

**From:** "Jan - Leisurecom" <Jan@leisurecom.co.nz>  
**Sent:** Mon, 18 Nov 2024 11:50:54 +1300  
**To:** "RLC Building Services" <buildingadmin@rotorualc.nz>  
**Subject:** RE: BC24-011274 - RFI  
**Attachments:** 233840-R-E-C001 Stormwater Report - ISSUED.pdf, BC24-011274 Building Consent Processing - BC RFI RLC REPLY.pdf, L735\_BC - 16-11-24.pdf  
**Categories:** 3. RFI info received

Hi – please see attached response to your RFI.

Thank you

**JAN GARMONSWAY**  
LEISURECOM HOMES | HEAD OF DELIVERY

**p:** 07 823 5951 **w:** [www.leisurecom.co.nz](http://www.leisurecom.co.nz)



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**From:** RLC Building Admin <buildingadmin@rotorualc.nz>  
**Sent:** Friday, 15 November 2024 1:10 PM  
**To:** Info <Info@leisurecom.co.nz>  
**Subject:** BC24-011274 - RFI



Tēnā koe,

Please find attached the additional information request regarding application - Building Consent - BC24-011274.

Please call us on 07 348 4199 if you have any questions, or email us at [buildingadmin@rotorualc.nz](mailto:buildingadmin@rotorualc.nz).

Ngā mihi,

Rotorua Lakes Council

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18 February 2021

Fran Muraahi  
166 Wellington Street  
**PUKEKOHE, 2120**



Dear Fran,

**Re: Soakage Report for 21 Island View Road, Rotorua (Lot 179, DPS 1083)**

### **(1) Introduction**

Stratum Consultants Ltd (Stratum) has been engaged by Fran Muraahi to carry out a soakage assessment for the stormwater disposal associated with the proposed development at 21 Island View Road, Rotorua.

This report summarises the tests undertaken and provides recommendations on the size and depth of the soakage system required to dispose of stormwater from a (10% AEP) 1 in 10 year, 60-minute storm event as per the building code.

### **(2) Site Description**

The property is located at 21 Island View Road, Rotorua and legally described as Lot 179, DPS 1083 and is approximately 994m<sup>2</sup>. The site is located approximately 600m south-east of Mount Ngongotaha and within the suburb of Western heights.

The site has as an existing house orientated to the south west of the site with a detached single garage accessed off Island View Road and single carport which is accessed off Ross Road. The property yard is established with grass and gently slopes approximately 4% (1 in 25) down towards Ross Road.

No stormwater reticulated system is available on the site and it is proposed that stormwater be disposed of via on-site soakage.

### **(3) Existing Information**

One percolation test was carried out to establish the stormwater soakage rate for the property. Additional testing has been undertaken for the Geotechnical Assessment Report (Stratum reference: 233840-M-E-C002). We note the following:

- The ground water table was not encountered during site investigations down to 4.5m.
- The borehole logs found that the site is underlain by topsoil to 0.2m below existing ground level (bgl). This was underlain with fine to medium sands, silt and pumice gravel to 4.5m. Sands and Gravels are the more prevalent soils over the depth of testing.

- The proposed soakage design targets the permeable sands and gravels located in the upper 3.5m of soil.
- The general overland flow direction is to the south-east with positive fall available out to Ross Road, hence, a 1:10 year design is considered appropriate.
- The percolation test identifies a soakage rate of 2.11 litres/m<sup>2</sup>/min.

#### **(4) Soakage Assessment & Recommendations**

The soakage assessment consisted of a hand augered borehole to a depth of 3m below the existing ground. A falling head percolation test was undertaken in accordance with E1 - Surface Water (E1/VM1) of the New Zealand building code.

Our on-site percolation test has identified soakage rate of 2.11 l/m<sup>2</sup>/min. This rate has been reduced by a factor of 0.5 to allow for long term performance of the system and potential reduction in soakage over time due to clogging.

No building plans were available at the time of writing this report and recommendations have been provided below for both soak holes and trenches to allow some flexibility when preparing the building consent drainage plans.

We recommend the following for a new soakage system on the site:

- (i) The soakage system shall accommodate flows for the 1:10 year (10% AEP), 60-minute event.
- (ii) Ensure the base of the soak hole or trench is into the underlying sand and gravel layers. If soils differ from those found in the percolation test then notify the engineer.
- (iii) A single 3.15m deep by 900mm diameter soak hole can dispose of 46m<sup>2</sup> of hardstand or roof area. A standard soak hole details is attached.
- (iv) A 5m long by 1m wide by 2m deep trench can dispose of 100m<sup>2</sup> of hardstand or roof area. This equates to 20m<sup>2</sup> of roof / hardstand area per lineal metre of trench. Where possible the trench is to be located parallel with the ground contour to ensure even loading of the trench occurs. A standard soakage trench detail is attached.
- (v) Suitable grit /leaf and sediment traps be installed at the collection points of the stormwater lines to prevent the capture and transfer of material into the system that may lead to blocking and eventual failure of the soakage system.
- (vi) A suitable form of surcharge relief shall be installed in the pipe system to facilitate surcharge to overland flow in events that exceed the capacity of the soakage system. We recommend pipe breaks at ground level for the downpipe connections to soak holes and a cesspit / relief overflow for the soakage trench system. See attached standard details.
- (vii) The stormwater disposal system is to be maintained as per the attached maintenance table.

- (viii) The soakage system shall be located at least 0.5m from any boundary (provided the neighbouring building is 2.5m from the boundary) and no closer than 3m to any building foundations or retaining walls.

## **(5) Conclusions**

Providing the above recommendations are carried out, it is our opinion that the specific designed soakage system is a suitable method of disposing of stormwater from hard and soft surfaces at this location.

## **(6) Limitations**

There will be occasions when the rainfall event exceeds the capacity of the soakage system. As such, there will be some runoff from the site or ponding until the soakage system recovers. The floor level of any building is to be above the surrounding ground levels and the ground shaped to prevent any ponding water entering the building. In addition, overland flow paths should be free from obstruction to prevent inundation of buildings.

This report has been prepared for Fran Muraahi and the territorial authority for the proposed development at 21 Island View Road, Rotorua. It is not to be relied upon or used out of context by any other person without reference to Stratum Consultants Ltd. The reliance by other parties on the information or opinions contained in the report shall, without prior review and agreement in writing, be at such parties' sole risk.

The following information is attached:

- Percolation Test
- Soakhole design
- Soakage trench design
- Standard Soakhole & Trench Detail
- Maintenance Table
- Hirds Data
- New Zealand Building Code – Percolation Testing Extract

If you have any further queries, please contact the undersigned.

Yours faithfully  
Stratum Consultants Ltd



Prepared by:  
Craig Pollard  
Civil Engineer

**Client:** Fran Muraahi  
**Project Title:** Soakage Assessment

**Page:** 1  
**No of Pages:** 6

**Site Address:** 21 Island View Road  
**City:** Rotorua  
**File Number:** 233840-R-E-S002

**Date Started:** 15/02/2021  
**Date Finished:** 15/02/2021  
**Logged By:** SG



### Test Location Sketch

**Notes:** Sketch of approximate locations only - not to scale



**Client:** Fran Muraahi  
**Project Title:** Soakage Assessment  
**Site Address:** 21 Island View Road  
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**Page:** 2  
**No of Pages:** 6  
**Date:** 15/02/2021  
**Logged By:** SG  
**Checked:**



## Stormwater Disposal - Percolation Test Results

**Borehole No :** 1

**Test:** 1

| Depth (m)                                                               | Groundwater | Graphic Log | DESCRIPTIONS                                                                | Water level versus time                                                                           |                 |                            |                                         |
|-------------------------------------------------------------------------|-------------|-------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------|----------------------------|-----------------------------------------|
| 0.0m                                                                    |             |             | (TOPSOIL)                                                                   |                                                                                                   |                 |                            |                                         |
|                                                                         |             | □□□         | SILT minor fine - medium sand, dark brown, dry - moist, low plasticity.     |                                                                                                   |                 |                            |                                         |
| 0.5m                                                                    |             | •••         | SAND fine - medium minor silt, light orangish brown, moist, poorly graded.  |                                                                                                   |                 |                            |                                         |
|                                                                         |             | •••         | SAND fine - medium, grey, moist, poorly graded.                             |                                                                                                   |                 |                            |                                         |
| 1.0m                                                                    |             | •••         |                                                                             |                                                                                                   |                 |                            |                                         |
|                                                                         |             | •••         |                                                                             |                                                                                                   |                 |                            |                                         |
| 1.5m                                                                    |             | ×××         | SILT minor fine - medium sand, light orangish brown, moist, low plasticity. | Time (minutes)                                                                                    | Level Drop (mm) | Cumulative Level Drop (mm) | Augered Hole depth (1): 3000 mm         |
|                                                                         |             | ×××         |                                                                             | 0.0                                                                                               | 0               | 0                          |                                         |
|                                                                         |             | ×××         |                                                                             | 1.0                                                                                               | 100.00          | 100.00                     |                                         |
|                                                                         |             | ×××         |                                                                             | 2.0                                                                                               | 100.00          | 200.00                     |                                         |
|                                                                         |             | ×××         |                                                                             | 3.0                                                                                               | 160.00          | 360.00                     |                                         |
|                                                                         |             | ×××         |                                                                             | 4.0                                                                                               | 300.00          | 660.00                     |                                         |
|                                                                         |             | ×××         |                                                                             | 5.0                                                                                               | 240.00          | 900.00                     |                                         |
| 2.0m                                                                    |             | •••         | SAND fine - coarse minor silt, light orangish brown, moist, poorly graded.  | 6.0                                                                                               | 170.00          | 1070.00                    | Presoak hole depth (2): 3000 mm         |
|                                                                         |             | •••         |                                                                             | 7.0                                                                                               | 140.00          | 1210.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 8.0                                                                                               | 230.00          | 1440.00                    | End test hole depth (3): 2190 mm        |
|                                                                         |             | •••         |                                                                             | 9.0                                                                                               | 150.00          | 1590.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 10.0                                                                                              | 40.00           | 1630.00                    | Auger Diameter: 100 mm                  |
| 2.5m                                                                    |             | •••         | SILT minor fine - medium sand, light orangish brown, moist, low plasticity. | 11.0                                                                                              | 100.00          | 1730.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 12.0                                                                                              | 80.00           | 1810.00                    | Water level drop: 2190 mm               |
|                                                                         |             | •••         |                                                                             | 13.0                                                                                              | 50.00           | 1860.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 14.0                                                                                              | 50.00           | 1910.00                    | Av test depth (2+3)/2: 2595 mm          |
| 3.0m                                                                    |             | •••         | SAND fine - coarse, light greyish brown, moist, poorly graded.              | 15.0                                                                                              | 50.00           | 1970.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 16.0                                                                                              | 60.00           | 2010.00                    | Depth of topsoil: 200 mm                |
|                                                                         |             | •••         |                                                                             | 17.0                                                                                              | 40.00           | 2050.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 18.0                                                                                              | 40.00           | 2110.00                    | Permeable Depth (av - topsoil): 2395 mm |
|                                                                         |             | •••         |                                                                             | 19.0                                                                                              | 60.00           | 2150.00                    |                                         |
|                                                                         |             | •••         |                                                                             | 20.0                                                                                              | 40.00           | 2190.00                    | modified Hole Diameter: 108 mm          |
| 3.5m                                                                    |             | •••         |                                                                             | 21.0                                                                                              | 40.00           | 2190.00                    |                                         |
| 4.0m                                                                    |             | •••         |                                                                             |                                                                                                   |                 |                            | Water Volume Lost: 19.9 litres          |
| 4.5m                                                                    |             | •••         |                                                                             |                                                                                                   |                 |                            | Hole Surface Area: 0.45 m <sup>2</sup>  |
| 5.0m                                                                    |             | •••         |                                                                             |                                                                                                   |                 |                            | Total time of test: 21 min              |
| Notes:                                                                  |             |             |                                                                             | when time 0 to 21 min<br>permeable depth is 2395 to 205 mm<br>surface area is 0.45 m <sup>2</sup> |                 |                            |                                         |
| Groundwater not encountered.                                            |             |             |                                                                             | Soakage rate 2.11 litres/m <sup>2</sup> /min                                                      |                 |                            |                                         |
| Tests carried out in accordance with Section E1 of the NZ Building Code |             |             |                                                                             |                                                                                                   |                 |                            |                                         |

**Client:** Fran Muraahi

**Project Title:** Soakage Assessment

**Page:** 3 & 4

**No of Pages:** 6

**Site Address:** 21 Island View Road

**City:** Rotorua

**Date:** 16/02/2021

**File Number:** 233840-R-E-S002

**By:** CP



## **Soakhole Capacity Spreadsheet - Borehole 1**

Flow Rate into soakhole = 0.639 l/s  
Soakage rate of soil = 2.11 l/m<sup>2</sup>/min  
Soakage reduction factor = 0.50 (RDC)  
Design Soakage rate = 1.06 l/m<sup>2</sup>/min  
Diameter of Hole = 0.900 m  
No Rings (@0.45m high) = 7.000 Depth of Soak hole 3.15

| Time | Water Depth<br>start (m) | Surface area<br>(wet) m <sup>2</sup> | Soakage<br>rate (l/s) | Storage<br>Rate (l/s) | Water Depth<br>finish (m) |
|------|--------------------------|--------------------------------------|-----------------------|-----------------------|---------------------------|
| 0    | 0                        | 0.636                                | 0.0112                | 0.6281                | 0.059                     |
| 1    | 0.059                    | 0.803                                | 0.0141                | 0.6251                | 0.118                     |
| 2    | 0.118                    | 0.970                                | 0.0171                | 0.6222                | 0.177                     |
| 3    | 0.177                    | 1.136                                | 0.0200                | 0.6193                | 0.235                     |
| 4    | 0.235                    | 1.301                                | 0.0229                | 0.6164                | 0.294                     |
| 5    | 0.294                    | 1.465                                | 0.0258                | 0.6135                | 0.351                     |
| 6    | 0.351                    | 1.629                                | 0.0287                | 0.6106                | 0.409                     |
| 7    | 0.409                    | 1.792                                | 0.0315                | 0.6077                | 0.466                     |
| 8    | 0.466                    | 1.954                                | 0.0344                | 0.6049                | 0.523                     |
| 9    | 0.523                    | 2.115                                | 0.0372                | 0.6020                | 0.580                     |
| 10   | 0.580                    | 2.276                                | 0.0401                | 0.5992                | 0.637                     |
| 11   | 0.637                    | 2.436                                | 0.0429                | 0.5964                | 0.693                     |
| 12   | 0.693                    | 2.595                                | 0.0457                | 0.5936                | 0.749                     |
| 13   | 0.749                    | 2.753                                | 0.0485                | 0.5908                | 0.805                     |
| 14   | 0.805                    | 2.910                                | 0.0512                | 0.5880                | 0.860                     |
| 15   | 0.860                    | 3.067                                | 0.0540                | 0.5853                | 0.916                     |
| 16   | 0.916                    | 3.223                                | 0.0567                | 0.5825                | 0.971                     |
| 17   | 0.971                    | 3.379                                | 0.0595                | 0.5798                | 1.025                     |
| 18   | 1.025                    | 3.533                                | 0.0622                | 0.5771                | 1.080                     |
| 19   | 1.080                    | 3.687                                | 0.0649                | 0.5743                | 1.134                     |
| 20   | 1.134                    | 3.840                                | 0.0676                | 0.5717                | 1.188                     |
| 21   | 1.188                    | 3.993                                | 0.0703                | 0.5690                | 1.242                     |
| 22   | 1.242                    | 4.144                                | 0.0730                | 0.5663                | 1.295                     |
| 23   | 1.295                    | 4.295                                | 0.0756                | 0.5636                | 1.348                     |
| 24   | 1.348                    | 4.446                                | 0.0783                | 0.5610                | 1.401                     |
| 25   | 1.401                    | 4.595                                | 0.0809                | 0.5584                | 1.454                     |
| 26   | 1.454                    | 4.744                                | 0.0835                | 0.5557                | 1.506                     |
| 27   | 1.506                    | 4.892                                | 0.0861                | 0.5531                | 1.558                     |
| 28   | 1.558                    | 5.040                                | 0.0887                | 0.5505                | 1.610                     |
| 29   | 1.610                    | 5.187                                | 0.0913                | 0.5479                | 1.662                     |
| 30   | 1.662                    | 5.333                                | 0.0939                | 0.5454                | 1.714                     |
| 31   | 1.714                    | 5.478                                | 0.0964                | 0.5428                | 1.765                     |
| 32   | 1.765                    | 5.623                                | 0.0990                | 0.5403                | 1.816                     |
| 33   | 1.816                    | 5.767                                | 0.1015                | 0.5377                | 1.866                     |
| 34   | 1.866                    | 5.911                                | 0.1041                | 0.5352                | 1.917                     |
| 35   | 1.917                    | 6.053                                | 0.1066                | 0.5327                | 1.967                     |
| 36   | 1.967                    | 6.195                                | 0.1091                | 0.5302                | 2.017                     |
| 37   | 2.017                    | 6.337                                | 0.1116                | 0.5277                | 2.067                     |

|    |       |       |        |        |       |
|----|-------|-------|--------|--------|-------|
| 38 | 2.067 | 6.477 | 0.1140 | 0.5252 | 2.117 |
| 39 | 2.117 | 6.617 | 0.1165 | 0.5228 | 2.166 |
| 40 | 2.166 | 6.757 | 0.1190 | 0.5203 | 2.215 |
| 41 | 2.215 | 6.896 | 0.1214 | 0.5179 | 2.264 |
| 42 | 2.264 | 7.034 | 0.1238 | 0.5154 | 2.313 |
| 43 | 2.313 | 7.171 | 0.1263 | 0.5130 | 2.361 |
| 44 | 2.361 | 7.308 | 0.1287 | 0.5106 | 2.409 |
| 45 | 2.409 | 7.444 | 0.1311 | 0.5082 | 2.457 |
| 46 | 2.457 | 7.580 | 0.1334 | 0.5058 | 2.505 |
| 47 | 2.505 | 7.715 | 0.1358 | 0.5034 | 2.552 |
| 48 | 2.552 | 7.849 | 0.1382 | 0.5011 | 2.600 |
| 49 | 2.600 | 7.982 | 0.1405 | 0.4987 | 2.647 |
| 50 | 2.647 | 8.115 | 0.1429 | 0.4964 | 2.694 |
| 51 | 2.694 | 8.248 | 0.1452 | 0.4941 | 2.740 |
| 52 | 2.740 | 8.380 | 0.1475 | 0.4917 | 2.787 |
| 53 | 2.787 | 8.511 | 0.1498 | 0.4894 | 2.833 |
| 54 | 2.833 | 8.641 | 0.1521 | 0.4871 | 2.879 |
| 55 | 2.879 | 8.771 | 0.1544 | 0.4848 | 2.924 |
| 56 | 2.924 | 8.900 | 0.1567 | 0.4826 | 2.970 |
| 57 | 2.970 | 9.029 | 0.1590 | 0.4803 | 3.015 |
| 58 | 3.015 | 9.157 | 0.1612 | 0.4780 | 3.060 |
| 59 | 3.060 | 9.285 | 0.1635 | 0.4758 | 3.105 |
| 60 | 3.105 | 9.411 | 0.1657 | 0.4736 | 3.150 |
|    |       |       |        |        |       |

The above calculation shows that the average flowrate into the design soakhole that can be sustained without overflow is : 0.639 litres per second

The maximum area to be reticulated to each soakhole is therefore calculated as follows:

Rainfall Intensity (10% AEP 60min) = 55.2 mm/hour  
C Value for Paved / Roof Areas = 0.90  
C Value for Grassed Areas = 0.3

**Max Paved / Roof Area per soakhole = 46.3 m<sup>2</sup>**  
**Max Grassed Area per soakhole = 138.9 m<sup>2</sup>**

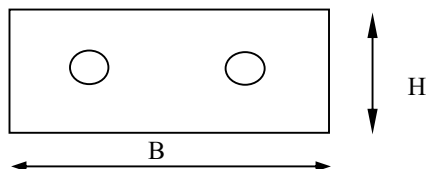
|          |                     |      |            |      |        |
|----------|---------------------|------|------------|------|--------|
| CLIENT   | Fran Muraahi        |      |            | PAGE | 5 of 6 |
| PROJECT  | Soakage Assessment  |      |            |      |        |
| ADDRESS  | 21 Island View Road |      |            |      |        |
| CITY     | Rotorua             |      |            |      |        |
| FILE No. | 233840              | DATE | 16/02/2021 | BY   | CP     |

## Soakage / storage Analysis

### Building & Carpark

#### Soakage Trench Detail

Width b = 1 m  
 Height H = 2.0 m  
 Length L = 5 m  
 Pipe Dia = 0.16 m  
 No Pipes = 2 No  
 Trench Vol. Ratio = 0.33



PIPE STORAGE = 0.20 m<sup>3</sup>  
 TRENCH STORAGE = 3.27 m<sup>3</sup>  
 TOTAL STORAGE CAPACITY = 3.47 m<sup>3</sup>

#### Site Details

Site Area = 100 m<sup>2</sup>  
 Runoff coefficient = 0.9  
 Return Period = 10 years

Site Soakage Rate = 1.06 l/m<sup>2</sup>/min

Site Soakage Area = B x L + 2(H) x L = 25 m<sup>2</sup>  
 SITE SOAKAGE CAPACITY = 26.41 l/min

#### Design Storm Analysis

| Duration<br>min | Intensity<br>mm/hr | Q<br>l/sec | Runoff<br>m <sup>3</sup> | Storage                  |                               | TOTAL                     | Check               |
|-----------------|--------------------|------------|--------------------------|--------------------------|-------------------------------|---------------------------|---------------------|
|                 |                    |            |                          | Stored<br>m <sup>3</sup> | Infiltrated<br>m <sup>3</sup> | STORAGE<br>m <sup>3</sup> | Storage ><br>Runoff |
| 10              | 125.00             | 3.13       | 1.88                     | 3.47                     | 0.26                          | 3.73                      | OK                  |
| 20              | 93.00              | 2.33       | 2.79                     | 3.47                     | 0.53                          | 4.00                      | OK                  |
| 30              | 77.30              | 1.93       | 3.48                     | 3.47                     | 0.79                          | 4.26                      | OK                  |
| 60              | 55.20              | 1.38       | 4.97                     | 3.47                     | 1.58                          | 5.05                      | OK                  |

\* Intensities taken from Niwa RCP8.5 which equates

**Client:** Fran Muraahi  
**Project Title:** Soakage Assessment

**Page:** 6  
**No of Pages:** 6

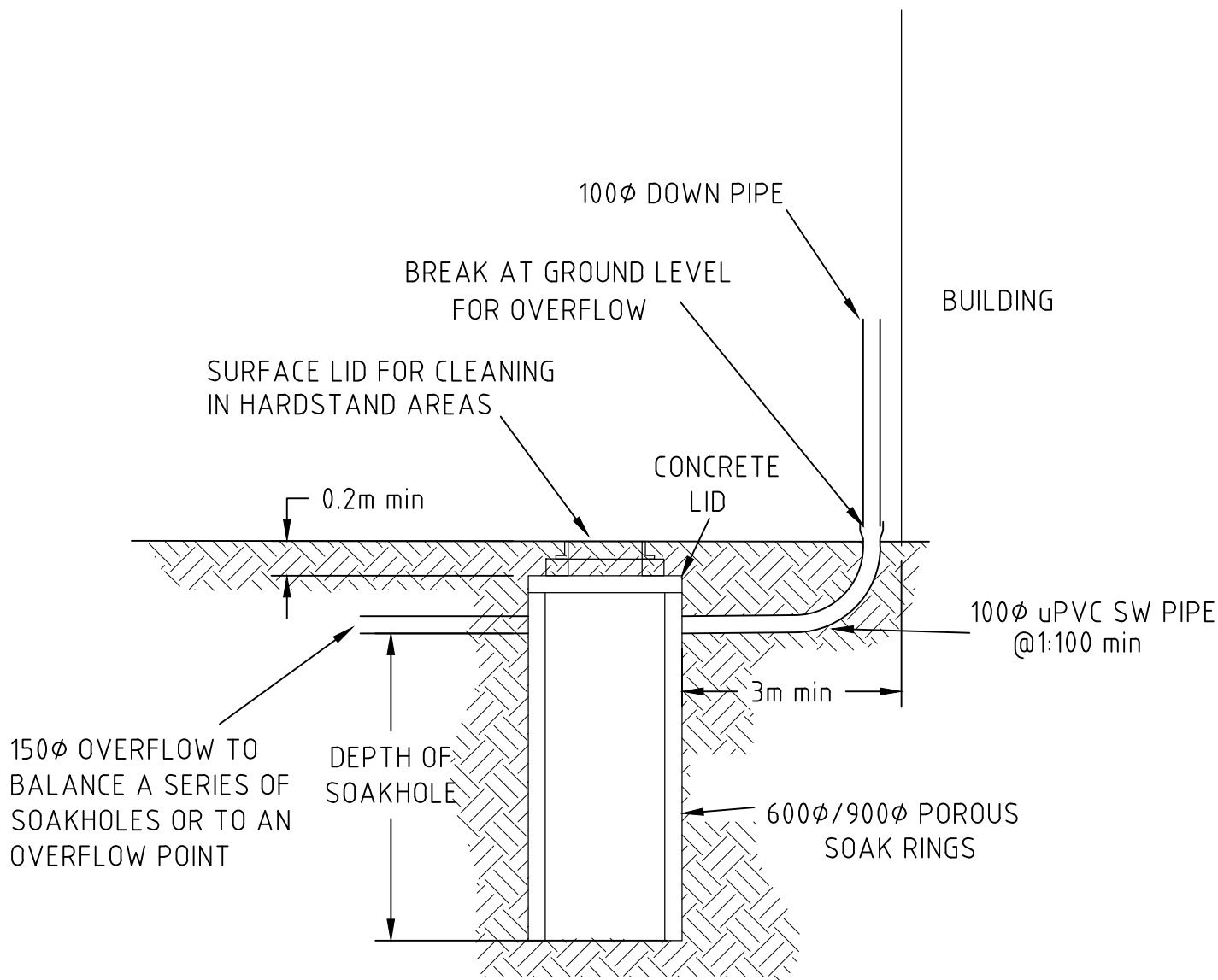
**Site Address:** 21 Island View Road  
**City:** Rotorua  
**File Number:** 233840-R-E-S002

**Date:** 12/02/2021  
**By:** CP



**HIRDS V4 Intensity-Duration-Frequency Results**  
**Site name: 21 ISLAND VIEW ROAD ROTORUA**  
**Rainfall intensities (mm/hr) :: RCP8.5 for the period 2081-2100**

| ARI  | AEP   | 10m  | 20m  | 30m  | 1h   | 2h   | 6h   | 12h  | 24h  | 48h  | 72h  | 96h  | 120h |
|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1.58 | 0.633 | 70.7 | 52.8 | 44   | 31.6 | 21.8 | 11.3 | 7.21 | 4.51 | 2.73 | 2.02 | 1.62 | 1.36 |
| 2    | 0.5   | 78.3 | 58.4 | 48.7 | 34.9 | 24.2 | 12.5 | 7.97 | 4.95 | 3.01 | 2.22 | 1.78 | 1.5  |
| 5    | 0.2   | 105  | 78   | 64.9 | 46.4 | 32   | 16.6 | 10.5 | 6.5  | 3.94 | 2.91 | 2.33 | 1.96 |
| 10   | 0.1   | 125  | 93   | 77.3 | 55.2 | 38   | 19.6 | 12.4 | 7.68 | 4.64 | 3.43 | 2.74 | 2.3  |
| 20   | 0.05  | 147  | 109  | 90.4 | 64.4 | 44.3 | 22.8 | 14.4 | 8.88 | 5.37 | 3.96 | 3.17 | 2.66 |
| 30   | 0.033 | 160  | 119  | 98.4 | 70.1 | 48.2 | 24.8 | 15.7 | 9.62 | 5.82 | 4.28 | 3.43 | 2.87 |
| 40   | 0.025 | 170  | 126  | 104  | 74.2 | 50.9 | 26.2 | 16.6 | 10.2 | 6.13 | 4.52 | 3.61 | 3.03 |
| 50   | 0.02  | 178  | 132  | 109  | 77.5 | 53.2 | 27.3 | 17.3 | 10.6 | 6.39 | 4.7  | 3.76 | 3.15 |
| 60   | 0.017 | 184  | 136  | 113  | 80.2 | 55   | 28.3 | 17.9 | 11   | 6.6  | 4.86 | 3.88 | 3.25 |
| 80   | 0.012 | 195  | 144  | 119  | 84.7 | 58.1 | 29.8 | 18.8 | 11.5 | 6.94 | 5.1  | 4.07 | 3.41 |
| 100  | 0.01  | 203  | 150  | 124  | 88.1 | 60.4 | 31   | 19.5 | 12   | 7.2  | 5.29 | 4.23 | 3.54 |
| 250  | 0.004 | 237  | 175  | 145  | 103  | 70.1 | 35.9 | 22.6 | 13.8 | 8.28 | 6.08 | 4.86 | 4.06 |



|                    |         |                         |                        |                 |                 |
|--------------------|---------|-------------------------|------------------------|-----------------|-----------------|
| DRAWN:             | CC      | FRAN MURAAHI            |                        |                 |                 |
| CHECKED:           |         | 21 ISLAND VIEW ROAD     |                        |                 |                 |
| DESIGNED:          |         | ROTORUA                 |                        |                 |                 |
| OFFICE:            | ROTORUA | TYPICAL SOAKHOLE DETAIL |                        |                 |                 |
| SCALE:             | NTS     |                         |                        |                 |                 |
| ORIGINAL DWG. SIZE | A4      |                         |                        |                 |                 |
| A                  | FEB 21  | CP                      | ISSUED FOR INFORMATION | DRAWING No.     | SHEET No. ISSUE |
| No.                | Date    | By                      | Issue/Revision         | 233840-R-E-D100 | 01 A            |

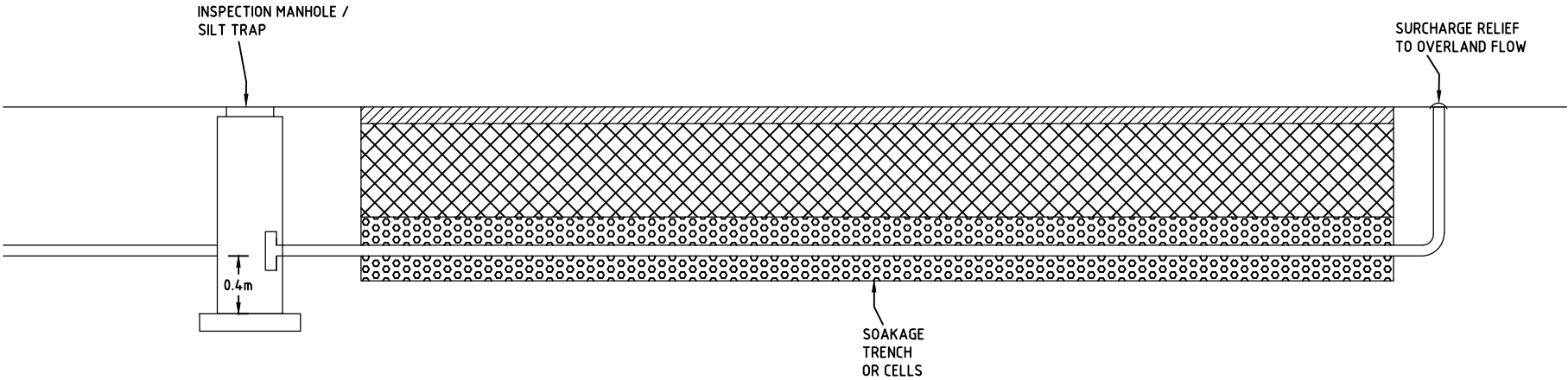


Planners | Engineers | Surveyors

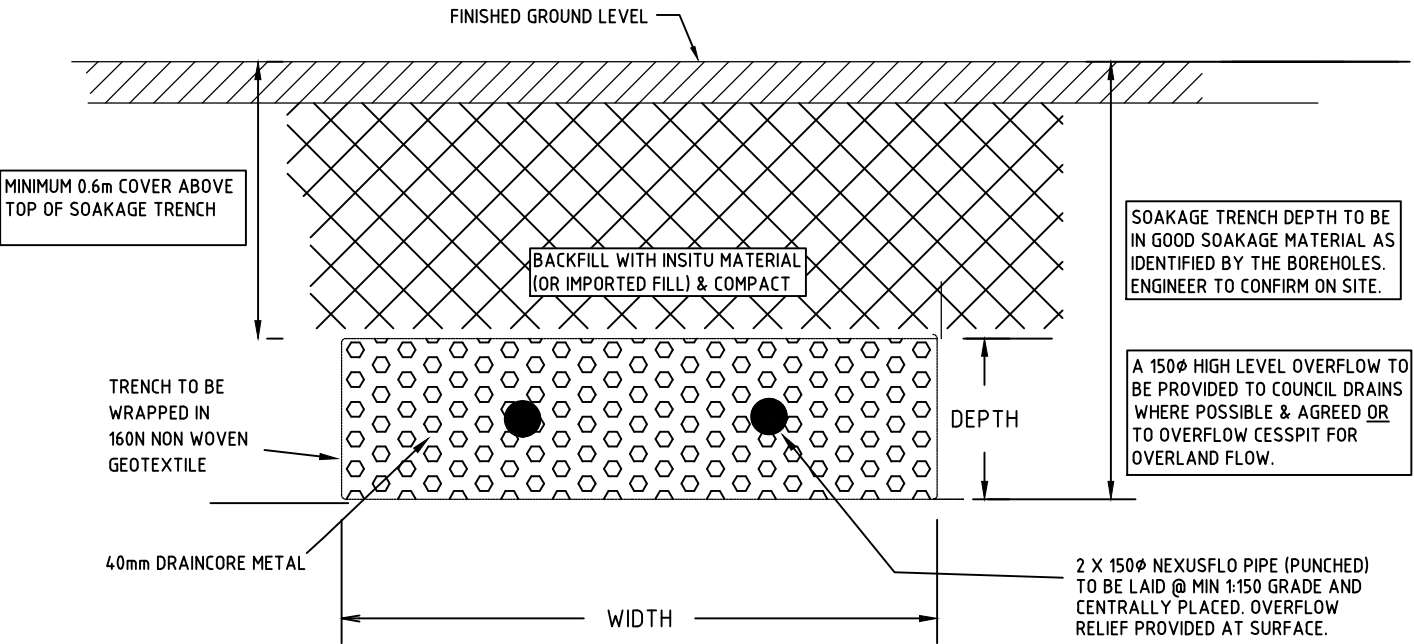
SERVICES NOTE  
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. STRATUM CONSULTANTS LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

|                                           |        |              |                 |
|-------------------------------------------|--------|--------------|-----------------|
| DRAWN:                                    | CP     | DESIGNED:    | CP              |
| CHECKED:                                  | CP     | SURVEYED BY: |                 |
| OFFICE OF ORIGIN - ROTORUA Ph 07 347 7840 |        |              |                 |
| No.                                       | Date   | By           | Issue/Revision  |
| A                                         | FEB 21 | CP           | FOR INFORMATION |
|                                           |        |              |                 |
|                                           |        |              |                 |
|                                           |        |              |                 |
|                                           |        |              |                 |

NOTES/KEY:



TYPICAL SOAKAGE TRENCH - PROFILE



TYPICAL SOAKAGE TRENCH - SECTION

FRAN MURAAHI  
21 ISLAND VIEW ROAD  
ROTORUA

TYPICAL TRENCH  
DETAIL



Planners | Engineers | Surveyors

|             |                 |                    |    |
|-------------|-----------------|--------------------|----|
| SCALE:      | N.T.S           | ORIGINAL DWG. SIZE | A3 |
| DRAWING No. | 233840-R-E-D100 | SHEET No.          | 02 |
|             |                 | ISSUE              | A  |

**Table 1: Maintenance Recommendations**

| Component                                  | Recommended Actions                                                                                                                                                                                                                                                                                                                                          | Who?                   | Frequency |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------|
| Tank hatches and covers                    | Inspect for correct fit and seal. Particularly important for underground tanks to prevent ingress of contaminated surface water and entry by children.                                                                                                                                                                                                       | Owner                  | Monthly   |
| Overflow, outlet pipes & orifices          | Inspect for blockage and clean of necessary. Check flap valves and/or vector screens.                                                                                                                                                                                                                                                                        | Owner                  | 3 Monthly |
| In-line leaf and debris diverters          | Inspect and clear away any accumulated leaves or debris                                                                                                                                                                                                                                                                                                      | Owner                  |           |
| Roof, gutters, down pipes & gutter screens | Inspect and remove debris and accumulated sediment. Prune any overhanging branches. If the roof and gutters need to be cleaned, the flow into the raintank should be temporarily diverted to prevent ingress of dirty water to the tank.                                                                                                                     | Owner<br>Owner         |           |
| Tank                                       | Inspect the tank for leaks, sediment build up and structural integrity. A professional tank cleaning contractor should be employed to clean out the tank when the sludge level gets close to the pump inlet.<br><br>Most raintanks have a design life of 25 years or more. Tanks older than 25 years should be regularly assessed and replaced if necessary. | Owner/<br>Professional |           |
| Roof, gutters, down pipes & gutter screens | Inspect and remove debris and accumulated sediment. Prune any overhanging branches. If the roof and gutters need to be cleaned, the flow into the raintank should be temporarily diverted to prevent ingress of dirty water to the tank.                                                                                                                     | Professional           | 6 Monthly |
|                                            |                                                                                                                                                                                                                                                                                                                                                              |                        |           |

**COMMENT:**

1. The low pressure air test is highly susceptible to temperature fluctuations during the test period. A 1°C change during the 5 minute test period will cause a pressure change of 30 mm water gauge or 60% of the permitted change.
2. Failure to soak ceramic and concrete pipes can cause highly variable results.

**8.3 High pressure air test**

- a) Pressurise pipeline to 25 kPa.
- b) Wait at least 2 minutes to ensure temperature stabilisation.
- c) Disconnect air supply.
- d) Measure the time taken (minutes) for the pressure to drop to 17 kPa.
- e) The pipeline is acceptable if the time taken exceeds that given for the appropriate pipe size in Table 6.

**Table 6: Time For Pressure Drop Versus Internal Pipe Diameter**  
Paragraph 8.3 e)

| Internal pipe diameter (mm) | Time for permissible pressure drop (minutes) |
|-----------------------------|----------------------------------------------|
| 90                          | 3                                            |
| 100                         | 3                                            |
| 150                         | 4                                            |
| 225                         | 6                                            |

**9.0 Disposal to Soak Pit**

**9.0.1** Where the collected *surface water* is to be discharged to a soak pit, the suitability of the natural ground to receive and dispose of the water without causing damage or nuisance to neighbouring property, shall be demonstrated to the satisfaction of the *territorial authority*.

**COMMENT:**

Means of demonstrating the suitability of the ground are outside of the scope of this Verification Method. Disposal of *surface water* to a soak pit may also require a resource management consent.

**9.0.2** Field testing of soakage shall be carried out as follows:

- a) Bore test holes of 100 mm to 150 mm diameter to the depth of the proposed soak pit. If groundwater is encountered in the bore test hole then this depth shall be taken as the depth of the soak pit.
- b) Fill the hole with water and maintain full for at least 4 hours, (unless the soakage is so great that the hole completely *drains* in a short time).
- c) Fill the hole with water to within 750 mm of ground level, and record the drop in water level against time, at intervals of no greater than 30 minutes, until the hole is almost empty, or over 4 hours, whichever is the shortest.
- d) Plot the drop in water level against time on a graph, and the soakage rate in mm/hr is determined from the minimum slope of the curve. If there is a marked decrease in soakage rate as the hole becomes nearly empty, the lower rates may be discarded and the value closer to the average can be adopted.

**9.0.3** The soak pit shall be designed utilising soakage and storage in accordance with 9.0.5 and 9.0.6 to ensure that *surface water* is discharged without overflowing. The rainfall intensity used in the design of the soak pit shall be that of an event having a duration of 1 hour and a 10% probability of occurring annually. Either local rainfall intensity curves produced by the *territorial authority* or rainfall frequency duration information produced by NIWA shall be used to determine the rainfall intensity.

**COMMENT:**

This Verification Method does not cover the design of soak pits with overflows discharging to *outfalls*. Such soak pits are often provided to retain water until peak flows in the *outfall* have passed and it is normally considered sufficient to design them for an event having a 10 minute duration and a 10% probability of occurring annually.

**9.0.4** The soak pit shall comprise either a rock filled hole (see Figure 13 (a)) or a lined chamber (see Figure 13 (b)). Both of these options shall be enclosed in filter cloth

complying with AS 3706.1. The filter cloth shall have a mass per unit area of 140 grams/m<sup>2</sup> and a minimum thickness of 0.45 mm.

**9.0.5** The volume of storage required in the soak pit,  $V_{\text{stor}}$  (m<sup>3</sup>), shall be calculated by:

$$V_{\text{stor}} = R_c - V_{\text{soak}}$$

where

$R_c$  = run-off discharged from catchment to soak pit in 1 hour (m<sup>3</sup>).

$V_{\text{soak}}$  = volume disposed of by soakage in 1 hour (m<sup>3</sup>).

and

$$R_c = 10CIA$$

where

$C$  = run-off coefficient (see Table 1).

$I$  = rainfall intensity (mm/hr) based on 1 hour duration of an event having a 10% probability of occurring annually.

Amend 5  
Jul 2001

$A$  = area (hectares) of the catchment discharging to the soak pit.

and

$$V_{\text{soak}} = A_{\text{sp}} S_r / 1000$$

where

$A_{\text{sp}}$  = area of the base of the soak pit (m<sup>2</sup>).

$S_r$  = soakage rate (mm/hr) determined from 9.0.2.

#### COMMENT:

Generally where the test results show a soakage rate of greater than 500 mm/hour, soakage rather than storage will be the main mechanism to remove the water. Where the soakage rate is significantly less than 500 mm/hour, storage will become the dominant factor. Intermediate soakage rates will require a design utilising both in the proportions necessary to ensure the water will dissipate before it overflows from the pit.

**9.0.6** Where the soak pit comprises a rock filled hole (see Figure 13 (a)) then the volume of the hole shall be calculated as  $V_{\text{stor}}$  divided by 0.38.

Amend 10  
Jan 2017

15 November 2024

Leisurecom Homes  
PO BOX 643  
CAMBRIDGE 3450

Tēnā koe,

**Re: Request for further information on your application for Building Consent**

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Application number:</b> | BC24-011274                               |
| <b>Site location:</b>      | 13 Ross Road Western Heights Rotorua 3015 |
| <b>Description:</b>        | New Relocated Dwelling                    |

We have assessed your application for Building Consent, and require the following additional information from you so that we can continue to process your application:

**Question(s) from Planning**

1. Refer to Roimata Mansell's email dated 13/11/24 [Noted, Plans now updated.](#)

**Question(s) from Land Development**

2. The plans show a stormwater connection, the stormwater network has not been designed for house connections and there is a Consent Notice registered on the title requiring stormwater to be directed to on-site soakage, updated stormwater plans required.  
[Updated attached](#)

**Building Act**

3. Legal description of the site on sheet A101 does not match the legal description on the Record of Title. [Noted, now updated.](#)

**B1 - Structure – Site Requirements**

4. EQ zone on plans is Zone 1. Rotorua is Zone 2, please amend this. [now updated](#)

**B1 - Structure – Foundations and Floors including Deck**

5. Confirm the allowed crawl space (height from GL to underside of floor joists) in accordance with NZS3604 6.14.4. [please refer A106](#)

📍 Civic Centre, 1061 Haupapa Street, Private Bag 3029,  
Rotorua 3046, New Zealand

☎ +64 7 348 4199 | ✉ [info@rotorualc.nz](mailto:info@rotorualc.nz)

🌐 [rotorualakescouncil.nz](http://rotorualakescouncil.nz)

### D1 – Access Routes

6. Demonstrate decking slip resistance with D1/AS1. [This is noted on A106](#)
7. Specify deck steps tread in compliance with D1/AS1. [Now added on A106](#)

### E1 – Surface Water

8. Is the car park area, as shown on sheet A100, going to be concreted? Demonstrate how surface water will be managed on this area in compliance with E1/AS1. [yes, sump added on A101](#)

### F5 – Construction and Demolition Hazards

9. Demonstrate compliance with NZBC F5. [Notes added on A101](#)

### G13 – Foul Water

10. Provide bedding and backfilling details (coverage to drains). [Added on A104](#)

Please include references to clearly indicate how and where the information has been provided, and where it can be found within the documents.

Only supply those documents/pages that have been amended (not full replacement sets).

Files shall be named Building Consent # - RFI – followed by:

- Plans (named Architectural, Structural, Mechanical Services, Hydraulic etc.)
- Supporting documentation - (named producer statements, calculations, geotechnical reports, fire designs, compliance schedule form, MCM certificates, Specifications, Manufacturers technical literature, etc.)

Your application has been suspended until the above information has been provided. Please submit this information in full within 60 days or your application will be rejected. You would then have to submit a new application to continue with this project.

While we appreciate that requests for additional information can be frustrating, we are required by the Building Act 2004 to ensure we are satisfied on reasonable grounds that the provisions of the act will be met.

Please call us on 07 349 5646 if you have any questions or email us at [buildingadmin@rotorualc.nz](mailto:buildingadmin@rotorualc.nz).

Ngā mihi,



Myrtle Cantos  
Building Consents Assessor

# L. Taratu and F. Muraahi New House Onsite Set - 13 Ross Road Building Consent

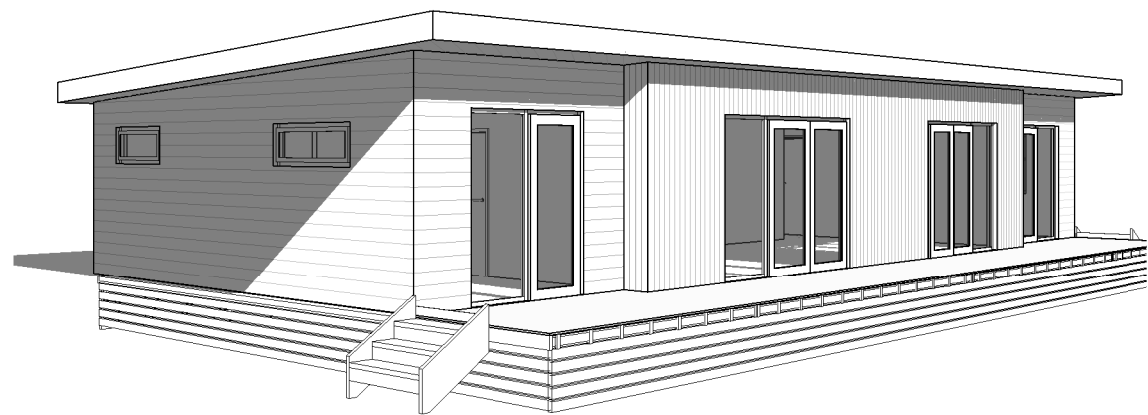
DATE: October 2024

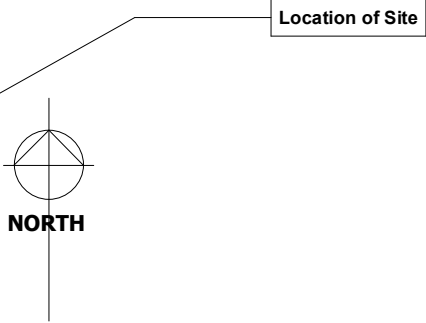
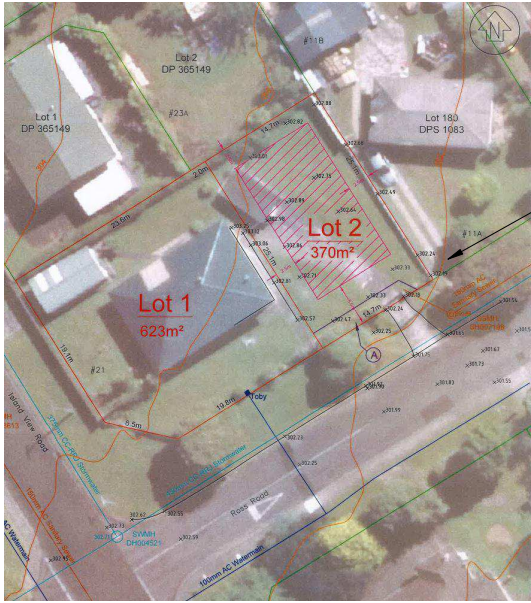
These Documents are to obtain Building Consent Onsite build Only

These items are:

- Deck Foundations.
- House Foundations.
- House Plumbing & Drainage
- Site Services

|      |   |                             |
|------|---|-----------------------------|
| A100 | B | Site Plan                   |
| A101 | B | Proposed Site Services Plan |
| A102 | B | Proposed Foundation Plan    |
| A103 | B | Proposed Floor Plan         |
| A104 | B | Proposed Drainage Plan      |
| A105 | B | Elevations                  |
| A106 | B | Construction Details        |
| A107 | B | Construction Details        |
| A108 | B | Construction Details        |





Location of Site

**SITE COVERAGE:**

Land Area: 360m<sup>2</sup>  
House Area: 120m<sup>2</sup>  
Site coverage Percentage: 33.3%

**Impervious surfaces:**

Land Area: 360m<sup>2</sup>  
Driveway: 55m<sup>2</sup>  
Impervious surfaces Percentage: 84.7%

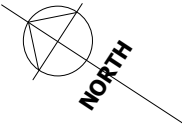
**SITE INFORMATION:**

Exposure Zone: Zone B  
Legal Description: Lot 2 DP 567116  
Wind Zone: Low  
Earthquake Zone: Zone 2  
Climate Zone: 4

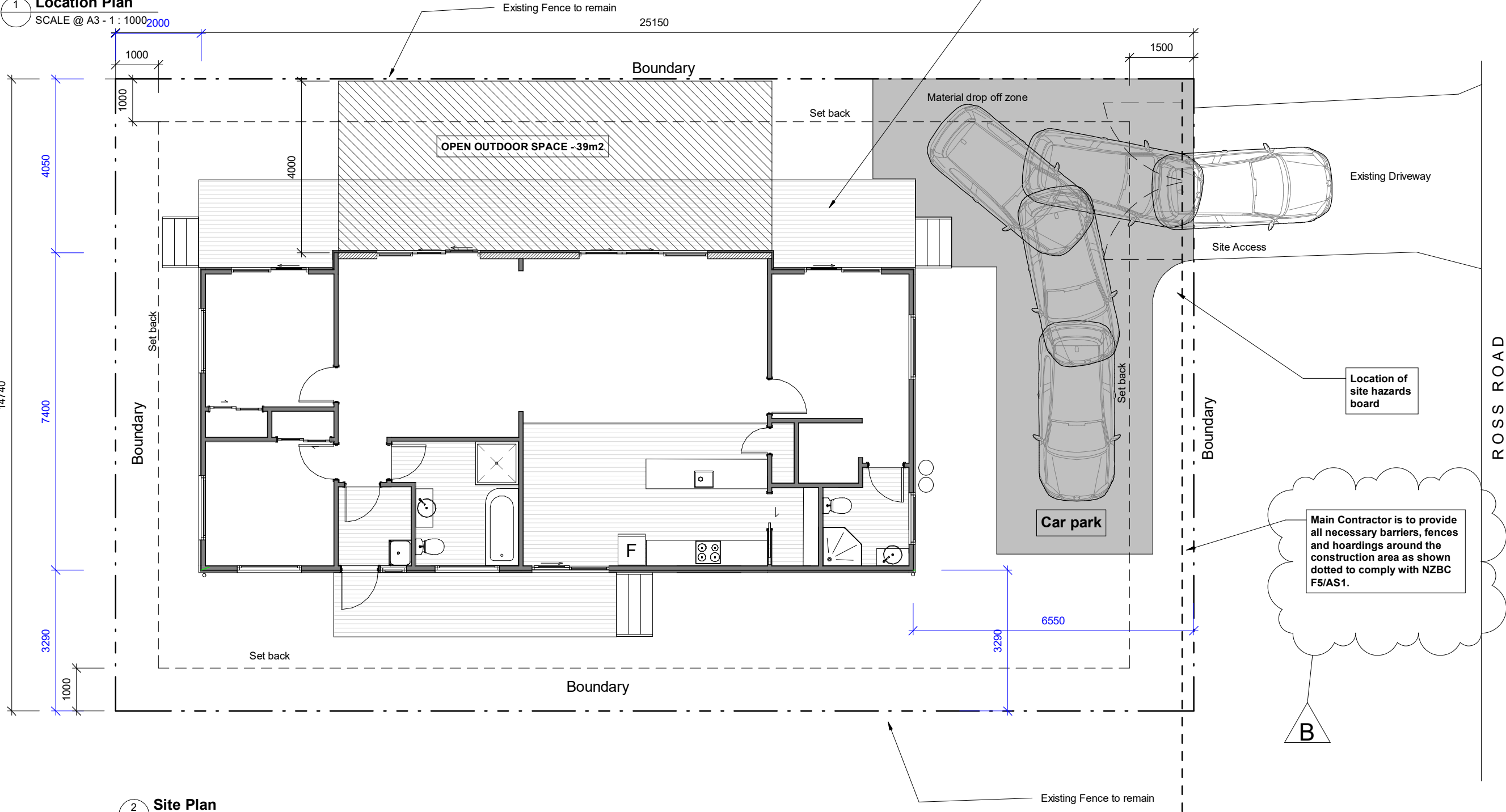
Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

**A100** Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set



**1 Location Plan**  
SCALE @ A3 - 1 : 1000



Floor Area: 120m<sup>2</sup>

Wind Zone: **Low**  
Earthquake Zone: **2**  
Durability Zone: **B**

House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services

Site Plan

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

SCALE @ A3. As indicated  
PROJECT No. L735  
PLOT DATE. 16/11/2024 1:38:17 pm

Building Consent



Figure 8: Type-one Surface Water Sump

Paragraph 3.6.2:

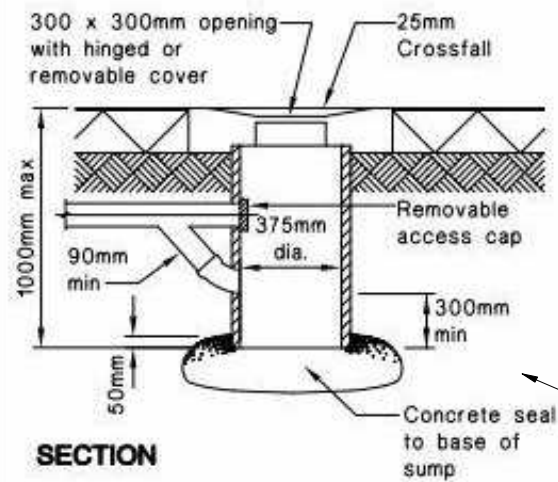
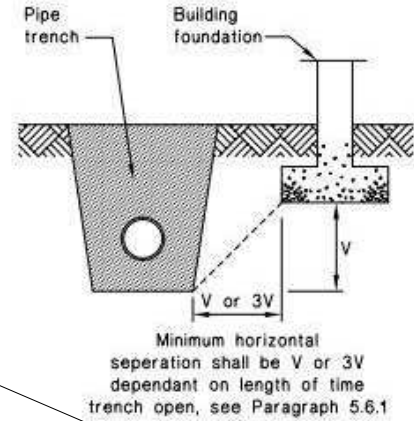


Figure 8: Relationship of pipe trench to building foundation

Paragraph 5.6.1



Sump

Allow to connect into existing Sewer Lateral, Confirm on site location

SITE INFORMATION:

Exposure Zone: Zone B  
Legal Description: Lot 2 DP 567116  
Wind Zone: Low  
Earthquake Zone: Zone 2  
Climate Zone: 4

SITE LEGEND

Existing Sewer  
New Sewer  
New water  
New Stormwater  
Land Contours

Note: Site Services shown only. House Services omitted for Clarity. Refer to other services plans for locations.  
Allow trenches for Sewer Pipes, telecommunication Cables, Power Cables, Water Pipes and Stormwater pipes

Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

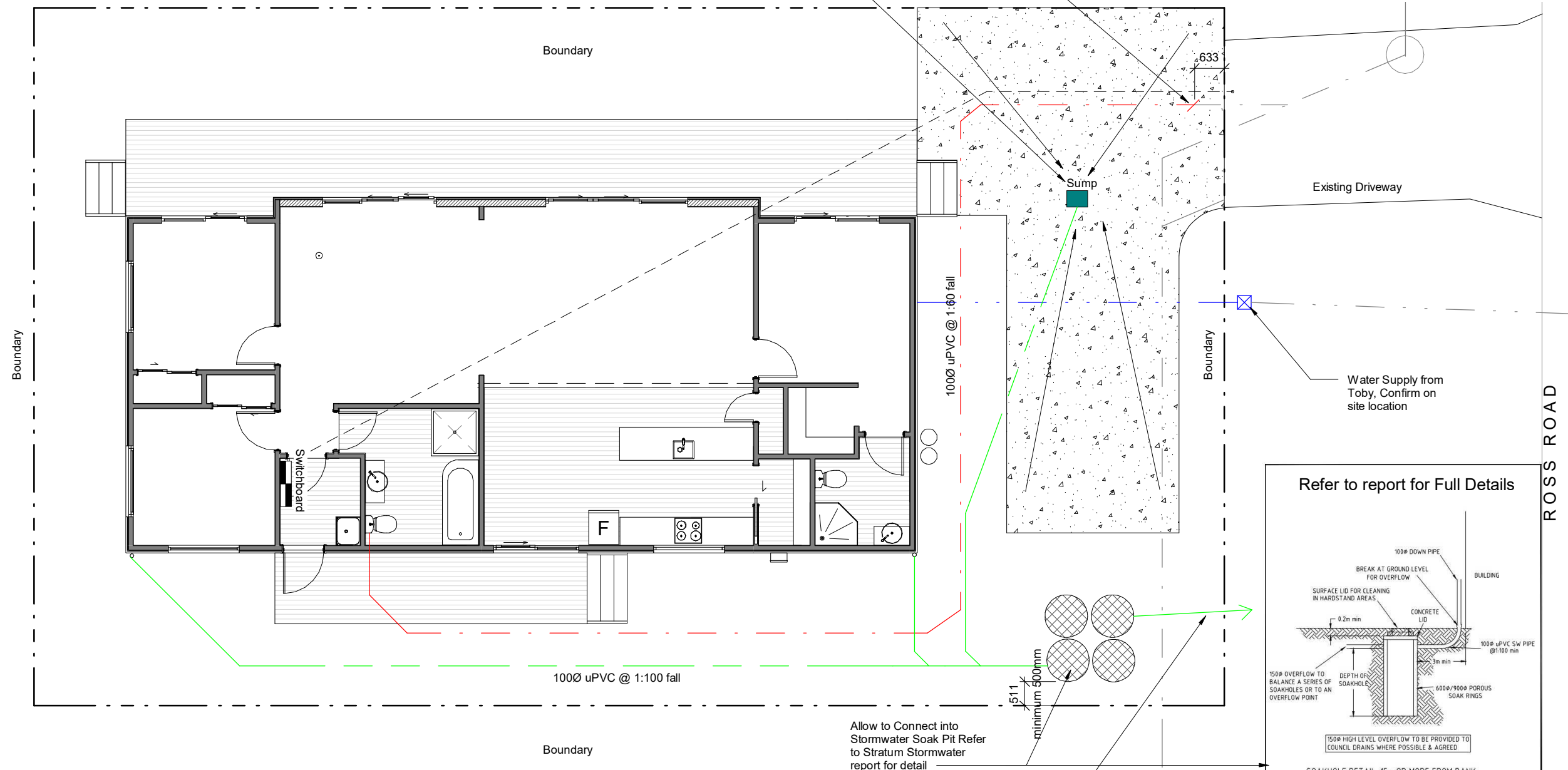
A101 Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set



2 A2 Copy 2

SCALE @ A3 - 1 : 100



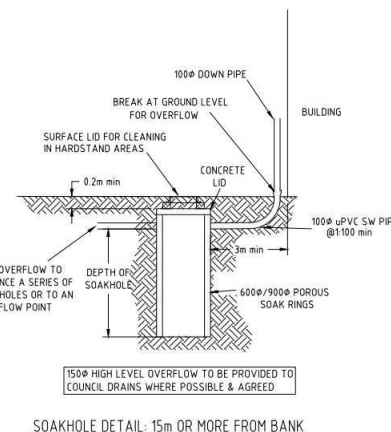
Floor Area: 120m<sup>2</sup>

Wind Zone: Low  
Earthquake Zone: 2  
Durability Zone: B

House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services

Proposed Site Services Plan

Refer to report for Full Details



B RFI 1 15-11-24  
A Building consent 24-10-24  
NO. DESCRIPTION DATE

SCALE @ A3. As indicated  
PROJECT No. L735  
PLOT DATE. 16/11/2024 1:38:17 pm

Building Consent

Leisurecom HOMES

FRAN MURAAHI  
21 ISLAND VIEW ROAD  
ROTORUA  
TYPICAL SOAKHOLE DETAIL  
233940-R-E-0100 01 A



Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

A102 Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set



SUBFLOOR LEGEND

- Dwelling Anchor Pile (AP): H5 125x125  
Anchor Piles Foundation:
  - 400Øx1500-1700mm Deep
  - 25MPa Concrete
- Deck Anchor Pile (AP): H5 125x125  
Anchor Piles Foundation:
  - 400Øx1500-1700min Deep
  - 25MPa Concrete
- Deck Ordinary Pile (AP): H5 125x125  
Anchor Piles Foundation:
  - 400Øx1500-1700min Deep
  - 25MPa Concrete

FIXINGS:  
ALL FIXING TO BE MIN 304 STAINLESS STEEL

Bearer Fixing to House Anchor Pile: 12kN s/s nail plate each side

Bearer Fixing to Deck Anchor Pile: 6kN s/s nail plate each side

Bearer Fixing to Deck Ordinary Pile: 2/4.9mm Wire dogs together with 2/100 x 3.75 skewed nails

ENSURE TO BE READ INCONJUNCTION WITH  
- GEOTECH REPORT  
- LEISURECOM HOMES FACTORY PLANS  
- ENGINEERS DRAWINGS AND PS1

SUBFLOOR INSULATION :

R2.8 Mammoth Underfloor

SUBFLOOR VENTILATION :

Ensure all new foundation walls have subfloor ventilation in compliance with NZBC:E2/AS1 3,500mm2 for every 1m2 of new building area. Builder to allow for subfloor ventilation and hinged subfloor door to allow for subfloor access for maintenance. Subfloor access location to be confirm with owner on site

Floor Area: 120m<sup>2</sup>

Wind Zone: Low  
Earthquake Zone: 2  
Durability Zone: B

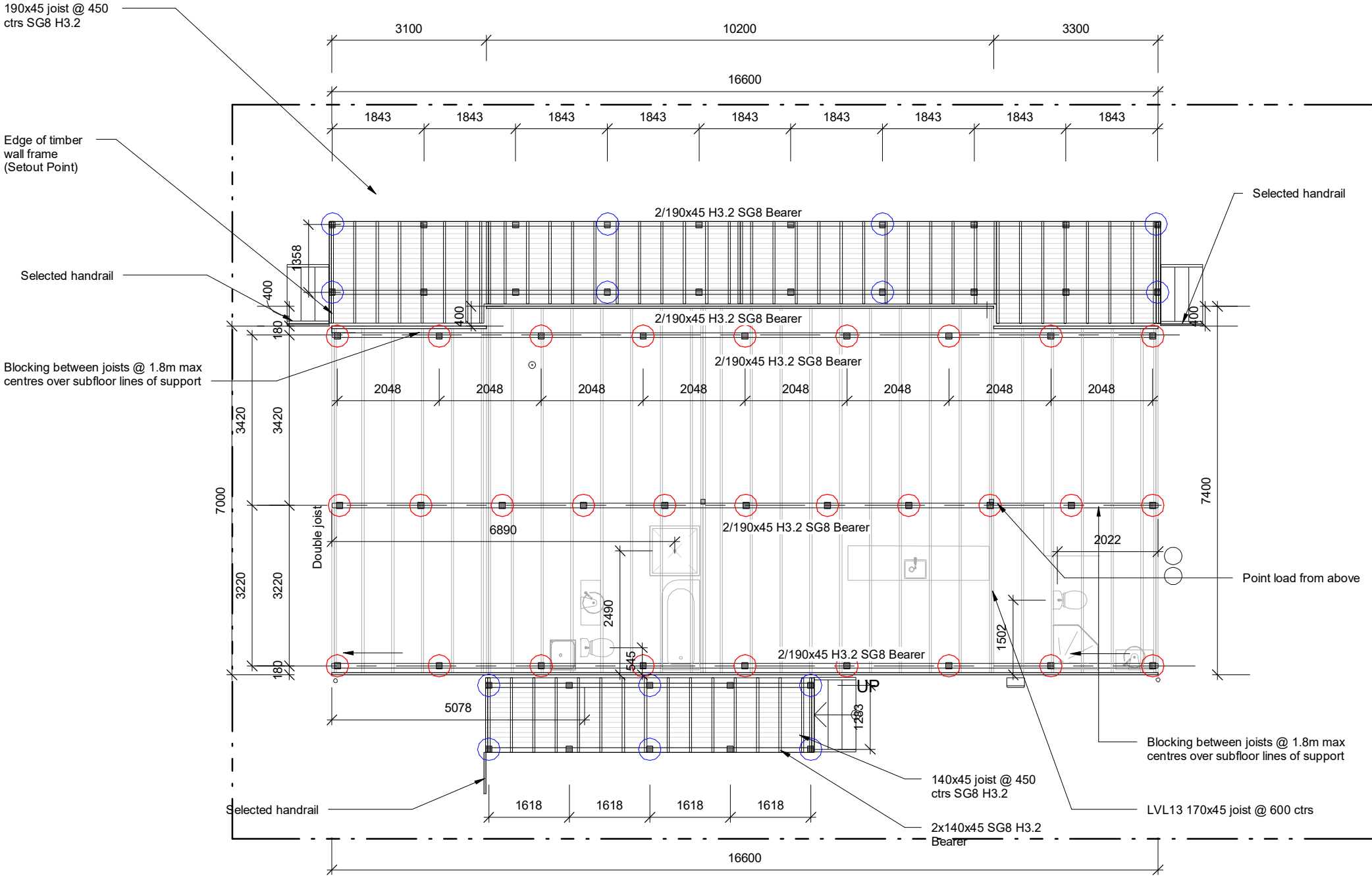
House Onsite plans are part of this Consent, this includes  
House Subfloor, Deck, Drainage & Site Services

Proposed Foundation Plan

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

SCALE @ A3. 1 : 100  
PROJECT No. L735  
PLOT DATE. 16/11/2024 1:38:17 pm

Building Consent

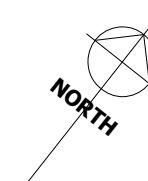


1 Proposed Subfloor Plan  
SCALE @ A3 - 1 : 100

Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

A103 Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set



ROSS ROAD

Floor Area: **120m<sup>2</sup>**

Wind Zone: **Low**  
Earthquake Zone: **2**  
Durability Zone: **B**

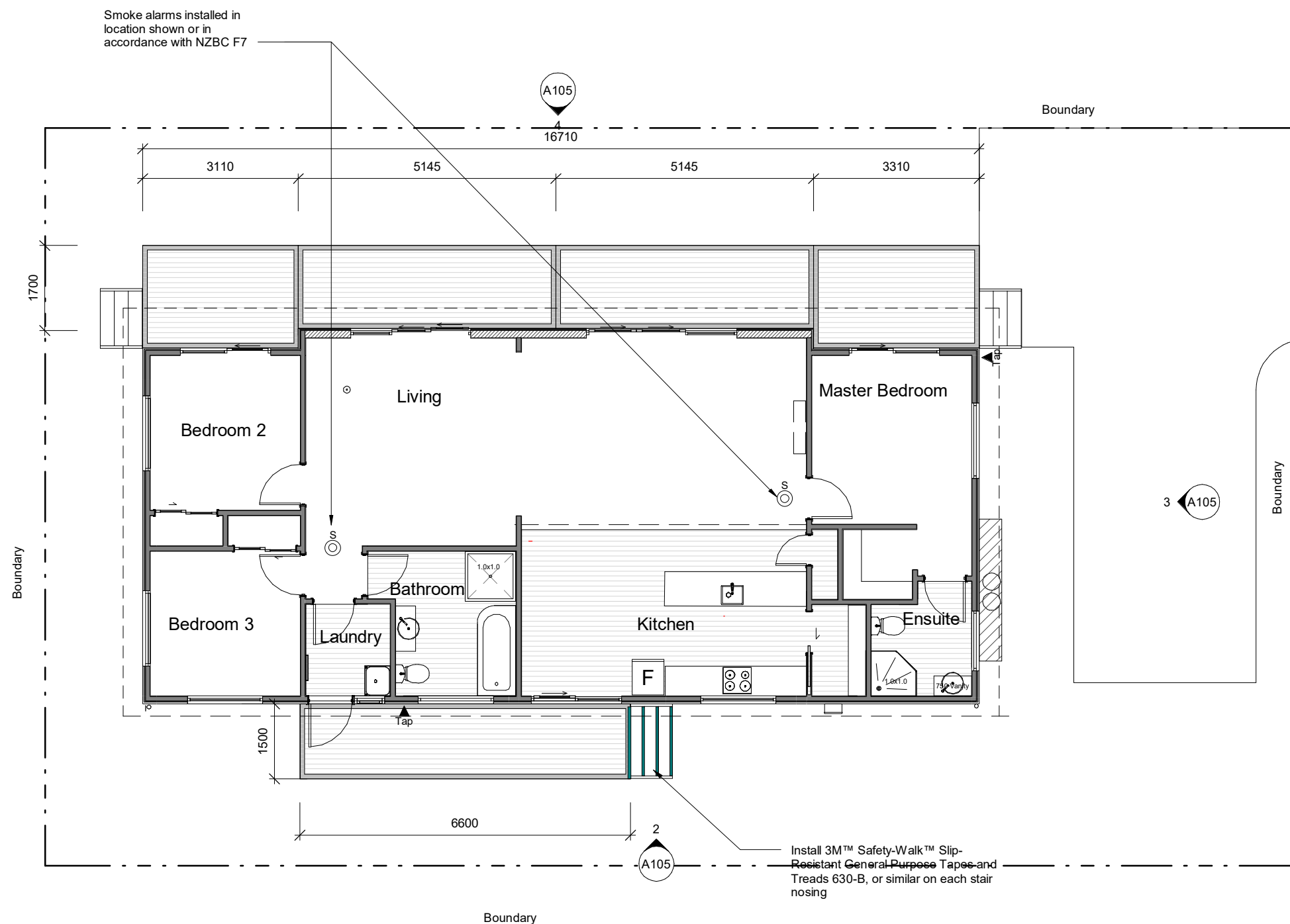
**House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services**

### Proposed Floor Plan

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

SCALE @ A3. 1 : 100  
PROJECT No. L735  
PLOT DATE. 16/11/2024 1:38:18 pm

## Building Consent



**1 Proposed Ground Floor Plan**  
SCALE @ A3 - 1 : 100

The floor plan illustrates the plumbing and sewer layout for a two-story building. The layout includes a central living area, a kitchen, and two bathrooms. The plumbing fixtures are as follows:

- Kitchen:** Sink, AAV (Air Admittance Valve), and a 50Ø pipe.
- Bathroom 1 (Left):** Shower, Bath, Basin, WC, and Tub.
- Bathroom 2 (Right):** WC, shower, and Basin.

The sewer system is shown in red, with a new 100Ø sewer drain to a septic tank. Key components include a 80Ø TV, a 50Ø pipe, and two ground level (GT) markers. The plan also shows a new 100Ø sewer drain to a septic tank.

Figure 7:

**Bedding and backfilling**

Paragraphs 2.1.1, 5.2.1, 5.3.1 and 5.4.1

Diagram (a) illustrates the bedding and backfilling for a cover greater than 500 mm. The structure consists of a central circular drain (D) surrounded by compacted granular bedding (100mm thick). This is surrounded by compacted selected fill (300mm min. thick). The outermost layer is fill (see note 1). The width of the structure is labeled as Width B.

**(a) Cover greater than 500 mm**

Diagram (b) illustrates the bedding and backfilling for a cover greater than 375 mm. The structure consists of a central circular drain (D) surrounded by compacted granular bedding and surround (100mm thick). This is surrounded by compacted selected fill (75mm thick). The outermost layer is fill (see note 1). The width of the structure is labeled as Width B.

**(b) Cover greater than 375 mm**

Diagram (c) illustrates the bedding and backfilling for a cover greater than 125 mm. The structure consists of a central circular drain (D) surrounded by compacted granular bedding and surround (100mm thick). This is surrounded by 75mm thick concrete. The outermost layer is compacted selected fill (50mm thick). The width of the structure is labeled as Width B.

**(c) Cover greater than 125 mm**

**NOTE**

1. See page 10.

- Ordinary if where drains are located below gardens and open country.

- Compacted selected fill where the drains are located below railway, airways and similar areas subject to light traffic.

|                                               | <b>Low pressure<br/>(i.e. header tank<br/>supply or low<br/>pressure)</b> | <b>Low and medium<br/>pressure unvented<br/>(valve vented and<br/>open vented)</b> | <b>Mains pressure</b>                                                     |
|-----------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Pressure of water at<br>tempering valve (kPa) | 20 – 30                                                                   | 30 – 120                                                                           | over 300                                                                  |
| Metres head (m)                               | 2 – 3                                                                     | >3 – 12                                                                            | over 30                                                                   |
| Minimum tempering valve size                  | 25 mm                                                                     | 20 mm                                                                              | 15 mm                                                                     |
| Pipes to tempering valve                      | 25 mm<br>(see <b>Note 3</b> )                                             | 20 mm                                                                              | 20 mm<br>(15 mm optional)<br><br>(see <b>Note 1</b> )                     |
| Pipes to shower                               | 20 mm                                                                     | 20 mm<br>(see <b>Note 4</b> )                                                      | 20 mm<br>(see <b>Note 5</b> )<br>(15 mm optional)<br>(see <b>Note 1</b> ) |
| Pipes to sink/laundry (see <b>Note 2</b> )    | 20 mm                                                                     | 20 mm                                                                              | 15 mm                                                                     |
| Pipes to bath (see <b>Note 2</b> )            | 20 mm                                                                     | 20 mm                                                                              | 15 mm                                                                     |
| Pipes to basins (see <b>Note 2</b> )          | 15 mm                                                                     | 15 mm                                                                              | 10 mm                                                                     |

**Notes:**

1. If supplied by separate pipe from *storage water heater* to a single outlet.
2. This table is based on maximum pipe lengths of 20 metres.
3. 2 m maximum length from *water heater* outlet to tempering valve.
4. 15 mm if dedicated line to shower.
5. 10 mm if dedicated line to shower.
6. Table 3 pipe sizes have been calculated to deliver water simultaneously to the kitchen sink and one other fixture.

Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

# A105

Rev.B

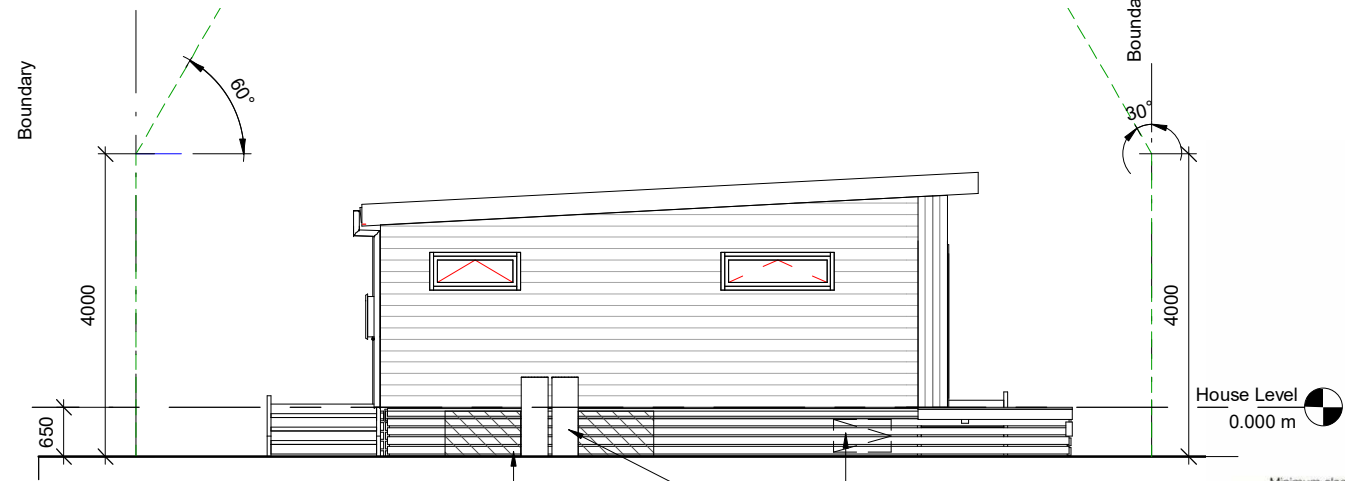
L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set

| Keynote Legend |                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Code           | Description                                                                                                                                 |
| M04            | Install new continuous hot water rheem 26l integrity external unit with pipe cover shroud in accordance with manufacturers recommendations. |

House Level  
0.000 m

4 Front Elevation  
A103 SCALE @ A3 - 1 : 100

Boundary



3 Side Elevation A  
A103 SCALE @ A3 - 1 : 100

Allow to install 6mm Fibre cement sheet behind baseboards minimum 1.0m each side as shown hatched

Subfloor Access hatch



1 Side elevation B  
A103 SCALE @ A3 - 1 : 100

Front Facade Elevation Area: 16.6m<sup>2</sup>  
Window WN.07: 1.8m<sup>2</sup>  
Window WN.08: 1.8m<sup>2</sup>  
Total Glazing: 3.6m<sup>2</sup>  
Total Front Facade Glazing Percentage: 21.7%

Floor Area: 120m<sup>2</sup>

Wind Zone: Low  
Earthquake Zone: 2  
Durability Zone: B

House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services

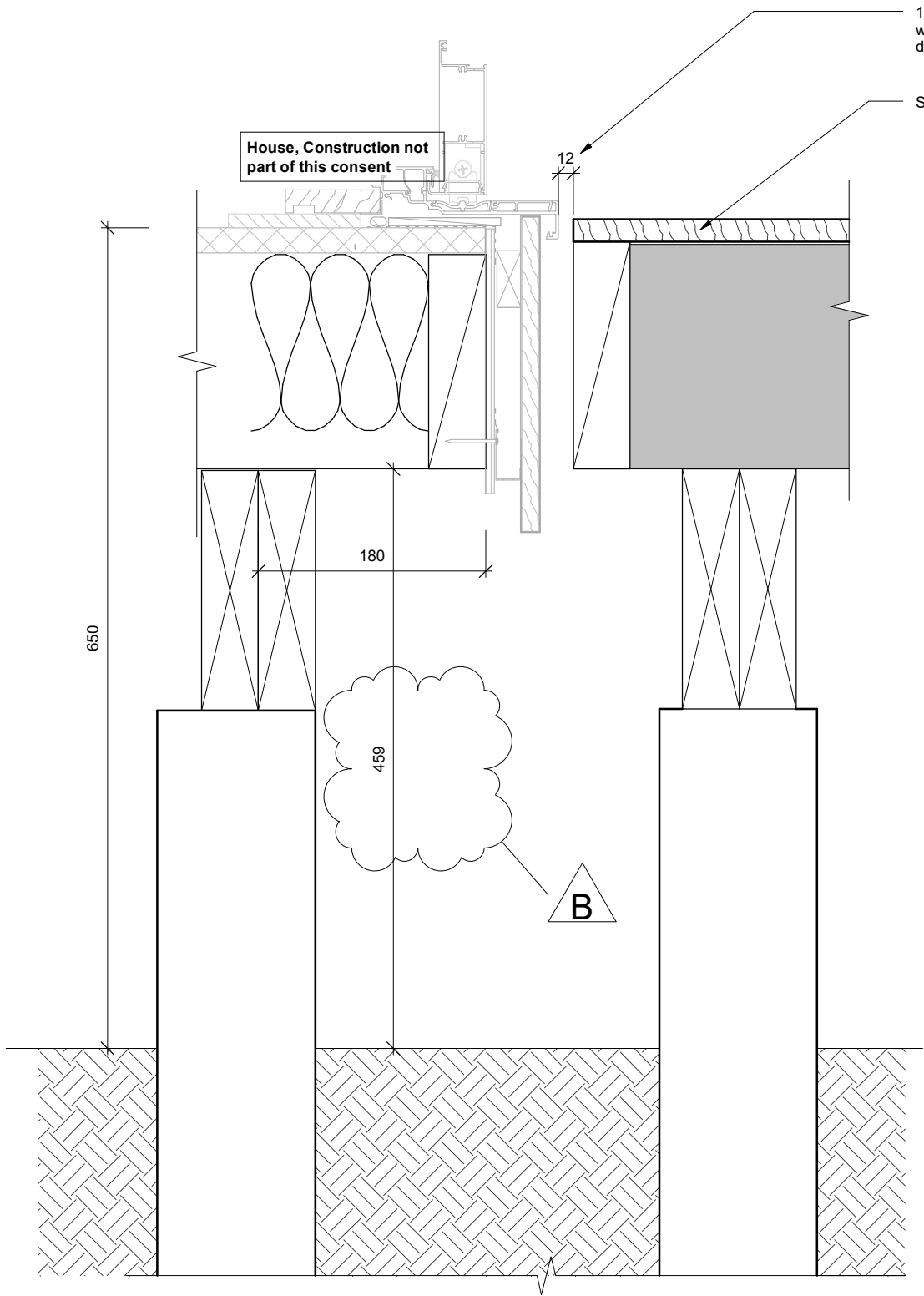
Elevations

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

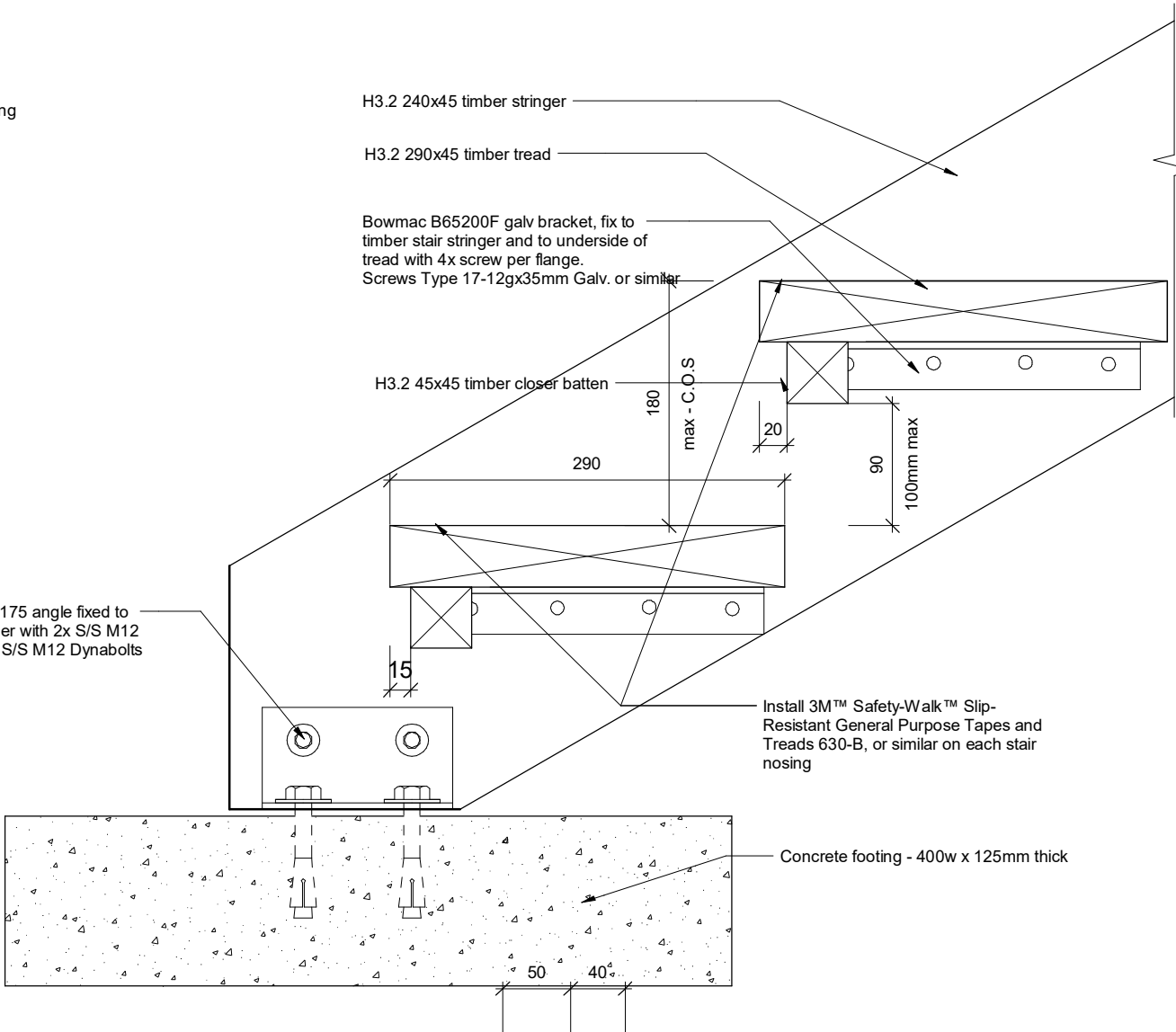
SCALE @ A3. As indicated  
PROJECT No. L735  
PLOT DATE. 16/11/2024 1:38:19 pm

Building Consent

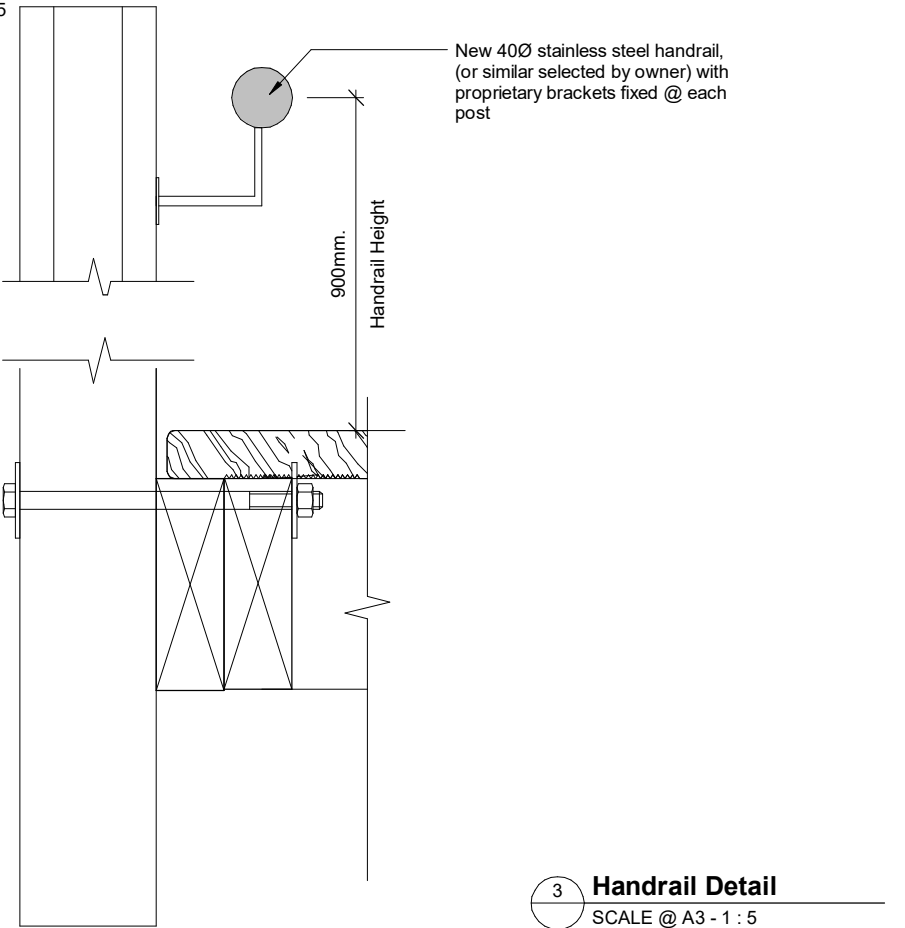




2 Deck to House Detail  
SCALE @ A3 - 1 : 5



1 Stair Detail  
SCALE @ A3 - 1 : 5



3 Handrail Detail  
SCALE @ A3 - 1 : 5

Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

# A106

Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set

Floor Area: 120m<sup>2</sup>

Wind Zone: Low  
Earthquake Zone: 2  
Durability Zone: B

House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services

## Construction Details

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

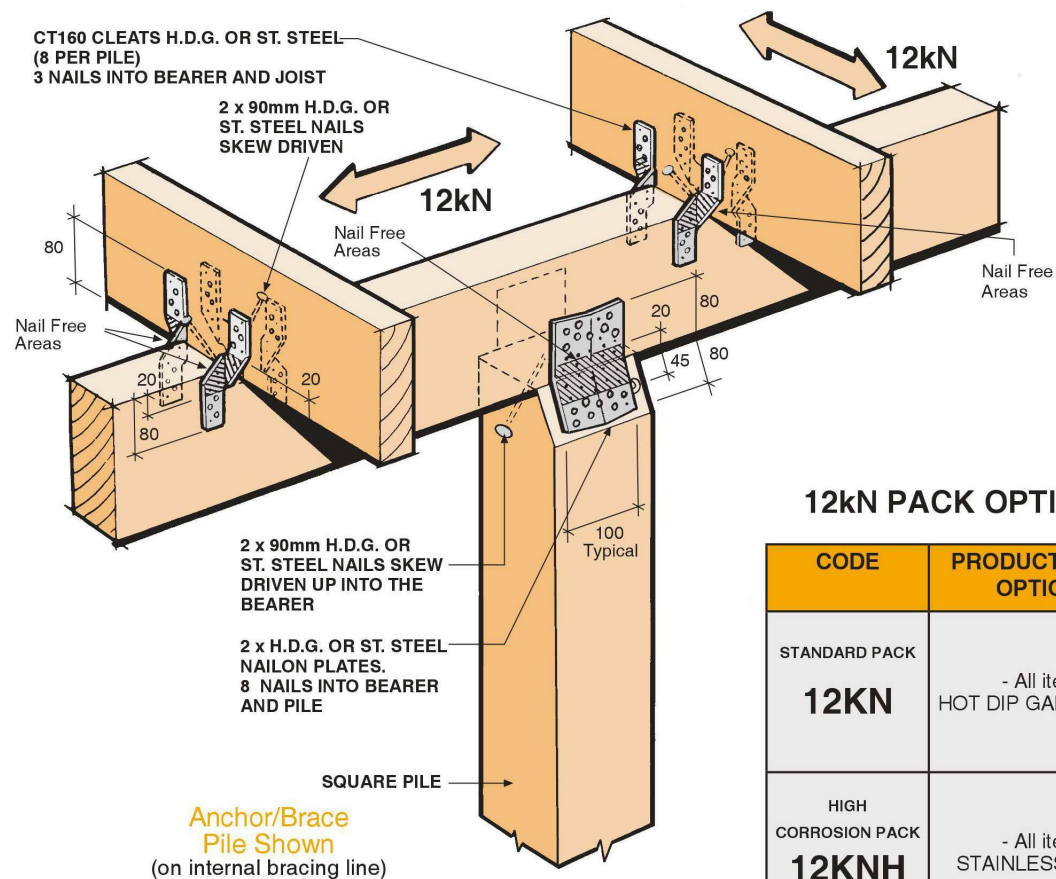
SCALE @ A3. 1 : 5  
PROJECT No. L735  
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## Building Consent



## 12kN PILE FIXING FOR BRACED PILES OR ANCHOR PILES

- ★ The 12kN Pile Fixing must be installed in accordance with this brochure
- ★ Auckland University Tested. Test Ref. 4613
- ★ All subfloor construction must be in accordance with NZS 3604:2011
- ★ NZS 3604 requires lines of lateral support to floor joists within 300mm of bearer or bracing lines, refer to Clause 7.1.2
- ★ Joists deeper than 150mm require solid hogging over braced or anchor pile



### 12kN PACK OPTIONS

| CODE                                | PRODUCT FINISH OPTIONS         |
|-------------------------------------|--------------------------------|
| STANDARD PACK<br><b>12KN</b>        | - All items HOT DIP GALVANISED |
| HIGH CORROSION PACK<br><b>12KNH</b> | - All items STAINLESS STEEL    |

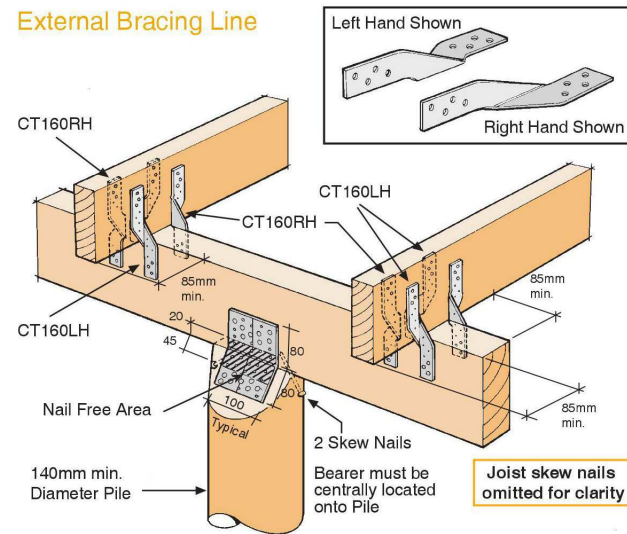
★ See Over For Corrosion Table.



SCAN FOR  
INSTALLATION  
VIDEO

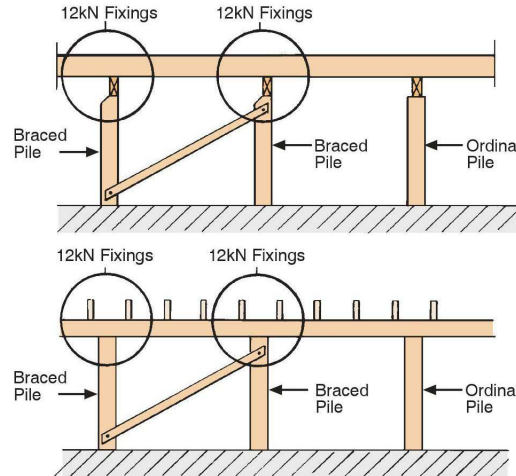
<https://vimeo.com/117350344>

### External Bracing Line



### CORROSION HAZARD USE TABLE

|                                                                                               |                                  |
|-----------------------------------------------------------------------------------------------|----------------------------------|
| <b>Standard Pack (12KN)</b><br>- Zones B & C<br>- All Fixings ABOVE 600mm from Ground level   | All items Hot Dip Galvanised.    |
| <b>High Corrosion Pack (12KNH)</b><br>- Zone D<br>- All Fixings BELOW 600mm from Ground level | All items Stainless Steel (304). |



### Sample Subfloor Elevations

12kN Fixing - Pile to Bearer  
12kN Fixing - Joists to Bearer

### 12kN Joint Fixing Schedule

- PILE TO BEARER**
- Nailon Plate (2 per joint) 1mm x 100mm (Typical) x 160mm long
  - 8 Nails per Plate into Pile
  - 8 Nails per Plate into Bearer
  - 2 Skew Nails 90mm (1 per face)
- JOIST TO BEARER**
- CT160 Cleats (4 per Joist) 160mm long
  - 3 Nails per Cleat into Joist
  - 3 Nails per Cleat into Bearer
  - 2 Skew Nails 90mm (1 per side)
- NAILS**
- 80 x 45mm x 3.55 dia. Spiral Nails
  - 6 x 90mm x 4 dia. St. Steel Nails (12KNH Pack only)

### 12kN Pile Set Contents

Each set represents 1 x 12kN Pile Fixing  
(packed 4 sets per carton)  
2 x Nailon Plates 160mm long  
8 x CT160 Cleats  
80 x 45mm x 3.55 dia. Spiral Nails  
90mm x 4 dia. St. Steel Angular Groove 6 - 12KNH Pack

90mm H.D.G. Nails  
not included.

Refer front page  
for Product  
Finish Options

Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

# A107

Rev.B

L. Taratu and F. Muraahi  
New House  
Factory Set - Waipa DC

House Factory plans are part of this Consent.  
House Subfloor, Deck, Drainage & Site Services are part of a separate Consent.

Construction Details

|     |                  |          |
|-----|------------------|----------|
| B   | RFI 1            | 15-11-24 |
| A   | Building consent | 24-10-24 |
| NO. | DESCRIPTION      | DATE     |

SCALE @ A3. 1 : 50  
PROJECT No. L735  
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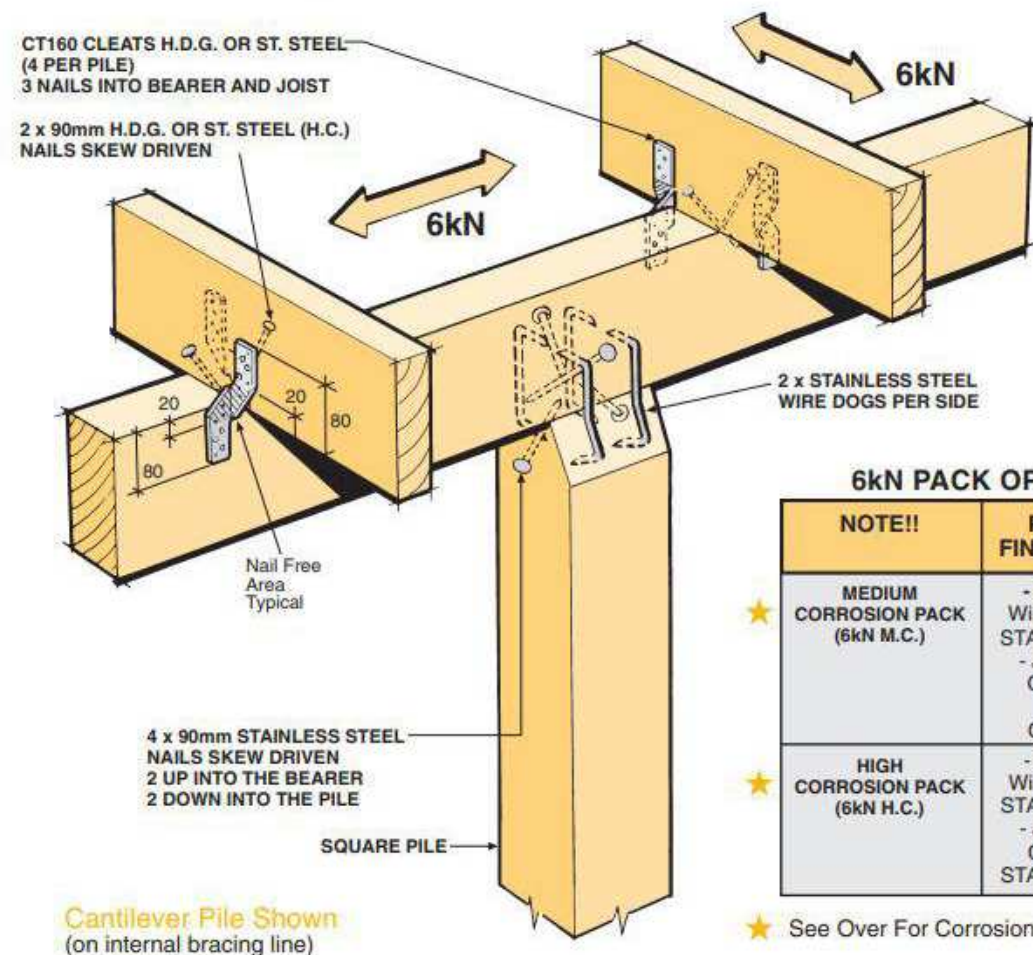
Building Consent



10/2011

## 6kN PILE FIXING FOR CANTILEVER PILES

- ★ The 6kN Pile Fixing must be installed in accordance with this brochure
- ★ Auckland University Tested. Test Ref. 4613
- ★ All subfloor construction must be in accordance with NZS 3604:2011
- ★ NZS 3604 requires lines of lateral support to floor joists within 300mm of bearer or bracing lines, refer to Clause 7.1.2



### 6kN PACK OPTIONS

| NOTE!!                             | PRODUCT FINISH OPTIONS                                                                                    |
|------------------------------------|-----------------------------------------------------------------------------------------------------------|
| ★ MEDIUM CORROSION PACK (6kN M.C.) | - Pile to Bearer Wire Dogs & Nails STAINLESS STEEL<br>- Joist to Bearer Cleats & Nails HOT DIP GALVANISED |
| ★ HIGH CORROSION PACK (6kN H.C.)   | - Pile to Bearer Wire Dogs & Nails STAINLESS STEEL<br>- Joist to Bearer Cleats & Nails STAINLESS STEEL    |

★ See Over For Corrosion Table.

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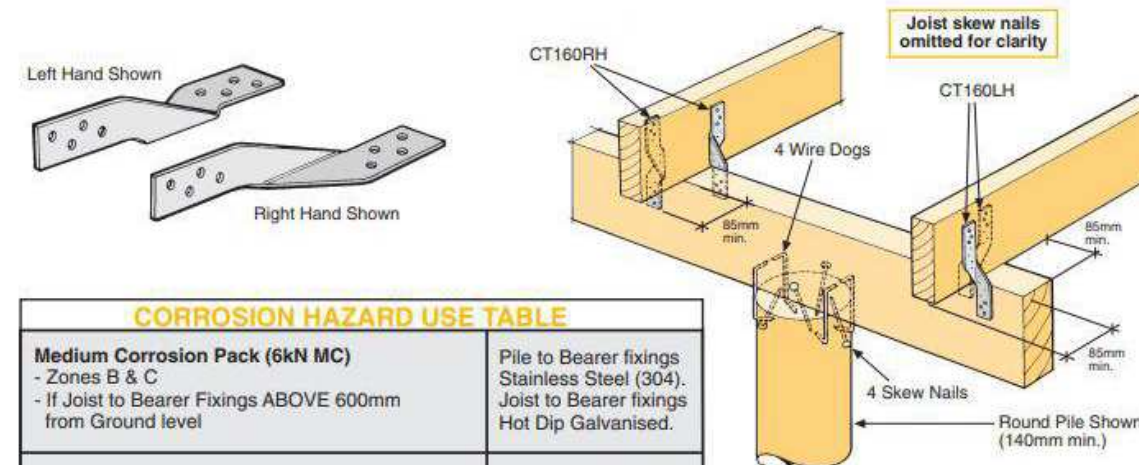
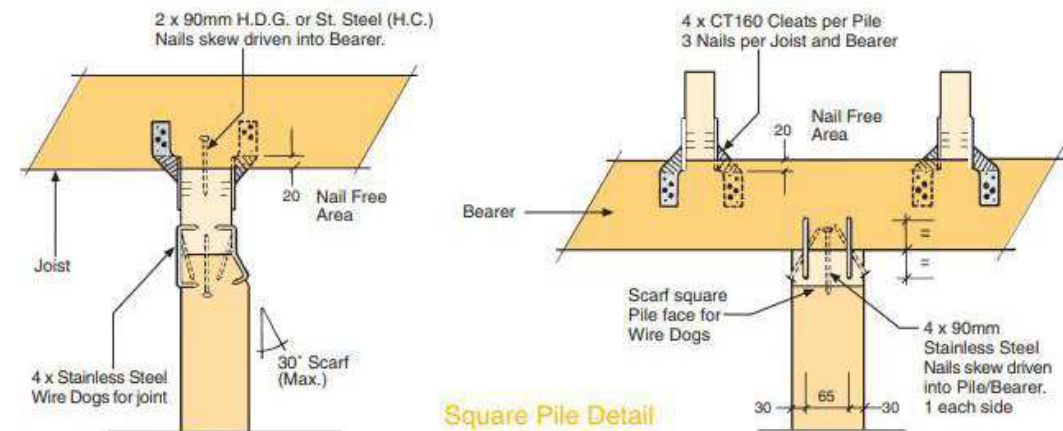


Contractors shall verify all dimensions on site before commencing work.  
Do not scale from the drawings.  
If in doubt ask.

# A108

Rev.B

L. Taratu and F. Muraahi  
New House  
13 Ross Road  
Onsite Set



### CORROSION HAZARD USE TABLE

|                                                                                                                      |                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Medium Corrosion Pack (6kN MC)</b><br>- Zones B & C<br>- If Joist to Bearer Fixings ABOVE 600mm from Ground level | Pile to Bearer fixings<br>Stainless Steel (304).<br>Joist to Bearer fixings<br>Hot Dip Galvanised. |
| <b>High Corrosion Pack (6kN HC)</b><br>- Zone D<br>- All Fixings BELOW 600mm from Ground level                       | All items Stainless Steel (304).                                                                   |

### 6kN Joint Fixing Schedule

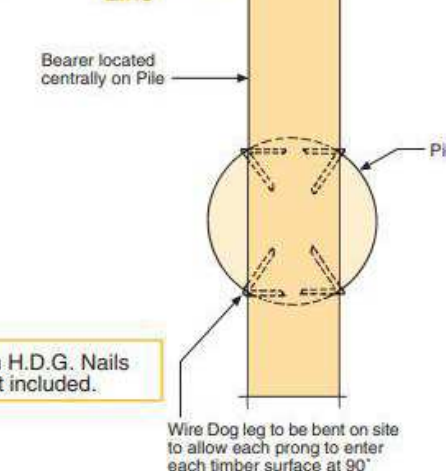
|                 |                                                                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PILE TO BEARER  | - Wire Dog Staples (4 per joint) Stainless Steel<br>- 4 x 90mm Skew Nails (1 per face) Stainless Steel                                                                             |
| JOIST TO BEARER | - CT160 Cleats (4 per pile) 160mm long<br>- 3 Nails per Cleat into Joist<br>- 3 Nails per Cleat into Bearer<br>- 2 Skew Nails 90mm (1 per side)                                    |
| NAILS           | - 24 x 45mm x 3.55 dia. Spiral Nails (for Joist to Bearer fixings)<br>- 4 x 90mm x 4 dia. St. Steel Nails (M.C. Pack only)<br>- 8 x 90mm x 4 dia. St. Steel Nails (H.C. Pack only) |

**6kN Pile Set Contents** Each set represents 1 x 6kN Pile Fixing (packed 10 sets per carton)  
4 x Wire Dog Staples Stainless Steel  
4 x CT160 Cleats  
24 x 45mm x 3.55 dia. Spiral Nails  
90mm St. Steel Nails to suit 4 - M.C. pack  
8 - H.C. pack

Refer front page for Product Finish Options

90mm H.D.G. Nails not included.

### External Bracing Line



Floor Area: 120m<sup>2</sup>

Wind Zone: Low  
Earthquake Zone: 2  
Durability Zone: B

House Onsite plans are part of this Consent, this includes House Subfloor, Deck, Drainage & Site Services

Construction Details

|     |                  |          |
|-----|------------------|----------|
| B   | RF 1             | 15-11-24 |
| A   | Building consent | 24-10-24 |
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Building Consent

