Te Kaunihera o Te Hiku o te Ika
Far North District Council

HE ARA TĀMATA
CREATING GREAT PLACES
Supporting our people

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fndc.govt.nz

Application for resource consent

Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Form 9).
Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges — both available on the Council's web page.

1. Pre-Lodgement discussion

Have you met with a council Resource Consent representative to discuss this application prior to lodgement?
☐ **Yes** ☑ **No** ☑ **N/A**

Have you consulted Council's Infrastructure Officer regarding infrastructure capacity to service the development?
☐ **Yes** ☑ **No** ☑ **N/A**

Have you consulted the Roading Officer regarding any road to vest or departure from District Plan / Engineering standards?
☐ **Yes** ☑ **No** ☑ **N/A**

**Contact details of who and how to engage in pre lodgement discussions can be found on the Resource Consent pages of the FNDC website.*

2. Type of consent being applied for

(more than one circle can be ticked):

☑ **Land Use**
☐ **Fast Track (Land Use - Controlled Activity)**
☐ **Change of Consent Notice (s.221(3))**
☐ **Certificate of Compliance (s.139)**
☐ **Extension of time (s.125)**

☐ **Discharge:** Total voume = _____ m³
Note; volumes >3m³ requires NRC Consent 3m³
☐ **Subdivision**
☐ **Existing Use Certificate (s.139A)**
☐ **Consent under National Environmental Standard**
(e.g. Assessing and Managing Contaminants in Soil)

☐ **Other (please specify)** _____

3. Would you like to opt out of the fast track process?

☐ **Yes** ☑ **No**

4. Consultation

Have you consulted with Iwi/Hapū? ◯ **Yes** ☑ **No**

If yes, which groups have you consulted with?

Who else have you consulted with?

For any questions or information regarding iwi/hapū consultation, please contact:
The Resource Consents Planning Technicians, **planning_technicians@fndc.govt.nz**

5. Applicant details

Name/s: Maurice and Sarah Scott

Email:

Phone number: Home

Postal address:
(or alternative method of service under section 352 of the act)

Postcode

Have you been the subject of abatement notices, enforcement orders, infringement notices and/or convictions under the Resource Management Act 1991?
◯ **Yes** ☑ **No**

If yes, please provide details:

6. Address for correspondence

Name and address for service and correspondence (if using an Agent write their details here)

Name/s: N?A

Email:

Phone number: Work Home

Postal address:
(or alternative method of service under section 352 of the act)

Postcode

All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.

7. Details of property owner/s and occupier/s

Name and Address of the owner/occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s: Maurice and Sarah Scott

Property address/ location:

Postcode

8. Application site details

Location and/or property street address of the proposed activity:

Name/s: Maurice and Sarah Scott

Site address/ location: 6 Tui St, Ahipara 0481

Postcode

Legal description: Lot 2 Deposited Plan 110831 **Val Number:**

Certificate of title:

Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff? ☑ **Yes** ○ **No**

Is there a dog on the property? ○ **Yes** ☑ **No**

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. This is important to avoid a wasted trip and having to re-arrange a second visit.

Call me for access.

9. Description of the proposal

Please enter a brief description of the proposal here. Please refer to Chapter 4 of the *District Plan, and Guidance Notes*, for further details of information requirements.

Extension and alteration of an existing two-story residential dwelling., including enclosing existing deck, construction of deck, roof alterations, re- cladding, new joinery and associated stormwater works.

If this is an application for a Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s), with reasons for requesting them.

The proposal has been prepared in accordance with the following version of the FNDC Engineering Standards:

○ **2009** ☑ **2023**

10. Would you like to request public notification?

○ **Yes** ☑ **No**

11. Other consent required/being applied for under different legislation

(more than one circle can be ticked):

- ◯ **Building Consent** EBC-2027-376/0
- ◯ **Regional Council Consent (ref # if known)** Ref # here (if known)
- ◯ **National Environmental Standard Consent** Consent here (if known)
- ◯ **Other (please specify)** Specify 'other' here

12. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following:

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL)? ◯ **Yes** ✔ **No** ◯ **Don't know**

Is the proposed activity an activity covered by the NES? Please tick if any of the following apply to your proposal, as the NESCS may apply as a result? ◯ **Yes** ◯ **No** ✔ **Don't know**

- ◯ **Subdividing land**
- ◯ **Changing the use of a piece of land**
- ◯ **Disturbing, removing or sampling soil**
- ◯ **Removing or replacing a fuel storage system**

13. Natural hazards (National Policy Statement for Natural Hazards 2025)

Is the site subject to known or potential natural hazards (for example, flooding, coastal inundation, erosion, or unstable land), as contemplated by the National Policy Statement for Natural Hazards 2025? ◯ **Yes** ✔ **No**

If yes, please identify the relevant natural hazard(s) by ticking the applicable box(es) below:

- ◯ **Flooding**
- ◯ **Landslips**
- ◯ **Coastal Erosion**
- ◯ **Coastal Inundation**
- ◯ **Active Faults**
- ◯ **Liquefaction**
- ◯ **Tsunami**

Please ensure all relevant technical reports are submitted with the application.

14. Assessment of environmental effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as written approvals from adjoining property owners, or affected parties.

Your AEE is attached to this application ✔ **Yes**

15. Draft conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? ✔ **Yes** ◯ **No**

If yes, please be advised that the timeframe will be suspended as per s107G of the RMA to enable consideration for the draft conditions.

16. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write in full) Maurice Scott

Email:

Phone number: Home

Postal address:
(or alternative method of service under section 352 of the act)

Postcode

Fees Information
An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

Declaration concerning Payment of Fees
I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: (please write in full) Maurice Scott

Signature:
(signature of bill payer)

Date 28-Oct-2026

MANDATORY

17. Important Information:

Note to applicant
You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form.

You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement.

A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:
Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, **www.fndc.govt.nz** These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

18. Declaration

The information I have supplied with this application is true and complete to the best of my knowledge.

Name (please write in full) Maurice Scott

Signature

Date 28-Oct-2026

by electronic means

See overleaf for a checklist of your information...

Checklist of your information

Please tick if information is provided

- [ ] Payment (cheques payable to Far North District Council)
- [x] A current Certificate of Title (Search Copy not more than 6 months old)
- [ ] Details of your consultation with Iwi and hapū
- [ ] Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- [x] Applicant / agent / property owner / bill payer details provided
- [ ] Location of property and description of proposal
- [x] Assessment of Environmental Effects
- [ ] Written approvals / correspondence from consulted parties
- [x] Reports from technical experts (if required)
- [ ] Copies of other relevant consents associated with this application
- [x] Location and site plans (land use) AND/OR
- [ ] Location and scheme plan (subdivision)
- [x] Elevations / floor plans
- [x] Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans



LAND USE RESOURCE CONSENT APPLICATION

ASSESSMENT OF ENVIRONMENTAL EFFECTS

TO EXTEND AND RENOVATE AN EXISTING DWELLING

6 Tui Street, Ahipara

Lot 2 DP 110831

26 September 2026

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Architectural Plans and the Storm water attenuation design report are provided as separate documents accompanying this application

1. The Applicant and Property Details

To	Far North District Council
Site address	6 Tui Street, Ahipara
Legal Description	Lot 2 DP 110831
Site area	1752 m²
Owners	Sarah Jane Scott and Maurice Anthony Gerald Scott
Operative District plan	Far North District Plan
Operative Zoning/Overlay	Residential Zone, Coastal Environment Overlay
Operative Hazard zone	Nil identified
Brief description of proposal	To extend and renovate an existing residential dwelling in the Ahipara Coastal Overlay.
Summary of reason for Consent	CE-R1/PER-3- *extension/alteration which results in an increase of more than 20% of the GFA of the existing building*

Prepared by Maurice Scott (Owner)

02041126167

mauricescott@hotmail.com

2. Proposal.

The proposal is for the extension and alteration of an existing two-storey dwelling situated at 6 Tui Street in Ahipara. The primary objectives of the works include enclosing an existing deck area to form additional internal floor areas at both levels, the construction of a new deck, alterations to the existing roof form, new exterior cladding and joinery, new water tanks and associated stormwater work.

The site is located within the Coastal Environment overlay identified in the Far North District Council Proposed District Plan. The proposed additions increase the gross floor area of the existing building by more than the amount permitted under Rule CE-R1, Performance Standard PER-3 which provides for an increase of up to 20%. The proposal therefore requires resource consent as a Restricted Discretionary Activity.

The existing GFA is 95m^2 whilst the proposed GFA is 143m^2 an increase of approximately **50**%.

The existing building footprint is 87m^2 whilst the proposed footprint is 105m^2, an increase of approximately **21**%.

The proposed works include alteration of the existing roof form from a pitch of approximately 40^o to 8^o. The house will be clad in Karaka Coloursteel, with new double-glazed aluminium joinery (Flax Pod) and a new Gull Grey Coloursteel roof. Two 25,000 litre water tanks are proposed for water storage and stormwater attenuation.

The architectural plans also identify a general building platform for a potential future detached shed. The final size, design and location of the shed have not yet been determined. Any future shed will be designed and located within the identified area to comply with the applicable permitted activity standards, including building height, height in relation to boundary, boundary setbacks, exterior colours and materials, stormwater run-off and any other relevant District Plan requirements.

The proposal does not involve a change in the residential use of the property. The additions are associated with the continued use of the site as a single residential dwelling

The following Assessment of Environmental Effects (AEE) has been prepared in accordance with Section 88 of and Schedule 4 of the Resource Management Act 1991 and is intended to provide the information necessary for a full understanding of the activity for which consent is sought and any actual or potential effects the proposal may have on the environment.

3. Site Context.

6 Tui Street is a residential property situated within the Ahipara Coastal Environment Overlay. The property is approximately 500 meters from the coastline.



The property is accessed from Tui Street via an approximately 35-meter driveway, which opens onto a rear section situated behind the residential dwellings at 4 and 8 Tui Street.



The dwelling and proposed development area are not visible from Tui Street or Takahe Road.

The site is zoned Residential and is located within the Coastal Environment Overlay. There are currently no identified coastal hazard overlays affecting the site. The northern and western portions of the site, including driveway, are predominantly flat, with the land rising towards the southeast. The site comprises predominantly grassed areas, with established shrubs and trees around the boundaries. Mature vegetation includes Norfolk pines, palms, eucalyptus and fruit trees.

Regional soil mapping indicates a complex soil profile consisting of Te Kopuru sand, Tangitiki sandy loam, and Ruakaka fine sandy peat variants.

The site is located within an established residential enclave in Ahipara, characterized by similar-sized allotments. The local built environment consists primarily of standalone residential dwellings of varying age and condition, accompanied by detached sheds, outbuildings, water tanks and domestic structures. Vegetation within the surrounding residential area is variable, with a mixture of established trees, hedges, lawns and garden areas.

- **Site Visibility:** The existing dwelling and proposed development area are situated centrally on the allotment. Due to the site's position behind existing residential development, together with established vegetation and surrounding structures, the proposed development will have very limited visibility from the surrounding public road network and is not readily visible from Tui Street or Takahe Road.
- **Northern Boundary:** Adjoined by the residential property 10 Tui Street, with established tall trees and shrubs providing substantial visual separation between the properties.
- **Western Boundary:** Adjoined by a private Right of Way (ROW) servicing no. 10. This ROW features an elevated, compacted profile that creates a distinct physical and topographical boundary along the north-western side of the site.
- **Eastern and Southern Boundaries:** Bordered by similar-sized residential blocks featuring standard domestic infrastructure, lawns, and tree lines.

4. Far North District Plan Assessment.

The property is zoned General Residential under the Proposed Far North District Plan and is also located within the Coastal Environment Overlay.

The proposal has been assessed against the relevant provisions of the Proposed Far North District Plan, including the General Residential Zone provisions, Coastal Environment Overlay and relevant District-Wide Matters.

The principal resource consent requirement arises under Rule CE-R1, which manages new buildings and structures and extensions or alterations to existing buildings and structures within the Coastal Environment.

Provision	Relevant Requirement	Assessment
CE-R1/PER-3 Extension or alteration to existing building	Extension must be no greater than 20% of existing GFA	Existing GFA 95m^2; proposed GFA 143m^2, increase of approximately 50% **Does not comply - resource consent required.**
CE-S1- Maximum height	Extension must not exceed height of the existing building	Proposed maximum building height remains 7.388m to the apex and does not exceed the maximum height of the existing dwelling. **Complies.**
CE-S2 – Colours and materials	N/A	N/A
CE-S3- Earthworks/Vegetation clearance	- not exceed 100m^2 in a calendar year - not exceed a cut height or fill depth of 1m - screen exposed faces that are visible from a public place.	Earthworks are limited to pile excavations and dispersal trench, involving approximately 3.63m^3 of excavated material to be removed from site, together with minor placement and compaction of aggregate for the proposed water tanks. **Complies**
CE-S4 – Setback from MHWS	Minimum set back 26m from MHWS	Site/development is approximately 500m from the coast. **Complies**
GRZ – S1	Maximum building height – 8m above ground	Proposed maximum height is approximately 7.388m. **Complies.**
GRZ-S2 – Height in relation to boundary	Recession planes: north 55^o at 2m; east/west 45^o at 2m; south 35^o at 2m	The proposed development complies with the applicable recession plane requirements. **Complies**
GRZ – S3 – Boundary setback	1.2m from Site boundary, 3m from road boundary	The proposed development is a minimum setback of 5.6m from any site boundary. **Complies**
GRZ – S4 – MHWS	26m from MHWS	Approx 500m from Coast, **Complies.**
GRZ – S5 Façade length	Recess required where a façade exceeds 20m along a public road or public land	The dwelling does not have a façade exceeding 20m along a public road or land. **Complies**
GRZ – S6 Outdoor living space	Residential units must retain qualifying outdoor living space	The site retains substantial qualifying outdoor living space, including the proposed new deck. **Complies.**

5. NES Contaminated Soils (NESCS)

The site is an established residential property and there is no record or other evidence of a current or historical activity or industry listed on the Hazardous Activities and Industries List (HAIL) having occurred on the site. The proposed works involve only minor soil disturbance associated principally with pile excavations, comprising approximately 2.03 m^3 of excavated material.

Accordingly, the NES for Assessing and Managing Contaminants in Soil to Protect Human Health is not considered to be triggered by the proposal.

6. NES Freshwater (NES-F)

The site is an established residential property and the proposed works do not affect any natural inland wetland, river, stream or other freshwater feature. The works are confined to the existing residential site and involve only minor earthworks associated with the proposed development.

Accordingly, the National Environmental Standards for Freshwater are not considered to be triggered by the proposal.

7. NPS Indigenous Biodiversity (NPS-IB)

The site is an established residential property and the proposed works are confined to the existing developed area of the site. The proposal does not involve the clearance or modification of significant indigenous vegetation or identified significant indigenous habitat.

Accordingly, the National Policy Statement for Indigenous Biodiversity does not raise any matters requiring further assessment in relation to the proposal.

8. NPS Highly Productive Land (NPS-HPL)

The site is located within the General Residential Zone and is an established residential property. The National Policy Statement for Highly Productive Land is directed toward the protection of highly productive land for land-based primary production and does not apply to land within a General Residential Zone.

Accordingly, the NPS-HPL does not require further assessment in relation to the proposal.

9. Notification

The proposal is considered appropriate for processing on a non-notified basis. The proposed works relate to the alteration and extension of an existing residential dwelling within an established residential site.

The development complies with the applicable maximum height, height in relation to boundary and setback requirements and will not result in unreasonable shading, dominance, privacy or overlooking effects on adjoining properties.

The dwelling is located on a rear site and is not visible from Tui Street or Takahe Road. The proposed roof surface is not visible from neighbouring properties or surrounding public roads. The effects associated with the proposed increase in gross floor area and the proposed roofing are considered to be less than minor.

On this basis, no persons are considered to be adversely affected to a minor or more than minor degree, and public or limited notification is not considered necessary.

10.0 Assessment of Environmental Effects (AEE)

10.1 Visual and Coastal Character Effects.

The proposal involves the extension and alteration of an existing dwelling within an established residential area of Ahipara. While the property is located within the Coastal Environment Overlay, the site is approximately 500 m from the coastline and is situated within an established residential enclave containing existing dwellings, sheds, water tanks, fencing and established vegetation.

The proposed development remains associated with the existing dwelling and does not introduce development into an undeveloped part of the coastal environment. The dwelling is located on a rear site approximately 60 m from Tui Street. It is not visible from Tui Street or Takahe Road. Existing buildings and established vegetation within and surrounding the site further limit views of the development.

The proposed exterior materials have been selected in subdued colours appropriate to the surrounding environment.

- Karaka ColorSteel cladding has an LRV of approximately 8%,
- Western Red Cedar approximately 10%, and
- Flax Pod aluminium joinery approximately 7%.
- Gull Grey ColorSteel roofing has an LRV of approximately 50%

These materials will result in a predominantly dark and recessive external appearance.

The proposed Gull Grey ColorSteel roofing has an LRV of approximately 50%. CE-S2 applies to the exterior surfaces of new buildings or structures and is not an applicable performance

standard under CE-R1/PER-3 for the proposed extension and alteration. Nevertheless, the visual effects of the proposed roofing have been considered as part of this assessment. The proposal is to replace the current ColorSteel White roof, which slopes at approximately 40° towards the north, with a new Gull Grey roof at a much lower pitch of 8°. The proposed roofing has a lower LRV than the existing white roofing and, due to the substantially reduced roof pitch, the roof surface will not be visible from neighbouring properties or surrounding public viewpoints. It will therefore not result in a discernible adverse visual effect

Overall, the alterations will remain visually integrated with the existing residential environment and will not adversely affect the coastal character or visual amenity of the surrounding area.

10.2 Building Scale, Bulk and Location

The proposal increases the gross floor area of the dwelling from approximately 95 m² to 143 m², an increase of approximately 50%. A significant proportion of this additional floor area is achieved through the enclosure of the existing deck area at both levels, rather than through a corresponding increase in the overall building footprint.

The building footprint will increase from approximately 87 m² to 105 m², an increase of approximately 21%. The proposed development will remain within the established residential portion of the site and the maximum building height will remain approximately 7.388 m, no higher than the existing dwelling.

The development complies with the applicable height, height in relation to boundary and boundary setback standards, with a minimum setback of approximately 5.6 m from the western boundary. These setbacks, together with the location of the dwelling on a rear site, provide substantial separation between the development and adjoining properties.

Although the increase in gross floor area exceeds the permitted 20% threshold within the Coastal Environment Overlay, the resulting increase in the physical scale and footprint of the dwelling is considerably less. The proposal is therefore not considered to result in excessive building bulk, dominance or intensity of development, or to adversely affect the character and amenity of the surrounding residential environment.

10.3 Effects on Adjoining Properties

The proposed development is not considered to result in adverse effects on the amenity of adjoining properties. The dwelling complies with the applicable building height, height in relation to boundary and setback standards, providing appropriate separation from neighbouring properties.

The alterations will not result in unreasonable shading or dominance effects. While the proposal provides additional internal floor area at both levels, this is largely achieved by

enclosing existing deck areas and does not substantially extend the dwelling towards adjoining boundaries.

The proposal is also not considered to result in unreasonable privacy or overlooking effects. The dwelling is well separated from adjoining properties and the proposed alterations do not introduce an unacceptable level of overlooking beyond that reasonably anticipated within an established residential environment.

Overall, any adverse effects on adjoining properties in terms of privacy, shading, dominance and residential amenity are considered to be less than minor.

10.4 Stormwater Effects

Stormwater management for the proposed dwelling extension and future shed has been assessed by RS Eng Ltd in its Stormwater Attenuation Design dated 12 October 2026.

The proposed system comprises two 25,000 litre water tanks, providing a combined capacity of 50,000 litres, fitted with restricted outlets to attenuate stormwater runoff from the proposed roof areas.

Stormwater will be discharged in a controlled manner to a 12 m long dispersal trench located north of the dwelling and aligned parallel to the contour.

The engineering assessment demonstrates that the proposed system will reduce peak stormwater flows to within the required design limits, including allowance for climate change.

Accordingly, the proposal is not considered to result in significant adverse stormwater effects on adjoining properties or the surrounding environment.

10.5 Earthworks and Construction Effects.

Earthworks associated with the proposal will be minor and localised. Excavation for the proposed pile foundations will result in approximately 2.03 m^3 of excavated material, which will be removed from the site. Minor placement and compaction of aggregate will also be undertaken to provide suitable bases for the proposed water tanks and approximately 1.6 m^3 of excavated material will be removed for the dispersal trench.

The earthworks will not result in any significant alteration to the existing landform or topography. Appropriate erosion and sediment controls will be used during construction to prevent sediment from leaving the site.

Construction effects, including temporary noise, vehicle movements and general building activity, will be limited to the construction period and are typical of residential building works.

Overall, adverse earthworks and construction effects are considered to be less than minor.

10.6 Natural Hazards

The site is not identified as being subject to any coastal hazard overlay relevant to the proposed development. The proposed works comprise alterations and extensions to an existing dwelling within an established residential site and do not materially alter the existing landform.

The proposal is therefore not considered to increase natural hazard risk to the site, adjoining properties or the surrounding environment.

10.7 Overall Effects Conclusion

The proposal represents an extension and alteration of an existing dwelling within an established residential environment. While the increase in gross floor area does not comply with the relevant Coastal Environment provisions, the assessment above demonstrates that the resulting environmental effects will be limited.

The development remains within the established residential portion of the site, retains the existing maximum building height and complies with the applicable height in relation to boundary and setback requirements. The increased floor area is largely achieved through enclosure of existing deck areas, with a comparatively modest increase in building footprint. The proposed roof surface will not be visible from neighbouring properties or surrounding public viewpoints.

Stormwater will be managed through an engineered attenuation dispersal system, with earthworks remaining minor and localised. The proposal will not result in significant adverse effects on adjoining properties, residential amenity, coastal character, visual amenity or the wider environment.

Overall, the actual and potential adverse effects of the proposal are considered to be less than minor.

11. Section 104 Assessment

Section 104 of the Resource Management Act 1991 requires the consent authority to have regard to the actual and potential effects of the activity on the environment, the relevant provisions of applicable national and regional planning instruments, the District Plan and Proposed District Plan, and any other matters considered relevant to the application.

The actual and potential effects of the proposal have been assessed in Section 10 of this AEE. The assessment concludes that adverse effects associated with the proposal, including effects on visual amenity and coastal character, adjoining properties, building scale and bulk, stormwater, earthworks and construction, will be less than minor.

The proposal comprises the extension and alteration of an existing dwelling within an established residential environment. The development retains the existing maximum building height and complies with the applicable height in relation to boundary and setback requirements. Although the increase in gross floor area exceeds the permitted threshold within the Coastal Environment Overlay, much of the additional floor area is achieved through enclosure of existing deck areas, with a substantially smaller increase in the overall building footprint.

The proposed Gull Grey roofing has an LRV of 50%. Although CE-S2 is not an applicable performance standard for the proposed extension and alteration, the potential visual effects of the roofing have nevertheless been considered. However, the roof pitch will be reduced from approximately 40° to 8° and the proposed roof surface will not be visible from neighbouring properties or surrounding public viewpoints. The remaining proposed exterior materials are dark and recessive in appearance. Accordingly, the proposal is not considered to result in significant adverse effects on visual amenity or coastal character.

The relevant national environmental standards and national policy statements have been considered in Sections 5–8 of this AEE and do not give rise to any additional matters requiring assessment.

The relevant objectives, policies and rules of the applicable Far North District Plan provisions have also been considered. The proposal represents the continued residential use and development of an established residential site and is considered consistent with the anticipated character and amenity of the surrounding residential environment and the relevant planning framework.

Overall, having regard to the matters set out in section 104 of the Resource Management Act 1991, the proposal is considered appropriate for the granting of resource consent.

12. Part 2 Assessment

Part 2 of the Resource Management Act 1991 sets out the purpose and principles of the Act, with the purpose being to promote the sustainable management of natural and physical resources.

The proposal provides for the continued use and improvement of an existing residential property within an established residential environment. The works are located within the existing developed portion of the site and do not involve development of an undeveloped coastal area or the removal of significant indigenous vegetation.

As demonstrated by the assessment above, the proposal will appropriately avoid, remedy or mitigate adverse effects on the environment. In particular, effects on coastal character, visual amenity, adjoining properties, stormwater and landform will be less than minor.

Overall, the proposal is considered consistent with the purpose and principles of the Resource Management Act 1991.

13. Conclusion

The proposal is for the extension and alteration of an existing two-storey dwelling at 6 Tui Street, Ahipara. Resource consent is required because the proposed increase in gross floor area exceeds the permitted threshold under CE-R1/PER-3 of the Coastal Environment provisions.

As demonstrated in this AEE, the proposal will remain compatible with the scale and character of the established residential environment. The development retains the existing maximum building height, complies with the applicable setback and height in relation to boundary requirements, and will not result in unreasonable effects on adjoining properties.

The proposed development will not result in significant adverse effects on coastal character, visual amenity, stormwater, landform or the wider environment. The actual and potential adverse effects of the proposal are considered to be less than minor.

The proposal is considered consistent with the relevant objectives and policies of the applicable planning framework and with the purpose and principles of the Resource Management Act 1991.

Accordingly, it is considered appropriate that resource consent be granted, subject to appropriate conditions.

Appendix a. Record of title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA62B/1110**

Land Registration District **North Auckland**

Date Issued 04 August 1986

Prior References

NA16A/651 NA54C/985

Estate Fee Simple

Area 1752 square metres more or less

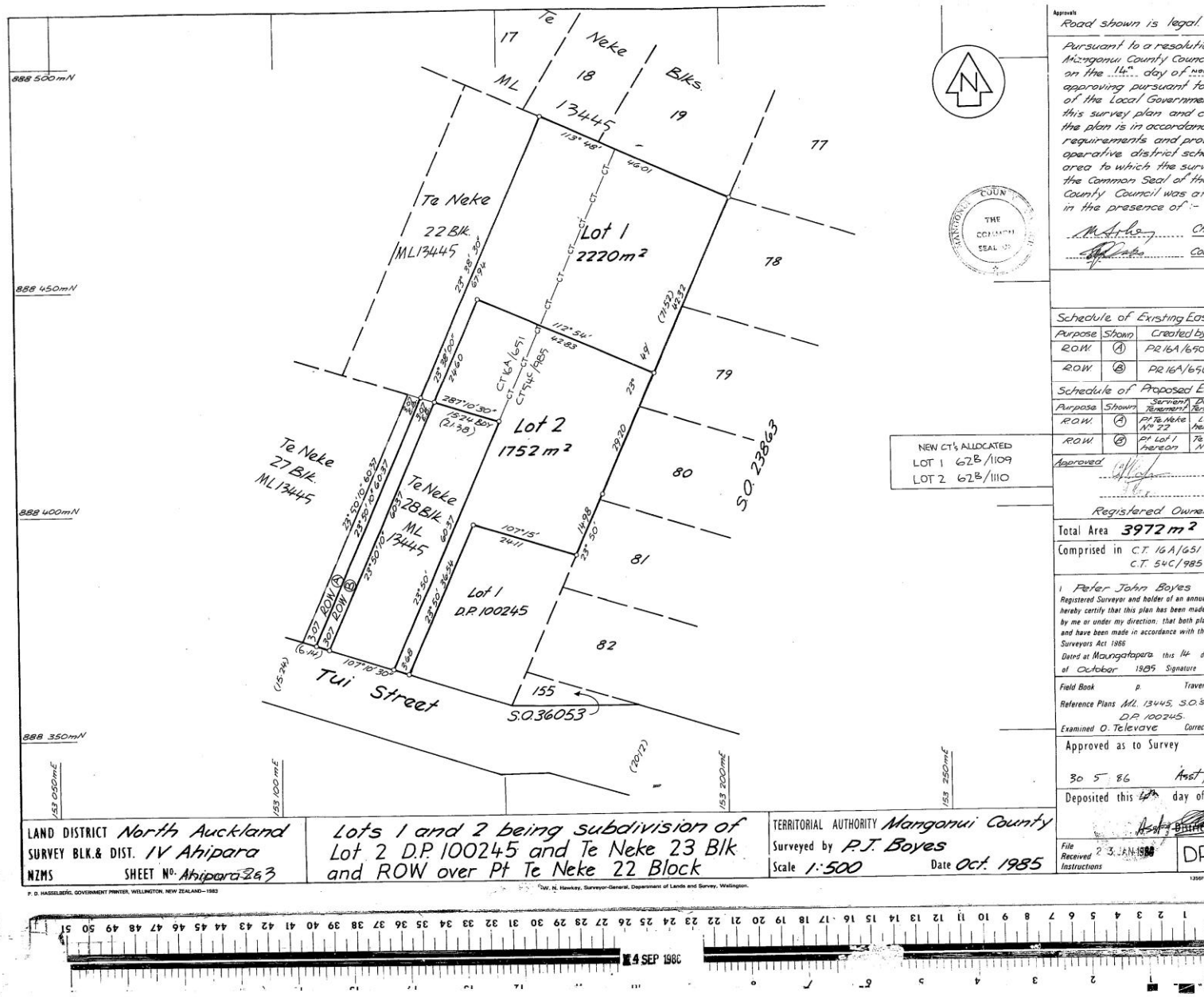
Legal Description Lot 2 Deposited Plan 110831

Registered Owners

Sarah Jane Scott and Maurice Anthony Gerald Scott

Interests

13499780.3 Mortgage to Basecorp Finance Limited - 3.2.2026 at 7:51 am


Te Neke 17
Te Neke 18 Blks.
ML 13445
19
77
78
79
80
81
82
888 500mN
888 450mN
888 400mN
888 350mN
Te Neke 22 Blk. ML13445
Lot 1 2220m²
Lot 2 1752m²
Lot 1 D.P. 100245
Te Neke 27 Blk. ML13445
Te Neke 28 Blk. ML 13445
S.O. 23863
S.O. 36053
Tui Street
CT 16A/651
CT 54C/985
NEW CT's ALLOCATED
LOT 1 62B/1109
LOT 2 62B/1110
Road shown is legal
Schedule of Existing Eas
Schedule of Proposed E
Approved
Registered Owner
Total Area 3972m²
Comprised in C.T. 16A/651
C.T. 54C/985
Peter John Boyes
Registered Surveyor
Dated at Maungatapera this 14
of October 1985 Signature
Field Book p. Traver
Reference Plans ML. 13445, S.O.
D.P. 100245.
Examined O. Televave
Approved as to Survey
30 5 86
Deposited this 4th day of
File
Received 23 JAN 1986
Instructions
LAND DISTRICT North Auckland
SURVEY BLK.& DIST. IV Ahipara
NZMS SHEET Nº Ahipara 2&3
Lots 1 and 2 being subdivision of Lot 2 D.P. 100245 and Te Neke 23 Blk and ROW over Pt Te Neke 22 Block
TERRITORIAL AUTHORITY Manganui County
Surveyed by P.J. Boyes
Scale 1:500
Date Oct. 1985
P. D. HASSELBERG, GOVERNMENT PRINTER, WELLINGTON, NEW ZEALAND—1983
W. N. Hawkey, Surveyor-General, Department of Lands and Survey, Wellington.
4 SEP 1986

Appendix b. Boundary photos

. WESTERN

NORTHERN



EASTERN



SOUTH

Appendix c – Exterior Colour and Materials Schedule

6 Tui Street, Ahipara

The proposed exterior materials and finishes for the alterations and extension to the existing dwelling are set out below.

Building element	Material / finish	Colour	LRV	Indicative swatch
Wall cladding	COLORSTEEL	Karaka	8%	
Feature cladding	Western Red Cedar	Natural timber finish	Approx. 10%	
Window and door joinery	Powder-coated aluminium	Flax-Pod	7%	
Roofing	COLORSTEEL	Gull Grey	50%	

Notes

The external wall cladding, cedar and aluminium joinery are dark, recessive finishes with low levels of reflectivity.

Important: The colour swatches shown above are indicative only and may vary between screens and printers. The named manufacturer colours, materials and stated LRV values are the controlling specifications for this schedule.

Operative District Plan assessment

6 Tui Street, Ahipara | Lot 2 DP 110831 | 28 October 2026

Supplementary information supplied in response to FNDC request for identification of relevant Operative District Plan (ODP) rules and activity status.

Proposal and planning context

The proposal comprises alterations and additions to an existing two-storey dwelling, including enclosure of existing deck areas, roof alterations, recladding, new deck and associated stormwater works. Existing gross floor area is 95 m² and proposed gross floor area is 143 m². The property remains a single residential unit. The operative zoning is Residential. The separate Proposed District Plan Coastal Environment assessment in the lodged AEE identifies CE-R1/PER-3 as the consent trigger; that trigger is not an ODP infringement.

Operative Residential Zone — Chapter 7.6

Rule	Assessment against submitted plans	Finding
7.6.5.1.1 Relocated buildings	No building is being relocated.	Not applicable
7.6.5.1.2 Residential intensity	One existing dwelling retained; no additional residential unit.	Complies
7.6.5.1.3 Scale of activities	Continued domestic residential use.	Complies
7.6.5.1.4 Building height	Maximum proposed apex 7.388 m (A10/A11), below 8 m ODP limit.	Complies
7.6.5.1.5 Sunlight 45° recession plane rising from 2 m at the site boundary.	Closest figured building setback 5643mm gives 7643mm plane height; corresponding building height advised as 6948mm - a 700mm margin. At figured 9.000 m setback the plane height is 11.000 m, exceeding the maximum 7.388 m apex. At 13.257 m it is 15.257 m. Refer A01 and A10/A11.	Complies
7.6.5.1.6 Stormwater management	A01 gives 381 m² total impermeable surfaces on 1,752 m² site (21.7%), including indicative shed; below 50% threshold. Attenuation works separately detailed.	Complies
7.6.5.1.7 Setback from boundaries	A01 provides figured setbacks, including 5.643 m, 9.000 m and 13.257 m. Proposed dwelling is well beyond 1.2 m non-road setback; existing long access to Tui Street is retained.	Complies for depicted dwelling
7.6.5.1.8–1.17 Other zone controls	No non-residential activity, outdoor processing, additional signage or change in ordinary domestic activity is proposed. Existing vehicle access retained. Relevant transportation and noise requirements continue to apply.	No identified new infringement

Relevant district-wide provisions

The ODP requires compliance with applicable district-wide provisions in Part 3, particularly Chapter 12 (natural and physical resources, including earthworks and any mapped heritage or hazard features), Chapter 15 (traffic and access), and where relevant Chapters 16–17 (signs, lighting, designations and utilities). The works retain existing residential access and use, with limited localised foundation excavation and sediment controls as described on A01. The site's proximity to a recorded archaeological feature is already subject to council/Heritage New Zealand consideration. This assessment does not purport to resolve any separate archaeological authority requirement or unverified mapped constraint.

Activity status and conclusion

Based on the supplied figured site dimensions, elevations and stated site coverage, the proposed alterations and additions meet the assessed ODP Residential Zone permitted activity standards in Rule 7.6.5.1. No ODP Residential Zone consent trigger has been identified for the dwelling alterations. This conclusion is subject to any additional applicable district-wide or mapped controls. The application separately seeks resource consent under the Proposed District Plan Coastal Environment rule CE-R1/PER-3, as assessed in the existing AEE.

Drawing references and scope

Beard Online Architecture, "SCOTT Maurice — FULL SET 22_10_2026": A01 Site Plan (PDF page 5), A10 and A11 Elevations. Site area of 1,752 m² (Record of Title) and 381 m² impermeable coverage are taken from A01. A future shed is indicative only and is not assessed as a final building proposal.

References: Far North Operative District Plan, Chapter 7.6 and relevant district-wide provisions; Beard Online Architecture drawing set dated 22 October 2026.

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA62B/1110**

Land Registration District **North Auckland**

Date Issued 04 August 1986

Prior References

NA16A/651 NA54C/985

Estate Fee Simple

Area 1752 square metres more or less

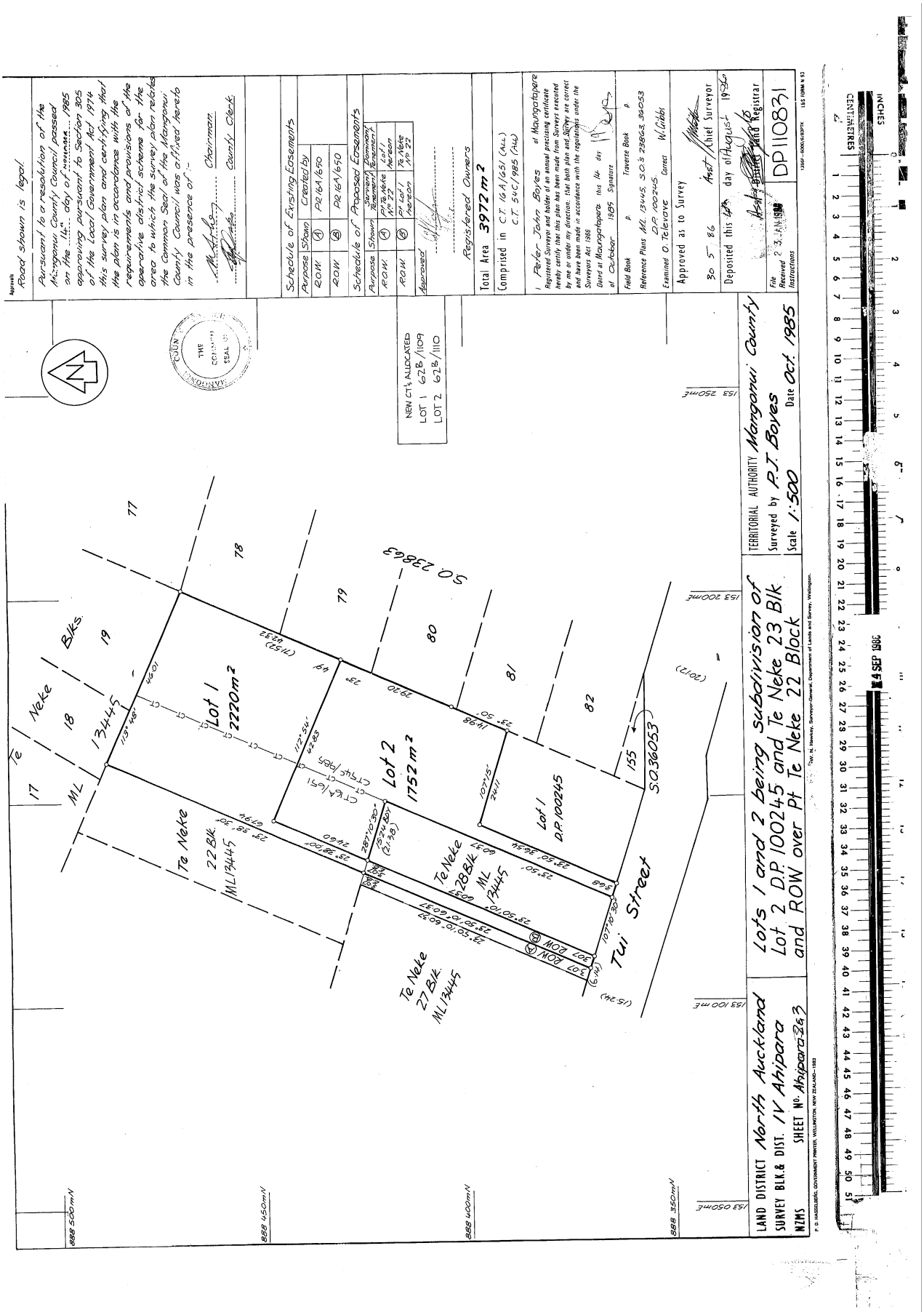
Legal Description Lot 2 Deposited Plan 110831

Registered Owners

Sarah Jane Scott and Maurice Anthony Gerald Scott

Interests

13671220.2 Mortgage to Kiwibank Limited - 31.7.2026 at 9:27 am


Lot 1
2220m²
Lot 2
1752 m²
Lot 1
DP 100245
Te Neke 22 Blk
ML 13445
Te Neke 23 Blk
ML 13445
Te Neke 27 Blk
ML 13445
Tui Street
SO 36053
SO 23863
Lots 1 and 2 being subdivision of
Lot 2 D.P. 100245 and Te Neke 23 Blk
and ROW over Pt Te Neke 22 Block
LAND DISTRICT North Auckland
SURVEY BLK & DIST. IV Ahipara
SHEET No Ahipara 2&3
NZMS
TERRITORIAL AUTHORITY Mangonui County
Surveyed by P.T Boyes
Scale 1:500
Date Oct 1985
Approved as to Survey
30-5-86
Asst / Chief Surveyor
Deposited this 4th day of August 1986
Registrar
DP 110831
Schedule of Existing Easements
Schedule of Proposed Easements
Registered Owners
Total Area 3972 m²
Comprised in C.T. 16A/651 (Alt.)
C.T. 34C/985 (Alt.)
NEW CTs ALLOCATED
LOT 1 62B/1109
LOT 2 62B/1110
Road shown is legal
Pursuant to a resolution of the Mangonui County Council passed on the 14th day of October 1985 approving pursuant to Section 305 of the Local Government Act 1974 this survey plan and certifying that the plan is in accordance with the requirements and provisions of the operative district scheme for the area to which the survey plan relates the Common Seal of the Mangonui County Council was affixed hereto in the presence of :-
Chairman
County Clerk
Approved
Field Book p Traverse Book p
Reference Plans ML 13445, SO's 23863, 36053
Examined O. Televorve Correct W. Cribbi
File
Received
Instructions
Te Neke Blks
ML 13445
888 500mN
888 450mN
888 400mN
888 350mN
153 250mE
153 200mE
153 100mE
153 050mE

commercial & industrial development - structural design - residential design - new homes - alterations - extensions - garages

DRAWING SCHEDULE		
Sheet No.	**Sheet Name**	**Rev. No.**
1	SCHEDULE OF NOTES-1	None
2	SCHEDULE OF NOTES-2	None
3	SCHEDULE OF NOTES-3	None
A01	SITE PLAN	None
A02	PROPOSED FLOOR PLAN-Level 1	None
A02.1	PROPOSED FLOOR PLAN-Ground	None
A02.4	SLIP RESISTANCE NOTE	None
A02.2	EXISTING FLOOR PLAN-Ground	None
A02.3	EXISTING FLOOR PLAN-Level 1	None
A03	FOUNDATION/BRACING PLAN	None
A03/1	S01	None
A03.1	6KN/12KN CONNECTION	None
A03.2	PILE TO PILE BRACE DETAIL	None
A03.3	TYPICAL STEP DETAIL-EXTERIOR	None
A03.4	ORDINARY PILE FIXING	None
A04	SUBFLOOR FRAMING PLAN	None
A04.1	MID FLOOR FRAMING PLAN	None
A04.2	(B2) 2/400 x 63 MIDFLOOR BEAM	None
A04.3	LOAD & NON LOADBEARING DEATIL-TIMBER	None
A04.4	LAPPED OR BUTTED JOINTS IN FLOOR JOISTS	None
A04.5	TYPICAL FLOOR JOIST LAYOUT NZS3604:2011	None
A05	PLUMBING & DRAINAGE LAYOUT-Ground	None
A05.0	PLUMBING & DRAINAGE LAYOUT-Level 1	None
A05.1	GULLY TRAP BEDDING DETAILS	None
A06	WALL BRACING PLAN Ground	None
A06.1	WALL BRACING PLAN Level 1	None
A06.2	HANDIBRAC DETAIL	None
A06.3	WALL BRACING CALC-0	None
A06.4	WALL BRACING-CALC-1	None
A06.5	GIB HANDIBRAC	None
A07	ROOF FRAMING PLAN	None
A07.1	LINTEL/STUD FIXINGS-TIMBER	None
A08	DESIGN IT/PROLAM CALCS	None
A09	ROOF PLAN	None
A09.1	H1	None
A09.2	H1	None
A09.3	H1	None
A09.4	H1	None
A10	ELEVATIONS	None
A11	ELEVATIONS	None
A12	RISK MATRIX	None
A13	CROSS SECTION A-A	None
A13.1	ARCHITECTURAL DETAILS A-A	None
A13.2	ARCHITECTURAL DETAILS A-A	None
A13.3	ARCHITECTURAL DETAILS A-A	None
A13.4	ARCHITECTURAL DETAILS A-A	None
A13.5	ARCHITECTURAL DETAILS A-A	None
A14	CROSS SECTION B-B	None
A15	LONG SECTION C-C	None
A15.1	ARCHITECTURAL DETAILS C-C	None
A16	DESIGNIT-1	None
A17	DESIGNIT-2	None
A17.1	DESIGNIT-3	None
A17.2	DESIGNIT-4	None
A17.3	DESIGNIT-5	None
A18	DESIGNIT-6	None
A19	LEVEL ENTRY SHOWER-TIMBER MARMOX	None
A20	HEAD, VERTICAL TRAPEZOIDAL/CAVITY CLADDING I	None
A20.1	SILL, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DE	None
A20.2	JAMB, VERTICAL TRAPEZOIDAL/CAVITY CLADDING I	None
A21	EXTERNAL CORNER, VERTICAL TRAPEZOIDAL/CAVI	None
A21.1	INTERNAL CORNER, VERTICAL TRAPEZOIDAL/CAVIT	None
A22	SOFFIT, VERTICAL TRAPEZOIDAL/CAVITY CLADDING	None
A22.1	BASE, VERTICAL TRAPEZOIDAL/CAVITY CLADDING I	None
A22.2	METERBOX HEAD, VERTICAL TRAPEZOIDAL/CAVITY	None
A22.3	METERBOX SILL VERTICAL TRAPEZOIDAL/CAVITY C	None
A22.4	METERBOX JAMB, VERTICAL TRAPEZOIDAL/CAVITY	None
A23	HEAD,SILL, WINDOW, VERTICAL SHIPLAP/CAVITY CL	None
A24	JAMB, WINDOW, VERTICAL SHIPLAP/CAVITY CLADDI	None
A25	HEAD,SILL,DOOR,. VERTICAL SHIPLAP/CAVITY CLAD	None
A26	JAMB,DOOR,, VERTICAL SHIPLAP/CAVITY CLADDING	None
A27	INTERSTORY DRAINED JOINT, VERTICAL SHIPLAP/C	None
A28	BASE,SOFFIT, VERTICAL SHIPLAP/CAVITY CLADDING	None
A29	TYPICAL CAVITY FIXING	None
A30	CLADDING PENETRATION DETAIL	None
W01	WINDOW/DOOR SCHEDULE	None
W02	WINDOW/DOOR SCHEDULE	None
B01	E3-BATHROOM DETAILS	None
B03	BATHROOM TILED DETAILS	None
B09	GIB AQUALINE KITCHEN DETAILS	None
M02	BOWMAC BOTTOM PLATE FIXING	None
M03	LUMBERLOK DECK CONNECTION DETAILS	None
M04	BEDDING AND BACKFILLING	None
M05	WATER FILTRATION DEVICE	None
M06	WATER ATTENUATION	None
M09	STUD-PLATE FIXING	None
M10	STUD-PLATE FIXING	None
M11	FIXING TYPE & CAPACITY	None
M12	BOWMAC STUD/TOP PLATE FIXING	None
M13	MITEK LINTEL/STUD FIXINGS	None
M12.1	MITEK-OPTIONAL STUDLOCK LINTEL FIXINGS	None
M12.2	MITEK-OPTIONAL STUDLOCK LINTEL FIXINGS	None
M14	DEKTITE DETAIL	None
M17	SADDLE FLASHING DETAIL	None
H01	GAS CALIFONT DETAILS	None
H02	GAS CALIFONT DETAILS	None
HO3	GAS CALIFONT DETAILS	None
WC01	GIB AQUALINE INSTALLTION DETAILS	None
WC02	GIB AQUALINE INSTALLTION DETAILS	None
WC10	GIB AQUALINE INSTALLTION DETAILS	None
WC03	GIB INSTALLTION DETAILS	None
WC04	GIB INSTALLTION DETAILS	None
WC05	GIB INSTALLTION DETAILS	None
WC06	ECOPLY INSTALLTION DETAILS	None
WC07	UNEX DETAILS	None
WC08	UNEX DETAILS	None
WC09	UNEX DETAILS	None

Proposed Alteration/Addition of Existing Dwelling

For

M & S Scott

6 Tui Street, Ahipara

beard architecture
architectural and structural designers
design vision strategy

LICENSED BUILDING PRACTITIONER
www.dbh.govt.nz
114524
BUILDING CONFIDENCE

Beard Online Architecture D M Beard Structural LTD **Doug T:** 022 454 9863 **E**: beardarc48@gmail.com **Tyler T:** 021 247 7232 **E**: tylerkharissa@gmail.com **Kirsty T:** 022 167 9900 **E**: kirstyboarch22@gmail.com 106 Arawhata Road Kaingaroa 0483

DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.

IMPORTANT NOTE TO ALL CONTRACTORS & SUPPLIERS:
This schedule overrides all timber treatment references made anywhere else in these documents or other attached documents.
Please check before supplying, ordering or installing any materials.

SCHEDULE OF TIMBER TREATMENT

H1.2 - Framing protected from the weather, above ground with the possibility of exposure to moisture.
- Roof framing with lined soffits.
- Exterior walls protected from the weather.
- Wall framing.
- Enclosed Subfloor framing except piles or exposed bearers.

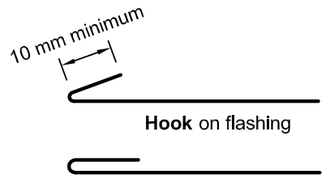
H3.1 -
- Exterior painted posts and beams.
- Enclosed lintels and posts supporting enclosed balconies.
- Enclosed balcony ply and joists.
- Balustrade framing.
- Cavity battens.

H3.2 - Framing exposed to the weather above ground with a risk of trapped water.
- External rafters and beams.
- Timber slatted decking joists and bearers.
- Fence pailings and rails not in contact with ground.

H5 - Timber in contact with the ground or within 100mm of the ground.
- Piles

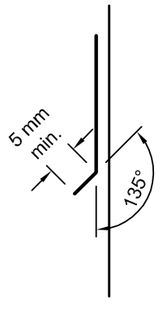
Denotes PROLAM, hySPAN, hyJOIST, hyONE.

HEMS & HOOKS FOR L, M, H, VH & EH WIND ZONES

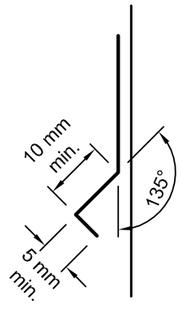


Hem may be flattened but not completely closed

NOTE: (1) For L, M, H, VH wind zones, *hooks* and *hems* may be omitted on *flashing* upstands on condition the upstand dimensions are increased by 25 mm.
(2) For EH wind zone *hems* and *hooks* are mandatory. Refer paragraph 4.5.1.



'**Kick-out**' at bottom edge of vertical flashing



'**Bird's beak**' at bottom edge of vertical flashing

SUBFLOOR ACCESS DOOR:
Provide a 600w x 450h subfloor access door to allow access to subfloor area. This may be placed to best advantage.

CORROSION 'D' ZONES:
All exposed and sheltered structural fixings are to be 304 Stainless Steel (SS) for Corrosion Zone D Environment.

COLOURSTEEL:
COLOURSTEEL WALL/ROOF CLADDINGS & FLASHINGS are to be Coloursteel MAXAM. (Superior protection for Mild inland enviroments to very Severe coastal enviroments). Refer to Enviromental Catagories & Product Maintainance Recommendations in Plans.

FLOOR JOISTS/LATERAL SUPPORT:
NZS3604:2011 (7.1.2.3) In addition to any lateral support required by 7.1.2.1, floor joists having a span of over 2.5m and a depth of 4 or more times their thickness shall be laterally supported by continuous blocking or strutting complying with 7.1.2.4 at mid-span.

LPG CYLINDERS:
•Store cylinders upright in a dry, well-ventilated place, away from heat sources. They must be placed on a level, firm, fire-resistant base and be well secured to stop them falling over.
•Cylinders must be located away from doors and windows, and at least 1 metre away from drains, gully traps and so on.
•Check cylinders regularly to make sure they are in good condition, and not damaged.

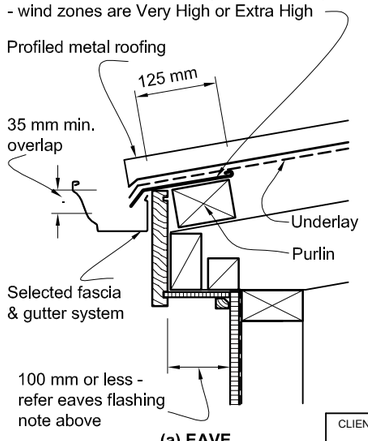
PLUMBING:
AS/NZS 3500.1. 2015 for cold water, AS/NZS 3500.2. 2015 for foul water and AS/NZS 3500.4.2015 for hot water.

E3/AS1 requires the following:
Floor surfaces of any space containing sanitary fixtures or sanitary appliances must be impervious and easily cleaned.
Wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.
Surfaces of building elements likely to be splashed or become contaminated in the course of the intended use of the building, must be impervious and easily cleaned.
Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

FLOOR COVERINGS
Floor coverings to Kitchen/Laundry areas to be either Vinyl with chemically welded joins or Ceramic floor tiles:
Lay over ARDEX WPM 001 liquid membrane if Floor substrate is timber composite sheet.

E2/AS1 requires the following:
Turn-downs at gutters.
The lower ends of trapezoidal and trough profile roofing shall be turned down at gutters, where the roof pitch is less than 10°.
The turn-down shall be 30° from the plane of the sheet.
Also:
Vertical fixing Trapezoidal Wall Cladding on cavity is not provided for because, solid cavity battens would potentially compromise the ventilation and drainage of the cavity. However, using castellated battens (as an alternative solution) overcomes this and is widely accepted.

Eave flashing required where all of the following conditions are met:
- Roof slope less than or equal to 10°, and
- soffit width less than or equal to 100 mm, and
- wind zones are Very High or Extra High



(a) EAVE

Schedule of Important Notes to be read and understood by all relevant Contractors & Suppliers.

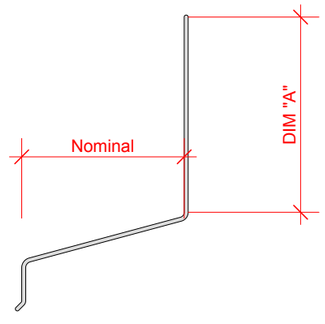
Note: Prior to any Requests for Further information letters being sent, the individual processor or processors are requested to call 0224549863 or 0212477232 to discuss all items, in order for the designer to provide clarification.
This agreement was previously mandated by council.

STAIRS
All accessible stairways shall have handrails on both sides.
All other stairways with a width of 2.0m or less and having two or more risers, shall have handrails on at least one side.
Handrails may be omitted on stairways of two or three risers within or giving access to a household unit.
Any stairway which exceeds 2.0m in width shall:
a) Have handrails on both sides and, where the width exceeds 4.0m, shall also have an intermediate handrail provided at the centre of the stairway, or
b) If the stairway is essentially an outdoor architectural feature and not required to be an accessible stairway, have at least one handrail. Examples of such stairways are those leading to civic areas, or to decks on Housing.
Where enclosed stairs are shown on the drawings, the builder is to ensure that a minimum clearance of 2000 is provided along the entire length of the pitch line (nose of all treads).
Construction of all stairways to comply with NZBC compliance document Clause D1 - Access routes.

WET AREA WALL AND CEILING LININGS AND FINISHES
In accordance with NZBC clause E3 *Internal moisture*, wall linings and finishes exposed to water splash must be impervious and easy to clean.
Acceptable Solution E3/AS1 lists suitable linings and finishes for wet areas as:
- timber and timber-based materials (such as timber boards, plywood, particleboard, MDF or compressed sheet) if sealed with a waterproof applied coating.
- waterproof sheet material such as vinyl with sealed joints.
- ceramic and stone tiles with 6% maximum absorption (joints must be waterproof and bedding material specified as suitable for wet area use).
- cement-based solid plaster and concrete with steel trowel or polished finish.
- cork tile or sheet with a waterproof coating and sealed joints.
- monolithic applied coatings (e.g. terrazzo) with a polished, non-absorbent finish.
- sheet materials (e.g. plasterboard) with vinyl-coated wallpaper or semi-gloss or gloss paint finishes.
- water-resistant sheet linings with decorative, high-pressure laminate or factory-applied polyurethane or resin finishes.
- modular lining units that are impervious and are easy to clean with impervious joints.

E3/AS1 specifically excludes the use of the following in showers:
- Cork tile or sheet with a waterproof applied coating.
- Sheet materials (e.g. plasterboard) with vinyl-coated wallpaper or semi-gloss or gloss finish.
- Ceramic and stone tiles that have not been laid over a continuous, waterproof membrane.

EXTRA HIGH WIND ZONE:
Hooks and hems to all flashing upstands. All window head flashings are to have a minimum 60mm upstand.Refer to Table 7 on sheet 000



ALL WIND ZONES -EXCEPT EXTRA HIGH-DIM 'A' = 60mm
EXTRA HIGH WIND ZONE-DIM 'A' = 85mm
Note: DIM 'A' may be reduced by 25mm if a hem is included

WINDOW HEAD FLASHING WITHOUT HOOK OR HEM

D.M.Beard Structural Ltd & Beard Online Architecture advise the territorial Authority responsible for issuing any resource Consent, Project Information Memorandum, or Building Consents related to these and accompanying documents that, they accept absolutely no responsibility for any financial charges made on behalf of the legal owner of the property described herein.

NOTIFY CHANGES
Notify this office of any amendments requested by the client or any territorial authority and secure our approval prior to commencing work on any of the requested changes.

LINTELS:
Contractors & Materials Suppliers providing materials quotations are to verify that all lintel sizes above windows & door openings are in compliance with NZS 3604:2011 Section 8, Tables 8.9, 8.10, 8.11, 8.12, 8.13 and ensure that the correct timber grades & sizes are supplied for the job. NOTE: Lintels only occur in load bearing walls, header plates in non-load bearing walls are not classed as lintels.

FRAMING TIMBER
All structural framing timbers, studs, plates, rafters, lintels, beams, purlins, joists, bearers, posts, trusses etc are to be SG8.
Also refer to SCHEDULE OF TIMBER TREATMENT ON THIS SHEET.

SLIP RESISTANCE
Mean coefficient of friction u, is not less than 0.4 when tested in accordance with AS/NZS 3661.1. Table 1A will provide adequate slip resistance (u>0.4). All Timber Deck surfaces are to be coated & sand/grit impregnated. The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2mm so that it is not submerged by the coating and not greater than about 2-3mm so that it remains tightly bound to the surface. If overpainted, testing is required to establish acceptability of slip resistance.
The above information can be further referenced in D1/VM1 (Section 2 Level Access Routes) and contractor is to ensure all references to slip resistance are complied with.

SAFETY BARRIERS
All safety barriers including balustrades & interior/exterior stairway handrails to comply with NZS 3604:2011, NZBC Clause B1-Structure, NZBC clause D1-Access Routes, NZBC F4 Clause F4.3.4 & F4.3.5 and Acceptable Solutions F4/AS1, Table 1. Refer to index F4/VM1 & AS1.

IMPORTANT NOTE:
All nuts & bolts, structural & proprietary fixings to comply with NZS 3604:2011 Section 4 -DURABILITY, tables 4.1, 4.2, 4.3, 4.4 and ensure that this section of "NZS 3604:2011 Timber Framed Buildings" is clearly understood before any materials are ordered or installed. Materials suppliers are to refer to structural fixings below. All bolts passing thru timber must have 50 x 50 x 3 flat washers to all timber faces. Where any of these connections are directly exposed to the weather elements or are less than 600 above FGL they are to be 304 Stainless Steel.

WINDOWS & DOORS
All dimensions shown are over the Window/Door Reveals. Allow addition 15mm for cavity fixed, or 55mm for direct fixed. Check all dimensions on site before manufacturing. Refer to floor plan for location & direction of door opening. All exterior joinery to be powdercoated aluminium. Owner to choose the colours. All exterior joinery to be manufactured to comply with the wind zone as noted on THE SITE PLAN. All timber reveals are to be H3.1.

Interconnected Smoke Alarms SA
Refer to NZS 4514;2021
The location of Interconnected Smoke Alarms shall be as follows;
a). Smoke alarms shall be located on or near the ceilings;
b). Smoke Alarms shall be located in all bedrooms, living spaces, hallways, and landings within the building;
c). Where a kitchen is separated from the living spaces and hallways by doors that can be closed, an alarm specified by it's manufacturer as suitable for a kitchen shall be located in the kitchen. This may be a heat alarm to avoid nuisance activations;
d). In a multi-level household unit, there shall be at least one smoke alarm on each level; and
e). Where more than one smoke alarm is needed to meet the requirements of this standard, these smoke alarms shall all be interconnected so that when one activates, all smoke alarm devices in the household unit will sound.

REV	DATE	BY	REVISION AMENDMENTS	DESCRIPTION	DATE	ISSUE NO.

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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # 1
DWG	SCHEDULE OF NOTES-1	DRAWN KB/TB/DB CHKD KB/TB/DB	

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LUMBERLOK FIXING

Lumberlok Ceiling Ties
160 or 200 long fixed with LUMBERLOK SS product nails 30mm x 3.15ø.

Nail on Plate
Fixed with LUMBERLOK SS product nails 30mm x 3.15ø.

Joist Hangers
All Joist Hangers connections should be fixed with LUMBERLOK SS product nails 30mm x 3.15ø or Type 17-12g Hex Head SS screws.

Muiltigrips
Fixed with LUMBERLOK st.st product nails 30mm x 3.15ø or Type 17-14g Hex Head SS screws.

Bottom Plate Fixing Anchor
Bottom plate fixings are temporaraily fized to the perimeter boxing @ 900 crs max prioir to concrete pour and folded around the bottom plate, LUMBERLOK SS product nails 30mm x 3.15ø are then applied to secure frames in position, altnerative to concrete bolts, or the drilling of bottom plates and lifting of the frame over cast in steel rods.

Header Block Anchor
Where concrete header blocks are used to form the concrete slab perimeter, the product is clipped onto the block edge @ 600 crs max and left until the slab is poured and frames reay to stand. Fixed with LUMBERLOK SS product nails 30mm x 3.15ø to bottom plate.

Strip Brace
Fix using 5 x LUMBERLOK SS product nails 30mm x 3.15ø at each end if strip can be folded over timber face otherwise 8 nails at each end.

Muilti Brace
Fix using 11 x LUMBERLOK SS product nails 30mm x 3.15ø at each end if Muilti Brace can be folded over timber face otherwise use 15 nails each end.

12kN 7 6kN pile Fixing
Refer to 6Kn and 12KN Connection Detail attached.

Cyclone Ties
Fix wit LUMBERLOK SS product nails 30mm x 3.15ø.

Concealed Purlin Cleats
Fixed with LUMBERLOK Type 17-14g Hex Head SS screws and LUMBERLOK SS product nails 30mm x 3.15ø.

Girt Plate
Fixed with min 8 x LUMBERLOK SS product nails 30mm x 3.15ø per flange or 3 x LUMBERLOK Type 17-14g x 35 mm Hex Head SS screws per flange (6 screws/cleat).

Multigrips
Fix with LUMBERLOK SS product nails 30mm x 3.15ø or Type 17-14g Hex Head SS screws.

Please Note: Post/Bearer Brackets, Straps, Angle Brackets, Angles, Z/L Beam Supports for bolts and nail sizes. Fixing Note. All bolt holes accommodate M12 Bolts unless noted. Nail holes to accommodate 40mm x 3.15øF. Head Square twisted shank nails (HDG).

REFER TO MITEK LUMBERLOK STRUCTURAL ON-SITE GUIDE.

SUBSTITUTION OF PRODUCTS AND MATERIALS AS NOTED ON THE DRAWINGS

Please note that substitution of any materials as specified on the drawings may not be changed without notifying the designer in advance.

If any branded products or otherwise that are changed and that involves changes and/or amendments to the original drawings, there will be an additional design fee to cover the cost of changing/amending the drawings.

This may include revising any of the following:
Minor Variations.
Amendments to:
Wall wraps
Wall/roof claddings
Internal wall linings.
Balustrades.
Windows/doors including sizes and new/revised locations.
Plans and associated dimensions and notes.
Cross Sections, related details and applicable notes.
Details and applicable notes.
Manufacturers details.
Revised wall and/or subfloor bracing design.
Engineered components.
H1 Energy Calculations.
General Specifications.

DIMENSIONS
Contractor to check & verify all dimensions on site before commencing construction.
Any discrepancies to be reported to the designers immediately.
Do not dimension or scale from these drawings.

CONCRETE STRENGTH
Generally, all concrete shall be at 25mPA strength at 28 days, unless noted otherwise.

NOTE TO PLUMBING CONTRACTOR
The Plumber is to provide an overflow relief gully in the most advantageous position. The water trap is to be charged with at least one waste water drain or a hose tap located directly above.
All PVC drains, waste pipes & other plumbing systems to conform to AS 3500.2

STRUCTURAL FIXINGS
The contractors & materials suppliers to allow to provide all structural fixings, including those for, floor joists, rafters & trusses whether shown or not shown on the drawings, in compliance with NZS 3604:2011 including section 4 - Durability & in particular the supply of all 304 or 316 SS fixings & nails in Sea spray & Zone 1 areas.

NOTE TO All CONTRACTORS
While on site all contractors are to hold a copy of **NZS 3604:2011** & any other relevant NZBC compliance documents that specifically relate to this project including Clauses B1, B2, D1, E2, F4, G1 & G12. A copy of these compliance documents (Excluding NZS 3604:2011) can be downloaded & printed from the Department of building & housing website which is www.dbh.govt.nz
ALL CONSTRUCTION IN ACCORDANCE WITH NZ BUILDING & ENGINEERING STANDARDS AND DETAILS INCLUDED WITHIN THE ATTACHED DOCUMENTS AND SPECIFCATIONS. IF IN DOUBT OVER ANY DETAIL PLEASE CONTACT THE DESIGNERS IMMEDIATELY

NAILING SCHEDULES
The Contractor is to ensure all nailed fixings to comply with NZS 3604:2011 tables 6.8, 7.5, 8.19, 10.14 & 13.3 & comply also with Section 4 - Durability.

EDGE FIXINGS FOR ALL SHEET MATERIAL & EXTERIOR/INTERIOR CLADDING
Contractor & Materials Suppliers are to allow to supply all nogging to ensure edge fixings for all sheet material & exterior/interior claddings are supported in compliance with the manufacturers recommendations.

FOUNDATION NOTES:
1. The Site Suitability Report is based of a maximum of 4 Scala-Penetrometer Test Sites.
2. All Pile Footings/Foundations are to be excavated to the depths as dimensioned or noted on the Foundation Plan and Details.
3. They should be at least 450mm into “Good Ground” as determined in NZS3604:2011.
4. If for any reason during Pile/Footing Excavation soft ground is observed/encountered then the Designer should immediately be contacted prior to any further Pile Excavation so that further investigations can be carried out and this may mean that a Registered Structural Engineer will be required to become involved.
5. The Site Suitability Report is a general assessment (based on NZS3604:2011) of the expectations of where good ground should be encountered, however there could be Pile Excavations that may need to be deeper to encounter good ground as per number 4. above.
6. All piles are to go through existing fill and into good ground.

TYPICAL TIMBER FOUNDATION NOTES
1. Nogs under bracing lines, walls parallel to joists.
2. Base cladding to be 6mm hardiflex with base vents @ 1880 crs, 750 from corners. Allow for base access.

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # 2
DWG	SCHEDULE OF NOTES-2	DRAWN KB/TB/DB CHKD KB/TB/DB	

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20 H3.1 STRANDFLOOR

20 H3.1 Strandfloor® sheet flooring is manufactured from strands of radiata pine. The wood strands are bonded with a PMDI resin and contain a mineral wax-based water repellent throughout the thickness of the sheet. At manufacture, the sheets have an average density of 680 kg/m3 and average moisture content of 10%. The sheets are identified by the product name printed on one face.

20 H3.1 Strandfloor® will support loads of up to 1.5 kPa in buildings built within the scope of NZS 3604 with maximum floor joist spacing of 600 mm centres. Strandfloor® will support loads up to 3 kPa for all other non-domestic flooring applications built within the scope of NZS 3604 with maximum floor joist spacing of 600 mm centres. Point loads may reduce allowable floor joist spacing, please refer to the Floor Design section of the Technical Literature.

20 H3.1 Strandfloor® will support loads of up to 1.5 kPa in buildings built within the scope of NZS 3604 with maximum floor joist spacing of 600 mm centres. Strandfloor® will support loads up to 3 kPa for all other non-domestic flooring applications built within the scope of NZS 3604 with maximum floor joist spacing of 600 mm centres. Point loads may reduce allowable floor joist spacing, please refer to the Floor Design section of the Technical Literature.

Each sheet of 20 Strandfloor® must span at least two floor joist spans (i.e. be continuous over three joists), except at floor edges where infill sheets may be required.

20 H3.1 Strandfloor® must be fixed with 60 x 2.8 mm hot-dip galvanised or stainless steel, annular-grooved flooring nails, or 50 x 8 g screws (non-diaphragm applications only) at *150 mm centres around the perimeter of the sheets, and at 300 mm centres at intermediate supports. Nails may be power or hand driven but must be parallel with, and no closer than 10 mm to the edge of the sheet.*

TILED WET AREAS (BATHROOMS/SHOWERS

Acceptable Flooring Substrate
Sheet material substrates supported by timber framing, the building's structural system complies with NZS 3604, Timber-framed buildings.
Reconstituted Wood Panel Flooring to have joists/nogs @ 600 crs max.
Non-oriented strand board panels that are bonded with PMDI resin, are water repellent, have an average density of 680kg/m3, are treated to H3 with a waterborne treatment not LOSP, and are
suitable for use as the timber substrate under wet-area waterproof membrane systems.
The moisture content of reconstituted wood flooring at the time of priming must not exceed 16%.
All face surfaces and edges must be primed prior to sheet installation.
All reconstituted wood panels, boards or products other than non-oriented strand board as described above are outside the scope of this Code of Practice. *Particleboard is not suitable for*
use as a new floor to any wet area.

SHEET WALL LININGS TO WET AREAS

Water-resistant gypsum plasterboards 10mm
Fibre-cement sheet 9mm
Reconstituted wood panels 12mm
Plywood 12mm

WATER PROOF MEMBRANE

Compatibility with Tile Adhesives
Wet-area waterproof membrane systems and any tile adhesive must be demonstrated as compatible in accordance with AS ISO 13007.1:2014 Ceramic tiles - Grouts and adhesives, 5.2,
and recommended for use together by both the membrane Supplier and the adhesive supplier.
Wet-area waterproof membrane systems are often over-surfaced with tiles fixed with a tile adhesive. It is imperative that the selected waterproof membrane system and tile adhesive be compatible, and it is best practice that they are from the same Supplier.

PLYWOOD

Plywood is not commonly used as a wall lining in wet areas, but it is more stable than timber and wood-based products. It can be treated, but treatment must be compatible with waterproofing membranes or coatings applied and should be a water-based preservative such as CCA (LOSP is not suitable because of the solvents used). It has a high resistance to impact, is a suitable substrate for tiling and may be used in water splash areas if it has an appropriate finish. It is not suitable as an exposed finish in showers.
Plywood must:

- be a minimum of 9 mm thick
- have edges sealed prior to installation
- have a minimum of three coats of water- or oil-based, semi-gloss or full-gloss paint (oiled finishes are not recommended in wet areas).

ARDEX WPM 001

Prime the surface with ARDEX WPM 265 water based primer or MAPEI Eco Prim T Plus and allow to dry.
Two coats of ARDEX WPM 001 are required to achieve a minimum total dry film thickness of 1.0mm. The flooring recommendations should be extended at least 150 mm up all perimeter walls.
Prime the surface with ARDEX WPM 265 water based primer and allow to dry.

ARDEX Undertile Liquid Membranes have been appraised for use as waterproofing membranes for
the internal wet areas of buildings, within the following scope:
on floor substrates of concrete, reconstituted wood panel flooring, plywood, fibre cement compressed sheet and fibre cement sheet tile underlay, and on wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
when protected from physical damage by trafficable floor finishes; and,
where floors are designed and constructed such that deflections do not exceed 1/360th of the span.
for example, if L = 555 mm (span between floor joists)
L/360 = 555/360 = 1.5 mm is maximum permitted deflection.
Note; Where larger tiles are to be used or the joist span is over 3 metres, then reduce the deflection to L/480

PAINT AND CLEAR FINISHES

Paints and clear finishes should not be used on surfaces that are continually wet. In areas where occasional wetting occurs in well-ventilated kitchens and bathrooms, water-based acrylic enamel paint applied over a solvent-based sealer coat is generally satisfactory. The ability to withstand moisture is better if water-resistant grade plasterboard is used.
High-gloss coatings should be used in areas of high wear and where regular cleaning is required. Semi-gloss coatings may be used in areas of low wearing or wetting. Matt finish coatings should only be used in dry areas.
In comparison to semi-gloss and matt-finish coatings, high-gloss coatings:

- are generally more durable
- have a higher resistance to abrasion and staining
- tend to highlight substrate imperfections
- increase glare and diffuse light less
- are easier to clean
- are less affected by mould growth.

3.0 WATERSPLASH AS PER E3/AS1

3.1 Lining materials

3.1.1 Floors
The following finishes to floors satisfy the performance for impervious and easily cleaned surfaces in spaces containing sanitary fixtures or sanitary appliances. In open plan spaces this surface shall extend at least
1.5 m from all sanitary fixtures and sanitary appliances:

3.1.2 Walls
The following linings and finishes to walls satisfy the performance for impervious and easily cleaned surfaces in areas adjacent to sanitary fixtures or sanitary appliances, or otherwise likely to be splashed in the course of the intended use of the building:
a) Integrally waterproof sheet material
(e.g. polyvinylchloride) with sealed joints.
b) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints, and bedded with an adhesive specified
by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use.
c) Sheet linings finished with a semi-gloss or gloss coating or a hard-wearing low-sheen latex paint containing mould inhibitors.
d) Water resistant sheet linings finished with decorative high pressure laminate or factory applied polyurethane or resin, and installed with impervious joints (see Figure 2)

WET AREA FLOORING

If water penetrates the impervious surface, preservative treatment will delay the decay of the timber. This delay allows time for the cause of the leak to be noticed and remedied before permanent damage is done. If there is doubt that the maintenance requirements of an impervious surface can be assured then the flooring beneath must be minimum H3.1 treated (such as H3 plywood) and not particleboard. Note that this refers to 'flooring' only, and not to the underlying floor framing. However, if the wet area contains a shower fixture, special consideration should be given to the flooring plus the framing.

FLOORING AND FRAMING UNDER SHOWERS

Flooring and framing under showersWhere frequent water splash is present from a shower, there is a high risk of water entry. Access for inspection behind showers is difficult and water leaks may remain undetected. Clause B2 of the Building Code requires that building elements are durable depending on, among other things, ease of access and replacement. Flooring under a shower tray is moderately difficult to get to and replace and accordingly, Clause B2.3.1(b)(i) of the Building Code requires a minimum 15-year durability (note that this must be extended to a minimum 50-year durability where the flooring performs a structural function, such as where it is part of a structural diaphragm or where it is laid underneath the bottom plate).
In a comment on Clause 110.3.1, NZS 3602 recommends the following solution for flooring under showers:
Considerable undetected water damage to particleboard and surrounding wall floor framing can occur under baths used as a shower and under certain types of shower trays. It is recommended that H3 treated plywood be used under such fittings where maintenance cannot be assured. Adjoining timber framing and timber supporting these fittings should be treated.
The level of treatment for the timber framing is not mentioned and needs to be determined on a case-by-case basis depending on the risk involved. The risk must be assessed in terms of the likelihood of water entering below or behind the shower and remaining there long enough to cause damage.
Where there is a risk of water damage, treatment of the surrounding and supporting framing to H3.1 is likely to satisfy this requirement, but lesser levels of treatment may be appropriate in some circumstances. If it can be demonstrated that there is no risk of water damage then neither the flooring nor the framing would need to be treated. Note that the timber may need to be treated for other reasons, such as insect attack or ground atmosphere – refer to NZS 3602 for more information.

All dimensions to be checked on site prior to commencement of work.
Work only to figured dimensions, in the event of a discrepancy contact the Designer.
Do not change any details without prior consent from the Designer.
Building Contractor to check all levels, dimensions, connections & manufacturers specifications before beginning or manufacturing any work to ensure that all materials & labour necessary to complete the project has been allowed for, whether inferred, drawn on plans or not.
Liability will not be accepted by Designer for any materials or labour not shown on drawings or required by council or during construction.

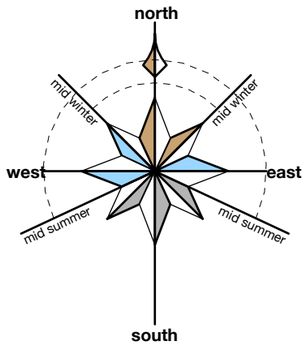
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			REVISION AMENDMENTS

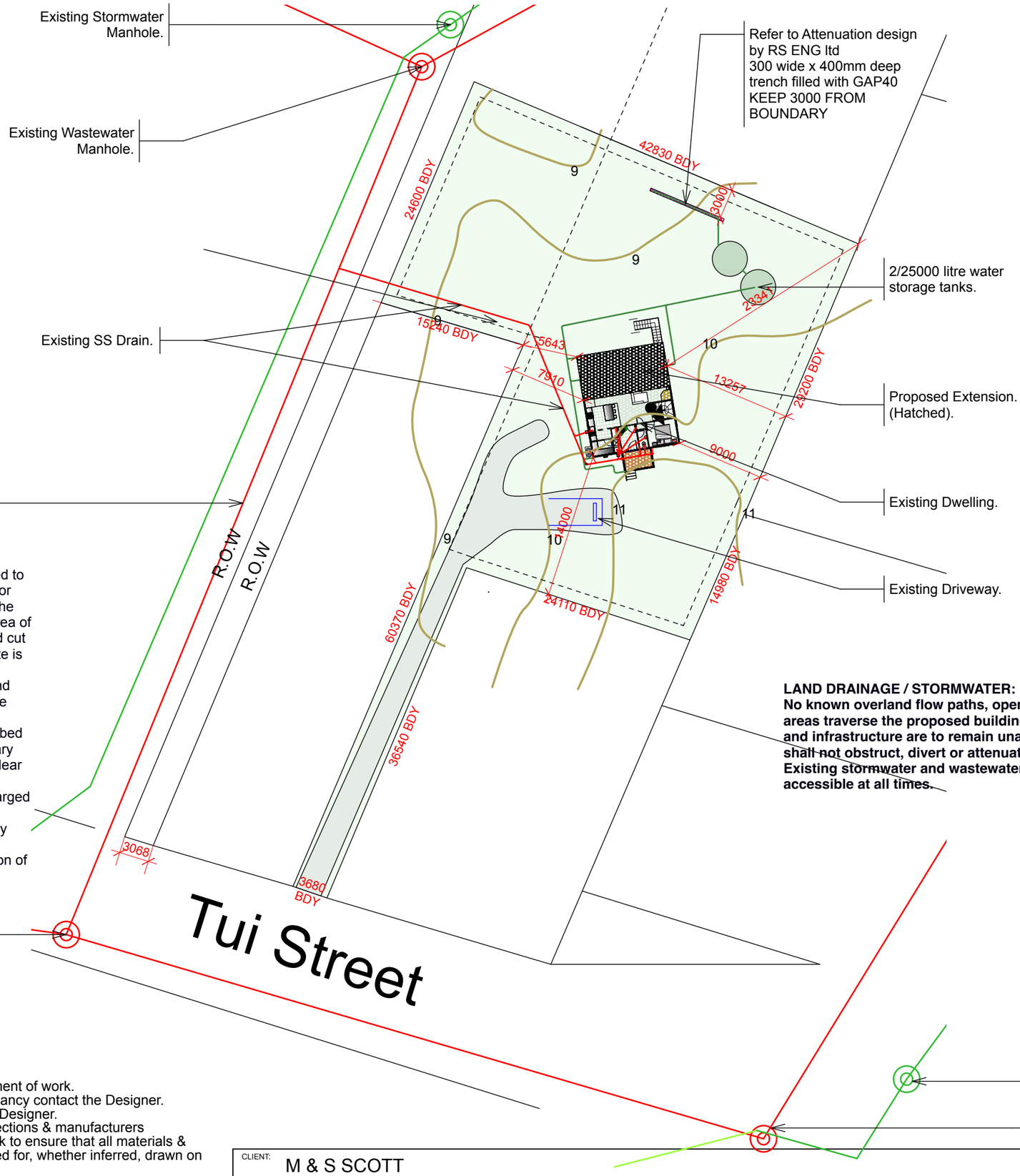
DATE
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CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE #	14/08/2026	DWG # 3
	SCALE @ A3	NTS	
DWG SCHEDULE OF NOTES-3	DRAWN	KB/TB/DB	
	CHKD	KB/TB/DB	

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PROPOSED EARTHWORKS / EROSION & SEDIMENT CONTROL

Earthworks associated with the proposed works are limited to localised excavation for the new pile foundations and minor ground preparation associated with the proposed shed. The proposed shed is located on an existing generally level area of the site and only minor trimming, levelling and/or localised cut and fill is anticipated. No significant recontouring of the site is proposed.

All earthworks shall be undertaken to minimise erosion and prevent sediment-laden runoff leaving the site. Appropriate erosion and sediment controls shall be installed prior to commencement of earthworks and maintained until disturbed areas are stabilised. Excavated material and any temporary stockpiles shall be contained within the site and located clear of stormwater infrastructure.

No sediment, soil or sediment-laden water shall be discharged to Tui Street, adjoining properties, or the existing public stormwater system. Disturbed areas shall be progressively stabilised by grassing, landscaping, hardstand or other suitable means as soon as practicable following completion of the works.

SITE NOTES:
6 TUI STREET, AHIPARA

LEGAL DESCRIPTION
LOT 2
DP 110831
VALUATION NUMBER: 00039-11800
TOTAL LAND AREA: 1725 m2

SITE COVERAGE
EXISTING BUILDING AREA: 54m2
EXISTING DRIVEWAY AREA: 183m2
PROPOSED BUILDING AREA: 72m2
PROPOSED ROOF TOTAL AREA: 88m2
PROPOSED SHED AREA: 56m2
TOTAL AREA OF IMPERMEABLE SURFACES: 381m2
TOTAL % OF IMPERMEABLE SURFACES: 22.1%

FNDC ZONE **GENERAL RESIDENTIAL**
COASTAL ENVIRONMENT
SETBACK TO BOUNDARIES 3 metres from roadside, 1.2 from other boundaries

EARTHQUAKE ZONE 1
EXPOSURE ZONE D
CLIMATE ZONE 1
WIND REGION A
WIND ZONE **HIGH**
SNOW ZONE NO
LEE ZONE NO

Existing GFA:
Ground Floor = 54m²
Upper Floor = 41m²
Total Existing GFA = 95m²
CE-R1 PER-3 permits extension/alteration up to 20% of existing lawfully established building GFA.

20% of 95m² = 19m² permitted increase.

Proposed GFA increase:
Ground Floor = +18m²
Upper Floor = +30m²
Total Increase = 48m²
48m² / 95m² = 50.5% GFA increase.
CE-R1 PER-3 NOT ACHIEVED.
Refer CE-R1 RDIS-1 – Restricted Discretionary.

LAND DRAINAGE / STORMWATER:
No known overland flow paths, open drains, watercourses or identified flood hazard areas traverse the proposed building footprints. Existing stormwater drainage patterns and infrastructure are to remain unaffected by the proposed works. The proposed works shall not obstruct, divert or attenuate the existing passage of stormwater across the site. Existing stormwater and wastewater infrastructure to remain unobstructed and accessible at all times.

REV | DATE | BY | REVISION AMENDMENTS

DESCRIPTION | DATE | ISSUE NO.

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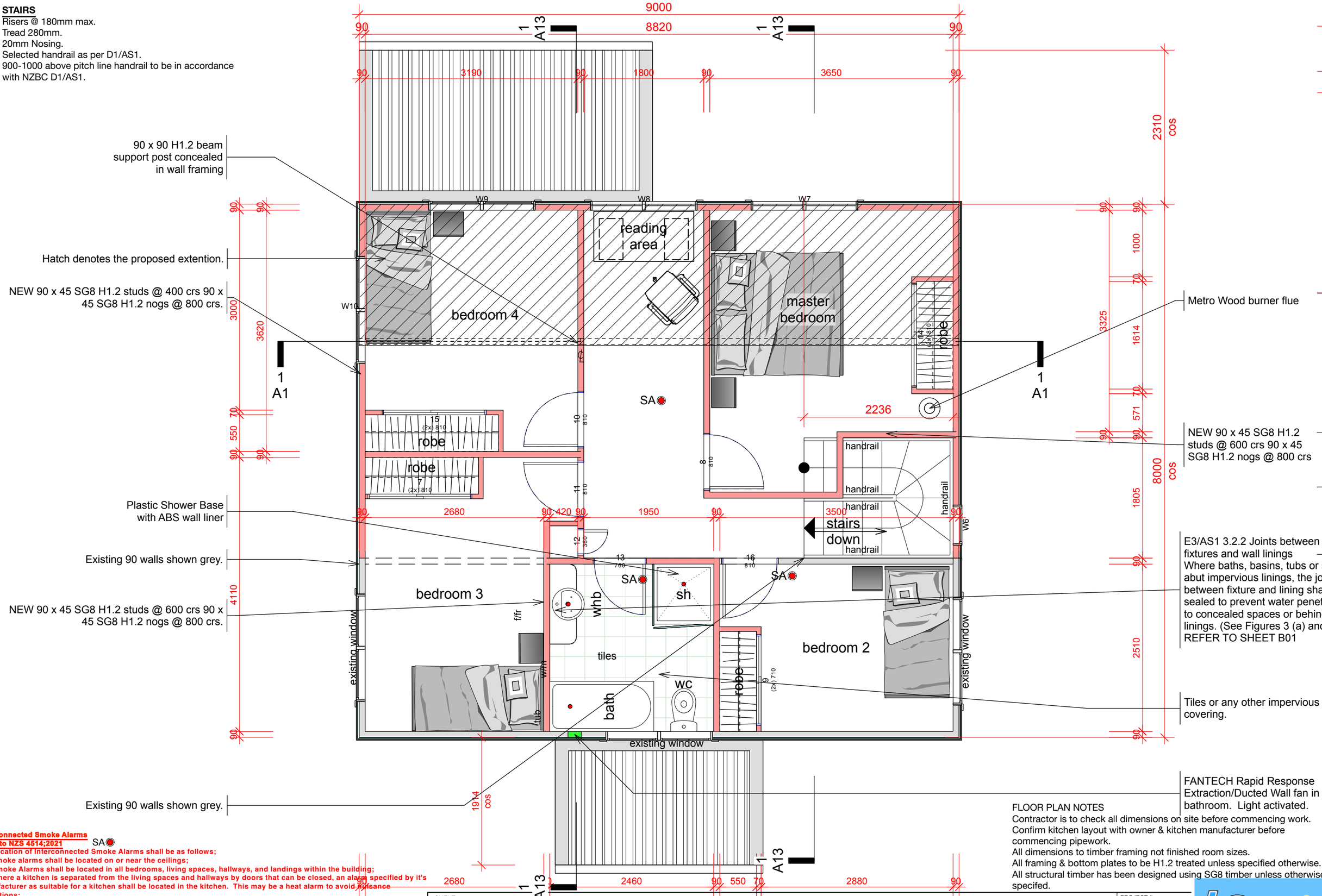
All dimensions to be checked on site prior to commencement of work.
Work only to figured dimensions, in the event of a discrepancy contact the Designer.
Do not change any details without prior consent from the Designer.
Building Contractor to check all levels, dimensions, connections & manufacturers specifications before beginning or manufacturing any work to ensure that all materials & labour necessary to complete the project has been allowed for, whether inferred, drawn on plans or not.
Liability will not be accepted by Designer for any materials or labour not shown on drawings or required by council or during construction.

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:400	DWG # A01
DWG	SITE PLAN	DRAWN KB/TB/DB CHKD KB/TB/DB	

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STAIRS
Risers @ 180mm max.
Tread 280mm.
20mm Nosing.
Selected handrail as per D1/AS1.
900-1000 above pitch line handrail to be in accordance with NZBC D1/AS1.



90 x 90 H1.2 beam support post concealed in wall framing

Hatch denotes the proposed extention.

NEW 90 x 45 SG8 H1.2 studs @ 400 crs 90 x 45 SG8 H1.2 nogs @ 800 crs.

Plastic Shower Base with ABS wall liner

Existing 90 walls shown grey.

NEW 90 x 45 SG8 H1.2 studs @ 600 crs 90 x 45 SG8 H1.2 nogs @ 800 crs.

Existing 90 walls shown grey.

Metro Wood burner flue

NEW 90 x 45 SG8 H1.2 studs @ 600 crs 90 x 45 SG8 H1.2 nogs @ 800 crs

E3/AS1 3.2.2 Joints between fixtures and wall linings
Where baths, basins, tubs or sinks abut impervious linings, the joint between fixture and lining shall be sealed to prevent water penetration to concealed spaces or behind linings. (See Figures 3 (a) and (b).)
REFER TO SHEET B01

Tiles or any other impervious floor covering.

FANTECH Rapid Response Extraction/Ducted Wall fan in bathroom. Light activated.

Interconnected Smoke Alarms
Refer to NZS 4514;2021 SA
The location of Interconnected Smoke Alarms shall be as follows;
a). Smoke alarms shall be located on or near the ceilings;
b). Smoke Alarms shall be located in all bedrooms, living spaces, hallways, and landings within the building;
c). Where a kitchen is separated from the living spaces and hallways by doors that can be closed, an alarm specified by it's manufacturer as suitable for a kitchen shall be located in the kitchen. This may be a heat alarm to avoid nuisance activations;
d). In a multi-level household unit, there shall be at least one smoke alarm on each level; and
e). Where more than one smoke alarm is needed to meet the requirements of this standard, these smoke alarms shall all be interconnected so that when one activates, all smoke alarm devices in the household unit will sound.

FLOOR PLAN NOTES
Contractor is to check all dimensions on site before commencing work.
Confirm kitchen layout with owner & kitchen manufacturer before commencing pipework.
All dimensions to timber framing not finished room sizes.
All framing & bottom plates to be H1.2 treated unless specified otherwise.
All structural timber has been designed using SG8 timber unless otherwise specifed.

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CLIENT:	M & S SCOTT
PROJECT:	6 Tui Street, Ahipara
DWG	PROPOSED FLOOR PLAN-Level 1
DATE #	14/08/2026
SCALE @ A3	1:50
DRAWN	KB/TB/DB
CHKD	KB/TB/DB
PROJECT #	MS-0326
DWG #	A02

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DESCRIPTION | DATE | ISSUE NO.

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STAIRS
Risers @ 180mm max.
Tread 280mm.
20mm Nosing.
Selected handrail as per D1/AS1.
900-1000 above pitch line handrail to be in accordance with NZBC D1/AS1.

(VB1) 240 x 90 SG8 H3.2 Verandah Beam.

90 x 90 H1.2 beam support post.

Tiles or any other impervious floor covering. If Tiles apply ARDEX WPM 001 liquid floor membrane to cover the 1500 rad. Splash Area.

Hatch denotes the proposed extention.

NEW 90 x 45 SG8 H1.2 studs @ 400 crs 90 x 45 SG8 H1.2 nogs @ 800 crs.

Extraction Hood over hob vented through wall.

G3/AS1 1.6 Wall linings (Kitchen)
Wall linings adjacent to appliances and facilities shall have surfaces that can be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, tiles, wallboards with painted or applied impervious coatings or films, are examples of suitable materials for these surfaces.

Existing 90 walls shown grey.

NEW 90 x 45 SG8 H1.2 studs @ 600 crs 90 x 45 SG8 H1.2 nogs @ 800 crs.

2/45g LPG bottles on 600 min x 400 x 100 thick concrete pad.
Bottles to be secured to building with safety chains.
Ensure any bolts penetrating wall cladding have waterproofing EPDM or Neoprene gasket.

RINNAI A26 LPG Water Heater.

Existing 90 walls shown grey.

FANTECH Rapid Response Extraction/Ducted Wall fan in bathroom. Light activated.

900h safety rail to one side.

1000h safety rail to one side of stairs. D4/AS1 Compliant.

Metro Wood burner.

NEW 90 x 45 SG8 H1.2 studs @ 600 crs 90 x 45 SG8 H1.2 nogs @ 800 crs.

E3/AS1 3.2.2 Joints between fixtures and wall linings
Where baths, basins, tubs or sinks abut impervious linings, the joint between fixture and lining shall be sealed to prevent water penetration to concealed spaces or behind linings. (See Figures 3 (a) and (b).) REFER TO SHEET B01

Tiles or any other impervious floor covering.

New 20 thick premium grade H3.2 timber decking fixed to existing deck joists. Joist to be @ 450 crs.

Timber steps.
280w treads
180mm max rise.

timber deck
dining
lounge
kitchen
sink
range
pantry
entry
wc
cupbd
bedroom 1
stairs up
handrail
SA
FFL 12.825
existing window
proposed new work/extention
1 A13
1 A1

Interconnected Smoke Alarms
Refer to NZS 4514;2021 SA
The location of Interconnected Smoke Alarms shall be as follows;
a). Smoke alarms shall be located on or near the ceilings;
b). Smoke Alarms shall be located in all bedrooms, living spaces, hallways, and landings within the building;
c). Where a kitchen is separated from the living spaces and hallways by doors that can be closed, an alarm specified by it's manufacturer as suitable for a kitchen shall be located in the kitchen. This may be a heat alarm to avoid nuisance activations;
d). In a multi-level household unit, there shall be at least one smoke alarm on each level; and
e). Where more than one smoke alarm is needed to meet the requirements of this standard, these smoke alarms shall all be interconnected so that when one activates, all smoke alarm devices in the household unit will sound.

FLOOR PLAN NOTES
Contractor is to check all dimensions on site before commencing work.
Confirm kitchen layout with owner & kitchen manufacturer before commencing pipework.
All dimensions to timber framing not finished room sizes.
All framing & bottom plates to be H1.2 treated unless specified otherwise.
All structural timber has been designed using SG8 timber unless otherwise specifed.

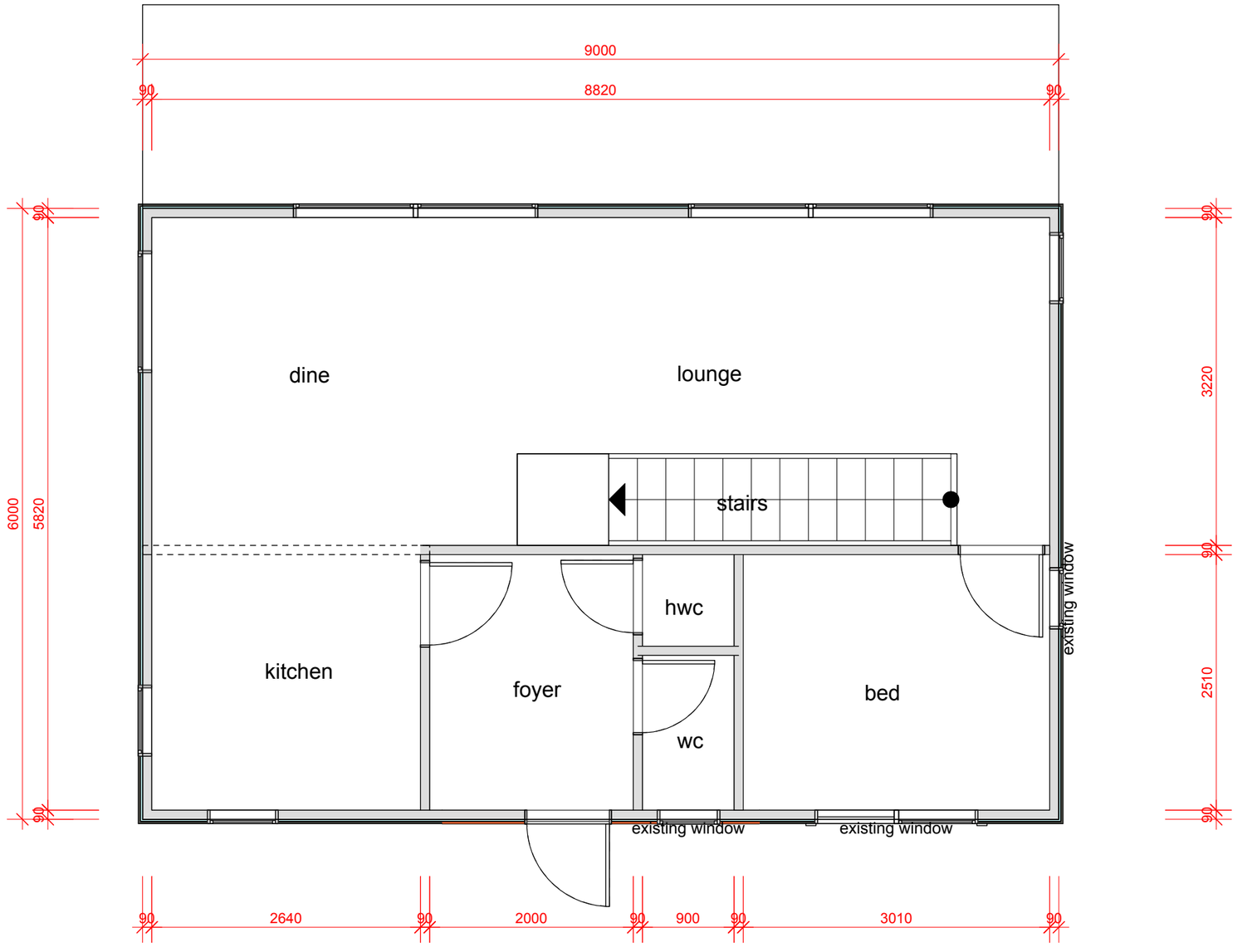
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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: PROPOSED FLOOR PLAN-Ground
PROJECT # MS-0326
DWG # A02.1
DATE # 14/08/2026
SCALE @ A3 1:50
DRAWN KB/TB/DB
CHKD KB/TB/DB

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DESCRIPTION | DATE | ISSUE NO.

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PROJECT: 6 Tui Street, Ahipara

DWG: EXISTING FLOOR PLAN-Ground

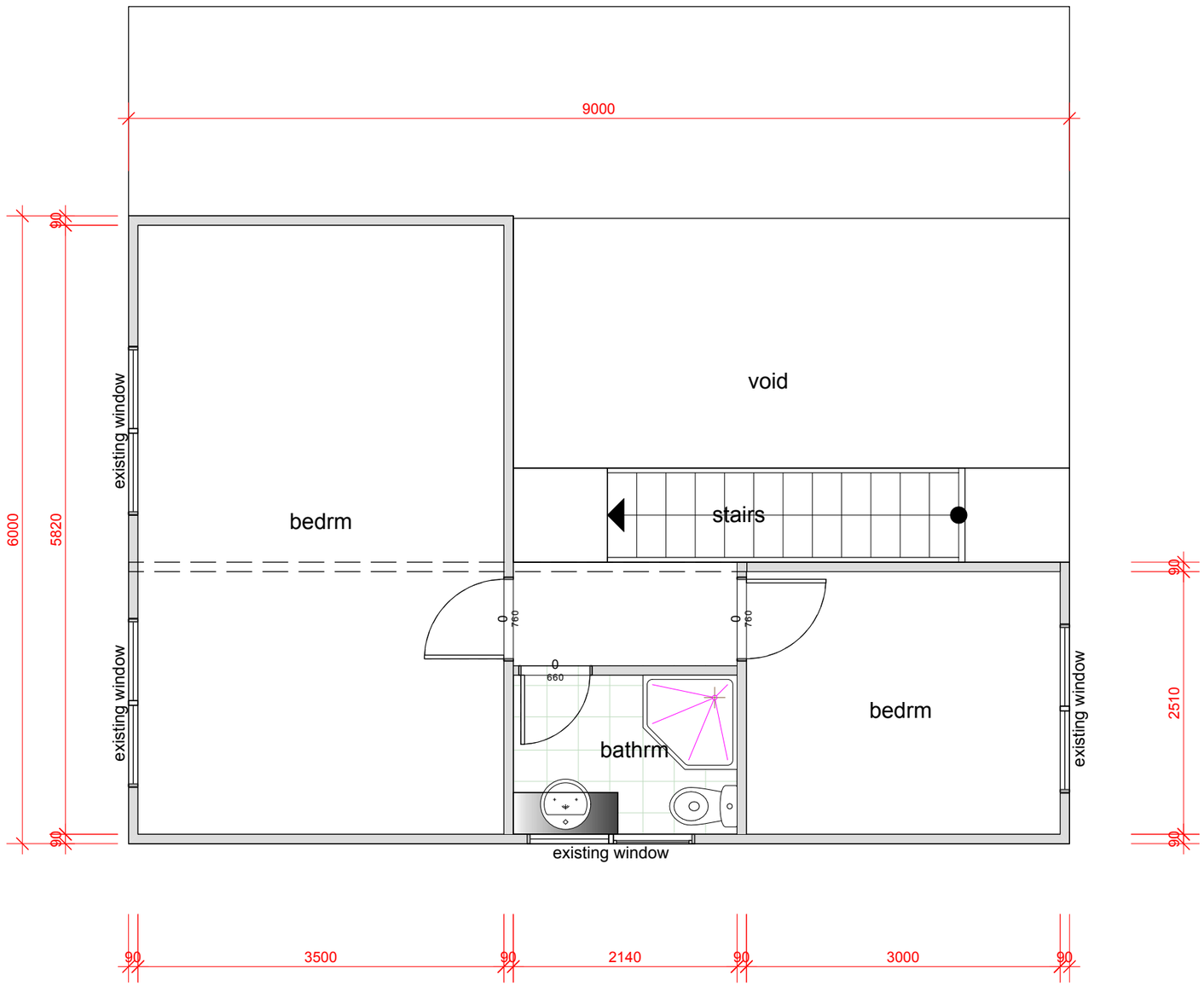
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DRAWN	KB/TB/DB
CHKD	KB/TB/DB

PROJECT # MS-0326

DWG # A02.2

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CLIENT: M & S SCOTT

PROJECT: 6 Tui Street, Ahipara

DWG: EXISTING FLOOR PLAN-Level 1

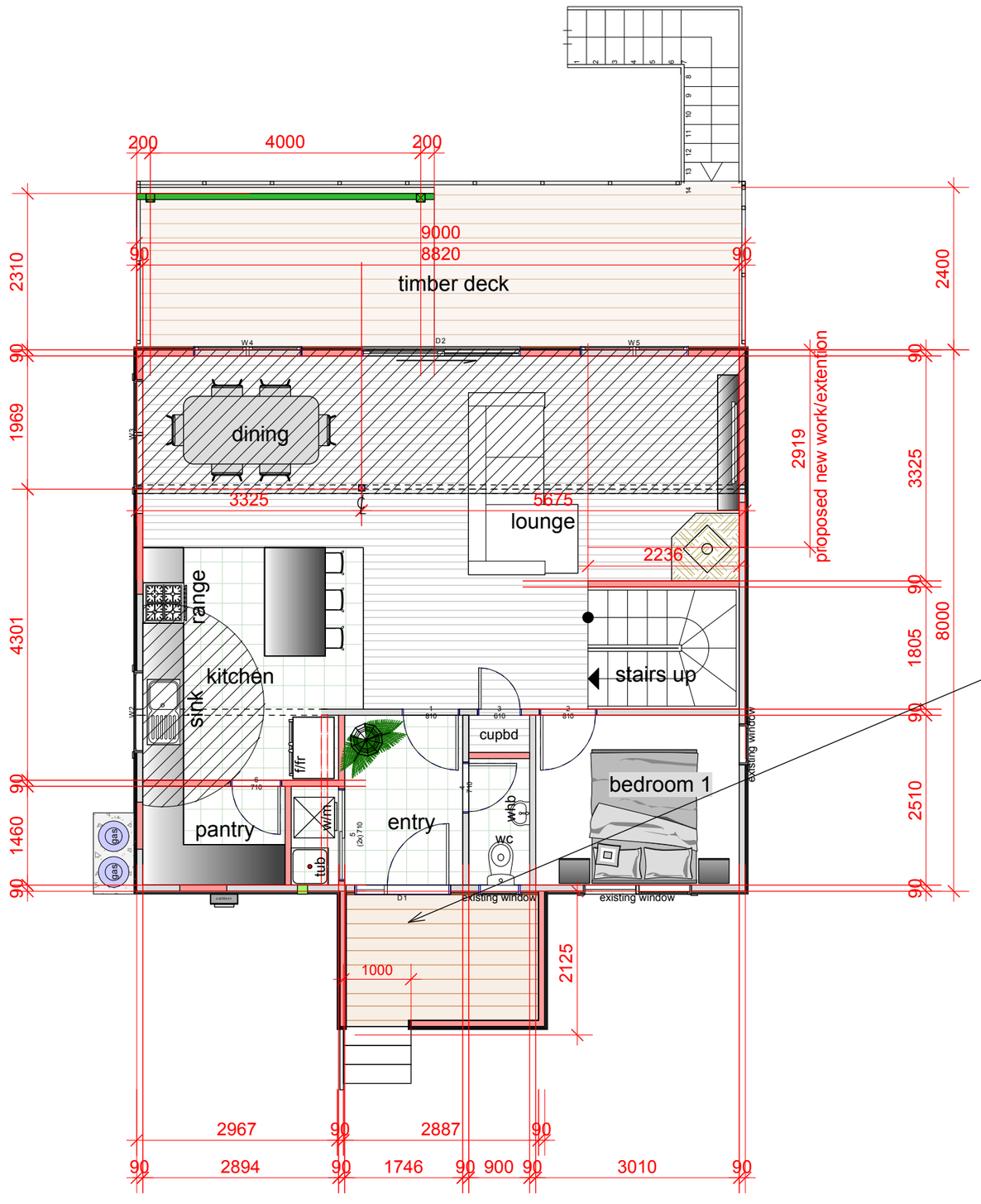
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CHKD	KB/TB/DB

PROJECT # MS-0326

DWG # A02.3

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The access route is designed and constructed to achieve slip resistance in accordance with the current NZBC D1/AS1, for walking surfaces likely to be wet.
Slip resistance is achieved through the following integrated design and material measures:
• 140 X 35 PREMIUM GRADE DECKING, which provides inherent surface texture suitable for external pedestrian access routes.
• Decking boards to be installed with a grooved or ribbed profile, oriented perpendicular to the direction of travel where practicable.
• Decking to be laid with minimum 5–7 mm gaps between boards to promote drainage and rapid surface drying.
• Decking surface to be finished with a penetrating, non-film-forming exterior decking oil (no paint or film-forming coatings), maintaining the natural timber grain and slip-resistant texture.
• The access route geometry (including ramp at 1:12) is designed to minimise slip risk by avoiding abrupt level changes and allowing effective drainage.
The completed access route provides a slip-resistant walking surface suitable for external wet conditions, consistent with the performance intent of NZBC D1/AS1.
Installation and ongoing maintenance of the decking surface are to be carried out in accordance with the timber and oil manufacturer's recommendations to ensure continued slip resistance.

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DATE	DESCRIPTION

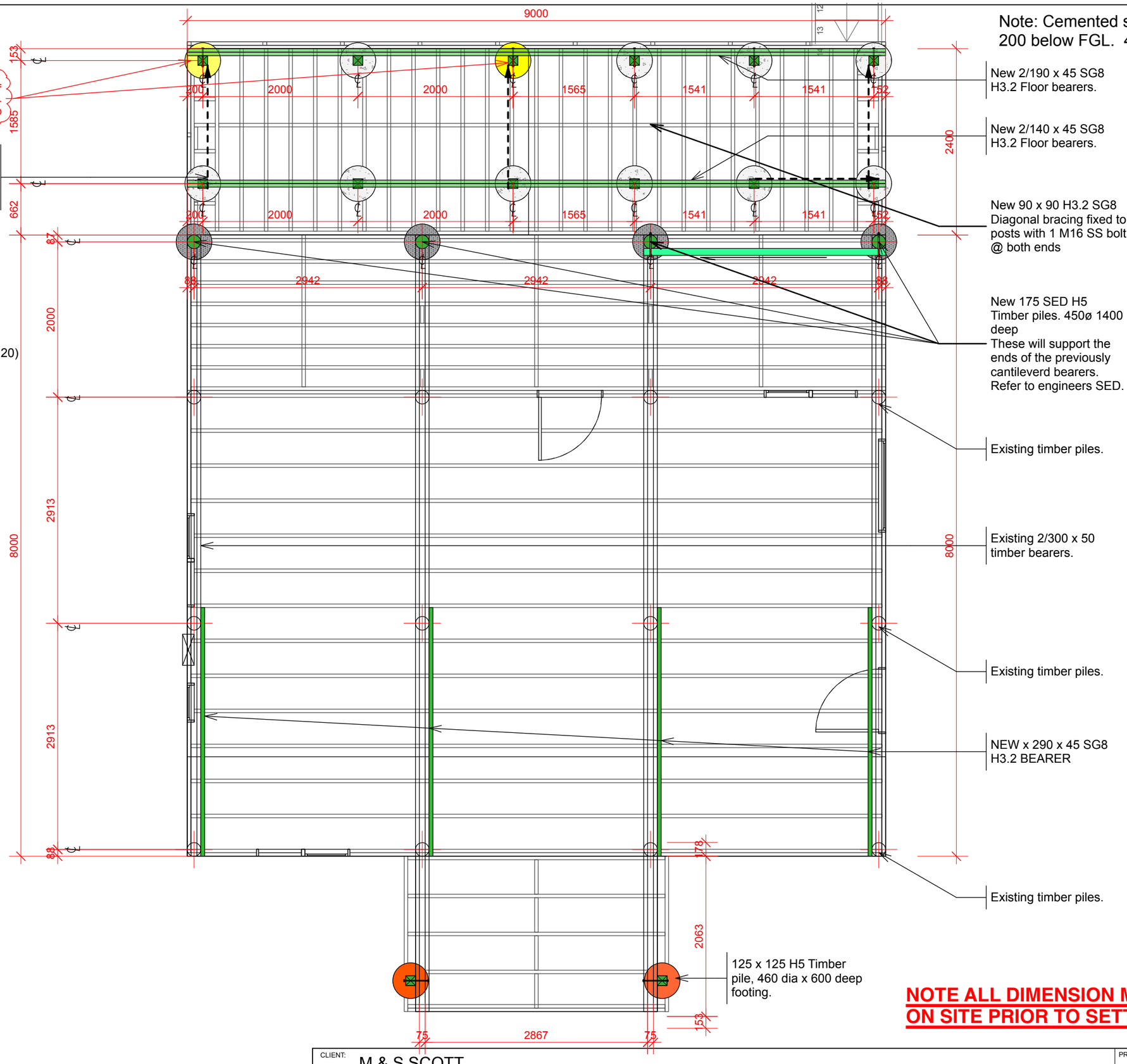
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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 1:50	DWG # A02.4
DWG	SLIP RESISTANCE NOTE	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Note: Cemented sandstone at approx 200 below FGL. 40 blows refusal at 250mm.

Ex 125 x 125 H5 MG (120 x 120) Timber pile/post
460 dia x 1300 deep footings

125 x 125 H5 Timber pile
460 dia x 600 deep footings

125 x 125 H5 Timber pile
460 dia x 400 deep footings

SED ENGINEERED 175ø
H5 Post 450ø x 1400 deep
conc footing

DECK BRACING
requires (15BU/m2/2=7.5BU/m2)
Deck to have 7.5 BU/m2
Deck Area to be braced= 22m2
x 7.5 = 165
Min of BU's Required
Braced Pile = 160 Wind
120 Earthquake
Total needed= Braces Required 2 (4 Provided)

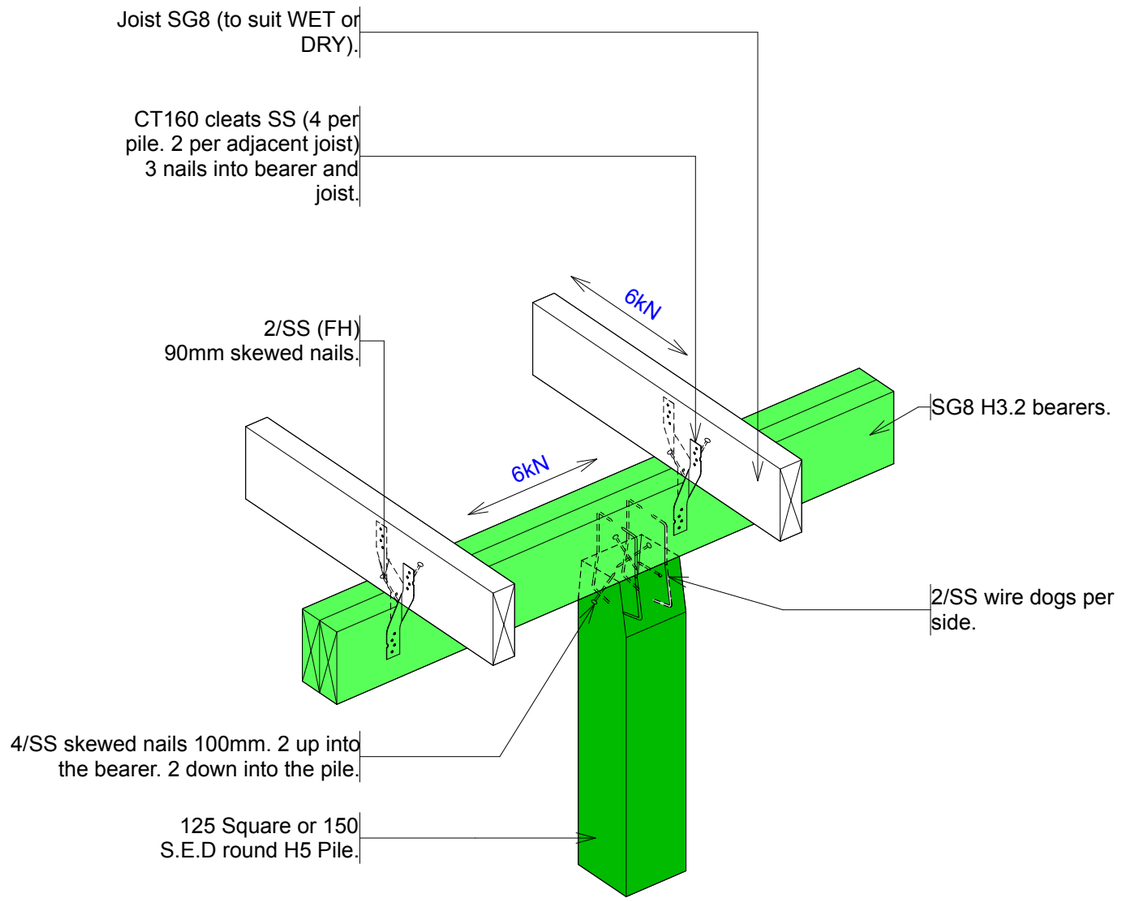
NOTE ALL DIMENSION MUST BE CONFIRMED ON SITE PRIOR TO SETTING OUT PILES

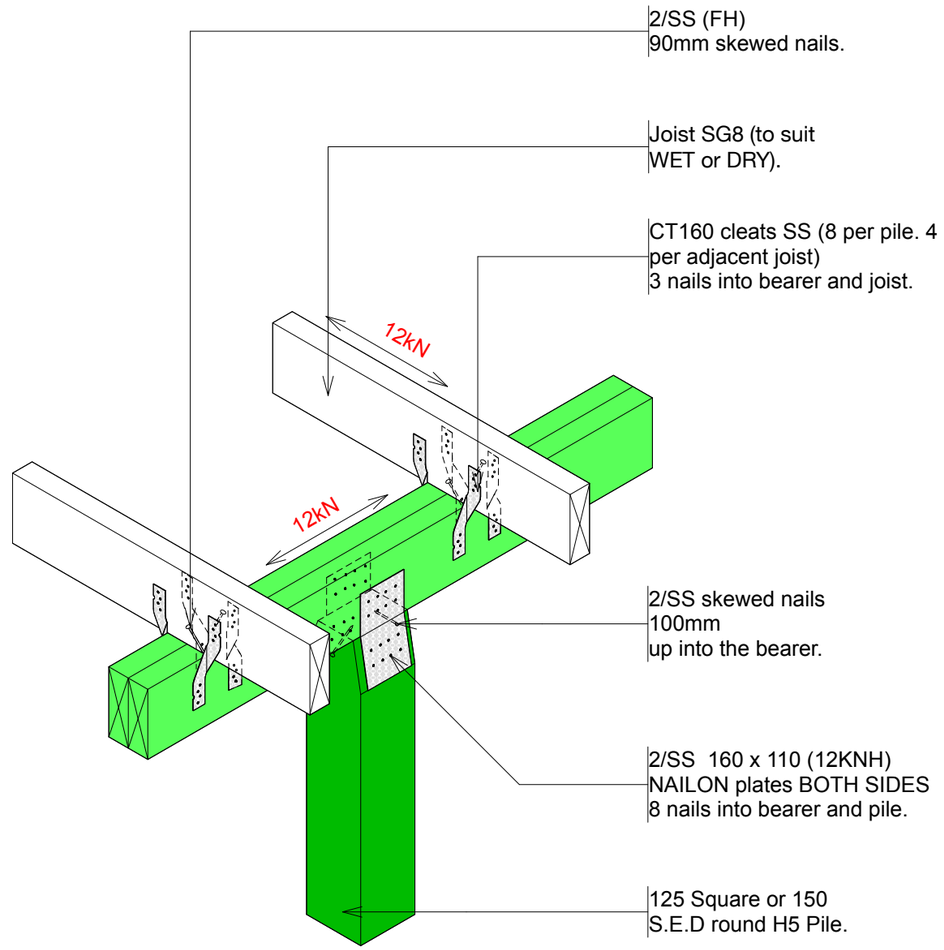
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CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A03
DWG FOUNDATION/BRACING PLAN	SCALE @ A3 1:50	DRAWN KB/TB/DB	CHKD KB/TB/DB

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6kN Connection (Cantilevered Piles)

12kN Connection (Anchor & Braced Piles)

(Refer to current MITEK On-Site Guide)

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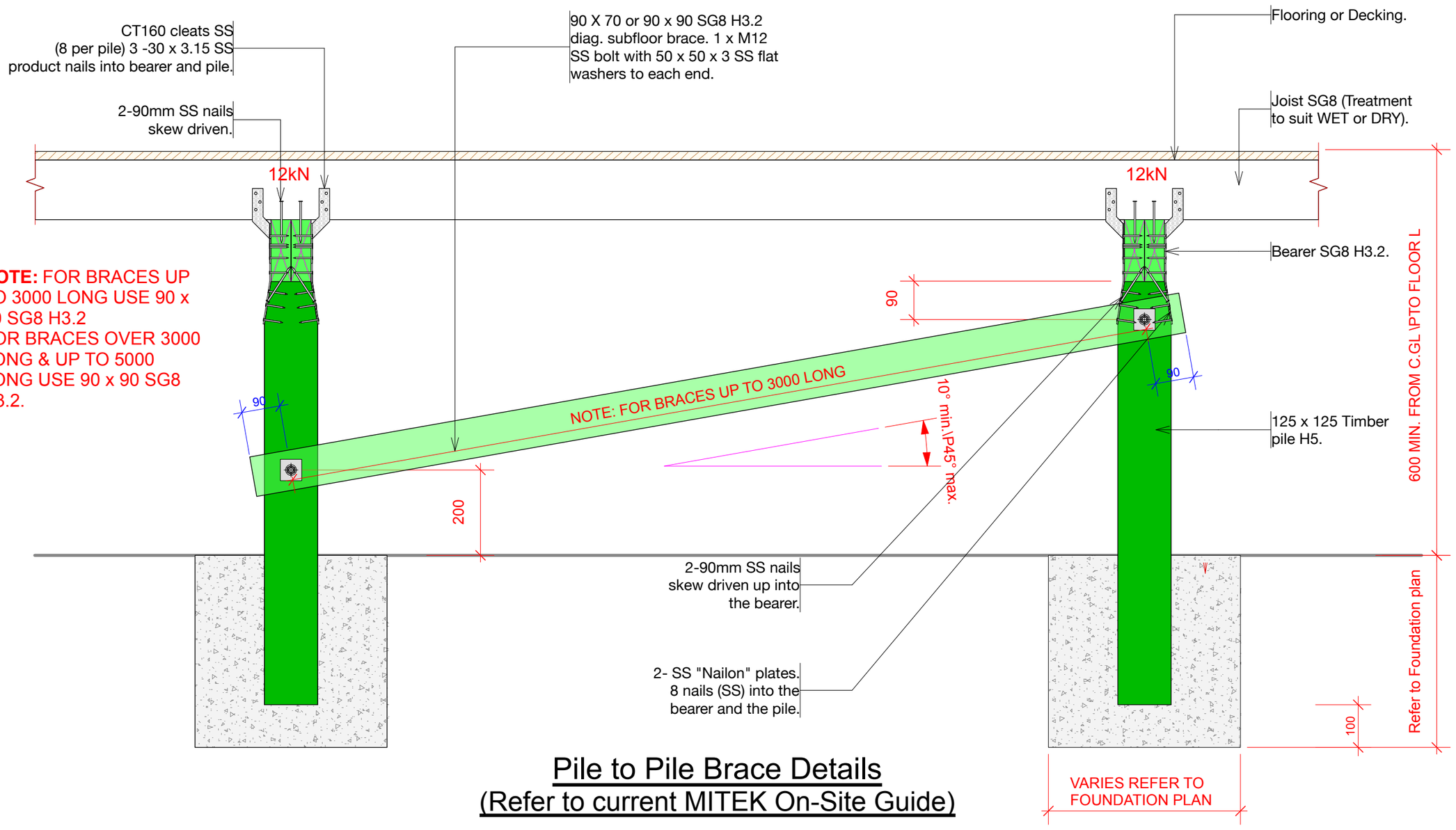
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A03.1
DWG	6KN/12KN CONNECTION	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Pile to Pile Brace Details
(Refer to current MITEK On-Site Guide)

ALL CONC. MUST BE 25 MPa MIN.

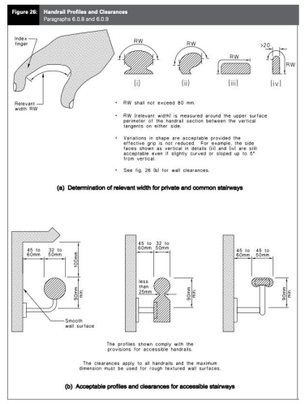
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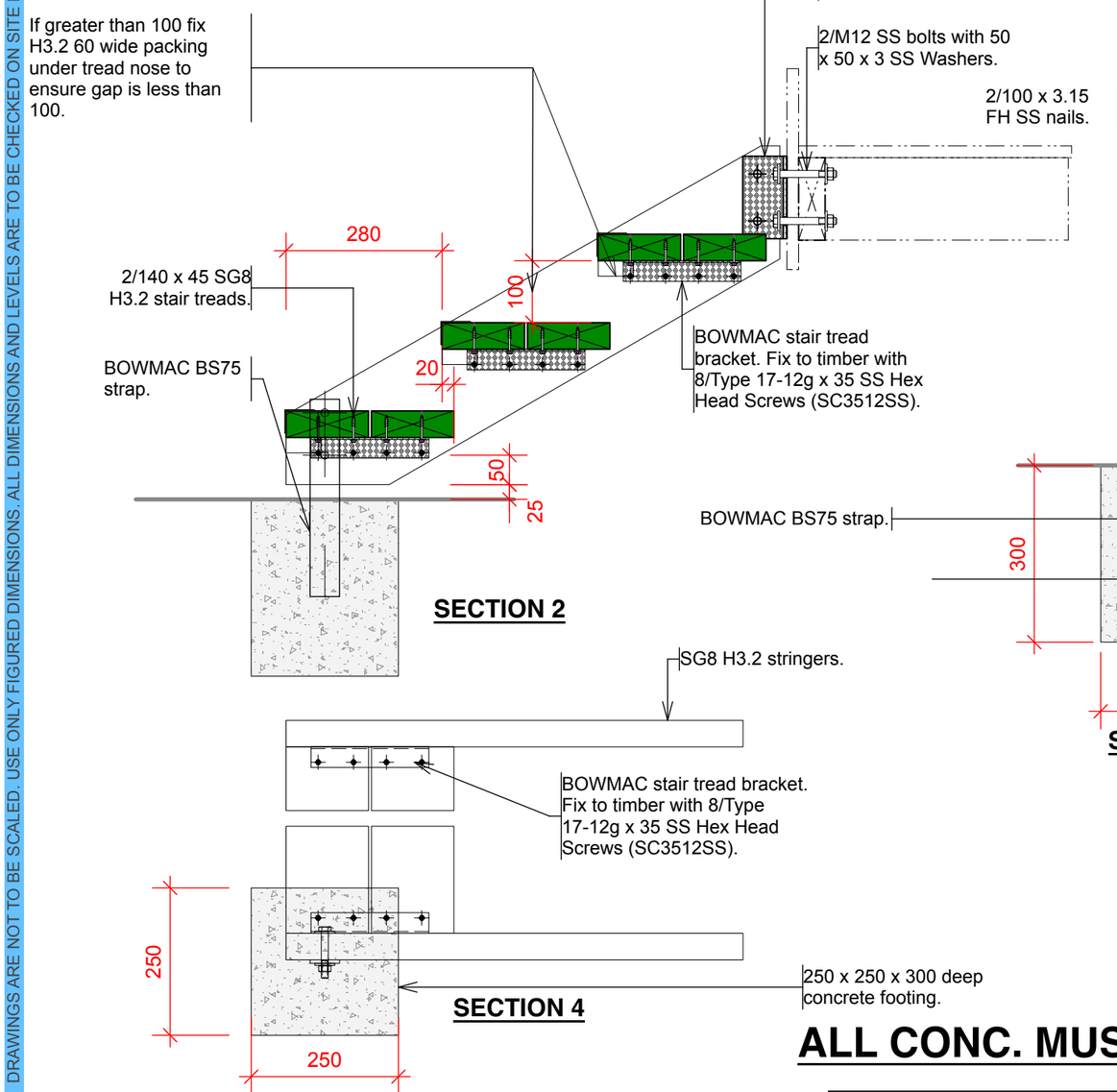
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:10	DWG # A03.2
DWG	PILE TO PILE BRACE DETAIL	DRAWN KB/TB/DB CHKD KB/TB/DB	

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Table 2:	Slip Resistance for Walking Surfaces			
Walking surface[12]	**Level surface**[1]		**Sloping surface**[2] **or stairs**[3]	
	Acceptable dry slip resistance	**Acceptable wet slip resistance**	**Acceptable dry slip resistance**	**Acceptable wet slip resistance**
Timber				
Uncoated smooth	Yes	No	No	No
Uncoated profiled[4]				
– across profile	Yes	Yes	Yes	Test
– along profile	Yes	No	No	No
Coated (paint, polyurethane, etc)	Yes	No	No	No
Coated and sand/grit impregnated[5]	Yes	Yes	Yes	Yes





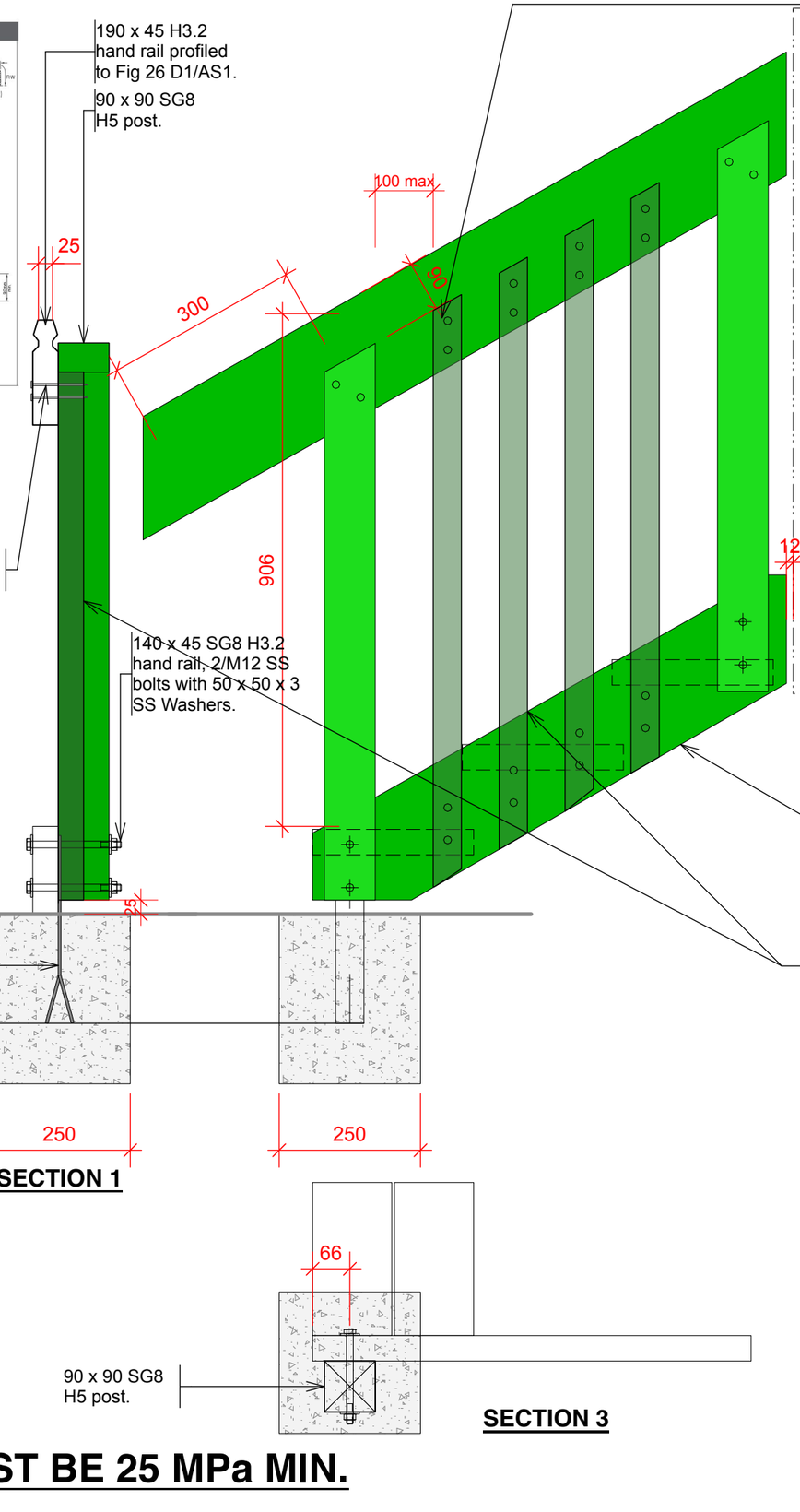


Table 6:	Design Limits for Stairs Paragraphs 4.1.1, 4.1.4 a), 4.4.2, 4.5.1 a) and Figure 17		
Stair	**Maximum pitch**	**Maximum riser height (mm)**	**Minimum tread (mm)**
Service, minor private	47°	220	220
Secondary private	41°	200	250
Common and main private	37°	190	280
Accessible	32°	180	310

2.0 Access Routes

2.1 Slip resistance

2.1.1 Scope: This section provides means of complying with Performance D1.3.3(d): 'Access routes shall have adequate slip-resistant walking surfaces under all conditions of normal use.'

2.1.2 For level *access routes* (including level *accessible routes*) expected to become wet with water in normal use, walking surfaces shall either:

a) Have an SRV classification of not less than 39 from the wet pendulum test method of AS 4586 Appendix A using the Slider 96 rubber, or

b) Use the materials listed in Table 2 as 'acceptable wet slip'.

ALL CONC. MUST BE 25 MPa MIN.

Note:
900 max. stair width over strings

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A03.3
DWG	TYPICAL STEP DETAIL-EXTERIOR	SCALE @ A3 1:10	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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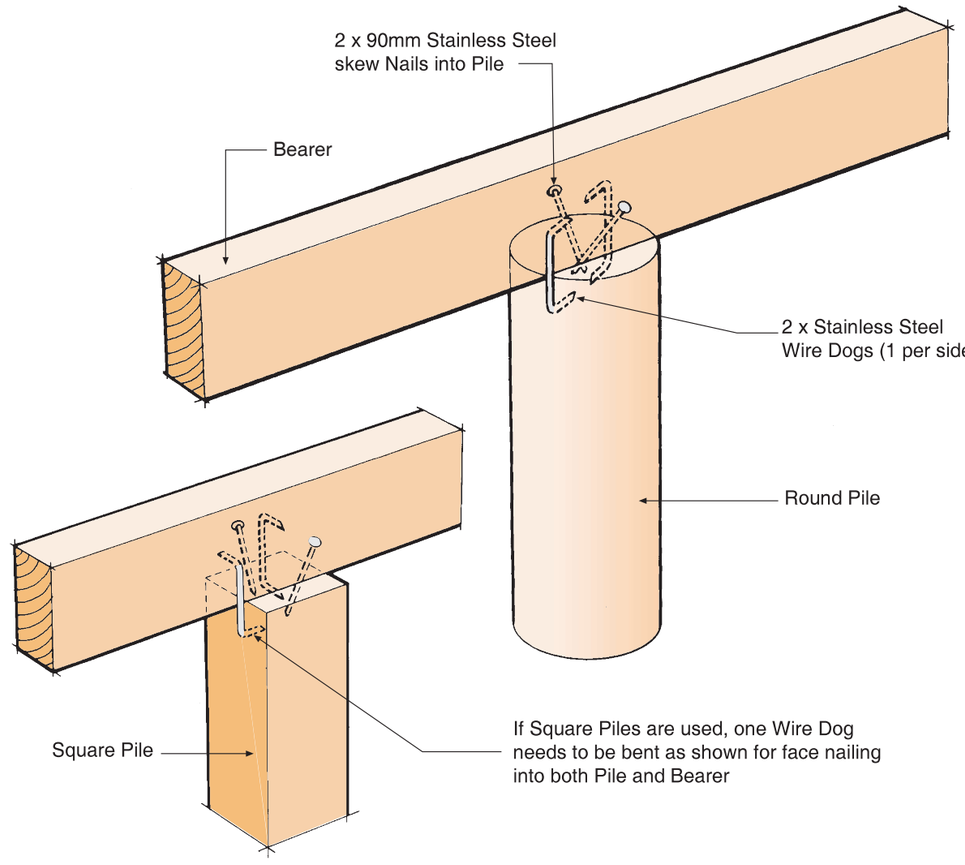
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2024 EDITION V1

ORDINARY PILE FIXING

- Complies with NZS 3604:2011
- All Fixings Stainless Steel
- For all Ordinary Piles (Refer Figure 6.3 NZS 3604:2011)



Code: **OPF**

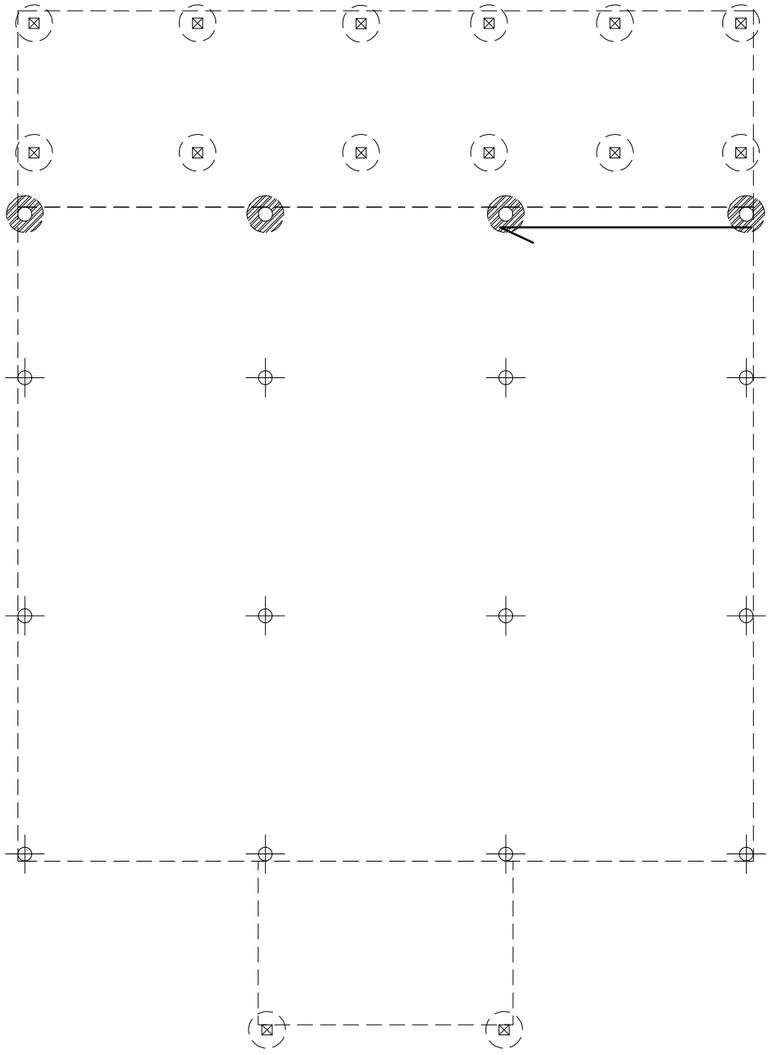
Packed: **20 x Stainless Steel Wire Dog Staples**
20 x Stainless Steel Nails 90mm x 4 dia.

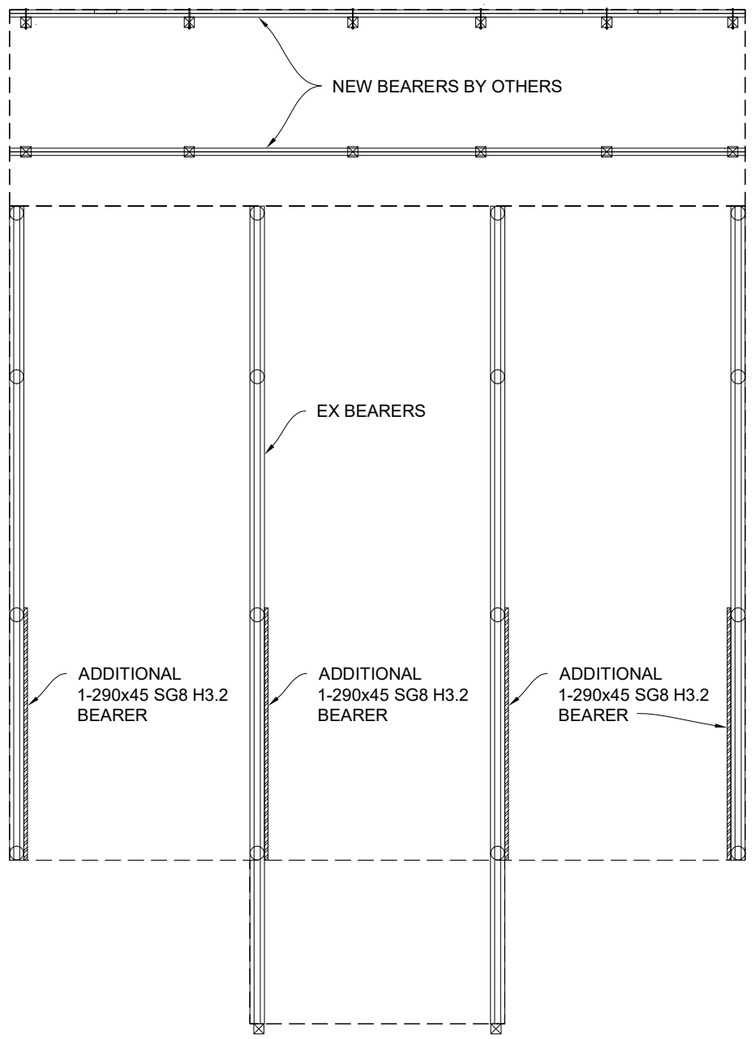
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PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A03.4
DWG ORDINARY PILE FIXING	SCALE @ A3 1:50	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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NEW TIMBER PILES BY OTHERS

175SED H5 POSTS, ON 450Ø x 1400MM DEEP 20MPA CONCRETE FOOTING.

EXISTING TIMBER PILES

90x90 H3.2 SG8 DIAGONAL BRACING FIXED TO POSTS W/ 1-M16 SS BOLT AT BOTH ENDS.

PARTIAL FOUNDATION PLAN
SCALE 1:75

PARTIAL FRAMING PLAN
SCALE 1:75

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ORIGINAL SIZE: mm A3

T&A STRUCTURES LTD
CHARTERED PROFESSIONAL ENGINEERS
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No.	Revisions	Date
1	First issue	21 Sep 2026

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Surveyed	
Designed	
Drawn	
Reviewed	
Approved	

Project: 6 TUI STREET, AHIPARA
PROPOSED HOUSE EXTENSION

Sheet Title: PARTIAL FOUNDATION PLAN

Drawing Status: CONSENT

Project No.: 088-FND-26SD

Drawing: S01

Scale: 1:75 (A3)

Revision: 1

REV	DATE	BY	REVISION AMENDMENTS

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PROJECT: 6 Tui Street, Ahipara

DWG: S01

PROJECT # MS-0326

DATE # 14/08/2026

SCALE @ A3 1:50

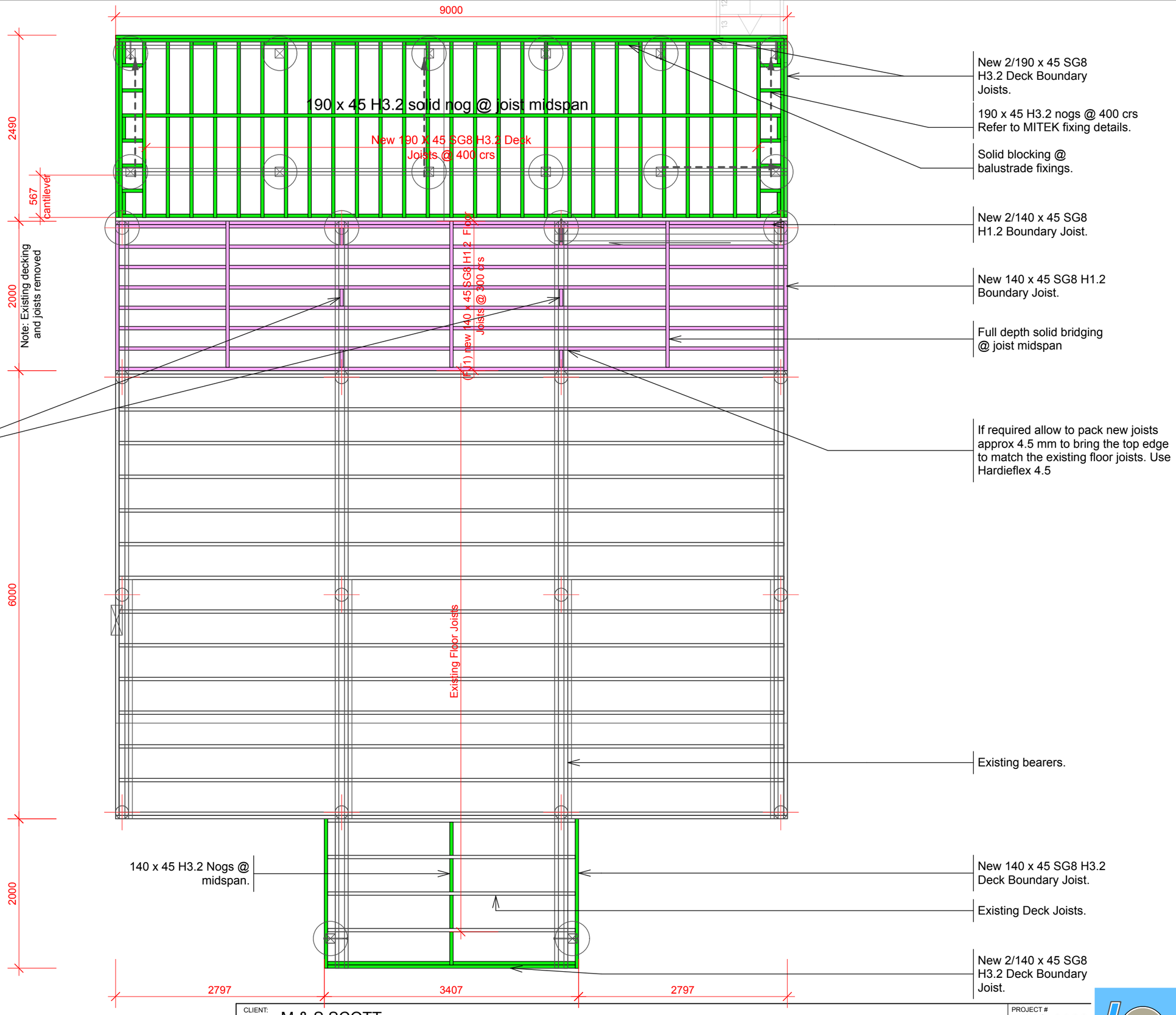
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CHKD KB/TB/DB

DWG # A03/1

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DECK BRACING
requires (15BU/m2/2=7.5BU/m2)
Deck to have 7.5 BU/m2
Deck Area to be braced= m2
x 7.5 =
Min of BU's Required
Braced Pile = 160 Wind
120 Earthquake
Total needed= Braces Required (Provided)



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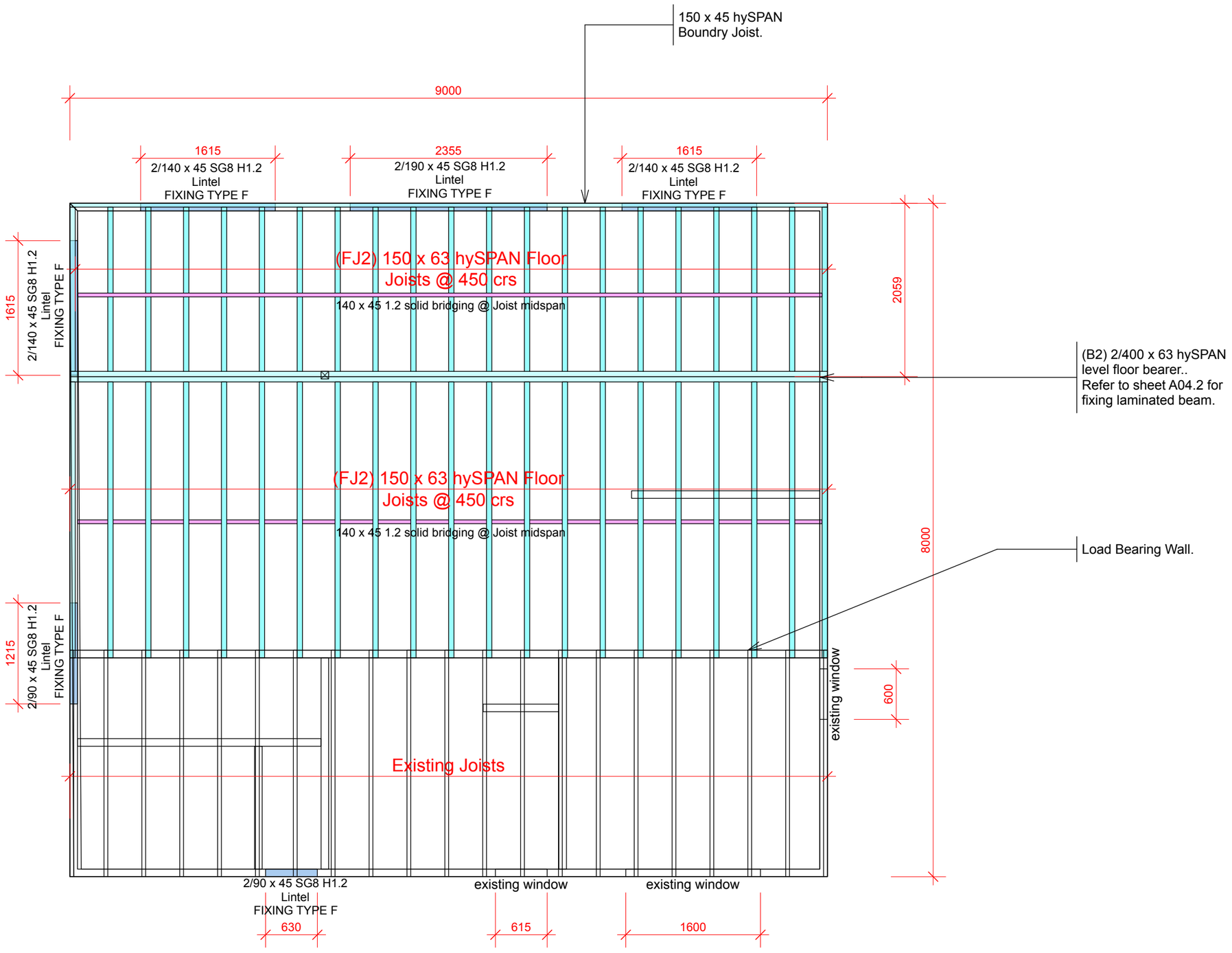
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CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A04
DWG SUBFLOOR FRAMING PLAN	SCALE @ A3 1:50		
	DRAWN KB/TB/DB		
	CHKD KB/TB/DB		

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CLIENT: M & S SCOTT

PROJECT: 6 Tui Street, Ahipara

DWG: MID FLOOR FRAMING PLAN

DATE #	14/08/2026
SCALE @ A3	1:50
DRAWN	KB/TB/DB
CHKD	KB/TB/DB

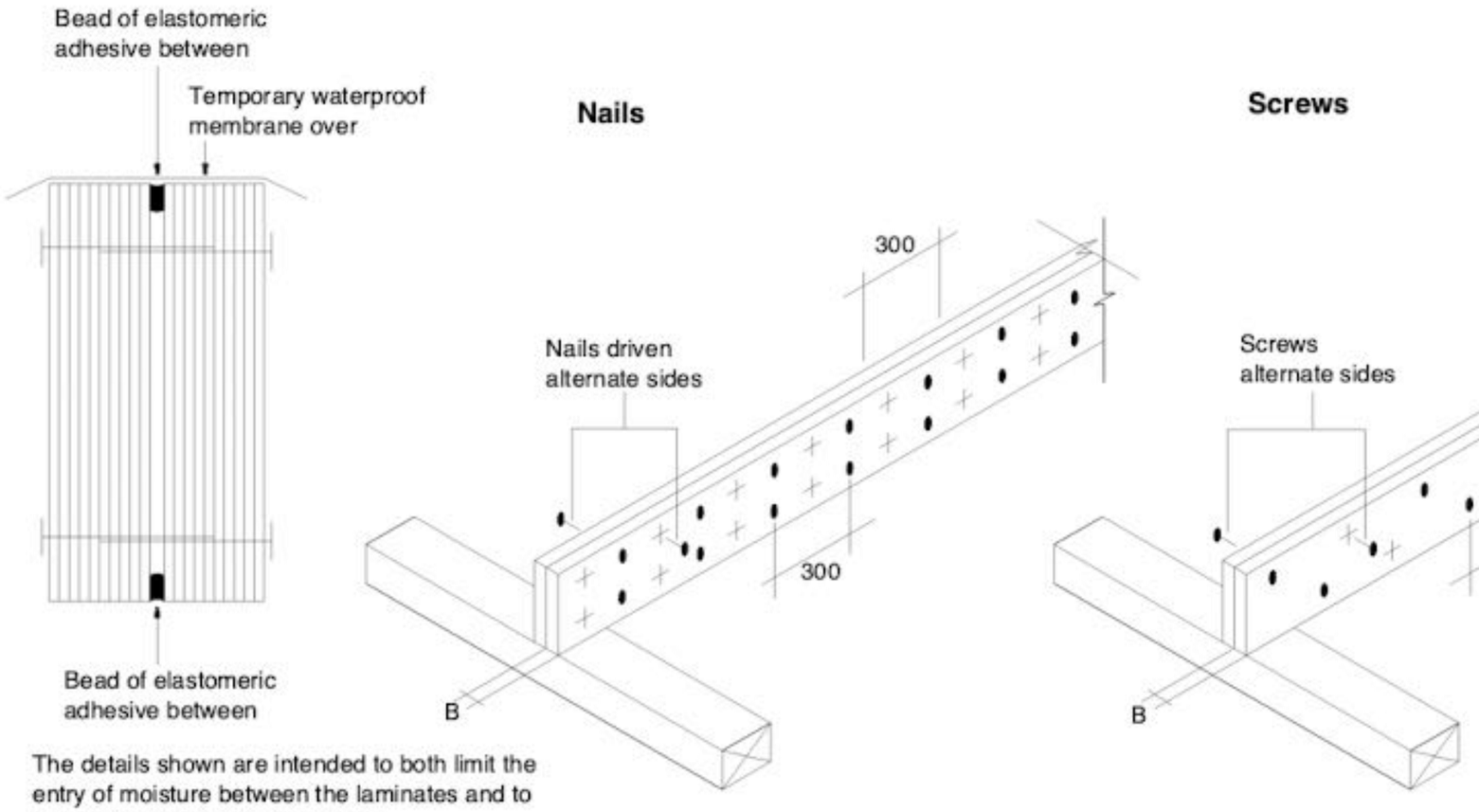
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DWG # A04.1

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Detail H1: Vertical Lamination - Two Pieces



The details shown are intended to both limit the entry of moisture between the laminates and to provide adequate shear transfer.

Section Size 'B'	Minimum Nail Diameter	Minimum Nail Length	Minimum Screw Guage	Minimum Screw Length
35	3.06 mm	75 mm	-	-
45	3.30 mm	90 mm	14 g	75 mm
63	3.30 mm	100 mm	14 g	100 mm
90	-	-	14 g	150 mm

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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A04.2
DWG	(B2) 2/400 x 63 MIDFLOOR BEAM	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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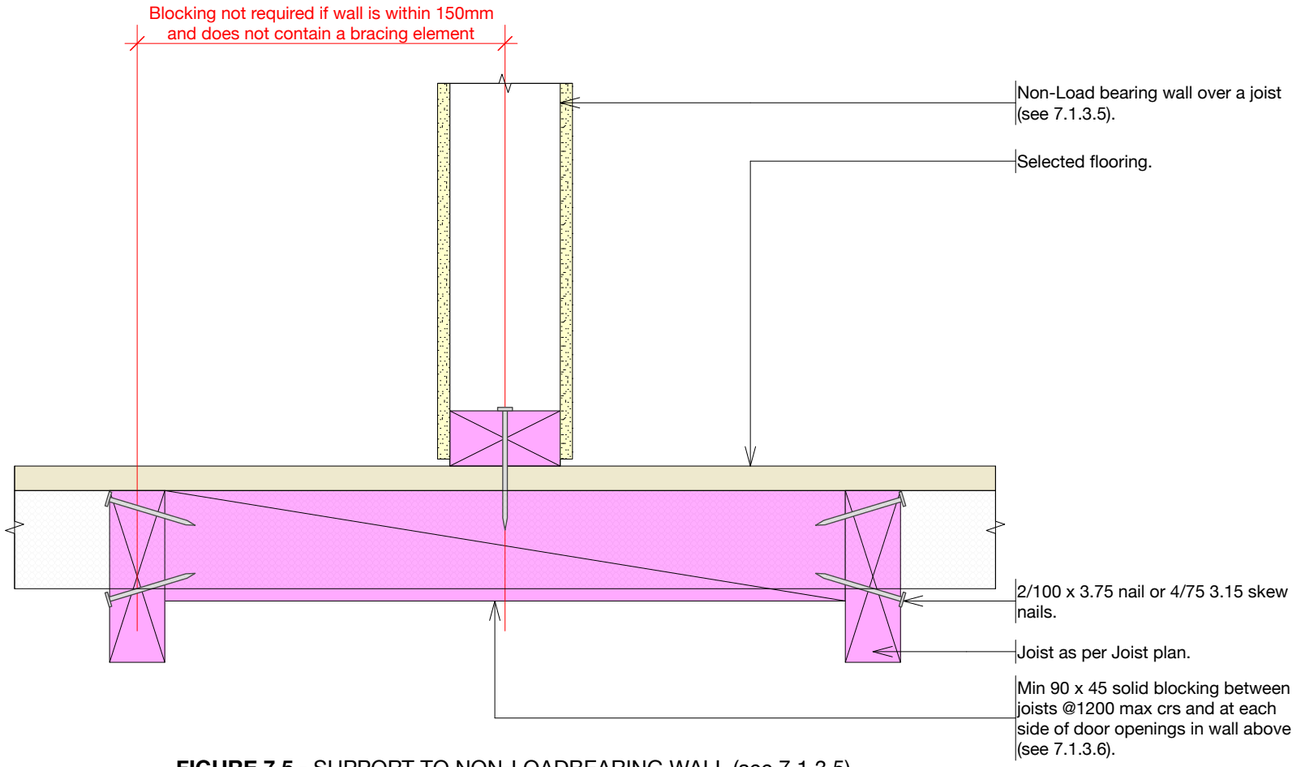


FIGURE 7.5 - SUPPORT TO NON-LOADBEARING WALL (see 7.1.3.5)

7.1.3.5
Where a non-loadbearing wall:
(a) Which contains wall bracing elements runs parallel to the line of floor joists beneath, it shall either:
(i) be over joists or
(ii) Be supported by solid blocking between the joists on either side of the wall in accordance with 7.1.3.6 and as shown in figure 7.5 or
b) Does not contain a wall bracing element it shall be within 150mm of a joist measured between centre lines.

7.1.3.6
Solid blocking shall be 90mm x 45mm cut neatly between joists, with its top flush with the top of the joists, set at each end of the wall above, at each side of any door openings, and at not more than 1.2m centres elsewhere.

6.3.2.1
A bearer or subfloor framing wall, shall be provided within 200mm centre to centre, of load bearing walls in the storey immediately above, and which are at right angles to the joists (see figure 6.1 (A).

6.3.2.2
Where a bearer supports a load bearing or braced wall running parrallel to the floor joists, it shall itself be supported by a pile or jack stud within 200mm, centre to centre, of the load bearing or bracing wall (see Figure 6.1 (B).

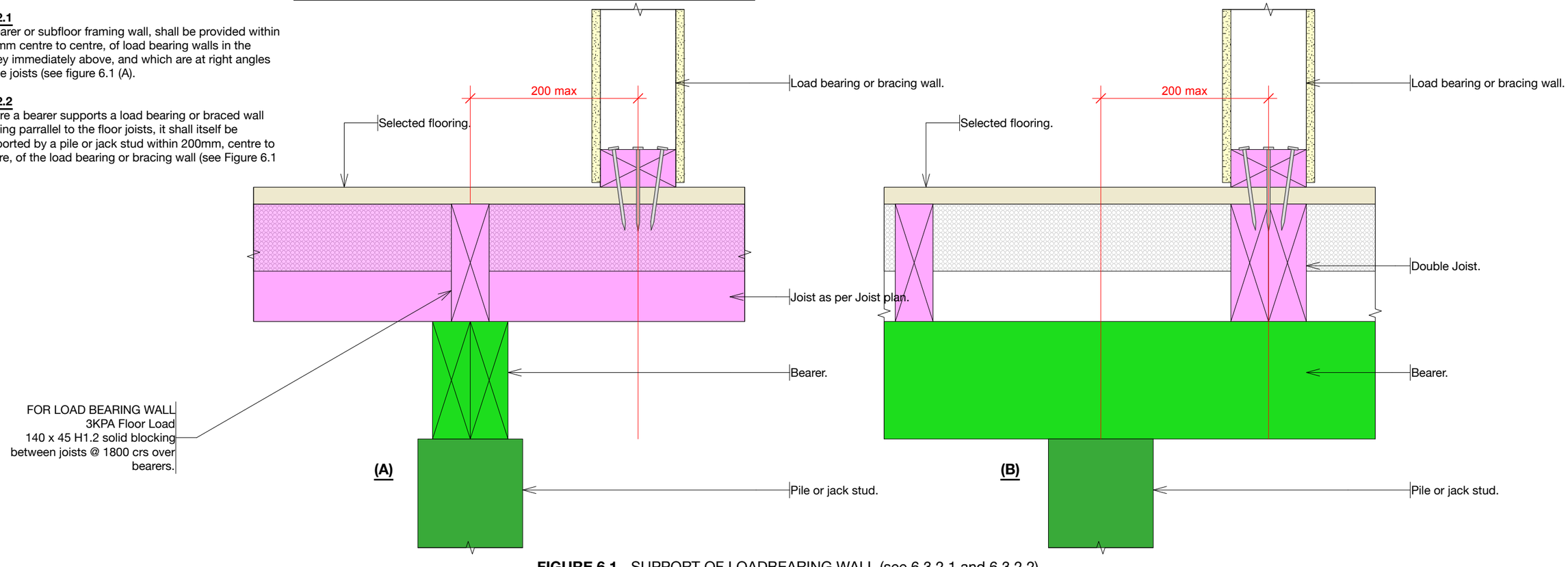


FIGURE 6.1 - SUPPORT OF LOADBEARING WALL (see 6.3.2.1 and 6.3.2.2)

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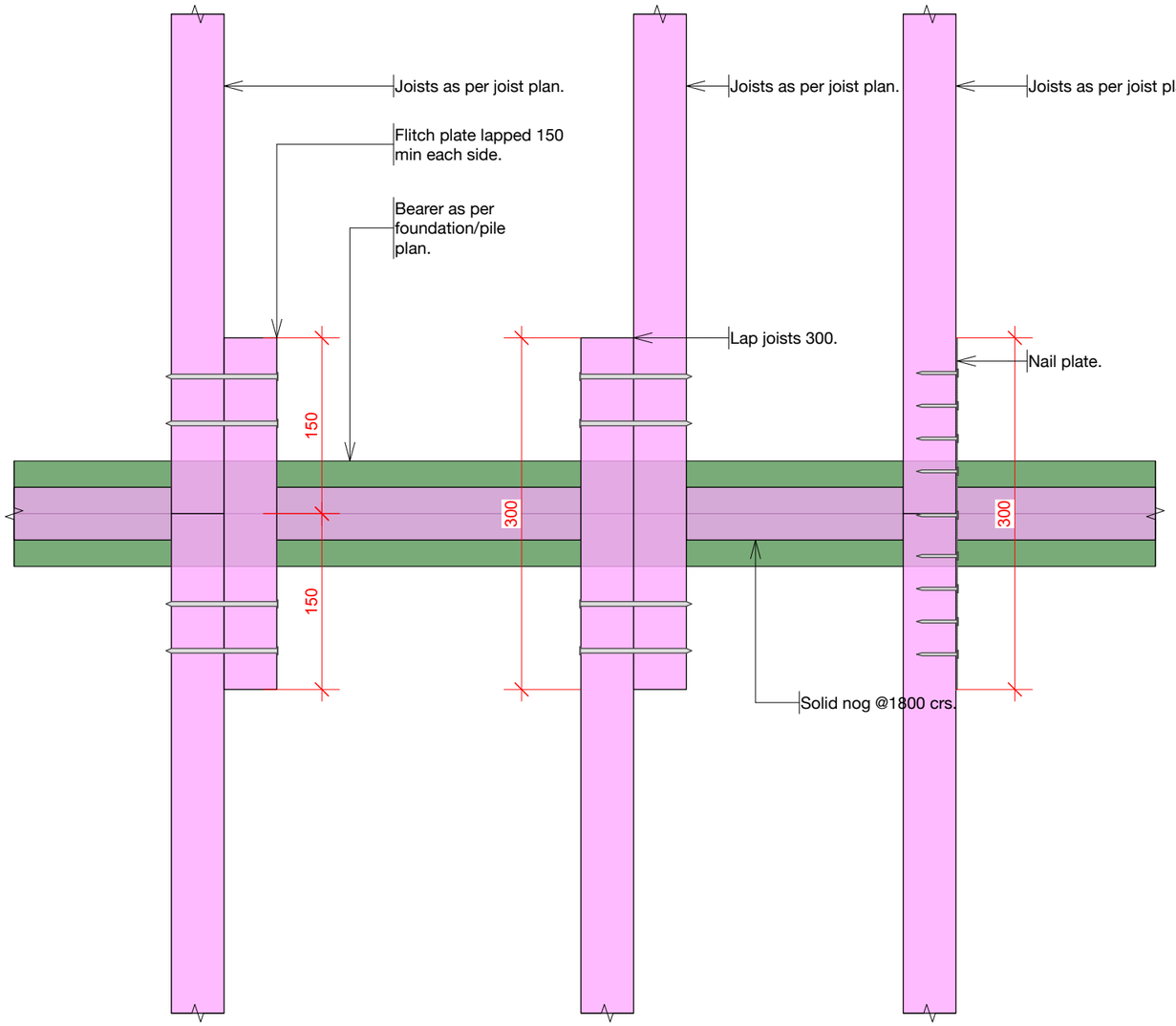
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PROJECT: 6 Tui Street, Ahipara	DATE #	14/08/2026	DWG # A04.3
	SCALE @ A3	1:5	
DWG LOAD & NON LOADBEARING DEATIL-TIMBER	DRAWN	KB/TB/DB	
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7.1.1.4
Floor joists shall have a minimum bearing on their supports of 32mm.

7.1.1.5
Joints in floor joists shall be made only over supports, but not where the joist is cantilevered beyond the support.

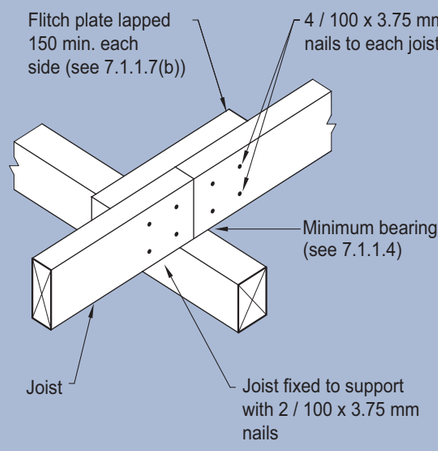
7.1.1.7
Joints in floor joists (see figure 7.1) shall either:
(a) Be butted and flitched with a piece of yimber of the same dimensions as the joists and extending not less than 150mm on each side of the joists end and nailed to both lengths of joists from both sides.
(b) Be lapped not less than 150mm on each side of the centre line of the support and nailed together from both sides: or
(c) Have a nail plate with a fixing capacity of 6kN in tension.



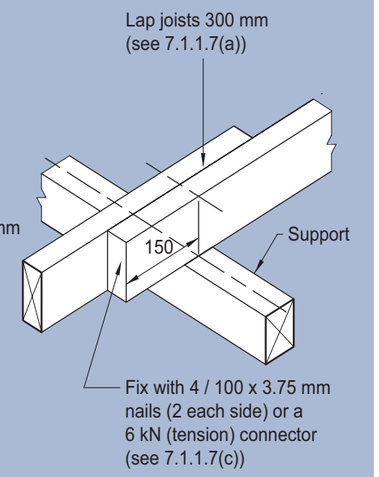
(A) TOP VIEW
FLITCHED JOINT IN JOIST

(B) TOP VIEW
LAPPED JOINT IN JOIST

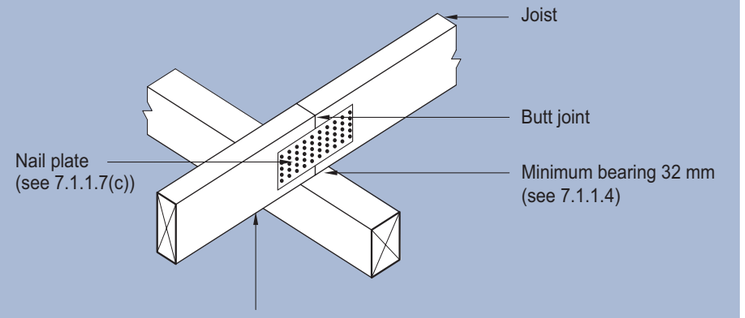
(C) TOP VIEW
BUTT JOINT IN JOIST



(A) FLITCHED JOINT IN JOIST



(B) LAPPED JOINT IN JOIST



(C) BUTT JOINT IN JOIST

NOTE –
(1) Joint shall be made over a support (see 7.1.1.5).
(2) See section 4 for durability requirements.

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PROJECT: 6 Tui Street, Ahipara
DWG: LAPPED OR BUTTED JOINTS IN FLOOR JOISTS

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DWG # A04.4

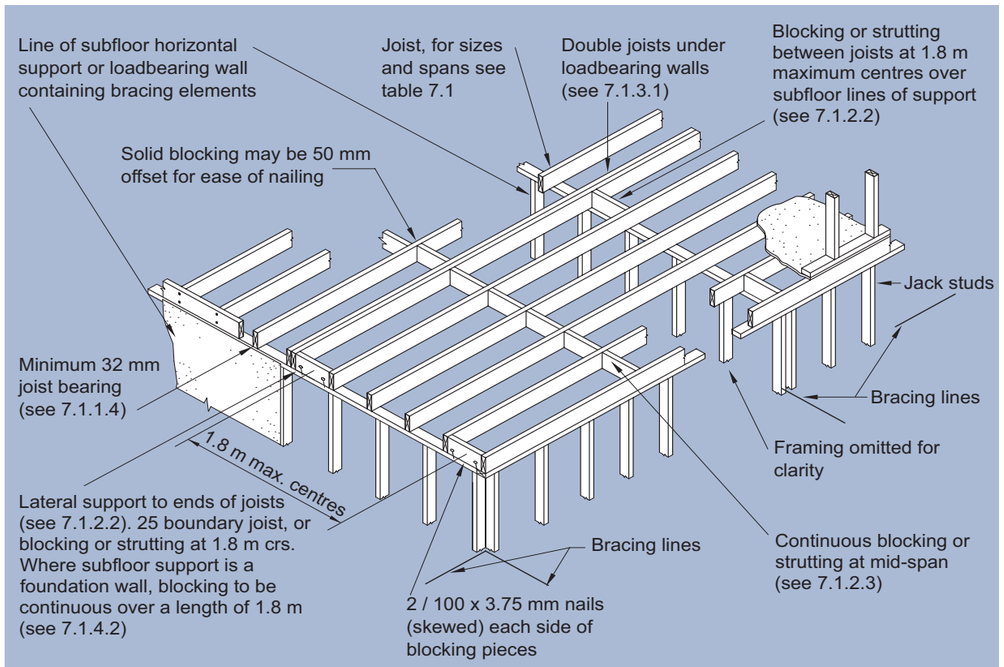
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7.1.2.1
Lines of lateral support to floor joists as specified in 7.1.2.2 shall be provided within 300mm of the following locations:
a) Ground joists: Along all subfloor lines of the horizontal support (see 5.5):
b) Other floor joists, Along the line of each wall that contains a wall bracing element in the storey below.

7.1.2.2
A line of lateral support to floor joists (see figure 7.2) shall consist of,
a) At the ends of joists: A continuous boundary joist 25mm thick and the same depth as the floor joists: or
b) In any location including at joists ends: FUll depth blocking or strutting complying with 7.1.2.4 between adjacacent floor joists at not more than 1.8m max centres provided that:
i) There shall be solid blocking between the 2 edge pairs of joists: and
ii) Additional solid blocking shall be provided where required byt 7.1.4.2.

7.1.2.3
In addition to any lateral support required by 7.1.2.1, floor joists having a span of over 2.5m and a depth of 4 or more times their thickness shall be laterally supported by continuous blocking or strutting complying with 7.1.2.4 at midspan (see figure 7.2)

7.1.2.4
Full depth blocking or strutting required by 7.1.2.2(b) or 7.1.2.3 shall be either:
a) Timber blocking 35mm thick, the same depth as the joists, neatly cut between adjacent joists: or
b) Herringbone strutting consisting of 2 pieces of 35mm x 35mm timber set diagonally in opposite directions, between the top and bottom edges of the joists.



NOTE –
(1) Refer to foundation drawings to identify joists adjacent to lines of support which shall have 6 kN fixings to bearer (see 6.7.3.1).
(2) Edge support to be provided for flooring (see 7.2.3.4).
(3) See section 4 for durability requirements.

Figure 7.2 – Floor joists layout criteria (see 7.1.2.2)

7.1.4.2
Where the floor joists run at right angles to the foundation wall, then either:
a) The ends of the joists shall be latterally supported by a continuous boundary joist in accordance with 7.1.2.2(a): or
b) The solid blocking required by 7.1.2.2 (b) shall be provided between each pair of joists for a length of 1.8m along the line of the foundation wall and eith:
i) Where the foundation wall is at a corner, the 1.8m lengh=th shall be measured from the corner (see figure 7.9): or
ii) Where the foundation wall is not at a corner, the 1.8m length shall be symmetrically disposed on the foundation wall.

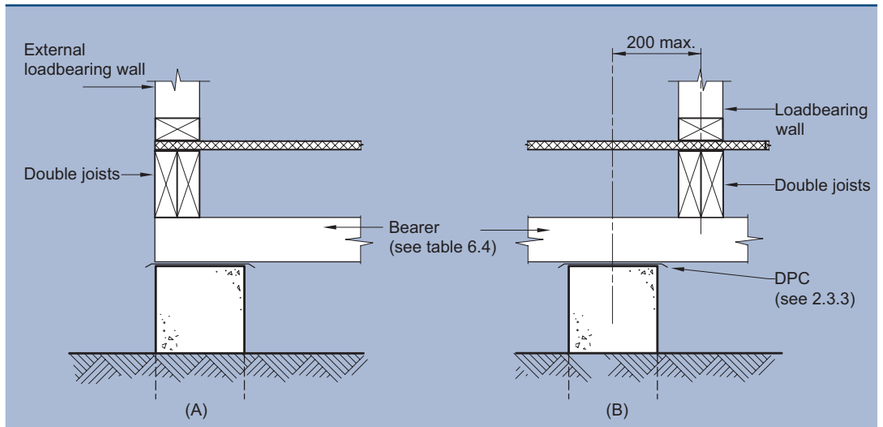


Figure 7.3 – Support to floor joists under loadbearing walls (see 7.1.3)

7.1.3.1
Where a load bearing wall runs parallel to the line of floor joists beneath it shall be supported by a pair of joists (see figure 7.3). SUch a pair of joists may be seperated by solid packing not exceeding 50mm thick or half the thickness of the wall above, whichever is the lesser, at not more that 600mm centres. If fitted floor decking is used, there shall be not less than a 20mm landing on the joists for the decking.

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PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A04.5
DWG TYPICAL FLOOR JOIST LAYOUT NZS3604:2011	SCALE @ A3 NTS	DRAWN KB/TB/DB	CHKD KB/TB/DB

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TABLE 3.31
MAXIMUM FIXTURE UNIT LOADING FOR VENTED DRAINS

Grade %	Nominal Size of Drain DN						
	65 (see Note 1)	**80**	**100**	**125**	**150**	**225**	**300**
5.00	60	215	515	1450	2920	11900	26900
3.35	36	140	345	1040	2200	9490	21800
2.50	25	100	255	815	1790	8060	18700
2.00	x	76	205	665	1510	7090	16600
1.65	x	61	165	560	1310	6370	15000
1.45	x	(50)	(140)	485	1160	5810	13900
1.25	x	(42)	(120)	425	1040	5360	12900
1.10	x	x	x	(380)	935	4970	12100
1.00	x	x	x	(340)	855	4500	11400
0.85	x	x	x	x	(725)	3850	10300
0.65	x	x	x	x	(595)	3250	9090
0.50	x	x	x	x	x	x	7720
0.40	x	x	x	x	x	x	6780

NOTES:
1) DN65 Drains may be used as branch drains only, provided no soil fixtures (except urinals) are connected thereto.
2) "x" indicates that the combination of nominal size and grade is not acceptable.
3) Figures in parentheses are the maximum fixture unit loadings for drains laid at reduced grades in accordance with clause3.4.2.
4) The regulatory authority may prescribe or approve the sizing and grading of any drain on the basis of the observed peak flows for the building of similar occupancy in lieu of the size determined as prescribed in this standard.

3.3.2 Main Drain
The minimum size of the main drain shall be **DN100**

TABLE 3.10.2
SIZE OF UNVENTED DRAINS

Size of pipe DN	Maximum fixture unit loading
65	5 Fixture units (excluding a water closet pan or slop hopper): or 10 fixture units from one floor waste gully
80	10 Fixture units (including not more than one water closet pan or slop hopper)
100	30 Fixture units (including not more than two water closet pan or 2 slop hopper)

TABLE 3.4.1
MINIMUM GRADE OF DRAINS

Nominal Size DN	Minimum Grade %
65	2.50
80	1.65
100	1.65*
125	1.25
150	1.00
225	0.65
300	0.45

* Except for drains from septic tanks, sewage treatment plants and unvented discharge pipes from tundishes, which may have a minimum grade of 1.00%

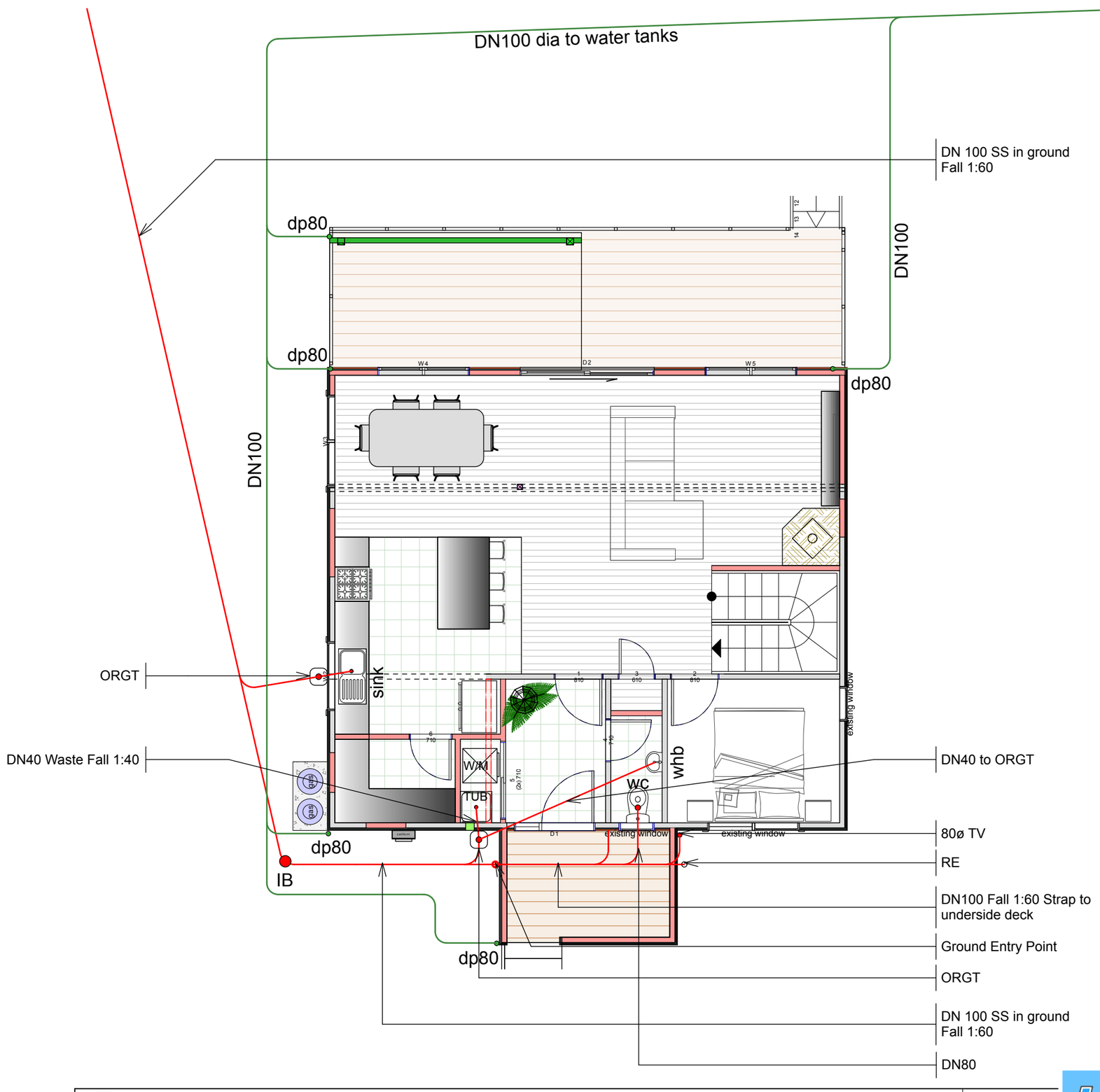
TABLE 3.4.2
MINIMUM FIXTURE UNIT LOADINGS FOR REDUCED GRADE DRAINS

Reduced grade %	Nominal size of drain, DN			
	80	100	125	150
1.45	9	10	-	-
1.25	10	18	-	-
1.10	x	x	27	-
1.00	x	x	38	-
0.85	x	x	x	75
0.65	x	x	x	160

NOTES:
1) "x" indicates that the combination of nominal size and grade is not acceptable.
2) "-" indicates that the grade is acceptable by Table 3.4.1 for the size (i.e not reduced grade)
3) Appendix C provides a table conversion of grades as a percentage to grades as a ratio.

Sanitary Waste Pipe Size:
Wash Baisins **DN32**
Showers, Baths, Tubs, Sinks **DN40**
1:20 for 32 mm pipes; 1:40 for pipes 65 mm diameter and under;
1:60 for pipes 100 mm diameter and under.

AS/NZS 3500.1. 2015 for cold water, AS/NZS 3500.2. 2015 AND G13/AS1 for foul water and AS/NZS 3500.4.2015 for hot water.



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0.65	x	x	x	x	(595)	3250	9090
0.50	x	x	x	x	x	x	7720
0.40	x	x	x	x	x	x	6780

NOTES:
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TABLE 3.10.2
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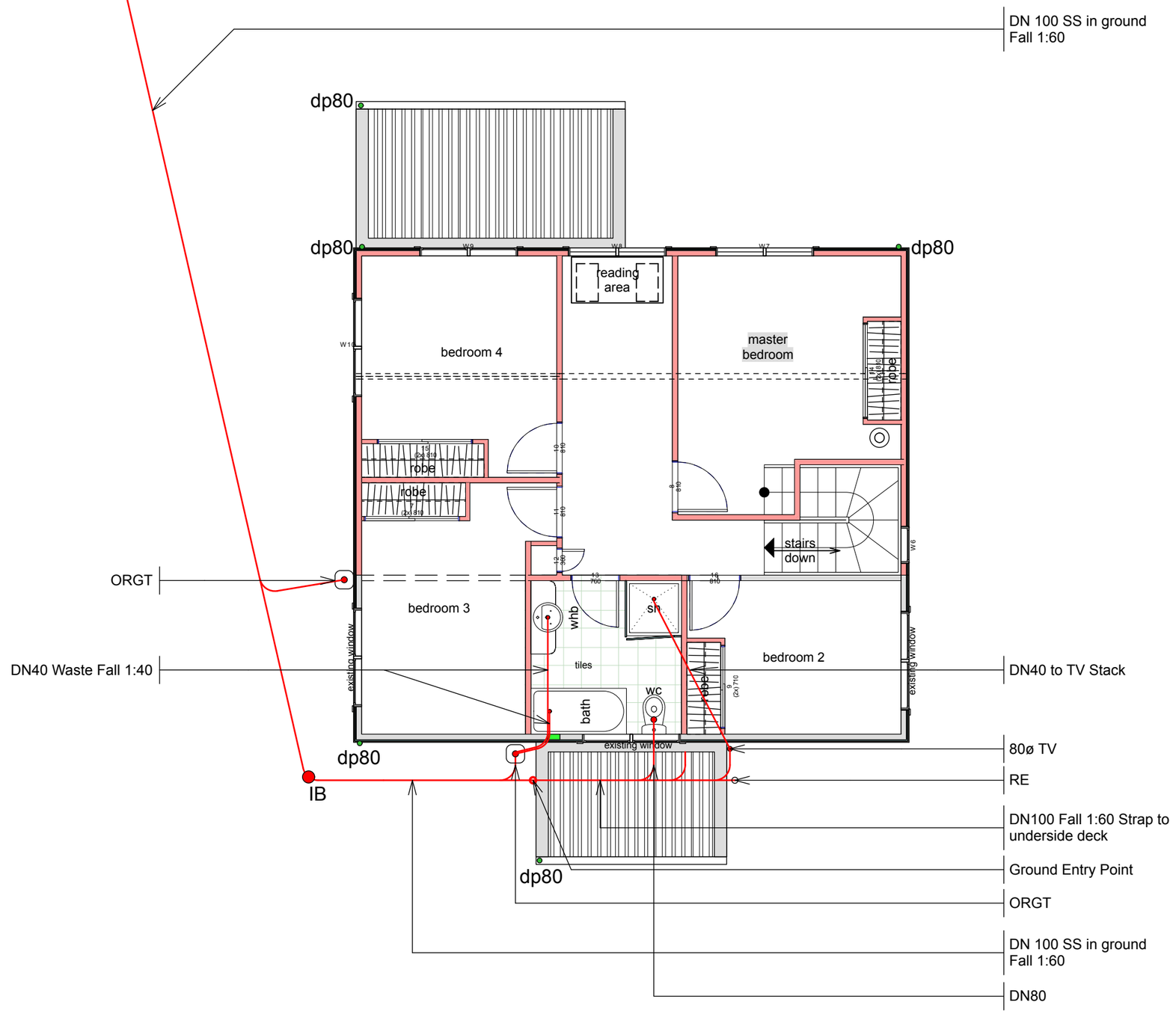
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1.00	x	x	38	-
0.85	x	x	x	75
0.65	x	x	x	160

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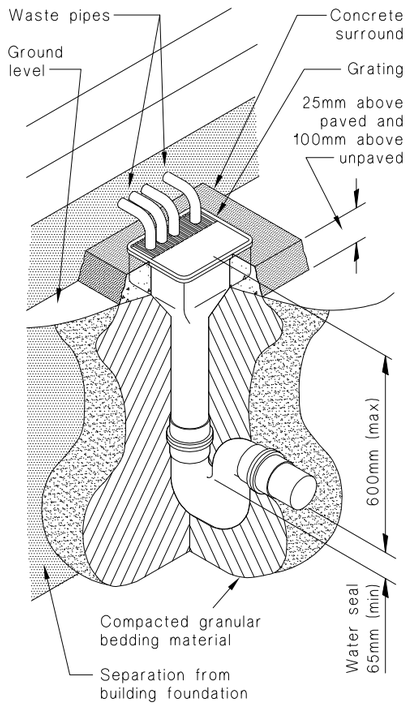
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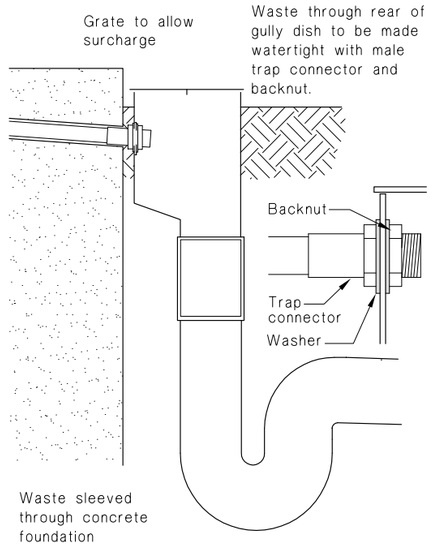
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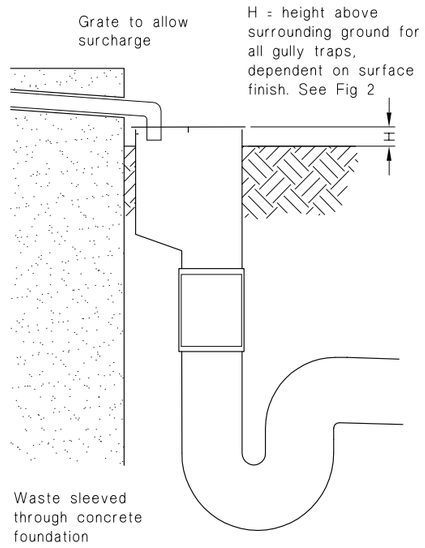
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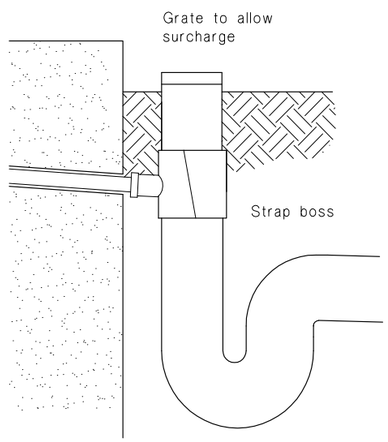




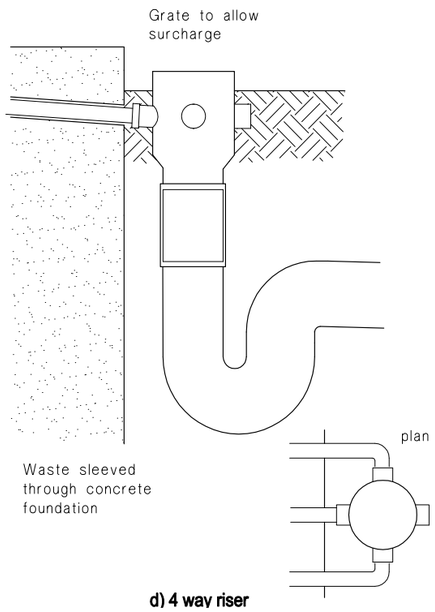
a) Waste discharging to rear of gully dish



b) Waste bend discharging over gully dish



c) Strap boss to riser



d) 4 way riser

3.3 Gully traps

3.3.1 All *gully traps* shall be constructed to prevent the ingress of *surface water* and foreign bodies likely to cause a blockage, shall be located within the legal boundary of the land on which the *building* is erected, and shall have (see Figures 2 and 3):

a) The overflow level of the gully dish no less than:

i) 25 mm above paved surfaces, or

ii) 100 mm above unpaved surfaces,

COMMENT:
It is imperative that the *waste pipe* connections to the *gully trap* remain watertight to prevent the ingress of ground/*surface water*.

b) A grating that will allow surcharge,

c) A minimum outlet pipe *diameter* of 100 mm,

d) A *water seal* depth of at least 65 mm,

e) At least one *discharge pipe* discharging to the *gully trap* to avoid *water seal* evaporation,

f) *Waste pipes* that discharge to the *gully trap* arranged to permit easy cleaning of the *gully trap*,

g) *Waste pipe* outlets located at least 20 mm above *water seal* level, and at least 20 mm below the grating,

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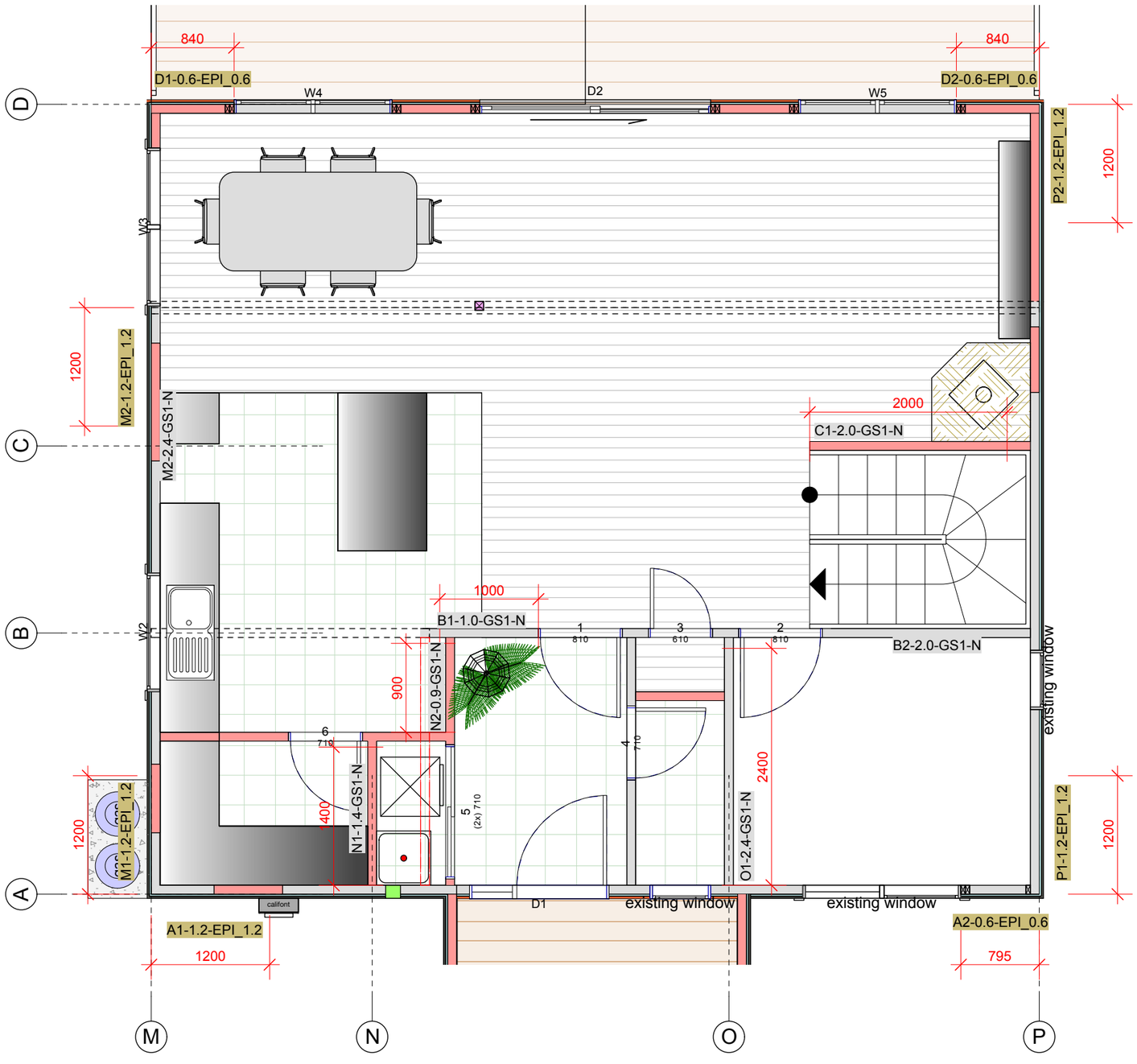
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A05.1
DWG	GULLY TRAP BEDDING DETAILS	SCALE @ A3 NTS	
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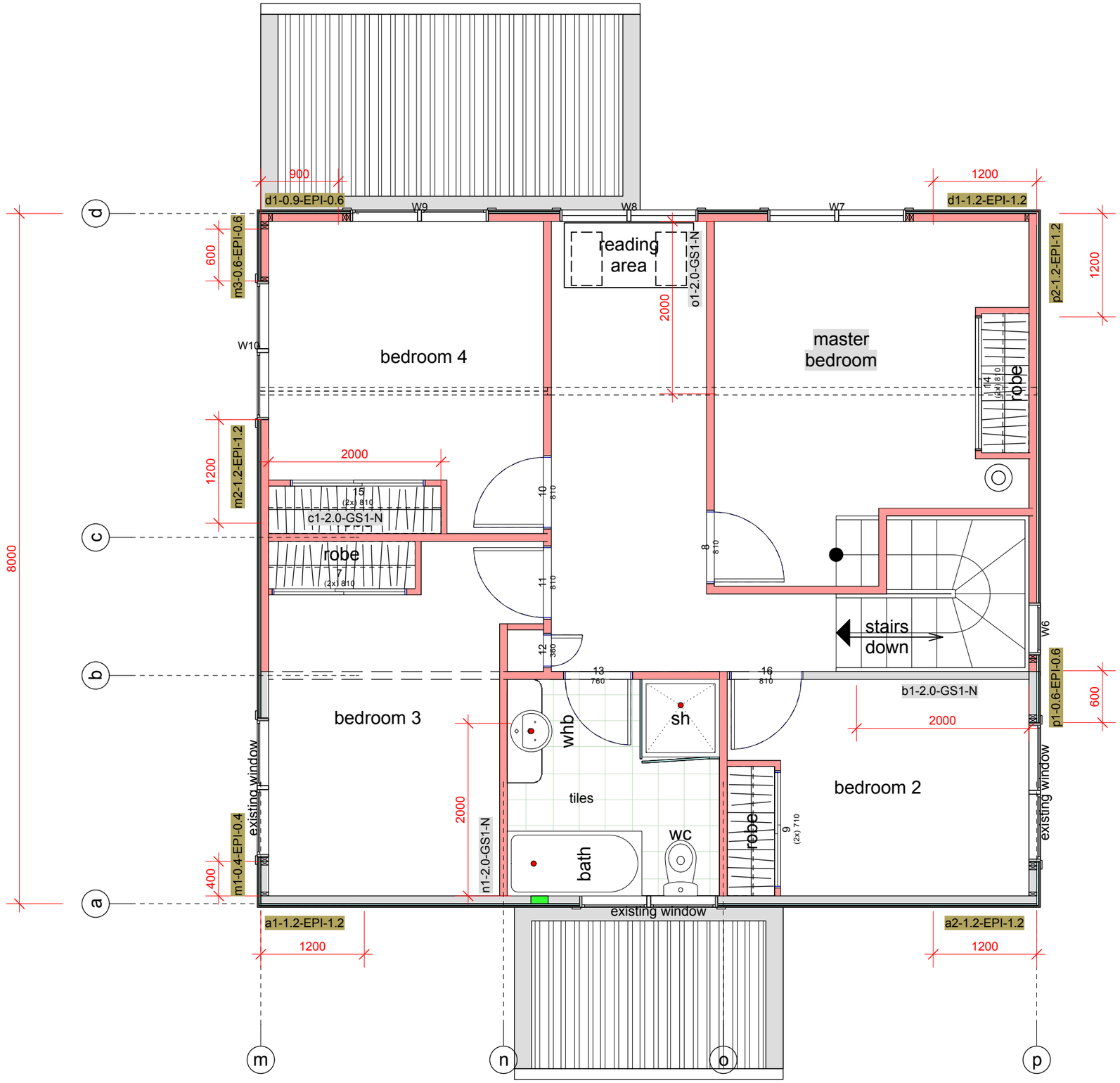
FOR WALL FRAMING MANUFACTURING PLEASE ALLOW FOR GIB HANDIBRACS FOR BRACING WIDTHS AS NOTED (NOT REQUIRED FOR GS1-NOM, GS1-N, GS2-N)

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		SCALE @ A3 1:50	DWG # A06
DWG	WALL BRACING PLAN Ground	DRAWN KB/TB/DB	
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ISSUE NO.	DESCRIPTION	DATE	BY	REVISION AMENDMENTS	DATE	REV

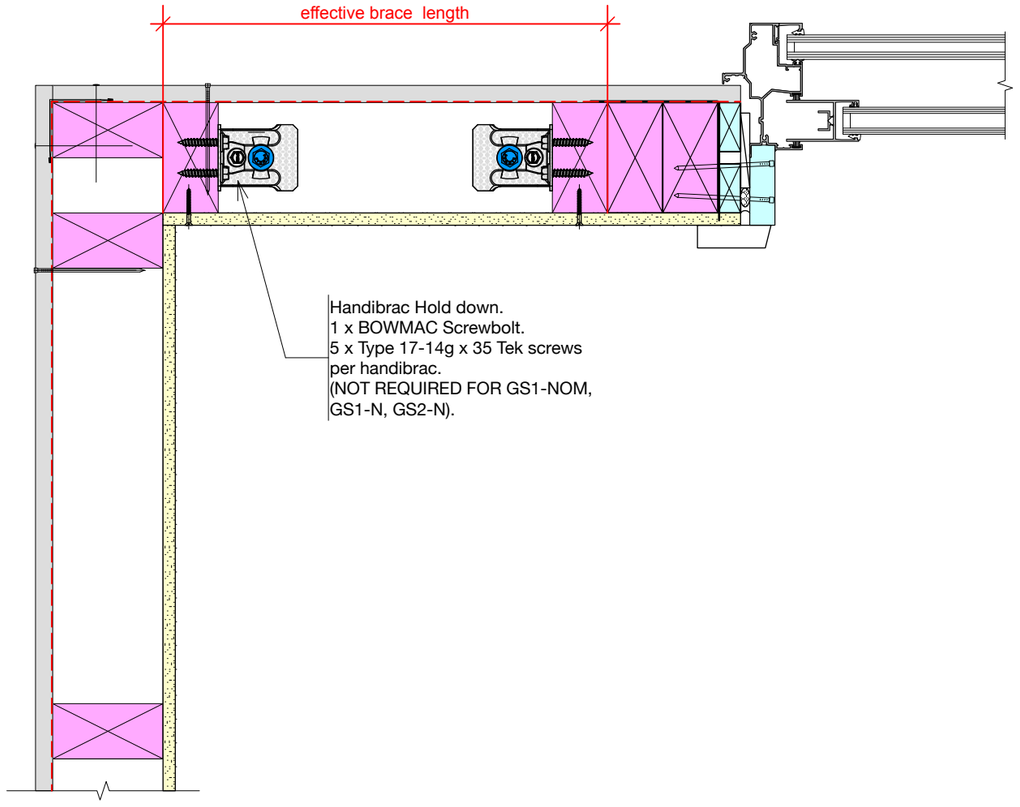
FOR WALL FRAMING MANUFACTURING PLEASE ALLOW FOR GIB HANDIBRACS FOR BRACING WIDTHS AS NOTED (NOT REQUIRED FOR GS1-NOM, GS1-N, GS2-N)

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A06.1
DWG	WALL BRACING PLAN Level 1	SCALE @ A3 1:50	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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- DETAIL

TYPICAL HANDIBRAC DETAIL

Scale 1 : 5

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:5	DWG # A06.2
DWG	HANDIBRAC DETAIL	DRAWN KB/TB/DB CHKD KB/TB/DB	

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GIB EzyBrace® Bracing Software

Demand Calculation Sheet

Job Details

Name:	M & S Scott
Street and Number:	6 Tui Street, Ahipara
Lot and D.P. Number:	Lot 2 DP 110831
City/Town/District:	Northland
Designer:	KB
Company:	Beard Online Architecture
Date:	05/08/2026

Building Specification

Number of Storeys	2	
Floor Loading	2 kPa	
Foundation Type	SubFloor	
Subfloor Cladding Weight	Light	
	Upper	**Lower**
Cladding Weight	Light	Light
Roof Weight	Light	Light
Room in Roof Space	No	No
Roof Pitch	20	20
Roof Height above Eaves (m)	1.5	1.5
Building Height to Apex (m)	7.5	
Ground to Lower Floor (m)	2.6	
Lower to Upper Floor (m)		2.3
Stud Height (m)	2.3	2.7
Building Length (m)	8	8
Building Width (m)	9	9
Build Plan Area (m2)	72	72

Building Location

Wind Zone = High

Earthquake Zone 1
Soil Type D & E (Deep to Very Soft)
Annual Probablity of Exceedance 1 in 500 (NZS3604:2011 Default)

Bracing Units required for Wind

	Along	Across
Upper Level	**261**	**179**
Lower Level	**603**	**482**
Subfloor Level	**1095**	**974**

Bracing Units required for Earthquake

	Along and Across
Upper Level	**295**
Lower Level	**690**
Subfloor Level	**871**

GIB Ezybrace® Version 12/18*

GIB EzyBrace® Bracing Software

Upper Level Along Resistance Sheet

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									261	295
									Resistance	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	768 294%	744 252%
a	1	1.2		2.1	EPI_1.2	CHH	144	144		
	2	1.2		2.1	EPI_1.2	CHH	144	144		
	External Length = 9								288 OK	288 OK
b	1	2.0		2.7	GS1-N	GIB®	123	107		
									123 OK	107 OK
c	1	2.0		2.6	GS1-N	GIB®	127	111		
									127 OK	111 OK
d	1	0.9		2.4	EPI_0.6	CHH	86	94		
	1	1.2		2.4	EPI_1.2	CHH	144	144		
	External Length = 9								230 OK	238 OK

GIB EzyBrace® Bracing Software

Upper Level Across Resistance Sheet

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									179	295
									Resistance	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	695 388%	679 230%
m	1	0.4		2.4	EPI_0.4	CHH	32	38		
	2	1.2		2.4	EPI_1.2	CHH	144	144		
	3	0.6		2.4	EPI_0.6	CHH	57	63		
	External Length = 8								233 OK	245 OK
n	1	2.0		2.7	GS1-N	GIB®	123	107		
									123 OK	107 OK
o	1	2.0		2.4	GS1-N	GIB®	138	120		
									138 OK	120 OK
p	1	0.6		2.4	EPI_0.6	CHH	57	63		
	2	1.2		2.4	EPI_1.2	CHH	144	144		
	External Length = 8								201 OK	207 OK

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Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A06.3
DWG	WALL BRACING CALC-0	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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GIB EzyBrace® Bracing Software

Lower Level Along Resistance Sheet

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									603	690
									Resistance	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	656 109%	632 Check
A	1	1.2		2.4	EPI_1.2	CHH	144	144		
	2	0.6		2.4	EPI_0.6	CHH	57	63		
	External Length = 9								201 OK	207 OK
B	1	1.0		2.3	GS1-N	GIB®	65	60		
	2	2.0		2.3	GS1-N	GIB®	138	120		
									203 OK	180 OK
C	1	2.0		2.3	GS1-N	GIB®	138	120		
									138 OK	120 OK
D	1	0.6		2.4	EPI_0.6	CHH	57	63		
	2	0.6		2.4	EPI_0.6	CHH	57	63		
									114 OK	126 OK

GIB EzyBrace® Bracing Software

Lower Level Across Resistance Sheet

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									482	690
									Resistance	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	895 186%	857 124%
M	1	1.2		2.4	EPI_1.2	CHH	144	144		
	2	1.2		2.4	EPI_1.2	CHH	144	144		
									288 OK	288 OK
N	1	1.4		2.3	GS1-N	GIB®	97	84		
	2	0.9		2.3	GS1-N	GIB®	57	53		
									153 OK	137 OK
O	1	2.4		2.3	GS1-N	GIB®	166	144		
									166 OK	144 OK
P	1	1.2		2.4	EPI_1.2	CHH	144	144		
	2	1.2		2.4	EPI_1.2	CHH	144	144		
									288 OK	288 OK

GIB EzyBrace® Bracing Software

Custom Wall Elements

Supplier	System	Min. Length (m)	Wind (BUs/m)	EQ (BUs/m)
CHH	EPI_0.4	0.4	80	95
CHH	EPI_0.6	0.6	95	105
CHH	EPI_1.2	1.2	120	135

Custom SubFloor Elements

Supplier	System	Min. Length (m)	Wind (BUs/m)	EQ (BUs/m)

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A06.4
DWG	WALL BRACING-CALC-1	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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GIB HANDIBRAC® OVERVIEW

COMPONENTS

GIB HandiBrac® is available in boxes of 10, each containing 5 pairs.

Components per paired pack include:

- 2 x GIB HandiBrac® Brackets
- 10 x Tek Screws
- 2 x BOWMAC® screw bolts included within specific GIB HandiBrac® pack

GIB® BRACING ELEMENTS

The GIB HandiBrac® is a proprietary product that has been tested and is suitable for use with specified GIB EzyBrace® Systems.

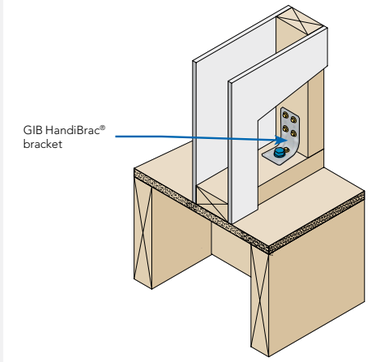
FIXING TO TIMBER FRAMED FLOORS

BOWMAC® screw bolt to achieve a characteristic uplift strength of 12kN.

PANEL HOLD-DOWN DETAILS

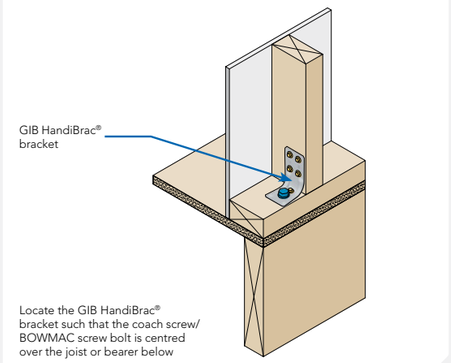
TIMBER FLOOR – INTERNAL WALL

Bottom Plate is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page.



TIMBER FLOOR – EXTERNAL WALL

Bottom Plate is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page.



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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A06.5
DWG	GIB HANDIBRAC	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Architectural Notes

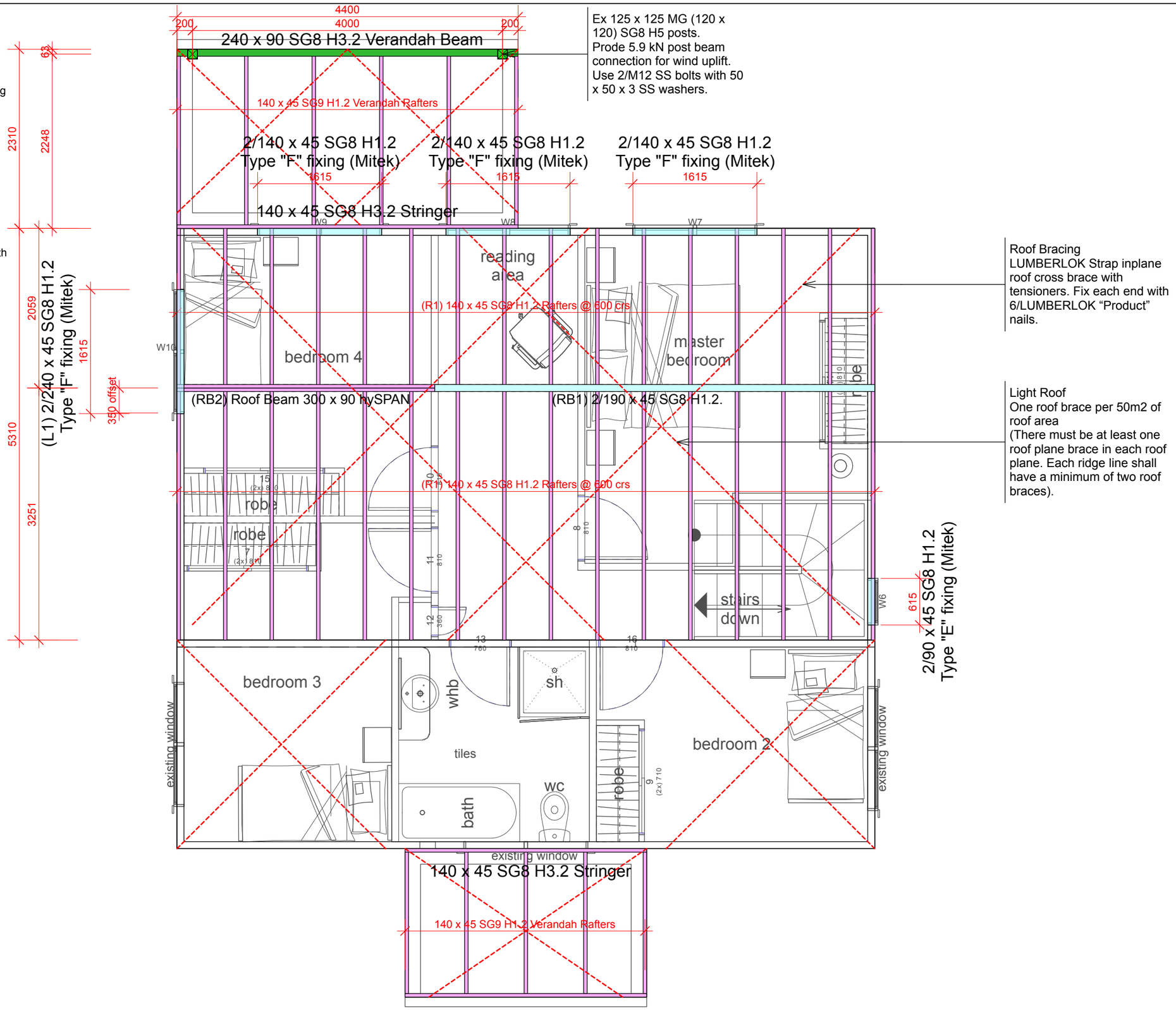
Roof:

Purlins (Trapezoidal Roofing)
70 x 45 SG8 H1.2 Purlins @ 900 crs, with 1/10g Self Drilling Screw 80mm long or Lumberlok Bluescrew. Top & Bottom rows to be 600 crs max.

Roofing Underlay
Covertek 407 Self Supporting Roof Underlay.

Trapezoidal Roof Cladding
0.4 Coloursteel MAXAM Trimline Roofing.

Roof Bracing
Lumberlok Strap Inplane Roof Cross Brace With Tensioners. Fix Each End With 6/lumberlok "product" Nails To Each End Fixing.



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REV | DATE | BY | REVISION AMENDMENTS | DATE | DESCRIPTION | ISSUE NO.

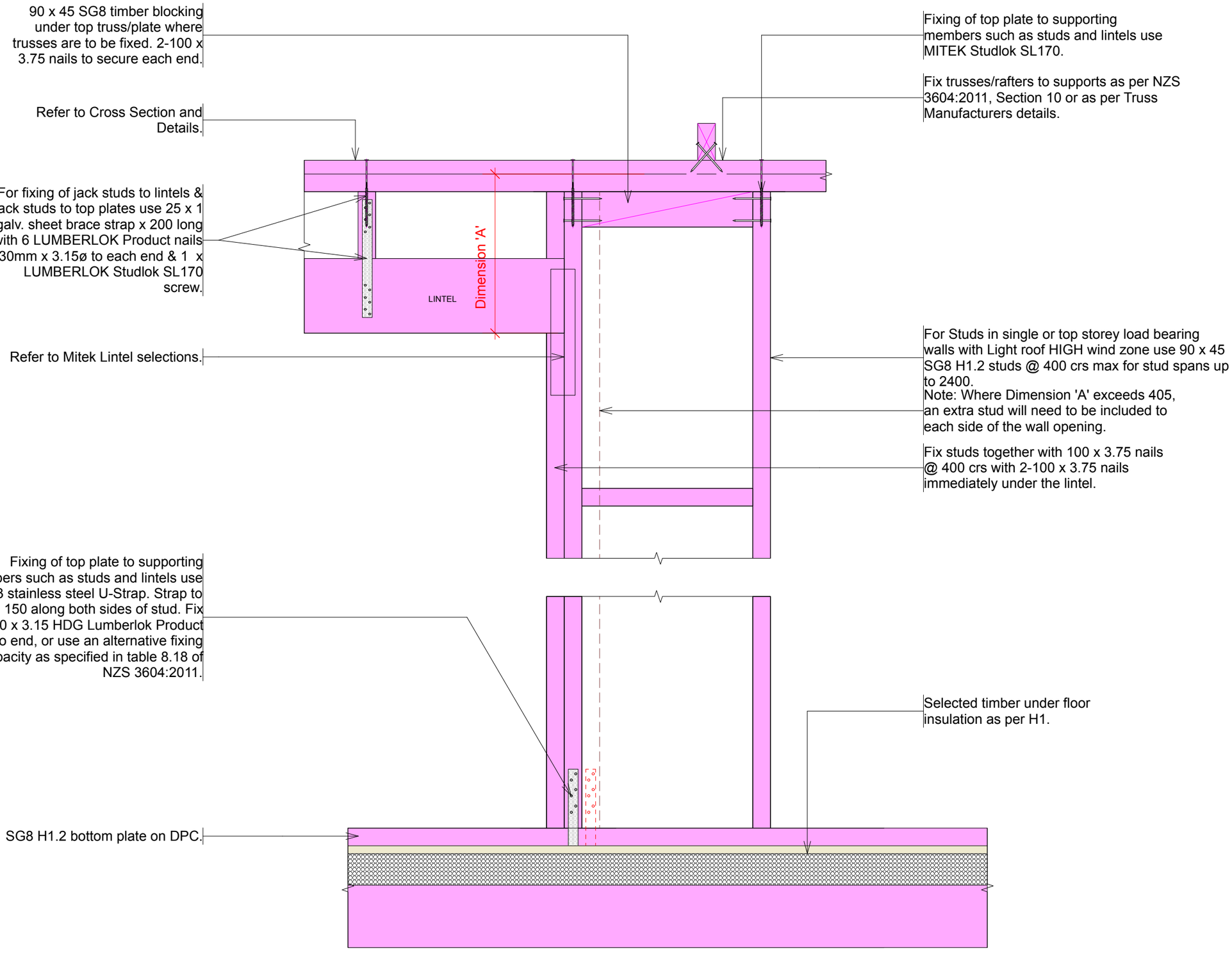
Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 1:50	DWG # A07
DWG	ROOF FRAMING PLAN	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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TIMBER LINTEL/STUD FIXING NOTES



FOR LINTELS UP TO 400 BELOW THE TOP PLATE - TIMBER FLOOR

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ISSUE NO.	DATE	DESCRIPTION

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A07.1
DWG	LINTEL/STUD FIXINGS-TIMBER	SCALE @ A3 1:10	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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CLIENT: M & S SCOTT

PROJECT: 6 Tui Street, Ahipara

DWG: DESIGN IT/PROLAM CALCS

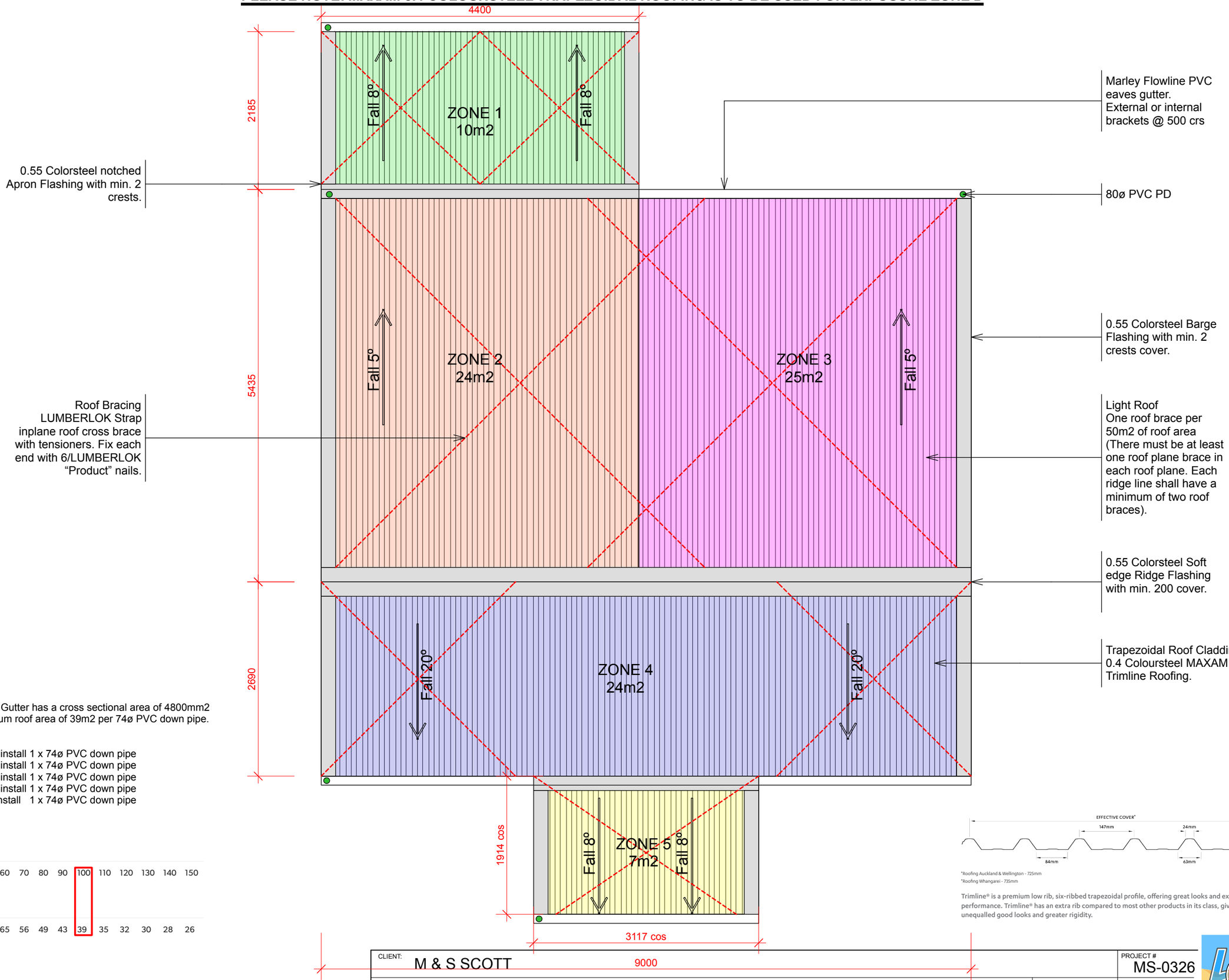
DATE #	14/08/2026
SCALE @ A3	NTS
DRAWN	KB/TB/DB
CHKD	KB/TB/DB

PROJECT # MS-0326

DWG # A08

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PLEASE NOTE: MAXAM 0.4 COLOURSTEEL TRAPEZOIDAL ROOFING IS TO BE USED FOR EXPOSURE ZONE D



Marley FLOWLINE (FL2) Gutter has a cross sectional area of 4800mm2 and can service a maximum roof area of 39m2 per 74ø PVC down pipe.

ZONE 1=10m2-therefore install 1 x 74ø PVC down pipe
ZONE 2=24m2-therefore install 1 x 74ø PVC down pipe
ZONE 3=25m2-therefore install 1 x 74ø PVC down pipe
ZONE 4=24m2-therefore install 1 x 74ø PVC down pipe
ZONE 5=7m2-therefore install 1 x 74ø PVC down pipe

Spouting Capacity:

Rainfall Intensity* (mm/hr)	40	50	60	70	80	90	100	110	120	130	140	150
Maximum Catchment Area per downpipe(m²)	97	78	65	56	49	43	39	35	32	30	28	26

*Roofing Auckland & Wellington - 725mm
*Roofing Whangarei - 735mm

Trimline® is a premium low rib, six-ribbed trapezoidal profile, offering great looks and exceptional performance. Trimline® has an extra rib compared to most other products in its class, giving it unequalled good looks and greater rigidity.

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
DWG	ROOF PLAN	SCALE @ A3 1:50	DWG # A09
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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H1 Calculation Report

H1 calculation in accordance with H1 Energy Efficiency Acceptable Solution H1/AS1 Sixth Edition (27/11/2025)

Date	13/08/2026
Project	Renovation 6 Tui Street Ahipara
Client	Beard Online Architecture
Contact	Kirsty Beard
Email	kirstyboarch22@gmail.com
Plan Date	5/08/2026
Climate Zone	1



Thank you for choosing Mammoth® insulation for your H1 calculations. Mammoth's thermal and acoustic insulation is made from 100% polyester using fibre from recycled PET plastic bottles.

The Mammoth products specified below represent the equivalent of 24,780 recycled plastic bottles.*

Congratulations for helping NZ protect our environment by keeping the carbon content locked up in the polyester fibre and reducing landfill waste.

Below is the summary of the construction elements and the insulation required for your project.

Construction Element	Insulation
Rafter roof - 140mm cavity	R3.6 Mammoth skillion (140mm)
External walls - 90mm cavity	R2.0 Mammoth wall sections (90mm)
Timber floors - 140mm & 150mm cavity	R2.8 Mammoth floor sections (140mm)
Aluminium joinery	Min. R0.37 units

Glazing percentage:	**18.9%**
Proposed building exceeds reference performance by:	**0.26%**
H1 Result:	**PASS**

H1 calculation in accordance with H1 Energy Efficiency Acceptable Solution H1/AS1 Sixth Edition (27/11/25) clause 2.1.2
The accompanying H1 calculation is valid only when the specified insulation products are used.
Substitution of any product listed above voids the H1 report.

LIFETIME WARRANTY Mammoth MODERN INSULATION

*Calculations are based on 500ml PET bottles (16.2g).

Mammoth® is a registered trade mark of InZone Industries Ltd.

Mammoth MODERN INSULATION 0800 MAMMOTH | www.mammoth.co.nz

Proposed Building Construction Elements

Roof	Insulation	Area (m^2)	R Value	Reference
Profiled metal on purlins, rafter 140x45 @ 600	R3.6 Mammoth (140mm)	**48.04**	**3.29**	**6.6**
Profiled metal on purlins, ex. rafter 140x45	R3.6 Mammoth (140mm)	**25.82**	**3.29**	**6.6**

Wall	Insulation	Area (m^2)	R Value	Reference
9mm Ecoply RAB, stud 90x45 @ 38% framing	R2.0 Mammoth (90mm)	**68.65**	**1.47**	**1.6**
9mm Ecoply RAB, ex. stud 90x45 @ 38% framing	R2.0 Mammoth (90mm)	**57.54**	**1.47**	**1.6**

Joinery	Glazing	Area (m^2)	R Value	Reference
Aluminium joinery	Min. R0.37 units	**21.07**	**0.37**	**0.46**
Standard door	-	**1.954**	**0.4**	**0.46**
Existing joinery	Defaulted to reference	**6.33**	**0.46**	**0.46**

Floor (slab on grade)	Insulation	Area (m^2)	R Value	Reference

Floor (suspended floor)	Insulation	Area (m^2)	R Value	Reference
Timber floor, joist 140x45 @ 300, to subfloor	R2.8 Mammoth (140mm)	**19.15**	**2.75**	**2.5**
Timber floor, joist 150x63 @ 450, to subfloor	R2.8 Mammoth (140mm)	**52.97**	**2.92**	**2.5**

Skylight	Area (m^2)	R Value	Reference

LIFETIME WARRANTY Mammoth MODERN INSULATION

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # A09.1
DWG	H1	DRAWN KB/TB/DB CHKD KB/TB/DB	

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H1 Calculation

Proposed Building Heat Loss Calculation

	$\frac{A_{roof}}{R_{Roof}}$		$\frac{A_{wall}}{R_{wall}}$		$\frac{A_{Glazing}}{R_{Glazing}}$		$\frac{A_{floor}}{R_{floor}}$		$\frac{A_{floor2}}{R_{floor2}}$		$\frac{A_{Skylight}}{R_{Skylight}}$		
Area (m^2)	73.86		126.19		29.354		0		72.12		0		
Net Heat Loss	22.4	+	85.8	+	75.6	+	0.0	+	25.1	+	0.0	=	**209.0**

Reference Building Heat Loss Calculation

	$\frac{A_{roof}+A_{skylight}}{Ref_{Roof}}$		$\frac{A_{0.7totalwall}}{Ref_{wall}}$		$\frac{A_{0.3totalwall}}{Ref_{Glazing}}$		$\frac{A_{floor}}{Ref_{floor}}$		$\frac{A_{floor2}}{Ref_{floor2}}$		
Area (m^2)	73.86		108.8808		46.6632		0		72.12		
Reference R Value	6.6		1.6		0.46		1.5		2.5		
Net Heat Loss	11.2	+	68.1	+	101.4	+	0.0	+	28.8	=	**209.5**

Glazing percentage of proposed building:	**18.9%**
Proposed building thermal performance exceeds reference performance by:	**0.26%**
H1 Result:	**PASS**

Terms and Conditions:

1. This calculation qualifies as an acceptable solution under Energy Efficiency Acceptable Solution H1/AS1 6th edition (27/11/25) clause 2.1.2 where the proposed building total heat loss is less than the reference building total heat loss, and the glazing area is no greater than 40% of the total wall area.
2. Construction R-values are based on the following sources:
   - BRANZ House Insulation Guide (6th edition)
   - Design Navigator R-Value Calculator
   - Mammoth® Insulation Test Methodology & Results
   - H1 Energy Efficiency Acceptable Solution H1/AS1
3. Where Mammoth products are specified, changing to another brand will void this report due to potential changes to construction R-values
4. Framed walls are assumed to have 38% framing unless otherwise specified.
5. All areas are based on internal dimensions.

LIFETIME WARRANTY Mammoth MODERN INSULATION

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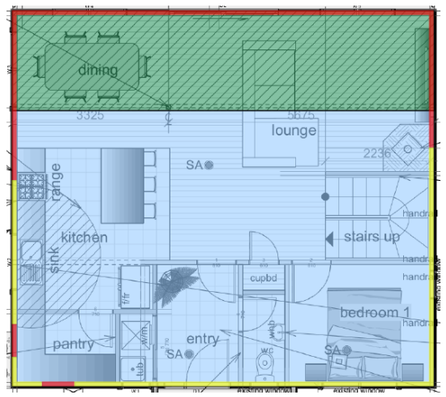
CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A09.2
DWG	H1	SCALE @ A3 1:50	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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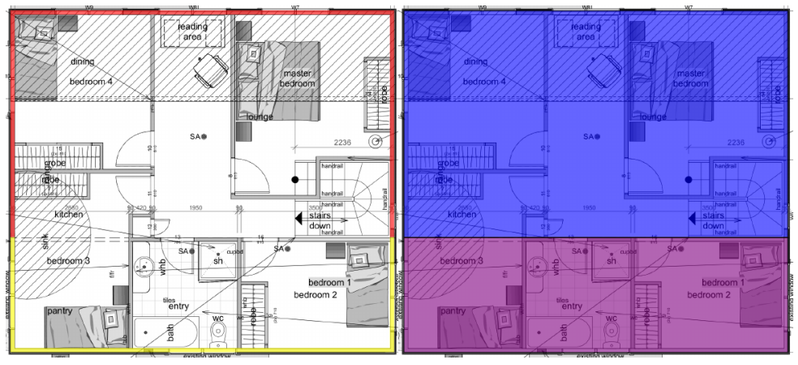
REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

9mm Ecoply (stud 90x45)	
9mm Ecoply (ex. stud 90x45)	
Timber floor (joist 140x45 @ 300)	
Timber floor (ex. joist 140x45 @ 450)	
Profiled metal (140x45 @ 600)	
Profiled metal (ex. rafter 140x45)	

Ground Floor



First Floor



Roof

Profiled metal on purlins, rafter 140x45 @ 600 & Existing 140mm rafter

Date: 11/08/2026

Element Name (optional) — 3.29 m²°C/W

Type: Roof: Timber framed skillion or flat Roof

Timber framed skillion or flat Roof [view detail]

external surface 0.03

Roofing : generic - Metal corrugated Iron with building paper — R-value: 0.01

Timber Frame & Cavity : 140mm rafters or joists @ 600mm, battens covered with insulation

Roof Frame Area: 7.5% — Cavity Area: 92.5%

Framing : R-value: 1.19

still Airgap : none — R-value: 0.00

Thermal Break : generic - none — R-value: 0.00

Insulation : 3.6

Ceiling Lining : generic - gypsum Plasterboard 13mm — R-value: 0.06

internal surface 0.09

Non-IC-rated recessed downlights

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

*R-value only valid for H/AS1 **Edition 5** and H1/AS2 **Edition 1** compliance calculations.*
Construction R-value calculated by DesignNavigator ©

External walls

9mm Ecoply RAB, stud 90x45 @ 38% framing & Existing stud 90x45

Date: 11/08/2026

Element Name (optional) — 1.47 m²°C/W

Type: Wall: Timber Frame (direct fixed Cladding)

Timber Frame (direct fixed Cladding) [view detail]

external surface 0.03

Cladding : generic - None (facing inside air, i.e. internal bulkhead into roof space) — R-value: 0.09

Air Barrier : generic - none — R-value: 0.00

Timber Frame & Cavity : 90mm, 38% framing

Wall Frame Area: 38.0% — Cavity Area: 62.0%

Framing : R-value: 0.75

Insulation : 2

still Airgap: none — R-value: 0.00

Wall Lining : generic - gypsum Plasterboard 10mm — R-value: 0.04

internal surface 0.09

*R-value only valid for H/AS1 **Edition 5** and H1/AS2 **Edition 1** compliance calculations.*
Construction R-value calculated by DesignNavigator ©

Foundations

Timber floor, joist 140x45 @ 300, to subfloor

Date: 11/08/2026

Element Name (optional) — 2.75 m²°C/W

Type: Floor: Suspended Floor with Lining under the Joists & Gap above or below the Insulation

Suspended Floor with Lining under the Joists & Gap above or below the Insulation [view detail]

internal surface 0.09

Flooring : generic - Particle Board 18mm — R-value: 0.15

Timber Frame & Cavity : 140mm joists @ 300mm

Floor Frame Area: 15.0% — Cavity Area: 85.0%

Framing : R-value: 1.16

Insulation : 2.8

air gap 0.20

Floor Lining : generic - Gypsum plasterboard 13mm — R-value: 0.06

surface 0.03

Insulation value of the subfloor space

Suspended floor area [m²]:
Perimeter length [m]:
Perimeter height [m]:
Perimeter type: Exposed floor (pole house)

*R-value only valid for H/AS1 **Edition 5** and H1/AS2 **Edition 1** compliance calculations.*
Construction R-value calculated by DesignNavigator ©

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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A09.3
DWG	H1	SCALE @ A3 1:50	
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InZone INDUSTRIES LTD

Brightr SMARTER ENERGY SOLUTIONS

Mammoth MODERN INSULATION

Timber floor, existing joist 150x63 @ 450, to subfloor

Date: 11/08/2026

Element Name (optional) — 2.92 m²°C/W

Type: Floor: Suspended Floor with Lining under the Joists & Gap above or below the Insulation

Suspended Floor with Lining under the Joists & Gap above or below the Insulation — view detail

internal surface 0.09

Flooring : generic - Particle Board 18mm
R-value: 0.15

Timber Frame & Cavity : 140mm joists @ 450mm

Floor Frame Area: 10.0% — *Cavity Area: 90.0%*

Framing : *R-value: 1.16*

Insulation : 2.8

air gap 0.20

Floor Lining : generic - Gypsum plasterboard 13mm
R-value: 0.06

surface 0.03

Insulation value of the subfloor space

Suspended floor area [m²]:

Perimeter length [m]:

Perimeter height [m]:

Perimeter type: Exposed floor (pole house)

*R-value only valid for H/AS1 **Edition 5** and H1/AS2 **Edition 1** compliance calculations.*
Construction R-value calculated by DesignNavigator ©

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PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A09.4
	SCALE @ A3 1:50		
DWG H1	DRAWN KB/TB/DB		
	CHKD KB/TB/DB		

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HIGH WIND ZONE

Karaka

ROOF AND WALL CLADDING
KARAKA COLORSTEEL



TSR: 24%
LRV: 8%



Trapezoidal Roof Cladding
0.4 Colorsteel MAXAM Trapezoidal Roofing.

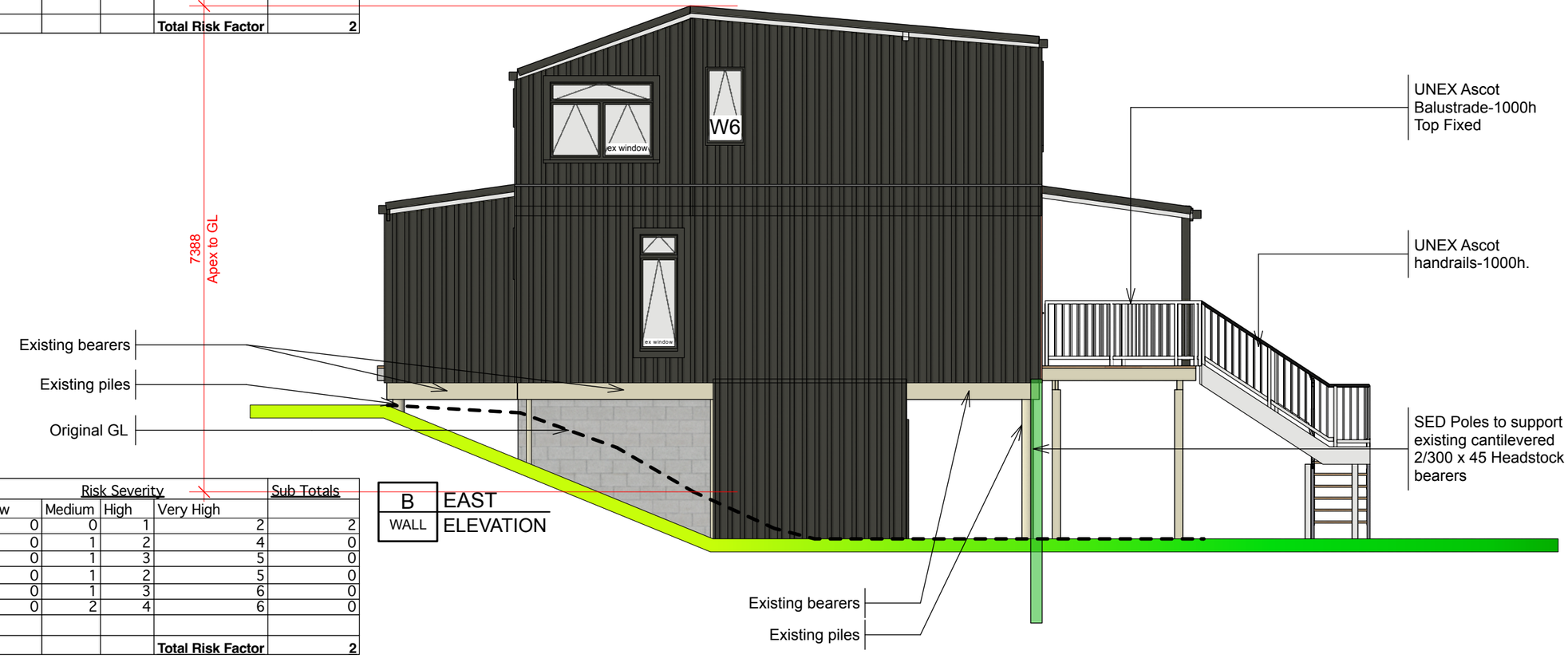
Vertical Shiplap Weatherboard Wall Cladding.

Vertical Trapezoidal Wall Cladding
0.4 Colorsteel MAXAM Trapezoidal Wall Cladding, over 40 x 20 Castellated Cavity Batten over 9mm Eco Ply.

Existing bearers

North Wall	Risk Severity				Sub Totals
	Low	Medium	High	Very High	
Wind Zone	0	0	1	2	2
Number of Storeys	0	1	2	4	0
Roof/Wall junctions	0	1	3	5	0
Eave width	0	1	2	5	0
Envelope complexity	0	1	3	6	0
Decks	0	2	4	6	0
				Total Risk Factor	2

A WALL — NORTH ELEVATION



East Wall	Risk Severity				Sub Totals
	Low	Medium	High	Very High	
Wind Zone	0	0	1	2	2
Number of Storeys	0	1	2	4	0
Roof/Wall junctions	0	1	3	5	0
Eave width	0	1	2	5	0
Envelope complexity	0	1	3	6	0
Decks	0	2	4	6	0
				Total Risk Factor	2

B WALL — EAST ELEVATION

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PROJECT: 6 Tui Street, Ahipara
DWG: ELEVATIONS
DATE # 14/08/2026
SCALE @ A3 1:75
DRAWN KB/TB/DB
CHKD KB/TB/DB
PROJECT # MS-0326
DWG # A10

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Karaka

ROOF AND WALL CLADDING
KARAKA COLORSTEEL



TSR: 24%
LRV: 8%

HIGH WIND ZONE



0.55 Colorsteel Z-Flashing

Vertical Shiplap Weatherboard Wall Cladding

Trapezoidal Roof Cladding 0.4 Colorsteel MAXAM Trapezoidal Roofing.

Vertical Trapezoidal Wall Cladding 0.4 Colorsteel MAXAM Trapezoidal Wall Cladding, over 40 x 20 Castellated Cavity Batten over 9mm Eco Ply.

Vertical Shiplap Weatherboard Wall Cladding

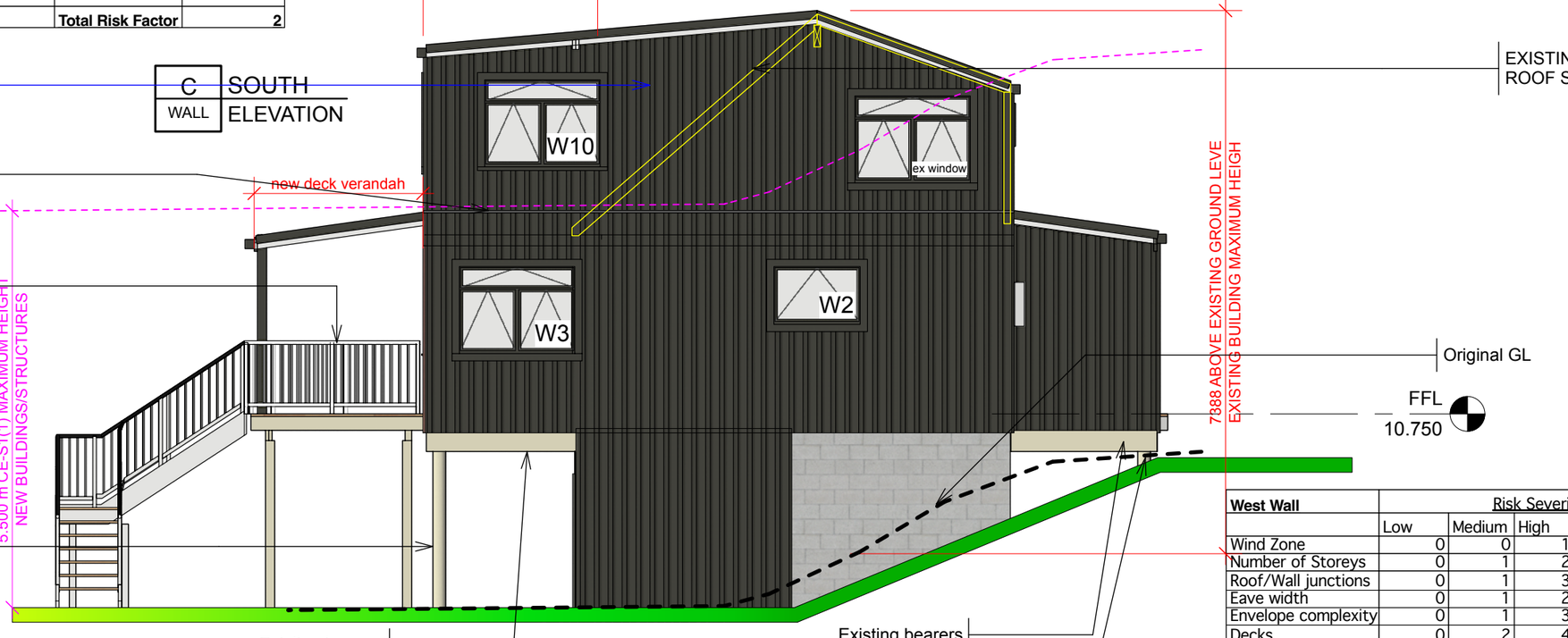
UNEX Ascot Balustrade-1000h Top Fixed

South Wall	Risk Severity				Sub Totals
	Low	Medium	High	Very High	
Wind Zone	0	0	1	2	2
Number of Storeys	0	1	2	4	0
Roof/Wall junctions	0	1	3	5	0
Eave width	0	1	2	5	0
Envelope complexity	0	1	3	6	0
Decks	0	2	4	6	0
				Total Risk Factor	**2**

NEW EXTENSION TO EXISTING BUILD

PROPOSED EXTENSION TO EXISTING BUILDING – REFER CE-S1(2). EXTENSION DOES NOT EXCEED HEIGHT OF EXISTING BUILDING.

C WALL SOUTH ELEVATION



EXISTING BUILDING ENVELOPE / ROOF SHOWN YELLOW

0.55 Colorsteel Z-Flashing

UNEX Ascot Balustrade-1000h Top Fixed

SED Poles to support existing cantilevered 2/300 x 45 Headstock bearers

West Wall	Risk Severity				Sub Totals
	Low	Medium	High	Very High	
Wind Zone	0	0	1	2	2
Number of Storeys	0	1	2	4	0
Roof/Wall junctions	0	1	3	5	0
Eave width	0	1	2	5	0
Envelope complexity	0	1	3	6	1
Decks	0	2	4	6	0
				Total Risk Factor	**3**

D WALL WEST ELEVATION

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A11
DWG	ELEVATIONS	SCALE @ A3 1:75	
		DRAWN KB/TB/DB	
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Table 1: Definitions of risk levels

Risk Factor	Score	Risk Severity	Comments
A: Wind Zone (6)	0	Low Risk	Low wind zone as described by NZS 3604
	0	Medium Risk	Medium wind zone as described by NZS 3604
	1	High Risk	High wind zone as described by NZS 3604
	2	Very High Risk	Very high wind zone as described by NZS 3604
	2	Extra High Risk	Extra high wind zone as described by NZS 3604 (4)
B: Number of storeys	0	Low Risk	One storey
	1	Medium Risk	Two storeys in part
	2	High Risk	Two storeys
	4	Very High Risk	More than two storeys
C: Roof/wall junctions	0	Low Risk	Roof-to-wall intersection fully protected (i.e. hip and gable roof with eaves)
	1	Medium Risk	Roof-to-wall intersection partly exposed (i.e. hip and gable roof with no eaves)
	3	High Risk	Roof-to-wall intersection fully exposed (i.e. parapets, enclosed balustrades or eaves at greater than 90° to vertical with soffit lining)
	5	Very High Risk	Roof elements finishing within the boundaries formed by the exterior walls (i.e. lower ends aprons, chimneys, dormers etc)
D: Eaves width (1) (2)	0	Low Risk	Greater than 600mm for single storey
	1	Medium Risk	451–600mm for single storey, or over 600mm for two storey
	2	High Risk	101–450mm for single storey, or 451–600mm for two storey, or greater than 600mm above two storey
	5	Very High Risk	0–100mm for single storey, or 0–450mm for two storey, or less than 600mm above two storey
E: Envelope complexity	0	Low Risk	Simple rectangular, L, T or boomerang shape with single cladding type
	1	Medium Risk	Moderately complex, angular or curved shapes (i.e. Y or arrowhead) with no more than two cladding types
	3	High Risk	Complex, angular or curved shapes (i.e. Y or arrowhead) with multiple cladding types
	6	Very High Risk	As for High risk, but with junctions not covered in C or F of this table (i.e. box windows, pergolas, multi storey re-entrant shapes etc)
F: Decks (3)	0	Low Risk	None, timber slat deck or porch at ground floor level
	2	Medium Risk	Fully covered in plan by roof, or timber slat deck attached at first or second floor level
	4	High Risk	Enclosed deck exposed in plan or cantilevered at first floor level
	6	Very High Risk	Enclosed deck exposed in plan or cantilevered at second floor level or above

Notes:

(1) Eaves width measured horizontally from external face of wall cladding to outer edge of overhang, including fascia and external gutters/spoutings.

(2) Balustrades and parapets count as 0mm eaves

(3) The term 'deck' includes balconies, as described in the definitions

(4) Buildings in Extra High winds zones require rigid underlays and drained cavities, refer to Table 3

(5) Refer also to Table 2

(6) Gisborne District Council has mapped the wind zones within the city. Any area outside the mapped zones must be assessed using the method outlined in New Zealand Standard 3604 – Timber Framed Buildings.

Risk score from Table 2	Direct fixed to framing	Over nominal 20mm drained cavity
		Claddings on parapets, enclosed balustrades, and in Extra High winds zones shall be installed over drained cavities. (5) (6)
0–6	a) Timber weatherboards – all types b) Fibre cement weatherboards c) Vertical profiled metal – corrugated and symmetrical trapezoidal (3) d) Fibre cement sheet (4) (jointed finish) e) Plywood sheet	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal(3) – corrugated and trapezoidal only d) Fibre cement – flush-finished e) EIFS
7–12	a) Bevel–back timber weatherboards b) Vertical timber board and batten c) Vertical profiled metal – corrugated only (3) (6)	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal – corrugated and trapezoidal only d) Rusticated weatherboards e) Fibre cement weatherboard f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) EIFS
13–20	a) Vertical profile metal – corrugated only (3) (6)	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal – corrugated and trapezoidal only d) Rusticated weatherboards e) Fibre cement weatherboard f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) EIFS i) Bevel-back weatherboards
Over 20	a) redesign the building to achieve a lower score, or b) specific design c) the design may need changing to reduce the risk d) Council may require more comprehensive details and documentation providing evidence of weathertightness e) Council, the designer or owner may require more inspections f) a third party audit of the design may be required.	

Notes:

(1) The wall cladding and this table are limited to those covered in E2/AS1.

(2) Traditional masonry veneer as per SNZ HB 4236, with minimum 40mm cavity.

(3) Refer figure 38 in E2/AS1 for profiles.

(4) Except stucco over a fibre cement backing.

(5) Cladding in Extra High winds zones require rigid underlays – refer to Paragraph 9.1.7.2 in E2/AS1

(6) Direct fix vertical corrugated steel is included as cavity construction.

Vertical fixing Trapezoidal Wall Cladding on cavity is not provided for in E2/AS1, because solid cavity battens would potentially compromise the ventilation and drainage of the cavity. However, using castellated battens (as an alternative solution) overcomes this and is widely accepted.

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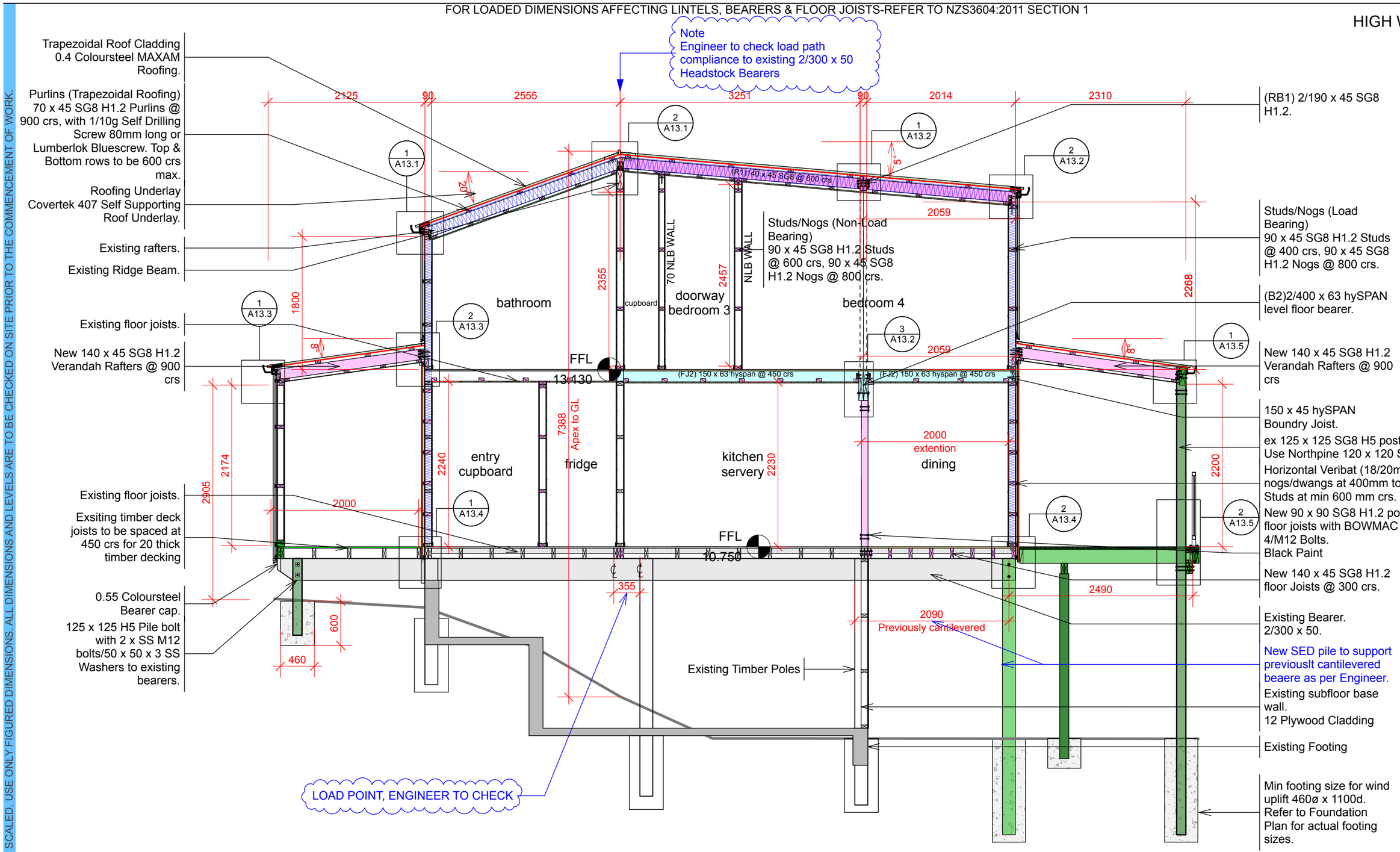
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PROJECT: 6 Tui Street, Ahipara
DWG: RISK MATRIX
DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
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PROJECT # MS-0326
DWG # A12

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FOR LOADED DIMENSIONS AFFECTING LINTELS, BEARERS & FLOOR JOISTS-REFER TO NZS3604:2011 SECTION 1

HIGH WIND ZONE

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A-A	Cross Section
000	

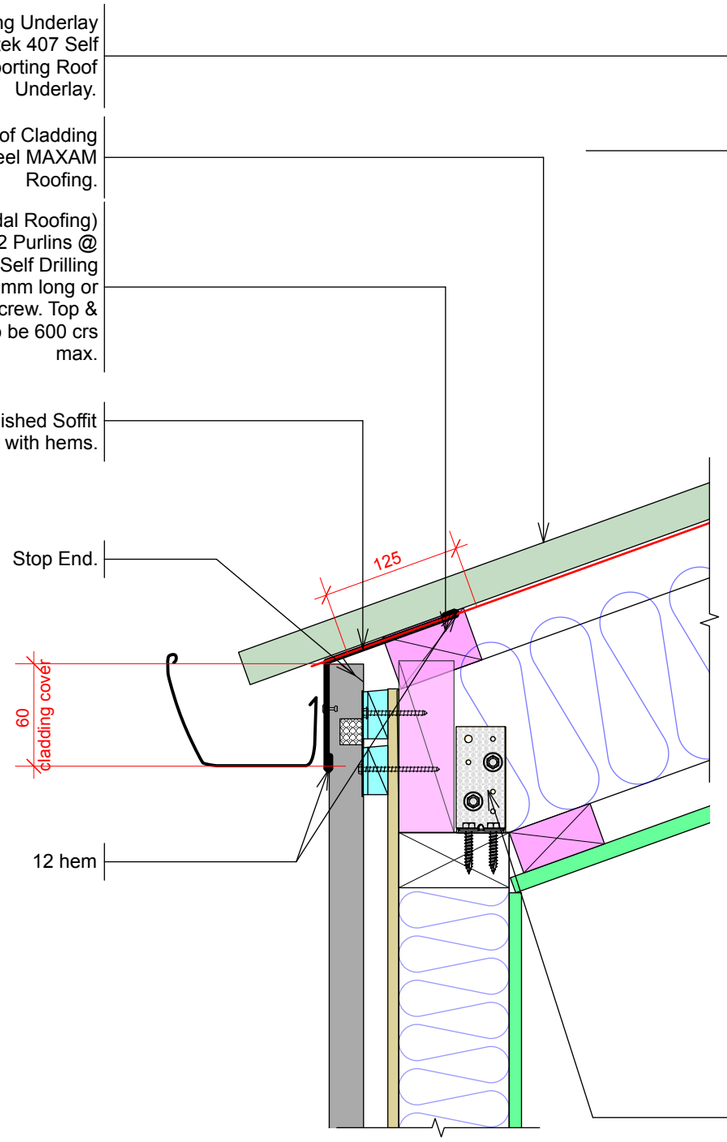
NOTE:
Bolted Connections.
50 x 50 x 3 Flat Washers to all Timber Faces.
Use S.S where exposed, otherwise Galv.

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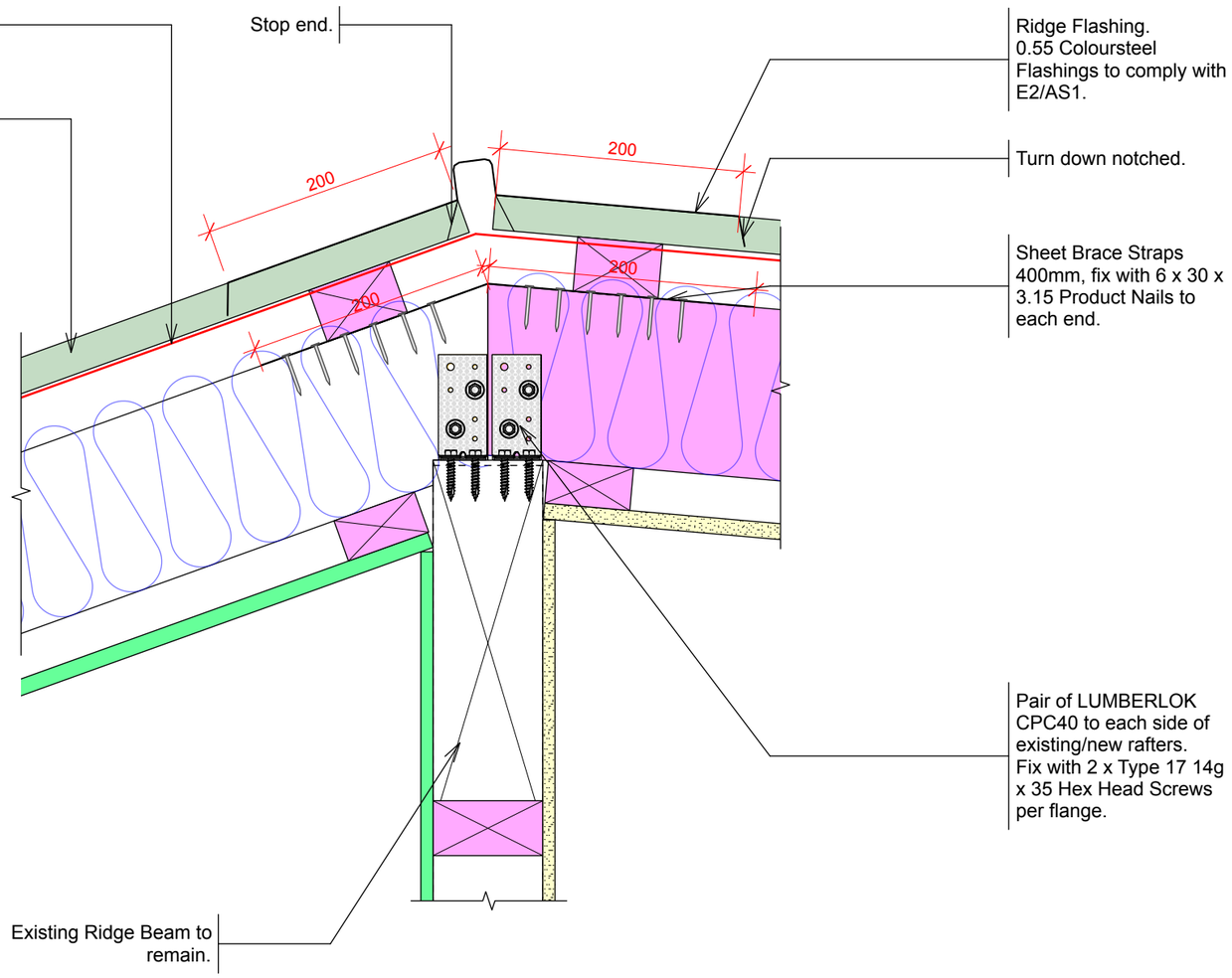
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
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DWG	CROSS SECTION A-A	DRAWN KB/TB/DB	
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1 Flush Eave
Scale: 1:5



2 Ridge Flashing/Rafter Connection
Scale: 1:5

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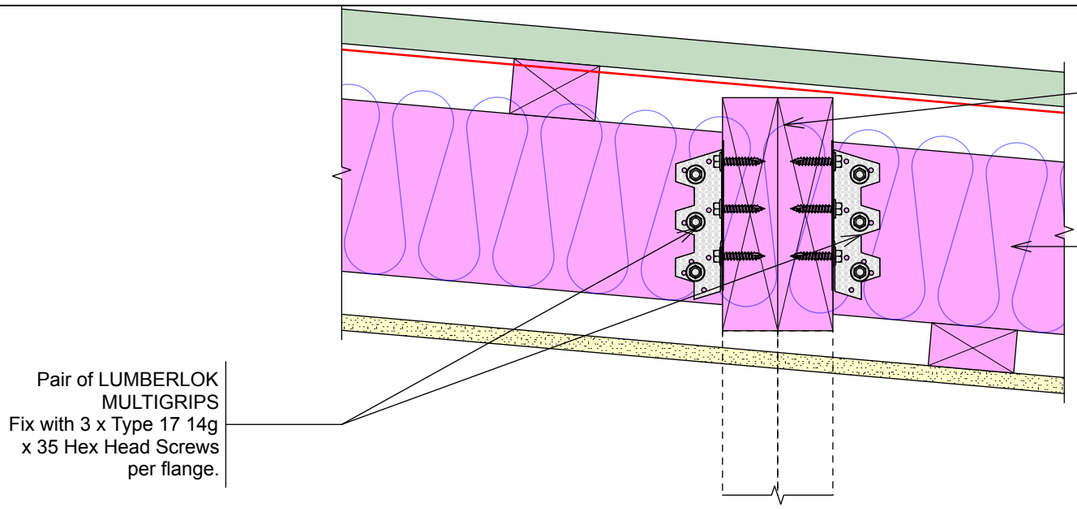
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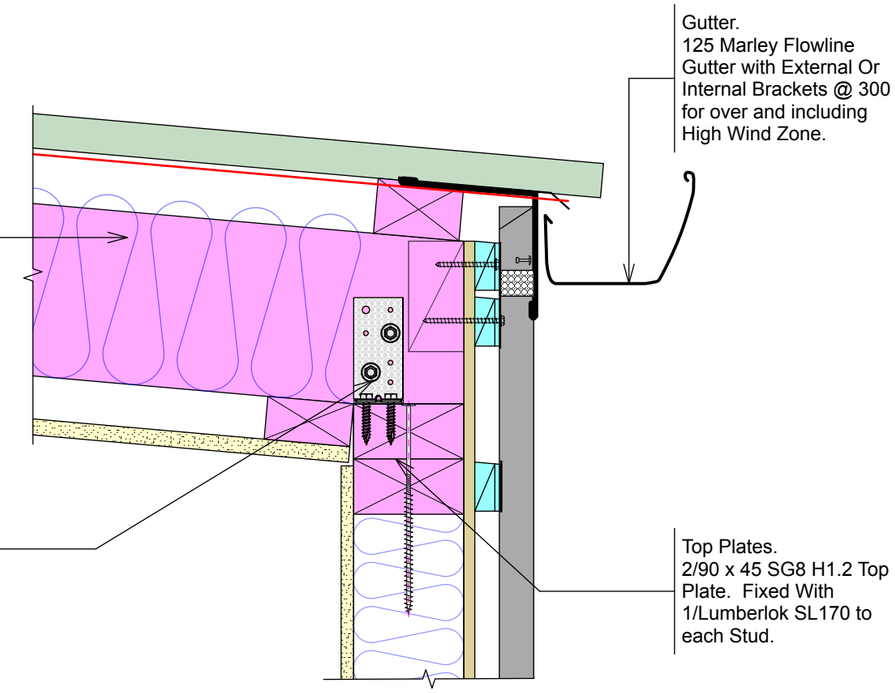
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:5	DWG # A13.1
DWG	ARCHITECTURAL DETAILS A-A	DRAWN KB/TB/DB CHKD KB/TB/DB	

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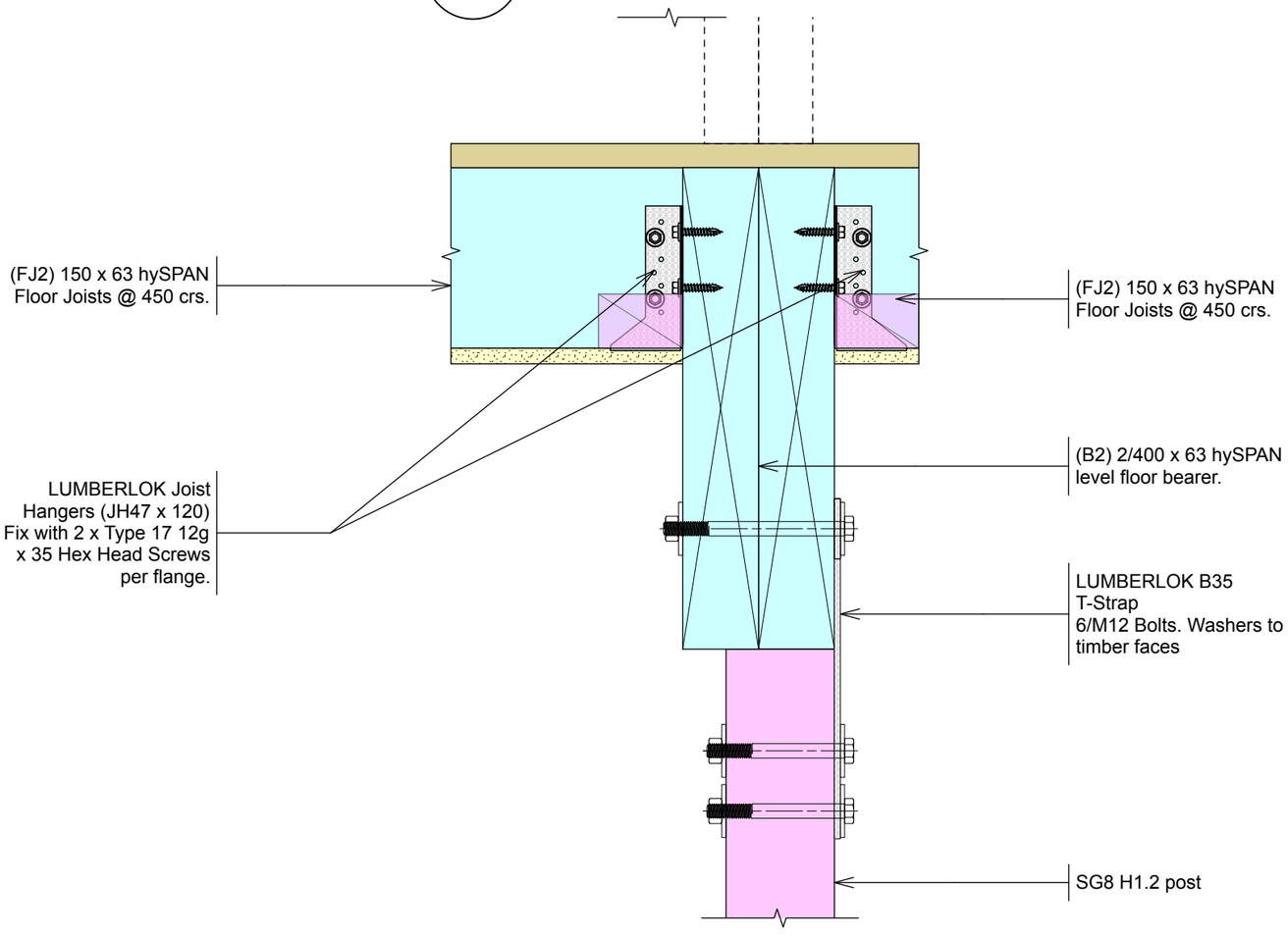
DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.



1 **Beam/Rafter Connection**
Scale: 1:5



2 **Flush Eave/Underflashing Detail**
Scale: 1:5



3 **Level Floor Bearer/Post Connection**
Scale: 1:5

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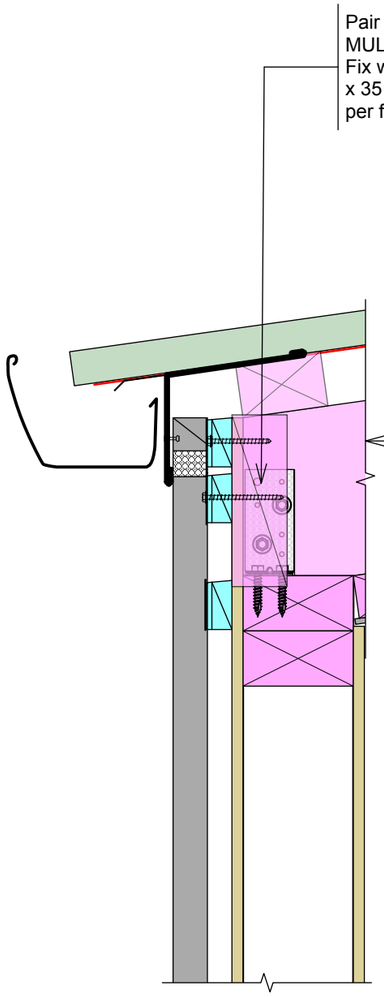
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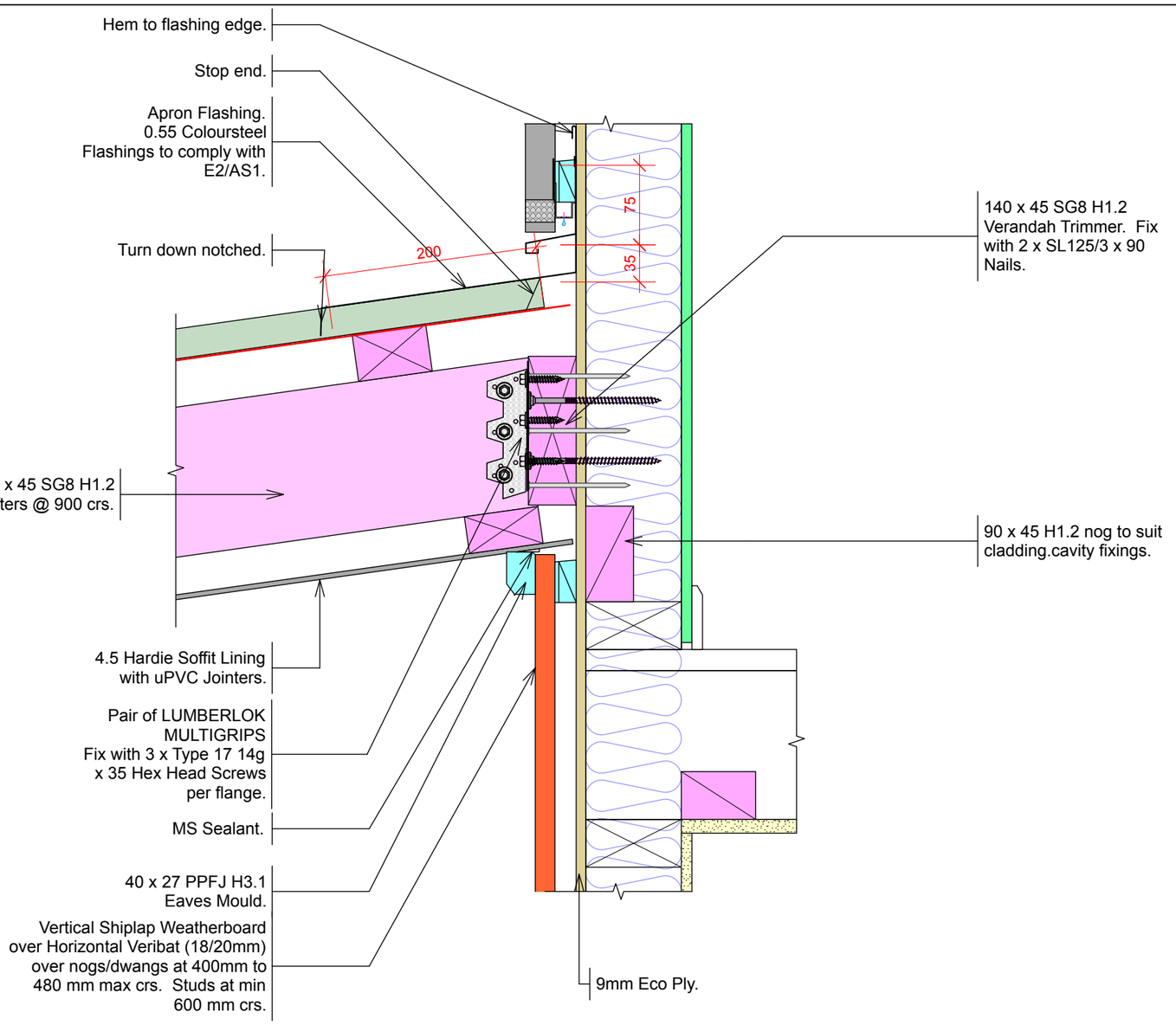
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1 Verandah Beam/Rafter Connection
Scale: 1:5



2 Apron Flashing/Rafter Connection
Scale: 1:5

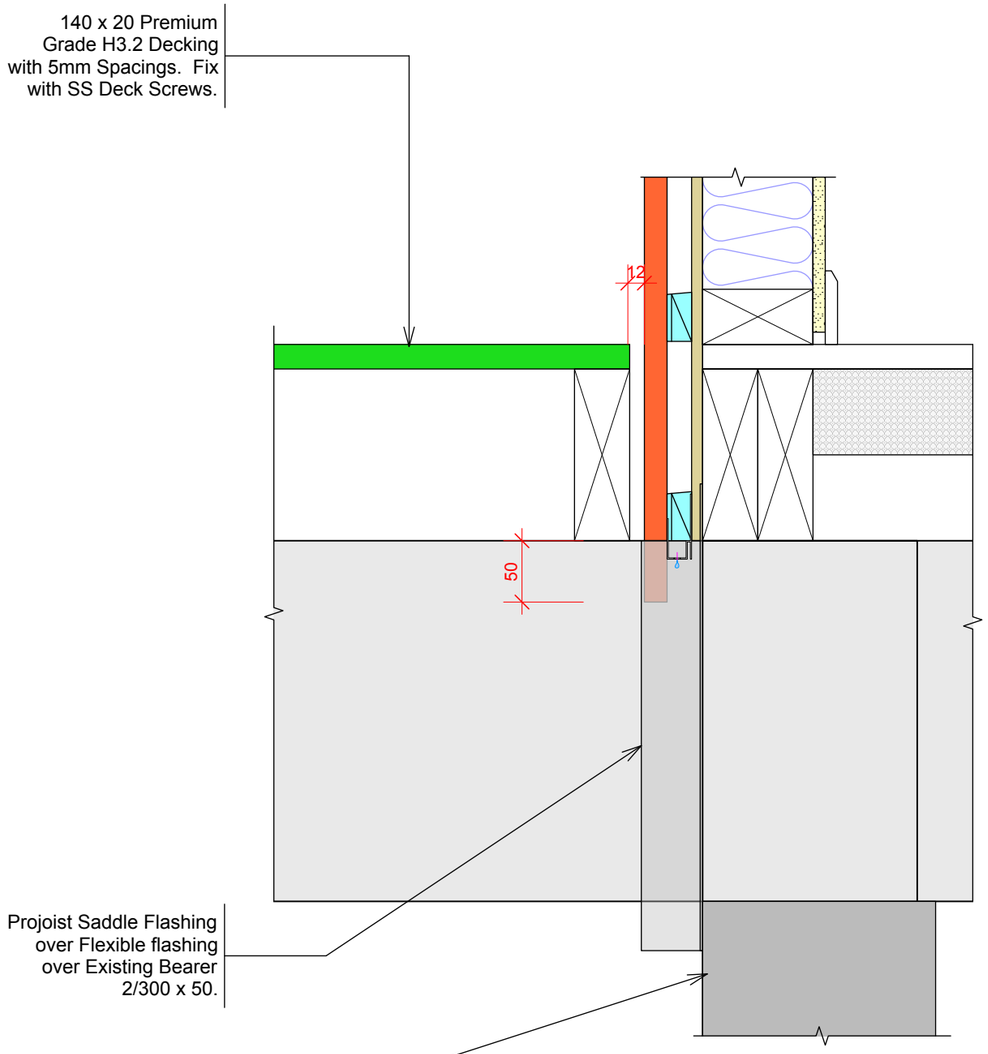
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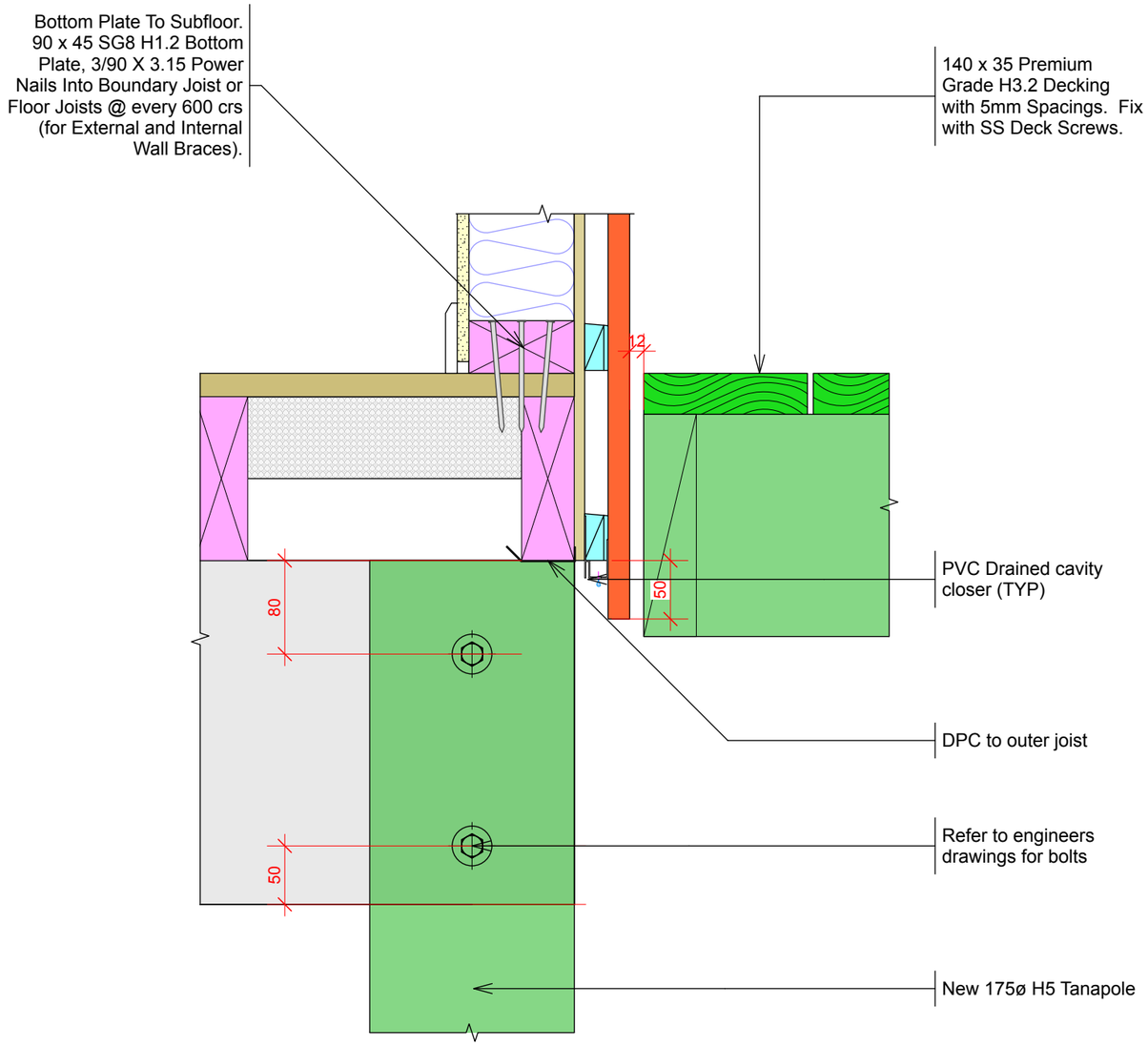
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A13.3
DWG	ARCHITECTURAL DETAILS A-A	SCALE @ A3 1:5	
		DRAWN KB/TB/DB	
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1 **Saddle Flashing**
Scale: 1:5



2 **Base Detail**
Scale: 1:5

REV	DATE	BY	REVISION AMENDMENTS

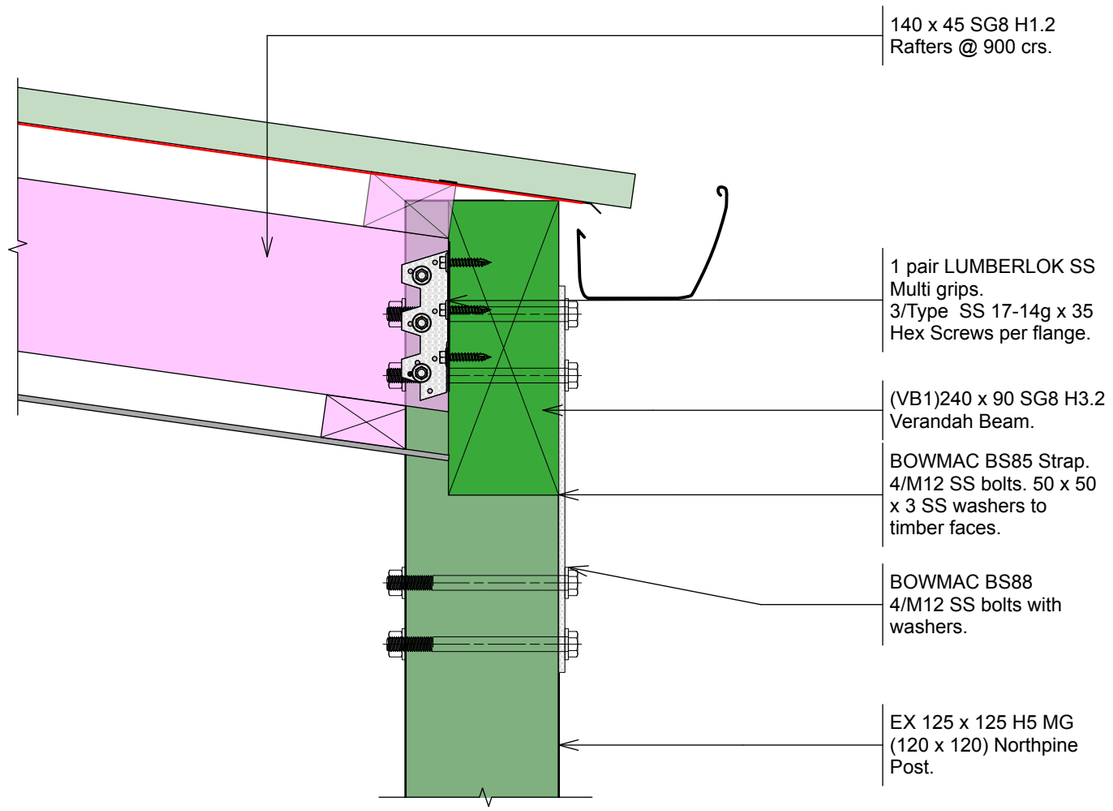
DESCRIPTION	DATE	ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

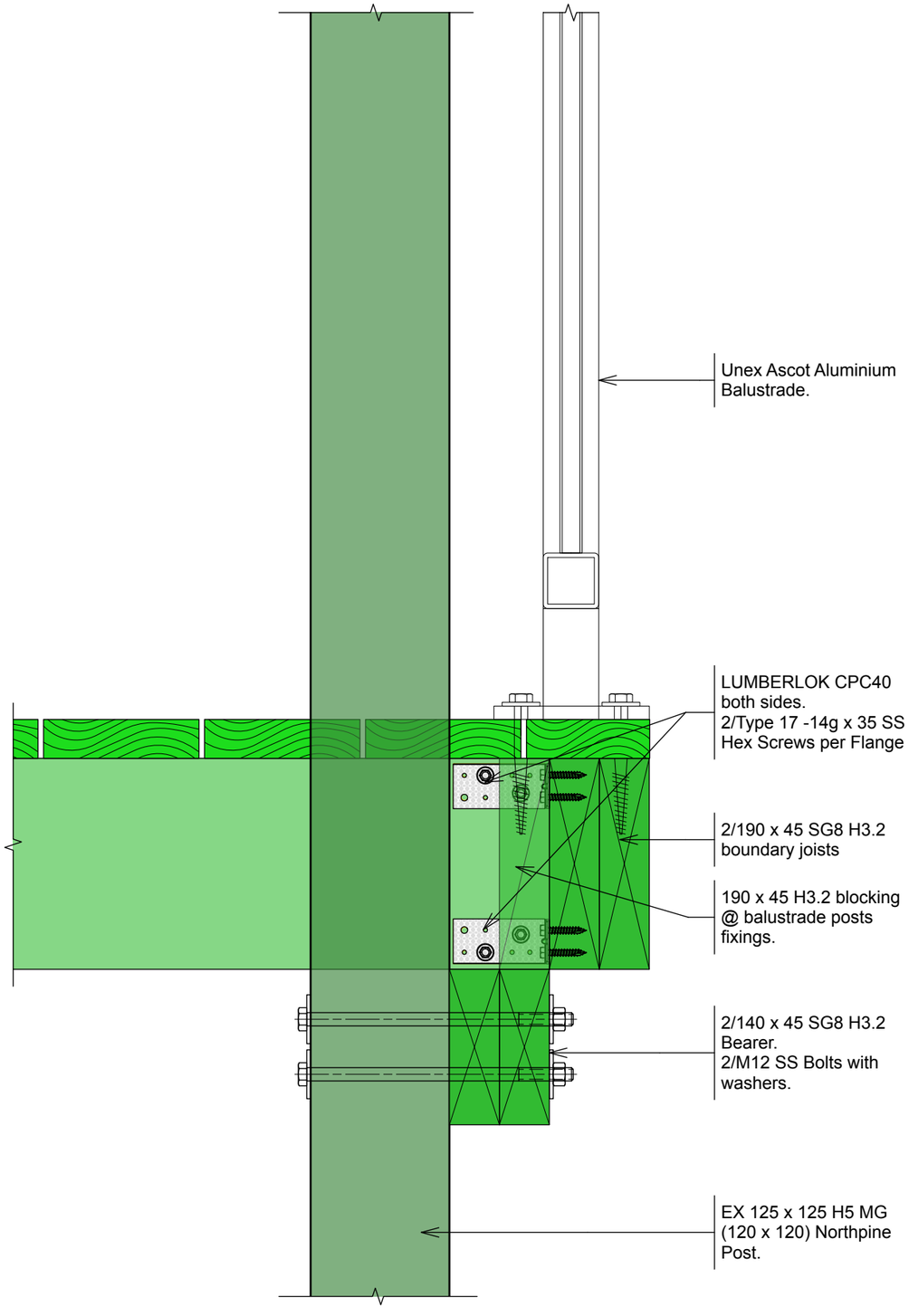
CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE #	14/08/2026	DWG # A13.4
	SCALE @ A3	1:5	
DWG ARCHITECTURAL DETAILS A-A	DRAWN	KB/TB/DB	
	CHKD	KB/TB/DB	

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1 Verandah Beam/Rafter Connection
Scale: 1:5



2 Bearer Connection
Scale: 1:5

REV	DATE	BY	REVISION AMENDMENTS

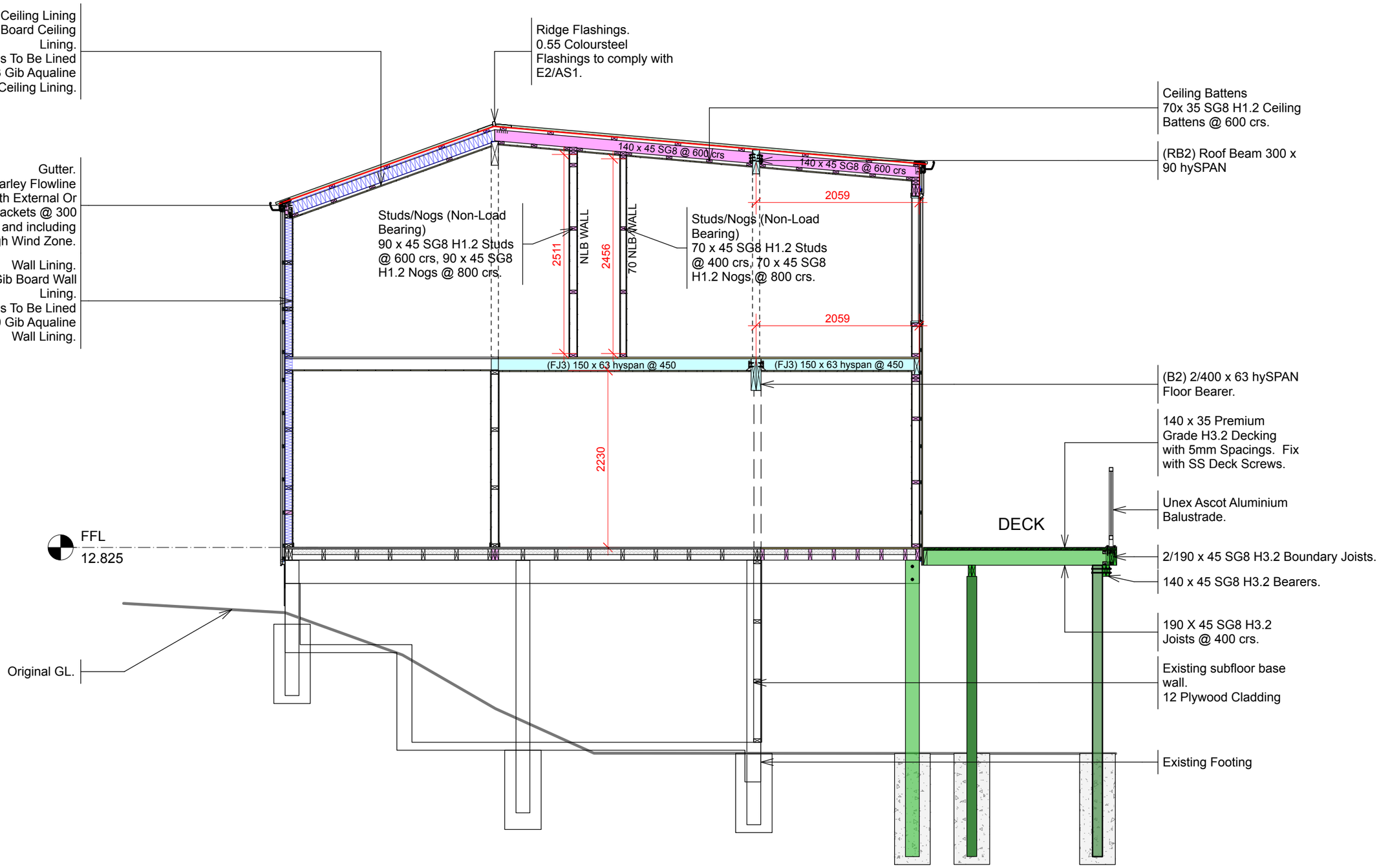
ISSUE NO.	DATE	DESCRIPTION

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A13.5
DWG	ARCHITECTURAL DETAILS A-A	SCALE @ A3 1:5	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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FOR LOADED DIMENSIONS AFFECTING LINTELS, BEARERS & FLOOR JOISTS-REFER TO NZS3604:2011 SECTION 1



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B-B Cross Section
000

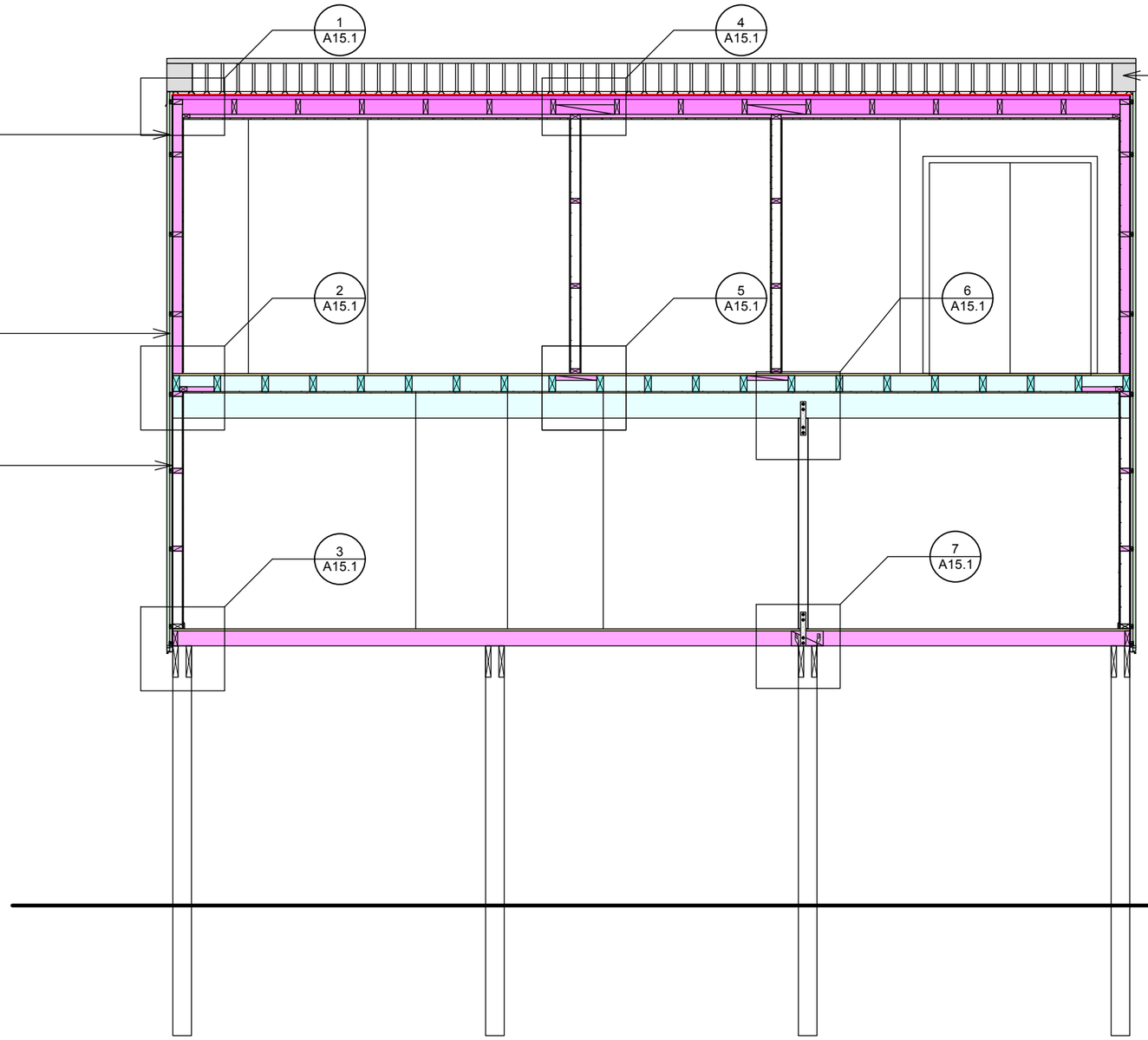
Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A14
DWG	CROSS SECTION B-B	SCALE @ A3 1:50	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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FOR LOADED DIMENSIONS AFFECTING LINTELS, BEARERS & FLOOR JOISTS-REFER TO NZS3604:2011 SECTION 1

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Vertical Trapezoidal Wall Cladding
0.4 Colorsteel MAXAM Trapezoidal Wall Cladding.

Vertical Trapezoidal Wall Cladding
0.4 Colorsteel MAXAM Trapezoidal Wall Cladding.

9mm Eco Ply.

Barge Flashings.
Trapezoidal (200 cover of 2 crests).
0.55 Colorsteel Flashings to comply with E2/AS1.

Note: Refer to below for insulation

Construction Element	Insulation
Rafter roof - 140mm cavity	R3.6 Mammoth skillion (140mm)
External walls - 90mm cavity	R2.0 Mammoth wall sections (90mm)
Timber floors - 140mm & 150mm cavity	R2.8 Mammoth floor sections (140mm)

C-C Cross Section
000

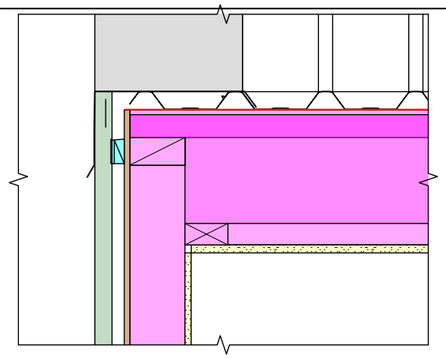
Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: LONG SECTION C-C
DATE # 14/08/2026
SCALE @ A3 1:50
DRAWN KB/TB/DB
CHKD KB/TB/DB
PROJECT # MS-0326
DWG # A15

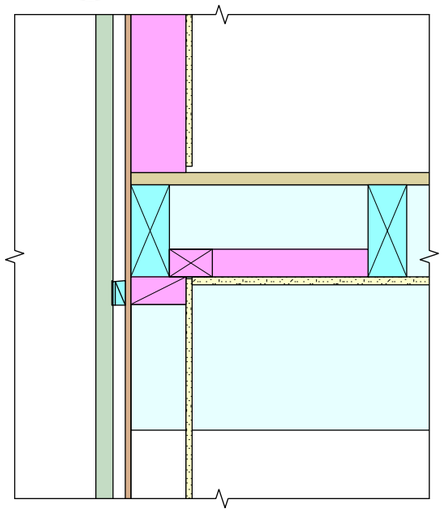
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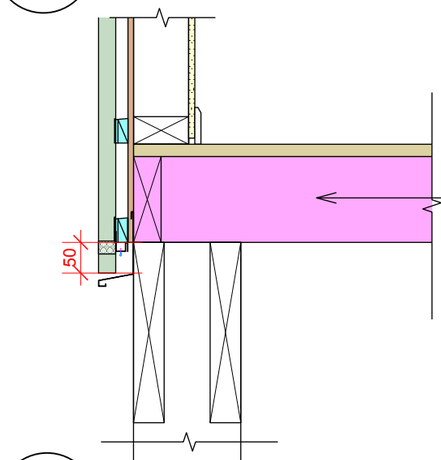
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1 Wall/Roof
Scale: 1:10

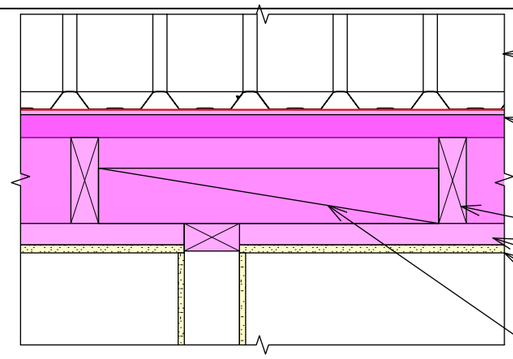


2 Wall/First Floor
Scale: 1:10



140 x 45 SG8 H1.2
Joists.

3 Wall/Grnd Floor
Scale: 1:10



Trapezoidal Roof Cladding
0.4 Colorsteel MAXAM
Roofing.

Purlins (Trapezoidal Roofing)
70 x 45 SG8 H1.2 Purlins @ 900 crs,
with 1/10g Self Drilling Screw 80mm
long or Lumberlok Bluescrew. Top &
Bottom rows to be 600 crs max.

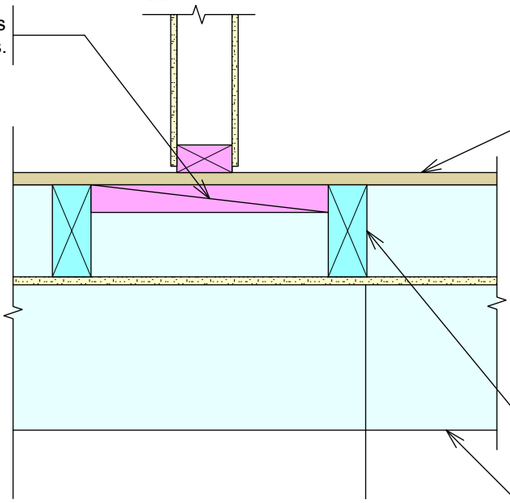
145 x 45 SG8 H1.2
Rafters @ 600 crs.

70 x 35 H1.2 Ceiling
Battens @ 600 crs.

13 Gib Bd Ceiling Lining.

90 x 45 SG8 H1.2
Ceiling nogs @ 600 max
crs for fixing wall
partition.

4 Roof/Wall
Scale: 1:10



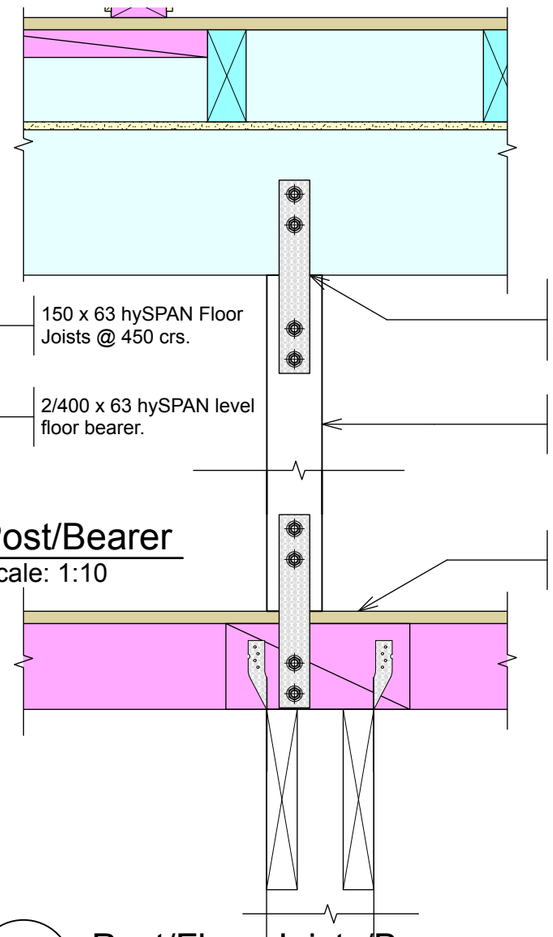
90 x 45 H1.2 floor nogs
@ 600 crs.

New 20 Strandfloor or
19 Ecoply Flooring.

150 x 63 hySPAN Floor
Joists @ 450 crs.

2/400 x 63 hySPAN level
floor bearer.

5 Wall Grnd Floor
Scale: 1:10



BOWMAC B85 Strap
4/M12 bolts with
washers.

90 x 90 SG8 H1.2
Bearer Support Post.

New 20 Strandfloor or
19 Ecoply as required.

6 Post/Bearer
Scale: 1:10

7 Post/Floor Joists/Bearer
Scale: 1:10

REV	DATE	BY	REVISION AMENDMENTS

DATE	DESCRIPTION

ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A15.1
DWG	ARCHITECTURAL DETAILS C-C	SCALE @ A3 1:10	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Producer Statement - PS1 - Design

Issued by:	Carter Holt Harvey LVL Limited
To:	M SCOTT
To be supplied to:	Far North District Council
Site address:	6 TUI ST, AHIPARA NORTHLAND
In respect of	Member structural design using designIT for houses – Series 7.1

This Producer Statement covers the structural design of Futurebuild Laminated Veneer Lumber (LVL) and Structural Grade timber SG8 members determined using designIT® for houses in respect of the requirements of Clauses B1 and B2 of the Building Code for the proposed work identified in the Design Certificate and drawings. designIT® for houses is provided to designers, architects and engineers to assist in the specification of our Engineered and sawn timber products, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604:2011, Timber-framed buildings (NZS 3604). In conjunction with a site specific Design Certificate, this Producer Statement may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code (NZBC).

designIT® for houses software has been prepared in accordance with soundly based and widely recognised structural engineering principles. The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 series and with timber structural design in accordance with NZS 3603:1993, Timber Structures Standard (NZS 3603), including Amendment 4 (Verification method B1/VM1, 6.1). This design methodology uses the most up to date information available from joint Australian/New Zealand standards to determine specified performance levels.

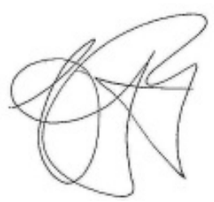
Futurebuild LVL and SG8 members, when used and treated to the required treatment levels prescribed in NZS 3602, Timber and Wood-based Products for Use in Building (NZS 3602), and NZS 3604, will form part of an Acceptable Solution and comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

On behalf of Carter Holt Harvey LVL Limited, and subject to:

- All proprietary products meeting their performance specification requirements;
- The designer having knowledge of common building practice and terminology applied in NZS3604 and using designIT® for houses in accordance with the terms of the software licence;
- Correct and accurate input of span and loading information by the designer;
- Adequate overall building stability and robustness; and
- Products being treated to the requirements of NZS 3602 and/or Acceptable Solution B2/AS1,

I believe on reasonable grounds that, provided installation is in accordance with the installation requirements provided in the Design Certificate and/or relevant product literature, NZS 3604 or specific engineering design, the product and/or product stress grade and size given by designIT® for houses will comply with the requirements of the New Zealand Building Code, specified above.
Carter Holt Harvey LVL Limited holds a current policy of Professional Indemnity Insurance of no less than $ 200,000.

For and on behalf of Carter Holt Harvey LVL Limited, Date: 10/03/2026



Signed by: Cameron Rodger, BE(Hons), MIEAust, CMEngNZ, IntPE, CPEng (Registration Number: 1017839)
Note: The total maximum amount of damages payable arising from this statement, whether in contract, tort or otherwise (including negligence) is limited to the sum of $200,000.

Date printed: 06 August 2026

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 1170.0 - 2002 Structural design actions, Part 0: General principles.
4. AS/NZS 1170.1 - 2002 Structural design actions, Part 1: Permanent, imposed and other actions.
5. AS/NZS 1170.2 - 2021 Structural design actions, Part 2: Wind actions.
6. AS/NZS 1170.3 - 2003 Structural design actions, Part 3: Snow and ice actions.
7. AS 1720.1 - 2010 Timber structures. Part 1: Design methods.
8. 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: 10/03/2026

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:	D BEARD
Business name:	D M BEARD STRUCTURAL LTD
Address:	106 Arawhata Rd Kaingaroa Northland 0483
Email:	beardarc48@gmail.com
Contact:	**Phone: 022 454 9863, Mobile: 022 454 9863**

Project and site details:

Project:	REFURB/ADDITIONS TO HOUSE
Reference:	MS-0326
Site address:	6 TUI ST, AHIPARA NORTHLAND
For (owner/s):	M SCOTT
Design wind zone	High - V_{500} = 44 m/s
Snow loading	Design snow zone: N0

MEMBER DESIGN DETAILS

Member 1

1) Member code and description	FJ1 GROUND FLOOR JOISTS - Floor joist - Supporting floor loads only
2) Date prepared	29 June 2026

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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A16
DWG	DESIGNIT-1	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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

4) Design inputs

Span	3.0 m - single span
Joist spacing	300 mm
Floor dead load	40 kg/m²
Floor live load	1.5 kPa/1.8 kN

5) Member specification

Size, stress grade/product	Use 140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ	10.0 mm	7.7 mm (long term)	1.3
Live load - ΨsQ	8.3 mm	5.8 mm	1.4
Floor flexibility - ΨsQ*	2.0 mm	1.9 mm	1.1

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-0.6
1.2G + 1.5Q	0.80	-1.3
1.2G + 1.5Q	0.94	-3.0

8) Installation requirements

- Provide at least 30 mm bearing at end supports (floor loads only)
- Bearing requirements for joists supporting load bearing walls may be greater - refer published literature/ Floor joist calculator for guidance

Member 2

1) Member code and description FJ2 MID FLOOR JOISTS - Floor joist - Supporting floor loads only

2) Date prepared 24 March 2026

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

4) Design inputs

Span	3.3 m - single span
Joist spacing	450 mm
Floor dead load	40 kg/m²
Floor live load	1.5 kPa/1.8 kN

5) Member specification

Size, stress grade/product	Use 150 x 63 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ	11.0 mm	6.1 mm (long term)	1.8
Live load - ΨsQ	9.0 mm	4.5 mm	2.0
Floor flexibility - ΨsQ*	2.0 mm	1.7 mm	1.2

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

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		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-1.0
1.2G + 1.5Q	0.80	-2.1
1.2G + 1.5Q	0.94	-3.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports (floor loads only)
- Bearing requirements for joists supporting load bearing walls may be greater - refer published literature/ Floor joist calculator for guidance

Member 3

1) Member code and description R1 LEVEL 1 RAFTERS - Common rafters

2) Date prepared 24 March 2026

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

4) Design inputs

Span	3.3 m - single span
Rafter spacing	600 mm
Roof mass	40 kg/m²
Lateral restraint condition	Bottom edge restrained by ceiling/ceiling battens at 600 crs max.

5) Member specification

Size, stress grade/product	Use 140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	11.0 mm	10.1 mm (long term)	1.1
Live load - ΨsQ	13.2 mm	2.8 mm	4.7
Live load - ΨsQ	13.2 mm	7.7 mm	1.7
Wind load - Ws	22.0 mm	8.4 mm	2.6

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-0.6
1.2G + 1.5Q	0.80	-2.3
1.2G + W + ΨcQ	1.00	-1.3
0.9G + W	1.00	0.8

8) Installation requirements

- Minimum bearing - end supports, 30 mm.

Member 4

1) Member code and description B2 MID FLOOR - LEVEL FLOOR BEARER - Bearer - Supporting floor loads only

2) Date prepared 20 July 2026

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

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A17
DWG	DESIGNIT-2	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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4) Design inputs

Span	5.7 m - single span
Floor load width 'FLW'	2.8 m
Floor dead load	40 kg/m²
Floor live load	1.5 kPa/1.8 kN

5) Member specification

Size, stress grade/product	Use 2/400 x 63 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	12.0 mm	9.4 mm (long term)	1.3
Live load - ΨsQ	9.0 mm	6.5 mm	1.4
Live load - ΨsQ	4.5 mm	0.8 mm	5.7

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-11.7
1.2G + 1.5Q	0.80	-23.5
1.2G + 1.5Q	0.94	-8.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- For floor level bearer, vertical lamination in accordance with Detail H1.
- Floor joists to be framed into the side of bearers - see Detail H18

Member 5

1) Member code and description RB1 BEDROOM - Intermediate beam

2) Date prepared 20 July 2026

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

4) Design inputs

Span	3.2 m - continuous span
Roof load width 'RLW'	2.8 m
Roof type and mass	Light roof and ceiling - 40 kg/m²

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	10.7 mm	5.5 mm (long term)	1.9
Live load - ΨsQ	12.8 mm	1.4 mm	9.0
Live load - ΨsQ	12.8 mm	1.9 mm	6.6
Wind load - Ws	21.3 mm	4.3 mm	5.0

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

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		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN	Intermediate kN
1.35G	0.60	-2.2	-7.3
1.2G + 1.5Q	0.80	-3.6	-10.7
1.2G + W + ΨcQ	1.00	-4.4	-14.7
0.9G + W	1.00	2.4	8.0

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Provide at least 45 mm bearing at internal supports
- Vertical lamination required - refer Clause 2.4.4.7 NZS 3604

Member 6

1) Member code and description R2 FRONT DECK - Common rafters

2) Date prepared 26 June 2026

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

4) Design inputs

Span	2.4 m - single span
Rafter spacing	900 mm
Roof mass	40 kg/m²
Lateral restraint condition	Bottom edge restrained by ceiling/ceiling battens at 600 crs max.

5) Member specification

Size, stress grade/product	Use 140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	8.0 mm	4.1 mm (long term)	2.0
Live load - ΨsQ	9.6 mm	1.2 mm	8.1
Live load - ΨsQ	9.6 mm	3.6 mm	2.7
Wind load - Ws	16.0 mm	3.5 mm	4.5

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-0.7
1.2G + 1.5Q	0.80	-2.3
1.2G + W + ΨcQ	1.00	-1.5
0.9G + W	1.00	0.9

8) Installation requirements

- Minimum bearing - end supports, 30 mm.

Member 7

1) Member code and description VB1 FRONT DECK - Verandah beams

2) Date prepared 06 August 2026

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

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PROJECT: 6 Tui Street, Ahipara
DWG: DESIGNIT-3
DATE # 14/08/2026
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4) Design inputs

Span	2.0 m - single span
Roof mass	40 kg/m²
Roof load width 'RLW'	1.2 m

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	5.0 mm	0.4 mm (long term)	11.3
Live load - ΨsQ	8.0 mm	0.1 mm	74.6
Wind load - Ws	10.0 mm	0.5 mm	21.5

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-1.0
1.2G + 1.5Q	0.80	-1.4
1.2G + W + ΨcQ	1.00	-2.5
0.9G + W	1.00	1.8

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer Clause 2.4.4.7 NZS 3604

Member 8

1) Member code and description R3 ENTRY DECK - Common rafters

2) Date prepared 27 June 2026

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

4) Design inputs

Span	2.1 m - single span
Rafter spacing	900 mm
Roof mass	40 kg/m²
Lateral restraint condition	Bottom edge restrained by ceiling/ceiling battens at 600 crs max.

5) Member specification

Size, stress grade/product	Use 140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	7.0 mm	2.4 mm (long term)	2.9
Live load - ΨsQ	8.4 mm	0.7 mm	12.1
Live load - ΨsQ	8.4 mm	2.6 mm	3.3
Wind load - Ws	14.0 mm	2.1 mm	6.8

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-0.6
1.2G + 1.5Q	0.80	-2.3
1.2G + W + ΨcQ	1.00	-1.3
0.9G + W	1.00	0.8

8) Installation requirements

- Minimum bearing - end supports, 30 mm.

Member 9

1) Member code and description VB2 ENTRY DECK - Verandah beams

2) Date prepared 29 June 2026

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

4) Design inputs

Span	3.0 m - single span
Roof mass	40 kg/m²
Roof load width 'RLW'	1.1 m

5) Member specification

Size, stress grade/product	Use 240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	7.5 mm	4.0 mm (long term)	1.9
Live load - ΨsQ	12.0 mm	1.1 mm	11.4
Wind load - Ws	15.0 mm	4.6 mm	3.3

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-1.2
1.2G + 1.5Q	0.80	-1.8
1.2G + W + ΨcQ	1.00	-3.2
0.9G + W	1.00	2.4

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 10

1) Member code and description RB2 LOUNGE - Intermediate beam

2) Date prepared 20 July 2026

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

4) Design inputs

Span	5.6 m - single span
Roof load width 'RLW'	2.6 m
Roof type and mass	Light roof and ceiling - 40 kg/m²

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5) Member specification

Size, stress grade/product	Use 300 x 90 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	18.7 mm	13.1 mm (long term)	1.4
Live load - ΨsQ	22.4 mm	3.2 mm	7.0
Live load - ΨsQ	22.4 mm	1.5 mm	14.5
Wind load - Ws	37.3 mm	9.5 mm	3.9

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

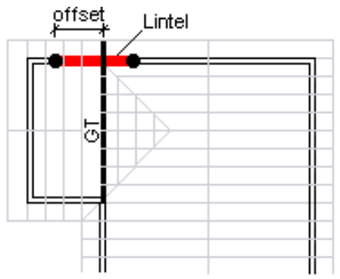
		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-5.1
1.2G + 1.5Q	0.80	-7.2
1.2G + W + ΨcQ	1.00	-9.8
0.9G + W	1.00	5.0

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 11

1) Member code and description L1 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared 21 July 2026

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

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m²
Roof pitch	5.0 º
Truss spacing	600 mm
Eaves overhang	0 mm
Common truss span	5400 mm
GT span	3400 mm
GT offset	350 mm
Lintel span	1615 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	5.4 mm	0.5 mm (long term)	11.3
Live load - ΨsQ	6.5 mm	0.1 mm	45.0
Wind load - Ws	8.1 mm	0.4 mm	18.7

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-2.6
1.2G + 1.5Q	0.80	-4.1
1.2G + W + ΨcQ	1.00	-5.7
0.9G + W	1.00	3.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 12

1) Member code and description VB1 - Verandah beams

2) Date prepared 31 July 2026

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

4) Design inputs

Span	4.0 m - single span
Roof mass	40 kg/m²
Roof load width 'RLW'	1.2 m

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m²

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio
Long term load - G + ΨLQ*	10.0 mm	7.4 mm (long term)	1.3
Live load - ΨsQ	12.0 mm	1.8 mm	6.6
Wind load - Ws	20.0 mm	8.0 mm	2.5

>*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[2,3]
Load case	k1[1]	End kN
1.35G	0.60	-1.8
1.2G + 1.5Q	0.80	-2.6
1.2G + W + ΨcQ	1.00	-4.5
0.9G + W	1.00	3.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer Clause 2.4.4.7 NZS 3604

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Notes for interpretation of serviceability data

1. 'average deflection' is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS 1170 and AS 1720.

2. Deflection is the flexural response to load 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
SG grades - mechanically graded to AS/NZS 1748	Average + 43%
GL grades for glulam to AS 1328	Average + 33%
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)	Average +18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!

3. The limits referred are those specified in AS 1720.3 for the stated load case.

4. 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements detailed.

Notes for interpretation of reaction data

1. Duration of load factor 'k1' for strength as per NZS 3603:1993
2. Negative (-) reactions relate to the 'gravity' or 'downwards' force on the support
3. Positive reactions relate to the 'upwards' forces or 'tie-down' requirement on the support
4. End reaction includes allowance for overhang/cantilever where one has been designed

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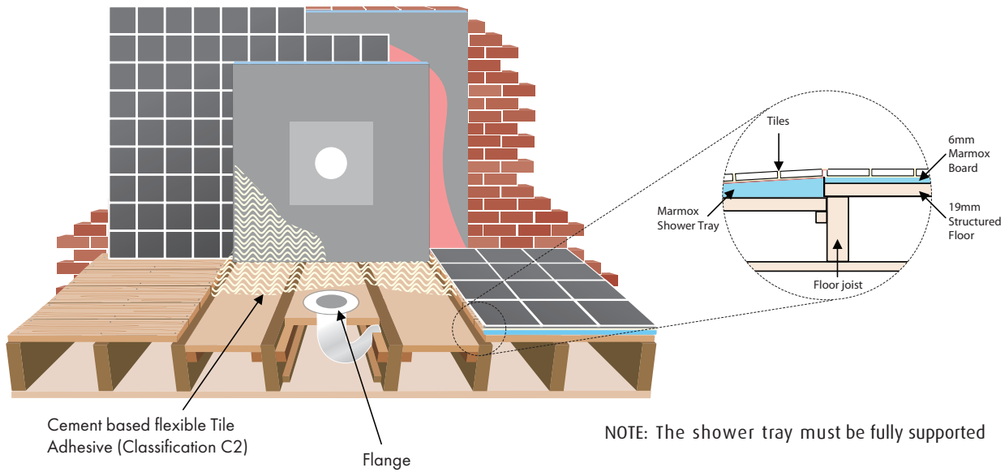
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DWG	DESIGNIT-6	DRAWN KB/TB/DB CHKD KB/TB/DB	

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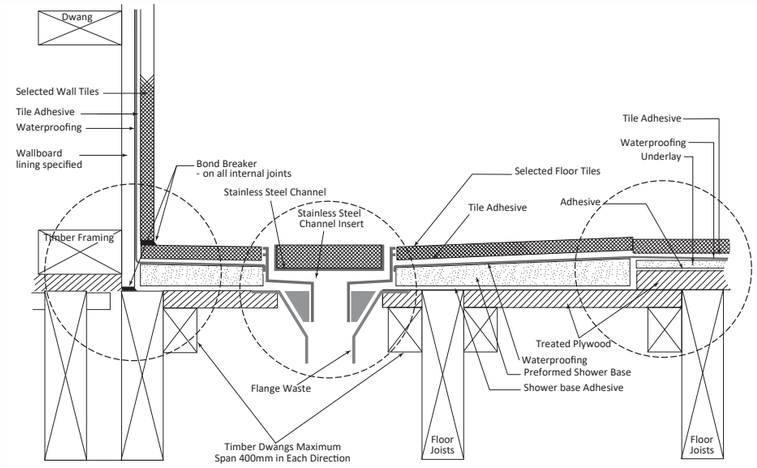
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Level Entry Tray example (recessed) without hobs



NOTE: The shower tray must be fully supported

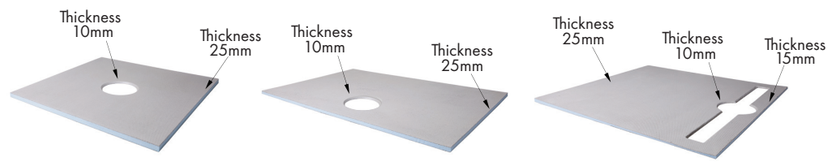
Cross Sections - Shower System

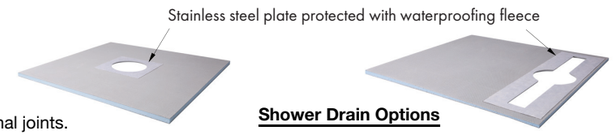


marmox SUSTAINABLE BUILDING PRODUCTS — Total System (Level Entry Channel drain)

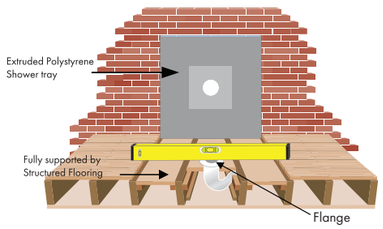
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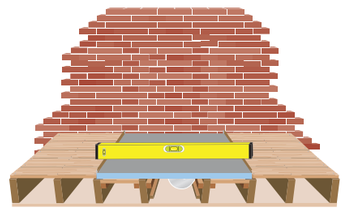
Centre drain / Offset drain / Trough drain traverse





Shower tray installation



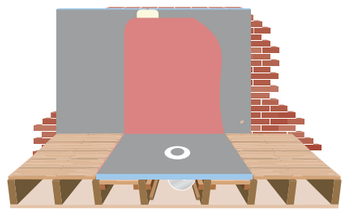


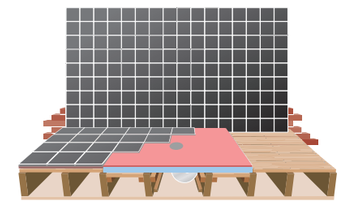
1 Check that the floor is flat and level. Clean the floor area for the shower base.

Note: If laying on a timber floor, it is recommended that a tile and slate underlay be laid first.

2 Dry position the shower base and mark the location of the drain, and the outside edge(s). Cut the floorboard for the pipe location and finish plumbing connections (including waste flange).

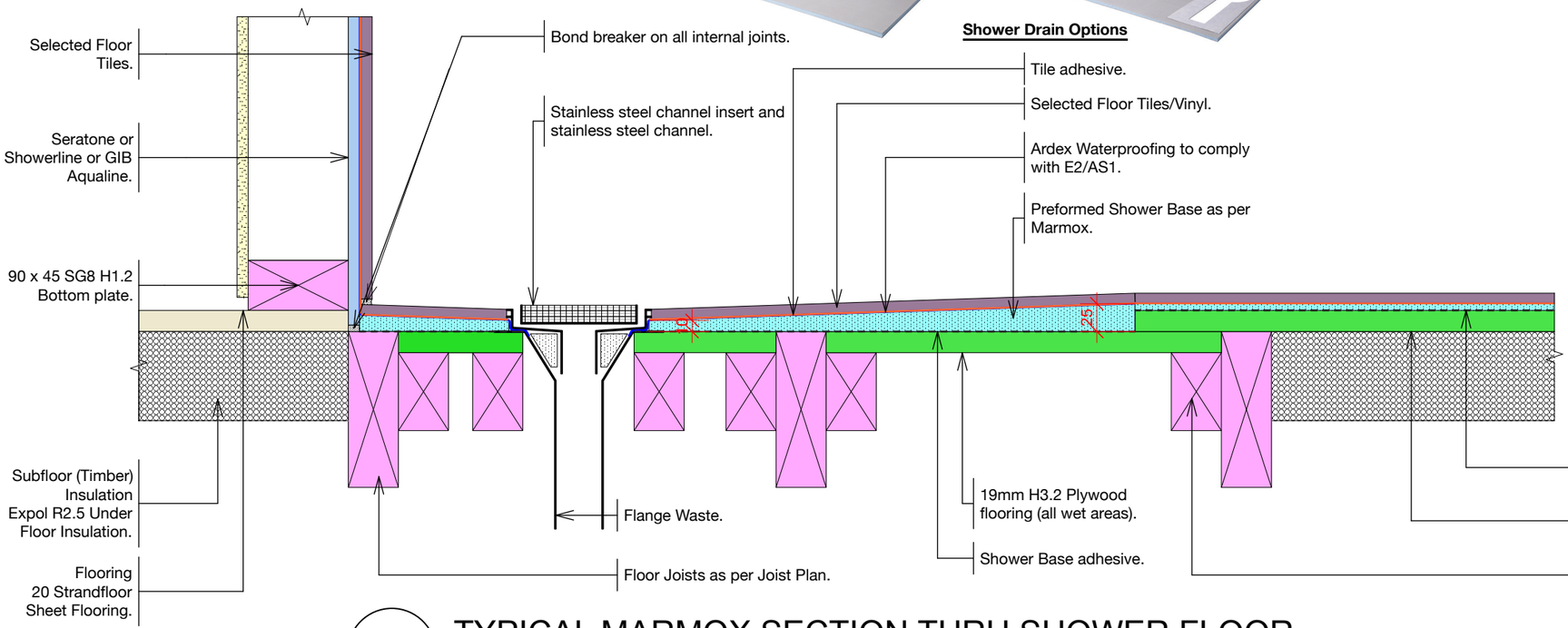
3 Use a flexible tile adhesive with 10mm notch trowel to fix the shower base to the floor. Place the shower base in position, apply downward pressure on the shower base and check for level.





4 Apply any Branz approved water based waterproofing (non solvent based) to the entire surface of the shower base, flange and wall sheeting according to the manufacturer's recommendations.

5 After the waterproofing dries, the shower can be tiled in a regular manner.



1 TYPICAL MARMOX SECTION THRU SHOWER FLOOR

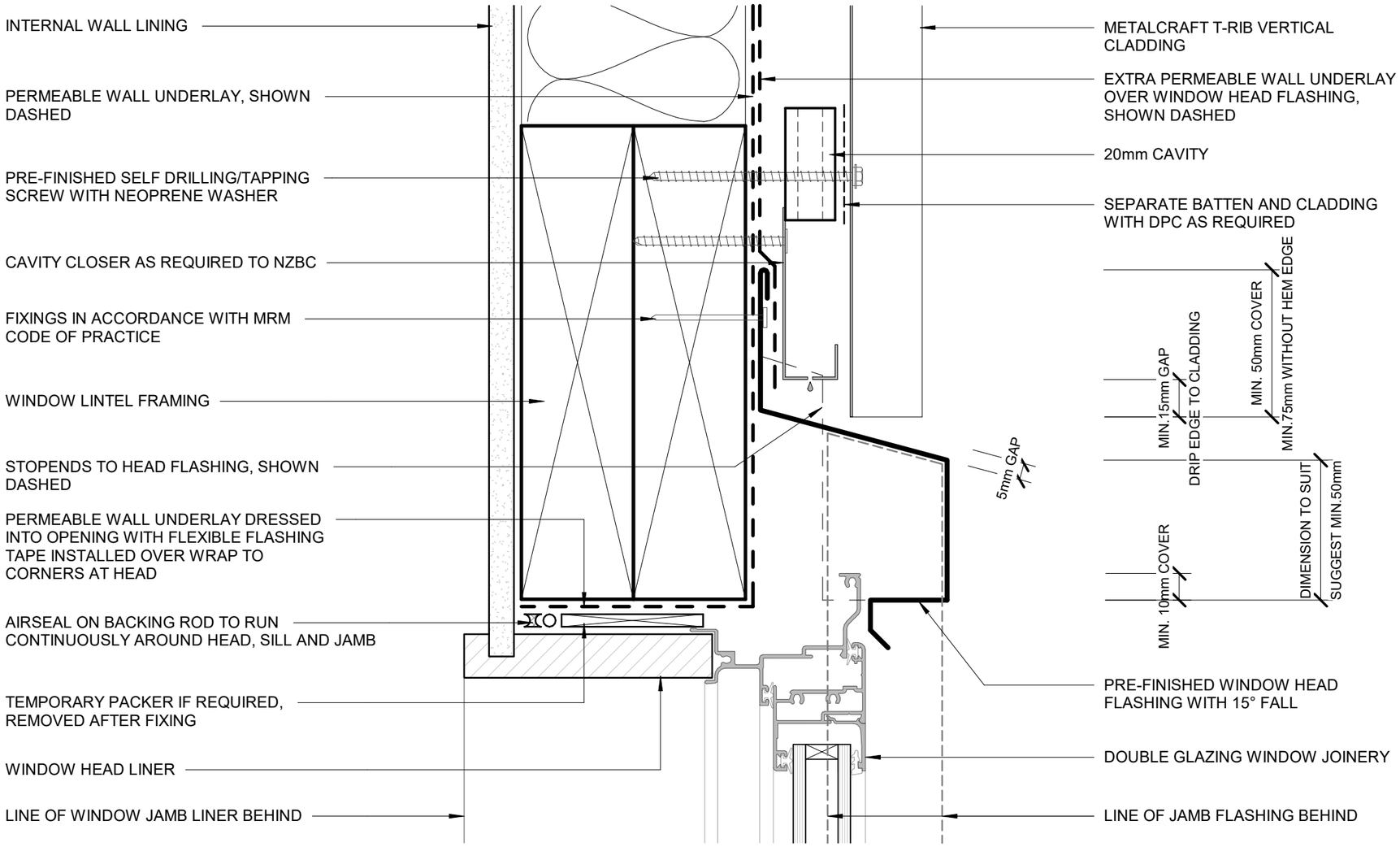
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A19
DWG	LEVEL ENTRY SHOWER-TIMBER MARMOX	SCALE @ A3 AS NOTED	
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NOTE: REFER TO TABLE 7 E2/AS1 FOR WINDOW HEAD UPSTAND DIMENSIONS-RELATIVE TO WIND ZONES.



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WINDOW HEAD

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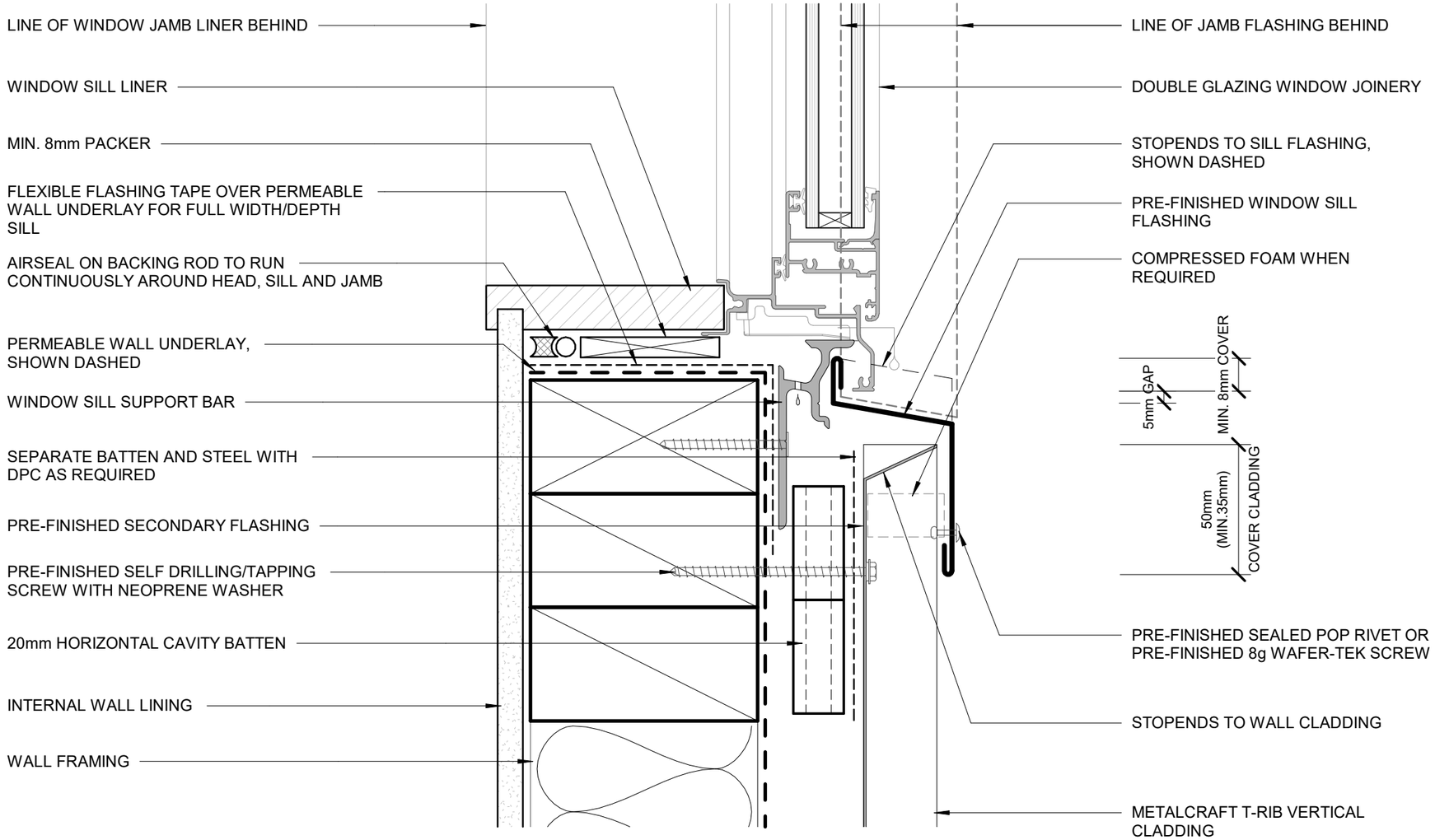
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A20
DWG	HEAD, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL	SCALE @ A3 NTS	
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WINDOW SILL

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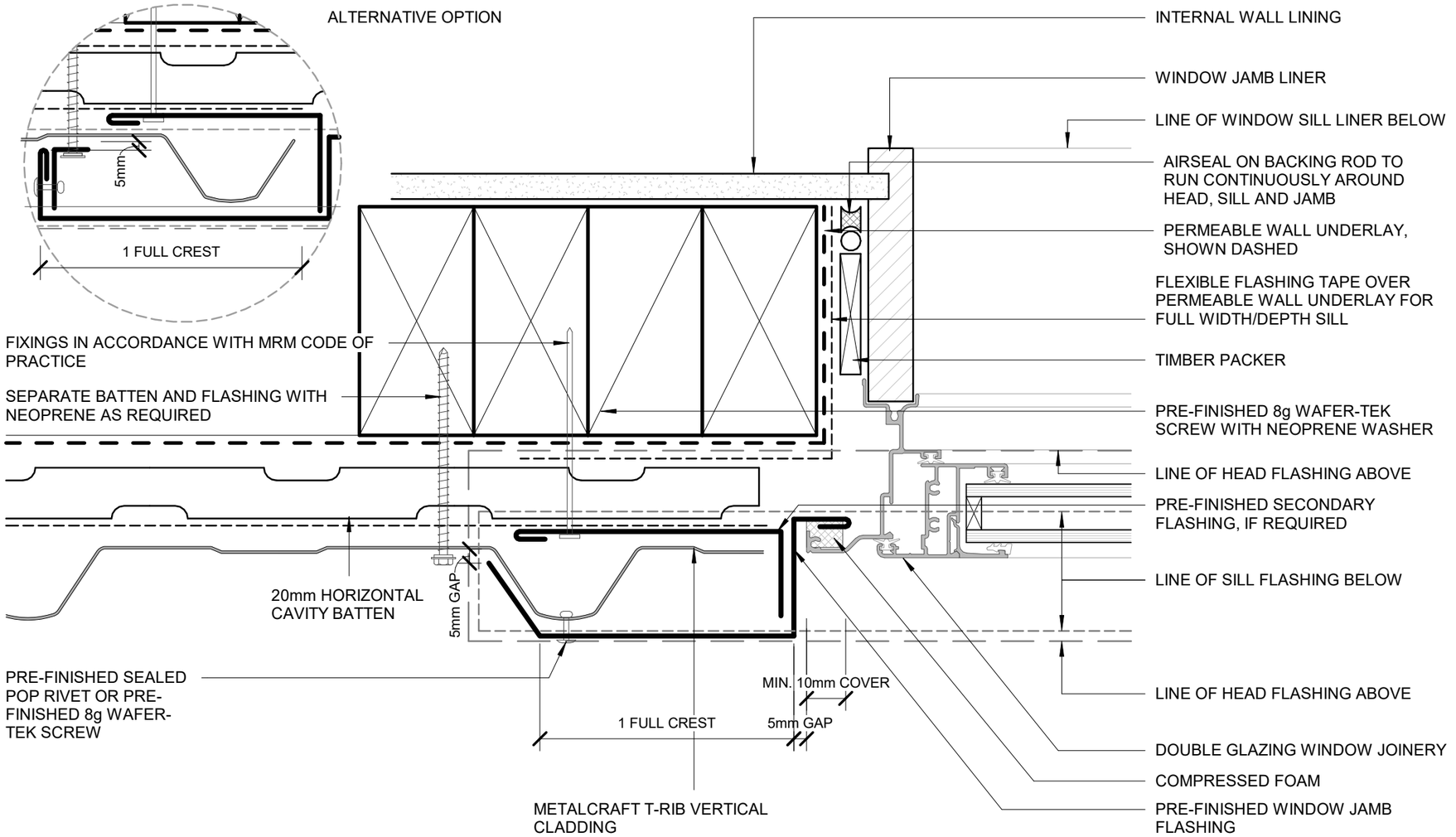
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A20.1
DWG	SILL, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL	DRAWN KB/TB/DB	
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NOTE: REFER TO TABLE 7 E2/AS1 FOR WINDOW HEAD UPSTAND DIMENSIONS-RELATIVE TO WIND ZONES.



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WINDOW JAMB

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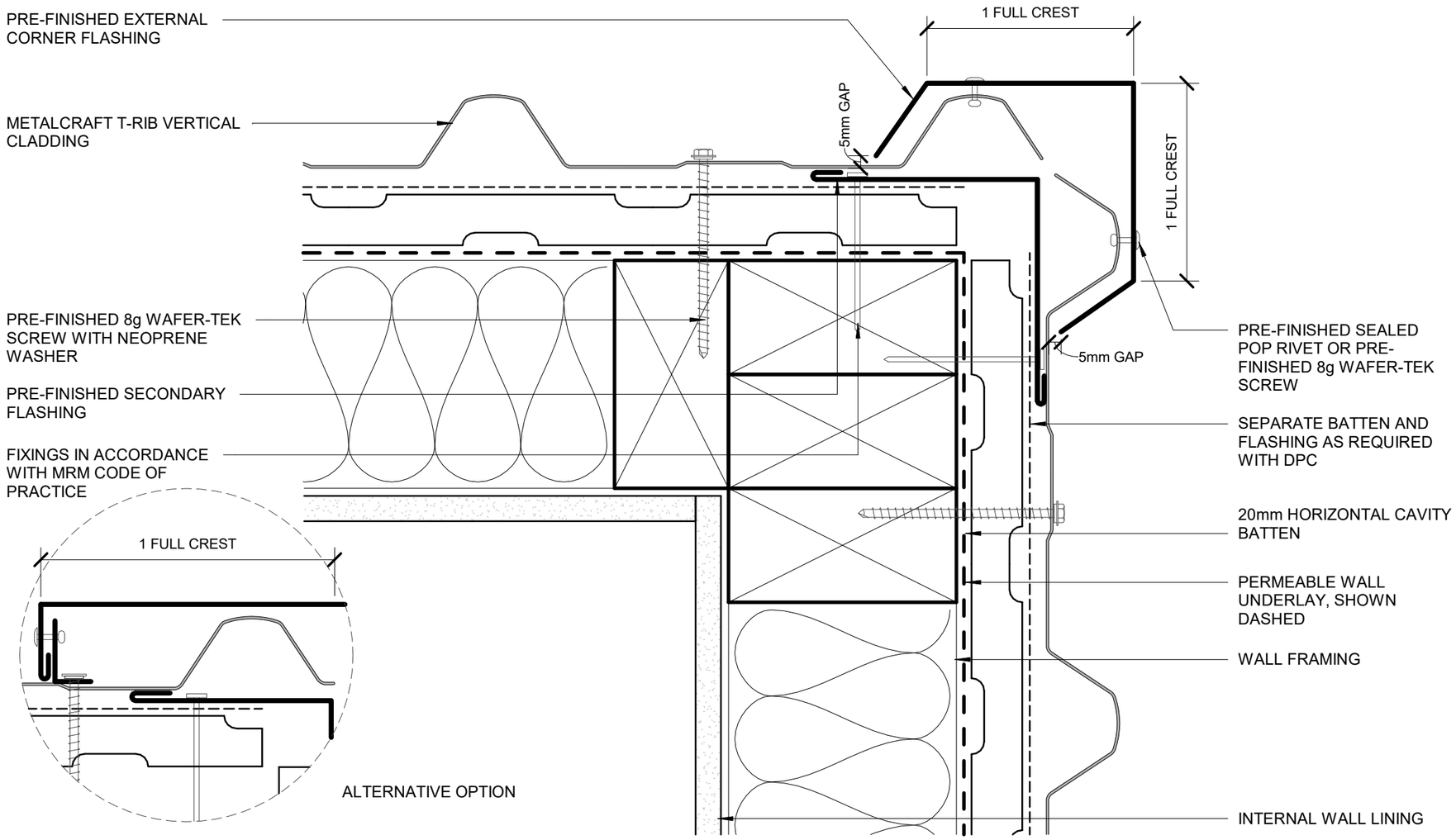
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DWG: JAMB, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL

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EXTERNAL CORNER

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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

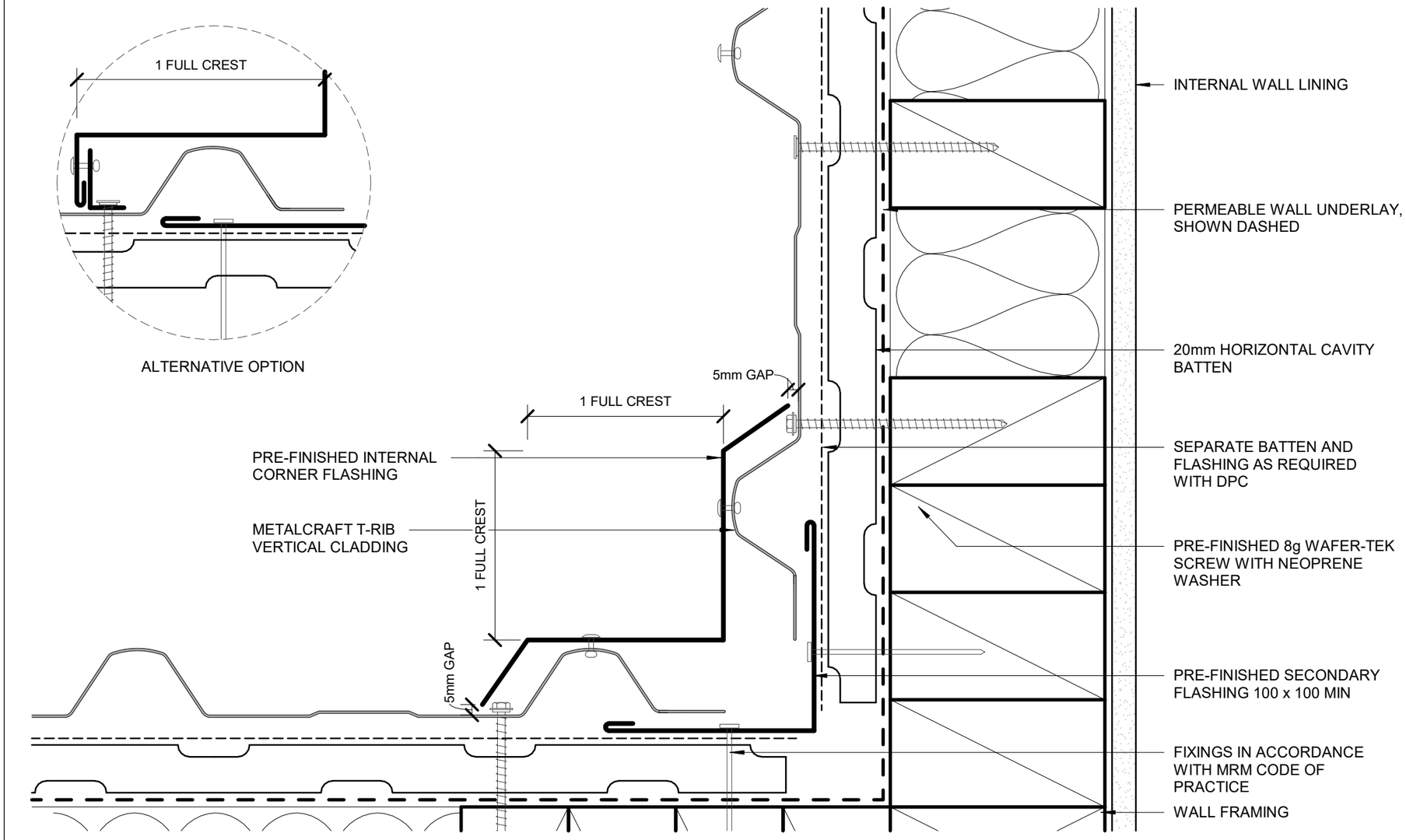
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: EXTERNAL CORNER, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326
DWG # A21

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INTERNAL CORNER

T - Rib Rev. 1.0 **RESIDENTIAL VERTICAL CLADDING**

Reference RVTRI Date JAN 2023 Scale 1 : 2 Sheet **B 10 / 18**

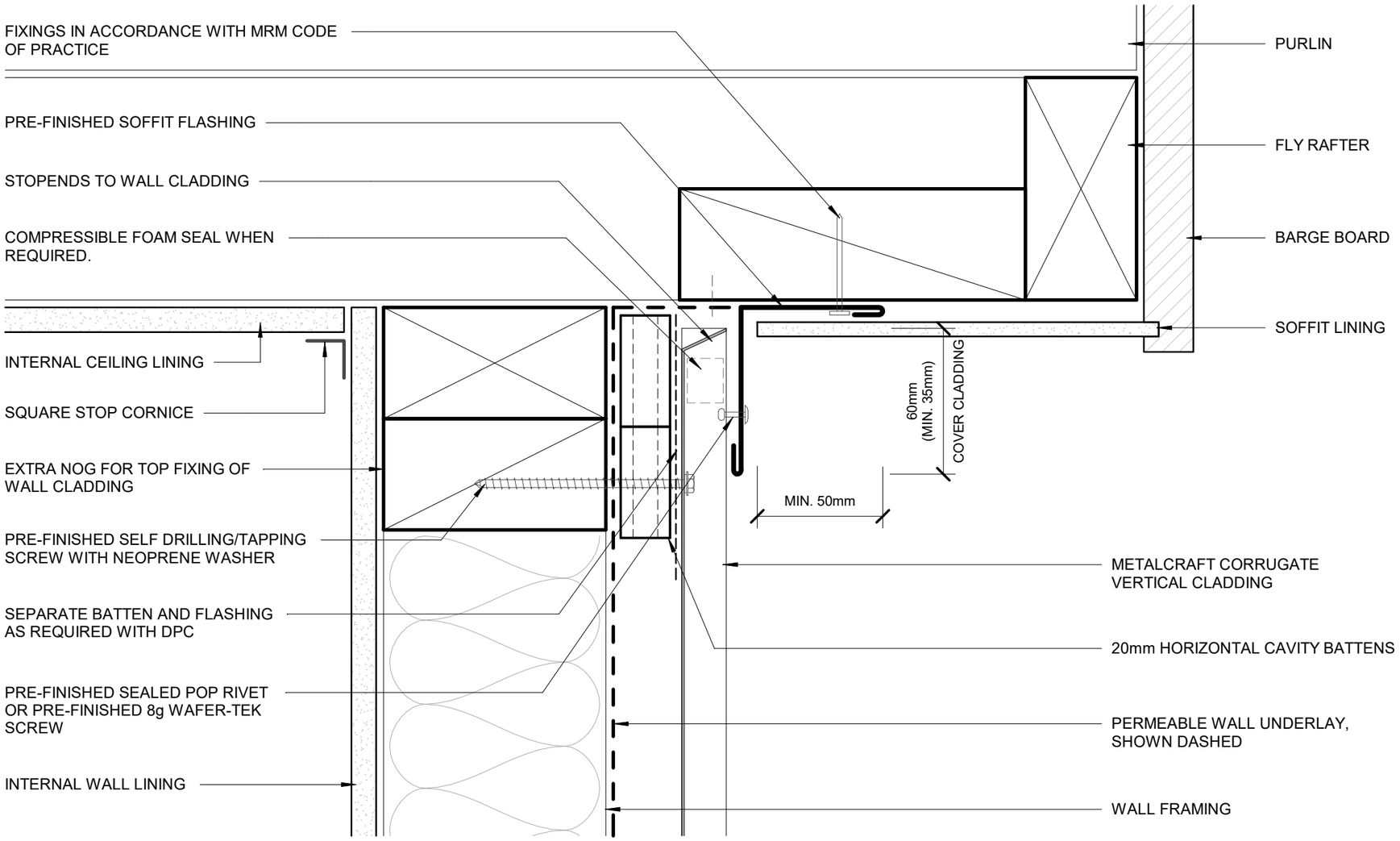
REV	DATE	BY	REVISION AMENDMENTS	DESCRIPTION	DATE	ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE #	14/08/2026	DWG # A21.1
	SCALE @ A3	NTS	
DWG INTERNAL CORNER, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL	DRAWN	KB/TB/DB	
	CHKD	KB/TB/DB	

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SOFFIT

Corrugate | Rev. 1.0 | RESIDENTIAL VERTICAL CLADDING

Reference RVCG | Date JAN 2023 | Scale 1 : 2 | Sheet **B 03 / 18**

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

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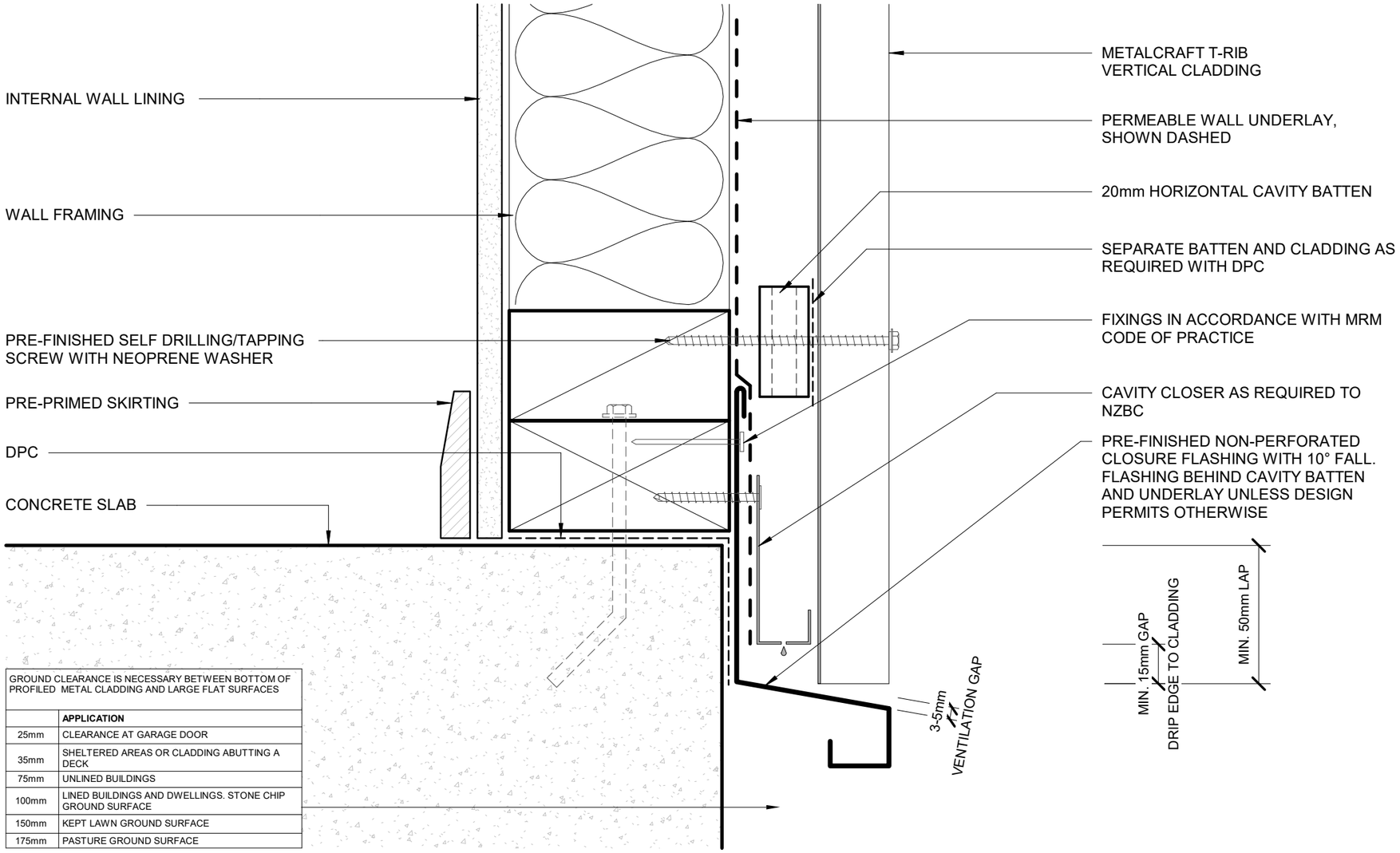
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: SOFFIT, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL

DATE #	14/08/2026
SCALE @ A3	NTS
DRAWN	KB/TB/DB
CHKD	KB/TB/DB

PROJECT # MS-0326
DWG # A22

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GROUND CLEARANCE IS NECESSARY BETWEEN BOTTOM OF PROFILED METAL CLADDING AND LARGE FLAT SURFACES

	APPLICATION
25mm	CLEARANCE AT GARAGE DOOR
35mm	SHELTERED AREAS OR CLADDING ABUTTING A DECK
75mm	UNLINED BUILDINGS
100mm	LINED BUILDINGS AND DWELLINGS. STONE CHIP GROUND SURFACE
150mm	KEPT LAWN GROUND SURFACE
175mm	PASTURE GROUND SURFACE

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BOTTOM OF CLADDING (FLUSH)

T - Rib | Rev. 1.0 | RESIDENTIAL VERTICAL CLADDING

Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet **B 15 / 18**

REV	DATE	BY	REVISION AMENDMENTS

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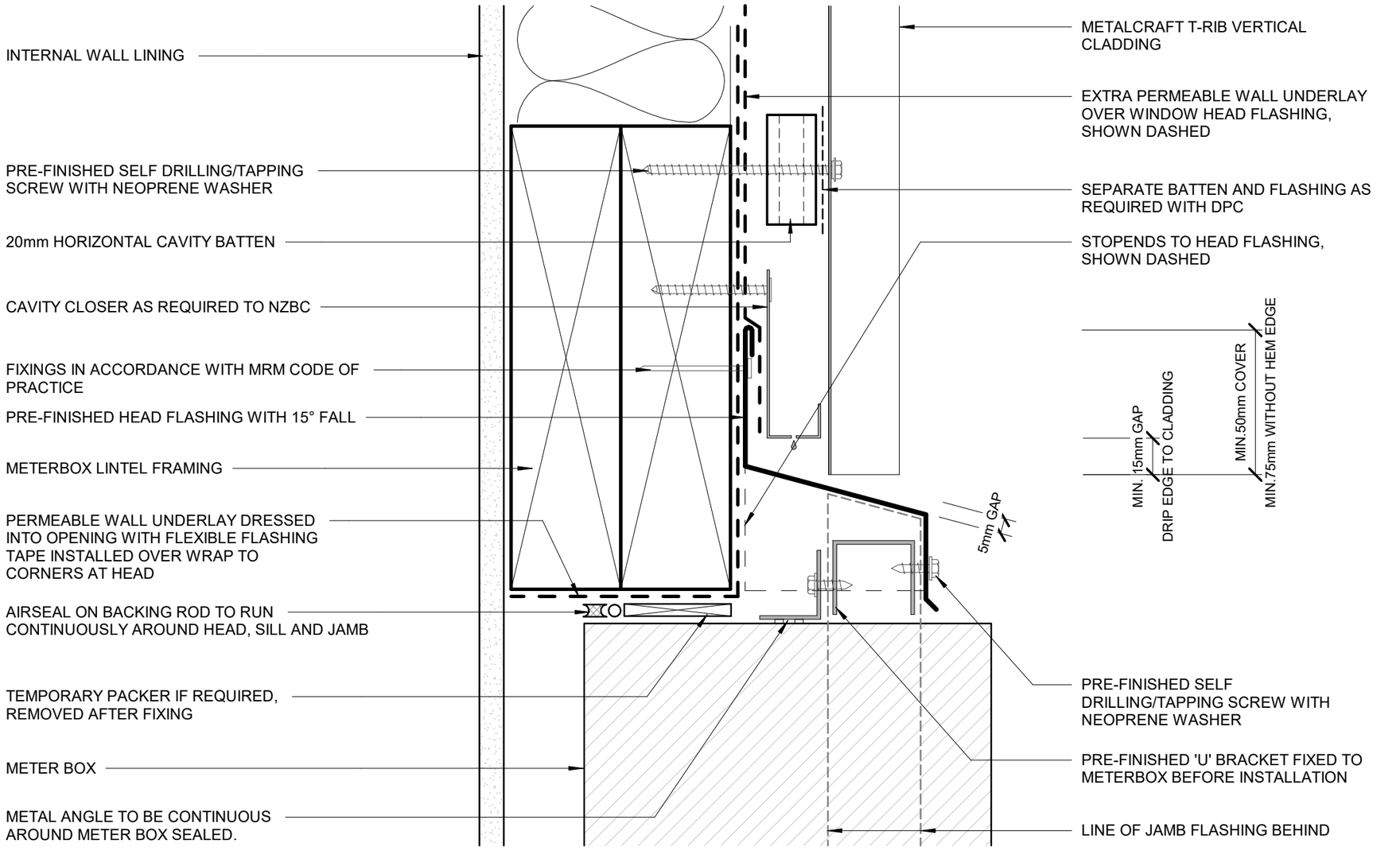
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: BASE, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326
DWG # A22.1

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METERBOX HEAD

T - Rib Rev. 1.0 **RESIDENTIAL VERTICAL CLADDING**

Reference RVTRI Date JAN 2023 Scale 1 : 2 Sheet **B 07 / 18**

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

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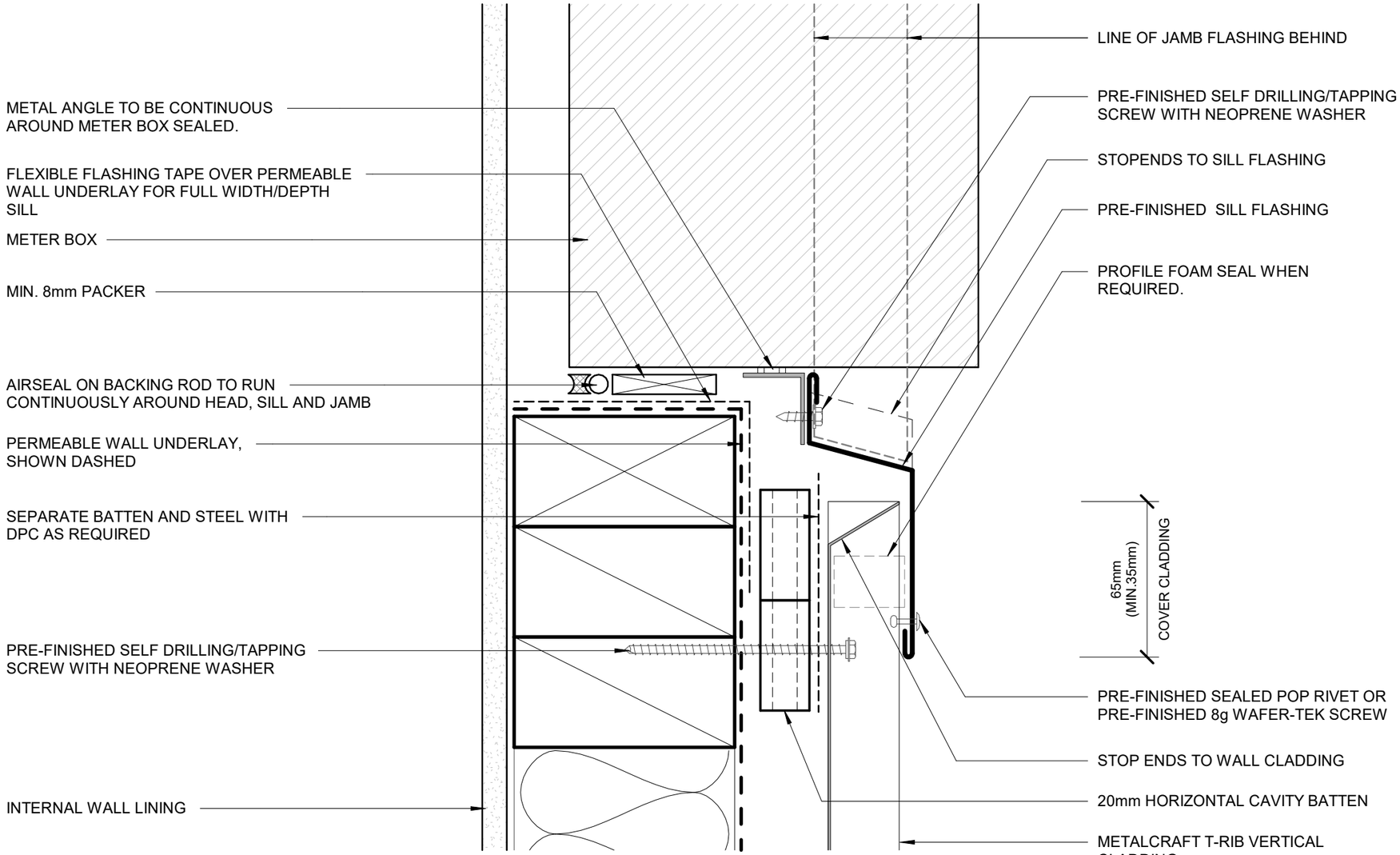
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: METERBOX HEAD, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326
DWG # A22.2

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METERBOX SILL

T - Rib Rev. 1.0 **RESIDENTIAL VERTICAL CLADDING**

Reference RVTRI Date JAN 2023 Scale 1 : 2 Sheet **B 08 / 18**

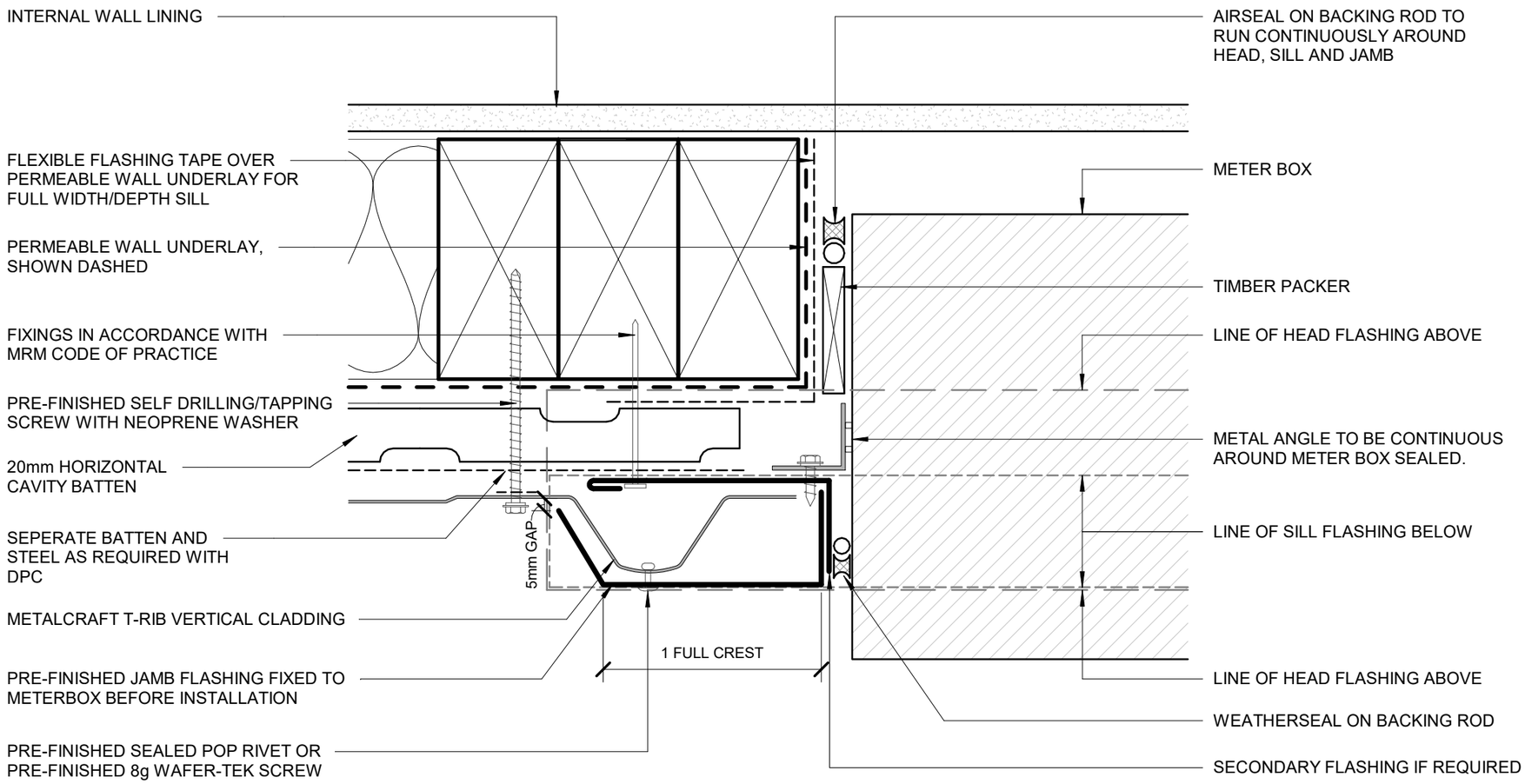
ISSUE NO.	DATE	DESCRIPTION	BY	DATE	REV

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A22.3
DWG	METERBOX SILL VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL	SCALE @ A3 NTS DRAWN KB/TB/DB CHKD KB/TB/DB	

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METERBOX JAMB

T - Rib | Rev. 1.0 | **RESIDENTIAL VERTICAL CLADDING**

Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet **B 09 / 18**

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

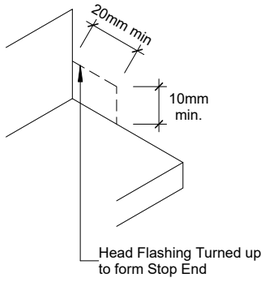
Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

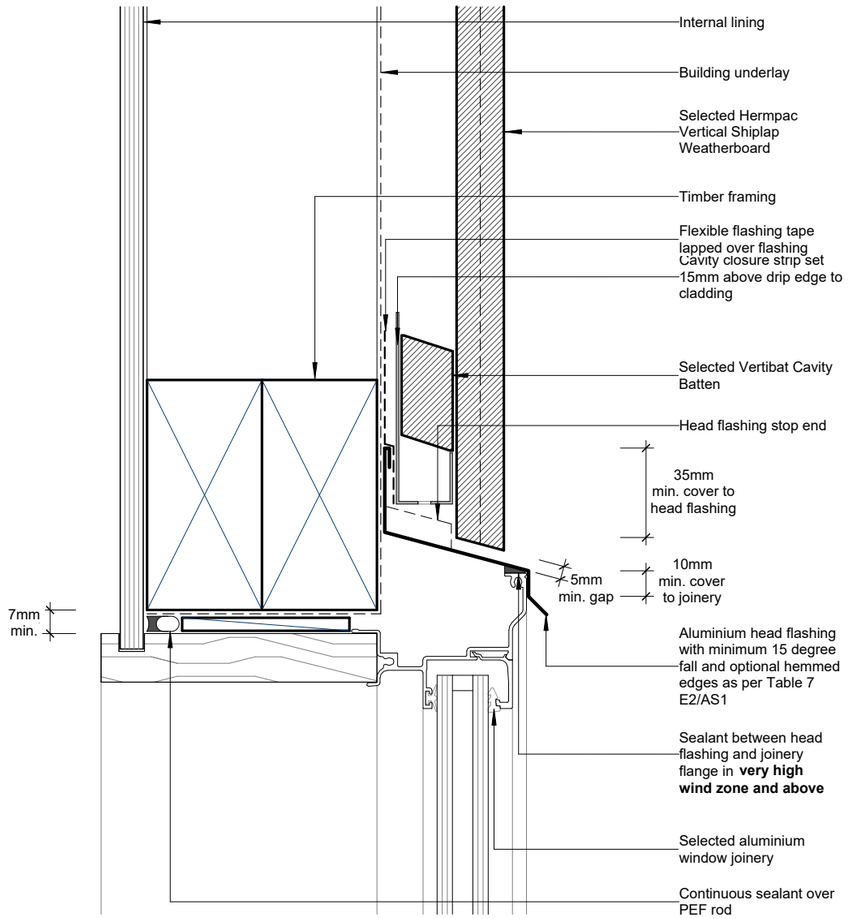
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A22.4
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DWG	METERBOX JAMB, VERTICAL TRAPEZOIDAL/CAVITY CLADDING DETAIL	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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NOTES:
- *All weatherboard fixings pre-drilled maximum 1mm diameter smaller than the nail/screw gauge.*
- *All Hermpac timber products, cut ends and edges to be precoated as per Installation Specifications.*
- *All materials and fixtures are to comply with E2/AS1 Clause 2.2.*
- *For non-hemmed corner flashings, ensure a minimum 75mm cover to weatherboards beyond the point where BRANZ Bulletin 411 compliant weatherboard lap or rebate combinations terminate at the corner junction.*
- *In Extra High Wind Zone and above, the 75mm cover requirement remains and hemmed edges must also be used.*
- *Refer to NZBC Acceptable Solution E2/AS1 Table 21 for the separation requirements between CCA treated battens and metal flashings.*
- *Prior to installation, refer to Hermpac Vertical Shiplap Technical Installation Specifications.*





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Cavity Fix Vertical Shiplap Weatherboard System

Window Head Detail, Aluminium Joinery

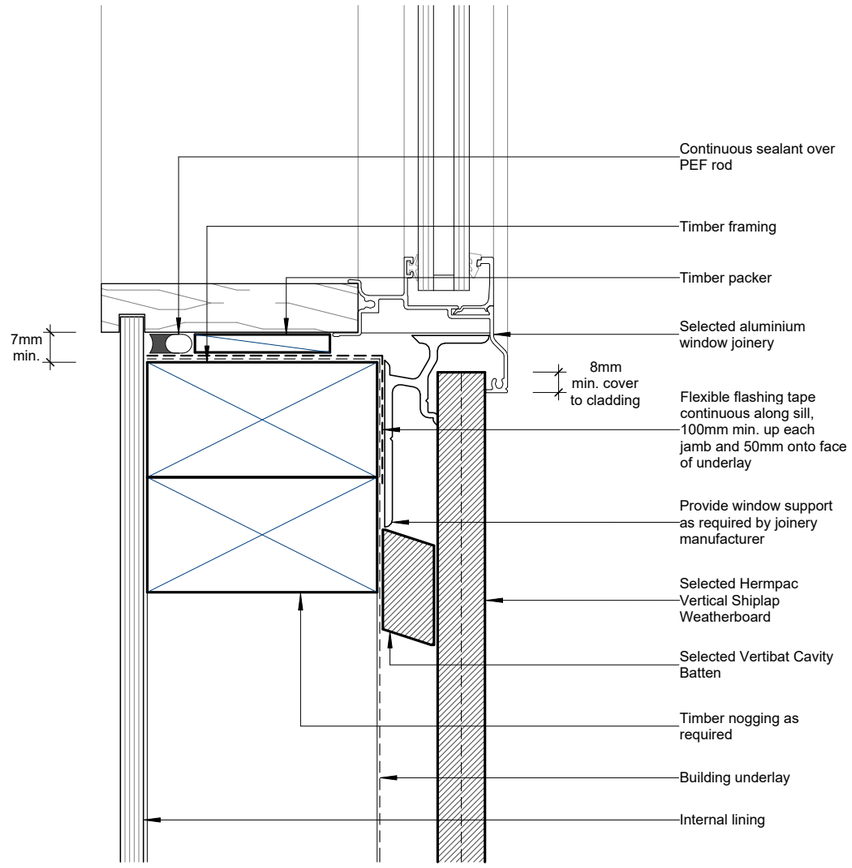
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BRANZ Appraised Appraisal No. 650

HC-SHIP-200 DRAWING

1 : 2 @ A4 SCALE | 2022 ISSUED DATE

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Cavity Fix Vertical Shiplap Weatherboard System

Window Sill Detail, Aluminium Joinery

CodeMark CERTIFIED CMNZ30036

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HC-SHIP-201 DRAWING

1 : 2 @ A4 SCALE | 2022 ISSUED DATE

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CLIENT: M & S SCOTT

PROJECT: 6 Tui Street, Ahipara

DWG: HEAD,SILL, WINDOW, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326

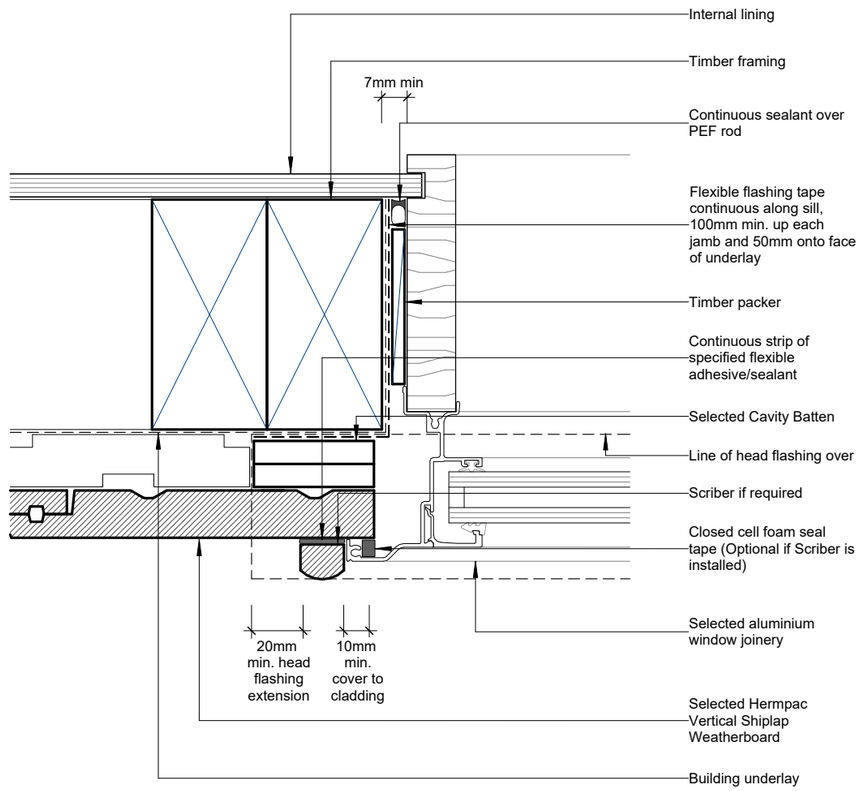
DWG # A23

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Cavity Fix Vertical Shiplap Weatherboard System

Window Jamb Detail, Aluminium Joinery

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HC-SHIP-202
DRAWING

1 : 2 @ A4
SCALE

2022
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CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: JAMB, WINDOW, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL

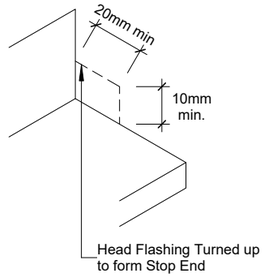
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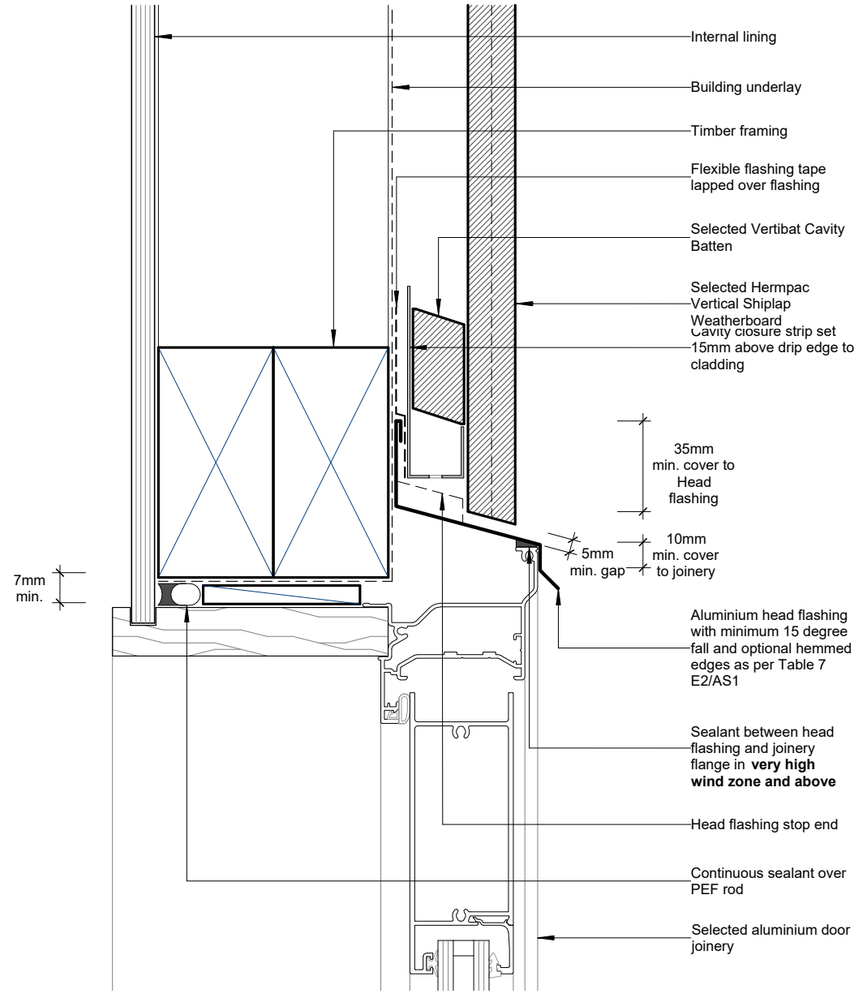
PROJECT # MS-0326
DWG # A24

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Cavity Fix Vertical Shiplap Weatherboard System

Door Head Detail
Aluminium
Joinery

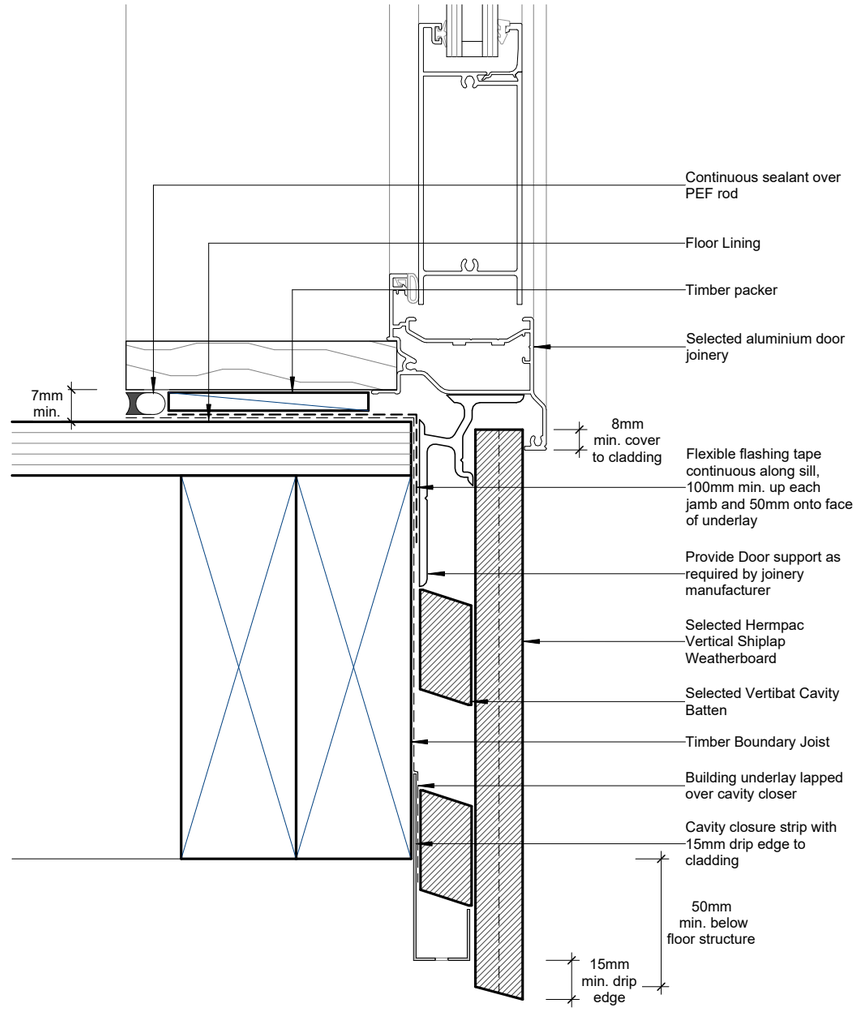
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HC-SHIP-210
DRAWING

1 : 2 @ A4	2022
SCALE	ISSUED DATE

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Cavity Fix Vertical Shiplap Weatherboard System

Door Sill Detail,
Aluminium
Joinery

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HC-SHIP-211
DRAWING

1 : 2 @ A4	2022
SCALE	ISSUED DATE

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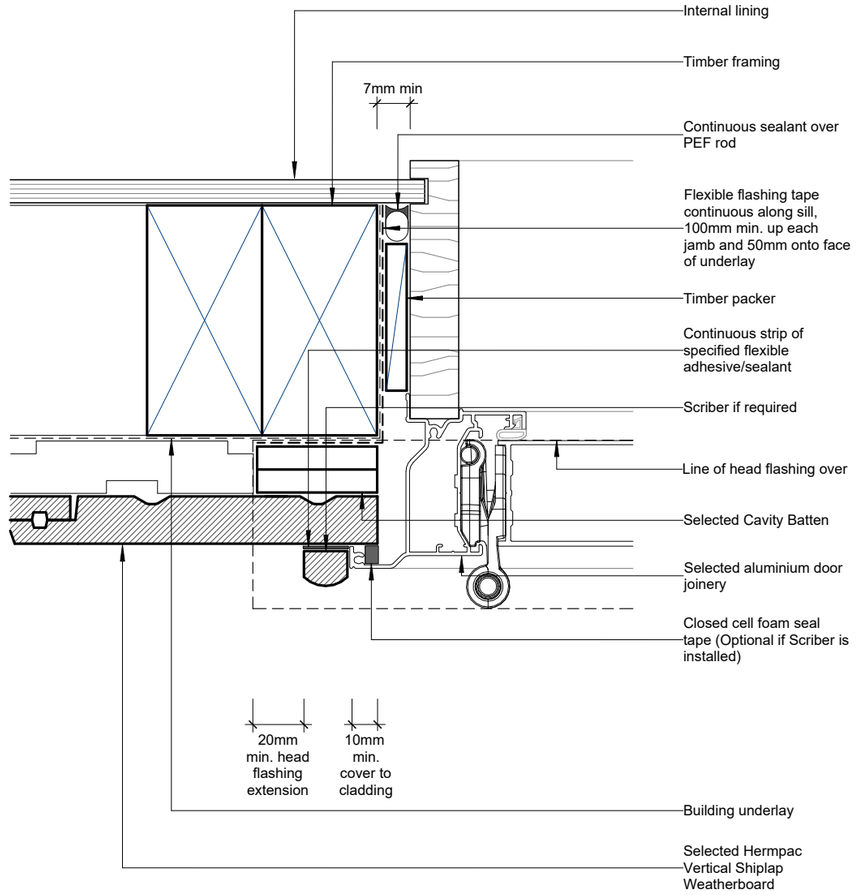
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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara		DATE #	14/08/2026
		SCALE @ A3	NTS
DWG: HEAD,SILL,DOOR,, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL		DRAWN	KB/TB/DB
		CHKD	KB/TB/DB
		DWG #	A25

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Cavity Fix Vertical Shiplap Weatherboard System

Door Jamb Detail, Aluminium Joinery

CodeMark CERTIFIED CMNZ30036

BRANZ Appraised Appraisal No. 650

HC-SHIP-212
DRAWING

1 : 2 @ A4
SCALE

2022
ISSUED DATE

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: JAMB,DOOR,, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

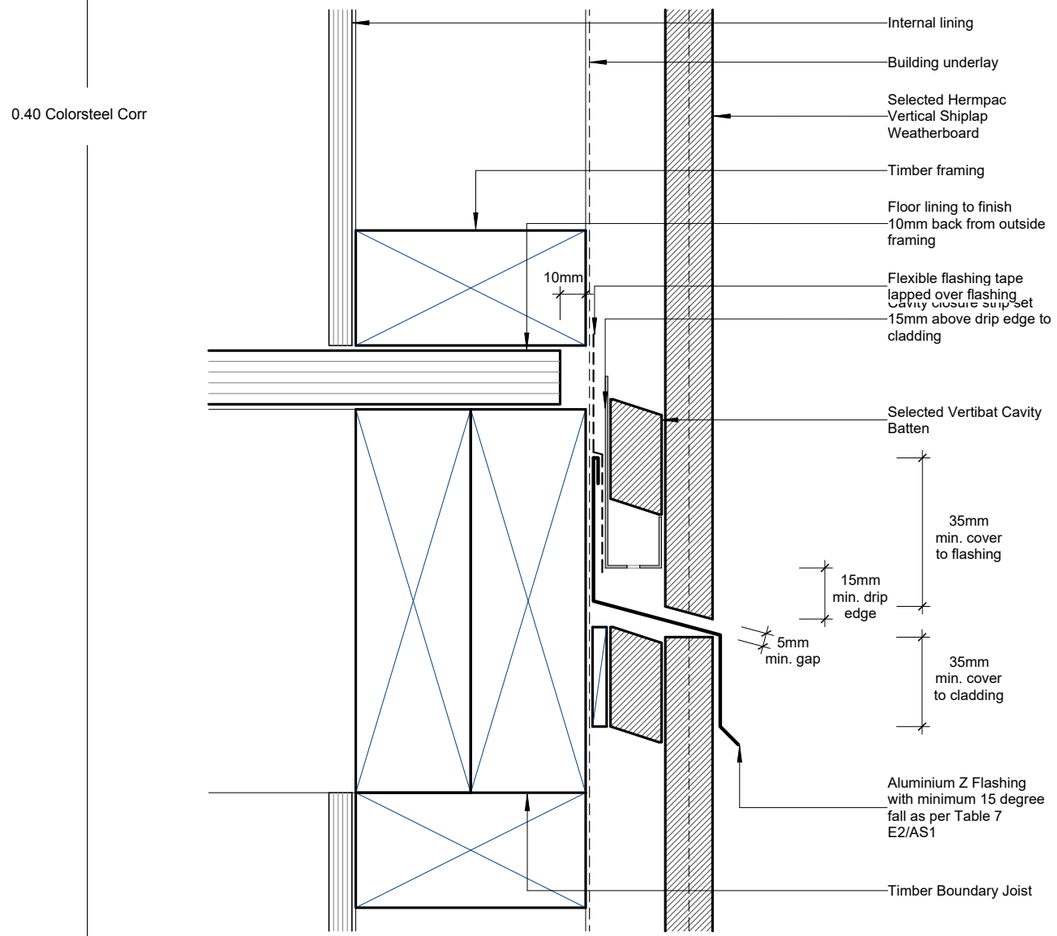
PROJECT # MS-0326
DWG # A26

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Cavity Fix Vertical Shiplap Weatherboard System

Drained
Inter-Storey Joint

CodeMark CERTIFIED
CMNZ30036

BRANZ Appraised
Appraisal No. 650

HC-SHIP-412
DRAWING

1 : 2 @ A4
SCALE

2022
ISSUED DATE

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 **E**: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT

PROJECT: 6 Tui Street, Ahipara

DWG: INTERSTORY DRAINED JOINT, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

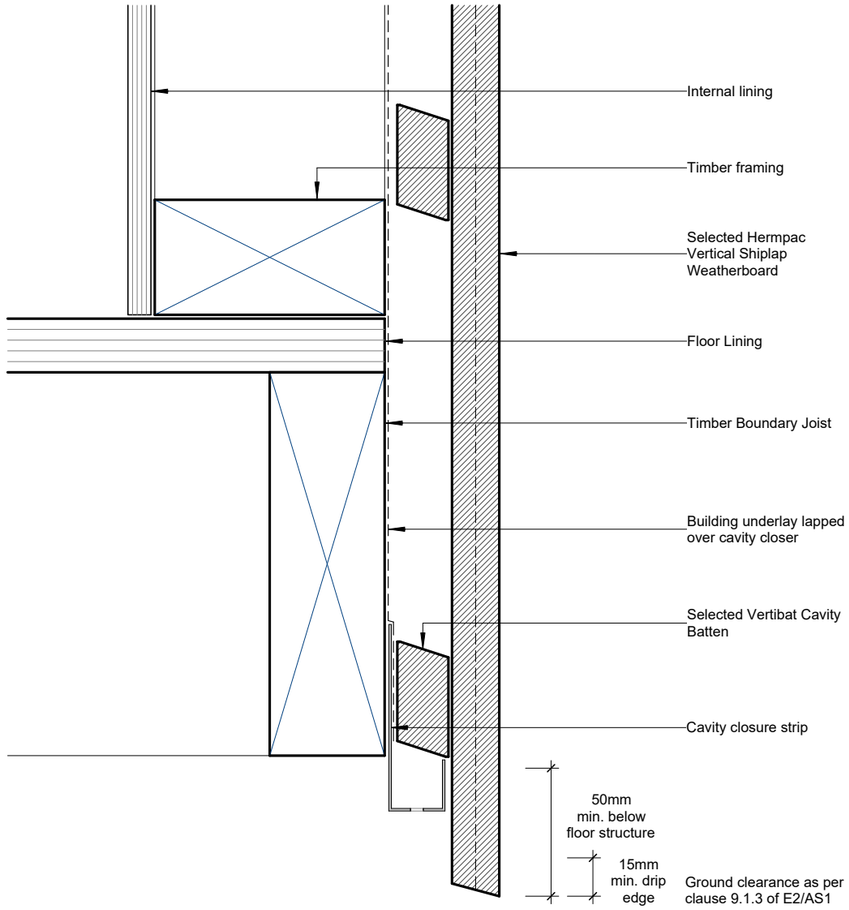
PROJECT # MS-0326

DWG # A27

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NOTES:
- All weatherboard fixings pre-drilled maximum 1mm diameter smaller than the nail/screw gauge.
- All Hermpac timber products, cut ends and edges to be precoated as per Installation Specifications.
- All materials and fixtures are to comply with E2/AS1 Clause 2.2.
- For non-hemmed corner flashings, ensure a minimum 75mm cover to weatherboards beyond the point where BRANZ Bulletin 411 compliant weatherboard lap or rebate combinations terminate at the corner junction.
- In Extra High Wind Zone and above, the 75mm cover requirement remains and hemmed edges must also be used.
- Refer to NZBC Acceptable Solution E2/AS1 Table 21 for the separation requirements between CCA treated battens and metal flashings.
- Prior to installation, refer to Hermpac Vertical Shiplap Technical Installation Specifications.



Hermpac
hermpac.co.nz
SUBJECT TO CHANGE WITHOUT NOTICE

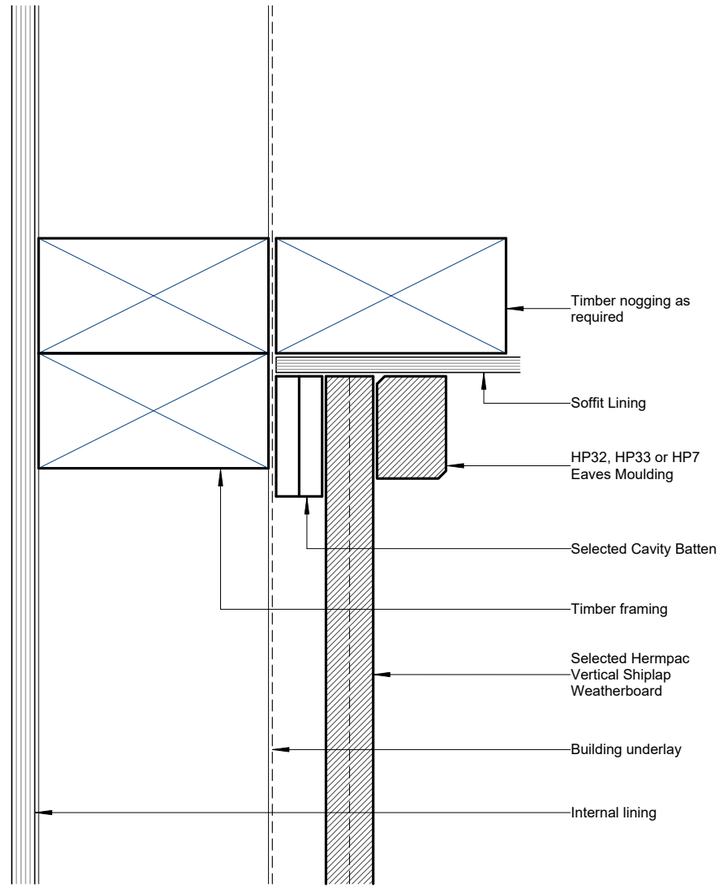
Cavity Fix Vertical Shiplap Weatherboard System
Base of Wall, Timber

CodeMark CERTIFIED CMNZ30036
BRANZ Appraised Appraisal No. 650

HC-SHIP-501
DRAWING

1 : 2 @ A4	2022
SCALE	ISSUED DATE

NOTES:
- All weatherboard fixings pre-drilled maximum 1mm diameter smaller than the nail/screw gauge.
- All Hermpac timber products, cut ends and edges to be precoated as per Installation Specifications.
- All materials and fixtures are to comply with E2/AS1 Clause 2.2.
- For non-hemmed corner flashings, ensure a minimum 75mm cover to weatherboards beyond the point where BRANZ Bulletin 411 compliant weatherboard lap or rebate combinations terminate at the corner junction.
- In Extra High Wind Zone and above, the 75mm cover requirement remains and hemmed edges must also be used.
- Refer to NZBC Acceptable Solution E2/AS1 Table 21 for the separation requirements between CCA treated battens and metal flashings.
- Prior to installation, refer to Hermpac Vertical Shiplap Technical Installation Specifications.



Hermpac
hermpac.co.nz
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Cavity Fix Vertical Shiplap Weatherboard System
Soffit Detail, Overhang

CodeMark CERTIFIED CMNZ30036
BRANZ Appraised Appraisal No. 650

HC-SHIP-601
DRAWING

1 : 2 @ A4	01/11/2021
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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # A28
DWG	BASE,SOFFIT, VERTICAL SHIPLAP/CAVITY CLADDING DETAIL	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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STRUCTURALLY FIXED CAVITY BATTENS

Minimum penetrations required

The minimum penetration length of fixings into the frame for particular claddings is the same whether the cladding is direct-fixed or over a cavity. For example, in:

- paint-finish weatherboards, fixings must have a minimum penetration of 35 mm into the structural frame
- stained or bare finish weatherboards, fixings must have a minimum penetration of 30 mm into the structural frame.

This means that, when weatherboards are fixed over a cavity, fixings must be at least 20 mm longer to achieve the minimum penetration into the structural frame.

As a general rule, as the nail length increases there is also an increase in shank diameter. This can cause the weatherboards to split.

Solution – structurally fix cavity battens to framing

One way to overcome this potential splitting problem is to fix the timber cavity battens directly to the framing. The battens then become part of the structural frame, which allows the fixings given in Table 24 to be used.

Although this is an alternative method, structural integrity of this fixing arrangement was confirmed by BRANZ Test Report ST0589 Version 2 *Fixing horizontal weatherboards to studs over a cavity.* It is described in BRANZ Bulletin 582 *Structurally fixed cavity battens.*

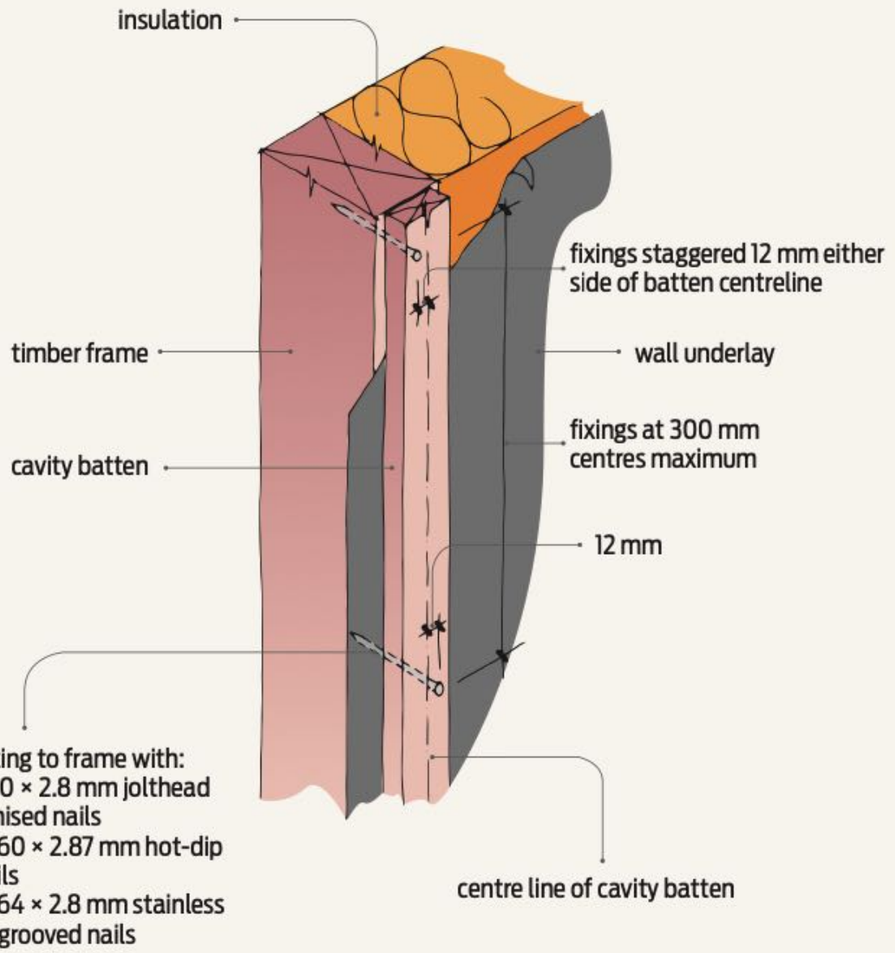


Figure 1 **Fixing for a structurally fixed timber cavity batten.**

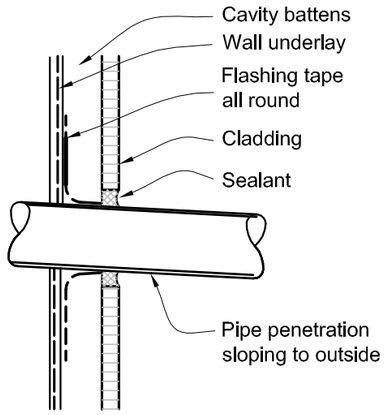
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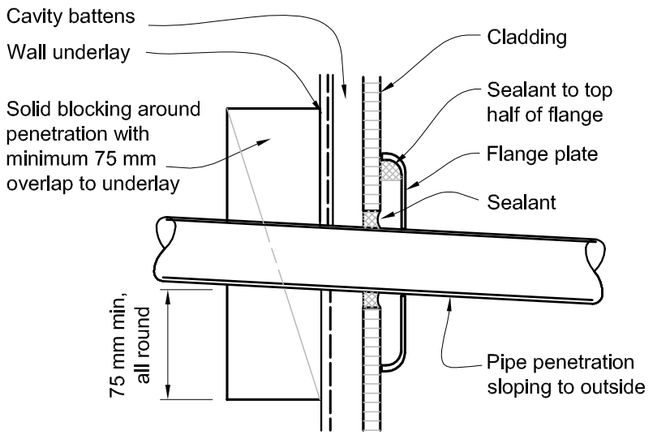
CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
		SCALE @ A3 NTS	DWG # A29
DWG	TYPICAL CAVITY FIXING	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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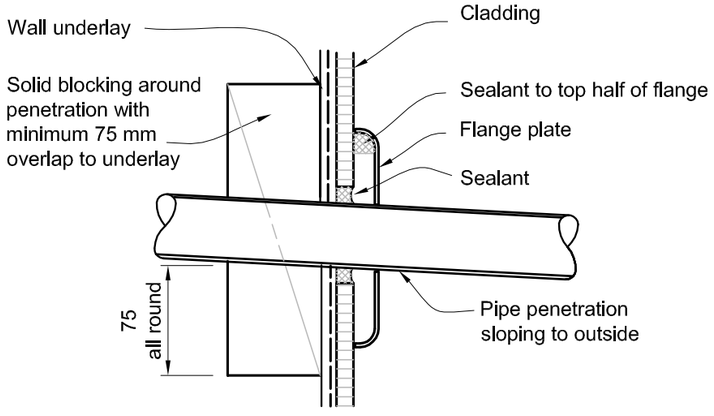
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(a) **CAVITY WITH FLASHING TAPE**



(b) **CAVITY WITH FLANGE PLATE**



(a) **DIRECT FIX WITH FLANGE PLATE**

GENERAL PIPE PENETRATION DETAIL

BRANZ Appraised

Appraisal No. 719 (2024)

TRADE-SEAL PIPE AND SERVICES PENETRATION SEAL



Product

1.1 TRADE-SEAL is a wall cladding pipe and service penetration seal consisting of an elastic EPDM sleeve fitted with a self-adhesive flange.

Scope

2.1 TRADE-SEAL has been appraised for use as a pipe and service penetration seal for use where the pipes and service penetration penetrates the wall underlay on timber-framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with BRANZ appraised flexible and rigid wall underlays; and,
- situated in NZS 3604 Wind Zones up to, and including, Extra High.

2.2 TRADE-SEAL has been appraised for use as a pipe and service penetration seal for use where the pipes and service penetration penetrates the wall underlay on steel-framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1, with regard to building height and floor plan area; and,
- with BRANZ appraised flexible and rigid wall underlays; and,
- situated in NZS 3604 Wind Zones up to, and including, Extra High.

2.3 TRADE-SEAL has also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of TRADE-SEAL into their design in accordance with the declared properties and the instructions of Marshall Innovations Limited.

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CLIENT: M & S SCOTT			PROJECT # MS-0326
PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # A30
DWG CLADDING PENETRATION DETAIL	SCALE @ A3 NTS		
	DRAWN KB/TB/DB		
	CHKD KB/TB/DB		

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Figure 2: Wall Lining Joints
Paragraph 3.2.1

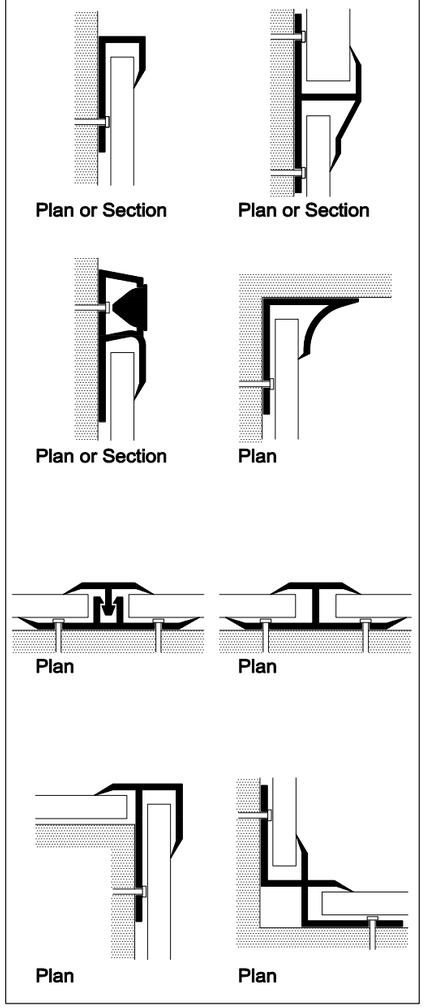


Figure 1: Floor Coverings at Wall Junctions
Paragraph 2.1.1

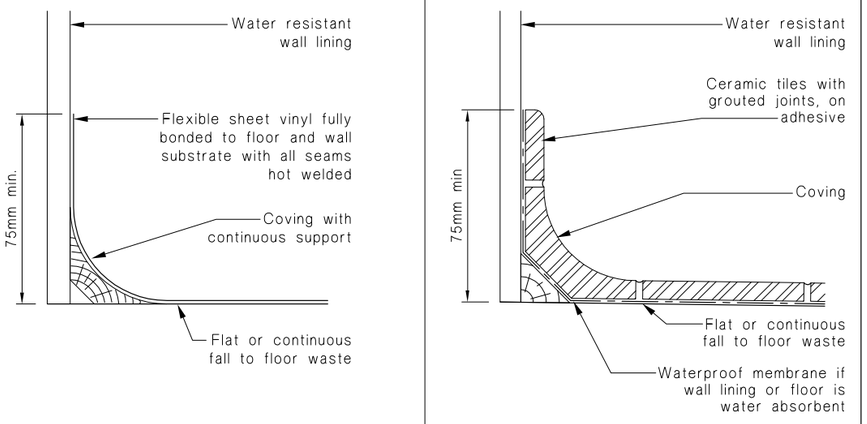


Figure 3: Baths, Basins, Tubs and Sinks, Joints against Wall Linings
Paragraph 3.2.2

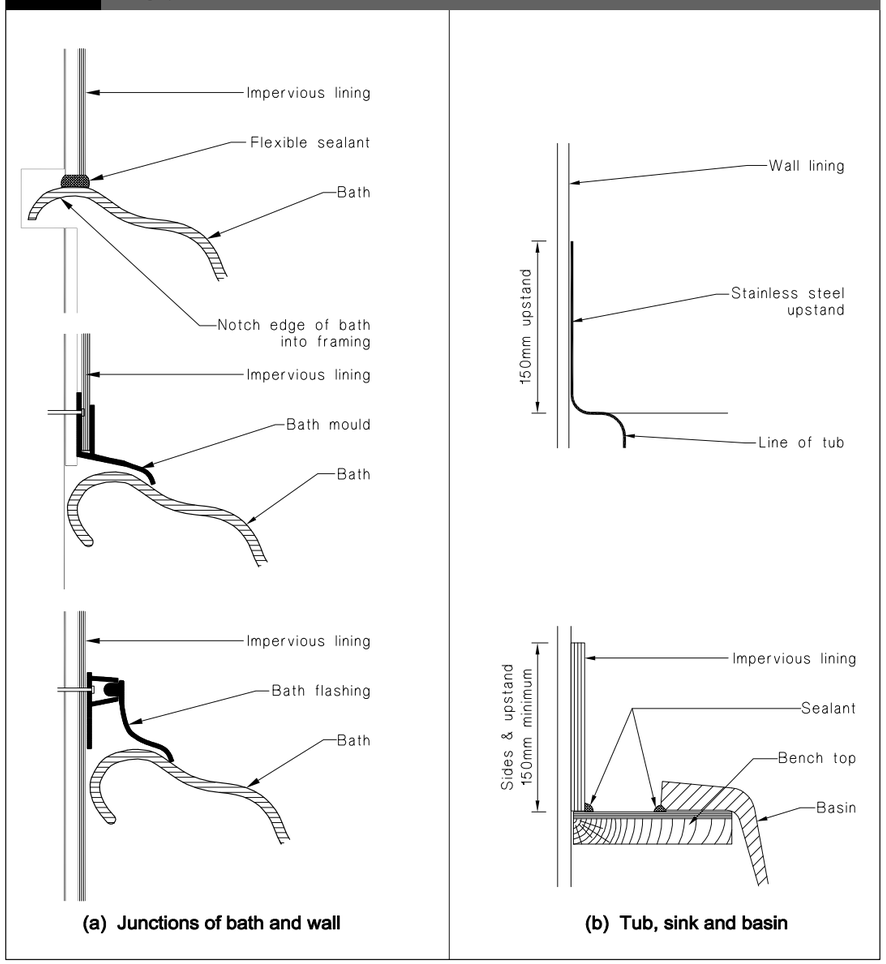
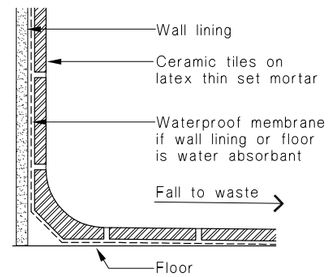
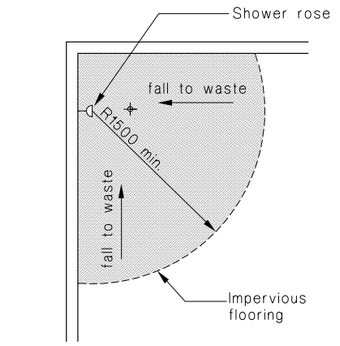


Figure 4: Shower Trays
Paragraphs 3.3.1 and 3.3.3

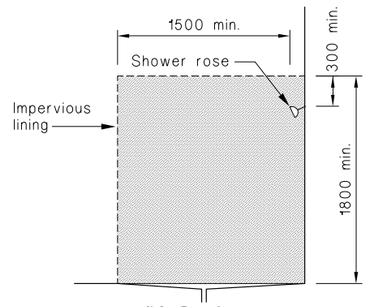


(c) Tiled shower tray

Figure 5: Wall and Floor Coverings to Unenclosed Showers
Paragraphs 3.3.1 and 3.3.5



(a) Plan



(b) Section

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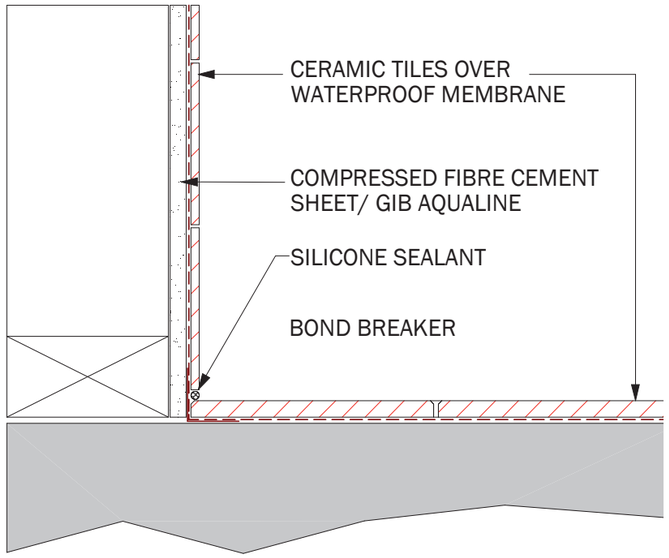
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: E3-BATHROOM DETAILS

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

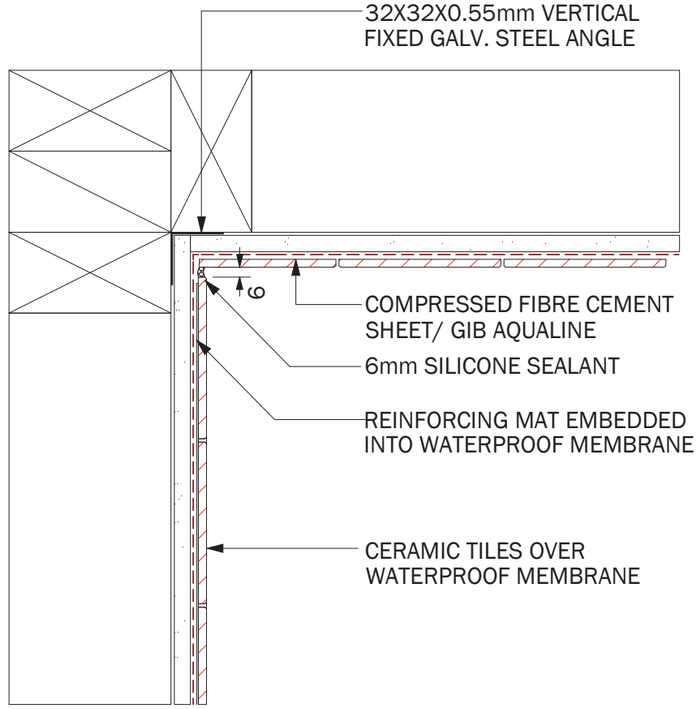
PROJECT # MS-0326
DWG # B01

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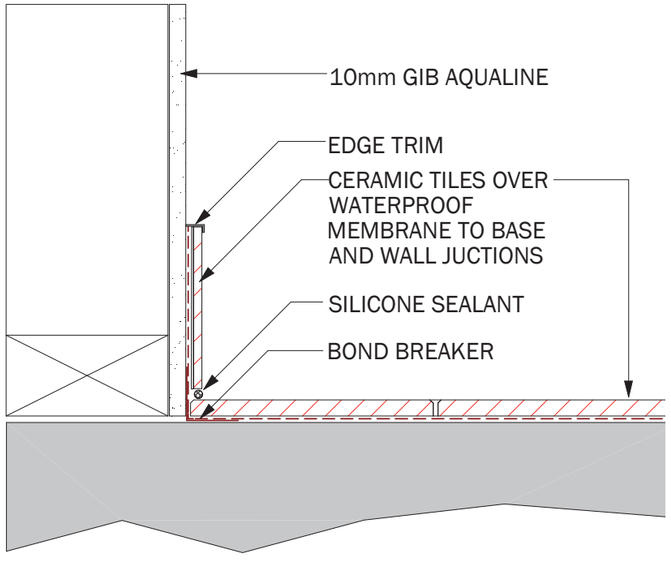


WALL / FLOOR DETAIL
TILED WALLS

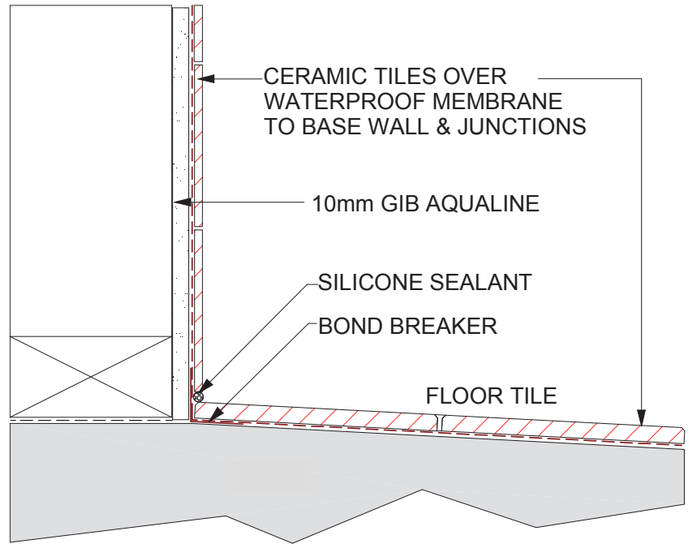


PLAN VIEW

CORNER DETAIL
TILED WALLS



TILED WALL / FLOOR DETAIL



SHOWER WALL / FLOOR DETAIL

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ISSUE NO.	DATE	DESCRIPTION	

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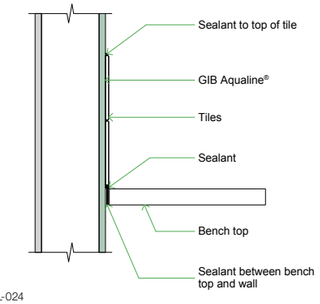
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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # B03
DWG	BATHROOM TILED DETAILS	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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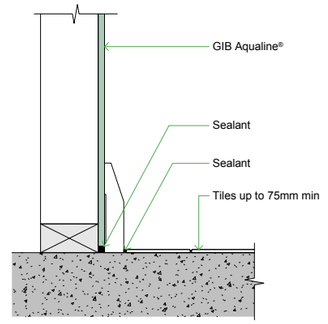
KITCHEN AND LAUNDRY DETAILS

A: BENCH TOP LINING JUNCTION



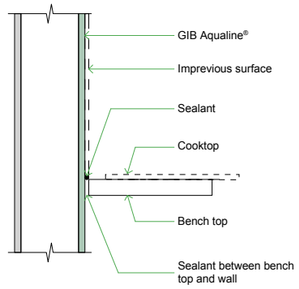
GAL-024

CERAMIC FLOOR SKIRTING LINING JUNCTION



GAL-001A

B: COOKTOP LINING JUNCTION



GAL-023B



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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # B09
DWG	GIB AQUALINE KITCHEN DETAILS	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Continuous Flow Gas Water Heaters

Rinnai INFINITY® EF26
High Efficiency Condensing Unit

The latest innovation in continuous flow gas hot water products. The Rinnai INFINITY® EF26 offers on-demand endless hot water that is more energy efficient, more cost effective and more environmentally friendly.

- ✓ High Efficiency: Pre-heats water with existing heat to reduce hot water running costs.
- ✓ Endless Hot Water: Never run out of hot water again.
- ✓ Space Saving: Located outside to give you more space indoors.
- ✓ Clever Design: These systems modulate to heat water at lower flow rates.
- ✓ Adaptive: Supports lower flow rates required of new taps.

Rinnai INFINITY® EF26

– Ideal for the environmentally conscious who want to significantly reduce running costs and lower energy usage, while still having the luxury of endless hot water.

– EF26: 92% thermal efficiency.





10 **3**

10-year warranty^ **3-year warranty^^**

Rinnai INFINITY® A Series

A system that heats your water when you need it – enjoy the peace of mind that the hot water won't run out! The Rinnai INFINITY® gas water heater is a nifty little system – installed outside so you won't have to sacrifice any of your indoor living space.



INFINITY® A16 – 16L/min*
Available in Graphite® colour



INFINITY® A20 – 20L/min*



INFINITY® A24 – 24L/min*



INFINITY® A26 – 26L/min*
Available in Graphite® colour

- ✓ Cost Efficient: Only pay to heat the water you use.
- ✓ Endless Hot Water: Never run out of hot water again.
- ✓ Space Saving: Located outside to give you more space indoors.
- ✓ Clever Design: These systems modulate to heat water at lower flow rates.
- ✓ Adaptive: Supports lower flow rates required of new tap and bathroomware.

Rinnai INFINITY® A Series

– Designed for homes requiring high volumes of hot water with lower initial set-up cost.

– 80% thermal efficiency.



Rinnai INFINITY® A26 in Graphite® colour

Rinnai INFINITY® Indoor

Installing your Rinnai INFINITY® gas hot water unit inside provides proximity to outlets (taps) and gets your hot water to you faster. Hidden in a cupboard, or up in the attic, the Rinnai INFINITY® gas water heater will operate efficiently and effectively.

- ✓ Aesthetics: No Rinnai INFINITY® unit visible on the outside of the house.
- ✓ Flexible Installation: Flue installation can be vertical, horizontal or a combination of both to maximise the locations in which the unit can be installed.

INFINITY® A28i

– Provides proximity to hot water outlets for larger homes.

– Up to 83% thermal efficiency.

– Provides 28 litres per minute of continuous hot water.



10 **3**

10-year warranty^ **3-year warranty^^**

* The L/min is the nominal water capacity at a 25°C rise. ^ 10-year warranty pro rata on heat exchanger. ^^ 3-year warranty on parts and labour. Please refer to Limited Warranty statement on Rinnai continuous flow water heaters at www.rinnai.co.nz/warranty.html

* The L/min is the nominal water capacity at a 25°C rise. ^ 10-year warranty pro rata on heat exchanger. ^^ 3-year warranty on parts and labour. Please refer to Limited Warranty statement on Rinnai continuous flow water heaters at www.rinnai.co.nz/warranty.html

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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # H01
DWG	GAS CALIFONT DETAILS	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
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INFINITY A-Series specification

Description
Continuous flow gas hot water heaters, with inbuilt frost protection. Factory preset to 55 °C. Suitable for external residential applications, mains and medium pressure systems.

They are not suitable as a spa or swimming pool heater. They are also not suitable for commercial or solar applications.

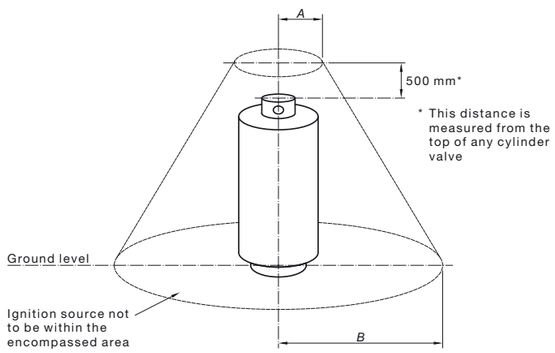
Fan forced exhaust system, and direct electronic ignition—requires electricity to operate.

	A16	A20	A24	A26
REU No.	A1620WG-ZK	A2024WG-ZK	A2426WG-ZK	A2626WG-ZK
Colour	White	White	White	White
Efficiency	80.5%	80.5%	81%	80%
Weight	13 kg	14 kg	15 kg	15 kg
Input	16.3-124 MJ/h	19.9-156 MJ/h	16.3-184 MJ/h	16.3-199 MJ/h
Output	27.4 kW	33.9 kW	41.4 kW	44.2 kW
Hot water capacity (raised 25 °C)	2.1-16 L/min	2.5-20 L/min	2.1-24 L/min	2.1-26 L/min
NO_x af	35 ppm	35 ppm	35 ppm	35 ppm
Temp. range with kitchen controller	37-55 °C	37-55 °C	37-55 °C	37-55 °C
Temp. range with bathroom controller	37-50 °C	37-50 °C	37-50 °C	37-50 °C
Available dip switch settings	40, 42, 50, 55, 60, 65 °C for all models			
Water flow control	Water flow sensor, electronic water flow control device			
Min. operating water pressure	10 kPa	10 kPa	10 kPa	10 kPa
Nominal operating water pressure	120-1000 kPa	160-1000 kPa	200-1000 kPa	200-1000 kPa
Min. operating water flow	1.5 L/min	1.5 L/min	1.5 L/min	1.5 L/min
Max. operating water flow	20 L/min	24 L/min	26 L/min	26 L/min
Electrical consumption				
- normal	47 W	58 W	56 W	66 W
- standby	2 W	2 W	2 W	2 W
- frost protection	68 W	68 W	68 W	68 W
Connections				
- hot	R½ (15 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)
- cold	R½ (15 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)
- gas	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)

J5 CLEARANCES AROUND CYLINDERS

Cylinders should be installed with clearances complying with Figure J3 and Figure J4 and at least one (1) metre from readily ignitable material.

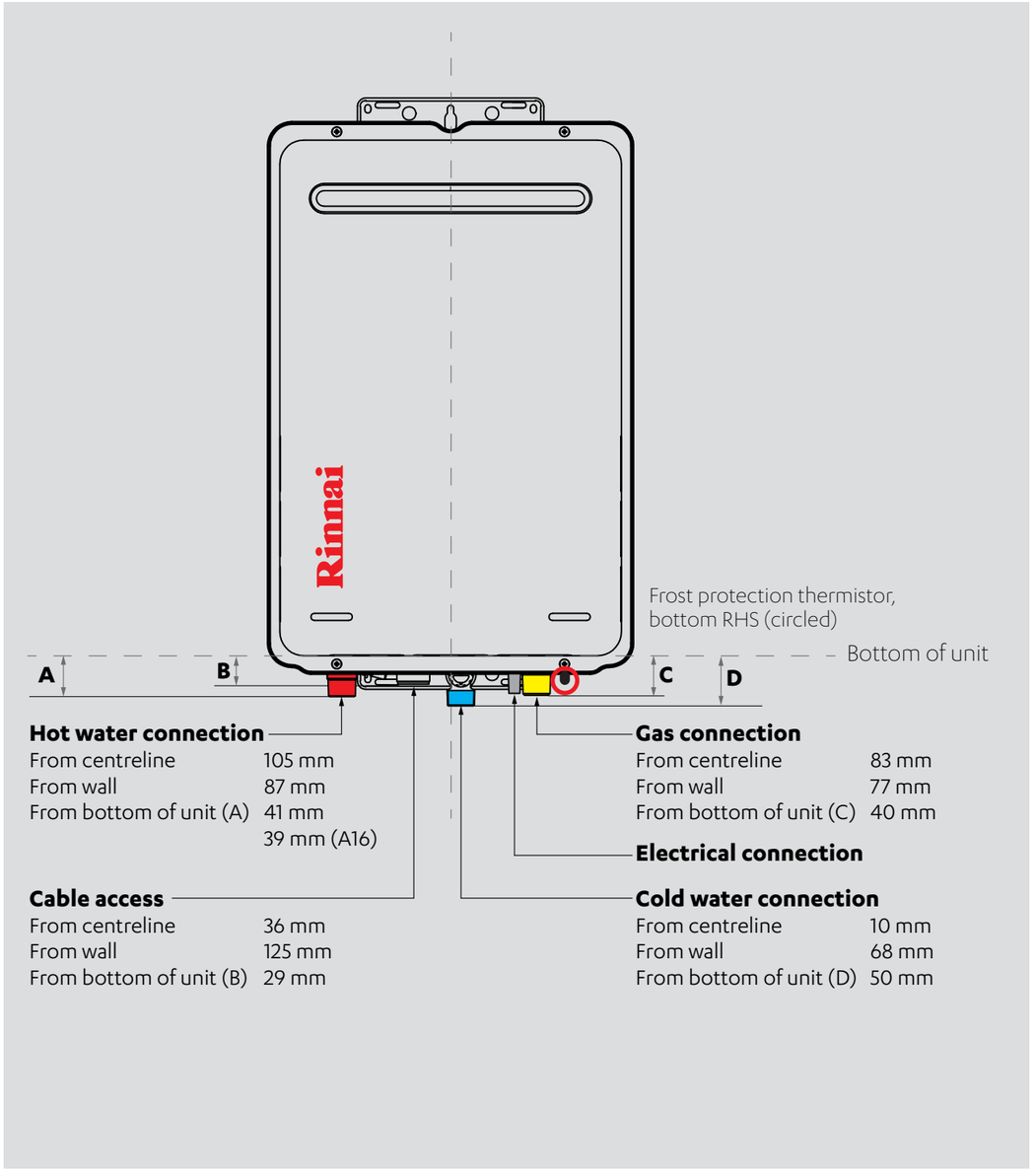
In New Zealand, the separation distances illustrated in Figure J4 are only applicable to installations having a storage capacity up to 100 kg of *LP Gas*. Above 100 kg storage capacity, the requirements are contained in the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice.



Radius	Exchange cylinder mm	In-situ fill cylinder mm
A	500	1500
B	1500	3500

FIGURE J3 MINIMUM CLEARANCE TO IGNITION SOURCES

INFINITY A-Series connection dimensions



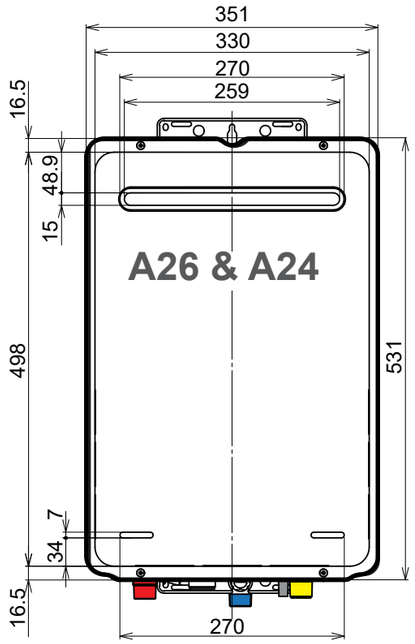
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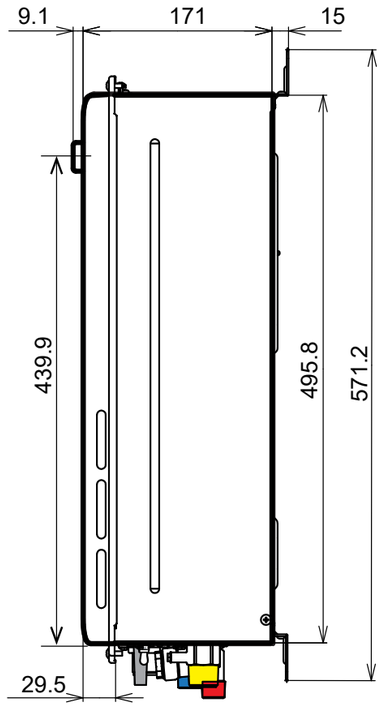
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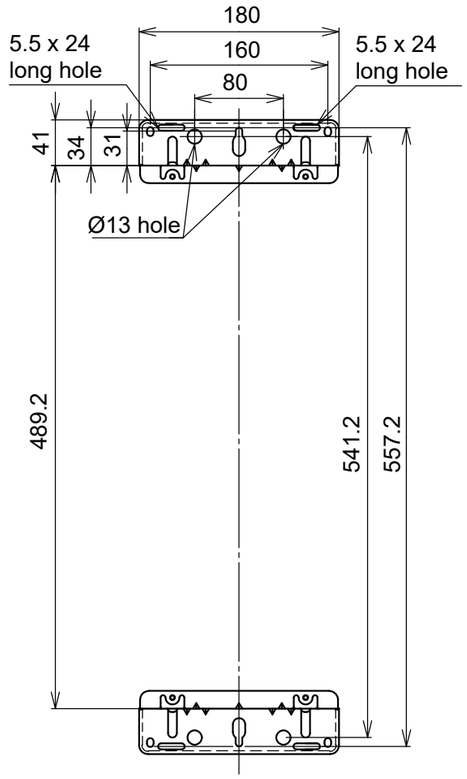
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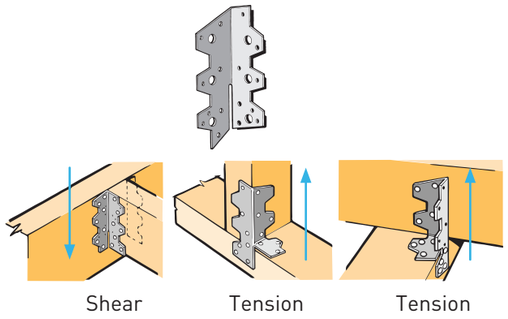
LUMBERLOK

TIMBER CONNECTORS CHARACTERISTIC LOADINGS DATA

MULTIGRIP

0.91mm G300 Z275 GALVANISED STEEL
0.9mm STAINLESS STEEL 304-2B

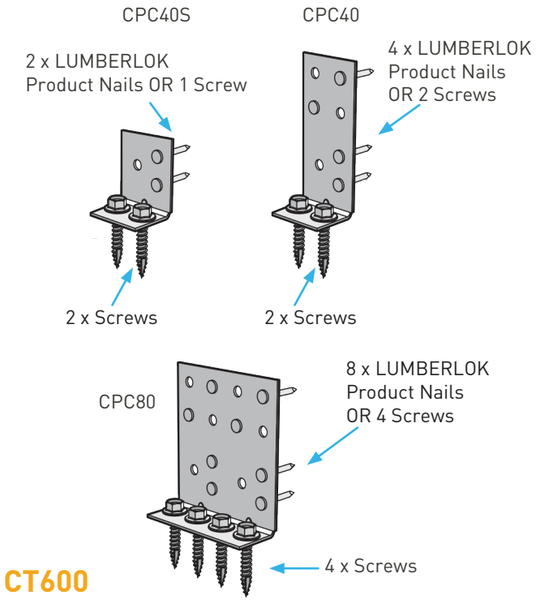
Characteristic Load		
Fixings	Nails: All holes filled with 30mm x 3.15 dia.	Screws: 3 x Type 17-14g x 35mm per flange
Shear	11.9 kN / pair	10.9 kN / pair
Tension	4.0 kN / each	-



CONCEALED PURLIN CLEATS

1.55mm G300 Z275 GALVANISED STEEL
0.9mm STAINLESS STEEL 304-2B (SSCPC40S)
1.5mm STAINLESS STEEL 304-2B (SSCPC40 & SSCPC80)

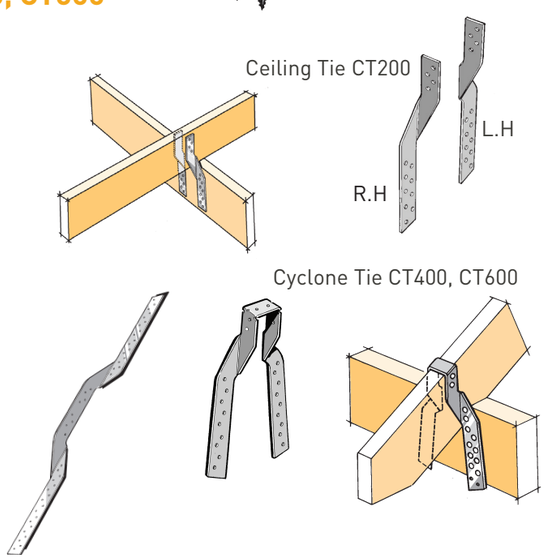
Characteristic Load	CPC40S	CPC40	CPC80
Uplift / Tension	4.0 kN / pair	8.0 kN / pair	16.0 kN / pair
Fix as shown with: LUMBERLOK Product Nails 30mm x 3.15 dia. AND Type 17-14g x 35mm Hex Head Screws			



CEILING TIE CT200 & CYCLONE TIES CT400, CT600

0.91mm G300 Z275 GALVANISED STEEL
0.9mm STAINLESS STEEL 304-2B

Characteristic Load	CT200 (pair)	CT400, CT600
Uplift / Tension (4 nails each end)	10.5 kN	10.5 kN
Uplift / Tension (6 nails each end)	-	12.0 kN
Nails: LUMBERLOK Product Nails 30mm x 3.15 dia.		

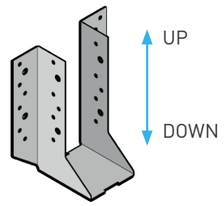


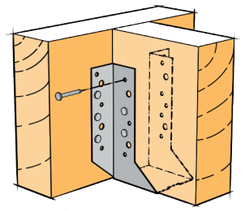
LUMBERLOK

TIMBER CONNECTORS CHARACTERISTIC LOADINGS DATA

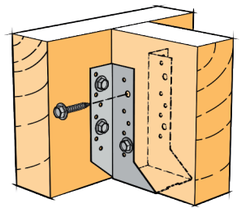
JOIST HANGERS

0.91mm G300 Z275 GALVANISED STEEL
0.9mm STAINLESS STEEL 304-2B





Nail Detail



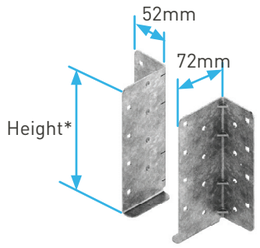
Screw Detail

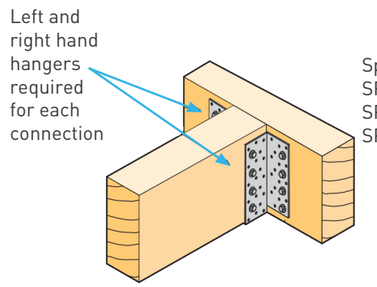
Joist Hanger Type	Characteristic Load - Nails			Characteristic Load - Screws		
	No. of Nails per Flange*	Down	Uplift	No. of Screws per Flange*	Down	Uplift
JH 47 x 90	3	9.0 kN	6.0 kN	1	7.0 kN	4.7 kN
JH 47 x 120	5	15.0 kN	10.0 kN	2	14.0 kN	12.0 kN
JH 47 x 190	9	27.0 kN	18.0 kN	3	21.0 kN	18.0 kN
JH 95 x 165	8	24.0 kN	16.0 kN	3	21.0 kN	18.0 kN
JH 70 x 180	8	24.0 kN	16.0 kN	3	21.0 kN	18.0 kN
	Nails: LUMBERLOK Product Nails 30mm x 3.15 dia.			Screws: Type 17-12g x 35mm Hex Head		

*4 Flanges per hanger
Note: Loads for 47mm Joist Hangers also apply to 52mm.
For roof trusses, Joist Hangers shall be fully nailed or screw fixed.

SPLIT HANGERS

1.55 G300 Z275 GALVANISED STEEL





Split Hangers are available in heights of:
SPH140 - 137mm actual size
SPH180 - 177mm actual size
SPH220 - 217mm actual size

Split Hanger Type	Characteristic Load (per pair) - Screws					
	No. of Screws per Flange	Down	Uplift	No. of Screws per Flange	Down	Uplift
SPH140	3	15.0 kN	15.0 kN	6	36.0 kN	30.0 kN
SPH180	4	24.0 kN	20.0 kN	8	48.0 kN	40.0 kN
SPH220	5	30.0 kN	25.0 kN	10	60.0 kN	50.0 kN
	Fill all round holes with screws Screws: Type 17-14g x 35mm Hex Head			Fill all round and square holes with screws Screws: Type 17-14g x 35mm Hex Head		

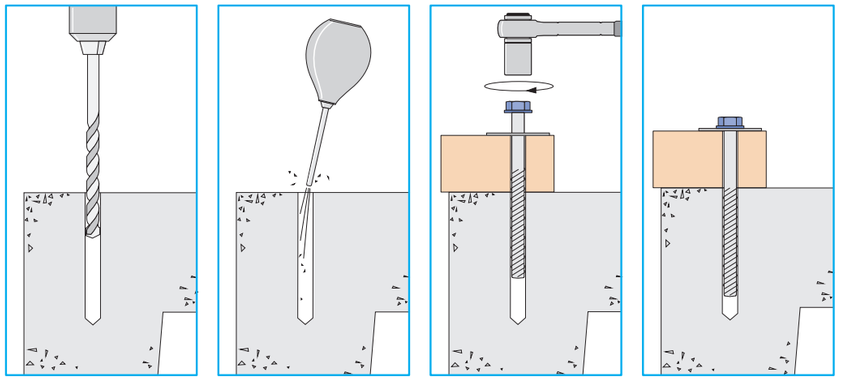
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MiTek® BOWMAC®

2024 EDITION V1

INSTALLATION DETAILS

→ Install BOWMAC SCREW BOLT and washer supplied to concrete slabs at 900mm max. crs., or 600mm max. crs. when using masonry header blocks
→ SCREW BOLT must be located within 150mm from end of timber wall frame



- Use a 10mm diameter masonry bit for drilling into concrete substrate
- Drill a hole into the concrete base to a minimum depth of 95mm and clean out dust and debris from hole prior to installation of BOWMAC SCREW BOLT
- Insert SCREW BOLT through washer and timber and into the hole
- Begin tightening SCREW BOLT by applying downward pressure when engaging the first thread
- Additional downward pressure may be required for installation in high strength, dense concrete
- Continue tightening SCREW BOLT until the head is firmly seated against the washer
- In extremely dense material, use of an impact wrench is recommended
- Ensure SCREW BOLT is at the required embedment depth
- Don't exceed the maximum clamping torque of 80Nm
- The installation is now complete

INSTALLATION TIPS

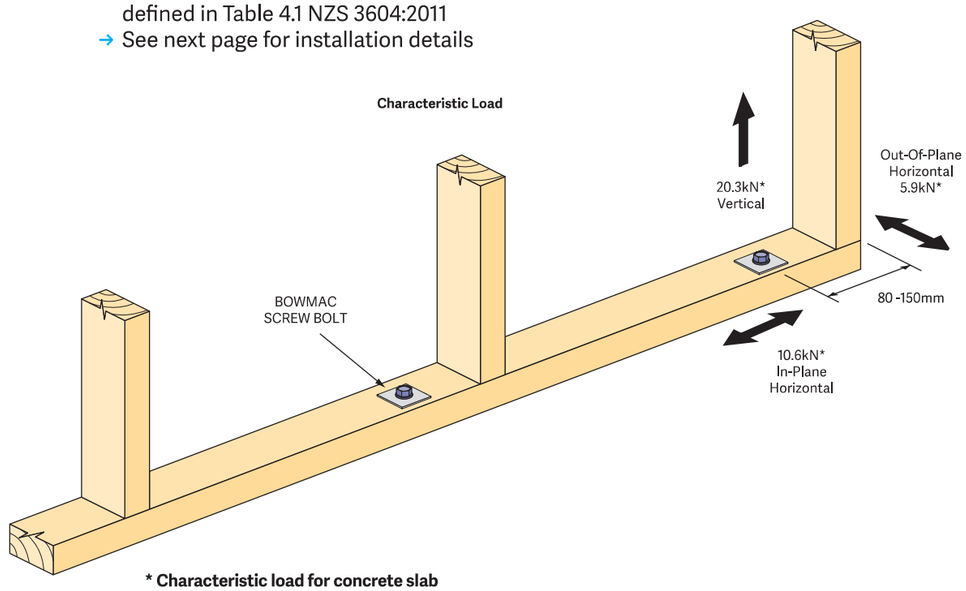
- Use quality hexagonal socket with a ratchet spanner (15mm Hex Head)
- Where substrate allows, a torque controlled wrench can be used
- During installation debris or dust created by the thread cutting action may cause some resistance to be experienced. This is easily overcome by unscrewing the BOWMAC SCREW BOLT for one turn, or more and then continue to fix to the full embedment

Code: BPS
Packed: 10 SCREW BOLTS and washers per bag
5 bags per carton

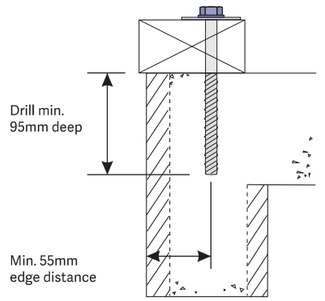
MiTek® BOWMAC®

BOTTOM PLATE SCREW BOLT
M10 X 140 BOWMAC BLUE HEAD

→ Complies with Clause 7.5.12.2 NZS 3604:2011 Proprietary Post Fixed Anchors
→ BRANZ tested. Ref # ST0895 Oct. 2012
→ Suitable for both external and internal wall frame anchor to concrete slab or masonry header blocks
→ Complies with durability requirements for "All Zones" in a "CLOSED" environment as defined in Table 4.1 NZS 3604:2011
→ See next page for installation details



*** Characteristic load for concrete slab edges formed by masonry header blocks**



Available from leading Builders Supply Merchants throughout New Zealand

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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # M02
DWG	BOWMAC BOTTOM PLATE FIXING	DRAWN KB/TB/DB CHKD KB/TB/DB	

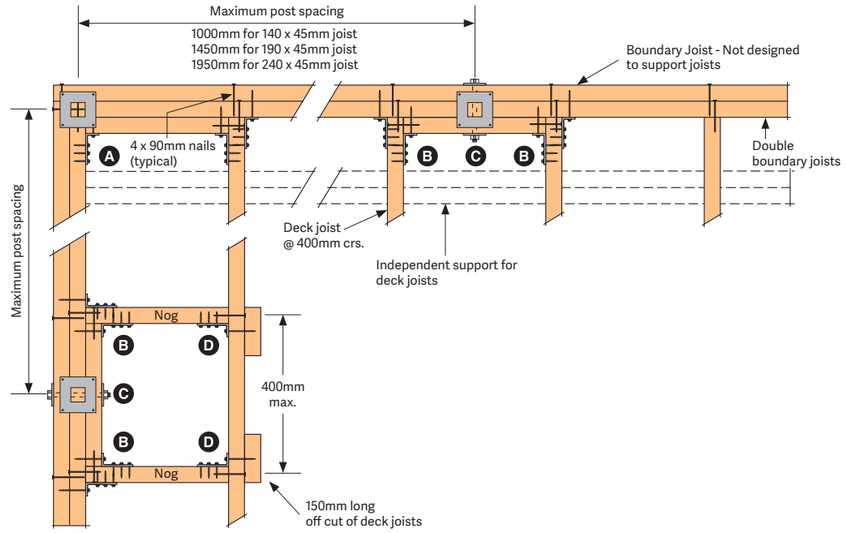
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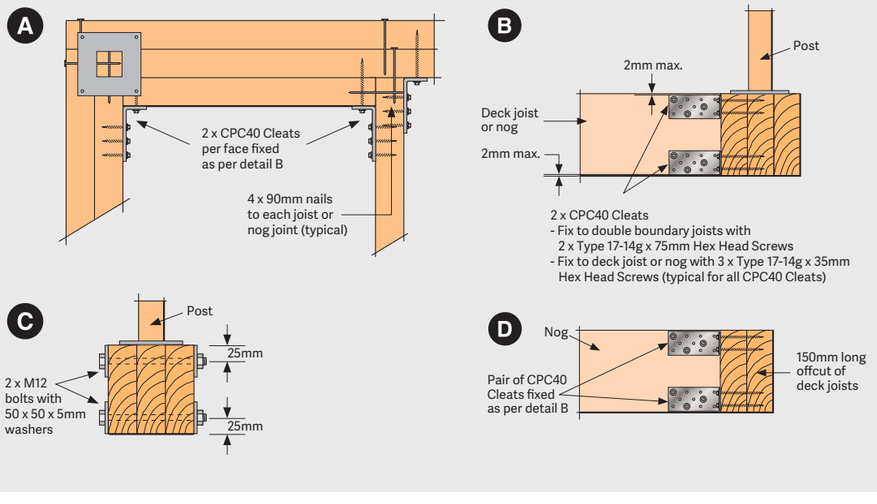
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MiTek® LUMBERLOK®

TOP FIXED BALUSTER POSTS

- Complies with Table 3.3 AS/NZS 1170.1:2002 for horizontal load of 0.75kN/m on handrail
- All fixings are designed to provide adequate rotational stability to the handrail system to resist the horizontal load at top of baluster post
- Assumes an approved post and balustrade system is used
- Suitable for all wind zones including Extra High, for approved glass or fully clad balustrades
- Top fixed posts (by others) are usually metal posts with welded base plates





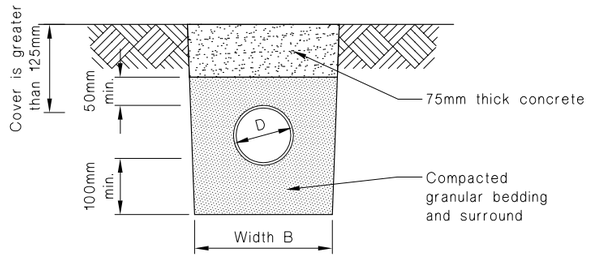
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DWG	LUMBERLOK DECK CONNECTION DETAILS	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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Figure 13: Bedding and Backfilling
Paragraphs 3.9.2, 3.9.4 and 3.9.5



(c) Cover greater than 125 mm

NOTE:
1. Fill shall be:
-Ordinary fill where drains are located below gardens and open country.
-Compacted selected fill where the drains are located below residential driveways and similar areas subjected to light traffic.

NEW STORMWATER DRAIN TO HAVE A COVER OF 100mm OF 25mPa CONCRETE

d) Spaced at:

i) 7.5 m centres for trench slopes between 1 in 8 and 1 in 5, or

ii) 5.0 m centres for trench slopes greater than 1 in 5.

COMMENT:
The anti-scour blocks partition off the trench and prevent ground or *surface water* running along the trench and causing scouring.

3.9.4 Trench width

The width B of the trench shall be no less than the pipe diameter D plus 200 mm. Trench width at the top of the pipe shall be no more than 600 mm unless the pipe(s) in the trench are covered with concrete, as shown in Figure 13 (c).

3.9.5 Acceptable materials

Acceptable fill materials shown in Figure 13 are:

a) Bedding material of clean granular non-cohesive material with a maximum particle size of 20 mm, or

b) Selected compacted fill of any fine-grained soil or granular material which is free from topsoil and rubbish and has a maximum particle size of 20 mm, or

c) Ordinary fill which may comprise any fill or excavated material.

3.9.6 Placing and compacting

a) Granular bedding and selected fill shall be placed in layers of no greater than 100 mm loose thickness and compacted.

b) Up to 300 mm above the pipe, compaction shall be by tamping by hand using a rod with a pad foot (having an area of 75 ± 25 mm by 75 ± 25 mm) over the entire surface of each layer to produce a compact layer without obvious voids.

c) More than 300 mm above the pipe, compaction shall be by at least four passes of a mechanical tamping foot compactor (whacker type) with a minimum weight of 75 kg.

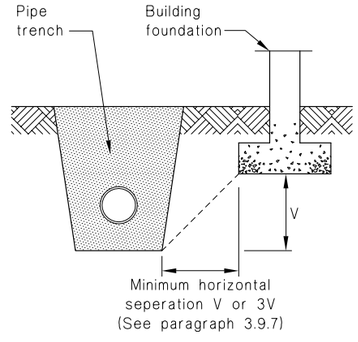
3.9.7 Proximity of trench to building

For light timber frame and concrete masonry *buildings* founded on *good ground* and constructed in accordance with NZS 3604 or NZS 4229, pipe trenches which are open for no longer than 48 hours shall be located no closer than distance 'V' (see Figure 14) to the underside of any *building* foundation. Where the trench is to remain open for periods longer than 48 hours, the minimum horizontal separation shall increase to 3V in all ground except rock.

3.9.8 AS/NZS 2032, AS/NZS 2566.1 and AS/NZS 2566.2 provide other acceptable solutions.

COMMENT:
These provisions may exceed New Zealand Building Code minimum requirements.

Figure 14: Relationship of Pipe Trench to Building Foundation
Paragraph 3.9.7



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DWG BEDDING AND BACKFILLING	SCALE @ A3 NTS		
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STANDARD TANK WATER FILTARTION SYSTEM



- 1 x Bracket (white)
- 12 x Stainless Steel Screws
- 3 x 20" Housings with 3/4" BSP female ports
- 1 x 10m Sediment Pleated Pre-Filter
- 1 x 10m Sediment Polyspun Pre FIlter
- 1 x 5 Micron Carbon Block Post Filter.

5 Year Warranty

Stage 1 - Pleated Sediment 10 Micron Pre Filter

Made of the highest quality material this pleated filter removes particulate matter from the water such as rust, dirt & sediment and is fully cleanable.

Stage 2 - Poly Spun Sediment 10 Micron Pre Filter

Made of the highest quality poly spun material this filter further removes particulate matter from the water such as rust and dirt.

Stage 3 - Carbon Block 5 Micron Post Filter

The 5 micron carbon block filter further reduces chlorine, chemicals, metals, tastes and odours

Note: Cartridges should be replaced every 6 months.

MARLEY LEAF DIVERTER 80MM

MARLEY CURVE LEAF AND DEBRIS DIVERTOR TO BE INSTALLED AT EVERY DOWNPIPE.

Removes leaves and debris. Protects tanks and stormwater systems.

Certified for use with Potable Water: AS/NZS 4020:2005
Material: uPVC (unplasticised PVC)
Water Capture: Can capture 99% of water with a clean screen.
Screen Aperture: 0.8mm
Guarantee: 15 Years if installed as part of a Marley spouting System, and properly maintained.
UV Resistant to handles NZ's harsh Summer sun, high UV Levels and long, hot days.
Will not Rust or corrode, designed for NZ's salt laden coastal air.
Proudly Made in NZ

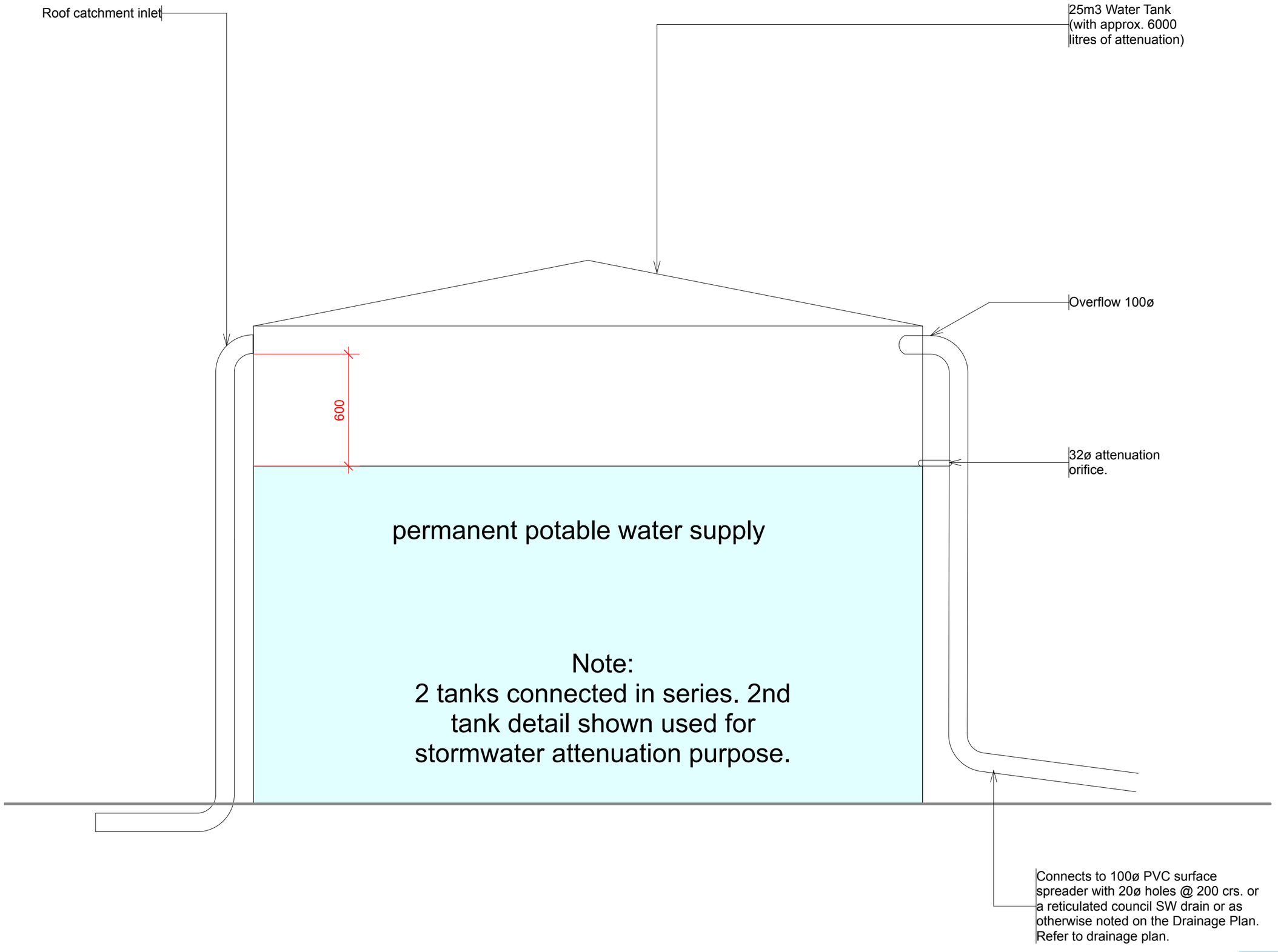


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DWG	WATER FILTRATION DEVICE	DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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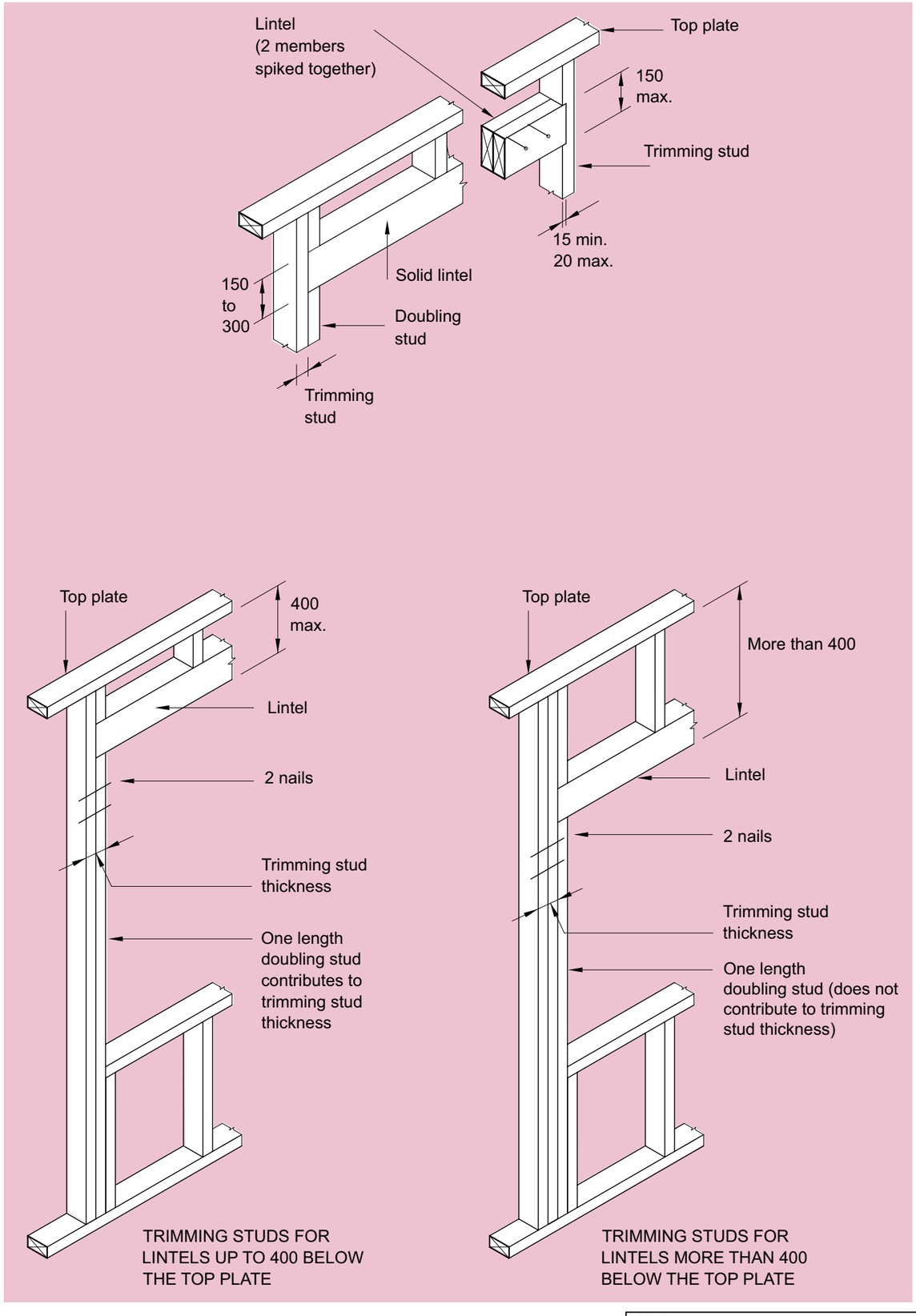
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PROJECT: 6 Tui Street, Ahipara	DATE # 14/08/2026		DWG # M06
DWG: WATER ATTENUATION	SCALE @ A3 NTS		
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NZS 3604:2011 Table 2.2 is a guide for nailing requirements and describes the types and capacity of fixings. Five of the fixing types include galvanised mild-steel strapping (see Table 1).

Roof frame strapping

Most strapping requirements are for roof framing (see Figure 1). In strong winds, this is the most vulnerable part of the structure as it is subject to uplift. Where a roof is supported over an opening, it is essential that the load is transferred around the opening.

LINTELS

NZS 3604:2011 paragraphs 8.6.1.7 and 8.6.1.8 require that, where a lintel supports a rafter or truss, and depending on wind zone, lintel span and loaded dimension, the lintel must be fixed against uplift according to Table 8.14. This includes using 25 × 1 mm galvanised steel straps meeting the capacity requirements in Table 8.18 to secure the lintel to the trimming stud and the trimming stud to a floor joist or solid blocking (Figure 8.12). Each strap must be fixed by six 30 × 2.5 mm nails into both the lintel and the trimming stud.

Tying down is also required between the:

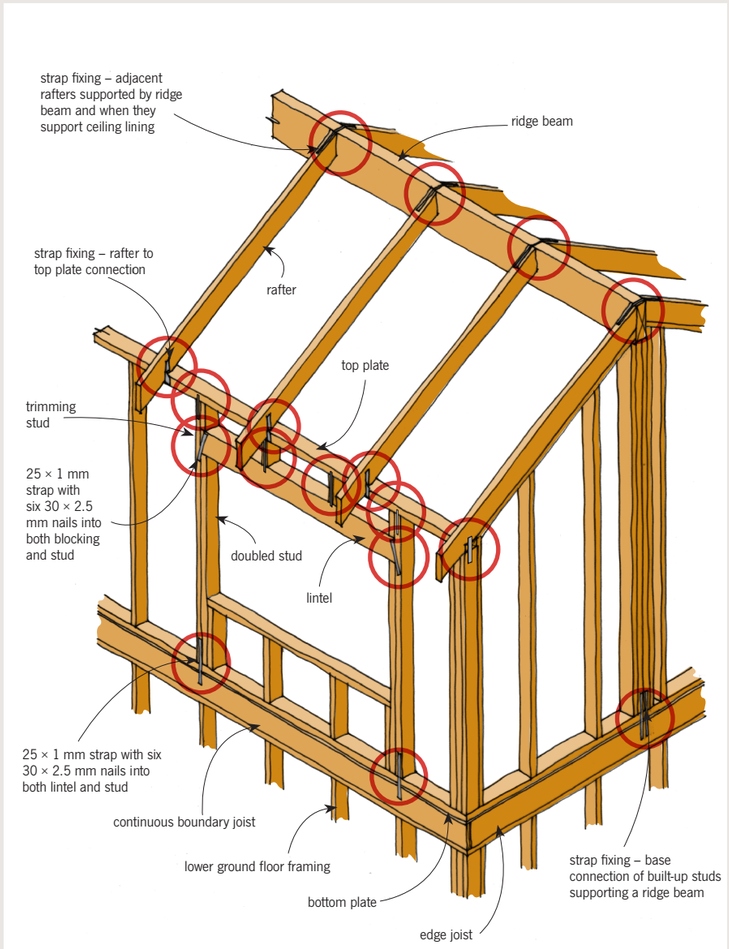
- top plate and lintel
- top plate and jack studs
- trimming studs to top plate.

An alternative 7.5 kN connection (in tension) may also be used.

TRIMMING STUDS

Fixing the trimming stud to the floor joist applies to a single-storey building or to upper floor framing to the intermediate floor.

Where ground floor framing is on a concrete floor slab, the strapping is folded under the bottom plate and fixed to each side of the stud using six 30 × 2.5 mm nails (see Figure 2).



Note: Circles indicate strap fixing locations to resist uplift.

Figure 1: Framing locations requiring strap fixing.

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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
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DWG	STUD-PLATE FIXING	DRAWN KB/TB/DB	
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HOW TO USE NZS 3604:2011 TABLE 8.18 REMAINS A COMMON QUESTION TO THE BRANZ HELPLINE, EVEN THOUGH IT'S BEEN TOUCHED ON IN SEVERAL *BUILD* ARTICLES. THIS TIME, WE WORK THROUGH IT STEP BY STEP.

TO PREVENT UPLIFT, some top plates only require 0.7 kN Type A fixings attaching the top plates to studs and lintels. However, in other cases, additional securing is needed to studs and lintels (see Figure 1).

When are extra uplift fixings required?

Where lintels in NZS 3604:2011 *Timber-framed buildings* Figure 8.12 require uplift fixings at the ends to trimming studs, the studs and lintels will almost certainly require securing to top plates at 600 mm centres with a 4.7 kN Type B fixing (see Table 8.18).

For lintel to trimming stud requirements, see NZS 3604:2011 Figure 8.12 and Table 8.14, and *Build* 138 pages 33–34, Lintel fixings.

Example 1

In the first example of how to use Table 8.18, the parameters are:

- light roof
- rafters or trusses at 900 mm centres (spacing actually makes no difference to the top plate to studs and lintel fixing requirements)
- low wind zone
- loaded dimension of 4 m.

Using Table 8.18, work through the steps (see Figure 2):

- Step 1 – Choose the roof (light).
- Step 2 – Choose the wind zone and the correct roof member spacing (900 and low).
- Step 3 – Choose the loaded dimension (4 m).
- Step 4 – Align steps 2 and 3 to determine the fixing type required (Type A)
- Step 5 – Read off the fixing that is required at 600 centres maximum.

For this example, 2/90 × 3.15 mm end nails or an alternative fixing that provides 0.7 kN in tension are required. It is likely the nails will be used.

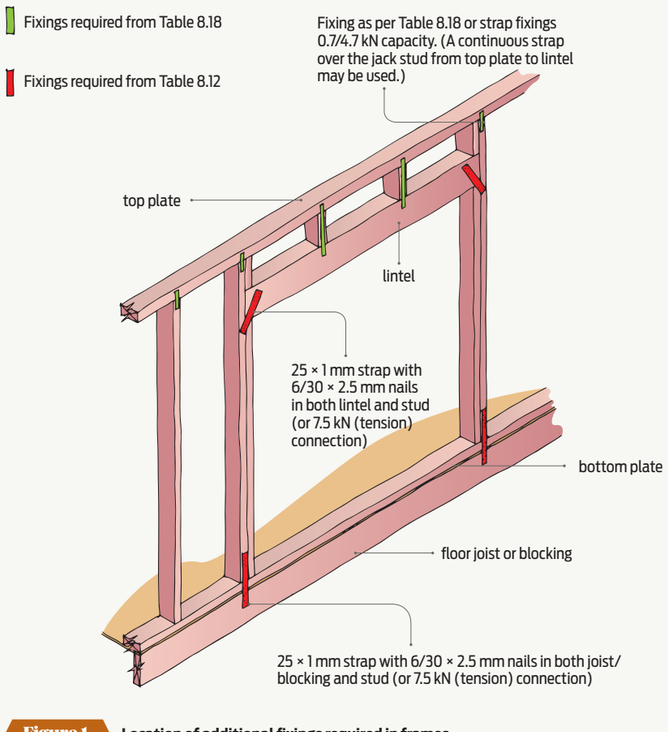


Figure 1 **Location of additional fixings required in frames.**

Example 2

With our second example, we have:

- heavy roof
- rafters or trusses at 900 mm centres
- high wind zone
- loaded dimension of 4 m.

Using Table 8.18, work through the steps again (see Figure 3):

- Step 1 – Choose the roof (heavy).
- Step 2 – Choose the wind zone (high).
- Step 3 – Choose the loaded dimension (4 m).
- Step 4 – Align steps 2 and 3 to determine the fixing type required (Type B).
- Step 5 – Read off the fixing that is required at 600 centres maximum.

For this example, the fixings required are 2/90 × 3.15 mm end nails plus 2 wire dogs or an alternative fixing that provides 4.7 kN in tension, commonly a strap.

Continuous strap for jack studs

Table 8.18 requires fixings to attach the top plate to the studs and to the lintels at 600 mm centres. It is common to have jack studs above lintels, so the fixing will be required for both where:

- the jack stud attaches to the top plate
- the jack stud attaches to the top of the lintel.

It is usually easier to use the alternative fixing of a strap running continuously from top plate to the lintel where jack studs are short.

Alternative 4.7 kN fixing

Table 2.2 in NZS 3604:2011 has a reference guide to fixing types and their locations.

Type A and B fixings in Table 8.18 are in tension, as is Type E in Table 2.2:

- Type A = 0.7 kN or 2/90 × 3.15 mm end nails
- Type B = 4.7 kN or 2/90 × 3.15 mm end nails + 2 wire dogs
- Type E = 4.7 kN or 2/90 × 3.15 mm **skew** nails + 2 wire dogs

Comparing Type B and E fixings, both have 2 wire dogs but one has 2 end nails and the other has 2 skew nails giving the same rating in tension.

Alternative 0.7 kN fixing into jack studs

Obviously, it is not possible to use end nails through a lintel into a jack stud.

From the above, it seems reasonable to assume that, where wire dogs were not necessary (Type A fixing), 2 skew nails through a jack stud into the top of the lintel would give the 0.7 kN.

Double top plate

Where a double top plate is required, the fixing capacity should be continuous through the plates.

Bottom plate

As a final note, on a slab floor, Figure 8.12 requires bolts through the bottom plate within 150 mm of

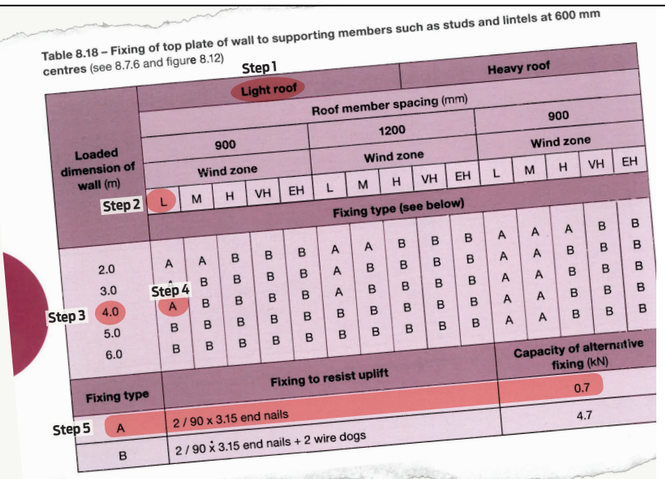


Figure 2 **Example 1 using NZS 3604:2011 Table 8.18. Provided by Standards New Zealand under licence 001100.**

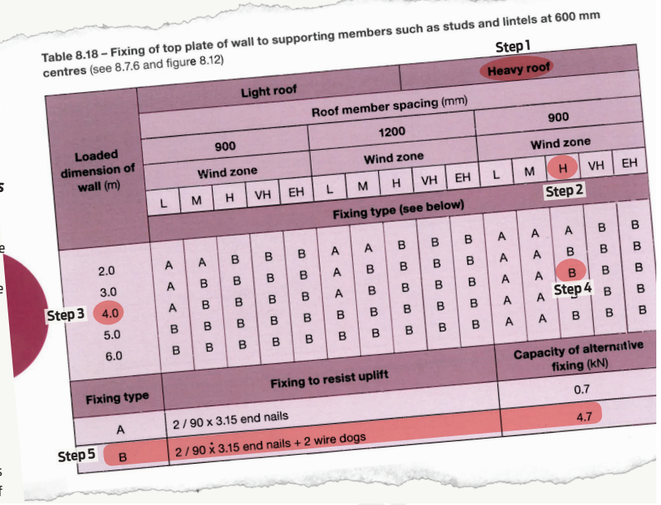


Table 8.18 – Fixing of top plate of wall to supporting members such as studs and lintels at 600 mm centres (see 8.7.6 and figure 8.12)

Loaded dimension of wall (m)	Light roof										Heavy roof				
	Roof member spacing (mm)														
	900					1200					900				
	Wind zone					Wind zone					Wind zone				
	L	M	H	VH	EH	L	M	H	VH	EH	L	M	H	VH	EH
	Fixing type (see below)														
2.0	A	A	B	B	B	A	A	B	B	B	A	A	A	B	B
3.0	A	B	B	B	B	A	B	B	B	B	A	A	B	B	B
4.0	A	B	B	B	B	A	B	B	B	B	A	A	B	B	B
5.0	B	B	B	B	B	B	B	B	B	B	A	A	B	B	B
6.0	B	B	B	B	B	B	B	B	B	B	A	A	B	B	B
Fixing type	Fixing to resist uplift										Capacity of alternative fixing (kN)				
A	2 / 90 x 3.15 end nails										0.7				
B	2 / 90 x 3.15 end nails + 2 wire dogs										4.7				

REFER ALSO TO MITEK LINTEL FIXING SCHEDULE

Table 8.12 – Lintel supporting wall and floor for all wind zones – SG 8 for up to 2 kPa floor loads (see figure 8.10)

	Loaded dimension* of lintel (m)	Maximum span for lintel sizes listed below (m) width x thickness (mm)							
		140 x 70	140 x 90	190 x 70	190 x 90	240 x 70	240 x 90	290 x 70	290 x 90
Light wall	3.0	1.1	1.4	1.6	1.9	2.0	2.4	2.4	2.9
Medium wall	3.0	1.1	1.4	1.5	1.9	1.9	2.4	2.3	2.8

* For definition of loaded dimension see 1.3.
NOTE – Members 70 mm and 90 mm thick may be substituted with built-up members sized and nailed in accordance with 2.4.4.7.

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # M10
DWG	STUD-PLATE FIXING	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
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Table 8.19 – Nailing schedule for hand-driven and power-driven nails (see 8.8.6)

Joint	Hand-driven nails		Power-driven nails	
	Length (mm) **x diameter** (mm) **and type**	**Number/ Location**	**Length** (mm) **x diameter** (mm) **and type**	**Number/ Location**
Bottom plate to floor framing at: (a) External walls and internal wall bracing elements (b) Internal walls (may be nailed to floor decking) (c) Trimmer not exceeding 4.2 m long	100 x 3.75 100 x 3.75 100 x 3.75	2 at 600 mm centres 1 at 600 mm centres 4 (end nailed)	90 x 3.15 90 x 3.15 90 x 3.15	3 at 600 mm centres 1 at 600 mm centres 6 (end nailed)
Dwang to stud	75 x 3.15 or 100 x 3.75	2 (skewed) 2 (end nailed)	75 x 3.06 90 x 3.15	2 (skewed) 2 (end nailed)
Fishplate to straightened stud	60 x 2.8	4 each side of cut	60 x 2.8	4 (each side of cut)
Half joint in top plate	75 x 3.15	3	75 x 3.06	4
Lintel to trimming stud	75 x 3.15 or 100 x 3.75	4 (skewed) 2 (end nailed)	90 x 3.15	3 (end nailed)
Ribbon board to stud	100 x 3.75	2	90 x 3.15	3
Sill or header trimmer to trimming stud for: (a) Trimmer not exceeding 2.4 m long (b) Trimmer not exceeding 3.0 m long (c) Trimmers not exceeding 3.6 m long	100 x 3.75 100 x 3.75 100 x 3.75	2 (end nailed) 3 (end nailed) 4 (end nailed)	90 x 3.15 90 x 3.15 90 x 3.15	3 (end nailed) 5 (end nailed) 6 (end nailed)
Solid plaster batten to stud	60 x 2.8 (galv.)	500 mm centres	60 x 2.8 (galv.)	500 mm centres
Stud to plate	75 x 3.15 or 100 x 3.75	4 (skewed) 2 (end nailed)	75 x 3.06 90 x 3.15	4 (skewed) 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel	100 x 3.75	2 at 500 mm centres	90 x 3.15	3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections	100 x 3.75	600 mm centres	90 x 3.15	600 mm centres
Trimming stud to doubled stud immediately under lintel	100 x 3.75	2	90 x 3.15	2
Waling to stud	60 x 2.8	2	60 x 2.8	2

NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Refer to 4.4 for required protective coatings for metal fasteners.
(3) For studs up to 2.7 in length, 2 / 90 x 3.15 power-driven nails (end nailed) are sufficient.

Table 2.2 – Fixing type and capacity reference guide (see 2.4.4.1)

Fixing type	Description	Alternative fixing capacity (kN)	See table
A	2 / 90 x 3.15 end nails	0.7	8.18
B	2 / 90 x 3.15 end nails + 2 wire dogs	4.7	
C	2 / 90 x 3.15 end nails + strap fixing (see figure 8.12)	8.5	
D	4 / 90 x 3.15 end nails + 2 strap fixing (double stud)	16.0	
E	2 / 90 x 3.15 skew nails + 2 wire dogs	4.7	10.1, A10.1 10.7, A10.7 10.11, A10.11 10.14 10.15 15.6, A15.6 15.10, A15.10
F	2 / 90 x 3.15 skew nails + strap fixing (see figure 10.6)	7.0	
G	10 / 90 x 3.15 nails (5 each side)	4.7	10.2, A10.2 15.7, A15.7
H	1 / M12 bolt	8.5	
I	2 / M12 bolts	16.0	
J	2 / M16 bolts	24.0	
K	6 / 90 x 3.15 nails	3.0	10.5, A10.5
L	2 / M12 bolts	9.8	
M	2 / M16 bolts	13.0	
N	6 / 100 x 4.0 HDG nails (hand driven)	4.7	10.8, A10.8 15.8, A15.8
O	2 / M12 bolts (see figure 9.3 (C))	6.8	
P	2 HDG ‘flat’ straps (see figure 9.3 (B))	13.7	
Q	2 HDG ‘tee’ straps (see figure 9.3 (A))	25.5	
R	1 / 90 x 3.15 nail	0.55	10.10, A10.10 10.12, 15.9, A15.9
S	2 / 90 x 3.15 nails	0.8	
T	1 / 10g self-drilling screw, 80 mm long	2.4	
U	1 / 14g self-drilling Type 17 screw, 100 mm long	5.5	

NOTE – Capacities are associated with fixing type, not fasteners. See individual selection tables for the appropriate fixing type for the application.

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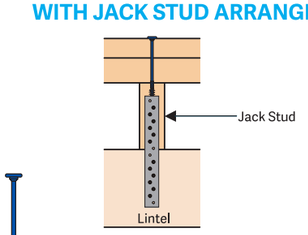
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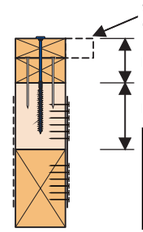
CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: FIXING TYPE & CAPACITY
DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
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DWG # M11

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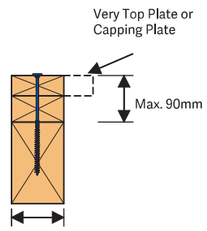
FIXING THROUGH VERY TOP PLATE OR CAPPING PLATE TO LINTEL WITH JACK STUD ARRANGEMENT



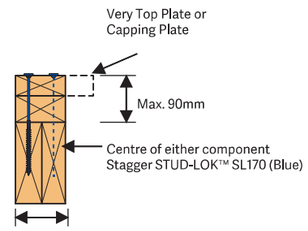


NOTE:
Connect jack stud to lintel with LUMBERLOK Sheet Brace Strap 200mm on one side with 6 x LUMBERLOK Product Nails 30mm x 3.15 dia. each end or a pair of Tylok 6T5 (one side each)

FIXING THROUGH VERY TOP PLATE OR CAPPING PLATE TO LINTELS DIRECTLY UNDER TOP PLATE

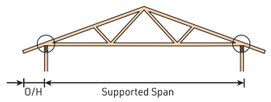


Solid Lintel



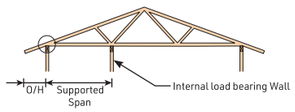
Component Lintel

LOADED DIMENSION DEFINITION

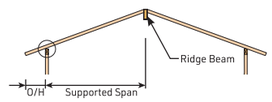


External wall with Standard truss

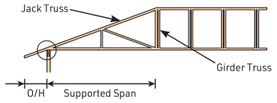
EXTERNAL WALL LOADED DIMENSION = $\frac{\text{SUPPORTED SPAN}}{2}$ + O/H



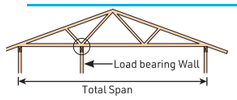
External wall with Internal load bearing wall



External wall with Rafter roof

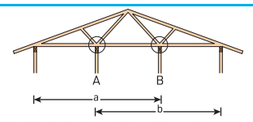


External wall with Jack truss



Internal load bearing wall
(overhang dimension does not apply)

INTERNAL LOAD BEARING WALL LOADED DIMENSION = $\frac{\text{TOTAL SPAN}}{2}$



Multiple internal load bearing walls
(overhang dimension does not apply)

MULTIPLE INTERNAL LOAD BEARING WALLS LOADED DIMENSION FOR WALL A = $^{a}/_{2}$ WALL B = $^{b}/_{2}$

FIXING SELECTION CHART

(Suitable for walls supporting roof members at 600, 900 or 1200mm crs.)

Wind Zones L, M, H, VH, EH as per NZS 3604:2011

Loaded Dimension (m) Stud Centres			Light Roof Wind Zone					Heavy Roof Wind Zone				
300mm	400mm	600mm	L	M	H	VH	EH	L	M	H	VH	EH
3.0	2.3	1.5	2N	2N	SL	SL	SL	2N	2N	SL	SL	SL
4.0	3.0	2.0	2N	2N	SL	SL	SL	2N	2N	SL	SL	SL
5.0	3.8	2.5	2N	SL	SL	SL	SL	2N	2N	SL	SL	SL
6.0	4.5	3.0	2N	SL	SL	SL	SL	2N	2N	SL	SL	SL
7.0	5.3	3.5	2N	SL	SL	SL	SL	2N	2N	SL	SL	SL
8.0	6.0	4.0	2N	SL	SL	SL	SL	2N	2N	SL	SL	SL
9.0	6.8	4.5	SL	SL	SL	SL	SL	2N	2N	SL	SL	SL
10.0	7.5	5.0	SL	SL	SL	SL	SL	2N	2N	SL	SL	SL
11.0	8.3	5.5	SL	SL	SL	SL	SL	2N	2N	SL	SL	SL
12.0	9.0	6.0	SL	SL	SL	SL	SL	2N	2N	SL	SL	SL

2N = 2/90mm x 3.15 dia. Nails

SL = Single STUD-LOK SL170 (blue)
plus 2/90mm x 3.15 dia. Nails
or 100mm x 3.75 dia. Framing Nails

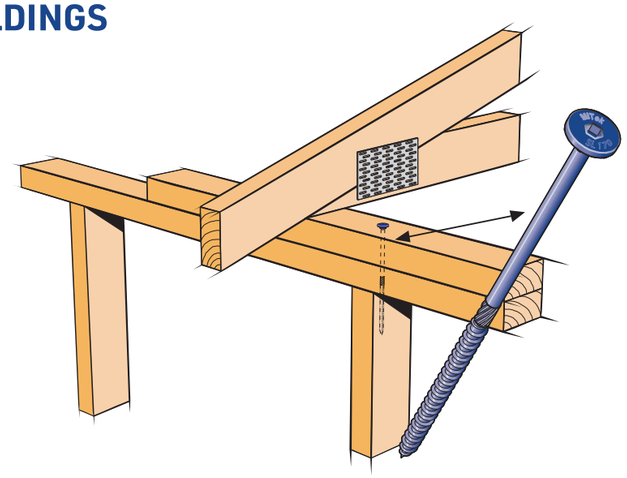
NOTE:
To calculate the number of STUD-LOK fixings required, divide the wall length by the stud centres, add 1 to this figure and locate this numbers of fixings as evenly as possible along the wall length. This figure includes the start and end studs in each wall length.

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2024 EDITION V1

STUD-LOK SL170 (BLUE) TOP PLATE FIXING

PROVIDES A SOLUTION FOR TOP PLATE TO STUD FIXINGS FOR RESIDENTIAL TIMBER FRAME BUILDINGS

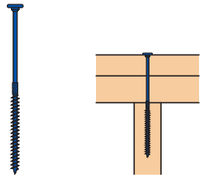


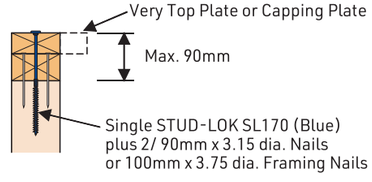
- → Complies with fixing requirements in Section 8 NZS 3604:2011
- → The BOWMAC STUD-LOK forms an integral part of the MiTek Truss & Frame design and layout

NOTE:

- Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist lateral loads
- The STUD-LOK connections assume that the correct choice of rafter/truss fixings have been made
- Wall framing arrangements under girder trusses are not covered in this schedule
- All timber selections are as per NZS 3604:2011 and include LVL8 timber grades

FIXING THROUGH VERY TOP PLATE OR CAPPING PLATE TO STUDS





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PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # M12
DWG	BOWMAC STUD/TOP PLATE FIXING	SCALE @ A3 NTS	
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		CHKD KB/TB/DB	

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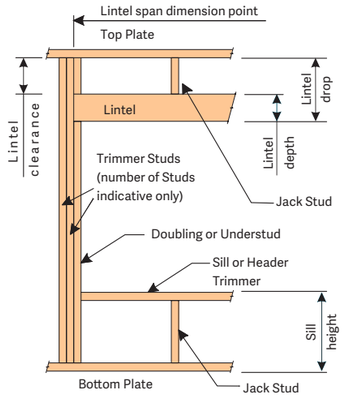
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STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

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



LINTEL SUPPORTING GIRDER TRUSSES

	Light Roof			Heavy Roof		
	Wind Zone			Wind Zone		
Roof Tributary Area	Low, Medium, High	Very High	Extra High	Low, Medium, High	Very High	Extra High
8.6m²	G	G	H	G	G	H
11.6m²	G	H	H	G	G	H
12.1m²	G	H	H	G	H	H
15.3m²	H	H	-	G	H	H
19.1m²	H	-	-	G	H	-
20.9m²	H	-	-	H	H	-
21.8m²	H	-	-	H	-	-
34.3m²	-	-	-	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 (m)	Loaded Dimension (m)	Light Roof Wind Zone					Heavy Roof Wind Zone				
		Low	Medium	High	Very High	Extra High	Low	Medium	High	Very High	Extra High
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
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	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	-	-
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	6.0	G	H	-	-	-	E	F	H	-	-
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	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	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	H	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
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	6.0	G	H	-	-	-	E	G	H	-	-
5.4	2.0	F	F	G	H	H	E	F	G	G	H
	2.8	F	G	H	H	-	E	F	G	H	H
	3.0	F	G	H	-	-	E	F	G	H	-
	4.0	G	H	H	-	-	E	F	H	-	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	G	H	-	-

REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: MITEK-OPTIONAL STUDLOCK LINTEL FIXINGS

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326
DWG # M12.1

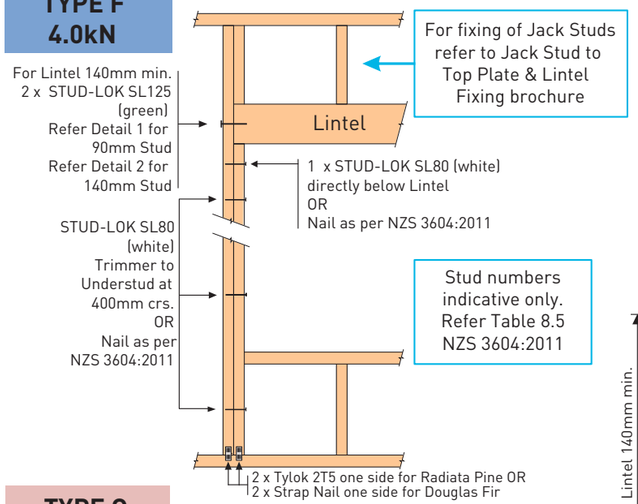
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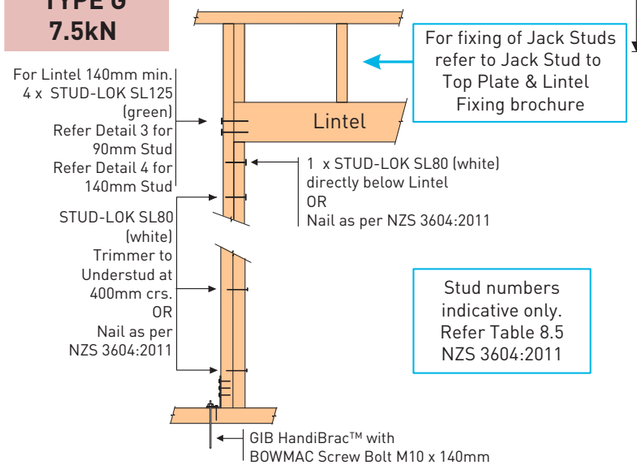
STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

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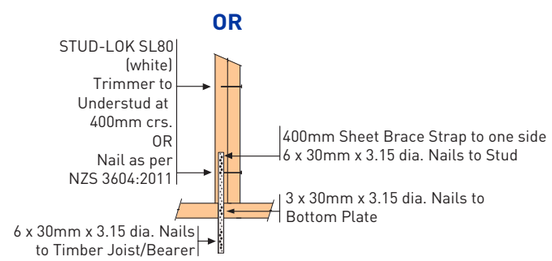
TYPE F 4.0kN



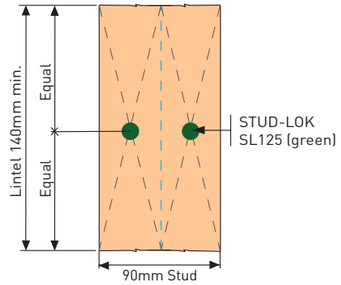
TYPE G 7.5kN



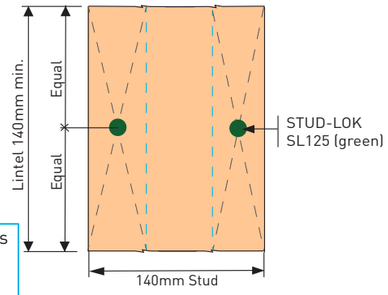
OR



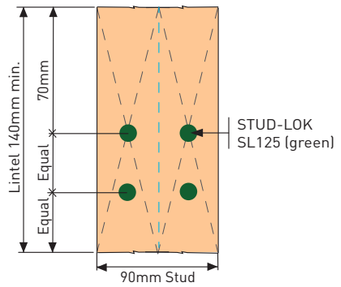
Detail 1



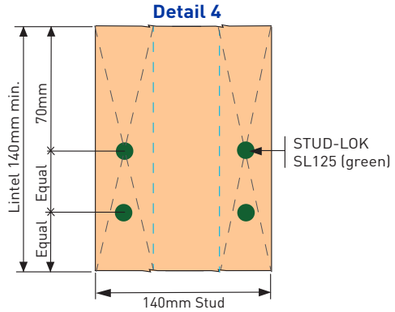
Detail 2



Detail 3



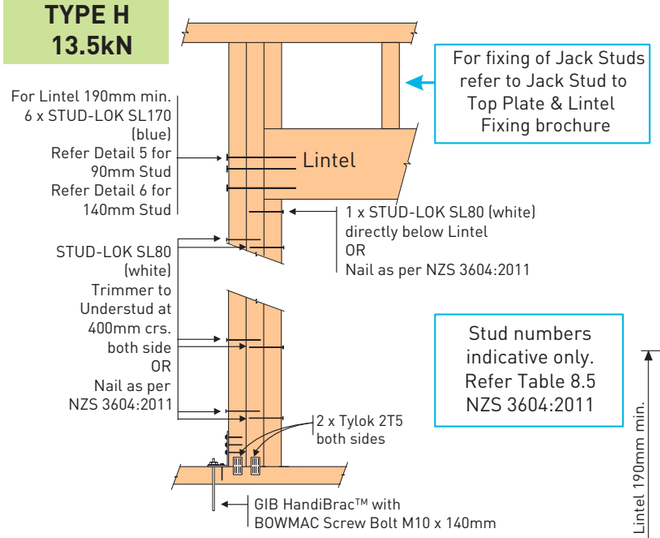
Detail 4



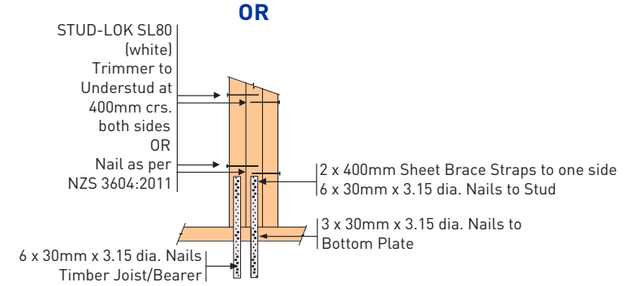
STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

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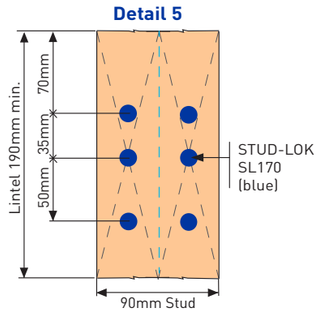
TYPE H 13.5kN



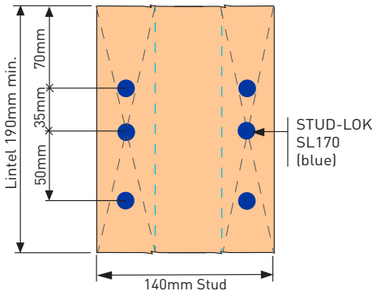
OR



Detail 5



Detail 6



NOTE: STUD-LOK TYPE F 4.0kN fixing can be used for TYPE E 1.4kN fixing

REV	DATE	BY	REVISION AMENDMENTS

DESCRIPTION

DATE

ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # M12.2
DWG	MITEK-OPTIONAL STUDLOCK LINTEL FIXINGS	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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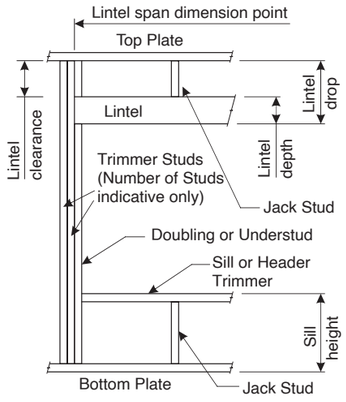
LINTEL FIXING SCHEDULE

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 0.20kPa
- 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
8.6m²	G	G	H	G	G	H
11.6m²	G	H	H	G	G	H
12.1m²	G	H	H	G	H	H
15.3m²	H	H	-	G	H	H
19.1m²	H	-	-	G	H	-
20.9m²	H	-	-	H	H	-
21.8m²	H	-	-	H	-	-
34.3m²	-	-	-	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

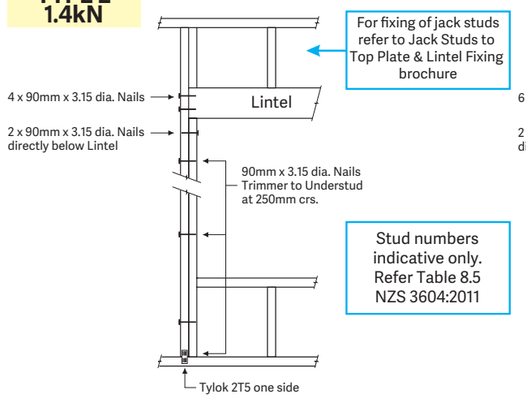
Selection Chart for Lintel Fixing

Lintel Span (m)	Loaded Dimension (m) (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
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	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	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	H	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
5.1	2.0	F	F	G	H	H	E	F	G	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.5	F	G	H	-	-	E	F	G	H	-
	4.0	G	G	H	-	-	E	F	H	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	G	H	-	-
5.4	2.0	F	F	G	H	H	E	F	G	G	H
	2.8	F	G	H	H	-	E	F	G	H	H
	3.0	F	G	H	-	-	E	F	G	H	-
	4.0	G	H	H	-	-	E	F	H	-	-
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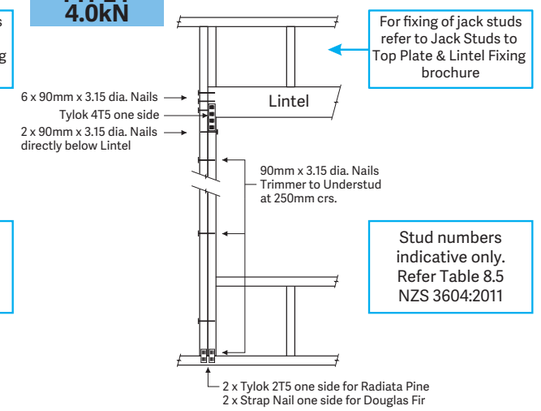
LINTEL FIXING OPTIONS

(Characteristic Uplift)

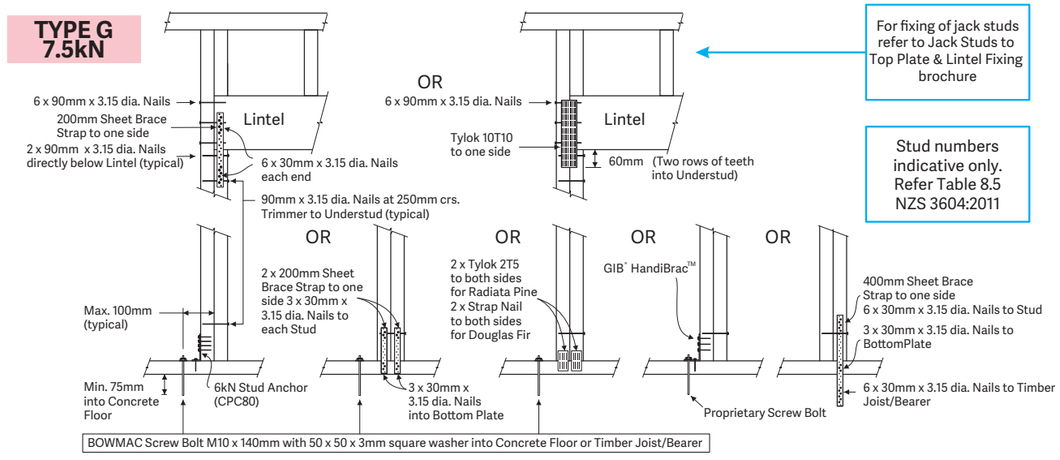
TYPE E 1.4kN



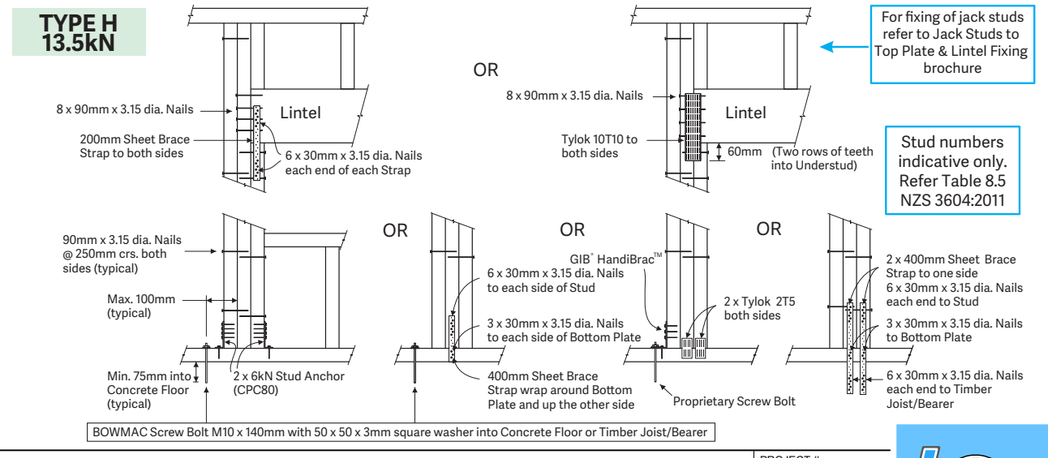
TYPE F 4.0kN



TYPE G 7.5kN



TYPE H 13.5kN



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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT

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DWG: MITEK LINTEL/STUD FIXINGS

DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB

PROJECT # MS-0326

DWG # M13

architecture beard
architectural and structural designers
design vision strategy

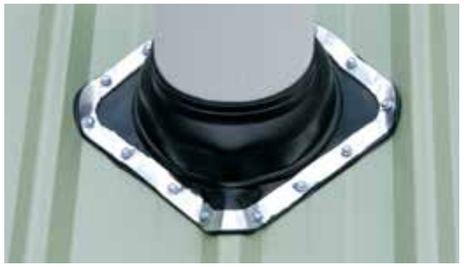
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Dektite Premium

The versatile solution

CODE: BLACK EPDM	CODE: GREY EPDM	CODE: RED SILICONE	BASE (MM)	PIPE (MM)	ROOF PITCH
DFE10MB			71 x 71	0-20	Up to 60°* See foot note
DFE100B	DFE100G		100 x 100	0-35	
DFE100BS*		DFE200RES	100 x 100	0-35	
DFE101B	DFE101G		139 x 139	5-55	Up to 45°* See foot note
DFE101BS*		DFE201RES	139 x 139	5-55	
DFE102BA	DFE102GA	DFE202REA	181 x 181	50-70	
DFE103B	DFE103G	DFE203RE	218 x 218	5-127	
DFE104B	DFE104G	DFE204RE	279 x 279	75-175	
DFE105B	DFE105G	DFE205RE	309 x 309	100-200	
DFE106B	DFE106G	DFE206RE	363 x 363	125-230	
DFE107B	DFE107G	DFE207RE	456 x 456	150-300	
DFE108B	DFE108G	DFE208RE	495 x 495	170-355	
DFE109B	DFE109G	DFE209RE	680 x 680	230-508	

* DFE100BS and DFE101BS both have multiple cable nipples





USE THE ABOVE CHART TO SELECT A SUITABLE BOOT FLASHING SIZE

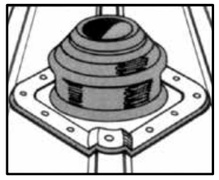
Dektite Premium

The versatile solution

- ✔ Most extensive range of Dektites for flashing penetrations 0 - 510mm, available in black and grey EPDM and silicone red for high temperatures.
- ✔ Designed to enable practically any pipe flashing operation to be carried out within minutes, simple to install and very effective.
- ✔ The low profile cone not only looks good but provides a generous internal clearance, so even the steepest roofs are handled with ease.
- ✔ Suitable for flashing pipes that penetrate wall claddings.
- ✔ Can also be used to flash square penetrations. Just add 30% to the pipe diameter and trim the cone to suit.
- ✔ EPDM withstands temperatures from -50°C to 115°C and up to 150°C intermittently.
- ✔ Silicone withstands temperatures from -60°C to 200°C and up to 250°C intermittently.



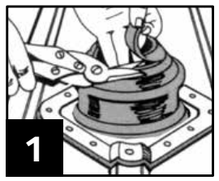
Installation Instructions:



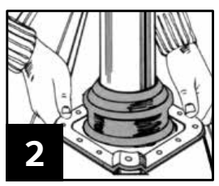
NOTE:

For more effective drainage, always fit the Dektite on the diamond or bias.

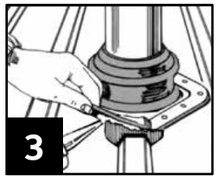
Dektites are suitable for flashing pipes that penetrate wall claddings.



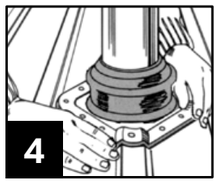
Cut a neat hole in roofing sheet with minimum clearance for pipe and insert pipe through hole. Trim the cone to suit pipe size using sharp tin snips. Where required, support cut sections of sheet with additional framing.



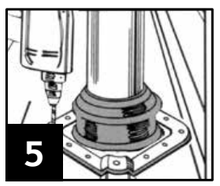
Slide Dektite flashing down over pipe. Lubricating the pipe with water allows the pipe to slide snuggly into position.



Apply a neutral cure 100% silicone sealant (roof and gutter approved) to the underside of the Dektite by turning back the flexible flange.



Press base to the roof profile by hand, smooth out any awkward creases. Don't fully extend to allow for vibration.



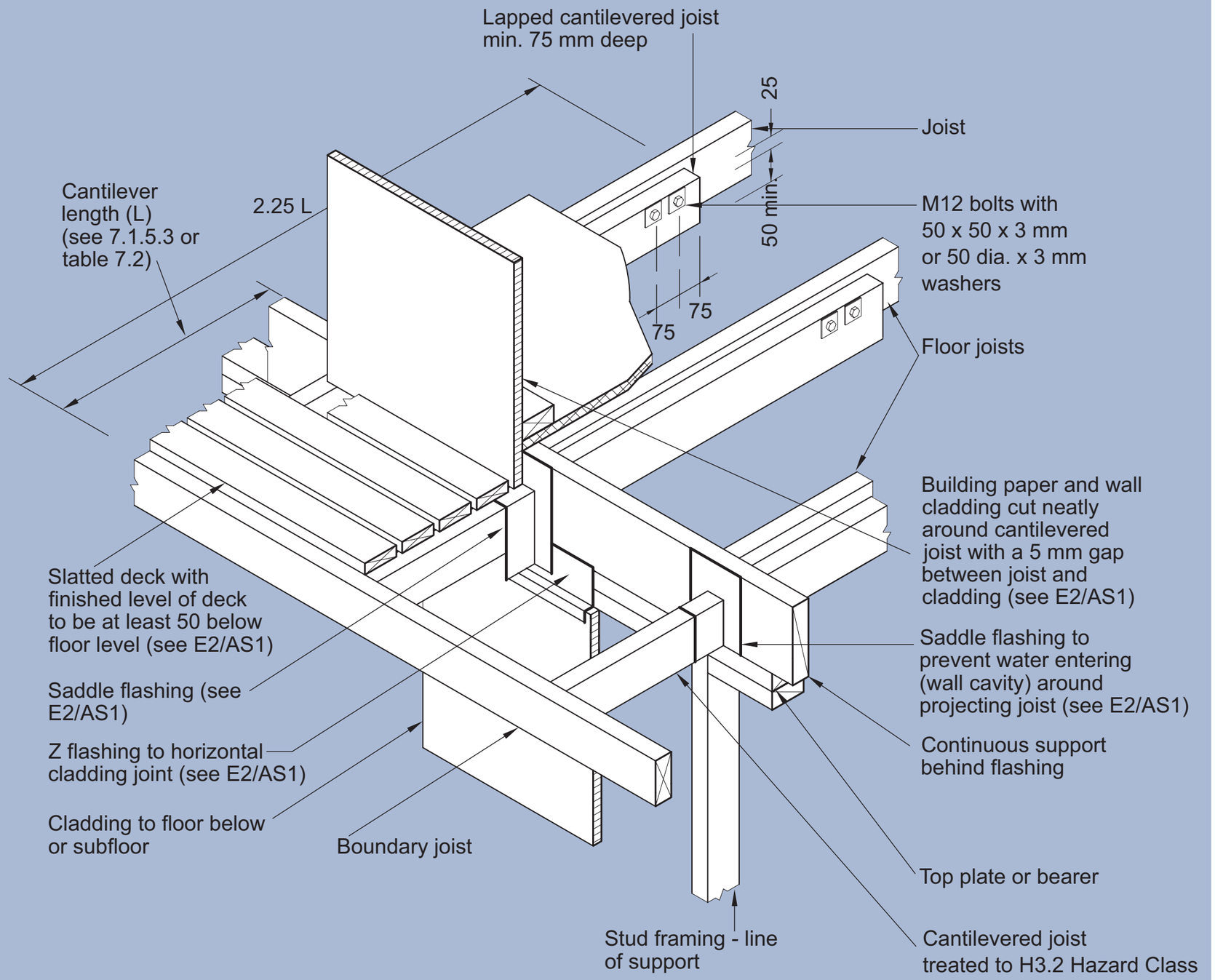
Fasten using self drilling washered screws or sealed rivets. Fit fasteners progressively outward in opposing pairs to avoid gaps.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	
DWG	DEKTITE DETAIL	SCALE @ A3 NTS	DWG # M14
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.



NOTE – See section 4 for durability requirements.

Unless otherwise stated, all dimensions are in mm.

REV	DATE	BY	REVISION AMENDMENTS

ISSUE NO.	DATE	DESCRIPTION

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
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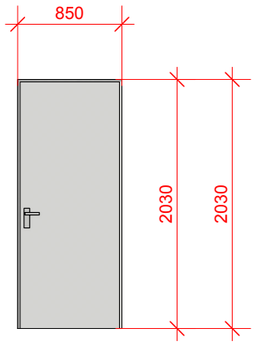
CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # M17
DWG	SADDLE FLASHING DETAIL	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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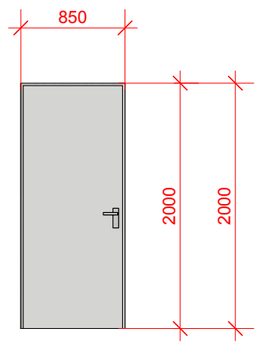
SITE MEASURE ALL JOINERY PRIOR TO CONSTRUCTION, FLOOR PLANS AND ELEVATIONS TAKE PRECEDENCE OVER THIS WINDOW SCHEDULE, CHECK AND VERIFY ALL OPTIONS WITH THE PROJECT MANAGER BEFORE MANUFACTURE

DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.

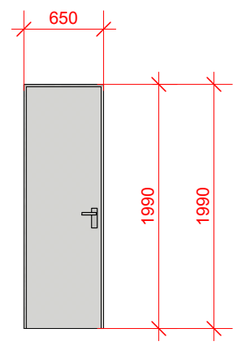
Window/Door Schedule



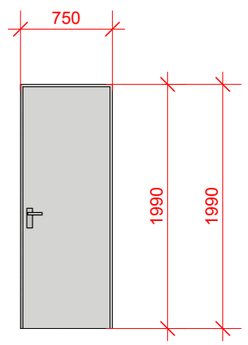
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FFL to Sill: 1: 0



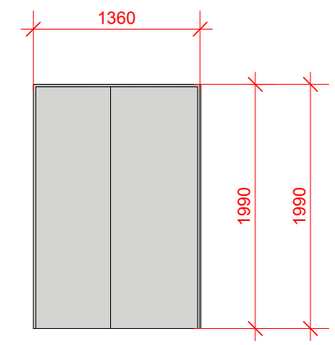
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Leaf Size: 1980 x 810
FFL to Sill: 2: 0



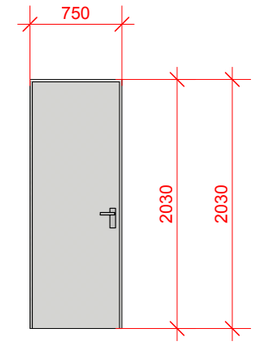
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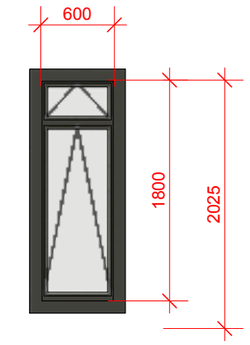
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FFL to Sill: 4: 0



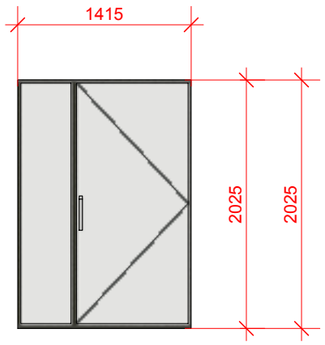
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FFL to Sill: 5: 0



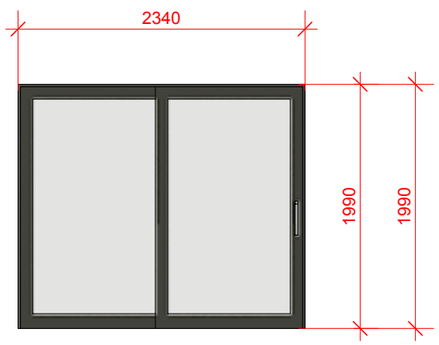
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FFL to Sill: 6: 0



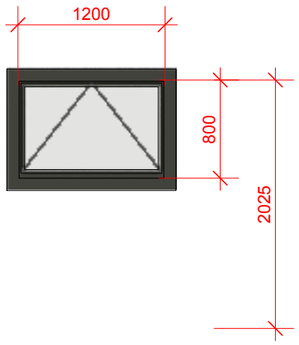
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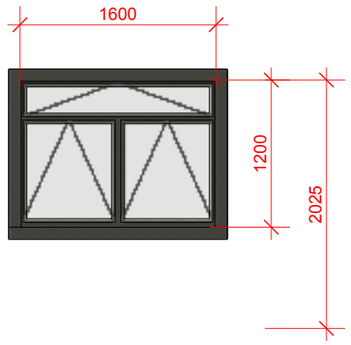
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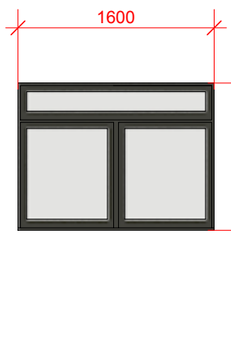
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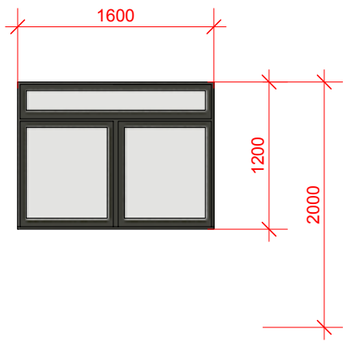
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Leaf Size: N/A
FFL to Sill: W2: 1225



ID: **W3**
Qty: 1
Leaf Size: N/A
FFL to Sill: W3: 825



ID: **W4**
Qty: 1
Leaf Size: N/A
FFL to Sill: W4: 800



ID: **W5**
Qty: 1
Leaf Size: N/A
FFL to Sill: W5: 800

THE ACCEPTABLE SOLUTION F2/AS1 STATES THAT GLAZING SUBJECT TO HUMAN IMPACT SHALL COMPLY WITH NZS 4223:PART3:2016 CODE OF PRACTICE FOR GLAZING IN BUILDINGS

1.1 Human impact safety
1.1.1 Glazing likely to be subject to human impact shall comply with NZS 4223:
"Only glazing within 2000 mm of the floor level is normally likely to be subject to human impact.
"Alternatively, safety glazing material may be used in accordance with the relevant tables for Grade A and B safety glazing."

(a) All dimensions shown are over the Window/Door Reveals. Allow addition 15mm for cavity fixed, or 55mm for direct fixed. Check all dimensions on site before manufacturing. Refer to floor plan for location & direction of door opening. All exterior joinery to be powdercoated aluminium. Owner to choose the colours. All exterior joinery to be manufactured to comply with the wind zone as noted on sheet A001. All timber reveals are to be MSG8 H3.1

(b) OPENING WINDOWS
Where the possible height of fall is 1.0 m or more, measured from the adjacent floor level, windows that open shall have:
a) The lower edge of the opening no less than 760 mm above floor level, or
b) A window opening restrictor fitted to limit the maximum dimension of the opening to 460 mm, or
c) A 760 mm high barrier located in front of the window.

Panel details	Human impact safety requirements
Framed shower screen and bath enclosures	Grade A safety glazing material in accordance with Table 3.1 (308.1(a))
Panels and doors with one unframed edge	Toughened safety glass minimum thickness 5 mm (308.2)
Frameless pivot or hinge doors	Toughened safety glass minimum thickness 6 mm (308.4)
Glazing within 1500 mm above the abutting finished floor level or standing area of a bath or shower	Grade A safety glazing material in accordance with Table 3.1 (308.1(b))
Glazing greater than 1500 mm above the abutting finished floor level or standing area of a bath or shower	Annealed glass to NZS 4223:Part 4

NOTE
Thermally broken aluminium frame Low E/Clear Gas Argon
Double pane will achieve the required R0.46. Please note that minimum R value requirement for H1/AS1 is R0.46 for Zone 1.

REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

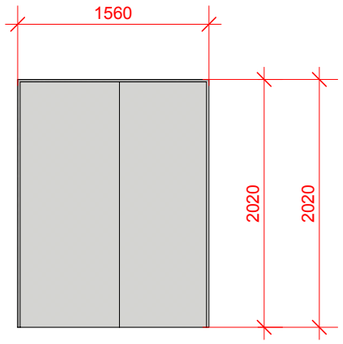
CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:50	DWG # W01
DWG	WINDOW/DOOR SCHEDULE	DRAWN KB/TB/DB CHKD KB/TB/DB	

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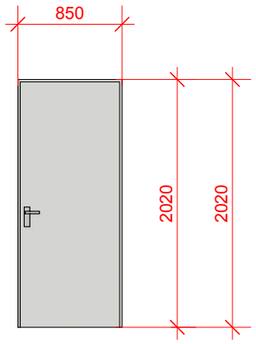
SITE MEASURE ALL JOINERY PRIOR TO CONSTRUCTION, FLOOR PLANS AND ELEVATIONS TAKE PRECEDENCE OVER THIS WINDOW SCHEDULE, CHECK AND VERIFY ALL OPTIONS WITH THE PROJECT MANAGER BEFORE MANUFACTURE

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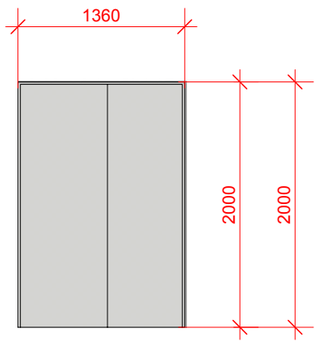
Window/Door Schedule



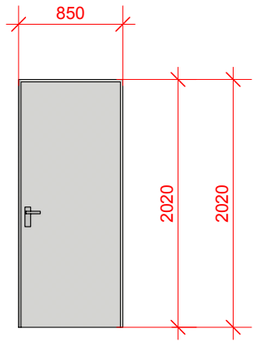
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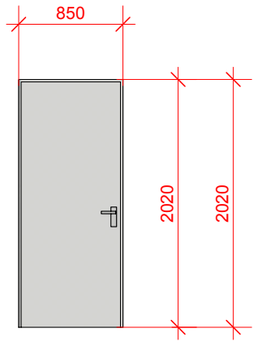
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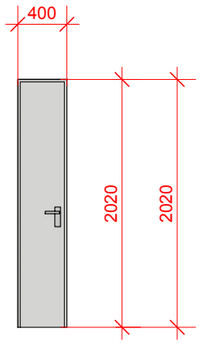
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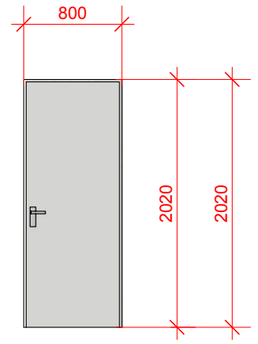
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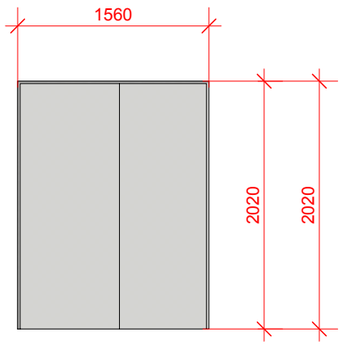
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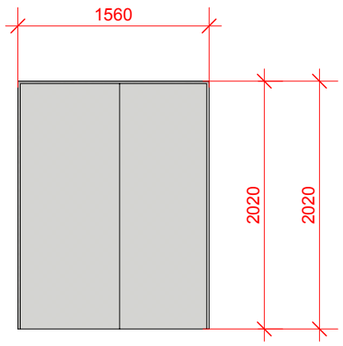
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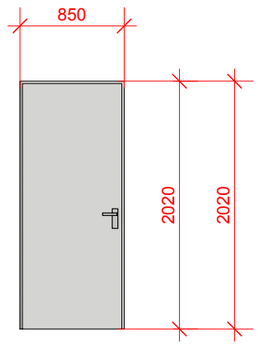
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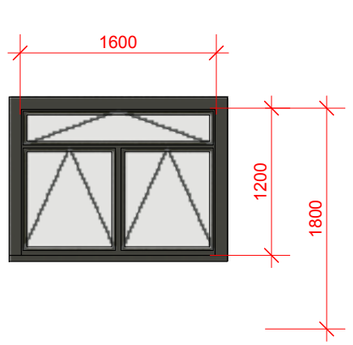
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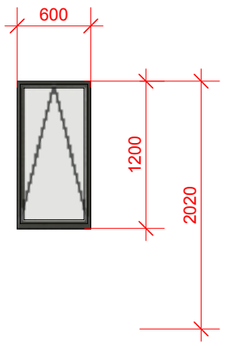
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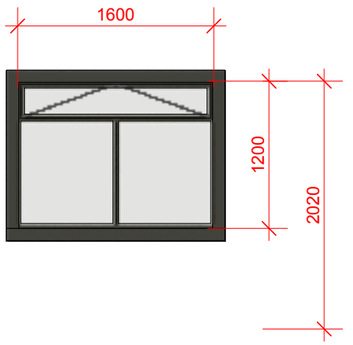
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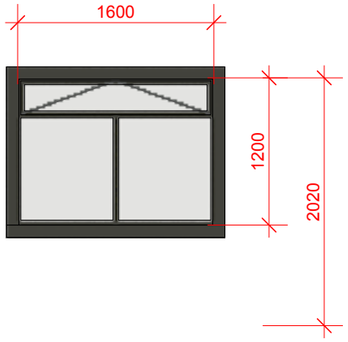
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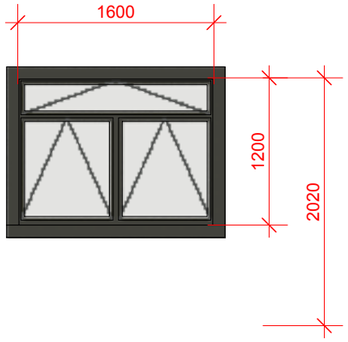
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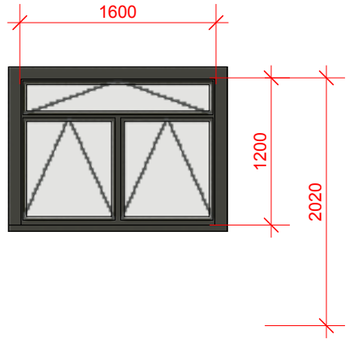
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FFL to Sill: W7: 820



ID: **W8**
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Leaf Size: N/A
FFL to Sill: W8: 820



ID: **W9**
Qty: 1
Leaf Size: N/A
FFL to Sill: W9: 820



ID: **W10**
Qty: 1
Leaf Size: N/A
FFL to Sill: W10: 820

(a) All dimensions shown are over the Window/Door Reveals. Allow addition 15mm for cavity fixed, or 55mm for direct fixed. Check all dimensions on site before manufacturing. Refer to floor plan for location & direction of door opening. All exterior joinery to be powdercoated aluminium. Owner to choose the colours. All exterior joinery to be manufactured to comply with the wind zone as noted on sheet A001. All timber reveals are to be MSG8 H3.1

(b) OPENING WINDOWS

Where the possible height of fall is 1.0 m or more, measured from the adjacent floor level, windows that open shall have:

a) The lower edge of the opening no less than 760 mm above floor level, or
b) A window opening restrictor fitted to limit the maximum dimension of the opening to 460 mm, or
c) A 760 mm high barrier located in front of the window.

Panel details	Human impact safety requirements
Framed shower screen and bath enclosures	Grade A safety glazing material in accordance with Table 3.1 (308.1(a))
Panels and doors with one unframed edge	Toughened safety glass minimum thickness 5 mm (308.2)
Frameless pivot or hinge doors	Toughened safety glass minimum thickness 6 mm (308.4)
Glazing within 1500 mm above the abutting finished floor level or standing area of a bath or shower	Grade A safety glazing material in accordance with Table 3.1 (308.1(b))
Glazing greater than 1500 mm above the abutting finished floor level or standing area of a bath or shower	Annealed glass to NZS 4223:Part 4

1.1 Human impact safety
1.1.1 Glazing likely to be subject to human impact shall comply with NZS 4223:
“Only glazing within 2000 mm of the floor level is normally likely to be subject to human impact.
“Alternatively, safety glazing material may be used in accordance with the relevant tables for Grade A and B safety glazing.”

THE ACCEPTABLE SOLUTION F2/AS1 STATES THAT GLAZING SUBJECT TO HUMAN IMPACT SHALL COMPLY WITH NZS 4223:PART3:2016 CODE OF PRACTICE FOR GLAZING IN BUILDINGS

NOTE
Thermally broken aluminium frame Low E/Clear Gas Argon
Double pane will achieve the required R0.46. Please note that minimum R value requirement for H1/AS1 is R0.46 for Zone 1

REV | DATE | BY | REVISION AMENDMENTS
ISSUE NO. | DATE | DESCRIPTION

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: WINDOW/DOOR SCHEDULE

PROJECT # MS-0326
DATE # 14/08/2026
SCALE @ A3 1:50
DRAWN KB/TB/DB
CHKD KB/TB/DB
DWG # W02

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DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.

NON-TILED WALLS – TIMBER FRAMING

TIMBER WALL FRAMING

Framing dimensions must comply with the requirements of NZS 3604:2011.

- The moisture content of timber framing shall be 18% or less at the time of lining
- Studs shall be spaced at 600mm centres maximum for both 10mm and 13mm GIB® plasterboard
- Nogs to be evenly spaced with a maximum spacing of 1350mm. Alternatively, nogs may be staggered 150mm maximum either side of a horizontal joint line
- Nogs are not required behind horizontal joints except in shower situations or specific fire or noise control systems

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® High Thread screws.

FASTENER CENTRES

- 300mm centres to top and bottom plates and to perimeter studs
- Single fasteners to each stud where the horizontal joint crosses the studs
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Daubs of GIBFix® adhesive at 300mm centres to intermediate studs
- Do not place adhesive at sheet edges or under fasteners. Sheet edges at door or window openings can be adhesive fixed unless forming part of the perimeter of a bracing element

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

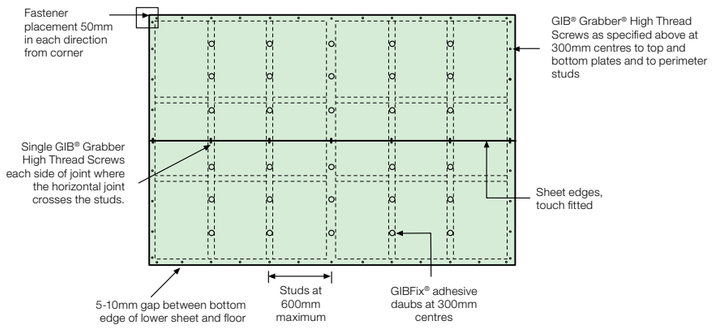
LINING

- Use minimum 10mm GIB® plasterboard
- Install the sheets leaving a 5-10mm gap at the floor line to allow for movement of the framing members and to allow for cleaning dirt and rubbish before sealing
- Sheets to be touch fitted.

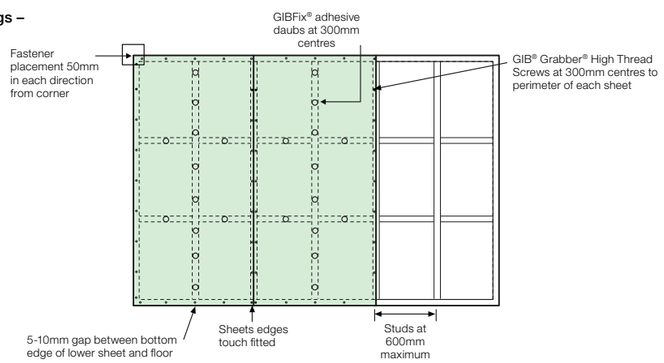
JOINTING

- Jointing shall be carried out in accordance with the instructions in the GIB® Site Guide.

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



TILED WALLS – TIMBER FRAMING

TIMBER WALL FRAMING

Framing dimensions and spacing must be appropriate for the tile weight and comply with the requirements of NZS 3604:2011 Timber Framed Buildings, or relevant specific design Standard.

NOGS

For impact protection in shower cubicles or shower over bath situations it is important that all sheet joints are made on solid framing. This may require vertical fixing or the installation of additional nogs. Also provide nogs:

- Adjacent to each pipe penetration and behind sink and tub flashings
- Between all studs above bath flanges and preformed shower bases

CORNER REINFORCING

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum
- 32 x 32 x 0.55mm NZ18 or 45 x 45 x 0.55mm GIBFix® Angle. Angles need to be temporarily held in place until secured by the lining fixings.

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® High Thread Screws

FASTENER CENTRES

- 150mm centres to perimeter of wall and all intermediate studs
- Adhesive is not to be used in place of mechanical fasteners
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Single fasteners to each stud where the horizontal joint crosses the studs
- Where relevant, fastener lengths must comply with the requirements of GIB® Fire Rated Systems or GIB® Noise Control Systems

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

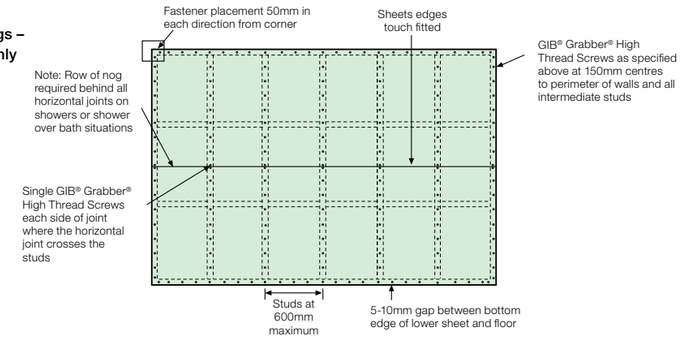
LINING AND TILE WEIGHTS

- Use minimum 10mm GIB® plasterboard
- For maximum permitted tile weights refer to pg 16 of this manual
- GIB® Wet Area linings may be fixed vertically or horizontally
- Sheets are touch fitted
- Provide a 5-10mm gap at the wall/floor junction and between the bottom edge of the lining and any bath rim or preformed shower base to allow for placement of sealant
- Do not tile on the resilient side of GIB Rail® or STWC Acoustic Clip (ST001) and channel noise control system
- GIB® Wet Area linings are suitable for tiling full height of walls, but if a wall is to be partially tiled (e.g. half high), only the area of wall under the tiles needs to be fixed as required for tiled areas. The remainder of the wall may be fixed as for non-tiled areas

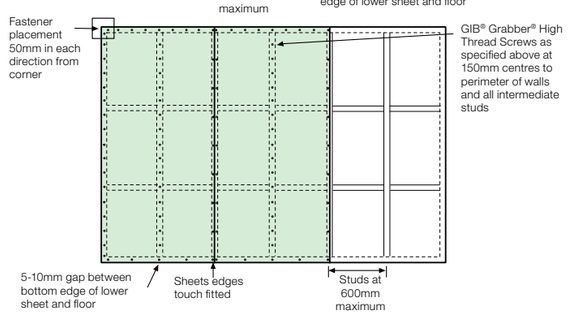
JOINTING

- Jointing shall be carried out in accordance with the instructions of the GIB® Site Guide

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



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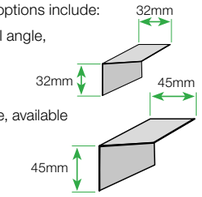
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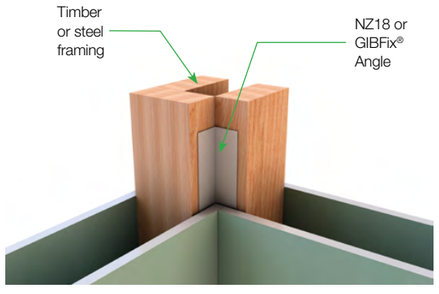
GIB METAL ANGLES AND MAXIMUM TILE WEIGHTS

METAL ANGLES FOR TILED INTERNAL CORNERS

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum 32 x 32 x 0.55mm galvanised metal angle.
- Suitable GIB® metal angle options include:
  - GIB® Rondo® NZ18 metal angle, available length: 3.0m
  - GIBFix® Angle metal angle, available lengths: 2.4m and 2.7m



- Angles need to be temporarily held in place until secured by the lining fixings
- Minimum height of the metal angle is 1800mm



WATERPROOF MEMBRANE SYSTEMS

A waterproof membrane system must be applied to all lining materials used as a substrate for ceramic tiles in a shower or shower over a bath application, or any other tiled application exposed to frequent water splash.

For further information see p10.

TILES AND TILE WEIGHTS

In areas likely to be directly exposed to water, tiles may be ceramic, porcelain or stone must comply with the over-surface finish requirements of the IWAM Code of Practice and be bedded with a suitable tile adhesive on the waterproof membrane system. See page 10 for the minimum extent of wall surfaces requiring impervious sheet materials or waterproof membrane systems prior to tiling.

Smaller mosaic tiles are often lighter, but the integrity of grout joints might be more prone to impact, whilst heavier tiles are larger and have less and deeper grout and sealant joints. For more information also see AS 3958:2007 Ceramic tiles – Guide to the installation of ceramic tiles.

Table 2: Recommended maximum tile weights

Maximum Tile Weights for GIB Aqualine®, GIB Toughline® Aqua or GIB Weatherline®			
Stud Centre (maximum)	**Fasteners Centre (maximum)**	**Lining Thickness**	**Tile Weight**
600mm maximum	150mm maximum	10mm	26kg/m²
		13mm	40kg/m²

ADHESIVE AND GROUT WEIGHTS

The weight of adhesive and grout can vary depending on the type of tile and the installation process used. The maximum tile weights stated in table 2 are conservative and refer to the tile weight excluding grout and adhesive used. An additional 3kg/m² has been factored into tile adhesion testing on top of the above stated tile weights to account for adhesive and grout weight used during the installation of the tile.

GIB CEILINGS

CEILING FRAMING

Framing dimensions and spacing must comply with the requirements of NZS 3604:2011, NASH for steel or relevant NZ Standard.

For noise control or fire rating applications consult the relevant GIB® technical publication.

FASTENERS

- Steel battens – 25mm x 6g GIB® Grabber® Self Tapping screws
- Timber battens or Joists – 32mm x 6g GIB® Grabber® High Thread screws

ADHESIVES

- Steel battens - GIBFix® All-Bond
- Timber battens - GIBFix® All-Bond or GIBFix® One

FASTENERS CENTRES

- Single screws to the edges and centre of the sheets across each batten
- Single screw at 600mm maximum to the perimeter of the ceiling
- Screws to be 12mm from sheet edges
- Daubs of adhesive at 200mm centres between the screws
- Do not place adhesive at sheet edges or under fasteners, this may lead to screw pops

LINING

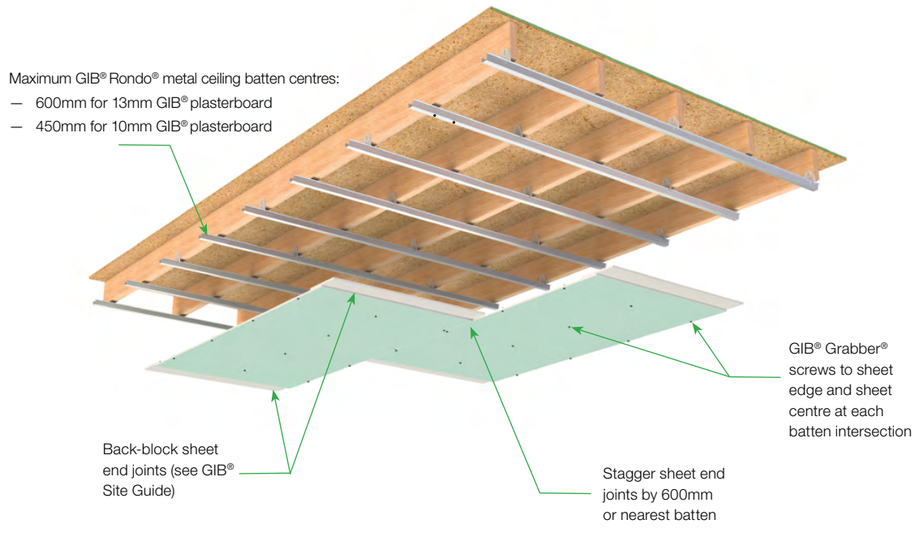
- The lining shall be fixed at right angles to the battens or joists
- Commence fixing from the centre of the sheets outwards.
- Sheets to be touch fitted
- Use long length sheets to minimise sheet end butt joints.
- Back-block sheet end butt joints
- See GIB® Site Guide for sheet edge backblocking requirements

BATTEN SPACINGS

- 13mm GIB® plasterboard – 600mm centres maximum
- 10mm GIB® plasterboard – 450mm centres maximum

JOINTING

- All sheet joints must be paper tape reinforced and stopped in accordance with instructions in the GIB® Site Guide
- Do not fix tiles to GIB® plasterboard ceilings



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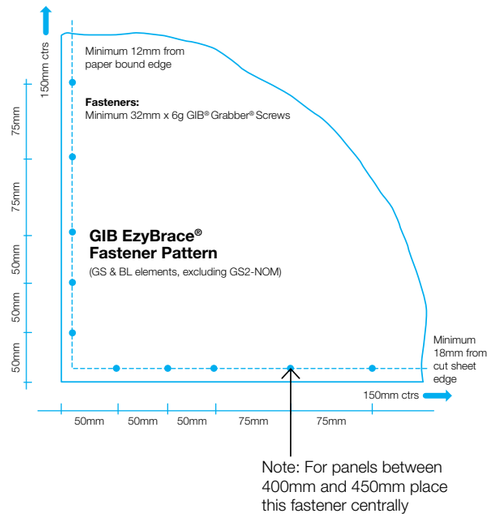
6.1.7 GIB EzyBrace® Corner Fastener Pattern

Corner Fastener Pattern for ALL 4 CORNERS OF GIB® Bracing Elements (excluding GS2-NOM).

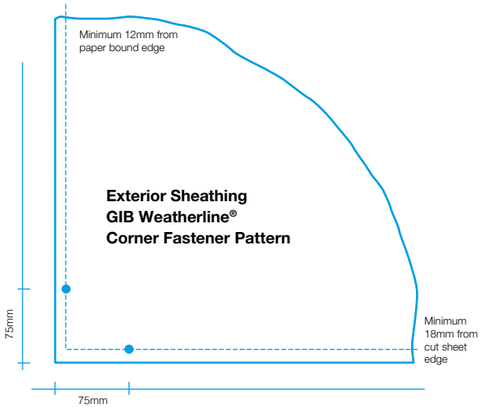
- All four corners of a GIB® plasterboard bracing element must be fastened as per the fastening patterns shown below
- Bracing element perimeter is then fastened at 150mm centres, or for GS2-NOM 300mm centres
- Fasteners must be no closer than 12mm from the paper enclosed edge and no closer than 18mm from sheet ends or cut edges of sheets

GIB EzyBrace® Corner Fastener Pattern

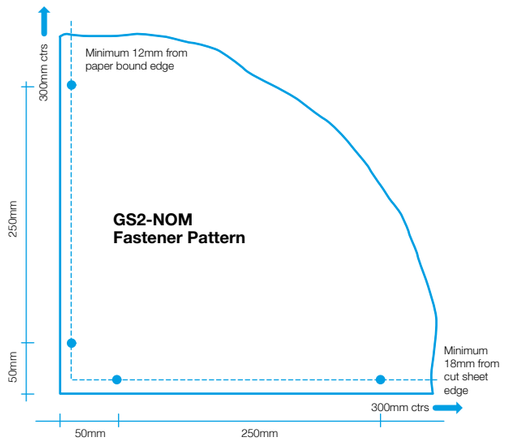
Unless specified all fastener spacings are maximums.



Note: For panels between 400mm and 450mm place this fastener centrally



Refer to wind loading section of the GIB Weatherline® Design and Construction Manual for fastening centres, except when installing a W-H bracing element where the GIB EzyBrace® fastener pattern will apply.

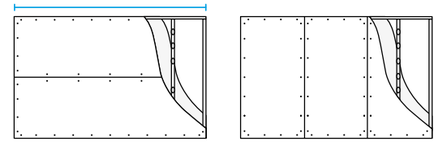


6.1.2 Internal Bracing System Specifications

GS2-NOM

1. 10mm or 13mm GIB® Standard plasterboard fixed to each side of the wall framing
2. Corner fastening pattern applies (see p.71)
3. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 300mm max to perimeter
4. Panel hold downs not required
5. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
6. Joints must be stopped
7. GIB® tape must be used in joints
8. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown

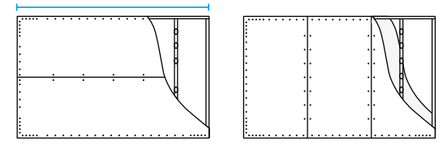


Horizontal Fixing Vertical Fixing

GS1-N

1. Any 10mm or 13mm GIB® plasterboard to one side of the wall only
2. Corner fastening pattern applies (see p.71)
3. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter
4. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
5. Panel hold downs not required
6. Joints must be stopped
7. GIB® tape must be used in joints
8. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown

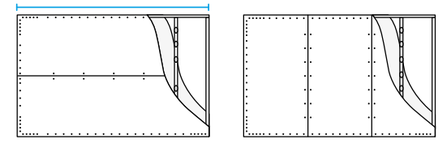


Horizontal Fixing Vertical Fixing

GS2-N

1. Any 10mm or 13mm GIB® plasterboard to both sides of the wall. Both sides fixed as bracing elements
2. Corner fastening pattern applies (see p.71)
3. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter
4. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
5. Panel hold downs not required
6. Joints must be stopped
7. GIB® tape must be used in joints
8. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown

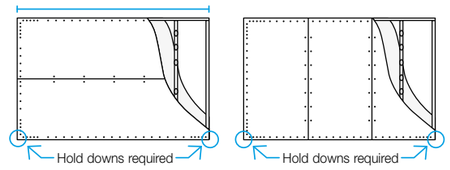


Horizontal Fixing Vertical Fixing

GSP-H

1. Any 10mm or 13mm GIB® plasterboard to one side of the wall
2. 7mm structural plywood to the other side
3. Corner fastening pattern applies (see p.71)
4. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter (plasterboard side) 50 x 2.8mm FH nails at 150mm max to perimeter. Corner fastening pattern not applicable to plywood side
5. Panel hold downs required
6. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
7. Joints must be stopped
8. GIB® tape must be used in joints
9. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown



Horizontal Fixing Vertical Fixing

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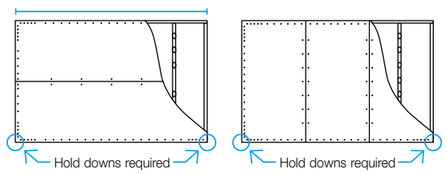
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6.1.2 Internal Bracing System Specifications

BL1-H

1. 10mm or 13mm GIB Braceline® to one side of the wall only
2. Corner fastening pattern applies (see p.71)
3. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter
4. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
5. Panel hold downs required
6. Joints must be stopped
7. GIB® tape must be used in joints
8. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown

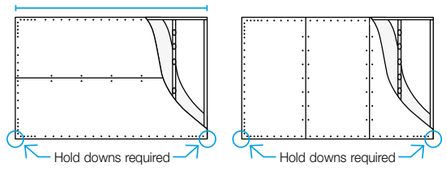


Horizontal Fixing | Vertical Fixing

BLG-H

1. 10mm or 13mm GIB Braceline® to one side of the wall
2. Any 10mm or 13mm GIB® plasterboard to the other side. Both sides fixed as bracing elements
3. Corner fastening pattern applies (see p.71)
4. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter
5. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
6. Panel hold downs required
7. Joints must be stopped
8. GIB® tape must be used in joints
9. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown

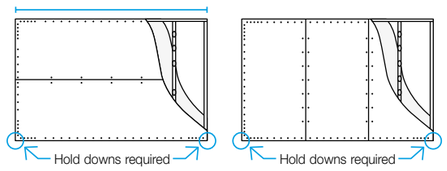


Horizontal Fixing | Vertical Fixing

BLP-H

1. 10mm or 13mm GIB Braceline® to one side of the wall only
2. 7mm structural plywood to the other side
3. Corner fastening pattern applies (see p.71)
4. 32mm x 6g GIB® Grabber® screws or GIB® Grabber® Dual Thread screws at 150mm max to perimeter (plasterboard side). 50 x 2.8mm FH nails at 150mm max to plywood perimeter. Corner fastening pattern not applicable (plywood side)
5. Panel hold downs required
6. Centre of the sheet may be fixed with adhesive or fastenings at 300mm max
7. Joints must be stopped
8. GIB® tape must be used in joints
9. Sheets may be fixed horizontally or vertically

Bracing Element – Plasterboard side shown



Horizontal Fixing | Vertical Fixing

For sheet substitution options refer to p.14.

5.4.4 Back Blocking – Butt and Edge Joints

Back blocking is the practice of laminating an off-cut of plasterboard to the back of a joint using GIB-Cove® Bond adhesive.

Back blocking is required to ceiling sheet edge joints as follows:

Timber Battens	When there are 3 or more tapered edge joints in a ceiling area
Metal Battens	When there are 6 or more tapered edge joints in a ceiling area

Back blocking is required to all joints when a Level 5 Finish has been specified.

Back blocking is strongly recommended at sheet end joints in ceilings. Some fire rated systems require that joints are made on solid blocking and that requirement takes precedence and must be followed. Refer to GIB® Fire Rated Systems specifications for more information.

Back blocking is not required for a Level 4 Finish when a suspension system has been used. This includes GIB® Rondo® metal ceiling batten system fixed on clips. See p.49. Sheets ends should be back blocked.

Due to wind pressure when garage door is open, and vibration from garage door opening, it is recommended that all sheet joints in garage ceilings are back blocked.

Back Blocking Comprises 2 Steps:

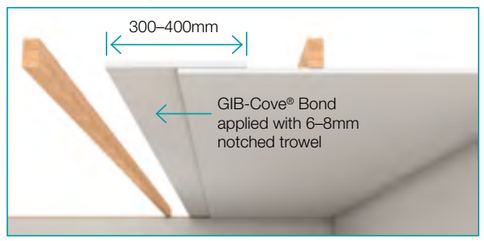
- Laminating a piece of plasterboard to the back of the joint
- Forming a tapered edge to help form a flat stopped joint

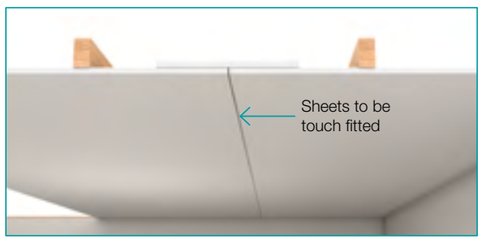
Step 2 can be omitted but the stopped joint will need to be much wider (500–600mm) in order to minimise the effect of the stopping joint thickness.

Back Blocking Technique

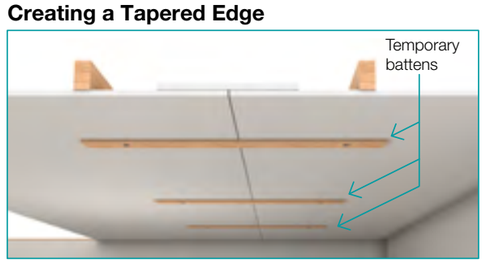
- Make back blocks at least 300mm wide and cut to fit loosely between framing members
- Apply GIB-Cove® Bond to the underside of the back block with a 6–8mm notched trowel
- Do not use synthetic wall board adhesive for back blocking
- If possible, attach the back block to the back of the joint from above
- If access from above is not possible, apply GIB-Cove® Bond to one half of the back block before attaching the back block to the edge of the sheet. Install a couple of screws through the tapered edge to secure the back block
- Apply GIB-Cove® Bond to the remainder of the back block just before fixing the next sheet

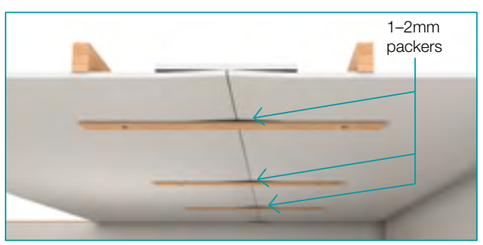
Back Blocking





Creating a Tapered Edge





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6.1.5 Bottom Plate Fixing

Bottom Plate Fixings for GIB® Bracing Elements

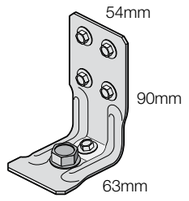
Brace Type	Concrete Slabs		Timber Floors
	External Walls	Internal Walls	External and Internal Walls
GS1-N **GSW-N**	As per NZS 3604:2011 No specific additional fastening required	As per NZS 3604:2011 Alternatively use 75 x 3.8mm shot-fired fasteners with 16mm discs, 150mm and 300mm from each end of the bracing element and at 600mm thereafter.	Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011
GS2-N **GS2-NOM**	Not applicable		
GSP-H **BL1-H** **BLP-H** **GSW-H** **W-H** **BLW-H**	Intermediate fastenings to comply with NZS 3604:2011 In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated on p.69-70		Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011 In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated below
BLG-H	Not applicable	As for GSP-H, BL1-H, BLP-H on concrete slab as illustrated on p.69-70	

6.1.6 Panel Hold-Down Details

GIB HandiBrac® – Recommended Method

Developed in conjunction with MiTek™ NZ, the GIB HandiBrac® has been designed and tested for use as a hold-down in GIB® BL and GSP bracing elements.

- The GIB HandiBrac® registered design provides for quick and easy installation
- The GIB HandiBrac® provides a flush surface for the wall linings because it is fitted inside the framing. There is no need to check into the framing as recommended with conventional straps
- The GIB HandiBrac® is suitable for both new and retrofit construction
- The design also allows for installation and inspection at any stage prior to fitting internal linings



Concrete Floors		Timber Floors	
External Walls	**Internal Walls**	**External Walls**	**Internal Walls**
			
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate	Position GIB HandiBrac® at the stud / plate junction	Position GIB HandiBrac® in the centre of the perimeter boundary joist	Position GIB HandiBrac® in the centre of floor joist or full depth solid block

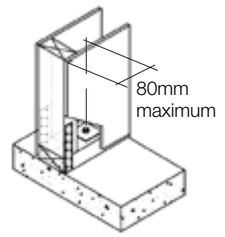
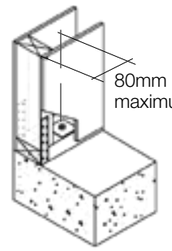
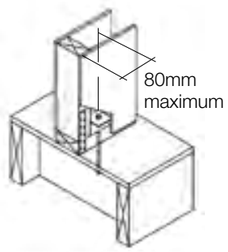
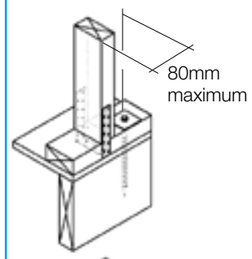
Hold-Down Fastener Requirements

Concrete Floors	Timber Floors
A mechanical fastening with a minimum characteristic uplift capacity of 15kN or use supplied BT 10/140 screw bolt in GIB HandiBrac® pack.	12 x 150mm galvanised coach screw or use supplied BT 10/140 screw bolt in GIB HandiBrac® pack.

Bracing Strap Installation

Care needs to be taken with the installation of the bracing strap. It should be checked in to be flush with the face of the stud providing a flat substrate for the plasterboard. It should be positioned in such a way that the important corner fastenings of the bracing element are not affected by it. Keeping the strap to the edge of the end stud as shown will allow the important corner fastenings to be installed without having to penetrate the bracing strap.

Concrete Floors	Timber Floors
400 x 25 x 0.9mm galvanised strap to pass under the plate and up the other side of the stud. Six 30 x 2.5 flat head galvanised nails to each side of the stud. Three 30 x 2.5 flat head galvanised nails to each side of the plate. Hold down bolt with 50 x 50 x 3mm washer to be fitted within 80mm of the edge of the element.	

Internal Walls	External Walls	Internal Walls	External Walls
			
			2/300 x 25 x 0.9mm galvanised straps with six 30 x 2.5mm flat head galvanised nails to each stud and into the floor joist and three nails to the plate. Block to nog fixed with 3/100 x 3.75mm nails to stud.

Hold-Down Fastener Requirements

Concrete Floors	Timber Floors
A mechanical fastening with a minimum characteristic uplift capacity of 15kN fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element.	12 x 150mm galvanised coach screw fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element.

REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # WC05
DWG	GIB INSTALLTION DETAILS	DRAWN KB/TB/DB CHKD KB/TB/DB	

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3.3 ECOPLY® BRACING SPECIFICATION - EPI

Table 10: Singled Sided Structural Plywood Brace

Specification No.	Minimum Wall Length	Lining Requirements	BUs/m Wind	BUs/m Earthquake
EP1_0.4	0.4m	Ecoply® one side	80	95
EP1_0.6	0.6m	Ecoply one side	95	105
EP1_1.2	1.2m	Ecoply one side	120	135

Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, such as Laserframe® of SG8 stress grade minimum, is recommended.

Bottom Plate Fixing

Use GIB Handibrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

Lining

One layer of 7mm, 9mm or 12mm Ecoply® plywood fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

Fastening the Ecoply® Panels

Fasten with 50 x 2.8mm hot dipped galvanised or stainless steel flat head nails for direct fix. Place fasteners no less than 7mm or 3 fastener diameters from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

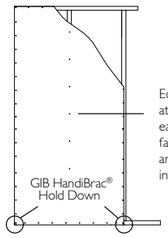
Fasteners for H3.2 CCA Treated Ecoply Panels

Where fasteners are in contact with H3.2 CCA treated timber or plywood, fasteners shall be a minimum of hot dip galvanised.

In certain circumstances stainless steel fasteners may be required. Refer to Table 8 of the Ecoply Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® fixed with 50 x 2.8 mm nails at 150 mm centres to perimeter of each sheet at no less than 7 mm or 3 fastener diameters from sheet edge and at 300 mm centres to intermediate studs

Ecoply® Bracing Systems are designed to meet the requirements of the NZBC and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply manufactured by CHH Plywood and SG8 timber framing, and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

DECEMBER 2023

DRAWINGS ARE NOT TO BE SCALED. USE ONLY FIGURED DIMENSIONS. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.

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Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # WC06
DWG	ECOPLY INSTALLTION DETAILS	DRAWN KB/TB/DB CHKD KB/TB/DB	

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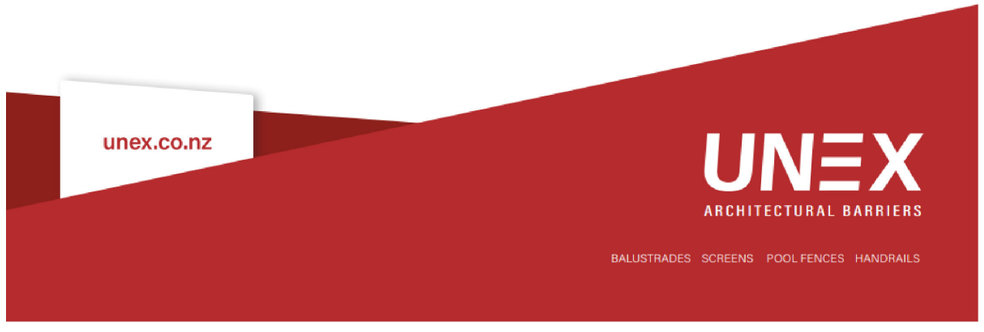
BALUSTRADE PS1 COVER SHEET

PS1 Number:	30101
Date:	24-07-2026
Product | Fixture:	Ascot(PRRTop) | FS.1T.02.00-Dry Timber, Top Fix, 90mm CRS
Indicative Linear Meterage:	13
Project Name:	M & S Scott
Site Address:	6 Tui St, Ahipara
Legal Description:	Lot 2 DP 110831

SPECIFIER DETAILS

Area where balustrade is installed:	Front Deck
Company:	Beard Online Architecture
Phone:	0224549863
Email:	beardarc48@gmail.com
Website:	

NOTE: The attached PS1 covers the relevant balustrade system for multiple sites and applications. The engineer's signature date relates to the calculation of this data. The effective date of this individual PS1 is as shown on this cover sheet.



PS1:30101

PRODUCER STATEMENT – PS1
DESIGN

ISSUE: 02

BUILDING CODE CLAUSE(S): B1/F2/F4 **JOB NUMBER:** 2130235

ISSUED BY: Kirk Roberts Consulting Engineers Ltd
(Engineering Design Firm)

TO: Unex Systems (NZ) Ltd
(Owner/Developer)

TO BE SUPPLIED TO: To Whom It may Concern
(Building Consent Authority)

IN RESPECT OF: Balustrade styles as supplied by Unex System (NZ) Ltd (see list enclosed). Construction details are to be in accordance with the UNEX Fabricators' Manuals – Framed Baluster v13.1. The maximum post spacing must not exceed the distance given in the manual referred to above.
(Description of Building Work)

AT: Various
(Address, Town/City)

LEGAL DESCRIPTION: **N/A** ☑

We have been engaged by the owner/developer referred to above to provide *(Extent of Engagement)*:
Refer attached schedule
in respect of the requirements of the Clause(s) of the Building Code specified above for Part only, as specified in the Schedule, of the proposed building work.

The design carried out by us has been prepared in accordance with:

- ☑ Compliance documents issued by the Ministry of Business, Innovation & Employment *(Verification method/acceptable solution)* Clauses B1/VM1 and B1/AS1. and/or;
- ☐ Alternative solution as per the attached Schedule.

The proposed building work covered by this producer statement is described on the drawings specified in the Schedule, together with the specification, and other documents set out in the Schedule.

On behalf of the Engineering Design Firm, and subject to:

- Site verification of the following design assumptions: Refer to attached Schedule
- All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that:

- the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the Schedule, will comply with the relevant provisions of the Building Code and that;
- the persons who have undertaken the design have the necessary competency to do so.

I recommend the Refer Schedule level of **construction monitoring**.

I, *(Name of Engineering Design Professional)* Jan Jober-Studnicka , am:

- ☑ CPEng number CMEngNZ, CPEng (1013092), Auckland Council Producer Statement Author Register No. 3312
  and hold the following qualifications MSc, CMEngNZ, CPEng

The Engineering Design Firm holds a current policy of Professional Indemnity Insurance no less than $200,000
The Engineering Design Firm is a member of ACE New Zealand.

SIGNED BY *(Name of Engineering Design Professional)*: Jan Jober-Studnicka
(Signature below):

ON BEHALF OF *(Engineering Design Firm)*: Kirk Roberts Consulting Engineers Ltd **Date:** 27/02/2026

Note: This statement has been prepared solely for the Building Consent Authority named above and shall not be relied upon by any other person or entity. Any liability in relation to this statement accrues to the Engineering Design Firm only. As a condition of reliance on this statement, the Building Consent Authority accepts that the total maximum amount of liability of any kind arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in tort or otherwise, is limited to the sum of $200,000.

PS1:30101

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CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026	DWG # WC07
DWG	UNEX DETAILS	SCALE @ A3 NTS	
		DRAWN KB/TB/DB	
		CHKD KB/TB/DB	

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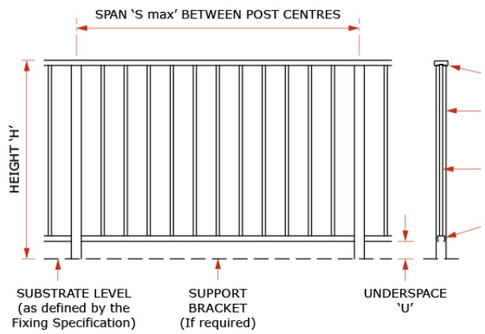
STYLE SPECIFICATIONS

NZBAL-A13.1B | SPEC ID **SS.01.06T**

'ASCOT' (PRR TOP RAIL)

This specification details the members to be used for this style and the maximum spacing of the posts. A separate specification must be referred to for fixing to the substrate (refer to Chapter 3). Post spacing must not exceed the lesser of the spacing from both Chapter 2 and Chapter 3.

1. Fabrication and Installation are to be in accordance with Assembly Specification AS.01.06T on Page 125 and all relevant portions of this manual.
2. The balustrade shall be constructed such that the geometry of the balustrade shall comply with Acceptable Solutions F4/AS1. This includes the following (but not limited to): The minimum barrier height requirement, the maximum gap allowable and the avoidance of non-complying toeholds.



The balustrade shall be fabricated from the following items:

- TOP RAIL: PRR / DRI2 or DRH
- POSTS: VPM2, VPH2 or VPE (as selected by the fabricator, refer to the table below).
- BALUSTERS: DTS3 or DTH (refer to table below)
- LOWER RAIL: VRL3

BALUSTER TYPE AND MAXIMUM POST CENTRES 'S max' (metres)
ALWAYS TAKE THE LESSER OF THE VALUE BELOW AND THE VALUE FROM THE FIXING SPECIFICATION

HEIGHT[3]	POST TYPE[2]	Line No.	LOADING CLASS[1]					
			N07C/N07R		N03R		Not Preventing Falls	
			BALUSTER TYPE[4]	SPAN 'S'	BALUSTER TYPE(4)	SPAN 'S'	BALUSTER TYPE(4)	SPAN 'S'
1.0	VPM2	1	DTS3	0.99	DTS3	1.71	DTS3	1.81
	VPH2	2	DTS3	1.25	DTS3	1.71	DTS3	1.81
	VPE	3	DTS3	1.50	DTS3	1.81	DTS3	1.81
	RAILS ONLY	4	DTS3	1.81	DTS3	1.81	DTS3	1.81
1.1	VPM2	5	DTS3	0.90	DTS3	1.71	DTS3	1.81
	VPH2	6	DTS3	1.13	DTS3	1.71	DTS3	1.81
	VPE	7	DTS3	1.36	DTS3	1.71	DTS3	1.81
	RAILS ONLY	8	DTS3	1.81	DTS3	1.81	DTS3	1.81
1.2	VPM2	9	DTH	0.74	DTS3	1.59	DTS3	1.55
	VPH2	10	DTH	0.93	DTS3	1.71	DTS3	1.81
	VPE	11	DTH	1.11	DTS3	1.71	DTS3	1.81
	RAILS ONLY	12	DTH	1.81	DTS3	1.81	DTS3	1.81

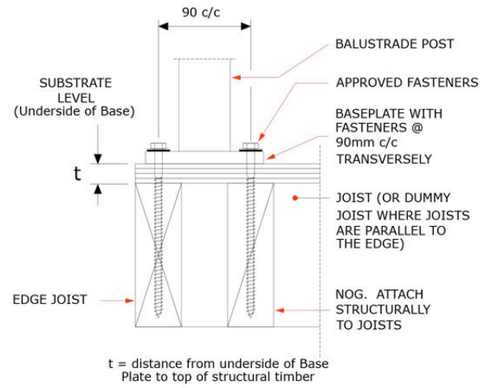
1. LOADING CLASS: Refer to Page 213 of this MANUAL for the scope of the Loading Class designations.
2. POST TYPES: Refer to Chapter 1 for details. "RAILS ONLY" gives the maximum span of the rails when fixed in single panels between walls or columns designed to provide adequate support to the rails.
3. HEIGHT 'H': is the overall height of the balustrade above the substrate level shown. Interpolate for Heights between those shown.
4. BALUSTER TYPE: Refer to Chapter 1 for details.

FIXING SPECIFICATIONS

NZBAL-A13.1B | SPEC ID **FS.1T.02.00**

DRY TIMBER - TOP FIXING, 90MM CRS

Refer to all notes on Pages 83 and 84 which shall apply to this specification and the relevant pages in Chapter 5 Installation Guides. Refer also to Chapter 2 for the Style Specification.



1. For details of approved fasteners refer to Note 3 on Page 83.
2. Washers to be fitted under screw and bolt heads shall be as follows
   - For 6mm fasteners - washer supplied with fasteners.
   - For FC8-165 fasteners - washer supplied with fasteners.
   - For 8mm bolts - 22mm O.D. S/S washer (Part No. FW8-22) with a polymer washer (Part No. FWP8-22G) between the S/S and the aluminium.
   - For Washers bearing against timber use 50 x 50 x 3mm stainless steel washers Part No FW10-50SQ.
3. Substrate design including waterproofing and the structural design of the timber substrate and its connections are not included in this specification and must be carried out by others.

MAXIMUM POST CENTRES 'S max' (metres)
ALWAYS TAKE THE LESSER OF THE VALUE BELOW AND THE VALUE FROM THE STYLE SPECIFICATION

Height[3]	Baseplate Size D x W	Fasteners - Qty and Type(2)	t' (See dia-gram)	Line No.	LOADING CLASS[1]																											
					N07C/N07R										N03R	Not Preventing Falls																	
					Design Wind Speed[4]											Design Wind Speed[4]																	
					VH		EH									M			H				VH				EH					
					50	52	54	56	58	60	62	64				38	40	42	44	46	48	50	52	54	56								
1.0	115x105	4 x FC8-165	19	1	1.72	1.72	1.72	1.68	1.57	1.46	1.37	1.29			3.68	3.65	3.29	2.99	2.72	2.49	2.29	2.11	1.95	1.81	1.68								
	115x105	4 x FC8-165	25	2	1.63	1.63	1.63	1.58	1.47	1.38	1.29	1.21			3.48	3.43	3.10	2.81	2.56	2.34	2.15	1.98	1.83	1.70	1.58								
	115x105	4 x FC8-165	32	3	1.52	1.52	1.52	1.47	1.37	1.28	1.20	1.13			3.26	3.19	2.88	2.61	2.38	2.18	2.00	1.84	1.70	1.58	1.47								
	115x105	4 x M8 Bolts	N/A	4	2.40	2.40	2.40	2.32	2.16	2.02	1.89	1.77			4.62	4.62	4.54	4.12	3.75	3.43	3.15	2.91	2.69	2.49	2.32								
1.1	115x105	4 x FC8-165	19	5	1.56	1.56	1.50	1.39	1.30	1.21	1.14	1.07			3.35	3.03	2.73	2.48	2.26	2.06	1.90	1.75	1.62	1.50	1.39								
	115x105	4 x FC8-165	25	6	1.48	1.48	1.41	1.31	1.22	1.14	1.07	1.01			3.17	2.85	2.57	2.33	2.13	1.95	1.79	1.65	1.52	1.41	1.31								
	115x105	4 x FC8-165	32	7	1.39	1.39	1.31	1.22	1.14	1.06	1.00	0.94			2.97	2.65	2.39	2.17	1.98	1.81	1.66	1.53	1.42	1.31	1.22								
	115x105	4 x M8 Bolts	N/A	8	2.19	2.19	2.07	1.93	1.79	1.68	1.57	1.47			4.62	4.18	3.77	3.42	3.12	2.85	2.62	2.41	2.23	2.07	1.93								
1.2	115x105	4 x FC8-165	19	9	1.44	1.36	1.26	1.17	1.09	1.02	0.96	0.90			3.08	2.55	2.30	2.09	1.90	1.74	1.60	1.47	1.36	1.26	1.17								
	115x105	4 x FC8-165	25	10	1.36	1.28	1.19	1.11	1.03	0.96	0.90	0.85			2.92	2.40	2.17	1.97	1.79	1.64	1.51	1.39	1.28	1.19	1.11								
	115x105	4 x FC8-165	32	11	1.27	1.20	1.11	1.03	0.96	0.90	0.84	0.79			2.73	2.24	2.02	1.83	1.67	1.53	1.40	1.29	1.20	1.11	1.03								
	115x105	4 x M8 Bolts	N/A	12	2.01	1.88	1.75	1.63	1.52	1.42	1.33	1.24			4.30	3.53	3.19	2.89	2.63	2.41	2.21	2.04	1.88	1.75	1.63								

1. LOADING CLASS: Refer to Page 206 of this Manual for the scope of the Loading Class designations.
2. FASTENER DESIGNATIONS: beginning with 'F' are part numbers for fasteners supplied by UNEX eg. FC8-165: FC = Coach Screw Stainless Steel. 8 = 8mm diameter, 165 = length in mm; Substitution with other fasteners is not permitted.
3. HEIGHT 'H': is the overall height of the balustrade above the substrate level shown. Interpolate for Heights between those shown.
4. DESIGN WIND SPEED: in m/s, Refer to Pages 56 to 57 for details of applicable wind codes and the methods for determining the Design Wind Speed.

REV | DATE | BY | REVISION AMENDMENTS | DESCRIPTION | DATE | ISSUE NO.

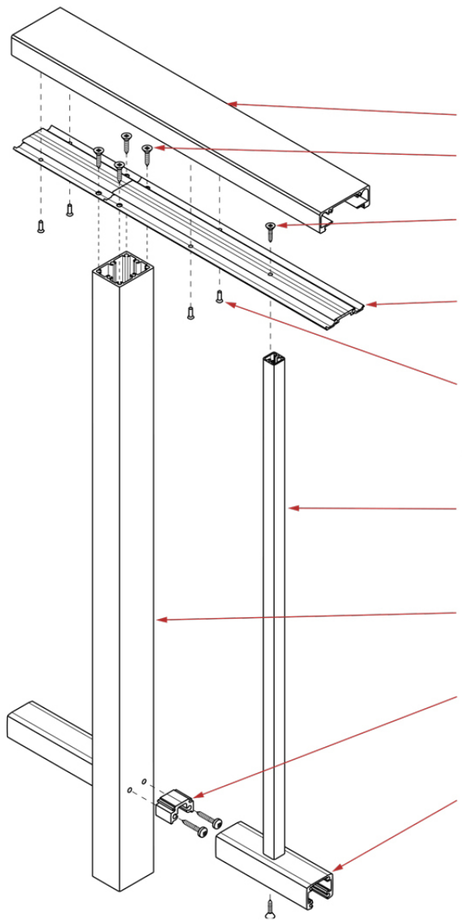
Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT: M & S SCOTT
PROJECT: 6 Tui Street, Ahipara
DWG: UNEX DETAILS
PROJECT # MS-0326
DATE # 14/08/2026
SCALE @ A3 NTS
DRAWN KB/TB/DB
CHKD KB/TB/DB
DWG # WC08

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'ASCOT' (PRR TOP RAIL)

Refer elsewhere for corners, slopes and other situations not illustrated here.



PRR TOP RAIL

FV10-19.T1 SCREWS. 4 per post. Drill size = Ø5.5mm.

FV6-19 SCREW. One per baluster end for DTS3 Balusters, 2 per end for DTH Balusters. Drill size = Ø4.1mm.

DRI2 INNER TOP RAIL (illustrated) for DTS3 Balusters, or DRH INNER TOP RAIL for DTH Balusters.

FS4-4 RIVETS. 1 pair within 150mm from panel ends; and at 750mm maximum centres between, and on either side of joints in Outer Top Rail. Drill size = Ø3.3mm.

DTS3 BALUSTER (or DTH BALUSTER where required). The balusters must be orientated so that the screwports are on either side of the rail centreline.

VPM2 (illustrated), VPH2, VPC, or VPE Post. At 90° corners use VPH2 post rather than the VPM2 post.

ANG CONNECTOR type, secured to post with FT10-32.T1 SCREWS, 2 per connector. Drill size into post = Ø4.1mm. Refer to Page 169.

VRL3 LOWER RAIL

UNEX LOADING CLASSIFICATION

Below is an extract from AS/NZS 1170.1:2002, a standard which is cited in the NZBC. This table gives the minimum imposed actions on barriers for various occupancy types. To the right hand side of this table are the applicable UNEX Loading Classifications (ULC) which are stated in the specifications contained in this catalogue.

**AS/NZS 1170.1:2002 TABLE 3.3
MINIMUM IMPOSED ACTIONS FOR BARRIERS**

	Type of occupancy for part of the building or structure	Specific Uses	Top Edge: Horizontal kN/m	Top Edge: Vertical kN/m	Top Edge: Inwards, Outwards, or Downwards kN	Infill: Horizontal kPa	Infill: Any Direction kN	ULC (UNEX Loading Classifications)
A	**Domestic and residential activities**	All areas within or serving exclusively one dwelling including stairs, landings, etc., but excluding external balconies and edges of roofs (see C3)	0.35	0.35	0.6	0.5	0.25	**N03R**
		Other residential (see C3)	0.75	0.75	0.6	1.0	0.5	**N07R**
B, E	**Offices and work areas not included elsewhere including storage areas**	Light access stairs and gangways not more than 600mm wide	0.22	0.22	0.6	N/A	N/A	**N02**
		Fixed platforms, walkways, stairways and ladders for access	0.35	0.35	0.6	N/A	N/A	**N03C**
		Areas not susceptible to overcrowding in office and institutional buildings also industrial and storage buildings	0.75	0.75	0.6	1.0	0.5	**N07C**
AREAS WHERE PEOPLE MAY CONGREGATE								
C1/C2	**Areas with tables or fixed seating**	Areas with fixed seating adjacent to a balustrade, restaurants, bars. etc.	1.5	0.75	0.6	1.5	1.5	**N15**
C3	**Areas without obstacles for moving people not susceptible to over-crowding**	Stairs, landings, external balconies, edges of roofs, etc.	0.75	0.75	0.6	1.0	0.5	**N07C**
C5	**Areas susceptible to over-crowding**	Theatres, cinemas, grandstands, discheques, bars, clubs, auditoria, shopping malls (see also D), assembly areas, studios, etc	3.0*	0.75	0.6	1.5	1.5	**N30** **N20(1)**
D	**Retail areas**	All retails areas including public areas of banks/building societies (see C5 for areas where over-crowding may occur)	1.5	0.75	0.6	1.5	1.5	**N15**

(1) N20 is only applicable where 2.0kN/m horizontal top edge load is acceptable by the Building Consent Authorities.

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D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT
PROJECT:	6 Tui Street, Ahipara
DWG	UNEX DETAILS
DATE #	14/08/2026
SCALE @ A3	NTS
DRAWN	KB/TB/DB
CHKD	KB/TB/DB
PROJECT #	MS-0326
DWG #	WC09

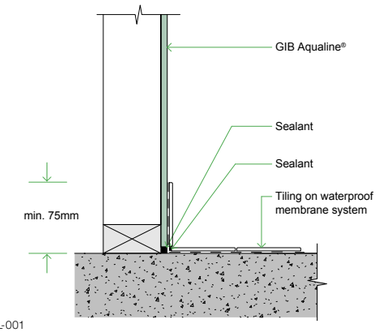
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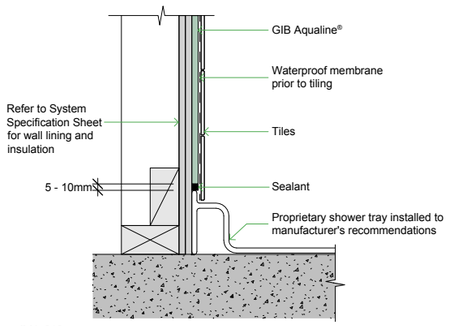
SHOWER – TILED WALL AND ACRYLIC BASE DETAILS

A: CERAMIC FLOOR SKIRTING LINING JUNCTION



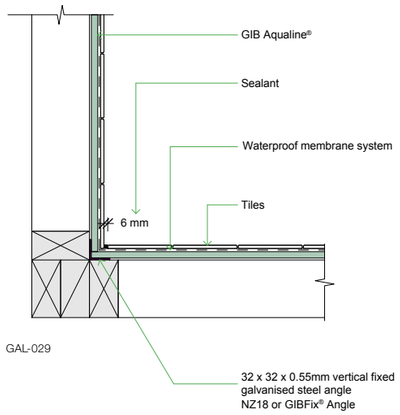
GAL-001

B: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



GAL-016

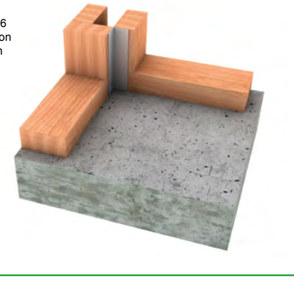
C: TILED INTERNAL CORNER



GAL-029

D: TILED INTERNAL CORNER METAL ANGLE POSITION

Refer to page 16 of this publication for specification and installation guidance.



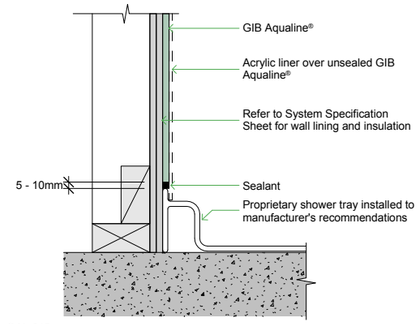
E: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



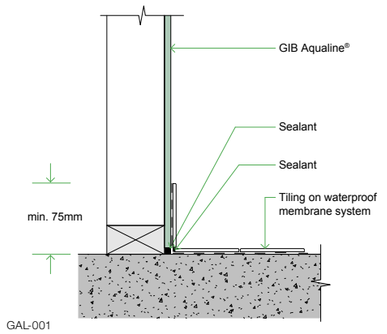
SHOWER – ACRYLIC LINER AND BASE DETAILS

A: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



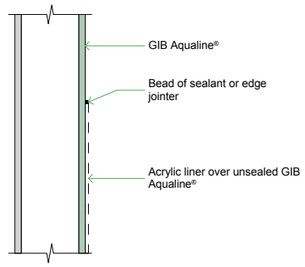
GAL-015

B: CERAMIC FLOOR SKIRTING LINING JUNCTION



GAL-001

C: UNSEALED PLASTERBOARD LINING



GAL-028

D: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



ISSUE NO.	DESCRIPTION	DATE	BY	REVISION AMENDMENTS	DATE	REV

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 NTS	DWG # WC10
DWG	GIB AQUALINE INSTALLTION DETAILS	DRAWN KB/TB/DB CHKD KB/TB/DB	

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Stormwater Attenuation Design

Client:	Maurice Scott	**File No.:**	20593
Project:	Dwelling Extension and New Shed	**Location:**	6 Tui Street, Ahipara
Subject:	Stormwater Attenuation Design	**Date:**	12 October 2026

1.0 Introduction

RS Eng has been engaged by Maurice Scott to design a stormwater attenuation system associated with the proposed dwelling extension and shed at 6 Tui Street, Ahipara (Lot 2 DP 110831).

2.0 Assumptions and Methods

The pre-development and post-development runoff flows were modelled using HydroCAD. The United States Department of Agriculture Technical Release 55 (TR55) Type 1A method was adopted for calculating the run-off flow, using rainfall depths from HIRDS 4 (High Intensity Rainfall Design System, NIWA) including an additional 20% rainfall depth to account for climate change as required by FNDC ES. The subsoils have been assessed as Group C soils with good grass cover, from FNDC ES. The following rainfalls have been adopted in the design:

Event	Current	Climate Change (+20%)
20% AEP	110	132
1% AEP	200	240

3.0 Attenuation Design

The new dwelling roof and shed are proposed to have a total roof area of 144m^2. As the FNDC allowable impervious coverage is up to 10%, the proposed development exceeds the allowable area by 155m² and will therefore require attenuation. Impervious surfaces allow little or no infiltration of stormwater into the ground, causing a greater volume and peak flow of rainfall runoff. As a result, attenuation of the stormwater runoff is required. This minimises any potential adverse effects on downstream properties and/or council assets.

It is proposed to direct stormwater runoff from the roof of the dwelling and shed into two 25,000L water tanks with a restricted outlet structure which reduces the peak flows to permitted levels. The attenuation system restricts stormwater runoff from the roof sufficiently to compensate for the exceeding flows from the driveway area. The table below provides a summary of the stormwater attenuation modelling.

As per the FNDC ES when stormwater is being re-used (i.e. water supply from rainwater tanks) then a reduction in attenuation volume is allowed. The FNDC ES specifies a 50% reduction in attenuation for 155m² using two 25,000L water tanks. Included below is the calculation of the storage adjustment used to account for this in HydroCAD.

$$Storage\ adjustment = 1/\left[1 - \left(Reduction * \frac{Roof\ Area}{Total\ Area}\right)\right]$$

Table 1: Stormwater Attenuation Design Summary.

	Pre-development		**Post-development**	
Permeable Area (m^2)				
Grassed	144		_	
Driveway	11		_	
Impervious Area (m^2)				
Dwelling Roof	_		88	
Shed Roof	_		56	
Uncollected exceeding driveway	_		11	
Peak flow l/s	20% AEP	1% AEP	20% AEP +20%	1% AEP +20%
From surfaces	0.63	1.50	1.34	2.45
80% (design flows reqd.)	**0.50**	**1.20**		
Total attenuated flows			**0.48**	**1.09**
Tank storage required			2.85m^3	5.7m^3
Attenuation Tank Summary				
Tank	2 x 25,000 L Promax Tank or similar			
Tank Diameter	3.7m			
	Diameter		**Depth from Overflow**	
Primary Orifice	24mm		0.28m	
Secondary Orifice	45mm		0.03m	

All stormwater should be collected from roof and driveway surfaces and discharged in a controlled manner to a 12m long stormwater dispersal trench located north of the dwelling laid parallel to the contour. No stormwater shall be discharged in an uncontrolled manner.

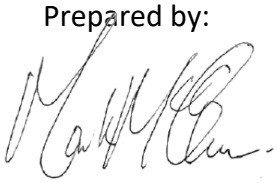
4.0 Attachments:

- Site plan.
- Stormwater dispersal trench details.
- Stormwater tank details.
- HIRDS rainfall depths.
- HydroCAD calculations.

5.0 Limitations

These calculations have been prepared solely for the benefit of our client and the Far North District Council. The purpose is to design stormwater attenuation for the proposal. The reliance by other parties on the information, opinions or recommendations contained therein shall, without our prior review and agreement in writing, do so at their own risk.

Prepared by:



Mark McClure
Technician

Reviewed by:



Sarah Scott Compton
Senior Technician
NZDE(Civil)

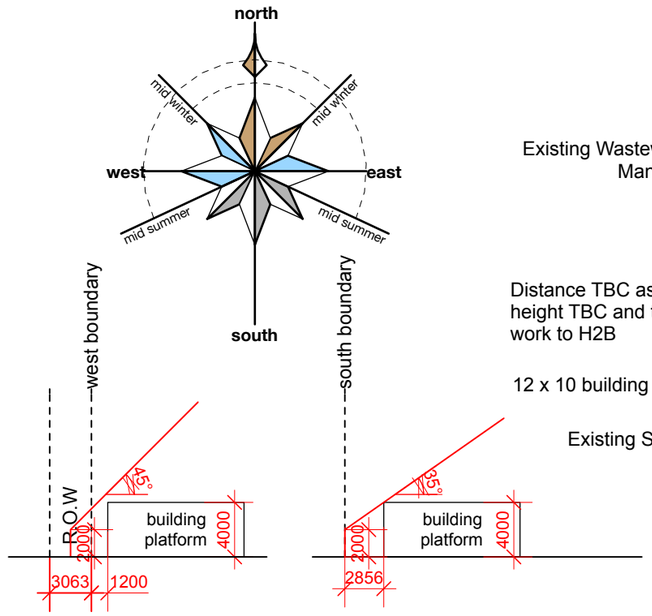
Approved by:

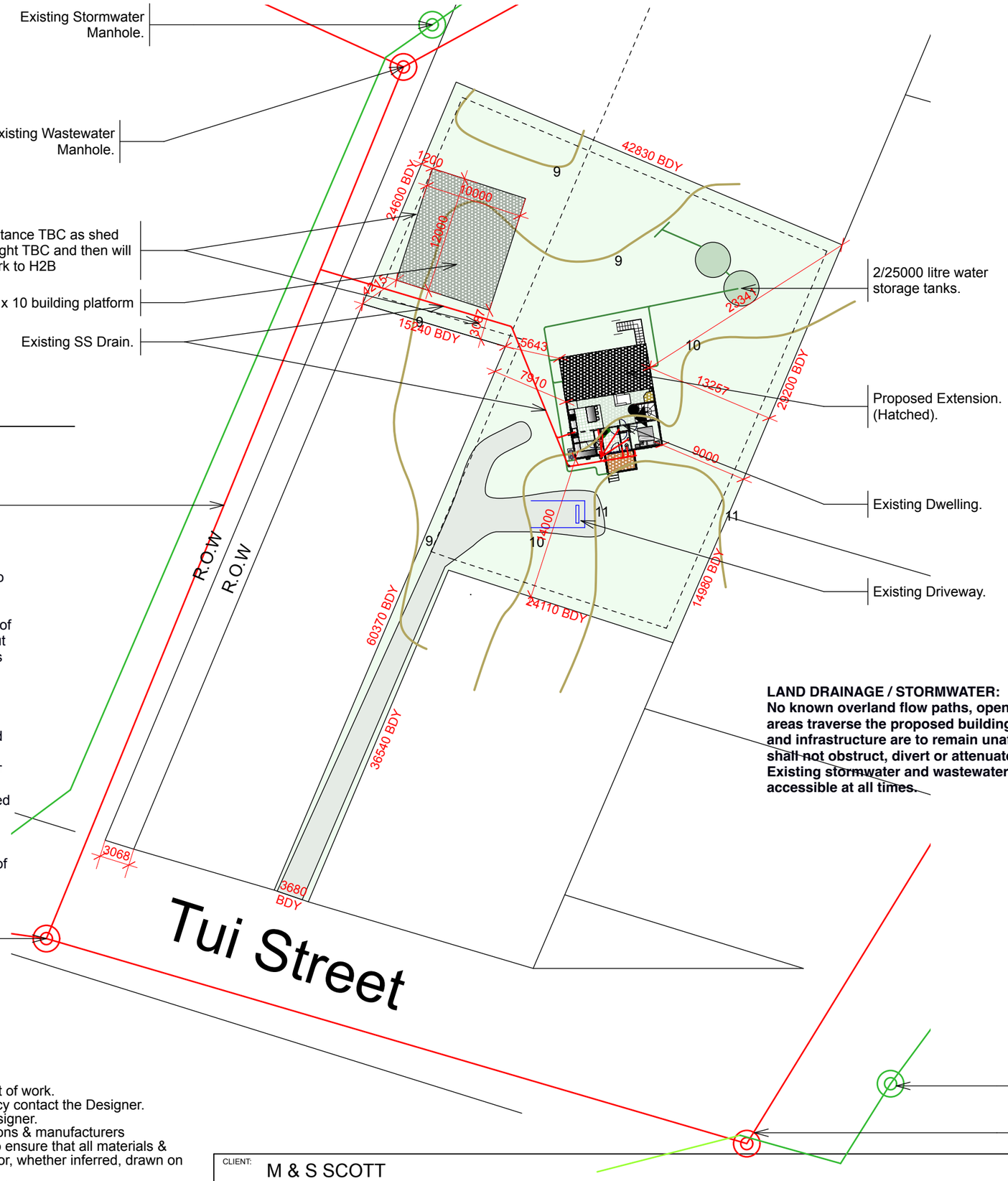


Matthew Jacobson
Director
NZDE(Civil), BE(Hons)(Civil), CPEng, CMEngNZ

RS Eng Ltd

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SITE NOTES:
6 TUI STREET, AHIPARA

LEGAL DESCRIPTION
LOT 2
DP 110831
VALUATION NUMBER: 00039-11800
TOTAL LAND AREA: 1725 m2

SITE COVERAGE
EXISTING BUILDING AREA: 54m2
EXISTING DRIVEWAY AREA: 183m2
PROPOSED BUILDING AREA: 72m2
PROPOSED ROOF TOTAL AREA: 88m2
PROPOSED SHED AREA: 56m2
TOTAL AREA OF IMPERMEABLE SURFACES: 381m2
TOTAL % OF IMPERMEABLE SURFACES: 22.1%

FNDC ZONE **GENERAL RESIDENTIAL**
COASTAL ENVIRONMENT
SETBACK TO BOUNDARIES 3 metres from roadside, 1.2 from other boundaries

EARTHQUAKE ZONE 1
EXPOSURE ZONE D
CLIMATE ZONE 1
WIND REGION A
WIND ZONE **HIGH**
SNOW ZONE NO
LEE ZONE NO

PROPOSED EARTHWORKS / EROSION & SEDIMENT CONTROL
Earthworks associated with the proposed works are limited to localised excavation for the new pile foundations and minor ground preparation associated with the proposed shed. The proposed shed is located on an existing generally level area of the site and only minor trimming, levelling and/or localised cut and fill is anticipated. No significant recontouring of the site is proposed.
All earthworks shall be undertaken to minimise erosion and prevent sediment-laden runoff leaving the site. Appropriate erosion and sediment controls shall be installed prior to commencement of earthworks and maintained until disturbed areas are stabilised. Excavated material and any temporary stockpiles shall be contained within the site and located clear of stormwater infrastructure.
No sediment, soil or sediment-laden water shall be discharged to Tui Street, adjoining properties, or the existing public stormwater system. Disturbed areas shall be progressively stabilised by grassing, landscaping, hardstand or other suitable means as soon as practicable following completion of the works.

LAND DRAINAGE / STORMWATER:
No known overland flow paths, open drains, watercourses or identified flood hazard areas traverse the proposed building footprints. Existing stormwater drainage patterns and infrastructure are to remain unaffected by the proposed works. The proposed works shall not obstruct, divert or attenuate the existing passage of stormwater across the site. Existing stormwater and wastewater infrastructure to remain unobstructed and accessible at all times.

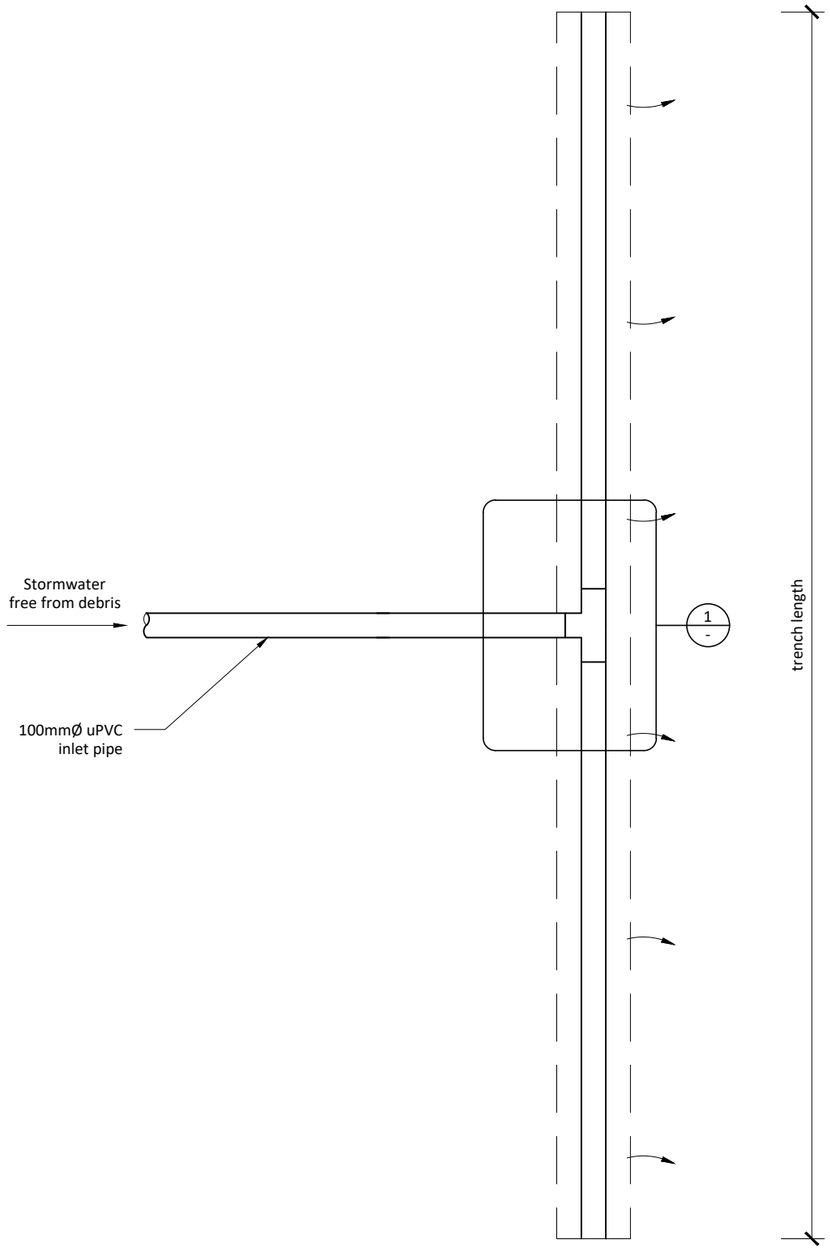
All dimensions to be checked on site prior to commencement of work.
Work only to figured dimensions, in the event of a discrepancy contact the Designer.
Do not change any details without prior consent from the Designer.
Building Contractor to check all levels, dimensions, connections & manufacturers specifications before beginning or manufacturing any work to ensure that all materials & labour necessary to complete the project has been allowed for, whether inferred, drawn on plans or not.
Liability will not be accepted by Designer for any materials or labour not shown on drawings or required by council or during construction.

Beard Online Architecture 106 Arawhata Road Kaingaroa 0483 E: beardarc48@gmail.com
D M Beard Structural LTD Doug: 022 454 9863 Tyler: 021 247 7232 Kirsty: 022 167 9900

CLIENT:	M & S SCOTT		PROJECT # MS-0326
PROJECT:	6 Tui Street, Ahipara	DATE # 14/08/2026 SCALE @ A3 1:400	DWG # A01
DWG	SITE PLAN	DRAWN KB/TB/DB CHKD KB/TB/DB	

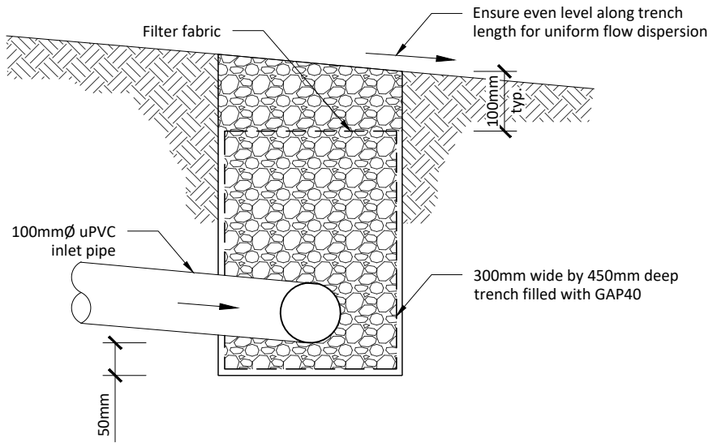
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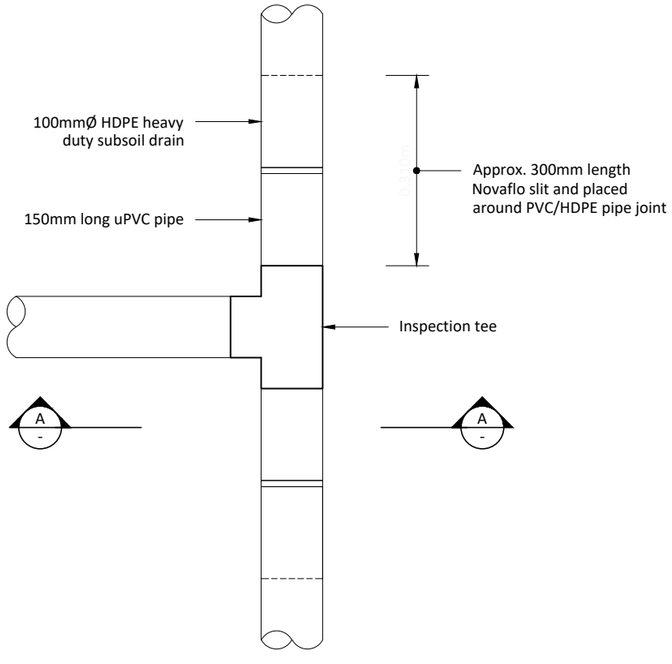


NOTE:
Keep dispersal trench 3.0m clear of property boundary

PLAN
1:25



A
-
SECTION A
1:10



1
-
PIPE CONNECTION DETAIL
1:10

NOTES:
- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- These drawings are to be read in conjunction with specifications - plans take precedence.
- If any part of these documents are unclear, please contact RSEng Ltd.
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09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

Title
STANDARD DISPERSAL DRAIN
TYPICAL DETAIL

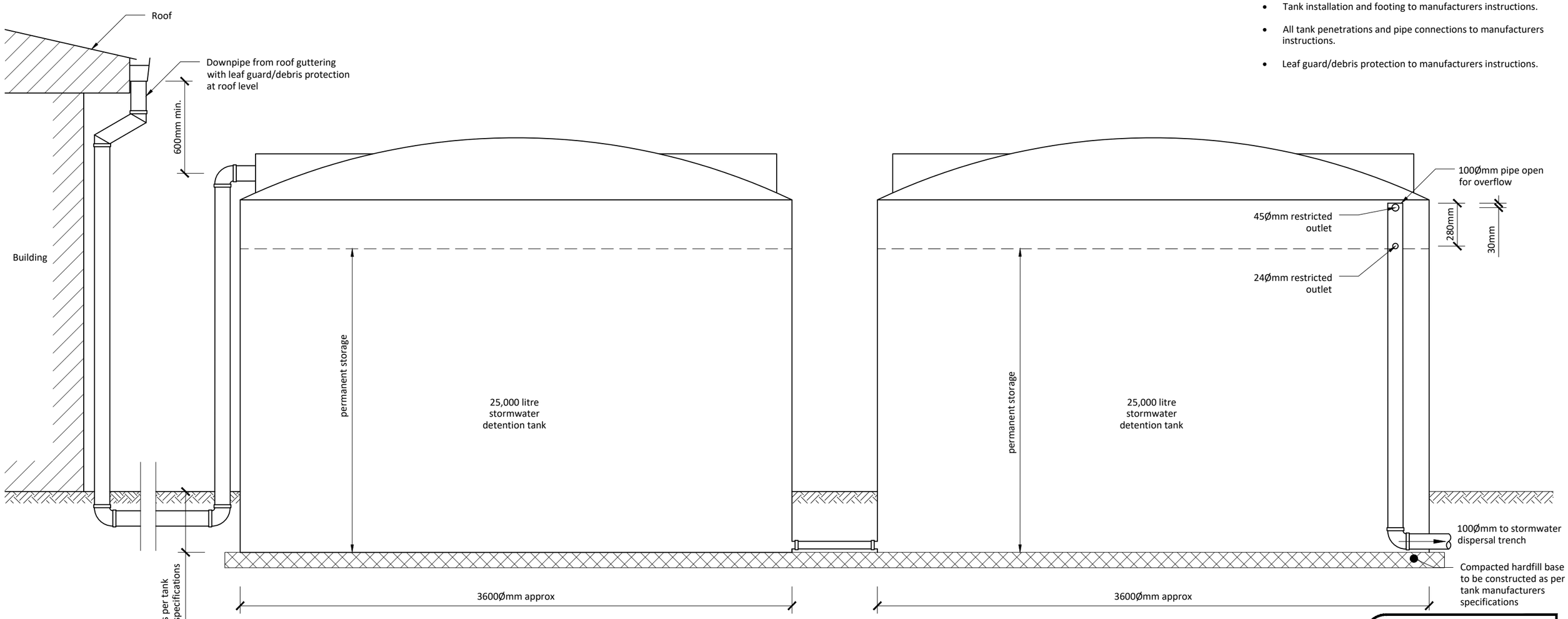
Client

Location

Date	Rev	Notes
23/12/2021	A	Original Issue

Scale	Original	Rev
AS SHOWN	A3	A

Drawn	Approved	File #	Sheet
ME	ST		1



STORMWATER ATTENUATION 2/25,000L TANK DETAIL

1:25

NOTES:

- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- These drawings are to be read in conjunction with specifications - plans take precedence.
- If any part of these documents are unclear, please contact RSEng Ltd.
- This plan is copyright to RSEng Ltd and should not be reproduced without prior permission.
- Tank installation and footing to manufacturers instructions.
- All tank penetrations and pipe connections to manufacturers instructions.
- Leaf guard/debris protection to manufacturers instructions.

- Tank installation and footing to manufacturers instructions.
- All tank penetrations and pipe connections to manufacturers instructions.
- Leaf guard/debris protection to manufacturers instructions.

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road, Whangarei 0110

Title: STORMWATER ATTENUATION TANK DETAIL

Client: MAURICE SCOTT

Location: 6 TUI STREET, AHIPARA

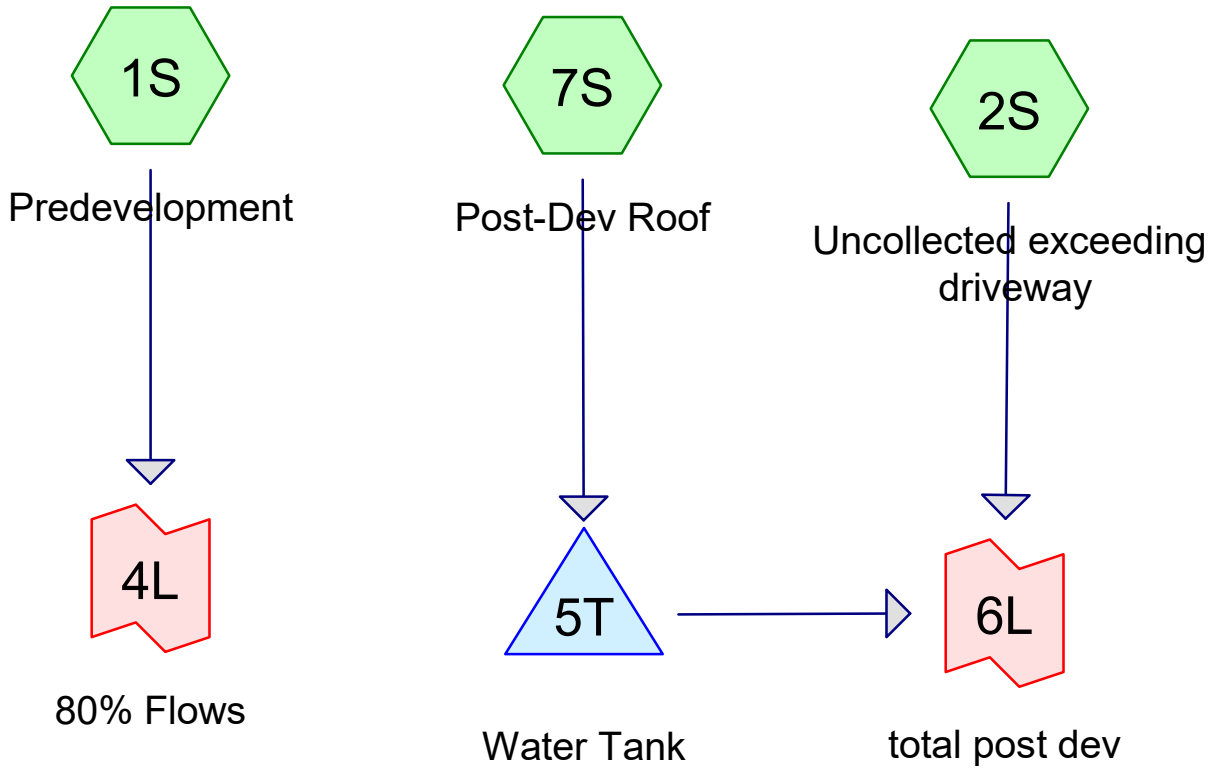
Date	Rev	Notes
13/10/2026	A	Original Issue

Scale	Original	Rev
1:25	A3	A

Drawn	Approved	File #	Sheet
MYH	MJ	20593	1

Rainfall depths (mm) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	8.76	13.2	16.6	23.7	32.6	50.4	63.4	76.8	89.9	96.9	101	105
2	0.5	9.58	14.5	18.1	25.9	35.8	55.3	69.5	84.3	98.7	106	111	115
5	0.2	12.4	18.8	23.5	33.7	46.5	72.1	90.7	110	129	139	146	151
10	0.1	14.5	21.9	27.5	39.4	54.5	84.6	107	130	152	164	172	178
20	0.05	16.6	25.2	31.7	45.4	62.8	97.7	123	150	176	190	199	206
30	0.033	17.9	27.2	34.2	49	67.8	106	133	162	191	206	216	223
40	0.025	18.8	28.6	36	51.6	71.5	111	140	171	201	217	228	236
50	0.02	19.6	29.7	37.4	53.6	74.3	116	146	178	209	226	237	245
60	0.017	20.2	30.7	38.5	55.3	76.6	119	151	184	216	234	245	254
80	0.013	21.1	32.1	40.4	58	80.4	125	158	193	227	246	258	266
100	0.01	21.9	33.3	41.8	60.1	83.3	130	164	200	236	255	267	277
250	0.004	24.9	37.9	47.7	68.6	95.3	149	188	230	271	293	308	319



Subcat Reach Pond Link

Routing Diagram for 20593 Attenuation 2026-10-12
Prepared by RS Eng, Printed 13/10/2026
HydroCAD® 10.00-15 s/n 06482 © 2015 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Predevelopment

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

If a more exact TR-20 match is desired, an optional "Type II 24-hr Tabular" rainfall definition is available, which produces a peak runoff of 2099cfs, just 0.1% higher than TR-20.

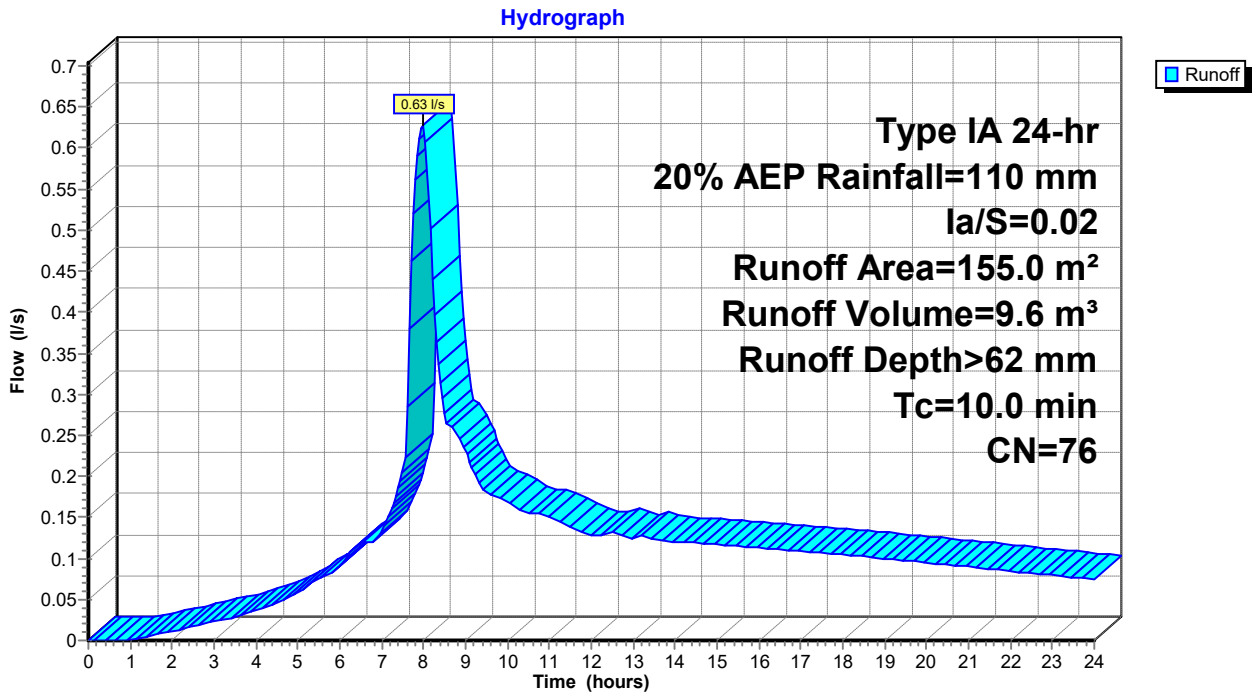
Runoff = 0.63 l/s @ 7.99 hrs, Volume= 9.6 m³, Depth> 62 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=110 mm, Ia/S=0.02

Area (m²)	CN	Description
11.0	98	Paved parking, HSG C
144.0	74	>75% Grass cover, Good, HSG C
155.0	76	Weighted Average
144.0		92.90% Pervious Area
11.0		7.10% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Predevelopment

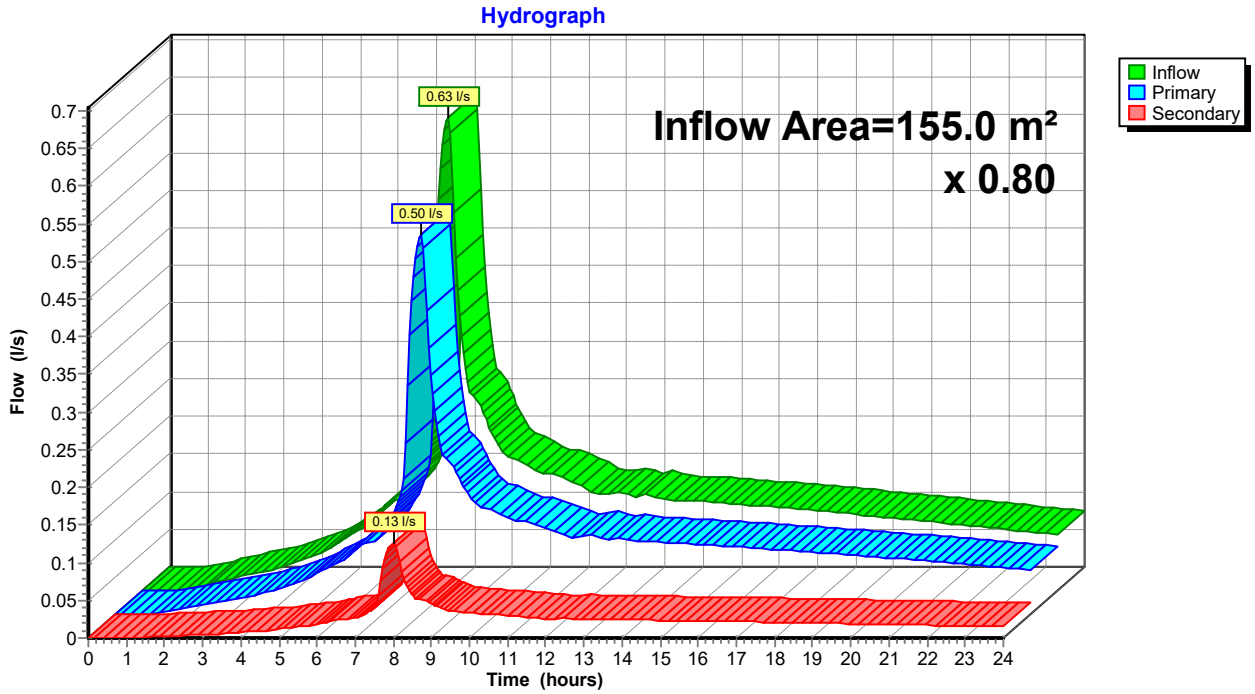


Summary for Link 4L: 80% Flows

Inflow Area = 155.0 m², 7.10% Impervious, Inflow Depth > 62 mm for 20% AEP event
Inflow = 0.63 l/s @ 7.99 hrs, Volume= 9.6 m³
Primary = 0.50 l/s @ 7.99 hrs, Volume= 7.7 m³, Atten= 20%, Lag= 0.0 min
Secondary = 0.13 l/s @ 7.99 hrs, Volume= 1.9 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: 80% Flows



Summary for Subcatchment 1S: Predevelopment

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

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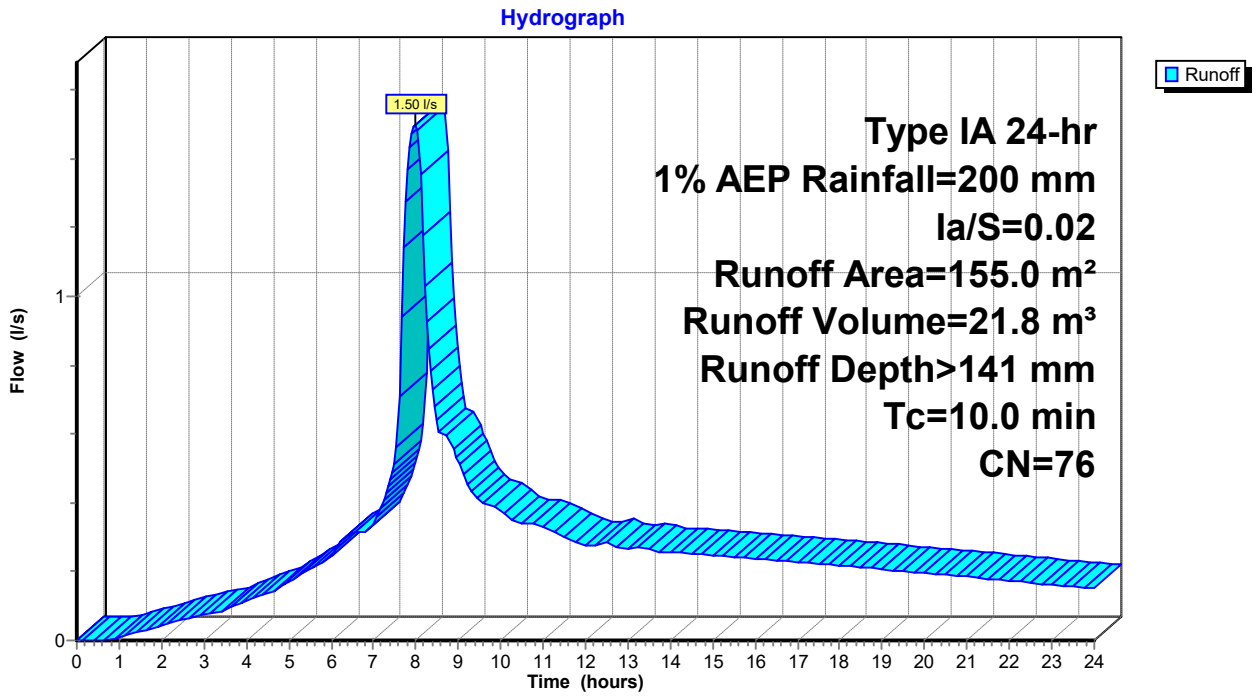
Runoff = 1.50 l/s @ 7.98 hrs, Volume= 21.8 m³, Depth> 141 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=200 mm, Ia/S=0.02

Area (m²)	CN	Description
11.0	98	Paved parking, HSG C
144.0	74	>75% Grass cover, Good, HSG C
155.0	76	Weighted Average
144.0		92.90% Pervious Area
11.0		7.10% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Predevelopment

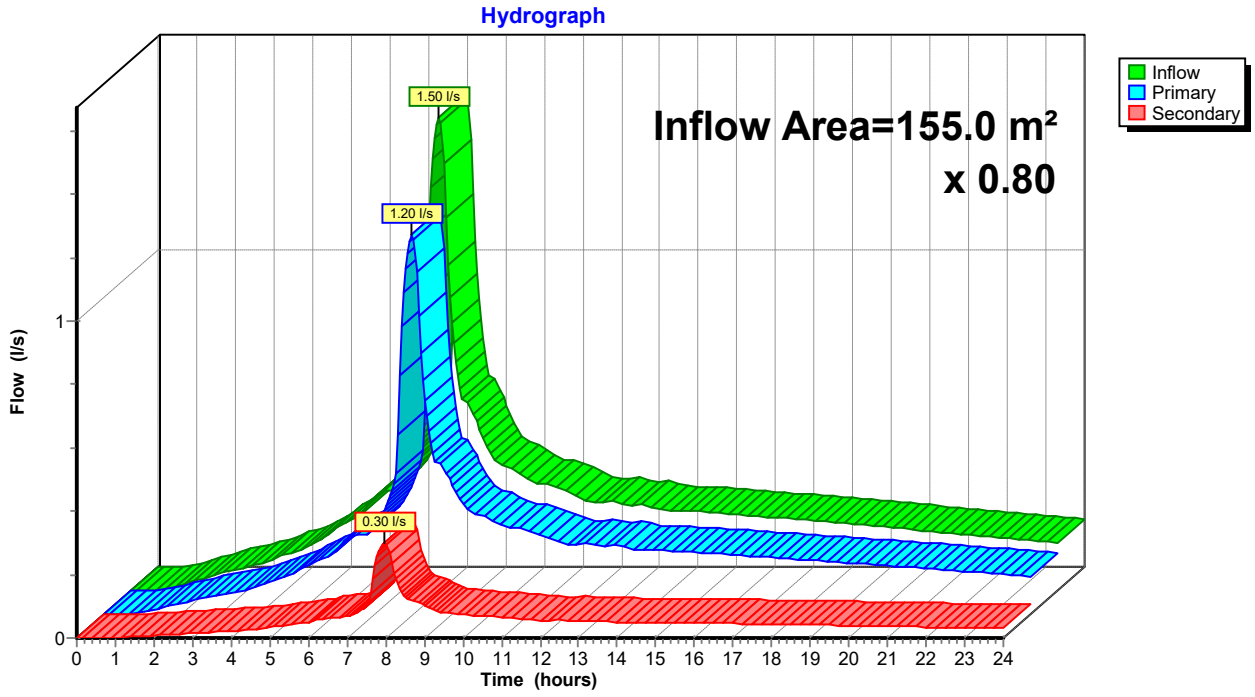


Summary for Link 4L: 80% Flows

Inflow Area = 155.0 m², 7.10% Impervious, Inflow Depth > 141 mm for 1% AEP event
Inflow = 1.50 l/s @ 7.98 hrs, Volume= 21.8 m³
Primary = 1.20 l/s @ 7.98 hrs, Volume= 17.5 m³, Atten= 20%, Lag= 0.0 min
Secondary = 0.30 l/s @ 7.98 hrs, Volume= 4.4 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: 80% Flows



Summary for Subcatchment 2S: Uncollected exceeding driveway

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

If a more exact TR-20 match is desired, an optional "Type II 24-hr Tabular" rainfall definition is available, which produces a peak runoff of 2099cfs, just 0.1% higher than TR-20.

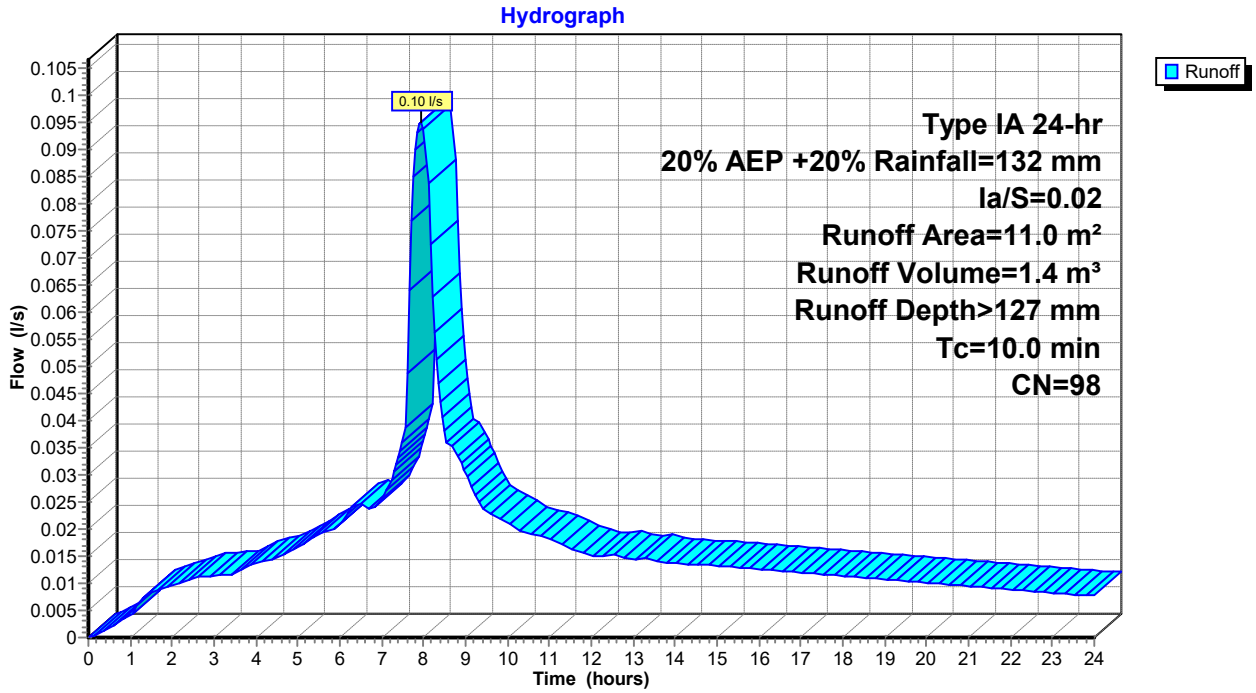
Runoff = 0.10 l/s @ 7.94 hrs, Volume= 1.4 m³, Depth> 127 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=132 mm, Ia/S=0.02

Area (m²)	CN	Description
11.0	98	Paved parking, HSG D
11.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Uncollected exceeding driveway



Summary for Subcatchment 7S: Post-Dev Roof

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

If a more exact TR-20 match is desired, an optional "Type II 24-hr Tabular" rainfall definition is available, which produces a peak runoff of 2099cfs, just 0.1% higher than TR-20.

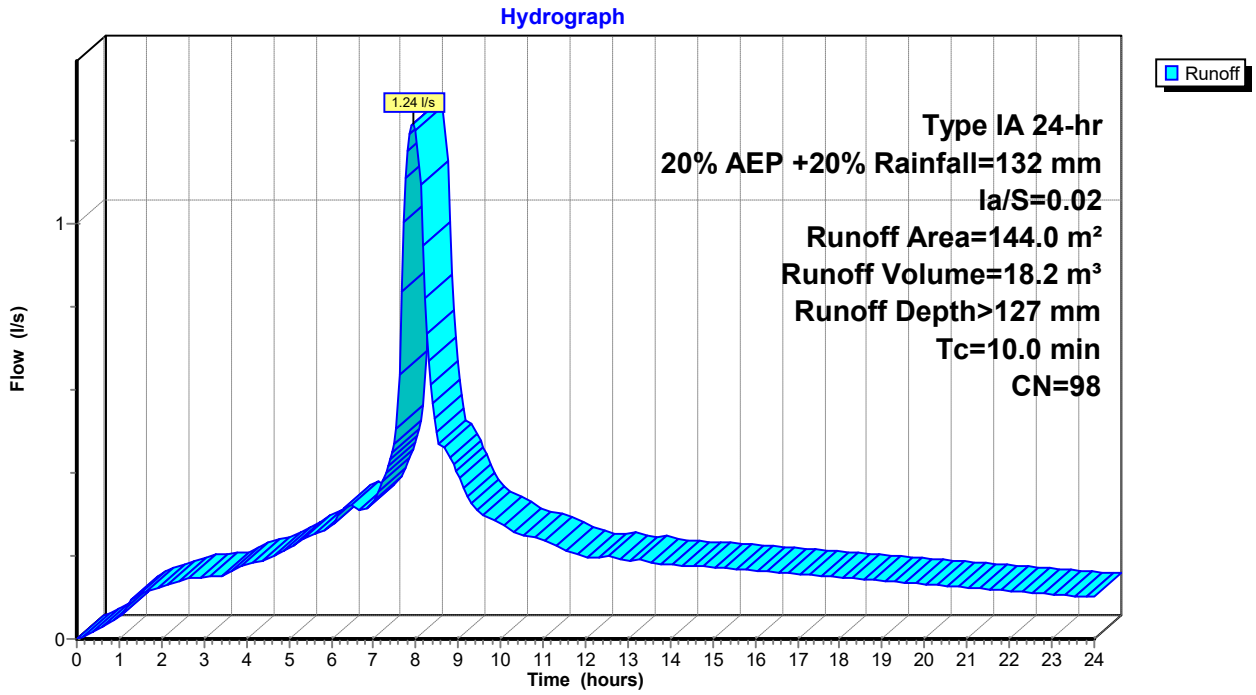
Runoff = 1.24 l/s @ 7.94 hrs, Volume= 18.2 m³, Depth> 127 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=132 mm, Ia/S=0.02

	Area (m²)	CN	Description
*	88.0	98	House roof
*	56.0	98	Shed roof
	144.0	98	Weighted Average
	144.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 7S: Post-Dev Roof



Summary for Pond 5T: Water Tank

Inflow Area = 144.0 m²,100.00% Impervious, Inflow Depth > 127 mm for 20% AEP +20% event
Inflow = 1.24 l/s @ 7.94 hrs, Volume= 18.2 m³
Outflow = 0.43 l/s @ 8.85 hrs, Volume= 17.7 m³, Atten= 65%, Lag= 54.5 min
Primary = 0.43 l/s @ 8.85 hrs, Volume= 17.7 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 0.141 m @ 8.85 hrs Surf.Area= 24.9 m² Storage= 3.5 m³

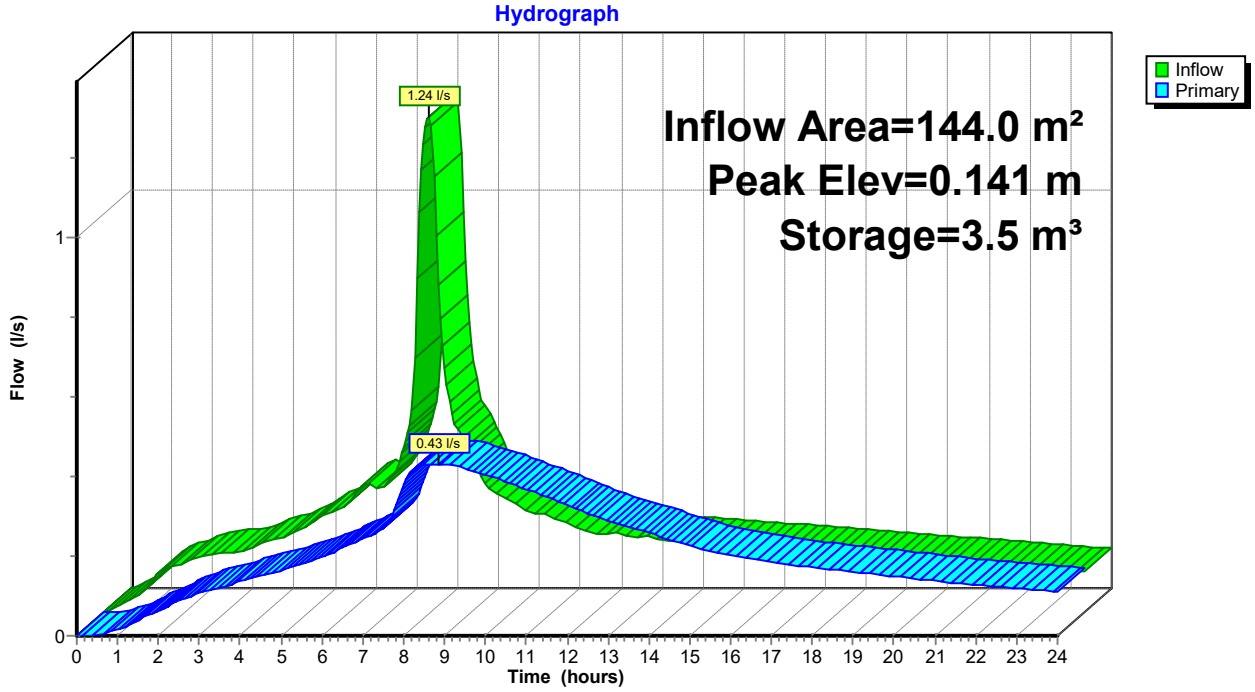
Plug-Flow detention time= 98.9 min calculated for 17.7 m³ (97% of inflow)
Center-of-Mass det. time= 77.4 min (729.2 - 651.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	70.3 m³	**3.70 mD x 2.82 mH Vertical Cone/Cylinder** x 2.32

Device	Routing	Invert	Outlet Devices	
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate**	C= 0.600
#2	Primary	0.250 m	**45 mm Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=0.43 l/s @ 8.85 hrs HW=0.141 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.43 l/s @ 0.96 m/s)
└**2=Orifice/Grate** (Controls 0.00 l/s)

Pond 5T: Water Tank

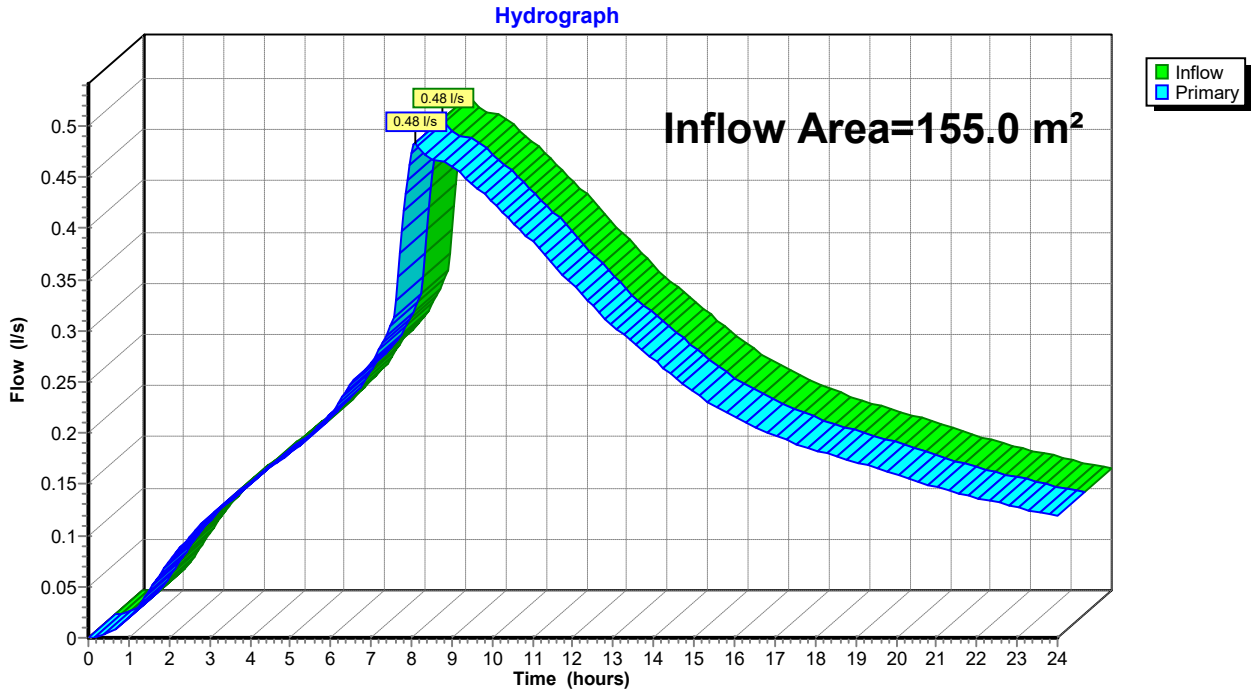


Summary for Link 6L: total post dev

Inflow Area = 155.0 m²,100.00% Impervious, Inflow Depth > 123 mm for 20% AEP +20% event
Inflow = 0.48 l/s @ 8.09 hrs, Volume= 19.1 m³
Primary = 0.48 l/s @ 8.09 hrs, Volume= 19.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: total post dev



Summary for Subcatchment 2S: Uncollected exceeding driveway

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

If a more exact TR-20 match is desired, an optional "Type II 24-hr Tabular" rainfall definition is available, which produces a peak runoff of 2099cfs, just 0.1% higher than TR-20.

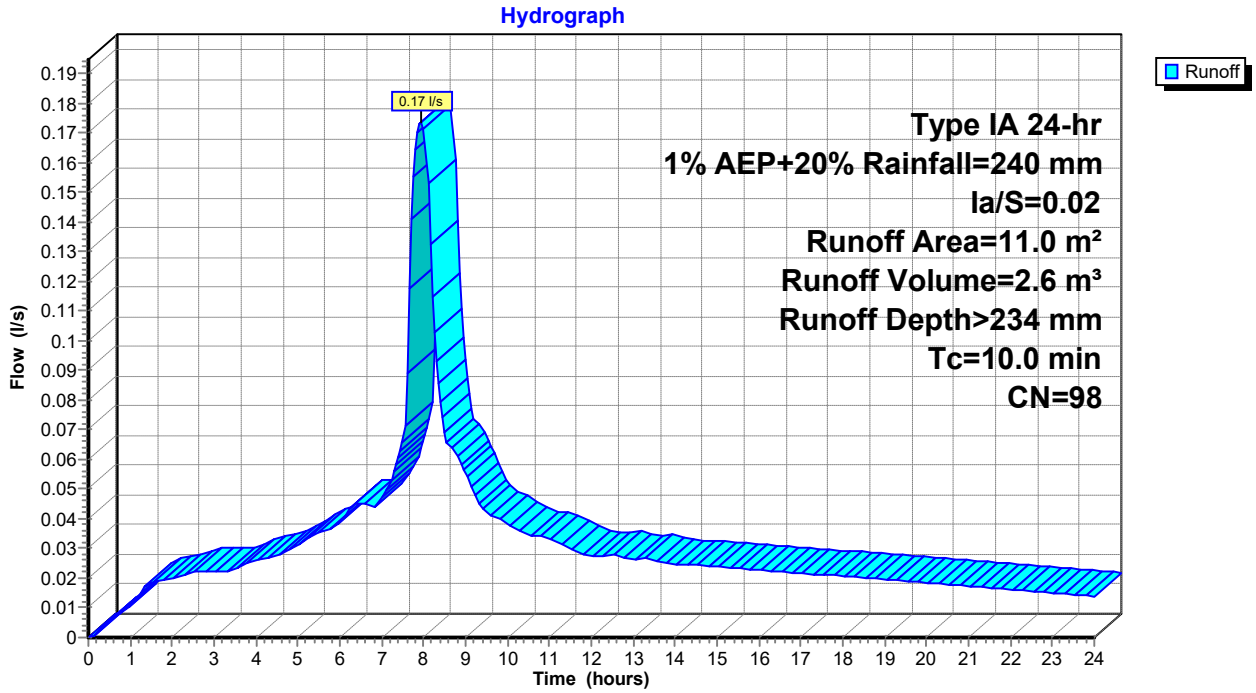
Runoff = 0.17 l/s @ 7.94 hrs, Volume= 2.6 m³, Depth> 234 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=240 mm, Ia/S=0.02

Area (m²)	CN	Description
11.0	98	Paved parking, HSG D
11.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Uncollected exceeding driveway



Summary for Subcatchment 7S: Post-Dev Roof

This subcatchment reproduces the runoff calculation from Sample Job #1 in the TR-20 manual.

Since TR-20 has no CN or Tc calculation procedures, these values have been entered directly, rather than using HydroCAD's built-in CN lookup table and Tc calculation procedures.

The resulting peak flow of 2176cfs is approximately 4% higher than the published TR-20 value of 2097cfs. This difference occurs at small Tc values due to the additional detail provided by the polynomial-based rainfall distributions used in HydroCAD.

If a more exact TR-20 match is desired, an optional "Type II 24-hr Tabular" rainfall definition is available, which produces a peak runoff of 2099cfs, just 0.1% higher than TR-20.

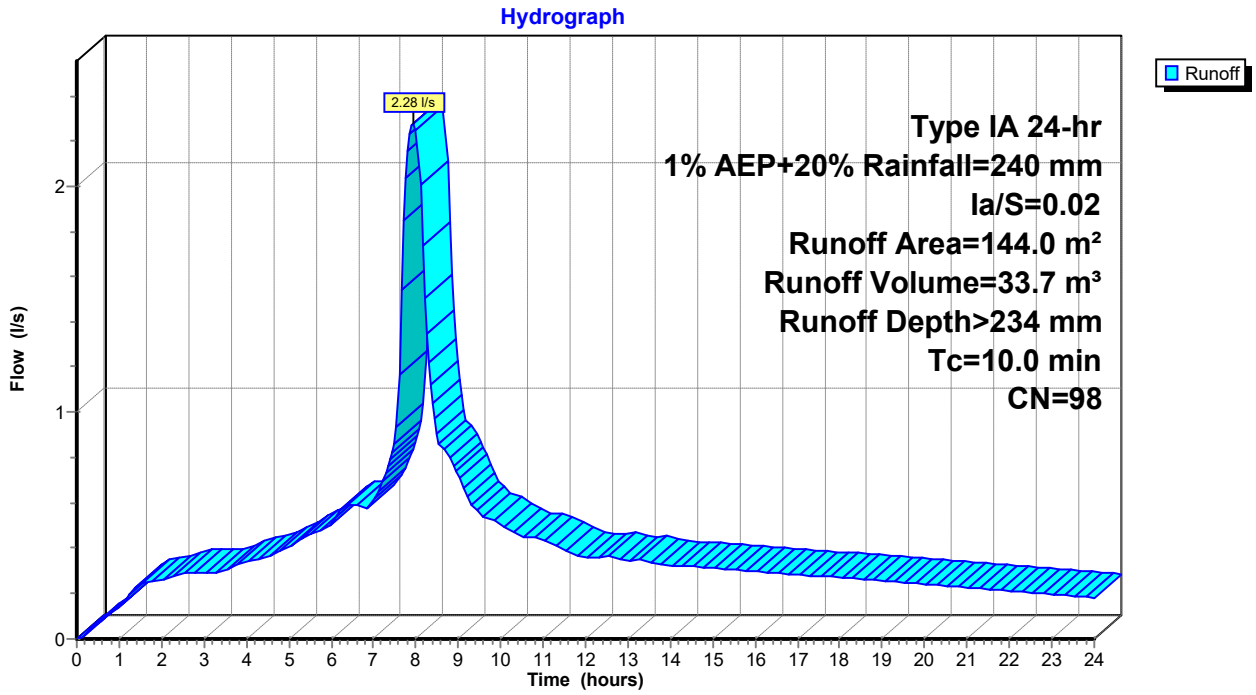
Runoff = 2.28 l/s @ 7.94 hrs, Volume= 33.7 m³, Depth> 234 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=240 mm, Ia/S=0.02

	Area (m²)	CN	Description
*	88.0	98	House roof
*	56.0	98	Shed roof
	144.0	98	Weighted Average
	144.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 7S: Post-Dev Roof



Summary for Pond 5T: Water Tank

Inflow Area = 144.0 m²,100.00% Impervious, Inflow Depth > 234 mm for 1% AEP+20% event
Inflow = 2.28 l/s @ 7.94 hrs, Volume= 33.7 m³
Outflow = 1.01 l/s @ 8.42 hrs, Volume= 32.5 m³, Atten= 56%, Lag= 29.0 min
Primary = 1.01 l/s @ 8.42 hrs, Volume= 32.5 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 0.281 m @ 8.42 hrs Surf.Area= 24.9 m² Storage= 7.0 m³

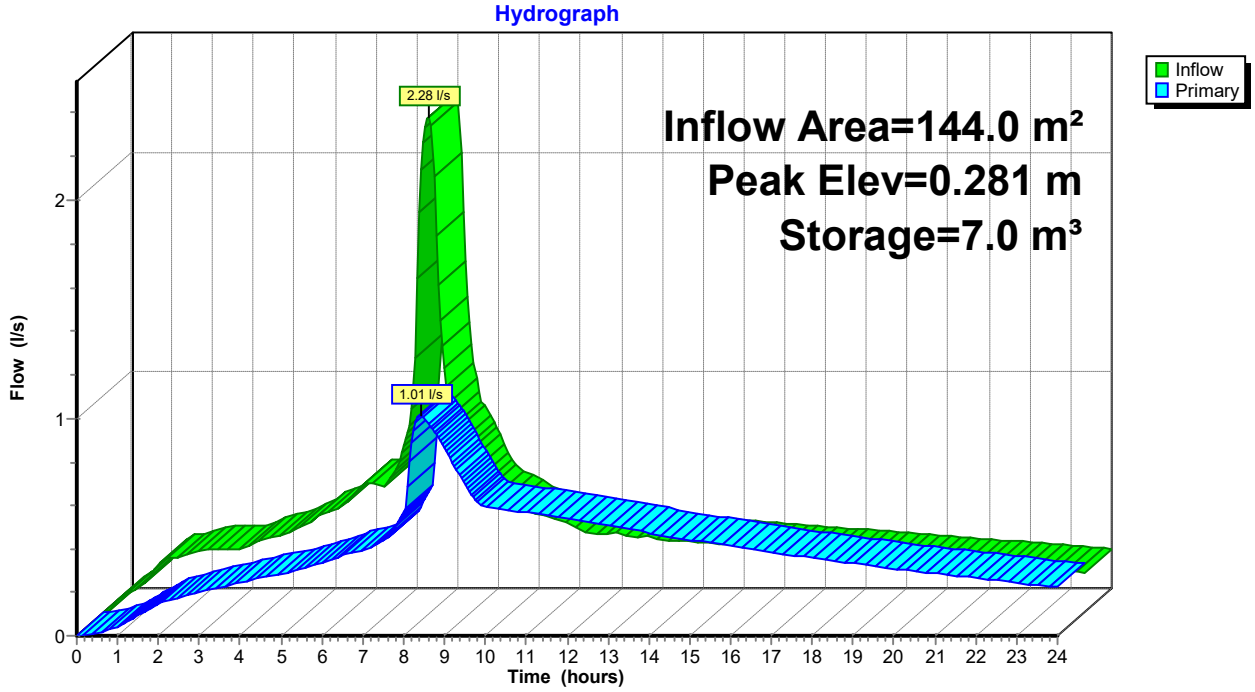
Plug-Flow detention time= 128.5 min calculated for 32.5 m³ (96% of inflow)
Center-of-Mass det. time= 101.4 min (745.7 - 644.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	70.3 m³	**3.70 mD x 2.82 mH Vertical Cone/Cylinder** x 2.32

Device	Routing	Invert	Outlet Devices	
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate**	C= 0.600
#2	Primary	0.250 m	**45 mm Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=1.00 l/s @ 8.42 hrs HW=0.281 m (Free Discharge)
└─**1=Orifice/Grate** (Orifice Controls 0.62 l/s @ 1.38 m/s)
└─**2=Orifice/Grate** (Orifice Controls 0.38 l/s @ 0.33 m/s)

Pond 5T: Water Tank



Summary for Link 6L: total post dev

Inflow Area = 155.0 m²,100.00% Impervious, Inflow Depth > 227 mm for 1% AEP+20% event
Inflow = 1.09 l/s @ 8.39 hrs, Volume= 35.1 m³
Primary = 1.09 l/s @ 8.39 hrs, Volume= 35.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: total post dev

