Approved Building Consent Documents

Please Note: A copy of the stamped approved documents must be available on site for all inspections.

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

Our Ref: APP-124155

11th March 2019

Judith Stones
278b Meeanee Road
Meeanee
Napier 4112

Dear Madam

NOTIFICATION OF DECISION

Your application for resource consent has been granted, subject to the conditions stated on the attached consent document.

Your resource consent is an important legal document which you should keep as a permanent record. It is important that you read your consent and understand the conditions that the Council has imposed. It is your responsibility as the consent holder to adhere to those conditions.

Check your consent document thoroughly, if any information is wrong you must advise us within 15 working days, we will be able to address any minor mistakes within 15 working days at no cost, if you do not advise us within 15 working days, and there is a mistake, a change of consent conditions and costs will apply for any corrections.

You should also read the resource consent and the associated Planner's Report to understand any on-going monitoring charges and any requirements to report to the Council.

Costs

The Council will calculate the final cost of processing your application and will send a separate invoice if the total cost exceeds the deposit you have paid, or will refund any money owing.
All costs incurred by the Hawke's Bay Regional Council as a result of the collection of any debt relating to the processing of this application, and monitoring of the consent, shall be borne by the consent holder. Council reserves the right to produce this document, and any other relevant information, in support of any claim.

Processing Time

The Resource Management Act 1991 (RMA) requires the Council to process your application within set timeframes. All timeframes were met in the processing of this application.

Objection and Appeal Provisions

If you are not satisfied with any aspect of this decision you can make a formal objection, in writing to the Council within 15 working days of receiving this notification. If following this objection process you are still not satisfied with the decision, you may appeal to the Environment Court. Please note that you cannot exercise your consent until any objection or appeal is resolved.
If you have any questions or wish to discuss any aspect of your consent or the objection/appeal provisions please contact the consents planner who processed your application in the first instance.

Lapsing of Consent

Please note the lapse date on your consent document. This is the date that states if you have not used the consent it will end. You can think of this date as a kind of "use it or lose it" date. This date is typically on the front page of your consent document under the heading 'Lapsing Of Consent'. Where no date is specified, the consent will lapse 5 years from date of issue. If you anticipate that you will not use your consent before it lapses, you can apply for an extension of the lapse date.

Yours faithfully

PAUL BARRETT - PRINCIPAL CONSENTS PLANNER
REGULATION GROUP
PH (06) 833-8014
BARRETT@HBRC.GOVT.NZ

cc:
SWD Wastewater & Drainage Ltd
PO Box 28019
Havelock North 4157

Attention: Caleb Snee

GENERAL ADVICE NOTES

1. In accordance with Section 36 of the Resource Management Act 1991, resource consent applicants are responsible for paying costs relating to receiving, processing and granting resource consents. The total amount payable will be communicated to you as soon as practicable. Any deposit already paid will be deducted from the total cost.

2. In accordance with Section 36 of the Resource Management Act 1991 and the Council's Annual Plan, Council's reasonable administration, supervision and monitoring costs, including the cost of any inspections and costs associated with collection, analysis interpretation and reporting of any data reasonably required to monitor compliance with consent conditions or the impact of this consent on the environment, shall be met by the consent holder.

3. Where a resource consent has been issued for any type of construction (e.g. dam, bridge, jetty) this consent does not constitute authority to build and it may be necessary for you to apply for a Building Consent from the relevant territorial authority.

4. This consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.

5. The permit is transferable to another owner or occupier of the land concerned, upon application, on the same conditions and for the same use as originally granted (s.134-137 RMA).

6. The consent holder may apply to change the conditions of the consent (except for the duration) (s.127 RMA).

7. Any person carrying out activities allowed by this consent, either with the explicit or implied permission of the consent holder, must do so as if the resource consent had been granted to that person as well as the holder of the consent. The consent holder is advised to inform those persons of the consent conditions, as any action by or cost to this Council resulting from non-compliance with the consent conditions will be directed to the consent holder (s.3A RMA).

8. Any enforcement officer, having written authority from the Council, may at all reasonable times go on, into, under, or over any place or structure (except a dwelling/house) for the purposes of inspection and taking samples to determine compliance with the consent conditions (s.332 RMA).

9. In accordance with Section 116(1AB) of the Resource Management Act 1991, if an objection has been made on this consent, the resource consent commences when the objection has been decided or withdrawn. If no objection has been made the consent commences on the date that the decision is notified under section 114 of the Resource Management Act 1991, or on a later date if this date is stated in the resource consent.

10. As the consent holder it is your responsibility to inform the Hawke's Bay Regional Council's Consents section of any change to your contact details. Upon any sale of the property, if you do not want to keep the consent, you must apply for your resource consent to be transferred. **Transfers are unable to be facilitated through the rates information that this Council holds.**

HAWKE'S BAY
REGIONAL COUNCIL

RESOURCE CONSENT

Discharge Permit

In accordance with the provisions of the Resource Management Act 1991 (RMA), and subject to the attached conditions, the Hawke's Bay Regional Council (the Council) grants a resource consent for a discretionary activity to:

Judith Stones
278b Meeanee Road
Meeanee
Napier 4112

to discharge secondary treated domestic effluent from a one bedroom dwelling into the ground in circumstances where contaminants (or any other contaminants emanating as a result of natural processes from those contaminants) may enter water.

LOCATION

Address of site:	278 Meeanee Road, Meeanee, Napier,
Legal description (site of discharge):	Lot 13 DP 96
Map reference:	E 1933705 – N 5615908 (NZTM)

CONSENT DURATION

This consent is granted for a period expiring on 31 May 2029.

LAPSING OF CONSENT

This consent shall lapse in accordance with section 125 of the RMA on the 31st May 2029, if it is not exercised before that date

Paul Barrett
Principal Consents Planner
REGULATION GROUP
Under authority delegated by Hawke's Bay Regional Council
11th March 2019

CONDITIONS

1. All works and structures relating to this consent shall be installed to conform to best engineering practices.

2. The type of treatment plant shall be a **ProTec 10,000,** and installed by a Hawke's Bay Regional Council accredited installer.

3. The land treatment field shall be located as shown on the plan attached at Appendix 1.

4. The volume of effluent discharged shall not exceed **2.8 m^3 over any 7 day period**.

5. There shall be no discharge within **1.5 m** of any property boundary.

6. The distribution pipes shall be placed at least **200 mm** below the top of the raised bed and spaced **1000 mm** apart over the entire land treatment field.

7. The land treatment field shall be:

   a) raised at least **300 mm** by importing category 2 soil as defined by AS/NZS 1547:2000, and **100 mm** of distribution aggregate

   b) Designed and constructed to avoid any slumping of the bed and any lateral flow of wastewater from the bed to the natural ground surface.

8. The effluent shall be discharged evenly over an area not less than **20 m^2** (20 m long by 2 m wide raised bed).

9. There shall be no discharge within **600 mm** of the highest seasonal groundwater level.

10. After installation of the treatment plant and land treatment field, and before discharge commences, the consent holder shall provide the Council (Manager Compliance) with:

    a) an 'as built' plan of the treatment plant and land treatment field that clearly shows their location and layout, in particular the plan shall show any distances and dimensions specified in the conditions of this consent; and

    b) a statement signed by the Hawke's Bay Regional Council accredited installer that the installation is in accordance with the 'as built' plan provided and with the conditions of the consent.

11. The operation and maintenance of the treatment plant shall not adversely affect its performance or the functioning of the land treatment field.

12. The consent holder shall ensure that maintenance of the system occurs at least every **6** months by a Hawke's Bay Regional Council accredited service provider. This maintenance shall ensure that all components of the wastewater treatment plant, and land treatment field are functioning properly. The results of these maintenance checks shall be made available to the Council (Manager Compliance) within one month of servicing.

13. The consent holder shall ensure that there is a point where the treated effluent can be sampled before the land treatment field. The consent holder shall provide access for the Council to this sampling point to enable a sample to be taken either during an inspection or as part of the Council's sampling programme for on-site wastewater treatment plants. The sample may be analysed for the analytes listed below.

a) Faecal coliforms

b) Biochemical oxygen demand

c) Total suspended solids

d) Total nitrogen

14. Any stormwater run-off entering the land treatment field shall not adversely affect the performance of the land treatment field.

15. There shall be no surface run-off, ponding, or contamination of surface water resulting from the discharge of wastewater to land.

16. The discharge shall not result in any offensive or objectionable odour beyond the boundary of the subject property.

17. In the event of any archaeological site or waahi tapu being uncovered during the exercise of this consent, activities in the vicinity of the discovery shall cease. The consent holder shall contact the Council (Manager Compliance) to obtain contact details of the relevant tangata whenua. The consent holder shall then consult with the relevant local hapu or marae and the Heritage New Zealand Pouhere Taonga, and shall not recommence works in the area of the discovery until the relevant Heritage New Zealand Pouhere Taonga and tangata whenua approvals to damage, destroy or modify such sites have been obtained.

18. No activities shall be undertaken on the land treatment field that may damage it, and prevent it functioning properly.

19. There shall be no vehicle access over any part of the land treatment field.

20. If an event occurs on-site that may lead to the contamination of a drinking water supply, the Consent Holder shall notify the operators of the Meeanee School and Hall Bore, and the Hawke's Bay Regional Council (Manager Compliance) of the event as soon as reasonably practicable after the event occurs

    Advice Note: Such an event might include for example the failure of an effluent field. The operator of the Meeanee School and Hall Bore can be contacted on 06 844 2073. The Regional Council 24 hour Pollution Hotline should also be contacted on 0800 108 838.

21. The conditions of this consent may be reviewed by Council during the month of May of any year pursuant to sections 128, 129, 130, 131 and 132 of the RMA. The actual and reasonable costs of any review undertaken will be charged to the consent holder, in accordance with section 36 of the RMA. The consent(s) may be reviewed for any of the following purposes:

    a) To deal with any adverse effect on the environment which may arise from the exercise of this consent, which it is appropriate to deal with at that time, or which became evident after the date of issue.

    b) To require the adoption of the best practicable option to remove or reduce any effects on the environment.

    c) To modify any monitoring programme or to require additional monitoring if there is evidence that current monitoring requirements are inappropriate or inadequate.

    d) To impose a discharge standard if it is considered necessary.

e) To require the installation of an effluent meter to confirm compliance with the authorised discharge volume.

f) To modify or add any condition to ensure the activity is undertaken in accordance with operative plans.

REASONS FOR DECISION

The effects of the activity on the environment will not be more than minor. Granting the consent is consistent with the purpose and principles of the RMA, the National Policy Statement for Freshwater, the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 and with all relevant plans and policies.

ADVICE NOTES

1. A building consent may be required from the territorial authority (Napier City Council). A land use consent may also be required from that Council.
2. It is important to ensure that there is a reserve land treatment field, kept free of permanent structures and available for use in the event that the land treatment field fails. This area should be no less than **10 m^2**.
3. Reasonable care should be taken to protect the land treatment field from being damaged by other activities.
4. In accordance with Policy 18(d) of the Regional Policy Statement, should reticulation become available then connection to this reticulated system would be required by the Regional Council. This will affect the replacement of this consent upon expiry.
5. All information required by the conditions of this consents can be emailed to ComplianceReturns@hbrc.govt.nz

MONITORING BY THE COUNCIL

Routine monitoring

The wastewater treatment system authorised by this consent is a Council accredited system. Provided it is installed by a Council accredited installer, and is regularly maintained by a Council accredited service provider at the frequency specified in this consent, the consent holder will not incur any routine monitoring costs. It is the responsibility of the service provider to ensure that maintenance records are filed with the Council to show that the required maintenance has been undertaken.

If the system is not regularly maintained by an accredited service provider (or there is no record of this having occurred) then the system will drop out of the accreditation programme, and may be visited by a Council officer up to once every 12 months. The cost of this inspection would be charged to the consent holder, in accordance with the Annual Plan in place at the time.

Any actual and reasonable costs incurred in the follow-up of non-compliance with consent conditions will also be charged to the consent holder, regardless of the accreditation status of the system.

Non-routine monitoring

"Non routine" monitoring will be undertaken if there is cause to consider (e.g. following a complaint from the public, or routine monitoring) that the consent holder is in breach of the conditions of this consent. The cost of non-routine monitoring will be charged to the consent holder in the event that non-compliance with conditions is determined, or if the consent holder is deemed not to be fulfilling the obligations specified in section 17(1) of the RMA shown below.

Section 17(1) of the RMA states:

> *Every person has a duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of the person, whether or not the activity is carried on in accordance with*
>
> *a) any of sections 10, 10A, 10B, and 20A; or*
>
> *b) a national environmental standard, a rule, a resource consent, or a designation.*

Consent Impact Monitoring

In accordance with section 36 of the RMA (which includes the requirement to consult with the consent holder) the Council may levy additional charges for the cost of monitoring the environmental effects of this consent, either in isolation or in combination with other nearby consents. Any such charge would generally be set through the Annual Plan process.

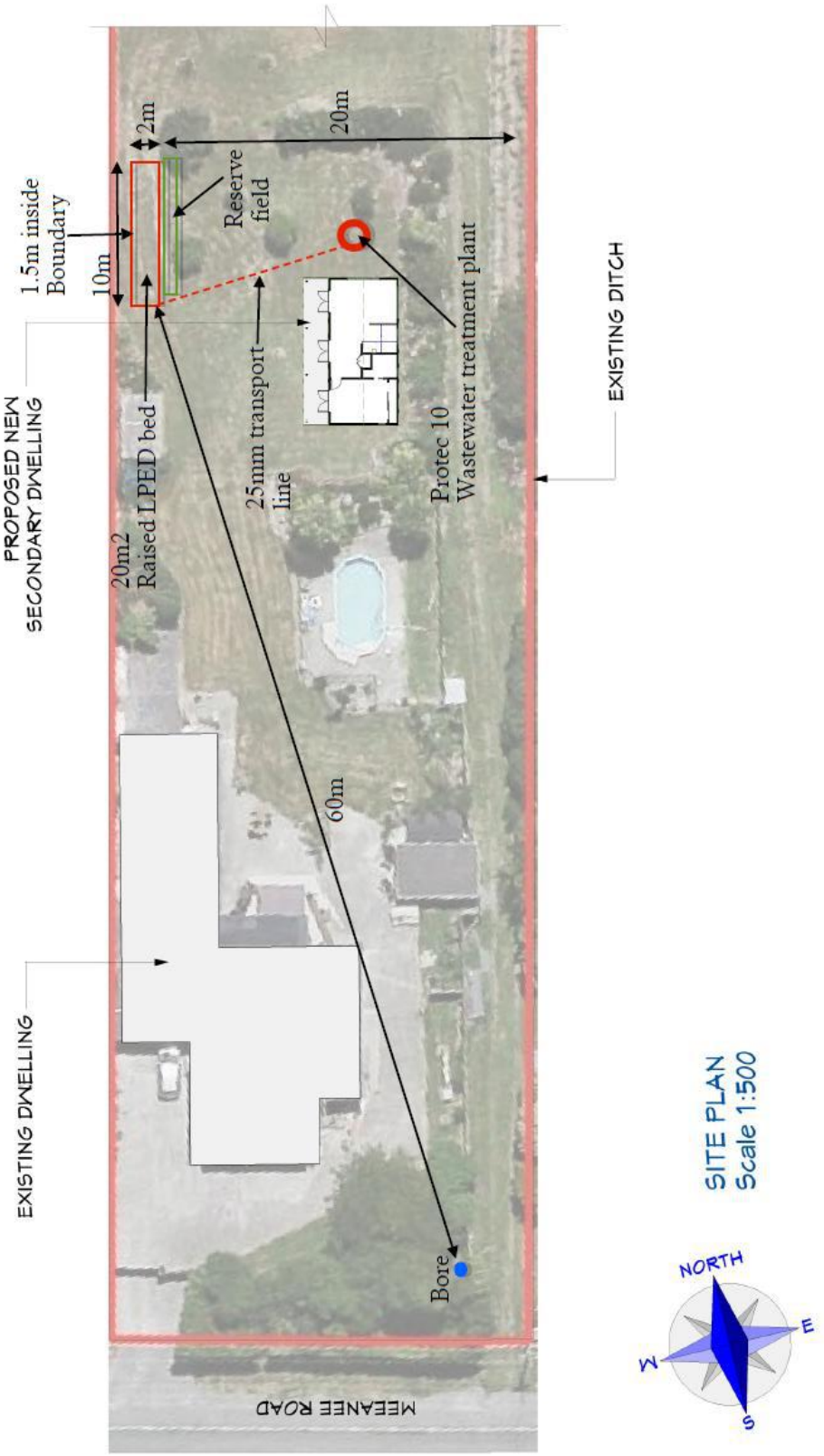
DEBT RECOVERY

It is agreed by the consent holder that it is a term of the granting of this resource consent that all costs incurred by the Council for, and incidental to, the collection of any debt relating to this resource consent, whether as an individual or as a member of a group, and charged under section 36 of the RMA, shall be borne by the consent holder as a debt due to the Council, and for that purpose the Council reserves the right to produce this document in support of any claim for recovery.

CONSENT HISTORY

Authorisation No:	Date	Event	Relevant Rule	Plan
AUTH-123959-01	11/03/2019	Consent initially granted	52	Regional Resource Management Plan

APPENDIX 1: LOCATION OF LAND TREATMENT FIELD



ASSESSMENT OF RESOURCE CONSENT APPLICATION

Applicant: Judith Stones

Application Number: APP-124155

Property Address: 278 Meeanee Road, Meeanee, Napier,

Authorisation No:	Activity Description	Activity Type:	Activity Location
AUTH-123959-01	to discharge secondary treated domestic effluent from a one bedroom dwelling into the ground in circumstances where contaminants (or any other contaminants emanating as a result of natural processes from those contaminants) may enter water	Discharge Permit	278 Meeanee Road, Meeanee, Napier,

1. DETAILS OF PROPOSAL

The proposal is to discharge domestic wastewater from a one bedroom sleepout. The proposal is for the construction and operation of a new wastewater treatment system. The existing main dwelling on the site is serviced by an existing wastewater treatment system for which the effluent field lies 20 m away (see email from Caleb Snee dated 07/03/2019)

Table 1: Application Details

Area of Property:	4046 m^2
Number of Bedrooms:	1
Relevant TLA:	NCC
Located over Heretaunga Plains Unconfined Aquifer or Ruataniwha Plains Unconfined Aquifer:	No
Located within Coastal Margin[1]:	No
Water Source:	Private supply from bore
AS/NZS Flow Allowance:	200 L/p/d

[1] "Coastal Margin" is defined in the RCEP as an area of the coastal environment identified for the purposes of this Plan to manage activities and the effects of activities occurring within the coastal environment. It does not include any part of the coastal marine area.

Expected Volume:	0.4 m^3/d, 2.8 m^3/wk
Net Site Area to Discharge Volume Ratio:	(4046 / 0.4 = 10.1 m^2/L/d)
Brand of Treatment Plant:	ProTec 10,000 WWTP
Level of Treatment:	Secondary
Maintenance By:	SWD Wastewater and Drainage Ltd
Maintenance Frequency:	Proposed 6 monthly maintenance
Topography and Slope of Land Treatment Field:	Flat <10%
Soil Type of Land Treatment Field: (according to HBRC GIS map)	Farndon soils - >30 cm silt loam on sandy loam (slightly saline)
Soil Category: (according to AS/NZS 1547)	Category 4 – Clay loams
Method of Land Application:	Pumped to a raised LPED field
Depth of Discharge:	100 mm above normal ground level
Spacing between distribution lines:	1000 mm
Loading Rate:	20 mm/d
Size of the Land Treatment Field:	20 m^2
Size of Reserve Land Treatment Field:	10 m^2
Distance to Nearest Surface Water Body:	29 m
Distance to Highest Seasonal Groundwater Table:	900 mm
Distance to and Well No. of Nearest Well:	70 m east to well no. 878 60 m south to an unregistered bore on the discharge site property
Aquifer Condition and Depth of Top Screen:	Well no. 4255, located 78 m from the discharge site, has a top screen at 55.30 M.B.L.S. The aquifer is flowing confined.
Distance to Nearest Property Boundary:	1.5 m
Method of Stormwater Disposal:	Soakage pit

Distance to Highest Seasonal Groundwater Table

Due to the high water table in the Jervoistown area the applicant is proposing to discharge secondary treated domestic effluent into a raised bed. Discharge via a raised bed is considered the best option for this site to ensure 600 mm of separation between the highest seasonal groundwater table and the point of discharge is achieved. The applicant is proposing to install the distribution pipes 100 mm above normal ground level to provide for the 600 mm separation. No adverse environmental effects on the groundwater resource are expected due to the separation of 600 mm between the point of discharge and the highest seasonal groundwater table being achieved, and an appropriate loading rate of 20 mm/day.

2. SITE VISIT

No inspection of the site was required for the processing of this application as sufficient information was provided by the applicant.

3. CLASSIFICATION OF ACTIVITY

The table below shows the relevant permitted activity rule contained in the Regional Resource Management Plan and identifies the conditions that the proposed activity does not comply with.

Rule 37 of RRMP – New[2] domestic sewage disposal systems, including greywater disposal – Permitted Activity		
Conditions:	*Complies:*	*Comments:*
a. Where the wastewater receives no more than advanced primary treatment, the discharge shall be onto or into a property with a land area of no less than 2500m^2.	Yes	
aA. Where the wastewater receives more than advanced primary treatment then: i. the discharge shall be onto or into a property with a land area of no less than 1000m^2; and ii. the net site area to discharge volume ratio shall not be less than 1.5 m^2 per litre per day.	Yes	4046 m^2 10.115 m^2
b. The rate of discharge of sewage (including greywater) shall not exceed 2 m^3/d, averaged over any 7 day period.	Yes	0.4 m^2/day 2.8 m^2/week
c. The treatment and disposal system shall be designed to cater for the peak daily loading.	Yes	
d. The discharge shall not occur over the Heretaunga Plains or Ruataniwha Plains unconfined aquifer as shown in Schedule IV.	Yes	
e. The discharge and land treatment field shall not be within 20 m of any surface water body (including any stormwater open drain or roadside drain), or any tile drain or within 1.5 metres of any property boundary.	Yes	29 m from Thomas drain 1.5 m from property boundary
eA. The system shall be designed and installed in accordance with the requirements specified in Figure 6.	Yes	The proposed loading rate of 20 mm/day is in line with the suggested loading rate of 20 mm/day for category 4 soils (high/moderate structured soils).
f. There shall be no surface ponding as a result of the discharge, or direct discharge into any water body.	Yes	
g. The discharge shall be distributed evenly over the entire disposal area.	Yes	
h. There shall be no increase in the concentration of pathogenic organisms in any surface water body as a result of the discharge.	Yes	
i. At the time of installation and commencement, the discharge shall not occur within 30 m of any bore drawing groundwater from an unconfined aquifer into which any contaminant may enter as a result of the discharge.	Yes	60 m from an unregistered bore on the applicant's property 70 m from well no. 878
j. The point of discharge shall be no less than 600 mm above the highest seasonal groundwater table.	Yes	600 mm of separation will be achieved by using a raised bed
k. The discharge shall not result in, or contribute to, a breach of the "Drinking Water Quality Standards for New Zealand" (Ministry of Health, 2005 (Revised 2008)) in any groundwater body after reasonable mixing.	Yes	
l. The discharge shall not cause any emission of offensive or objectionable odour, or release of noxious or	Yes	

[2] 'New' systems are considered to be those systems that have been installed or modified after notification of the RRMP, which occurred in April 2000.

dangerous gases (including aerosols) beyond the boundary of the subject property or on any public land.		
m. For discharges using pit privies: i. the privy shall be constructed in soil with an infiltration rate not exceeding 150 mm/h, and ii. the privy shall not be the primary wastewater system for any permanently occupied dwelling.	NA NA	
n. The system shall be designed, constructed, operated and maintained in a manner which ensures that there is no clogging of the disposal system or soils.	Yes	
nA. The discharge shall not be into a trench or bed disposal system constructed in category 5 or 6 soil except where wastewater receives at least secondary treatment.	Yes	
o. Where the wastewater receives secondary treatment or better, the discharge shall not exceed 20 g/m^3 of BOD, and 30 g/m^3 of suspended solids.	Yes	BOD <10 mg/L Suspended solids: <20 mg/L
p. The wastewater treatment and land application system shall be maintained in accordance with the manufacturer's instructions, or if no manufacturer's instructions exist, in accordance with the best management practice as described in AS/NZS 1547, or TP58: On-site Wastewater Systems: Design and Management Manual (Auckland Regional Council Technical Publication No. 58), or other alternative recognised on-site wastewater design manuals. A schedule of maintenance shall be kept, and this schedule shall be available for inspection by the Regional Council upon request.	Yes	Proposed maintenance every 6 months
q. The discharge shall not be disposed of by way of spray irrigation.	Yes	
r. The discharge shall not be into a raised bed.	No	The discharge shall be into a raised bed, 300 mm above normal ground level (top of bed).
Consistent with policies 16, 71 and 75?	Yes	

The proposed activity does not comply with condition r of Rule 37, and will therefore be assessed as a **discretionary activity** under Rule 52 (RRMP).

4. ENVIRONMENTAL EFFECTS

Environmental Effects	Yes/No/NA	Comments/Summary
System design:		
Is system designed in accordance with AS/NZS 1547:2012 and Figure 6/Schedule N (HBRC)?	Yes	The proposed flow allowance of 200 L/person/day is in line with that recommended for households on a bore water supply, and the proposed land treatment field (raised bed) has been designed in accordance with AS/NZS 1547:2012. The proposed loading rate of 20 mm/day is in line with the Figure 6's suggested maximum loading rate of 20 mm/day for category 4 soils (high/moderate structured soils).
Groundwater quality:		
600 mm separation from point of discharge to highest seasonal groundwater table?	Yes	The proposed ELAA will be raised 300 mm above normal ground level, and will ensure 600 mm of separation between the highest seasonal

<table>
<tr><td></td><td></td><td>groundwater table and the point of wastewater distribution is achieved.

As a result of the separation distance from the point of discharge, the proposed discharge is unlikely to have any more than a minor effect on groundwater quality.</td></tr>
<tr><td>Adequate separation distance between proposed discharge and any drinking water supply intakes?</td><td>Yes</td><td>The nearest well (no. 878) is located approximately 70 m north of the proposed discharge and therefore is unlikely to have any effect on the quality of the water abstracted from that well due to the separation distance.

National Environmental Standards for Sources of Human Drinking Water (2007) must be taken into account in recommended conditions of consent. A registered drinking water abstraction point is located 482 m south of the proposed discharge. It supplies 25 – 100 people with drinking water. The water quality at this water supply bore is unlikely to be affected by the proposed discharge as it is drawing from a confined aquifer.

There are four NES registered drinking water supply bores located within 2 km of the proposed discharge (see Table 2).

Table 2
<table><tr><th>Name of Registered NES Drinking Water Supply source bore</th><th>Distance from proposed activity (meters)</th></tr><tr><td>Meeanee Gavin Black Street Bore</td><td>482 m</td></tr><tr><td>Meeanee School and Hall Bore</td><td>813 m</td></tr><tr><td>Tannery Road Bore</td><td>1,666 m</td></tr><tr><td>McElwee Bore 15345</td><td>1,902 m</td></tr></table></td></tr>
<tr><td colspan="3">Surface water quality:</td></tr>
<tr><td>All surface water bodies located at least 20 m from the discharge?</td><td>Yes</td><td>The nearest surface waterbody is the Thomas drain located approximately 29 m from the discharge site. The effects of the proposed discharge on surface water quality will be no more than minor because of the separation between the point of discharge and the closest surface water body.</td></tr>
<tr><td colspan="3">Affected Parties:</td></tr>
<tr><td>Discharge at least 1.5 m from all property boundaries?</td><td>Yes</td><td></td></tr>
<tr><td>If affected party approvals required, have they been provided?</td><td>NA</td><td></td></tr>
<tr><td colspan="3">Cultural/Heritage and Natural Character:</td></tr>
<tr><td>Works unlikely to affect the natural character of the area?</td><td>Yes</td><td rowspan="2">The proposed discharge will not adversely affect natural character, or any other significant values. Any potential effects will be mitigated by the recommended consent conditions.</td></tr>
<tr><td>Works unlikely to affect significant cultural, historic, conservation, recreational or amenity values?</td><td>Yes</td></tr>
</table>

Summary of Effects
Given the assessment above, it is considered that the proposed activity will not result in any more than minor effects when undertaken in accordance with the recommended consent conditions.

5. PLANS, POLICIES AND RELEVANT NATIONAL ENVIRONMENTAL STANDARDS (NES)

Policies 17 and 47 of the RRMP set out decision making criteria to be considered in the management of activities that may affect ground and surface water. The criteria include ensuring that all activities, particularly discharges of contaminants onto or into land, comply with the environmental guidelines for ground and surface water quality, and the associated implementation approach set out in Policies 71, 75 & 76.

Policy 18 encourages the use of low maintenance on-site sewage disposal systems, in combination with shallow land application fields that achieve even distribution.

Policies 72A and 76A were inserted in accordance with Policy A4 of the National Policy Statement for Freshwater Management 2011 and 2014 respectively. Both policies require consent authorities to have regard to the following when considering applications for discharge permits:

1. **When considering any application for a discharge the consent authority must have regard to the following matters:**
   a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and
   b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.

2. **When considering any application for a discharge the consent authority must have regard to the following matters:**
   a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of the people and communities as affected by their contact with fresh water; and
   b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of the people and communities as affected by their contact with fresh water resulting from the discharge would be avoided.

The Freshwater NPS sets out one objective and one policy relating to Te Mana o Te Wai as follows:

Objective AA1 *To consider and recognise Te Mana o te Wai in the management of fresh water.*

Policy AA1 *By every regional council making or changing regional policy statements and plans to consider and recognise Te Mana o te Wai, noting that:*

a) te Mana o te Wai recognises the connection between water and the broader environment – Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people); and

b) values identified through engagement and discussion with the community, including tangata whenua, must inform the setting of freshwater objectives and limits.

The Statement of National Significance in the Freshwater NPS describes the concept of Te Mana o Te Wai as the integrated and holistic well-being of a fresh water body. It explains that "Upholding Te Mana o te Wai acknowledges and protects the mauri of the water. This requires that in using water you must also provide for Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people)."

Further objectives regarding integrated management and provision of reasonable opportunity for Iwi and hapū involvement in overall freshwater management in both planning and decision-making are also included in the Freshwater NPS.

Objective D1 *To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.*

Policy D1 *Local authorities shall take reasonable steps to:*

a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;

b) work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and

c) reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.

It is not considered that the proposed activity will breach any environmental guidelines and standards contained in the above policies, or cause any additional degradation of surface or groundwater quality. It is therefore considered that the proposed activity is consistent with the objectives and policies of the RRMP.

NATIONAL ENVIRONMENTAL STANDARDS 2007

Regulations 7 and 8 of the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 (NES) apply to water and discharge permits issued by regional councils.

Regulations 7 and 8 only apply to an activity that has the potential to affect a registered drinking-water supply that provides no fewer than 501 people with drinking water for not less than 60 days each calendar year.

The nearest registered supply of this nature is the Tannery Road Bore, which is a Napier City Council public water supply bore. It is located 894 m from the site of discharge, and supplies 500 – 5,000 people. There are four registered supplies in total within a 2 km radius of the proposed discharge (see Table 3).

The applicant proposes to install a wastewater treatment system that is expected to treat the wastewater to an appropriate standard (secondary treatment standard) that ensures the discharge will not adversely affect the nearby potable water supply. Regulations 7 and 8 have been considered and the proposed discharge is not expected to affect the surrounding registered drinking water supply sources.

Regulation 12 only applies to an activity that has the potential to affect a registered drinking-water supply that provides no fewer than 25 people with drinking water for not less than 60 days each calendar year.

As there are a number of registered drinking water supplies of this nature (see Table 3) within 2 km of the proposed discharge, a condition of consent under Regulation 12 is recommended. While unlikely, this will ensure the operators of this supply are notified if an event occurs that may have a significant adverse effect on the quality of the water at this abstraction point. It is recommended that the condition of consent proposed in accordance with Regulation 12 covers all of the four NES supplies located within 2 km of the land treatment field.

Table 3

Name of Registered NES Drinking Water Supply source bore	Distance from proposed activity	Population	Supplier
Meeanee Gavin Black Street Bore	482 m	33	Gavin Black Services Ltd
Meeanee School and Hall Bore	813 m	160	Meeanee School
Tannery Road Bore	1,666 m	894	Napier City Council
McElwee Bore 15345	1,902 m	28	McElwee Residents Society Inc.

6. STATUTORY CONSIDERATIONS

Section 104 of the RMA sets out the matters to be considered when assessing a consent application. There are no particular statutory matters raised which have not already been addressed in the assessment above. Exercising the consent will be consistent with Part 2 of the RMA and the relevant plans and policies.

With regard to section 105(1) of the Act, the proposed treatment and disposal system is considered the best practicable option and will have no more than minor adverse environmental effects. The area to which the application relates is not connected to a reticulated sewerage scheme. Therefore, wastewater from the applicant's property needs to be treated and disposed of on-site.

Given that the effluent is to be discharged to land at an appropriate application rate, and will undergo some renovation in the soil column, as well as dilution and dispersion in the groundwater, none of the effects listed in section 107 are expected to occur.

7. RELEVANT STATUTORY ACKNOWLEDGEMENTS – TREATY CLAIMS SETTLEMENT ACTS

The proposed activity is not considered to be within adjacent to or directly affecting a Statutory Area as set out in any Acts specified in Schedule 11 of the Resource Management Act.

8. NON-NOTIFICATION

The proposal will have no more than minor effects and there are no adversely affected persons and no special circumstances exist, therefore this application can be processed on a non-notified basis.

9. CONSENT DURATION

A duration of 10 years is recommended with the consent expiring on 31 May 2034. This duration is considered reasonable taking into account the need to recognise the consent holder's investment and the uncertainties relating to the long term effects (particularly cumulative effects) of the activity.

10. MONITORING

Monitoring by Consent Holder

The consent holder is required to ensure that maintenance of the system is undertaken at least every **6 months**. The results of these maintenance checks shall be made available to the Council (Manager Compliance) within one month of servicing.

Monitoring by Council

The proposed wastewater treatment system and installer are both accredited by the Hawke's Bay Regional Council. As a result of this, the consent holder will not be subject to any routine monitoring or monitoring costs, provided the system is regularly maintained by a Council accredited service provider at the frequency specified in this consent, that maintenance records are returned to the Council, and that all other consent conditions are complied with.

If the system is not maintained in accordance with the conditions of the resource consent, it will no longer be part of the accreditation system and may be visited by the Council up to once every 12 months. The cost of this routine monitoring will be charged to the consent holder in accordance with the Council's Annual Plan at the time.

Any actual and reasonable costs incurred in the follow-up of non-compliance with consent conditions, regardless of the accreditation status of the system, will be charged to the consent holder.

11. CONCLUSION

The proposed activity will have no more than minor effects, is consistent with the RMA, NES Regulations and Council policies, and can be granted.

12. RECOMMENDATION

The application be processed on a non-notified basis and granted as attached.

Recommending Officer	Recommendation Confirmed
	
Julia Byrne **Consents Planner** REGULATION GROUP	**Paul Barrett** **Principal Consents Planner** REGULATION GROUP
11th March 2019	11th March 2019

WASTEWATER & DRAINAGE SWD

1017 Outram Road | Hastings | 4122
M: 027 333 8212
E: caleb@swdnz.co.nz
www.swdnz.co.nz

DESIGN SPECIFICATION

Client:	Judie Stone
Site Location:	278 Meeanee Road Napier
System Type:	Protec 10,000 Waste water treatment plant.
Effluent Distribution Method:	LPED Raised bed
Design Loading Rate:	20 mm/d
Design:	2 people @ 200 litres each/day = 400 litres/day potential effluent discharge
Land Area Required:	20m2
Reserve Area:	10m2

Caleb Snee
Owner Operator
Registration No.: 18598
Certifying Drainlayer

On-Site Wastewater Disposal Site Assessment, Subsoil Investigation and Site Evaluation Checklist

1. Site Evaluator

1.1	Name: Caleb Snee	Registration Number: 18598
	Company: Swd Wastewater & Drainage	Address: P.O.Box 28019 H/N
	Phone: Fax:	Mobile: 0273338212

2. Site Information

2.1	Location Address: 278 Meeanee road napier		
	Owner: Judie Stone	Address: 278 Meeanee road	
	Phone:	Fax:	Mobile:
2.2	Legal Description	Lot No: lot 13 DP:	Valuation No:
	Area of Site: m^2	Ha: 0.4046	

2.3	Shape/Layout of site - plans attached?	Yes	☑	No	☐
2.4	Photographs of site attached?	Yes	☐	No	☑
2.5	Percolation Test Results Attached?	Yes	☐	No	☑
2.6	Illustration of Soil Structure Attached?	Yes	☑	No	☐
2.7	Photograph of Soil Structure Attached?	Yes	☐	No	☑

3. Hydraulic Loading Information

3.1	Number of Bedrooms 1	Number of Persons 2	Design Loading Rate Per Person (1/day) 200

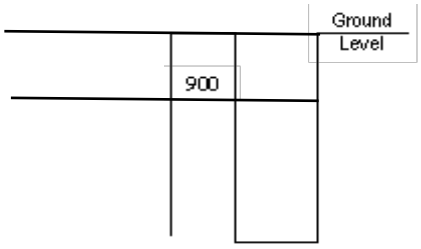
3.2	Waste Disposal Unit Installed?	Yes	☐	No	☑
3.3	Water Saving Devices Fitted?	Yes	☐	No	☑
3.4	Water Supply / Rain Water / Bore/Well / Reticulated (cross out those not applicable)				

4. Site Assessment

4.1	Have Plans / Photographs of the Site been supplied? **If not, why not**	Yes	☑	No	☐		
4.2	Topography of Site – Flat (<10%) / Rolling (10-20%) / Sloping (20-30%)/ Steep (>30%) (cross out those not applicable)						
4.3	Give details if different from 4.2						
4.4	Does the site contain fill?	Yes	☐	No	☑	Unknown	☐
4.5	Does the site Contain Drainage Flow Paths?			Yes	☐	No	☑
4.6	Any Visible or Known Stormwater Problems?			Yes	☐	No	☑
4.7	Need for Ground Water/Surface Water "Cut-Off / Collector Drains"			Yes	☐	No	☑
4.8	Is the winter High Water table known? If known comments please:			Yes	☐	No	☑

4.9	Proposed Disposal and Reserve area, Distance from: Boundaries ..1.5m.. / Waterway ..20m.. / Well/Bore ..na.. / Buildings..6m..
4.10	Local Experience – (Existing on-site Systems) (Either Comment or tick which is applicable) Is performance Satisfactory? Yes ☑ No ☐ Unknown ☐ N/A ☐ If answer is No - Comments please

5. Sub Soil Investigation

5.1	How was Soil Profile Determined? Bore Holes / Dig Test Holes / Earlier Site Excavations / Other – (Please specify)				
5.2	Have the soils been assessed by an Independent Party? If so please specify LDE Geotec Report Ref 13295	Yes	☑	No	☐
5.3	Has the soil structure Profile been completed? Have photographs been supplied? 	Yes Yes	☑ ☐	No No	☐ ☑
5.4	Has Percolation Testing been carried out? If YES specify method	Yes	☐	No	☑
5.5	Are Percolation test results attached?	Yes	☐	No	☑
5.6	Soil Category - show the estimated soil category from the descriptions below: Tick applicable box				
	1. Gravel, coarse sand, rapid draining, structureless		☐		
	2. Sandy Loams – weakly structured		☐		
	3. Loams – moderate to weak structure		☐		
	4. Clay Loams – weak to massive		☑		
	5. Light Clays - Strong / Moderate / Weak		☐		
	6. Medium to Heavy Clays - Strong / Moderate / Weak		☐		

6. Site Evaluation

6.1	Design Considerations:				
	Any environmental constraints? If yes please specify	Yes	☐	No	☑
	Any soil constraints? If yes please specify (see 5.6)	Yes	☐	No	☑
	Any site constraints? If yes please specify (see 2.2, 4.2, 5.6) Slopes	Yes	☑	No	☐
	Any Hawke's Bay Regional Council (HBRC) constraints? If yes please specify – Rule: 35 / 36 / 37 (Please circle which rule applies)	Yes	☐	No	☑

6.2	Type of Sewer Treatment System considered best suited for the site 10.000ltr Secondary treated wastewater treatment plant
6.3	Type of Disposal System considered best suited for the site LPED Raised bed
6.4	Minimum disposal area recommended (for trenches / beds / irrigation systems - see 6.2 and 6.3 attached and 6.8 below) 20m2
6.5	Minimum size of reserve area (See HBRC & HDC Requirements) 10m2
6.6	Are sewer treatment system and disposal system calculations and design plans attached? Yes ☑ No ☐ **If not why not**
6.7	Other comments: 1 Bedrooms= 2 PE x 200 l/ person/day=400l/day 400 / 20 = 20m2
6.8	Trench and bed calculation from AS/NZS 1547 2012

Calculations:

Length of drain = Q ÷ (sum of DLR x W)

Example:
Q = Litre/day used = 3 bedroom, 6 people x 180 L/D/person
Q = 1080 ÷ DLR from Table 4.2A1 ÷ trench width
= 1080 ÷ (15 x .600) (see 6.3)
= 1080 ÷ 9
= 120m of drain required (see 10b)

Or

Length of drain = Q x 1 ÷ DLR = m^2
= m^2 ÷ trench width = length of drain

Example: = 1080 x 1 ÷ 15 = 72 m^2
= 72 ÷ .600 = 120m of drain (see 6.3.2b)

7. General Comments

7.1	AS/NZS 1547:2012 "On-site domestic wastewater management" can be used for guidance in On-site evaluation and soil assessment. This Standard can provide options for on-site wastewater treatment and land application systems.
7.2	AS/NZS 1546.1:2008 "Septic tanks" has been adopted by the Hastings District Council. Unless a manufacturer has built his tanks to comply with this Standard and had an engineer verify that the tanks comply with the Standard, that particular make of tank is not permitted to be installed within the Hastings District.
7.3	Where it is necessary to contact the Hawke's Bay Regional Council in relation to On-site Waste Water Disposal, Charlotte Drury Principal Consents Officer (06) 833 8058 is the person to contact.
	Name: Caleb Snee
	Signature:
	Date: 10.02.2019

8. Design Flow Allowances for Sewage Systems

Source	Minimum wastewater flow allowance in L/person/day	
	On-site roof water tank supply	Reticulated community/bore water supply
Households	180	200
Households (blackwater only)	60	60
Households (greywater only)	90	120
Motels/hotels - Guests, resident staff - Non-resident staff - Reception rooms - Bar trade (per customer) - Restaurant (per diner)	 220 30 20-30 20 25-30	 220 30 20-30 20 25-30
Community halls - Banqueting - Meetings	 20 10	 30 15
Tea rooms (per customer) -Without restroom facilities -With restroom facilities	 10 15	 15 25
School (pupils plus staff)	15-30	15-30
Rural factories, shopping centres	30	50
Camping grounds - fully serviced -recreation areas	 100 50	 130 65

NOTE: For the purposes of determining building occupancy, Hawke's Bay Regional Council adopts an occupancy of 2 people per room, excluding bathrooms, kitchens, laundries and any other room that cannot feasibility be used as a bedroom

9. Trenches / Beds / Mounds

Maximum design loading rates for trenches, beds and mounds

Soil category	Soil texture	Structure	Design loading rate			
			Primary treated effluent		Secondary treated effluent (mm/d)	Mounds Specific design (mm/d)
			Conservative rate (mm/d)	Maximum rate (mm/d)		
1	Gravels and sands	Structureless	20 (see note 1)	35 (see note 1)	50 (see note 1)	32
2	Sandy loams	Weakly structured Massive	20 15	35 25	50 50	24 24
3	Loams	High/mod structure Weakly structure / massive	15 10	25 15	50 30	24 16
4	Clay loams	High/mod structure Weakly structured Massive	10 6 4	15 10 5	30 20 10	16 8 5
5	Light clays	Strongly structured Mod structure / massive	HBRC consent required – see Rule 37(nA)	HBRC consent required – see Rule 37(nA)	HBRC consent required – see Rule 37(nA)	8 Specialist soil advice & design techniques required
6	Medium to heavy clays	Strongly structured Mod structured / massive	HBRC consent required – see Rule 37(nA)	HBRC consent required – see Rule 37(nA)	HBRC consent required – see Rule 37(nA)	Specialist soil advice & design techniques required

Note 1: The treatment capacity of the soil and not the hydraulic capacity of the soil or the growth of the clogging layer govern the effluent loading rate of category 1 soils. Category 1 soils require special design.

10. Design Specifications for Trenches / Beds / Mounds

a) Trenches must be at least 400mm deep and 300mm wide and have a depth of aggregate of 200mm to 400mm.

b) They shall be limited to around 25m long, and there must be a spacing of at least 1000mm between adjacent trench walls.

c) Beds must be at least 1000mm wide, with a minimum spacing of 1000mm between adjacent bed walls and within 1.00m from distribution lines to wall of bed.

d) Multiple distribution lines to be included where beds are more than 1.5 metres in width.

e) Both trenches and beds must be backfilled with distribution media and covered with a minimum of 150mm of topsoil.

f) The discharge shall be pumped, or dosed in fixed quantities so that the wastewater is applied evenly across the entire land treatment field.

g) Gravity drainage to trench and beds is not permitted unless a specifically designed siphon system is used to provide dose loading and distribution over the entire trench or bed area at any one time.

h) Trenches or beds shall not be constructed on slopes of greater than 15 degrees (approximately 27% slope).

11. Irrigation Systems

Maximum design irrigation rates for irrigation systems

Soil Category	Soil texture	Design irrigation rate DRIP (mm/day)	Design irrigation rate LPED (mm/day)
1	Gravels and sands	5	Not advisable
2	Sandy loams	5	4
3	Loams	4	3.5
4	Clay loams	3.5	3
5	Light clays	3	2.5
6	Medium to heavy clays	2	Not advisable

Design specifications for Irrigation Systems

a) Irrigation lines placed on the surface shall be pinned to the surface and covered with at least 100mm of media after the surface has been scarified.

b) Subsurface irrigation lines shall be installed at a maximum depth of 200mm below ground level and covered with at least 100mm depth of cover.

c) Maximum spacing of 600mm in Category 1 and 2 soils and 1000mm in all other soil categories, as defined by AS/NZS 1547:2012.

d) Secondary treated wastewater shall be applied evenly across the entire land treatment field.

e) On sloping ground the design irrigation rate (DIR) shall be decreased to ensure that effluent migration down slope is taken up adequately with the top soil and plant root system. Required reductions according to slope are as follows:

   i. Flat slopes and up to 10% - no reduction;

   ii. 10% to 20% - reduction in DIR value of 20%;

   iii. 20% to 30% - reduction in DIR value of 50%; and

   iv. >30% - specialist advice required.

f) Appropriate plant species are advised to be planted to assist with evapotranspiration.

12. Conversion of per cent grade, slope and gradient

Slope conversion table

Per cent grade (%)	**Slope angle** Degrees (°)	**Slope ratio (V:H)** Approximate gradient
5	2.8	1:20.0
10	5.7	1:10.0
15	8.5	1:6.7
20	11.3	1:5.0
25	14.0	1:4.0
30	16.7	1:3.3
35	19.3	1:2.9
40	21.8	1:2.5

278 Meeanee Road
Lot 13 DDP 96
AREA: 0.4046 Ha
EARTHQUAKE ZONE: 3
CORROSION ZONE: C
CLIMATE ZONE: 2
WIND ZONE: HIGH

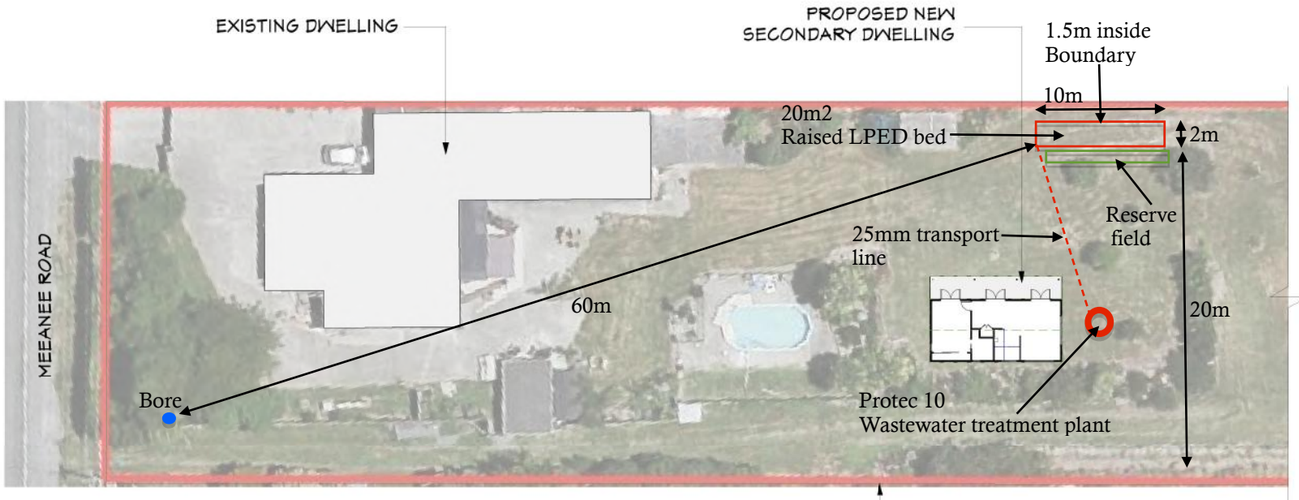
SWD Wastewater & Drainage Ltd
Caleb Snee
Rego-18598
Date-19-02-2019

PROPOSED NEW SECONDARY DWELLING
to be located 25m max from primary dwelling

EXISTING DWELLING

NORTH
W
E
S

LOCATION PLAN
Not to Scale



NORTH
W
E
S

SITE PLAN
Scale 1:500

APPROVED BC190130 03/04/2019 Napier City Council Pg 28 of 51

Homeworx
New homes design and build

Stones Secondary Dwelling 278 Meeanee Road Napier	Drawing Title: Location Plan & Site Plan Drawing Scale: As Shown Designed by Gordon Sansom LBP 117656	Notes:	Date Drawing Printed: Tuesday, February 12, 2019

Homeworx | 336 Meeanee Road, Napier | PO Box 3394 | Onekawa, Napier | P 06-843 8834

Design Navigator H1 Compliance Report

Project Summary

H1 Report created by:	Homeworx Design and Build Limited
Project Name:	Stones
Client:	Judie Stones
Lot No:	Lot 13 DDP 96
Comment:	New secondary dwelling
Project Id:	119644
Report Date:	22/01/2019

Compliance Result

This report shows compliance of the design with Clause H1 Fourth edition Amendment 3 from January 2017 and the R-value targets of Clause E3 Second edition Amendment 6 from January 2017.

This building complies with H1 via the following methods:

- the Schedule Method in NZS4218:2009
- the Calculation Method in NZS4218:2009
- the BPI Method

H1 Compliance Details

NZS4218:2009 Schedule Method Compliance

The use of the Schedule Method is permitted .

In order to comply the R-values for all the construction elements must be the same or larger than the permitted minimum R-values. This design **complies** with the NZS4218:2009 Schedule Method.

Non-Solid Construction

	Permitted Minimum	Proposed Minimum	
Floor:	1.3	1.61	✓
Non-solid Walls:	1.9	2.17	✓
Glazing in Non-solid Walls:	0.26	0.26	✓
Roof:	2.9	3.3	✓
Skylights:	0.26		✓

Notes:
If multiple solid wall types levels are used the table shows the requirements for the corresponding walls and windows in them. For solid timber and for other solid constructions two options are shown for each. But the components of these options can not be mixed, i.e. it is not permitted to use the solid timber wall R-value from option 1 and the solid timber window R-value from option 2.

NZS4218:2009 Calculation Method Compliance

The use of the Calculation Method is permitted .

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 50% of the R-values in the '50% Rule' table below. This design **complies** with the

NZS4218:2009 Calculation Method.

HeatLoss:

Reference building	Proposed building
182	149

Minimum R-values ("50% rule"):

	Permitted Minimum	Proposed Minimum	
Floor:	0.65	1.61	✓
Non-solid Walls:	0.95	2.17	✓
Roof:	1.45	3.3	✓

The Reference building has the following areas and R-values.

					Non-solid	Solid Timber	Other Solid
					100.0	0.0%	0.0%
Floor:	Area:	57.1	m²	R-values:	1.3	1.3	1.5
Walls excl. glazing:	Area:	54.5	m²	R-values:	1.9	1.2	1
Glazing (up to 30%):	Area:	23.3	m²	R-values:	0.26	0.26	0.26
Glazing (surplus of 30%):	Area:	0	m²	R-values:	0.4	0.34	0.31
Roof:	Area:	57.1	m²	R-values:	2.9	3.5	3.5
Heat Loss:					182	195	199

For mixed constructions the heat loss of the reference building is calculated as the sum of the heat losses for each type of wall construction multiplied by the fraction of the wall area of each type. This approach is based on clause 4.2.6 of NZS4218:2009.
There are no skylights in the reference building. The reference building roof area is the sum of the proposed building roof and skylight areas.

Building Performance Index Compliance

The use of the Building Performance Index (BPI) method is permitted .

This design complies with the BPI.

In order to comply the design must have a BPI smaller or equal to 1.55 kWh/DegMonth.m². Your building has a BPI of 1.22 kWh/DegMonth.m².

The normalised annual heating energy use of this design is 2820 kWh.

Please refer to www.designnavigator.co.nz/BPICorrelation.pdf regarding the recognition of the BPI for NZBC compliance verification.

Compliance with Clause E3

This building complies with the R-value targets in NZBC Clause E3 .

Component	Minimum R-value	Project R-value
Framed wall constructions with cavities	1.5	
Single skin masonry wall without a cavity	0.6	
Solid timber wall no less than 60 mm thick	0.6	
Roof or ceilings	1.5	

Design Details

Building Dimensions

Floor Area	57.1	m²
Gross Wall Area	77.8	m²
Net Wall Area	59.9	m²
Wall (North) Area	9.6	m²
Wall (East, South and West) Area	50.3	m²
Gross Roof Area	57.1	m²
Net Roof Area	57.1	m²
Glazing Area	17.9	m²
Window (North) Area	2.9	m²
Window (East, South and West) Area	15	m²
Skylight Area	0	m²

Glazing Areas

Total Vertical Glazing Percentage	23	%
East, South and West Window Percentage	23	%
Total over 30%	no	
East, South and West over 30%	no	
Total over 50%	no	
max. Skylight Area for Schedule Method	1.5	m²
Skylights over Schedule Method Limit	no	
Decorative Glazing	0	m²
Decorative Glazing over 3m²	no	

Information required for BPI calculation

Living Floor Area	57.1	m²	Note: This includes also internal floors.
Average Room Height	2.6	m	
Thermal Mass Level	Medium weight		Slab floor with some carpeting or direct glued timber, timber framed walls.

Climate

Location	Napier
Climate Zone	2

Heat Loss Details

	ID	Orient.	Width	Height	Gross Area	Net Area	R-value*	Heat Loss	Shad. Coeff.**	Solid Wall***
Floors										
Floor 1	Slab floor				57.1	57.1	1.61	35.5		
Walls										
Wall 1	West wall	W	11.0	2.4	26.4	16.8	2.17	7.7		C
Window 1-1	Windows & Doo		9.6	1.0		9.6	0.26	36.9	0.58	
Wall 2	North wall	N	5.2	2.4	12.5	9.6	2.17	4.4		C
Window 2-1	Windows & Doo		2.9	1.0		2.9	0.26	11.1	0.58	
Wall 3	East wall	E	11.0	2.4	26.4	21.7	2.17	10.0		C
Window 3-1	Windows & Doo		4.7	1.0		4.7	0.26	18.0	0.58	
Wall 4	South wall	S	5.2	2.4	12.5	11.8	2.17	5.4		C
Window 4-1	Windows & Doo		0.7	1.0		0.7	0.26	2.8	0.58	
Roofs										
Roof 1	Roof				57.1	57.1	3.30	17.3		
Total Heat Loss								149.1		

* Any concrete slab-on-ground floor regardless of its dimensions can be assumed to have an R-value of at least R-1.3 (H1/AS1 2.1.5).
** The Shading Coefficient is only required for BPI calculations.
*** C: Cavity Construction (any construction that is not solid), T: Solid Timber, S: Other Solid Construction (Note that the use of solid timber and other solid construction types is discretional, i.e. solid timber walls and other solid walls can be treated as if they are non-solid (NZS4218:2009 section 4.1.3.).)

Floor Construction Details

Name: Slab floor — 1.61 m²°C/W

Type: Floor: Slab Floor

internal surface 0.09

Flooring : none (Example: polished surface of a concrete floor) — *R-value: 0.00*

Slab Insulation

Slab floor area [m²]:	57.1		
Perimeter length [m]:	32.36		
External wall thickness [mm]:	90		
Soil conductivity [W/m °C]	1.2		
Underslab insulation:	Total slab	Polystyrene EPS 40mm (INS Grade)	0.95
Piles Footings:	Number:	Penetration Diameter [mm]:	
Slab edge insulation:	none	Insulation :	

Wall Construction Details

Name: Linea Weatherboards — 2.17 m²°C/W

Type: Wall: Timber Frame (direct fixed cladding)

external surface 0.03

Cladding : Linea weatherboard — *R-value: 0.08*

Air Barrier : Building paper — *R-value: 0.01*

Timber Frame & Cavity : 90mm, studs @ 600mm, dwangs @ 800mm

Wall Frame Area: 14.4%

Framing : *R-value: 0.75*

Cavity Area: 85.6%

Pink®Batts® Ultra R2.6 Wall 2.6

still Airgap: none — *R-value: 0.00*

Wall Lining : Gypsum plasterboard 10mm — *R-value: 0.04*

internal surface 0.09

Roof Construction Details

Name: Corrugate roof

3.30 m²°C/W

Type: Roof: Timber framed truss Roof, direct fixed or battened flat Ceiling

external surface 0.03

Roofing : Corrugate iron with building paper

R-value: 0.01

Insulation :

Timber Frame & Cavity : 90mm rafters or joists @ 900mm, battens covered with insulation

Roof Frame Area: 5.0%	*Cavity Area: 95.0%*
Roof space (still air) 0.11	Roof space (still air) 0.11
Framing : *R-value: 0.75*	Pink®Batts® R3.6 Ceiling 3.6

Roof Lining : Gypsum plasterboard 10mm

R-value: 0.04

internal surface 0.09

Non-IC-rated recessed downlights

Ceiling Area [m²]: 57.1 Number of downlights: 11 Clearance from lamp holder side [m]:

GIB EzyBrace® Bracing Software

Demand Calculation Sheet

Job Details

Name:	STONES
Street and Number:	278 MEEANEE ROAD
Lot and DP Number:	Lot 13 DEEDS 96
City/Town/District:	NAPIER
Designer:	ANNALISA
Company:	HOMEWORX
Date:	03.12.18

Building Specification

Number of Storeys	1
Floor Loading	2 kPa
Foundation Type	Slab
	Single
Cladding Weight	Light
Roof Weight	Light
Room in Roof Space	No
Roof Pitch (degrees)	20
Roof Height above Eaves (m)	1.45
Building Height to Apex (m)	3.8
Ground to Lower Floor (m)	0.2
Average Stud Height (m)	2.4
Building Length (m)	11
Building Width (m)	5.2
Building Plan Area (m²)	57.1

Building Location

Wind Zone = High

Earthquake Zone 3

Soil Type D & E (Deep to Very Soft)

Annual Prob. of Exceedance: 1 in 500 (Default)

Bracing Units required for Wind

	Along	Across
Single Level	**209**	**367**

Bracing Units required for Earthquake

	Along & Across
Single Level	**297**

Single Level Along Resistance Sheet

Job Name: STONES

									Wind	EQ
									Demand	
									209	297
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	376 180%	342 115%
A	1	0.85		2.4	GS1-N	GIB®	53	50		
	2	1.10		2.4	GS1-N	GIB®	74	66		
	1	0.85		2.4	GS1-N	GIB®	53	50		
									179 OK	166 OK
B	1	2.40		2.4	GS1-N	GIB®	166	144		
	2	0.55		2.4	GS1-N	GIB®	31	32		
									196 OK	176 OK

Single Level Across Resistance Sheet

Job Name: STONES

Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	Wind	EQ
									Demand	
									367	297
									Achieved	
									607	528
									165%	178%
M	1	3.60		2.4	GS1-N	GIB®	248	216		
									248 OK	216 OK
N	1	2.60		2.4	GS1-N	GIB®	179	156		
									179 OK	156 OK
O	1	1.30		2.4	GS1-N	GIB®	90	78		
	2	1.30		2.4	GS1-N	GIB®	90	78		
									179 OK	156 OK

DESIGN CERTIFICATE

Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey LVL Limited (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code (NZBC), provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, or specific engineering design, as appropriate.

Futurebuild LVL and SG8 components, when used and treated to the required treatment levels prescribed in NZS 3602 and NZS 3604, as modified by Acceptable Solution B2/AS1, will comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

References:
1. NZS 3603:1993 Timber Structures Standard.
2. NZS 3604:2011 Timber-framed buildings.
3. AS/NZS 1170:2002 Structural design actions, Parts 0 and 1.
4. AS/NZS 1170:2011 Structural design actions, Part 2: Wind actions.
5. AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
6. AS 1720.1:2010 Timber structures. Part 1: Design methods.
7. AS 1720.3:2016 Timber structures. Part 3: Design criteria for timber-framed residential buildings.

This Design Certificate, and any associated warranty/certification, is void where there has been substitution of alternate products not detailed within the Member Specification.

Version date: 6 February 2019

For further information or advice contact:
Carter Holt Harvey LVL Limited,
173 Captain Springs Road, Onehunga. Auckland
Telephone: 0800 808 131
Email: designit@futurebuild.co.nz
Web: https://futurebuild.co.nz/

Specifier details:

Specifier:	Gordon Sanson
Business name:	Homeworx
Email:	gordon@homeworx.co.nz

Project & site details:

Project:	Stones
Site address:	
Design wind zone	High
Snow loading	Design snow zone: N1, Altitude: 0 m (sub-alpine), Ground snow load, $S_g^{1,2}$ = 0.0 kPa

1. designIT does not include any allowance for the effects of drifting and sliding of snow.
2. Snow loads are applied to roofed over structures only, the design of exposed floors/decks are not covered by designIT.

MEMBER DESIGN DETAILS

Member 1

1) Member code and description	P1 - Post - Supporting concentrated loads in single or upper storey
2) Date prepared	22 January 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

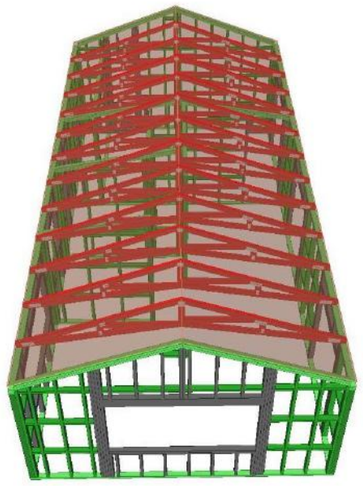
Post height	2500 mm
Roof type	Light roof and ceiling - 40 kg/m²
User input roof area supported	6.6 m²

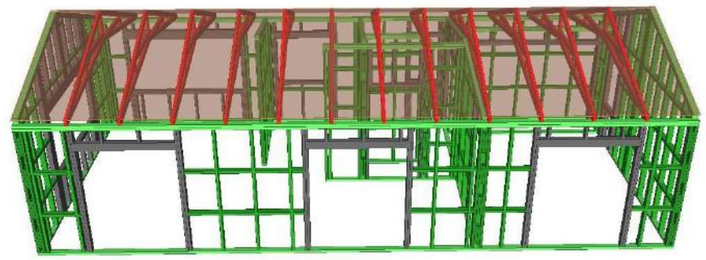
5) Member specification

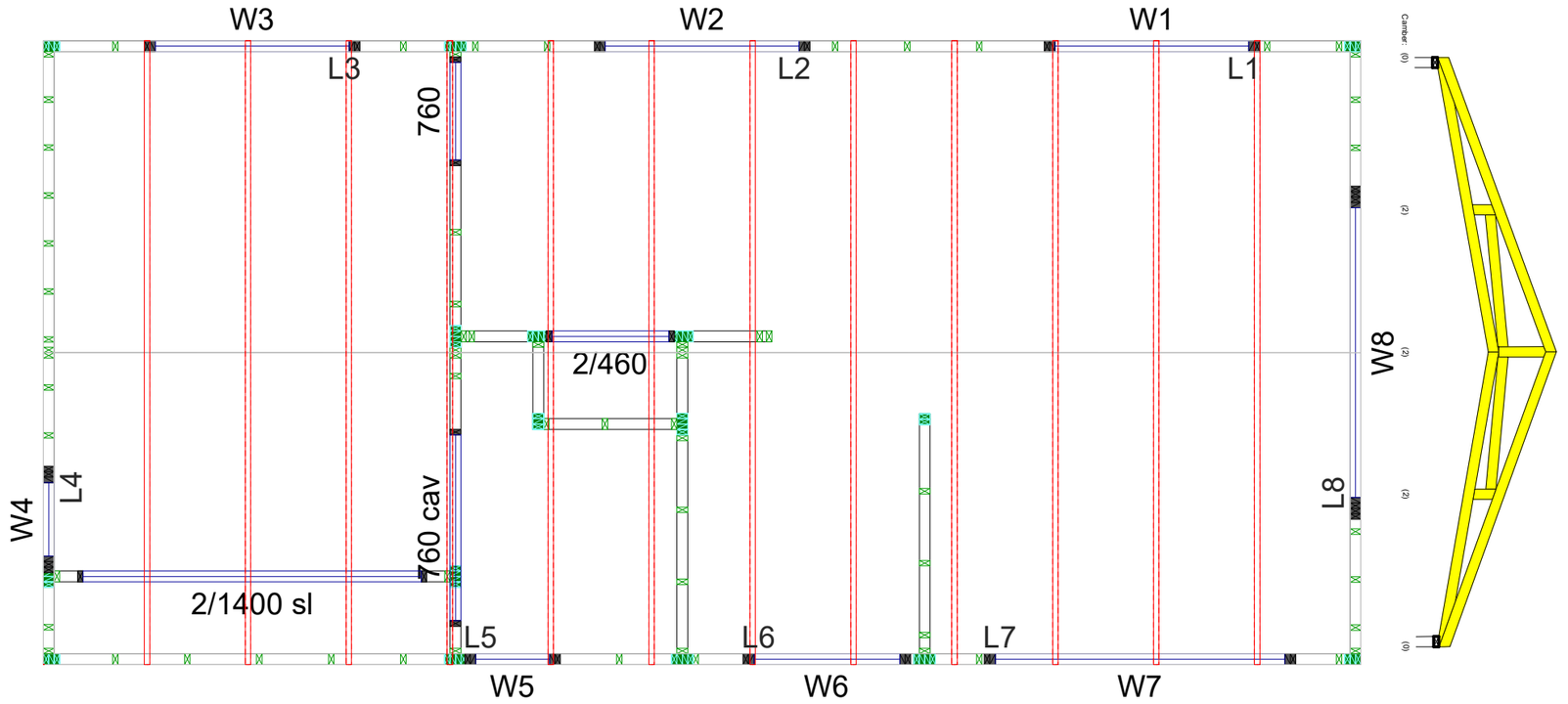
Size, stress grade/product	Use 88 x 88 GL8
Material type	Glue laminated timber to AS/NZS 1328
Assumed design density	< 650 kg/m²

6) Installation requirements

- Posts exposed to weather preservative treated to H3.2







BUILDABLE LAYOUT FOR CONSENT

Rough Opening Schedule - Level 1				
Qty	Name	Height x Width	Fin. Height	Lintel Size
1	L1 - W1	2015 x 1615	2015	1-PLL150
1	L2 - W2	2015 x 1615	2015	1-PLL150
1	L3 - W3	2015 x 1615	2015	1-PLL150
1	L4 - W4	1215 x 615	2015	2-90x45 MSG8 H12
1	L5 - W5	1015 x 615	2015	2-90x45 hyCHORD H12
1	L6 - W6	1015 x 1215	2015	1-PLL150
1	L7 - W7	1215 x 2415	2015	1-PLL200
1	L8 - W8	1215 x 2415	2015	1-PLL200
1	760	2035 x 815	2035	(None)
1	760 cav	2075 x 1550	2075	(None)
1	2/460	2035 x 975	2035	(None)
1	2/1400 sl	2080 x 2820	2080	(None)

pryda

Customer	: Homeworx	Roofing	: Longrun	Job Ref	homeworx_stones
Site Address	: Stones Home	Std. Stud Centres	: External: 600 Internal: 600	Scale	
	: 278 Meeanee Rd	Design Wind Velocity	: 44.00 m/s (Ult.)	Level	
		Detailer	: Jason Horne		

Component Summary Report

Level 1

Nominal Wall Height = 2465 mm

Lintel And Jamb Stud Summary

Label	Opening Width (mm)	Opening Hight (R) or (L) (mm)	Lintel		Jamb Stud (LEFT)				Jamb Stud (RIGHT)			
			Size	Defl. (mm)	Size	Min. Bearing (mm)	Reactions (kN)		Size	Min. Bearing (mm)	Reactions (kN)	
							Down	Uplift			Down	Uplift
L1	1615	2015 (L)	1 / 140x90 GL8H12	-0.4	2 / 45x90 JFLVL8H12	35.0	3.3	-3.7	2 / 45x90 JFLVL8H12	35.0	2.7	-2.9
L2	1615	2015 (L)	1 / 140x90 GL8H12	-0.6	2 / 45x90 JFLVL8H12	35.0	2.3	-2.5	2 / 45x90 JFLVL8H12	35.0	2.3	-2.4
L3	1615	2015 (L)	1 / 140x90 GL8H12	-0.4	2 / 45x90 JFLVL8H12	35.0	2.7	-2.9	2 / 45x90 JFLVL8H12	35.0	3.3	-3.7
L4	615	2015 (L)	2 / 90x45 MSG8 H12	0.0	3 / 45x90 JFLVL8H12	35.0	0.0	No uplift	3 / 45x90 JFLVL8H12	35.0	0.0	No uplift
L5	615	2015 (L)	2 / 90x45 hyCHORD H12	0.0	2 / 45x90 JFLVL8H12	35.0	0.0	No uplift	2 / 45x90 JFLVL8H12	35.0	1.8	-2.0
L6	1215	2015 (L)	1 / 140x90 GL8H12	-0.2	2 / 45x90 JFLVL8H12	35.0	2.4	-2.6	2 / 45x90 JFLVL8H12	35.0	1.3	-1.3
L7	2415	2015 (L)	1 / 190x90 GL8H12	-1.3	2 / 45x90 JFLVL8H12	35.0	3.4	-3.5	2 / 45x90 JFLVL8H12	35.0	3.9	-4.1
L8	2415	2015 (L)	1 / 190x90 GL8H12	-0.2	4 / 45x90 JFLVL8H12	35.0	0.2	No uplift	4 / 45x90 JFLVL8H12	35.0	0.2	No uplift

Notes:
(1) R= Raised Lintel and L= Lowered Lintel.
(2) 'Defl.' relates to maximum permanent load deflection.
(3) 'Min. Bearing' is set to minimum 35mm. N/R indicates no bearing on studs with lintel acting as top plate stiffener.
(4) 'Down' relates to maximum downward reaction due to factored combined loads (e.g. 1.2G+1.5Q) and 'Uplift' refers to maximum uplift reaction due to 0.9G+Wup load combination.

Tumu Frame & Truss
Stortford Lodge, PO Box 2308, Hastings, , Ph (06) 879-7850, Fax (06) 879-6468

Producer Statement - PS1 - Design

Job Ref: **homeworx_ston**

This producer statement applies to the structural engineering design software "Pryda Build" supplied by Pryda NZ to

Tumu Frame & Truss

These truss designs are in accordance with sound and widely accepted engineering principles. I believe on reasonable grounds that if constructed in accordance with the design, the trusses will comply with relevant requirements of the New Zealand Building Code, Clause B1 and Verification Method B1/VM1. The durability shall comply with the New Zealand Building Code, Clause B2, for building importance level 2 and a design working life of 50 years.

In addition to the above, this software also complies in part with:

ANSI / TPI 1 - 2002 National Design Standard for metal plate connected wood truss construction.

AS 1649 - 2001 Timber - Methods of test for mechanical fasteners and connectors - Basic working loads and characteristic strengths.

The truss designs require that the supporting structure is stable in its own right, and that the trusses will be braced in accordance with the New Zealand Building Code Standard NZS 3604:2011, and any supplementary details provided, including but not limited to Pryda Installation Guides.

Pryda NZ holds a current policy of Professional Indemnity Insurance with cover no less than NZ$2 million. The policy includes the engineering design processes used in the software.

On behalf of Pryda NZ (a division of ITW New Zealand)

André van Blerk
Chartered Professional Engineer
BSc (Eng) CMEngNZ (214689), CPEng, IntPE

Tumu Frame & Truss
Stortford Lodge, PO Box 2308, Hastings, , Ph (06) 879-7850, Fax (06) 879-6468

Date: 22-01-2019
Ver 4.4.0

Fabricator / Designer Statement

Job Ref: **homeworx_ston**

This statement may be used by the Building Consent Authority for compliance purposes and is issued by a licensed truss fabricator using the Pryda Build software.

CLIENT Name: *Homeworx*

SITE Details:

Address : *Stones Home*
278 Meeanee Rd

City:
Napier
Post Code:

Nominal Design Criteria:

Design working life: 50 years
Building importance: Residential (Importance Level 2)
Roofing: Longrun (6.0 kg/sq.m)
Ceiling: 10mm Gib-board (6.8 kg/sq.m)
Top chord purlins: 900 mm

Design roof snow load: 0 Pa
(incl. probability factor
Ground snow load: 0 Pa
Location: Region N1 - lower Nth Island
Altitude above sea lev 100 m

BC restraints: Battens at 450 mm crs
Standard truss spacing 900 mm
Standard roof pitch: 20.00 deg.
Ult. design wind speed 44 m/s (wind classification = High)

Max. eaves height: 3 m
Max. ridge height: 6 m

Int pressure coeff. up: 0.2
Overhang Condition: Metal fascia

The correctness of the Design Criteria used by the Pryda Build truss design software is the responsibility of the fabricator.
Note : Where relevant, a structural fascia beam is required at all hip and dutch hip corners to support the short creeper/rafter overhangs, as shown in AS4440-2004
Note: This statement must be read in conjuction with the truss layout and detail sheets.

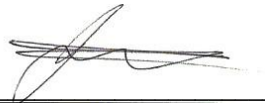
All truss designs and their connections have been designed using Pryda design software. Additional items such as roof/ceiling plane bracing, special notes, supplementary timber, etc., which may be shown on the plan drawings are the responsibility of others.

All trusses have been manufactured in accordance with the fabrication specifications provided by Pryda, and shall be installed, connected and braced in accordance with the recommendations given in - : AS4440:2004 "Installation of nailplated timber roof trusses" and any other supplementary details that may be provided, such as the Pryda Installation Guides.

Timber verification and grading values are in accordance with clause B1 and timber treatment in accordance with clause B2 of the New Zealand Building Code.

I/we confirm that the trusses for this project have been manufactured in accordance with the fabrication specifications provided by Pryda New Zealand.

Name: Jason Horne Position: Detailer

Signed:  Date: 22-01-2019

Fabricator / Designer Statement

Note 1: All timber framing nails are machine-driven, glue coated, or annular/helical deformed shank. Use specified fixings with Pryda connectors as noted.

Tie-downs to walls/beams:

Trusses need to be fixed at each timber support with 2/90x3.15 dia Skew Nails.

All additional tie-downs are as follows:

Truss Mark	Sup No.	Distance	Fixing	Support Jt Grp	Support Width	Truss Jt Grp	Uplift (kN)	Fixing Details
S2	1	-	1/NPPC4	JD5	90	JD5	-2.03	2/12g-11x35 screws, 6/30x3.15d nails
	7	5200	1/NPPC4	JD5	90	JD5	-2.03	2/12g-11x35 screws, 6/30x3.15d nails
S3	1	-	1/NPPC4	JD5	90	JD5	-3.02	2/12g-11x35 screws, 6/30x3.15d nails
	7	5200	1/NPPC4	JD5	90	JD5	-3.02	2/12g-11x35 screws, 6/30x3.15d nails

Secondary fixings (hip & gable ends, valleys):

All trusses are to be fixed at each support with the following:

Hip truss to truncated girder	3 face nails, bottom chords
Jack truss to truncated girder	3 skew nails or back face nails, bottom chords
Creeper truss to hip truss	3 face nails, top and bottom chords
Top chord extensions	2 skew nails
Valley trusses	1 skew nail
Outriggers	2 skew nails

Fixing Summary:

Connector	Description	Total	Fixing Method (per connector)	
Tiedown			Support	Truss
NPPC4	Purlin cleat	24	2/12g-11x35 screws	6/30x3.15d nails

Stones

24 February 2019

SN-R10114393

PROLAM SUMMARY

Customer/Project: Stones
Physical Address: 278 Meeanee Road, Napier

Designer: Gordon Sanson, Homeworx Design and Build Limited
PO Box 3394, Onekawa, Napier 4112
E: gordon@homeworx.co.nz P: 027 513 0323

Verandah beam

Prolam Verandah Beams

Building Type	House	Roof Weight	Light without Ceiling
Timber	Pine, Primed	Roof Load	0.25 kPa
Treatment	H3.2	Live Load	0.25 kPa uniform
Visual	Yes		1.10 kN concentrated
Exposed	Yes	Wind Zone	High (44.0 m/s)
Roof Pitch	8 °	Snow Region	No Snow
Eaves	220 mm		
Roof Span	1.90 m		
Lintel Span	3.70 m		

Use Prolam PLVL8H3-200100PP 190 x 88mm PL8

Capacity Ratio	2.7
Long Term Deflection	< 1.0 mm
Max. Bearing Reaction	3.2 kN
Load Combination	1.2G + 1.5Qpoint
Minimum Bearing Length	35 mm
Uplift Fixing Requirements	3.75 kN Characteristic Load

PRODUCER STATEMENT

TASMAN CONSULTING ENGINEERS CIVIL & STRUCTURAL

Tasman Consulting Engineers Limited has been engaged by Prowood to provide design services for the development of the Prolam Online calculator.

The design has been carried out using sound and widely accepted engineering principles to the requirements of AS/NZS1170:2002, NZS3603:1993 and NZS3604:2011 using the timber properties for GL8, GL12 and GL17 glulam and LVL15.

I believe on reasonable grounds that the above design will meet the requirements of clauses B1/VM1 of the Building Code Documents.

David King

David King

ME (civil, MIPENZ CPEng (no 145511) IntPE

For Tasman Consulting Engineers, PO Box 3631, Richmond, NELSON 7050

24 February 2019

PAINTING SPECIFICATIONS

IMPORTANT PLEASE READ!

This laminated treated product must be protected from the elements until it is sealed. Timber naturally absorbs moisture from the surrounding environment. This can cause the product to alter dimensionally. Sealing the product with a quality paint system dramatically reduces the incidence of dimensional change and increases longevity.

Recommended procedure:

1. Fill nail holes with an exterior grade woodfiller.
2. Sand back until surface is smooth and completely free from dirt and dust.
3. If painting, prime all surfaces and cut ends and joints with a good quality alkyd primer and allow drying as per paint manufacturer's instructions.
4. Apply two full coats of a premium brand acrylic or enamel topcoat.
5. If staining apply three full coats of a premium stain including cut ends and joints.
6. Product must be recoated every 2 years.

NOTE: Light colours are recommended. As timber moves with environmental changes, resin bleeding, distortion and cracking may occur.

NO WARRANTY APPLIES TO ANY PRODUCT THAT HAS NOT BEEN KEPT DRY, OR HAS NOT BEEN PAINTED AS RECOMMENDED ABOVE.

283 Waiwhero Rd P O Box 413 Motueka New Zealand Phone 03 526 7436 Fax 03 526 7437
Email: info@prowoodnz.com

LUMBERLOK®

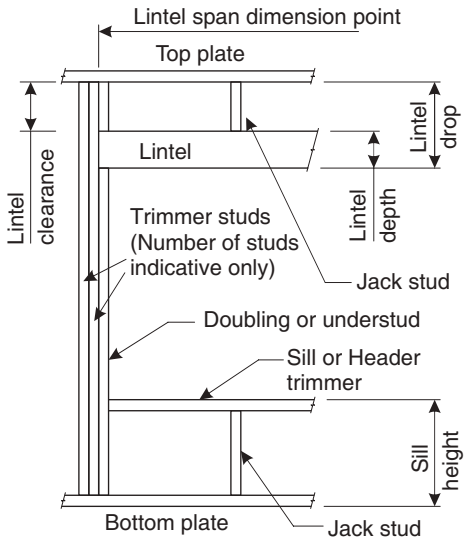
LINTEL FIXING SCHEDULE

ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

NOTE:

- ★ All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20 kPa.
- ★ Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist horizontal loads.
- ★ These fixings assume the correct choice of rafter/truss to top plate connections have been made.
- ★ All fixings assume bottom plate thickness of 45mm maximum. Note: TYLOK options on timber species.
- ★ Wall framing arrangements under girder trusses are not covered in this schedule.
- ★ All timber selections are as per NZS 3604:2011.

DEFINITIONS



Lintel Supporting Girder Trusses:

Roof Tributary Area	Light Roof			Heavy Roof		
	Wind Zone			Wind Zone		
	L, M, H	VH	EH	L, M, H	VH	EH
8.6 m²	G	G	H	G	G	H
11.6 m²	G	H	H	G	G	H
12.1 m²	G	H	H	G	H	H
15.3 m²	H	H	-	G	H	H
19.1 m²	H	-	-	G	H	-
20.9 m²	H	-	-	H	H	-
21.8 m²	H	-	-	H	-	-
34.3 m²	-	-	-	H	-	-

Notes:
1) Roof Tributary Area = approx. 1/2 x (Total roof area on girder and rafter trusses supported by lintel)
2) Assumed girder truss is at mid-span or middle third span of lintel
3) Use similar fixings for both ends of lintel
4) All other cases require specific engineering design

SELECTION CHART FOR LINTEL FIXING

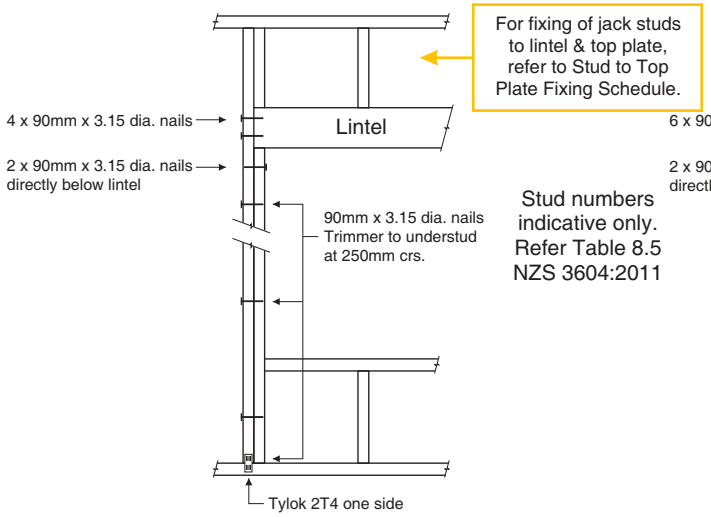
Lintel Span	Loaded Dimension (See Fig. 1.3 NZS 3604:2011)	Light Roof Wind Zone					Heavy Roof Wind Zone				
		L	M	H	VH	EH	L	M	H	VH	EH
0.7	2.0	E	E	E	E	F	E	E	E	E	E
	3.0	E	E	E	F	F	E	E	E	E	F
	4.0	E	E	F	F	F	E	E	E	F	F
	5.0	E	F	F	F	G	E	E	F	F	F
	6.0	E	F	F	G	G	E	E	F	F	G
0.9	2.0	E	E	E	F	F	E	E	E	E	F
	3.0	E	E	F	F	F	E	E	E	F	F
	4.0	E	E	F	F	F	E	E	F	F	F
	5.0	E	F	F	F	G	E	E	F	F	F
	6.0	E	F	F	G	G	E	E	F	F	G
1.0	2.0	E	E	E	F	F	E	E	E	E	F
	3.0	E	E	F	F	F	E	E	E	F	F
	4.0	E	F	F	F	G	E	E	F	F	F
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	E	F	F	G	G	E	E	F	F	G
1.2	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	E	F	F	F	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	F	F	G	G	H	E	E	F	G	G
1.5	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	F	F	F	G	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	F	F	G	G	H	E	E	F	G	G
	6.0	F	F	G	H	H	E	E	F	G	H
2.0	2.0	E	F	F	F	G	E	E	F	F	F
	3.0	E	F	F	G	G	E	E	F	F	G
	4.0	F	F	G	G	H	E	E	F	G	G
	5.0	F	F	G	H	H	E	E	F	G	H
	6.0	F	G	G	H	H	E	F	G	H	H
2.4	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	G	H	E	E	F	G	G
	4.0	F	F	G	H	H	E	E	F	G	H
	5.0	F	G	G	H	H	E	F	G	H	H
	6.0	F	G	H	H	-	E	F	G	H	H
3.0	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	H	H	E	E	F	G	H
	4.0	F	G	G	H	H	E	F	G	H	H
	5.0	F	G	H	H	-	E	F	G	H	H
	6.0	F	G	H	-	-	E	F	G	H	-
3.6	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	F	G	H	H	E	F	G	G	H
	4.0	F	G	H	H	-	E	F	G	H	H
	5.0	F	G	H	-	-	E	F	G	H	-
	6.0	G	H	H	-	-	E	F	H	-	-
4.2	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	G	H	H	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	H	H	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
4.5	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.4	F	G	H	H	-	E	F	G	H	-
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
4.8	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.2	F	G	H	H	-	F	F	G	H	-
	4.0	F	G	H	-	-	E	F	H	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-

MiTek®

LINTEL FIXING OPTIONS

LUMBERLOK®

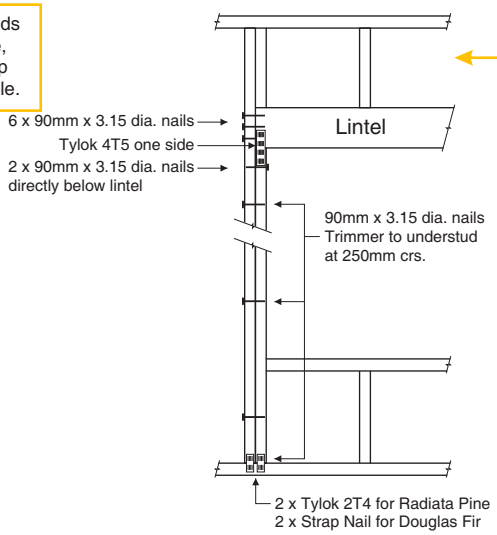
TYPE E
1.4 kN



For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

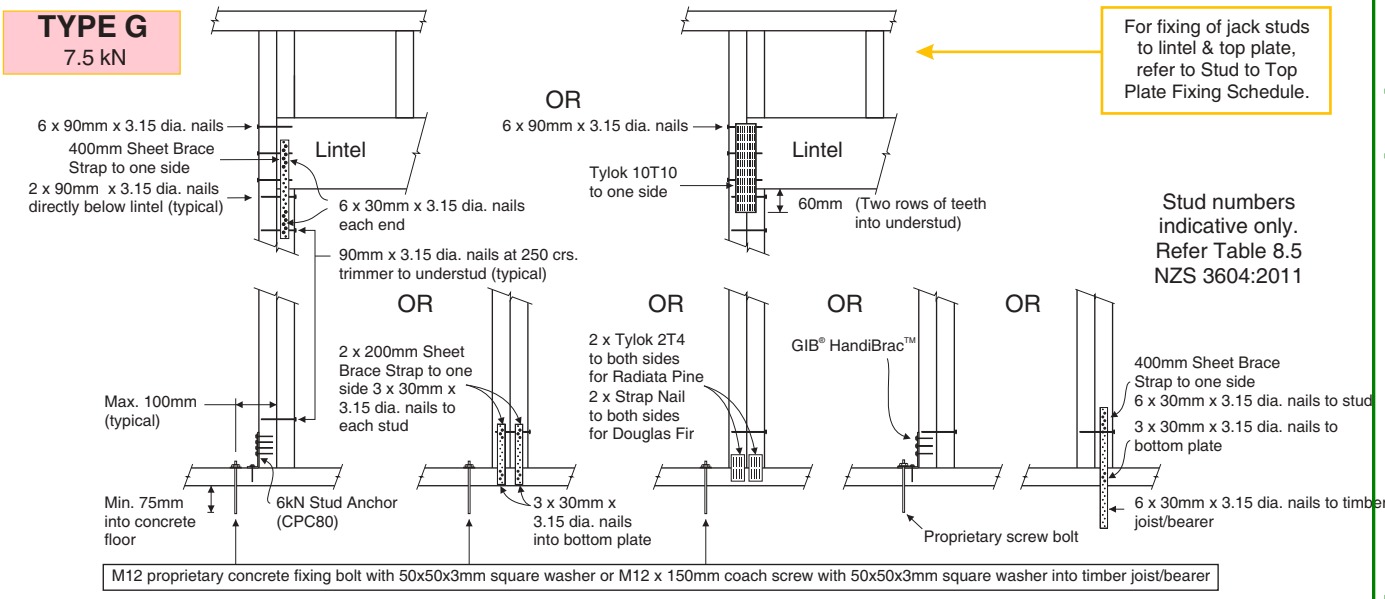
TYPE F
4.0 kN



For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

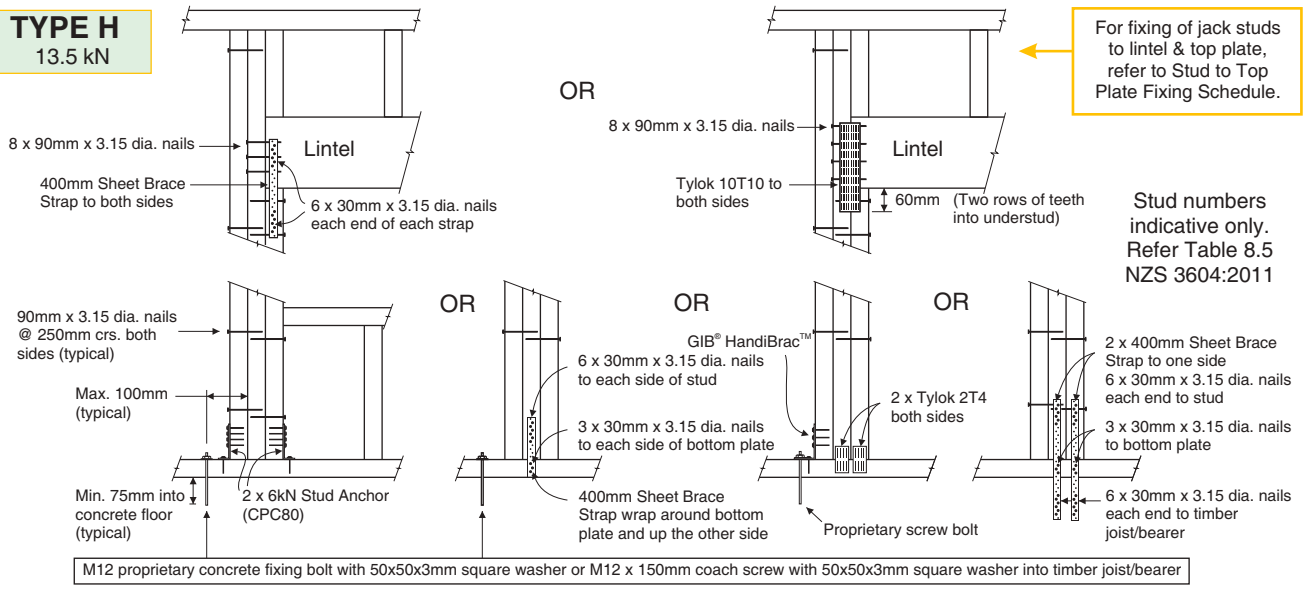
TYPE G
7.5 kN



For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

TYPE H
13.5 kN



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MiTek®
GANG-NAIL® LUMBERLOK® BOWMAC®

Prolam® On-line Calculator - www.prolamnz.com/specifiers
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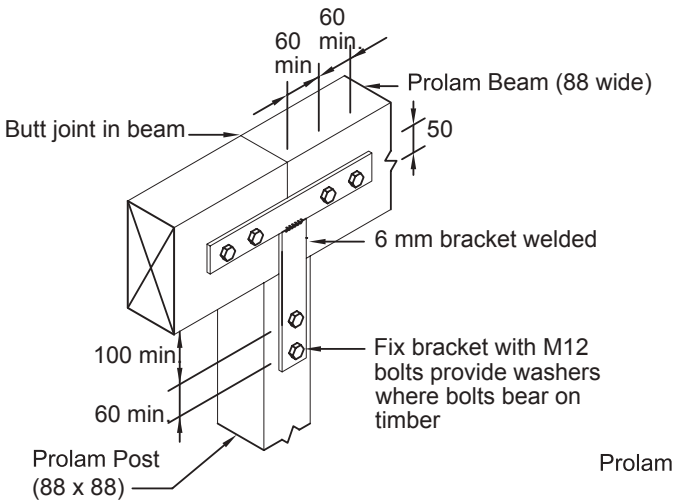
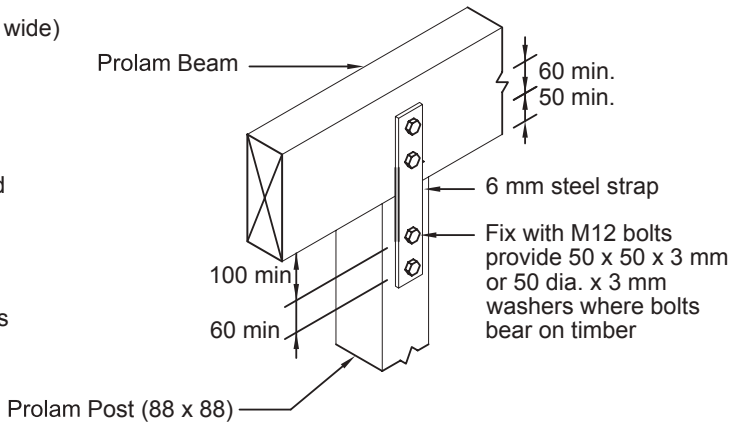
PROLAM POST FIXINGS



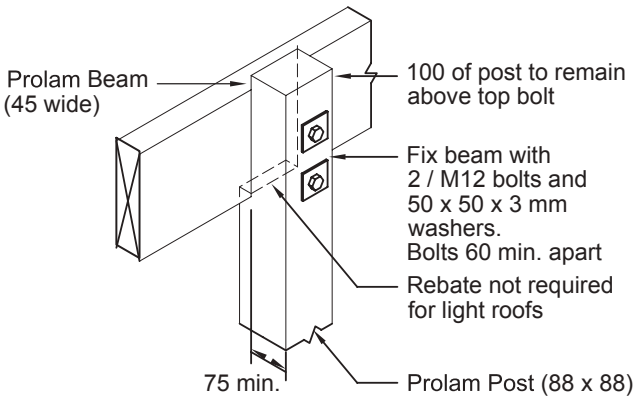
NOTE -
(1) Capacity 12.2 kN for 1 bracket. Capacity
(2) 25.5 kN for 2 brackets.

(A)



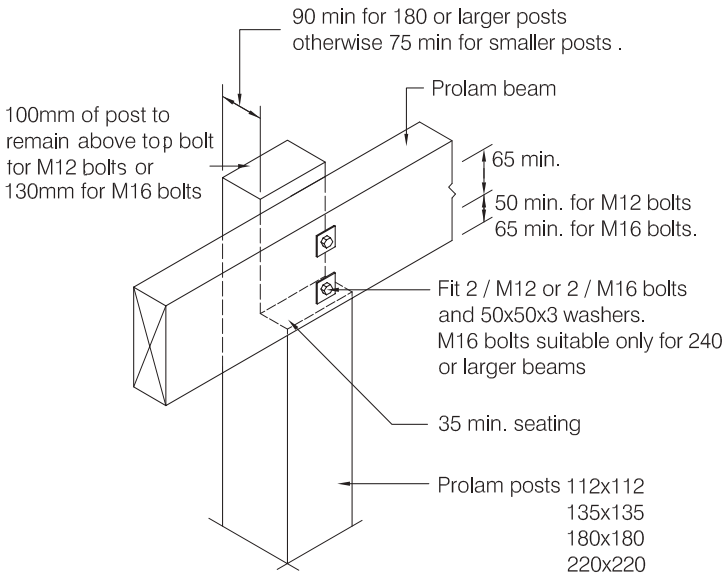
NOTE -
(1) Capacity 6.8 kN for 1 bracket.
(2) Capacity 13.7 kN for 2 brackets.

(B)



NOTE -
Capacity 6.8 kN.

(C)



BEAM FIXING

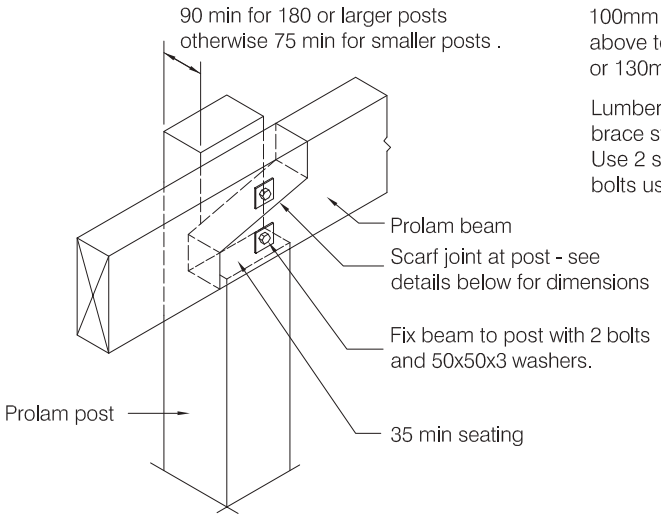
Uplift capacity
2 / M12 bolts - 7.8 kN
2 / M16 bolts - 12.0 kN

(D)

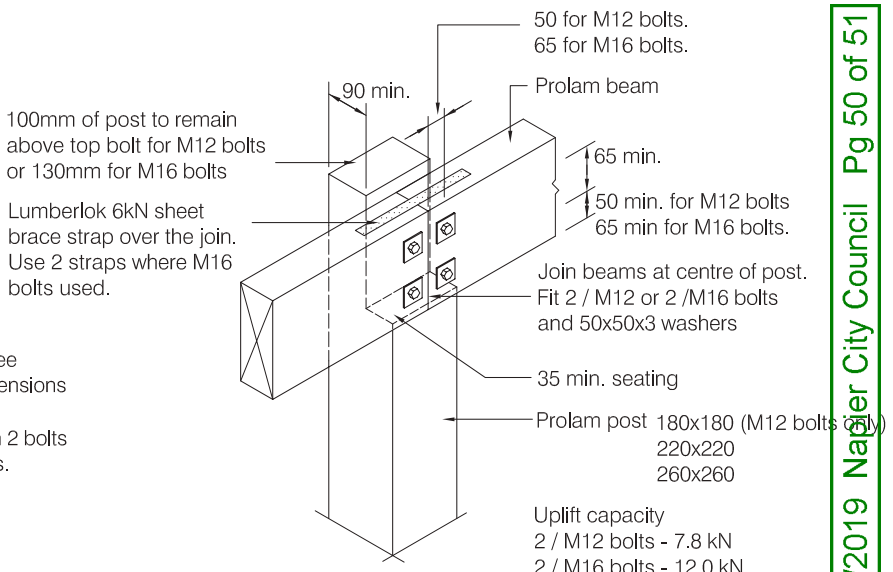
Unless otherwise stated, all dimensions are in mm.

Prolam® On-line Calculator - www.prolamnz.com/specifiers
Ph 03 526 7436 E info@prowoodnz.com

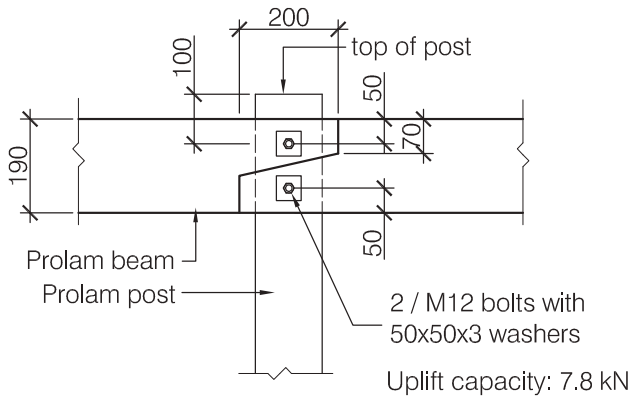
PROLAM POST FIXINGS



SCARF JOINT AT POSTS

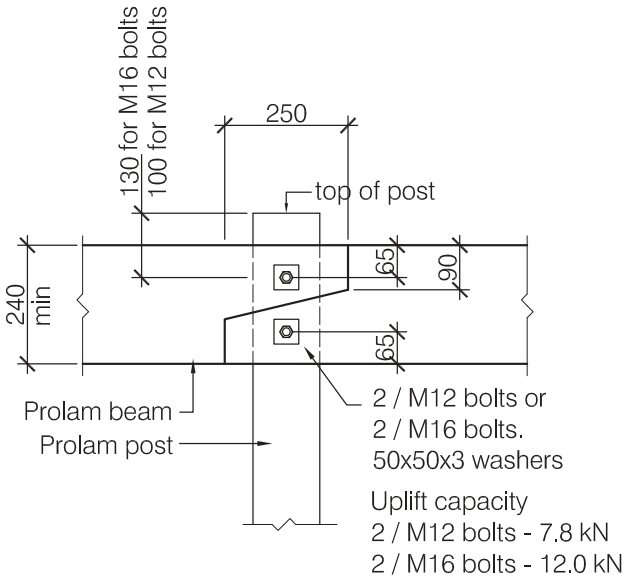


BEAM SPLICE FOR 180x180
OR LARGER POSTS



SCARF JOINT FOR 190 BEAMS

Not suitable for M16 bolts



SCARF JOINT FOR 240 OR LARGER BEAMS

PROLAM® products are manufactured to the requirements of AS/NZS 1328.1:1998 Glue Laminated Structural Timber, and AS/NZS 1491:1996 Finger Jointed Structural Timber under an approved quality system based on the 1S0 9000 series of standards. As such if the product is used in accordance with **PROLAM®** product literature, it will meet the durability clauses of the New Zealand Building Code B2.

Subfloor Applications:

- **PROLAM®** may be used where approved practices for clearance and ventilation are used.

External Use:

- **PROLAM®** is recommended for weather exposed applications if sealed and maintained in accordance with **PROLAM®** literature.

Preservative Treatment:

- **PROLAM®** Beams are CCA H3.2 treated as defined by NZS 3640:2003, for weather exposed applications, such as verandah beams, deck bearers, and subfloor applications.
- **PROLAM®** Posts are CCA H5 treated as defined by NZS 3640:2003 for in-ground and weather exposed applications, such as deck piles, verandah posts and similar applications.

Storage of **PROLAM®:**

- To ensure **PROLAM®** remains straight and true at the time of installation, follow the below recommendations:

1. Store under cover so that it remains dry until installation.
2. Stack clear of the ground for good ventilation.
3. Stack on bearers to keep flat and straight.

Branded **PROLAM®:**

- **PROLAM®** is branded for your protection. Look-alike materials may not perform to the standard of **PROLAM®**. For your protection do not accept unauthorized substitution