

Operational Instruction

80km/h Speed Limit at Railway Level Crossings

4.11

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TRAFFIC MANAGEMENT Operational Instructions

80 km/h Speed Limit at Railway Level Crossings - 4.11

AMENDMENT RECORD

<i>Version</i>	<i>Page(s)</i>	<i>Date</i>	<i>Amendment Description</i>	<i>Init</i>
1	All	02/02/2017		IH
2	Page 6; Figures 4.1 to 4.10	15/08/2017	Review of long distance advance warning signs added; Note 1 on figures amended	IH
3	All	12/20	Format updates; Figure 4.9 corrected	EW

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Manager, Traffic Services
21 / 01 / 2021

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1. Introduction

South Australia's *Railway Crossing Safety Strategy* (2017) recommends the reduction of speed limits on the approach to railway crossings on roads with a speed limit of 100 km/h or greater.

Reducing the approach speed to railway level crossings:

- Alerts drivers to a change in conditions or hazard ahead.
- Provides the driver with more time to observe the warning signs and control at the crossing
- Provides the driver with more time to observe an approaching train at a passive controlled crossing and make an appropriate decision.
- Significantly reduces the braking and stopping distance of the road vehicle, which will also lessen the impact of a collision with a train.

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These factors and the complementary conditions within this document are measures to reduce serious injuries and fatalities for road users. It contributes towards incorporating a Safe System — the cornerstone of South Australia's Road Safety Strategy — into our road network and everyday business.

2. Requirements for 80 km/h speed limit

Active Advanced Warning Assemblies (refer AS 1742.7) are the preferred treatment of advance warning for drivers approaching railway level crossings as they provide improved notification to drivers when trains are approaching the crossing while minimising the disruption to drivers at other times.

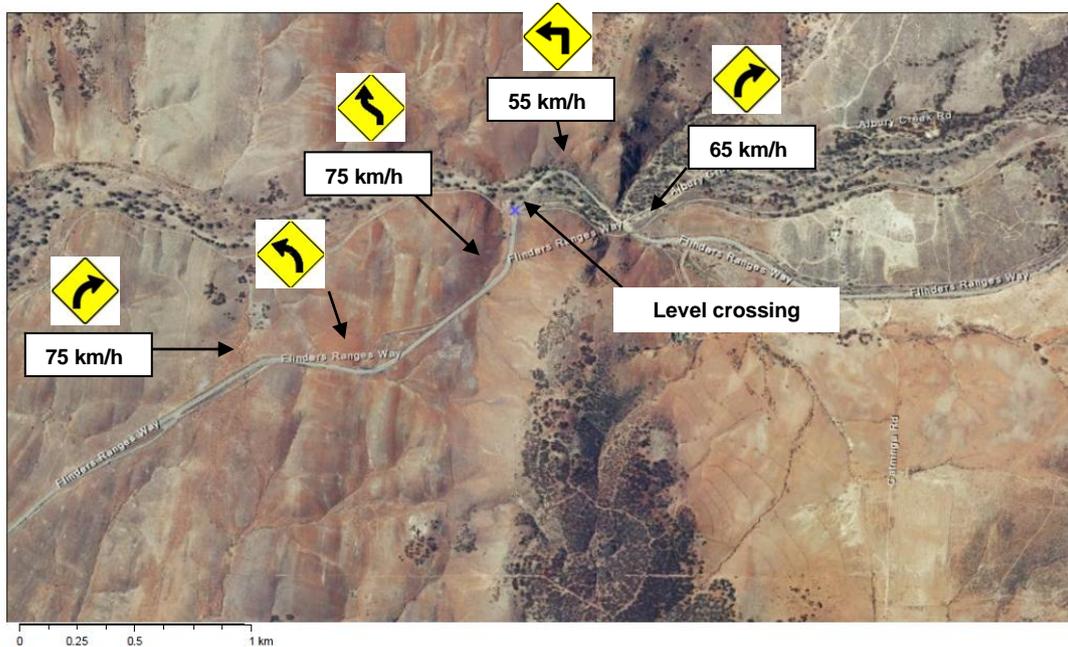
A speed limit of 80 km/h shall be applied on rural roads at railway level crossings where the following criteria, assessed for each approach separately, are met:

- Existing road speed limit is 100 km/h or higher,
- Sealed pavement,
- Active Advanced Warning Assemblies are not used at the crossing.

In some situations, the geometry on the approach to the crossing makes it impractical to install an 80 km/h speed limit. The 80 km/h speed limit may be omitted where:

- The level crossing is located on a road which terminates at a T-intersection, and there is less than 130 metres between the intersection and the first warning sign on approach to the level crossing (W7-7 for passive controlled crossing or W7-4 for active controlled crossing),
- The level crossing is located within a series of curves subject to either the W1-5 Winding Road sign or a series of individual curve warning signs with an advisory speed less than 80 km/h (refer example in Figure 2.1), or

- The level crossing is located at the end of an overtaking lane where a reduction in speed limit may inhibit the safe merging of traffic. Active Advanced Warning Assemblies should be considered in this situation.



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Figure 2.1 Example of series of curves on approach to level crossing

3. Change in operating speed

Sight distance calculations are based on operating speeds, which is the 85th percentile free speed of cars. While the installation of the 80 km/h speed limit will reduce operating speeds, the safety benefits of the reduced speeds must not be offset by a reduction in the sight distance at the crossing.

On approaches where operating speeds are not affected by road geometry, any sight distance calculation will be based on the speed limit (as the operating speed) prior to the 80 km/h speed limit for the level crossing.

4. Signing

The R4-1 (80) signs on approach to the crossing shall be supplemented with the TES 19457 supplementary plate.



Figure 4.1 TES 19457 Railway Crossing supplementary plate

Speed limit signing for each approach to the crossing is located relative to the existing warning signs for the crossing, as indicated in Figures 4.1 to 4.10. Selection of the relevant figure to use depends on the distance between the crossing and an intersection. These figures may not be representative of all existing level crossing sign layouts and geometries and the speed limit signing will need to be determined based on the specific conditions at each site. The regulatory and warning signs for the level crossings on these figures are indicative only and the user must refer to AS 1742.7 for the use of these signs.

In addition to the information provided in Figures 4.1 to 4.10, the following factors shall also be taken into account when determining the locations of the speed limit signing:

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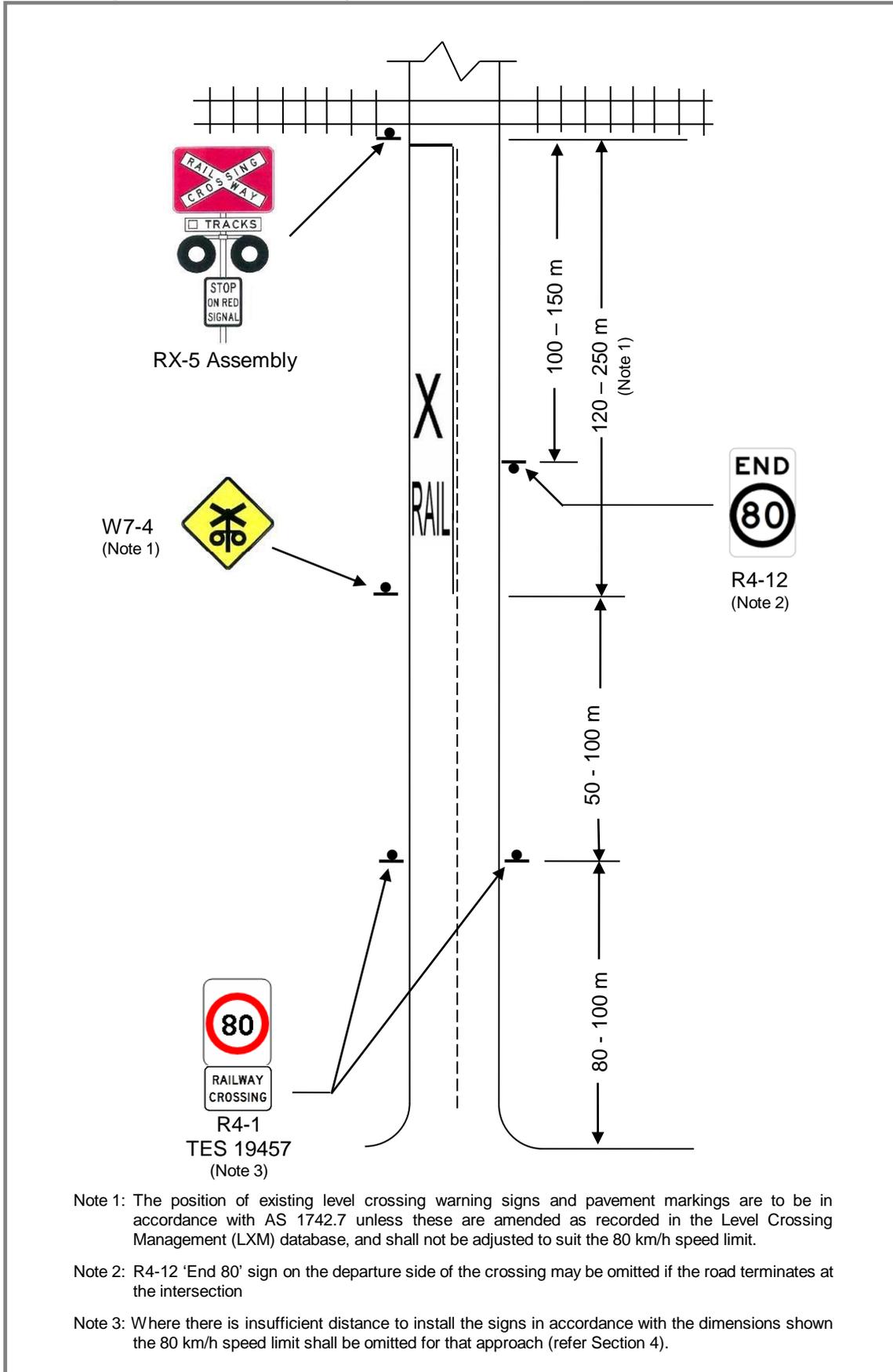
- Where long distance advance warning signs (RX-10 assembly or W7-4 and W8-5 combination) are in place on approach to a crossing in accordance with AS 1742.7 clause 2.4.1, the need for these signs shall be reviewed as the TES 19457 sign which supplements the R4-1 (80) sign provides advance warning of the railway crossing to drivers.
- Where a crossing is located close to an intersection such that signs cannot be located in accordance with the dimensions shown in Figure 4.1 for active control crossings or Figure 4.6 for passive control crossings, the 80 km/h speed limit shall be omitted for this approach.
- Where an advisory speed sign supplementing a curve warning sign on the approach to the crossing indicates a value of 70 km/h or more, the advisory speed sign shall be removed.
- Where an advisory speed sign supplementing a curve warning sign on the approach to the crossing indicates a value of less than 70 km/h, the 80 km/h speed limit sign shall be installed a minimum of 100 m in advance of the advisory speed sign.

Offset speed limits (ie where the start and finish of the 80 km/h speed limit do not coincide for each direction of travel) are permitted for speed limits applied in accordance with this Operational Instruction.

5. Approval

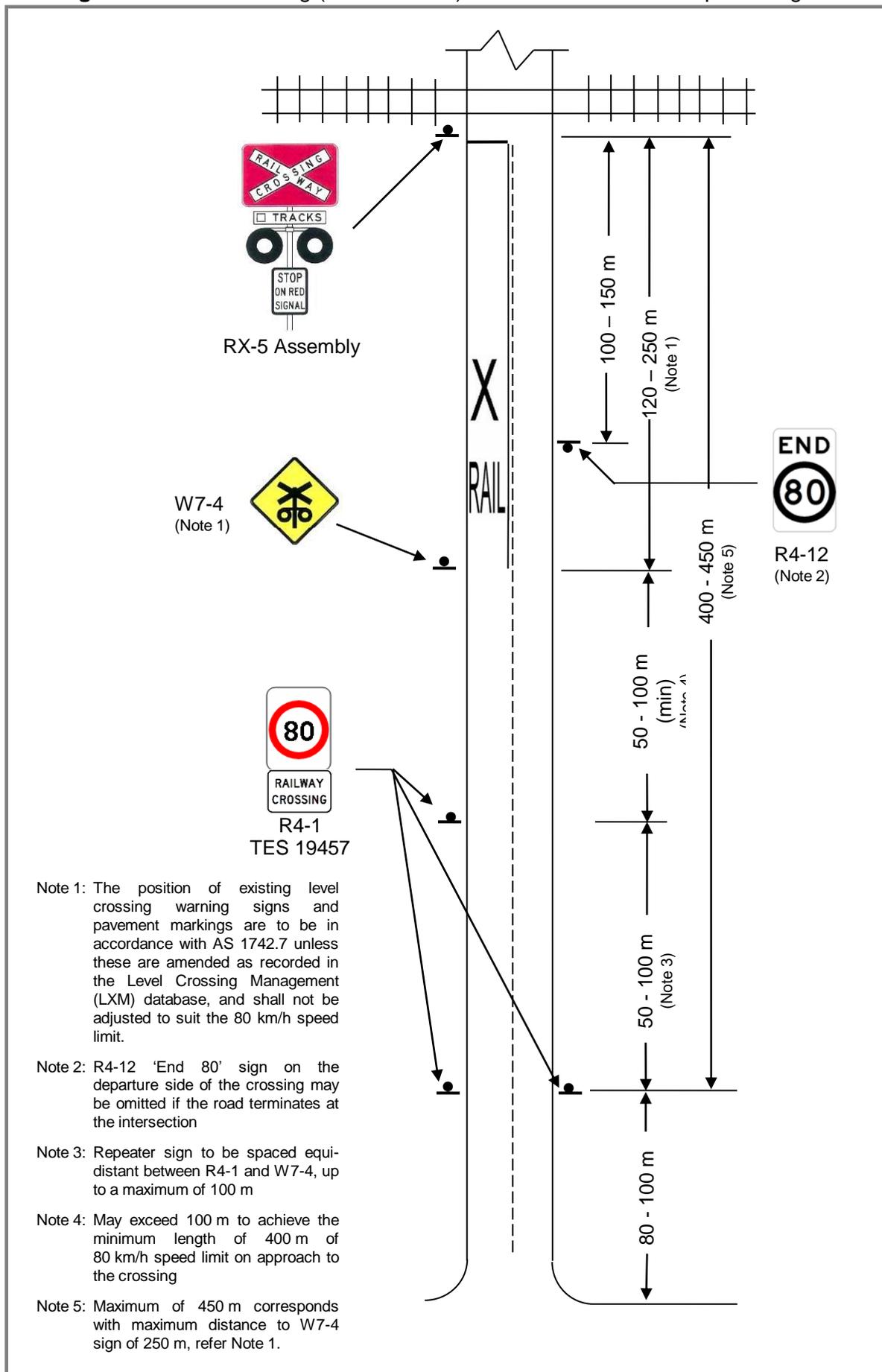
The installation of the speed limit signs in accordance with this Operational Instruction requires the approval of DIT's Executive Director, Road and Marine Services.

Figure 4.1 Level crossing (active control) directly adjacent intersection



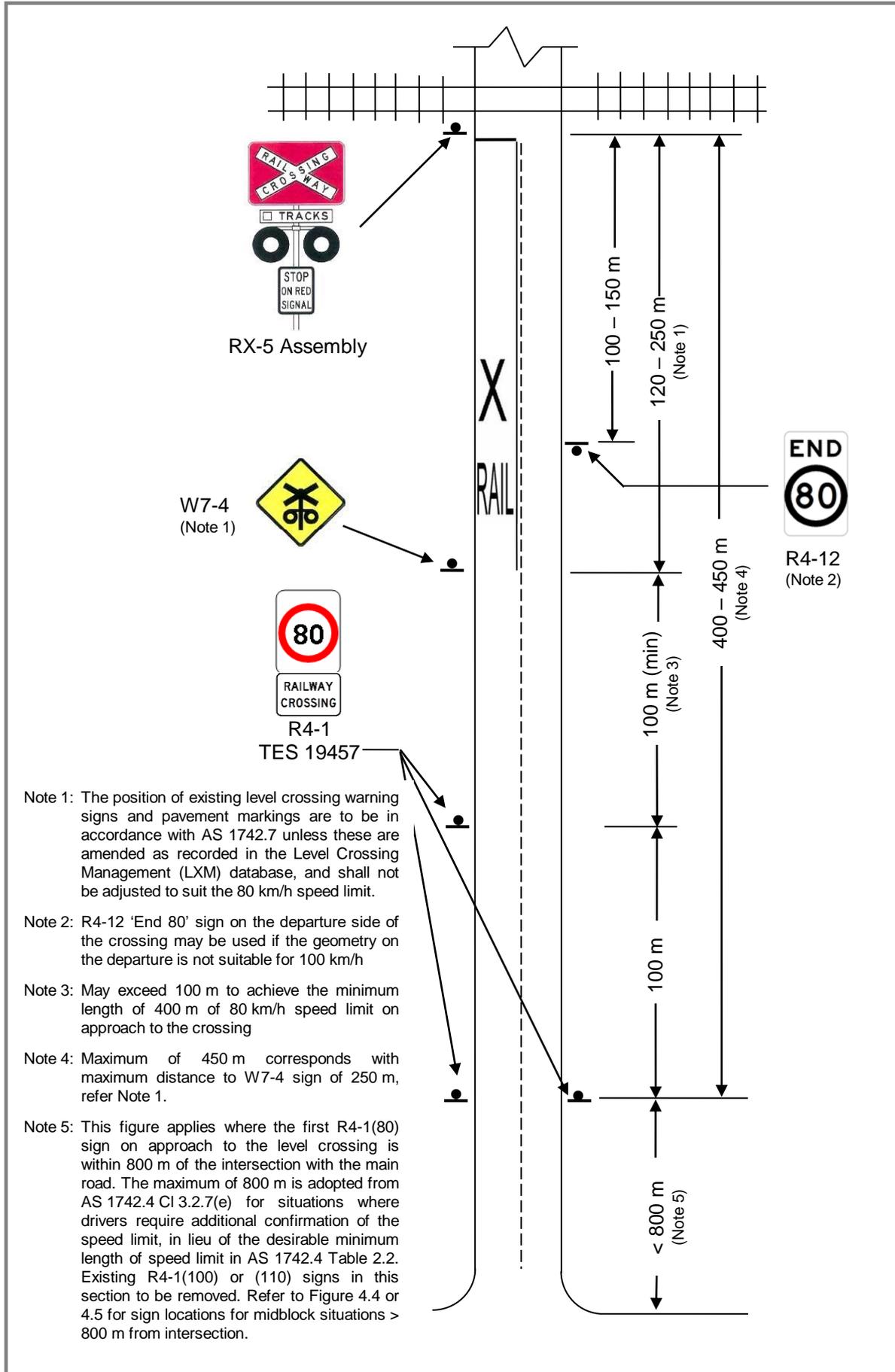
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Figure 4.2 Level crossing (active control) near intersection with repeater signs



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Figure 4.3 Level crossing (active control) within 1.2 km of intersection



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Note 1: The position of existing level crossing warning signs and pavement markings are to be in accordance with AS 1742.7 unless these are amended as recorded in the Level Crossing Management (LXM) database, and shall not be adjusted to suit the 80 km/h speed limit.

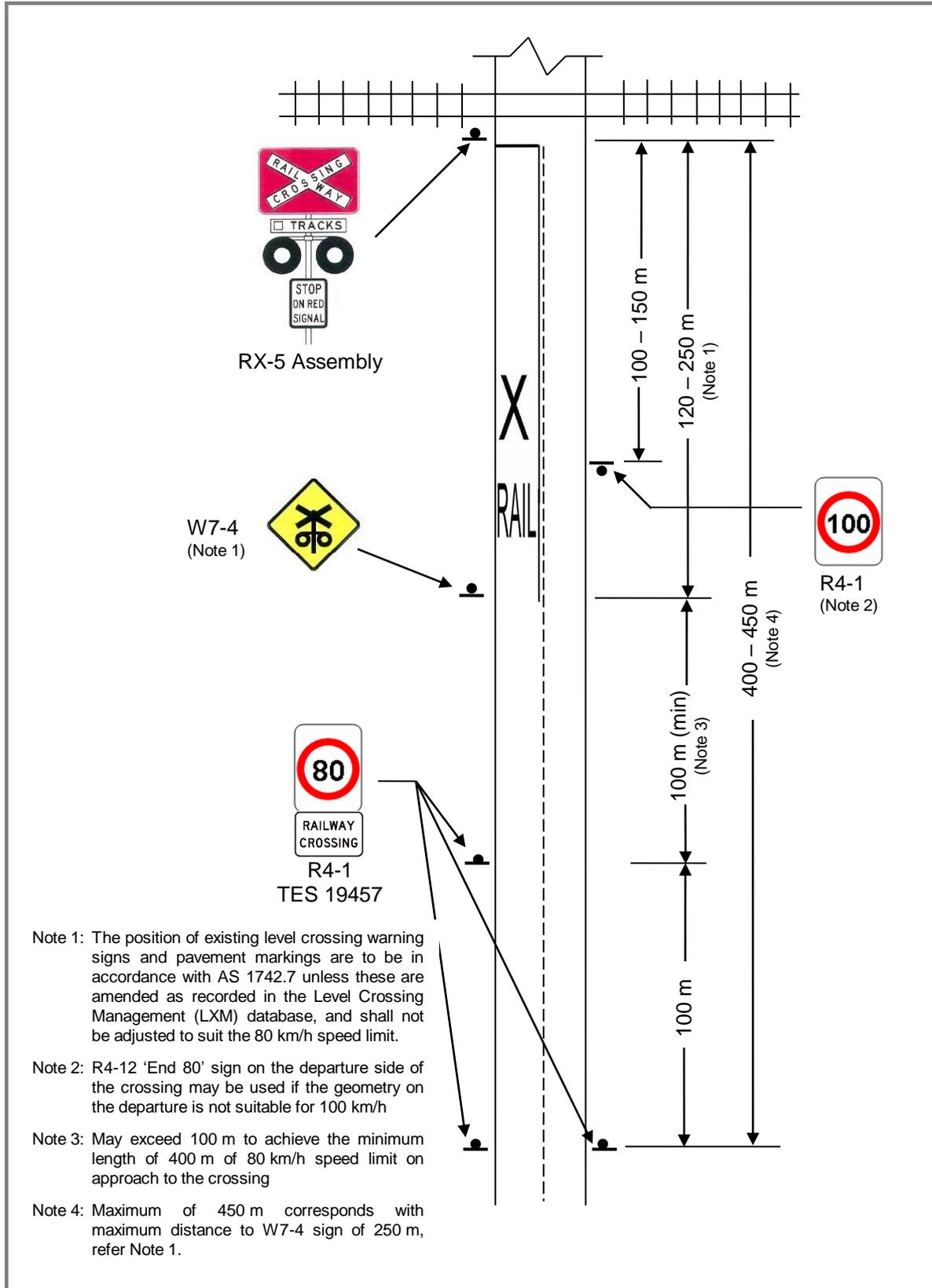
Note 2: R4-12 'End 80' sign on the departure side of the crossing may be used if the geometry on the departure is not suitable for 100 km/h

Note 3: May exceed 100 m to achieve the minimum length of 400 m of 80 km/h speed limit on approach to the crossing

Note 4: Maximum of 450 m corresponds with maximum distance to W7-4 sign of 250 m, refer Note 1.

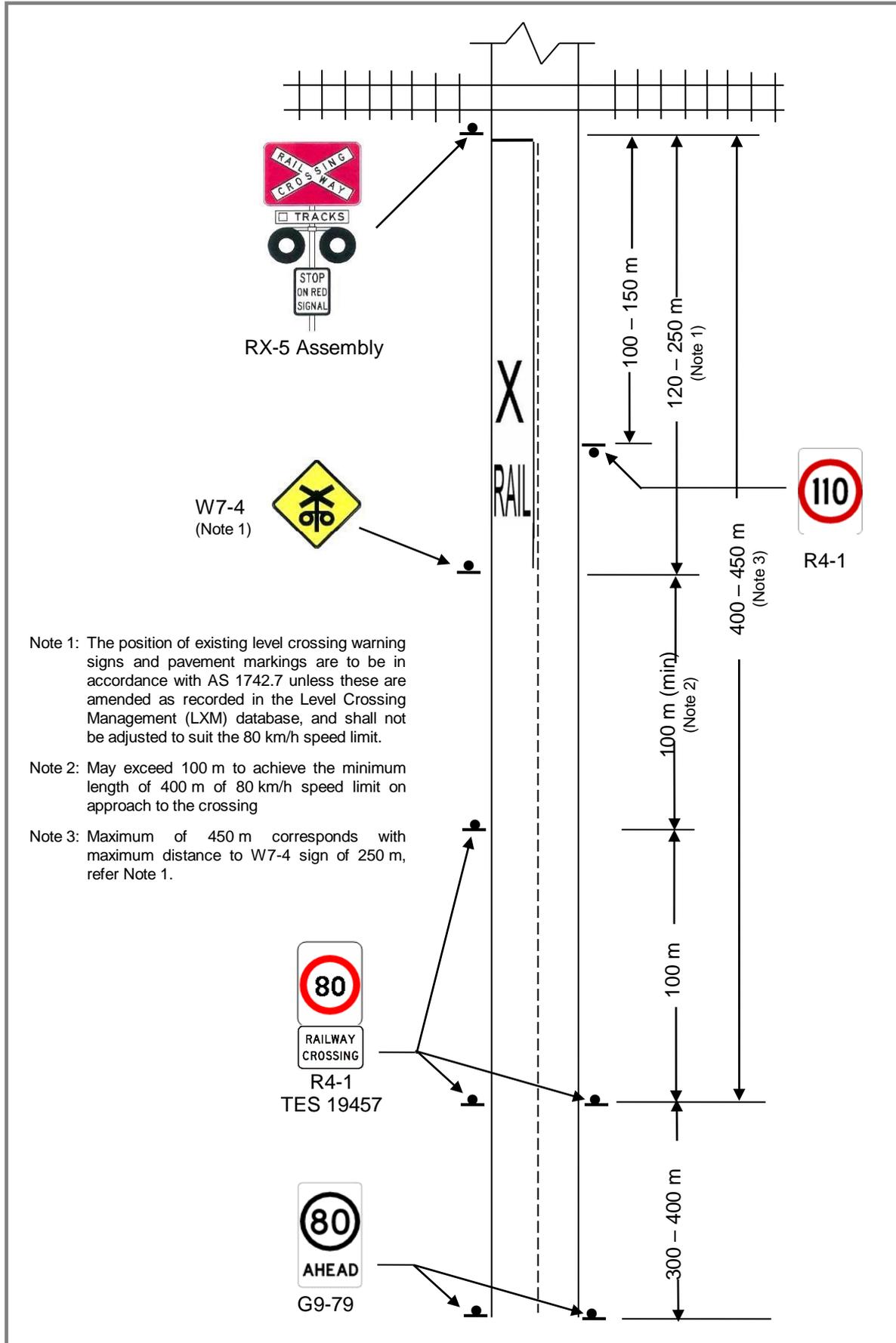
Note 5: This figure applies where the first R4-1(80) sign on approach to the level crossing is within 800 m of the intersection with the main road. The maximum of 800 m is adopted from AS 1742.4 Cl 3.2.7(e) for situations where drivers require additional confirmation of the speed limit, in lieu of the desirable minimum length of speed limit in AS 1742.4 Table 2.2. Existing R4-1(100) or (110) signs in this section to be removed. Refer to Figure 4.4 or 4.5 for sign locations for midblock situations > 800 m from intersection.

Figure 4.4 Level crossing (active control) midblock within 100 km/h speed limit



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Figure 4.5 Level crossing (active control) midblock within 110 km/h speed limit



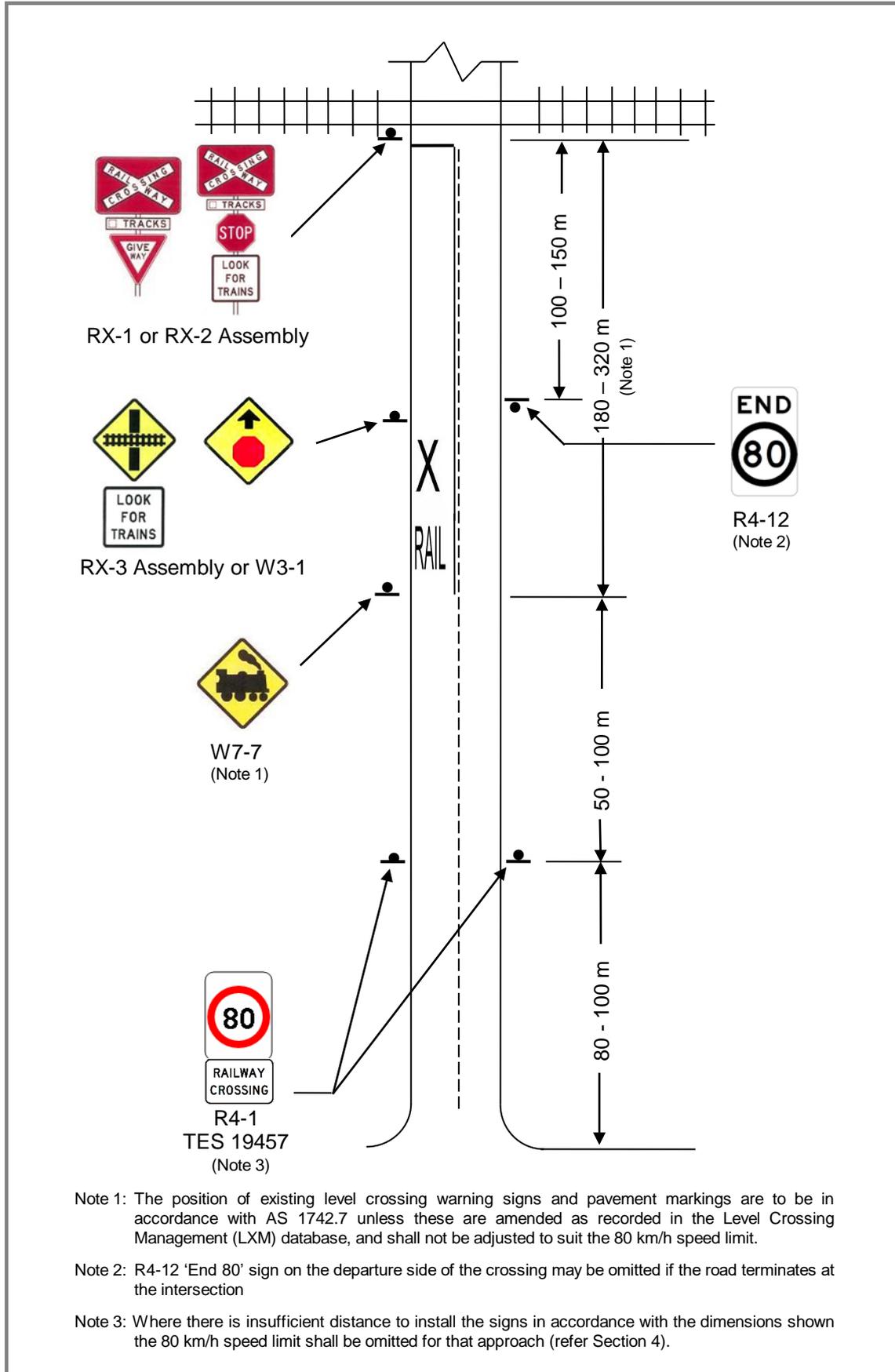
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Note 1: The position of existing level crossing warning signs and pavement markings are to be in accordance with AS 1742.7 unless these are amended as recorded in the Level Crossing Management (LXM) database, and shall not be adjusted to suit the 80 km/h speed limit.

Note 2: May exceed 100 m to achieve the minimum length of 400 m of 80 km/h speed limit on approach to the crossing

Note 3: Maximum of 450 m corresponds with maximum distance to W7-4 sign of 250 m, refer Note 1.

Figure 4.6 Level crossing (passive control) directly adjacent intersection



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Figure 4.7 Level crossing (passive control) near intersection with repeater signs

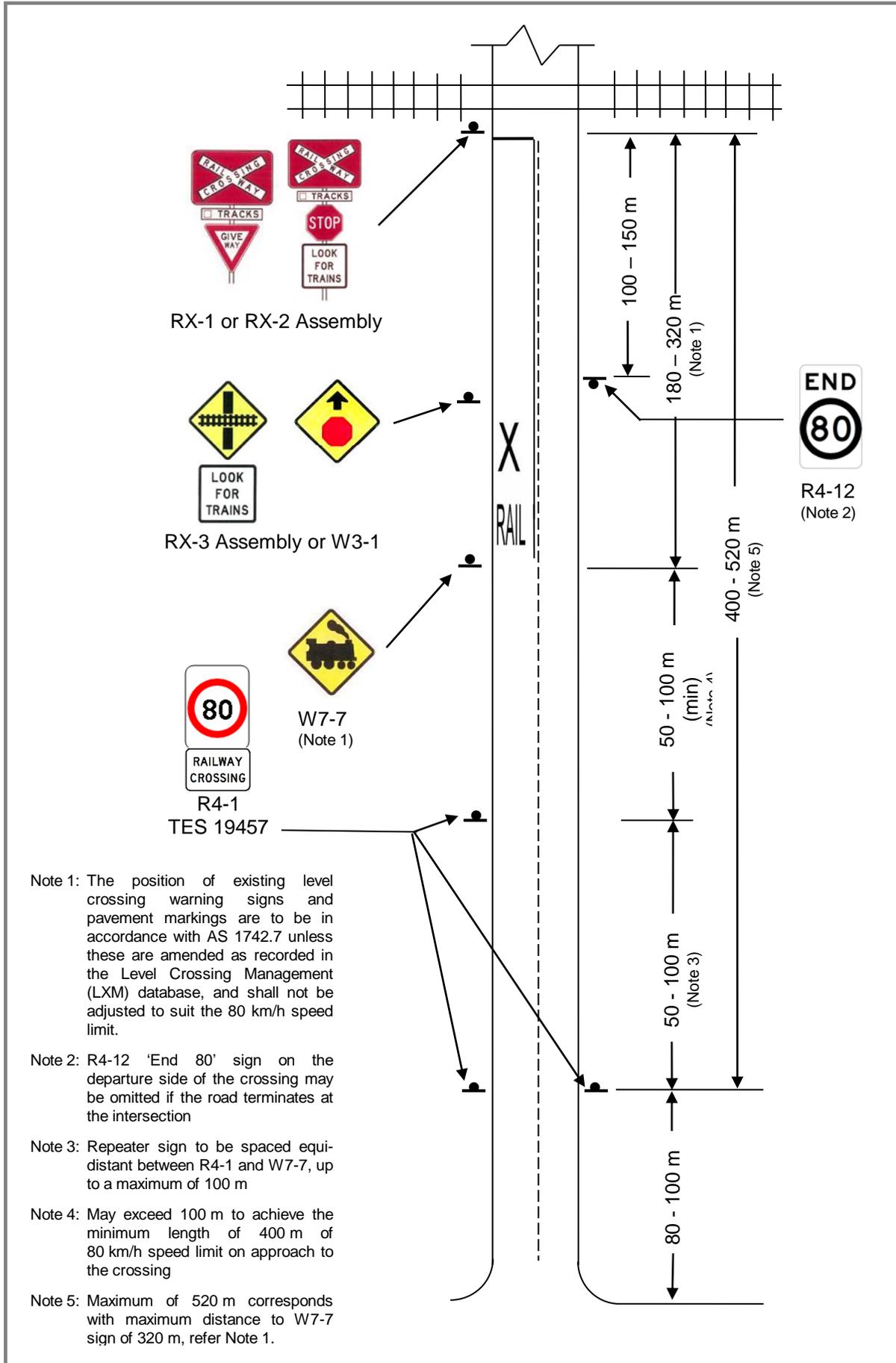


Figure 4.8 Level crossing (passive control) within 1.2 km of intersection

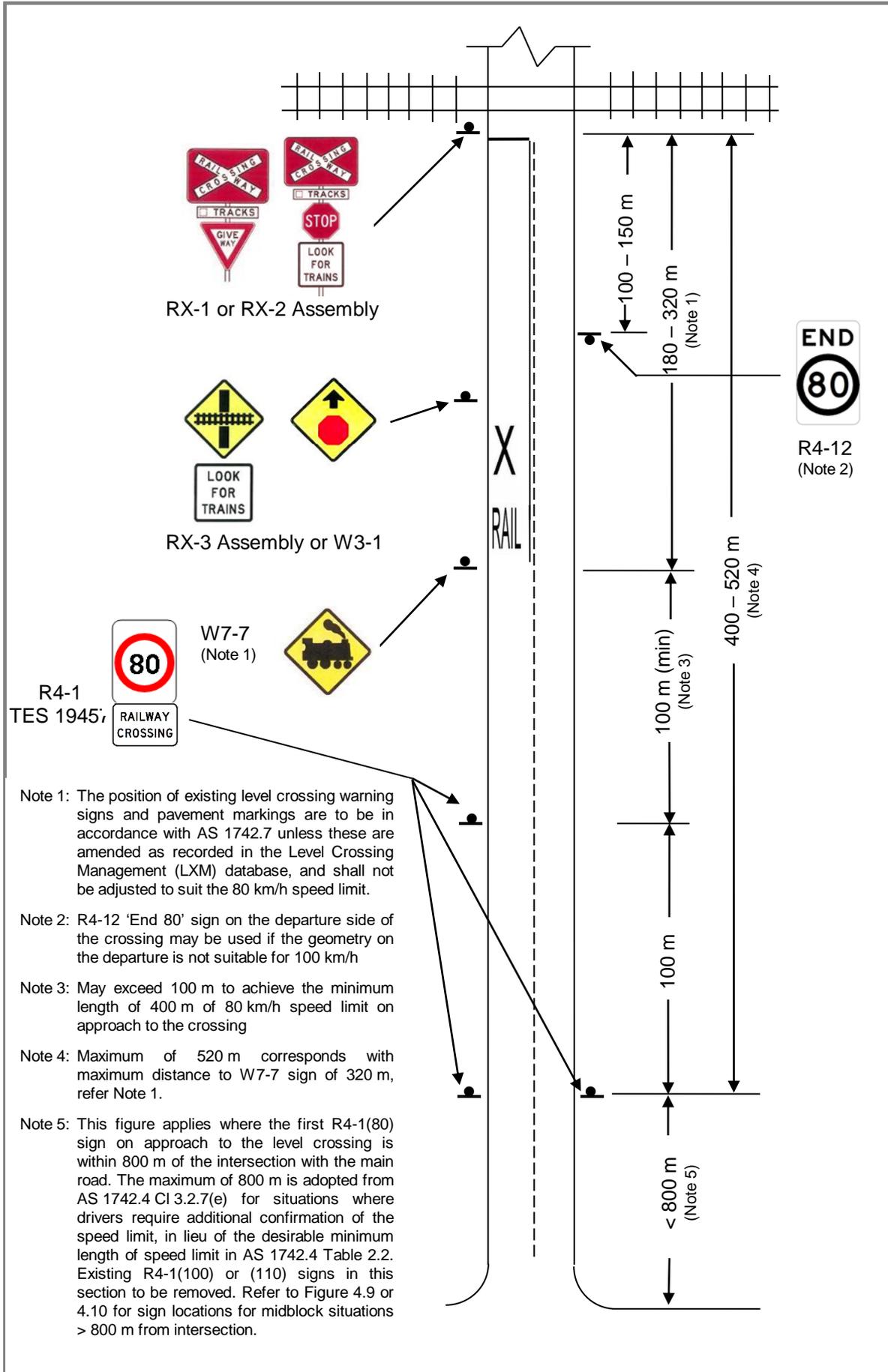
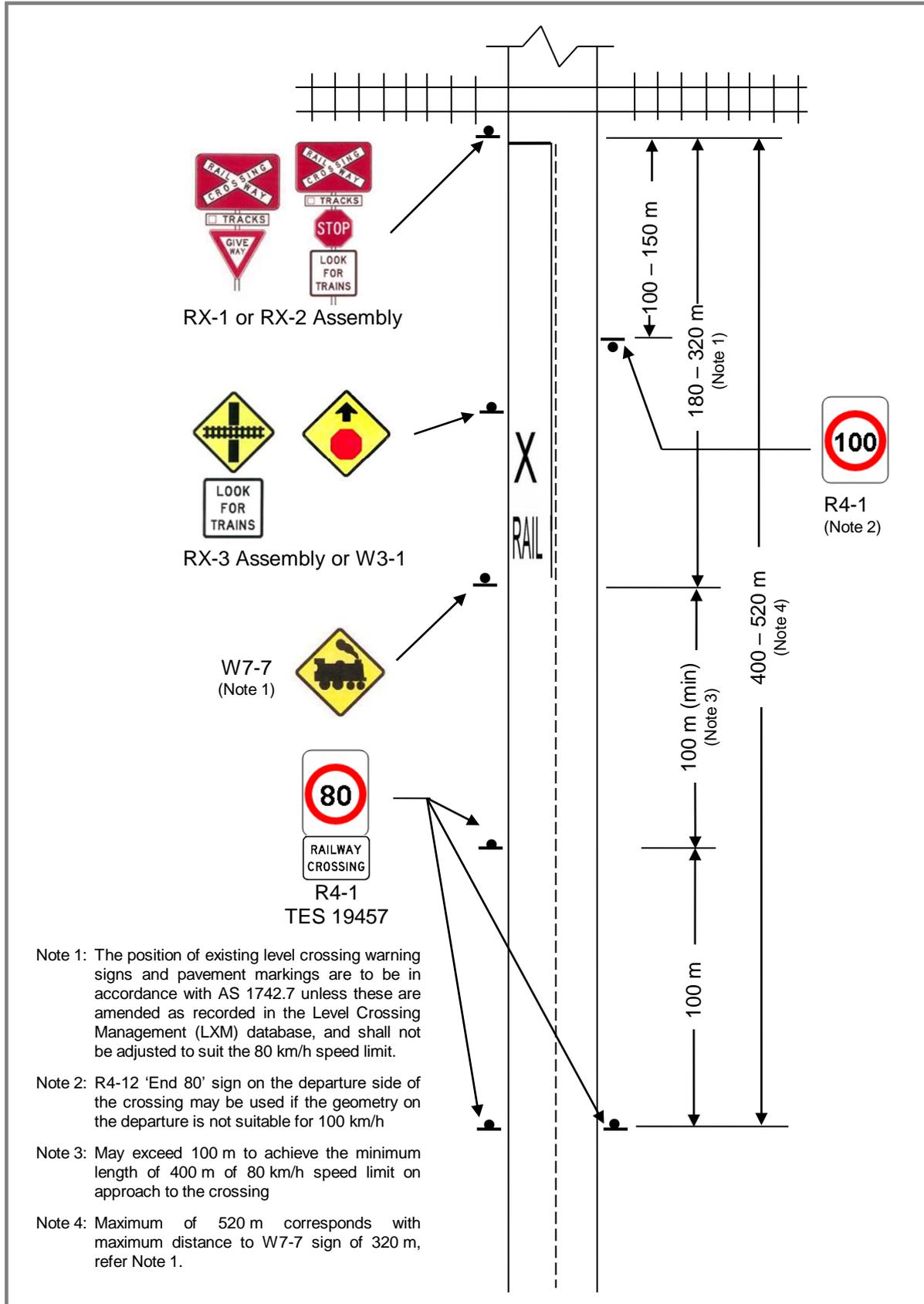
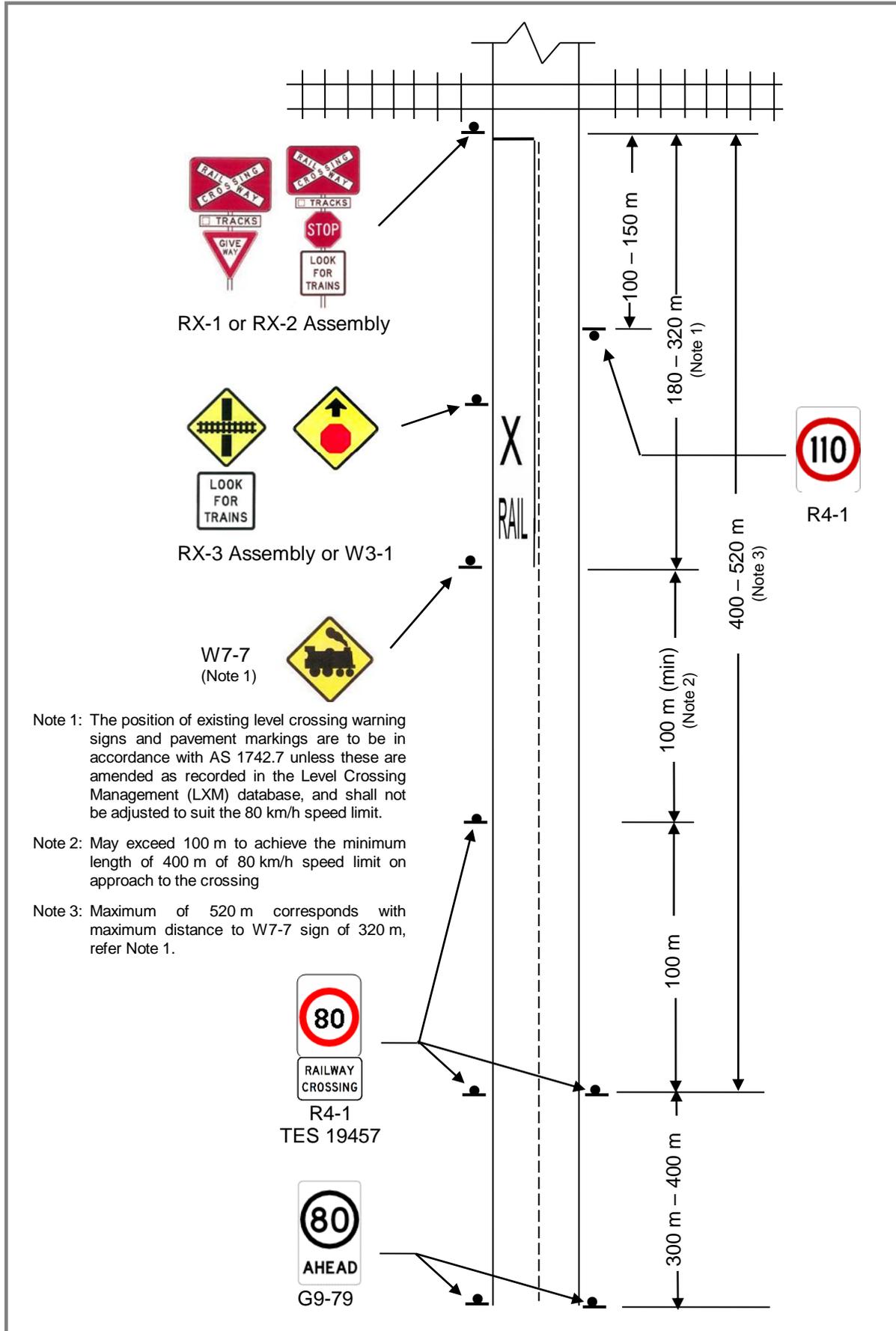


Figure 4.9 Level crossing (passive control) midblock within 100 km/h speed limit



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Figure 4.10 Level crossing (passive control) midblock within 110 km/h speed limit



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