
Engineering Appendix One

Vehicle Crossings

1. ROADING HIERARCHY	2
2. VEHICLE CROSSING PLACES.....	2
3. URBAN / RESIDENTIAL CROSSINGS	3
4. ARTERIAL AND COLLECTOR RURAL ROADS, ALL RURAL RIGHTS OF WAY AND FARM CROSSINGS.....	3
5. LOCAL RURAL ROADS	4
6. GENERAL	4
7. WORK WITHIN COUNCIL ROAD RESERVE	4

1. ROADING HIERARCHY

The roads that make up the Arterial and Collector roads are referenced in Section 21 of the District Plan.

These roads need protection with respect to intensity of frontage development to ensure that the safe passage of vehicles is not compromised.

Crossings on State Highways are to be approved by, and constructed to, New Zealand Transport Agency (NZTA) Standards.

2. VEHICLE CROSSING PLACES

- a) For each land title in urban and greenbelt residential zones, which have frontage to a public road of 30m or less, no more than one vehicle crossing place shall be permitted.
- b) For each land title in urban and greenbelt residential zones, which have frontage of more than 30m to a public road, no more than two vehicle crossing places shall be permitted, provided there is a minimum distance of 7.5m between those crossing places.
- c) The location of the crossing and its use on State Highway shall be to the Transit Planning Policy Manual, Appendix 5B Access Ways Standards and Guidelines and approved by the NZTA.
- d) The distances between any new vehicle crossing point and any road intersection shall be as per the table below.

85th Percentile speed* (Kms/hr)	Separation Distances (m)			
	Vehicle Crossing Spacing from Intersections		Vehicle Crossing Spacing	
	Arterial & Collector	Local	Arterial & Collector	Local
100	200	40	200	105
80	100	40	100	70
70	40	30	55	40
60	50	20	-	-
50	20	12	-	-

- e) Every dwelling, commercial premises or property that requires regular vehicular access over road reserve, shall have a complying crossing before being occupied. Existing crossings shall be upgraded during subdivision. The cost of constructing crossings shall be at the owner's/developer's expense.
- f) Where vehicle crossings are subject to a "change in use", commercial or farm type crossings may be required to be formed.
- g) The width of vehicle crossing shown on the drawings may increase for commercial, industrial and crossings, where vehicles "passing" is required.

3. URBAN / RESIDENTIAL CROSSINGS

Vehicle crossings where kerb and channel and footpath are existing shall be a standard concrete vehicle crossing in accordance with Diagram 1 or Diagram 2 if approved.

Vehicle crossings where kerb and channel only exists shall be a standard concrete vehicle crossing in accordance with Diagram 1 or Diagram 2 if approved.

Vehicle crossings where there is no kerb and channel or footpath shall comprise a sealed vehicle apron with a 4m radius at the road seal edge, and extending back to the boundary (together with culvert pipe if necessary) in accordance with Diagram 3.

Crossings are to be constructed so as not to be impeded in any way or form by street furniture or utilities.

Any disturbed berms on road reserve shall be covered with minimum 100mm topsoil and grassed as soon as possible with a 95% strike rate prior to Council's approval for completion.

Disused crossings shall be reinstated to typical berm and/or footpath/kerb and channel.

4. ARTERIAL AND COLLECTOR RURAL ROADS, ALL RURAL RIGHTS OF WAY AND FARM CROSSINGS

All existing vehicle crossings and future vehicle crossings on major rural roads where the location at the time of subdivision consent application can be defined (e.g. entrance to back lot or right of way, farm service entrance) shall be provided with a vehicle crossing on Diagram 5.

Where farm Co-operative Societies such as Fonterra provide details for crossings, the most onerous standard shall be constructed.

New or existing crossings shall be constructed to the same standard as the existing roads subbase (or a minimum 300mm of compacted basecourse) for 12m from the carriageway to the gate or cattle stop and "keyed" into the carriageway's subbase, treated for weeds and be free draining for 2 metres from the existing and new edge of seals. Extra fill shall replace soft subgrade.

Crossings shall be chip sealed for at least 8m from the edge of road seal. A concrete culvert pipe (minimum 300mm diameter) with headwalls shall be provided under the crossing as determined by the Community Assets Manager, Horowhenua District Council.

All "down slopes" toward the sealed carriageway whether inside or outside the road reserve shall be sealed to an all weather standard for at least 15 metres and have "cut off drains" formed. All crossings are to be of a gradient of not more than 1 in 8 with the appropriate batters on retaining walls to ensure slope stability over road reserve and this gradient shall be continued for three metres inside the property boundary.

Crossings are to be constructed so as not to be impeded in any way or form by street furniture or utilities.

All disturbed berms on road reserve shall be covered with minimum 100mm topsoil and grassed as soon as possible with a 95% strike rate prior to Council's approval for completion.

Disused crossings shall be reinstated to typical berm and/or footpath/kerb and channel.

5. LOCAL RURAL ROADS

In all other rural and greenbelt residential zones, vehicle crossings shall be to the standard shown on Diagram 6 including the general conditions stated above.

All new rural rights of way or vehicle crossings for more than 6 dwellings shall include widening the sealed carriageway on the opposite side of the road to provide a "standing area" with a 1 in 10 taper to 2.5m extra width for 20m then another 1 in 10 taper giving a total length of 70m. To achieve this, drains and fences may need to be relocated. This work will be done at the lot owners cost and to Council standards.

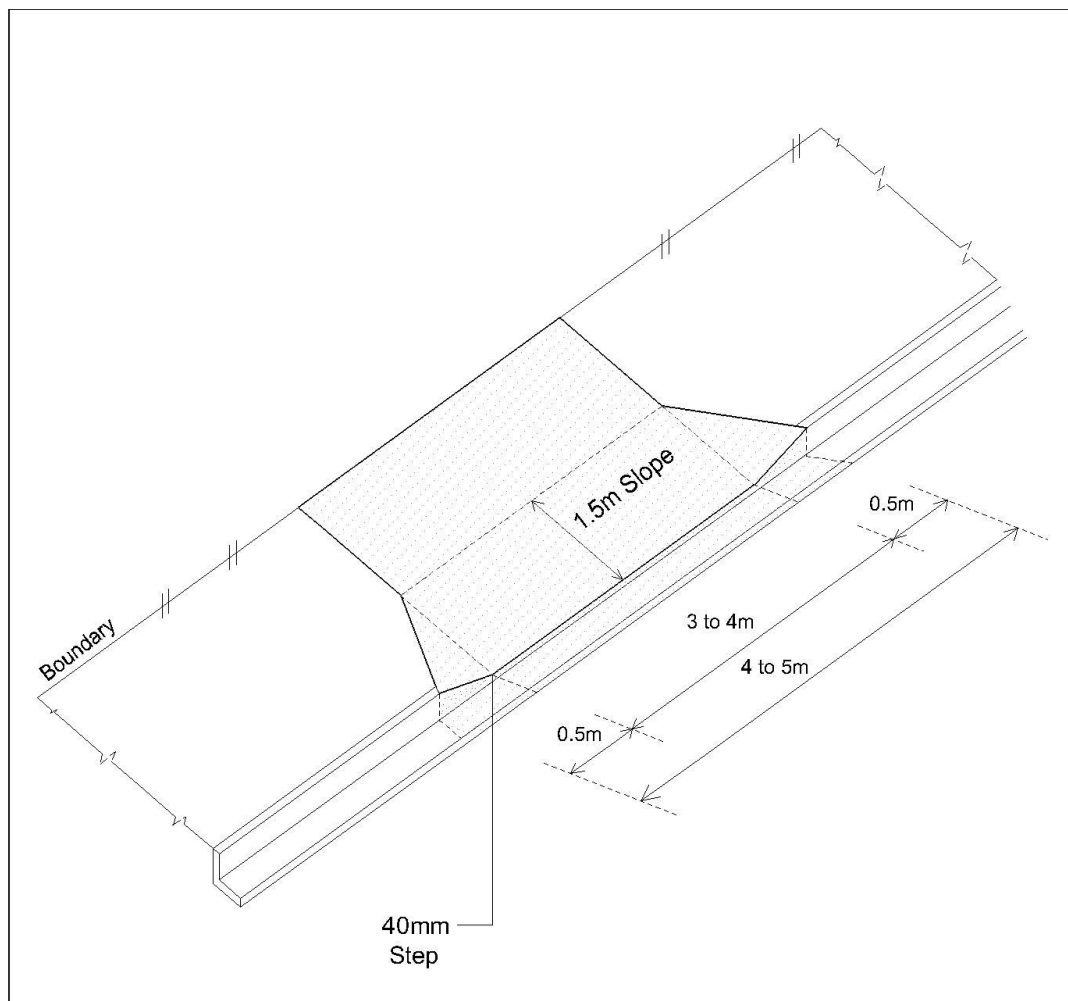
The widening shall be constructed to the same standard as the existing roads subbase (or a minimum 300mm of compacted basecourse) and "keyed" into the carriageway's subbase, treated for weeds and be free draining with shoulders. Extra fill shall replace soft subgrade.

6. GENERAL

- a) The vehicle crossing standards are to be applied at the time of building and/or subdivision consent. In the case of building consents, a vehicle crossing/damage deposit may be payable to Council for all consents in relation to building, demolition removal and relocation of buildings.
- b) Where soft ground conditions are encountered under any crossing formation, additional excavation and placement of compacted fill shall be done to ensure the life of the crossing is at least equivalent to the design life of the adjacent road.
- c) Damaged and substandard surfaces immediately adjacent to any new crossing must be repaired during construction.
- d) Immediately prior (within 48 hours) to any form of surfacing, all of the unsealed shoulder and all of the crossing to be sealed, shall be sprayed with an approved, **ground sterilising weed killer spread** at rates strictly in accordance with the manufacturer's instructions and at the upper end of the rate for "roadsides". A suitable product could be Nufarm's Nu-Terb 900 WDG, containing 900g/kg terbuthylazine with Roundup Transorb to achieve knockdown and control of existing weed growth.
- e) No newly formed or upgraded crossing shall create ponding within 2m of the compacted fill or finished surfacing.
- f) No solid steel plate crossing places are permitted.
- g) Kerb ramps allow the safe and easy movement of wheeled trolleys and prams, as well as wheelchairs.
- h) Ongoing maintenance of vehicle crossing places is the responsibility of the landowner(s). However, from time to time when Council have programmed works such as reseals or footpath renewals, vehicle crossings may be upgraded.

7. WORK WITHIN COUNCIL ROAD RESERVE

For construction of all vehicle crossings within or on Council and NZTA roads, a Corridor Access Request (CAR) shall be applied for. These applications are separate to any other consents issued and a Work Access Permit (WAP) will be issued to work within the roading network if approved. For applications on State Highways, requests should be sent to NZTA.

Diagram 1: Standard Residential Crossing**Notes for Diagram 1:**

- Existing footpath is to be saw cut and replaced with 100mm thick concrete, from the kerb to the property boundary.
- Residential concrete to be 17.5MPa and commercial/industrial concrete to be 20MPa.
- Rights of way and commercial/industrial crossings to be 150mm thick and reinforced with HRC 665 mesh or equivalent and four D12 rods through the channel.
- Broom finished.

Diagram 2: Alternative Residential Kerb Crossing Details

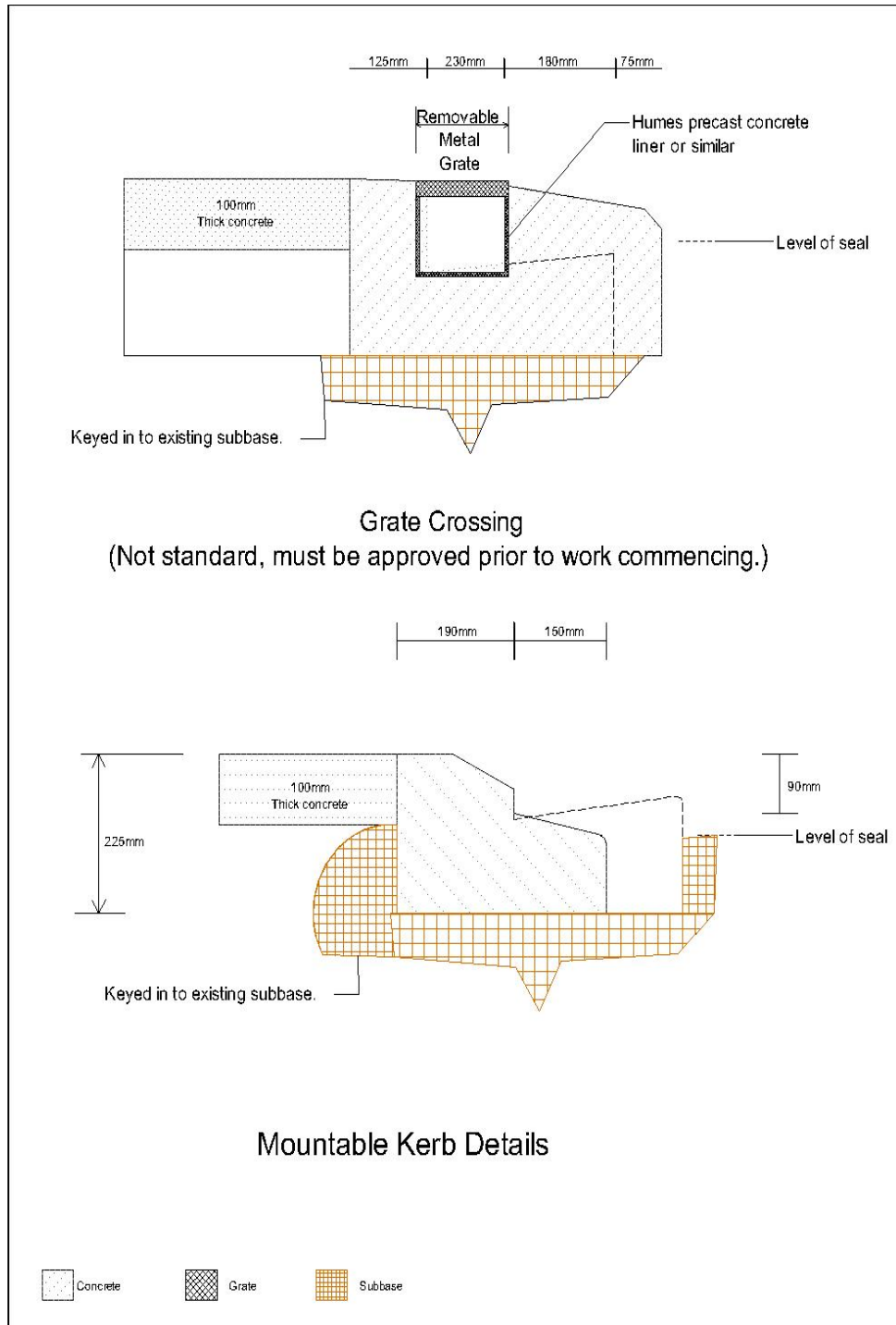
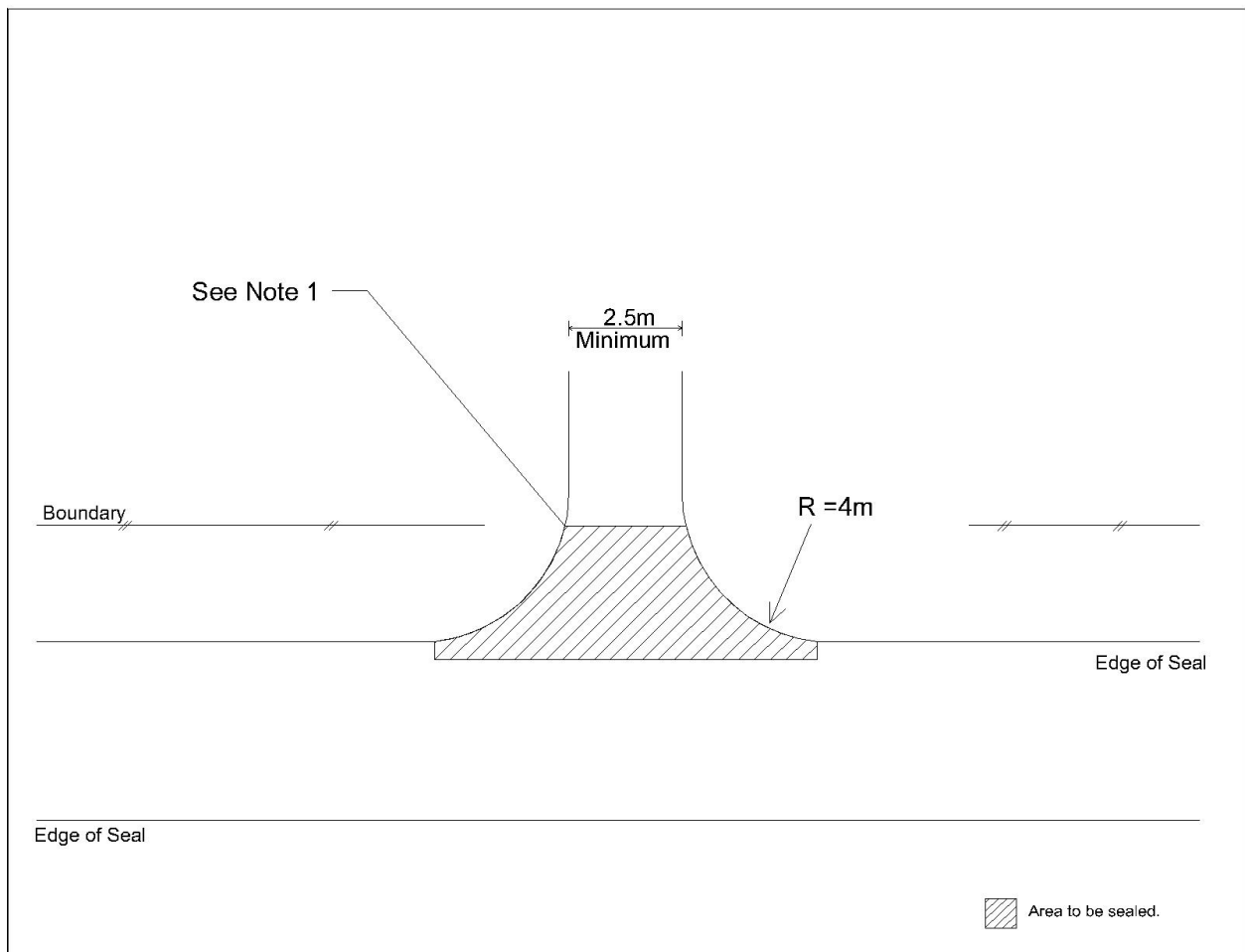
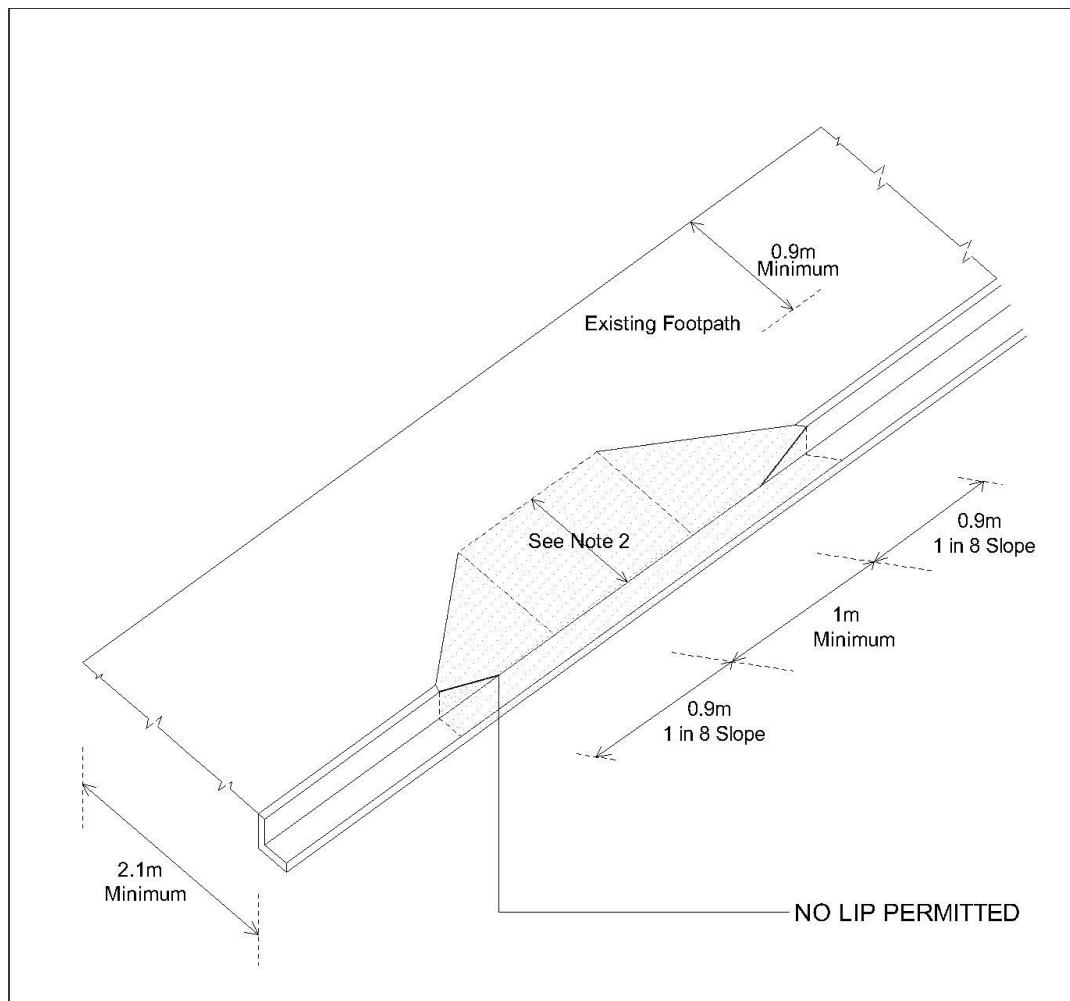


Diagram 3: Residential Crossings, Grass Berm, No Footpath**Notes for Diagram 3:**

- Basecourse to be built to a minimum of 200mm wider than the sealed area.
- If required 300mm minimum diameter culvert with headwall, positioned at least 2m from edge of seal.
- Crossings shall be constructed to the same standard as the existing roads subbase and keyed into the subbase, treated for weeds prior to sealing and be free draining for 2m from the edge of seal.
- Two coat of grade 4 chip seal. (For slopes greater than 1 in 15, concrete or asphalt surfacing may be required.)
- The sealed area is to be from the edge of seal to the boundary.

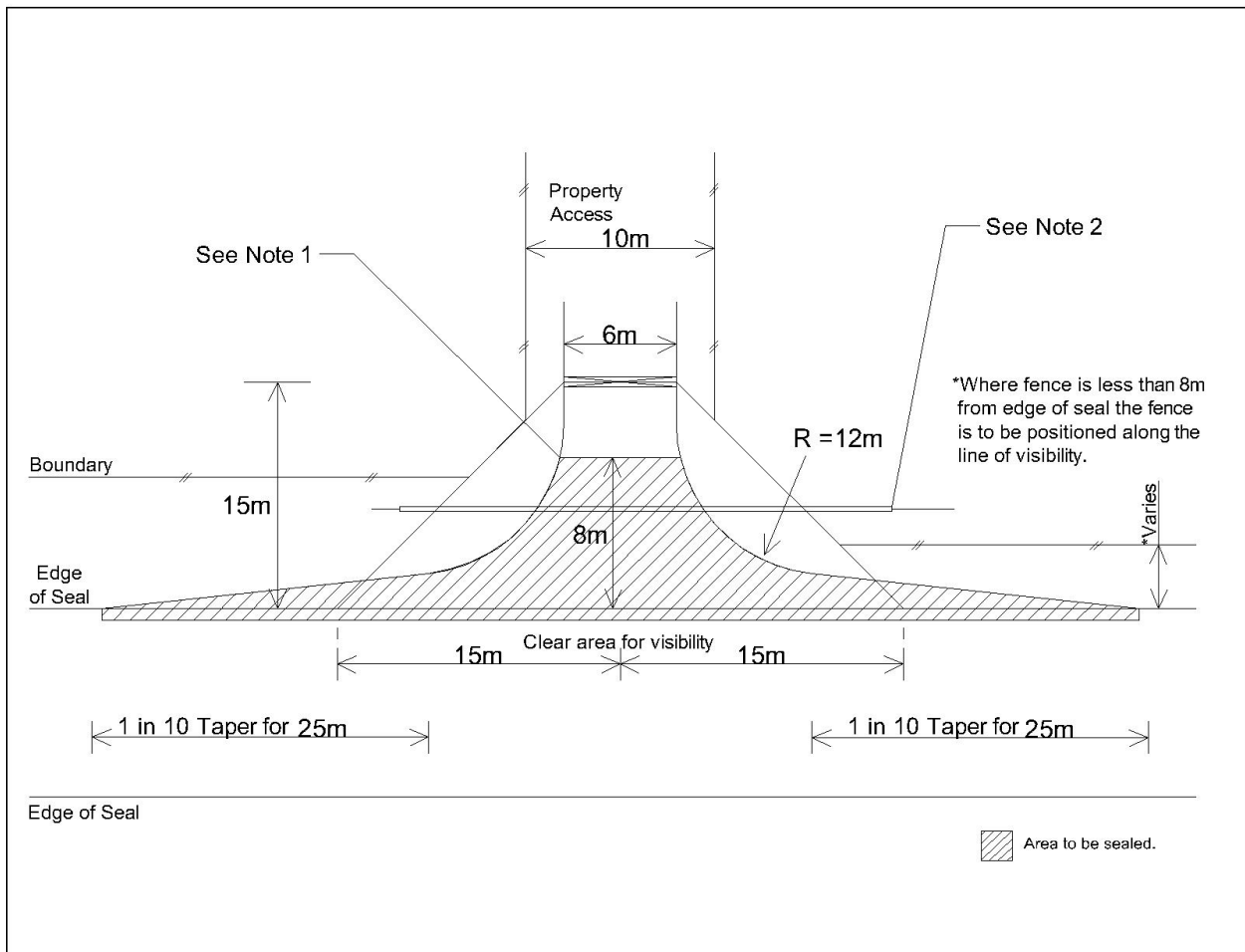
Diagram 4: Pedestrian Ramps



Notes for Diagram 4:

- a) A slope no greater than 1 in 8.
- b) A yellow tactile pad must be used.

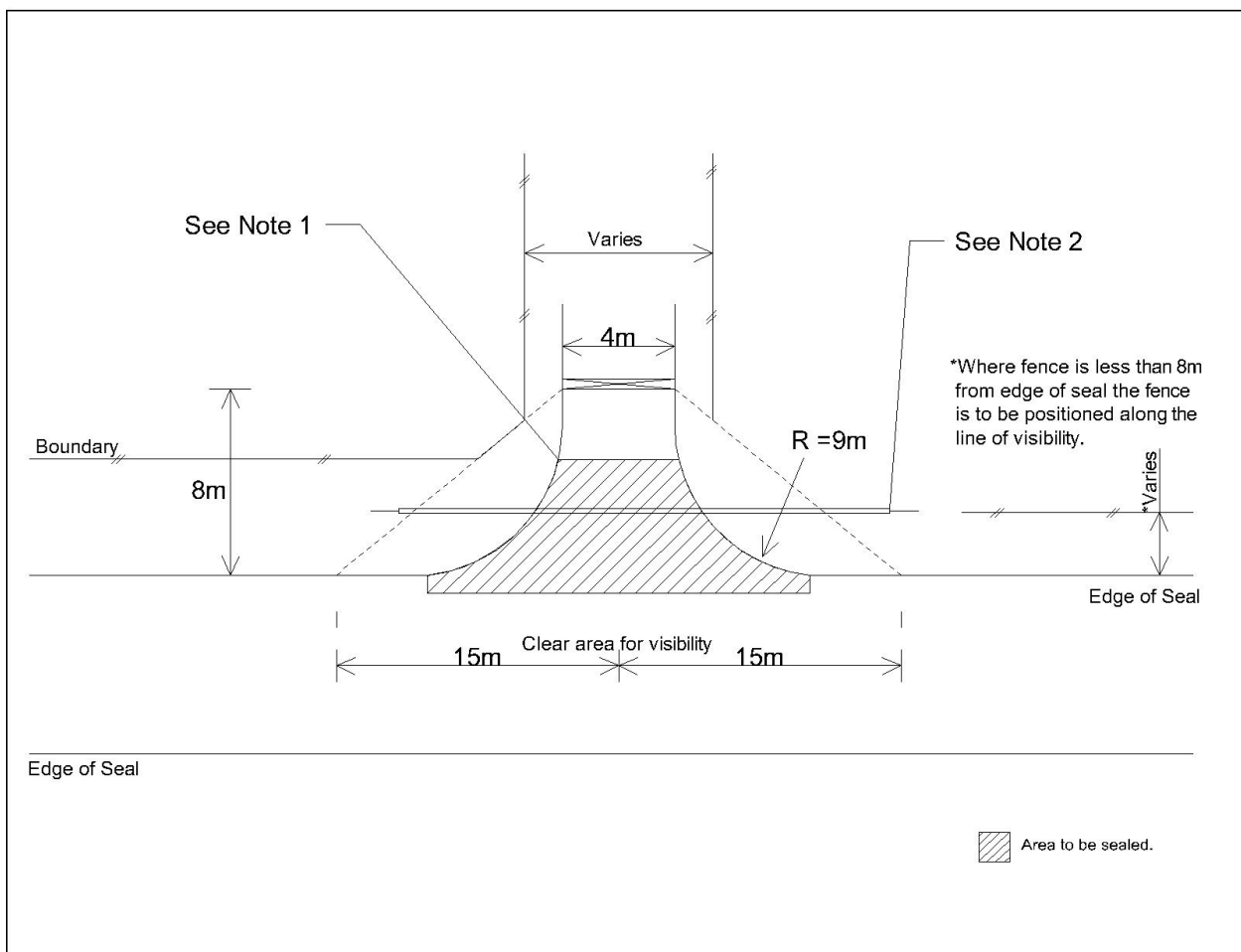
Drawing 5: Rural Crossings for Rights of Way, Farms, Arterial and Collector Roads



Notes for Diagram 5:

- a) Basecourse to be built to a minimum of 200mm wider than the sealed area.
- b) If required, a 300mm minimum diameter culvert with headwall, positioned at least 4m from the existing edge of seal.
- c) Crossings shall be constructed to the same standard as the existing roads subbase and keyed into the subbase, or a minimum of 200mm basecourse, treated for weeds prior to sealing and be free draining for 2m from the edge of seal.
- d) Two coat grade 4 chip seal.
- e) The gate shall be no less than 15m from edge of seal.

Diagram 6: Rural Crossings



Notes for Diagram 6:

- Basecourse to be built to a minimum of 200mm wider than the seal area.
- If required, a 300mm minimum diameter culvert with headwall, positioned at least 2m from the existing edge of seal.
- Crossings shall be constructed to the same standard as the existing roads subbase and keyed into the subbase, treated for weeds prior to sealing and be free draining for 2m from the edge of the seal.
- Two coat grade 4 chip seal.
- The gate shall be no less than 8m from the edge of seal.
- The sealed area is to be from the edge of seal to the boundary.