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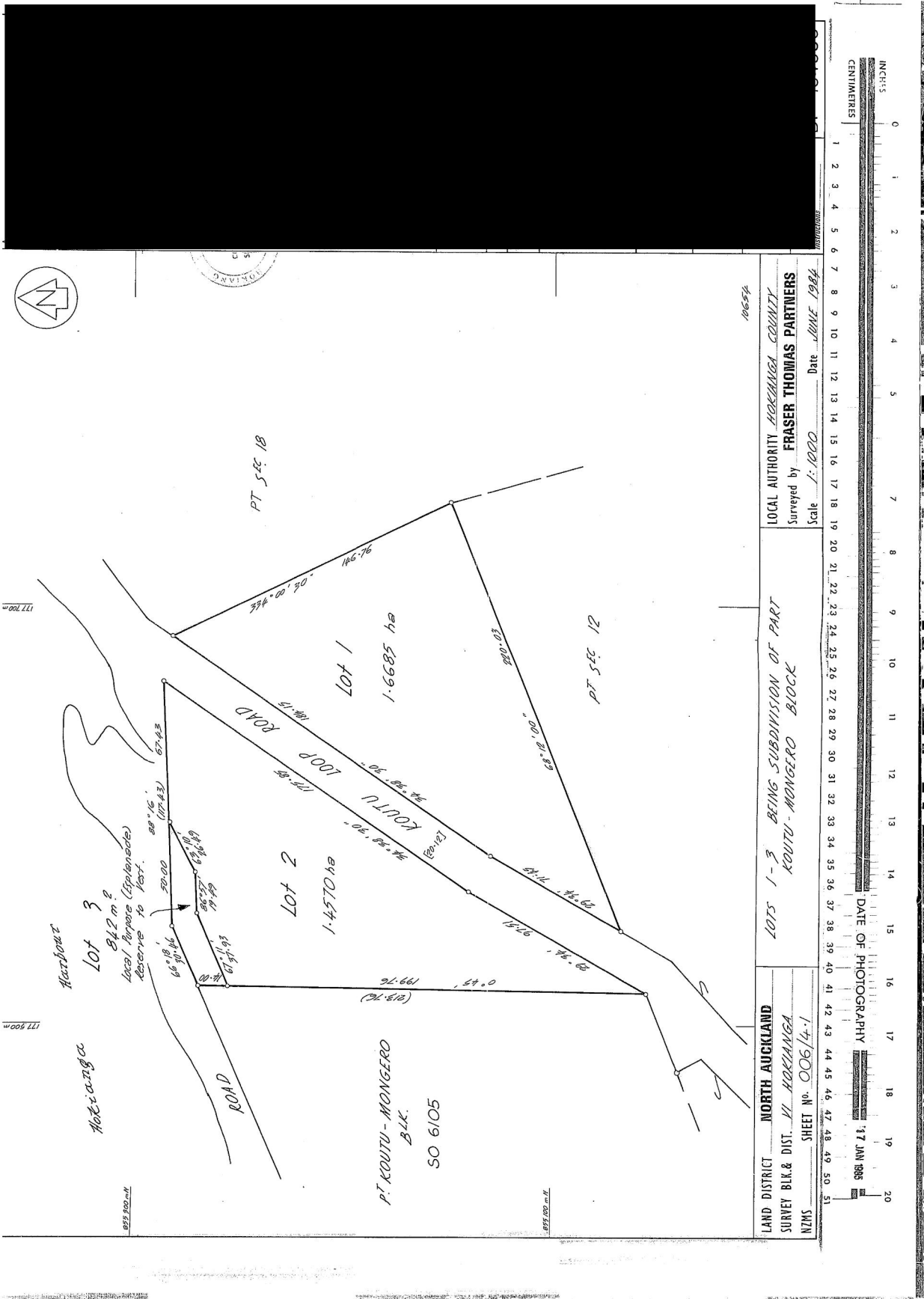
Identifier NA57C/383
Land Registration District North Auckland
Date Issued 06 December 1984

Prior References
NA2D/1002

Estate Fee Simple
Area 1.4570 hectares more or less
Legal Description Lot 2 Deposited Plan 104035
Registered Owners

Interests

12313334.2 Mortgage to ASB Bank Limited - 29.11.2021 at 3:34 pm





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Level 8, 99 Albert St, Auckland

05/10/2023

**536 Koutu Loop Road,
Opononi**

Resource Consent Application &
Assessment of Environmental Effects

Land Use Consent for a Secondary
Residential Unit

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Appendices

Appendix	Document	Author	Date
Appendix 1	Record of Title	-	21/09/2023
Appendix 2	Application Plans	Chris Tate – Architecture	07/09/2023
Appendix 3	Onsite Wastewater Design Report	Water Flow NZ Ltd	22/08/2023

Document Control Record

Version	Date	Status	Author	Reviewer
01	19/09/2023		Jackson Rowe Planner	Duncan Ross Planner and Director

1. Application Details

Address	536 Koutu Loop Road, Opononi
Appellation	Lot 2 DP 104035
Titles	Legal Description: Lot 2 Deposited Plan 104035, Record of Title: NA57C/383
Property Area	14936m ²
Territorial Authority	Far North District

2. Executive Summary

Adam Parore and Libby Price (the “applicant”) seek land use consent to construct a secondary residential dwelling at 536 Koutu Loop Road, Opononi (the “site”). This property is currently comprises a 2 bedroom dwelling and a boat-shed which is utilised as 'casual accommodation'.

The title documents and associated instruments for the property are included in **Appendix 1**. The design and layout of development has been shown within **Appendix 2** prepared by 'Chris Tate' with further technical detail provided in Onsite Wastewater Design Report prepared by 'WaterFlow NZ Ltd'.

The application is described fully within this Assessment of Environmental Effects (“AEE”). The assessment demonstrates that the proposal satisfies the relevant Assessment Criteria of the Far North District Plan (“FNDP”) and that any adverse effects on the environment associated with this proposal are less than minor. It is therefore deemed that application can proceed on a non-notified basis, and that consent should be granted.

3. Introduction

3.1. Site Description

The site has an area of 14,936m² and is located in Opononi in the Far North District. The site is an irregular triangle in shape connecting to Koutu Loop Road, and is currently occupied by an existing dwelling and separate garage, pool, deck and guest accommodation. The site is rural in nature, mainly flat and possesses dense vegetation.

The site is zoned Coastal Living (“CIZ”) under the Operative District Plan and Rural Lifestyle (“RLZ”) under the Proposed District Plan but this section does not have legal weight as of time of lodgement. The only rules that have legal effect that may be relevant to this application is EW-R12, EWR13, EW-S3, EW-S5 and IB-R1 to IB-R5.

In terms of Overlays within the PDP, the site is within the Coastal Environment and is subject to the Coastal Flood (Zone 1:50 Year Scenario), Coastal Flood (Zone 2: 100 Year Scenario), Coastal Flood (Zone 3: 100 Year + Rapid Sea Level Rise Scenario) and the River Flood Hazard Zone (100 Year ARI Event).

The site is already developed and distinguishable from the Rural Living Zone in its coastal location typified by its high amenity and close proximity to the Coast and the neighbouring Outstanding Natural Landscape and High Natural Character shown in Figure 1.0.



Figure 1. ONL and High Natural Character Coastal Landscape – 536 Koutu Loop Road

Description of Local Environment:

The site is located within the suburb of Opononi, South of the Hokianga Harbour and Northeast of the shoreside suburb of Omapere. The area is remote and rural in nature and is close to the tourist attraction of the Koutu Boulders with State Highway 12 running Southeast.

The physical qualities of the site are best described by the “rural residential development” that does not impinge on the Coastal Character “characterized by open space and vegetated landscapes, interspersed by farm buildings, structures and residential units” retaining spaciousness and rural character.

3.2. Description of the Proposal

A new 96.1m² dwelling is proposed in the southern corner of the site with timber piles used as the foundations: consisting of 1 bedroom, kitchen and bathroom facilities adjoined to the living area and spacious slatted timber decking partially covered to the North and to the South connecting the entrance to the minor dwelling. The house design is contemporary with simple clean lines and a materiality of glazing with black aluminium joinery, black cedar natural cladding blending into the surrounding natural environment. The unit is simplistic and sympathetic to the natural character of the coastal environment and wider receiving environment and is exhibited in Figure 2.0.

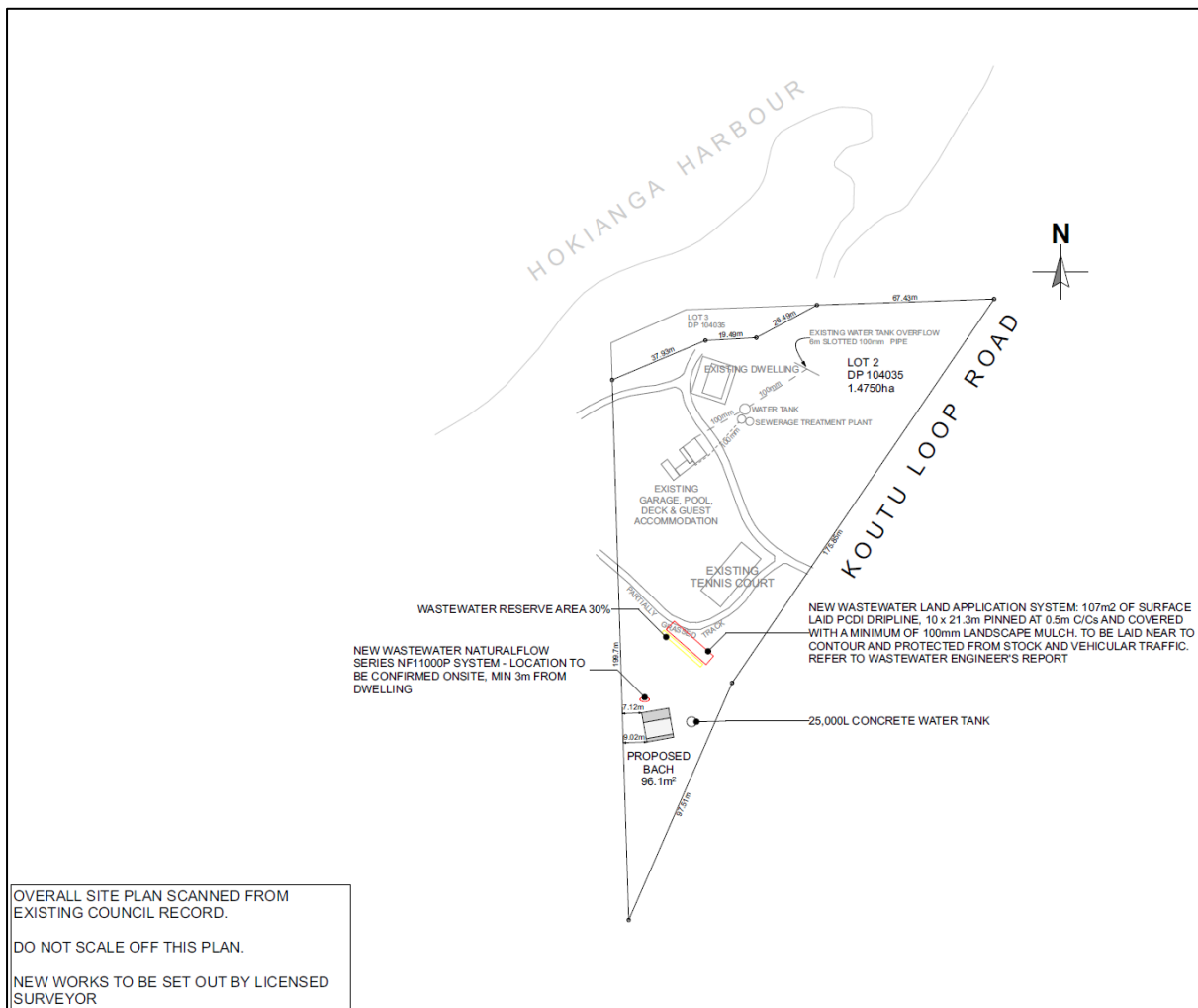


Figure 2

4. Overview of Activities and Overall Status

4.1. Reasons for Consent

Operative District Plan

Activity Sought is a **Secondary Residential Dwelling**

Rule:	Comment	Activity Status
12.4.6.1.2 FIRE RISK TO RESIDENTIAL UNITS	Proposed works are located within 20m of the drip line of any trees in a naturally occurring or deliberately planted area of scrub or shrubland, woodlot or forest.	Discretionary
10.7.5.1.1 VISUAL AMENITY	The proposed building gross floor area stated at 95.1m ² is above the permitted 50m ² threshold.	Restricted Discretionary
10.7.5.1.2 RESIDENTIAL INTENSITY	This project proposes a second residential unit on this property that has a total area of 1.4570ha. While the existing residential unit and this proposed residential unit appear to be able to achieve the required minimum of 3000m ² each for its exclusive use surrounding each unit, they will not achieve a minimum of 3.7ha each elsewhere on the property.	Discretionary

10.7.5.1.6 STORMWATER MANAGEMENT	Impermeable surfaces area exceeds the 600m ² permitted threshold.	Restricted Discretionary
10.7.5.1.7 SETBACK FROM BOUNDARIES 10.7.5.1.7 SETBACK FROM BOUNDARIES	The nearest setback from a boundary is stated at 7.91m breaches the permitted minimum of 10m.	Restricted Discretionary

Standards:

CE-S4 Coastal Hazard Area - Minimum floor levels

All activities occurring within buildings are designed so they will not be subject to inundation and/or material damage (including erosion) over a 100-year timeframe, and either:

the finished floor level of any building accommodating a vulnerable activity must be at least 500mm above the maximum water level in a 1 percent AEP flood event plus 1m sea level rise; or
 the finished floor level of any other building must be at least 300mm above the maximum water level in a 1 percent AEP flood event plus 1m sea level rise.

CE-S5 Coastal Hazard Area – Information requirements

Any application for a resource consent in relation to a site that is potentially affected by a coastal hazard must be accompanied by a report prepared by a suitably qualified and experienced engineer that addresses the matters identified in the relevant objectives, policies, performance standards and matters of control/discretion.

4.2. Overall Status

The overall activity status of the application under the **Operative District Plan** is **Discretionary**:

- 12.4.6.1.2 FIRE RISK TO RESIDENTIAL UNITS
- 10.7.5.1.2 RESIDENTIAL INTENSITY

but is **Restricted Discretionary** for the following activities:

- 10.7.5.1.1 VISUAL AMENITY
- 10.7.5.1.6 STORMWATER MANAGEMENT
- 10.7.5.1.7 SETBACK FROM BOUNDARIES 10.7.5.1.7 SETBACK FROM BOUNDARIES
- 10.7.5.1.6 Stormwater Management

The overall activity status of this application will be **Non-complying** activity when the aforementioned **Proposed District Plan** sections take legal effect: RLZ-R11 - minor residential unit.

Will be **Restricted Discretionary** Activity under the Proposed District Plan Rules and Standards once they have legal effect:

- RLZ-R1 and infringement of RLZ-S3 Setback

- NH-R3 New buildings or structures – 1 in 100 Year River Flood hazard areas
- NH-R7
- CE-R12

Will be **Discretionary Activity** under the Proposed District Plan Rules and Standards once they have legal effect:

NH-R5 – Wild fire – Buildings used for a vulnerable activity (excluding accessory buildings) - Discretionary activity

CE-R1 – Coastal environment – new building/structure - Discretionary activity

CE-R3 – Earthworks or indigenous vegetation clearance - Discretionary activity

Provisions:

Coastal Living Zone (ODP)

Objectives:

10.7.3.1 To provide for the well being of people by enabling low density residential development to locate in coastal areas where any adverse effects on the environment of such development are able to be avoided, remedied or mitigated.

10.7.3.2 To preserve the overall natural character of the coastal environment by providing for an appropriate level of subdivision and development in this zone.

Coastal Living Zone (ODP)

Policies:

10.7.4.1 That the adverse effects of subdivision, use, and development on the coastal environment are

avoided, remedied or mitigated.

10.7.4.2 That standards be set to ensure that subdivision, use or development provides adequate infrastructure and services and maintains and enhances amenity values and the quality of the environment.

10.7.4.3 Subdivision, use and development shall preserve and where possible enhance, restore and

rehabilitate the character of the zone in regards to s6 matters, and shall avoid adverse effects as far as practicable by using techniques including:

(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;

(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;

(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2, and in particular Section 2.5, and Council's "Tangata Whenua Values and Perspectives (2004)");

(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.

10.7.5.3.1 Visual Amenity – Matters of Discretion (ODP)

The following are restricted discretionary activities in the Coastal Living Zone:

(a) any new building(s); or

(b) any alteration/addition to an existing building

that do not meet the permitted activity standards in Rule 10.7.5.1.1 where the new building or building alteration/addition is located partially or entirely outside a building envelope that has been approved under a resource consent.

When considering an application under this provision the Council will restrict the exercise of its

discretion to matters relating to:

- (i) the location of the building;
 - (ii) the size, bulk, and height of the building or utility services in relation to ridgelines and natural features;
 - (iii) the colour and reflectivity of the building;
 - (iv) the extent to which planting can mitigate visual effects;
 - (v) any earthworks and/or vegetation clearance associated with the building;
 - (vi) the location and design of associated vehicle access, manoeuvring and parking areas;
 - (vii) the extent to which the building will be visually obtrusive;
 - (viii) the cumulative visual effects of all the buildings on the site;
 - (ix) the degree to which the landscape will retain the qualities that give it its naturalness, visual and amenity values;
 - (x) the extent to which private open space can be provided for future uses ;
 - (xi) the extent to which the siting, setback and design of building(s) avoid visual dominance on landscapes, adjacent sites and the surrounding environment;
 - (xii) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.
-

10.7.5.3.6 Setback from Boundaries – Matters of Discretion (ODP)

In assessing an application resulting from a breach of Rule 10.7.5.1.7 Setback from

Boundaries the matters to which the Council will restrict its discretion are:

- (a) the extent to which the building(s) reduces outlook and privacy of adjacent properties;
 - (b) the extent to which the buildings restrict visibility for access and egress of vehicles;
 - (c) the ability to mitigate any adverse effects on the surrounding environment, for example by way of planting;
 - (d) the extent to which the buildings and their use will impact on the public use and enjoyment of adjoining esplanade reserves and strips and adjacent coastal marine areas.
-

10.7.5.3.8 Stormwater Management (ODP)

The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 15% or 1,500m², whichever is the lesser.

In assessing an application under this provision the Council will restrict the exercise of its discretion to:

- (a) the extent to which building site coverage and Impermeable Surfaces contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment;
 - (b) the extent to which Low Impact Design principles have been used to reduce site impermeability;
 - (c) any cumulative effects on total catchment impermeability;
 - (d) the extent to which building site coverage and Impermeable Surfaces will alter the natural contour or drainage patterns of the site or disturb the ground and alter its ability to absorb water;
 - (e) the physical qualities of the soil type;
 - (f) any adverse effects on the life supporting capacity of soils;
 - (g) the availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites;
 - (h) the extent to which paved, Impermeable Surfaces are necessary for the proposed activity;
 - (i) the extent to which landscaping and vegetation may reduce adverse effects of run-off;
 - (j) any recognised standards promulgated by industry groups;
 - (k) the means and effectiveness of mitigating stormwater runoff to that expected by permitted activity threshold;
 - (l) the extent to which the proposal has considered and provided for climate change.
-

Assessment Criteria (Chapters 7 to 10 ODP)

Assessment Criteria

11.1 RESIDENTIAL INTENSITY (INCLUDING MINOR RESIDENTIAL UNITS) AND SCALE OF ACTIVITIES

- (a) The character and appearance of building(s) and the extent to which the effects they generate can be avoided, remedied or mitigated, consistent with the principal activity on the site and with other buildings in the surrounding area.
- (b) The siting of the building(s), decks and outdoor areas relative to adjacent properties and the road frontage, in order to avoid visual domination and loss of privacy and sunlight.
- (c) The size, location and design of open space and the extent to which trees and garden plantings are utilised for mitigating adverse effects.
- (d) The ability of the immediate environment to cope with the effects of increased vehicular and pedestrian traffic.
- (e) The location and design of vehicular and pedestrian access, on site vehicle manoeuvring and parking areas and the ability of those to mitigate the adverse effects of additional traffic.
- (f) Location in respect of the roading hierarchy – the activity should be assessed with regard to an appropriate balance between providing access and the function of the road.
- (g) The extent to which hours of operation are appropriate in terms of the surrounding environment.
- (h) Noise generation and the extent to which reduction measures are used.
- (i) Any servicing requirements and/or constraints of the site – whether the site has adequate water supply and provision for disposal of waste products and stormwater.
- (j) Whether the development is designed in a way that avoids, remedies or mitigates any adverse effects of stormwater discharge from the site into reticulated stormwater systems and/or natural water bodies.
- (k) The ability to provide adequate opportunity for landscaping and buildings and for all outdoor activities associated with the residential unit(s) permitted on the site.
- (l) The degree to which mitigation measures are proposed for loss of open space and vegetation.
- (m) Any adverse effects on the life supporting capacity of soils.
- (n) The extent of visual and aural privacy between residential units on the site and their associated outdoor spaces.
- (o) Visual effects of site layout on the natural character of the coastal environment.
- (p) The effect on indigenous vegetation and habitats of indigenous fauna.
- (q) The extent to which the activity may cause or exacerbate natural hazards or may be adversely affected by natural hazards, and therefore increase the risk to life, property and the environment.

(r) Proximity to rural production activities and potential for incompatible and reverse sensitivity effects.

(s) When establishing a minor residential unit (i) the extent of the separation between it and the principal dwelling; (ii) the degree to which the design is compatible with the principal dwelling; (iii) the extent that services can be shared; (iv) the extent that the floor plan is fit for purpose; (v) the extent to which landscaping is utilised to mitigate adverse effects; (vi) the design of the building in regard to how easily it may be removed from a site should circumstances change.

(t) With respect to access to a State Highway (SH) that is a Limited Access Road, the effects on the safety and/or efficiency on any SH and its connections to the local roading network and the provision of written approval from the NZ Transport Agency

11.3 STORMWATER MANAGEMENT

(a) The extent to which building site coverage and impermeable surfaces result in increased stormwater runoff and contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment.

(b) The extent to which Low Impact Design principles have been used to reduce site impermeability.

(c) Any cumulative effects on total catchment impermeability.

(d) The extent to which building site coverage and impermeable surfaces will alter the natural contour or drainage patterns of the site or disturb the ground and alter its ability to absorb water.

(e) The physical qualities of the soil type.

(f) Any adverse effects on the life supporting capacity of soils.

(g) The availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites.

(h) The extent to which paved, impermeable surfaces are necessary for the proposed activity.

(i) The extent to which landscaping may reduce adverse effects of run-off.

(j) Any recognised standards promulgated by industry groups.

(k) The means and effectiveness of mitigating stormwater run-off to that expected by the permitted activity threshold.

(l) The extent to which the proposal has considered and provided for climate change.

(m) The extent to which stormwater detention ponds and other engineering solutions are used to mitigate any adverse effects.

11.5 VISUAL AMENITY IN THE GENERAL COASTAL, SOUTH KERIKERI INLET AND COASTAL LIVING ZONES

(a) The size, bulk, height and siting of the building or addition relative to skyline, ridges, areas of indigenous vegetation and habitat of indigenous fauna, or outstanding landscapes and natural features.

(b) The extent to which landscaping of the site, and in particular the planting of indigenous trees, can mitigate adverse visual effects.

(c) The location and design of vehicle access, manoeuvring and parking areas.

(d) The means by which permanent screening of the building from public viewing points on a public road, public reserve, or the foreshore may be achieved.

(e) The degree to which the landscape will retain the qualities that give it naturalness and visual value as seen from the coastal marine area.

(f) Where a building is in the coastal environment and it is proposed to be located on a ridgeline, whether other more suitable sites should be used and if not, whether landscaping, planting or other forms of mitigation can be used to ensure no more than minor adverse visual effects on the coastal environment.

(g) The extent to which the activity may cause or exacerbate natural hazards or may be adversely affected by natural hazards, and therefore increase the risk to life, property and the environment.

(h) the extent to which private open space can be provided for future uses ;

(i) the extent to which the siting, setback and design of building(s) avoid visual dominance on landscapes, adjacent sites and the surrounding environment; (j) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.

11.6 SETBACK FROM BOUNDARIES

(a) Where there is a setback, the extent to which the proposal is in keeping with the existing character and form of the street or road, in particular with the external scale, proportions and buildings on the site and on adjacent sites.

(b) The extent to which the building(s) intrudes into the street scene or reduces outlook and privacy of adjacent properties.

(c) The extent to which the buildings restrict visibility for vehicle manoeuvring.

(d) The ability to mitigate any adverse effects on the surrounding environment, for example by way of street planting.

(e) The extent to which provision has been made to enable and facilitate all building maintenance and construction activities to be contained within the boundaries of the site.

12.4.7 ASSESSMENT CRITERIA – Natural Hazards

In addition to these matters, the Council shall also apply the relevant assessment matters set out below:

(a) the degree to which the activity may cause or exacerbate natural hazards or may be adversely affected by natural hazards, and therefore increase the risk to life, property and the environment;

(b) the extent to which the activity may adversely affect cultural and spiritual values;

(c) the degree to which any proposed activity is compatible with the maintenance of the natural character of the environment;

- (d) the effects on amenity values, landscape values, heritage features and indigenous habitats and ecosystems, especially in the coastal environment and associated with rivers, lakes, wetlands and their margins;
- (e) the effects on natural features, such as beaches, sand dunes, mangrove areas, wetlands and vegetation, which have the capacity to protect land and structures from natural hazards;
- (f) any adverse effects on water quality;
- (g) any adverse effects of the activity on any archaeological sites;
- (h) any effect on the life supporting capacity of soil;
- (i) the potential impact of sea level rise;
- (j) in respect of fire risk to residential units: (i) the degree of fire risk to dwellings arising from the proximity of the woodlot or forest and vice versa; and (ii) any mitigation measures proposed to reduce the fire risk; and (iii) the adequacy of the water supply; and (iv) the accessibility of the water supply to fire service vehicles.
- (k) any cumulative adverse effects on the environment arising from the activity;
- (l) the potential need for ongoing maintenance and the potential effects of such maintenance;
- (m) the effects of any proposed option to either avoid, remedy or mitigate the effects of identified natural hazards;
- (n) the ability to monitor the effects of the activity and take remedial action (e.g. removal) if necessary;
- (o) the extent to which any proposed activity or works intended to provide protection from natural hazards will result in the effects of the natural hazard being transferred to another location

NB: These sections of the PDP have not taken legal effect but assist in Assessment of Environmental Effects for a Discretionary activity in the ODP.

Rural Lifestyle Zone (PDP)

Objectives

RLZ-01

The Rural Lifestyle Zone is used predominantly for low density residential activities and small scale farming activities that are compatible with the rural character and amenity of the zone.

RLZ-02

The predominant character and amenity of the Rural Lifestyle Zone is characterised by:

low density residential activities;

small scale farming activities with limited buildings and structures;
smaller lot sizes than anticipated in the Rural Production Zone;
a general absence of urban infrastructure;
rural roads with low traffic volumes;
areas of vegetation, natural features and open space.

RLZ-O3

The role, function and predominant character and amenity of the Rural Lifestyle Zone is not compromised by incompatible activities.

RLZ-O4

Land use and subdivision in the Rural Lifestyle Zone does not compromise the effective and efficient operation of primary production activities in the adjacent Rural Production Zones.

Rural Lifestyle Zone (PDP)

Policies

RLZ-P1

Enable activities that will not compromise the role, function and predominant character and amenity of the Rural Lifestyle Zone, while ensuring their design, scale and intensity is appropriate to manage adverse effects in the zone, including:

- a) low density residential activities;
- b) small scale farming activities;
- c) home business activities;
- d) visitor accommodation; and
- e) small scale education facilities.

RLZ-P2

Avoid activities that are incompatible with the role, function and predominant character and amenity of the Rural Lifestyle Zone because they are:

contrary to the density anticipated for the Rural Lifestyle zone;
predominately of an urban form or character;

primary production activities, such as intensive indoor primary production, that generate adverse amenity effects that are incompatible with rural lifestyle living; or

commercial, rural industry or industrial activities that are more appropriately located in a Settlement Zone or an urban zone.

RLZ-P3

Avoid where possible, or otherwise mitigate, reverse sensitivity effects from sensitive and other non-productive activities on primary production activities in the adjacent Rural Production Zone.

RLZ-P4

Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:

consistency with the scale and character of the rural lifestyle environment;

location, scale and design of buildings or structures;

at zone interfaces:

any setbacks, fencing, screening or landscaping required to address potential conflicts;

the extent to which adverse effects on adjoining or surrounding sites are mitigated and internalised within the site as far as practicable;

the capacity of the site to cater for on-site infrastructure associated with the proposed activity;

the adequacy of roading infrastructure to service the proposed activity;

managing natural hazards;

any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity; and

any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Coastal Environment (PDP)

Objectives

CE-O1

The natural character of the coastal environment is identified and managed to ensure its long-term preservation and protection for current and future generations.

CE-O2

Land use and subdivision in the coastal environment:

preserves the characteristics and qualities of the natural character of the coastal environment;

is consistent with the surrounding land use;

does not result in urban sprawl occurring outside of urban zones;

promotes restoration and enhancement of the natural character of the coastal environment; and

recognises tangata whenua needs for ancestral use of whenua Māori.

CE-O3

Land use and subdivision in the coastal environment within urban zones is of a scale that is consistent with existing built development.

Policies

CE-P1

Identify the extent of the coastal environment as well as areas of high and outstanding natural character using the assessment criteria in APP1- Mapping methods and criteria.

CE-P2

Avoid adverse effects of land use and subdivision on the characteristics and qualities of the coastal environment identified as:

outstanding natural character;

ONL;

ONF.

CE-P3

Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of land use and subdivision on the characteristics and qualities of the coastal environment not identified as:

outstanding natural character;

ONL;

ONF.

CE-P4

Preserve the visual qualities, character and integrity of the coastal environment by:

consolidating land use and subdivision around existing urban centres and rural settlements; and

avoiding sprawl or sporadic patterns of development.

CE-P5

Enable land use and subdivision in urban zones within the coastal environment where:
there is adequacy and capacity of available or programmed development infrastructure; and
the use is consistent with, and does not compromise the characteristics and qualities.

CE-P6

Enable farming activities within the coastal environment where:
the use forms part of the values that established natural character of the coastal environment; or
the use is consistent with, and does not compromise the characteristics and qualities.

CE-P7

Provide for the use of Māori Purpose zoned land and Treaty Settlement land in the coastal environment where:

the use is consistent with the ancestral use of that land; and
the use does not compromise any identified characteristics and qualities.

CE-P8

Encourage the restoration and enhancement of the natural character of the coastal environment.

CE-P9

Prohibit land use and subdivision that would result in any loss and/or destruction of the characteristics and qualities in outstanding natural character areas.

CE-P10

Manage land use and subdivision to preserve and protect the natural character of the coastal environment, and to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:

- a) the presence or absence of buildings, structures or infrastructure;
- b) the temporary or permanent nature of any adverse effects;
- c) the location, scale and design of any proposed development;
- d) any means of integrating the building, structure or activity;
- e) the ability of the environment to absorb change;
- f) the need for and location of earthworks or vegetation clearance;
- g) the operational or functional need of any regionally significant infrastructure to be sited in the particular location;
- h) any viable alternative locations for the activity or development;

- i) any historical, spiritual or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6;
- j) the likelihood of the activity exacerbating natural hazards;
- k) the opportunity to enhance public access and recreation;
- l) the ability to improve the overall quality of coastal waters; and
- m) any positive contribution the development has on the characteristics and qualities.

Natural hazards (PDP)

Objectives

NH-O1

The risks from natural hazards to people, infrastructure and property are managed, including taking into account the likely long-term effects of climate change, to ensure the health, safety and resilience of communities.

NH-O2

Land use and subdivision does not increase the risk from natural hazards or risks are mitigated, and existing risks are reduced where there are practicable opportunities to do so.

NH-O3

New infrastructure is located outside of identified natural hazard areas unless:

it has a functional or operational need to be located in that area;

it is designed to maintain its integrity and function, as far as practicable during a natural hazard event; and

adverse effects resulting from that location on other people, property and the environment are mitigated.

NH-O4

Natural defences, such as natural systems and features, and existing structural mitigation assets are protected to maintain their functionality and integrity and used in preference to new structural mitigation assets to manage natural hazard risk.

Policies

NH-P1

Map or define areas that are known to be subject to the following natural hazards, taking into account accepted estimates of climate change and sea level rise:

- a) flooding;
- b) coastal erosion;
- c) coastal inundation; and
- d) land instability.

NH-P2

Manage land use and subdivision so that natural hazard risk is not increased or is mitigated, giving consideration to the following:

- a) the nature, frequency and scale of the natural hazard;
- b) not increasing natural hazard risk to other people, property, infrastructure and the environment beyond the site;
- c) the location of building platforms and vehicle access;
- d) the use of the site, including by vulnerable activities;
- e) the location and types of buildings or structures, their design to mitigate the effects and risks of natural hazards, and the ability to adapt to long term changes in natural hazards;
- f) earthworks, including excavation and fill;
- g) location and design of infrastructure;
- h) activities that involve the use and storage of hazardous substances;
- i) aligning with emergency management approaches and requirements;
- j) whether mitigation results in transference of natural hazard risk to other locations or exacerbates the natural hazard; and
- k) reduction of risk relating to existing activities.

NH-P3

Take a precautionary approach to the management of natural hazard risk associated with land use and subdivision.

NH-P4

Manage land use and subdivision so that the functionality and long-term integrity of existing structural mitigation assets are not compromised or degraded.

NH-P5

Require an assessment of risk prior to land use and subdivision in areas that are subject to identified natural hazards, including consideration of the following:

- a) the nature, frequency and scale of the natural hazard;

- b) the temporary or permanent nature of any adverse effect;
- c) the type of activity being undertaken and its vulnerability to an event, including the effects of climate change;
- d) the consequences of a natural hazard event in relation to the activity;
- e) any potential to increase existing risk or creation of a new risk to people, property, infrastructure and the environment within and beyond the site and how this will be mitigated;
- f) the design, location and construction of buildings, structures and infrastructure to manage and mitigate the effects and risk of natural hazards including the ability to respond and adapt to changing hazards;
- g) the subdivision/site layout and management, including ability to access and exit the site during a natural hazard event; and .
- h) the use of natural features and natural buffers to manage adverse effects.

River Flood hazard

NH-P6

Manage land use and subdivision in river flood hazard areas to protect the subject site and its development, and other property, by requiring:

- a) subdivision applications to identify building platforms that will not be subject to inundation and material damage (including erosion) in a 1 in 100 year flood event;
- b) a minimum freeboard for all buildings designed to accommodate vulnerable activities of at least 500mm above the 1 in 100 year flood event and at least 300mm above the 1 in 100 year flood event for other new buildings;
- c) commercial and industrial buildings to be constructed so they will not be subject to material damage in a 1 in 100 year flood event;
- d) buildings within a 1 in 10 Year River Flood Hazard Area to be designed to avoid material damage in a 1 in 100 year flood event;
- e) storage and containment of hazardous substances so that the integrity of the storage method will not be compromised in a 1 in 100 year flood event;
- f) earthworks (other than earthworks associated with flood control works) do not divert flood flow onto surrounding properties and do not reduce flood plain storage capacity within a 1 in 10 Year River Flood Hazard area;
- g) the capacity and function of overland flow paths to convey stormwater flows safely and without causing damage to property or the environment is retained, unless sufficient capacity is provided by an alternative method; and
- h) the provision of safe vehicle access within the site.

Coastal hazard

NH-P7

Manage new land use and subdivision in coastal hazard areas so that:

- a) new subdivision avoids locating building platforms within High Risk Coastal Hazard areas and building platforms should be located outside other coastal hazard areas where alternative locations are available and it is practicable to do so;
- b) new buildings containing vulnerable activities are not located within High Risk Coastal Hazard areas unless:
 - i. there is no other suitable location available on the existing site;
 - ii. hazard risks can be mitigated without the need for hard protection structures.
- c) where a building or building platform is located with a coastal hazard area, it should be designed and constructed such that:
 - i) the building platform will not be subject to inundation and / or material damage (including erosion) over a 100-year timeframe; and either
 - ii) the finished floor level of any building accommodating a vulnerable activity must be at least 500mm above the maximum water level in a 1 percent AEP flood event plus 1m sea level rise; or
 - iii) the finished floor level of any other building must be at least 300mm above the maximum water level in a 1 percent AEP flood event plus 1m sea level rise.
- d) hazard risk is not transferred to, or increased on, other properties;
- e) buildings, building platforms, access and services are located and designed to minimise the need for hard protection structures;
- f) safe vehicle access within the site is provided; and
- g) services are located and designed to minimise the risk of natural hazards.

Assessment Criteria: Setback (ODP)

Matters of Discretion:

Where the standard is not met, matters of discretion are restricted to:

- the character and amenity of the surrounding area;
- screening, planting and landscaping on the site;
- the design and siting of the building or structure with respect to privacy and shading;
- natural hazard mitigation and site constraints;

the effectiveness of the proposed method for controlling stormwater;
the safety and efficiency of the current or future access, egress on site and the roading network; and
the impacts on existing and planned public walkways, reserves and esplanades.

Assessment Criteria – Natural and Physical Resources (ODP)

12.4.7 Assessment Criteria

The matters set out in s104 and s105, and in Part II of the Act, apply to the consideration of all resource

consents for land use activities.

In addition to these matters, the Council shall also apply the relevant assessment matters set out below:

(a) the degree to which the activity may cause or exacerbate natural hazards or may be adversely affected

by natural hazards, and therefore increase the risk to life, property and the environment;

(b) the extent to which the activity may adversely affect cultural and spiritual values;

(c) the degree to which any proposed activity is compatible with the maintenance of the natural character of

the environment;

(d) the effects on amenity values, landscape values, heritage features and indigenous habitats and ecosystems, especially in the coastal environment and associated with rivers, lakes, wetlands and their

margins;

(e) the effects on natural features, such as beaches, sand dunes, mangrove areas, wetlands and vegetation, which have the capacity to protect land and structures from natural hazards;

(f) any adverse effects on water quality;

(g) any adverse effects of the activity on any archaeological sites;

(h) any effect on the life supporting capacity of soil;

(i) the potential impact of sea level rise;

(j) in respect of fire risk to residential units:

(i) the degree of fire risk to dwellings arising from the proximity of the woodlot or forest and vice versa;

and

(ii) any mitigation measures proposed to reduce the fire risk; and

(iii) the adequacy of the water supply; and

(iv) the accessibility of the water supply to fire service vehicles.

(k) any cumulative adverse effects on the environment arising from the activity;

(l) the potential need for ongoing maintenance and the potential effects of such maintenance;

(m) the effects of any proposed option to either avoid, remedy or mitigate the effects of identified natural

hazards.

(n) the ability to monitor the effects of the activity and take remedial action (e.g. removal) if necessary;

(o) the extent to which any proposed activity or works intended to provide protection from natural hazards will result in the effects of the natural hazard being transferred to another location.

5. Permitted Baseline

The permitted baseline refers to the effects of permitted activities on the subject site, and in this instance, there are several permitted activities provided for within the zone, however as the proposal seeks to provide a minor dwelling on less than 2ha off land already containing a sleepout and existing dwelling (which is a non-complying activity) the relevance of the permitted baseline to this development is limited.

In addition to the above, the lawfully established environment, being existing or previously consented activities and site features, can provide a useful comparison for existing effects against effects of the proposed development. In this instance, the previously approved resource consent 2160316-RMALUC & 2140324-RMALUC.

The above matters form a baseline for which effects of the proposal should be considered, and therefore those activities which require assessment are generally limited to those occurring in addition to, or above, the permitted or consented level.

6. Assessment of Environmental Effects

The proposed built-form is positioned to minimize any further vegetation removal and earthworks with the site intended for the owners of the property to be able to have some space away from the rest of the property and teen-age children.

10.7.5.1.6 STORMWATER MANAGEMENT

Based overall impermeable coverages, the new 96.1m² unit will catch all roof rainwater and house in a 25,000-litre concrete water tank which will be used for the household water and firefighting as required. This demonstrates compliance to reduce impermeability through employment of Low Impact Urban Design thereby reducing cumulative effects on impermeability within the catchment.

The water tank overflow will be connected to a level, 10 metre long, 100 mm perforated drainage pipe in a 200 mm x 600 mm deep trench, with gap 60 min drainage material to disperse of any additional storm water on site. The physical quality of the soil exhibits 300mm of topsoil over silty clay loam classed with a moderate field soil structure in *Appendix 3 – Wastewater Design Report*.

With the dwelling constructed on timber piles the effects on the life supporting capacity of the soil will be less than minor. In terms of new proposed impermeable areas, they are confined to that of the new minor dwelling and landscaping will offset effects of runoff as the development has considered the existential impacts of climate change and designed a built-form to accord with the effects of inundation, sea level rise and erosion.

10.7.5.1.7 SETBACK FROM BOUNDARIES 10.7.5.1.7 SETBACK FROM BOUNDARIES

On the western boundary the proposed unit will infringe the 10-metre setback rule by 2.88m and 0.98m. The building platform has been selected to avoid any further vegetation removal and to minimize earthworks. The proportion of the minor dwelling will ensure maintenance of the character and external scale of the streetscape in line with the other small rural dwellings and vacant parcels on adjacent lots. The terrain and topography of the site and its natural characteristics containing trees that protrude 5m above the roading network results in negligible outlook, overlooking and privacy concerns onto the street and neighbours as redundant. The location of the building in the corner sufficiently distanced from any accessway will cause no effects on visibility for vehicle manoeuvring and there are no concerns that construction activity will encroach on the site boundaries.

The owners acknowledge this risk and wish to continue with the above measures in place.

10.7.5.1.1 VISUAL AMENITY

This rule has been triggered by the size of the new minor dwelling being above the 50m² GFA threshold. In mitigation the proposed building will blend effortlessly into its native surroundings with its simple, elegant forms, natural dark stained timber with black joinery and roofing. The proposed unit will not be visible from the road and almost invisible from the sea. The building envelope will not appear overly bulky as it is one storey and creates visual interest with its vertical cedar shiplap cladding and sloping roof form. The positioning of the site close to the road boundary will mean that the natural values of the Outstanding Natural Character of the Coastline is not detracted from as the built form is screened by the indigenous fauna with the colour palette making the dwelling visually imperceptible from the coastline. The effects of the activity will further be reduced with the site replanted with native vegetation improving and enhancing them immediate and greater environment: the building will be permanently screened by the dense overgrowth and not visually observable from public viewing points on the road network or foreshore. The landscape will retain its natural qualities as the proposed dwelling will only cover 0.64% of the total site area and further effects from natural hazards will not be

caused or exacerbated by the development in not substantially increasing risks to life, property and the environment. The extent of open space on the property is maintained for the amenity of residents and the siting and natural characteristics of the site mean that visual dominance on the landscape and neighbouring properties is negligible.

Under the Proposed District Plan and rezoning to Rural Lifestyle Zone the objectives of the zone are fulfilled as the applicant seeks and accessory dwelling unit achieving the low-density form anticipated within the zone, with the ***Application Plans in Appendix 2*** demonstrating sufficient infrastructure capacity and ability to mitigate natural hazards and not detract from the Outstanding Natural Landscape (ONL) as it is sufficiently screened by vegetation and in design.

There is natural regenerating native bush within 20 m of the proposed new unit. In mitigation there will be a 25,000-litre concrete water tank to collect rainwater and be available to help extinguish any fire. The tank will be fitted with a coupling to be able to directly connect firefighting equipment too. The risk of fire causing loss of life, damage and destruction to indigenous fauna is ultimately mitigated sufficing the objectives and policies through reducing risk, improved property owner awareness of the risk which they accept and wish to continue with the above measures in place.

The site area of 1.4570ha. While the existing residential unit and this proposed residential unit appear to be able to achieve the required minimum of 3000m² each for its exclusive use surrounding each unit, they will not achieve a minimum of 3.7ha each elsewhere on the property: something the property owners accept as the dwelling proposed is ancillary for the use of their children and there is sufficient space and separation between the units for amenity at each dwelling.

7. Notification Assessment (s95)

This section contains the assessment made with respect to the Public and Limited Notification determinations (under s95A and s95B of the RMA) to be made for the application.

7.1. Public Notification Assessment (s95A)

Step 1 - Mandatory in certain circumstances

The application does not meet any of the criteria under s95A(3), therefore public notification is not required by Step 1.

Step 2 - Precluded in certain circumstances

The application does not meet either of the criteria under s95A(5), therefore public notification is not precluded by Step 2.

Step 3 (Part 1) - Required by rule

The application does not require public notification under s95A(8), therefore Step 3 of the Public Notification assessment is to be continued below

Step 3 (Part 2) - Effects on wider environment assessment (s95D)

In accordance with s95D, the application will not have and is not likely to have adverse effects on the environment that are more than minor, therefore public notification is not required by Step 3.

- The proposed dwelling is screened by the dense indigenous vegetation and is in an area of remoteness because of the topography and coastal environment. The size of the small format building will be negligible from the coast and public realm as examined in previous sections.

Step 4 - Special circumstances

It is considered that no special circumstances warranting public notification of the application exist, therefore public notification is not required by Step 4.

7.2. Limited Notification Assessment (s95B)

Step 1 - Certain affected groups and affected persons must be notified

No affected groups and/or affected persons have been identified in relation to the application (under s95B(2) and s95B(3)), therefore, no limited notification is required under Step 1.

Step 2 - Precluded in certain circumstances

The application does not meet either of the criteria under s95B(6), therefore limited notification is not precluded by Step 2.

Step 3 - Affected persons assessment (s95E)

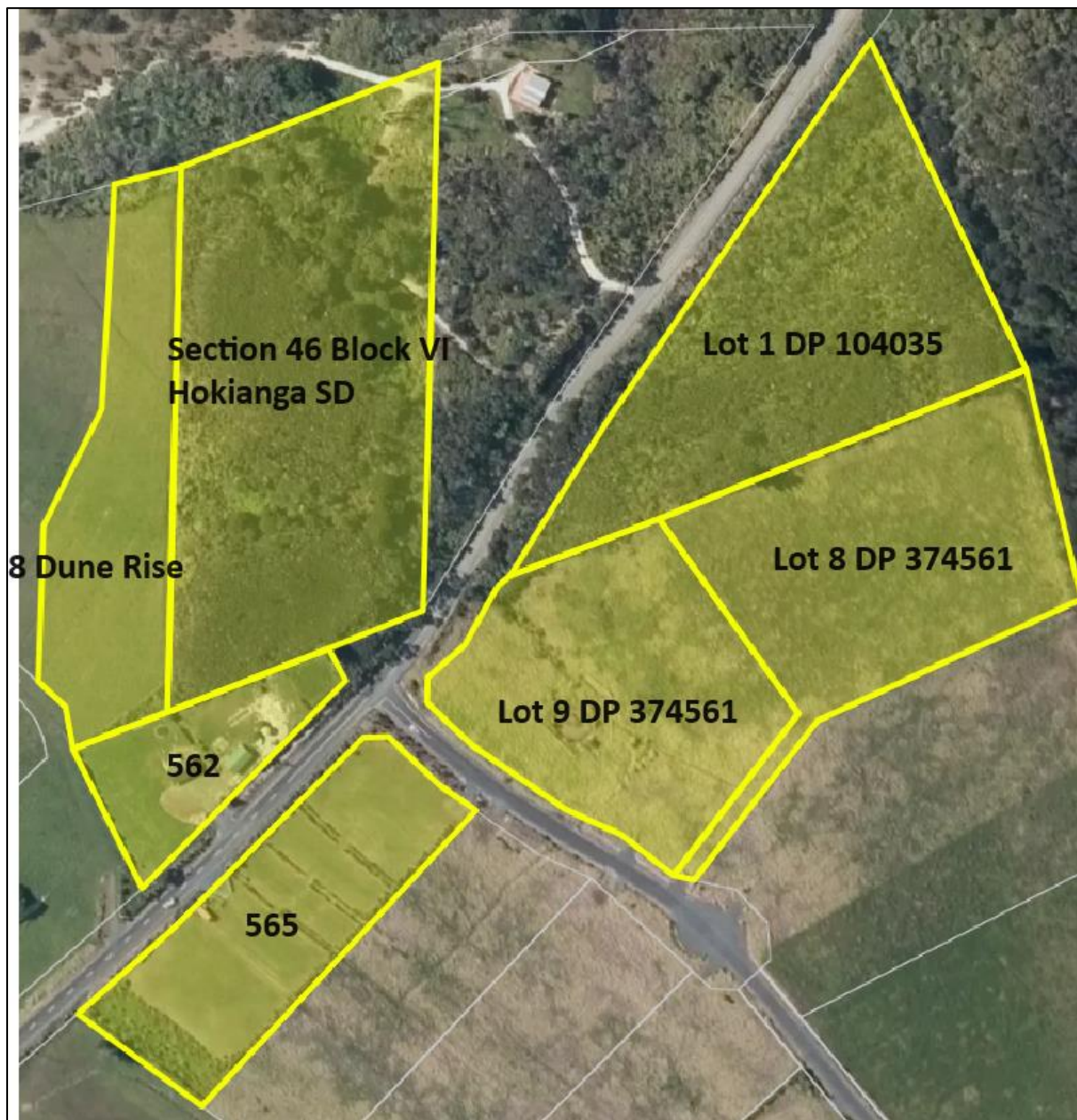


Figure 3. Affected persons assessment

Lot 1 DP104035: The effects on this property will be less than minor as the properties are separated by a two laned roadway approximately 6m in width and the steeper topography of the subject site and dense indigenous vegetations means that the proposed development will not be perceptible

Lot 8 DP374561: The subject site is sufficiently separated from this Lot and access is provided for by a different road therefore the effects will be less than minor as the property is adjoined by two other Lots.

Lot 9 DP 374561: this property is sufficiently separated by vegetation and is also constrained by the roadway: perception of the subject site shown in Figure 4.0 (below) showing effects will be less than minor.



Figure 4. View from Lot 9 DP 374561

565 Koutu Bay Road: This site is Southwest and undeveloped: thereby effects on development will be less than minor on this site.

562 Koutu Bay Road: This is the only neighbouring site that contains buildings: containing a building and garage. The buildings are sufficiently separated but any effects of development will be less than minor and unobservable from this property.

8 Dune Rise: This site is vacant and development effects will not be perceptible as there is another neighbouring property covered in vegetation that is between the subject.

Section 46 Block VI Hokianga SD: This site is closest to the proposed minor residential dwelling as development infringes on the setback boundary at this property but as a vacant parcel that is covered in canopy the effects will be less than minor.

The application does not meet either of the criteria under s95B(7)-(8) and does not result in any persons considered to be affected persons in accordance with s95E, therefore limited notification is not required by Step 3.

Step 4 - Special circumstances

It is considered that no special circumstances warranting limited notification of the application exist, therefore no one else is to be notified under Step 4.

7.3. Notification Conclusion

The steps set out in s95A and s95B of the RMA were followed to determine whether public or limited notification is warranted for this application. Overall, it is considered that no circumstances warranting public or limited notification exist, therefore **the application can be processed on a non-notified basis.**

8. Section 104 Assessment

The application does not meet any of the criteria under s95A(3), therefore public notification is not required by Step 1.

8.1. Actual and Potential Effects

Matters to be considered by the Council when assessing an application for consent under Section 104 of the RMA include, subject to Part II, any actual or potential effects on the environment of allowing that activity.

In this instance, an assessment of the actual and potential effects has been provided in relation to each AUP section above and has concluded that the adverse effects of the proposal are no more than minor in relation to the wider environment in each instance.

The proposed development is conventional in terms of its layout, form and scale, and will fit comfortably within the established setting.

The design of the dwellings is consistent with the intended built form of the zone and will not adversely affect the character of the area or zone. The proposal requires minimal earthworks to establish the building platforms. Any construction effects are expected to be minimal, noting conditions of consent can be employed to ensure this.

The site although subject to any natural hazards shown in the PDP viewer, and no new hazards will be created because of the proposed works. Appropriate infrastructure and servicing connections can be provided to facilitate the scale of development proposed. In addition to the above, the development will provide additional residential capacity support the needs of the community while generally achieving compliance with the associated standards to ensure an appropriate scale and form of development.

The main effects that may be caused by this proposal will be during the construction phase of the project which are temporary in nature. For example, there will be earth excavation machinery on site. This will potentially cause some noise and dust, there will also be potential for general builders' noise during construction. There is parking on the site, so any traffic/parking disturbance will be to a minimum.

Potential positive effects created by this proposal include the employment opportunities for all those involved with the project and having a result to be a showcase of the various people's skills who are involved with the project. In addition, the site will be replanted with native vegetation improving and enhancing them immediate and greater environment. And ultimately a stunning home for the owners

8.2. Non-complying Activities (s104D)

The overall activity status of this application is **Non-complying** activity under the **Proposed District Plan** RLZ-R11 - minor residential unit but a Discretionary land-use consent under the **Operative District Plan**. The effects of the minor residential unit are less than minor and will only impact on those on-site as assessed in Section 6 in both the plans.

8.3. Conclusion

The nature of this proposal is within the district plan guidelines for residential activity. The proposal is as sympathetic and respectful to its local and greater environment as could be hoped for. This is a

robust application where any effects, both now and in the future, will be minor in nature and it is requested that the application proceed without further delay.

9. Relevant RMA Sections

Further sections of the RMA considered relevant to the assessment of this application have been assessed below.

9.1. Part 2

Section 5 - Purpose

The proposal delivers a high standard of design that will provide a high level of amenity to future residents of the dwelling increasing the functionality of their large section.

Given the characteristics of the site and the surrounding area, it is considered that the dwelling represents sustainable management of the site's natural and physical resources and ensures that it meets the reasonably foreseeable needs of future generations as it is constructed on piles mitigating natural hazard effects and adequate acceptance and mitigation of the fire hazard risk.

Overall, the assessment of effects demonstrates that the effects of the proposed development will be adequately mitigated, managed or avoided, so that they are consistent with the expectation for development within the zone.

Section 6 - Matters of National Importance

There are no matters of national importance relevant to this proposal.

Section 7 - Other Matters

The proposal is consistent with the purpose of the RMA because a high standard of on-site amenity will be achieved, while not detracting from the amenity values of the local area and coastal landscapes.

Section 8 - Treaty of Waitangi

The granting of resource consent for the proposal would not be contrary to the principles of the Treaty of Waitangi, as there are no historical events or circumstances relevant to the Crown's partnership with Tangata Whenua, connected to the use of the site.

Part 2 Summary

Overall, the application is considered to meet the relevant provisions of Part 2 of the RMA as the proposal achieves the purpose of the RMA being the sustainable management of natural and physical resources.

9.2. Consent Conditions

As noted in the proposal, the following conditions are offered in relation to accidental discovery.

Accidental Discovery Protocol

If, at any time during site works, potential koiwi (human remains) or archaeological artefacts are discovered, then the following discovery protocol shall be followed:

- a. All earthworks will cease in the immediate vicinity (at least 10m from the site of the discovery) while a suitably qualified archaeologist is consulted to establish the type of remains

b. If the material is identified by the archaeologist as human, archaeology or artefact, earthworks must not be resumed in the affected area (as defined by the archaeologist). The consent holder must immediately advise Compliance Monitoring NW1, Heritage New Zealand Pouhere Taonga and Police (if human remains are found) and arrange a site inspection with these parties.

c. If the discovery contains koiwi, archaeology or artefacts of Maori origin, representatives from those Iwi groups with mana whenua interest in the area are to be provided information on the nature and location of the discovery.

d. The consent holder shall not recommence works until approved by Compliance Monitoring NW1.

Section 108 of the RMA enables Council to impose conditions of consent on any granted consent. The applicant is willing to accept conditions of consent appropriate to the scale and nature of the proposed activities.

Should consent be granted, it is requested that draft conditions of consent are provided to the applicant for review prior to the release of the consent.

10. Conclusion

Schedule 4 Section 7 (a)-(f) of the RMA 1991 denotes that an AEE must take address a selection of matters in assessment of a land-use consent.

In summarising these matters, the application as residential in nature will have no adverse effects on those in the neighbourhood and wider community, no effects to landscape or visually to the immediate and larger environment due to the design and form of the proposed development and its screening by the indigenous vegetation complementing and enhancing the local area. In terms of vegetation, none will be removed but there is potential to disturb temporarily plant and animal habitats during the construction period with no other special values impacted by the proposal. There are also no effects cause by contaminants discharged and no hazardous substances will be used, or installations erected.

For example, there will be earth excavation machinery on site. This will potentially cause some noise and dust disturbance to people living in the immediate vicinity of the property. There will also be potential for general builders' noise during construction. There is parking on the site, so any traffic/parking disturbance will be to a minimum. In terms of mitigating effects from construction and associated Earthworks it is important to note:

- The building will be built on poles limiting earthworks and disturbance to land: the design of building enhancing the immediate environment through materiality and colour.

The following best practise earthworks measures will be put in place:

- Silt control
- Earthworks management plan
- Construction will only be carried out between the hours of 8.00am and 5.30pm

It is our opinion that as a Discretionary activity with regard tor potential or actual adverse effects on the environment that will be less than minor, the proposal is consistent with the objectives and policies of the Operative District Plan and the Proposed District Plan in the Coastal Living Zone. It is our view that the application should proceed without Public and Limited Notifications satisfying S95A, 95B, 95D and 95E and can be lawfully assessed.

Reasons for Approval

Resource consent should be granted to this proposal, given that an assessment under s104(1)(a) of the RMA has shown that the actual and potential effects of the proposal will be acceptable. This is because the proposed dwelling will provide a high standard of onsite amenity and adequate private open space.

In accordance with an assessment under s104(1)(b) of the RMA, the proposal will be consistent with the relevant statutory documents. This application is consistent with Part 2 of the RMA because a good standard of onsite amenity will be achieved from the proposed development and adverse effects will be less than minor. Finally, given general compliance with relevant statutory documents, overall we are of the opinion that this application will satisfy the statutory obligations under Section 104 and 104B of the Resource Management Act 1991, consent can therefore be granted accordingly.

AEE prepared by:



Jackson Rowe

Planner

021 968 404

jackson@civix.co.nz

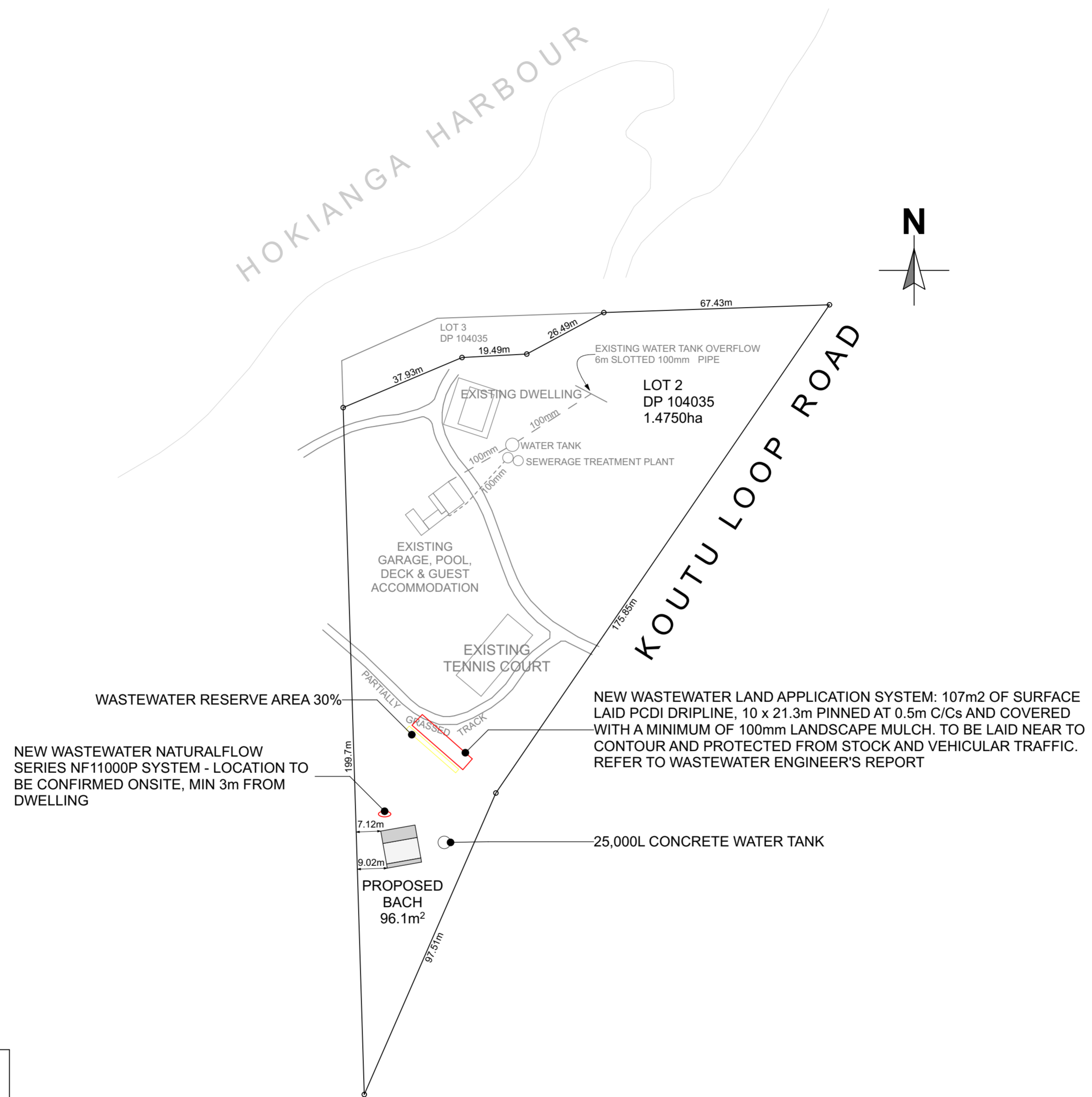
Civix Limited – Planning, Engineering and Surveying



536 KOUTU LOOP ROAD OPONONI

NEW BACH
FOR ADAM PARORE & LIBBY PRICE

LAYOUT	SHEET TITLE
A1	PLANS
A101	LOCATION PLAN
A102	SPECIFIC SITE PLAN
A103	FLOOR PLAN
A104	FOUNDATION & FLOOR FRAMING PLAN
A105	BRACING & CONNECTIONS PLAN
A106	PLUMBING & DRAINAGE PLAN
A107	ROOF FRAMING PLAN
A2	SECTIONS
A201	SECTION A
A202	SECTION B
A3	ELEVATIONS
A301	ELEVATIONS - NORTH AND EAST
A302	ELEVATIONS - SOUTH AND WEST
A4	DETAILS
A401	DETAILS 1 - JOINERY HEAD
A402	DETAILS 2 - JOINERY JAMB
A403	DETAILS 3 - JOINERY SILL
A404	DETAILS 4 - ENTRY DOOR HEAD & JAMB
A405	DETAILS 5 - ENTRY DOOR SILL
A406	DETAILS 6 - CLADDING
A407	DETAILS 7 - ROOF
A408	DETAILS 8 - E3 AND HWC
A409	DETAILS 9 - SUBFLOOR
A5	WINDOW AND DOOR SCHEDULE
A501	WINDOW SCHEDULE
D	ENGINEERING DETAILS BY T. DRUPSTEEN
SHEET D	D2 NORTH WALL PORTAL FIXINGS
	D5 STEEL BRACING PORTAL



OVERALL SITE PLAN SCANNED FROM EXISTING COUNCIL RECORD.

DO NOT SCALE OFF THIS PLAN.

NEW WORKS TO BE SET OUT BY LICENSED SURVEYOR

REFER TO ONSITE WASTEWATER DESIGN REPORT BY WATERFLOW NZ LTD



PROJECT:
NEW BACH
ADAM PARORE & LIBBY PRICE

ADDRESS:
536 KOUTU LOOP RD
OPONONI

DESIGNED BY: CT
DRAWN BY: PNY
REVISION #:
ISSUED: 12/09/23

SHEET TITLE:
LOCATION PLAN
SCALE:
1:1000@ A2

SHEET:
A101

SITE INFORMATION

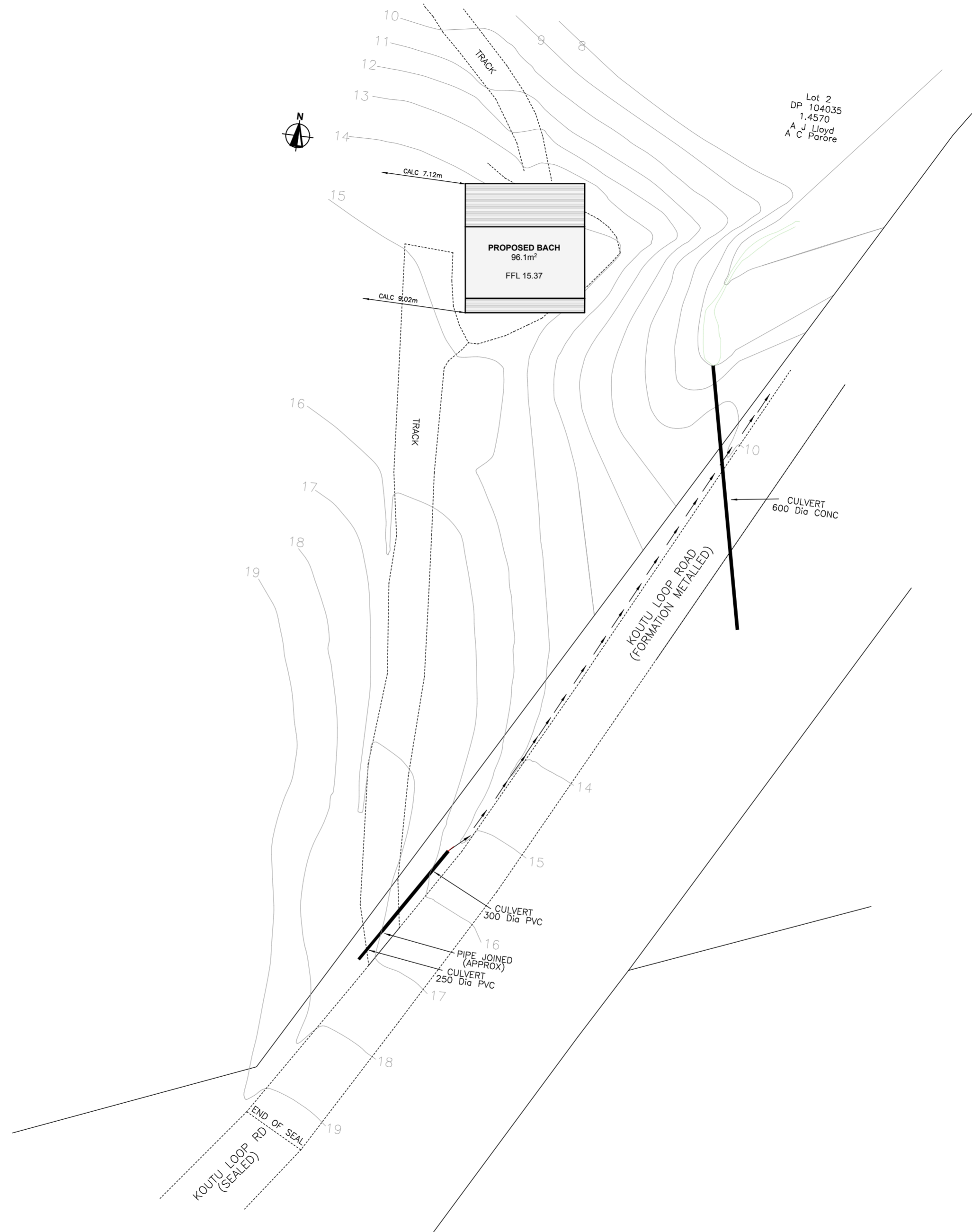
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536 KOUTU LOOP ROAD, OPONONI 0473

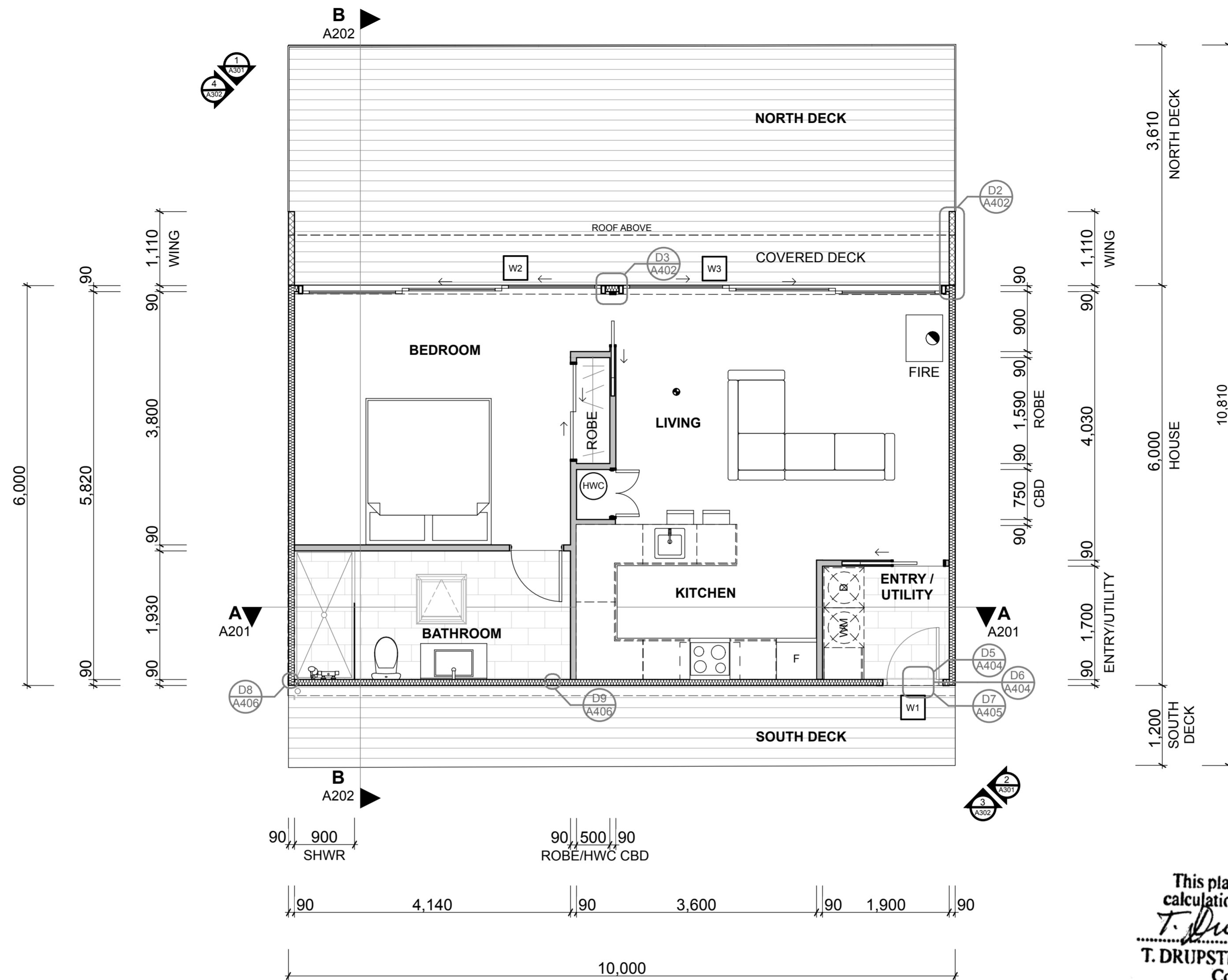
LEGAL DESCRIPTION:
LOT 2 DEPOSITED PLAN 104035

CT NUMBER: NA57C/383

CLIMATE ZONE: 1
EARTHQUAKE ZONE: 1
CORROSION ZONE: D - HIGH
RAINFALL INTENSITY: 70-80mm
WIND REGION: A
WIND ZONE: VERY HIGH

FNDC DISTRICT PLAN ZONE:
COASTAL LIVING





This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng, ImPE
 Consulting Engineer

FLOOR PLAN KEY

- 90 x 45mm SG8 TIMBER STUD WALL FRAMING WITH 20mm CAVITY AND BULK INSULATION
- 90 x 45mm SG8 TIMBER STUD WALL FRAMING WITH GIB WALL LININGS (SELECTED WALL TILES IN BATHROOM)
- WING WALLS: 90 x 45mm SG8 TIMBER STUD WALL FRAMING WITH 20mm CAVITY BOTH SIDES

NOTES

- EXTRACTION: KITCHEN**
RANGEHOOD WITH MIN FLOW RATE 50L/sec VENTED TO EXTERNAL WALL
- EXTRACTION: BATHROOM, ENTRY/UTILITY**
MIN FLOW RATE 25L/sec, VENTED TO EXTERNAL WALL
- HOT WATER SUPPLY**
FROM 180L HOT WATER CYLINDER

- FIRE**
METRO WOOD BURNER. USE SUPPLIED MATCHING FLUE AND CHIMNEY IN BLACK.
- SMOKE ALARM**
TO BE LOCATED 3m FROM BEDROOM DOOR AND ON ESCAPE ROUTE.
- DOWNLIGHTS**
RECESSED LIGHTING MUST BE IC OR IC-F RATED AND INSTALLED AS PER AS/NZS 60598.2.2

- H1 COMPLIANCE**
CEILING INSULATION: PINK BATTS SKILLION ROOF R4.5
- WALL INSULATION: PINK BATTS WALL R2.4 90mm
- FLOOR INSULATION: EXPOL BLACK R1.8 60mm
- GLAZING: THERMALHEART LOW-E4 ARGON DOUBLE-GLAZING Ug 1.10



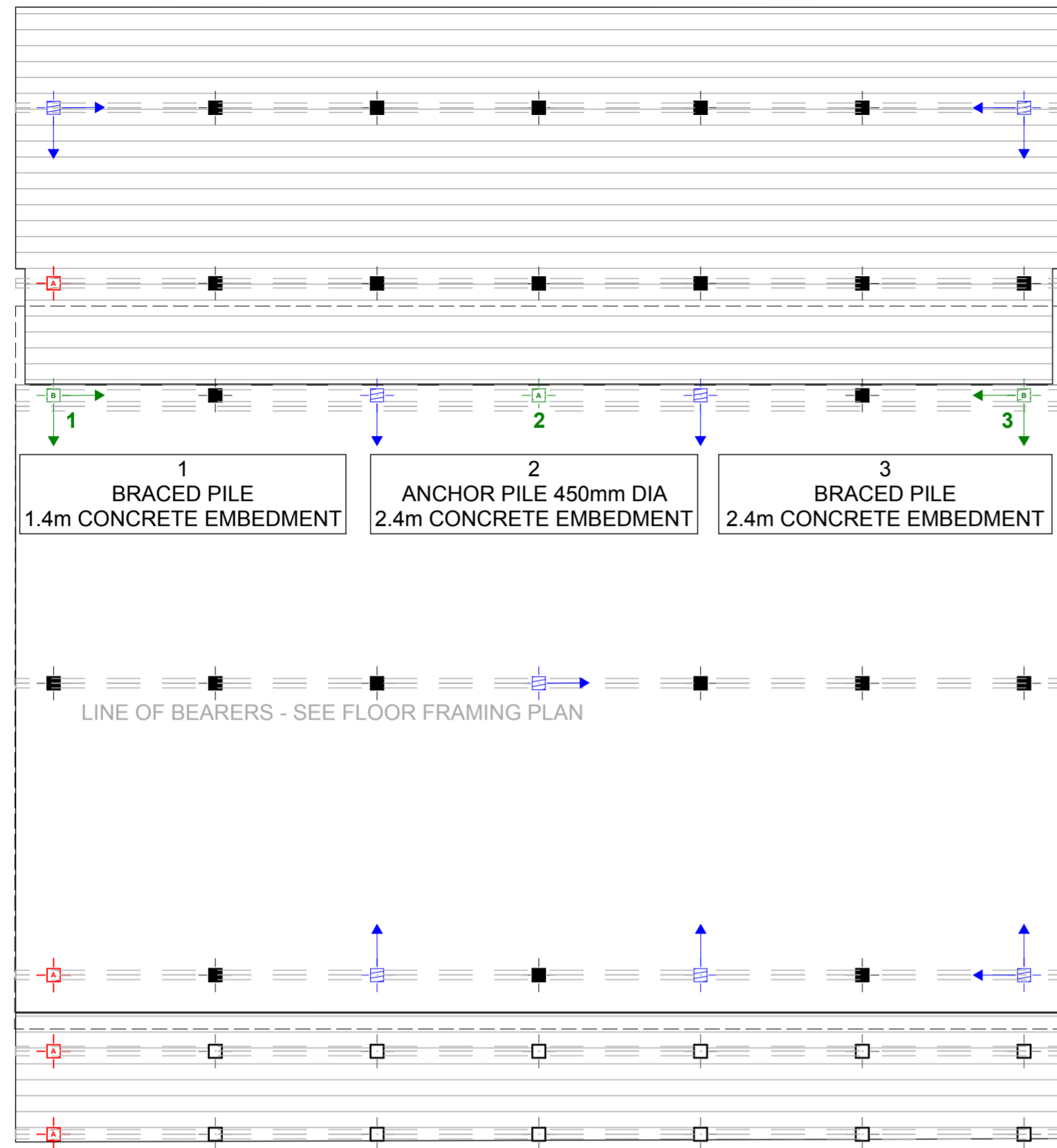
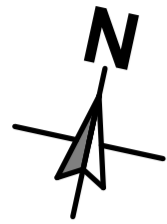
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DESIGNED BY: CT
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 REVISION #:
 ISSUED: 7/09/23

SHEET TITLE:
FLOOR PLAN
 SCALE:
 1:50 @ A2






SHEET:
A103

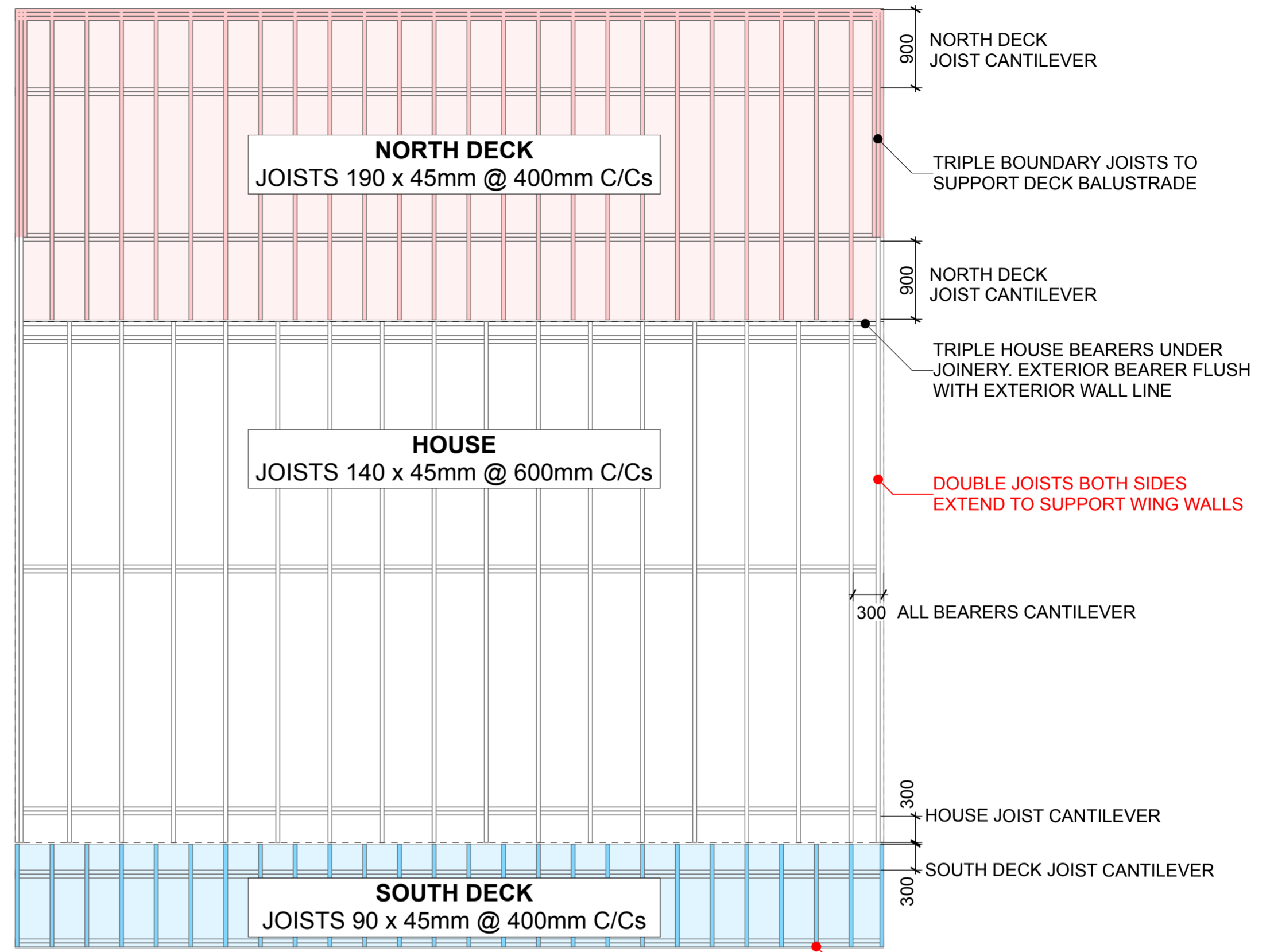


1 FOUNDATION PLAN 1:50

PILE KEY

NOTE: DEPTH OF PILES IS DEPTH BELOW CLEARED GROUND LEVEL/BOTTOM OF TOPSOIL.

-  125mm SQ ORDINARY TIMBER PILES SET IN 300 DIA x 450mm DEEP 20MPa CONCRETE
-  125mm SQ H5 ORDINARY TIMBER PILES SET IN 450 DIA x 450mm DEEP 20MPa CONCRETE
-  ANCHOR PILES AS PER NZS 3604, SET IN 450 DIA x 900mm DEEP 20MPa CONCRETE UNLESS OTHERWISE INDICATED ON PLAN. CONNECTED TO BEARER ONLY.
-  BRACED PILES AS PER NZS 3604, SET IN 450 DIA x 450mm DEEP CONCRETE. DIAGONAL SUBFLOOR BRACES TO BE 90 x 75mm - ARROWHEAD DENOTES HIGHEST END.
-  SPECIAL PILES - SEE PLAN



2 FLOOR FRAMING PLAN 1:50

FLOOR FRAMING NOTES

ALL FIXINGS TO BE STAINLESS STEEL AND AS PER NZS 3604

FLOOR OF HOUSE SEPARATE FROM DECKS

BEARERS
 NORTH DECK & HOUSE H3.2 SG8 2/140 x 45mm TIMBER BEARERS
 SOUTH DECK H3.2 SG8 2/90 x 45mm TIMBER BEARERS

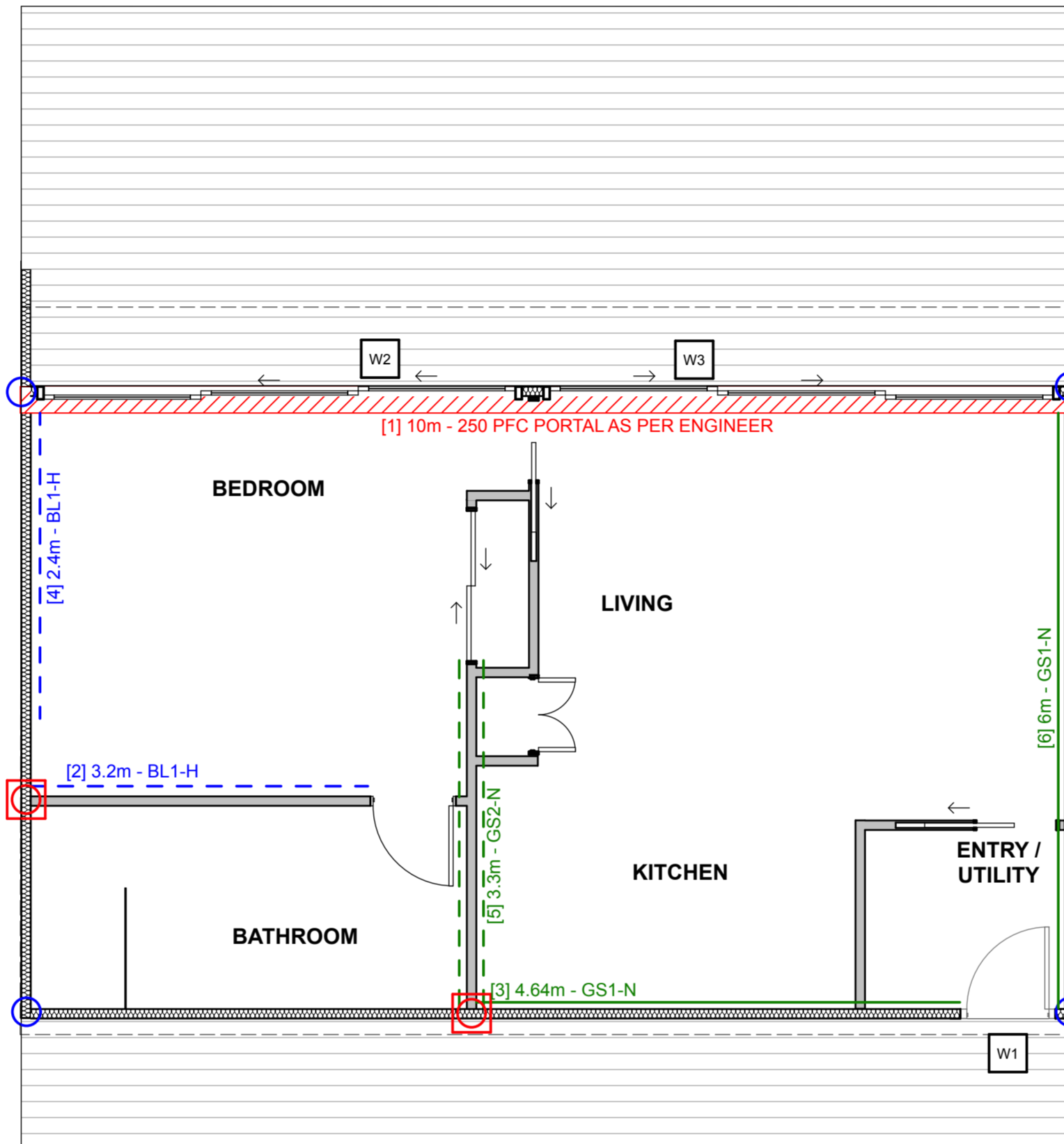
JOISTS
 NORTH DECK H3.2 SG8 190 x 45mm TIMBER JOISTS @ 400mm C/Cs
 HOUSE H3.2 SG8 140 x 45mm TIMBER JOISTS @ 600mm C/Cs
 SOUTH DECK H3.2 SG8 90 x 45mm TIMBER JOISTS @ 400mm C/Cs

CANTILEVERS AS PER PLAN

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
 T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer

DECKING
 TIMBER SLAT DECKING TO SILVER OFF

FLOORING
 21mm THICK H3.2 PLYWOOD



This plan complies with my 23/31 calculations where applicable.
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 T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer

BRACING - AS PER ENGINEER'S DESIGN

[REFERENCE NUMBER] - MIN LENGTH - TYPE

- ▨ **PORTAL** 10m LONG CONTINUOUS 250 PFC STEEL PORTAL AS PER ENGINEER'S DESIGN
- **GS1-N** GIB STANDARD PLASTERBOARD ONE SIDE
- - - **GS2-N** GIB STANDARD PLASTERBOARD TWO SIDES
- - - **BL1-H** GIB BRACELINE ONE SIDE, WITH PANEL HOLD-DOWN FIXINGS

TREAT ALL LENGTHS OF GIB BRACING ELEMENTS AS MINIMUMS. REFER TO GIB SPECIFICATION AND INSTALLATION MANUAL.

FOR PORTAL ELEMENTS, REFER TO ENGINEERING DRAWINGS SHEET D

TOP PLATES

ALL TOP PLATES INCLUDING INTERNAL BRACING WALLS TO BE 140 x 45mm

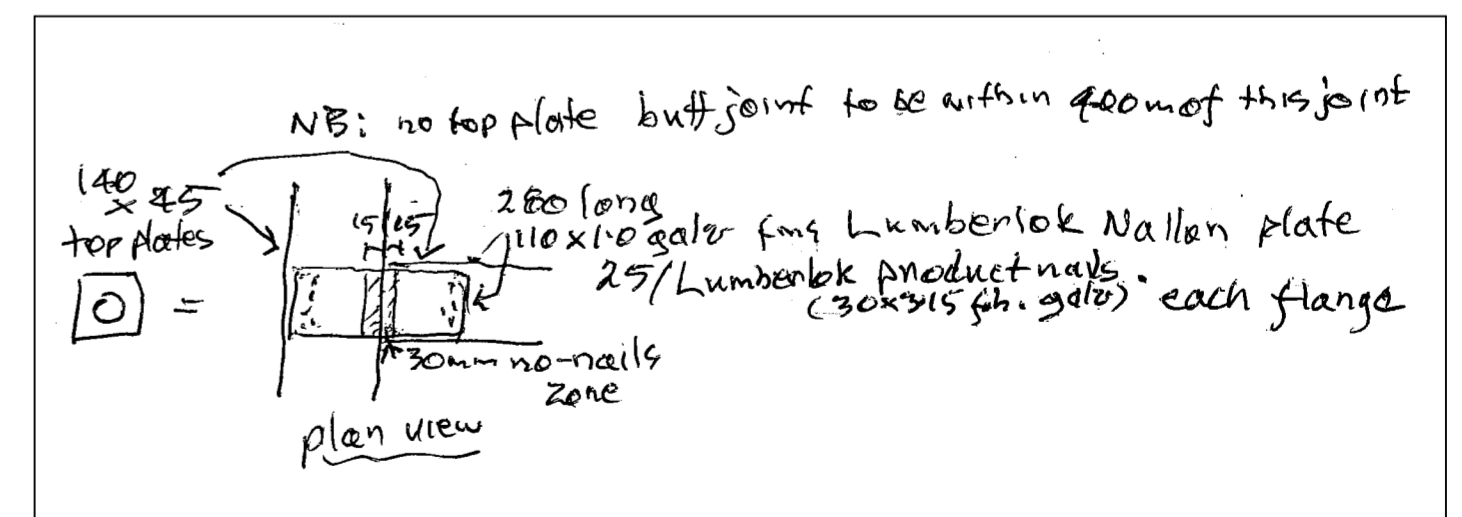
FIXINGS

ALL EXTERNAL FIXINGS TO BE STAINLESS STEEL

TOP PLATE CONNECTORS

GALVANISED LUMBERLOK PLATE-LOK 6kN CONNECTOR AT TOP PLATE CORNERS AND T-JUNCTIONS (USE ALSO AT ALL TOP PLATE BUTT JOINTS).

◻ 280 LONG 110 x 1.0 STAINLESS STEEL FMS LUMBERLOK NAILON PLATE WITH 25/LUMBERLOK PRODUCT NAILS (30 x 315 FMS STAINLESS STEEL) EACH FLANGE. REFER ENGINEER'S DETAIL D3 THIS SHEET.

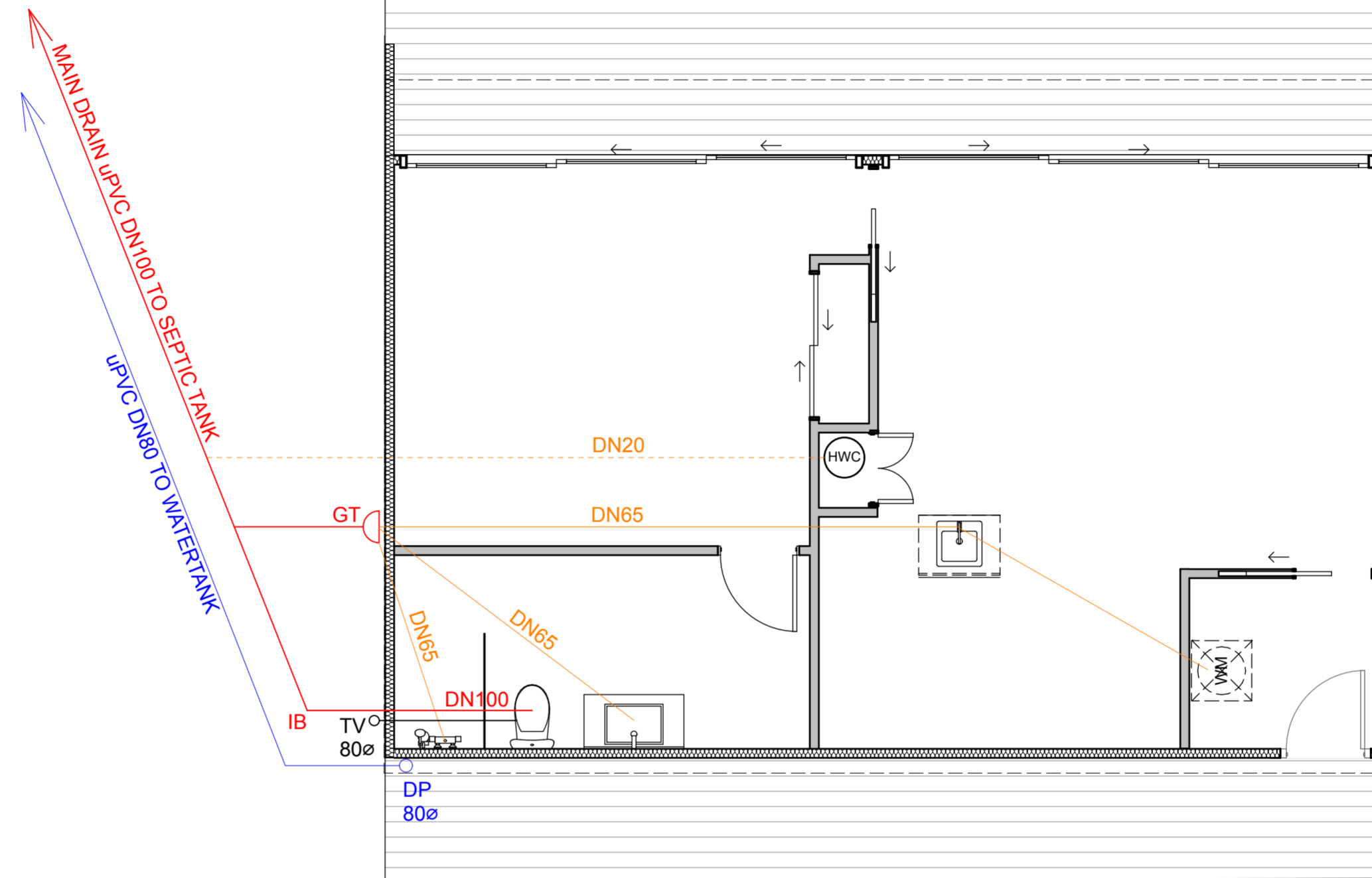


ENGINEER'S DETAIL D3
 TOP PLATE CONNECTION DETAIL AT EXTERIOR WALL ENDS OF BRACES [2] AND [5]

WATER TANK

25,000 LITRE CONCRETE WATER TANK WITH FIRE-FIGHTING COUPLING CONNECTION.

WATER TANK OVERFLOW TO BE DISCHARGED TO A 10m LONG 100mm PERFORATED DRAINAGE PIPE IN A 200 x 600mm DEEP TRENCH, WITH GAP 60 MIN DRAINAGE MATERIAL TO DISPERSE ANY ADDITIONAL STORMWATER ON SITE.



FALLS/PIPE ø

CONTRACTOR SHALL CHECK LOCATIONS AND ROUTES ON SITE.

- SHOWER/SINK/DW/WASHING MACHINE WITH 65mmø PIPE AT 2.5% MIN GRADIENT.
- TOILET WITH 100mmø PIPE AT 1.65% MIN GRADIENT.
- HWC TRAY WASTE 20mmø AT 1.65% MIN GRADIENT.
- STORMWATER DRAINAGE TO HAVE MINIMUM FALL OF 1:100

USE BUTYLINE PIPE WORK FOR WATER RETICULATION.

USE uPVC FOR WATERWATER AND STORMWATER DISCHARGE, SIZED AS PER PLAN.

KEY

- IB INSPECTION BEND
- TV TERMINAL VENT
- HWC 180L HOT WATER CYLINDER FITTED WITH BLOCKING AND METAL STRAP RESTRAINTS TO ENSURE NO MOVEMENT. SEE SPECS.

ALL PLUMBING TO COMPLY WITH AS/NZS 3500 AND NZBC G13/A3



PROJECT:
NEW BACH
ADAM PARORE & LIBBY PRICE

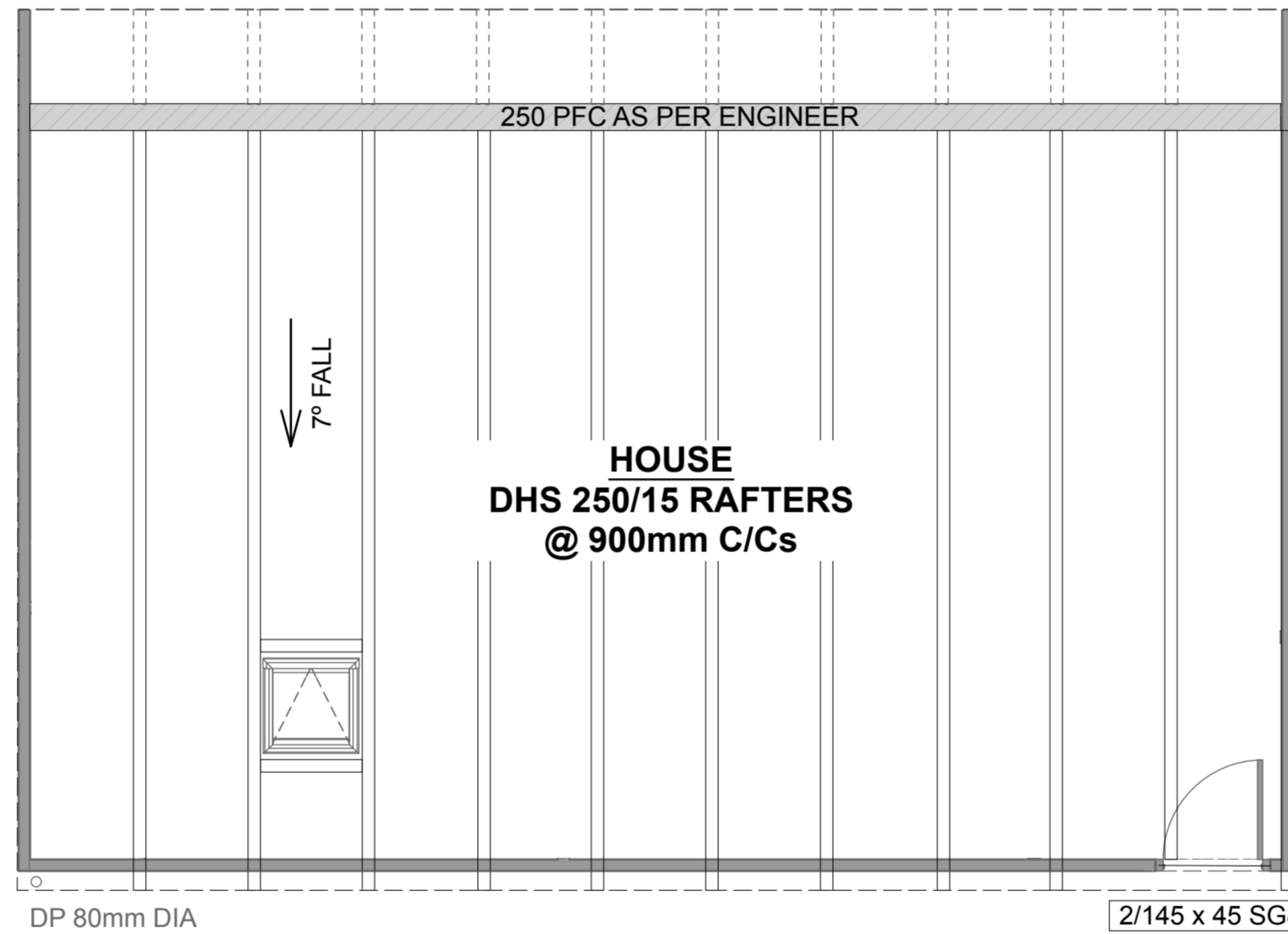
ADDRESS:
536 KOUTU LOOP RD
OPONONI

DESIGNED BY: CT
DRAWN BY: PNY
REVISION #:
ISSUED: 7/09/23

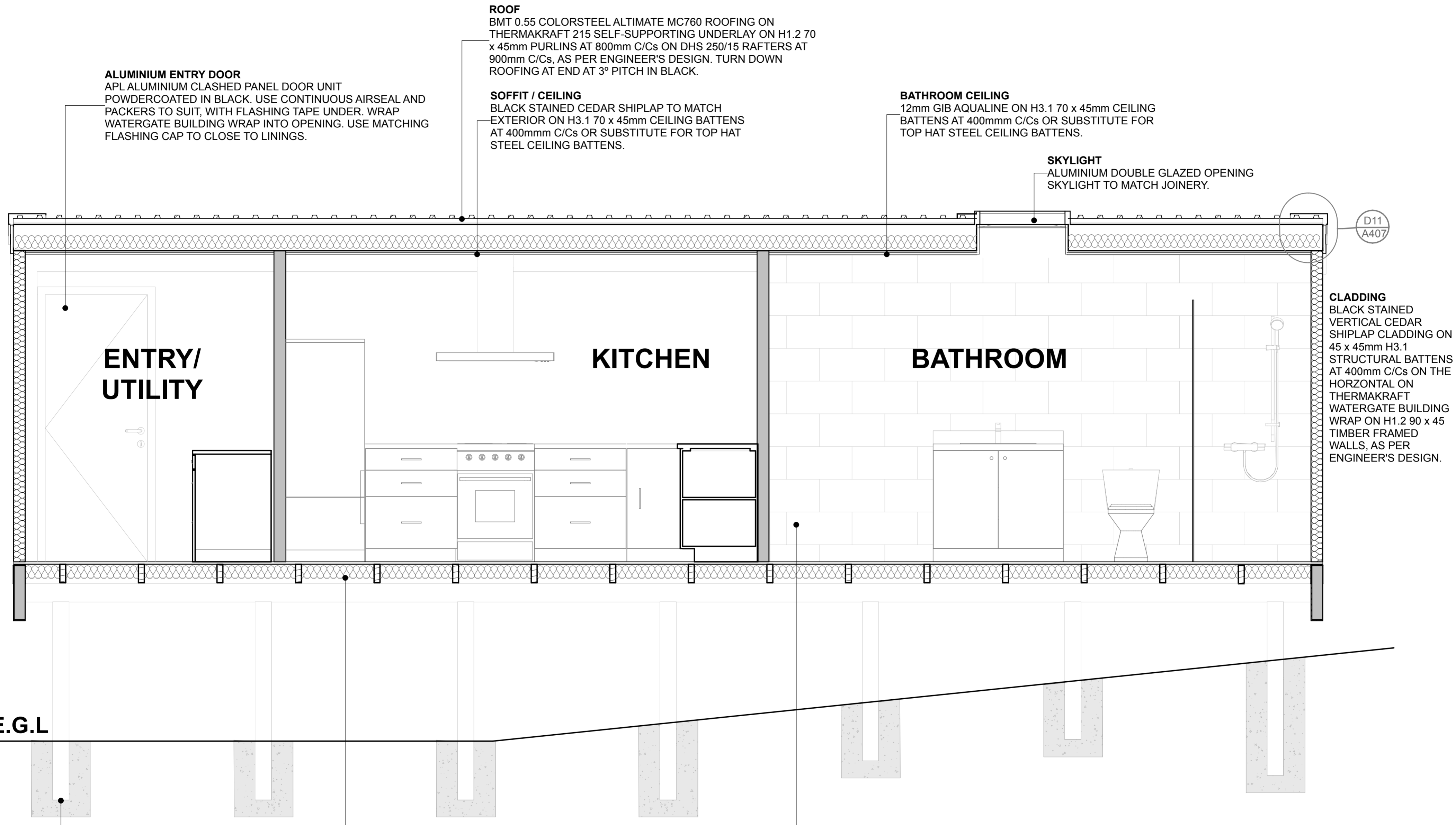
SHEET TITLE:
PLUMBING & DRAINAGE PLAN
SCALE:
1:50 @ A2

SHEET:
A106

OUTRIGGERS
 EX 250 x 6 STEEL PLATE CLEATS
 WELDED TO PFC @ 900mm C/Cs



This plan complies with my 23/31
 calculations where applicable.
T. Drupsteen 080923
 T. DRUPSTEEN - CP Eng, IntPE
 Consulting Engineer



D11
A407

ALUMINIUM ENTRY DOOR
APL ALUMINIUM CLASHED PANEL DOOR UNIT POWDERCOATED IN BLACK. USE CONTINUOUS AIRSEAL AND PACKERS TO SUIT, WITH FLASHING TAPE UNDER. WRAP WATERGATE BUILDING WRAP INTO OPENING. USE MATCHING FLASHING CAP TO CLOSE TO LININGS.

ROOF
BMT 0.55 COLORSTEEL ALTIMATE MC760 ROOFING ON THERMAKRAFT 215 SELF-SUPPORTING UNDERLAY ON H1.2 70 x 45mm PURLINS AT 800mm C/Cs ON DHS 250/15 RAFTERS AT 900mm C/Cs, AS PER ENGINEER'S DESIGN. TURN DOWN ROOFING AT END AT 3° PITCH IN BLACK.

SOFFIT / CEILING
BLACK STAINED CEDAR SHIPLAP TO MATCH EXTERIOR ON H3.1 70 x 45mm CEILING BATTENS AT 400mm C/Cs OR SUBSTITUTE FOR TOP HAT STEEL CEILING BATTENS.

BATHROOM CEILING
12mm GIB AQUALINE ON H3.1 70 x 45mm CEILING BATTENS AT 400mm C/Cs OR SUBSTITUTE FOR TOP HAT STEEL CEILING BATTENS.

SKYLIGHT
ALUMINIUM DOUBLE GLAZED OPENING SKYLIGHT TO MATCH JOINERY.

CLADDING
BLACK STAINED VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/Cs ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON H1.2 90 x 45 TIMBER FRAMED WALLS, AS PER ENGINEER'S DESIGN.

E.G.L

FOUNDATIONS
TIMBER PILES AS PER ENGINEER. SEE FOUNDATION PLAN A104 FOR FURTHER DETAILS.

HOUSE SUBFLOOR FRAMING AND FLOORING
21mm THICK H3.2 PLYWOOD FLOORING TO BE SEALED WITH SELECTED SEALER OVER 140 x 45mm H1.2 JOISTS AT 600mm C/Cs ON 2/140 x 45mm BEARERS. SEE FLOOR FRAMING PLAN A105 FOR FURTHER DETAILS.

SELECTED FLOOR TILES IN ENTRY/UTILITY AND BATHROOM

INTERIOR WALL LININGS
GIB LINED WALLS (AQUALINE IN WET AREAS) WITH 10mm NEGATIVE DETAIL TO CLOSE TO FLOOR.

SELECTED WALL TILES IN BATHROOM.

ALL EXTERIOR FIXINGS TO BE STAINLESS STEEL

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng. IntPE
Consulting Engineer

CHRIS TATE
ARCHITECTURE

PROJECT:
NEW BACH
ADAM PARORE & LIBBY PRICE

ADDRESS:
536 KOUTU LOOP RD
OPONONI

DESIGNED BY: CT
DRAWN BY: PNY
REVISION #:
ISSUED: 7/09/23

SHEET TITLE:
SECTION AA
SCALE:
1:20 @ A2

SHEET:
A201

OUTRIGGERS
EX 250 x 6mm STEEL PLATE OUTRIGGER
FINS AT 900mm C/Cs WELDED TO PFC.

CEDAR SHIPLAP SOFFIT LINING ON 70 x
35mm H3.1 CEILING BATTENS AT 400mm
C/Cs OR TOP HAT BATTENS.

EAVE FLASHING BMT 0.55 COLORSTEEL
ALTIMATE TO MATCH ROOFING.

ALUMINIUM JOINERY
APL THERMALHEART SERIES ALUMINIUM
SLIDING DOOR UNIT WITH LOW-E/3 ARGON
DOUBLE GLAZING POWDERCOATED IN
BLACK. USE CONTINUOUS AIRSEAL AND
PACKERS TO SUIT, WITH FLASHING TAPE
UNDER. WRAP WATERGATE BUILDING
WRAP INTO OPENING. USE MATCHING
ALUMINIUM ANGLE TO CLOSE TO CEDAR
CEILING LINING.

EXTERNAL GLASS BALUSTRADE
1m IN HEIGHT AND FIXED THROUGH TWIN
JOISTS ON EACH SIDE, AS PER
MANUFACTURER'S SPECIFICATIONS.

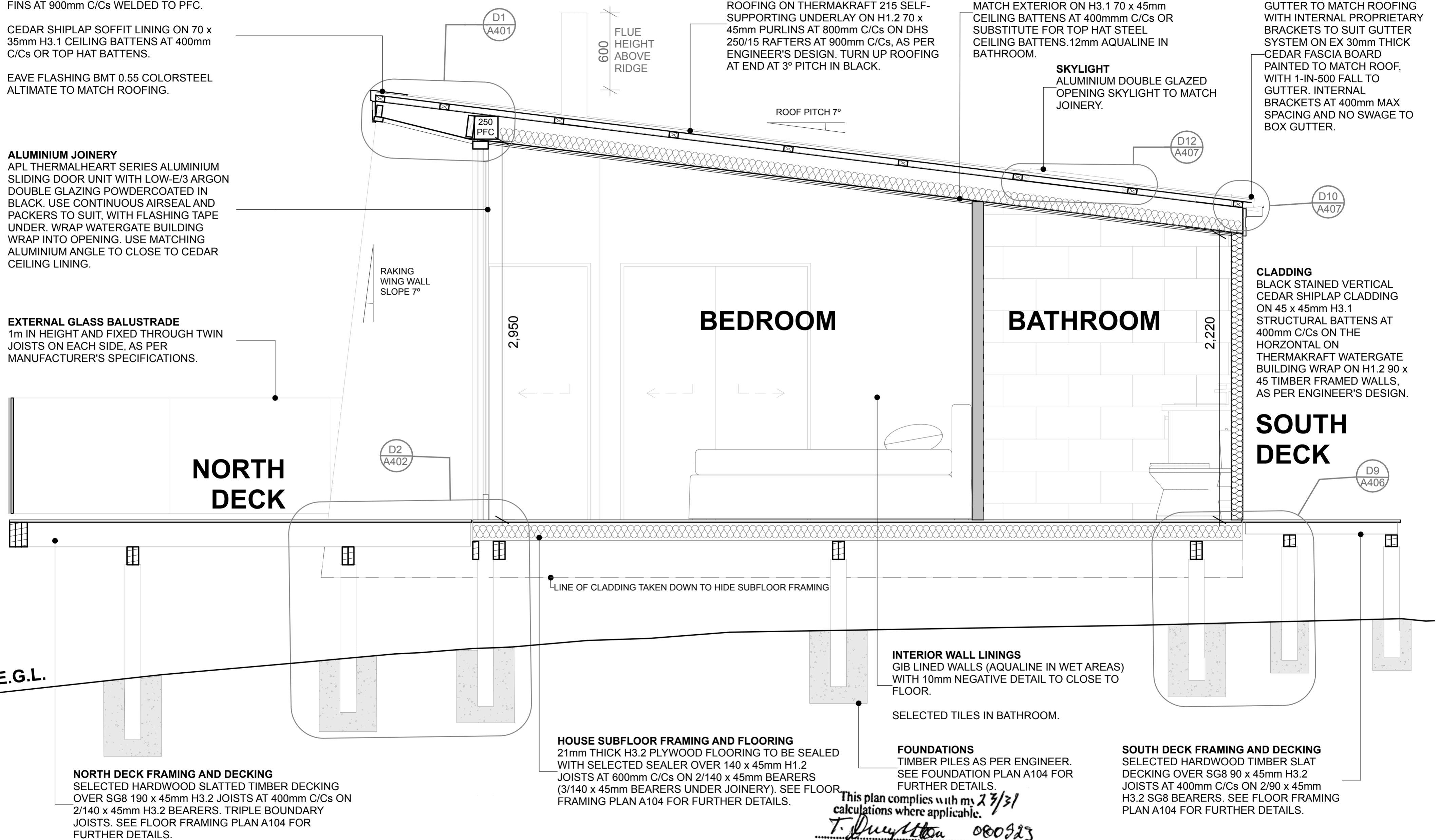
ROOF
BMT 0.55 COLORSTEEL ALTIMATE MC760
ROOFING ON THERMAKRAFT 215 SELF-
SUPPORTING UNDERLAY ON H1.2 70 x
45mm PURLINS AT 800mm C/Cs ON DHS
250/15 RAFTERS AT 900mm C/Cs, AS PER
ENGINEER'S DESIGN. TURN UP ROOFING
AT END AT 3° PITCH IN BLACK.

SOFFIT / CEILING
BLACK STAINED CEDAR SHIPLAP TO
MATCH EXTERIOR ON H3.1 70 x 45mm
CEILING BATTENS AT 400mm C/Cs OR
SUBSTITUTE FOR TOP HAT STEEL
CEILING BATTENS. 12mm AQUALINE IN
BATHROOM.

SKYLIGHT
ALUMINIUM DOUBLE GLAZED
OPENING SKYLIGHT TO MATCH
JOINERY.

GUTTER
CUSTOM ALTIMATE 125 BOX
GUTTER TO MATCH ROOFING
WITH INTERNAL PROPRIETARY
BRACKETS TO SUIT GUTTER
SYSTEM ON EX 30mm THICK
CEDAR FASCIA BOARD
PAINTED TO MATCH ROOF,
WITH 1-IN-500 FALL TO
GUTTER. INTERNAL
BRACKETS AT 400mm MAX
SPACING AND NO SWAGE TO
BOX GUTTER.

CLADDING
BLACK STAINED VERTICAL
CEDAR SHIPLAP CLADDING
ON 45 x 45mm H3.1
STRUCTURAL BATTENS AT
400mm C/Cs ON THE
HORIZONTAL ON
THERMAKRAFT WATERGATE
BUILDING WRAP ON H1.2 90 x
45 TIMBER FRAMED WALLS,
AS PER ENGINEER'S DESIGN.



HOUSE SUBFLOOR FRAMING AND FLOORING
21mm THICK H3.2 PLYWOOD FLOORING TO BE SEALED
WITH SELECTED SEALER OVER 140 x 45mm H1.2
JOISTS AT 600mm C/Cs ON 2/140 x 45mm BEARERS
(3/140 x 45mm BEARERS UNDER JOINERY). SEE FLOOR
FRAMING PLAN A104 FOR FURTHER DETAILS.

INTERIOR WALL LININGS
GIB LINED WALLS (AQUALINE IN WET AREAS)
WITH 10mm NEGATIVE DETAIL TO CLOSE TO
FLOOR.

SELECTED TILES IN BATHROOM.

FOUNDATIONS
TIMBER PILES AS PER ENGINEER.
SEE FOUNDATION PLAN A104 FOR
FURTHER DETAILS.

SOUTH DECK FRAMING AND DECKING
SELECTED HARDWOOD TIMBER SLAT
DECKING OVER SG8 90 x 45mm H3.2
JOISTS AT 400mm C/Cs ON 2/90 x 45mm
H3.2 SG8 BEARERS. SEE FLOOR FRAMING
PLAN A104 FOR FURTHER DETAILS.

NORTH DECK FRAMING AND DECKING
SELECTED HARDWOOD SLATTED TIMBER DECKING
OVER SG8 190 x 45mm H3.2 JOISTS AT 400mm C/Cs ON
2/140 x 45mm H3.2 BEARERS. TRIPLE BOUNDARY
JOISTS. SEE FLOOR FRAMING PLAN A104 FOR
FURTHER DETAILS.

This plan complies with my 23/31
calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng, IntPE
Consulting Engineer

ALL EXTERIOR FIXINGS TO BE STAINLESS STEEL

PROJECT:
CHRIS TATE
ARCHITECTURE
NEW BACH
ADAM PARORE & LIBBY PRICE

ADDRESS:
536 KOUTU LOOP RD
OPONONI
DESIGNED BY: CT
DRAWN BY: PNY
REVISION #:
ISSUED: 7/09/23

SHEET TITLE:
SECTION B
SCALE:
1:20 @ A2

SHEET:
A202

ALL WORK TO COMPLY WITH NZ BUILDING CODE AND NZS 3604:2011

ALL DIMENSIONS, SIZES AND LEVELS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF ANY WORKS

BUILDING ENVELOPE RISK MATRIX		
1: NORTH ELEVATION		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	Very high risk	2
Number of storeys	Low risk	0
Roof/wall intersection design	High risk	3
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		5

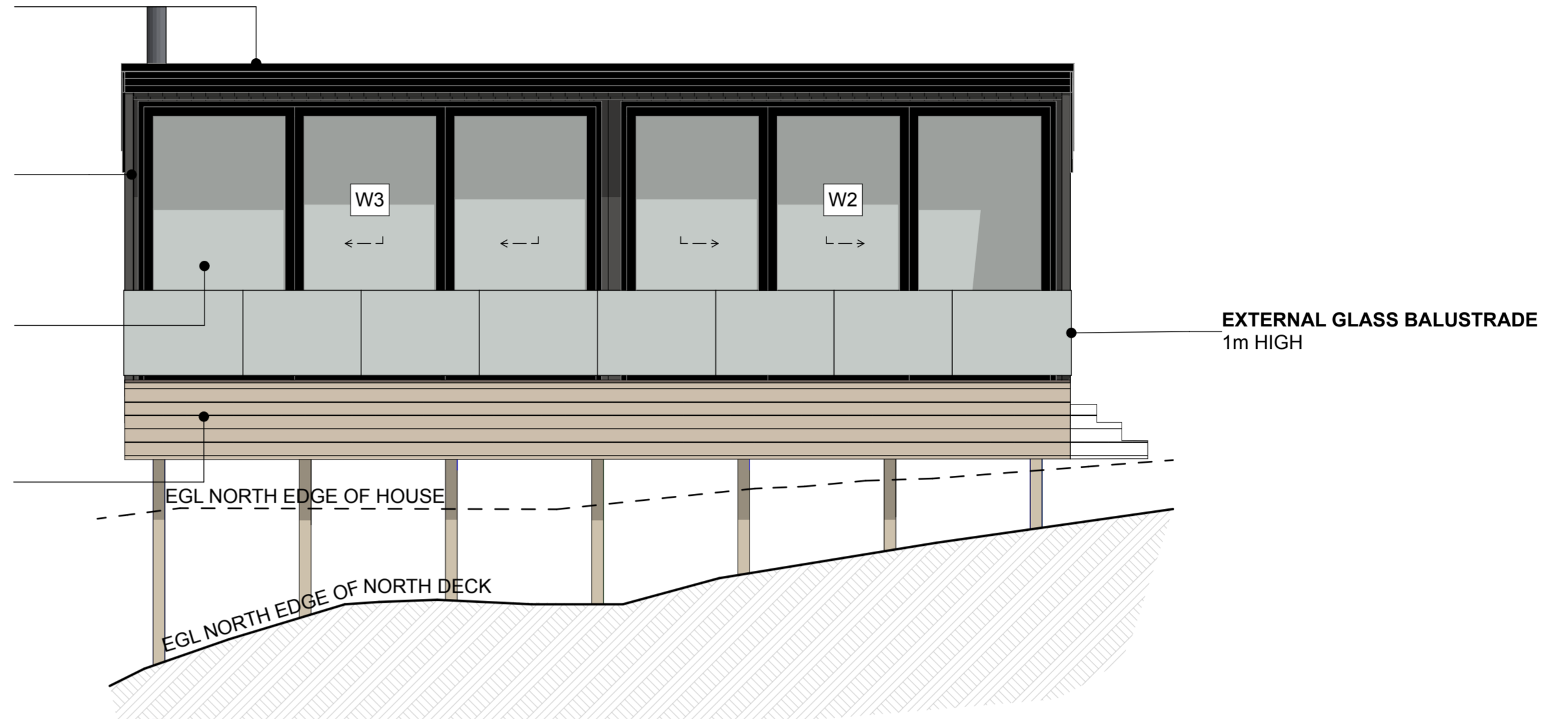
BUILDING ENVELOPE RISK MATRIX		
2: EAST ELEVATION		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	Very high risk	2
Number of storeys	Low risk	0
Roof/wall intersection design	High risk	3
Eaves width	Very high risk	5
Envelope complexity	Medium risk	1
Deck design	Low risk	0
Total Risk Score:		11

ROOFING & GUTTER
 COLORSTEEL ALTIMATE MC760 ROOFING WITH ALTIMATE 125 BOX GUTTER TO MATCH.

CLADDING
 BLACK STAINED VERTICAL CEDAR SHIPLAP CLADDING ON TIMBER FRAMING, AS PER ENGINEER'S DESIGN

JOINERY
 APL ALUMINIUM DOUBLE GLAZED SLIDERS POWDERCOATED IN BLACK

DECKS
 HARDWOOD TIMBER SLATTED DECKS



1 NORTH ELEVATION 1:50

ROOFING & GUTTER
 COLORSTEEL ALTIMATE MC760 ROOFING WITH ALTIMATE 125 BOX GUTTER TO MATCH.

CLADDING
 BLACK STAINED VERTICAL CEDAR SHIPLAP CLADDING ON TIMBER FRAMING, AS PER ENGINEER'S DESIGN

DECKS
 HARDWOOD TIMBER SLATTED DECKS



2 EAST ELEVATION 1:50

This plan complies with my 23/31 calculations where applicable.
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 T. DRUPSTEEN - CP Eng, IntPE
 Consulting Engineer

ALL WORK TO COMPLY WITH NZ BUILDING CODE AND NZS 3604:2011

ALL DIMENSIONS, SIZES AND LEVELS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF ANY WORKS

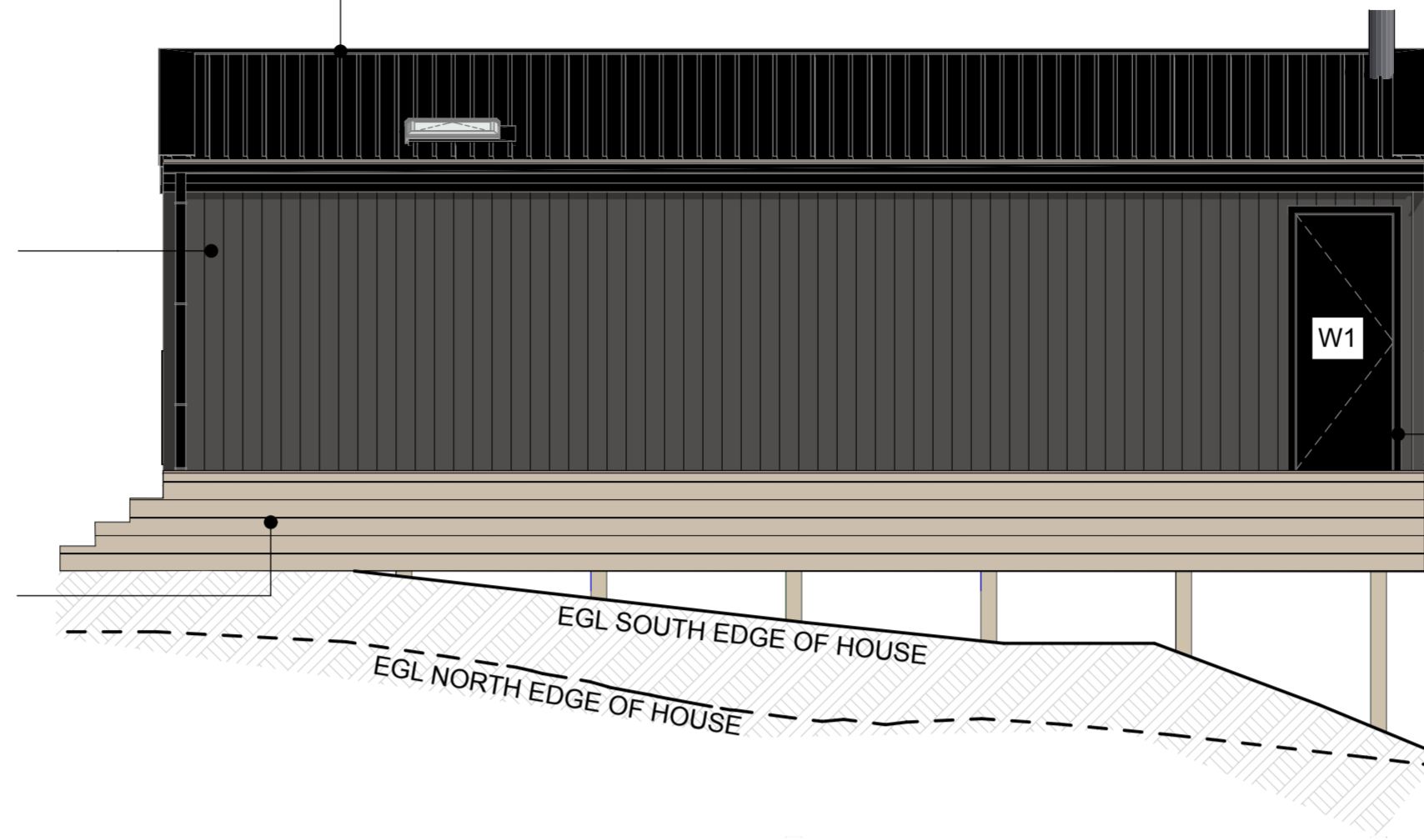
BUILDING ENVELOPE RISK MATRIX		
3: SOUTH ELEVATION		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	Very high risk	2
Number of storeys	Low risk	0
Roof/wall intersection design	High risk	3
Eaves width	Very high risk	5
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		10

BUILDING ENVELOPE RISK MATRIX		
4: WEST ELEVATION		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	Very high risk	2
Number of storeys	Low risk	0
Roof/wall intersection design	High risk	3
Eaves width	Very high risk	5
Envelope complexity	Medium risk	1
Deck design	Low risk	0
Total Risk Score:		11

ROOFING & GUTTER
 COLORSTEEL ALTIMATE MC760 ROOFING
 WITH ALTIMATE 125 BOX GUTTER TO MATCH.

CLADDING
 BLACK STAINED VERTICAL CEDAR SHIPLAP
 CLADDING ON TIMBER FRAMING, AS PER
 ENGINEER'S DESIGN

DECKS
 HARDWOOD TIMBER SLATTED DECKS

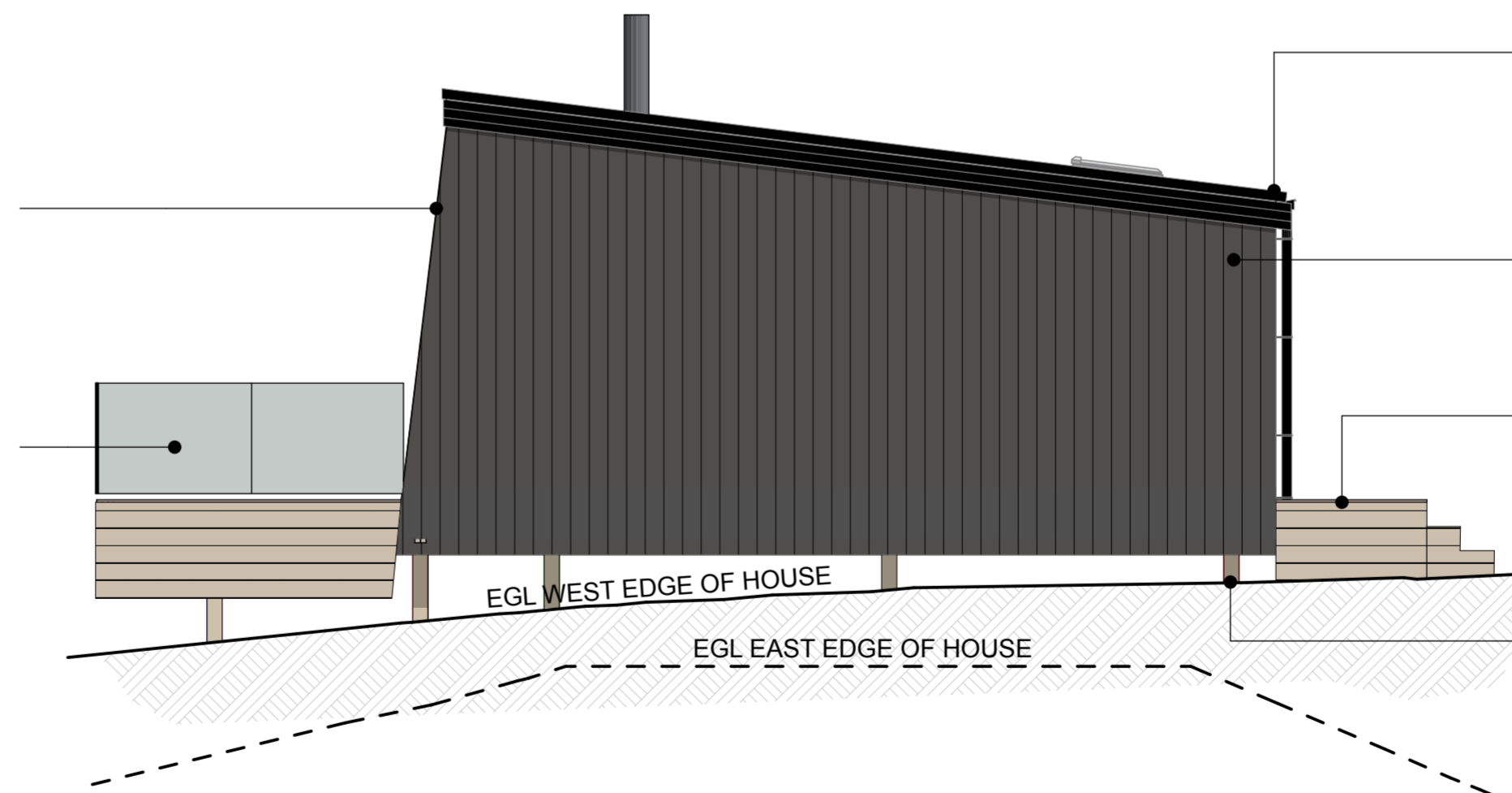


ENTRY DOOR
 APL ALUMINIUM CLASHED EXTERIOR DOOR,
 POWDERCOATED IN BLACK

3 SOUTH ELEVATION 1:50

WING WALLS
 WING WALLS RAKED AT 7° ANGLE TO
 FORM RIGHT ANGLE AT ROOF.

EXTERNAL GLASS BALUSTRADE
 1m HIGH



ROOFING & GUTTER
 COLORSTEEL ALTIMATE MC760 ROOFING
 WITH ALTIMATE 125 BOX GUTTER TO MATCH.

CLADDING
 BLACK STAINED VERTICAL CEDAR SHIPLAP
 CLADDING ON TIMBER FRAMING, AS PER
 ENGINEER'S DESIGN

DECKS
 HARDWOOD TIMBER SLATTED DECKS

FOUNDATIONS AND SUBFLOOR
 TIMBER PILES AND TIMBER SUBFLOOR, AS
 PER ENGINEER'S DESIGN.

4 WEST ELEVATION 1:50

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 calculations where applicable.
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T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer



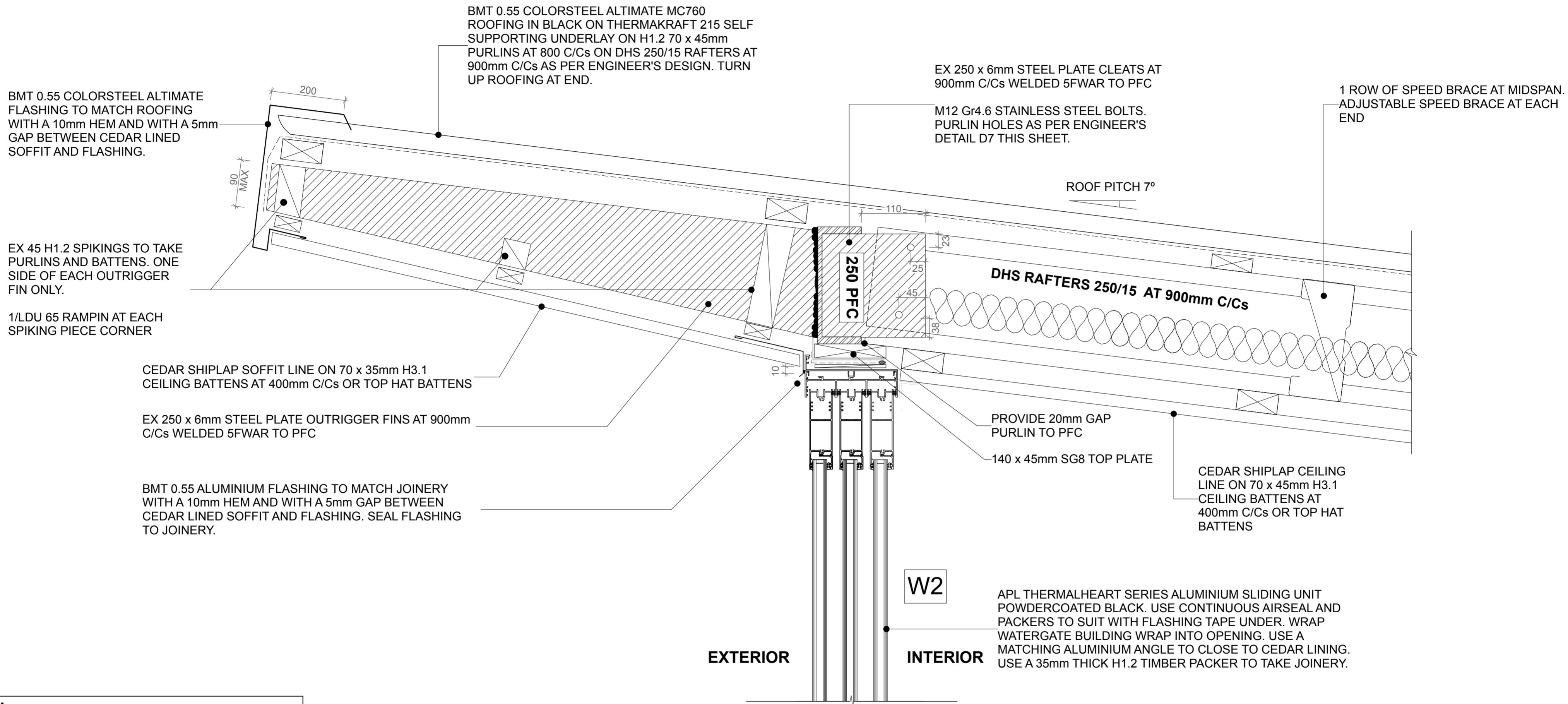
PROJECT:
NEW BACH
 ADAM PARORE & LIBBY PRICE

ADDRESS:
 536 KOUTU LOOP RD
 OPONONI

DESIGNED BY: CT
 DRAWN BY: PNY
 REVISION #:
 ISSUED: 7/09/23

SHEET TITLE:
ELEVATIONS - SOUTH & WEST
 SCALE:
 1:50 @ A2

SHEET:
A302



BMT 0.55 COLORSTEEL ALTIMATE FLASHING TO MATCH ROOFING WITH A 10mm HEM AND WITH A 5mm GAP BETWEEN CEDAR LINED SOFFIT AND FLASHING.

BMT 0.55 COLORSTEEL ALTIMATE MC760 ROOFING IN BLACK ON THERMAKRAFT 215 SELF SUPPORTING UNDERLAY ON H1.2 70 x 45mm PURLINS AT 800 C/Cs ON DHS 250/15 RAFTERS AT 900mm C/Cs AS PER ENGINEER'S DESIGN. TURN UP ROOFING AT END.

EX 250 x 6mm STEEL PLATE CLEATS AT 900mm C/Cs WELDED 5FWAR TO PFC

1 ROW OF SPEED BRACE AT MIDSPAN. ADJUSTABLE SPEED BRACE AT EACH END

EX 45 H1.2 SPIKINGS TO TAKE PURLINS AND BATTENS. ONE SIDE OF EACH OUTRIGGER FIN ONLY.

1/LDU 65 RAMPIN AT EACH SPIKING PIECE CORNER

M12 Gr4.6 STAINLESS STEEL BOLTS. PURLIN HOLES AS PER ENGINEER'S DETAIL D7 THIS SHEET.

ROOF PITCH 7°

CEDAR SHIPLAP SOFFIT LINE ON 70 x 35mm H3.1 CEILING BATTENS AT 400mm C/Cs OR TOP HAT BATTENS

EX 250 x 6mm STEEL PLATE OUTRIGGER FINS AT 900mm C/Cs WELDED 5FWAR TO PFC

DHS RAFTERS 250/15 AT 900mm C/Cs

BMT 0.55 ALUMINIUM FLASHING TO MATCH JOINERY WITH A 10mm HEM AND WITH A 5mm GAP BETWEEN CEDAR LINED SOFFIT AND FLASHING. SEAL FLASHING TO JOINERY.

PROVIDE 20mm GAP PURLIN TO PFC

140 x 45mm SG8 TOP PLATE

CEDAR SHIPLAP CEILING LINE ON 70 x 45mm H3.1 CEILING BATTENS AT 400mm C/Cs OR TOP HAT BATTENS

EXTERIOR

INTERIOR

APL THERMALHEART SERIES ALUMINIUM SLIDING UNIT POWDERCOATED BLACK. USE CONTINUOUS AIRSEAL AND PACKERS TO SUIT WITH FLASHING TAPE UNDER. WRAP WATERGATE BUILDING WRAP INTO OPENING. USE A MATCHING ALUMINIUM ANGLE TO CLOSE TO CEDAR LINING. USE A 35mm THICK H1.2 TIMBER PACKER TO TAKE JOINERY.

W2

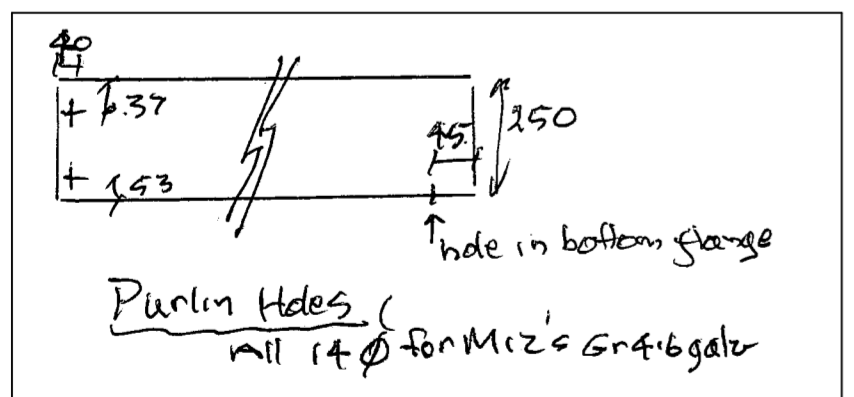
JOINERY HEAD
1:5

D1
A202

JOINERY MAKER TO ISSUE A PS4 PRODUCER STATEMENT

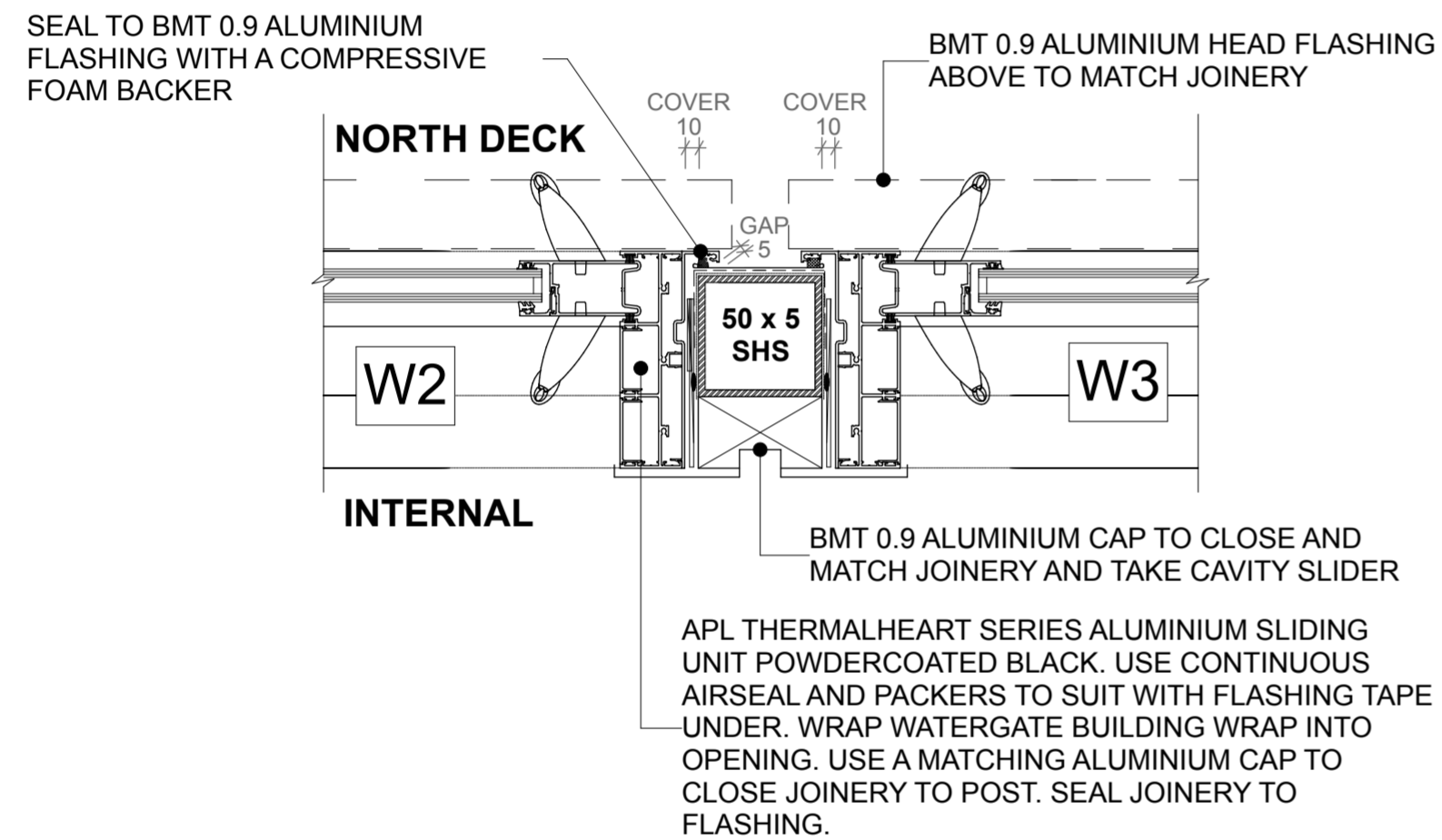
BUILDER TO LIAISE WITH ENGINEER PRIOR TO CONSTRUCTION.

ALL EXTERIOR FIXINGS TO BE STAINLESS STEEL



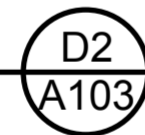
ENGINEER'S DETAIL D7
PURLIN HOLES

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng, IntPE
Consulting Engineer



JOINERY JAMB TO POST

1:5



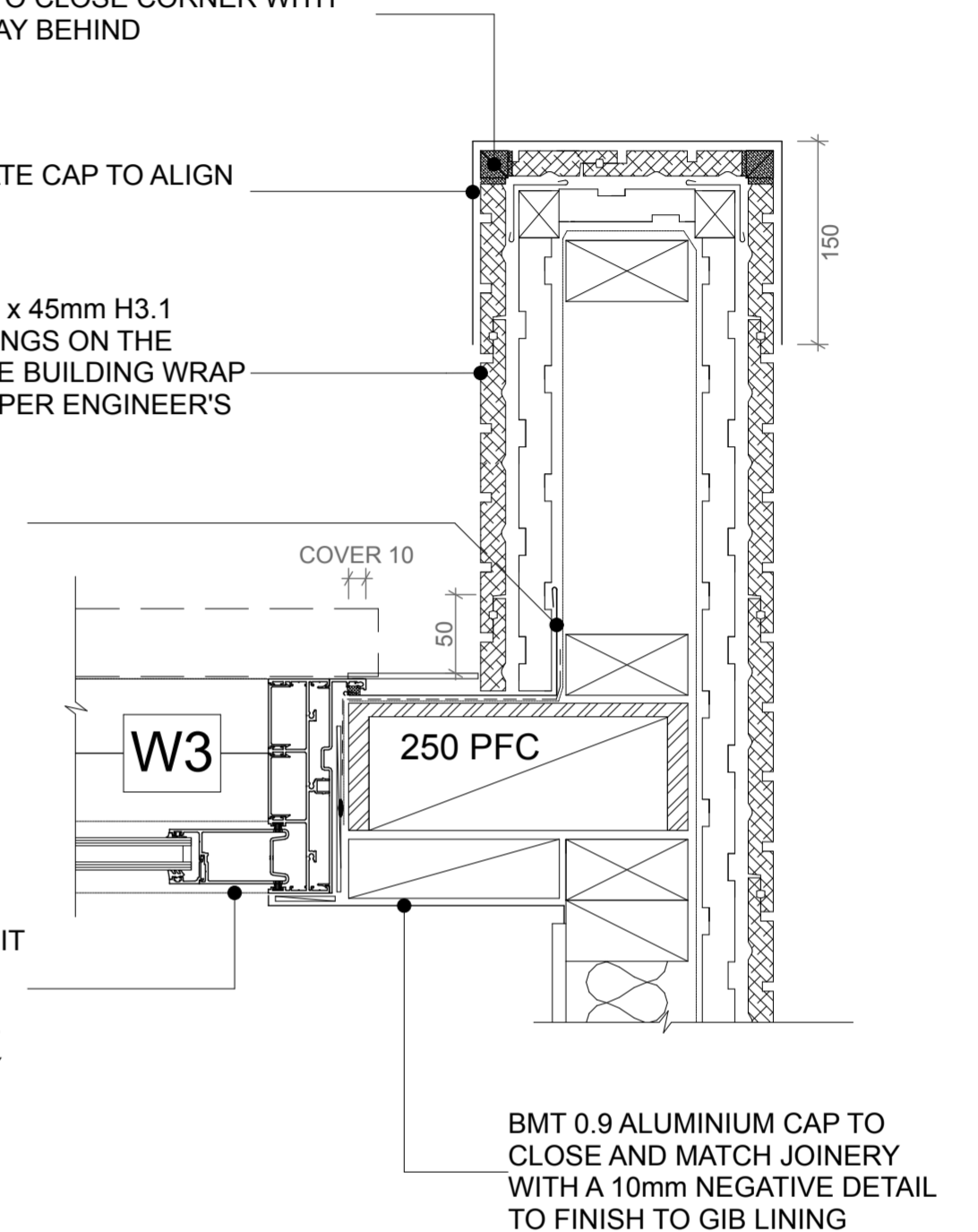
USE PROPRIETARY CEDAR CORNER PIECE TO CLOSE CORNER WITH BMT 0.55 CORNER FLASHING 50mm EACH WAY BEHIND

DECORATIVE BMT 0.55 COLORSTEEL ALTIMATE CAP TO ALIGN WITH ROOFING CLOSING CAP ABOVE

VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/C SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS, AS PER ENGINEER'S DESIGN. USE H1.2 PACKING AS REQUIRED

BMT 0.9 ALUMINIUM BACK FLASHING ABOVE TO MATCH JOINERY

APL THERMALHEART SERIES ALUMINIUM SLIDING UNIT POWDERCOATED BLACK. USE CONTINUOUS AIRSEAL AND PACKERS TO SUIT WITH FLASHING TAPE UNDER. WRAP WATERGATE BUILDING WRAP INTO OPENING. USE A MATCHING ALUMINIUM CAP TO CLOSE JOINERY TO POST. SEAL JOINERY TO FLASHING.

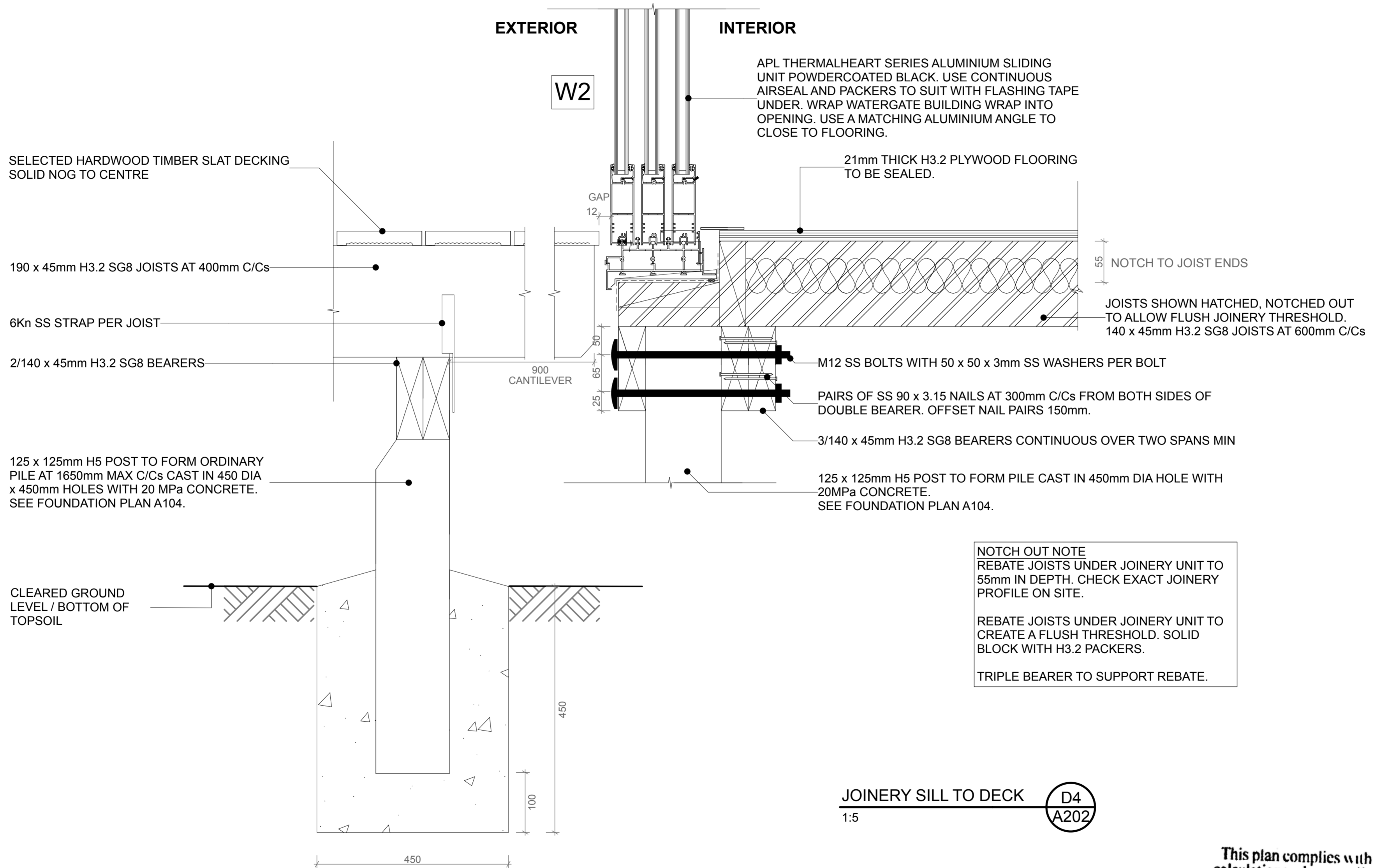


JOINERY JAMB TO WING WALL

1:5



This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
 T. DRUPSTEEN - CP Eng, IntPE
 Consulting Engineer



APL THERMALHEART SERIES ALUMINIUM SLIDING UNIT POWDERCOATED BLACK. USE CONTINUOUS AIRSEAL AND PACKERS TO SUIT WITH FLASHING TAPE UNDER. WRAP WATERGATE BUILDING WRAP INTO OPENING. USE A MATCHING ALUMINIUM ANGLE TO CLOSE TO FLOORING.

21mm THICK H3.2 PLYWOOD FLOORING TO BE SEALED.

55 NOTCH TO JOIST ENDS

JOISTS SHOWN HATCHED, NOTCHED OUT TO ALLOW FLUSH JOINERY THRESHOLD. 140 x 45mm H3.2 SG8 JOISTS AT 600mm C/Cs

M12 SS BOLTS WITH 50 x 50 x 3mm SS WASHERS PER BOLT

PAIRS OF SS 90 x 3.15 NAILS AT 300mm C/Cs FROM BOTH SIDES OF DOUBLE BEARER. OFFSET NAIL PAIRS 150mm.

3/140 x 45mm H3.2 SG8 BEARERS CONTINUOUS OVER TWO SPANS MIN

125 x 125mm H5 POST TO FORM PILE CAST IN 450mm DIA HOLE WITH 20MPa CONCRETE. SEE FOUNDATION PLAN A104.

SELECTED HARDWOOD TIMBER SLAT DECKING SOLID NOG TO CENTRE

190 x 45mm H3.2 SG8 JOISTS AT 400mm C/Cs

6Kn SS STRAP PER JOIST

2/140 x 45mm H3.2 SG8 BEARERS

125 x 125mm H5 POST TO FORM ORDINARY PILE AT 1650mm MAX C/Cs CAST IN 450 DIA x 450mm HOLES WITH 20 MPa CONCRETE. SEE FOUNDATION PLAN A104.

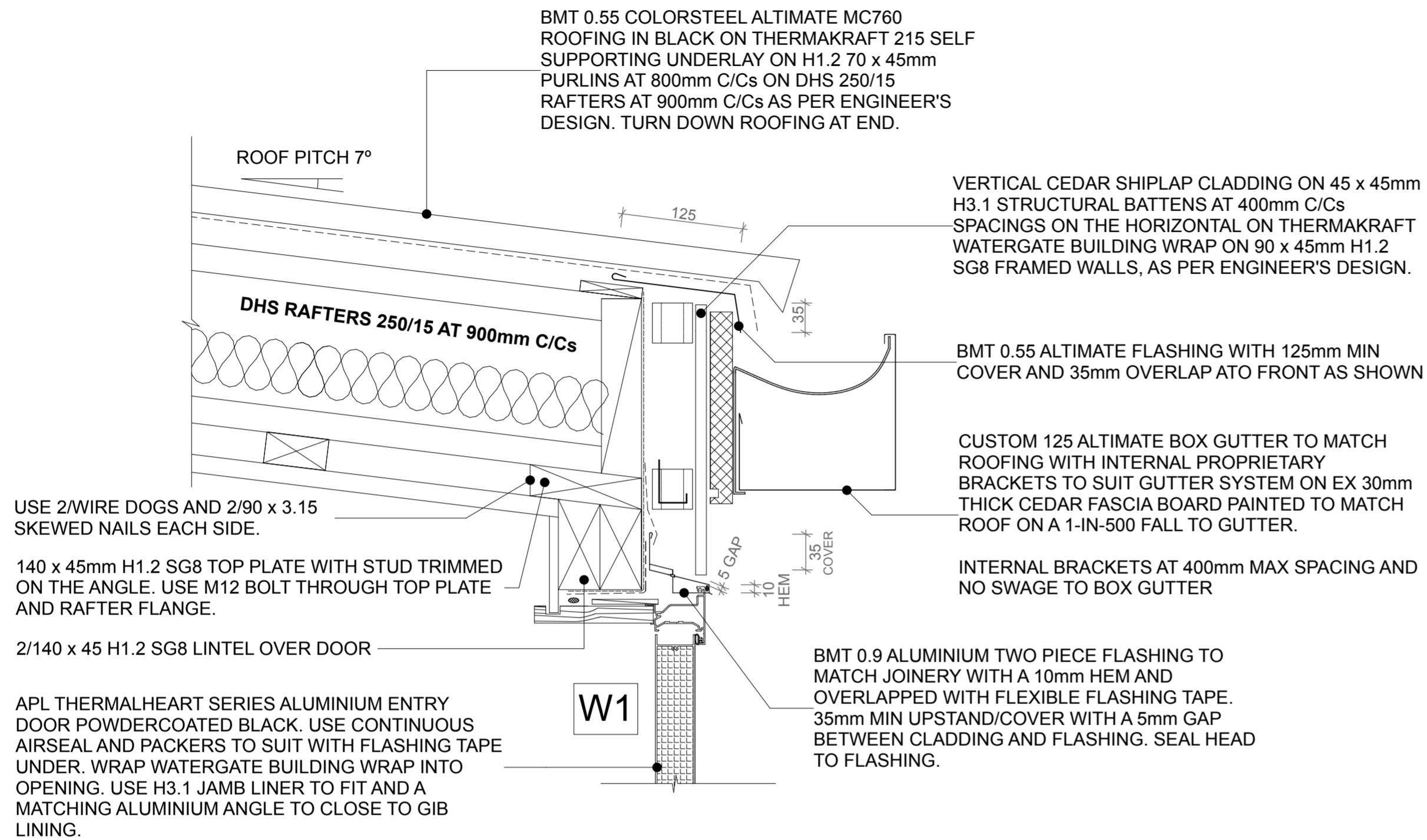
CLEARED GROUND LEVEL / BOTTOM OF TOPSOIL

NOTCH OUT NOTE
 REBATE JOISTS UNDER JOINERY UNIT TO 55mm IN DEPTH. CHECK EXACT JOINERY PROFILE ON SITE.
 REBATE JOISTS UNDER JOINERY UNIT TO CREATE A FLUSH THRESHOLD. SOLID BLOCK WITH H3.2 PACKERS.
 TRIPLE BEARER TO SUPPORT REBATE.

Type text here

JOINERY SILL TO DECK
 1:5 D4
A202

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
 T. DRUPSTEEN - CP Eng, IntPE
 Consulting Engineer



ENTRY DOOR HEAD

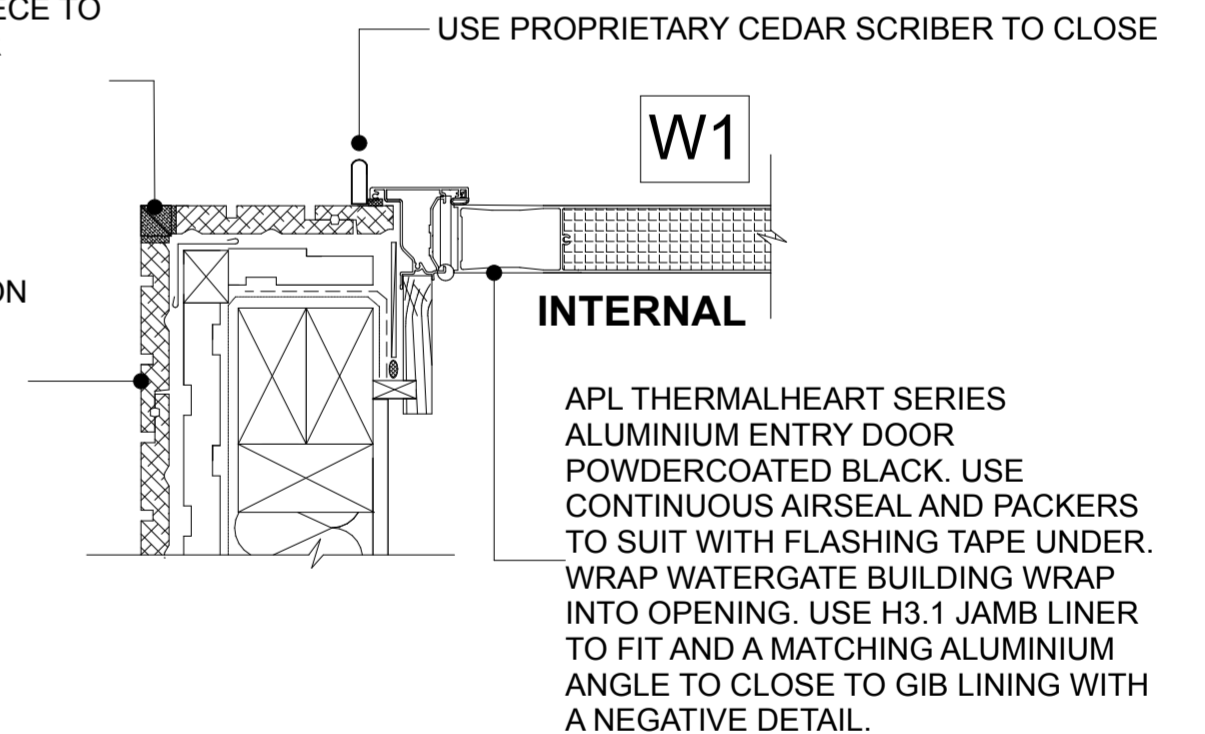
D5
A103

1:5

USE PROPRIETARY CEDAR CORNER PIECE TO CLOSE CORNER WITH BMT 0.9 CORNER FLASHING 50mm EACH WAY BEHIND

USE H1.2 PACKING AS REQUIRED

VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/C SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS.

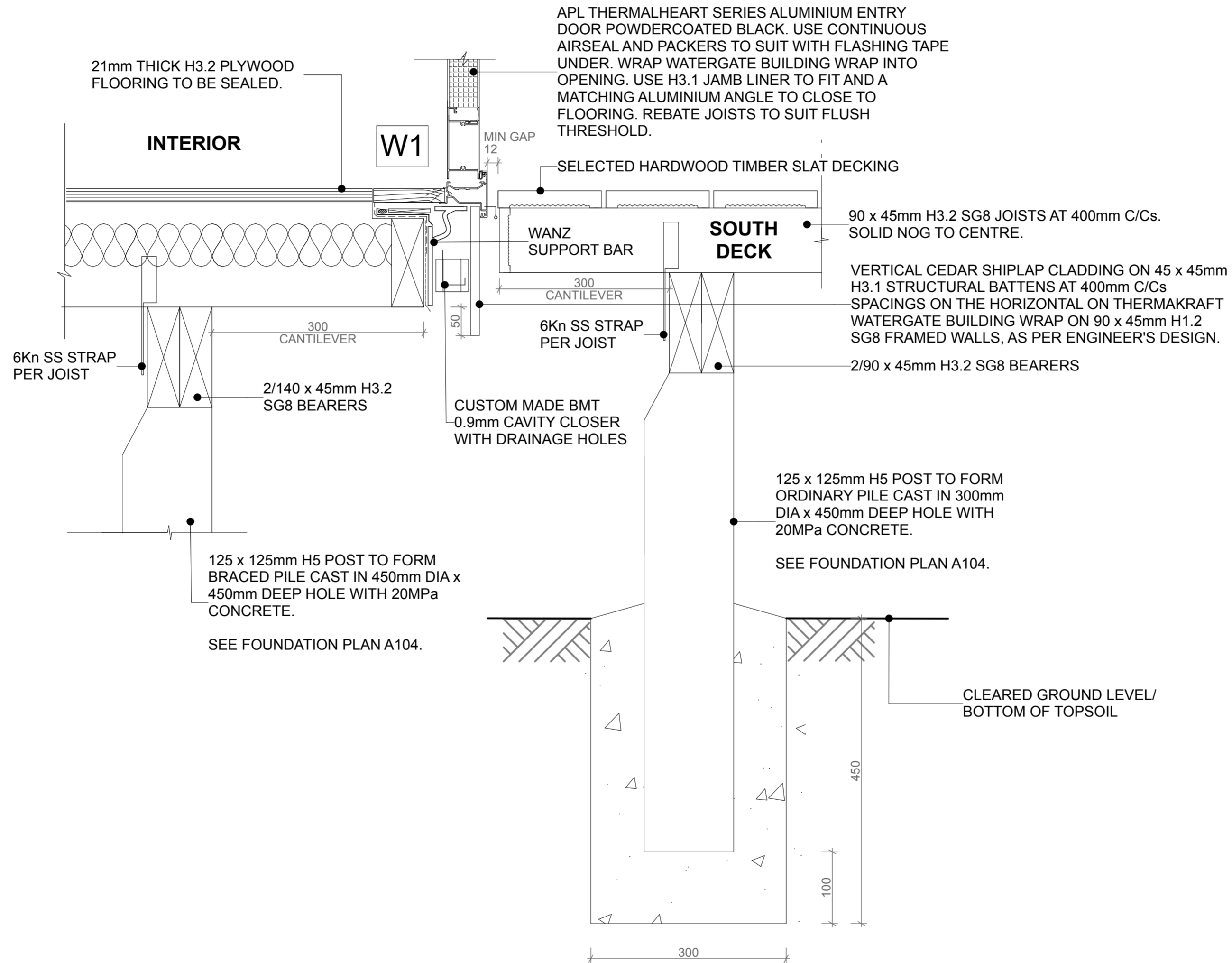


ENTRY DOOR JAMB

D6
A103

1:5

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng. ImPE
 Consulting Engineer



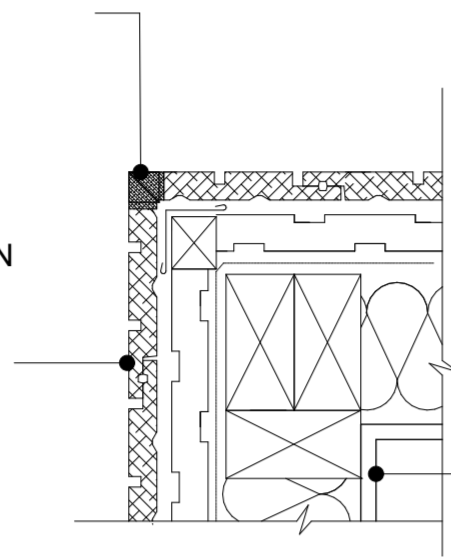
ENTRY DOOR SILL D7
A103
 1:5

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
 T. DRUPSTEEN - CP Eng, IntPE
 Consulting Engineer

USE PROPRIETARY CEDAR CORNER PIECE TO CLOSE CORNER WITH BMT 0.9 CORNER FLASHING 50mm EACH WAY BEHIND

USE H1.2 PACKING AS REQUIRED

VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/C SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS, AS PER ENGINEER'S DESIGN.



GIB LINED INTERIOR

GIB LINED WALLS WITH 10mm NEGATIVE DETAIL TO CLOSE TO FLOOR

INTERIOR

VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/C SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS, AS PER ENGINEER'S DESIGN.

SELECTED HARDWOOD TIMBER SLAT DECKING SOLID NOG TO CENTRE

SOUTH DECK

90 x 45mm H3.2 SG8 JOISTS AT 400mm C/Cs

USE LUMBERLOK STAINLESS STEEL STRAP NAIL EACH SIDE OF STUD TO BOTTOM PLATE

GAP 12

6Kn SS STRAP PER JOIST

300 CANTILEVER

2/90 x 45mm H3.2 SG8 BEARERS

CUSTOM MADE BMT 0.9 CAVITY CLOSER WITH DRAINAGE HOLES

6Kn SS STRAP PER JOIST

300 CANTILEVER

2/140 x 45mm H3.2 SG8 BEARERS

125 x 125mm H5 POST TO FORM ORDINARY PILE CAST IN 450 DIA x 450mm HOLES WITH 20 MPa CONCRETE.

SEE FOUNDATION PLAN A104.

125 x 125mm H5 POST TO FORM ORDINARY PILE CAST IN 300 DIA x 450mm HOLES WITH 20 MPa CONCRETE.

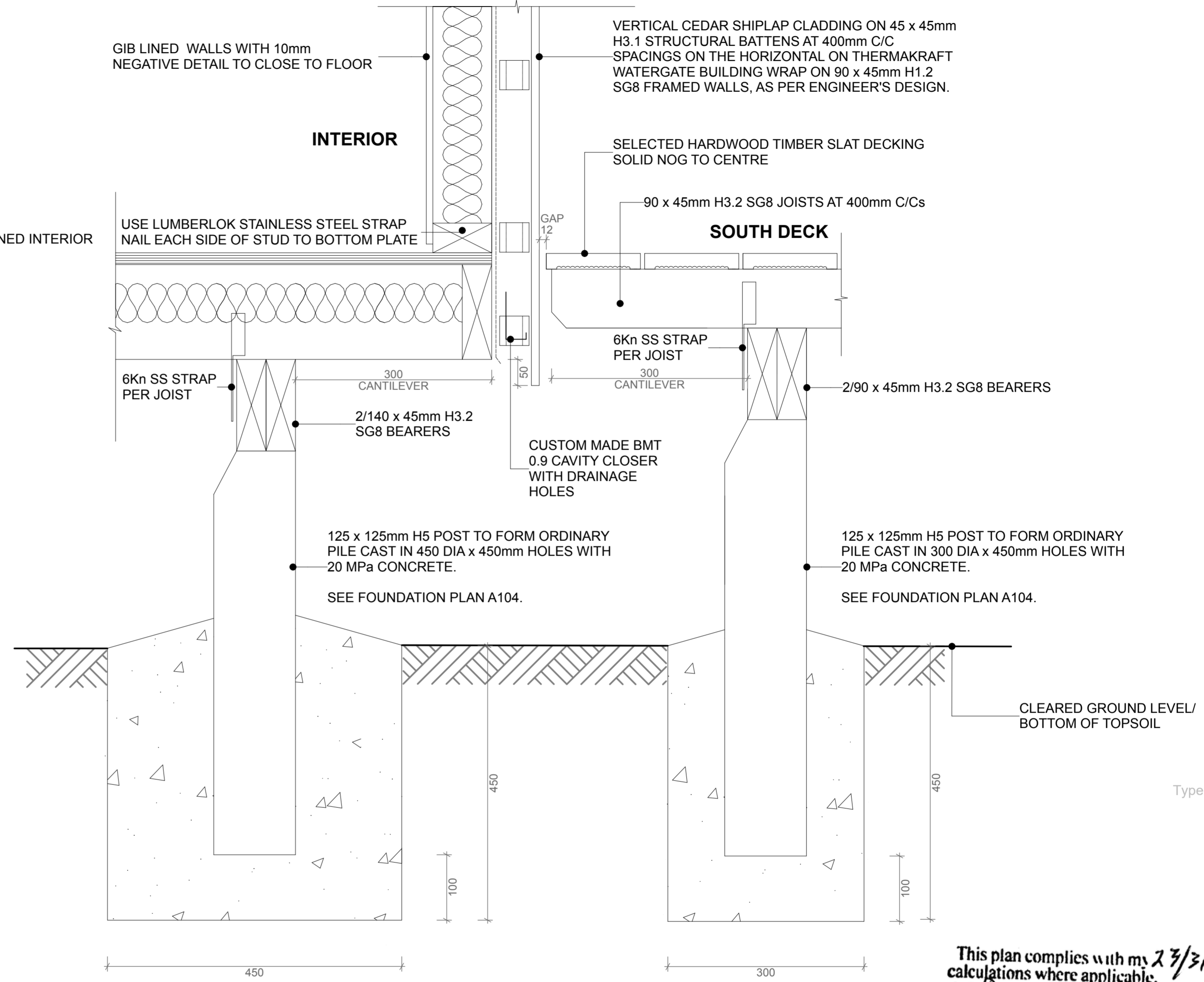
SEE FOUNDATION PLAN A104.

CLEARED GROUND LEVEL/ BOTTOM OF TOPSOIL

EXTERNAL CORNER

1:5

D8
A103



BOTTOM PLATE

1:5

D9
A202

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer

CHRIS TATE
ARCHITECTURE

PROJECT:
NEW BACH
ADAM PARORE & LIBBY PRICE

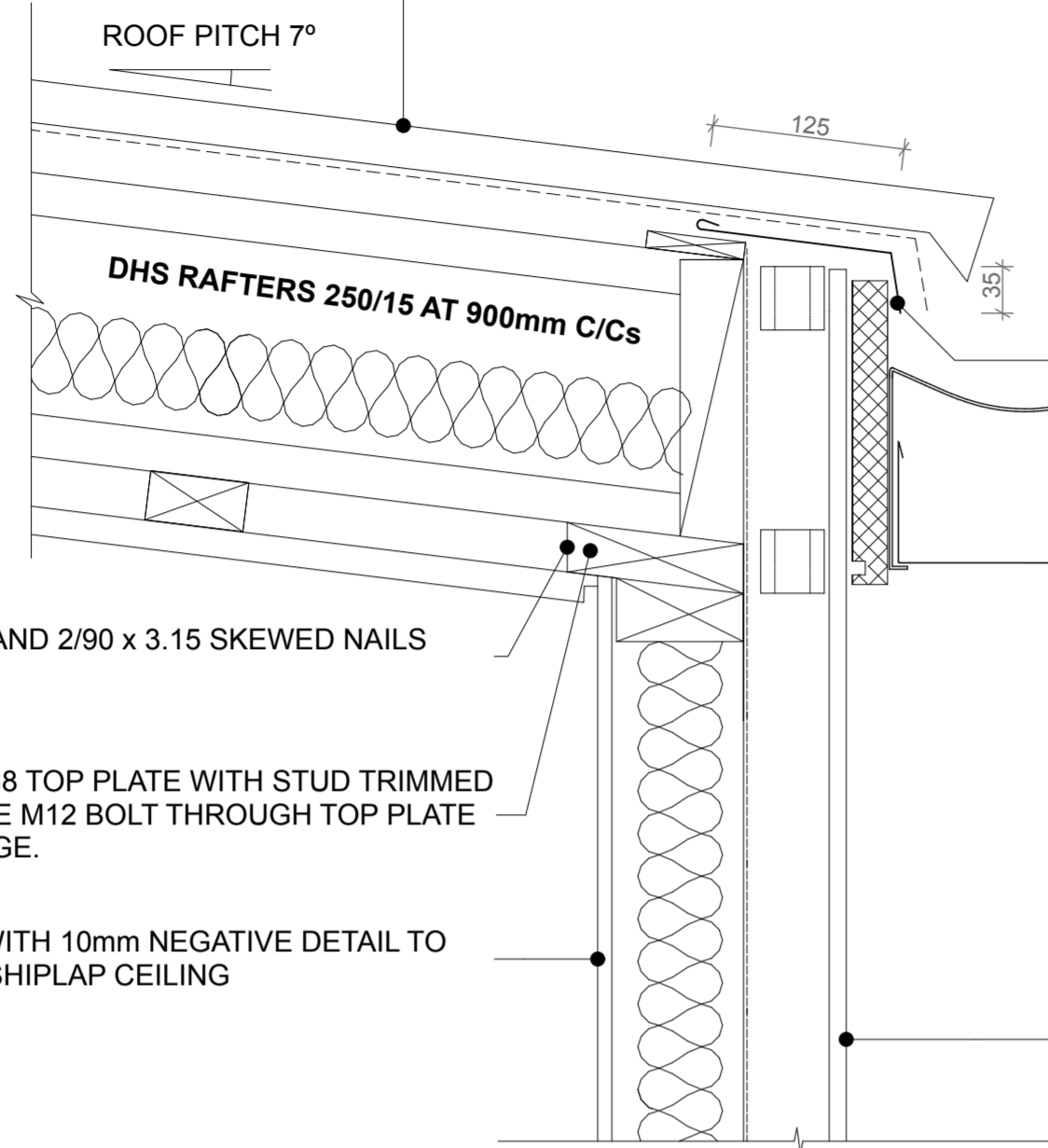
ADDRESS:
536 KOUTU LOOP RD
OPONONI

DESIGNED BY: CT
 DRAWN BY: PNY
 REVISION #:
 ISSUED: 7/09/23

SHEET TITLE:
DETAILS 6 - CLADDING
 SCALE:
1:5 @ A2

SHEET:
A406

BMT 0.55 COLORSTEEL ALTIMATE MC760 ROOFING IN BLACK ON THERMAKRAFT 215 SELF SUPPORTING UNDERLAY ON H1.2 70 x 45mm PURLINS AT 800 C/Cs ON DHS 250/15 RAFTERS AT 900mm C/Cs AS PER ENGINEER'S DESIGN. TURN DOWN ROOFING AT END.



BMT 0.55 ALTIMATE FLASHING WITH 125mm MIN COVER AND 35mm OVERLAP ATO FRONT AS SHOWN

CUSTOM 125 ALTIMATE BOX GUTTER TO MATCH ROOFING WITH INTERNAL PROPRIETARY BRACKETS TO SUIT GUTTER SYSTEM ON EX 30mm THICK CEDAR FASCIA BOARD PAINTED TO MATCH ROOF ON A 1-IN-500 FALL TO GUTTER.

INTERNAL BRACKETS AT 400mm MAX SPACING AND NO SWAGE TO BOX GUTTER

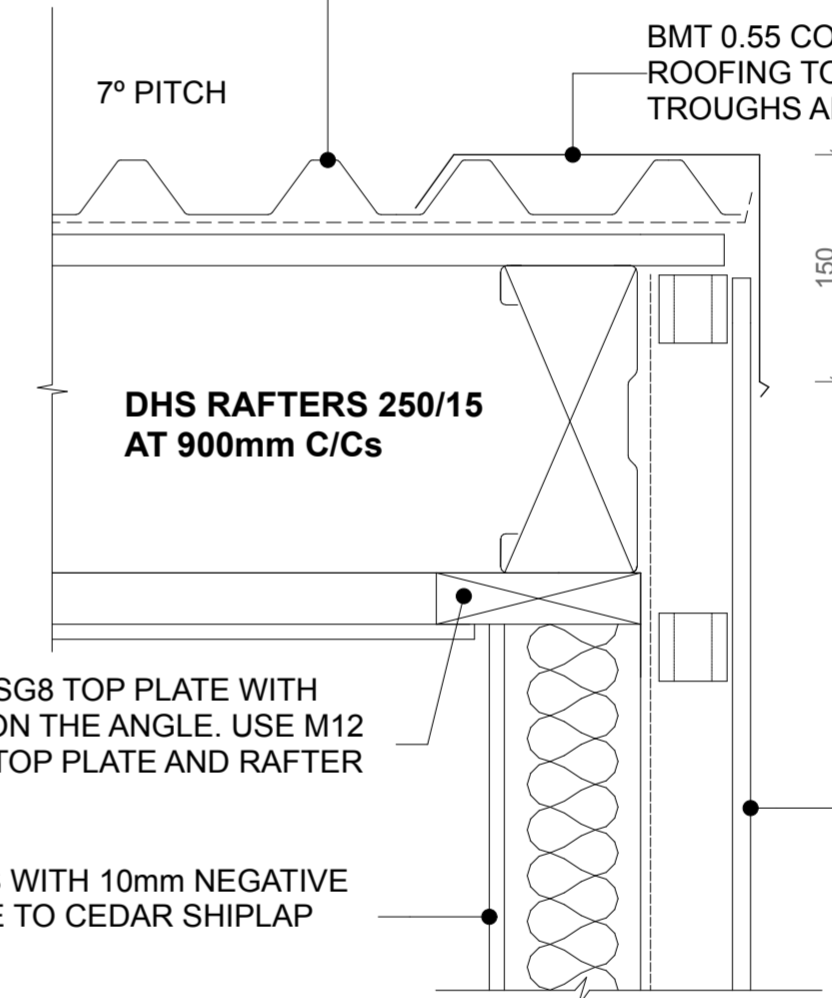
VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/Cs SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS, AS PER ENGINEER'S DESIGN.

USE 2/WIRE DOGS AND 2/90 x 3.15 SKEWED NAILS EACH SIDE.

140 x 45mm H1.2 SG8 TOP PLATE WITH STUD TRIMMED ON THE ANGLE. USE M12 BOLT THROUGH TOP PLATE AND RAFTER FLANGE.

GIB LINED WALLS WITH 10mm NEGATIVE DETAIL TO CLOSE TO CEDAR SHIPLAP CEILING

BMT 0.55 COLORSTEEL ALTIMATE MC760 ROOFING IN BLACK ON THERMAKRAFT 215 SELF SUPPORTING UNDERLAY ON H1.2 70 x 45mm PURLINS AT 800 C/Cs ON DHS 250/15 RAFTERS AT 900mm C/Cs AS PER ENGINEER'S DESIGN. TURN DOWN ROOFING AT END.



BMT 0.55 COLORSTEEL ALTIMATE FLASHING TO MATCH ROOFING TO BE SOFT CLOSE TYPE AND COVER TWO TROUGHS AND 150mm MIN COVER

140 x 45mm H1.2 SG8 TOP PLATE WITH STUD TRIMMED ON THE ANGLE. USE M12 BOLT THROUGH TOP PLATE AND RAFTER FLANGE.

GIB LINED WALLS WITH 10mm NEGATIVE DETAIL TO CLOSE TO CEDAR SHIPLAP CEILING

VERTICAL CEDAR SHIPLAP CLADDING ON 45 x 45mm H3.1 STRUCTURAL BATTENS AT 400mm C/Cs SPACINGS ON THE HORIZONTAL ON THERMAKRAFT WATERGATE BUILDING WRAP ON 90 x 45mm H1.2 SG8 FRAMED WALLS.

GUTTER

1:5

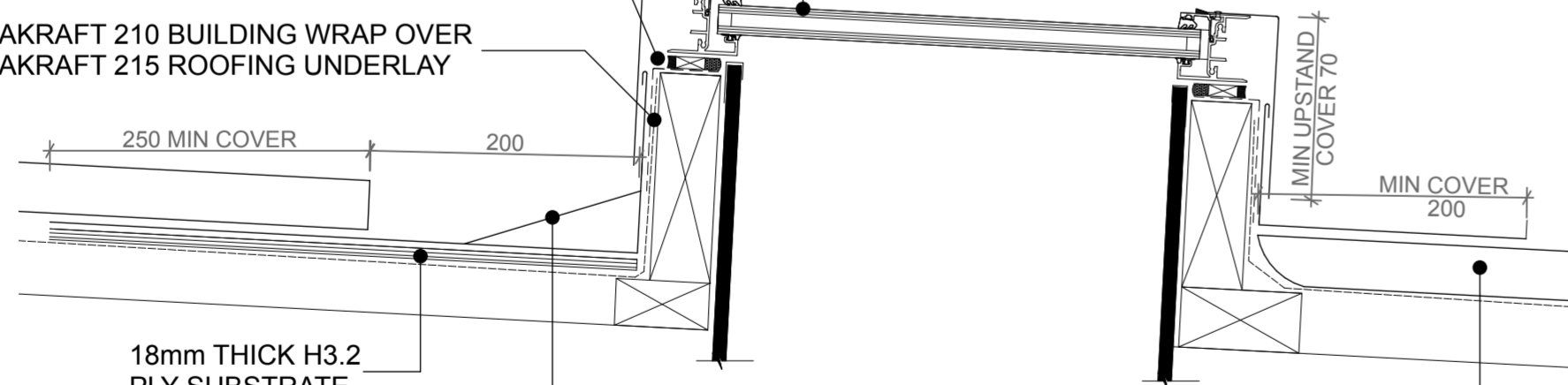
D10
A103

BMT 0.55 COLORSTEEL ALTIMATE TOP FLASHING TO BE SEALED AND RIVETED TO SKYLIGHT

DOUBLE GLAZED APL OPENING SKYLIGHT TO MATCH JOINERY

AIR SEAL AND PACKER TO SUIT WITH WATERPROOF SEAL TO OUTER EDGE

THERMAKRAFT 210 BUILDING WRAP OVER THERMAKRAFT 215 ROOFING UNDERLAY



BMT 0.55 COLORSTEEL ALTIMATE MC760 ROOFING ON THERMAKRAFT 215 SELF SUPPORTING UNDERLAY ON 70 x 45mm H1.2 PURLINS AT 800mm C/Cs ON DHS 250/15 RAFTERS AT 900mm C/Cs AS PER ENGINEER'S DESIGN.

BARGE

1:5

D11
A201

SKYLIGHT

1:5

D12
A202

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer



PROJECT:
NEW BACH
 ADAM PARORE & LIBBY PRICE

ADDRESS:
 536 KOUTU LOOP RD
 OPONONI

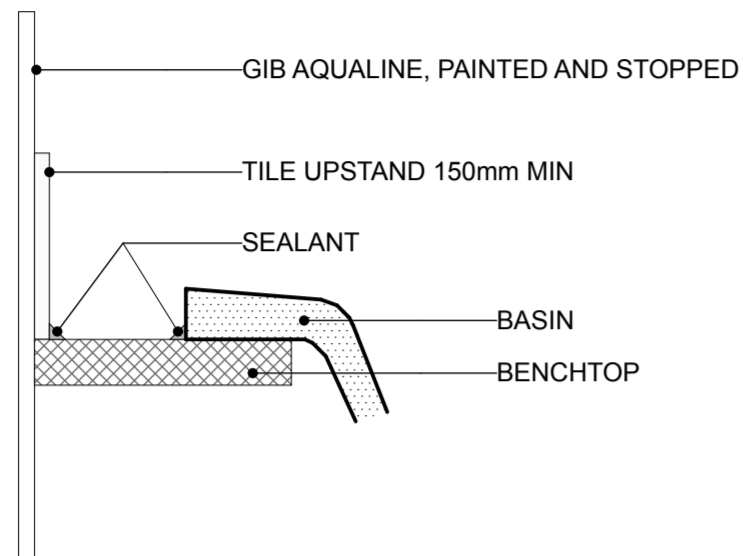
DESIGNED BY: CT
 DRAWN BY: PNY
 REVISION #:
 ISSUED: 7/09/23

SHEET TITLE:
DETAILS 7 - ROOF
 SCALE:
 1:5 @ A2

SHEET:

A407

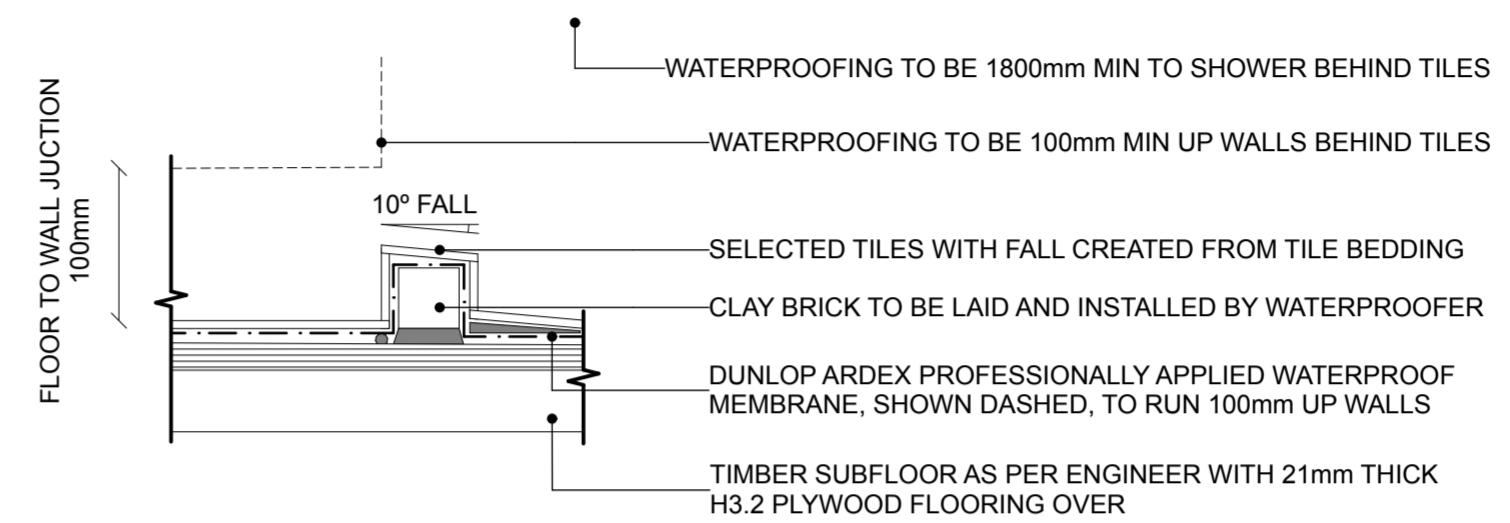
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E3 SINK TO WALL

NTS - GENERIC - NOT REFERENCED

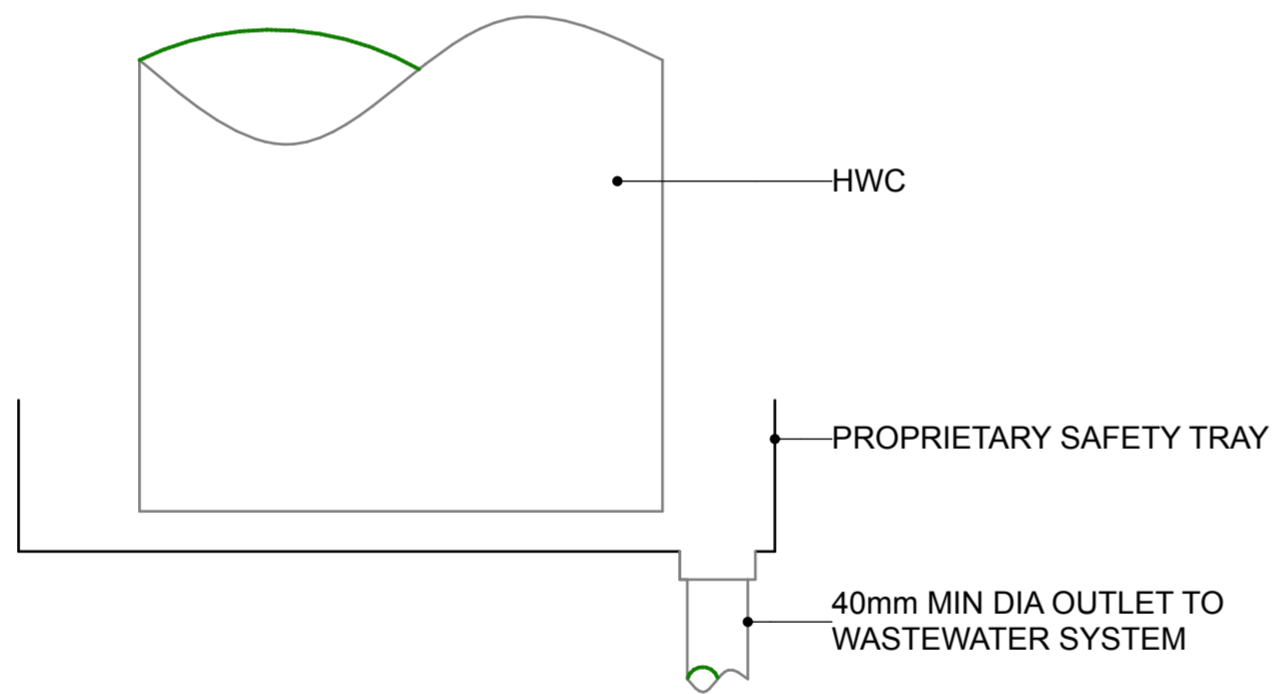
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SHOWER NIB

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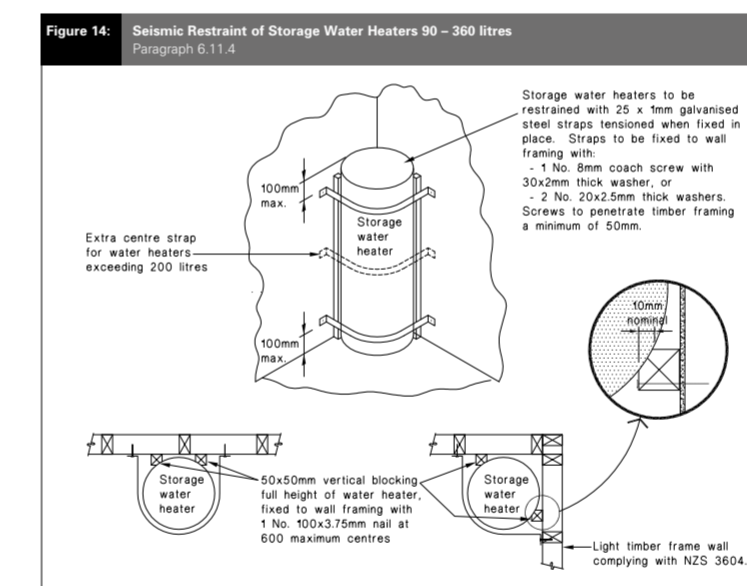
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HWC OUTLET

NTS - GENERIC - NOT REFERENCED

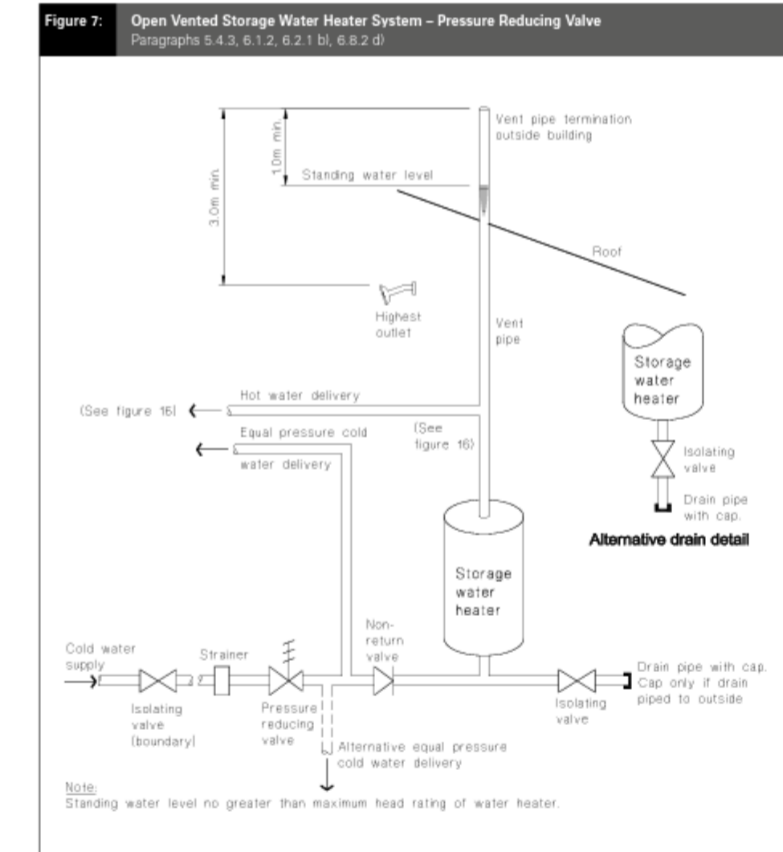
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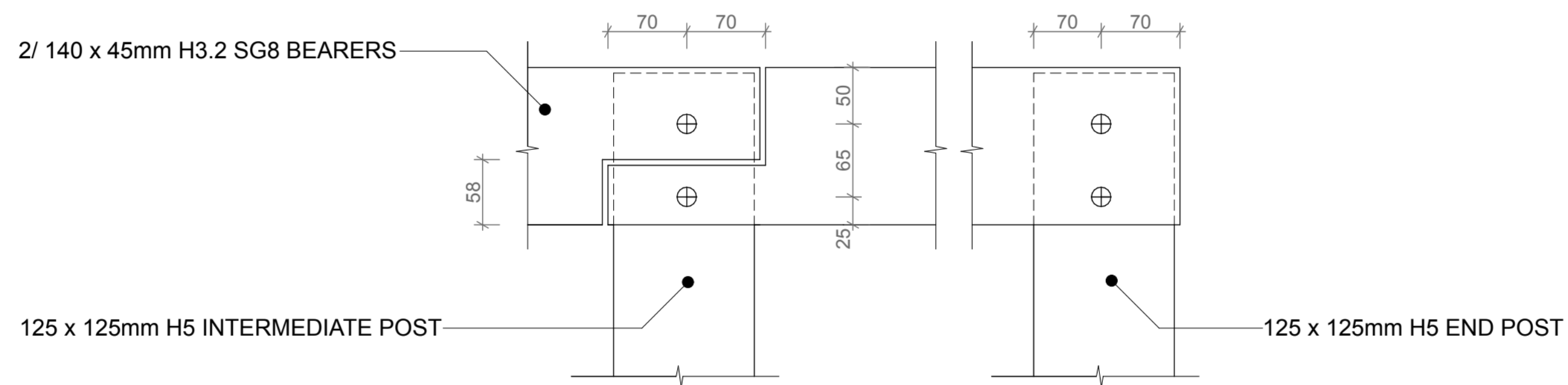


HWC SEISMIC RESTRAINTS / PRESSURE-REDUCING VALVE

NTS - GENERIC - NOT REFERENCED

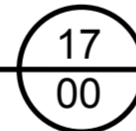
16
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BEARER JOINT

1:5 - GENERIC - NOT REFERENCED



Type text here

This plan complies with my 23/31 calculations where applicable.
T. Drupsteen 080923
T. DRUPSTEEN - CP Eng. IntPE
 Consulting Engineer

CHRIS TATE
ARCHITECTURE

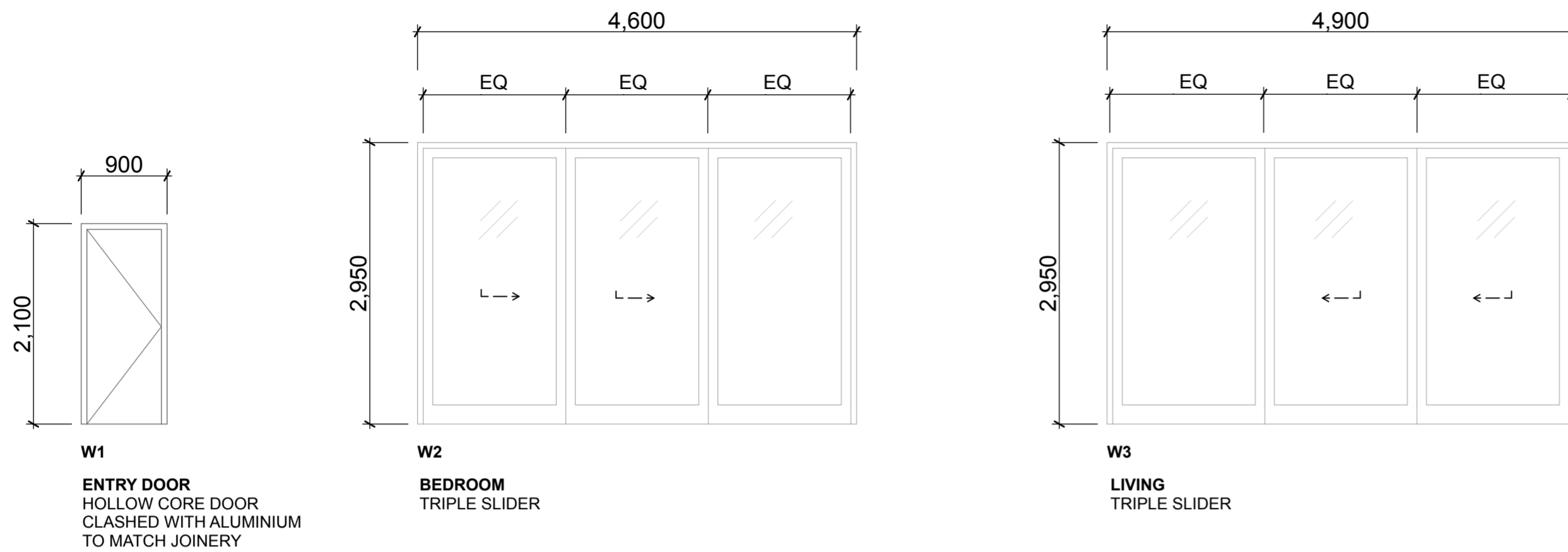
PROJECT:
NEW BACH
ADAM PARORE & LIBBY PRICE

ADDRESS:
536 KOUTU LOOP RD
OPONONI

DESIGNED BY: CT
 DRAWN BY: PNY
 REVISION #:
 ISSUED: 7/09/23

SHEET TITLE:
DETAILS 8 - SUBFLOOR
 SCALE:
1:5 @ A2

SHEET:
A409



NOTES

SCHEDULE ITEMS VIEWED FROM EXTERIOR.

JOINER TO CONFIRM ALL MEASUREMENTS ON SITE AND OPENING DIRECTION WITH CLIENT PRIOR TO FABRICATION.

LINTELS

W1 2/145 x 45mm SG8
 W2 & W3 250PFC AS PER ENGINEER.

SUITE

ALL EXTERIOR JOINERY IS APL THERMALHEART POWDERCOATED BLACK.

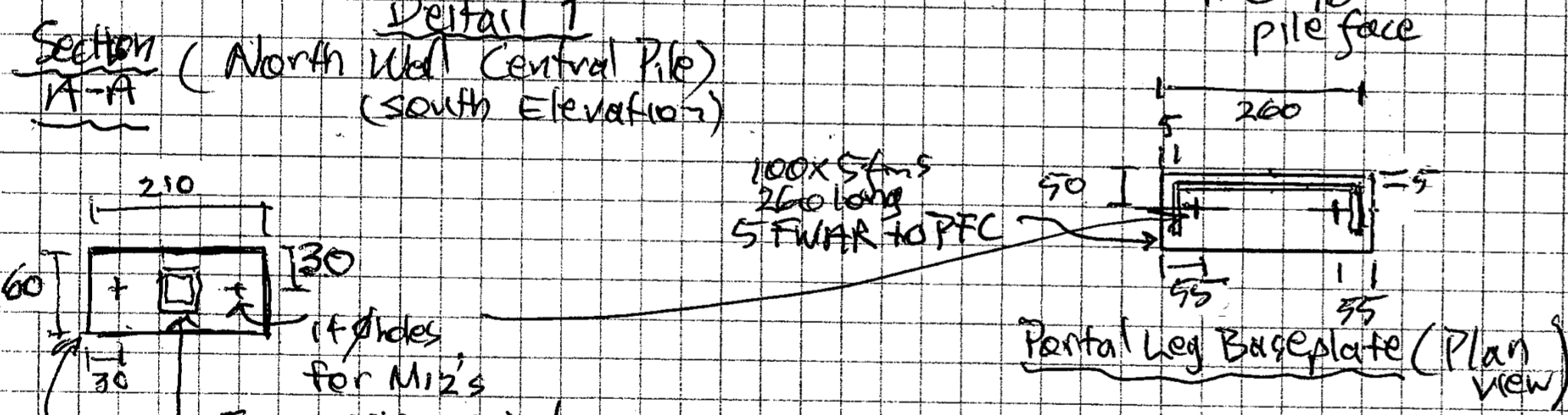
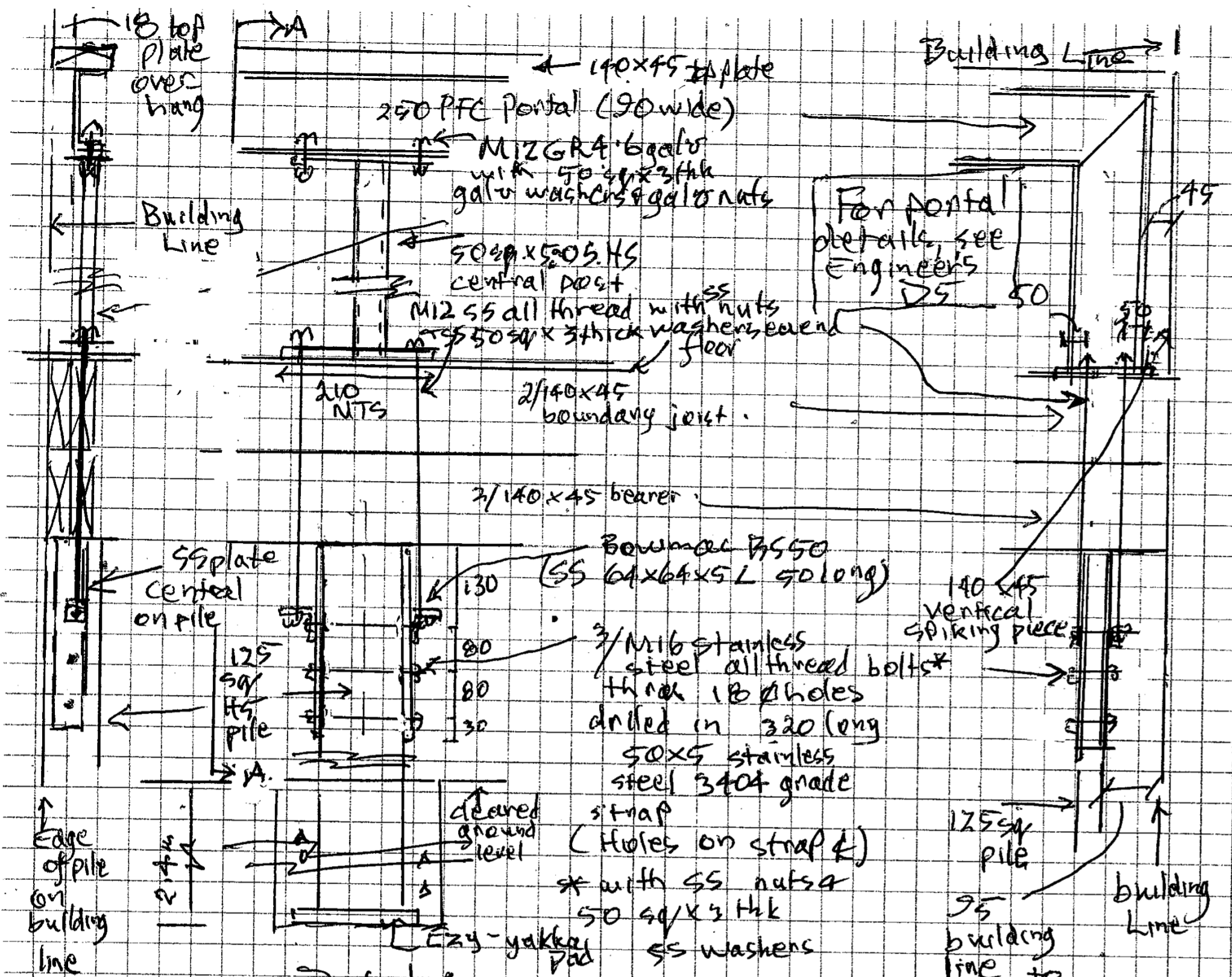
GLAZING

DOUBLE GLAZED SAFTEY GLASS WITH CLEAR LOW-E/3 GLAZING AND ARGON GAS AND THERMAL SPACER.

GLAZIER TO USE SAFETY GLASS TO MEET NZ BUILDING CODE. EACH PANE TO HAVE A VISIBLE ETCHED SAFTEY GLASS STAMP.

HARDWARE

CLIENT SELECTED HARDWARE



50 sq S45 end plates (plan view)

PARORE FAMILY TRUST

536 Koufua Loop Rd Bach

North Wall Portal Fixings to Floor

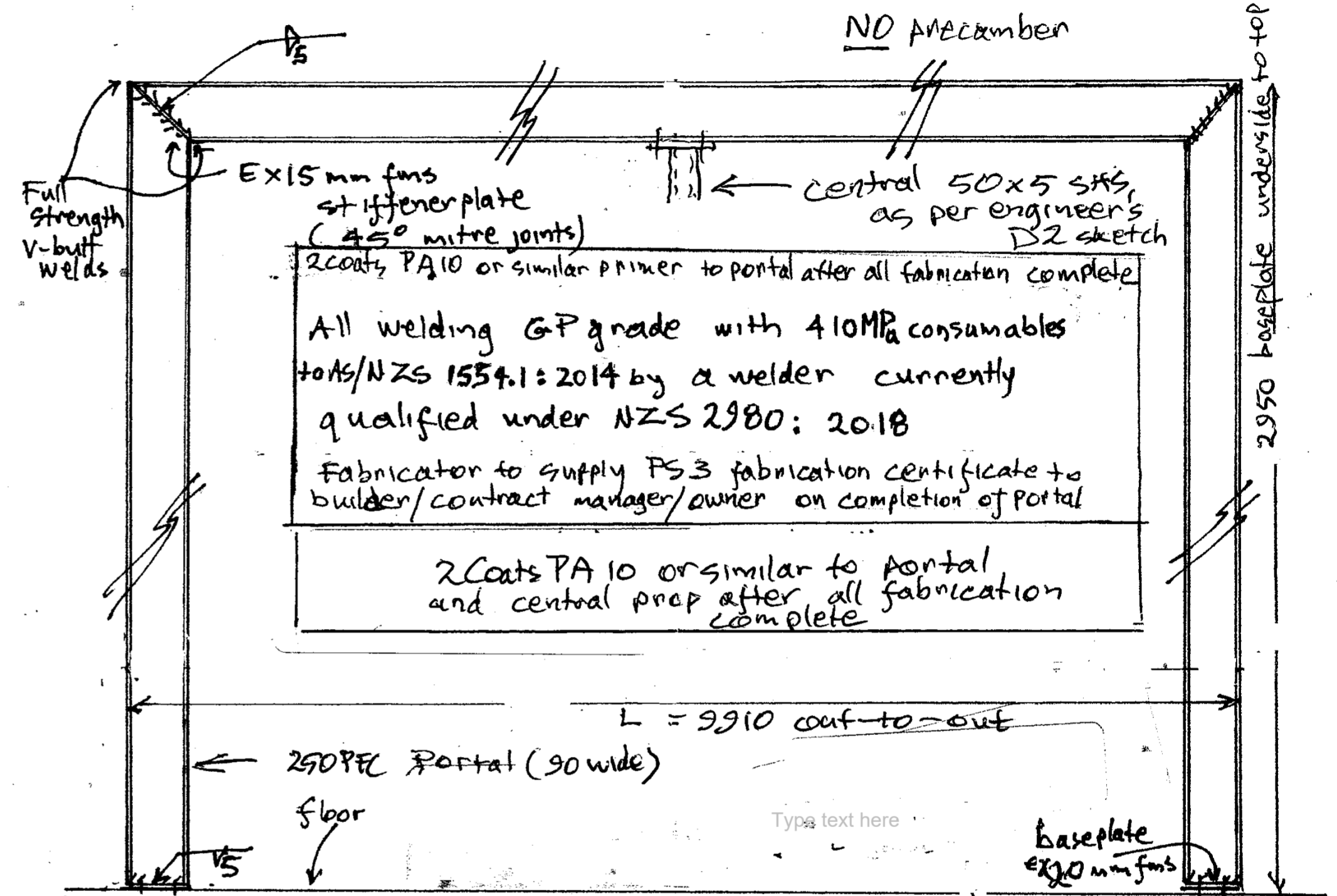
Drawn: T. Drupsteen

Date: 18/7/23

Scale: Not to Scale

TD ref: 23/31

D2 of 5



This plan complies with my 23/31 calculations where applicable.

T. Drupsteen 0800923

T. DRUPSTEEN - CP Eng, IntPE Consulting Engineer

See engineer's D2 sketch for baseplate details.

Parore Family Trust Bach

TD ref: 23/31

Drawn: T. Drupsteen

Date: 18/7/23

Scale: Not to scale

T. DRUPSTEEN Consulting Engineer
B.E. CP Eng, IntPE, M.I.P.E.N.Z
3264 SH 12, R.D.3, Kaikohe
Ph(9) 4014 737 02011 43443

ENGINEER'S DETAIL D2:
NORTH WALL PORTAL FIXINGS TO FLOOR

SHEET D

ENGINEER'S DETAIL D5:
STEEL BRACING PORTAL

SCALE: Not to Scale

D5 of 5

STATEMENT OF DESIGN - PS1

Issued by: Dean Hoyle

To: Joanne Moffitt

Copy to be supplied to: Far North District Council

In Respect of: NaturalFlow Domestic Onsite Wastewater and Sewage System Design

At: 536 Koutu Loop Road, Opononi

Legal Description: Lot 2 DP 104035

Waterflow NZ Ltd has been engaged by Joanne Moffitt to provide the technical design services and details in respect of the requirements of G13/VM4 and B2 Durability of the Building Code 2004, for an Onsite Wastewater and Sewage System for their building at the above location.

The Design has been carried out in accordance with Auckland Council TP-58 Guidelines and Clause B2, G13 and G14 of the Building Regulations 2004.

The proposed building work covered by this producer statement is described on the drawings titled: Joanne Moffitt Onsite Wastewater Design Report, and numbered 1-42 together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions: correct installation of the system and drainage fields
- (ii) All proprietary products meeting their performance specification requirements;

As an independent design professional covered by a current policy for Professional Indemnity Insurance, no less than \$200,000*, I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

Signed by: Dean Hoyle – PS Author '3037' Auckland Council, NZQA Onsite Wastewater Training/Opus, BOINZ OWM, HBRC & FNDC Approved Designer

Date: 22.08.23

Signature: 

Waterflow NZ Ltd
1160 State Highway 12
Maungaturoto 0520

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000.*

2023

Waterflow NZ Ltd
Certified Designer

Joanne Moffitt
536 Koutu Loop Road
Opononi
Lot 2 DP 104035

Reference Number: WF10974
Issued 22.08.23

[ONSITE WASTEWATER DESIGN REPORT]

Onsite Wastewater Design Report by Waterflow NZ Ltd – Copyright 2014

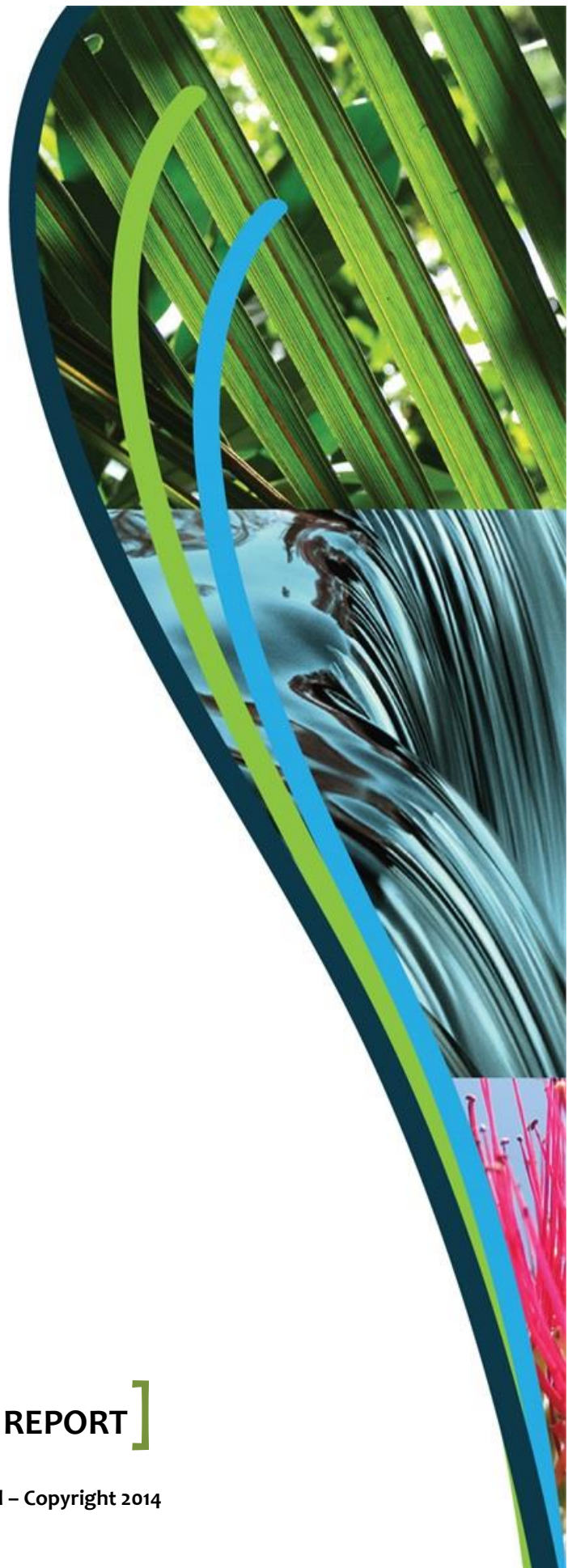


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PART B: SITE ASSESSMENT - SURFACE EVALUATION 5

PART C: SITE ASSESSMENT - SOIL INVESTIGATION 7

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PART E: LAND DISPOSAL METHOD 10

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PART G: OPERATION AND MAINTENANCE OF SYSTEM 11

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DECLARATION 14

SITE LAYOUT PLAN: 15

Attachments

- PS1
- Land Application System Schematics
- Pump Specification
- Electrical Diagram
- Assessment of Environmental Effects
- System & Installation Specifications
- System & Installation Specifications
- Home Owners Care Guide

PART A: CONTACT AND PROPERTY DETAILS

A 1. Consultant / Evaluator

Name:	Dean Hoyle
Company/Agency:	Waterflow New Zealand Ltd
Address:	1160 SH 12 Maungaturoto
Phone:	09 431 0042
Fax:	09 431 8845
Email Address:	dean@waterflow.co.nz

A 2: Applicant Details

Applicant Name:	Joanne Moffitt
Company Name:	
Property Owner:	Joanne Moffitt
Owner Address:	536 Koutu Loop Road, Opononi
Phone:	
Mobile:	021 713271
Email Address:	c2cearthscapes@gmail.com

A 3: Site Information

Sited Visited by:	Ken Hoyle	Date:	Wednesday, 9 August 2023		
Physical Address:	536 Koutu Loop Road, Opononi				
Territorial Authority:	Far North District Council				
Regional Council:	Northland Regional Council				
Regional Rule	C.6.1.3				
Legal Status of Activity:	Permitted:	<input checked="" type="checkbox"/>	Controlled:	<input type="checkbox"/>	Discretionary:
Total Property Area (m²):	14570m ²				
Map Grid Reference:					
Legal Description of Land (as on Certificate of Title):					
Lot No:	2				
DP No:	104035				
CT No:					

A 4: Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on the site?

Yes:	<input checked="" type="checkbox"/>	No:	<input type="checkbox"/>
------	-------------------------------------	-----	--------------------------

If yes, give reference No's and description:

1 Existing Dwelling with own Wastewater Treatment system & disposal field, performing well. Owner proposes to build a 1 bedroom dwelling to the south of the section with own Wastewater Treatment system and PCDI field
--

A 5: Dwelling(s) for which on-site wastewater service is to be provided

Status of dwelling(s) to be serviced:	New	<input checked="" type="checkbox"/>	Existing	<input type="checkbox"/>	Multiple	<input type="checkbox"/>
How many dwellings on the property?	1					
Capacity of dwellings:	Dwelling 1	1				
(or number of bedrooms)	Dwelling 2					
	Dwelling 3					
	Other:					
Notes:						

PART B: SITE ASSESSMENT - SURFACE EVALUATION

B 1: Site Characteristics

Performance of adjacent systems:	(Unknown)		
Estimated annual rainfall (mm):	1250 - 1500 (as per NIWA statistics)		
Seasonal variation (mm):	300-400mm		
Vegetation cover:	Native Bush		
Slope shape:	Linear Planar		
Slope angle:	7-9 °		
Surface water drainage characteristics:	Broad overland to roadside drain		
Flooding potential?	Yes:	No:	x
If Yes, specify relevant flood levels relative to disposal area:			
Site characteristics:	an irregular large shaped property. Property is generally covered with native bush. Property boundaries are on Koutu Loop Road to the East and other like properties and native bush on all other boundaries.		

B 2: Slope Stability

Has a slope stability assessment been carried out on the site?

Yes:		No:	x
------	--	-----	---

If no, why not?

Low slope:	x	No signs of instability:	x	Other:
------------	---	--------------------------	---	--------

If yes, give brief details of report:

Details:	
Author:	
Company/Agency:	
Date of report:	

B 3: Site Geology

--

B 4: Slope Direction

What aspect does the proposed disposal system face?

North	x	West	
North-West		South-West	
North-East		South-East	
East		South	

B 5: Site Clearances if applicable (also on site plan)

	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries:	>1.5	>1.5
Surface Water:	>15	>15
Ground Water:	>1.2	>1.2
Stands of Trees / Shrubs:	n/a	n/a
Wells/Water Bores:	>20	>20
Embankments / Retaining Walls:	>3	>3
Buildings:	>3	>3
Other:		

B 6: Please identify any site constraints applicable for this property, and indicate how the design process is to deal with these.

Constraints	Explain how constraints are being dealt with
1 Site constraints: (a) (b)	n/a

PART C: SITE ASSESSMENT - SOIL INVESTIGATION

C 1: Soil Profile Determination Method

Test pit:		Depth (mm):		No. of Test pits:	
Bore hole:	x	Depth (mm):	1200	No. of Bore holes	2
Other:					

C 2: Fill Material

Was fill material intercepted during the subsoil investigation?

Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
------	--------------------------	-----	-------------------------------------

If yes, please specify the effect of the fill on wastewater disposal:

--

C 3: Permeability Testing

Has constant head Permeability Testing (Ksat) been carried out?

Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
------	--------------------------	-----	-------------------------------------

If yes, please indicate the details (test procedure, number of tests):

--

Test report attached?

Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
------	--------------------------	-----	-------------------------------------

C 4: SURFACE WATER CUT OFF DRAINS

Are surface water interception/diversion drains required?

Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
------	--------------------------	-----	-------------------------------------

C 5: DEPTH OF SEASONAL WATER TABLE:

Winter (m):	>1.2
Summer (m):	>1.2

Was this:

Measured:	<input checked="" type="checkbox"/> no sign of ground water or mottling in bore holes
Estimated:	

C 6: SHORT CIRCUITS

Are there any potential short circuit paths?

Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
------	--------------------------	-----	-------------------------------------

If yes, how have these been addressed?

--

C 7: SOIL CATEGORY

Is topsoil present?

Yes:	<input checked="" type="checkbox"/>	No:	<input type="checkbox"/>
------	-------------------------------------	-----	--------------------------

If yes, what is the topsoil depth & soil description?

300mm topsoil over silty clay loam

Indicate the disposal field soil category (as per AC TP-58, Table 5.1)

Category	Description	Drainage	(x)
1	Gravel, coarse sand	Rapid draining	
2	Coarse to medium sand	Free draining	
3	Medium-fine & loamy sand	Good draining	
4	Sandy loam, loam & silt loam	Moderate draining	
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow draining	x
6	Sandy clay, non-swelling clay & silty clay	Slow draining	
7	Swelling clay, grey clay & hardpan	Poorly or non-draining	

Reason for placing in stated category:

Result of bore hole/test pit sample	<input checked="" type="checkbox"/>
Profile from excavation	<input type="checkbox"/>
Geotech report	<input type="checkbox"/>
Other:	<input type="checkbox"/>

C 8: SOIL STRUCTURE

Based on results of the in-situ soil profile investigation above (C7) please indicate the disposal (land application) field soil structure:

Massive	<input type="checkbox"/>
Single grained	<input type="checkbox"/>
Weak	<input type="checkbox"/>
Moderate	<input checked="" type="checkbox"/>
Strong	<input type="checkbox"/>

C 9: As necessary, provide qualifying notes on the relationship of Soil Category (C7) to Soil Structure (C8) and the effect this relationship will have on design loading rate selection:

--

PART D: DISCHARGE DETAILS - SEE HYDRAULIC LOADING TABLES

D 1: Water supply source for the property:

Rain water (roof collection)	x
Bore/well	
Public supply	

D 2: Are water reduction fixtures being used?

Yes:		No:	x
------	--	-----	---

If 'yes' Please state:

Standard Fixtures include dual flush 11/5.5 or 6.3 litre toilet cisterns, and includes standard automatic washing machine, but a low water use dishwasher, no garbage grinder.

D 3: Daily volume of wastewater to be discharged:

No. of bedrooms/people:	1: 1 Bedroom 2: 3:
Design occupancy (people): (as per AC TP-58, Table 6.1)	1: 2 People 2: 3:
	Black / Grey water
Per capita wastewater production (litres/person/day): (as per ARC TP-58, Table 6.2)	1: 160 L/day 2: 3:
Total daily wastewater production (litres per day):	320 L/day

D 4: Is daily wastewater discharge volume more than 2000 litres?

Yes:		No:	x
------	--	-----	---

D 5: Gross lot area to discharge ratio:

Gross lot area:	14570 m ²
Total daily wastewater production (litres/day):	320 L
Lot area to discharge ratio:	45.53

D 6: Net Lot Area

Area of lot available for installation of the disposal (land application) field and reserve area:

Net lot area (m ²):	13570 m ²
Reserve area (m ²):	30%

PART E: LAND DISPOSAL METHOD

E 1: Indicate the proposed loading method:

	Black / Grey Water
Gravity Dose:	
Dosing Siphon:	
Pump:	BIA-B42A

E 2: If a pump is being used please provide following information:

Total Design Head (m):	32
Pump Chamber Volume (litres):	1600
Emergency Storage Volume (litres):	4500

Is a high water level alarm being installed in pump chambers?

Yes:	<input checked="" type="checkbox"/>	No:	<input type="checkbox"/>
------	-------------------------------------	-----	--------------------------

E 3: Identify the type(s) of Land Disposal method proposed for this site:

	Black / Grey Water
P.C.D.I. Dripper Irrigation:	PCDI surface laid and mulched
L.P.E.D. System:	
Evapo-Transpiration Beds:	
Other:	
(as per Schematics attached)	

E 4: Identify the Loading Rate proposed for option selected in E3:

as per ARC TP-58, Table 9.2 & Table 10.3	Black / Grey Water
Loading Rate (litres/m ² /day):	3
Disposal Area Basal (m ²):	
Areal (m ²):	107

E 6: Details and dimensions of the disposal (land application) field:

Length (m):	21.3	No. Lines:	10	Hole Size:	N/A
Width (m):	5.0	Spacing (m):	0.5	Hole Spacing:	N/A
Notes:	107sqm of Surface laid PCDI dripline pinned at 0.5m centers and covered with a minimum covering of 100mm mulch. See schematic drawing attached.				

PART F: PROPOSED WASTEWATER TREATMENT SYSTEM

A NaturalFlow NF11000P Treatment System, fed through surface laid PCDI dripline is suitable for this site. The NF11000P Treatment System has enough capacity to accommodate 1600ltr per day, so will be well within its capacity. The land application system is designed to discharge a maximum volume of 320ltrs per day and if this is exceeded it could cause failure resulting in environmental and public harm.

PART G: OPERATION AND MAINTENANCE OF SYSTEM

The operation of this complete system will be explained verbally to the owner by the Installer or Agent on Completion of Installation; also provided with Waterflow's Home Owner's Manual.

Waterflow NZ Ltd encourages the Home Owner to monitor and care for your NaturalFlow system yourself, with our backing and support, and by doing so you will learn how your system works and operates and how to keep it in top working order.

It is also recommended that a Maintenance Program contract is in place at all times to ensure this system is maintained at top performance at all times.

All on site wastewater systems require regular maintenance; in this case once annually is suffice and may be specified within the consent process by the Building Department of Far North District Council. This Maintenance will be recorded on hard copy and supplied to both the Owner and Far North District Council Compliance Officer if requested.

NOTE TO OWNER: All written records pertaining to the wastewater system should be retained in a safe place. When a change of ownership occurs, a full and complete history is able to be passed to the new owners.

Animals are to be physically excluded from the installed effluent field to avoid damage, and to reduce the risk of soil compaction in the vicinity of the bed.

Planting within this area is encouraged to assist with evapotranspiration by plants.

PART H: SOIL LOG PROFILE



300mm topsoil over silty clay loam
Class 5, (as per AC TP-58, Table 5.1)



PART I: SITE IMAGES



NaturalFlow Series NF11000P System - location to be confirmed onsite, minimum 3m from dwelling.


Proposed Building Platform




Land Application System: 107sqm of surface laid PCDI dripline, 10 x 21.3m pinned at 0.5m centers and covered with a minimum of 100mm landscape mulch. To be laid near to contour and protected from stock and vehicular traffic. See schematic drawing attached.

DECLARATION

I, hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Prepared By:	
Name:	Alexandra Sabath - Wastewater Design Technician
Signature:	
Date:	22.08.23

Reviewed By:	
Name:	Dean Hoyle – PS Author ‘3037’ Auckland Council, NZQA Onsite Wastewater Training/Opus, BOINZ OWM, HBRC Approved Designer
Signature:	
Date:	22.08.23

NOTE: The Waterflow Systems are to be installed by a registered drainlayer to the designs supplied by Waterflow NZ Ltd. All work to comply with Regional Council Water and Soil Plans.

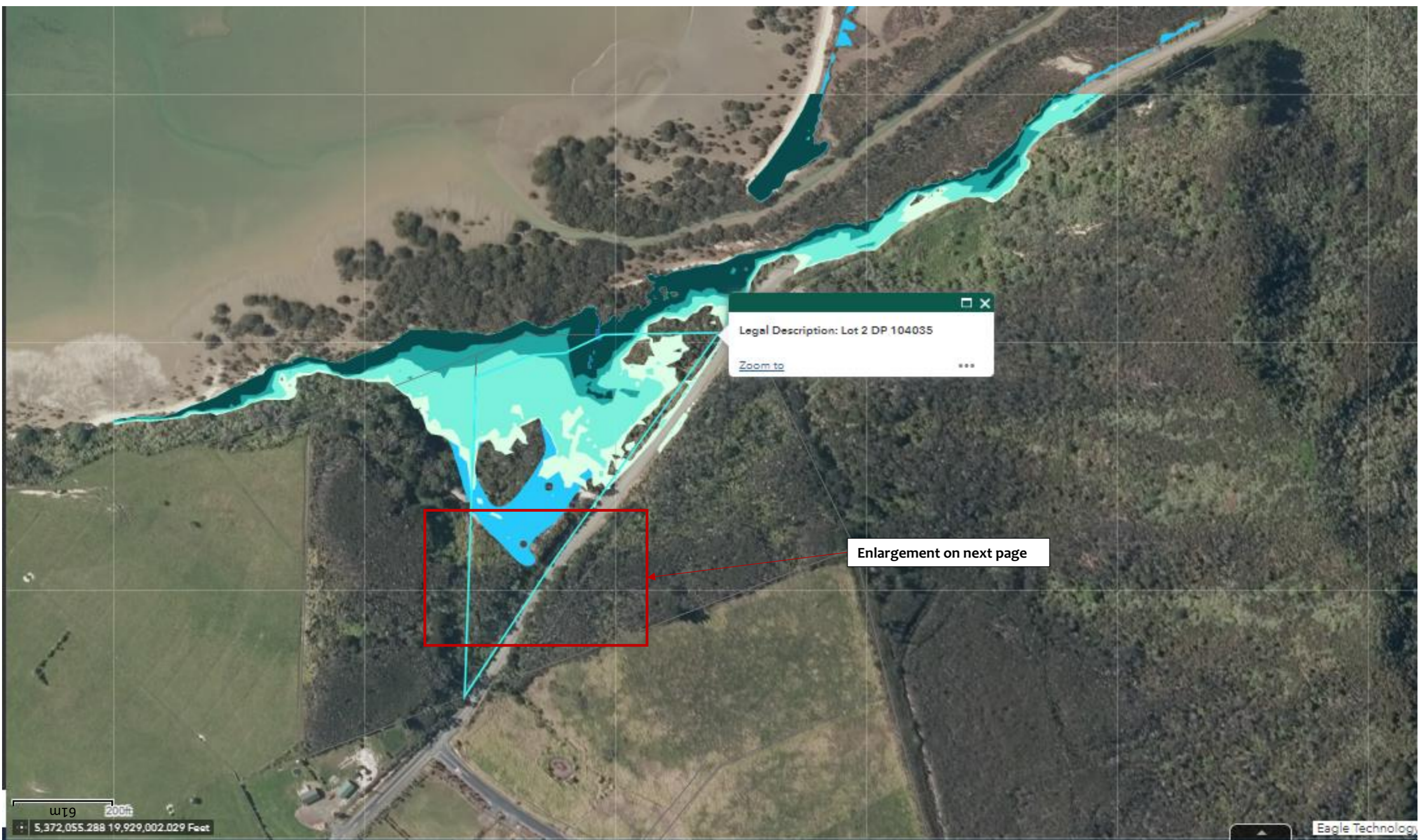
Comments/Summary:

The disposal field will need to be protected from traffic and animal grazing. Planting this area is recommended to increase Evapotranspiration.

Suitable plants for the disposal field can be found on our website www.naturalflow.co.nz

Waterflow Treatment systems to be installed by accredited installer unless other arrangements have been made by Waterflow NZ Ltd

For more information do not hesitate to contact the team at Waterflow NZ Ltd on 0800 628 356



Legal Description: Lot 2 DP 104035
 Zoom to

Enlargement on next page

WT9 200ft
 5,372,055.288 19,929,002.029 Feet

Eagle Technology



SITE LOCATION PLAN:
 Joanne Moffitt
 536 Koutu Loop Road
 Opononi
 Lot 2DP 104035
 1.457HA

SCALE:
 1 : 240
 @ A3

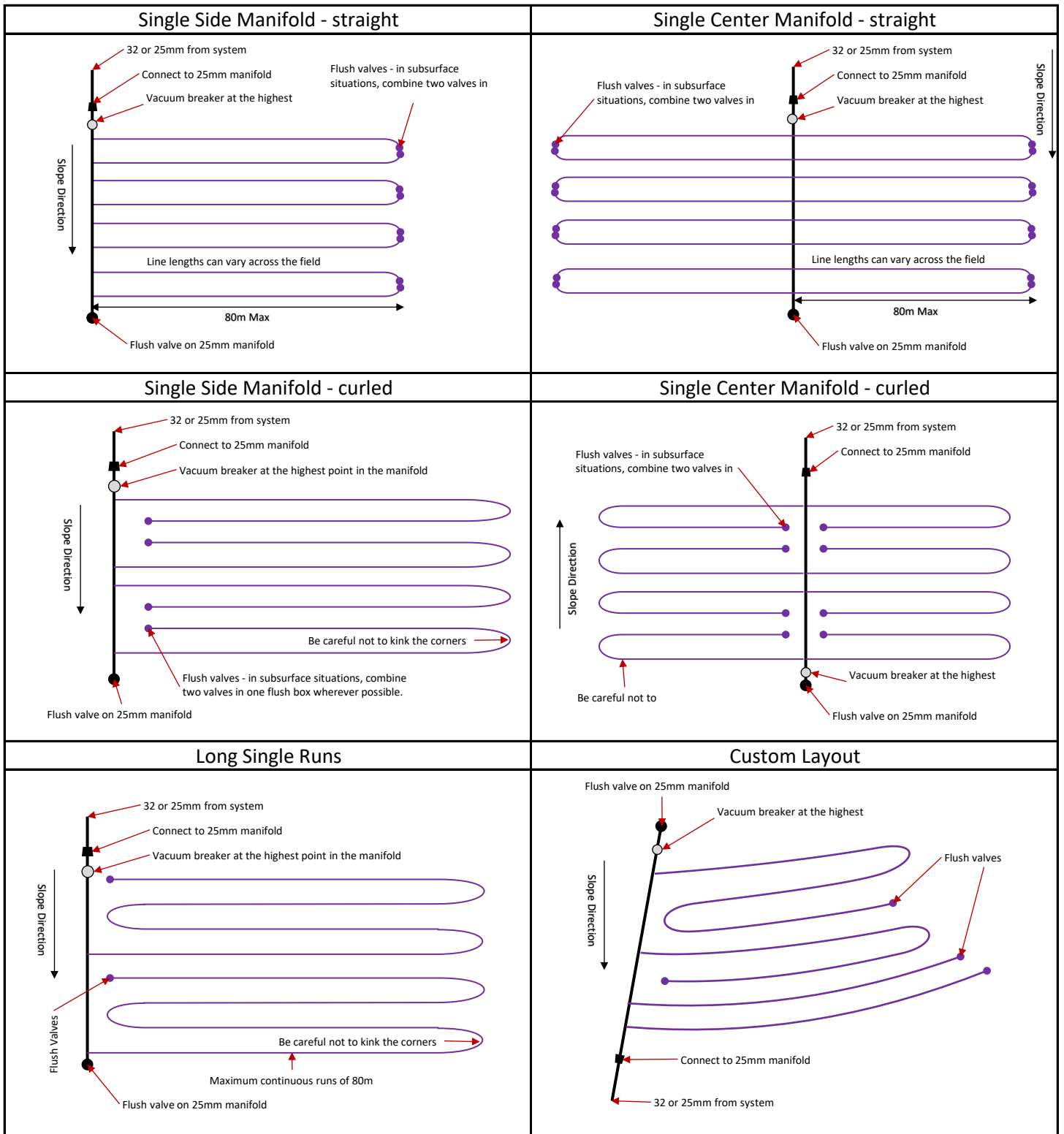


DATE DRAW: 22.08.23
 PREPARED BY: Alexandra Sabath
 REVISED: Dean Hoyle

SITE LAYOUT PLAN:
 Joanne Moffitt
 536 Koutu Loop Road
 Opononi
 Lot 2 DP 104035
 1.457HA

SCALE:
 1 : 51
 @ A3

Common PCDI Layouts

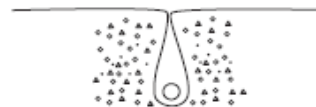


Cross Sections of PCDI installation

150mm Mulch or Leaf Litter



Subsoil Buried @ 100-150mm





METZERPLAS

ADI

Cylindrical PC
(Pressure
Compensated)
dripper.

- Cylindrical PC dripper, with unique regulating labyrinth with self-flushing operation at the beginning and the end of each irrigation cycle.
- Triple inlet filter with filtering area 10 times larger than any other dripper.
- High clog resistance.
- Suitable for poor quality and effluent water.
- Large pressure compensation range up to 4.3 bars.
- Dripline diameter: 16, 18 and 20 mm.
- Dripper flow rate: 1.6, 2.2 and 3.5 l/h.
- *Rootguard*® configuration available for extra root protection in SDI (Subsurface Drip Irrigation).



ADI Dripline Technical Data:

Model	Inside Diameter (mm)	Wall Thickness (mm)	Min. Working Pressure (bars)	Max. Working Pressure (bars)	KD
ADI 16	13.8	0.9	0.8	3.5	1.12
		1.15	0.8	4.3	0.95
ADI 18	15.8	1.2	0.8	4.3	0.95
ADI 20	17.4	1.0	0.8	3.5	0.85
		1.25	0.8	4.3	0.6



METZERPLAS

ADI

Cylindrical PC (Pressure Compensated) dripper.

ADI 16 mm. Maximum lateral length (I.D. 13.8 mm, W.T 0.9 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
1.6	86	122	156	188	218	260	324
2.2	72	103	131	157	182	216	269
3.5	51	73	94	113	131	156	195

ADI 18 mm. Maximum lateral length (I.D. 15.8 mm, W.T 1.2 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
2.0	93	134	171	205	238	284	355
3.5	65	92	118	142	166	198	247

ADI 20 mm. Maximum Lateral length (I.D. 17.4 mm, W.T 1.0 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
1.6	128	182	234	281	325	388	484
2.2	113	159	202	242	279	331	409
3.5	76	109	140	168	196	233	291

For additional tables and data please contact Metzerplas Technical Department or visit our website: www.metzerplas.com

Packaging Data

Model	Roll Length (m)	Quantity Per Container (Rolls)		
		20	40	40 h
ADI 16	400	150	300	350
ADI 18	300	150	300	333
ADI 20	300	133	266	300



Electrical data:

Rated voltage:	240V
Mains frequency:	50 Hz
Rated output:	550W
Current:	4.0 amps
Capacitor:	20 uF
Motor duty:	Continuous
Motor type:	Asynchronous
Motor protection:	In-built thermal overload
Ingress protection:	IP 68
Insulation class:	F
Power cable length:	10 m H07RNF
Net weight:	12 kg
Dimensions:	171Lx162Wx461H (mm)

2 Year Bianco Pumpz Warranty

The pump is a submersible drainage pump fitted with noryl impellers and stainless steel strainer. The pump has can handle particles up to 3mm.

The pump is characterised by:

- Glass filled pump body and noryl impellers for durability
- Fully automatic operation.
- Dual mechanical seals (Carbon ceramic on pump side and silicon carbide/ceramic in oil bath on motor side)
- Carry handle for ease of transport
- 240V single phase motor with in-built auto reset thermal overload.
- 10m of power cable.
- Dewatering of cellars, garages etc.
- Pumping clean or slightly dirty water
- Flows to 105L/min
- Heads to 32 m

Liquid:

Clean water temperature range: 2 – 35 °C

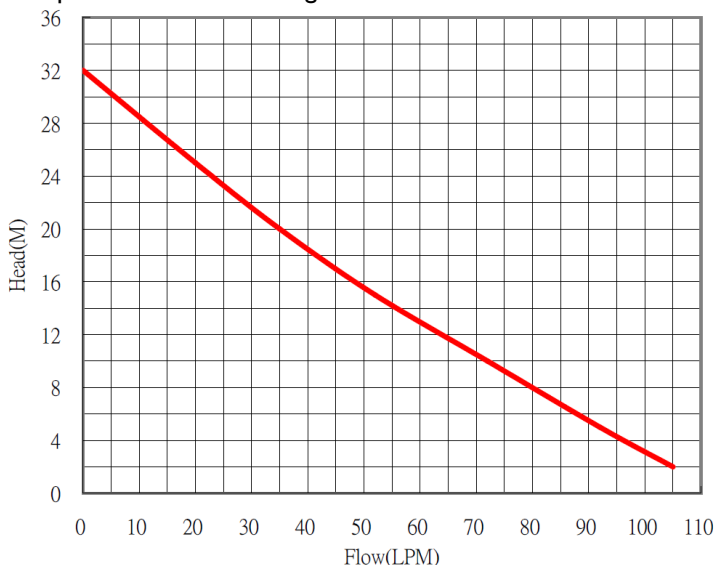
Materials:

Pump body:	Glass filled nylon
Strainer:	304 SS
Impeller:	Glass filled nylon
Shaft:	Stainless Steel 410
Shaft seal:	Dual mechanical seals (Carbon ceramic on pump side and silicon carbide/ceramic in oil bath on motor side)

Installation:

Maximum ambient temperature: 40 °C

Pipe connections discharge: 1 1/4" F



LIQUID LEVEL ALARM FLUSH MOUNTING

FPC-12656

Operating Instructions

Supply Voltage: 240VAC
Operating voltages: 24VDC / 5VDC

Setup

- The input mode selection DIP switch No. 1 is used to select whether the input signal is normally open or normally closed.
- If normally open is selected, then the alarm will activate when the input circuit is closed.
- If normally closed is selected then the alarm will activate when the input circuit is open.
- DIP switch number 2 has no function.

Operation: Alarm Behaviour

- When an alarm condition occurs (as described above), the input must remain in that state for 2 seconds before the alarm will activate.
- If the alarm condition clears then the alarm will turn off immediately.

Operation: Buzzer

- In an alarm condition the buzzer will sound for 5 minutes before it enters "chirp mode". Once in chirp mode, the buzzer will make a short beep every 5 minutes.

- The buzzer can be silenced at any time by pressing the mute button – this will also stop the "chirp mode".
- If the alarm condition subsides at any time then the mute will be cancelled.
- After 12 hours of being muted, and if the alarm condition is still present, the mute will automatically reset and the buzzer will begin sounding again.

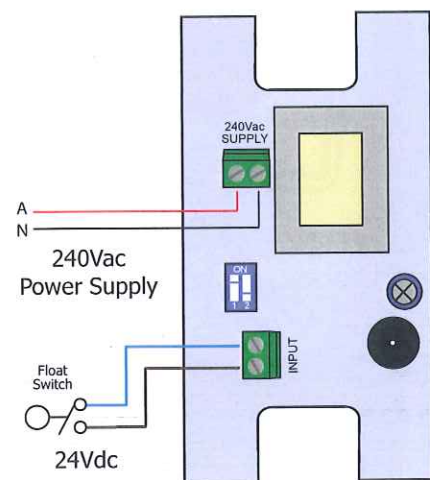
Operation: Silent Mode

- If at any stage the alarm condition subsides and then returns again, the mute will reset and the unit will begin sounding again. In conditions where a pump is struggling but still over all managing to keep up with the flow, this would mean that the alarm could keep sounding and the mute would not work.
- By holding down the mute button for 3 seconds the buzzer can be disabled. This can only be done when an alarm condition is already present and the unit will beep 3 times to confirm that it is now in silent mode.
- Silent mode will last for 12 hours before the unit will revert back to normal mode and the buzzer will begin operating again.
- Silent mode can be cancelled by holding down the mute button again for 3 seconds until the unit beeps twice.

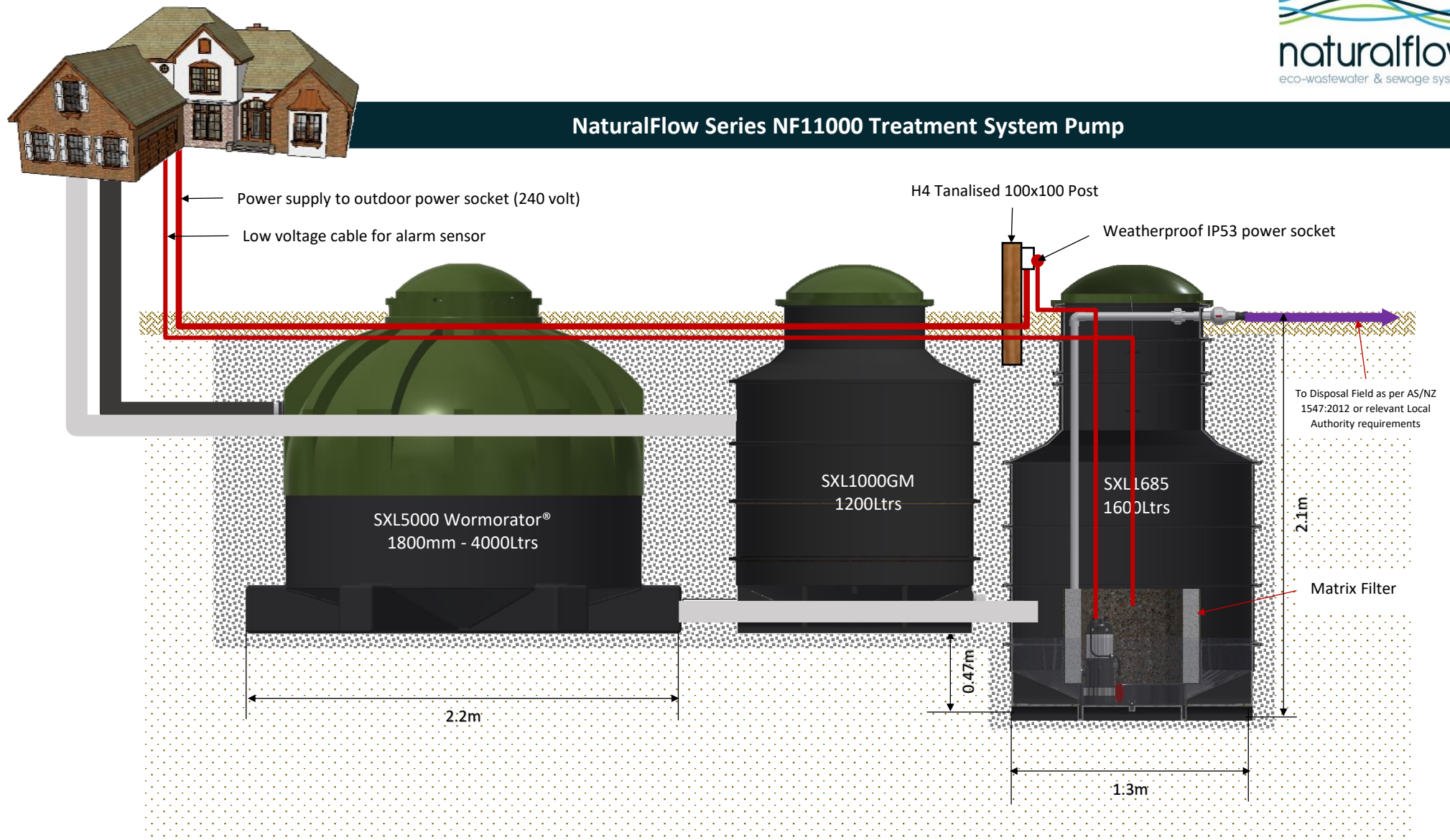
Schematic



Wiring



NaturalFlow Series NF11000 Treatment System Pump



Assessment of Environmental Effects

Joanne Moffitt of 536 Koutu Loop Road, Opononi Lot 2 DP 104035

1.1 Description of Proposal

The owners of this site propose the construction of a new 1 bedroom dwelling.

1.2 Site Description

This site, located at 536 Koutu Loop Road, is a an irregular large shaped property. Property is generally covered with native bush. Property boundaries are on Koutu Loop Road to the East and other like properties and native bush on all other boundaries.

1.3 Wastewater Volume

In calculating the wastewater flows we have allowed for a maximum occupancy of 2 persons, based on the proposed 1 bedroom dwelling (as per AC TP-58, Table 6.1). Total wastewater production is based on an allowance of 160 litres per person per day (as per ARC TP-58, Table 6.2), which is conservative given that water supply is roof collected rain water and standard water fixtures will be used throughout the house.

1.4 Wastewater Volume

The Naturalflow Series NF11000 treatment system that is proposed will treat the wastewater to a high standard prior to dispersal using a PCDI drip line, into a purpose-designed disposal field, where the removal of nutrient will continue, both in the receiving soils and by plant uptake.

The system will be capable of producing reductions in Biochemical Oxygen Demand, Total Suspended Solids, Nitrogen, and Coliforms to a standard that meets the requirements (see details below). The system will cater for the wastewater requirements of the private dwellings (domestic wastewater) and will not service any commercial or trade waste sources. Risk Minor to Nil.

1.5 Proposed Treatment System

The objective of the treatment system is to reduce and remove much of the contaminants from the wastewater prior to discharge into the receiving soil. This will improve the long-term performance of the disposal field as well as reducing the risk to the receiving environment. The system will consist of:

- Wormerator Module
- Grey Water Module

- Treated Effluent Pump Chamber
- Control panel with audio and visual alarm
- Land Application System

The system is constructed using plastic roto-molded tanks. The system produces treated effluent with BOD <20mg/l, Suspended solids <20mg/l.

1.6 Land Application System

The proposed irrigation system uses pressure-compensating dripper lines ensuring an even delivery of moisture over the entire irrigation field and a conservative DLR of 3mm. We propose the use of Metzertopline AD16/2.2 @ 0.6m/c with the Dripline laid out at 0.5m centres. This Dripline will then be covered by 100mm landscape mulch. Densely planting this area will greatly enhance evapo-transpiration and be very beneficial especially in the wetter months of the year. This irrigation can be installed in conjunction with existing or proposed landscaping.

1.7 Surface & Ground Water

It is proposed to treat the water to a high standard prior to discharge and the proposed irrigation system will introduce the water into the topsoil horizon using PCDI irrigation. A low application rate of treated effluent into the topsoil will significantly reduce the likelihood of, any breakout or runoff or any risk of surface water contamination. With the ground water levels being >1.2m this conservative DLR also means the risk of ground water contamination is virtually nil. A majority of the undeveloped areas of this site are suitable for a PCDI disposal field when the necessary setbacks are observed. Risk Minor to Nil.

1.8 Air Quality

The proposed Series NF11000 treatment system will produce no noticeable odour when functioning correctly. Any odour will be contained within the tanks. The PCDI irrigation system will load the soil at a rate that should not cause ponding, spraying or aerosol of the effluent that could potentially cause odours. Risk Minor to Nil.

1.9 Visual Impact

The tanks are installed wholly below ground level with only the lids being visible. The lids will protrude approximately 100mm to prevent egress of storm water into the system. The disposal field will be located in a purpose designed mulched and intensively planted disposal area. Warning signs may be installed to indicate the presence of the disposal area, although probably not necessary in a domestic situation, also the area may be fenced to restrict access.

1.10 Environmental Risks

Risks associated with this proposal are minor. The treatment system will be automated, and the Home Owner will be given a 'Home Owners Care Guide' which explains the necessary visual checks to ensure no issues arise with the system, specifically – solids build-up - high water level – discharge failure – filter blockage.

Peak flow into the system are not expected to be significant and the system includes a large emergency storage volume.

1.11 Maintenance Requirements

The maintenance requirement of this system is minimal, with the system fully automated. The system requires little input from the operator apart from the regular cleaning of the outlet filter between the treatment system and the Dripline field. All other maintenance interventions must be carried out by service persons familiar with the operation of the system and approved by the manufacturer. Maintenance may include checking of the dissolved oxygen levels, cleaning of effluent outlet filter, removal of excess sludge volume, checking of control panel function, etc....

The disposal field is quite possibly the most important and sensitive part of the treatment system and requires a reasonable amount of maintenance to keep it functioning well. Any leaking or damaged Dripline must be fixed quickly using the appropriate materials, the planting must be maintained, weeds removed and grass kept cut. The Dripline should be kept covered with a suitable bark, mulch, or topsoil.

Warning signs such as ponding, odours, and signs of excessive growth act as an indicator to possible problems. A disk filter is fitted to help prevent blockage of the drippers and to protect the Dripline. This filter will require cleaning during servicing of the system. The owners will be verbally informed at the commissioning of this system of all maintenance requirements and strongly advised to have a service contract in place prior to final sign off of the system installation.



naturalflow

eco-wastewater & sewage systems
by Waterflow NZ Ltd

NaturalFlow Series NF11000 Treatment System

System Specifications & Installation Instructions



NATURALFLOW SERIES NF11000

System Specification & Installation Instructions

New Zealand's Leaders in Eco-Sustainable, Odourless Wastewater and Sewage Systems

Compliance Requirements

All NaturalFlow Treatment Systems meet the requirements of the NZ Building Code G13-VM4.

Section 9 of AS/NZS 1546.1:2008 state that tanks constructed to these Standards will meet the requirements of the Code for Clauses B1 and B2, structure and durability.

Compliance with Section 9 of AS/NZS 1546.1:2008 and also Clauses G13.3.4 relating to on-site treatment and disposal systems and G14.3.1 and 14.3.2 relating to the control of foul water as an industrial waste are covered in the 'NaturalFlow Compliance Requirements' document.

Please feel free to ask for a copy of this complete document, if required.

The Treatment Process

The NaturalFlow Series NF11000 System comprises of a 1.8m diameter x 1.7m high WORMORATOR® module where the black water (B/W), (which in the NaturalFlow System includes the kitchen sink waste) in order to remove the solids, is directed onto a bed of natural medium lined with a textile cloth which is designed to retain maximum solids.

These residual solids are seeded with tiger worms which proceed, as results of long term testing have shown, to digest them reducing the volume by approximately 95%, leaving only residual vermicasts which are virtually free of harmful bacteria and other pollutants. The B/W then flows through a secondary filter tray which further treats the water reducing the TSS & BOD and also reducing the particle size, in the TSS, to less than 1mm. This secondary treatment tray acts as an in-built outlet filter AS/NZS 1546 1:2008 Clause D3.3. and has a minimum life expectancy of 15 years. It then flows into the Dose Treatment Chamber where it is combined with the grey water (G/W) and settlement and filtration takes place. Its final treatment, through an aerating matrix filter, brings its treatment level up to meet the 20/30 BOD/TSS, Secondary Treatment criteria and it is then reintroduced into the environment in accordance with AS/NZS 1547:2012 and the relevant local authorities' requirements.

The G/W, which is separated at its source from the B/W, flows first into the Grey Water Treatment Tank that retains the bulk of the scum and solids and then trickle filters through an aerating matrix filter and layers of natural media. It is then combined with the B/W in the Wormorator® Chamber for disposal in accordance with AS/NZS 1547:2012 This filter chamber has a buffering capacity of 1000ltrs to contain any surge flows.

The size and extent of the disposal system is determined by the receiving environment and the expected flow volumes. Factors such as soil types, slope and the proximity of potentially sensitive environments such as creeks, wells, bores and other water ways determine the extent, location and type of disposal system chosen.

The Wormorator® and associated dose tank has a 2000ltr reserve capacity where pump loading is necessary to allow for 24hrs emergency storage should a pump fail. The operating capacity of the NaturalFlow Series NF11000 Treatment System is 1600ltrs per day of combined Black and Grey water.

Because the Wormorator® is a dry vault system there is negligible sludge build up so it does not require any regular de-sludging. This specifically meets clause AS/NZS 1547:2012 4.2.2.1 as to de-sludging requirements.

See our website: www.naturalflow.co.nz

NATURALFLOW SERIES NF11000

System Specification & Installation Instructions

New Zealand's Leaders in Eco-Sustainable, Odourless Wastewater and Sewage Systems

Wormorator® & Dose Chamber Specifications

Tanks are made of Cotene 9050 which is a linear medium density polyethylene, designed specifically for rotational molding of large tanks and products that require a high level of rigidity. It contains a fully formulated long term UV stabilization package (with a minimum UV8 rating) and is suitable material for wastewater treatment containment meeting all the requirements of Section 4.3.3 of AS/NZS 1547:2012 which cross references the structural performance requirements of its section 2.4.2.3 back to the relevant provisions of AS/NZS 1546.1, which for plastic septic tanks constructed via by rotational molding using thermoplastics (polyethylene) are set out in Section 9 of that Standard. These tanks have an expected lifespan of 50 years.

SXL5000 Wormorator® Module

4000ltrs Nominal capacity
1800mm Diameter over main body
2200mm over feet
1700 mm O/A height

Dose Chamber

1600ltrs Nominal capacity
1200mm Diameter over main body
732mm Riser Diameter
2125mm O/A height

Grey Water Treatment Tank

1200ltrs Nominal capacity
1200mm Diameter over main body
1700mm O/A height

Installation Location and Certification

These tanks are not designed for vehicle loads and shall be located no closer than 1.50m to a driveway, road frontage or a building. If for any reason the tank is located where vehicle traffic may drive over the tank or approach closer than 1.50m, or where it may be trampled on by farm stock then the tank should be protected by a concrete slab designed to support these loads. Surface water must also be diverted from flowing into the installation.

Installation must be certified to AS/NZS 1547:2012, the certificate to be issued and held by the regulatory authority.

High Water Table Installations

All tanks have been engineered and designed with support ribbing for maximum strength, in accordance with the NZC 3604. Clauses B1 and B2 for structure and durability, to withstand any hydraulic pressures, both lateral and uplift, created by high water table conditions, even when the tanks are completely empty at install stage.

As per the NaturalFlow Systems installation instructions, in these conditions, tanks must be anchored in with concrete around base, as per the installation instructions, to height as specified.

Plumbing Pipes and Fittings

All internal plumbing is done with PVC pipes with appropriate connections according to AS/NZS 1260 and AS/NZS 4130.

If in doubt contact the experts on 0800 628 356 or sales@waterflow.co.nz

NATURALFLOW SERIES NF11000

System Specification & Installation Instructions

New Zealand's Leaders in Eco-Sustainable, Odourless Wastewater and Sewage Systems

Backfill and Bedding

Place and bed to NZBC G13/AS2, using compacted granular metal, in layers not exceeding 100mm.

Electrical

Where a pump is required on a flat site electrical connection must be installed according to AS/NZS 3000 and the control and alarm system must be in a weatherproof housing located in a readily visible position.

Warranty

WATERFLOW NZ LTD warrants that the NaturalFlow System will be free from defects in material and workmanship for the following periods of time from the date of installation as set out in the following conditions:

1. Roto-Molded tanks 15yrs
2. Filter media 15yrs
3. Dosing float/and or pumps 2yrs
4. WATERFLOW NZ LTD will at its discretion replace or repair such components that prove to be faulty with the same or equivalent part at no charge.
5. Warranty of operation covers the performance of the NaturalFlow systems as connected to the effluent inflow for which they are designed, and also installed to the criteria as set out in the relative installation instructions and procedures.

Warranty excludes defects due to:

- A) Failure to use the system in accordance with owner's manual.
- B) A force majeure event outside the reasonable control of WATERFLOW NZ LTD such as (but not limited to) earthquake, fire, flood soil subsidence ground water table variations or plumbing fault.
- C) Modifications to surrounding landscape contours after installation
- D) The actions of a third party
- E) The system required to bear loads (either hydraulic or biological) greater than that for which it was designed
- F) Any modifications or repairs undertaken without the consent of WATERFLOW NZ LTD
- G) Failure, where applicable, to fence and plant land application system (disposal field)



1st June 2014
Dean Hoyle
Managing Director

NATURALFLOW SERIES NF11000

System Specification & Installation Instructions

NaturalFlow Series NF11000 Dose Installation Instructions

The NaturalFlow system is to be installed or signed off by a registered Drain layer to the design specified by Waterflow NZ Ltd.

The following installation instructions and procedures followed correctly will ensure System performance is not compromised in any way.

1. Excavate a 2.5m diameter level platform for the Worminator® at the appropriate depth to ensure adequate fall for inlet pipe from the source. This has to be installed on virgin ground.
2. Lay 100mm of bedding metal on platform and place Worminator®. Do this before excavating for dose chamber as this helps keep the excavations to a minimum.
3. Analyze where the dose chamber needs to be placed (this needs to line up with one of the feet at the base of the WORMORATOR®) and excavate a 1.3m diameter level platform 550mm below the Worminator platform (this allows for 100mm of bedding material).
4. Very carefully drill a 127mm hole with a hole saw at the lowest point of the foot on Worminator and fit Uniseal (see Uniseal instruction details appendix B below).
5. Lay 100mm of bedding metal on dose chamber platform and place tank.
6. Measure the distance between the Worminator outlet and dose chamber inlet allowing 50mm both ends to insert into tanks. Mark pipe before inserting to ensure there is 50mm of pipe inside both tanks also fit the directional junction with flow being towards dose chamber.
7. Fit enough riser pipe to directional junction, to bring it up to grey water outlet level.
8. Trench from Dose Chamber outlet to disposal field, ensuring there is a constant fall from outlet to disposal field.
9. Where possible excavate a trench away from System and lay drain coil and drainage metal at the base of the system to drain away any surface or ground water. On a flat or high water table site System must be bedded in as per appendix A below.
10. Take a minimum of 3 photos at this point to showing connections and back fill, to ensure correct installation for sign off.
11. Back fill around the installed tanks until the required depth for the Grey Water module is reached, then excavate a level platform off 1.5m diameter and position tank on 100mm of bedding material and connect to 'riser'.
12. Back fill around tanks with pea-metal or similar. DO NOT back fill with soil or clay of any type as this can cause point pressure on the modules, through expansion and contraction, and will cause distortion.

Caution: System must be protected from excessive super imposed loads both lateral and top loads. E.g. loads from vehicular traffic. There needs to be at least 2m of clearance maintained around system.

Worms: Ensure adequate moisture in the Worminator® and add worms once installed unless systems is not going to be used within 2 months of installation.

If in doubt contact the experts on 0800 628 356 or sales@waterflow.co.nz

NATURALFLOW SERIES NF11000

System Specification & Installation Instructions

NaturalFlow Series NF11000 Pump Installation Instructions

The NaturalFlow system is to be installed or signed off by a registered Drain layer to the design specified by Waterflow NZ Ltd.

The following installation instructions and procedures followed correctly will ensure System performance is not compromised in any way.

1. Excavate a 2.5m diameter level platform for the Worminator® at the appropriate depth to ensure adequate fall for inlet pipe from the source. This has to be installed on virgin ground.
2. Lay 100mm of bedding metal on platform and place Worminator®. Do this before excavating for dose chamber as this helps keep the excavations to a minimum.
3. Analyze where the dose chamber needs to be placed (this needs to line up with one of the feet at the base of the WORMORATOR®) and excavate a 1.3m diameter level platform 550mm below the Worminator platform (this allows for 100mm of bedding material).
4. Very carefully drill a 127mm hole with a hole saw at the lowest point of the foot on Worminator and fit Uniseal (see Uniseal instruction details appendix B below).
5. Lay 100mm of bedding metal on dose chamber platform and place tank.
6. Measure the distance between the Worminator outlet and dose chamber inlet allowing 50mm both ends to insert into tanks. Mark pipe before inserting to ensure there is 50mm of pipe inside both tanks also fit the directional junction with flow being towards dose chamber.
7. Fit enough riser pipe to directional junction, to bring it up to grey water outlet level.
8. Where possible excavate a trench away from System and lay drain coil and drainage metal at the base of the system to drain away any surface or ground water. On a flat or high water table site System must be bedded in as per appendix A below.
9. Take a minimum of 3 photos at this point to showing connections and back fill, to ensure correct installation for sign off.
10. Back fill around the installed tanks until the required depth for the Grey Water module is reached, then excavate a level platform off 1.5m diameter and position tank on 100mm of bedding material and connect to 'riser'.
11. Trench from Dose Chamber outlet to disposal field, ensuring there is a constant fall from outlet to disposal field.
12. Back fill around tanks with pea-metal or similar. DO NOT back fill with soil or clay of any type as this can cause point pressure on the modules, through expansion and contraction, and will cause distortion.

Caution: System must be protected from excessive super imposed loads both lateral and top loads. E.g. loads from vehicular traffic. There needs to be at least 2m of clearance maintained around system.

Worms: Ensure adequate moisture in the Worminator® and add worms once installed unless systems is not going to be used within 2 months of installation.

NATURALFLOW SERIES NF11000

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Appendix A and B

Appendix A

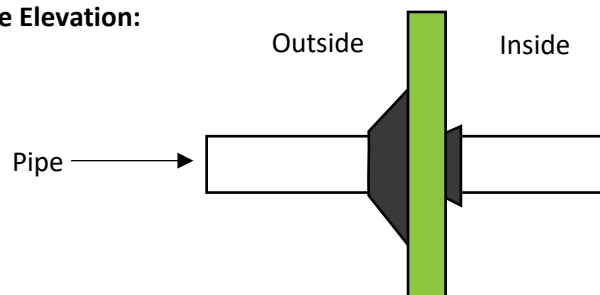
High Water Table: For installation in high water table areas, make sure you have a pump to pump away ground water whilst installing. Excavate a pump cavity to one side of the platform and pump ground water away during entire installation process. Half fill dose tank with water, this will flow back into Wormerator as well and will help with resisting the hydraulic uplift (ensure that Wormerator is not completely flooded). Either lay 2-3m³ of concrete around the base of the tanks or mix 3 bags of cement/cube of GAP20 (or similar) metal to form a mass to stop any hydraulic uplift. Leave water in tanks for at least 12 hours after installation is completed and then pump out to allow Wormerator to dry out.

Appendix B

Instructions for fitting UNISEAL®

1. Cut hole to the Hole saw size indicated for the UNISEAL® you are using. Either 127mm hole for a 4"/100mm pipe or 67.2mm hole for a 2"/50mm pipe.
2. Ensure that the hole is clean cut with sharp edges. Irregularities could cause poor seating and ultimate leakage.
3. Insert the UNISEAL® into the hole with the wide side facing the pipe to be inserted.
4. Make certain that the pipe end to be inserted is clean cut. File the edges so that there are no sharp points to cut UNISEAL®.
5. Using Detergent, lubricate the outside of the pipe end to be inserted, then push the pipe through the UNISEAL® from the large flange side. The detergent will be squeezed off as the pipe passes through the UNISEAL®. The co-efficient of friction of the rubber holds the pipe tightly in place.

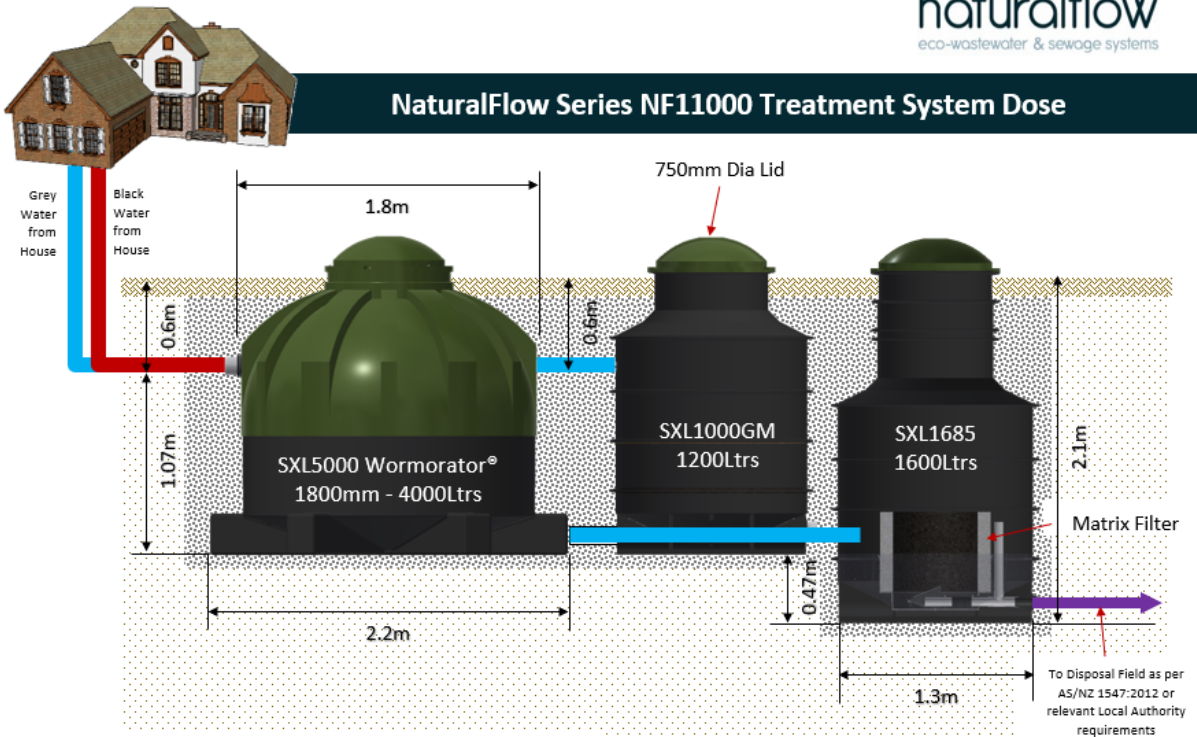
Side Elevation:



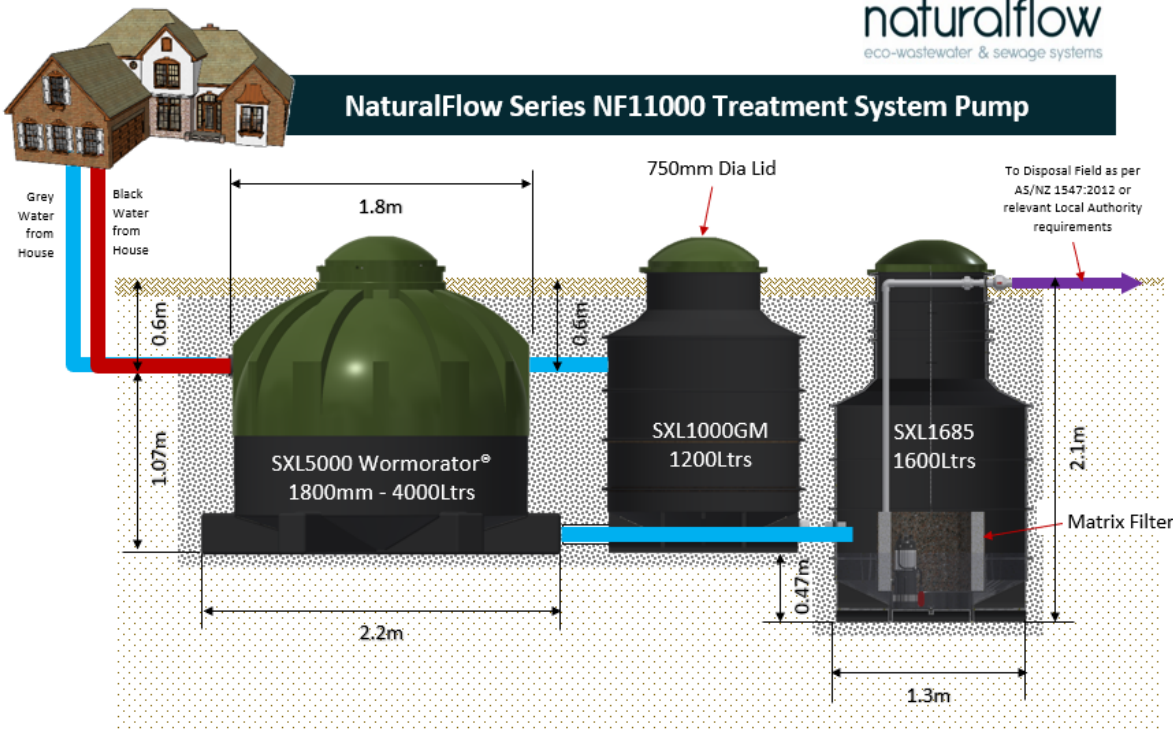
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System Specification & Installation Instructions

NaturalFlow Series NF11000 Flow Charts



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