superelevated roadway extends full superelevation part way through the shoulder before "rounding" towards a cross slope in the opposite direction	• Partially addresses potential safety issue due to "black ice" (i.e., plowed snow sitting on the high side shoulder can thaw and refreeze across the adjacent driving lanes)	• Complicates design (though CIVIL 3D can handle with a setting change) • Complicates construction • Potential safety issue due to errant vehicles having to deal with a crossover slope break part way through the shoulder • Beam guard and/or concrete barrier height varies with respect to the elevation at edge of traveled way. This elevation differential can alter the trajectory of an errant vehicle and affect the performance of the roadside hardware. Additional engineering is required to design the roadside hardware. In this case, direct the issue to the design oversight engineer. • Need to transition to full width superelevation at bridges
	Case C (Alternate)	Same as Case A (Alternate)	• Same as Case A (Alternate)	• Same as Case A (Alternate)

Use this attachment to determine if a wider clear zone is warranted when working on:

- Freeway or expressway
- With a posted speed of 70 mph
- And the whole project is a modernization or portions of the project are purchasing right of way.

If a project is purchasing right of way to realign a curve (or other improvement) within a larger project, only the area where the right of way is being purchased warrants review.

Use Attachments 1.9 and 1.10 to select initial clear zone. Use the maximum value listed in Attachment 1.9. See other sections of the FDM to assist in determining the initial clear zone for a project or location within a project.

To develop this guidance, the following assumptions were made:

- Roadway segment is tangent.
- Roadway segment had no run-off the road crash history.
- Roadway segment has posted speed of 70 mph.
- Roadway segment is uniform through the 1-mile section.
- Hazard at the edge of the clear zone is minor (i.e., a right-of-way fence).

Do not use chart 1 or chart 2 in this attachment for the following (the list is not all-inclusive):

- Deciding what action to take because of Consequence of Collision.
- Deciding initial clear zone for a project.
- Deciding if shielding verse providing clear zone is cost-effective.

Charts in this attachment have three shaded locations. The green areas have a benefit cost ratio of 4.00 or more. The orange areas have benefit cost between 2 and 3.99. The white areas have benefit cost ratios of 1.99 or less.

Provide 10 FT of extra clear zone when a road segment is in the:

- Green area of the chart.
- Orange area of the chart and there is a history of run off the road crashes.
- Orange area of the chart and extra analysis suggests widening the clear zone.

Extra analysis includes reviewing impacts of the additional clear zone. Some issues to review are:

- Does the extended clear zone have impact on bodies of water?
- What is the useful life of the extended clear zone?
- Does the extended clear zone impact 4(F) or similar properties?
- Does the extended clear zone cause other design issues?
- Does the segment of road have a higher run off the road crash rate.

Document in Design Study Report when a road segment is in the:

- Green area of the chart and the clear zone is <u>not being</u> extended.
- Orange area of the chart and clear zone is <u>not being</u> extended.
- White area of the chart and clear zone is <u>being</u> extended.

The cost of providing the extra 10 FT of clear zone is the difference between what is required in Attachments 1.9 and 1.10 and providing the extra 10 FT of clear zone. The cost of getting the clear zone values in Attachments 1.9 and 1.10 are not included in the analysis.

For example, the cost of extending a pipe from 18 FT to 34 FT is not part of the cost used in this analysis. However, the cost of extending the pipe from 34 FT to 44 FT is part of the analysis.

Costs to consider are: (the list is not all-inclusive):

- Earthwork.
- Length in drainage features.
- Acquiring new Right-of-Way.
- Structural length and associated costs.

To use the charts below do the following:

1. Use correct chart for the number of lanes the road has.

a. Chart 1 (Figure 1.1)is for a 4-lane facility.

b. Chart 2 (Figure 1.2 is for a 6-lane facility

2. Existing AADT (X-Axis).
3. Cost of providing an extra 10 FT of clear zone (Y-Axis).
4. Determine intersection point on the graph.

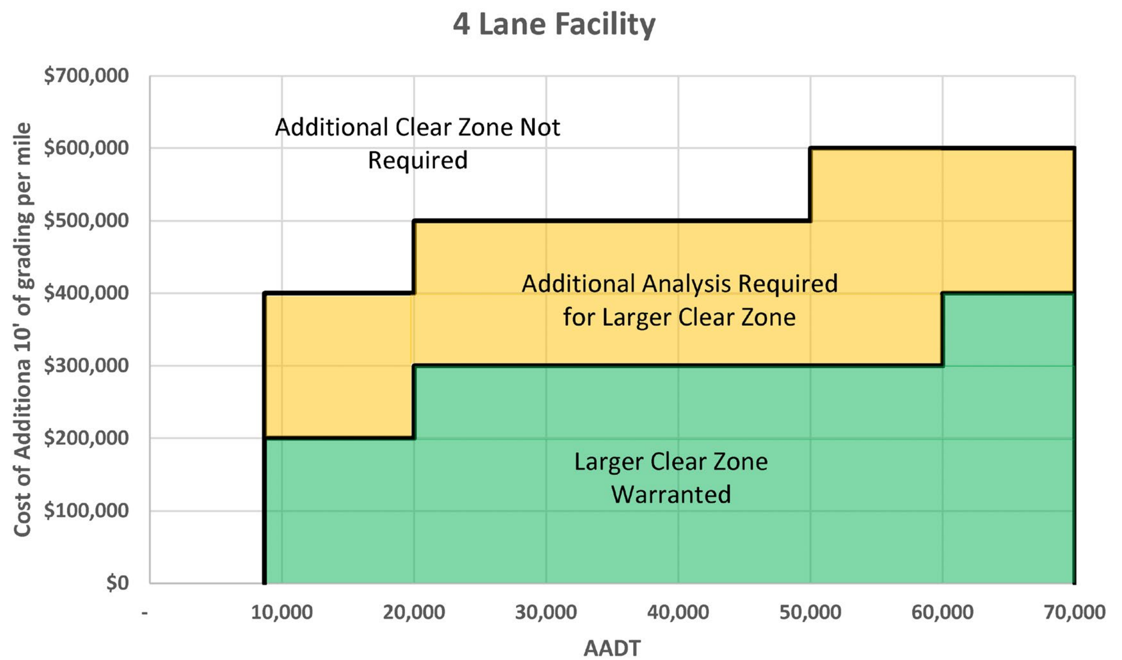


Figure 1.1 Additional 10' of Clear Zone on a 4-Lane Facility

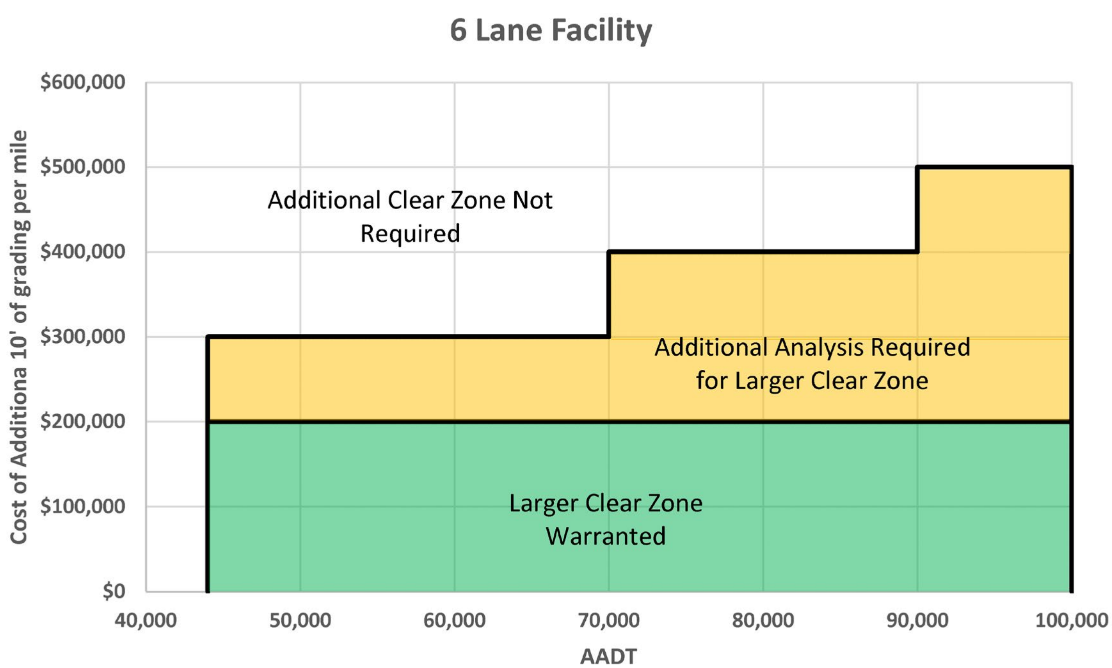


Figure 1.2 Additional 10' of Clear Zone on a 6-Lane Facility

Example 1:

Posted Speed: 70 mph

Current AADT: 30,000

Slope is 6:1

Clear zone required in Attachment 1.9 of 11-15-1: 34 FT

Cost to extend 10’ for one mile is: $153,000 (Work is mostly grading and pipe extensions.

Roadway is a 4-lane facility

There is no ROR history

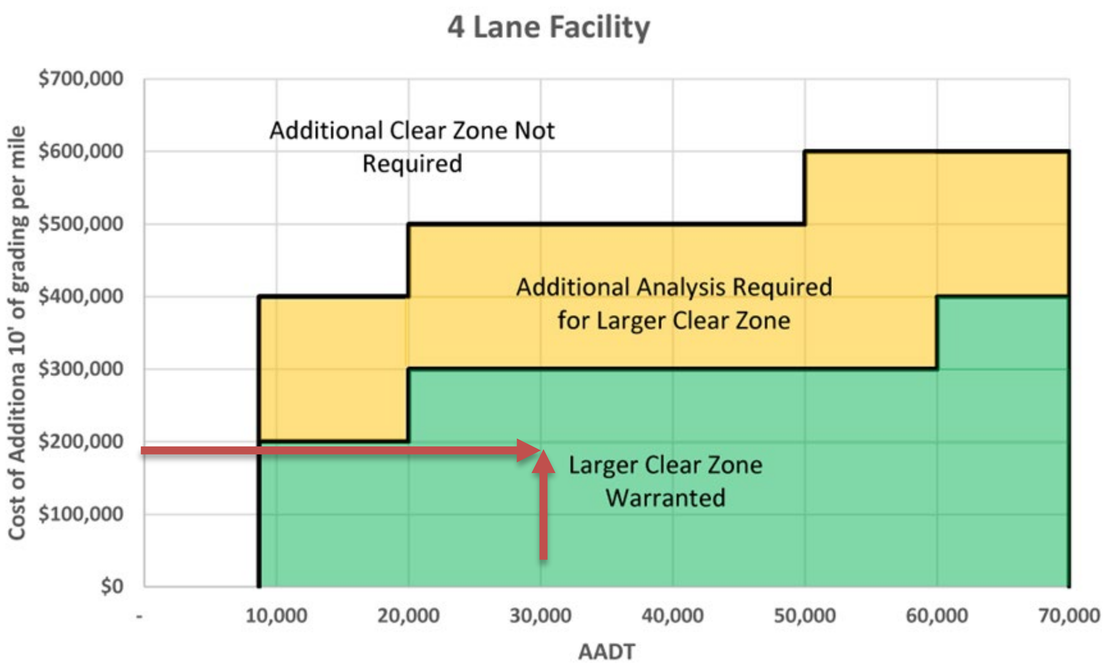


Figure 1.3 Example 1

Segment is in the green section of Chart 1. Provide a 44 FT wide clear zone.

Example 2:

Posted Speed: 70 mph

Current AADT: 45,000

Slope is 6:1

Clear zone required in Attachment 1.9 of 11-15-1: 34 FT

Cost to extend 10’ for one mile is: $453,000 (Work is grading, pipe extensions, and longer bridge).

Roadway is a 4-lane facility

There is no ROR history

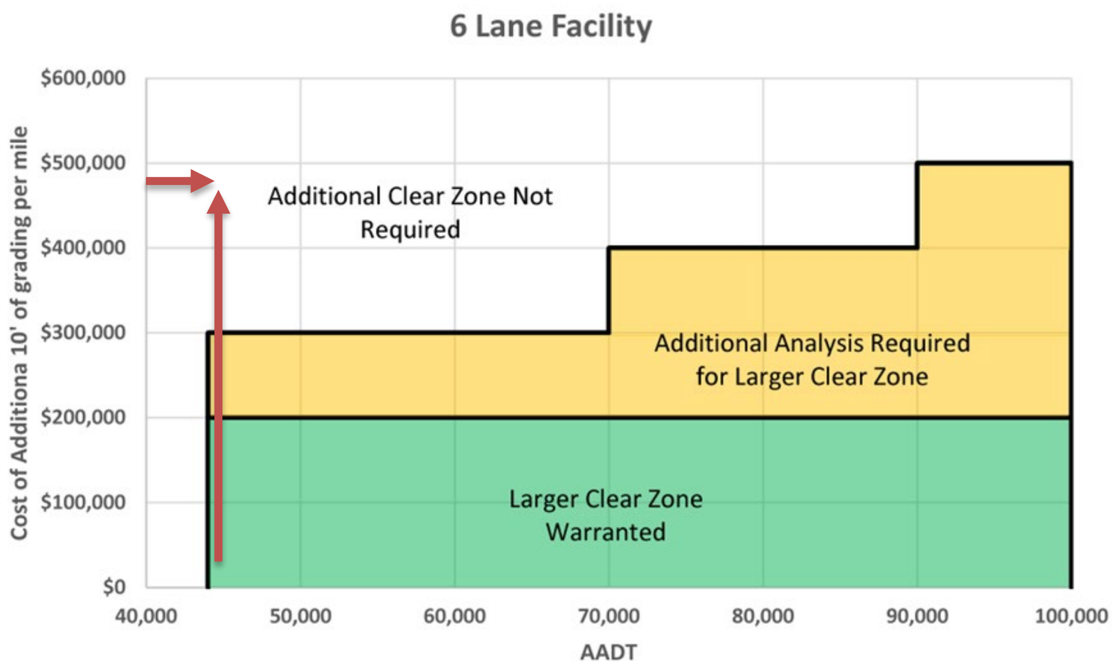
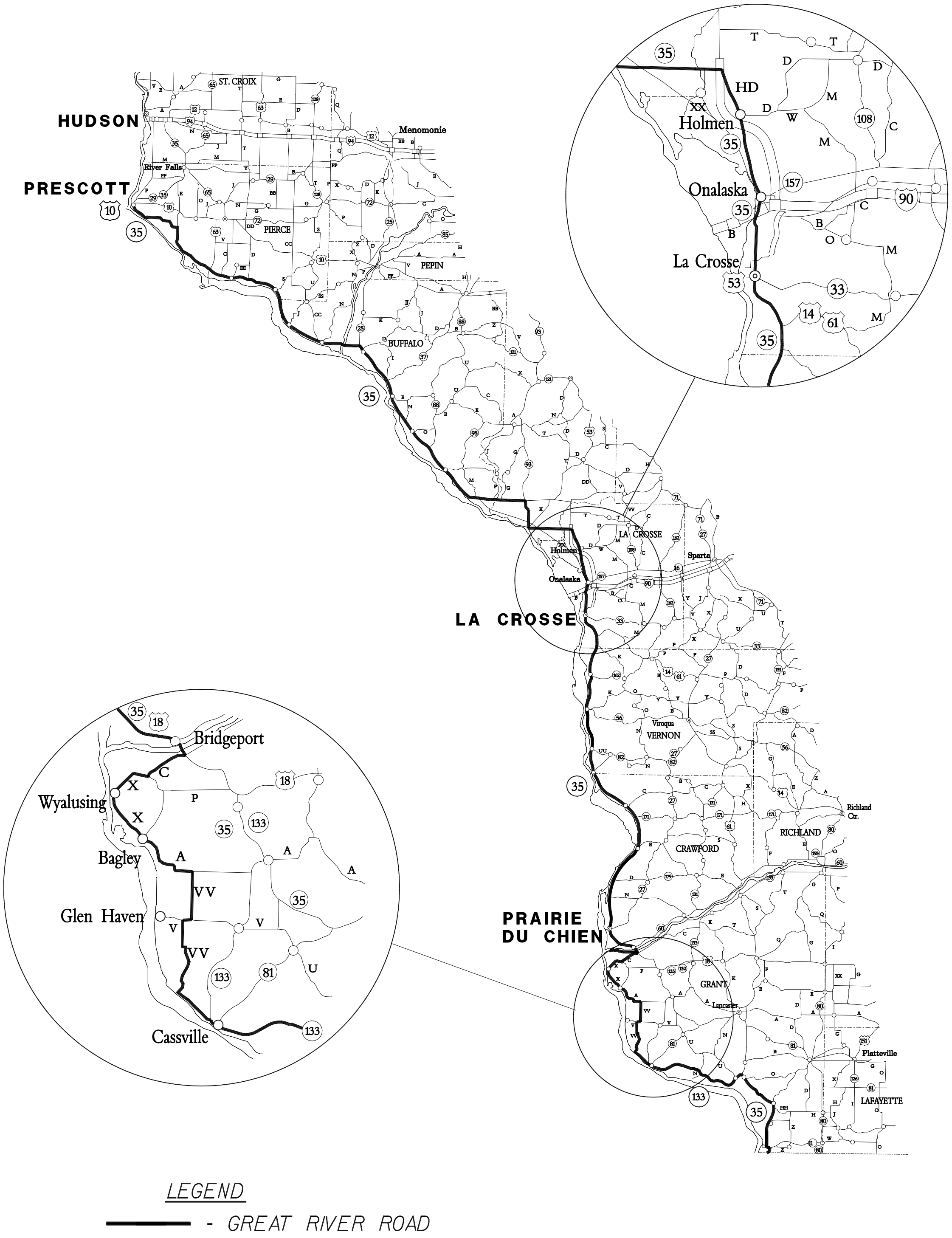


Figure 1.4 Example 2

Segment falls within the white section of Chart 2 Extra clear zone is not necessary.

Note another possible solution would be to analyze increasing the clear zone on the segment without the costs of the bridge widening. At the bridge the clear zone could be the normal clear zone calculated using Attachments 1.9 and 1.10.



GREAT RIVER ROAD

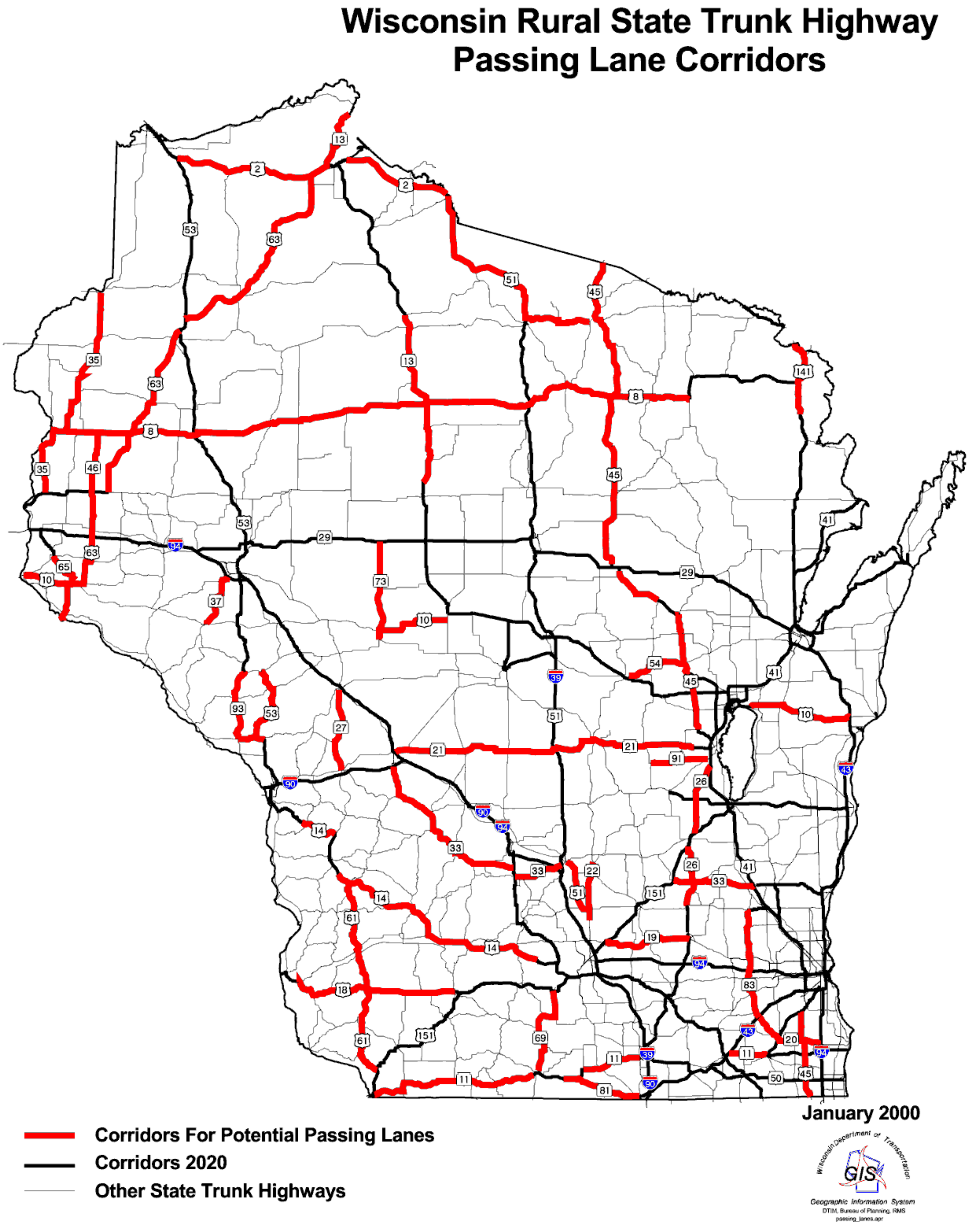
Great River Road – Legal Definition

84.107 Great River Road.

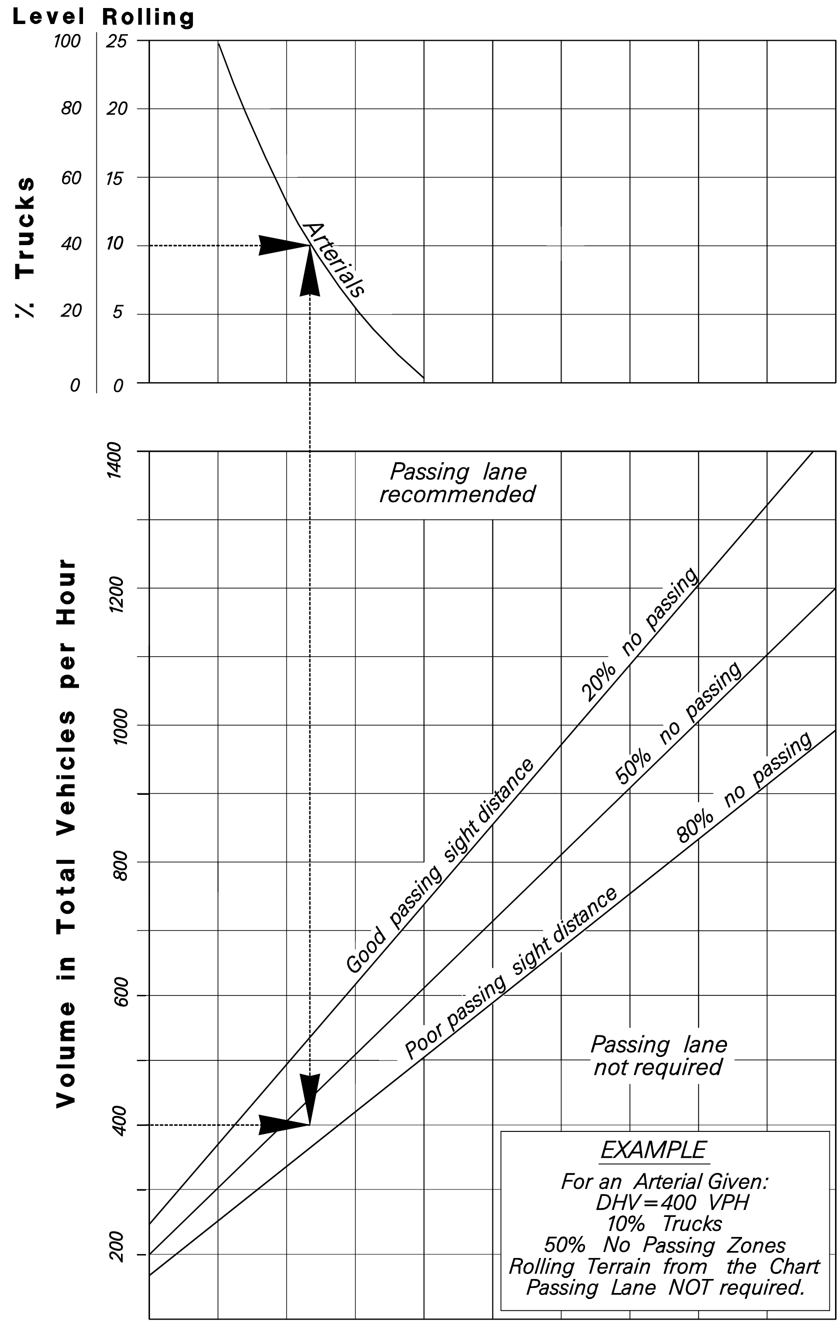
(1) The department shall designate and mark as the "Great River Road" the route in Grant, Crawford, Vernon, La Crosse, Trempealeau, Buffalo, Pepin and Pierce counties commencing at the Wisconsin–Illinois border and proceeding northerly on STH 35 to its junction with STH 133; then proceeding westerly on STH 133 to its junction with CTH "VV" near Cassville; then proceeding northerly on CTH "VV" to its junction with CTH "A"; then proceeding westerly on CTH "A" to its junction with CTH "X" in Bagley; then proceeding northerly on CTH "X" to its junction with CTH "C"; then proceeding easterly on CTH "C" to its junction with STH 35, with all of the preceding highways in Grant County; then proceeding northerly on STH 35 to its junction with USH 14/61 in La Crosse County; then proceeding northerly on USH 14/61 to its junction with USH 53; then proceeding northerly on USH 53 to its junction with STH 35; then proceeding northerly on STH 35 to its junction with Business 35/CTH "HD" near Holmen; then proceeding northerly on Business 35/CTH "HD" to its junction with STH 35; then proceeding northerly on STH 35 to its junction with USH 10 in Pierce County; and then proceeding westerly on USH 10 to the Wisconsin–Minnesota border.

(2) If the department, after investigations and studies, finds that any proposed Great River Road development is advantageous to the state, it shall have full authority to perform, on behalf of the state, each and every duty required of the state, in order to secure and complete the proposed development project. For the purposes of such development projects, the Great River Road shall be a portion of the state trunk highway system.

History: 1993 a. 357.


Wisconsin Rural State Trunk Highway
Passing Lane Corridors
January 2000
Corridors For Potential Passing Lanes
Corridors 2020
Other State Trunk Highways
Wisconsin Department of Transportation
GIS
Geographic Information System

Warrant for Considering Passing Lanes



Note: The Rolling Terrain criterion should be considered only for projects located in western and southwest Wisconsin. See the text of this procedure for additional warranting criteria.

Source: Washington State DOT