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**PART 7: PARKS AND RESERVES****700 SCOPE**

This part of the Standards sets out the engineering requirements for works carried out within the Parks and Reserve areas and associated land development projects. It provides the relevant criteria for performance, specification for design, construction and materials

**700.1 Strategic Vision**

The strategic vision for Rodney District Council with regard to Parks and Reserves is:

- To ensure that the amenity and safety values of the community are met.
- To encourage greater passive use of our Parks for all to enjoy.

**700.2 Performance Criteria**

- Meet all standards and criteria of the District Plan and any Regional Plan.
- Provide for future development.

**700.3 Documents Referred to in This Section**

The current relevant standards that control the design, construction and installation of the Council's parks, reserves and beach area assets, which are referred to throughout this manual, include:

- AS/NZS 4422: 1996 – Playground surfacing – Specifications, requirements and test method.
- AS/NZS 4486: 1997 – Development, installation, inspection, maintenance and operation of playground equipment.
- SNZ HB 8630: 2004 - Tracks and Outdoor Visitor Structures.
- NZS 4121:2001 - Design for Access and Mobility: Buildings and Associated Facilities.
- NZS 4402:1986 - Methods of Testing Soils for Civil Engineering Purposes.
- NZS 3104:2003 – Concrete production – ordinary grade.
- NZS 3109:1996 – Concrete construction.
- NZS 3114:1987 - Concrete surface finishes.
- NZS 3116:2002 – Interlocking concrete block paving.
- NZS 3124:1987 – Concrete construction for minor works.
- AS/NZ 4671:2001 – Steel reinforcing materials.
- NZBC E1/AS1 – Surface water.
- AS/NZ 4455:1997 – Masonry units and segmental pavers.
- NZS 3604:1999 – Timber framed buildings.
- Auckland Regional Council Pest Control Standards.
- Transit New Zealand.

M/1 Asphaltic bitumens

M/7 Roadmarking paint

P/9P (Auckland) Construction of asphaltic concrete paving

M/10P (Auckland) Asphaltic concrete

- Transit New Zealand/LTSA Manual of Traffic Signs and Markings
- AS/NZS 4422:1996 Playground Surfacing

## **701 GENERAL REQUIREMENTS**

For all proposed works affecting existing or proposed parks, reserves and beach areas, such as developments, subdivisions and landscaping works, approval is required from the Parks & Coastal Department. The Parks and Coastal Department will grant approval following the submission of appropriate designs and information, completion of works as detailed in the designs and general adherence to this manual.

### **701.1 Information Required from Applicants**

Applications to Council shall include sufficient information to demonstrate that the proposed work meets the requirements of the Code of Practice "Standards for Engineering Design And Construction".

### **701.2 Design Phase**

**701.2.1** Landscaping plans will be submitted for approval at the same time as other plans, e.g. engineering plans. These shall be at a scale of 1:500 for general design and 1:250 for planting and irrigation designs, and show all pertinent information such as the finished levels of the reserve, trees, pathways, playgrounds and other structures, drainage/swales including dewatering areas adjacent to stormwater ponds/marshes, accessways, etc. The location of existing services must also be detailed.

**701.2.2** A Landscape Implementation Plan will be submitted outlining methodology, scope of works, features, timing and details of the implementation of proposed landscape plans.

**701.2.3** Scale drawings of playgrounds, structures and any other proposed asset not detailed in this Standard will be submitted for approval by the Parks and Coastal Department.

**701.2.4** Planting designs shall detail both botanical and common names, PB size at planting, quantity of individual species, staking and/or other planting requirements.

**701.2.5** A Health and Safety Plan (This may include a Traffic Management Plan) shall be prepared for any works on an established reserve (including maintenance period following the issue of a certificate under section 224(c) of the Resource Management Act 1991).

### **701.3 Consents**

**701.3.1** Generally, applicants shall apply for consents in their own name rather than on behalf of Council. It is the responsibility of the applicant to ensure all necessary approvals have been obtained and submitted with the application for consent.

### **701.4 Inspection of Works**

**701.4.1** The Council's Parks and Coastal Department or nominee may from time to time inspect works to ensure the plans submitted in the design phase and the requirements of this Standard are fully complied with. Inspections may occur during the earthworks stage, to check contours, topsoil quality and plant stock health during the construction and planting stages.

### **701.5 Completion of Works**

**701.5.1** As-Built data of completed works shall be supplied. It shall conform to the Council's requirements, as specified in Part One of this Standard. Drawings may also be required in AutoCAD Release 14 format.

**701.5.2** Completed building consent certification – if required.

**701.5.3** Completed Resource Consent certification – if required.

**701.5.4** Playground certification of compliance by an independent playground specialist. Documentation shall include test results and checklists to certify that the materials and construction conforms to AS/NZS4422, AS/NZS4486 and all their parts and amendments.

**701.5.5** Written manufacturers guarantee for playgrounds and any other products where warranties available/applicable.

**701.5.6** Certificates of Compliance and Producer Statements for works covered by legislative requirements.

## **702 DESIGN REQUIREMENTS**

### **702.1 Location and Layout**

**702.1.1** The design of reserve areas shall take account of adjoining land uses and areas to ensure appropriate provision of recreation assets and landscaping.

**702.1.2** Landscape plans shall ensure that future maintenance requirements (both short and long term) have been considered when designing layouts so that ongoing costs are minimized where appropriate, e.g. installing rubbish bins near access roads.

**702.1.3** The designs of access routes through a reserve should ensure linkage with existing networks (i.e. access to pumping stations, continuation of a path network), consider future developments both of the reserve and adjoining areas, follow sight lines where possible and take account of the topography of land.

### **702.2 Development of Parks and Reserves**

**702.2.1** Parks, reserves and beach areas shall be developed as required by the Parks and Coastal Department as part of subdivision works. This may include earthworks, drainage, planting, pathways, facilities and structures (e.g. seating/ tables, litter bins, fencing, barriers and signs) and, if required, any other development as specified by the Parks and Coastal Department.

**702.2.2** Where earthworks are to be carried out within park and reserve areas they shall be designed and constructed in accordance with standards and criteria in the District Plan.

**702.2.3** Designs shall incorporate minimizing water run-off that originates from the reserve. Runoff may be reduced by using materials with high permeability in access routes, car parking and other hard surfaces and planting of gardens and trees to mitigate runoff.

**702.2.4** Ponds and other stormwater detention and treatment systems that are to be constructed in parks, reserves and beaches shall be for the purpose of treating stormwater that originates from the park, reserve or beach area. No stormwater system for other purposes shall be located in parks, reserves and beach areas. All stormwater outlets into streams or riparian areas within reserves shall be designed to be visually complementary with the stream and park environments. The outlets shall be designed to prevent erosion and stream scour. The Parks and Coastal Department and the Stormwater Department shall jointly approve the final design of any stormwater systems on parks, reserves and beach areas.

**702.2.5** Where other infrastructure such as roads, wastewater and water supply systems are to be provided, they shall be designed and constructed in accordance with the relevant sections of this Standard and in accordance with relevant construction standards as appropriate.

### **702.3 Planting and Summer Periods**

**702.3.1** Planting programs will be developed to optimise growing conditions for plants and trees. Planting is to occur between April and September, wherever possible to maximize plant establishment. Consideration may be given to planting earlier or later depending on seasonal conditions. Approval to plant outside of this timeframe must be obtained from the Parks and Coastal Department.

**702.3.2** Irrigation of trees will be required during the first summer season, (1 December to 1 April of the following year). Irrigation of amenity plantings and grass areas that have been planted or sown outside the June to September period will also be required during this time.

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**703 GENERAL SITE PREPARATION****703.1 Protection**

**703.1.1** All bush areas and trees shall be cordoned off to protect the rootzone and vegetation, prior to commencement of works and remain until completion.

**703.1.2** Root zone is defined as area one metre out from the canopy of any vegetation. Protection is to be provided by erecting sturdy high visibility barriers depending on the intensity of activity associated with the development site:

- Rural – High visibility plastic or steel mesh fencing to minimum height of 1 metre.
- Urban 1 – High visibility plastic or steel mesh fencing to a minimum height of 1 metre.
- Urban 2 – High visibility plastic or steel mesh fencing to a minimum height of 1.8 metre.

Note: Urban 1 = Subdivision with low activity and minimal public access.

Urban 2 = Subdivision with high activity and high public access.

**703.1.3** If excavation is required within the root zone, a Council approved arborist shall be onsite during the project to supervise works. Resource consents for work within this zone shall be obtained. If excavations are necessary, these shall be limited to use of hand held tools.

**703.1.4** Exposed surface roots shall be covered by materials such as sandbags, track metal, planking, old carpet or mulch, to prevent scuffing and abrasion.

**703.1.5** All attempts will be made to retain all roots over 35mm in diameter uncovered by excavation. All roots exposed shall be kept damp, covered from direct sunlight and protected from damage by a suitable material such as Hessian or shade cloth. When a root greater than 35mm is consented for removal, the arborist shall only prune back to the excavation face by the use of hand held tools and the root shall be immediately covered to protect from desiccation and further damage. The excavation face shall be covered with geotextile mat and weed cloth, and pinned into place until backfilling occurs, upon which it shall be removed.

**703.1.6** No storage of construction materials/machinery/equipment/spoil/waste shall occur within 3 metres of the rootzone, or where there is a risk of spills or runoff reaching and damaging the rootzones.

**703.1.7** No operation of machinery shall occur within 3m of the cordoned off rootzone without prior approval from the Parks and Coastal Department. If machinery has to operate within this zone a temporary geotextile mat and mulch layer shall be laid over the ground to protect the tree roots from compaction and root damage.

**703.1.8** Silt protection shall be undertaken as outlined in Section 9.4 of the District Plan and as authorised by subdivision consent.

**703.2 Earthworks**

**703.2.1** Where earthworks are to be undertaken, contours will be shaped to eliminate ponding in grass areas and promote good drainage.

**703.2.2** Grassed batter slopes that will require mowing are to be no steeper than 1 vertical to 5 horizontal (1 in 5).

**703.2.3** Batters steeper than 1 in 5 shall be densely planted and mulched. Batters that have been planted should include edging, terracing or horizontal timber strips to avoid the movement of mulch down the slope.

**703.2.4** Heavily compacted soils shall be ripped, preferably during the summer period, to a depth of 300mm, with rip lines 1m apart, then rolled with a sheep foot roller or similar, before any laying of topsoil is undertaken.

**703.2.5** Lightly compacted soils shall be scarified or disced to a depth of 100mm, with balancing fertilizers as indicated by soil tests applied at this point. Rolling with a sheep foot roller or similar should be undertaken before any laying of topsoil.

**703.3 Topsoil**

**703.3.1** Topsoil shall be sourced from an original surface layer of grassland or cultivated land. Soil arising from reclaimed land, industrial sites, or which has been used for the disposal of any industrial, domestic or agricultural wastes shall not be used.

**703.3.2** Topsoil shall exhibit the presence of biological activity as evidenced by adequate aggregation and organic matter content. The material shall be acceptable for growing all of the appropriate turf grass species given adequate management.

**703.3.3** Topsoil shall be applied at the depths specified in Table 7.1: Topsoil Depths for each landscape type.

**Table 7.1: Topsoil Depths**

	Minimum settled depth (mm)
Grass Areas	150
Amenity Plantings	400

**703.4 Fertilising**

**703.4.1** A soil test shall be undertaken to determine the pH levels of the soils (as offered through a Council approved laboratory). The soil test shall determine the composition and type of fertiliser and/or lime/gypsum that is to be applied to the particular area being developed, (pH levels are defined in following sections where required).

**703.5 Irrigation**

**703.5.1** Parks and Coastal Department approval is required prior to the installation of any permanent or semi-permanent irrigation system. Where required a duct for a water connection shall be provided to amenity or garden planting areas. The applicant shall apply and pay for a metered water connection for irrigation purposes where required for maintenance purposes.

**703.5.2** All materials used in the installation of any irrigation system shall be constructed of quality materials. Refer to Rodney District Council Drawing 18000 Sheet 7.23.

**704 PEST CONTROL**

**704.1** Weeds shall be controlled within the park, reserve or beach areas in accordance with the Auckland Regional Council Regional (ARC) Plant Pest Management Strategy. Weeds shall be controlled and removed using accepted techniques as detailed in ARC Pest Fact Sheets. Please note: Some noxious weeds may require repeat applications to eradicate. Large woody weed debris will be removed from site.

**704.2** Any weed spraying shall be undertaken in accordance to the manufacturer's recommendations.

**704.3** The applicant shall also be responsible for animal pest control during the defects liability period, which will be undertaken to ARC Pest Control Standards of operation.

**705 LITTER CONTROL**

**705.1** All areas once established shall be kept free of litter and debris, including paper, plastic, stones, bricks, bottles, glass, cans, tree branches and other forms of inorganic matter.

**705.2** The **Developer** or **contractor** shall arrange for the disposal of litter and debris, which shall be removed to an appropriate tipping site.

**706 GRASS AREAS****706.1 Selection of Species**

**706.1.2** Grass seed mix for parks and reserves shall be either an approved dwarf cultivar rye grass or an approved turf species blend. Other special purpose varieties may be used with prior approval of the Parks & Coastal Department.

**706.2 Seed Certification**

**706.2.1** All ryegrass seed used shall have an endophyte level of greater than or equal to 80%, a purity of greater than or equal to 99% and a germination final count of greater than or equal to 90%.

**706.2.2** The contractor shall supply certificates to the Engineer which prove seed used is certified and which give descriptions of age, purity, % germination and endophyte content.

**706.3 Site Preparation**

**706.3.1** The ground area shall be presented in a level uniform manner, free of hollows and humps.

The ground surface area shall either:

- (a) Follow contour of land, and/or
- (b) Be level with a maximum gradient of 10° to assist with water run-off and/or drainage.

All grass areas are to be levelled prior to fertilising and seeding.

**706.4 Inspection, Traps, Grates, etc**

**706.4.1** Topsoil shall be level with the top edges of kerbs, grates, inspection portals and any other ground level structural edge that is located in parks, reserves or on road reserve areas. Suitable silt traps should be placed at grates and inspection portals to avoid silt blockage until turf cover is established.

**706.5 Ground Preparation**

**706.5.1** All heavy topsoils may be amended by the addition of compost or sand. Stony soils can be lightly machined with a cultivator or similar piece of equipment. Stones can be buried using a reverse rotary hoe.

**706.5.2** Soil pH shall be brought to a range suitable for grass growth by the addition of lime and a starter fertiliser.

**706.5.3** The area for seeding shall be free of all weed species (such as kikuyu, couch grass, gorse, and blackberry).

**706.5.4** Grass seed for lawn areas shall be under and oversown at a rate of 400 kg/ha. Seeds should be under sown for better strike and reduced loss to birds.

**706.5.5** Broadcast of grass seed is acceptable for areas where the soil is too wet for tractors.

**706.5.6** All newly grass seeded areas are to be rolled with a Cambridge roller (or similar roller to minimise compaction) after seeding.

**706.6 Fertilising**

**706.6.1** The soil test shall determine the composition and type of fertiliser and/or lime that is to be applied.

**706.6.2** Areas to be newly sown for grass shall be fertilised to maintain a pH range of 6.0 to 6.5.

**706.6.3** Two applications of fertiliser are to be carried out. The first application shall be undertaken at one week prior to sowing of grass seed using a suitable starter fertilizer such as di-ammonium phosphate (D.A.P.) at a rate of 25g/m<sup>2</sup> and second application four weeks after grass growth has commenced with a suitable maintenance fertilizer such as Nitrophoska Blue + TE (Trace Elements) at 25g/m<sup>2</sup>.

**706.7 Grass Establishment**

- 706.7.1** First mowing of newly sown grass areas can be undertaken using a rotary mower when 50% of the grass coverage has reached a height of 100mm.
- 706.7.2** Irrigation may be required at the direction of the Parks and Coastal Department.
- 706.7.3** The grassed area shall be maintained for a minimum period of 12 months after sowing to ensure dense, even turf coverage has been established. 95% grass coverage is required for all grass areas and 100% weed free at the time of handover.

**707 SPECIMEN TREES****707.1 Selection of Species and Specimens**

- 707.1.1** The Parks and Coastal Department shall approve the selection and location of tree species.
  - 707.1.2** Any planting of trees on the southern boundary of reserve land shall consider the location of neighbouring houses to limit or prevent shading of any dwelling.
  - 707.1.3** Specimen trees shall be 2.0 — 3.0m in overall height of PB95 grade and have a girth of no less than 120mm at 1.0m.
  - 707.1.4** All trees should be of good form with a single dominant stem, with all side branches evenly spaced and less than 1/3 of the diameter of the main stem in size, unless inappropriate to the species.
  - 707.1.5** With single leader type trees, form pruning should have been carried out concentrating on the removal of large side-branches over 1/3 of the diameter of the main stem at any point. For trees with a “globe” shaped crown, (e.g. Melia, Jacaranda, Albizzia) the main branches should radiate evenly from the trunk, and spaced vertically i.e. not originating from one point. In general all side branches set onto the main stem at angles of 30 and 75 degrees, or at such an angle that is natural for the particular species/cultivar.
  - 707.1.6** Native plantings are to be district sourced where possible.
- 707.2** Site Preparation, Tree Planting and Establishment
- 707.2.1** An approved operator shall undertake spraying out of planting sites, for weed and grass species at least two weeks prior to commencement of planting.

**707.2.2** Requirements for tree plantings are detailed in Table 7.2: Specimen Tree Planting Requirements

**Table 7.2: Specimen Tree Planting Requirements**

	Less than 2m tall	Greater than 3m tall
Weed free circle / mulching	1m wide area	1m wide area
Girth at 1m height	120mm	180mm
PB Size	PB 45	PB 95
Hole size (minimum)	600mm wide x 600mm deep, backfilled with 50/50 topsoil compost mix	1000mm wide x 1000mm deep, backfilled with 50/50 topsoil compost mix
Fertiliser	100grams super phosphate mixed within the back fill medium	200grams super phosphate mixed within the back fill medium
Staking Posts (size)	50mm x 50mm hardwood stakes	70mm or 100mm peeler post
Staking Posts (length)	2.4m, buried 800mm depth	2.4m, buried 800mm depth
Number Staking posts	2 stakes	3 posts— triangle formation
Ties	Minimum 1 tie per stake	Minimum 1 tie per post
Ties Type	Semi permanent 50mm webbing, set up in a figure 8 configuration between stake and tree.	
Watering	Trees shall be watered within 2 hours of planting to assist in the bedding in of the plant.	

**707.2.3** Topsoil shall have a pH between 5.5 to 7.5 and be free of stones and other inorganic matter. Compost shall be well decomposed, pH neutral and shall not contain organic matter with a particle size greater than 10mm.

**707.2.4** Trees shall either be flush planted with the ground level or mound planting with a maximum height of 30% of the root ball above ground level — depending upon ground conditions. Refer to Rodney District Council Drawing 18000 Sheet 7.5.

**707.3 Fertiliser**

**707.3.1** An application of slow release fertiliser is to be applied to each tree during the planting process.

**707.3.2** Additional fertiliser is to be applied to each plant in September of each year. This fertiliser shall be in the form of a balanced slow release fertiliser such as Nitrophoska Permanent, which has a 12-month release period.

**707.4 Staking**

- 707.4.1** All specimen trees shall be staked as detailed in the Table 7.2: Planting Requirements, to maintain and assist their form for the first three to five years.
- 707.4.2** Regular bimonthly maintenance of specimen trees must include checking of the ties and stakes to maintain proper form.

**707.5 Tree Protectors**

- 707.5.1** All specimen trees should be protected and supported during any maintenance works with tree surrounds/ protectors as detailed in Table 7.3: Tree Protectors. Also refer to Rodney District Council Drawing 18000 Sheet 7.5.

**Table 7.3: Tree Protectors**

	<b>Tree Protector Size</b>	<b>Sources</b>
PB 95 or smaller	450mm (internal)	Edgemasta — Street Furniture Ltd
Larger than PB 95	1200mm (internal)	Edgemasta — Street Furniture Ltd
<i>Note: Trunk guards may be used when the Parks Department deem Edgemaster trunk guards unnecessary.</i>		

**707.6 Mulching**

- 707.6.1** Mulching around specimen trees encourages water retention and controlling weed growth.
- 707.6.2** A minimum one metre weed free area shall be maintained around unprotected trees, or the whole area inside tree surround. Mulching shall be maintained to a 75-100mm thickness when settled. The mulch shall be graded away from the trunk of the tree to minimise any trunk burn.
- 707.6.3** Edgemasta surrounds when used shall be kept full of mulch and weed free.
- 707.6.4** The **Developer** shall maintain the level of mulch around the trees during the defects liability period.

**707.7 Watering**

- 707.7.1** Trees shall be watered to maintain healthy vigorous growth throughout the summer season. At least 40 litres of water will be fed to each tree per visit in a manner that ensures full soakage of the rootball.

**707.8 Pruning**

- 707.8.1** Any pruning shall be approved by the Parks and Coastal Department, and carried out to maintain healthy and sustainable tree specimens.
- 707.8.2** All pruning shall be undertaken by a Parks and Coastal Department approved arborist, a list of which may be obtained from the Parks and Coastal Department.

**707.9 Replacement Trees**

- 707.9.1** Plants damaged, vandalised, and stolen or dead shall be replaced as required to maintain the original numbers, grades and species as per the approved plans.
- 707.9.2** Any trees damaged or in poor form shall be replaced at the **Developer's** expense. These replacement plants shall be subject to a defects liability period for a further two growing seasons.

**708 AMENITY PLANTINGS**
**708.1 Selection of Planting Type and Design**

- 708.1.1** Plantings shall be of a single planting type, of annuals, perennials, roses, shrub gardens, hedges and re-vegetation plantings.
- 708.1.2** Planting designs shall be based on achieving a scheme that requires a minimum of long-term maintenance. Plantings shall generally be grouped together to promote cost effective maintenance and improve the plant survival rate.
- 708.1.3** Amenity planting designs shall allow for 3m spacing between mulched plantings and other assets for maintenance and mowing purposes.
- 708.1.4** All plantings shall have densities that achieve 100% coverage of soil within 2 growing seasons (except re-vegetation plantings where 3 growing seasons is acceptable). In anticipation of plant dieback, all amenity plantings shall be over planted, as outlined in Table 7.4: Over planting for Amenity Plantings. Over planting is the provision of extra plants depending on the plant grade used.

**Table 7.4: Overplanting for Amenity Plantings**

<b>Plant Grade</b>	<b>Required Overplanting</b>
Less than PB3	15%
PB3	10%
PB5+	5%

**708.2 Site Preparation and Planting**
**708.2.1 General**

- 708.2.2** An approved operator shall undertake spraying out of planting sites at least two weeks prior to commencement of planting.
- 708.2.3** Ripping and scarifying shall be undertaken in an approved manner.
- 708.2.4** Topsoil can be mounded in amenity planting areas. Topsoil shall have a pH between 5.5 to 7.5 and be friable, free of stones and other inorganic matter.
- 708.2.5** Annuals, perennial and roses shall be dressed with at least 100mm of approved weed free compost material containing well-rotted manures and/organic material once every year prior to the summer planting.
- 708.2.6** Where plants may be susceptible to animal damage during the establishment period, plant surrounds may be used on individual plants to protect shrub or plant species.
- 708.2.7** All plants should be of good form with side branches evenly spaced and less than 1/3 of the diameter of the main stem in size. Plants should be hardened off to cope with climatic conditions of the site and be free of pests and disease. Plant root system shall show no evidence of 'spiralling' or being root bound.

**708.3 Planting**

- 708.3.1** Rootballs shall be saturated prior to planting and roots loosened if appropriate.
- 708.3.2** Planting holes shall be 2x rootball diameter in width and 1-1.5 x rootball height. The bottom and sides of the planting holes are to be roughened to encourage root movement into the surrounding soil. Soil removed from the planting hole shall be amended with 30% compost and fertiliser before planting.

**708.3.3** Plants shall be set slightly lower to the surrounding soil to avoid wicking, and the planting hole is to be backfilled in 150mm layers and consolidated so as to remove air pockets. Surplus planting material from the holes shall be spread evenly over the surrounding area (leaving no soil on top of the mulch layer) taking care not to cover the surface of the newly planted rootballs with additional fill.

**708.4 Watering and Irrigation**

**708.4.1** All plants shall be watered within 2 hours of planting such that the surrounding soil is wet to the full depth of the rootball.

**708.4.2** The use of water crystals for amenity plantings may be undertaken as per the manufacturer's instructions and guidelines.

**708.4.3** Annuals, perennials and roses shall be provided with irrigation to augment natural precipitation as necessary throughout the growing period to ensure optimum development to the flowering stages and beyond to maintain the display. Refer to Rodney District Council Drawing 18000 Sheet 7.23

**708.5 Fertilisers**

**708.5.1** Annuals, perennials and rose gardens shall have an approved granular general fertiliser (low N, high P, and K) and blood and bone applied at time of planting as detailed in Table 7.5: Fertiliser for Amenity Planting. These fertilisers should be applied before digging but after raking to the surface 100mm of the bed.

**708.5.2** Shrub gardens, hedges and re-vegetation areas shall have an application of slow release fertiliser applied to each plant during the planting process as detailed in Table 7.5: Fertiliser for Amenity Planting

**Table 7.5: Fertiliser for Amenity Planting**

	Plant Size			
	Annuals, and Roses	Perennials	Root trainers to PB20	PB20 — PB40
Fertiliser	Super phosphate and blood & bone mixed within the backfill medium	Super phosphate mixed within the backfill medium	Super phosphate mixed within the backfill medium	Super phosphate mixed within the backfill medium
Application Rate	50 grams/m <sup>2</sup> & 30 grams/m <sup>2</sup> of blood & bone at planting	50 grams/m <sup>2</sup> at planting	50 grams/m <sup>2</sup> at planting	80 grams/m <sup>2</sup> at planting
Fertiliser Type	Nitrophoska Permanent or similar slow release fertiliser			

**708.6 Compost and Mulch**

**708.6.1** The addition of compost increases the humus level in the soil and promotes biological activity. Compost will be well decomposed, pH neutral and shall not contain organic matter with a particle size greater than 10mm.

**708.6.2** The activity of mulching around amenity plantings encourages water conservation and controls weed growth.

**708.6.3** All bark/woodchip mulch shall be free from all other matter, organic or inorganic. All mulch or compost shall be free from phytotoxins and pathogens, and free of weed species including chip from willow, poplar or any other adventive weed species.

- 708.6.4** Mulch shall be of cambium bark and shall be applied to shrub gardens, hedges and re-vegetation plantings at a settled depth of between 75-100mm.
- 708.6.5** Cambium bark shall be of B4 grade and shall be applied to perennials and roses to a settled depth of 75mm.
- 708.6.6** Where the gradient exceeds 1:4 in re-vegetation plantings, shredded pine mulch shall be used to encourage mulch retention on the slopes.
- 708.6.7** Mulch shall be applied on all amenity plantings, except annual beds.
- 708.6.8** Hard mulches such as shell and stone chip may be suitable in certain high profile areas. These shall be applied to a settled depth of between 75-100mm.

**708.7 Weed Mat**

- 708.7.1** Weed mat is not permitted in any amenity plantings on parks, reserves and beach areas.

**708.8 Edging**

- 708.8.1** All planted areas shall have a maintained edge. An edge is typically comprised of a minimum vertical cut of 100mm deep on the bed perimeter, with soils pulled back into the bed from the cut to provide a smooth, rounded and defined edge.
- 708.8.2** All curved edges shall be smooth and regular. Where the edge is straight, a string line must be used in order to ensure a true straight line.

**708.9 Staking**

- 708.9.1** Where required, specimen shrubs and plants shall be staked after planting to provide support during their establishment. Requirements for staking are detailed in Table 7.6: Shrub and Plant Staking.

**Table 7.6: Shrub and Plant Staking**

	Plants under 1m	Plants under 1.5m
Hardwood Stake 25mm x 25mm	1x 1200mm stake, buried 400mm	2x 1200mm stake, buried 400mm
Plant Ties	2x ties per stake	Minimum 1x tie per stake

For plants over 1.5m high, refer to staking requirements for trees and specimen trees in Table 7.2: Specimen Tree Planting Requirements.

**708.10 Annuals**

- 708.10.1** Annual beds shall provide a colourful visual display, with 3 changes of bedding plants per year. All annual beds shall have irrigation installed.
- 708.10.2** Compost is to be evenly distributed in the top 150mm of topsoil a rate of 100mm. Fertiliser is to be applied, and then the bed consolidated by treading and raking until a fine tilth and level surface is achieved. All stones, debris and other foreign materials are to be removed before planting.
- 708.10.3** Annual beds shall be planted at a density of 30 plants per square metre. Plants are to be of potted colour grade.
- 708.10.4** Rows of edging plants shall be a uniform distance apart with plants positioned alternately to those in adjacent rows. Plants other than those used in edging rows should be planted at a uniform distance apart, but in a random (not using lines or rows) system unless otherwise specified.
- 708.10.5** Plants shall be placed firmly and uniformly in the soil so that the top of the rootball is level with the surface.
- 708.10.6** Soil shall be lightly cultivated after planting to remove any footprints.

**708.10.7** No surface mulch is to be applied to annual beds.

**708.11 Perennials**

**708.11.1** Perennial beds shall provide seasonal floral displays in high profile areas.

**708.11.2** Perennial bed preparation is to follow Section 708.2: Site Preparation and Planting.

**708.11.3** Perennial beds shall be planted at a density and size of plant that achieves 100% coverage of soil within two planting seasons (usually 4-5 plants per metre). Beds shall be over planted to compensate for dieback as outlined in Table 7.4: Over planting for Amenity Plantings. Plants shall be a minimum of PB3 grade.

**708.11.4** Rows of plants shall be a uniform distance apart with plants positioned alternately to those in adjacent rows.

**708.12 Rosegardens**

**708.12.1** Rosegardens shall provide a seasonal floral display in a formal setting. Beds shall be well set out to promote good access for maintenance maximising floral display.

**708.12.2** Rosegarden beds shall be planted at a density of 1 plant per square metre. Plants shall be hardened off and may be bare-rooted (roots shall be spread evenly in the planting hole) or container grown (ensure roots have a good covering of soil i.e. no roots showing above the soil level; and have no sign of moss or weeds).

**708.12.3** A good rose plant has three to five stems each about 25-45 cm long, and with good fibrous root structure. Watch for roses with roots or stems on one side only. Ensure the graft union is positioned 2-3cm below soil level.

**708.12.4** Rows of plants shall be a uniform distance apart with plants positioned alternately to those in adjacent rows.

**708.12.5** Soil shall be lightly cultivated after planting to remove any footprints.

**708.13 Shrub Gardens**

**708.13.1** Shrub gardens shall provide all round displays of foliage and/or floral displays.

**708.13.2** Shrub gardens shall be planted at a density and size of plant that achieves 100% coverage of soil within two planting seasons. Beds shall be over planted to compensate for plant dieback as outlined in Table 7.4: Over planting for Amenity Plantings. Plants shall be a minimum of PB3 grade.

**708.13.3** Rows of plants shall be a uniform distance apart with plants positioned alternately to those in adjacent rows.

**708.14 Hedges**

**708.14.1** Hedges shall provide a uniform visual barrier, and shall be trimmed on the fronting sides and top. Hedges shall be maintained to an even height up to 2.5m.

**708.14.2** Hedges shall be planted at a density of 1-2 plants per linear metre dependent on species. Plants shall be a minimum grade of PB3.

**708.14.3** Rows of plants shall be a uniform distance apart. When there is more than a single row, plants shall be positioned alternately to those in adjacent rows.

**708.14.4** Hedge plants shall have growing tips pruned on planting to promote bushy growth.

**708.15 Re-vegetation Plantings**

**708.15.1** Re-vegetation plantings shall provide a variety of species that complement the neighbouring forest or scrub areas. Plantings shall include those native plants that provide food sources for native bird populations.

**708.15.2** Where possible, native re-vegetation projects shall include district-sourced species.

**708.15.3** Re-vegetation plantings in open areas shall be planted at a density and size of plant that achieves 100% coverage of soil in 3 growing seasons. Beds shall be over planted to compensate for plant dieback as outlined in Table 7.4: Over planting for Amenity Plantings. Plants shall be of a minimum of root trainer grade.

**708.15.4** Re-vegetation plantings along forest or bush edges or where a canopy already exists shall require varied planting ratios/ha depending on canopy density. The Parks and Coastal Department will set planting ratios in these situations.

**708.15.5** Plants shall be spaced unevenly in the planting layout to encourage a natural appearance and setting.

**708.16 Replacement Plants**

**708.16.1** All plants damaged, vandalised, stolen or dead shall be replaced to maintain numbers and unity of the display. Plants and planting standards shall be of the same quality as specified in Section 708: Amenity Plantings.

**709 NATIVE FOREST AND BUSH AREAS****709.1 Protection**

**709.1.1** No works shall be carried out within the dripline of any tree(s) within a native forest area or identified on any survey plan. All trees are to be barricaded off around the dripline to ensure minimal impact to their root systems

**709.2 Weed Removal**

**709.2.1** Refer to the Council Pest and Weed Strategy and Section 704 Pest Control.

**709.2.2** Forest and bush edges, and breaks in the canopy should be regularly checked for weed invasion.

**709.3 Replanting/Re-vegetation**

**709.3.1** Forest or bush edges that have been broken shall be planted to mitigate the effects of wind funnelling. These plantings shall be undertaken as detailed in Section 708.15 Re-vegetation Plantings.

**709.3.2** Mulches shall be used only around the outside edge of existing bush blocks to minimise establishment of weed species.

**710 RIPARIAN AREAS (SWALES, RAINGARDENS, LAKES, PONDS & RIVER EDGES)****710.1 General Design and Layout**

**710.1.1** Lakes, ponds raingardens and swales within parks, reserves and beach areas shall be designed and constructed in accordance with Section 4: Stormwater

**710.1.2** As detailed in Section 4: Stormwater, watercourses shall remain in a natural state wherever possible. This includes retention of the natural topography and vegetation.

**710.1.3** Riparian streams, swales, pond and lake zones shall be protected, preserved or revegetated. Revegetation plantings shall be undertaken when the slope is higher than 1 vertical to 5 horizontal (1 in 5) and as deemed appropriate by the Parks and Coastal Department.

**710.1.4** All streams on reserves shall be planted with native plants to a minimum width of 5.0m from the edge of the stream.

**710.1.5** Access shall be provided to any ponds or lakes for maintenance, such as future removal of sediment. Vehicle access routes shall have adequate means against vehicle erosion of the surfaces. This may be achieved by the use of appropriate erosion matting or reinforced grass surface areas.

### **710.2 Planting Design and Species**

**710.2.1** All riparian areas are to be planted except where access strips are required and where the slope is minimal and it is appropriate to have a maintained grass edge.

**710.2.2** Any planting of riparian areas shall be designed for minimum long-term maintenance requirements and high water quality outflow.

**710.2.3** The plants shall be New Zealand native species; district sourced, and shall be appropriate to and tolerant of the particular site conditions.

**710.2.4** Plantings should be carried out to achieve a minimum 1.0m spacing along stream and pond banks. Swales shall be planted at densities related to size of plants to achieve a 100% cover in 2 planting seasons.

**710.2.5** Site-specific plantings plans are to be submitted to the Parks and Coastal Department for approval at the design phase.

### **710.3 Swales**

**710.3.1** Vegetated swales have a variety of objectives and designs. In general the objectives are to slow stormwater flows, capture some contaminants and allow for some reduction in the total volume of run-off.

**710.3.2** Swales shall be constructed as detailed in Part 4 Stormwater. Site specific planting plans shall be submitted to the Parks and Coastal Department for approval at the design phase. The preparation for planting shall be undertaken as follows.

**710.3.3** Hard clay layers shall be aerated by deep ripping to a depth of 500mm then rolled with a sheep foot roller or similar, before any laying of topsoil is undertaken.

**710.3.4** Weed species are to be sprayed out at least two weeks prior to planting.

**710.3.5** Swales shall have at least 100mm of topsoil. Topsoil shall have a pH of 6.0 (allowable range 5.5 — 6.5).

**710.3.6** All plant holes shall be a minimum of 2x width of PB and 2x height (depth) of PB. Hole is to be backfilled with 50/50 mix of topsoil and compost.

**710.3.7** An approved time-release fertiliser shall be applied to all plants.

**710.3.8** All plants shall be watered in within two hours of planting to assist with plant establishment.

**710.3.9** Swale areas shall not be blanket sprayed with herbicide for any more than 10% of every 100m length of swale area. Broadleaf targeted sprays may be used following approval from the Parks and Coastal Department.

### **710.4 Raingardens**

**710.4.1** Raingardens allow for the temporary ponding of stormwater, which then can be absorbed through ground soakage. Run-offs from storm events can overflow into a swale system including raingardens.

**710.4.2** The design of raingardens shall follow the requirements of Section 4: Stormwater.

**710.4.3** The Parks and Coastal Department and the Stormwater Department shall jointly approve the design of raingardens.

### **710.5 Ponds and Lakes**

**710.5.1** Ponds may be classified either as stormwater detention and treatment ponds or as an amenity landscape feature, depending upon the primary function of the pond. Dry ponds are not permitted on parks, reserves and beach areas.

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- 710.5.2** The design of constructed ponds and lakes in parks, reserves and beach areas shall be in accordance with those specified in Part 4: Stormwater.
- 710.5.3** Rock weirs may on occasions be required to prevent scouring of streams, a detail has been provided as Rodney District Council Drawing 18000 Sheet 7.2. A culvert head wall may be needed around culverts entering ponds and lakes, appropriate safety fencing shall be provided around headwalls to ensure public safety.
- 710.5.4** The perimeter shelf of any pond is to be planted in dense wetland species. Pond and lake banks are generally to be planted in native revegetation plantings, with access points provided for future maintenance. Grass areas may be permitted if the slope is appropriate and it is desirable to have visual access to the water.
- 710.5.5** The external slope of the pond shall be at a maximum of 1 vertical to 4 horizontal. Refer to Rodney District Council Drawing 18000 Sheet 4.20.
- 711 PLAY EQUIPMENT**
- 711.1** The Parks and Coastal Department supports a policy of uniqueness of play equipment and therefore no standard design is provided for parks, reserves and beach areas.
- 711.2** The Parks and Coastal Department shall be contacted prior to the design phase to determine community needs for equipment. The Parks and Coastal Department shall approve the design and positioning of any equipment, surfacing and surrounds.
- 711.3** Any equipment and surfacing installed shall comply with AS/NZS 4486.1:1997 and AS/NZS 4422:1997 and amendments. In addition all the equipment and surfacing shall meet the requirements of required Building or Resource Consents.
- 712 PARK FURNITURE**
- 712.1** The furniture defined in this section refers to furniture located in parks, reserves and beaches, for public convenience, activities and safety.
- 712.2** The Parks and Coastal Department may require seating, picnic tables, litter bins, BBQs, signs, fences, bollards, gates, lighting and other such furniture in parks, reserves and beach areas.
- 712.3** The Parks and Coastal Department shall approve the design style, colour (where applicable) and location of all furniture.
- 712.4** All litter bins, seats, picnic tables, signs and other high value items shall be treated with an approved graffiti guard. The Parks and Coastal Department may require application of graffiti guard to other furniture.
- 712.5 Site Preparation and Finish**
- 712.5.1** Boxing shall be used on all concrete laid to ensure neat and straight lines. Concrete pads where installed shall be raised 50mm above existing soil level. All boxing and excess materials shall be removed from site following the setting of concrete.
- 712.5.2** All concrete slabs shall be 100mm thick with 665 reinforcing mesh centrally placed over 50mm of AP20 or 15mm mix AC with 3% oxide added and mixed, on 100mm basecourse. The slab is to be constructed to allow for sloping ground and such that no water ponds on or around the slab.
- 712.5.3** Following installation of any furniture, the ground will be back filled and compacted to level. All excess materials and construction debris shall be removed from site. Where the paths abut grass areas, the disturbed area outside of the path shall be reinstated as outlined in Section 706: Grass Areas.

**712.6 Seats**

**712.6.1** Where seating is to be provided in parks, reserves and beach areas, the following designs and styles may be used:

- Park seat – Queenswood Series (1.8m length, inground or surface mount Supplier: Park Supplies).
- Park Bench – Large Colonial Seat with arm rests (supplier: Street Furniture NZ Ltd).
- Variations to fit with local aesthetics and styles. Note: Parks and Coastal Department will need to approve the design before proceeding.

**712.6.2** A concrete pad shall be laid, with dimensions extending 200mm from the back and side of the seat, and 400mm from the front.

**712.7 Picnic Tables**

**712.7.1** Where tables are to be provided in parks, reserves and beach areas, the following designs and styles may be used. The steel tube frame with timber slats is the style preferred by the Parks and Coastal Department:

- Steel Tube Frame with Timber Slats (preferred style).
- Traditional Picnic Table (supplier: Park Supplies Company).
- Macrocarpa Picnic Table.
- Variations to fit with local aesthetics and styles. Note: Parks and Coastal Department will need to approve the design before proceeding.

**712.7.2** A concrete pad will be laid, with dimensions extending 200mm from the sides of the table, and 400mm from the benches.

**712.8 Signage**

**712.8.1** Adequate signage shall be provided for safety, identification and information purposes. All signs require Parks and Coastal Department approval.

**712.8.2** Signs shall be designed and constructed in accordance with NZS 8603:1992 “Outdoor Recreation Symbols”, and the Rodney District Council Parks Signs Manual. Larger signs may be subject to resource and/or building consents and landowner consent conditions.

**712.8.3** In ground signs shall be installed with a concrete mowing strip, Refer to Rodney District Council Drawing 18000 Sheet 7.12.

**712.9 Fences and Bollards**

**712.9.1** Where required, all road frontages shall be fenced with one of the following:

- Parks wooden bollard and chain fence, (Unilog Bollard, pre-drilled, maximum spacing 1.8m apart, with 30mm galvanised chain).
- Parks wooden bollards, (Unilog Bollard, maximum spacing 1.2m apart).
- Single timber rail and post fence, (Unilog Florida Fencing, post spacing 1.8m apart).
- Double timber rail and post fence, (Unilog Florida Fencing, spacing either 1.8m or 2.4m apart).
- Barrier Safety fence.
- Standard 5 wire farm fence, 5 battens between posts, for use only on reserves that will be leased for grazing.
- Pool Standard Safety fence, 1.2m high.

- Variations of Unilog or similar fence options to fit with local aesthetics and styles.

**712.9.2** A 300mm wide x 100mm thick mowing strip shall be provided under the road frontage fence for the full length of a solid fence, or where bollards are used concrete mowing surrounds shall be installed.

**712.9.3** Any park and reserve boundary fencing where required should be open mesh or wire 1.2m high, Refer to Rodney District Council Drawing 18000 Sheet 7.3, 7.7, 7.11 & 7.12.

**712.10 Gates**

**712.10.1** Vehicular maintenance accessway gates shall be provided in all road frontage fences, adjacent to the Vehicle Accessways.

**712.10.2** Gates shall be in keeping with the selected fence style.

**712.11 Lighting**

**712.11.1** The design and positioning of lighting is to be approved by the Parks and Coastal Department.

**712.11.2** Supply of electricity shall not compromise tree roots and future access for repairs. The ground shall be reinstated following the laying of lines to the specifications outlined in Section 706 Grass Areas.

**712.12 Other Park Furniture**

**712.12.1** The design, style and positioning of all other park furniture (not detailed in this section) that is proposed for parks, reserves or beaches shall be approved by the Parks and Coastal Department at the landscape plan approval stage.

**713 PEDESTRIAN WAYS, CYCLE WAYS AND STRUCTURES**

**713.1 General**

**713.1.1** Design and construction of all pedestrian ways and structures must conform to the standards in SNZ HB 8630: 2004 Tracks and Outdoor Visitor Structures and NZS4121: Design for Access and Mobility: Buildings and Associated Facilities.

**713.1.2** All pedestrian way designs shall meet the classifications and related standards in Table 7.7: Pedestrian Way Standards, based on SNZ HB 8630: 2004. Cycle ways, where permitted shall be provided by extending the width of the various pedestrian ways and provision of markings and signs as outlined in Sections 713.7: Urban Paths and 713.8: Short Walks.

**Table 7.7: Pedestrian Way Standards**

	<b>Urban Path</b>	<b>Short Walk</b>	<b>Walking Track</b>
Location	Suitable for highly populated areas with maximum gradient of 1:12, no vegetation or obstacles limit width	Suitable for larger urban park areas with maximum grade of 1:6, no vegetation or obstacles limit width	Suitable for scenic reserve areas with maximum grade of 1:4.
Accessibility	Wheelchairs, prams and disabled walkers. Low fitness & most ages.	Disabled walkers. No allowance for wheelchairs or prams. Low to medium fitness & most ages.	No allowance for disabled persons or pram access. Low to medium fitness and most ages. There may be an element of physical challenge for persons of low fitness.

	<b>Urban Path</b>	<b>Short Walk</b>	<b>Walking Track</b>
Length / Time	Maximum of 750 metres return length (30 mins walk at 1.5km/hr).	Maximum of 1 kilometre return length (40 mins walk at 1.5km/hr).	Maximum of 3 kilometres return length (1.5hrs walk at 2km/hr).
Cycle Ways	Width of combined pedestrian/cycle way shall be increased to 2500mm, with provision of paint marking along path and signage indicating dual use.	Width of combined pedestrian/cycle way shall be increased to 2500mm, with provision of paint marking along path and signage indicating dual use.	Not permitted.
Surface	Asphaltic concrete, concrete with broom of exposed aggregate finish, profile decking timber, natural stone with rough finish, paving bricks with abrasive finish, slip resistant tiles or other suitable finish.	Asphaltic concrete, concrete with broom of exposed aggregate finish, profile decking timber, natural stone with rough finish, paving bricks with abrasive finish, compacted aggregate or other suitable finish.	Compacted aggregate, timber boardwalk, paving tiles, concrete and asphaltic concrete with broom or exposed aggregate finish or other suitable finish.
Maximum Grade	1:14 ideal, to absolute maximum 1:12.	1:12 ideal, to 1:6 maximum.	Max of 1:4, 1:8 ideal. Steps are required in areas exceeding 1:6.
Width	Minimum width of 2000mm may be reduced for short sections for aesthetic reasons.	Between 750mm and 2000mm wide. Min width barrier free 1200mm.	750mm to 2000mm
Vegetation Clearance	Clearance 2500mm high and provide 500mm width clearance. All vegetation is to be removed from site.	Clearance 2500mm high and provide 500mm width clearance. All vegetation is to be removed from site.	Clearance 2500mm high and provide 300mm width clearance with sensitivity to vegetation contributing to the bush experience within the envelope.
Steps	No steps, unless suitable adjacent ramps are provided. Steps shall have maximum riser height of 180mm and minimum tread length of 310mm.	Steps shall be constructed with a maximum riser height of 200mm and a minimum tread length of 300mm.	Steps shall be constructed with a maximum riser height of 200mm and a minimum tread length of 300mm.
Passing Bays	Every 50m where less than 1500mm wide.	Not required.	Not required.
	<b>Urban Path</b>	<b>Short Walk</b>	<b>Walking Track</b>

Drainage	Dish channels or drainage on high side of a footpath with subsoil drainage.	Dish channels or drainage on high side of a footpath with subsoil drainage.	Dish channels or drainage on high side of footpath 200mm wide and 100mm deep, drained by PVC culverts passing beneath track surface.
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**713.1.3** Structures include steps (not concrete), handrails/barriers, footbridges, boardwalks and platforms and shall be constructed to best trade practice that meets the building code. The structures will complement the relevant pedestrian way classification as detailed in Table 7.7: Pedestrian Way Standards.

**713.1.4** Building Consent shall be required for all new structures such as platforms, boardwalks, footbridges, handrails/barriers and stairways. On completion of the structure a copy of the signed building certificate is to be issued to the Council. Resource Consent may be required for some structures in certain areas.

**713.2 Layout, Location and Style**

**713.2.1** The layout and location of pedestrian ways, cycle ways or structures within parks, reserves and beach areas shall be submitted to the Parks and Coastal Department for approval.

**713.2.2** All pedestrian ways are to be aligned to maintain grade limits as outlined in Section 713.1: General, with consideration to drainage requirements for each location, while following the pedestrian desire lines for the site. Grades are to be measured with an abney level in planning stages to ensure suitable limits are maintained.

**713.2.3** Cycle ways shall be extensions of the pedestrian ways and their respective standards, with pavement markings and signage indicating dual use.

**713.2.4** All pedestrian ways are to be crowned or angled across the natural slope wherever possible to minimise flow of surface runoff over surface treatments.

**713.2.5** Where possible, switch backs to be located at topographical features to minimise visual impact. Switch backs to be sited to ensure surface runoff from one section can be diverted off outer corner to reduce flow on lower sections. Angles between sections shall cater to pedestrian desire lines and capabilities, to prevent pedestrians from taking short cuts between sections.

**713.2.6** Corners and junctions are to follow desire lines to minimize unformed shortcuts causing damage to areas outside the pedestrian way. This will include radii at urban path intersections and aesthetic considerations at areas of transition such as rest areas, switch backs and viewing platforms.

**713.2.7** Gradient changes are to be indicated to the pedestrian through the use of transition zones as set out in NZS 4121. Localised variation in height must be minimised to provide a uniform gradient and to eliminate ponding.

**713.2.8** Routes shall be designed to minimise cutting of tree roots and removal of vegetation. In bush areas, boardwalks will be promoted where the track route traverses significant vegetation and where an alternative route may not be undertaken. All significant trees shall be accommodated within the design.

**713.3 General Site Preparation and Reinstatement**

**713.3.1** Works are to be carried out by experienced, competent persons to best trade practice. Adjacent areas shall be protected from damage and silt runoff throughout construction. (refer Section 703.1 Protection).

**713.3.2** Pedestrian ways shall be benched into the side of slopes and retained where required to obtain a level walking surface.

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- 713.3.3** Within the root zone of trees, the pedestrian way shall be constructed above the existing ground, with only the removal of surface grass permitted. Work within the root zone of trees shall be undertaken as specified in Section 703.1 Protection.
- 713.3.4** Geotextile fabric shall be laid prior to the basecourse and surface material to protect the underlying soil structure.
- 713.3.5** Surfaces are to be compact, firm, stable, non-slip and obstacle free with no loose metal or stone. Edges shall be well defined. The surface shall be of sufficient standard to prevent high density impact on the reserve while maintaining easy access.
- 713.3.6** Following installation of any pedestrian way or structure, the ground will be back filled and compacted to level. All excess materials and construction debris shall be removed from site. Where the paths abut grass areas, the disturbed area outside of the path shall be reinstated as outlined in Section 708: Grass Areas.
- 713.4 Drainage**
- 713.4.1** All pedestrian ways are to be free draining. All non-sealed surfaces shall be crowned to shed water from the pedestrian way and to eliminate ponding.
- 713.4.2** All sealed surfaces shall have an ideal 1.5% and maximum 2% crossfall. Reverses in crossfall to be minimised. 10m transition to be used in cases where crossfall transition is necessary.
- 713.4.3** Where topography does not allow evenly distributed runoff, drainage culverts shall be installed in paths and tracks. The run-off from these tracks shall not result in concentrated runoff that may erode the ground surface. All pedestrian way types to be water tabled, culverted, benched and bridged as required.
- 713.4.4** Dish channels or drainage shall be provided on the high side of a footpath with subsoil drainage to prevent run-off from higher land discharging onto the paths and tracks.
- 713.4.5** Discharge areas to be treated to prevent scouring and minimise visual impact. Discharge area is to be clear of downhill fill. Soft soil areas subject to discharge, are to be protected with rip-rap.
- 713.5 Batters/Cuts/Fills**
- 713.5.1** Cut and fill batters to be provided where necessary to provide pedestrian way cross fall and eliminate concentration of overland flows.
- 713.5.2** Batters to provide sufficient slope to prevent excessive soil creep or slips. Suitable rise factors are site dependant. A rise factor of 4:1 is the general accepted maximum. Areas requiring a steeper slope are subject to approval.
- 713.5.3** Angle of repose for downhill fills to be determined by internal angle of friction under saturated conditions (natural angle of repose when wet).
- 713.5.4** The base of cut shall be shaped for preparation of surface treatment. Cuts to be planed off with sharp shovel. Soft areas of walking surface to be cut and filled.
- 713.5.5** Fill to make up no more than 50% of walking surface width.
- 713.6 Vegetation Clearance**
- 713.6.1** Vegetation must be kept away from the total width of the track formation, and to a height of 2.5m, giving users a clear passage and unimpeded view of the track surface.
- 713.6.2** A Council approved supervisory arborist, is to advise on the tree protection measures required to undertake the works with no more than a minor adverse effect on the retained protected trees. The supervisory arborist shall be on site to provide professional advice and conduct tree care work. Specific tree protection measures are to be identified and discussed. Vegetation removal is to follow accepted pruning techniques and not cause adverse effect on tree health.

- 713.6.3** The extent of any tree removal or vegetation clearance is to be confirmed by the supervisory arborist, and trees and other vegetation that are to be removed must be marked by the applicant with dazzle paint or marked by a similar method.
- 713.6.4** Vegetation shall have 300mm – 500mm minimum clearance depending on track type except within the bush environment. Pruning within the bush environment will be sensitive to native plant growth, retaining ferns, epiphytes and vegetation contributing to the bush experience within the envelope unless there is a direct hindrance to passage along the track. No straight-line pruning is to occur on any bush tracks.
- 713.6.5** Any object mounted between 675 and 2500mm must not protrude more than 100mm into Urban and Short Paths.
- 713.7 Urban Paths**
- 713.7.1** Urban paths will be well formed to a street shoe standard, suitable for high use by people of low fitness, most ages and for wheelchairs and prams in all weather.
- 713.7.2** Dual use pedestrian/cycle ways shall be constructed to a width of 2500mm to the same standards as Urban Paths. A painted line shall delineate the cycle way from pedestrian way, and the cycle way shall be marked with a cycling symbol every 200 metres and at every junction point (including entrances to the reserve). Signs shall be erected in the reserves to indicate the presence of dual use paths.
- 713.7.3** Surfaces are to be compact, firm, stable, non-slip and obstacle free. Acceptable surface treatments are asphaltic concrete, concrete with broom or exposed aggregate finish, profile decking timber, natural stone with rough finish, paving bricks with abrasive finish or slip resistant tiles. Proposed details for the surface finish on footpaths shall be submitted to the Parks & Coastal Department for approval.
- 713.7.4** Areas with grades between 1:20 and 1:12 are to be treated as ramps and are to comply with section 6 of NZS 4121:2001.
- 713.7.5** All paths subject to vehicle passage or crossing open grassed areas, uncompacted or areas subject to movement shall be 100mm thick, reinforced with 665 mesh or fibre on a 50mm bed of 20/7 scoria.
- 713.7.6** All concrete shall be ready mixed unless otherwise approved by the Parks and Coastal Department and shall have a minimum crushing strength of 17.5 MPa at 28 days.
- 713.7.7** A nominal crossfall (no more than 1.5%) shall be provided across the pathway to shed storm water run-off.
- 713.7.8** Dish channels or drainage are to be provided on the high side of the footpath with subsoil drainage to prevent and collect run-off from higher land discharging onto the path.
- 713.7.9** Where width is less than 1500mm wide a passing place shall be installed every 50m. The passing place shall be a minimum of 1500mm wide and 2000mm long. Transition to be indicated by 1:5 tapers to adjoining lengths of Urban Paths, alternately reverse curves to give a 2m transition at each end.
- 713.7.10** Where gradient falls between 1:33 and 1:20, rest areas are to be provided at intervals no further than 18m. Rest areas to be a minimum of 1200mm long and 2000mm wide, with a level surface appropriate to Urban Paths and located at points of interest. Transitions to be indicated by 1:5 tapers to adjoining lengths of Urban Path alternately reverse curves to give a 2m transition at each end.
- 713.7.11** Areas with grades between 1:20 and 1:12 are to be treated as ramps and are to comply with section 6 of NZS4121:2001. Edges require an upstand edge of 75mm minimum height or edge rail with maximum 75mm clearance to ramp. Grab rails on ramps shall be at a height between 840-900mm and comply with section 6 of NZS4121:2001 with secondary rails to be provided at mid-height between edge treatment and hand rail.
- 713.7.12** No steps shall be used on urban paths, unless suitable adjacent ramps are provided. Steps shall have maximum riser height of 180mm and minimum tread length of 310mm. Refer to Rodney District Council Drawing 18000 Sheet 7.13 & 7.14.

**713.8 Short Walk**

- 713.8.1** Short Walk tracks shall be well formed to a “shoe” standard suitable for high use by people of most ages and standards of fitness in all but the worst weather as defined in section 4.6 of NZS 4121:2001.
- 718.8.2** Dual use pedestrian/cycle ways shall be constructed to a width of 2500mm to the same standards as Short Walks. A painted line shall delineate the cycle way from pedestrian way, and the cycle way shall be marked with a cycling symbol every 200 metres and at every junction point (including entrances to the reserve). Signs shall be erected in the reserves to indicate the presence of dual use paths.
- 718.8.3** Acceptable surface treatments are asphaltic concrete, concrete with broom or exposed aggregate finish, profile decking timber, natural stone with rough finish, paving bricks with abrasive finish, slip resistant tiles or compacted aggregate. Proposed details for the surface finish on footpaths shall be submitted to the Parks Department for approval.
- 713.8.4** Drainage including water tables, cutouts, culverts and runoffs, shall be provided to prevent water flow from damaging the track and to remove surface water from the track.
- 713.8.5** Where gentle slopes occur, the path surfaces should have a crossfall between 1:100 and 1:50 track surfaces shall be crowned to shed water off the surface.
- 718.8.6** Where gradient falls between 1:33 and 1:20, rest areas to be provided at intervals no further than 18m. Rest areas shall be a minimum of 1200mm long and 2000mm wide with a level surface appropriate to a Short Walk and located at points of interest.
- 713.8.7** Steps shall be constructed to enable comfortable use by disabled walkers. The step risers shall have gradients that shall not exceed 37°. Riser height to be 200mm, with treads to be a minimum of 300mm long. All steps in a flight to have consistent tread depths and riser heights with no flight exceeding 2500mm in height. Avoid single steps and level changes less than 150mm with the exception of kerbs. Steps to maintain a minimum width of 1000 with 900 minimum clear between grab rails. Refer to Rodney District Council Drawing 18000 Sheet 7.13, 7.14, 7.16, 7.17 & 7.18.

**713.9 Walking Track**

- 713.9.1** A walking track shall be a well-defined track formed to a boot or running shoe standard, suitable for people of average fitness in most weather conditions. Use may be affected by weather related conditions such as swollen creeks, muddy surface or fallen obstacles.
- 713.9.2** A walking track may have a lower density use than short walk tracks.
- 713.9.3** No dual use pedestrian/cycle ways are permitted on walking tracks.
- 713.9.4** Suitable surface treatments include compacted aggregate, timber boardwalk, paving tiles, concrete and asphaltic concrete. Proposed details for the surface finish on footpaths shall be submitted to the Parks and Coastal Department for approval
- 719.9.5** Compacted aggregate shall be used on all tracks unless approved by the Parks and Coastal Department.
- 719.9.6** Rest areas are to be located at points of interest to be submitted to the Parks Department for approval. Rest areas to be a minimum of 1200mm long and 2000mm wide with a level surface appropriate to pedestrian way.
- 719.9.7** Steps shall be constructed to enable use by persons of low to medium fitness. The step risers shall have gradients that shall not exceed 37°. Riser height to be 200mm, with treads to be a minimum of 300mm long. All steps in a flight to have consistent tread depths and riser heights. Steps must maintain a minimum width of 600mm. Refer to Rodney District Council Drawing 18000 Sheet 7.13, 7.14, 7.16, 7.17 & 7.18.

**713.10 Structures**

- 713.10.1** All structures shall be designed and constructed in accordance with SNZ HB 8630: 2004 - Tracks and Outdoor Visitor Structures.

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**713.11 Steps**

- 713.11.1** Steps shall be constructed to enable comfortable use by children and older people.
- 713.11.2** The SNZ HB 8630 standards for steps for each pedestrian way type shall apply for all situations where steps may be required. Steps shall be built to the specifications of Parks and Coastal Drawings, and are to comply with the New Zealand Building Code.
- 713.11.3** All step treads must have an even surface; they must not be muddy or rough. In boxed steps, the treads must have an even surface of well-graded and compacted aggregate on compacted soil. All wooden steps shall have geogrid affixed. Aggregate shall have a good range of particle size distribution to facilitate compaction.
- 713.11.4** All timber to be H4 treated and branded with the appropriate woodmark. Timber to be treated at least two months prior to use. Refer to Rodney District Council Drawing 18000 Sheet 7.13 and 7.14.

**713.12 Handrails/Barriers**

- 713.12.1** Handrails and barriers shall be constructed where visitors (including children) may experience a perceived or significant hazard or where the fall height exceeds 1.0m.
- 713.12.2** The SNZ HB 8630: 2004 standard shall apply to all situations where handrails and barriers are or may be required.
- 713.12.3** Safety rails shall be used in areas where the fall height exceeds 1.0m and where specified by the building code.
- 713.12.4** Grab rails are to be provided in areas where a safety rail is not required but visitors experience significant danger, as outlined in SNZ HB 8630: 2004 Standard or in conjunction to safety rails where required for disabled access. Significant danger is defined as falls that may result in serious harm, as determined by fall height, secondary consequences of fall i.e. landing surface, propensity to roll.
- 713.12.5** Grab rails also to be provided where visitors experience perceived danger, both sides of steps and areas of grade subject to seasonal surface variation such as leaf litter, ice.
- 713.12.6** The SNZ HB 8630: 2004 standard shall apply to all situations where grab rails and barriers are or may be required as outlined above. Grab rails and barriers shall be built to the specifications of Parks Drawings. All barriers are to comply with NZS 4121:2001.
- 713.12.7** The grip of a grab rail shall be between 40mm and 50mm in diameter with 50mm clearance from adjacent objects. The ends of grip rails shall be curved down or rounded off and they shall continue at 300mm past the end of ramps, bridges and boardwalks.
- 713.12.8** Handrails and barriers shall be built to the specifications of Parks and Coastal Drawings. Refer to Rodney District Council Drawing 18000 Sheet 7.18.

**713.13 Footbridges**

- 713.13.1** Footbridges shall be used in conjunction with pathways across any perennial waterways. Footbridges may be used across any seasonal riparian area where required. The width shall match that of the pedestrian way.
- 713.13.2** The design and positioning of footbridges is to be approved by the Parks and Coastal Department.
- 713.13.3** The design and construction of footbridges shall be in accordance with SNZ HB 8630. Footbridges shall be designed to meet the specific requirements of a particular site. A standard footbridge design is provided for footbridges with a span of less than 2.5m (see Parks and Coastal Drawings). For spans in excess of 2.5m a site specific design is required. Variations on design will be required to have a Producer Statement meeting construction and design codes of compliance.
- 713.13.4** Footbridges shall be built to withstand a 1 in 20-year flood.

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- 713.13.5** The gaps between boards shall be no greater than 12mm. Boards are to be laid at right angles to the direction of pedestrian flow with no lip greater than 5mm high at the start of bridge. Decking timber shall be profiled to enhance slip resistance. An edge protection at least 75mm high must be installed where lower rails have clearance greater than 75mm. Remaining barrier details shall be as set out in the previous section.
- 713.13.6** Timber treatment to be in line with current requirements of timber preservation council. All timber shall be branded with the appropriate woodmark and treated at least 2 months prior to use. Round sawn piles or poles in contact with the ground are to be H5. Sawn timber not in contact with the ground must be H3 treated. Sawn timber in contact with the ground must be H5 treated.
- 713.13.7** All nails to be hot dipped galvanised unless in coastal spray zone. Stainless steel fixings are to be used in coastal spray zones. For deck fixing 90 x 3.15 FH/JH must be used. For general structural use, 100 x 4 FH is the minimum standard required.
- 713.13.8** All bolts shall be hot dipped galvanised H12. Bolts to be fitted with 50 x 50 x 5 galvanised square washers at both ends. All galvanised bolts in contact with treated timber to be protected using GP grease in pre-greased holes.
- 713.13.9** All footbridges shall have geogrid affixed. Refer to Rodney District Council Drawing 18000 Sheet 7.15, 7.16 & 7.17.
- 713.14 Boardwalks**
- 713.14.1** Boardwalks may be used over wet, swampy, muddy or sensitive track areas to achieve a mainly dry surface (i.e. for visitor comfort) as well as to protect the environment.
- 713.14.2** The design and positioning of boardwalks is to be approved by the Parks and Coastal Department.
- 713.14.3** The construction and design of boardwalks shall be in accordance with SNZ HB 8630 and the Standard Design for Boardwalks, (see Parks and Coastal Drawings). Variations on design will be required to have a Producer Statement meeting construction and design codes of compliance.
- 713.14.4** All footbridges shall have geogrid affixed. Refer to Rodney District Council Drawing 18000 Sheet 7.15.
- 713.15 Platforms**
- 713.15.1** The use of viewing platforms can enhance people's appreciation of a feature or scenic point. Any platform built will be based upon achieving minimum long-term maintenance of structure and placement.
- 713.15.2** The design and positioning of platforms is to be approved by the Parks and Coastal Department.
- 713.15.3** The construction and design of platforms shall be in accordance with SNZ HB 8630 and the Standard Design for Platforms, (see Parks and Coastal Drawings). Variations on design will be required to have a Producer Statement meeting construction and design codes of compliance.

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**714 ROADING AND PARKING****714.1 Selection of Design, Location and Layout**

**714.1.1** The design, layout and location plan for any roading and/or parking within a reserve area shall be submitted to the Parks and Coastal Department for approval.

**714.1.2** Where carparks, roads or other paved or metalled areas are to be provided, they shall be designed in accordance with Section 3: Roading, and the Rodney District Council District Plan.

**714.1.3** Disabled parking shall be provided for in accordance with NZS 4121 and NZMP 4122.

**714.1.4** The use of permeable or semi-permeable surfaces shall be used where possible for parking and low traffic areas. Drainage swales /filter strips shall be used where ever possible as an alternative to concrete kerbing and channelling for parking and roads to receive and assist in the treatment of stormwater. Refer to Section 3: Roading and Section 4: Stormwater for further guidance and direction.

**714.1.5** Guidance should be obtained from an experienced landscape architect familiar with water sensitive design and planting in order to address site specific design needs.

**714.2 Site Preparation and Construction**

**714.2.1** Carparks, roads or other paved or metalled areas are to be constructed in accordance with Part 3: Roading, and the Council District Plan.

**714.2.2** Paved carparks are to be marked out accordingly by an approved road-marking Contractor and must comply with TNZ/LTSA Manual of Traffic Signs and Markings.

**714.3 Maintenance Requirements**

**714.3.1** The defects liability period and maintenance requirements shall be as detailed in Part 3: Roading.