



## Wellington City Council

### Track structures :

**Drawings for structures not  
requiring a building consent**

## **Construction drawings for track structures.**

All built structures are legally required to be constructed to the standard of the New Zealand building code.

The following drawings are to be used when building track related structures in Wellington City Council Reserves that do not require a building consent.

This includes:

- Retaining walls less than 1.5m high and that do not support a surcharge
- Platforms (boardwalks) not more than 1.5 high.

Notes:

### 1. Resource consent

This document is to provide details on the construction of structures that do not require a building consent. However resource consent may be required.

You are required to refer to the council representative to determine if any structure you are intending to build is a permitted activity under the district plan. If it is not, resource consent will need to be obtained before construction commences.

### 2. Full bench tracks / cut and fill tracks

A 'full bench' track is the most sustainable track build methodology. This is the preferred option when track building on Wellington City Council managed land.

There may be instances when 'cut and fill' is the requested option for the track build. If this is the case the council representative will be informed of the request before the track proceeds. The council representative will be responsible for the decision on the track formation method to be used in these cases. If a 'cut and fill' method is permitted the following notes are to be followed.

### Engineer notes on cut and fill track bench formation:

Where a track is constructed on a cross slope of less than the maximum fill batter slope (1.5 horizontal to 1 vertical for clay soils), the track bench may be constructed using combined cut and fill formation or fill formation as shown on the drawings. The excavated material from the inside of the formation bench may be used to fill the outer edge of the track bench provided the moisture content is low enough to allow this fill material to be compacted in place. If cut clay material becomes wet and unsuitable for placement as fill, it should be disposed of in a suitable location and not used as track formation fill.

Fill batter slopes should not be steeper than the following depending on the soil type:

- Poor clay - 2.0 horizontal to 1.0 vertical.
- Brown clay and weathered rock - 1.5 horizontal to 1.0 vertical.
- Irregular shaped rocks, stacked - 1.0 horizontal to 1.0 vertical
- Drawing shows cut bench below the track bench of 300mm width to support fill material.
- Fill material to be compacted by power machinery.

### 3. Edge boards and retaining walls

The maximum height of a retainer wall that does not require a building consent is 1.5m provided it does not support a surcharge.

The use of timber pegs or posts for holding edge boards and retaining timber is the preferred option.

There may be cases where it is extremely difficult to drive a timber pegs into the ground. The use of a waratah can be considered in these cases. When this occurs the council representative will be informed of the request to use waratahs. The council representative will be responsible for the decision on which material is to be used. This may result in hiring a contractor to do this work using a more robust construction method rather than timber pegs and/or waratahs.

#### Notes on edge board retaining:

- Non concreted pegs can only be used for a maximum board height of 400mm.
- Non concreted pegs must be driven into solid ground to a minimum depth of 400mm.
- If waratahs are permitted they can only be used for a maximum board height of 400mm.
- If waratahs are permitted they must be driven into solid ground to a minimum depth of 400mm.
- If using waratahs these must be galvanised.

- If using waratahs they must have a capping. The drawings show a timber edge cap as this is a preferred finish rather than a plastic cap.
- Ensure all specified spacing distances for posts/pegs are followed.

Retaining wall specifications table has a maximum height of 1.2m. If you intend to build a retainer wall above this height, to a maximum height of 1.5m, you will need to refer to the council representative.

#### Rock retainer walls:

The use of rock walls for retaining can be used provided they follow the Department of Conservations detailed construction description outline in:

- Track Construction and Maintenance Guidelines - Guidelines – VC 1672  
23.1 Specifications for rock retaining wall 143

#### 4. Platforms / Boardwalks

The maximum height of a platform (boardwalk) that does not require a building consent is 1.5m.

However the maximum height of a platform without a barrier to fall is 1m.

If you intend to build a platform between 1.0m and 1.5m you will need to refer to the council representative for the requirement for type of barrier to fall and how this will be constructed.

The boardwalk drawings provide two alternatives for supporting joists. One is with joists sitting on top of the bearers. The other is with joists supported with the use of joist hangers.

If you are intending to use the boardwalk type titled 'Wcc typical boardwalk across gully base' you need to ensure the maximum gully span is not exceeded and the minimum bearer on ground length is provided.

#### 5. Timber details

Timber structures should be constructed as per the relevant principal standards. These are as follows:

- NZS 3601 Metric Dimensions of Timber
- NZS 3603 Timber Structures
- NZS 3604 Light Timber Frame Buildings
- NZS 3605 Timber Piles and Poles for use in Buildings
- NZS 3631 Timber Grading Rules
- NZS 3640 Timber Preservation

(The species, grade, sizes, finish, treatment and moisture content of timber and wood based products should comply with the requirements listed in the relevant standards, at the time of enclosure or installation.)

The whole of the timber should be sound, well-seasoned and maintain figured dimensions. Timber should comply with Table 16, according to its use and environment.

<b>Table 16 – Timber Grade and Treatment</b>			
<b>Location</b>	<b>Species</b>	<b>Grade</b>	<b>Treatment</b>
Sawn timber not in contact with ground	Pinus Radiata	SG8(Wet ) or VSG8	H3.2
Sawn timber in contact with ground (or within 150mm of the ground) or fresh water	Pinus Radiata	SG8(Wet ) or VSG8	H5
Round or sawn piles or poles in contact with ground or fresh water	Pinus Radiata	NZS 3605	H5
Round or sawn piles or poles sea water inundated	Pinus Radiata	NZS 3605	H6
Sawn timber sea water inundated or high rainfall areas	Pinus Radiata	SG8(Wet ) or VSG8	H6
Sawn timber in the sea spray zone	Pinus Radiata	SG8(Wet ) or VSG8	H4

Alternative grade of timber may be used in locations where this is approved by an engineer. Unless otherwise specified, all timber should be rough sawn to the sizes shown on the drawings. The substitution of dressed sizes should be made only after reference to the engineer. Specified barrier baluster spacing may be based on the full rough sawn size of the timber balusters. Substitution of dressed balusters may result in more than a 15% reduction in load capacity of the barrier.

Timber treatment should comply with the current requirements of the Timber Preservation Council. All treated timber should be branded with the appropriate Woodmark. It is preferred that timbers be treated at least 2 months prior to installation.

Cut faces of timber sections greater than 50mm thick should be treated with Metalex or similar field applied preservative treatment.

All nails and screws shall be as per the following:

- General use nails to be 100x4.0mm FH galvanised steel.
- Nails to fix battens to be 90x3.55mm FH galvanised steel.
- Top rail fixing screws to be 100x14g stainless steel bugle batten screws

All bolts should have the following details:

- Use type 316 stainless steel engineers bolts, nuts and washers in the following instances:
  - Marine wetting environment (any location below 2m above the mean high water spring level).
  - Marine spray environment (500m horizontally from the sea including harbours or 100m from tidal estuaries and sheltered inlets).
- Elsewhere type 304 stainless steel bolts, nuts and washers shall be used.
- Minimum bolt diameter for structural work should be 12 mm.
- On M12 bolts, washers should be minimum 50 x 50 x 3mm thick and M16 bolts, washers should be minimum 65 x 65 x 3mm thick.
- Square washers are required under the heads and nuts of all bolts.
- Thread protrusion past the nut should be a minimum of one thread pitch after tightening.

Work generally should be in accordance with the best trade practice, and this should be deemed to include those methods, practices and processes contained in current syllabuses for the NZQA courses in carpentry.

Details not shown on the drawings should be formed according to the principles of NZS 3604. A thorough knowledge of the principles set out in “Builders Guide to NZS 3604” is recommended.

All proprietary “Lumberlok” thin gauge steel connectors (excluding brackets) should be stainless steel and of the specified type and thickness shown on the drawings. All fixings shall be made using the specified proprietary nails and be made fully in accordance with the manufacturer’s instructions and recommendations.

## 6. Concrete foundations

All foundations should be in “good ground” as defined in NZS3604 to the minimum depth shown on the drawings. The bearing capacity of the ground at the base of the foundation must be at least 100KPa.

Foundations should have a 100mm thick layer of concrete below any timber piles.

Concrete should comply with NZS 3104 or NZS 3108. The material specifications and techniques set out there in shall be observed in all respects.

Concrete backfill should have a 20mm maximum aggregate size and a 28 day strength of 17.5 MPa.

It is recommended that all foundation holes are photographed with a measure tape to record depth and width of holes.