

APPENDIX 1

<p>ROADING DESIGN QUALITY ASSURANCE CHECKLIST</p> <p>PROJECT:</p> <p>PROJECT LOCATION:</p> <p>DRAWING NUMBERS:</p> <p>DESIGNER: QUALIFICATION:</p> <p>DATE:</p>

Checklist:

Items	Comments with regards to conformance
<p>Road Widths</p> <p>-- comply with Table 3.1.</p>	
<p>Speed Environment</p> <p>-- Speed environment implement _____ km/hr</p> <p>-- Element Design speeds:</p> <p style="padding-left: 20px;">_____ km/hr with $e_{max} =$ _____ and $f_{max} =$ _____</p> <p style="padding-left: 20px;">_____ km/hr with $e_{max} =$ _____ and $f_{max} =$ _____</p> <p style="padding-left: 20px;">_____ km/hr with $e_{max} =$ _____ and $f_{max} =$ _____</p> <p style="padding-left: 20px;">_____ km/hr with $e_{max} =$ _____ and $f_{max} =$ _____</p> <p style="padding-left: 20px;">_____ km/hr with $e_{max} =$ _____ and $f_{max} =$ _____</p> <p><i>(e_{max} = maximum superelevation, f_{max} = maximum friction)</i></p> <p>-- Design speed must not alter by > 10km/hr on adjacent elements.</p> <p>-- Maximum friction must not be exceeded and be consistent.</p>	
<p>Horizontal Alignment</p> <p>-- Urban Roads (where speed is 50km/hr or less)</p> <p style="padding-left: 20px;">Minimum Radius - 80m for arterial & industrial roads.</p> <p style="padding-left: 40px;">- 15m for local roads.</p> <p style="padding-left: 20px;">Apply curve widening where required.</p> <p style="padding-left: 20px;">Swept path of 11m truck at 12.5m design radius.</p> <p>-- Rural Roads (where speed is > 50km/hr)</p> <p style="padding-left: 20px;">(use AUSTRROADS Rural design guide)</p> <p style="padding-left: 20px;">Minimum Radius in accordance with Section 3.</p> <p style="padding-left: 20px;">Apply curve widening where required.</p> <p style="padding-left: 20px;">Swept path of 11m truck at 12.5m design radius.</p>	
<p>Vertical Alignment</p> <p>-- Vertical curves comply with AUSTRROADS</p> <p style="padding-left: 20px;">Min crest K value = _____</p> <p style="padding-left: 20px;">Min crest curve length = _____</p> <p style="padding-left: 20px;">Min sag K value = _____</p> <p>-- Longitudinal Grades comply with AUSTRROADS</p> <p style="padding-left: 20px;">Min Grade = _____</p> <p style="padding-left: 20px;">Max Grade = _____</p> <p style="padding-left: 20px;">Grade at intersection = _____</p> <p style="padding-left: 20px;">Cul-de-sac turning head grade between 4% and 6%</p>	

<p>Intersections</p> <ul style="list-style-type: none"> -- Extraordinary vehicle entrance required if development generating more than 40vpd in Rural areas. -- Edge of seal radius - >6m for residential roads - > 15 for rural roads -- Sight distance to be in accordance with Development Manual. -- Separation distance/location in accordance with Development Manual. -- Tracking curve, B-Train swept path with 15m design Radius. 							
<p>Cul-de-sac</p> <ul style="list-style-type: none"> -- Minimum turning head radius (in accordance with Development Manual) <ul style="list-style-type: none"> -- 9m for residential -- 13m for industrial -- Minimum kerb gradient 0.5% (if applicable) -- Surfacing to be asphaltic concrete 							
<p>Superelevation and crossfall</p> <ul style="list-style-type: none"> -- Normal camber to be – 3-4% for sealed surfaces - 5-6% for unsealed surfaces -- Maximum and design superelevation in accordance with design speed. -- Superelevation profile in accordance with AUSTRROADS <ul style="list-style-type: none"> - Rate of rotation _____ % - Relative grade _____ % 							
<p>Pavement Design</p> <ul style="list-style-type: none"> -- Design life to be no less than 30 years. -- Traffic loading and pavement design calculations are attached -- Unsealed pavements <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">300mm</td> <td style="width: 55%;">Well graded granular material</td> <td style="width: 30%;">Min. soakage CBR 20</td> </tr> <tr> <td>50mm</td> <td>WHAP 20</td> <td></td> </tr> </table> -- Subgrade CBR _____ -- All Laboratory and field test results are attached. -- Comply with Development Manual for sealed pavements. <ul style="list-style-type: none"> - Basecourse: material _____ thickness: _____ mm - Sub-base: material _____ thickness: _____ mm 	300mm	Well graded granular material	Min. soakage CBR 20	50mm	WHAP 20		
300mm	Well graded granular material	Min. soakage CBR 20					
50mm	WHAP 20						
<p>Sealing</p> <ul style="list-style-type: none"> -- Rural sealing in accordance with Volume 5, Table 3.1. -- Business, Industrial and Residential sealing in accordance with Volume 5, Table 3.1. 							
<p>Parking</p> <ul style="list-style-type: none"> -- On street Requirements in accordance with Table 3.1. 							
<p>Berms and Side Slopes</p> <ul style="list-style-type: none"> -- Urban Berms - Crossfall between 1 in 25 and 1 in 6 to allow for mowers. <ul style="list-style-type: none"> - 75mm topsoiling and grassing to be included. -- Batter Slopes - Crossfall between 1 in 5 and 1 in 7. 							
<p>Kerb and channelling</p> <ul style="list-style-type: none"> -- Concrete to be 20MPa -- Type to be barrier kerb in accordance with Development Manual (only use mountable kerb on central islands) -- Scour protection required if kerb and channel is discharging into earthen drain. 							

Hamilton City Development Manual	
Volume 5 : District Council Supplement	Matamata-Piako D. C. Supplement
	Appendix I

<p>Footpath</p> <ul style="list-style-type: none"> -- Widths in Accordance with Table 3.1 Requirements. -- Minimum of 100mm concrete (in accordance with Development Manual) -- Subgrade of _____ (subgrade should have minimum CBR of 7) -- Concrete to have a minimum 28 day strength of 20MPa -- 25 mm compacted depth of fine granular material base. -- Crossfall of 2% falling towards kerb and channel. 	
<p>Sumps</p> <ul style="list-style-type: none"> -- Spacing and location at low spots and no more than 90m apart. -- Standard details from Development Manual. -- All leads used are >= 225mm diameter. -- sumps are all connected up to stormwater system. 	
<p>Drainage</p> <ul style="list-style-type: none"> -- Minimum Culvert details Class X RCRRJ > 300mm dia. -- TNZ F/3 pipe culvert construction details. 	
<p>Subgrade Drainage</p> <ul style="list-style-type: none"> -- Min of 100mm perforated pipe under kerb and channel. -- Outlets appropriate. -- Material and construction in accordance with TNZ standard specifications. 	
<p>Crossings</p> <ul style="list-style-type: none"> -- Sight visibility and separation distance are to be in accordance with Development requirement. -- Construction to be in accordance with Development Manual. 	
<p>Signage and Markings</p> <ul style="list-style-type: none"> -- All Markings are to be in accordance with Transit New Zealand's Manual of Traffic Signs and Markings Part 2. -- All Signage is to be in accordance with Transit New Zealand's Manual of Traffic Signs and Markings Part 1. -- Any new private or public Road names are to be submitted to Council for approval. 	
<p>Lighting</p> <ul style="list-style-type: none"> -- Residential and industrial subdivisions required lighting <ul style="list-style-type: none"> - manufacturing details, design calculations and isolux drawings to be submitted for approval. -- Any new roads created, require lighting at intersections. <ul style="list-style-type: none"> - manufacturing details, design calculations and isolux drawings to be submitted for approval. 	
<p>Other</p> <ul style="list-style-type: none"> -- All road boundaries in the rural area shall be fenced. 	

_____ (signature)

ROAD DESIGNER