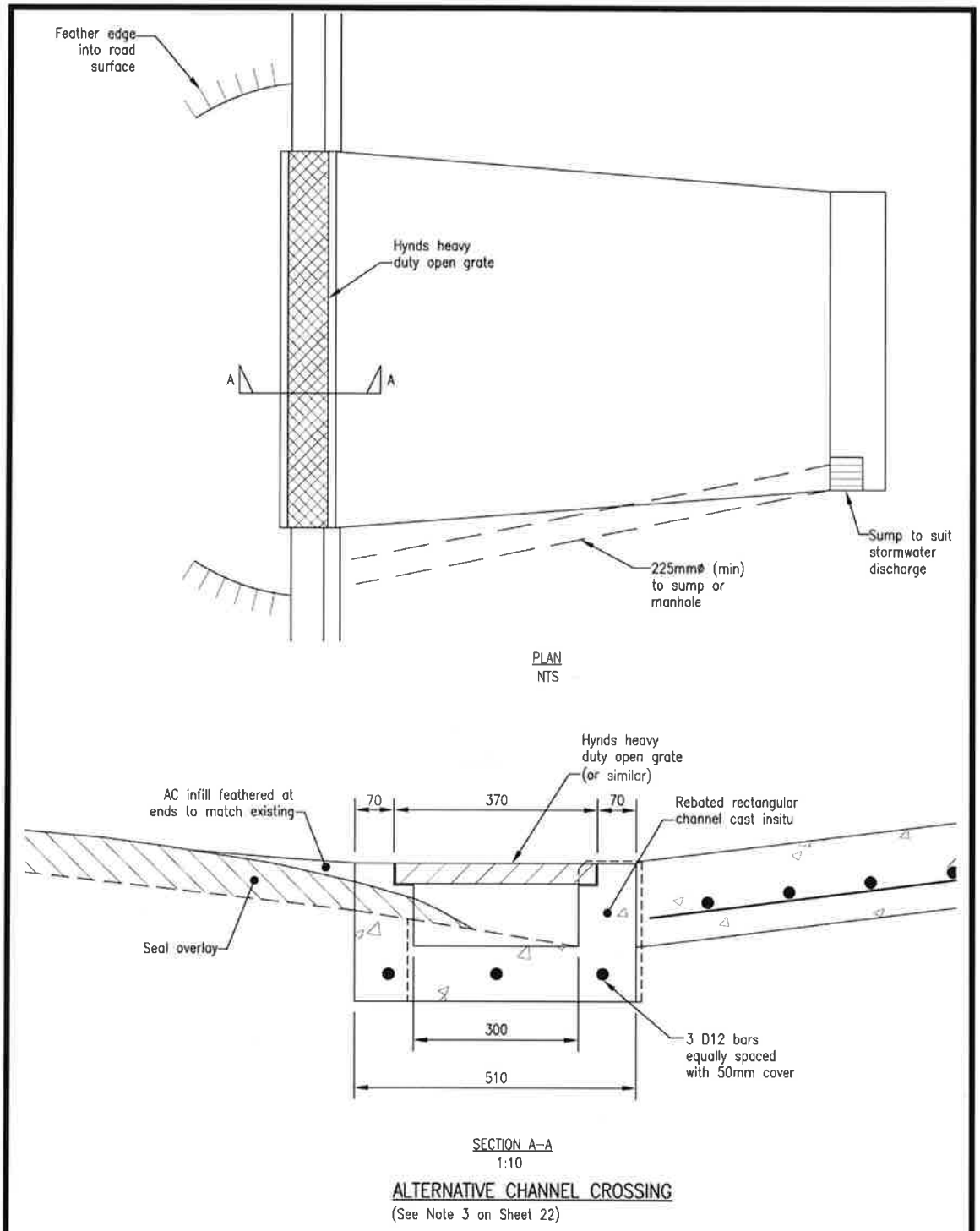
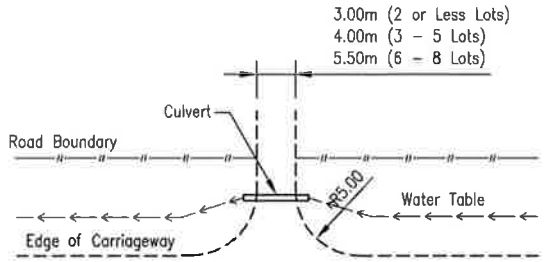
Sheet 20 Alternative Vehicle Crossing



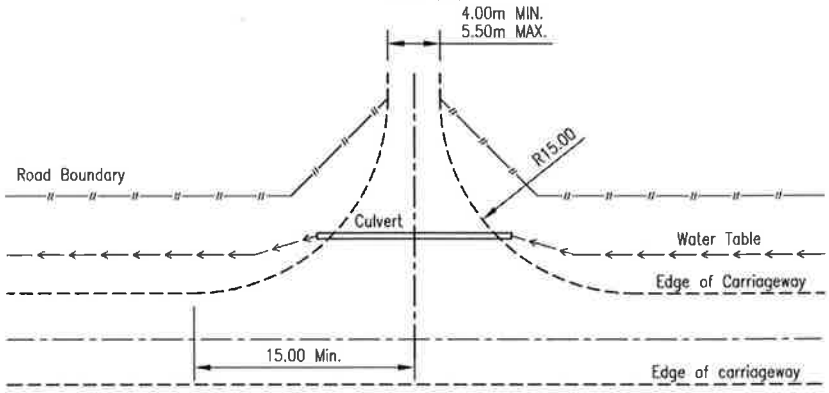
Note this crossing may only be installed with specific written approval from WDC

Sheet 21 Vehicle Crossing - Rural



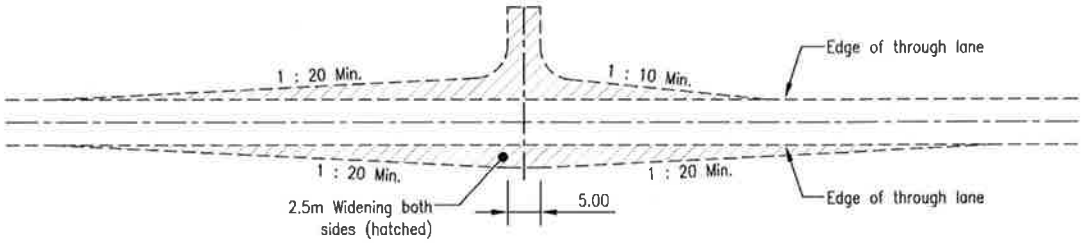
TYPE 1A – LIGHT VEHICLES

1:500 (A4)



TYPE 1B – HEAVY VEHICLE

1:500 (A4)



TYPE 2 – CROSSING WITH LOCAL WIDENING

1:1000 (A4)

NOTES:

1. Refer to Sheet 22 and Section 3.4.10.3.
2. Appies to Environments Living 3, Countryside and Coastal Countryside.
3. For Types 3 and 4 refer to Section 3.4.10.3

VEHICLE CROSSING – RURAL	Date: APRIL 2010
	Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: AS SHOWN
	SHEET No. 21

WDC 8036

Sheet 22 Vehicle Crossing Notes

RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CROSSINGS

1. All concrete to be 30 MPa strength at 28 days.
2. Crossings to be constructed to match existing footpath and channel levels and be graded to give sufficient clearance to the underside of all vehicles.
3. The alternative channel crossing detailed on Sheet 20 may only be used with specific approval. It is for use only where thick overlay of existing seal precludes the standard option.
4. If no footpath, allowance shall be made for such with a 3% crossfall to the kerb.
5. Kerb transitions to be constructed of similar materials to the adjacent kerb or cast insitu concrete. See Sheet 12 for details.
6. Where the footpath or adjacent property level is below the channel level, ramp the crossing up from the channel to control surface water while maintaining vehicle clearance. A freeboard of 200mm above the channel is required to contain stormwater within the road.
7. Gradient of crossing not to exceed 12.5% (1 in 8)
8. Crossings for all private ways shall be commercial grade to Sheet 19.
9. Edges of footpath and back of channel to be saw cut.
10. All crossings require council inspection prior to pouring concrete.
11. If the edge of the crossing is within 1m of a crack or joint in an existing footpath then that section of footpath shall be replaced.
12. Commercial and industrial channels to be reinforced with an extension of the 668 mesh.
13. Where a street sump is located within the proposed crossing, the sump shall be relocated to the side of the crossing and reconnected to the council storm water system.
14. Refer to Sheet 16 for vehicle crossing over a drainage swale.
15. Stormwater kerb connections generally not permitted. (See Section 4.8.1.5).
16. Splay width may need to be increased in some circumstances to accommodate an 11.5m rigid truck.
17. For commercial crossings provide a 2m strip of hot laid AC over full width including splays.

RURAL CROSSINGS

1. Pipes are to be RCRRJ Class "4" (formally Class "Z").
2. Pipes are to be adequate for the upstream catchment, but not less than 300mm dia or the downstream culvert and shall be constructed to the correct line and level to maintain drainage paths.
3. Provide concrete or stonework headwalls and/or concrete aprons. Pipe ends are to extend beyond the edge of the crossing a distance that allows the gradient to invert to be no steeper than IV:3H
4. Gateways shall be located to allow vehicle parking clear of the road shoulder.
5. Minimum sight distance requirements for entrance crossings are to comply with Sheet 14.
6. All crossings adjoining sealed public roads are to be sealed or concrete, to the property boundary.
7. Concrete access ways shall start at least 0.5m outside of the existing edge of seal or 0.5m outside of the carriageway width required by the standard whichever is the further.
8. Concrete entrance crossings are to be 125mm of 30MPa concrete for light vehicle access. Heavy vehicle crossings shall be 150mm thick of 30MPa concrete reinforced with 665 mesh unless specifically designed.
9. Unsealed crossings shall comprise not less than 125mm GAP 65 and 75mm GAP40 or 200mm GAP 40 (compacted depths).
10. For application of Type 2 crossing refer to Section 3.4.10.3.
11. Where local widening is required (Types 2 and 3) the tapers shall be sealed.

VEHICLE CROSSING NOTES (FOR RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND RURAL USE)	Date: APRIL 2010 Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: AS SHOWN SHEET No. 22

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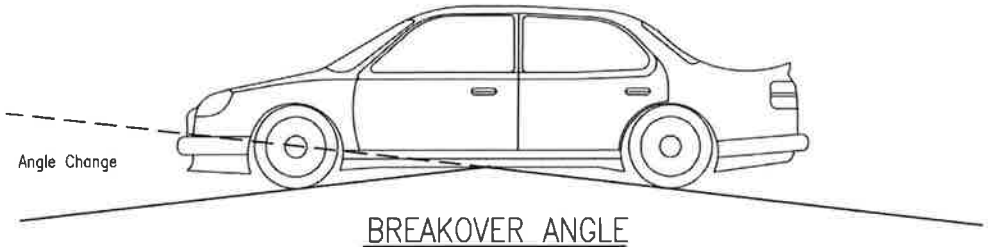
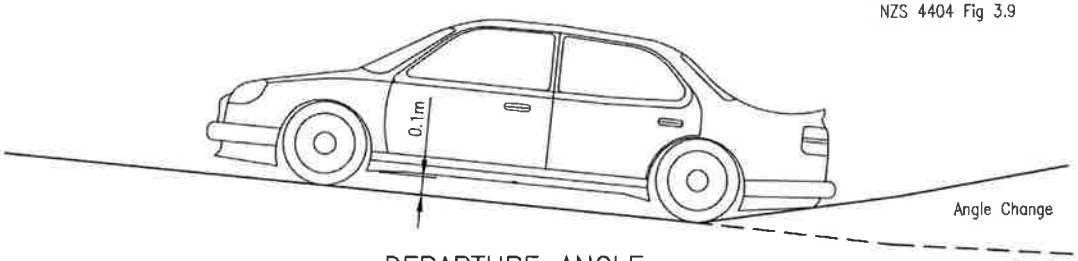
Sheet 23 Vehicle Crossing – Max Graded Profiles For Urban/Rural



BREAKOVER ANGLE

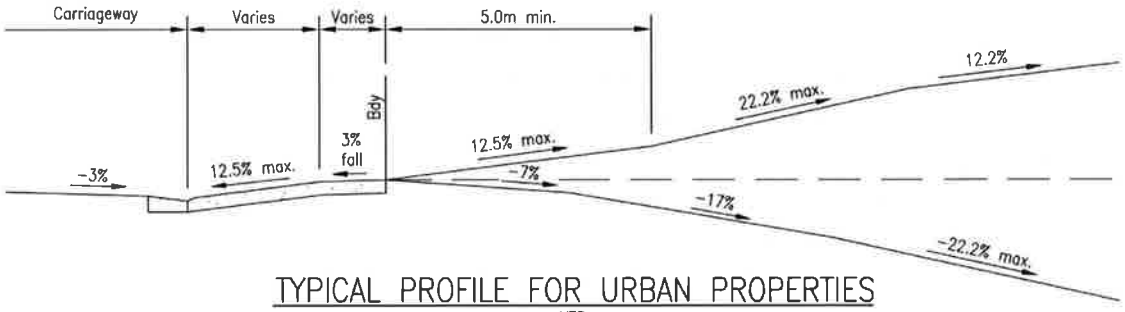
Maximum change of grade 10% (algebraic)
(5.7 degrees)

Refer also to
NZS 4404 Fig 3.9

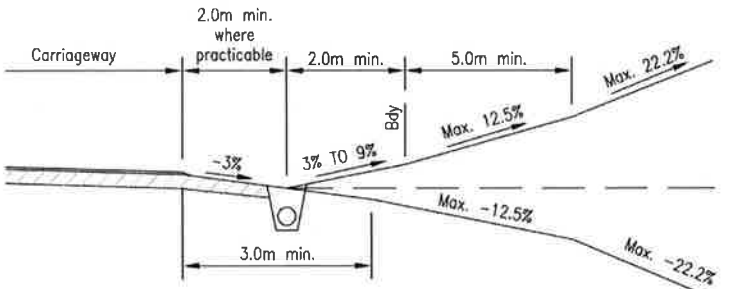


DEPARTURE ANGLE

Maximum change of grade 17% (algebraic)
(9.65 degrees)



TYPICAL PROFILE FOR URBAN PROPERTIES
NTS



TYPICAL PROFILE FOR RURAL PROPERTIES
NTS

NOTES:
1. Maximum grade changes to occur at not less than 2.0m intervals.
2. Based on 90 percentile car as at 1990 with minimum ground clearance of 100mm.

VEHICLE CROSSING – MAXIMUM GRADED PROFILES FOR URBAN/ RURAL PROPERTIES	Date: APRIL 2010
	Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: NTS
	SHEET No. 23

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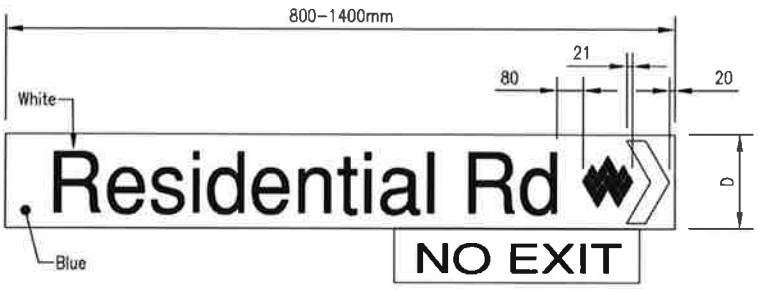
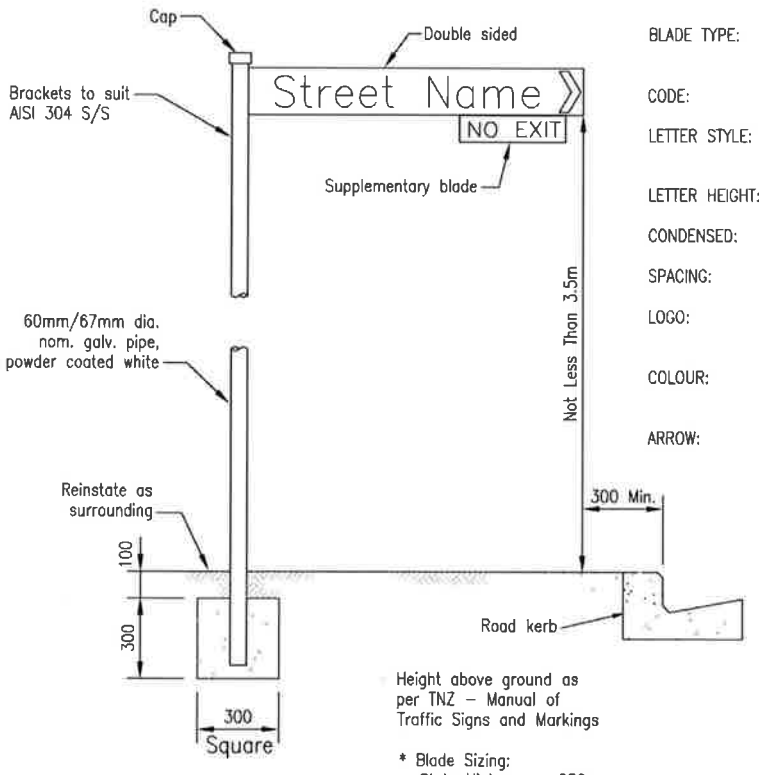
Sheet 24 Street Sign for Public Roads



BLADE SIZE:	D: 150mm/200mm/250mm *
BLADE LENGTH:	a) Single Sided shall not be less than 800mm nor greater than 1400mm. If greater than 1100mm, blade shall be mid–mounted. b) Double Sided shall not be less than 800mm nor greater than 1100 and shall be end mounted
BLADE TYPE:	"I" Section Aluminium Extrusion
CODE:	SNB 150mm/200mm/250mm
LETTER STYLE:	Transport–Upper & lower case
LETTER HEIGHT:	100mm/150mm/200mm
CONDENSED:	To Suit
SPACING:	To Suit
LOGO:	Whangarei District Council Logo
COLOUR:	High Intensity White Letters on Blue background
ARROW:	120° 150mm blade –40mm wide 200mm blade –45mm wide 250mm blade –50mm wide



Height above ground as per TNZ – Manual of Traffic Signs and Markings

* Blade Sizing:
State Highways:– 250mm
District arterial roads:– 200mm
Residential Areas:– 150mm

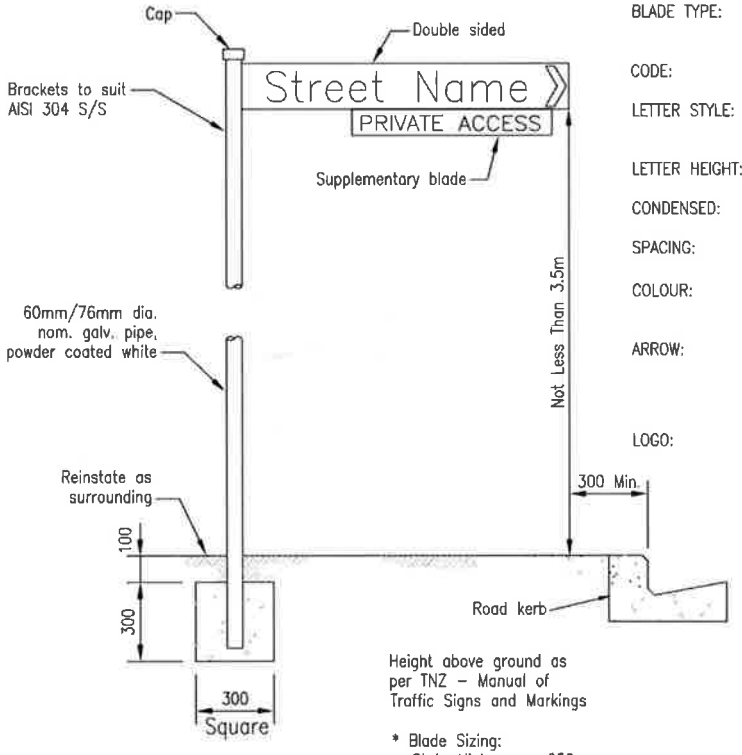
Refer to Section 3.4.13

STREET SIGN FOR PUBLIC ROADS (FOR ALL ENVIRONMENTS)	Date: APRIL 2010
	Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: AS SHOWN
	SHEET No. 24

WDC 8036

Sheet 25 Street Sign for Private Roads

BLADE SIZE:	D: 150mm/200mm/250mm *
BLADE LENGTH:	a) Single Sided shall not be less than 800mm nor greater than 1400mm. If greater than 1100mm, blade shall be mid–mounted. b) Double Sided shall not be less than 800mm nor greater than 1100 and shall be end mounted
BLADE TYPE:	"I" Section Aluminium Extrusion
CODE:	SNB 150mm/200mm
LETTER STYLE:	Transport–Upper & lower case
LETTER HEIGHT:	100mm/150mm/200mm
CONDENSED:	To Suit
SPACING:	To Suit
COLOUR:	High Intensity Blue Letters on White background
ARROW:	120° 150mm blade –40mm wide 200mm blade –45mm wide 250mm blade –50mm wide
LOGO:	No Logo



Height above ground as per TNZ – Manual of Traffic Signs and Markings

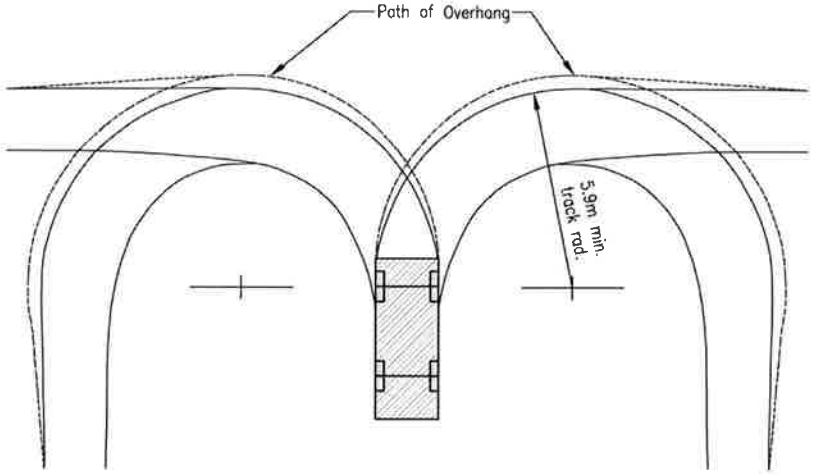
* Blade Sizing:
State Highways:– 250mm
District arterial roads:– 200mm
Residential Areas:– 150mm

Refer to Section 3.4.13

STREET SIGN FOR PRIVATE ROADS (FOR ALL ENVIRONMENTS)	Date: APRIL 2010
	Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: AS SHOWN
	SHEET No. 25

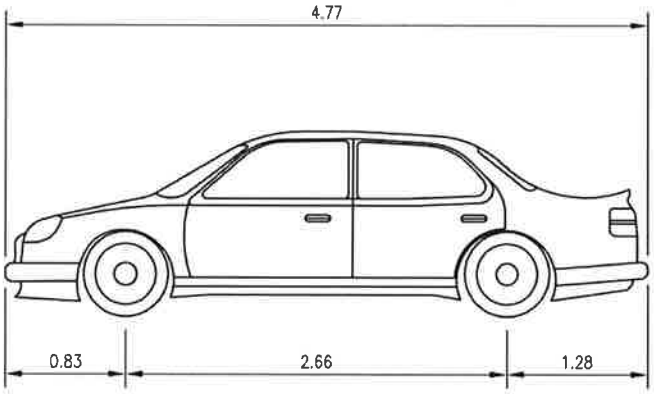
WDC 8036

Sheet 26 Vehicle Tracking Curves – Standard Car



TRACKING CURVES

Scale 1:200



DESIGN VEHICLE DIMENSIONS (NTS)

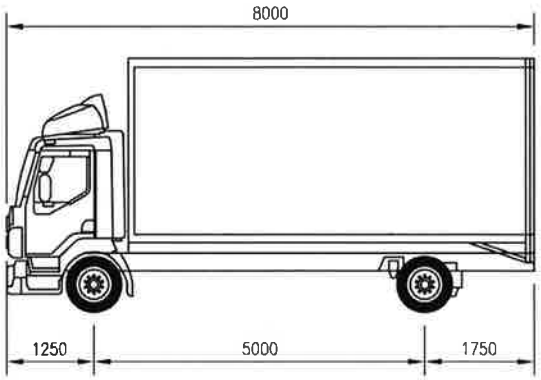
(Vehicle Width 1.88m)

Note:
1. The curve has been derived from the 90% car shown in the District Plan.
2. Turning radius shown is the minimum and not appropriate for speeds > 10km/hr.

VEHICLE TRACKING CURVES STANDARD CAR	Date: APRIL 2010 Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: AS SHOWN SHEET No. 26

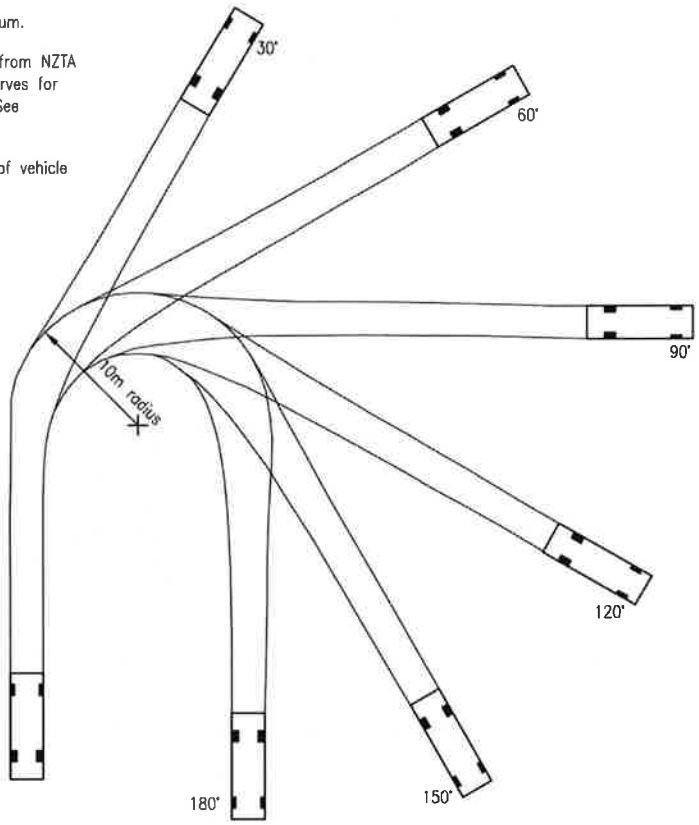
WDC 8036

Sheet 27 Heavy Goods Vehicle Tracking Curves – Medium Rigid Truck



DESIGN VEHICLE DIMENSIONS
(Vehicle Width – 2500)

NOTES:
1. Curves are not to scale.
2. Turning radius is minimum.
3. Curves are reproduced from NZTA "NZ Onroad Tracking Curves for Heavy Vehicles 2007" (See Section 3.4.3.2)
4. Curves show extremity of vehicle body.

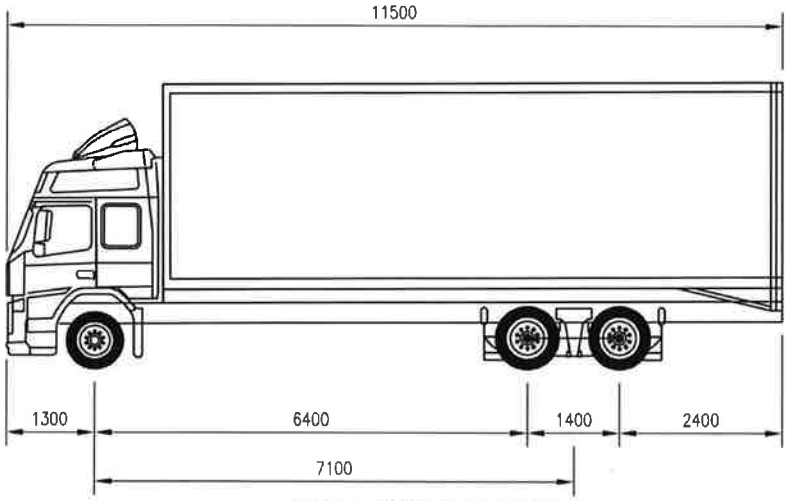


TRACKING CURVES – 8.0m RIGID TRUCK

HEAVY GOODS VEHICLE TRACKING CURVES MEDIUM RIGID TRUCK	Date: APRIL 2010 Revision: R0 Scale: NTS SHEET No. 27
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	

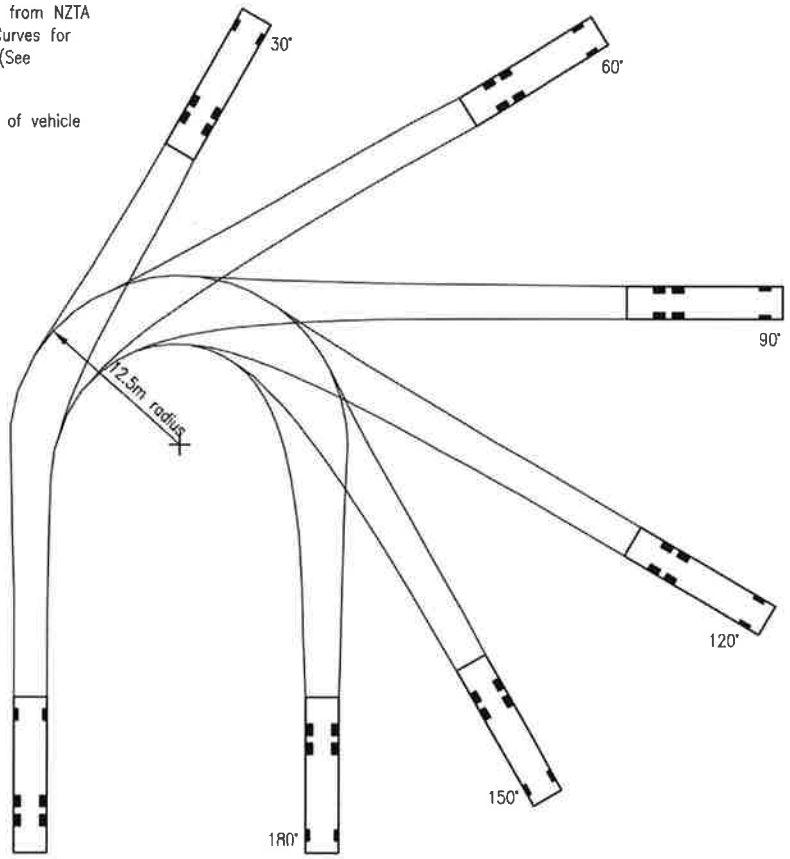
WDC 8036

Sheet 28 Heavy Goods Vehicle Tracking Curves – Large Rigid Truck



DESIGN VEHICLE DIMENSIONS
(Vehicle Width – 2500)

NOTES:
1. Curves are not to scale.
2. Turning radius is minimum.
3. Curves are reproduced from NZTA "NZ Onroad Tracking Curves for Heavy Vehicles 2007" (See Section 3.4.3.2)
4. Curves show extremity of vehicle body.

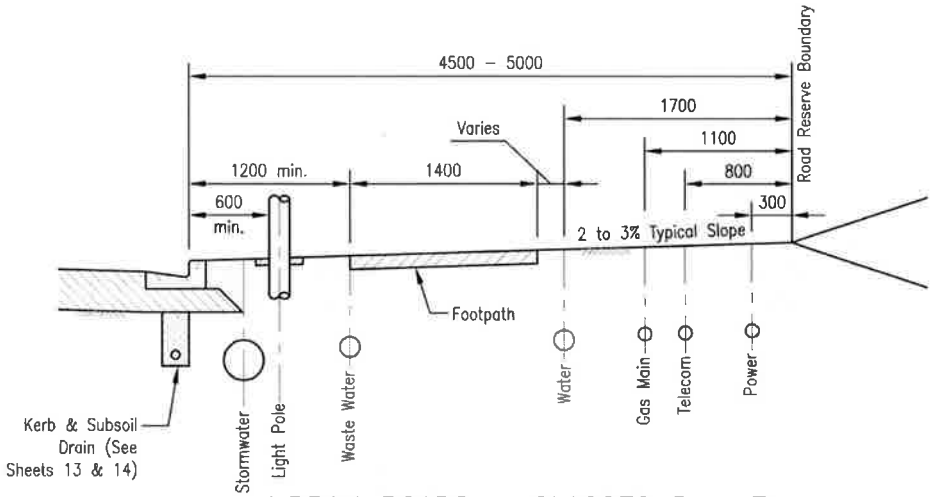


TRACKING CURVES – 11.5m RIGID TRUCK

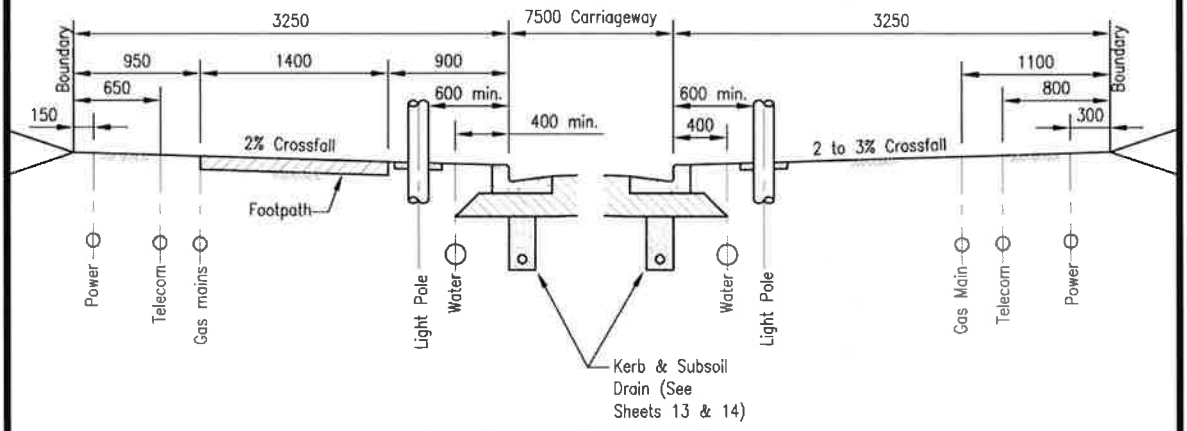
HEAVY GOODS VEHICLE TRACKING CURVES LARGE RIGID TRUCK	Date: APRIL 2010 Revision: R0 Scale: NTS SHEET No. 28
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	

WDC 8036

Sheet 29 Layout of Services



URBAN ROADS – CLASSES B – E



URBAN ROADS – CLASS A

Note:
For clearances between services, refer to Sheet 30

LAYOUT OF SERVICES FOR LIVING 1 AND 2 AND ALL BUSINESS ENVIRONMENTS	Date: APRIL 2010 Revision: R0
WHANGAREI DISTRICT COUNCIL ENVIRONMENTAL ENGINEERING STANDARDS	Scale: NTS SHEET No. 29

WDC 8036