

ISSUE	APP'D	DATE	AMENDMENT
H	D.C	05/14	TITLE BLOCK, INCLUDE ALL BARRIERS, TABLE A, NOTES

BARRIER POR CAN BE ACHIEVED WITHIN THE TERMINAL LENGTH. (REFER G.R.E.A.T'S FOR EXAMPLE)

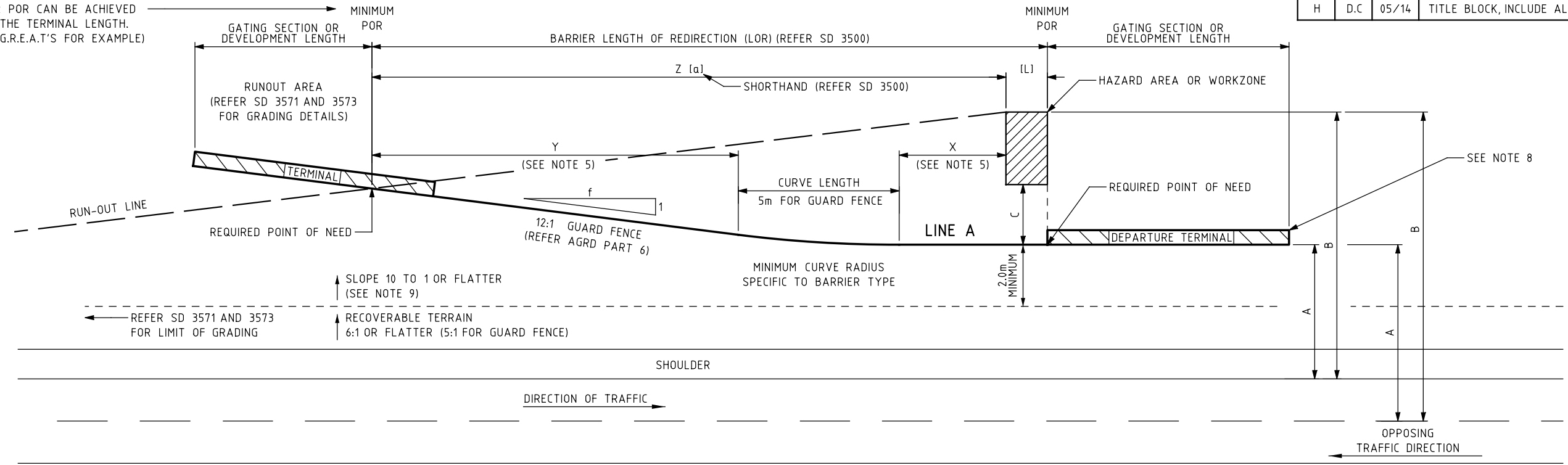
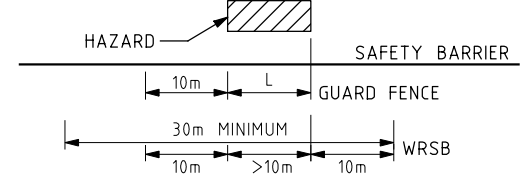


TABLE A - LENGTH "Z" FOR LINE A SAFETY BARRIERS (m) (SEE NOTE 4, 6 AND 7)

PROTECTED WIDTH "B" (m)	15			13			11			9			8			7			6			5			4			3			2.5				
	SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)			SPEED (km/h)				
"A" SAFETY BARRIER OFFSET FROM TRAFFIC LANE (m)	0.5*	85	75	65	80	70	65	80	70	65	75	65	60	70	60	55	65	60	55	60	55	50	55	50	50	55	45	45	40	40	40	45	40	40	
	1*	80	70	65	80	70	65	75	65	60	70	60	55	65	60	55	60	55	50	55	50	45	50	45	45	45	40	40	35	35	35	35	35	35	
	2*	75	65	60	75	65	60	65	60	55	60	55	50	55	50	45	50	45	45	45	40	45	40	40	40	35	35	30	30	25	30	30	25	25	
	3	70	60	55	65	60	55	60	55	50	55	45	45	50	45	40	40	40	35	35	30	30	30	25	25	25	25	25	25	25	25	25	25	25	
	4	65	55	50	60	50	50	55	45	45	45	40	35	40	35	30	35	30	30	25	25	20	20	20	20	20	20	20	20	20	20	20	20	20	
	5	60	50	50	55	45	45	45	40	35	30	30	30	30	25	25	25	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	6	55	45	45	50	40	40	40	35	30	30	30	25	25	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	7	50	40	40	45	35	35	35	30	25	25	20	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	8	45	35	35	35	30	30	30	25	25	20	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	9	35	35	30	30	25	25	25	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	10	30	30	25	25	20	20	20	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	11	25	25	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	12	20	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	13	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
VEHICLES / DAY (AADT) FACTOR	>10,000	(X)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	5,000-10,000	(X)	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85	0.92	0.89	0.85
	1,000-5,000	(X)	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.81	0.78	0.76
<1,000	(X)	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	0.7	0.69	0.68	

REDUCED POST SPACING DISTANCES



X, Y AND Z VALUES

$$X = \frac{Z}{2}$$

$$Y = \frac{Z}{2} - \text{CURVE LENGTH}$$

$$Z = \frac{B - A + \left(\frac{\text{CURVE LENGTH}}{2f} \right)}{\left(\frac{1}{2f} + \frac{B}{L_r} \right)}$$

L_r: RUN-OUT LENGTH VALUES IN ACCORDANCE WITH AASHTO 2011.
 f: FLARE RATE IN ACCORDANCE WITH AGRD PART 6 OR AASHTO 2011.
 CURVE LENGTH: RESULT OF FLARE RATE AND MINIMUM CURVE RADIUS. SHOULD MATCH BARRIER UNIT LENGTH. (e.g. GF= 5m)

TABLE A IS CALCULATED USING THE AGRD PART 6 'RUN-OUT LENGTH' METHOD AND L_r VALUES FROM AASHTO 2011.
 ** "Z" VALUES MAY BE MULTIPLIED WITH AADT FACTOR BELOW

*OFFSETS LESS THAN 3.0m REQUIRE RELEVANT AUTHORITY. REFER VRS TO AGRD PART 6.
 ADOPT 90km/h Z VALUES FOR OPERATING SPEEDS EQUAL TO AND LESS THAN 90km/h.

NOTES:

- SAFETY BARRIER TERMINOLOGY, SHORTHAND AND GENERAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SD 3500.
- ALIGNMENT DETAILS IN THIS DRAWING APPLY TO ALL ACCEPTED SAFETY BARRIER PRODUCTS, WITH THE EXCEPTION OF WRSB WHICH SHALL REFER TO SD 3573 FOR FLARED TERMINALS.
- DETAILS IN THIS DRAWING ARE FOR BARRIERS ON STRAIGHT SECTIONS OF ROAD. "Z" VALUES FOR CURVED SECTIONS OF ROAD SHALL USE THE "RUN-OUT LENGTH METHOD" IN ACCORDANCE WITH AGRD PART 6, SECTION 6.3.19 OR AASHTO 2011.
- VALUES OF "Z" IN TABLE A ARE MINIMUM VALUES CALCULATED FROM A CURVE LENGTH OF 5m WITH APPROXIMATELY A 60m RADIUS AND FLARE RATE OF 12:1. SEE NOTE 6 FOR APPLICATION WITH OTHER BARRIER TYPES AND RESTRICTIONS. SEE NOTE 7 FOR OTHER AADT VOLUMES.
- DIMENSIONS X AND Y ARE CALCULATED FROM Z VALUES. X=Z/2 AND Y=(Z/2)-CURVE LENGTH, IN ACCORDANCE WITH THE X, Y AND Z FIGURE. MINIMUM X VALUE IS 5m FOR GUARD FENCE AND 10m FOR WRSB.

- VALUES OF X, Y AND Z MAY ALSO BE CALCULATED FROM THE X, Y AND Z FIGURE USING L_r VALUES SPECIFIED IN AGRD PART 6 OR AASHTO 2011. VALUES SHALL BE A MULTIPLE OF THE SAFETY BARRIER UNIT LENGTH (e.g. 5m FOR GUARD FENCE) AND ROUNDED UP TO SUIT.
- FOR OTHER AADT VOLUMES, "Z" VALUES IN TABLE A MAY BE MULTIPLIED BY THE AADT FACTOR IN TABLE A AND ROUNDED TO THE CLOSEST WHOLE BARRIER UNIT LENGTH. VALUES CALCULATED FROM THE X, Y AND Z VALUES FIGURE ALREADY CONSIDER AADT VOLUMES AND SHALL NOT USE AADT FACTORS IN TABLE A. FUTURE TRAFFIC VOLUMES AT THE SITE SHALL BE CONSIDERED WHEN USING AADT FACTORS IN TABLE A.
- DEPARTURE TERMINALS (e.g. TRAILING TERMINAL) MUST NOT BE LOCATED WITHIN THE CLEAR ZONE OF OPPOSING TRAFFIC. IF THE TERMINAL IS TO BE LOCATED WITHIN OPPOSING TRAFFIC CLEAR ZONE, USE AN APPROVED APPROACH TERMINAL. REFER RDN 06-04.
- AN OBSTACLE-FREE AREA OF AT LEAST 2m WIDE WITH A SLOPE NO STEEPER THAN 10 TO 1 SHALL BE PROVIDED IN FRONT OF THE BARRIER. IDEALLY, THIS FLAT AREA SHOULD COVER THE FULL WIDTH FROM EDGE OF VERGE TO BARRIER.
- REDUCED POST SPACING MINIMUM DISTANCES FOR GUARD FENCE AND WRSB, SHALL BE IN ACCORDANCE WITH THE REDUCED POST SPACING DISTANCES FIGURE.

VicRoads Drawing No. 720272

REFERENCES AND NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- SAFETY BARRIER TERMINOLOGY, SHORTHAND AND GENERAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SD 3500.
- SAFETY BARRIERS SHALL BE VICROADS ACCEPTED PRODUCTS IN ACCORDANCE WITH RDN 06-04.
- RUNOUT AREA REQUIREMENTS IN ACCORDANCE WITH SD 3571 AND 3573.

VICROADS SUPPLEMENTS TO AGRD
 AUSTRROADS GUIDE TO ROAD DESIGN PART 6
 RDN 06-02 USE OF WIRE ROPE SAFETY BARRIERS
 RDN 06-04 ACCEPTED SAFETY BARRIER PRODUCTS
 RDN 06-08 USE OF STEEL GUARD FENCE
 AASHTO 2011 ROADSIDE DESIGN GUIDE
 SD 3500 TERMINOLOGY, SHORTHAND AND GENERAL REQUIREMENTS

SD 3501, 4311 LOCATION PROCEDURES
 SD 3502 OFFSET TO KERB AND SHOULDER
 SD 3511 LINE A
 SD 3571, 3573 RUNOUT AREA

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ROAD SAFETY BARRIERS
 SAFETY BARRIER (LINE A)
 ALIGNMENT DETAILS

NOT TO SCALE	APPROVED D.CASSAR	8/5/14	SD NO. SD 3511	ISSUE H
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