TELOS GROUP
REAL ESTATE

1271 Tauwhare Rd, Eureka | PROPERTY INFORMATION

TELOS GROUP
REAL ESTATE

CONTENTS

PROPERTY INFORMATION FOR:

1271 Tauwhare Road, Eureka

DOCUMENTS INCLUDED:

- TITLE
- INTERESTS
- LIM REPORT
- RATES NOTICE
- VALUATION REPORT
- RENTAL APPRAISAL
- SCHOOL ZONES
- REAA GUIDES

STATEMENT OF PASSING OVER OF INFORMATION

This information has been supplied by the vendor or the vendor's agents. Accordingly Telos Group Real Estate Limited is merely passing over the information as supplied to us by the vendor or the vendor's agents. We cannot guarantee its accuracy and reliability as we have not checked, audited, or reviewed the information and all intending purchasers are advised to conduct their own due diligence investigation into the same. To the maximum extent permitted by law Telos Group NZ Limited do not accept any responsibility to any person for the accuracy of the information herein.

TELOS GROUP
REAL ESTATE

Certificate of title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir
Registrar-General
of Land

Identifier	**996572**
Land Registration District	**South Auckland**
Date Issued	12 August 2022

Prior References
SA221/216

Estate	Fee Simple
Area	8320 square metres more or less
Legal Description	Lot 1 Deposited Plan 561952
Registered Owners	

Robert Gordon Davies

Interests

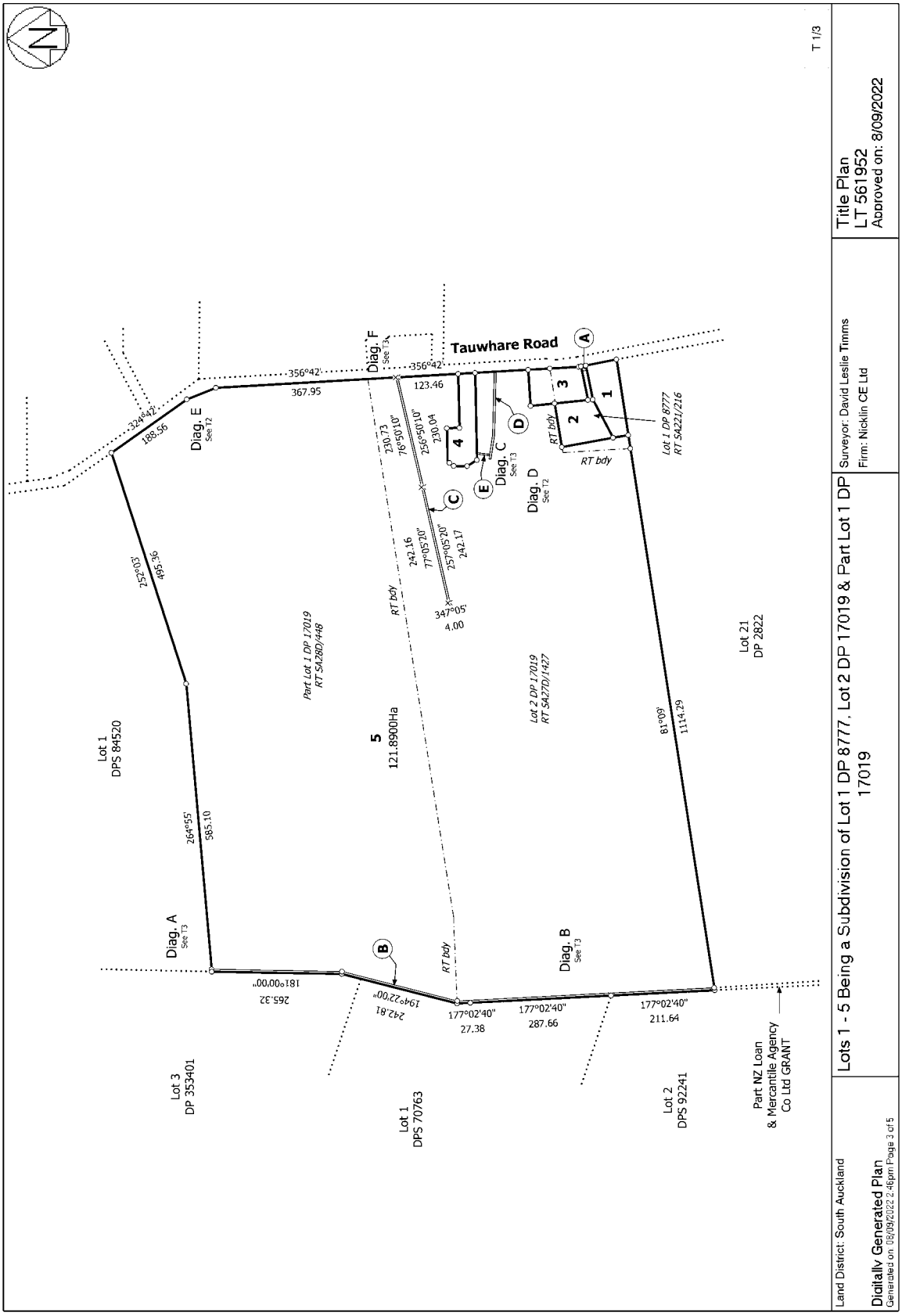
12459898.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.8.2022 at 3:33 pm

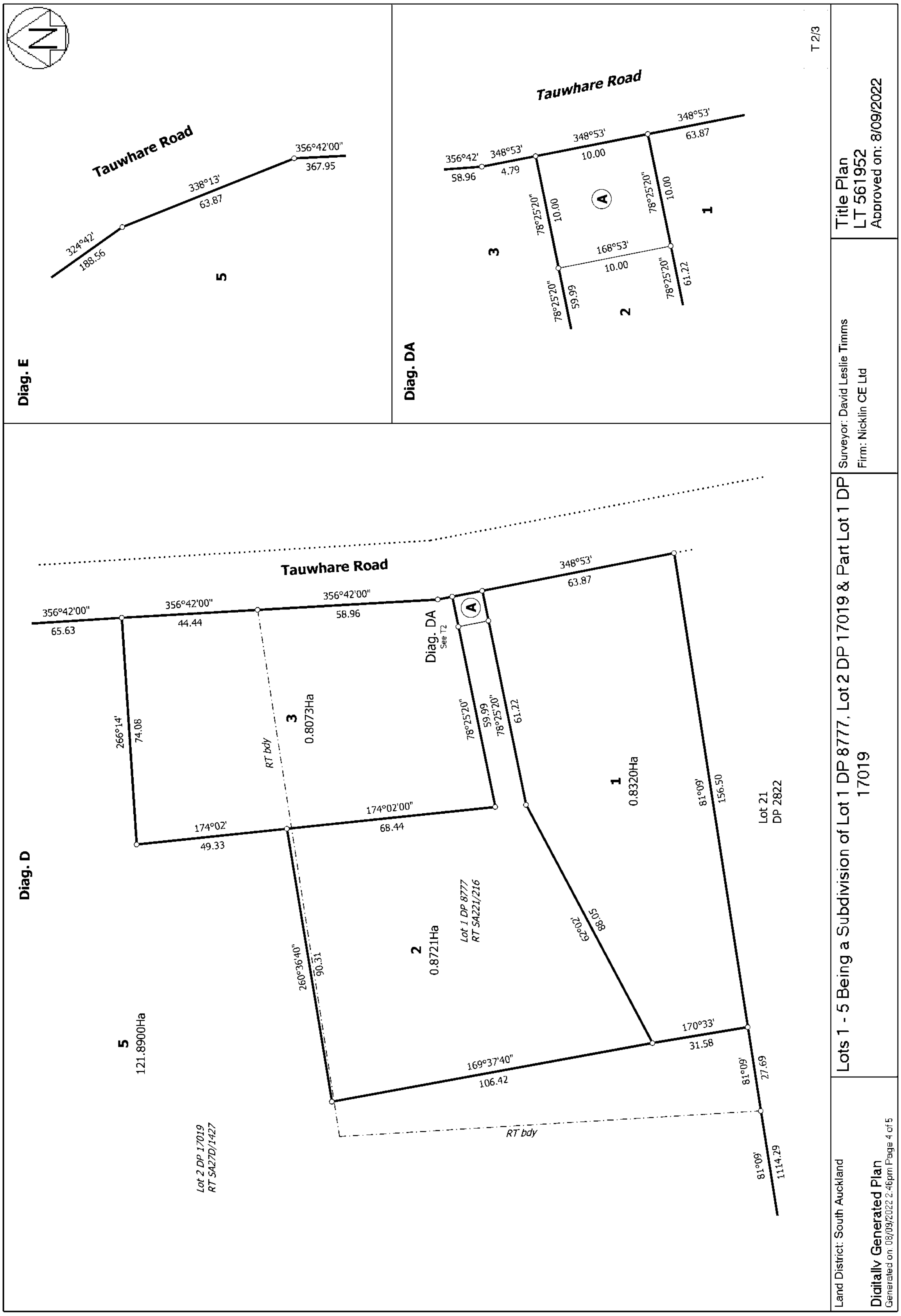
Appurtenant hereto is a right of way created by Easement Instrument 12459898.6 - 12.8.2022 at 3:33 pm

The easements created by Easement Instrument 12459898.6 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Covenant Instrument 12459898.7 - 12.8.2022 at 3:33 pm (Limited as to duration)

12952099.2 Mortgage to ANZ Bank New Zealand Limited - 15.3.2024 at 5:33 pm


T 1/3
Title Plan
LT 561952
Approved on: 8/09/2022
Surveyor: David Leslie Timms
Firm: Nicklin CE Ltd
Lots 1 - 5 Being a Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Part Lot 1 DP 17019
Land District: South Auckland
Digitally Generated Plan
Generated on 08/09/2022 2:46pm Page 3 of 5
Tauwhare Road
Diag. A See T3
Diag. B See T3
Diag. C See T3
Diag. D See T2
Diag. E See T2
Diag. F See T3
5
121.8900Ha
Lot 1 DPS 84520
Lot 3 DP 353401
Lot 1 DPS 70763
Lot 2 DPS 92241
Part NZ Loan & Mercantile Agency Co Ltd GRANT
Lot 21 DP 2822
Part Lot 1 DP 17019 RT SA28D/448
Lot 2 DP 17019 RT SA27D/1427
Lot 1 DP 8777 RT SA221/216
RT bdy
356°42'
367.95
324°42'
188.56
252°03'
495.36
264°55'
585.10
181°00'00"
265.32
194°22'00"
242.81
177°02'40"
27.38
177°02'40"
287.66
177°02'40"
211.64
81°09'
1114.29
347°05'
4.00
257°05'20"
242.17
77°05'20"
242.16
256°50'10"
230.04
76°50'10"
230.73
123.46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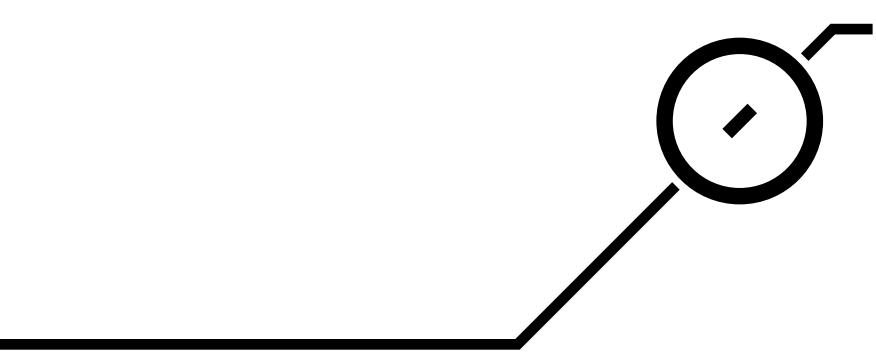
Digitally Generated Plan
Generated on 08/09/2022 2:46pm Page 4 of 5
T 2/3
Diag. E
Diag. DA
Diag. D
Tauwhare Road
Lot 1 DP 8777
RT SA221/216
Lot 2 DP 17019
RT SA27D/1427
Lot 21
DP 2822
1
0.8320Ha
2
0.8721Ha
3
0.8073Ha
5
121.8900Ha
RT bdy
Diag. DA
See T2

TELOS GROUP
REAL ESTATE



Interests

FOURTH SCHEDULE

LAND/RESTRICTIVE COVENANTS

Covenant A

The Covenantor for itself and its successors in title so as to bind the burdened land, covenants with the Covenantee and its successors in title for the benefit of the benefitting land to observe and perform the following stipulations and restrictions:

(1) To erect on the property one new single level dwelling house to a maximum height of seven (7) metres, with a ground floor area of not less than 150 square metres (exclusive of garaging, roof overhangs, verandas, and decking). Separate detached garaging and a workshop is allowed so long as it complies with these covenants and Waikato District Council requirements in all other respects.

(2) Not to use any pre-used building materials in the construction of any buildings or fencing on the property. Repurposed building materials that are part of an architecturally designed build or that will clearly increase the value of the property such as re-claimed native timber flooring shall be allowed.

(3) Not to permit any building, or associated works in the course of construction to be left without substantial work being carried out for a period exceeding three (3) months and not to permit complete construction of any such works to be delayed beyond nine (9) months of the laying of the foundations for the dwelling to be constructed on the property.

(4) Not to permit any driveway, fencing or landscaping in the course of construction to be left without substantial work being carried out for a period exceeding three (3) months and not to permit completion of any such works to be delayed beyond fifteen (15) months from the laying of the foundations for any dwelling on the property, or six (6) months from the beginning of the work themselves, whichever is the sooner.

(5) Not to permit or cause the property to be occupied and used as a residence unless:

   (a) A building has been substantially completed in accordance with the terms of this instrument; and

   (b) The building meets the requirements of the appropriate or any successor territorial authority ("Local Authority").

(6) Fencing: Any fencing is to complement the design and materials of the house and the rural environment. No sheet panels (fibre cement).

(7) Any pumps, septic tanks or water storage tanks if not below the natural ground level of the property should be no more than 1 metre above ground and to the rear of the house or behind a privacy screen and should not be visible from the road.

(8) The following buildings/ business and/or business activities are not permitted on the property:

   (a) Catteries
   (b) Dog or breeding Kennels
   (c) Poultry or Pig Farming
   (d) Paint shops
   (e) Dangerous goods store
   (f) Bulk storage

(g) Storage of cars for refurbishment, rebuilding and/or for sale (however the restoring, refurbishment or rebuilding of a car or vehicle as a hobby or non business activity is permitted)
(h) Repair workshops (unless pre-approved and of a minor nature)
(i) Escort agency, brothel or any activity associated with the sex industry
(j) Private or public burial plots

(9) The Covenantor is not permitted to store on the property:

(a) Tyres
(b) Scrap metal
(c) Shipping containers
(d) Fuel supplies over 100 litres
(e) Rubbish

(10) Not to use the property or permit the property to be used for boarding and breeding kennels and at all times not to allow any roosters, pigs or donkeys or more than two dogs over the age of three months to be kept on the property.

(11) Not to use the property or permit the property to be used for trading or commercial purposes unless allowed under the district plan for the Local Authority.

(12) No activity being a commercial activity or otherwise is to be undertaken whereby it may create excessive noise, odour, dust, or emission of light in the hours between dusk and dawn. Excessive noise includes the playing of loud music and the use of motorbikes or dirt bikes on the property.

(13) Not to develop, farm, cultivate or otherwise use the property except in accordance with the best husbandlike farming practices and at all times clear and keep clear the property from all noxious weeds including thistles and ragwort, rabbits, vermin and other pests as may be damaging to pastures or crops and duly and punctually comply with the provisions of the Fencing Act 1978, The Biosecurity Act 1993, The Plants Act 1970, The Local Government Acts 1974 and 2004 and The Resource Management Act 1991, The Regional Plan and the relevant District Plan and all amendments thereto and all notices or demands lawfully given or made by any person in pursuance thereof. The Covenantor expressly acknowledges that the property is located in a rural area and that accordingly there will be noises and activities associated with the day to day functioning and operation of a working farm. The Covenantor also acknowledges that the owners of surrounding farms may, at some point in the future, subdivide all or part of their land for residential or other purposes. The Covenantor undertakes that they will not bring any action under The Resource Management Act 1991 or The Local Government Acts 1974 and 2002 or any other associated Act to inhibit or prevent the day to day farming activities of any surrounding working farm. Nor will they object or bring any action or make any submission against any future subdivision of surrounding land whether under the Resource Management Act 1991 or any other associated Act.

Covenant B

The covenants and conditions contained herein shall run with and be registered against the burdened land ("the property") in favour of the following title including (but may not be limited to) _____ the benefitting land ("the Covenantee's farming operations and/or farm land/property").

(1) The boundary fence bordering the existing farm land will be dog proof fenced by the Covenantor to prevent pets and animals escaping from their properties or interfering or trespassing over the surrounding farm property

(2) The Covenantor acknowledges the property is in close proximity to the farming operation and other assets owned and operated by the Covenantee. The Covenantor further recognise that the operations on the benefiting land will at all times be accepted by owners and occupiers of the property. In addition:

(a) The Covenantor covenants that it will not make any complaints, or provide submissions in support of any complaints and will use its best efforts to ensure that its tenants, agents, transferees, or assignees, also do not make any complaints to the local authorities namely the Local Authority or Waikato Regional Council or their successors, concerning effects on the environment of the Covenantee's farming operations. Such complaints may concern but will not be limited to:

(i) The noise of the Covenantee's farming operations;
(ii) The odour of the Covenantee's farming operations;
(iii) The spray drift from the Covenantee's farming operations;
(iv) The spreading of fertiliser on the farm property by the Covenantee or a contractor acting on behalf of the Covenantee;
(v) The dust created by the Covenantee's operations;
(vi) The making of silage or hay by the Covenantee;
(vii) The cultivation of the benefited land by the Covenantee including sowing and raising of crops by the Covenantee on the farm property;
(viii) The keeping of livestock on the benefited land by the Covenantee;
(ix) Machinery, vehicular and livestock movements (either by truck or otherwise) associated with the Covenantee's farming operations.
(x) Any other environmental effects associated with the Covenantee's farming operations;
(xi) The use of Roads to move stock either by vehicle or on foot.

Provided that the Covenantee must at all times act within the provisions of the Resource Management Act 1991, any granted resource consents and any other statutory or regulatory authority.

(b) The Covenantor will not decline to give written approval, if and when requested by the Covenantee for any variation or new resource consent application made by the Covenantee PROVIDED that any variation or new resource consent application relates to:

(i) Any existing use on the benefited land or any like activity including but not limited to effluent, sprays and water consents; and
(ii) Is generally in accordance with the activities and environmental effects authorised by the existing consents, and
(iii) Will not produce greater environmental effects for the Land than are authorised by the existing consents and other authorisations.

(3) For clarification, it is the intent of these covenants that the Covenantor will give written approval where the Covenantee proposes modifications to its existing operations in a manner which does not produce any greater environmental effect on the Covenantor or the property, but seeks to modify the way in which operations are conducted on the benefited land.

BREACH OF LAND/RESTRICTIVE COVENANTS A & B

1.0 Should there be any breach or non-observance of any of the foregoing covenants within the land/restrictive covenants A & B above ("Covenants") by the Covenantor, without prejudice to any other liability which the Covenantor may have to any person having the benefits of the Covenants, the Covenantor will, on the receipt of a written demand by the Covenantee:

(a) Pay to the Covenantee as liquidated damages the sum of **FIFTY THOUSAND DOLLARS** ($50,000.00) immediately upon receipt of a written demand for payment, from the Covenantee or the Covenantee's solicitors; and

(b) Shall permanently remove or cause to be permanently removed from the property any improvement or structure so erected or repaired or remedy any other breach or non-observance of the foregoing covenants.

PROVIDED and it is further agreed and acknowledged that:

(c) The Covenantor shall only have liability with respect the provisions of the Covenants while the Covenantor is a registered proprietor of the property.

(d) If there is a default or defaults and if:

(i) such default is remedied within one month of notice in writing requiring the removal of such cause of default; and

(ii) the defaulting party pays all reasonable legal costs and other expenses incurred by the party enforcing the said covenants;

then the penal sum prescribed in clause 1.0 (a) shall be waived **PROVIDED THAT** this waiver shall not apply in respect of any subsequent default of a similar nature.

These covenants shall enure for a period of fifty (50) years from the date of registration of this easement instrument.

Title Plan - LT 561952

Survey Number	LT 561952
Surveyor Reference	4585 (A McNally) 1295 Tauwhare Road
Surveyor	David Leslie Timms
Survey Firm	Nicklin CE Ltd
Surveyor Declaration	

Survey Details

Dataset Description	Lots 1 - 5 Being a Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Part Lot 1 DP 17019		
Status	Initiated		
Land District	South Auckland	**Survey Class**	Class B
Submitted Date		**Survey Approval Date**	
		Deposit Date	

Territorial Authorities

Waikato District

Comprised In

RT SA221/216
RT SA27D/1427
RT SA28D/448

Created Parcels

Parcels	Parcel Intent	Area	RT Reference
Lot 1 Deposited Plan 561952	Fee Simple Title	0.8320 Ha	996572
Lot 2 Deposited Plan 561952	Fee Simple Title	0.8721 Ha	996573
Lot 3 Deposited Plan 561952	Fee Simple Title	0.8073 Ha	996574
Lot 4 Deposited Plan 561952	Fee Simple Title	0.8012 Ha	996575
Lot 5 Deposited Plan 561952	Fee Simple Title	121.9235 Ha	996576
Area A Deposited Plan 561952	Easement		
Area B Deposited Plan 561952	Easement		
Total Area		125.2361 Ha	

EASEMENT MEMORANDUM/SCHEDULE

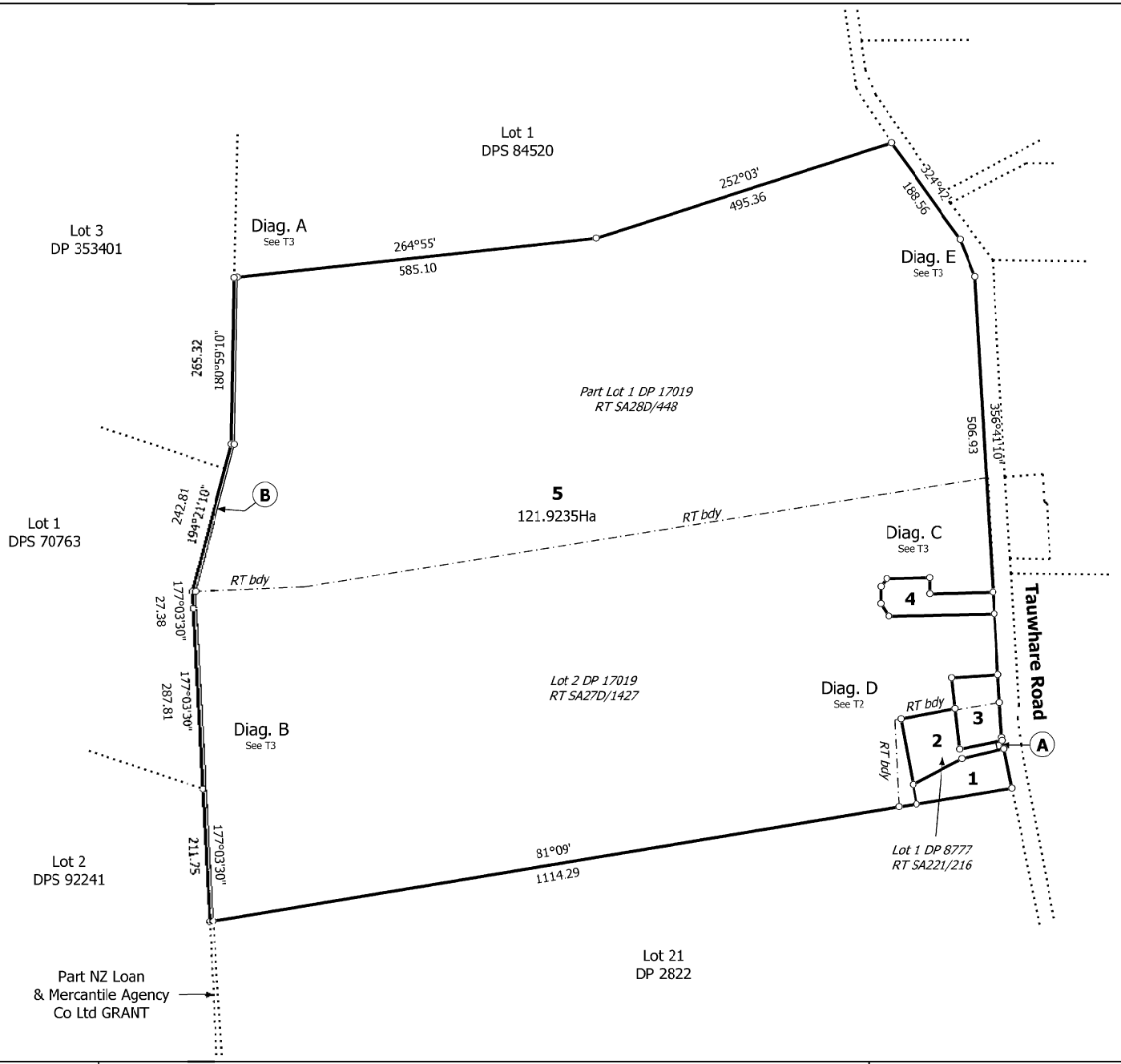
Land Registration District	Plan Number
South Auckland	DP 561952

Territorial Authority (the Council)

Waikato District Council

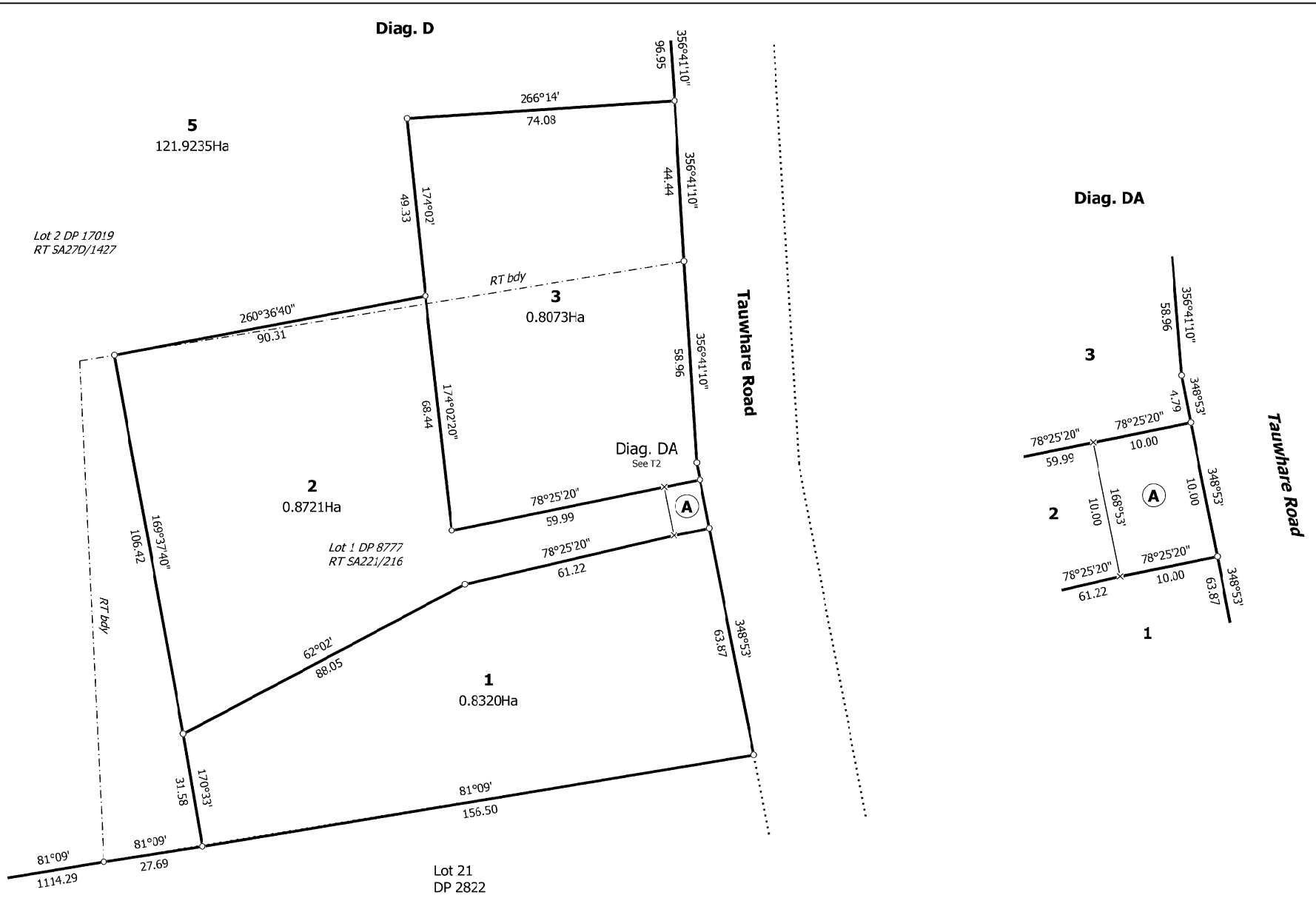
Memorandum of Easements			
Purpose	**Shown**	**Burdened Land (Servient Tenement)**	**Benefited Land (Dominant Tenement)**
RIGHT OF WAY	A	LOT 2 HEREON	LOTS 1 & 3 HEREON

Schedule of Existing Easements			
Purpose	**Shown**	**Burdened Land (Servient Tenement)**	**Doc No.**
DRAIN RESERVE	B	LOT 5 HEREON	Transfer 46014



T 1/3

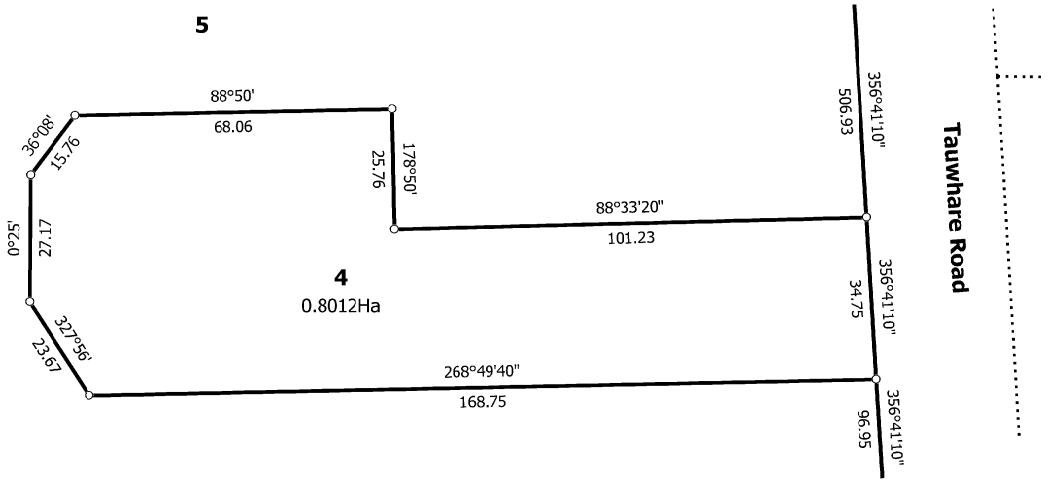
Land District: South Auckland Digitally Generated Plan Generated on: 11/11/2021 2:17pm Page 3 of 5	Lots 1 - 5 Being a Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Part Lot 1 DP 17019	Surveyor: David Leslie Timms Firm: Nicklin CE Ltd	Title Plan LT 561952 DRAFT



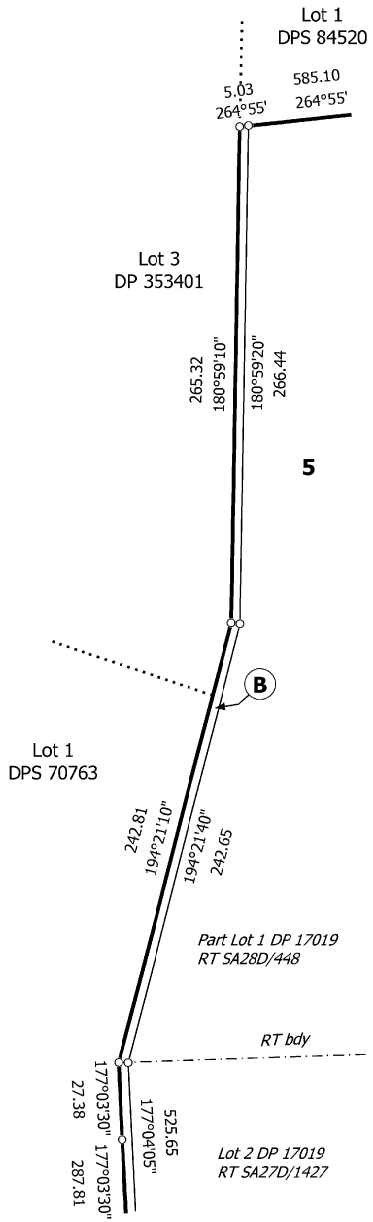
T 2/3

Land District: South Auckland Digitally Generated Plan Generated on: 11/11/2021 2:17pm Page 4 of 5	Lots 1 - 5 Being a Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Part Lot 1 DP 17019	Surveyor: David Leslie Timms Firm: Nicklin CE Ltd	Title Plan LT 561952 DRAFT

Diag. C



Diag. A



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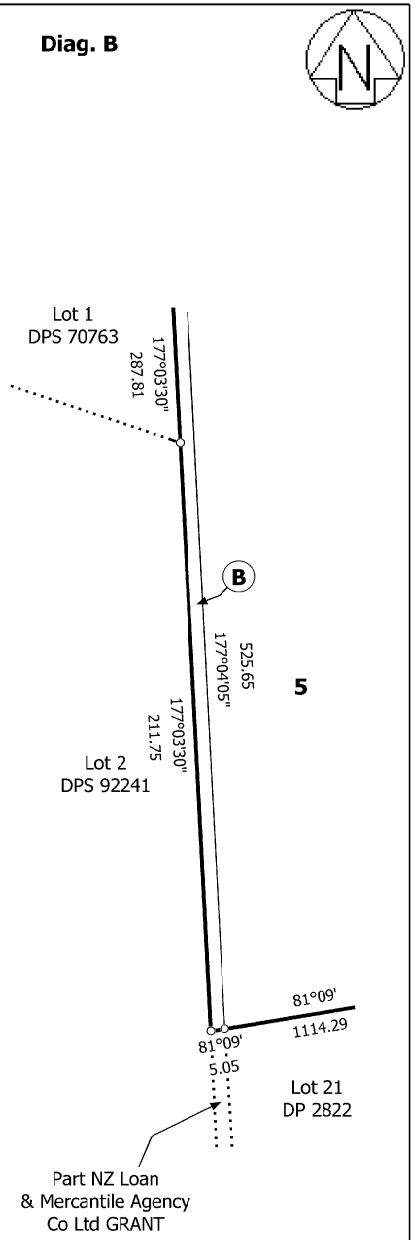
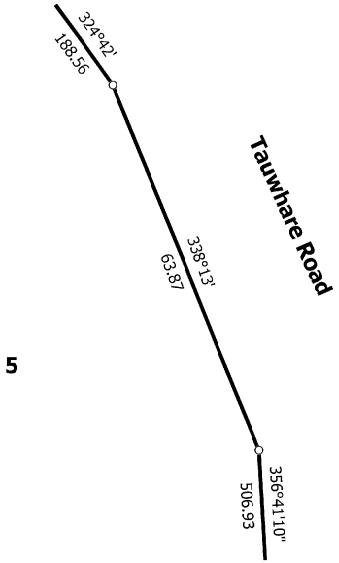


Diag. E



T 3/3

Land District: South Auckland Digitally Generated Plan Generated on: 11/11/2021 2:17pm Page 5 of 5	Lots 1 - 5 Being a Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Part Lot 1 DP 17019	Surveyor: David Leslie Timms Firm: Nicklin CE Ltd	Title Plan LT 561952 DRAFT

TELOS GROUP
REAL ESTATE

LIM Report/ Property File

Waikato DISTRICT COUNCIL
Te Kaunihera oo Takiwaa o Waikato

Form 7
CODE COMPLIANCE CERTIFICATE
Section 95 Building Act 2004

The Building

Street address of building:	1271 Tauwhare Road TAUWHARE
Legal description of land where building is located:	LOT 1 DP 561952
Valuation number:	04431/305.01
Property number:	2024321
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A
Current, lawfully established, use:	Detached Dwellings
Number of occupants per level and per use if more than 1:	N/A
Year first constructed:	2024

The Owner

Name of owner: Principle Property Limited
Contact person: R Davies

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	021-842687
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	robdavies12@gmail.com
Website:	N/A		

First point of contact for communications with the building consent authority

Name: DDL Architecture
Mailing address: PO Box 9400, Waikato Mail Centre, Hamilton 3240

Phone numbers:

Landline:	07-8498184	Mobile:	N/A
Facsimile number:	N/A	Email address:	kirsty@diversedesign.co.nz

Building Work:

Project: **Dwelling with attached garage**
Building consent number**:** **BLD0856/23**
Issued by: **Waikato District Council**

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent

Signature:

Name: **Peter Martens**
Position: Building Inspector
On behalf of: Waikato District Council **Date: 05 August 2024**

Sheet List

Sheet Number	Sheet Name	Current Revision	Current Revision Date
A0.0	Cover Sheet	2	11-11-12
A1.1	Site Plan	2	11-11-12
A1.2	Site Services	2	11-11-12
A1.3	Site Services Plan Enlarged	2	11-11-12
A1.4	Cut and Fill Plan	2	11-11-12
A1.5	Slab Setout Plan	2	11-11-12
A2.1	Floor Plan Notes	2	11-11-12
A2.2	Floor Plan Dimensions	2	11-11-12
A2.3	Bracing Plan Wing 1	2	11-11-12
A2.4	Bracing Plan Wing 2	2	11-11-12
A2.5	Bracing Plan Wing 3	2	11-11-12
A2.6	Joinery Plan	2	11-11-12
A2.7	Roof plan	2	11-11-12
A2.8	Electrical Plan	2	11-11-12
A2.9	Plumbing/Fire Sprinkler Plan	2	11-11-12
A3.1	Elevations	2	11-11-12
A3.2	Elevations	2	11-11-12
A4.1	Section A	2	11-11-12
A4.2	Section B	2	11-11-12
A4.3	Section C	2	11-11-12
A4.4	Section D	2	11-11-12
A4.5	Section E	2	11-11-12
A4.6	Section F	2	11-11-12
A4.7	Section G	2	11-11-12
A4.8	Section G Continued	2	11-11-12
A4.9	Section H	2	11-11-12
A4.10	Section I	2	11-11-12
A5.0	Slab Details	2	11-11-12
A5.1	Roof Details	2	11-11-12
A5.2	Roof Details	2	11-11-12
A5.3	Roof Details	2	11-11-12
A5.4	Roof Details	2	11-11-12
A5.5	Joinery Details	2	11-11-12
A5.6	Joinery Details	2	11-11-12
A5.7	Cladding Details	2	11-11-12
A5.8	Cladding Details	2	11-11-12
A5.9	Wet Area Details	2	11-11-12
A5.10	Wet Area Details	2	11-11-12
A5.11	HWC Details	2	11-11-12

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Cover Sheet

A0.0 **@ A3**

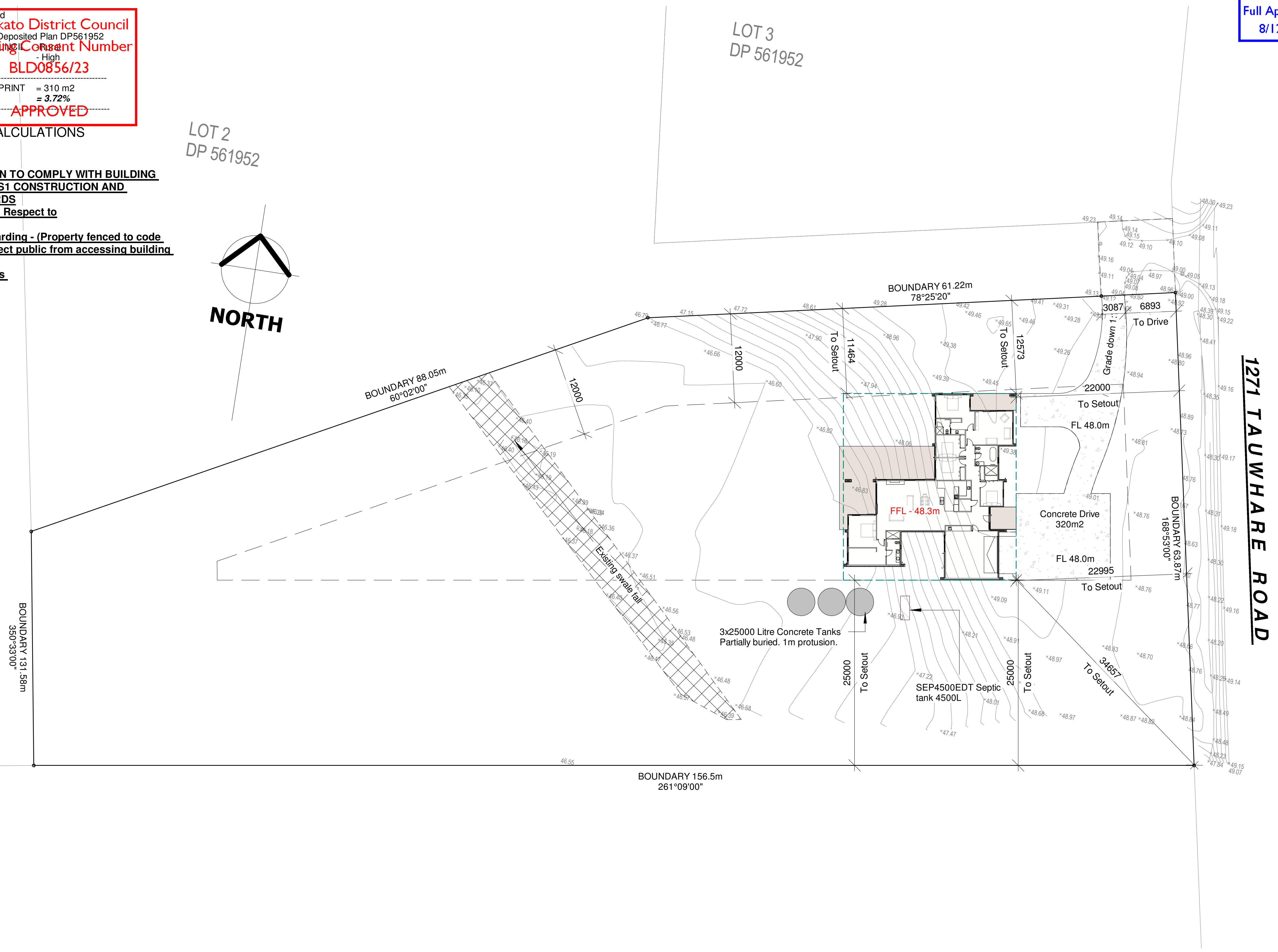
DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

Lot 1 1271 Tauwhare Road
Area: 8318M²
Legal Description Lot 1 Deposited Plan DP561952
WAIKATO DISTRICT - Rural
WINDZONE - High
EARTHQUAKE ZONE

NEW DWELLING FOOT PRINT = 310 m2
SITE COVERAGE = 3.72%

CUT AND FILL CALCULATIONS
Refer Sheet A1.3

SITE CONSTRUCTION TO COMPLY WITH BUILDING CODE CLAUSE F5/AS1 CONSTRUCTION AND DEMOLITION HAZARDS
(Where applicable) In Respect to
-Worksite Barriers
-Site Fences and Hoarding - (Property fenced to code requirements to protect public from accessing building site)
-Water Hazard Fences
-Gantries
-Toeboards



LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

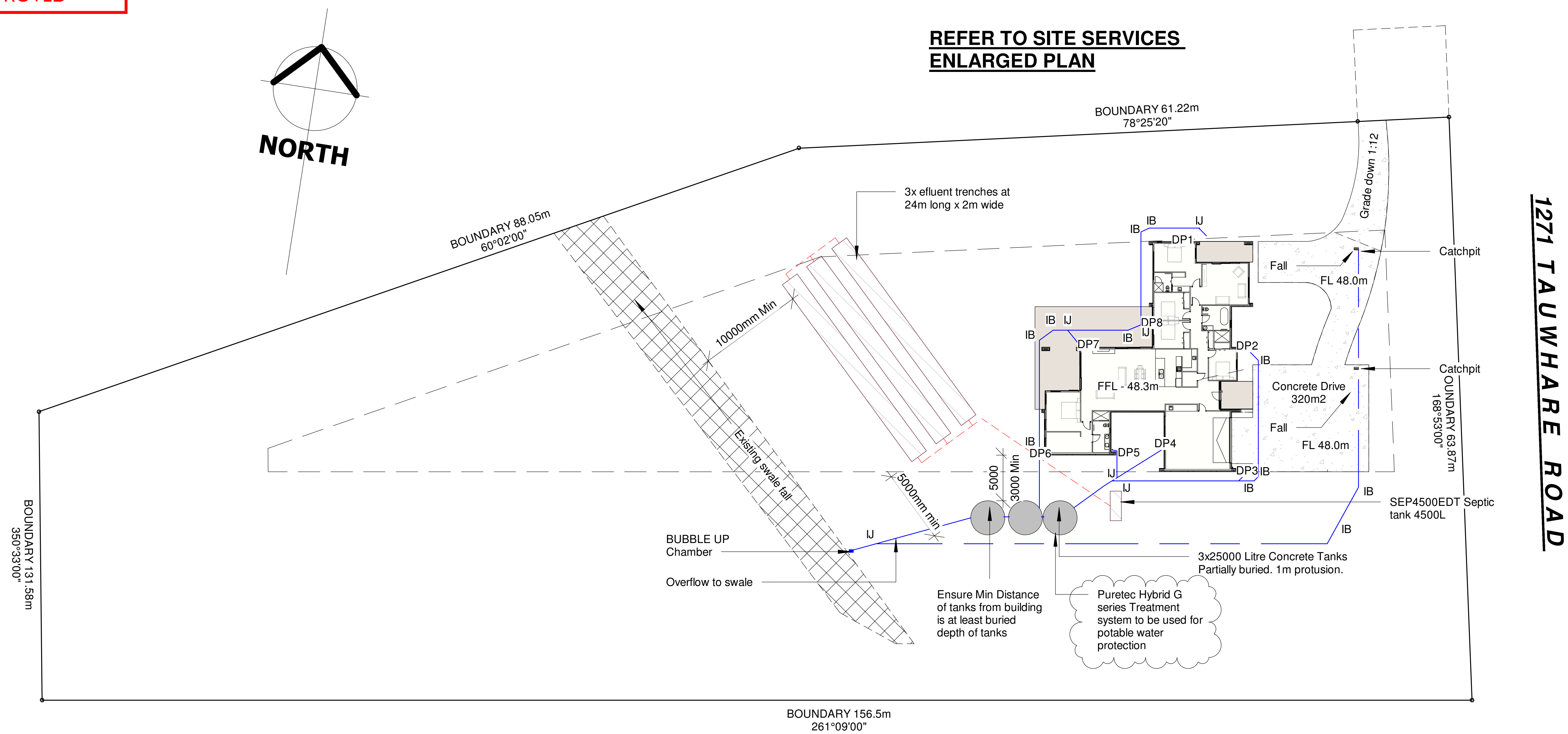
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz
DDL ARCHITECTURE

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS: 2 Consent Issue 11-11-12

Site Plan
A1.1
1 : 500@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR



PLUMBING SYSTEM AS 3500

Fixture Type	Waste Size	Min Grad	Material
Ensuite 1 WC	*100mm*	*1:60*	*uPVC*
Ensuite 1 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite1 Shower	*65mm*	*1:40*	*uPVC*
Ensuite 2 WC	*100mm*	*1:60*	*uPVC*
Ensuite 2 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite 2 Shower	*65mm*	*1:40*	*uPVC*
Bath Vanity	*65mm*	*1:40*	*uPVC*
Bath Bath	*65mm*	*1:40*	*uPVC*
Bath Shower	*65mm*	*1:40*	*uPVC*
Kitchen Sinks	*65mm*	*1:40*	*uPVC*
Laundry	*65mm*	*1:40*	*uPVC*
TV	*80mm*	*n/a*	*uPVC*
FWG	*65mm*	*1:40*	*uPVC*
Main ww Line	*100mm*	*1:60*	*uPVC*
Main SW Line	*100mm*	*1:60*	*uPVC*

NOTE: all water pipes in garage or roof space to be insulated to comply with NZS4503

DN 65 (65mm @1:40) drains may be used as branch drains only (up to 25 fixtures), provided no soil fixtures (except urinals) are connected thereto. Where toilets are connecting please use DN100 (100mm @1:40.)
Refer to Table 3.3.1 of AS 3500 for max fixture unit loading.

Note:

Kitchen & Laundry sinks to have flow restrictors installed as well as overflow fitting

note for sinks in island benches

AAV to kitchen sink for ventilation

HWC overflow to drain to a small rock garden to ensure no hindrance to neighbouring property

DWG to drain to a small rock garden to ensure no hindrance to neighbouring property

SETOUT ONLY - REFER SED SEWER DESIGN FOR FULL WASTEWATER DESIGN

PLUMBING LEGEND

STORMWATER LINE	(blue solid line)
WASTEWATER LINE	(red dashed line)
WATER LINE	(dashed line)
INSPECTION BEND	IB
INSPECTION JUNCTION	IJ
SILT TRAP	▪
CATCH PIT	▪
BUBBLE UP	▪

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Site Services

A1.2 | **1 : 500@ A3**

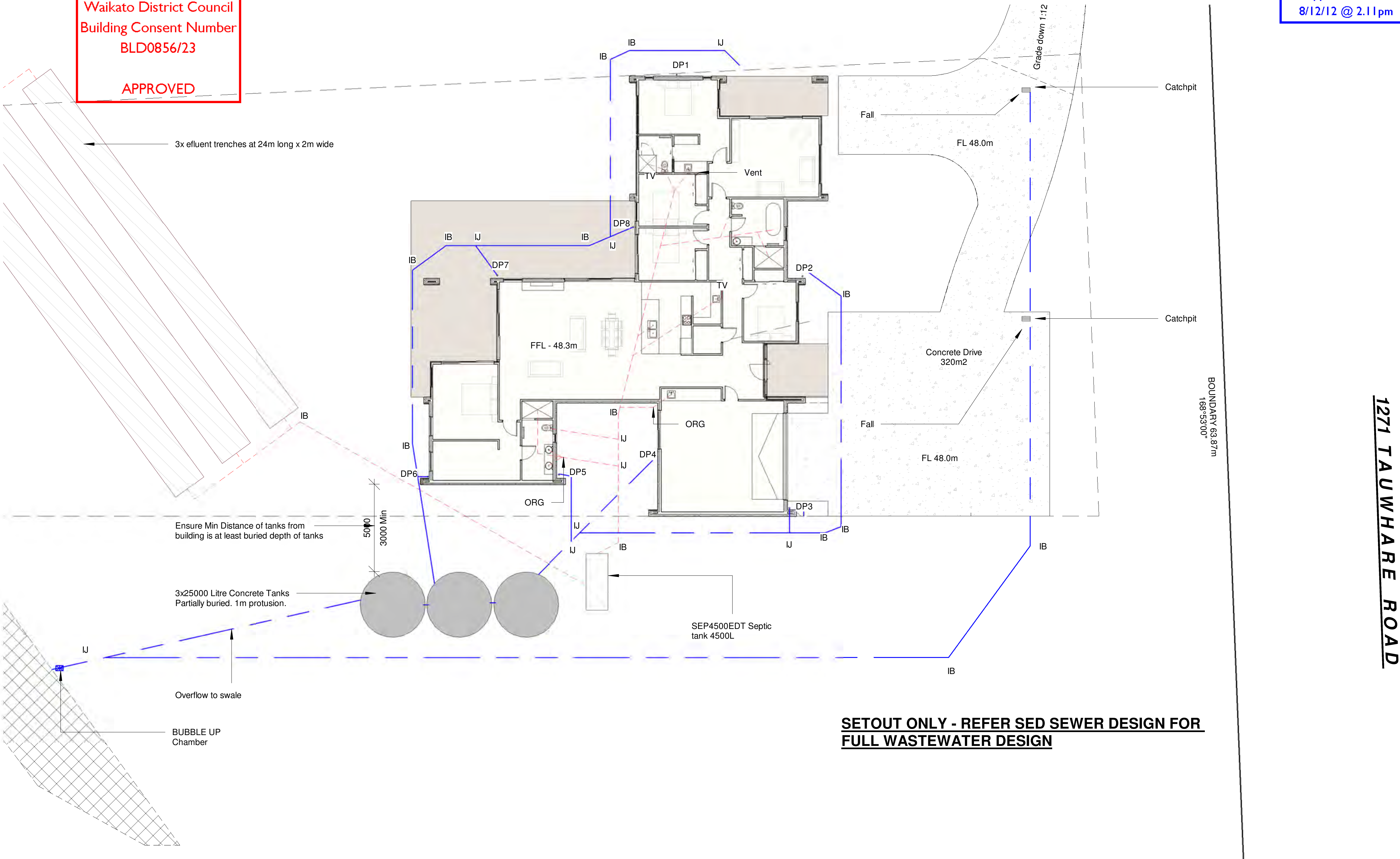
DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

Waikato District Council
Full Application Received
8/12/12 @ 2.11pm



SETOUT ONLY - REFER SED SEWER DESIGN FOR FULL WASTEWATER DESIGN

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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Site Services Plan Enlarged

A1.3

1 : 200@ A3

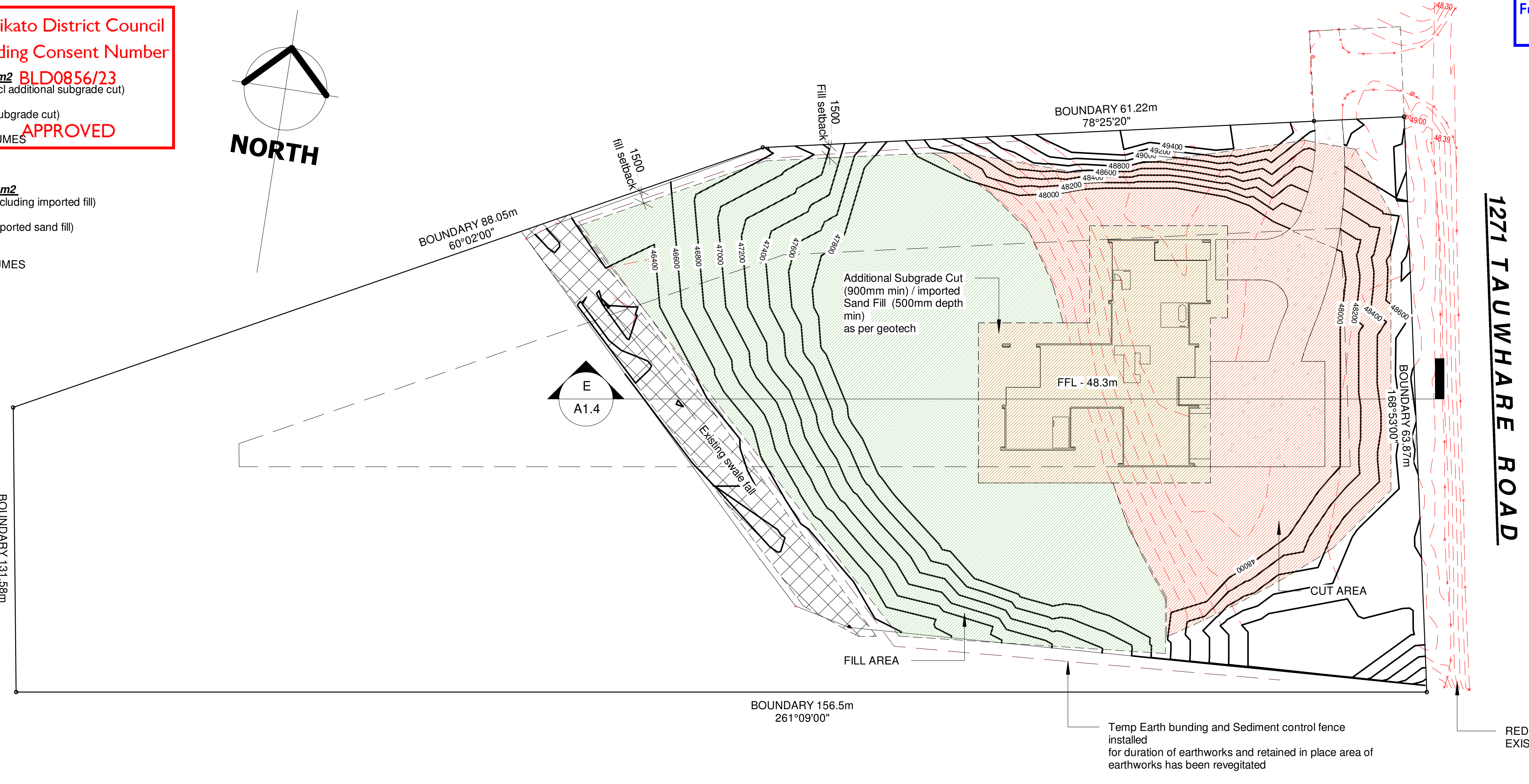
DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

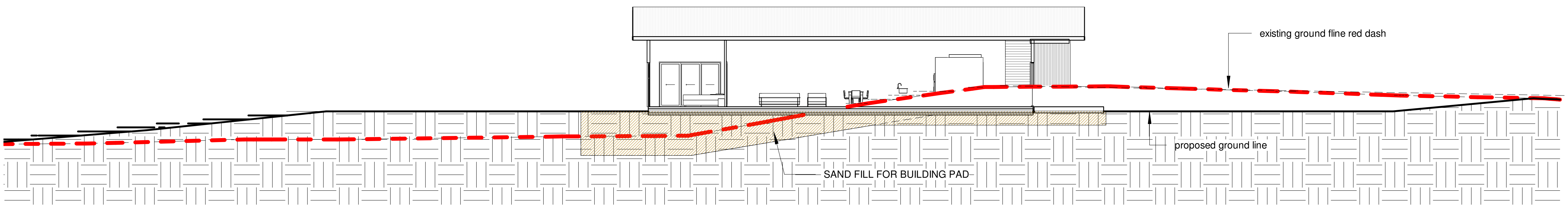
ORIGINAL IN COLOUR

CUT AREA -1500m2
CUT VOLUME (excl additional subgrade cut)
- 1298m3
CUT VOLUME (subgrade cut)
-371m3
TOTAL CUT VOLUMES
-1661m3

FILL AREA - 1900m2
FILL VOLUME (excluding imported fill)
-1661m3
FILL VOLUME (imported sand fill)
- 558m3

TOTAL FILL VOLUMES
-2058m3





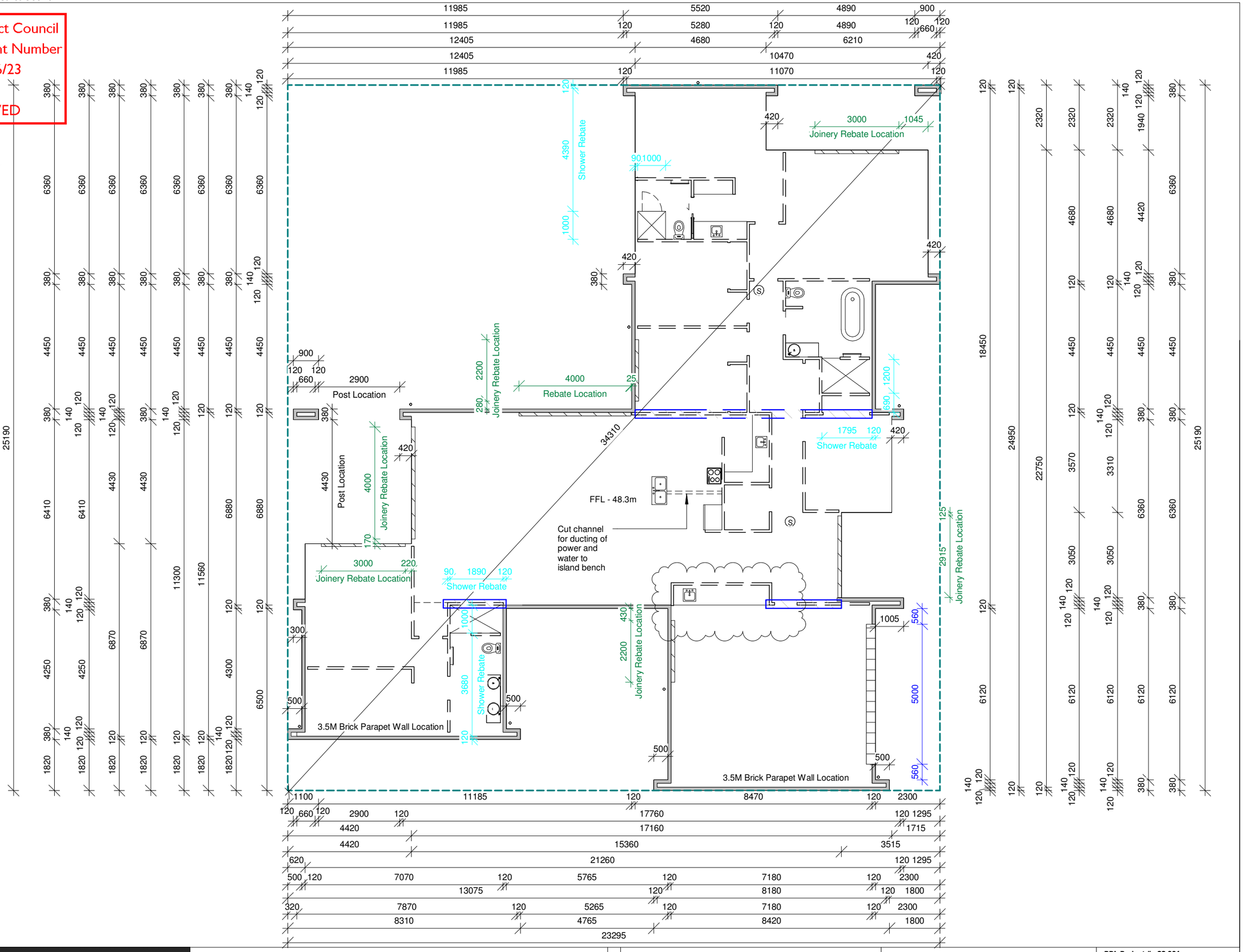
E EARTHWORKS SECTION

1 : 200

DDL ARCHITECTURE P: (07) 8498184 - E: admin@diversedesign.co.nz W: www.diversedesign.co.nz Design is the Property of Diverse Design Ltd and should not be used without prior consent	**LOT 1 TAUWHARE ROAD** **WAIKATO DISTRICT** CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL	REVISIONS: 2 Consent Issue 11-11-12 Rev. Description Date	**Cut and Fill Plan** A1.4 As indicated@ A3
			DDL Project # : 22-061 Drafted By : RV Issue Date : 6-10-22 Issue Type : CONSENT ORIGINAL IN COLOUR

FOUNDATION KEY	
SLAB THICKENING	
GARAGE REBATE	
120mm BRICK REBATE	
FLOOR WASTE GULLY	FWG
DRY WASTE GULLY	DWG

SETOUT ONLY REFER TO M&Z ENGINEERS PLAN FOR FOUNDATION AND STRUCTURAL DETAIL



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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:			
3	RFI	23-01-22	
2	Consent Issue	11-11-12	
Rev.	Description	Date	

Slab Setout Plan

A1.5 | 1 : 125@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

FLOOR AREAS:

Ground Floor Area Over Framing =300m2
Ground Floor Area Over Brick =310m2

GENERAL NOTES:

- All Stud Heights 2605mm unless noted otherwise
- High windzone
- All internal doors to be 2200mm high
- All dimensions are to framing
- All Soffits to be 450mm to wall framing unless noted otherwise
- All Levels to be check on site prior to commencing on job
- All dimensions to be verified during construction
- All timber to be SG8 unless specified otherwise
- Install Nogging for wall hung vanities
- All Internal bathrooms doors are to be undercut 20mm to allow for natural ventilation to bathrooms
- Kitchen Extracts to be installed with no less than 50L/s flowrate as per G4 ventilation section 1.5 mechanical ventilation 1.5.1 paragraph iii)

TIMBER TREATMENT:

H1.2
- All internal framing within envelope and subfloor framing (excl Piles)
- Bottom plates

H3.1
- Cavity battens
- Painted timber elements in contact with exterior elements

H3.2
- Fence Pailings and rails not in ground
- External Rafters, Posts and Beams not in contact with ground
- Deck joists and bearers

H4
- Fence Posts
- Jack stud walls
- Posts/columns less than150mm from ground

H5
- Piles or structural post in contact with ground

INTERIOR FINISHIES
- Walls -10mm Gib boards (AQUALINE TO WET AREAS)
- Ceiling -13mm Gib Board (AQUALINE TO WET AREAS)
- Skirting - 60x10mm SB Pine
- Cornice - 55mm Gib Cove
- Exterior joinery - FJ PP quality reveals with 60x10 architraves
- Interior Doors - MDF HC PQ with 60x10 architraves

BATH 1 FIXTURES
Shower - 1705 X1200 Tile
Vanity - 1175mm
Bath - 1900mm x820 Freestanding

ENSUITE 1 FIXTURES
Shower - 1000x1000mm Tile
Vanity - 1900mm (In W/R)

ENSUITE 2 FIXTURES
Shower - 1800 x 1000mm Tile
Vanity - 1700mm

LAUNDRY FIXTURES
Laundry Sink Insert

STUD SPACINGS:

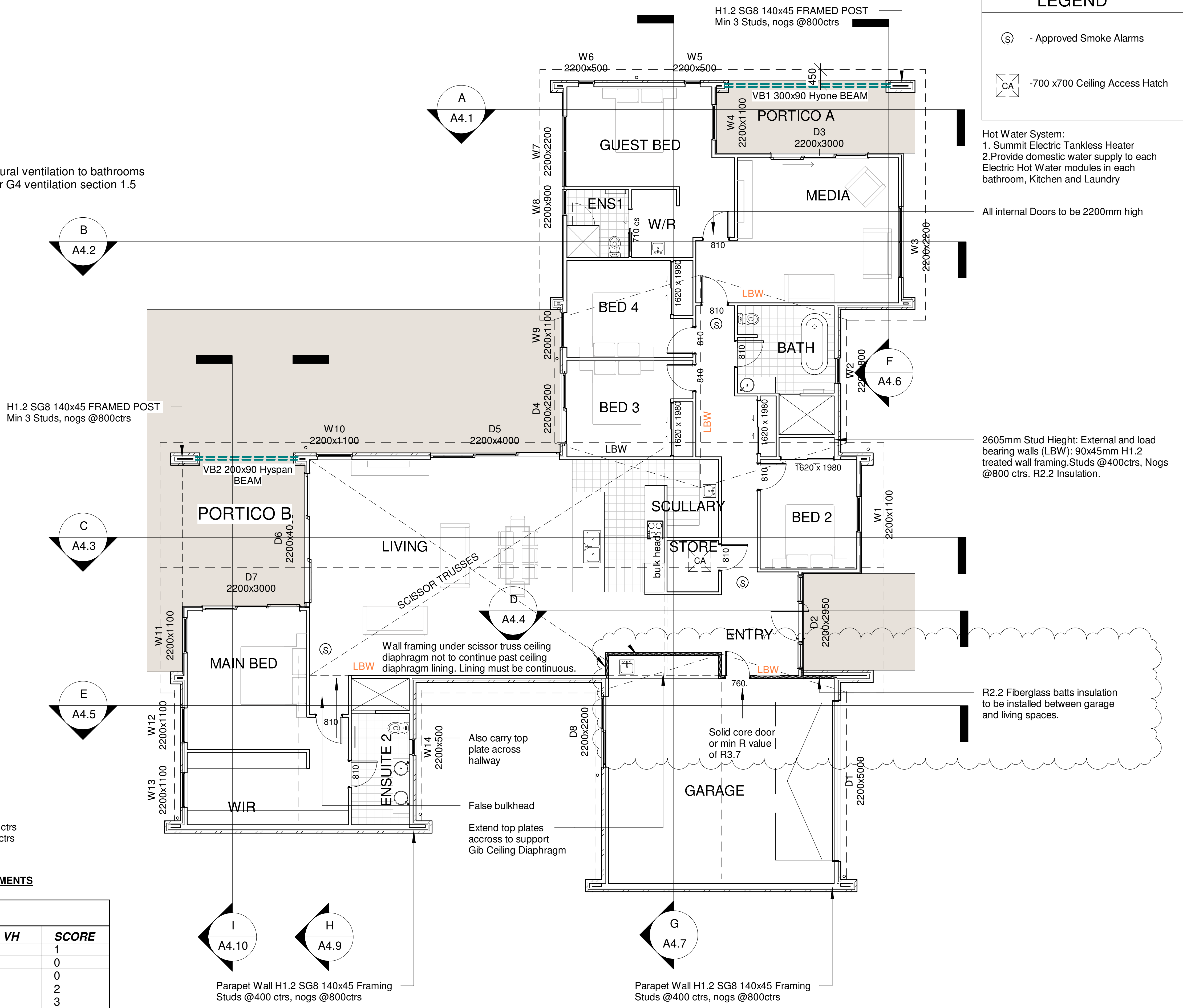
Internal Walls:
Non-Loadbearing-Studs 90x45mm @ 600mm ctrs, Nogs @ 800mm ctrs
Loadbearing-Studs 90x45mm @ 400mm ctrs, Nogs @ 800mm ctrs

External Walls:
Hermpac HP52 Vertical Shiplap Studs 90x45mm @ 400mm ctrs, Nogs @ 600mm ctrs
70 Series Brick Vertical Shiplap Studs 90x45mm @ 400mm ctrs, Nogs @ 600mm ctrs
Parapet Wall H1.2 SG8 140x45 Framing Studs @400 ctrs, nogs @800ctrs

REFER DESIGN NAVIGATOR H1 CALCULATIONS FOR THERMAL REQUIREMENTS

RISK MATRIX

RISK ITEM	L	M	H	VH	SCORE
WIND ZONE			X		1
STOREYS	X				0
ROOF/WALL INTERSECTION	X				0
EAVES WIDTH			X		2
ENVELOPE COMPLEXITY			X		3
DECK DESIGN	X				0
TOTAL					6



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REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Floor Plan Notes

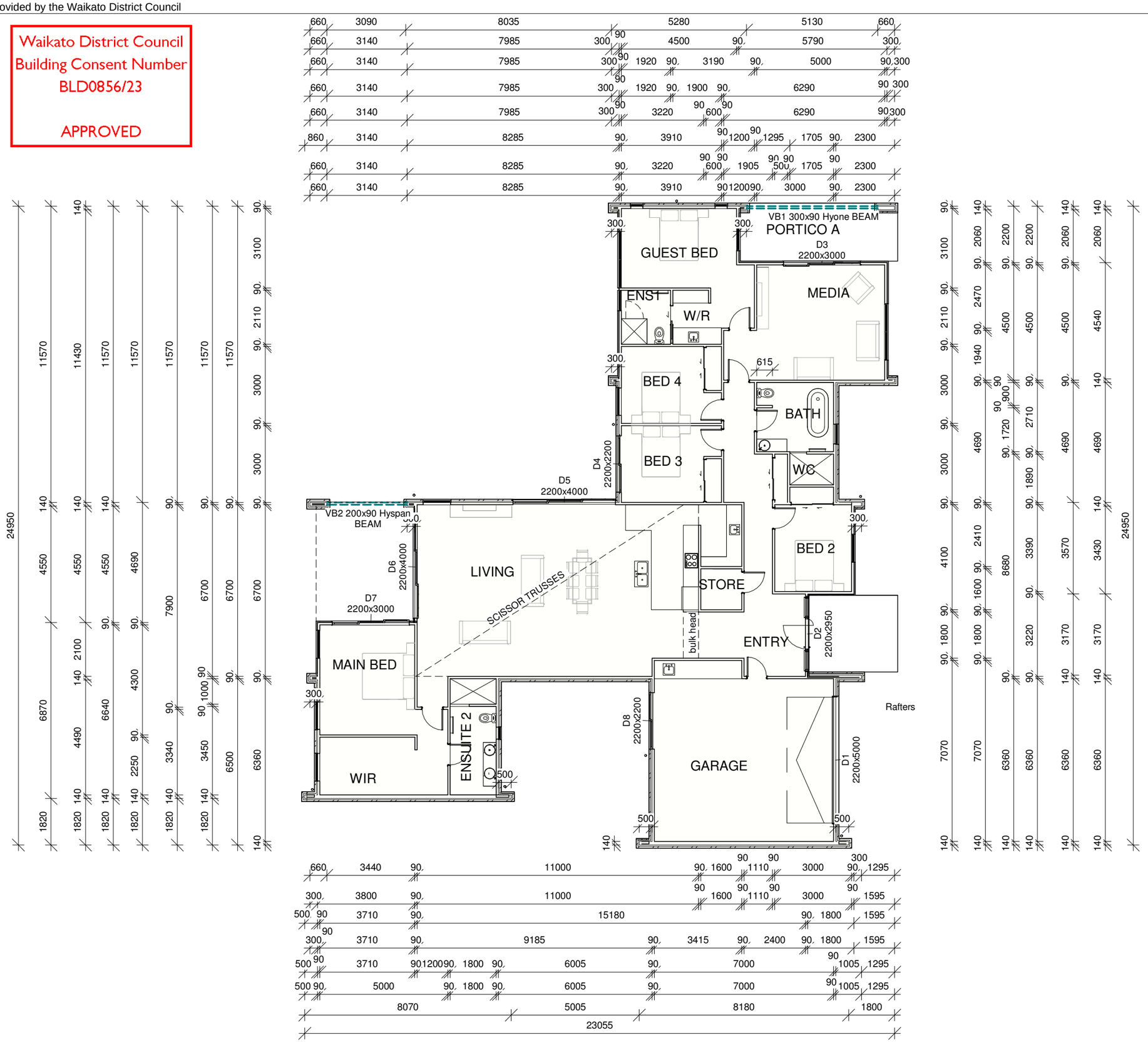
A2.1 | 1 : 125@ A3

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED



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REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Floor Plan Dimensions

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT
A2.2	1 : 150@ A3
ORIGINAL IN COLOUR	

NOTE:

-REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

NOTE:

-FINAL GLAZING TO BE CONFIRMED BY JOINERS/GLAZERS ACCORDING TO **HUMAN IMPACT SAFETY GLAZING NZS 4223.3:2016**

REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

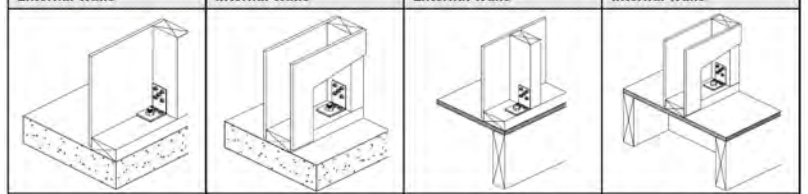
-ALL SETOUT DIMENSIONS FOR JOINERY ARE FROM TRIM TO TRIM, ALLOW FOR RELEVANT TRIM SIZE WHEN FRAMING

All Ply bracing to be checked into frame

Top plate fixings

FIXING TYPE B -4.7 kN
2 x 90mm x 3.15 dia. plain steel
wire nails driven vertically into stud
Plus LUMBERLOK (CPC80) 6kN Stud Anchor
OR
2 x 90mm x 3.15 dia. plain steel
wire nails driven vertically into stud.Plus 2 x LUMBERLOK CPC40
OR
2 x 90mm x 3.15 dia. plain steel
wire nails driven vertically into stud. Plus
LUMBERLOK Stud Strap (one face only)

LINTEL FIXINGS
REFER TO MITEK CONNECTION DETAIL SHEET SPEC / SITE GUIDE AND ELEVATIONS FOR TYPE

Concrete Floor		Timber Floor	
External walls	Internal walls	External walls	Internal walls
			
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate	Position GIB HandiBrac® at the stud / plate junction	Position GIB HandiBrac® in the centre of the perimeter joist or bearer	Position GIB HandiBrac® in the centre of floor joist or full depth solid block
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN.		12x150mm galvanised coach screw	

DDL ARCHITECTURE

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WAIKATO DISTRICT

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REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Bracing Plan Wing 1

A2.3 | 1 : 125@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

NOTE:

-REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

NOTE:

-FINAL GLAZING TO BE CONFIRMED BY JOINERS/GLAZERS ACCORDING TO **HUMAN IMPACT SAFETY GLAZING NZS 4223.3:2016**

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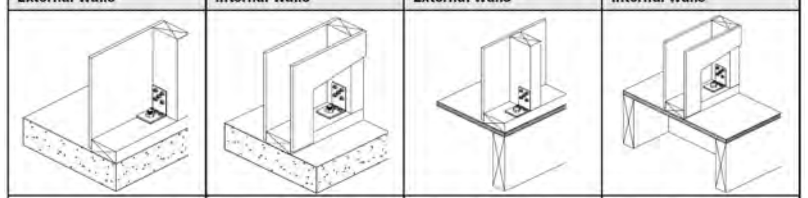
-ALL SETOUT DIMENSIONS FOR JOINERY ARE FROM TRIM TO TRIM, ALLOW FOR RELEVANT TRIM SIZE WHEN FRAMING

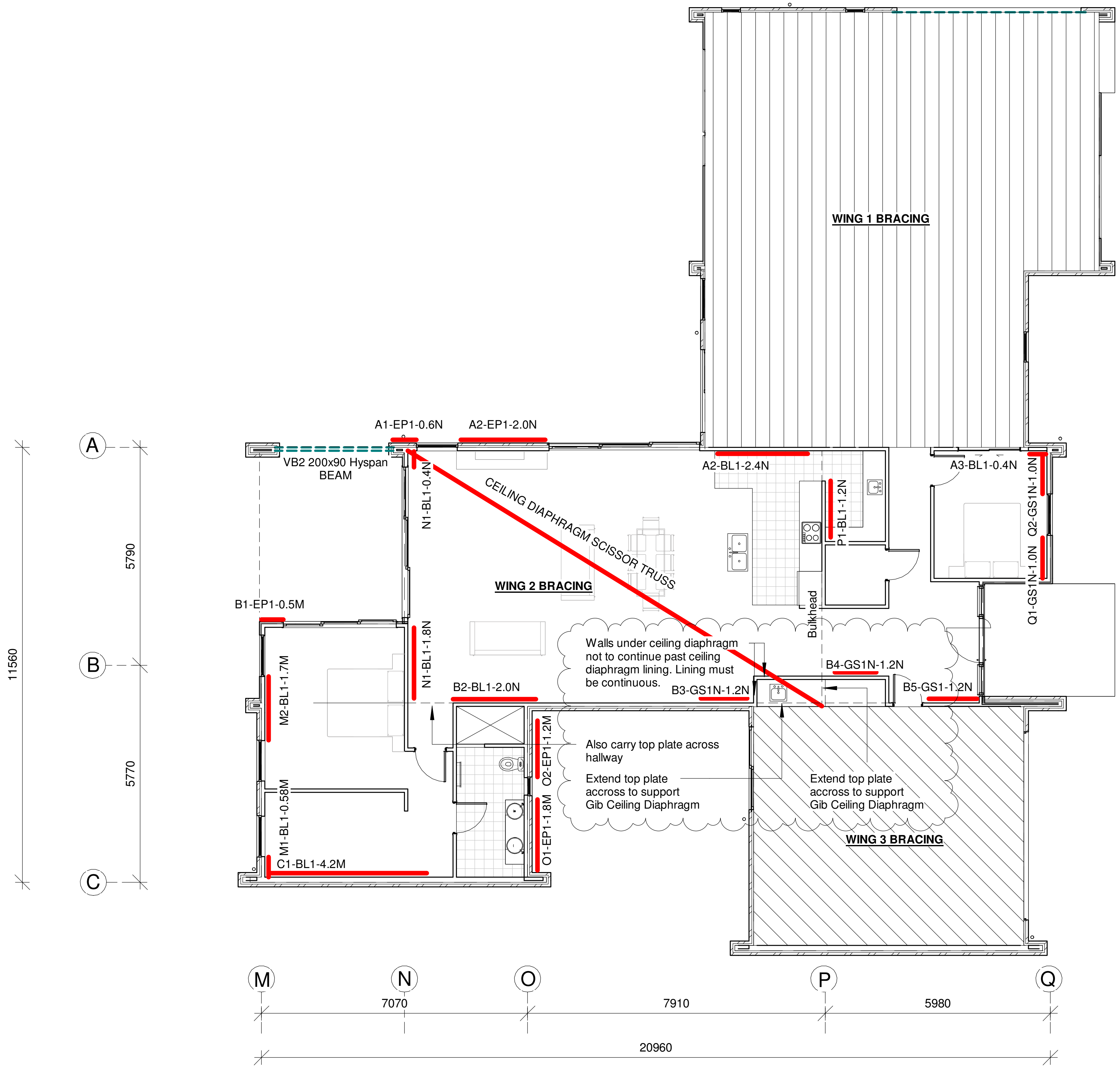
All Ply bracing to be checked into frame

Top plate fixings

FIXING TYPE B -4.7 kN
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud Plus LUMBERLOK (CPC80) 6kN Stud Anchor
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.Plus 2 x LUMBERLOK CPC40
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud. Plus LUMBERLOK Stud Strap (one face only)

LINTEL FIXINGS
REFER TO MITEK CONNECTION DETAIL SHEET SPEC / SITE GUIDE AND ELEVATIONS FOR TYPE

Concrete Floor		Timber Floor	
External walls	Internal walls	External walls	Internal walls
			
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate	Position GIB HandiBrac® at the stud / plate junction	Position GIB HandiBrac® in the centre of the perimeter joist or bearer	Position GIB HandiBrac® in the centre of floor joist or full depth solid block
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN.		12x150mm galvanised coach screw	



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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

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REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Bracing Plan Wing 2

A2.4 | 1 : 125@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

NOTE:

-REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

NOTE:

-FINAL GLAZING TO BE CONFIRMED BY JOINERS/GLAZERS ACCORDING TO **HUMAN IMPACT SAFETY GLAZING NZS 4223.3:2016**

REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

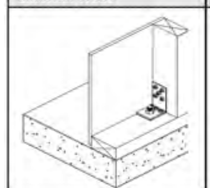
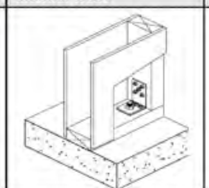
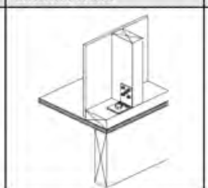
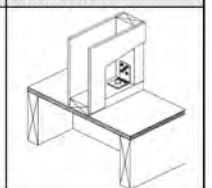
-ALL SETOUT DIMENSIONS FOR JOINERY ARE FROM TRIM TO TRIM, ALLOW FOR RELEVANT TRIM SIZE WHEN FRAMING

All Ply bracing to be checked into frame

Top plate fixings

FIXING TYPE B -4.7 kN
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud Plus LUMBERLOK (CPC80) 6kN Stud Anchor
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.Plus 2 x LUMBERLOK CPC40
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud. Plus LUMBERLOK Stud Strap (one face only)

LINTEL FIXINGS
REFER TO MITEK CONNECTION DETAIL SHEET SPEC / SITE GUIDE AND ELEVATIONS FOR TYPE

Concrete Floor		Timber Floor	
External walls	**Internal walls**	**External walls**	**Internal walls**
			
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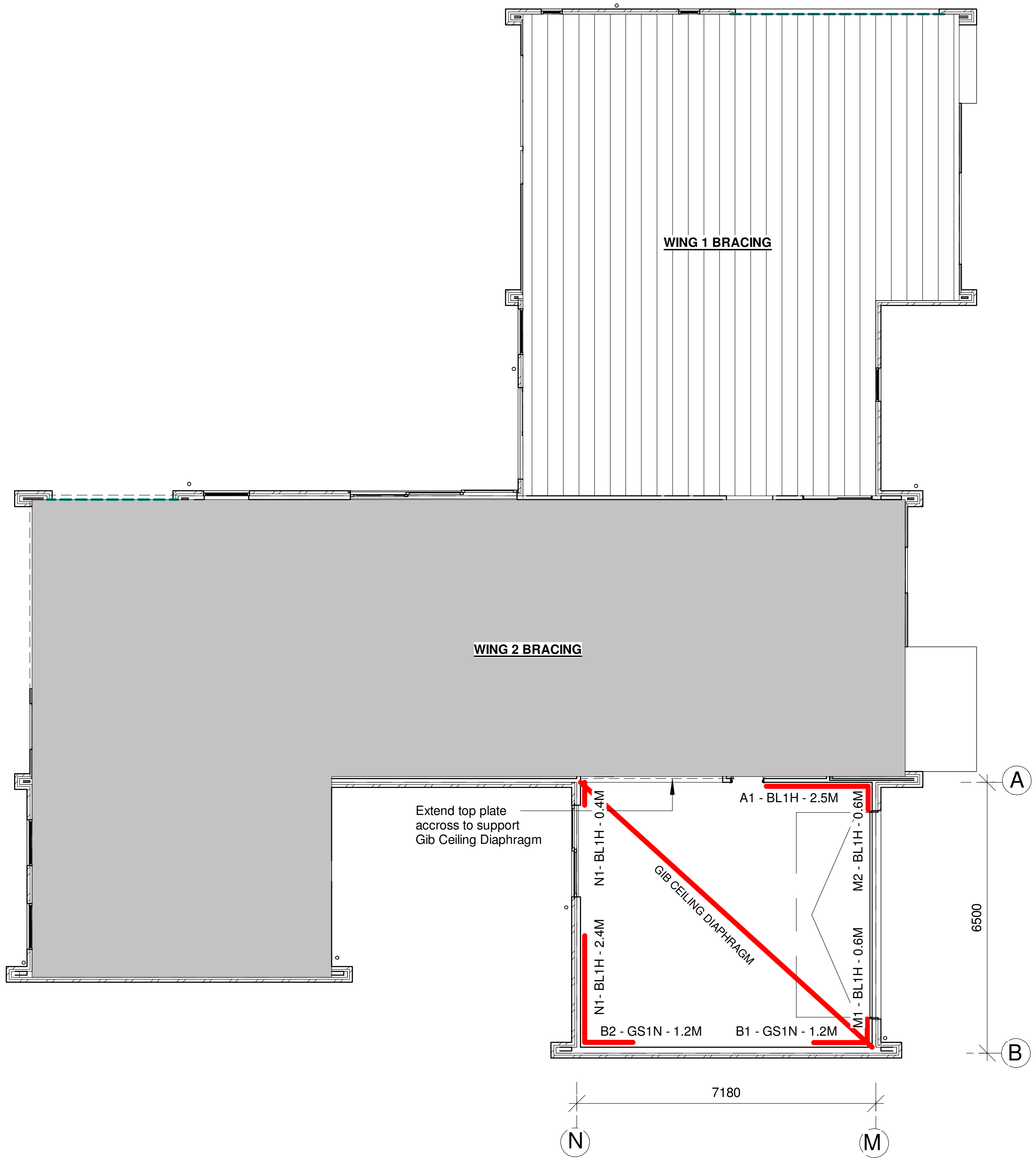
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN.		12x150mm galvanised coach screw	



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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

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REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Bracing Plan Wing 3

A2.5 | **1 : 125@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

NOTE:

-FINAL GLAZING TO BE CONFIRMED BY JOINERS/GLAZERS ACCORDING TO **HUMAN IMPACT SAFETY GLAZING NZS 4223.3:2016**

REFER TO NZ 3604 FOR CONNECTING TOP PLATE TO EXTERNAL WALLS AT RIGHT ANGLES-WALL CONTAINING BRACING-SEE SECTION 8.7.3.4

-ALL SETOUT DIMENSIONS FOR JOINERY ARE FROM TRIM TO TRIM, ALLOW FOR RELEVANT TRIM SIZE WHEN FRAMING

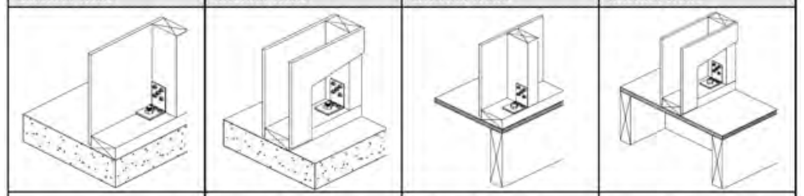
BL: LINTEL BARS SUPPORTING VENEER OVER OPENINGS

Top plate fixings

FIXING TYPE B -4.7 kN
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud Plus LUMBERLOK (CPC80) 6kN Stud Anchor
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.Plus 2 x LUMBERLOK CPC40
OR
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud. Plus LUMBERLOK Stud Strap (one face only)

LINTEL FIXINGS
REFER TO MITEK CONNECTION DETAIL SHEET SPEC / SITE GUIDE AND ELEVATIONS FOR TYPE

Concrete Floor		Timber Floor	
External walls	Internal walls	External walls	Internal walls
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate	Position GIB HandiBrac® at the stud / plate junction	Position GIB HandiBrac® in the centre of the perimeter joist or bearer	Position GIB HandiBrac® in the centre of floor joist or full depth solid block
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN.		12x150mm galvanised coach screw	



Door Schedule

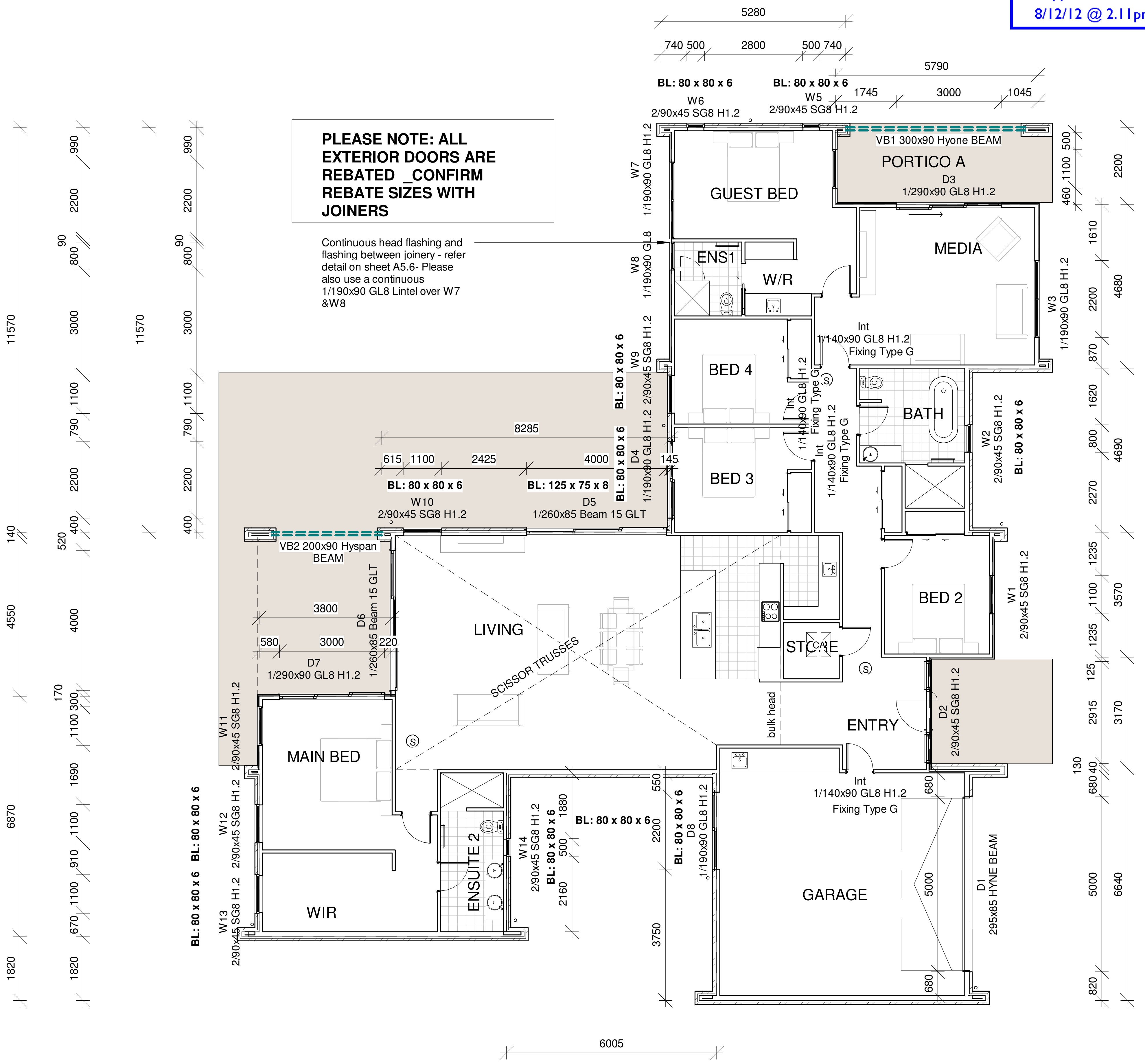
Door #	Head	Height	Width	Glazing	Glass Type	Comments	Lintel Fixing type
D1	2200	2200	5000	NA	NA		G
D2	2200	2200	2950	Double	Clear, Safety		G
D3	2165	2200	3000	Double	Clear, Safety		G
D4	2165	2200	2200	Double	Clear, Safety		G
D5	2165	2200	4000	Double	Clear, Safety		G
D6	2200	2200	4000	Double	Clear, Safety		G
D7	2165	2200	3000	Double	Clear, Safety		G
D8	2165	2200	2200	Double	Clear, Safety		G

Window Schedule

Window #	Head	Height	Width	Glazing	Glass Type	Comments	Lintel Fixing type
W1	2200	2200	1100	Double	Clear, Safety		F
W2	2200	2200	800	Double	Opaque, Safety		F
W3	2200	2200	2200	Double	Clear, Safety		G
W4	2200	2200	1100	Double	Clear, Safety		
W5	2200	2200	500	Double	Clear, Safety		F
W6	2200	2200	500	Double	Clear, Safety		F
W7	2200	2200	2200	Double	Clear, Safety		F
W8	2193	2200	800	Double	Opaque, Safety		F
W9	2200	2200	1100	Double	Clear, Safety		F
W10	2200	2200	1100	Double	Clear, Safety		F
W11	2200	2200	1100	Double	Clear, Safety		F
W12	2200	2200	1100	Double	Clear, Safety		F
W13	2200	2200	1100	Double	Clear, Safety		F
W14	2200	2200	500	Double	Opaque, Safety		F

PLEASE NOTE: ALL EXTERIOR DOORS ARE REBATED _CONFIRM REBATE SIZES WITH JOINERS

Continuous head flashing and flashing between joinery - refer detail on sheet A5.6- Please also use a continuous 1/190x90 GL8 Lintel over W7 &W8



LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

DDL ARCHITECTURE
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REVISIONS: Consent Issue 11-11-12

Joinery Plan
A2.6
1 : 125@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

MATERIALS/ CONSTRUCTION NOTES

Main Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh (10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs

Valley:
0.55mm BMT Colorsteel valley trays on H1.2 treated valley boards

Ridge/ Hip:
0.55mm BMT Colorsteel ridge flashing with soft edge

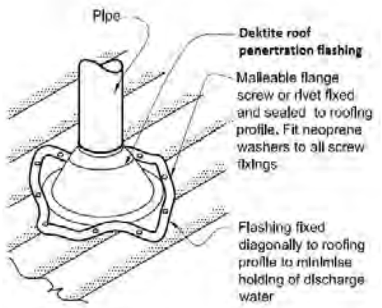
Barge:
0.55mm BMT Colorsteel barge flashing

Fascia and Spouting:
0.55mm BMT 140mm Colorsteel fascia and external 1/4 round spouting (or similar) with internal brackets.

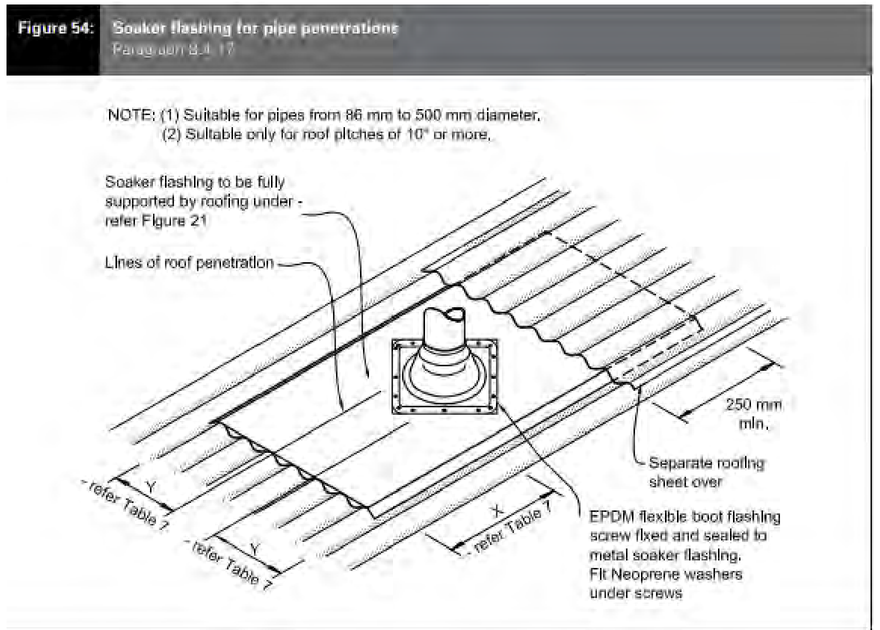
Downpipes:
uPVC painted downpipes (80mm unless noted otherwise)

Soffits:
4.5mm Hardies Soffit lining with PVC jointers fixed to Soffit Sprockets.

Down Pipe #	Size	Catchments Area
DP1	*80mm Dia*	*46m²*
DP2	*80mm Dia*	*66m²*
DP3	*80mm Dia*	*42m²*
DP4	*80mm Dia*	*38m²*
DP5	*80mm Dia*	*51m²*
DP6	*80mm Dia*	*31m²*
DP7	*80mm Dia*	*54m²*
DP8	*80mm Dia*	*45m²*
TOTAL ROOF AREA		***373M²***

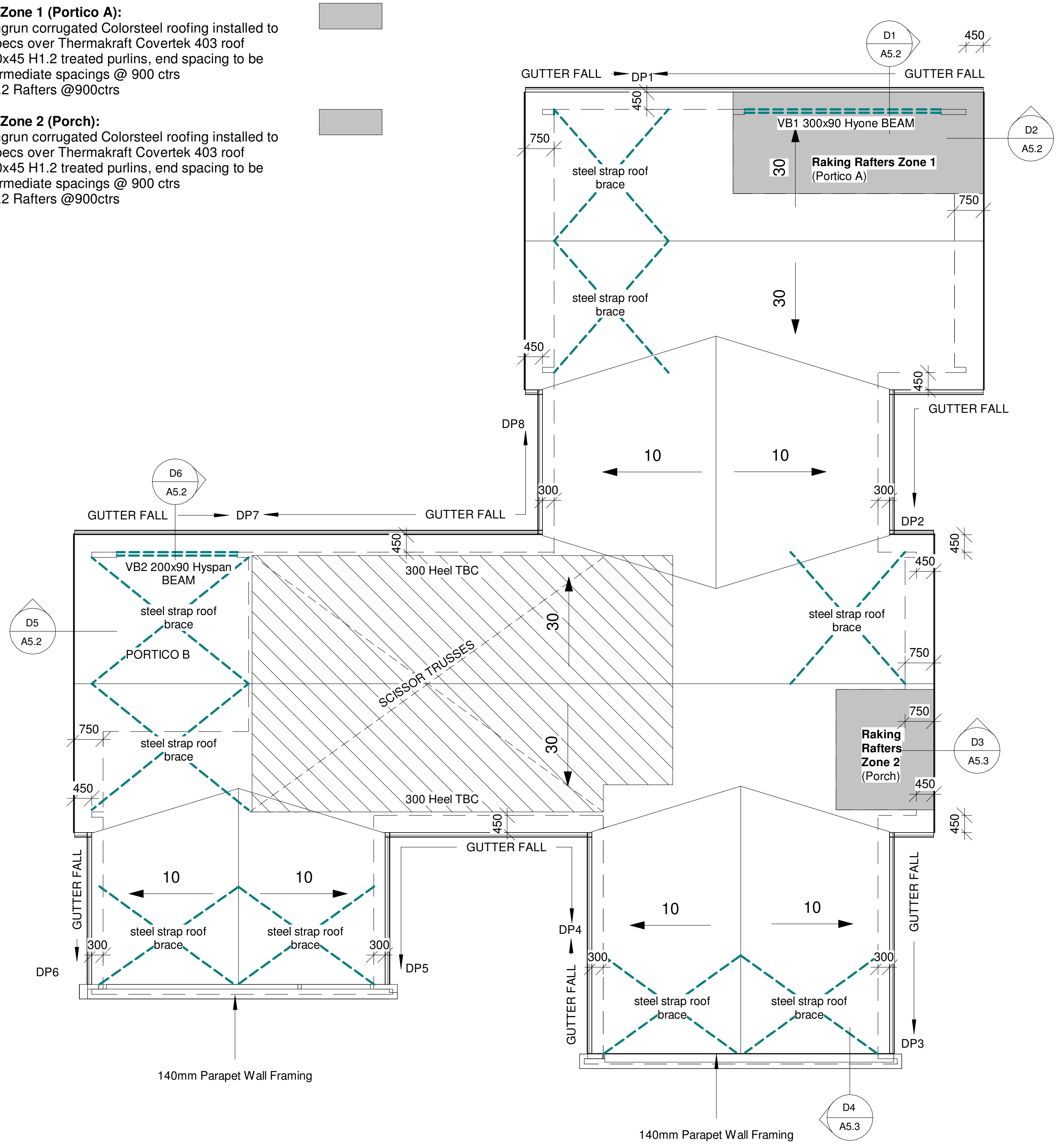


ROOF PENTRATION DETAIL
8° & Higher Pitch



Raking Rafters Zone 1 (Portico A):
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs
190x45 SG8 H1.2 Rafters @900ctrs

Raking Rafters Zone 2 (Porch):
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs
190x90 SG8 H1.2 Rafters @900ctrs



DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Roof plan

A2.7 | **1 : 125@ A3**

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

ORIGINAL IN COLOUR

ELECTRICAL LEGEND

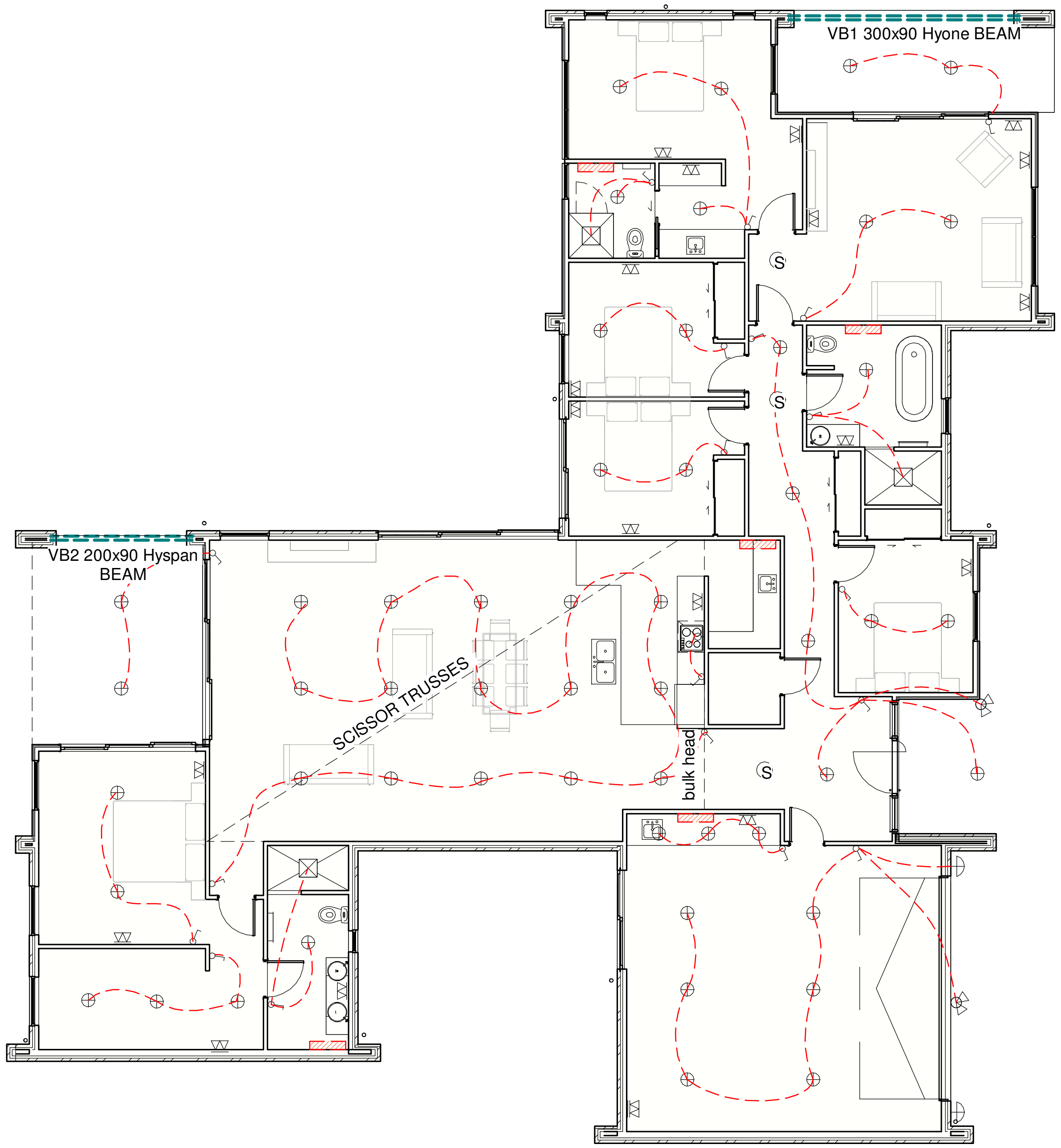
- WALL LIGHT
- CA RATED DOWNLIGHT
- LIGHT SWITCH
- SECURITY SENSOR LIGHT
- DOUBLE POWERPOINT
- TV JACK POINT — TV
- PHONE JACK POINT — PH
- APPROVED SMOKE ALARM — S
- HEATED TOWEL RAIL
- XF125S MANROSE CEILING FAN OR SIMILAR WITH MIN. 25 L/s PERFORMANCE
- RANGEHOOD WITH FLOW RATE OF NO LESS THAN 50l/s TO EXIT THROUGH SOFFIT
- SUMMIT ELECTRIC TANKLESS HEATER MODULE

Also Allow Wiring For

-Dishwasher
-Oven/ Hob
-Microwave
-Rangehood
-Wastemaster
- Door Chime
-Garage Door Opener
-Washer/ dryer
-Refrigerator
-Power for each Electric Hot Water modules in each bathroom, Kitchen and Laundry. These modules are single phase not 3 phase.
(see attached brochure for Electric Hot Water modules for understanding)
-Separate power circuit for water pump (this is a requirement for the fire sprinkler system)
-Auto hallway night lighting
-External power point in the north east corner of the covered deck area by master bedroom
-Three smoke detectors

Consult client regardng:
-Power to the main gate to power an auto gate.
-Power along the edges of the drive to install up lights to light the drive way.
-Power to the pool shed for future pool.

NOTE: CLIENT TO CONFIRM FINAL ELECTRICAL LAYOUT PRIOR TO WIRING



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LOT 1 TAUWHARE ROAD
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REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Electrical Plan

A2.8 | **1 : 150@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

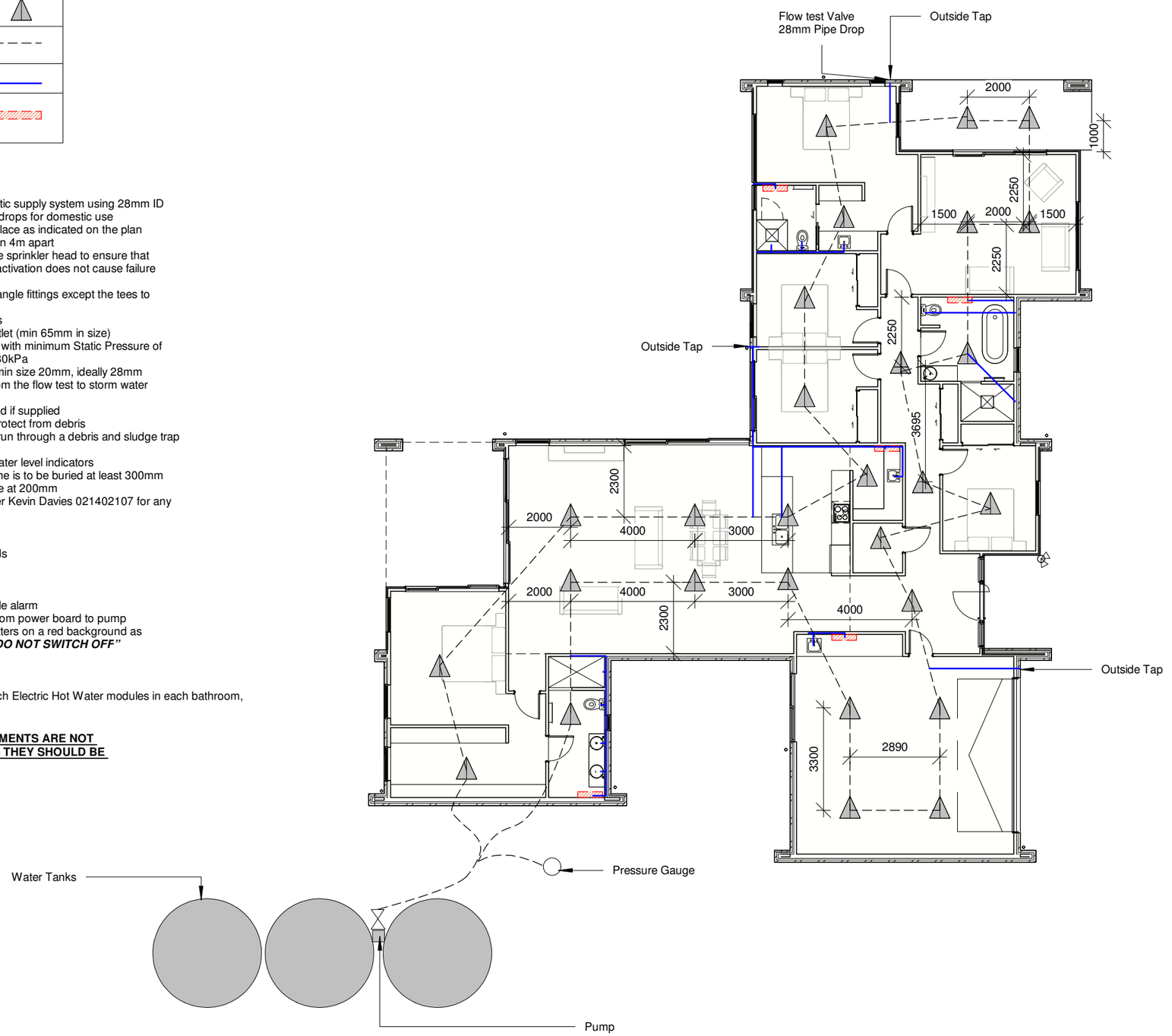
LEGEND	
-SPRINKLER HEADS	
-FIRE SPIRINKLER 32mm⌀ SUPPLY	
-DOMESTIC 15mm⌀ SUPPLY	
-ELECTRIC TANKLESS HEATER MODULE	

Residential Fire Sprinkler System
Specification for Plans (Plumber)
1. Looped combination fire and domestic supply system using 28mm ID reticulation to sprinklers and 15mm ID drops for domestic use
2. Affix sprinkler heads as supplied & place as indicated on the plan
3. Pipe supports are to be no more than 4m apart
4. Pipe supports are to be placed at the sprinkler head to ensure that movement from seismic and sprinkler activation does not cause failure of the system
5. Reticulation loop is not to have any angle fittings except the tees to drop to the sprinkler head
6. No pipes are to be used for supports
7. Afix pressure gauge at the pump outlet (min 65mm in size)
8. Gauge is to be permanently marked with minimum Static Pressure of 230kPa and the Design Pressure of 180kPa
9. Install a flow test valve as indicated min size 20mm, ideally 28mm
10.Install a drain to take away water from the flow test to storm water disposal
11. Water Flow Detectors to be installed if supplied
12.Ensure water pump is installed to protect from debris
13.Water from rainwater to tank to be run through a debris and sludge trap before entering the tank
14.Ensure that the water tanks have water level indicators
15.Pipe from the tank pump to the home is to be buried at least 300mm deep and have a covering warning tape at 200mm
16.Communicate with the Fire Designer Kevin Davies 021402107 for any clarification

Other Trades
All Trades
1. Ensure no damage to sprinkler heads
2. No paint on sprinkler heads
Electrician
1. Fit audible alarm
2. Wire Water Flow Detectors to audible alarm
3. Provide single power supply direct from power board to pump
4. Label switchboard switch in white letters on a red background as follows: ***"SPRINKLER FIRE PUMP - DO NOT SWITCH OFF"***

Hot Water System:
1. Summit Electric Tankless Heater
2.Provide domestic water supply to each Electric Hot Water modules in each bathroom, Kitchen and Laundry

PLEASE NOTE: WHERE MEASUREMENTS ARE NOT INDICATED TO SPRINKLER HEADS THEY SHOULD BE CENTRED IN THE ROOM



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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
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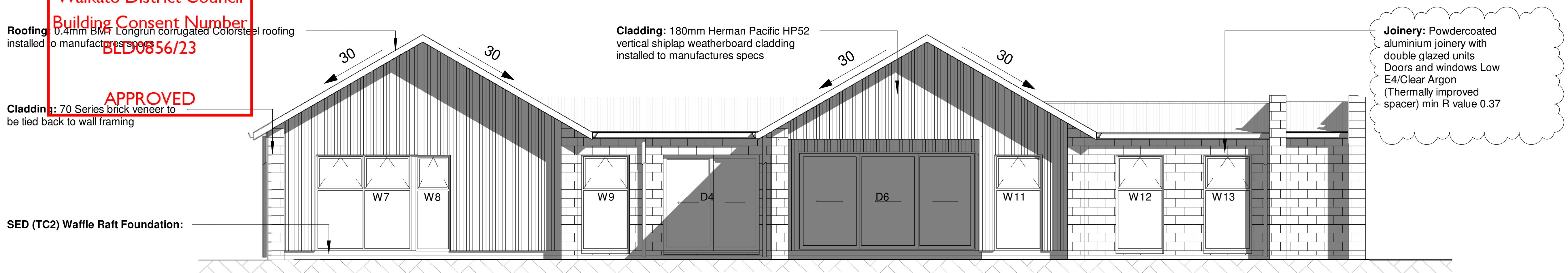
REVISIONS:

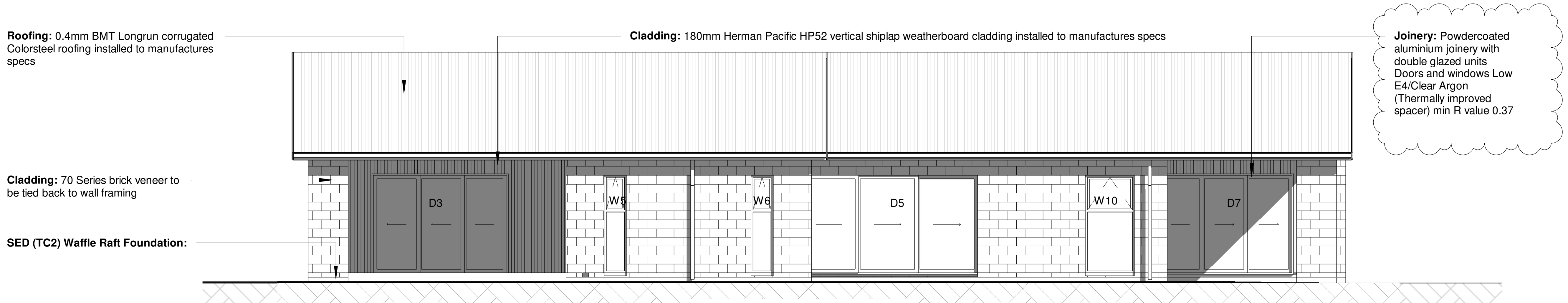
Rev.	Description	Date
2	Consent Issue	11-11-12

Plumbing/Fire Sprinkler Plan

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT
A2.9	1 : 150@ A3
ORIGINAL IN COLOUR	



WEST ELEVATIONS



NORTH ELEVATIONS

Window Schedule

Window #	Head	Height	Width	Glazing	Glass Type	Comments	Lintel Fixing type
W1	2200	2200	1100	Double	Clear, Safety		F
W2	2200	2200	800	Double	Opaque, Safety		F
W3	2200	2200	2200	Double	Clear, Safety		G
W4	2200	2200	1100	Double	Clear, Safety		
W5	2200	2200	500	Double	Clear, Safety		F
W6	2200	2200	500	Double	Clear, Safety		F
W7	2200	2200	2200	Double	Clear, Safety		F
W8	2193	2200	800	Double	Opaque, Safety		F
W9	2200	2200	1100	Double	Clear, Safety		F
W10	2200	2200	1100	Double	Clear, Safety		F
W11	2200	2200	1100	Double	Clear, Safety		F
W12	2200	2200	1100	Double	Clear, Safety		F
W13	2200	2200	1100	Double	Clear, Safety		F
W14	2200	2200	500	Double	Opaque, Safety		F

Door Schedule

Door #	Head	Height	Width	Glazing	Glass Type	Comments	Lintel Fixing type
D1	2200	2200	5000	NA	NA		G
D2	2200	2200	2950	Double	Clear, Safety		G
D3	2165	2200	3000	Double	Clear, Safety		G
D4	2165	2200	2200	Double	Clear, Safety		G
D5	2165	2200	4000	Double	Clear, Safety		G
D6	2200	2200	4000	Double	Clear, Safety		G
D7	2165	2200	3000	Double	Clear, Safety		G
D8	2165	2200	2200	Double	Clear, Safety		G

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

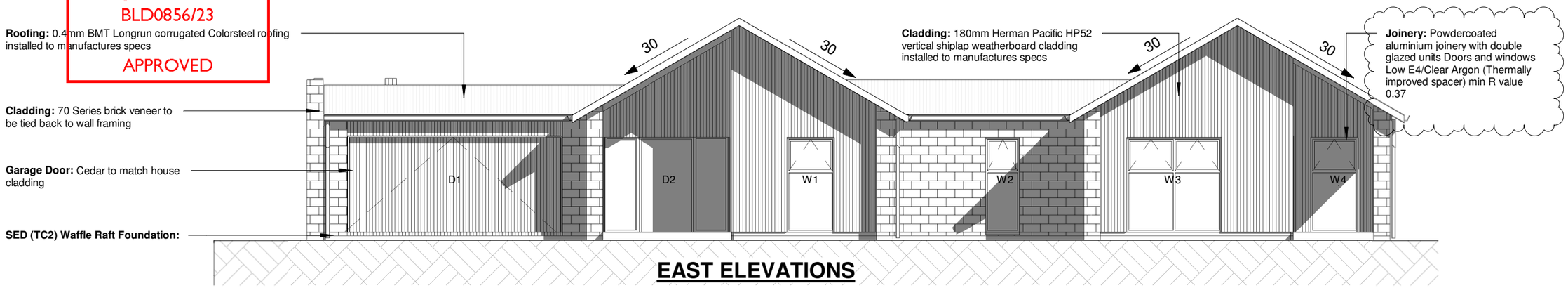
Elevations

A3.1 | 1 : 100@ A3

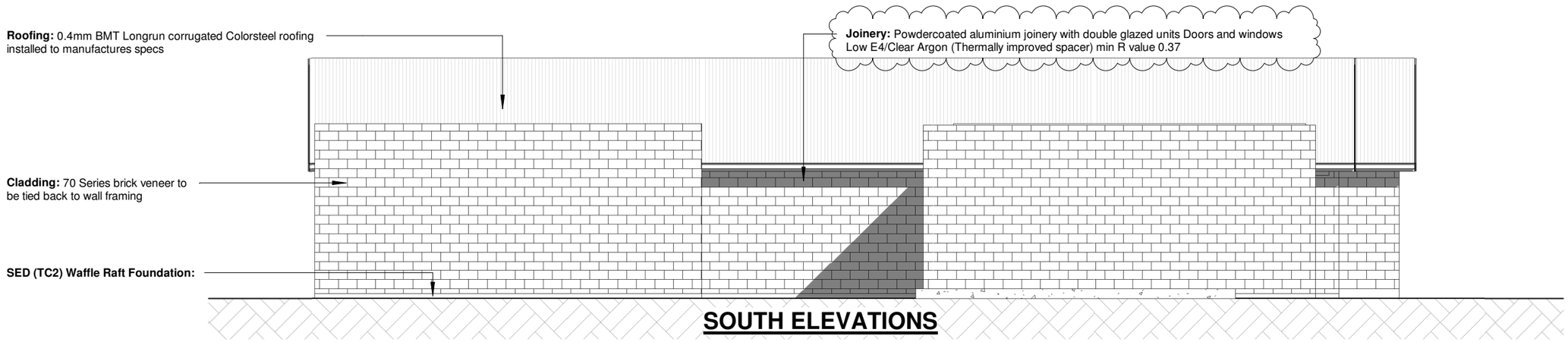
DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23
APPROVED



EAST ELEVATIONS



SOUTH ELEVATIONS

Window Schedule

Window #	*Head*	*Height*	*Width*	*Glazing*	*Glass Type*	*Comments*	*Lintel Fixing type*
W1	2200	2200	1100	Double	Clear, Safety		F
W2	2200	2200	800	Double	Opaque, Safety		F
W3	2200	2200	2200	Double	Clear, Safety		G
W4	2200	2200	1100	Double	Clear, Safety		
W5	2200	2200	500	Double	Clear, Safety		F
W6	2200	2200	500	Double	Clear, Safety		F
W7	2200	2200	2200	Double	Clear, Safety		F
W8	2193	2200	800	Double	Opaque, Safety		F
W9	2200	2200	1100	Double	Clear, Safety		F
W10	2200	2200	1100	Double	Clear, Safety		F
W11	2200	2200	1100	Double	Clear, Safety		F
W12	2200	2200	1100	Double	Clear, Safety		F
W13	2200	2200	1100	Double	Clear, Safety		F
W14	2200	2200	500	Double	Opaque, Safety		F

Door Schedule

Door #	*Head*	*Height*	*Width*	*Glazing*	*Glass Type*	*Comments*	*Lintel Fixing type*
D1	2200	2200	5000	NA	NA		G
D2	2200	2200	2950	Double	Clear, Safety		G
D3	2165	2200	3000	Double	Clear, Safety		G
D4	2165	2200	2200	Double	Clear, Safety		G
D5	2165	2200	4000	Double	Clear, Safety		G
D6	2200	2200	4000	Double	Clear, Safety		G
D7	2165	2200	3000	Double	Clear, Safety		G
D8	2165	2200	2200	Double	Clear, Safety		G

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Elevations

A3.2 | **1 : 100@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

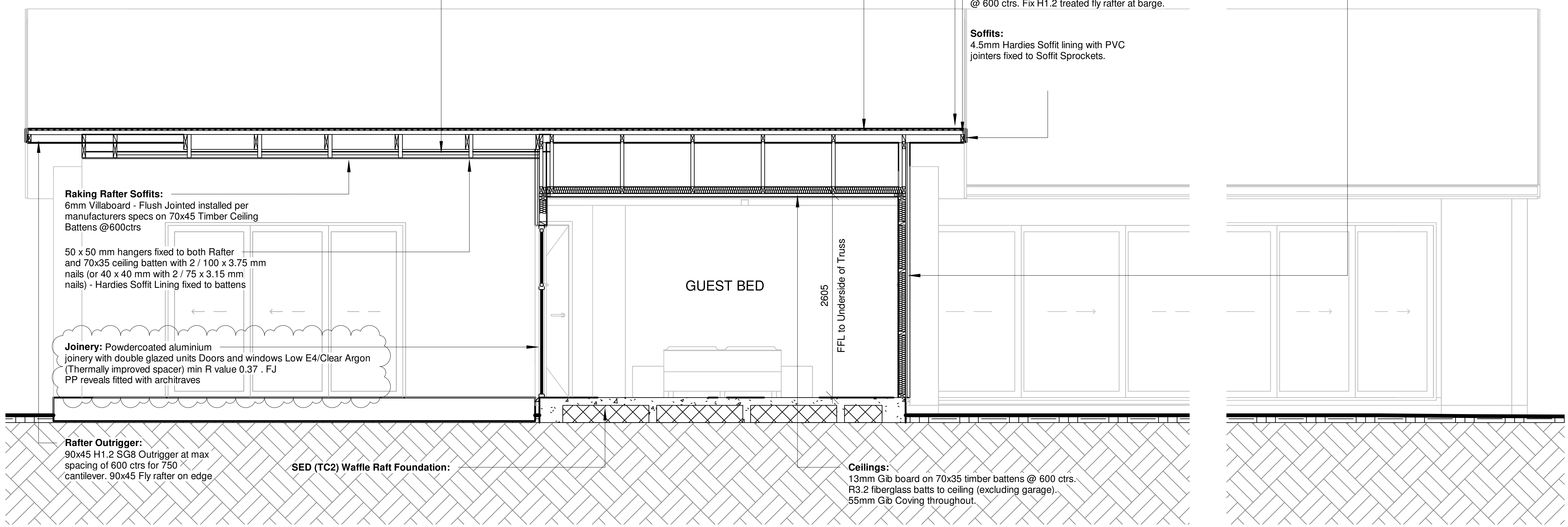
Raking Rafters Zone 1:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs
190x45 SG8 H1.2 Rafters @900ctrs

Main Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh(10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs

Barge:
0.55mm BMT Colorsteel barge flashing

Outriggers:
70x45 H1.2 treated purlins @600 ctrs fixed onto H1.2 treated 90x45 outriggers @ 600 ctrs. Fix H1.2 treated fly rafter at barge.

Timber Cladding: Hermpac HP52 Vertical Shiplap Weatherboards installed over Cavibat horizontal cavity battens system at 400-480ctrs ctrs max over Tekton or equivalent building wrap, onto 90x45mm H1.2 treated wall framing.Studs @400ctrs, Nogs @ 800 ctrs. R2.2 Insulation.



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
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REVISIONS:

Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Section A
A4.1
1 : 50@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

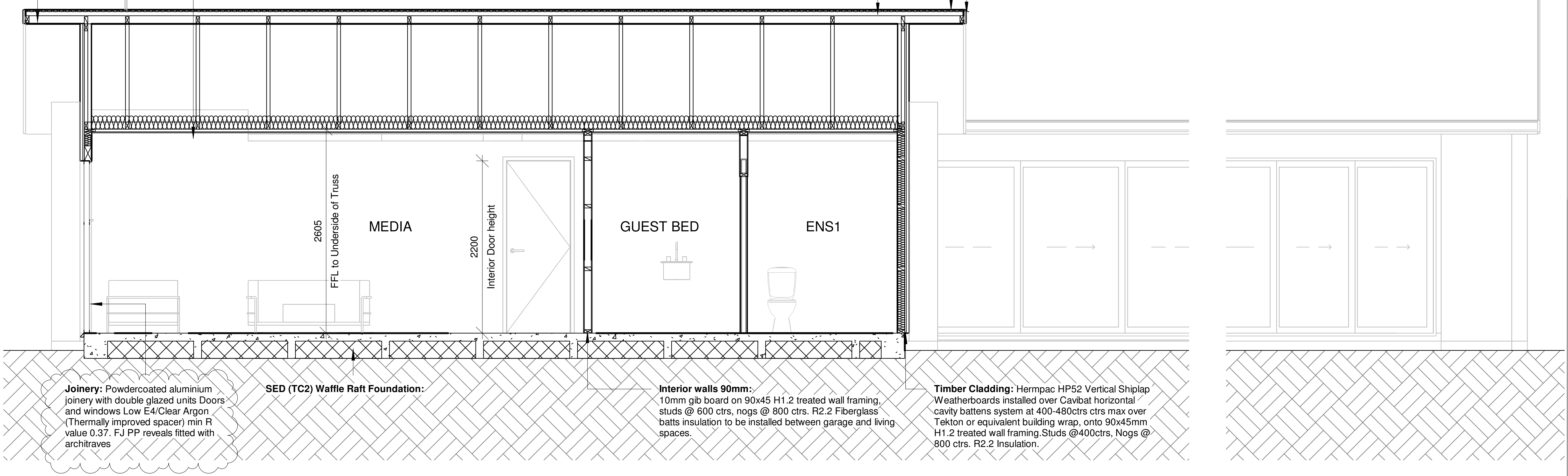
Soffits:
4.5mm Hardies Soffit lining with PVC jointers fixed to Soffit Brackets.

Ceilings:
13mm Gib board on 70x35 timber battens @ 600 ctrs.
R3.2 fiberglass batts to ceiling (excluding garage).
55mm Gib Coving throughout.

Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh(10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs

Barge:
0.55mm BMT Colorsteel barge flashing

Outriggers:
70x45 H1.2 treated purlins @600 ctrs fixed onto H1.2 treated 90x45 outriggers @ 600 ctrs. Fix H1.2 treated fly rafter at barge.



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
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Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
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NOTE –
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(c) Trimmer not exceeding 4.2 m long
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75 x 3.06 - 2 (skewed)
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Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
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(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
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90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
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NOTE –
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FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
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WAIKATO DISTRICT

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REVISIONS:

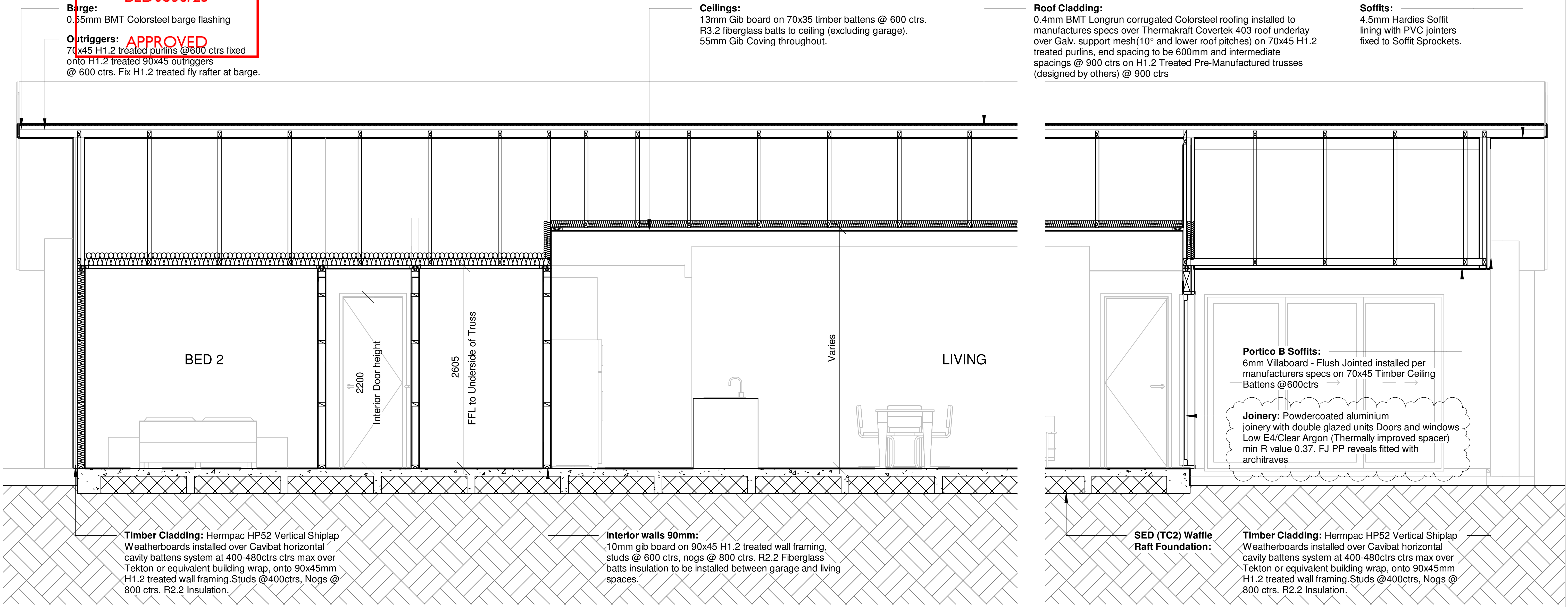
Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Section B

A4.2 | **1 : 50@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR



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2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

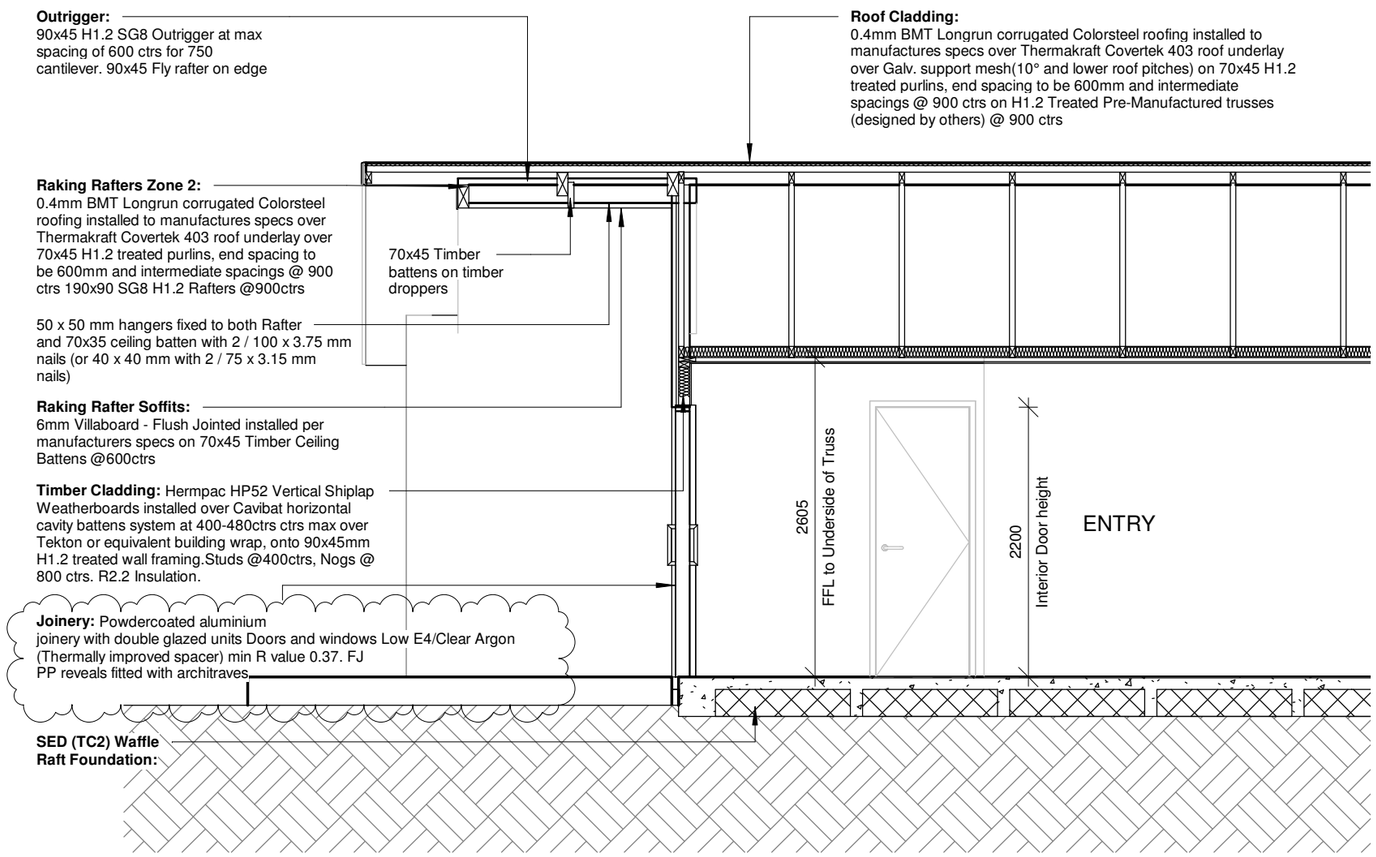
Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Section C

A4.3 | **1 : 50@ A3**

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

ORIGINAL IN COLOUR



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed)
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
0	RFI	23-01-22
2	Consent Issue	11-11-12

Section D

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

A4.4 | 1 : 50@ A3 | ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

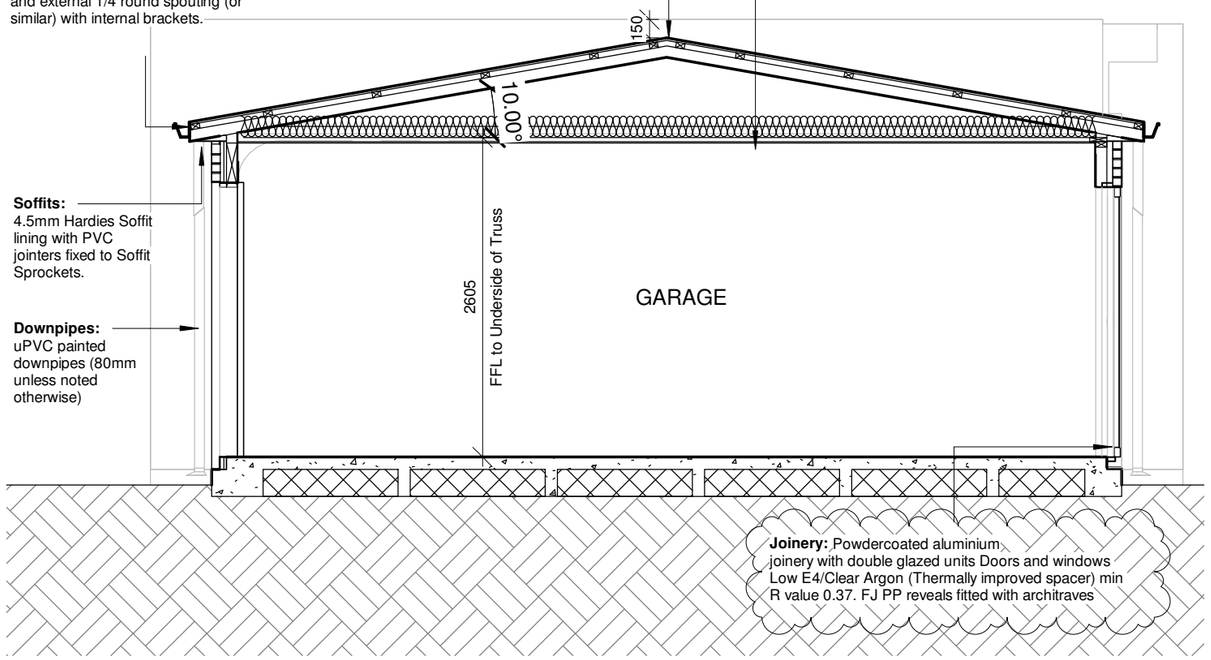
Ridge/ Hip:
0.55mm BMT Colorsteel ridge flashing with soft edge

Fascia and Spouting:
0.55mm BMT 140mm Colorsteel fascia and external 1/4 round spouting (or similar) with internal brackets.

Soffits:
4.5mm Hardies Soffit lining with PVC jointers fixed to Soffit Sprockets.

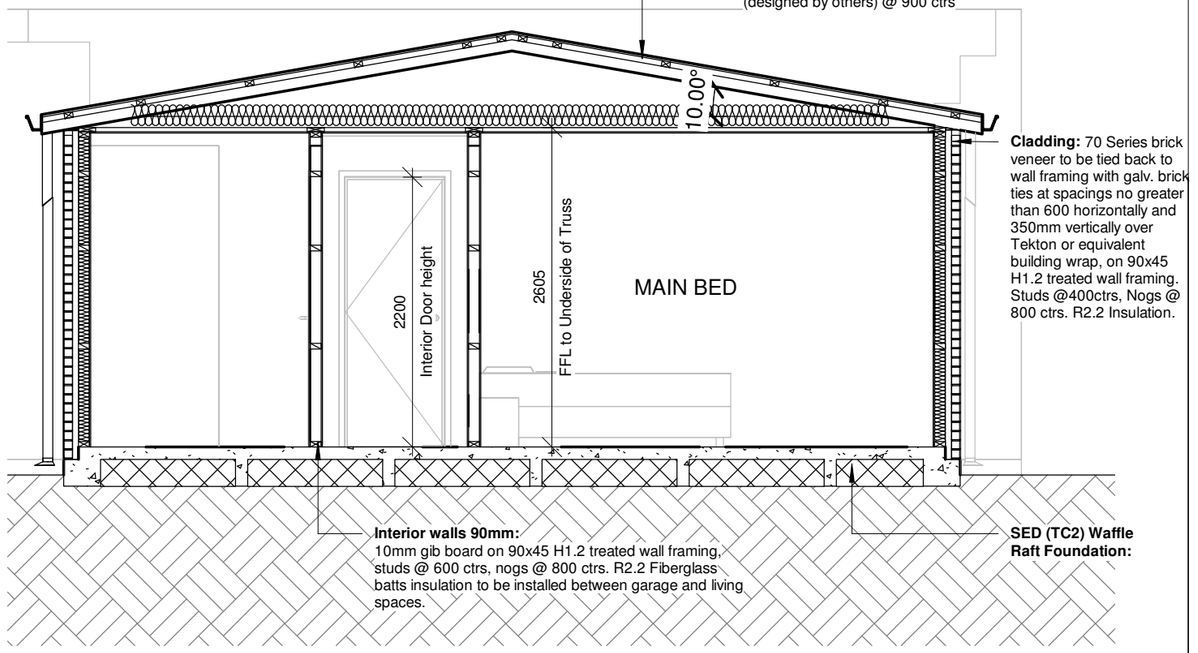
Downpipes:
uPVC painted downpipes (80mm unless noted otherwise)

Ceilings:
13mm Gib board on 70x35 timber battens @ 600 ctrs.
R3.2 fiberglass batts to ceiling (excluding garage).
55mm Gib Coving throughout.



Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh(10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs

Cladding: 70 Series brick veneer to be tied back to wall framing with galv. brick ties at spacings no greater than 600 horizontally and 350mm vertically over Tekton or equivalent building wrap, on 90x45 H1.2 treated wall framing. Studs @400ctrs, Nogs @ 800 ctrs. R2.2 Insulation.



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

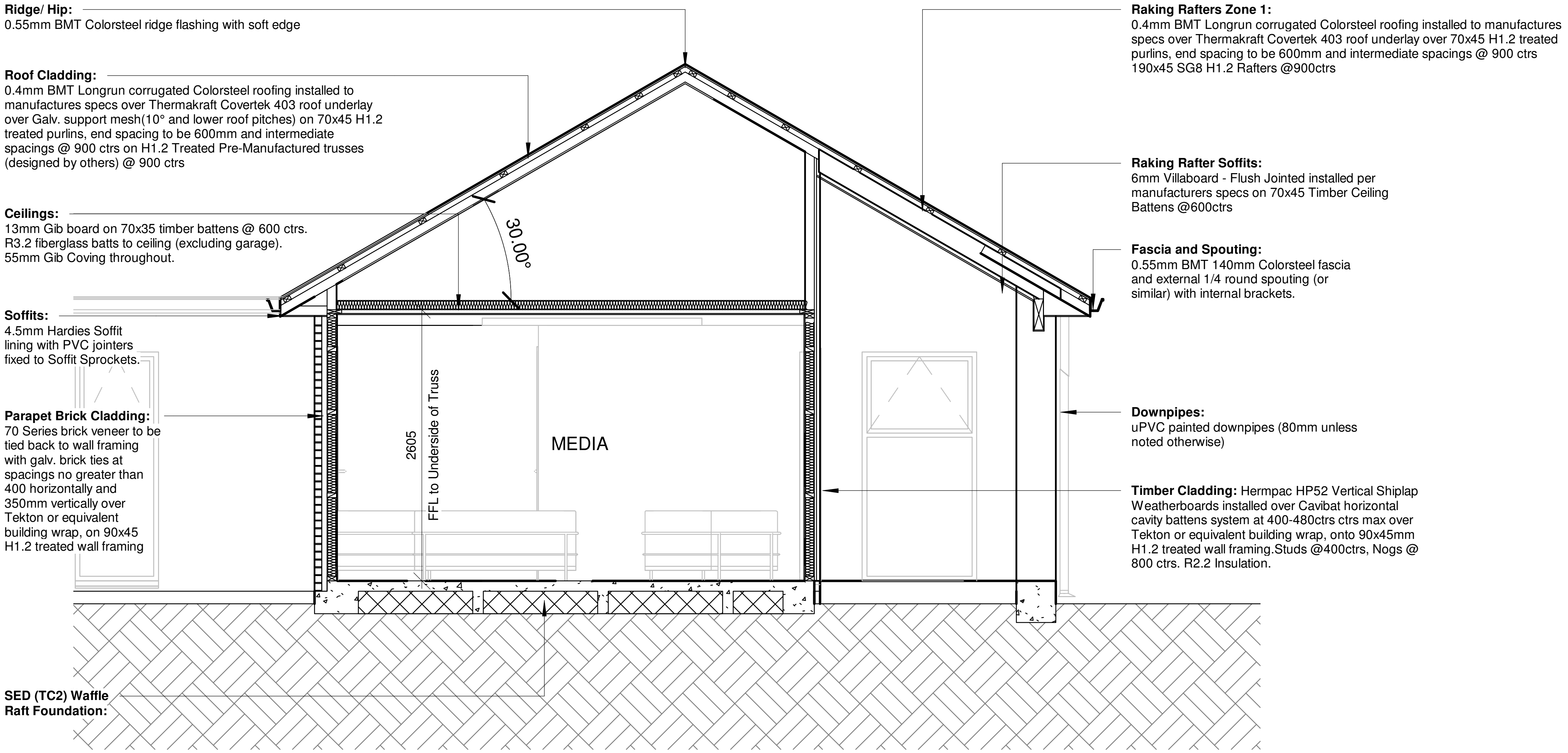
REVISIONS:

Rev.	Description	Date
1	RFI	23-01-22
2	Consent Issue	11-11-12

Section E

A4.5 | **1 : 50@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

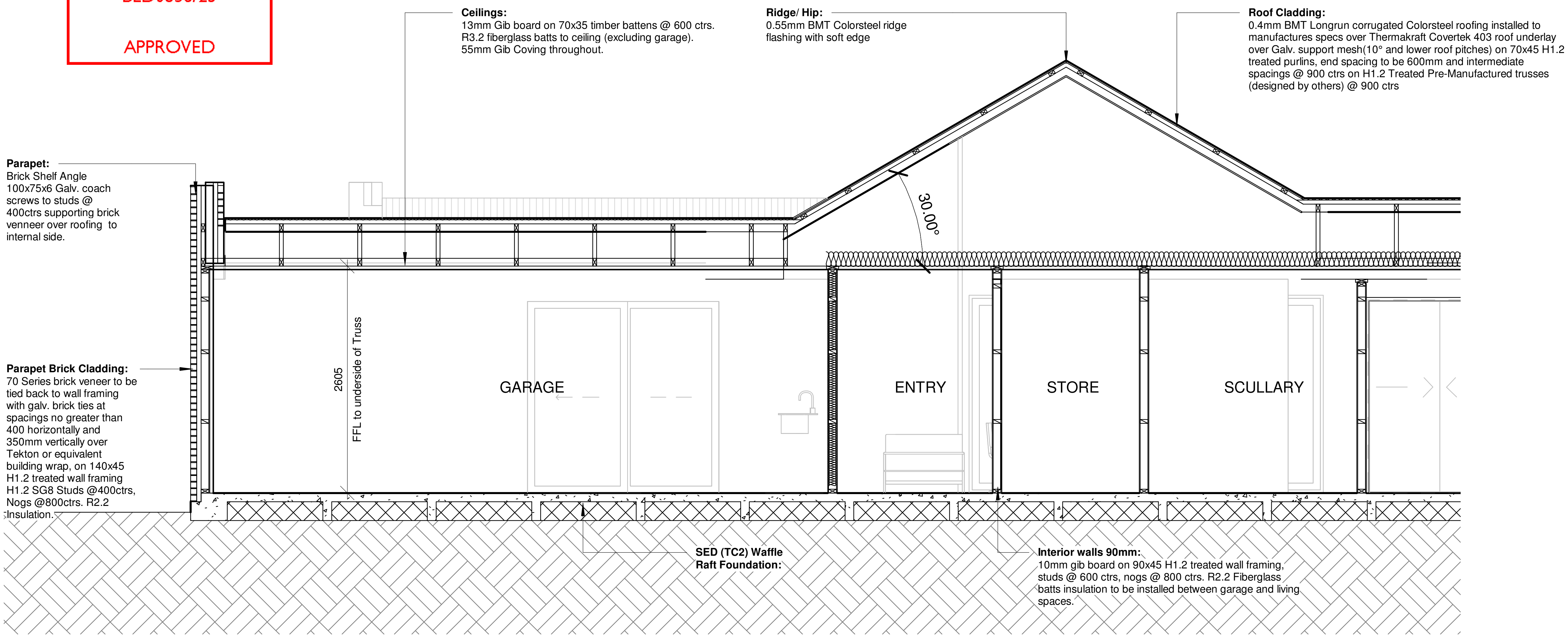
Rev.	Description	Date
2	Consent Issue	11-11-12

Section F

A4.6 | **1 : 50@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed)
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

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REVISIONS:

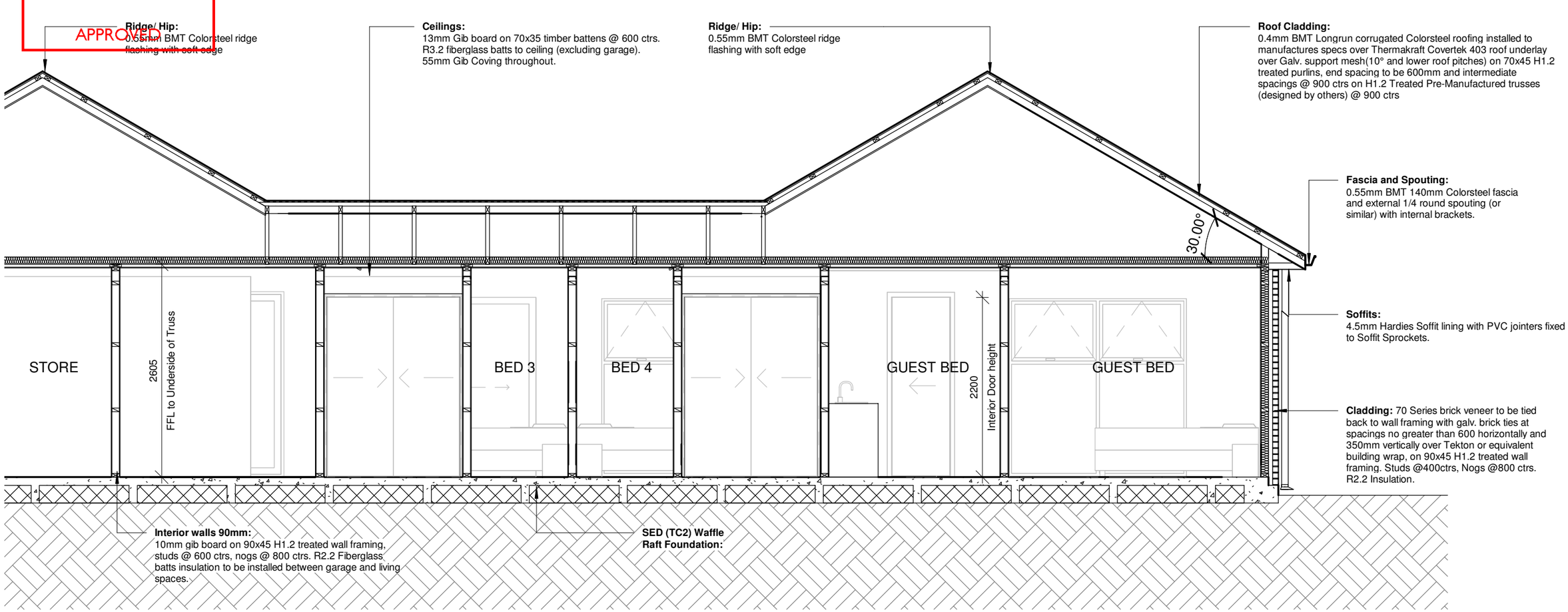
Rev.	Description	Date
2	Consent Issue	11-11-12

Section G

A4.7 | 1 : 50@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
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(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
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Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
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Purlin or batten directly to rafter or top chord
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NOTE –
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WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

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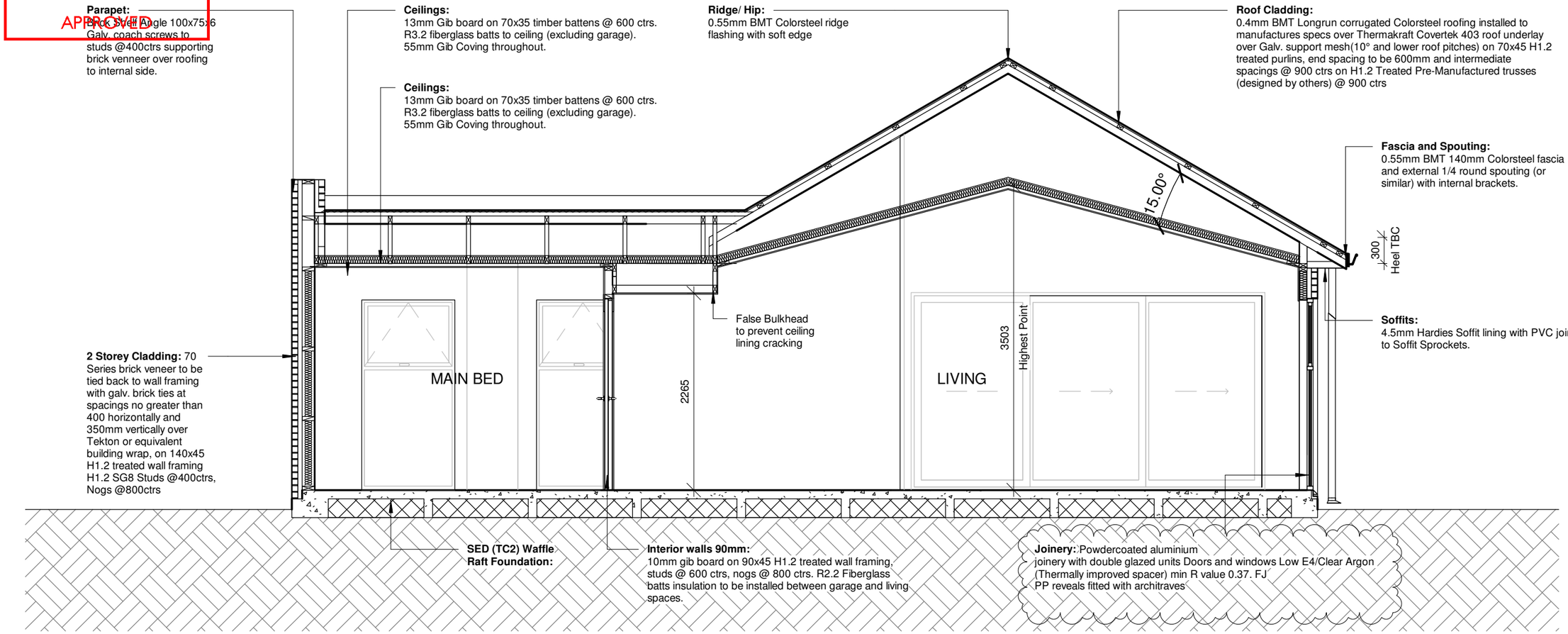
REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Section G Continued

A4.8 | 1 : 50@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR



ROOF FRAMING FIXINGS
Truss to top plate of external wall
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Truss to top plate of internal wall
2/ 90 x 3.15
Ceiling batten to parallel top plate of internal wall bracing element
90 x 3.15 -2 @ 400 mm centres
Hip rafter to top plate
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Steel strip Roof brace
(i) At ends - 3/ 60 x 3.15 or to manufactures spec
(ii) Other cases 2/ 60 x 3.15 or to manufactures spec
Blocking between rafters,joists or truss chords,90 mm x 45 mm
90 x 3.15 - 2 (end nailed)
Outrigger to gable top plate(as for equivalent purlins)
2 / 90 x 3.15 skew nails + 2 wire dogs or 4.7KN connection
Outrigger to rafter
90 x 3.15 3 (end nailed)
Flying rafter to outrigger
3/ 90 x 3.15
Outrigger blocking to top plate
90 x 3.15 4 (skewed)
Purlin or batten directly to rafter or top chord
1 / 10g self-drilling screw, 80 mm long or 2.4KN connection
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) Proprietary fixings with the required fixing capacity indicated in the tables may be used.

WALL FRAMING FIXINGS
Bottom plate to floor framing/concrete at:
(a) External walls and internal wall bracing elements
TIMBER: 90 x 3.15- 3 @ 600 mm Ctrs
CONCRETE: M12 ChemSet anchors @ 900 ctrs for in-situ, @ 600 ctrs for masonry header block. (120mm into in-situ and 90mm into concrete block, maintaining a minimum edge distance of 50 mm)
(b) Internal walls (may benailed to floor decking)
TIMBER: 90 x 3.15 - 1 @ 600 ctrs
CONCRETE: Ramset Spitfire @ 1200 ctrs (90 mm into concrete)
(c) Trimmer not exceeding 4.2 m long
90 x 3.15 - 6 (end nailed)
Dwang to stud
75 x 3.06 - 2 (skewed)
90 x 3.15 - 2 (end nailed)
Fishplate to straightened stud
60 x 2.8 - 4 (each side of cut)
Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
3/ 90 x 3.15

WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
(a) Trimmer not exceeding2.4 m long
90 x 3.15 - 3 (end nailed
(b) Trimmer not exceeding 3.0 m long
90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	RFI	23-01-22
2	Consent Issue	11-11-12

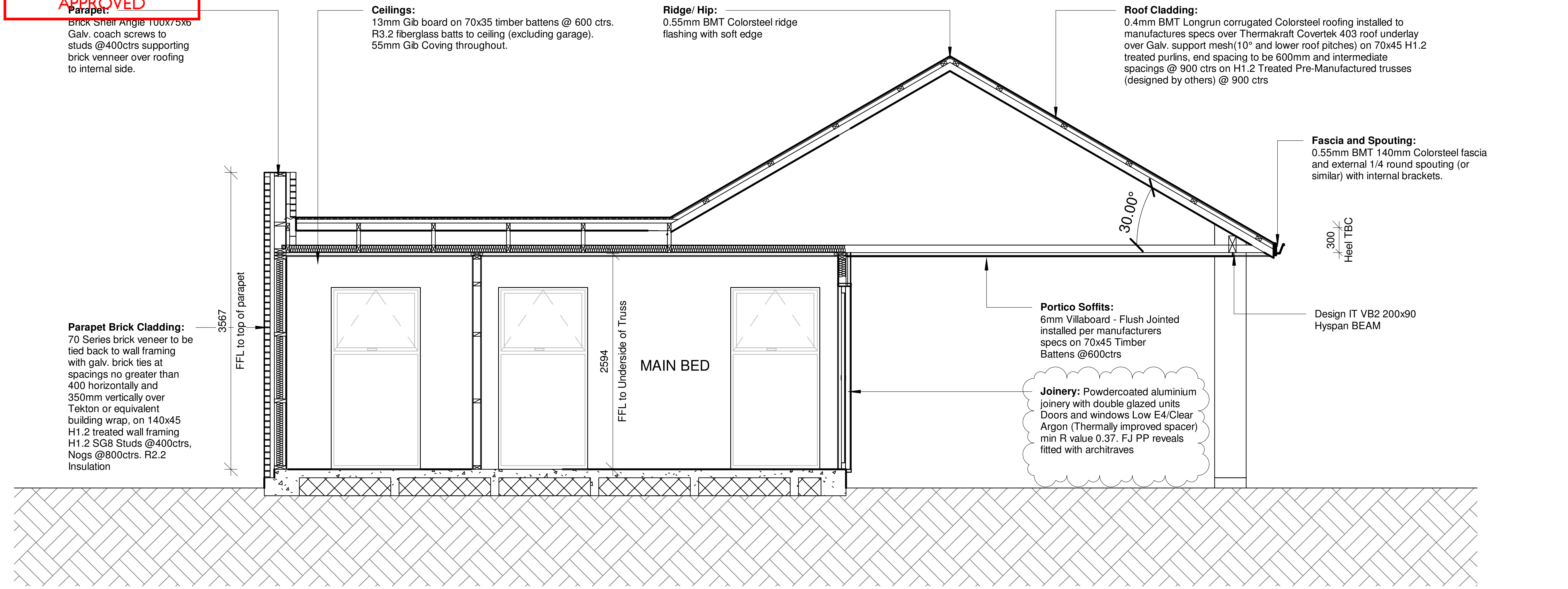
Section H

A4.9 | 1 : 50@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED



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Purlin or batten directly to rafter or top chord
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NOTE –
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Fishplate to straightened stud
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Half joint in top plate
4/ 75 x 3.06
Lintel to trimming stud
90 x 3.15 - 3 (end nailed)
Ribbon board to stud
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WALL FRAMING FIXINGS ctd.
Sill or header trimmer to trimming stud for:
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90 x 3.15 - 5 (end nailed)
(c) Trimmers not exceeding 3.6 m long
90 x 3.15-6 (end nailed)
Stud to plate
75 x 3.06- 4 (skewed)
90 x 3.15 - 3 (end nailed)
Top plate 140 mm x 35 mm to 90 mm x 45 mm and top plate to lintel
90 x 3.15- 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections
90 x 3.15 @ 600 mm centres
Trimming stud to doubled stud immediately under lintel
2/ 90 x 3.15 2
NOTE –
(1) Nail lengths and diameters are the minimum required.
(2) For studs up to 2.7 in length,

FINISHED GROUND LEVELS (GENERAL)
225mm FFL to Natural Ground
150mm FFL to Paved Area

FINISHED GROUND LEVELS (BRICK)
150mm FFL to Natural Ground
100mm FFL to Paved Area

DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

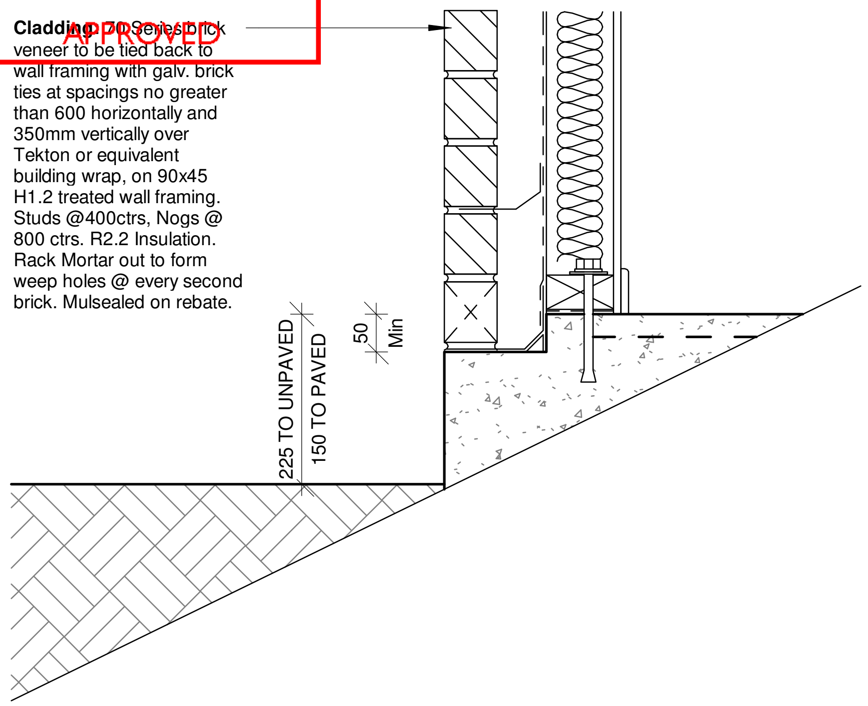
Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Section I

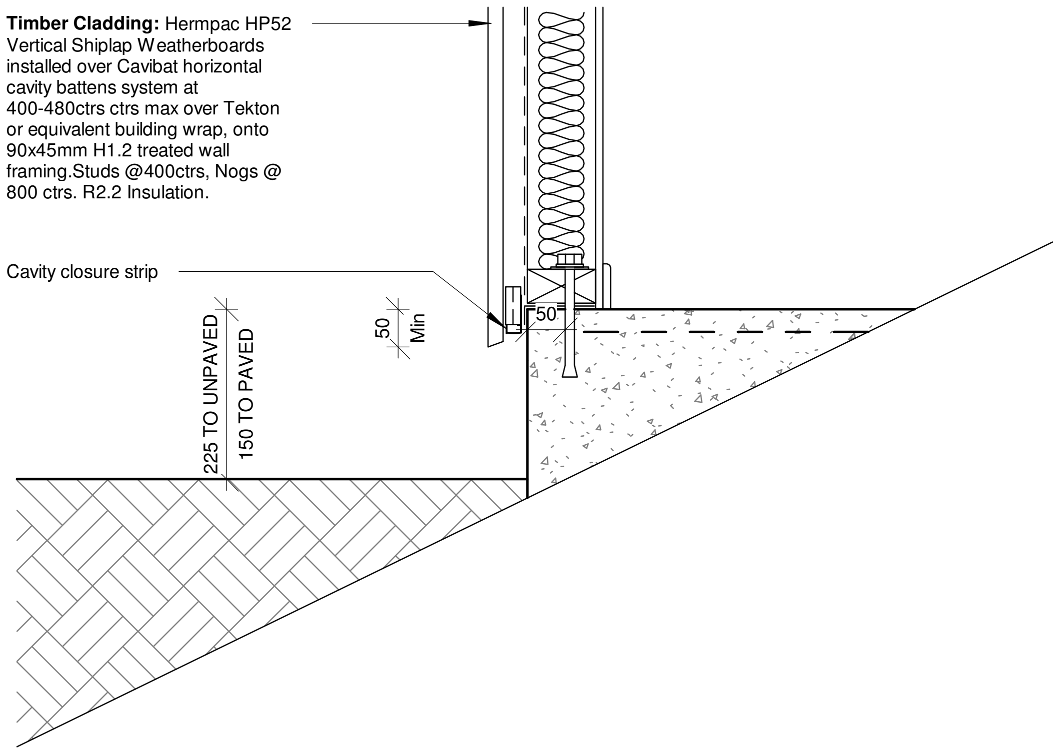
A4.10 | **1 : 50@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR



STANDARD EXTERIOR FOOTING
1:10



STANDARD EXTERIOR FOOTING -VERTICAL SHIPLAP
1:10

DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

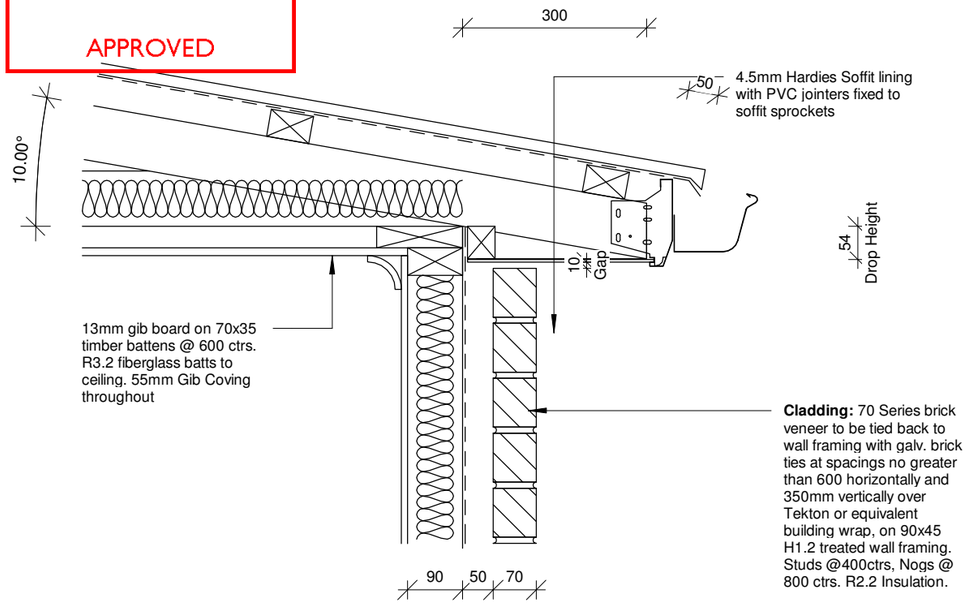
Rev.	Description	Date
2	Consent Issue	11-11-12

Slab Details

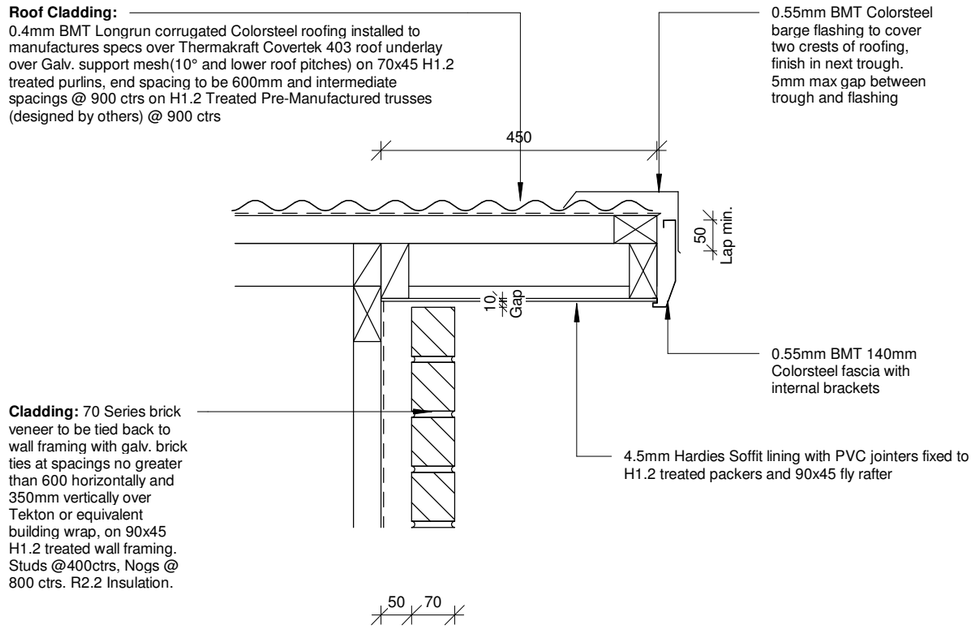
A5.0 **1 : 10@ A3**

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

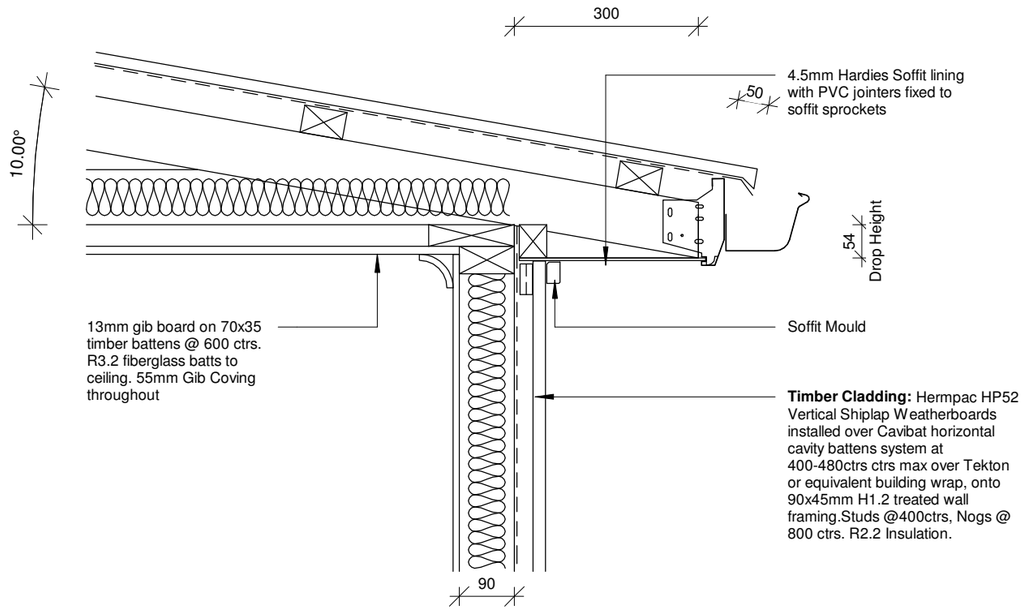
ORIGINAL IN COLOUR



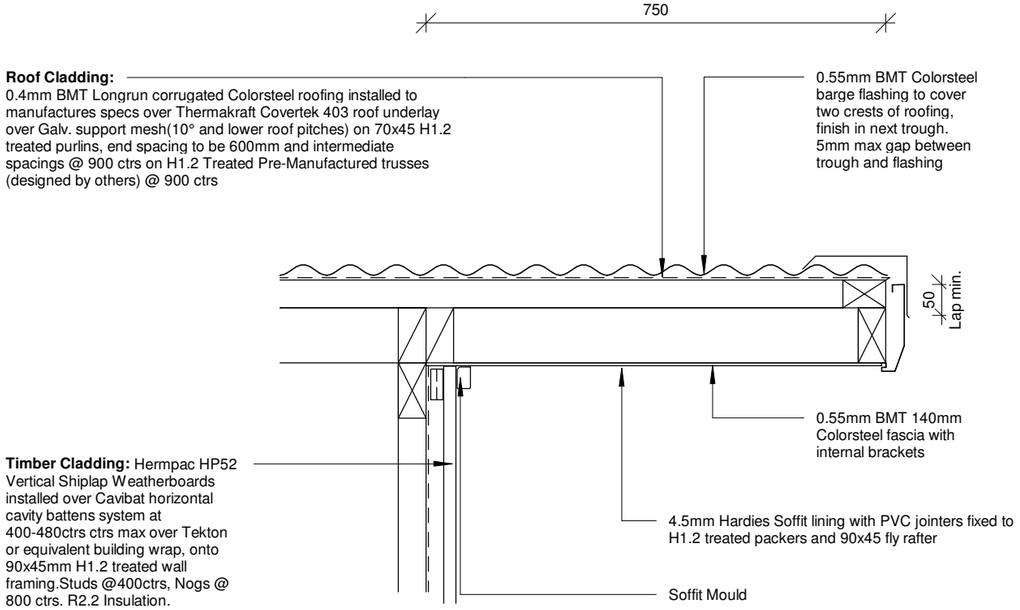
STANDARD EAVE/GUTTER-BRICK 10°
1:10



STANDARD BARGE - BRICK
1:10



STANDARD EAVE/GUTTER 10°
1:10



STANDARD BARGE - BRICK
1:10

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

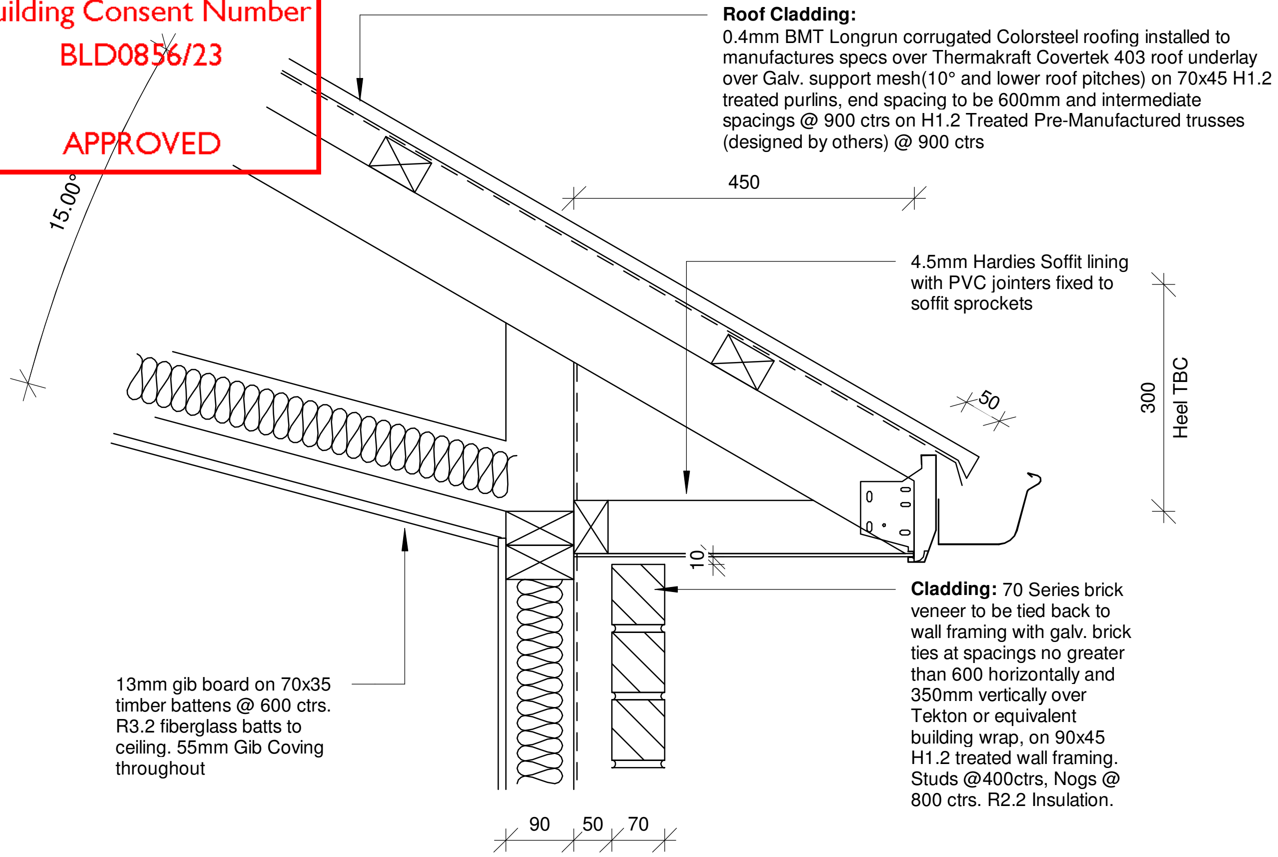
Roof Details

A5.1	1 : 10@ A3	ORIGINAL IN COLOUR

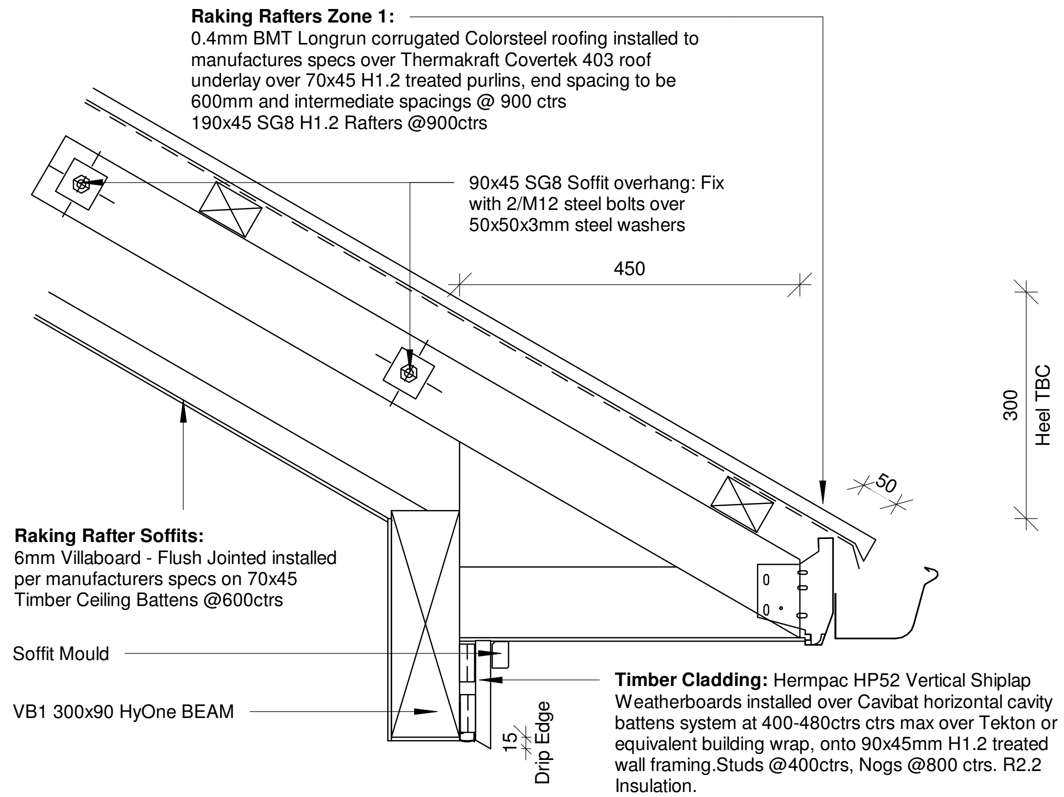
DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

Waikato District Council
Building Consent Number
BLD0856/23
APPROVED

Waikato District Council
Full Application Received
8/12/12 @ 2.11pm

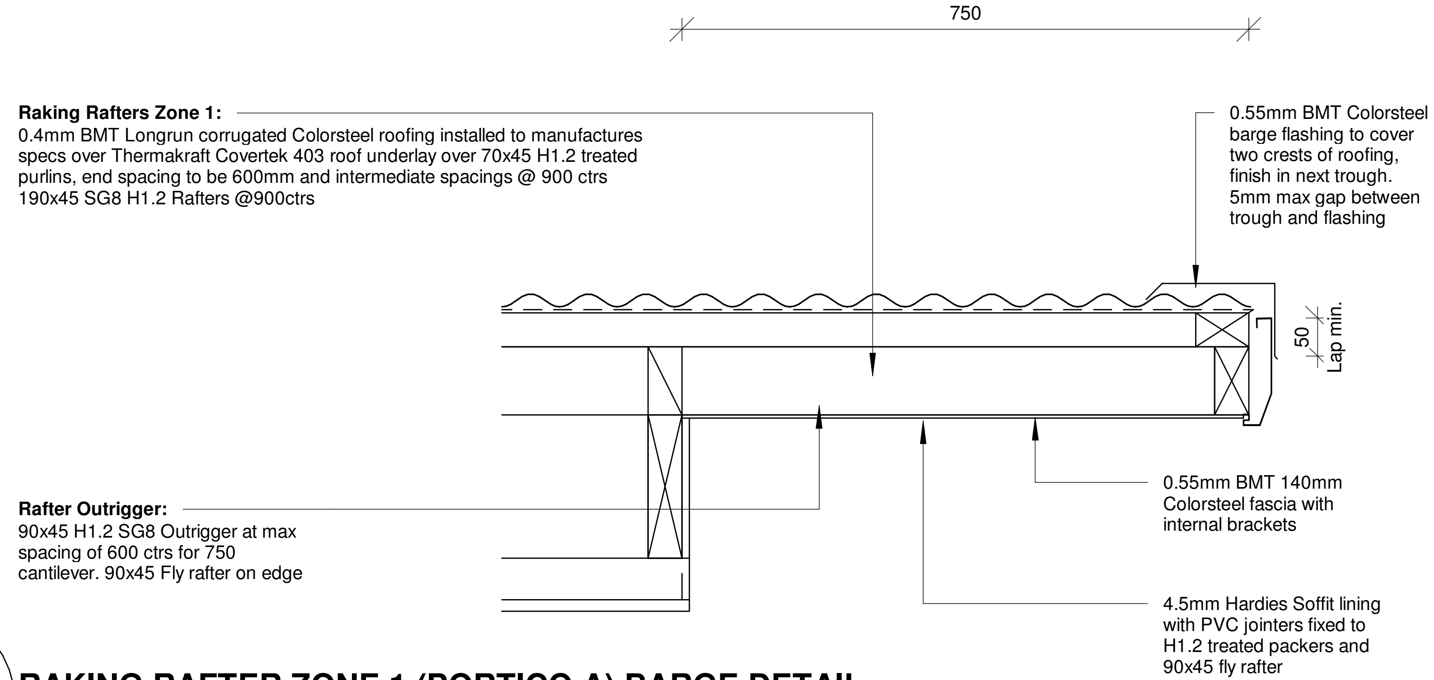


SCISSOR EAVE/GUTTER-BRICK
1:10



D1
A2.7

RAKING RAFTER ZONE 1 (PORTICO A) EAVE/GUTTER-BRICK
1:10



D2
A2.7

RAKING RAFTER ZONE 1 (PORTICO A) BARGE DETAIL
1:10

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

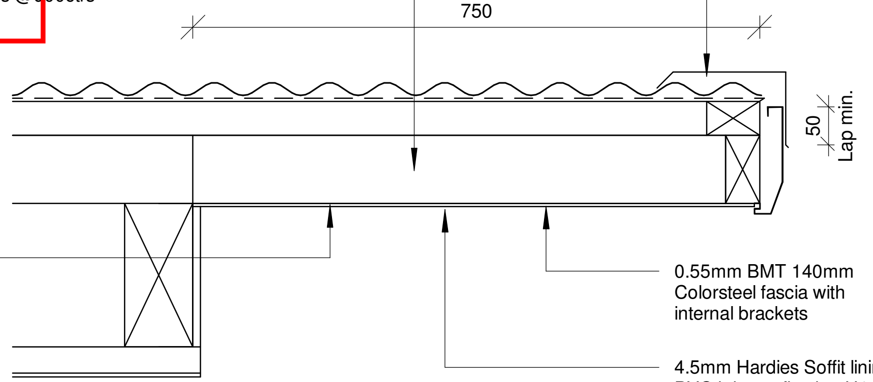
Roof Details

A5.2

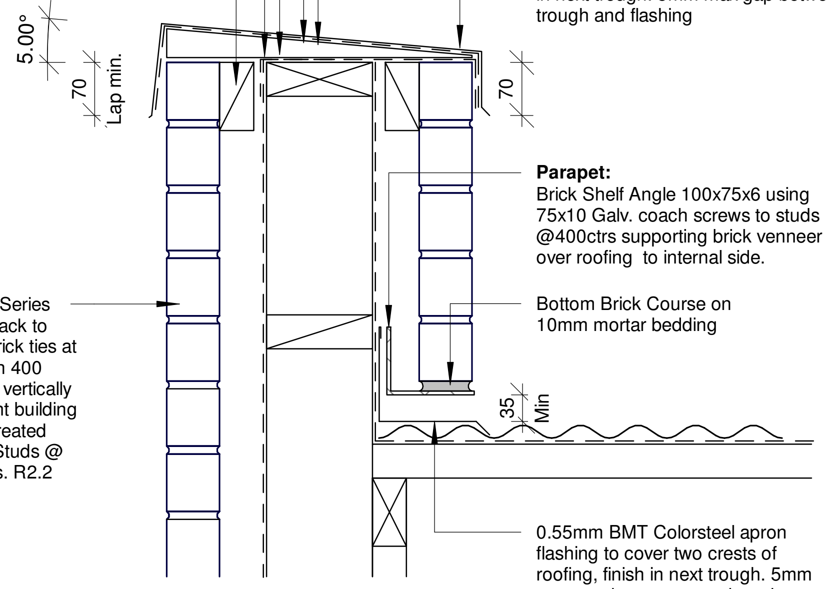
1 : 10@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

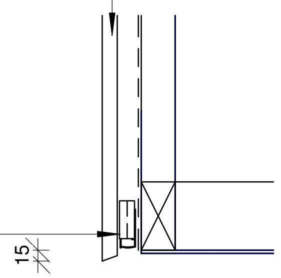
ORIGINAL IN COLOUR



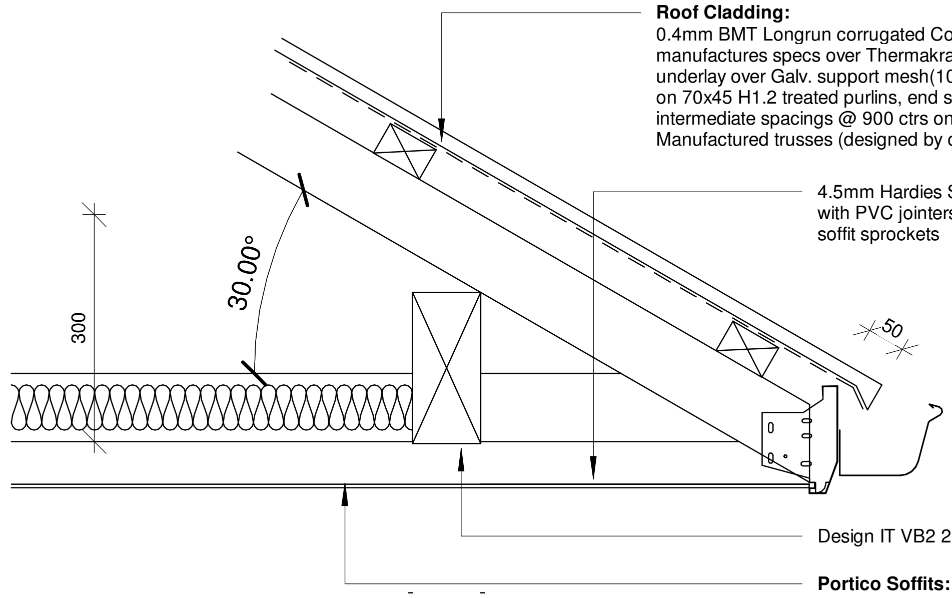
D3 / A2.7 **RAKING RAFTER ZONE 2 (PORCH) BARGE DETAIL** 1:10



D4 / A2.7 **PARAPET DETAIL** 1:10

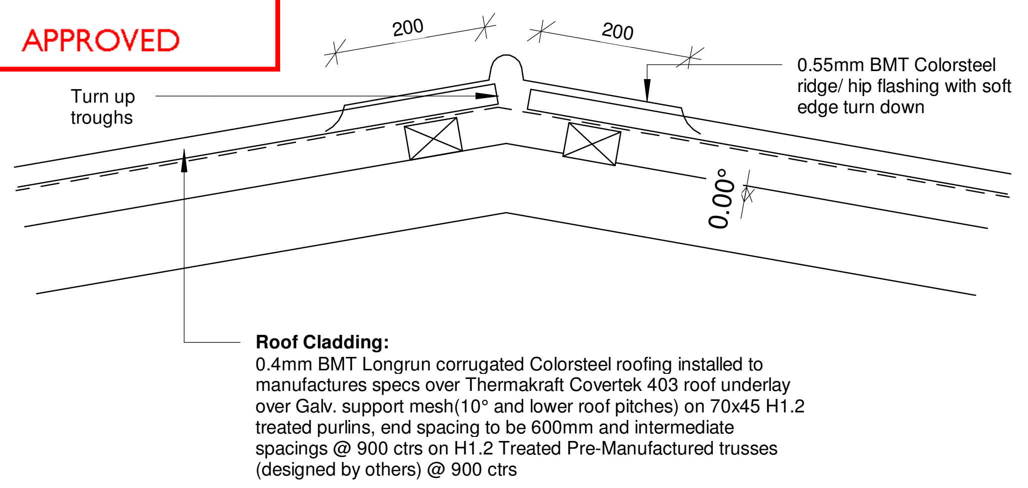


D5 / A2.7 **TYPICAL DRIP EDGE PORTICO B** *1:5*



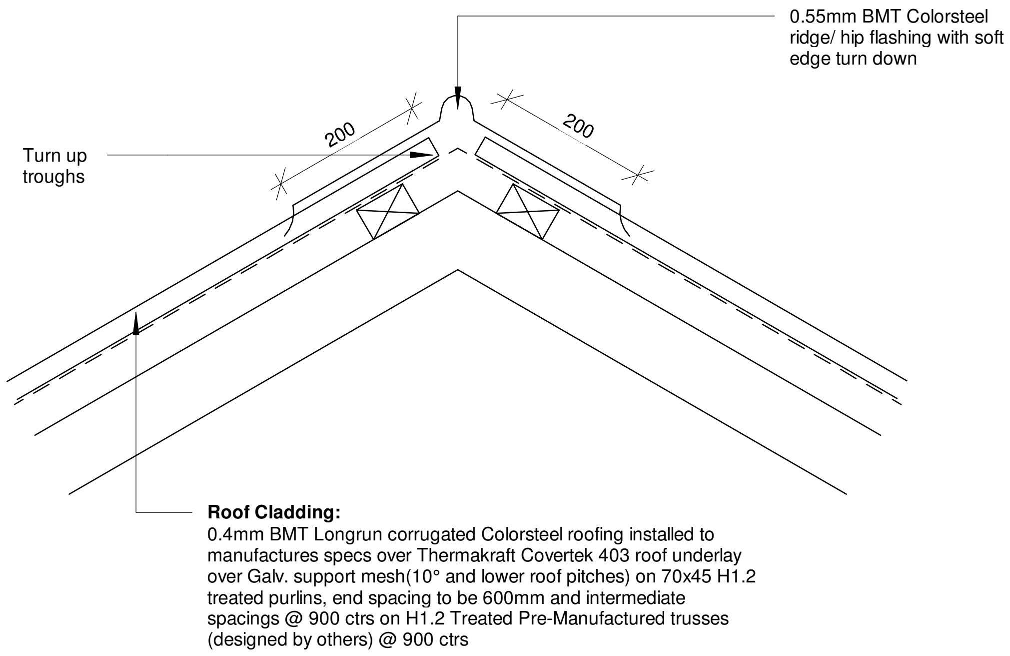
D6 / A2.7 **PORTICO B EAVE/GUTTER** 1:10

DDL ARCHITECTURE P: (07) 8498184 - E: admin@diversedesign.co.nz W: www.diversedesign.co.nz This Drawing is the Property of Diverse Design Ltd and should not be used without prior consent	**LOT 1 TAUWHARE ROAD** **WAIKATO DISTRICT** CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL	REVISIONS: 2 · Consent Issue · 11-11-12 Rev. · Description · Date	**Roof Details** **A5.3** · **1 : 10@ A3**
			DDL Project # : 22-061 Drafted By : RV Issue Date : 6-10-22 Issue Type : CONSENT ORIGINAL IN COLOUR


200
200
0.55mm BMT Colorsteel ridge/ hip flashing with soft edge turn down
Turn up troughs
0.00°
Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh(10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs

STANDARD HIP / RIDGE 10°

1:10


0.55mm BMT Colorsteel ridge/ hip flashing with soft edge turn down
200
200
Turn up troughs
Roof Cladding:
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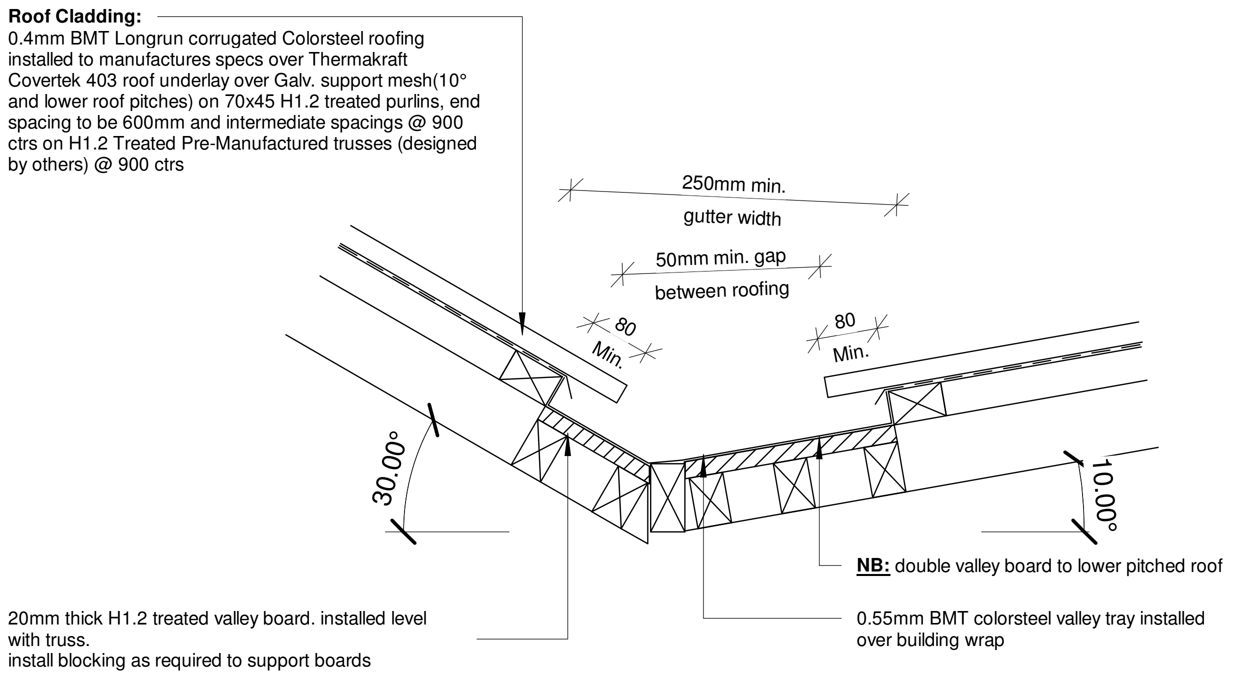
STANDARD HIP / RIDGE 30°

1:10


Roof Cladding:
0.4mm BMT Longrun corrugated Colorsteel roofing installed to manufactures specs over Thermakraft Covertek 403 roof underlay over Galv. support mesh(10° and lower roof pitches) on 70x45 H1.2 treated purlins, end spacing to be 600mm and intermediate spacings @ 900 ctrs on H1.2 Treated Pre-Manufactured trusses (designed by others) @ 900 ctrs
250mm min.
gutter width
50mm min. gap
between roofing
80
Min.
80
Min.
30.00°
10.00°
NB: double valley board to lower pitched roof
20mm thick H1.2 treated valley board. installed level with truss.
install blocking as required to support boards
0.55mm BMT colorsteel valley tray installed over building wrap

CHANGE IN PITCH VALLEY DETAIL - 30° TO 10° PITCH

1:10

DDL ARCHITECTURE
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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

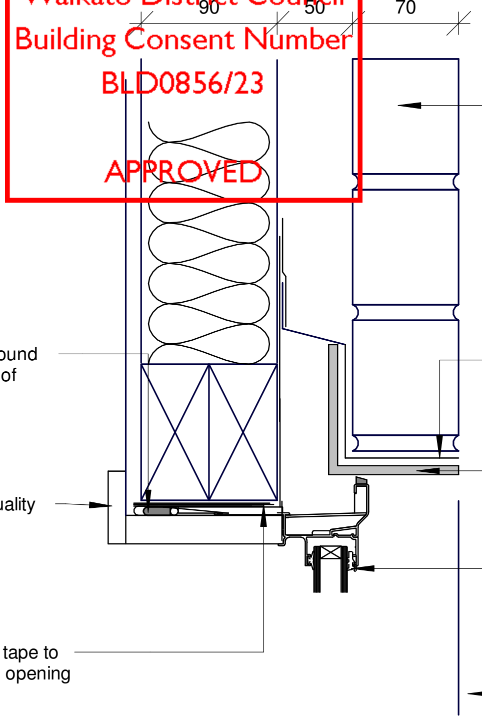
Roof Details

A5.4 | **1 : 10@ A3**

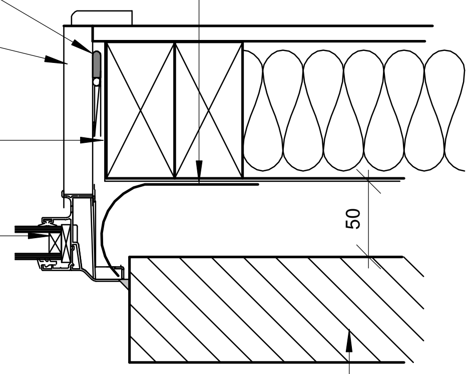
DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

ORIGINAL IN COLOUR

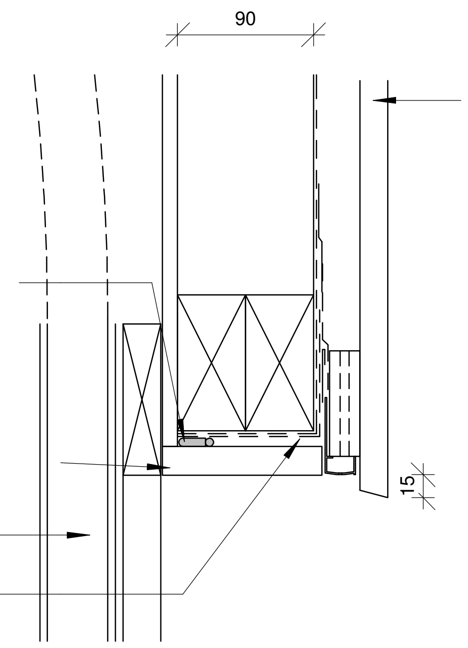
Waikato District Council
Building Consent Number
BLD0856/23
APPROVED



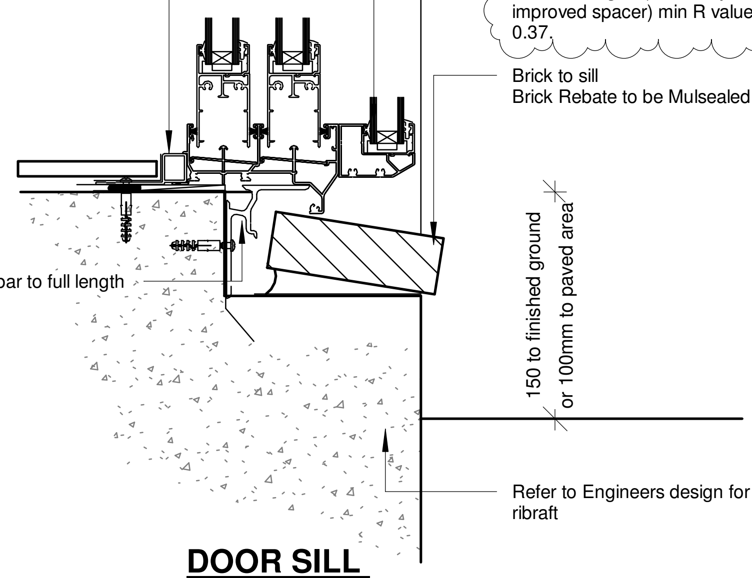
WINDOW HEAD W/ BRICK LINTEL
1:5



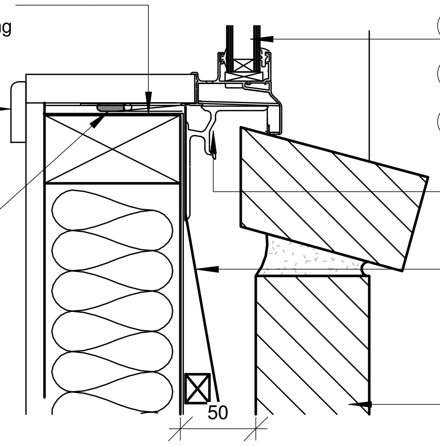
JOINERY JAMB
1:5



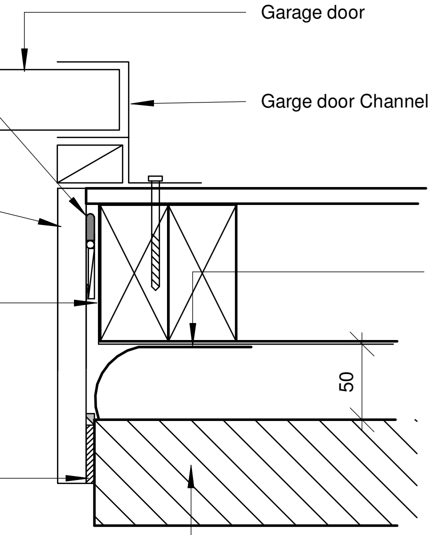
GARAGE DOOR HEAD DETAIL -BRICK
1:5



DOOR SILL
1:5



WINDOW SILL
1:5



GARAGE DOOR JAMB DETAIL - BRICK
1:5

DDL ARCHITECTURE
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W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

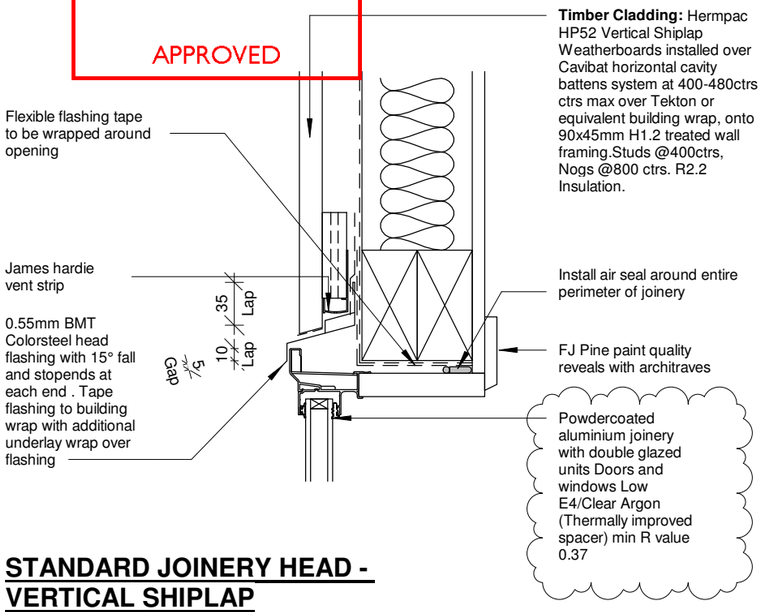
Rev.	Description	Date
3	RFI	23-01-22
2	Consent Issue	11-11-12

Joinery Details

A5.5 | **1 : 5@ A3**

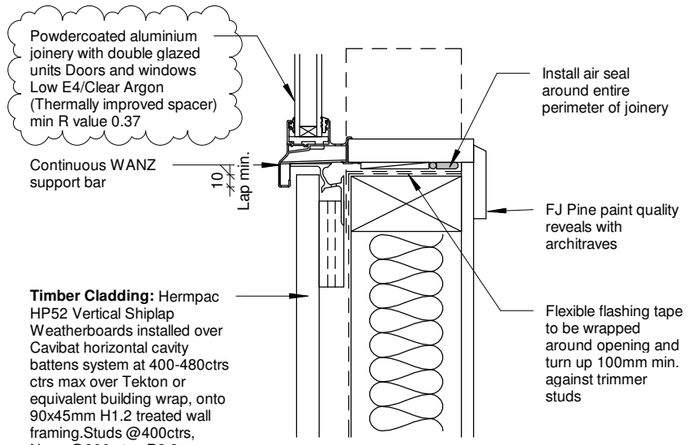
DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT

ORIGINAL IN COLOUR



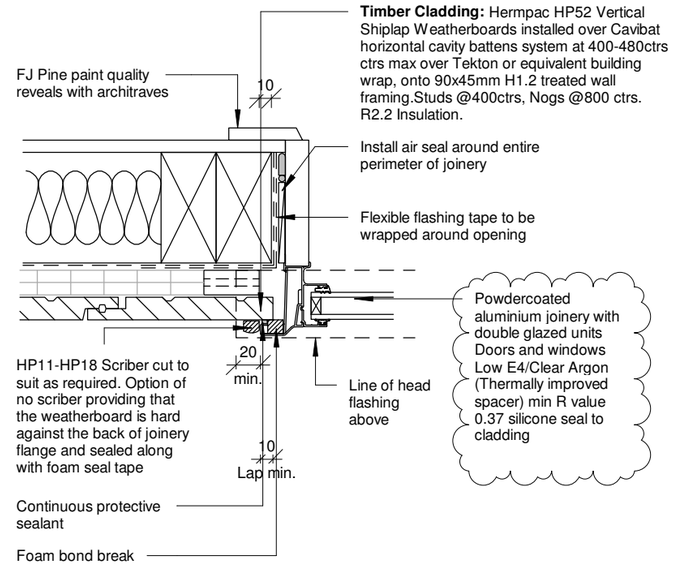
STANDARD JOINERY HEAD - VERTICAL SHIPLAP

1:5



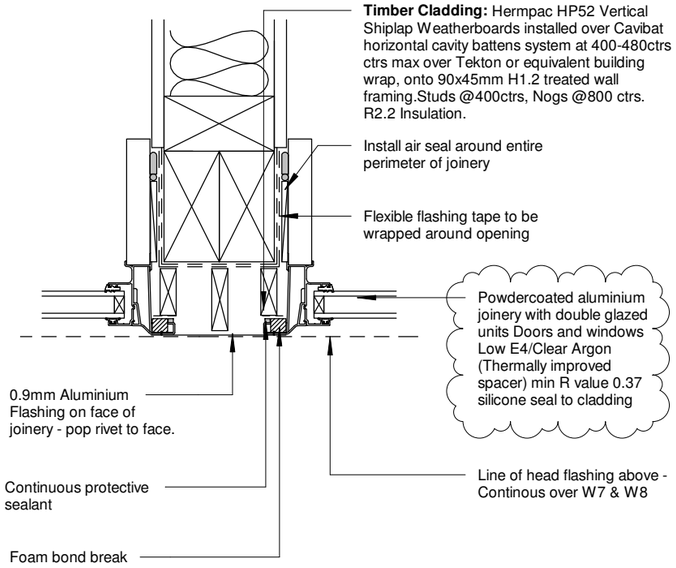
STANDARD WINDOW SILL - VERTICAL SHIPLAP

1:5



STANDARD JOINERY JAMB - VERTICAL SHIPLAP

1:5



W7-W8 JOINERY JAMB - VERTICAL SHIPLAP

1:5

DDL ARCHITECTURE
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W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
0	RFI	23-01-22
2	Consent Issue	11-11-12

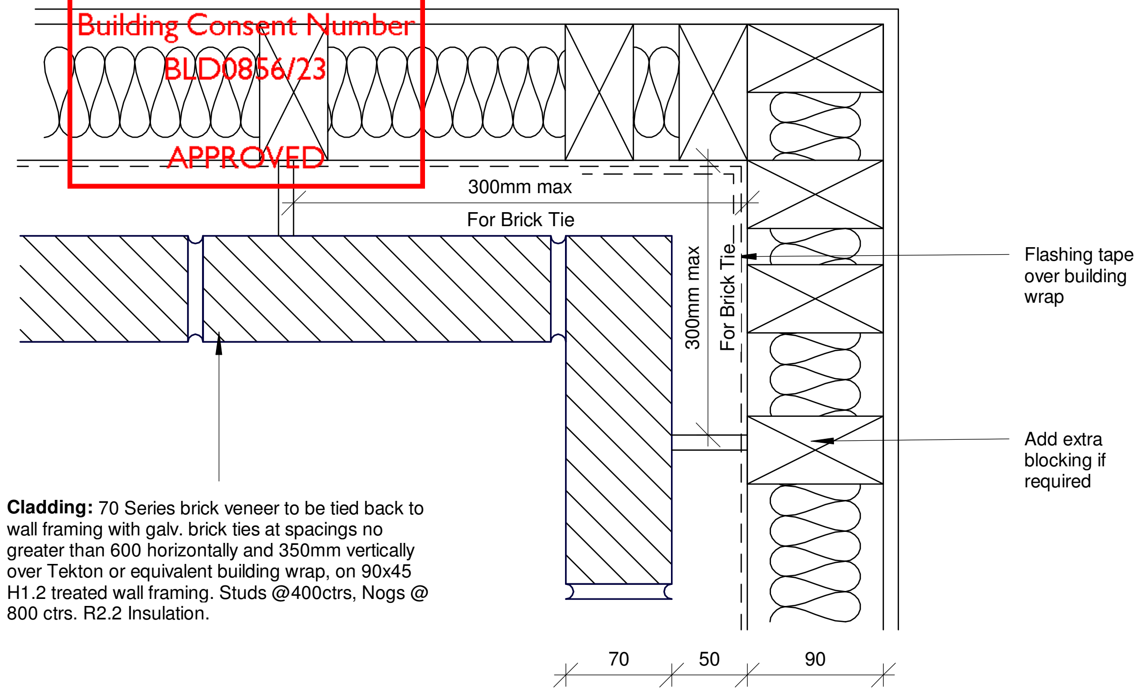
Joinery Details

A5.6

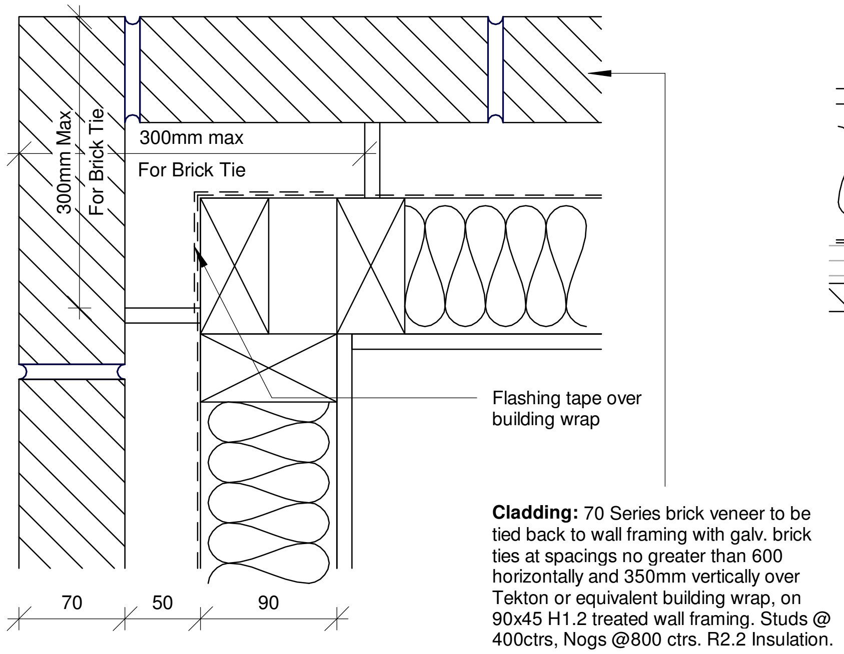
1 : 5@ A3

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

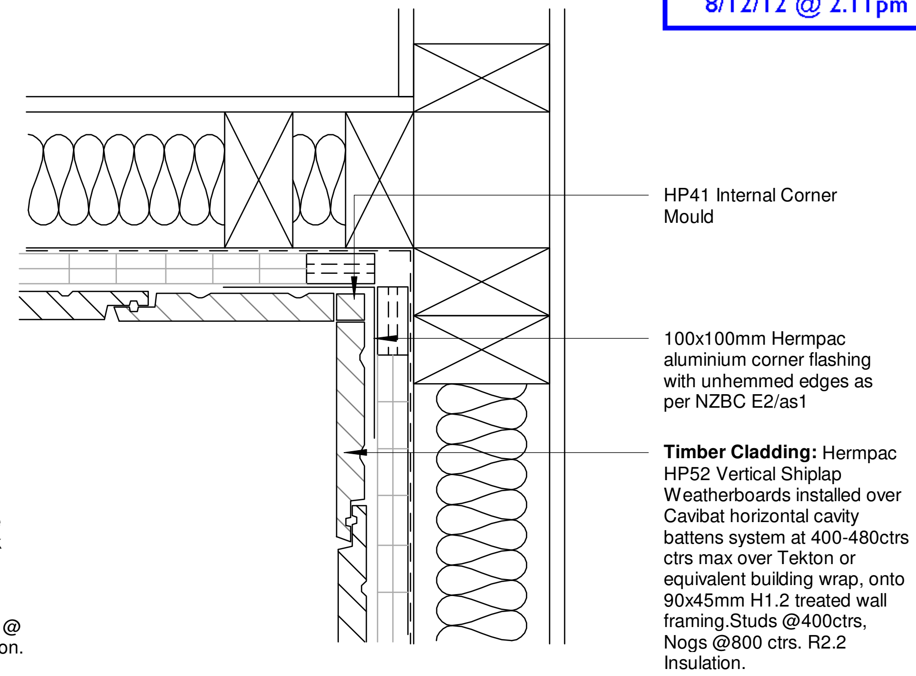
ORIGINAL IN COLOUR


300mm max
For Brick Tie
300mm max
For Brick Tie
Flashing tape over building wrap
Add extra blocking if required
Cladding: 70 Series brick veneer to be tied back to wall framing with galv. brick ties at spacings no greater than 600 horizontally and 350mm vertically over Tekton or equivalent building wrap, on 90x45 H1.2 treated wall framing. Studs @400ctrs, Nogs @ 800 ctrs. R2.2 Insulation.
70
50
90

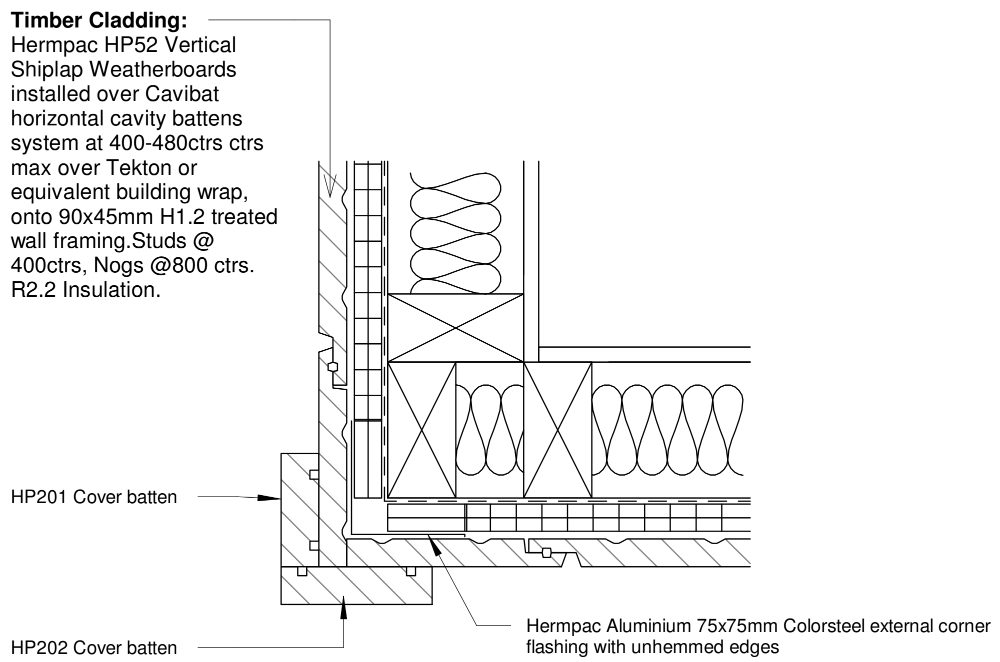
BRICK INTERNAL CORNER JUNCTION
1:5


300mm Max
For Brick Tie
300mm max
For Brick Tie
Flashing tape over building wrap
Cladding: 70 Series brick veneer to be tied back to wall framing with galv. brick ties at spacings no greater than 600 horizontally and 350mm vertically over Tekton or equivalent building wrap, on 90x45 H1.2 treated wall framing. Studs @ 400ctrs, Nogs @800 ctrs. R2.2 Insulation.
70
50
90

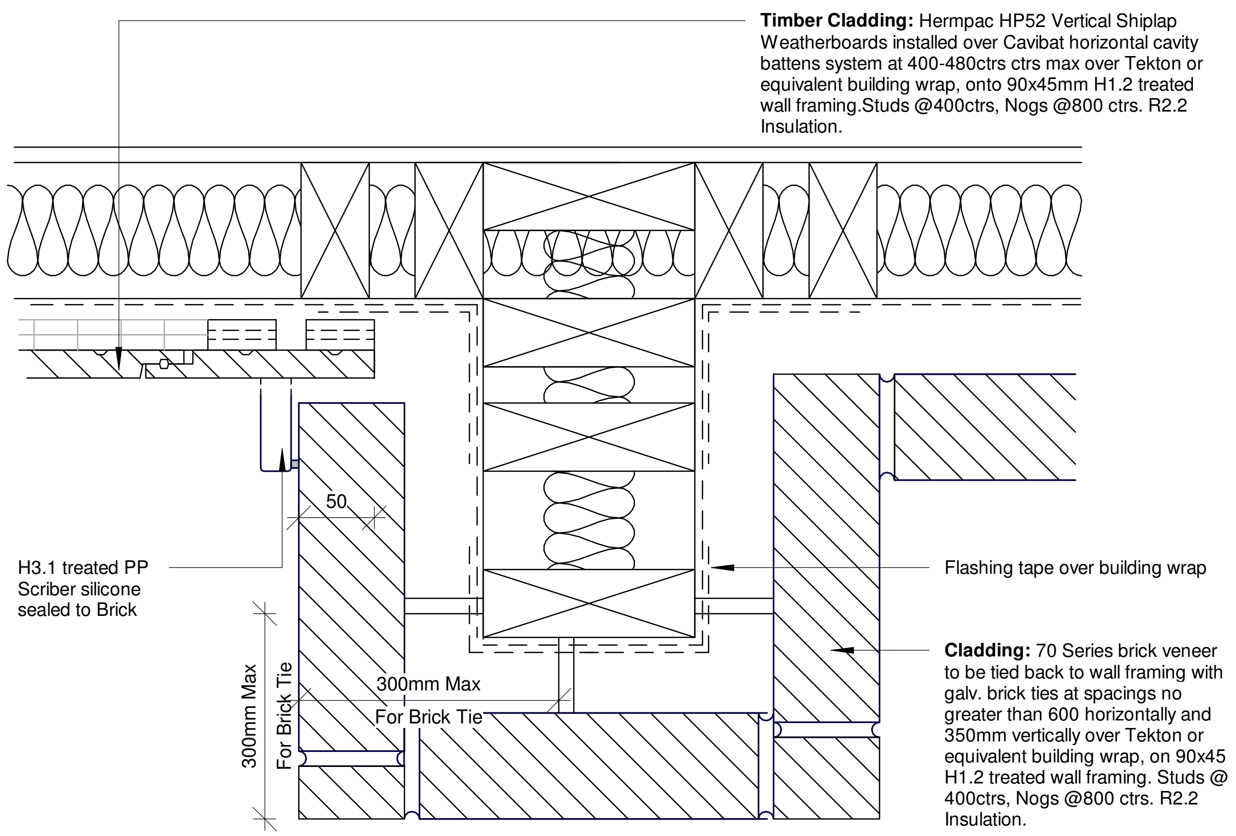
BRICK EXTERNAL CORNER JUNCTION
1:5


HP41 Internal Corner Mould
100x100mm Hermpac aluminium corner flashing with unhemmed edges as per NZBC E2/as1
Timber Cladding: Hermpac HP52 Vertical Shiplap Weatherboards installed over Cavibat horizontal cavity battens system at 400-480ctrs ctrs max over Tekton or equivalent building wrap, onto 90x45mm H1.2 treated wall framing.Studs @400ctrs, Nogs @800 ctrs. R2.2 Insulation.

VERTICAL SHIPLAP INTERNAL CORNER
1:5


Timber Cladding: Hermpac HP52 Vertical Shiplap Weatherboards installed over Cavibat horizontal cavity battens system at 400-480ctrs ctrs max over Tekton or equivalent building wrap, onto 90x45mm H1.2 treated wall framing.Studs @ 400ctrs, Nogs @800 ctrs. R2.2 Insulation.
HP201 Cover batten
HP202 Cover batten
Hermpac Aluminium 75x75mm Colorsteel external corner flashing with unhemmed edges

VERTICAL SHIPLAP EXTERNAL CORNER
1:5


Timber Cladding: Hermpac HP52 Vertical Shiplap Weatherboards installed over Cavibat horizontal cavity battens system at 400-480ctrs ctrs max over Tekton or equivalent building wrap, onto 90x45mm H1.2 treated wall framing.Studs @400ctrs, Nogs @800 ctrs. R2.2 Insulation.
50
H3.1 treated PP Scriber silicone sealed to Brick
300mm Max
For Brick Tie
300mm Max
For Brick Tie
Flashing tape over building wrap
Cladding: 70 Series brick veneer to be tied back to wall framing with galv. brick ties at spacings no greater than 600 horizontally and 350mm vertically over Tekton or equivalent building wrap, on 90x45 H1.2 treated wall framing. Studs @ 400ctrs, Nogs @800 ctrs. R2.2 Insulation.

VERTICAL SHIPLAP INTERNAL CORNER JUNCTION
1:5

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LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Cladding Details

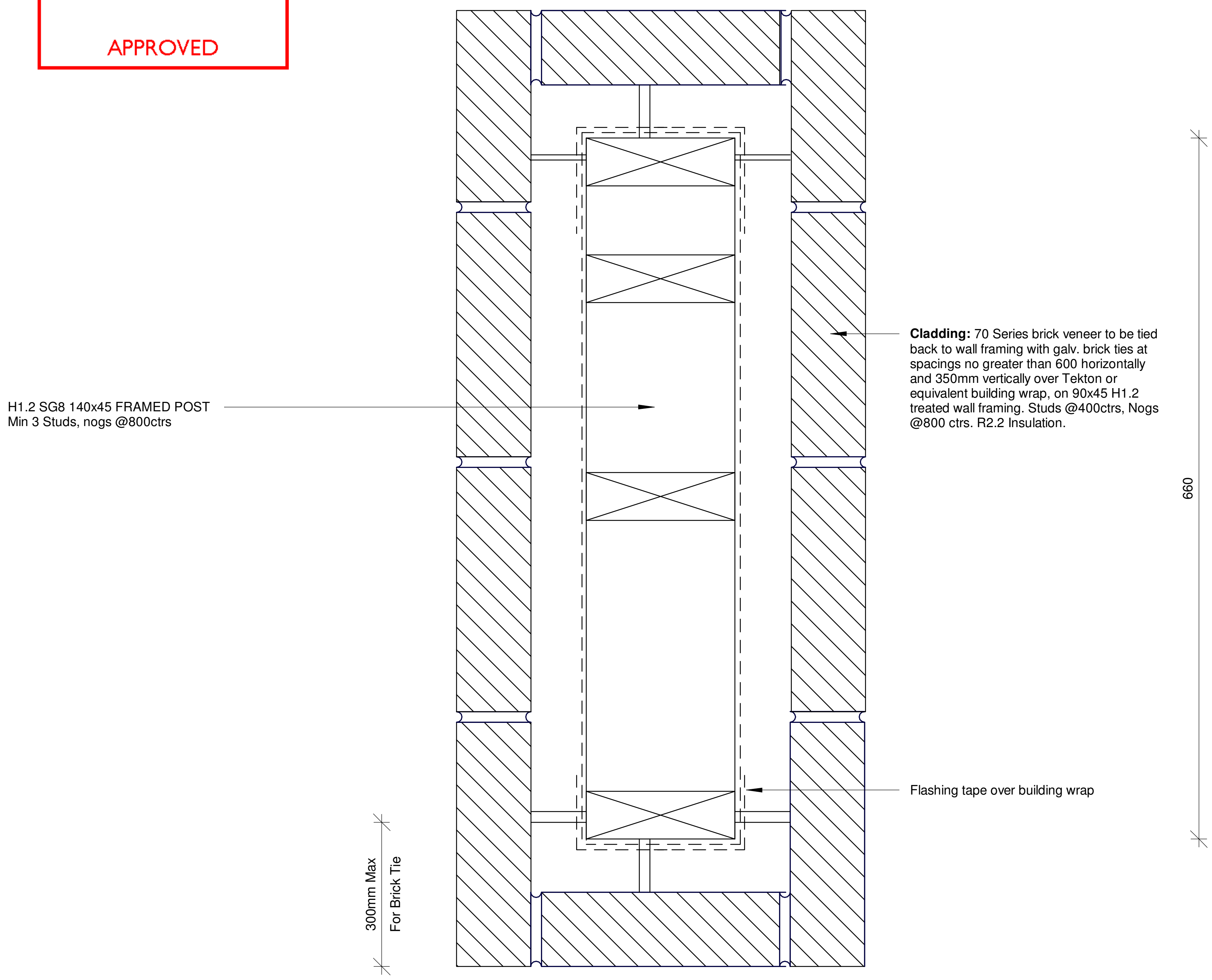
DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT

A5.7 | 1 : 5@ A3 | ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

Waikato District Council
Full Application Received
8/12/12 @ 2.11pm



BRICK POST DETAIL
1:5

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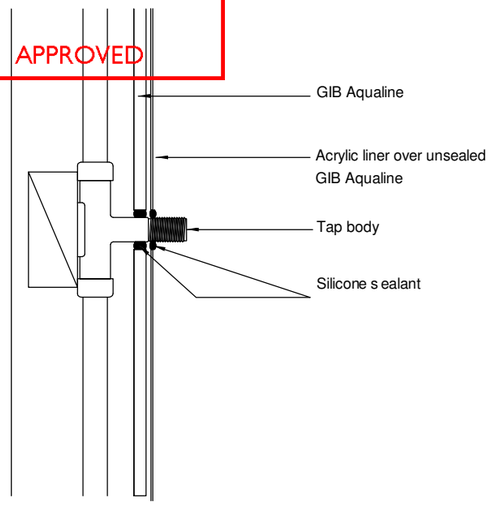
Rev.	Description	Date
2	Consent Issue	11-11-12

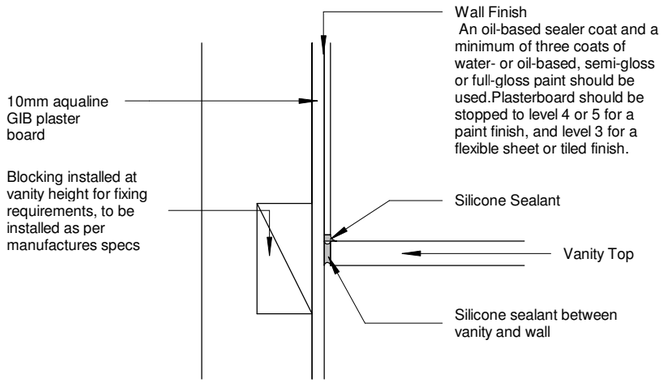
Cladding Details

DDL Project # :	22-061
Drafted By :	Author
Issue Date :	6-10-22
Issue Type :	CONSENT

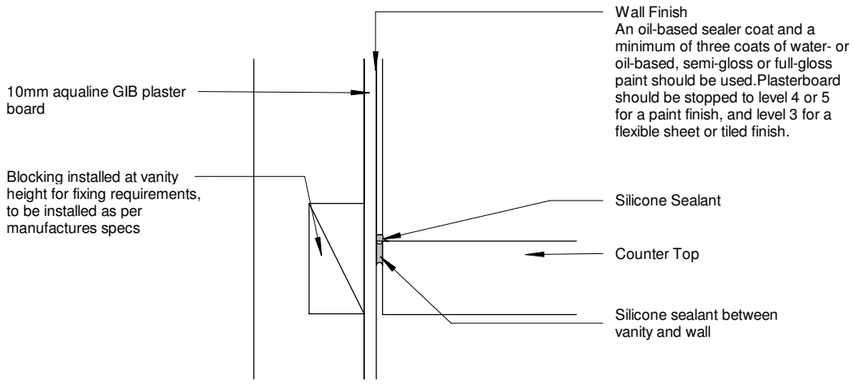
A5.8 | 1 : 5@ A3 | ORIGINAL IN COLOUR



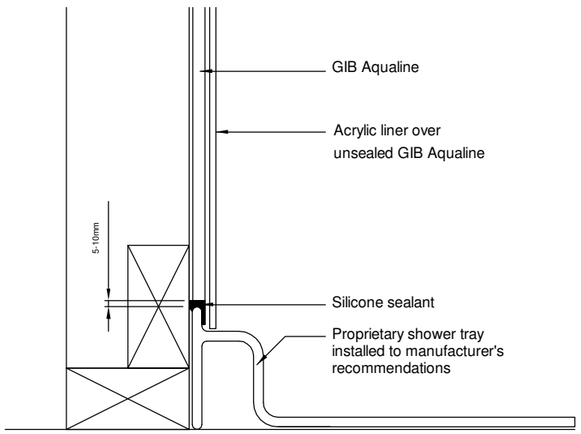
ACRYLIC SHOWER LINER PENETRATION DETAIL



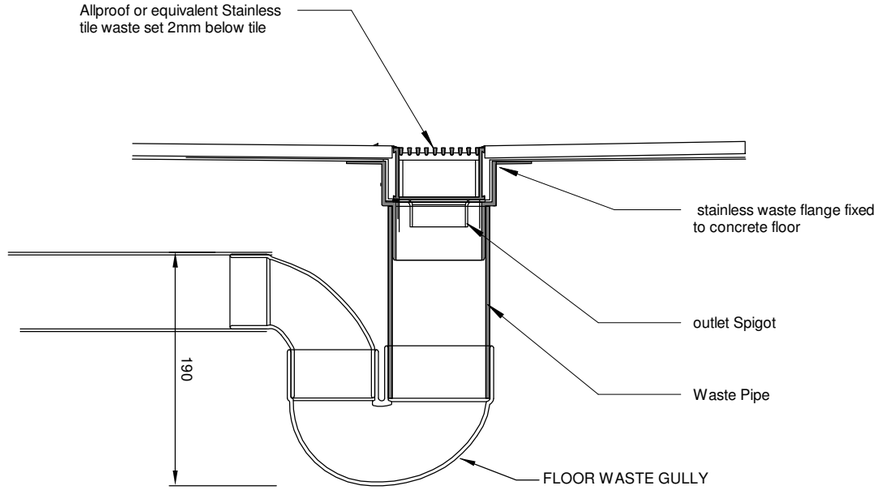
VANITY TO WALL JUNCTION
1:5



KITCHEN BENCH TO WALL JUNCTION
1:5



ACRYLIC SHOWER BASE DETAIL



SHOWER WASTE DETAIL
1:5

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WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

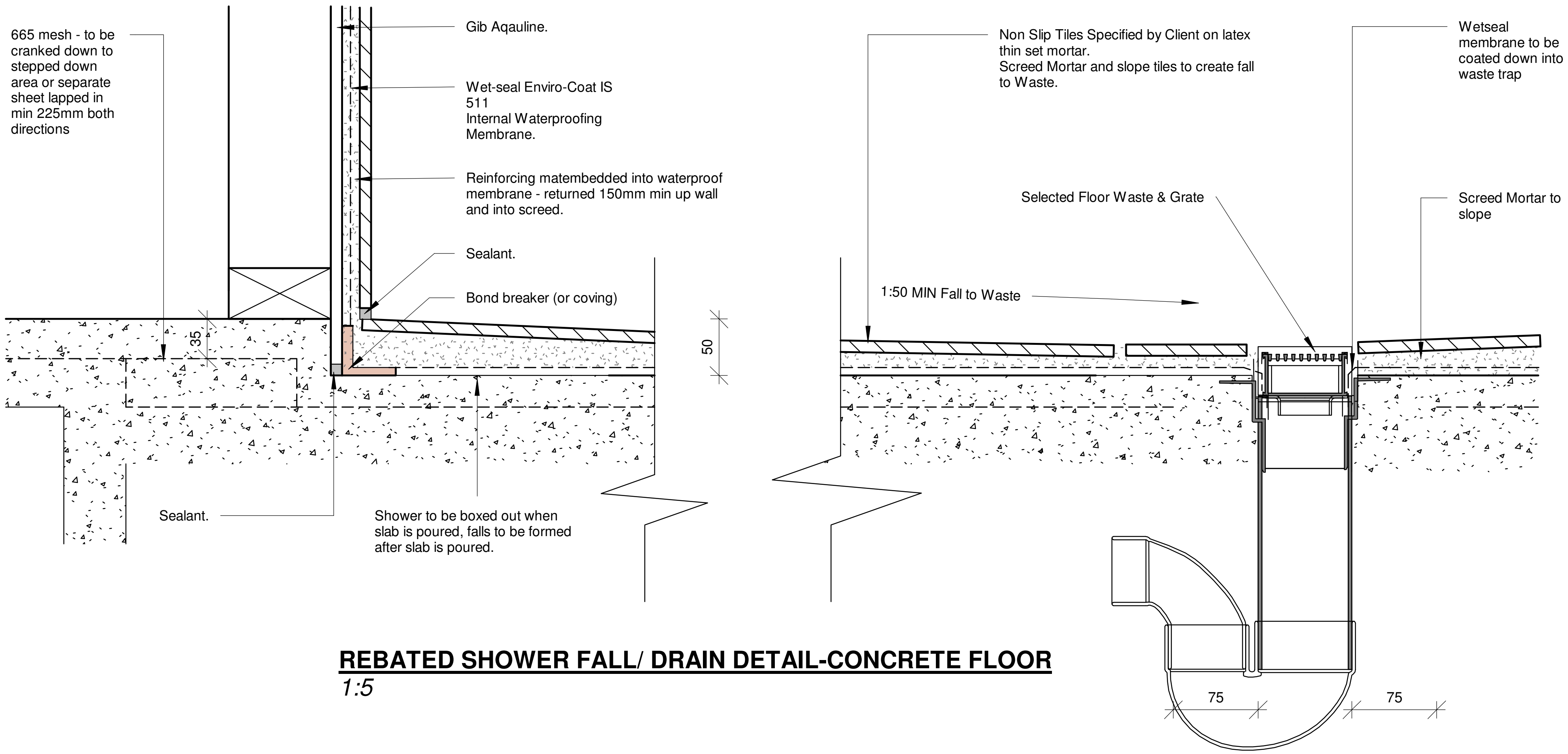
REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Wet Area Details

A5.9	1 : 5@ A3	

DDL Project # :	22-061
Drafted By :	RV
Issue Date :	6-10-22
Issue Type :	CONSENT
ORIGINAL IN COLOUR	



REBATED SHOWER FALL/ DRAIN DETAIL-CONCRETE FLOOR

1:5

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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

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Wet Area Details

DDL Project # : 22-061	
Drafted By :	RV
Issue Date :	6-10-22
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A5.10 | 1 : 5@ A3 | ORIGINAL IN COLOUR

Figure 8: Mains Pressure Storage Water Heater System (unvented)
Paragraphs 6.1.2 and 6.2.1 b)

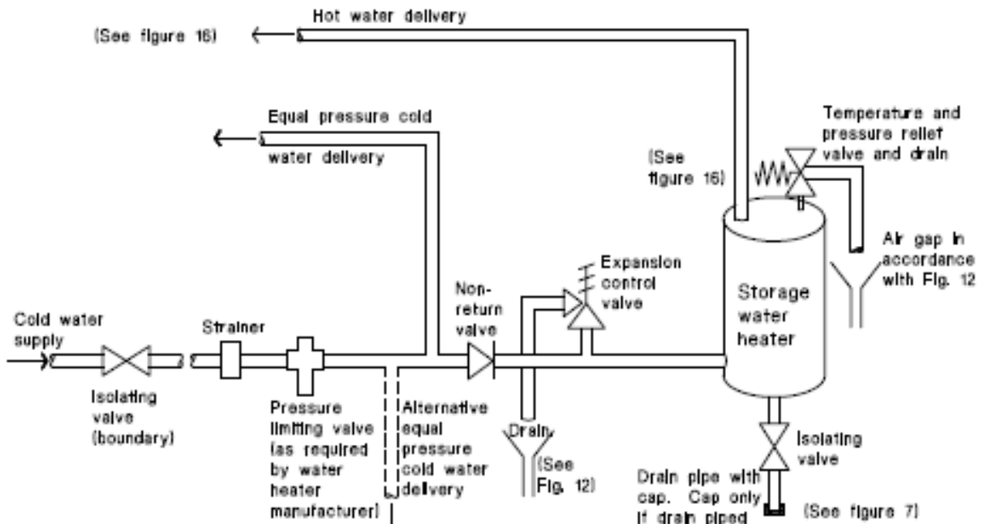
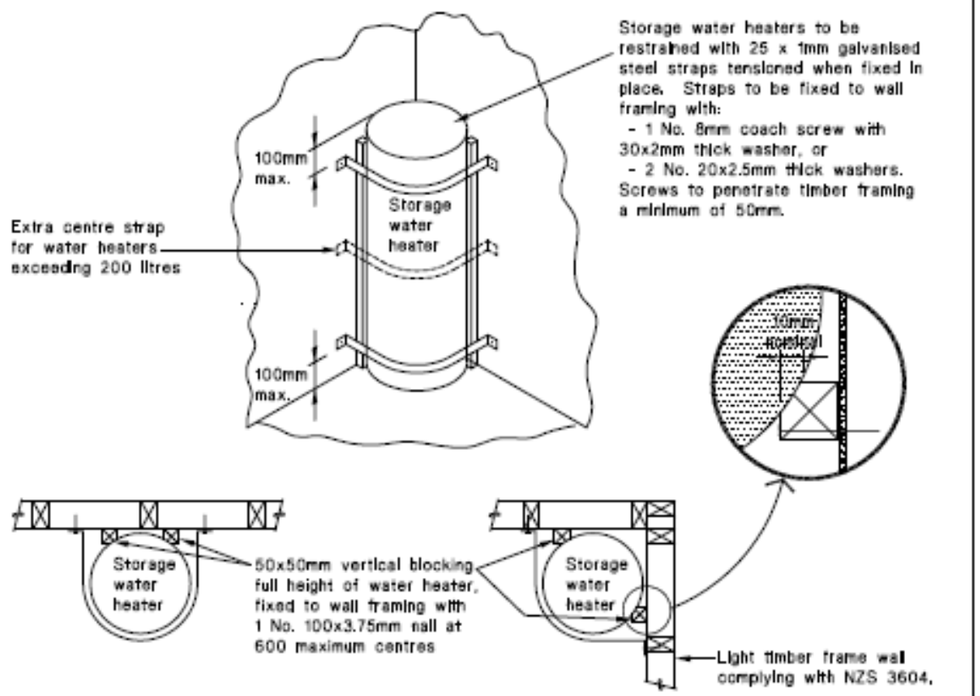


Figure 14: Seismic Restraint of Storage Water Heaters 90 – 360 litres
Paragraph 6.11.4



HOT WATER CYLINDER SEISMIC RESTRAINTS

Install Drainage tray to hot water cylinder as be E1/AS1

5.2.3 Safe trays
Performance E3.3.2: states that; Free water from accidental overflow from *sanitary fixtures* or *sanitary appliances* must be disposed of in a way that avoids loss of *amenity* or damage to *household units* or *other property*. An acceptable method of preventing water damage is to locate a safe tray below the water tank (see Figure 4). The safe tray shall incorporate a drain with a minimum diameter of 40 mm. Where the tank overflow discharges into the safe tray, the diameter of the safe tray drain shall be greater than the overflow pipe from the tank and comply with Paragraph 5.2.2.

6.7.2 Relief valve drains shall:
a) Be of copper pipe,
b) Have no restrictions or valves,
c) Have a continuous fall from the relief valve to the outlet,
d) Discharge in a visible position which does not present a hazard or damage to other *building elements* (except when used in association with *free outlet storage water heaters*),
e) Have a minimum *diameter* of the same size as the valve outlet,
f) Have the number of changes in direction plus the length of the relief drain (in metres) not exceeding 12,

COMMENT:
For example: 7 metres of pipe allows the total number of bends to be 5.

g) Be connected to a relief valve in accordance with the valve manufacturer's specification,
h) Comply with Paragraph 6.7.3 when relief valve drains are combined, and
i) Comply with Paragraphs 6.7.4 and 6.7.5 when freezing is likely.

6.5 Temperature control devices

6.5.1 Electric thermostats and energy cut-off devices shall comply with NZS 6214 or AS 1308.

6.5.2 Energy cut-off devices shall be designed to:
a) Be reset manually, and
b) Disconnect the energy supply before the water temperature exceeds 95°**C.**

6.14 Safe water temperatures

6.14.1 Maximum temperatures

The delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed:
a) 45°C for early childhood centres, schools, old people's homes, institutions for people with psychiatric or physical disabilities, hospitals, and
b) 55°C for all other buildings.

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LOT 1 TAUWHARE ROAD
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REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

HWC Details

A5.11	**1 : 5@ A3**	**DDL Project # : 22-061**
		Drafted By : RV
		Issue Date : 6-10-22
		Issue Type : CONSENT
		ORIGINAL IN COLOUR

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STRUCTURAL DRAWINGS

LOT 1 TAUWHARE ROAD, TAMAHERE, HAMILTON

DRAWING REGISTER

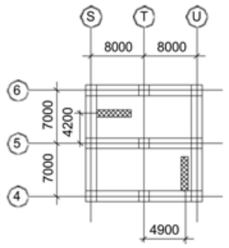
1. S000 | PROJECT NOTES
2. S001 | FOUNDATION PLAN
3. S010 | FOUNDATION DETAILS
4. S011 | FOUNDATION DETAILS

GENERAL NOTES

1. Materials and workmanship shall comply with the latest edition of the New Zealand Building Code and all relevant New Zealand Standards.
2. Work shall not commence until the applicable consents and permits have been issued by the relevant Building Consent Authority.
3. Work shall be carried out in accordance with the New Zealand Health and Safety in Employment Act 1992, or the Health and Safety at Work Act following its introduction in 2015.
4. These drawings shall be read in conjunction with the project documents of other engineering and other professional disciplines and other such written instructions that may be issued. All dimensions and details shall be checked for agreement with the other project documents.
5. Notes and details on drawings shall take precedence over general notes and typical details.
6. Dimensions shall not be scaled. Any discrepancies within the documentation shall be referred for clarification and approval before proceeding. If in doubt, ask.
7. All dimensions are in millimetres, except levels and coordinates which are in metres unless noted otherwise.
8. Setting out dimensions shall be verified on site by the Contractor, who shall be responsible for their correctness. All dimensions of existing structures shall be checked by the Contractor prior to fabrication and erection.
9. During construction the structures and excavations shall be maintained in safe and stable conditions at all times and no part shall be overstressed. The Contractor shall provide temporary works such as bracing, propping and shoring as necessary to keep the works stable at all times. Where necessary, the Contractor shall engage a Structural Engineer to design and certify the temporary works.
10. Existing services shown on drawings are indicative only. Prior to commencement of construction, the Contractor shall identify all existing services. Any damage to the existing services shall be rectified at the Contractor's expense.
11. All disturbed areas not subject to new works shall be reinstated to their original condition by the Contractor at the completion of works.
12. The drawings may not show all details of fixtures, inserts, sleeves, openings etc required by the various trades. All such details, including recesses and chases, are to be approved by the Engineer before proceeding with construction.
13. All proprietary products are to be installed strictly in accordance with manufacturers' written recommendations unless noted otherwise.
14. All penetrations through slabs and beams shall be approved by the Engineer prior to commencement of work.
15. Where engineering inspections are required, the Contractor shall give a minimum of 48 hours notice. All works to be inspected must be completed prior to the time of inspection. Inspections do not relieve the Contractor of responsibility for the completeness and correctness of the works.
16. Contractor is to take all necessary precautions to protect workers and public from injury including but not limited to protection from falls from all heights, protection from falls into open excavations and shielding of all starter bars and other projections.
17. Contractor is to continuously monitor weather during construction and ensure that partially constructed structures including but not limited to precast concrete walls, block walls and structural steel framing are comprehensively braced and loose structure is secure prior to arrival of any extreme weather events.

BUILDING GRID

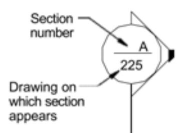
When a beam or wall is situated off the building grid the beam location is expressed as a decimal of the distance between the building grid.



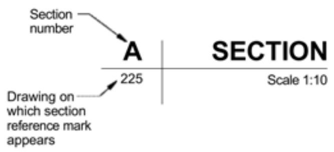
A beam at 4900 from grid T towards U is located as "Beam at grid T.6"

A wall at 4200 from grid 5 towards 6 is located as "Wall at grid 5.6"

DESIGNATION OF CROSS SECTIONS



(Section reference mark)



(Section title)

CONCRETE

1. Materials and workmanship shall comply with NZS 3104 and NZS 3109.
2. All concrete materials shall be Normal Concrete (N) unless noted otherwise.
3. All concrete materials shall be Ready-Mixed Concrete. Site-Mixed Concrete is not allowed without specific written approval from the Structural Engineer.
4. Concrete specified compressive strength at 28 days shall be as shown below, unless noted otherwise on the drawings:

Member Location	Concrete Strength MPa	Exposure Classification	Required Cover mm
Site concrete	15	-	-
Foundations	25 (RP2519TC2)	B1	75 (50)
Floor slabs	25 (RP2519TC2)	B1	35

NB: Minimum cover for concrete cast against ground can be 50mm (shown in brackets) instead of 75mm if using a damp-proof membrane or blinding concrete.

5. Minimum aggregate size shall be 10mm unless noted otherwise.
6. Maximum aggregate size shall be 20mm unless noted otherwise.
7. In the drawings the beam depth is written first followed by the width. Depth includes the slab thickness if present.
8. The design, certification, construction and performance of the formwork, falsework and back propping shall be the responsibility of the Contractor.
9. All formed edges and re-entrant corners shall be chamfered or filleted 20mm unless noted otherwise on the drawings.
10. Surface Finishes to NZS 3114:

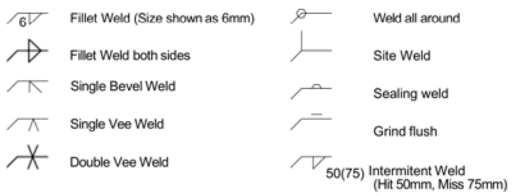
Off-Form Finishes:	
Areas concealed from view after completion	F1
Precast concrete	F5
General locations unless stated otherwise	F4
Floor and Pavement Finishes:	
Areas covered by backfill or concrete	U1
Exterior slabs unless stated otherwise	U2
Interior slabs	U3
Exterior pathways and pavements	U5
Surfaces for composite action	U6

11. Refer to Table 5.3 of NZS 3109 for minimum formwork stripping times.
12. All holes left by form tie bolts shall be filled with mortar matching the surface colour of the finished surface.
13. Location and type of construction joints to be agreed with Engineer prior to construction.
14. No chases, holes greater than 150mm diameter, or embedment of pipes greater than 40mm diameter other than those shown on the structural drawings shall be made in the concrete slabs. For all other concrete members, no penetrations, chases or embedments shall be made without prior approval by the structural engineer.
15. Exact size and location of penetrations are to be obtained from workshop drawings prior to scheduling of reinforcement, and are not to exceed dimensions where shown on the structural drawings. liase with all trades for final penetration setout.
16. Do not place conduits, pipes and the like within cover concrete. Conduits cast into concrete members shall be spaced at maximum distance possible and under no circumstances closer than a clear spacing of twice the larger conduit diameter from parrallel reinforcement or any other conduit.
17. The face of all concrete which has reinforcement projecting from it and against which new concrete is to be cast, is to be thoroughly mechanically scabbled, fully exposing the aggregate matrix cleaned of dust and loose concrete.

CONCRETE MASONRY

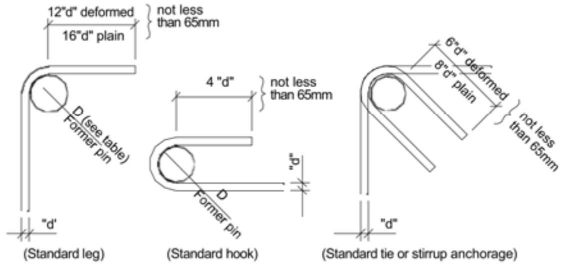
1. All masonry construction shall be to NZS 4210 and NZS 4230. Unless noted otherwise, construction shall be in accordance with Observation Type B of NZS 4230 under the supervision of a Registered Mason.
2. Blocks shall comply with AS/NZS 4455 and have a minimum characteristic compressive strength of 15 MPa in accordance with NZS 4210.
3. Mortar shall have a minimum compressive strength of 15 MPa
4. Grout infill shall have a minimum compressive strength of 20 MPa.
5. All cells to be grouted unless noted otherwise.
6. Provide cleanout ports at the bottom of all cores that are to be grouted. For fully grouted walls use inverted open-end depressed-web bond beams blocks for the first course.
7. Unless specified otherwise on the drawings, minimum splice lengths for deformed bars shall be:
   40 bar diameters for Grade 300 steel
   70 bar diameters for Grade 500 steel

WELDING SYMBOLS



REINFORCEMENT

1. Reinforcing materials shall comply with NZS 4671.
2. Notation
   - H — Deformed Grade 500, ductility class E
   - HR — Plain round Grade 500, ductility class E
   - D — Deformed Grade 300, ductility class E
   - R — Plain round Grade 300, ductility class E
   - RB — Reidbar Grade 500, ductility class E
3. All Grade 500 reinforcing steel shall be manufactured by the micro-alloy (MA) process unless approved otherwise. Grade 500 steel manufactured by the quench and temper (QT) process may be used only with written permission of the Engineer, and then only in locations where there is no possibility of re-bending or welding of the bars.
4. All wire mesh shall be Ductile 500E Mesh.
5. All reinforcing bar bends shall be made cold.
6. Spiral hoops shall be anchored by either welding to the previous turn or by terminating the spiral with at least a 135° stirrup hook, engaging a longitudinal bar and with the stirrup hook being a clear distance away from the previous turn of not more than 25mm. If a welded splice is used, the reinforcing must be a weldable grade such as Grade 300. If using Grade 500 micro-alloy, welding procedure must be in accordance with AS/NZS 1554.3.
7. Standard Hooks and Bends



All dimensions are from outside of bars except radii which are to be inside of bar. "d" denotes bar diameter.

8. Minimum Diameters of Reinforcement Bends

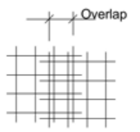
fy (MPa)	Bar type	Bar diameter d (mm)	Minimum diameter of bend (mm) Plain bars	Deformed bars
300 or 500	Stirrups and ties	6 - 20	2d	4d
		25	3d	6d
	All other bars	6 - 20	5d	5d
		25 - 40	6d	6d

9. Splice Lap Lengths (mm) for Deformed Bars to NZS 3101

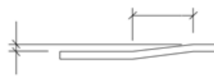
fy (MPa)	Bar diameter (mm) 10	12	16	20	25	32
Grade 300	400	500	650	800	1000	1250
Grade 500	650	800	1050	1300	1650	2100

- These values are based on 25 MPa concrete with $a = 1.3$, $b\sigma\ c = d = b0$
- Where there is less than 300mm of fresh concrete cast below the bar, the tabulated values may be reduced by 1.3
- Lap splicing of plain straight bars is not permitted

10. Splice reinforcement only at locations shown in the drawings. Unless noted otherwise, reinforcing bars in continuous concrete beams and spandrals shall have top bars spliced at the midspan and bottom bars spliced over the supports.
11. Laps to Reinforcing Steel Mesh
   Overlap measured between outermost cross wires of each fabric sheet is not less than the spacing of cross wires, plus 50mm, nor less than than 150mm, except where shown otherwise on the drawing.



12. Standard Bar Crank
   When main bars are offset, ie for the cranked laps, the slope of the inclined portion of the bar shall not exceed 1 in 6 thus:



13. All reinforcement is to be accurately positioned, adequately supported and properly tied in-place in accordance with:
   - NZS 3109 for reinforced concrete structures
   - NZS 3109 and NZS 3124 for reinforced masonrystructures
   - NZS 4229 and NZS 3604 for reinforced masonry structures not requiring specific design
14. Provide wire bar or preformed plastic type bolsters, chairs, spacers and other devices for spraying, supporting and fastening reinforcing bars in accordance with NZS 3109.
15. All starter bars shall be capped with safety caps while exposed.
16. Reinforcing shall be clean and free from loose rust, scale and other coatings that effect bonding to concrete/cementitious materials.
17. Welding of bars shall be carried out only if specified on the drawings or after written approval from the Engineer and then to the requirements of AS/NZS1554 and NZS 3109: clause 3.7.2, Welded splices, in respect of developed strength and location.

EPOXY GROUTING

1. All epoxy/injection adhesive connections shall use Ramset products unless noted otherwise. Other products may be considered for use on an individual basis with prior review and approval of the Structural Engineer.
2. Epoxy Grouting into Concrete;
   - Epcon C8 EXTREME injection mortar
   - w/ Chemset anchor studs per plan
   - or H Deformed Grade 500, ductility class E
3. Epoxy Grouting into Masonry;
   - Epcon C8 EXTREME injection mortar
   - w/ Chemset anchor studs per plan
   - or H Deformed Grade 500, ductility class E
4. Grout pad under base plates;
   - Ramset Premier Grout MP non-shrink cementious flowable grout installed according to manufacturers specification.

STRUCTURAL STEEL

1. Materials, fabrication and erection shall be in accordance with NZS 3404.1
2. Unless noted otherwise, all materials shall be as follows:
   - Hot rolled plates to AS/NZS 3678 Grade 250
   - Hot rolled sections UB, UC, PFC, TFC, EA, UA, flats to AS/NZS 3679.1 Grade 300
   - Welded sections WB, WC to AS/NZS 3679.2 Grade 300
   - Hollow sections CHS, SHS, RHS to AS 1163 Grade C350LO
3. All welding is to be carried out in accordance with AS/NZS 1554.
4. Welding symbols used on the drawings are in accordance with AS 1101.3
5. All welds shall be category SP unless noted otherwise, except for handrails, stairs, ladders, floor plates and grating welds which shall be GP.
6. Prequalified welding consumables shall be matched with the steel type in compliance with AS/NZS 1554;
   - Manual Metal Arc Welding (MMAW or SMAW) - B-E49XX (AS/NZS 4855)
   - Flux-cored Arc Welding (FCAW) - B-T49XX (AS/NZS ISO 17632)
   - Gas Metal Arc Welding (GMAW) - B-G49XX (AS/NZS ISO 14341)
7. All welds to be 6mm continuous fillet weld uno.
8. All butt welds to be complete penetration butt weld category SP uno.
9. The ends of all hollow sections are to be capped with a 6mm thick end plate with continuous seal fillet weld all round, uno. Breather holes are to be provided if members are to be hot-dip galvanized.
10. Inspections to be carried out to AS/NZS 1554.1 uno. in the drawing or specification. Minimum extent of non-destructive examination (NDE) shall be as follows:

Extent of NDE, %

Weld Category	Visual Means Visual	Visual	Other Means Magnetic Particle	Radiography or (for butt weld)
GP	100	25	10	-
SP	100	50	10	15

11. Bolting Notation:

Bolting category	Bolt standard	Bolt grade	Tension method	Tensioned joint type
4.6/S	AS 1111	4.6	Snug tight	
8.8/S	AS/NZS 1252	8.8	Snug tight	
8.8/TB	AS/NZS 1252	8.8	Full tension	Bearing
8.8/TF	AS/NZS 1252	8.8	Full tension	Friction
Note: The faying surfaces of /TF joints are to be left uncoated.				

12. Steel bolts, nuts and washers shall be hot-dip galvanized uno.
13. All bolts are to be M20 Grade 8.8/S uno, and minimum connection details shall consist of 2-M20 bolts with 10mm cleat plates uno.
14. All hold-down bolts shall be Grade 4.6/S and hot-dip galvanized after fabrication uno. All hold-down bolts to be M20 uno. Grade 8.8 hold-down bolts shall not be used without approval unless so indicated on the drawings.
15. High strength bolts shall not be re-torqued or re-used.
16. With the exception of hold-down bolts, bolt holes shall be 2mm larger in diameter than the nominal bolt diameter. Holes for hold-down bolts shall be 4mm larger than the nominal bolt diameter for bolts up to 24mm diameter, and 6 mm larger for bolts over 24 mm diameter.
17. All steelwork that requires fire protection to be boxed out with appropriate fire lining. To be coordinated with Architect and Fire Engineer
18. The Engineer shall review shop drawings for all steelwork prior to fabrication.

ABBREVIATIONS

alt	Alternate	IL	Invert level
approx	Approximate	IP	Intersection point
b	Bottom	LAR	Lap at random
bs	Both sides	max	Maximum
C	Centre	min	Minimum
c/c	Centre to centre	MS	Mild steel
crs	Centres	MSF	Mild Steel Flat
ch	Channel	nom.	Nominal
C	Centreline	NB	Nominal bore
col	Column	NF	Near face
conc	Concrete	No	Number
c.o.s.	Check on site	NTS	Not to scale
C.J.	Construction joint	O/A	Overall
cvr	Cover	OD	Outside diameter
DFT	Dry film thickness	PCD	Pitch circle diameter
dia	Diameter	PL	Plate
□	Diameter	P.V.C.	Poly vinyl chloride
D.J.	Dowel Joint	rad	Radius
DPC	Damp proof course	RC	Reinforced concrete
DPM	Damp proof membrane	reinf	Reinforcement
Dwg	Drawing	RL	Reduced level
EA	Equal angle	SC	Sawcut
EF	Each face	Sht	Sheet
EJ	Expansion joint	sq.	Square
EL	Elevation	S.S.	Stainless steel
EW	Each way	spec.	Specification
FF	Far face	star	Starter
FFL	Finished Floor Level	stir	Stirrup
FSL	Finished Slab Level	t	Top
FL	Flat	TOC	Top of concrete
FSBW	Full Strength Bevel Weld	TOS	Top of steel
FW	Fillet weld	trim	Trimmer
FWAR	Fillet weld all round	TYP	Typical
galv'd	Galvanised	TP	Tangent point
H.D.	Holding down (bolt)	uno	Unless noted otherwise
H.D.Galv'd	Hot dip galvanised	UOC	Underside of Concrete
Horiz	Horizontal	VL	Varying length

DESIGN LOADS

The structural components in these drawings have been designed for the following loadings:
Gravity Loads

Element	Superimposed Dead Load (kPa)	Distributed Live Load (kPa)	Concentrated Live Load (kN)
Truss Roof	0.35	0.25	-
Floor (Residential)	0.50	1.50	-
			-
			-

Wind Load Criteria to AS/NZS 1170.2:2002
- Design Life: 50 years
- Importance Level: 2
- Design wind speed V(des, Θ) ULS: 45 m/s
- Design wind speed V(des, Θ) SLS: 37 m/s

Seismic Load Criteria to NZS 1170.5:2004
- Design Life: 50 years
- Importance Level: 2
- Hazard factor, Z: 0.16
- Near fault factor, N(T,D): 1.0
- Site subsoil class: C

SETOUT DATA

1. Coordinate Datum: **TBA**
2. Level Datum: **TBA**
3. Site Benchmark: **TBA**

FOUNDATIONS

- Assumed ultimate soil bearing pressure at 300 kPa. To be confirmed on site by Geotechnical Engineer.
- Soil stiffness assumed between k = 100 kPa/10mm to k = 500 kPa/10mm.
- Soil friction angle assumed between φ = 25° to φ 35°.
- Soil dry weight assumed 18 kN/m³.
- To be confirmed on site by Geotechnical Engineer. Refer back to Structural Engineer if soil condition differs.
- Min. 3% CBR Subgrade

1. Footing elevations shown are for bidding purposes only and are assumed to be in suitable bearing material. The actual adequacy of the bearing material shall be verified and approved by the Geotechnical Engineer prior to placing of reinforcing steel and concrete. Footing elevations, if necessary, shall be lowered as directed by the Geotechnical Engineer.
2. Site preparation and over-excavation / recompaction of soils shall be performed per the recommendations presented in the geotechnical assessment report referenced above and in accordance with NZS 4402.
3. All footing excavations shall be cleaned of loose material and water prior to casting foundations. Contractor shall provide for de-watering of excavations from either surface, ground, or seepage water.
4. Unless noted otherwise on the drawings, a 50mm thick blinding layer shall be placed under all pad and strip footings on the exposed foundation material immediately after approval by the Geotechnical Engineer.
5. Unless specified otherwise, provide 0.25 mm minimum thickness polyethylene damp-proof membrane to the underside of all slabs on grade.
6. Footings shall be constructed and backfilled as soon as possible after excavation to avoid softening or drying out by exposure. Footing backfill and utility trench backfill within building area shall be mechanically compacted in layers to the approval of the Geotechnical Engineer. Floodingwill not be permitted.
7. Footings shall be located centrally under walls and columns unless noted otherwise.
8. All abandoned footings, utilities, etc. that interfere with new construction shall be removed.
9. The contractor shall be responsible for the design and construction of all temporary and permanent shoring, bracing, underpinning, etc. of adjacent properties and buildings.
10. The Contractor shall provide for and organize inspections of the foundation excavations in accordance with the requirements of the Geotechnical Engineer and the Structural Engineer. The Contractor shall give a minimum of 48 hours notice. All works to be inspected must be completed prior to the time of inspection. Inspections do not relieve the Contractor of responsibility for the completeness and correctness of the works.

TIMBER

1. All timber workmanship and materials shall be in accordance with NZS 3602, NZS 3604, NZS 3605 and NZS 3603.
2. All timber shall be Grade SG8 uno.
3. Timber shall be branded in accordance with the requirements of NZS 3602 and identify:
   - The plant responsible for preservative treatment of the timber by means a plant number or trade name
   - The preservative type code
   - The hazard class for which the timber has been treated
4. All timber piles, poles and members in contact with the ground apart from horizontal members of retaining walls shall be treated to H5 of NZS 3640 uno. Horizontal members of retaining walls shall be treated to H4. Anchor piles shall be branded with the letter A and have been tested to meet the requirements of NZS 3605.
5. All framing timber to be protected from concrete by a damp proof course (DPC) or other suitable impervious material overlapping the timber by at least 6mm.
6. Protect all timber against damage and from inclement weather. Ensure that any variation in moisture content is kept to a minimum before and after erection and before enclosure.
7. Maximum allowable equilibrium moisture content (EMC) for non-air conditioned or centrally heated buildings, for framing to which linings are attached:
   - At erection: 24% EMC maximum
   - At enclosure: 20% EMC maximum
   - At lining: 16% EMC maximum
8. All bolts, nuts, washers and plates to external timber work, timber in damp areas and timber subject to occasional wetting to be stainless steel Type 304 uno. (Not applicable to masonry anchors or cast in bolts.
9. All nail plates, wire dogs and bolts to internal timber work to be Grade 4.6/S hot dipped galvanised uno. All other structural fixings in an internal environment to be mild steel.
10. Washers to timber:
   - M12 bolts: 55 dia x 3 mm thick
   - M16 bolts: 65 dia x 3 mm thick
   - M20 bolts: 75 dia x 5 mm thick
   - M24 bolts: 85 dia x 6 mm thick
11. All bolts shall be installed along the member centreline and no bolt shall be within 100mm of member end. Bolts in steel plates to provide a snug fit, i.e. bolt holes in steel plates not greater than 0.5mm larger than bolt diameter.

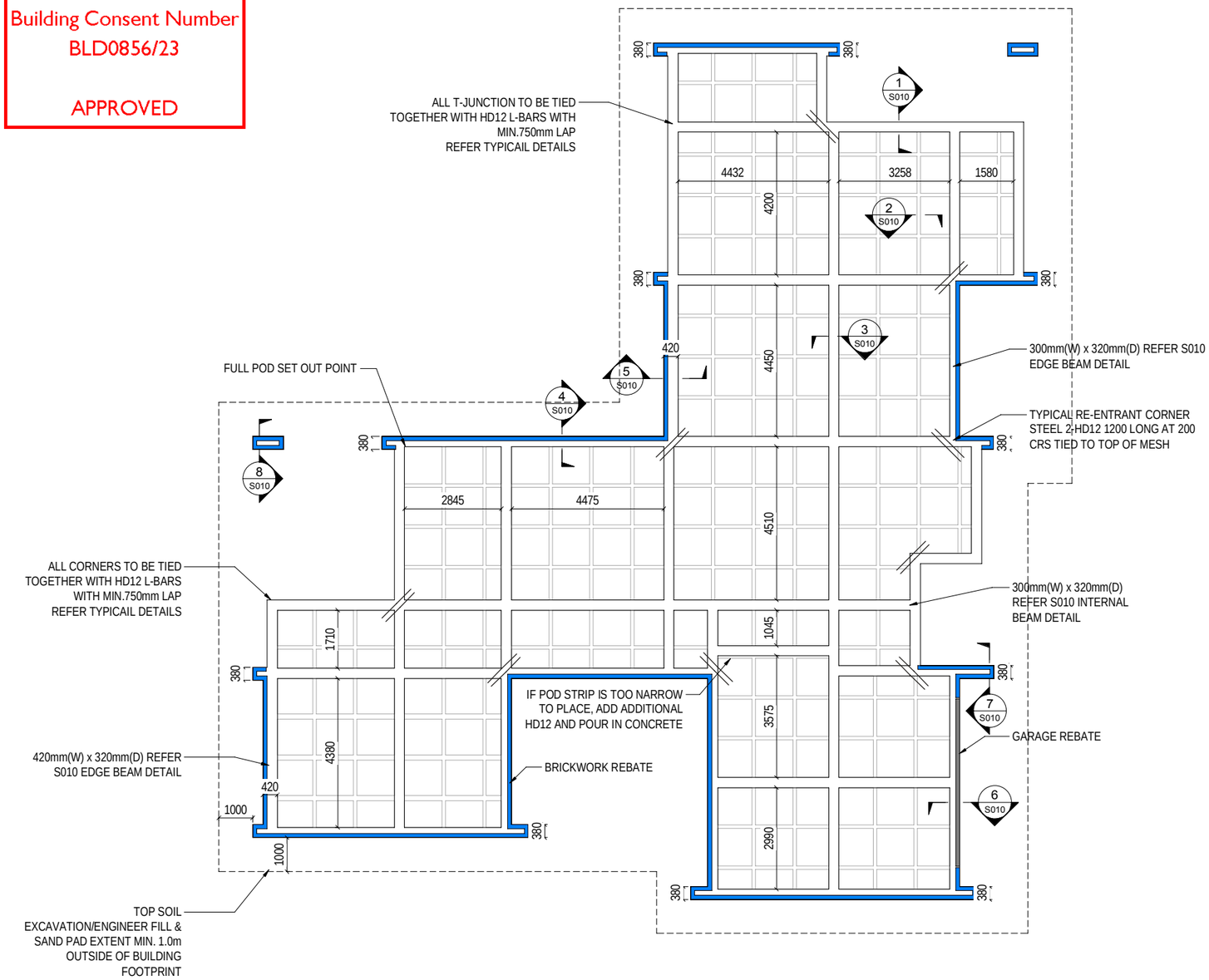
M&Z M&Z Group Limited | www.mzgroup.co.nz	JOB TITLE: LOT 1 TAUWHARE ROAD, TAMAHERE, HAMILTON.	DESIGNER: J.M	DRAWN BY: H.Y	DATE: 14.11.2022
		SCALE:		REVISION: 0
	DRAWING TITLE: PROJECT NOTES	JOB NUMBER: 364011122		SHEET No. S000

NOTES:
1. NO WORKS TO PROCEED UNTIL GEOTECHNICAL GROUND IMRPOVEMENT WORKS ARE COMPLETED AS PER DETAILS FROM GEOTECH REPORT AND INSPECTED BY GEOTECH ENGINEER
2. SOIL PROPERTIES AS PER GEOTECH REPORT
3. REFER TO S010, S011 FOR CONCRETE FOUNDATION DETAILS
4. ARCHITECT TO CONFIRM BUILDING LEVELS AND SURROUNDING AREAS
5. REFER ARCHITECTURAL DRAWINGS FOR GENERAL SET OUT DIMENSIONS, RECESSES, SHOWER REBATES AND PENETRATIONS

INSPECTIONS: (MIN. 48 HOURS NOTICE REQUIRED FOR ALL INSPECTIONS)
1. GEOTECH DIG OUT AND GROUND IMPROVEMENT (BY QUALIFIED GEOTECH ENGINEER)
2. PRE-POUR INSPECTION (BY M&Z)

	Description
Slab	100mm thick concrete floor slab
Concrete	25 Mpa concrete strength, Firth concrete mix RP2519TC2
Mesh	SE62 500E ductile mesh on 30mm mesh chair (or approved equivalent)
Pods	1100 square × 200 (d) polystyrene pods on 1200 × 1200 grid

BRICK REBATE



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JOB TITLE: LOT 1 TAUWHARE ROAD, TAMAHERE, HAMILTON.	DESIGNER: J.M	DRAWN BY: H.Y.	DATE: 14.11.2022
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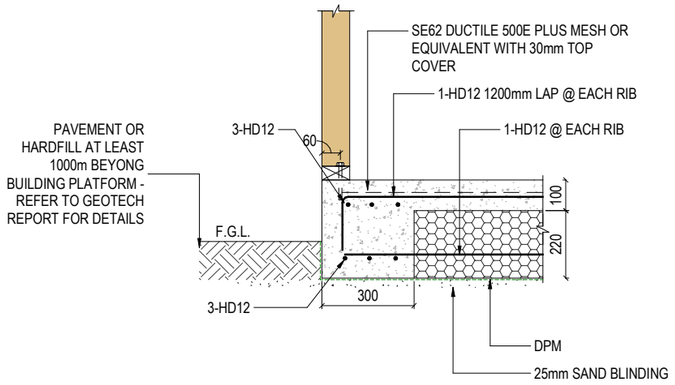

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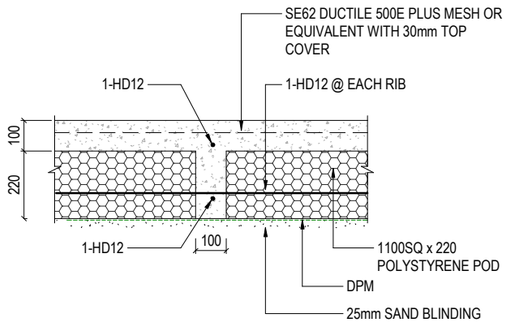

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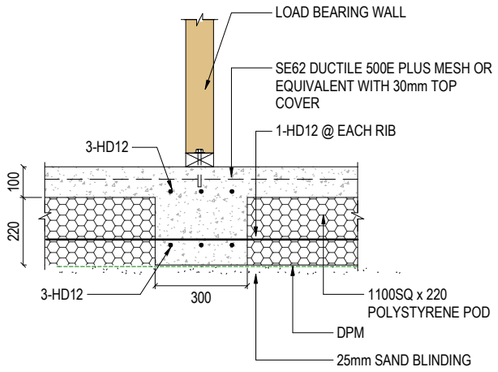

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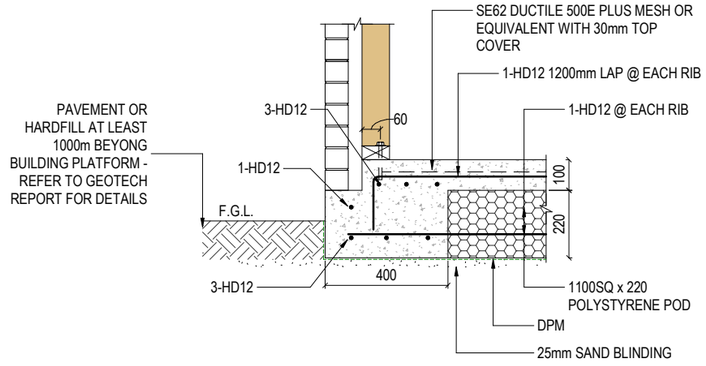

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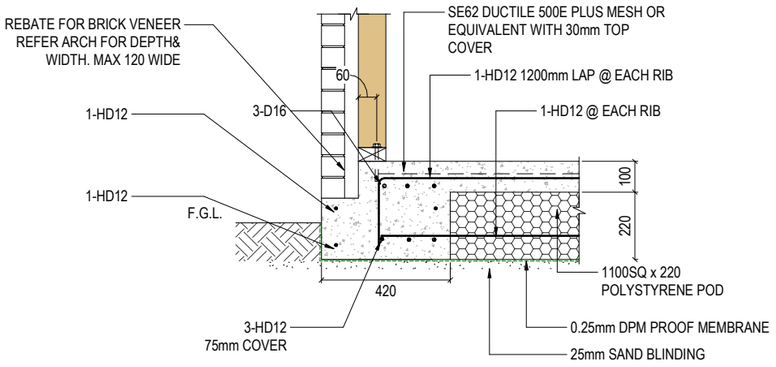

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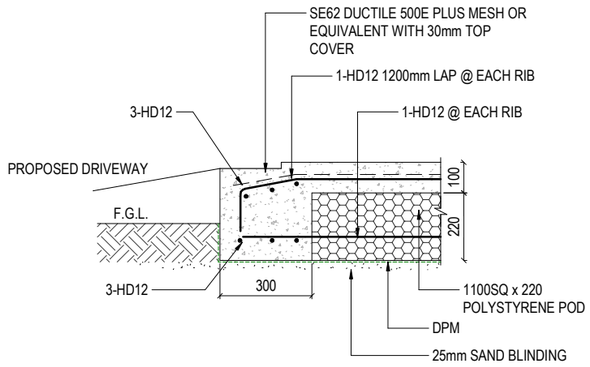

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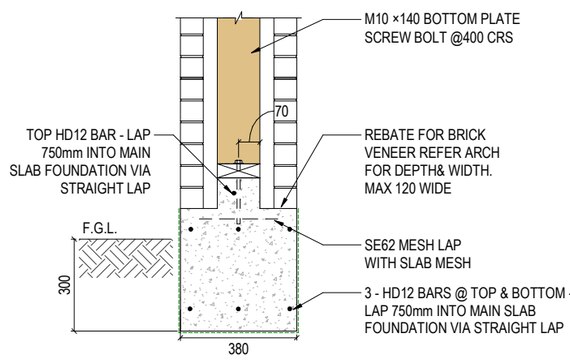

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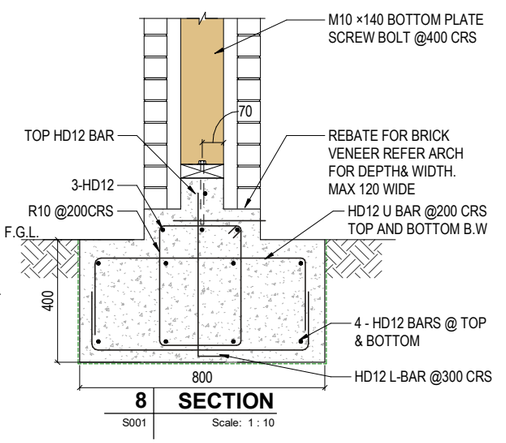

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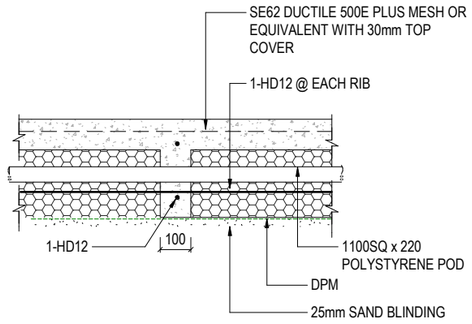
JOB TITLE: LOT 1 TAUWHARE ROAD, TAMAHERE, HAMILTON.	DESIGNER: J.M	DRAWN BY: H.Y.	DATE: 14.11.2022
	SCALE: 1 : 10		REVISION: 0
DRAWING TITLE: FOUNDATION DETAILS	JOB NUMBER: 364011122		SHEET No. S010



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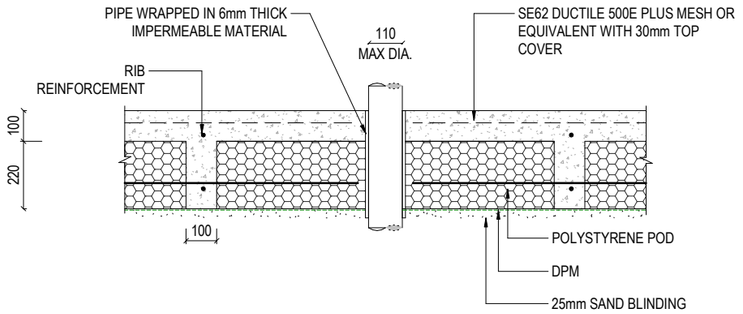

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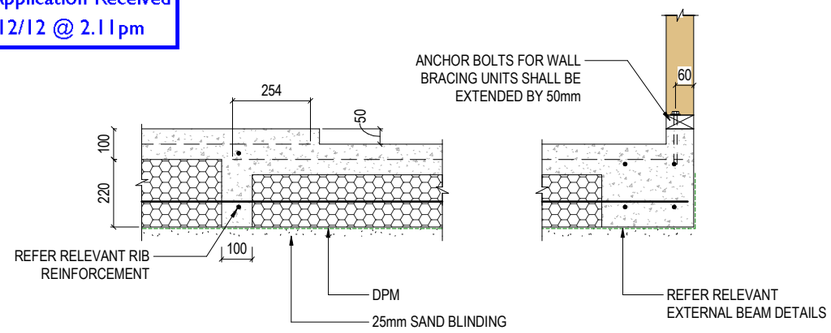

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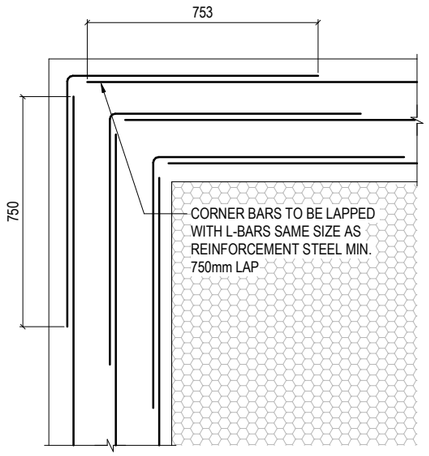

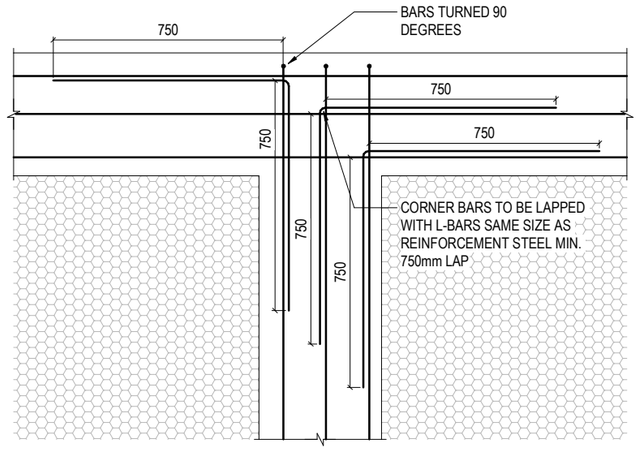

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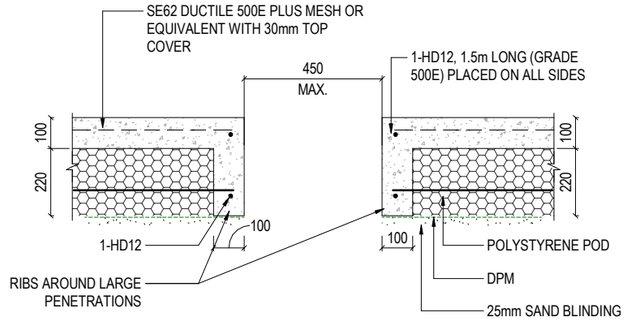

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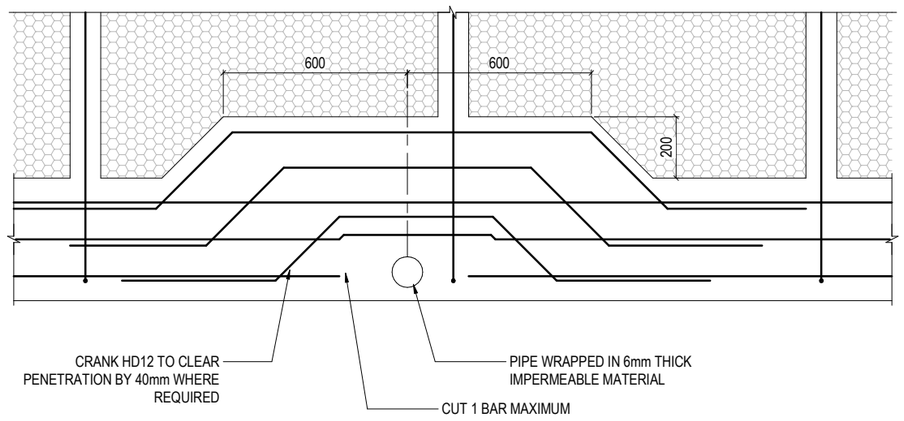

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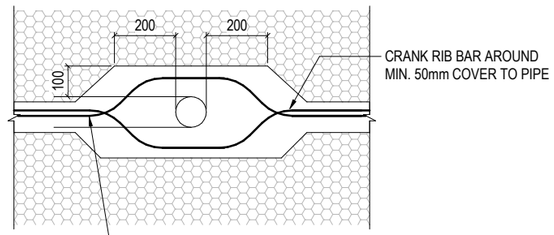

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JOB TITLE: LOT 1 TAUWHARE ROAD, TAMAHERE, HAMILTON.	DESIGNER: J.M	DRAWN BY: H.Y	DATE: 14.11.2022
	SCALE: 1 : 10		REVISION: 0
DRAWING TITLE: FOUNDATION DETAILS	JOB NUMBER: 364011122		SHEET No. S011

Phoenix
Consulting Engineers Ltd

PO BOX 939
CAMBRIDGE 3450
TEL. 07 5603555

SITE ASSESSMENT REPORT
PROPOSED NEW DWELLING
1271 TAUWHARE ROAD, TAUWHARE
CLIENT: ROB DAVIES

Date: 16 November 2022

Reference: 220390

SITE ASSESSMENT REPORT

CLIENT: ROB DAVIES

DATE: 16 NOVEMBER 2022
REFERENCE: 220390

Revision	Date	Details	Status
0	16 November 2022	First Issue	For Building Consent

Responsibility	Engineer	Signature
Prepared by	Amanda Longshaw Engineering Geologist, BSc	
Reviewed by	Christina McPherson Senior Geotechnical Engineer	

Assessment Summary		
Proposed Development	1271 Tauwhare Road, Tauwhare, 5 bedroom, single storey dwelling with attached garage	
Geotechnical Testing	4 hand augers with insitu strength testing	
Ground Conditions	Layered silt (alluvial clay) and sand deposits (Hinuera Formation)	
Geotechnical Assessment	Geotechnical Constraints	A Medium liquefaction damage vulnerability category, slope to be flattened for building platform through cut and fill processes.
	Recommended earthworks	TC2 foundation. Recommend either Option 1 or Option 4 (MBIE, 2012).
Inspections required for Certification *Please allow 48hrs notification for inspection bookings.* *Building Consent conditions and plans to be sent to Phoenix for review prior to any site inspection.* *Contractors PS3 must be provided to Phoenix before certification documents can be issued.*	• Inspect excavation depth and composition of subgrade soils. Test subgrade strength. • Inspect composition and test the compaction of engineered fill, post subgrade approval. Note, the Contractor is recommended to do their own compaction testing on each layer.	

Table of Contents

Appendices

SECTION 1: SCOPE & SITE OVERVIEW

1.0 INTRODUCTION

Phoenix Consulting Engineers Ltd (PCE) has been engaged by Rob Davies to undertake a geotechnical assessment for a proposed new dwelling at 1271 Tauwhare Road, Tauwhare.

The assessment is based on the proposed development plans provided by DDL Architecture (refer Appendix B). The plans indicate the proposed dwelling will be single story with light weight cladding, supported on a level concrete slab.

The geotechnical engineering considerations for the proposed development are based on our site-specific investigations and desktop study of the property. Our interpretation of the ground conditions is presented herein along with site specific foundation design recommendations.

This report is intended to support a Building Consent application process.

2.0 SITE DESCRIPTION

The subject site is located at 1271 Tauwhare Road, Tauwhare located approximately 15km east of Hamilton City (refer Figure 1 and Appendix A). The property is legally described as Lot 1 DP 561952 and has a total area of 8,320m². The site is bound by rural pasture and new residential/lifestyle blocks.

Figure 1: Aerial and LIDAR contours of site and surrounding area. Source: Waikato Regional Council GIS.

The site is on a gently undulating terrain with an overall slope to the west. Council LIDAR data indicates that the elevation of the site is approximately 46m RL to 49m RL. There is a short slope located approximately 30m from the Road boundary, in the vicinity of the proposed dwelling footprint. The existing slope is approximately 3.5m high and spans the width of the site. The site is to have cut and fill processes completed to ensure the finished floor level of the dwelling will be 48.3mRL. The proposed earthworks volumes are shown on the plans as 1661m^3 cut & 2058m^3 fill.

An existing farm swale is also located approximately 24m further west of the dwelling.

SECTION 2: GEOTECHNICAL ASSESSMENT

3.0 DESKTOP REVIEW

Publicly available information including mapping resources from regional and district councils and GNS have been reviewed to identify any specific features or hazards at the property. A summary of our findings follows.

3.1 Underlying Geology

The relevant published geological map *Geology of the* Waikato Area 1:250,000 (Edbrooke, et al. 2005) shows the site is underlain by Hinuera Formation (refer Figure 2). Hinuera Formation is comprised of late Pleistocene (17,000 to 25,000 year) aged cross-bedded pumice sand, silt and gravel with interbedded peat.

The geology to the east and west is mapped as Holocene River Deposits. This comprises recently deposited alluvial and colluvial sand, silt, mud and clay with local gravel and peat beds.

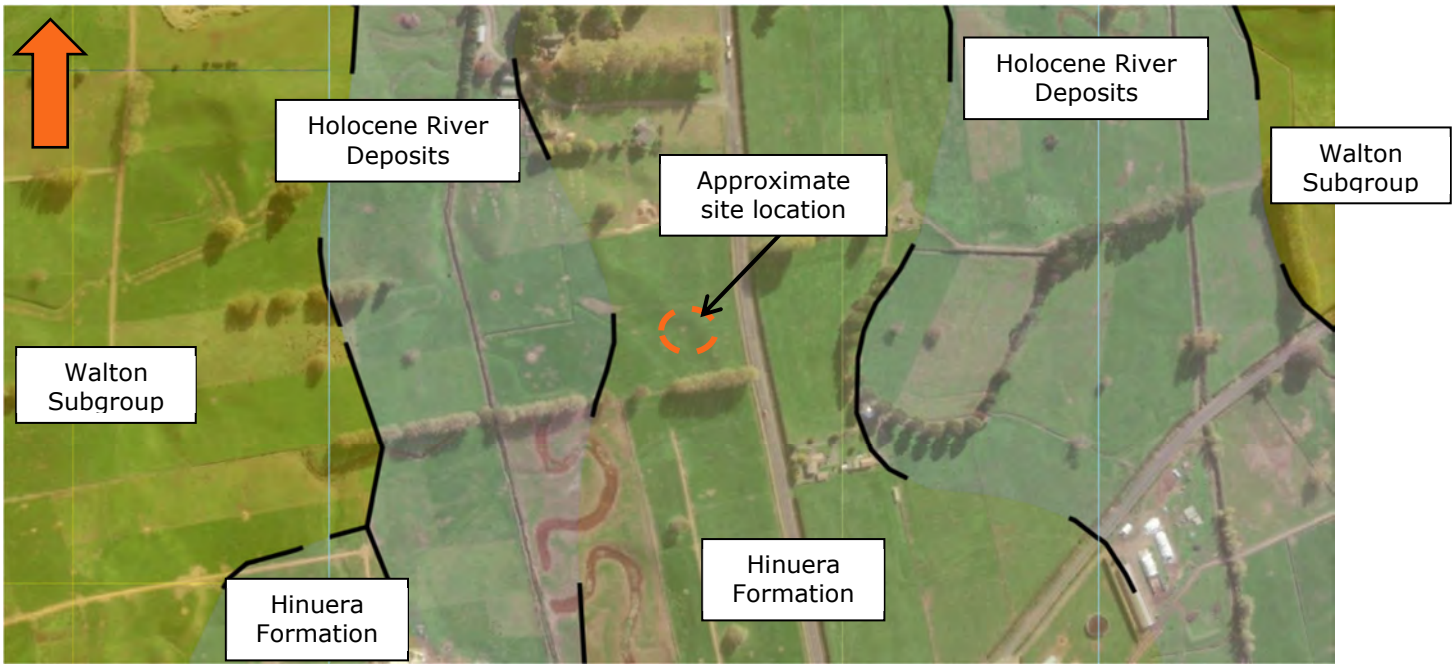


Figure 2: Mapped geology of the site and surrounding area. Source: GNS.

3.2 Previous Geotechnical Investigations & Reports

No relevant historic geotechnical information was available for the site or surrounding area from the New Zealand Geotechnical Database.

Probase Engineering undertook a Site Suitability Report for 1291-1295 Tauwhare Road, Eureka (reference number: P20782, dated 27 November 2020) prior to subdivision into five (5) lots for residential development, creating this site. Four hand augers were undertaken across the subdivision lots, with SC/HA01 and SC/HA02 located within Lot 1 (the current site). The hand augers

extended to 1.6m and 0.6m depth and Scalas to 1.9m and 0.8m. Groundwater was not encountered at the time of investigation.

A desktop liquefaction assessment was undertaken as part of the site suitability investigation which considered that the site has a moderate liquefaction vulnerability and should be considered in the foundation design. 'Good Ground' in accordance with NZS3604:2011 was not encountered in the shallow depth testing, therefore a TC2 waffle slab foundation or SED piles are the recommended foundation type.

The slope stability assessment during the site suitability investigation deemed a not significant hazard risk as the proposed dwelling location is generally moderately sloping (5 to 15 degrees) with earthwork construction to be undertaken on site to create a level platform using cut and fill processes.

Titus Consulting Engineers undertook an Engineering Assessment and Design Report for Lot 1 Tauwhare Road, Tauwhare (reference number: 13210, dated 20 December 2021). Six hand augers were undertaken on the site and extended from 1.2m to 2.0m depth. The soils encountered on site were low plasticity, silts with variable sand content, overlying medium dense to very dense sand deposits from approximately 0.7m depth. The liquefaction assessment completed by Titus shows that the foundations should be in accordance with MBIE guidelines and classified as TC2.

4.0 GEOTECHNICAL INVESTIGATION

4.1 Investigation Methodology

The site testing and assessment has been completed to investigate the suitability of the soils for the construction of foundations for the proposed dwelling, and their compliance with the criteria of NZS 3604:2011. NZS 3604 requires the determination of "good ground" at the base of the foundations by demonstration of an ultimate soil bearing capacity of minimum 300kPa. This was carried out by PCE by confirming soil composition from logging soil samples recovered from hand augers and measuring soils strength parameters by undertaking insitu share vane testing. A geotechnical site walkover observed the site's profile including any relevant slopes, any signs of slope movements, signs of buried services and indicators of past earthworks.

The soil descriptions given on the borehole logs are in general accordance with the New Zealand Geotechnical Society's "Field Description of Soil and Rock", dated 2005. The measured in situ undrained shear strength values given on the borehole logs are corrected in accordance with the New Zealand Geotechnical Investigation Specification. The groundwater levels given on the borehole logs were measured in the boreholes immediately following completion of the borehole.

4.2 Field Investigation

Geotechnical testing was carried out on site on 02 November 2022 at locations indicated on the test location plan (Appendix C). A summary of the investigation is presented below.

- Site walkover.
- Four 50mm diameter hand auger boreholes to a maximum depth of 1.8m below existing ground surface with in-situ strength tests.
- Four Scala penetrometer tests carried out to maximum 1.9m depth adjacent to hand auger boreholes.

Table 1: Summary of Hand auger Boreholes

Hand Auger no.	Location	Borehole Depth (m)	Scala Penetrometer depth (m)	Depth of Topsoil (m)	Groundwater Level (m)
HA1	Bottom of slope	1.3 (unable to penetrate)	1.4 (refusal)	0.2	1.0
HA2	Bottom of slope	1.6 (unable to penetrate)	1.9	0.2	1.3
HA3	Top of slope	1.6 (unable to penetrate)	1.9	0.2	Not encountered
HA4	Top of slope	1.8 (unable to penetrate)	1.9	0.2	Not encountered

Borehole logs with shear vane and Scala penetrometer test results are included in Appendix C.

5.0 GROUND CONDITIONS

The soil profile encountered within the boreholes is summarised below, with detailed descriptions provided on the appended borehole logs (Appendix C). The soils were generally consistent with the mapped geology of the area. The ground conditions comprised:

- 0.2m to 0.3m of topsoil.
- Natural ground comprised of Clay overlying silty Sand deposits. The soil profile is inferred to be Hinuera Formation, as per the geological map.
- The sandy soil layers were tested by Scala, recording typically medium dense to very dense relative densities from 1.0m.
- The clay layers were tested by shear vane, recording typically stiff to very stiff consistency with undrained shear strength values ranging from 69kPa to 107kPa. The clay layers were observed to have Low to Medium plasticity.

5.1 Groundwater

Groundwater was encountered at 1m and 1.3m depth at HA1 and HA2. These Hand augers were located at the bottom of the approximate 3m high slope. Groundwater was not encountered in the hand augers at the top of the slope.

6.0 GEOTECHNICAL ASSESSMENT

6.1 Bearing Capacity

Based on the available geotechnical data, we consider that an ultimate bearing capacity of 300kPa is available from approximately 0.3m depth. This equates to a dependable bearing capacity of minimum 150kPa after application of a static strength reduction factor of φ=0.5.

6.2 Expansivity

No expansive soils were observed within the shallow soil profile, therefore the risk of expansive movements affecting the proposed development is assessed to be low.

6.3 Slope Stability

From the site assessment carried out we consider the risk of slope instability to be minor and a slope stability analysis is not required for the current proposed development.

The following observations were noted during the site walkover:

- The building platform is on sloped land of approximately 30 degrees. This is to be built up as per the provided plans
- No signs of slope movements were observed.

No permanent vertical excavations in excess of 0.6m should be made on the slopes at the site unless they are retained by retaining walls designed by a Chartered Professional Engineer who has read this report. Permanent un-retained excavations may be battered at gradients no steeper than 1V:3H (18º), provided that they are covered in erosion control matting and comprehensively planted to minimise erosion risk and surface fretting or spalling in the long-term. Fill should be placed on benched surfaces.

To reduce the risk of instability of excavations during construction, temporary unsupported excavations should have a maximum height of 1.0m, with excavations above 1.0m either battered no steeper than 1V:1H (45º) or propped and supported. All work undertaken within or in close proximity to excavations greater than 1.0m should be in accordance with WorkSafe New Zealand Good Practice Guidelines Excavation Safety July 2016, Health and Safety at Work Act 2015, and all other relevant regulations, including the Health and Safety in Employment Regulations 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016.

Exposed cut faces should be protected in the short-term with polythene (or similar) that is securely anchored to the face to prevent water infiltration. In addition, runoff from the higher ground should be intercepted by shallow drains or small bunds to protect the earthworks area from saturation and erosion. Water collected in the interceptor drains should be diverted away from the earthworks area to a safe disposal point. All excavations (and earthworks) should be carried out in summer periods with a fine weather forecast for the following days and not be left unsupported for long periods of time.

6.4 Liquefaction

As per section 3.3, a liquefaction assessment has previously been completed for the site, and it has a moderate liquefaction vulnerability which should be considered in the TC2 foundation design.

Liquefaction induced ground surface damage is considered to be *Possible* (MBIE, 2017) at the site due to:

- The underlying soils comprise sandy layers that are likely to be suscpetibel to liquefaction where saturated.
- The water table was identified at 1.7m to 2.0m below ground level. This probably represents a perched aquifer and not representative of the top of the saturated zone. Additional testing would be required confirm this is the case.
- Hinuera Formation deposits are generally considered industry-wide to be susceptible to liquefaction during an Ultimate Limit State (1/500 year) earthquake. Because the site is on the3 margin of the alluvial basin, and immediately north of raised bedrock terrain, Hinuera Formation is unlikely to persist to significant depth. Therefore liquefiable soil is unlikely to persist to extensive depths. Deep geotechnical testing would be required to confirm this condition.
- Lateral spread risk is considered to be low due to no free faces located near the site.

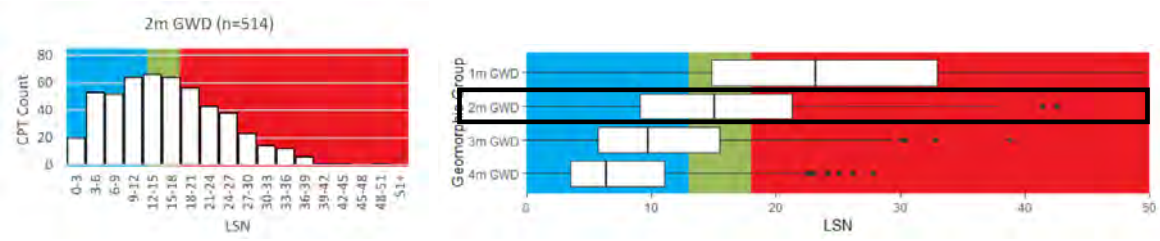


Figure 3: Assessed liquefaction severity for various geomorphology within Hamilton City area with a 2m water table and ULS earthquake loading. Extract from HCC (2019).

A *Medium* liquefaction damage vulnerability category, with *Minor to Moderate* expected liquefaction induced damage (MBIE, 2017) is considered appropriate for this site due to the conditions and assumptions described above. This predicts differential settlements of between 25mm to 100mm.

Any refinement of this category would require deeper site-specific testing.

Recommendations to mitigate these effects are discussed in Section 7.

6.5 Static Settlement

No soils prone to consolidation settlement were observed within the soil profile. The predicted settlements are considered to be within tolerable limits of the building code for the ultimate bearing capacities provided (i.e. less than 25mm vertical movement over 6m horizontal length).

7.0 RECOMMENDATIONS

7.1 Foundations

Based on the ground investigation, desktop review and our site observations, we consider the building platform to not meet all 'good ground' criteria specified in NZS3604:2011 due to the anticipated liquefaction induced settlements under ULS conditions. The foundation is therefore required to be specifically engineered.

MBIE TC2 foundation Options 1 & 4 are considered appropriate for the development based on the anticipated ULS & SLS settlements for the property and generally preferred for ease of design/construction. Details on the foundation systems and construction requirements are detailed below.

GROUND IMPROVEMENT – TC2 OPTION 1

Construct an engineered ground improvement raft and adopt either a standard NZS3604 perimeter foundation or standard waffle raft foundation.

The ground improvement will layer will require geogrid reinforcement at the base, and comprise imported engineered fill (brown rock, GAP65 or similar approved). The geogrid is to have a Radial Secant Stiffness at 0.5% strain of 390kN/m (within a tolerance of -75kN/m), or a minimum ultimate tensile strength of 40kN/m and retaining a minimum of 28kN/m at 5.0% strain. (MBIE, 2015).

Recommended Construction Sequence

- Minimum 0.8m deep excavation (or minimum 0.6m below the foundation base, whichever is greater) extended 1m beyond of building footprint. **Engineering inspection required** to confirm subgrade meets design strength and suitable composition. Additional undercut or in-situ rolling may be required to achieve target.
- Install geogrid on the base of the excavation with overlaps as per manufacturer's specification. **Photographs to be supplied to supervising Engineer** (geogrid docket, overlaps and general photos of grid).
- Install base layer of engineered fill. **Geotechnical inspection and testing required** to confirm suitable composition fill and compaction to acceptable levels. Compaction targets will depend on the type of fill being used. The contractor to provide the compaction test results following every 300mm lift to PCE if the contractor has access to a Scala Penetrometer or Clegg hammer. Alternatively, PCE can undertake additional compaction quality testing.
- Finished surface to be **inspected and tested** by PCE to confirm compaction to suitable targets.
- **PS3 documentation is required to be supplied to the supervising Engineer** from the earthworks contractor following construction of engineered fill. This should include the contractor's own compaction testing data.

ENHANCED RAFT FOUNDATION – TC2 OPTION 4

Design a stiffened raft foundation that meets the MBIE requirements of Option 4 (Figure 5.10 & 5.11).

Recommended Construction Sequence

- **Excavate topsoil** (0.2m to 0.3m deep excavation) extended min 1.0m outside of building footprint.
- Roll the subgrade using static compaction. **Engineering inspection required** to confirm subgrade meets design strength and suitable composition. Additional undercut or in-situ rolling may be required to achieve target.
- Install engineered fill or blinding sand layer. **Geotechnical inspection and testing** to confirm suitable composition fill and compaction to acceptable levels, if greater than 300mm thickness. Compaction targets will depend on the type of fill being used.
- **PS3 documentation is required to be supplied to the supervising Engineer** from the earthworks contractor following construction of engineered fill. This should include the contractor's own compaction testing data.

NOTE

PS4 documentation requires a minimum of 10 days' taken from the date we receive the earthwork contractor's PS3.

Please ensure that plans clearly detail the selected foundation option and reference which option has been selected.

7.2 Retaining Structures

Retaining structures are not anticipated for the proposed development based on current plans and the slope stability recommendations above. If any retaining structures are required, a qualified and experienced Engineer may need to be engaged to design the structure to meet local authority regulations.

SECTION 4: LIMITATIONS

8.0 GENERAL LIMITATIONS

This report was completed for the client based on the supplied brief and proposed development of the site at the time that this assessment was completed. Recommendations within this report are site specific in relation to the brief and should not be used for any other development or by any other client without further review and approval from Phoenix Consulting Engineers.

Our findings and recommendations are based on the limited testing undertaken at discrete locations to infer probable geotechnical site characterisation. The inferences are limited to the scope for which this work was carried out. The inferences, extrapolations, and assumptions cannot be guaranteed to be the actual ground conditions due to potential variability between test locations and that of the nature of subsoil conditions. If the actual ground conditions are found to be different from what has been described in this report, the matter should be referred back immediately to Phoenix Consulting Engineers before proceeding with works.

In addition, the moisture content of the soils is only applicable for the conditions at the time of testing and cannot be relied upon for construction. The moisture condition of the soil profile is expected to fluctuate with the current weather and season. Construction techniques may need to be modified accordingly.

9.0 REFERENCES

Edbrooke, S.W. (2005), Institute of Geological & Nuclear Sciences, Map 4: Waikato (Scale 1:250,000). Retrieved from GNS website.

GNS Science (2014), New Zealand Geology Web Map, accessed on 15 November 2022 http://data.gns.cri.nz/geology/.

Ministry of Business Innovation and Employment, 2017. Planning and Engineering Guidance for Potentially Liquefaction Prone Land.

Ministry of Business Innovation and Employment, 2012. Part A. Technical Guidance, Version 3.

Ministry of Business Innovation and Employment, 2015. Part C. Technical Guidance, Version 3.

New Zealand Geotechnical Society (2005), Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes.

New Zealand Geotechnical Society (NZGS) and Ministry of Business Innovation & Employment (MBIE) Earthquake Geotechnical Engineering Practice in New Zealand, Module 1: Overview of the guidelines, version 1, dated November 2021.

New Zealand Geotechnical Society (NZGS) and Ministry of Business Innovation & Employment (MBIE) Earthquake Geotechnical Engineering Practice in New Zealand, Module 3: Liquefaction Hazards, version 1, dated 29 November 2021.

NZ3604:2011, New Zealand Standard Timber Framed Buildings.

Probase Engineering Ltd, *Site Suitability Report, 1291-1295 Tauwhare Rd, Eureka*, Ref P20782, dated 27 November 2020.

Titus Consulting Engineers, *Engineering Assessment and Design Report, Lot 1 Tauwhare Road, Tauwhare*, Ref 13210, dated 20 December 2021.

Waikato Regional Council, Local Maps, accessed on 15 November 2022, https://waikatomaps.waikatoregion.govt.nz/Viewer

APPENDIX A - Site Location

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

LocalMaps Print

0 0.03 0.06 0.12 0.18 0.24 0.3 km

N

Scale: 1:4,514
1 cm = 0.05 km when printed at A4
NZGD 2000 New Zealand Transverse Mercator

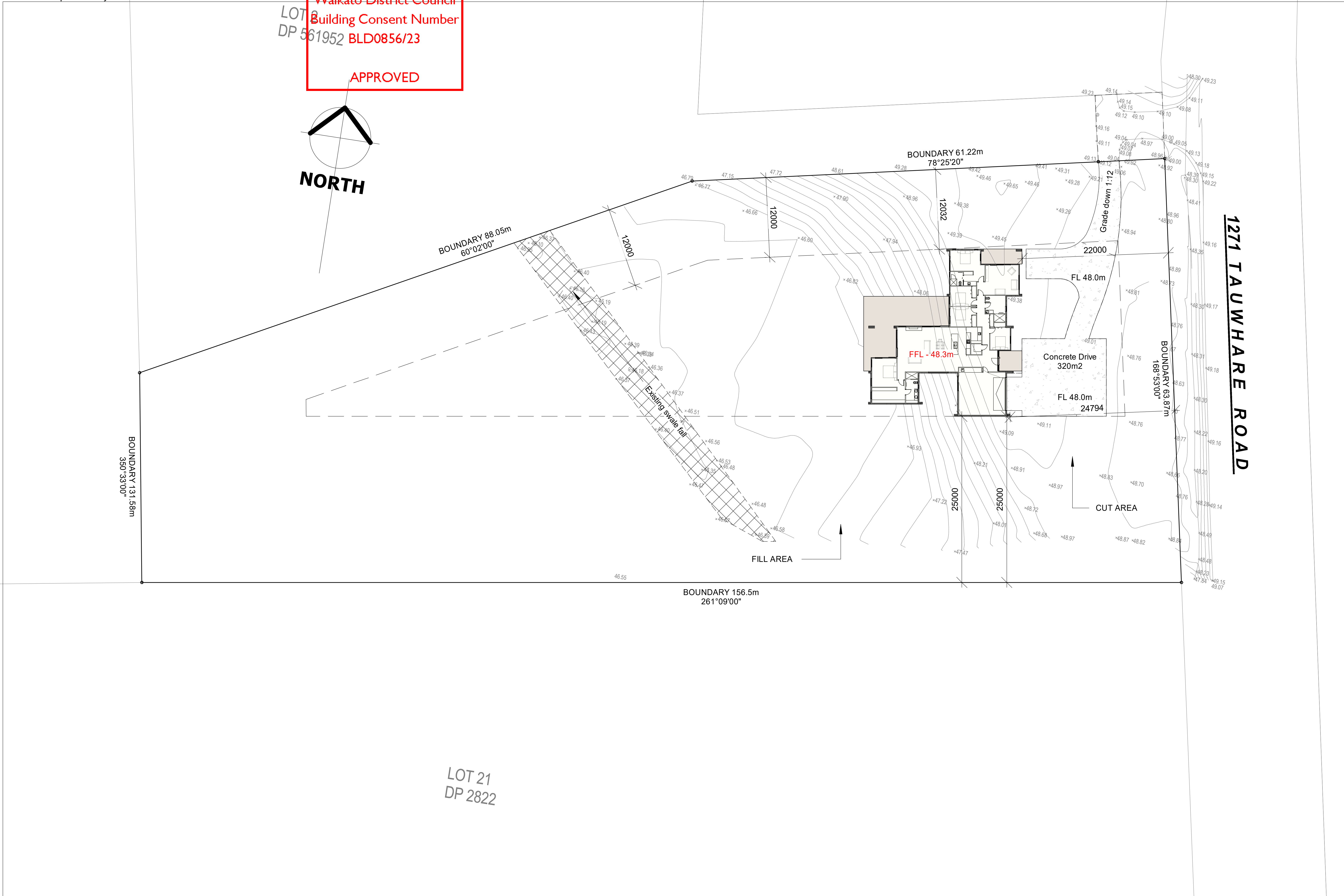
Created at: 15/11/2022 2:30 PM
Layout: A4 Portrait

Waikato REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

APPENDIX B - Project Drawings

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED



DDL ARCHITECTURE

P: (07) 8498184 - E: admin@diversedesign.co.nz

W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date

SITE PLAN

SK1 | 1 : 500@ A3

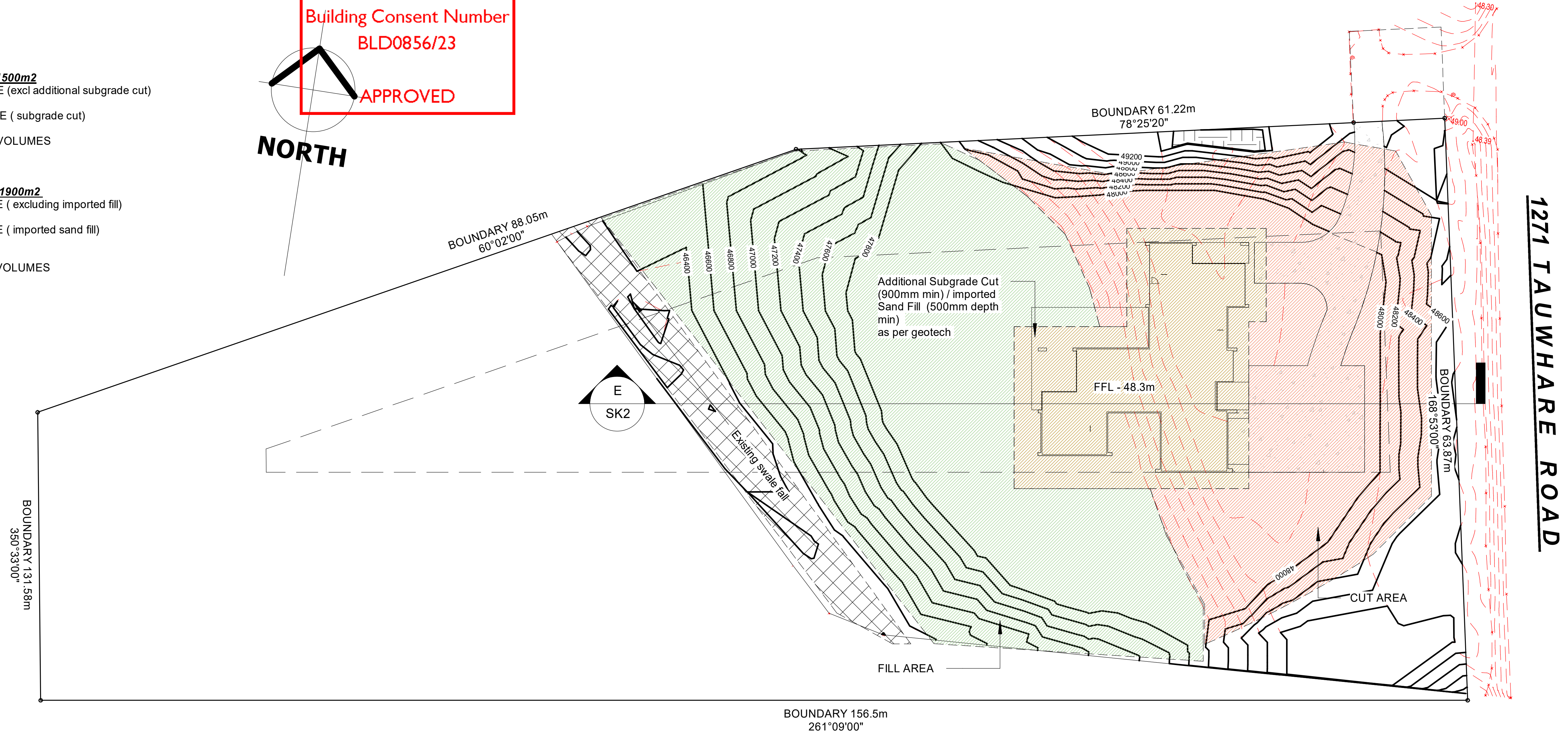
DDL Project # :	22-061
Drafted By :	JAC
Issue Date :	6-10-22
Issue Type :	CONCEPT

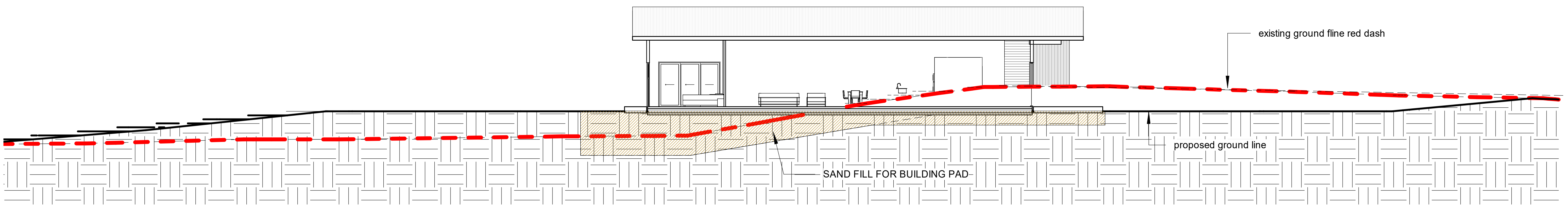
ORIGINAL IN COLOUR

CUT AREA -1500m2
CUT VOLUME (excl additional subgrade cut)
- 1298m3
CUT VOLUME (subgrade cut)
-371m3
TOTAL CUT VOLUMES
-1661m3

FILL AREA - 1900m2
FILL VOLUME (excluding imported fill)
-1661m3
FILL VOLUME (imported sand fill)
- 558m3

TOTAL FILL VOLUMES
-2058m3





E EARTHWORKS SECTION

1 : 200

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W: www.diversedesign.co.nz
DDL ARCHITECTURE

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

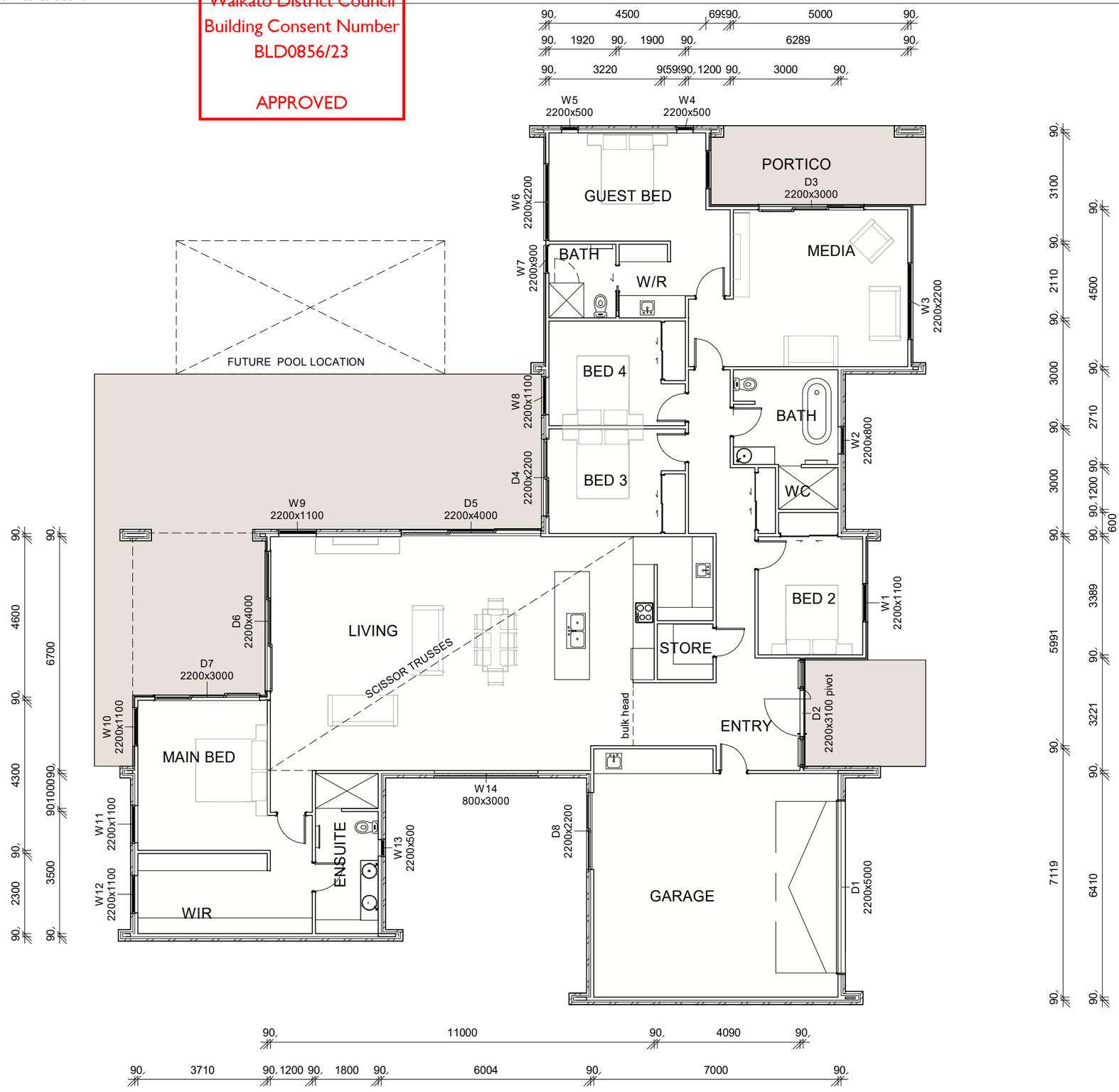
Rev.	Description	Date

CUT AND FILL PLAN

SK2 | **As indicated@ A3**

DDL Project # : 22-061	
Drafted By :	Author
Issue Date :	6-10-22
Issue Type :	CONCEPT

ORIGINAL IN COLOUR



FLOOR AREA
-300m2 OVER FRAME
-310m2 OVER BRICK

GENERAL NOTES -
-INTERIOR DOORS ALL TO BE 2.2m HIGH
-STUD HEIGHTS 2.5m UNLESS NOTED OTHERWISE

DDL ARCHITECTURE
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W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

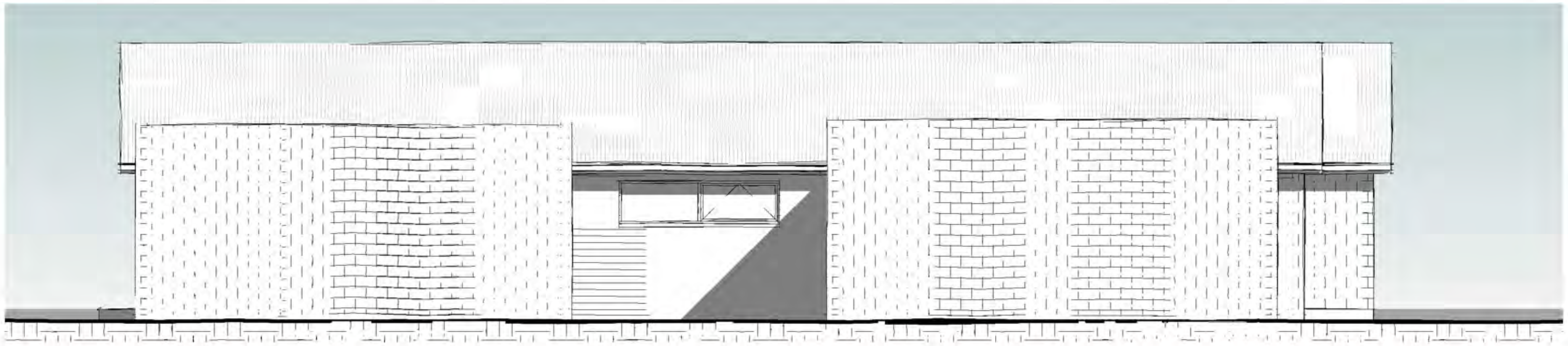
Rev.	Description	Date

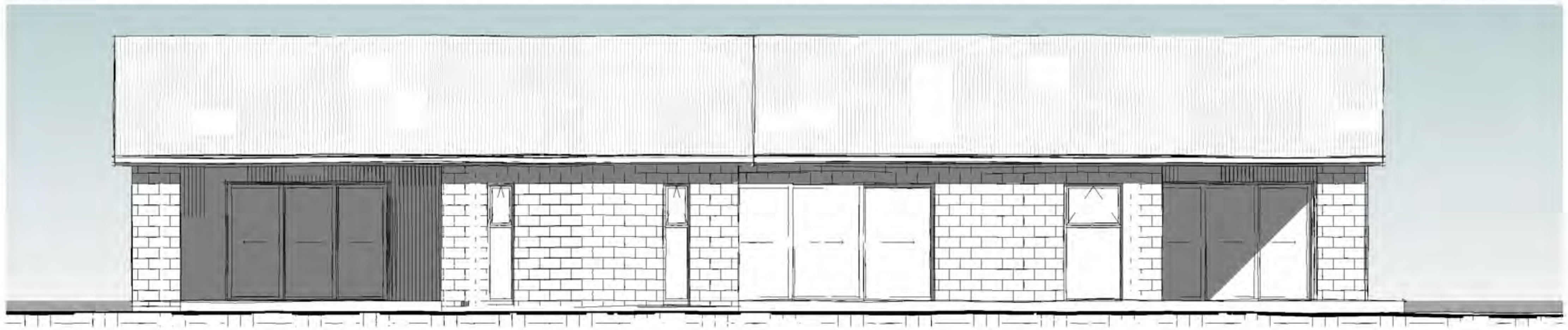
FLOOR PLAN

DDL Project # :	22-061
Drafted By :	JAC
Issue Date :	6-10-22
Issue Type :	CONCEPT

SK3 | 1 : 125@ A3 | ORIGINAL IN COLOUR

Print Date: 13 June 2025, 1:55 PM





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LOT 1 TAUWHARE ROAD

WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

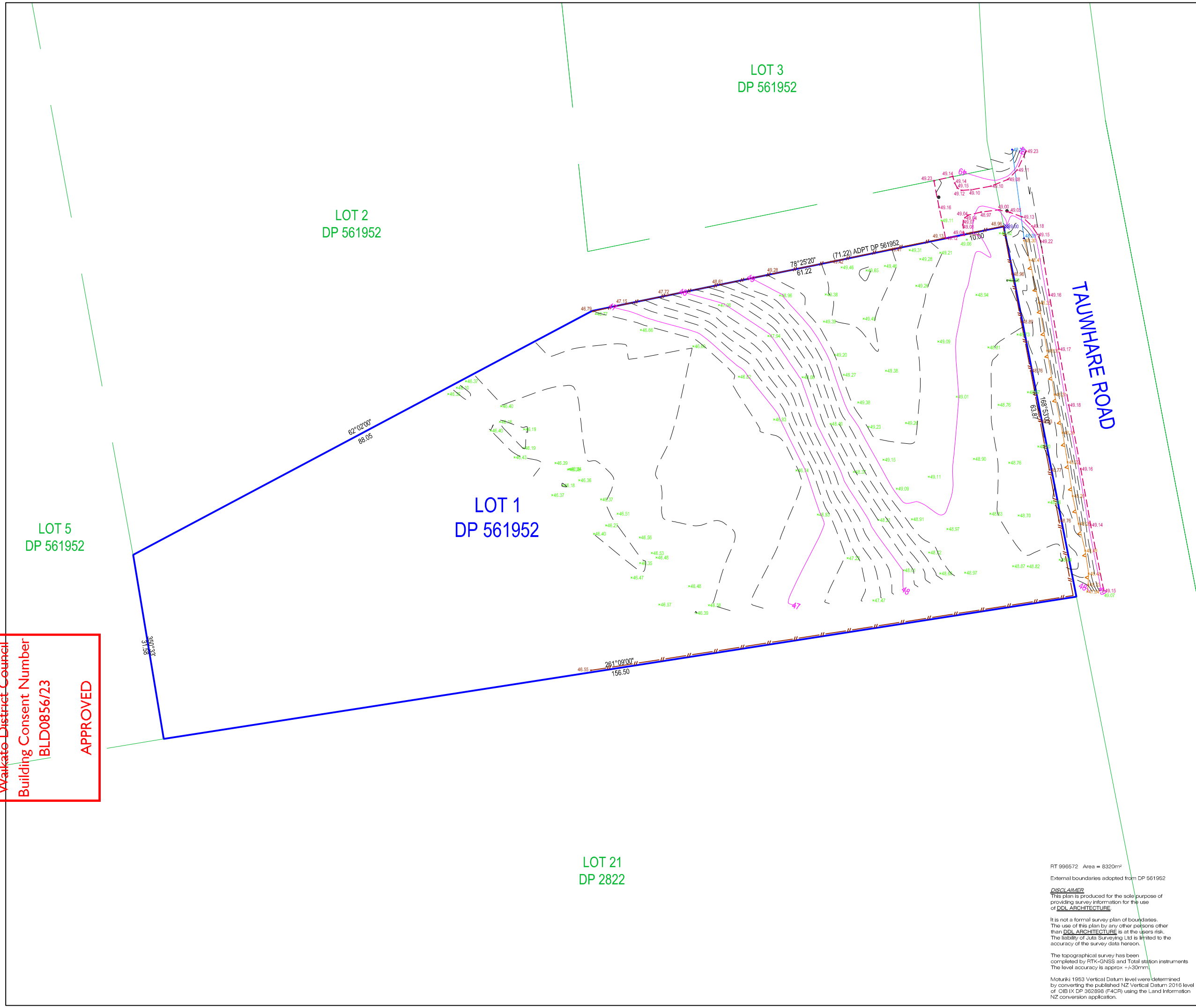
Rev.	Description	Date

ELEVATIONS

SK4 | 1 : 100@ A3

DDL Project # :	22-061
Drafted By :	JAC
Issue Date :	6-10-22
Issue Type :	CONCEPT

ORIGINAL IN COLOUR



REVISION

ISSUE	DATE	DETAILS	CHKD	DWN
A	5/10/22	TOPO PLAN	MGL	MGL

NOTE:
DATUM: GEODETIC 2000
ORIGIN: OIB IX DP 362898 700335.70mN
460596.11mE

LEVELS ARE IN TERMS OF MOTURIKI DATUM 1953.
ORIGIN OF LEVELS: OIB IX DP 362898 (F4CR) @ RL=51.924

ABUTTALS SHOWN ARE FROM QUICKMAP AND THEY ARE APPROXIMATE

CONTOURS SHOWN ARE AT:-
1.0 m MAJOR INTERVALS
0.2 m MINOR INTERVALS

LEGEND

- TOP OF BANK
- BOTTOM OF BANK
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- ROAD CENTRELINE
- EDGE OF SEAL
- SS WASTEWATER LINE
- SW STORMWATER LINE
- OLD PEG
- POWER POLE
- POWER BOX
- FH FIRE HYDRANT
- VALVE
- WASTEWATER MANHOLE
- STORMWATER MANHOLE
- CATCHPIT
- FENCE LINE
- TOBY
- TELECOM
- GAS
- LIGHT
- FIBRE

ORIENTATION

DRAWING TITLE

TOPO PLAN

CLIENT

DDL ARCHITECTURE

PROJECT

TOPOGRAPHICAL SURVEY OF
LOT 1 DP 561952
1271 TAUWHARE ROAD, EUREKA

RT 996572 Area = 8320m²

External boundaries adopted from DP 561952

DISCLAIMER
This plan is produced for the sole purpose of providing survey information for the use of DDL ARCHITECTURE.

It is not a formal survey plan of boundaries. The use of this plan by any other persons other than DDL ARCHITECTURE is at the users risk. The liability of Juta Surveying Ltd is limited to the accuracy of the survey data hereon.

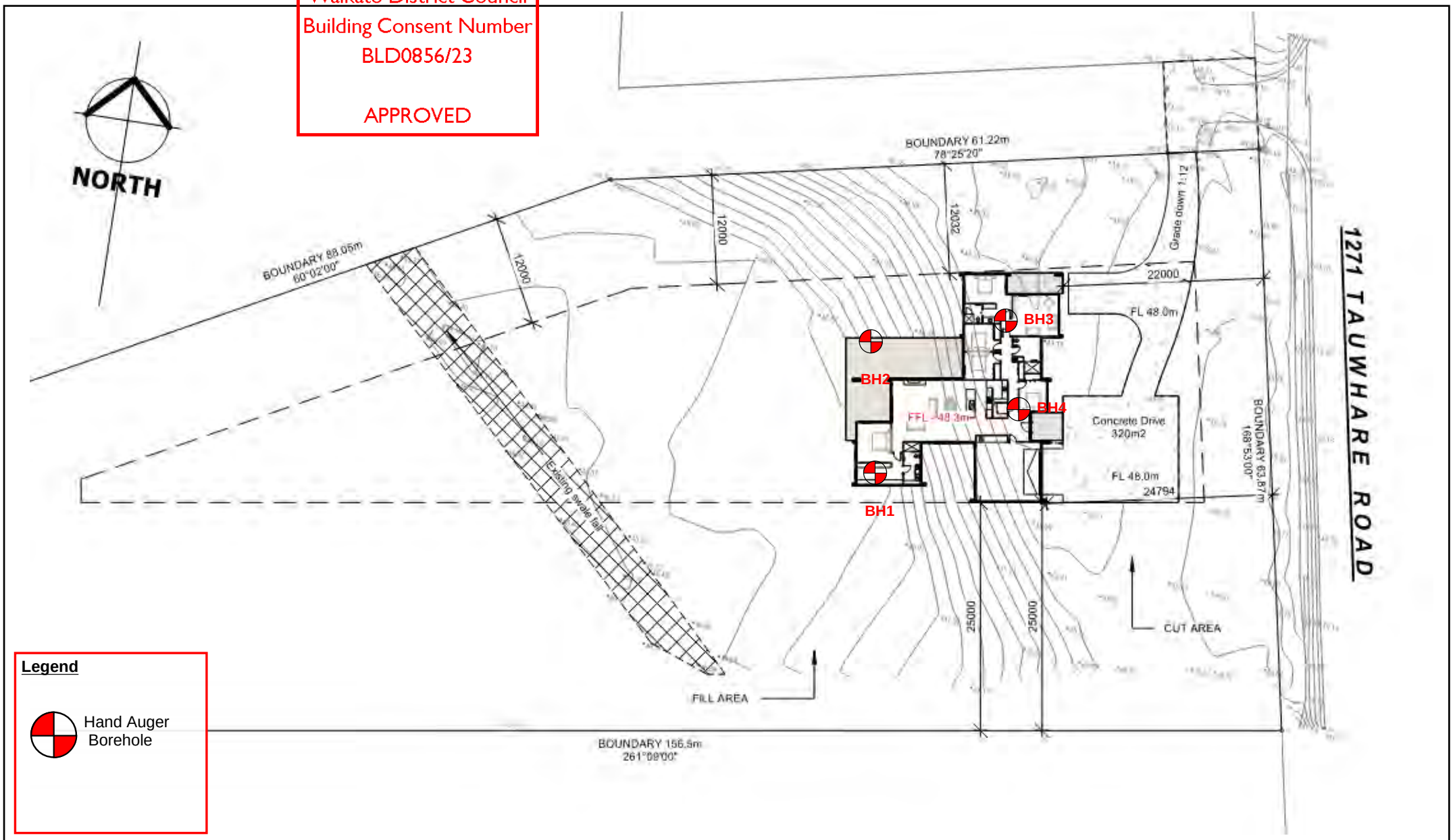
The topographical survey has been completed by RTK-GNSS and Total station instruments The level accuracy is approx +/-30mm.

Moturiki 1953 Vertical Datum level were determined by converting the published NZ Vertical Datum 2016 level of OIB IX DP 362898 (F4CR) using the Land Information NZ conversion application.

JUTA SURVEYING LTD
PO BOX 15535 Hamilton 3243, New Zealand
Phone: 021 332934
Email:markl@juta.co.nz

SCALE :	1 : 300 @ A1 1 :600 @ A3		
DATE:	5th OCTOBER 2022		
SURVEYED BY :	KK	DESIGNED BY:	N/A
DRAWN BY:	MGL	CHECKED BY :	MGL
PROJECT No. JS22-0234		DWG No. TP01	REV. A

APPENDIX C - Investigation Data



Legend

Hand Auger Borehole

Client:	Rob Davies	Job #:	220390
Project:	Proposed New Dwelling 1271 Tauwhare Road, Tauwhare	Date:	15 November 2022
Drawing Title:	Geotechnical Test Location Plan	Drawn by:	AL

Phoenix Consulting Engineers Ltd

PROJECT	1271 Tauwhare Road		
CLIENT	Latitude Homes	JOB No	220390
LOCATION	Tauwhare	DATE	2-Nov-22
BH No.	1	TESTS BY	LR

Phoenix Consulting Engineers Ltd

Depth (mm)	Soil Description	Shear Vane (kPa)	Scala Penetrometer Test blows
100	**TOPSOIL**		-
200			2
300	very stiff **CLAY** minor silt, light brown orange staining, moist, low to	101 / 29	2
400	moderate plasticity	Very Stiff	1
500			2
600		101 / 29	1
700		Very Stiff	1
800			1
900	0.9m wet	107 / 32	1
1000	1.0m saturated	Very Stiff	5
1100			7
1200	silty **SAND**; grey, saturated, fine to coarse, well graded		7
1300	**END OF BOREHOLE-** Unable to Penetrate		20
1400			UTP
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			
3100			
3200			
3300			
3400			
3500			
3600			
3700			
3800			
3900			
4000			

Percolation Test

Time (min)	0	5	10	15	20	25	30	35	40	45	50	55	60
Water Depth (mm)													

Tailing Gradient — mm / mins
Percolation Rate = — mm / hour
Comments

Notes

1. Scala results are number of blows per 100mm
2. Shear Vane readings are converted readings, as per calibration Certificate. (Values are not Ultimate)
3. UTP = Unable To Penetrate

PROJECT	1271 Tauwhare Road		
CLIENT	Latitude Homes	JOB No	220390
LOCATION	Tauwhare	DATE	2-Nov-22
BH No.	2	TESTS BY	LR

Phoenix
Consulting Engineers Ltd

Depth (mm)	Soil Description	Shear Vane (kPa)	Scala Penetrometer Test blows
100	**TOPSOIL**		-
200			2
300	stiff **CLAY** minor silt; light brown orange staining, dry to moist, low to moderate	98 / 35	1
400		Stiff	2
500			2
600		72 / 26	1
700		Stiff	2
800			3
900		75 / 32	3
1000		Stiff	5
1100	1.1m moist to wet		8
1200			3
1300	medium dense silty **SAND;** grey, saturated, fine to coarse, well graded		3
1400			5
1500			5
1600	**END OF BOREHOLE-** Unable to Penetrate		6
1700			5
1800			7
1900			7
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			
3100			
3200			
3300			
3400			
3500			
3600			
3700			
3800			
3900			
4000			

Scala Penetrometer Test: 0 1 2 3 4 5 6 7 8 9

Percolation Test

Time (min)	0	5	10	15	20	25	30	35	40	45	50	55	60
Water Depth (mm)													

Tailing Gradient mm / mins
Percolation Rate = mm / hour
Comments

Notes

1. Scala results are number of blows per 100mm
2. Shear Vane readings are converted readings, as per calibration Certificate. (Values are not Ultimate)
3. UTP = Unable To Penetrate

PROJECT	1271 Tauwhare Road		
CLIENT	Latitude Homes	JOB No	220390
LOCATION	Tauwhare	DATE	2-Nov-22
BH No.	3	TESTS BY	LR

Phoenix Consulting Engineers Ltd

Depth (mm)	Soil Description	Shear Vane (kPa)	blows
100	**TOPSOIL**		-
200			2
300	stiff **SILTY CLAY**; light brown, dry to moist, low plasticity	87 / 43	2
400		Stiff	1
500			2
600		93 / 26	1
700		Stiff	1
800	0.8m minor sand		1
900		69 / 32	1
1000		Stiff	2
1100	1.1m moist to wet		3
1200			3
1300	medium dense **SILTY SAND**; grey, moist to wet, fine to coarse, well graded		3
1400			5
1500			5
1600	**END OF BOREHOLE-** Unable to Penetrate		8
1700			10
1800			13
1900			20
2000			
2100			
2200			
2300			
2400			
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2600			
2700			
2800			
2900			
3000			
3100			
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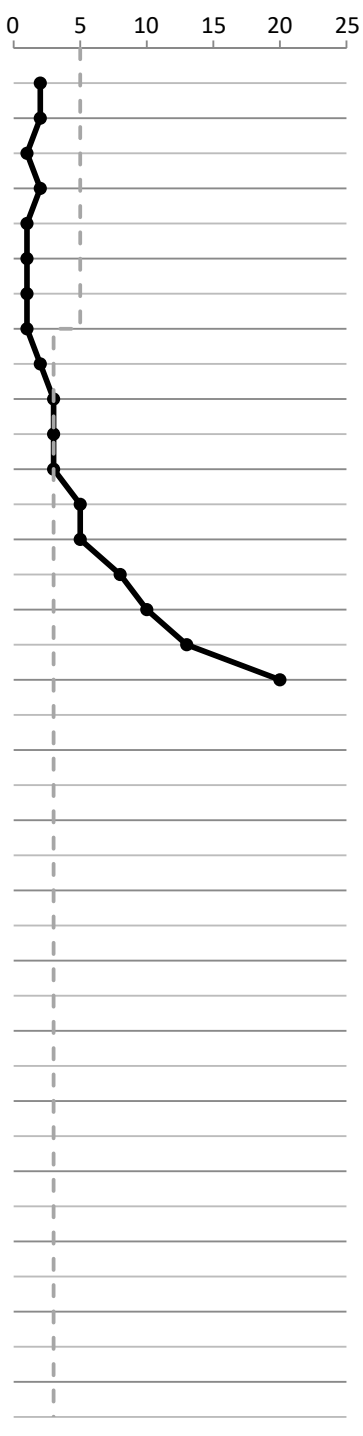
3500			
3600			
3700			
3800			
3900			
4000			

Scala Penetrometer Test



Percolation Test

Time (min)	0	5	10	15	20	25	30	35	40	45	50	55	60
Water Depth (mm)													

Tailing Gradient mm / mins

Percolation Rate = mm / hour

Comments

Notes

1. Scala results are number of blows per 100mm
2. Shear Vane readings are converted readings, as per calibration Certificate. (Values are not Ultimate)
3. UTP = Unable To Penetrate

PROJECT	1271 Tauwhare Road		
CLIENT	Latitude Homes	JOB No	220390
LOCATION	Tauwhare	DATE	2-Nov-22
BH No.	4	TESTS BY	LR

Phoenix Consulting Engineers Ltd

Depth (mm)	Soil Description	Shear Vane (kPa)	Scala Penetrometer Test blows
100	**TOPSOIL**		-
200			2
300	stiff **SILTY CLAY**; light brown, dry to moist, low plasticity	75 / 32	1
400		Stiff	1
500			1
600		104 / 23	2
700		Very Stiff	1
800			2
900	0.9m moist to wet		1
1000			2
1100	medium dense **SILTY SAND**; grey moist to wet, fine to medium, well graded		3
1200			3
1300			3
1400	1.4m brown, fine to coarse		3
1500			5
1600			8
1700			15
1800	**END OF BOREHOLE-** Unable to Penetrate		20
1900			UTP
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
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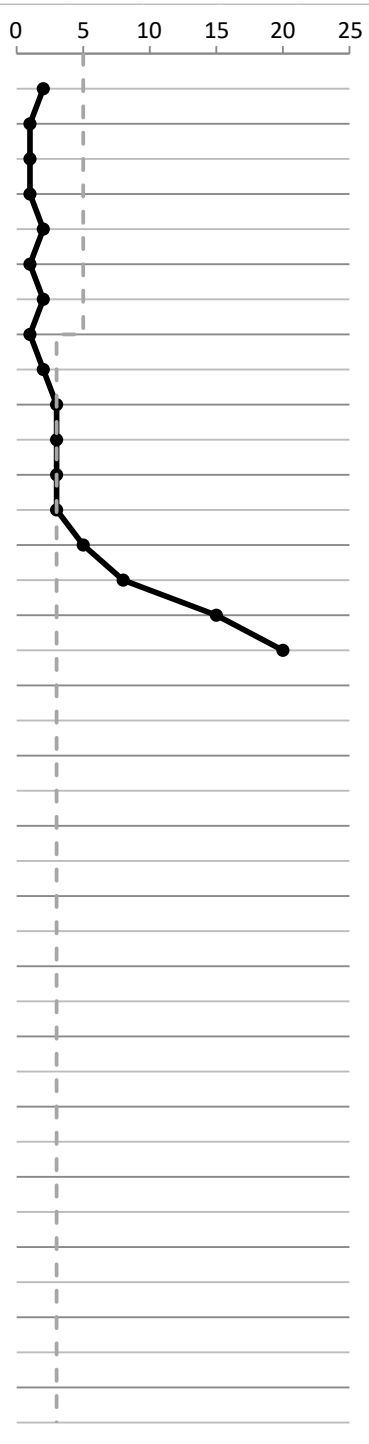
3800			
3900			
4000			



Percolation Test

Time (min)	0	5	10	15	20	25	30	35	40	45	50	55	60
Water Depth (mm)													

Tailing Gradient mm / mins
Percolation Rate = mm / hour
Comments

Notes

1. Scala results are number of blows per 100mm
2. Shear Vane readings are converted readings, as per calibration Certificate. (Values are not Ultimate)
3. UTP = Unable To Penetrate

APPENDIX D - Previous Reports

SITE SUITABILITY REPORT

1291-1295 Tauwhare Rd
Eureka
P20782

Client: Nicklin CE

By: BJM

Date: 27th November 2020

Email: James@probase.co.nz

Report Summary

Probase Engineering Ltd was engaged by Nicklin CE to conduct a Site Suitability Assessment for the site at 1291-1295 Tauwhare Rd, Eureka to assess the suitability for residential development. The property is intended to be subdivided into 5 lots.

This report is for resource consent and planning purposes only. Further investigations will be required for building consent purposes.

Report Prepared for: **Nicklin CE**

Note: The information contained in this document is solely for the use of the Client identified above for the purpose for which it has been prepared and the Author undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

Revision:	Date:	Details:	Prepared by:	Reviewed by:
0	27/11/2020	Final	Ben McKay	James Harper

Summary

The following provides a summary of the requirements Probase Engineering recommends for the subdivision of 1291-1295 Tauwhare Rd, Eureka.

- **Liquefaction Assessment**
  - Soils are mapped as Hinuera Formation, comprised of silty SANDs.
  - Groundwater was not encountered at depths shallower than termination depth of 2900mm, and soil moisture did not increase significantly with depth.
  - Liquefaction vulnerability classified as having '**Moderate Vulnerability'**.

- **Slope Stability Assessment**
  - Probase Engineering deems **slope stability hazard risk not significant** as the ground topography near the proposed dwelling location is generally only gently to moderately sloping (<5° - <15°).
  - The methods below shall be undertaken during earthworks construction:
    - Any cut which creates a slope exceeding 18° (1:3) and is of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any fill placed which creates a slope (batter and/or bund) exceeding 18° (1:3) and of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any retaining wall should be specifically designed to for the appropriate surcharge.

- **Foundations**:
  - The following foundations may be suitable options for the proposed residential development:
    - Waffle slab foundation.
    - SED piles.
  - **Further testing will be required** at building consent stage to confirm preliminary recommendations.

- **Waters:**
  - Probase Engineering recommends the use of above ground detention tanks to mitigate stormwater discharges (with a portion available for potable water use for a new dwelling). It is recommended that the overflow pipe is directed to a swale.
  - Wastewater treatment and disposal via either Primary or Secondary Treatment.
  - **Specific engineering investigation, assessment and design will be required** by a suitably qualified engineering professional at the building consent stage.

TABLE OF CONTENTS

APPENDICES

1 BACKGROUND AND PROPOSED SCOPE

On 18th November 2020, Probase Engineering was engaged by Nicklin CE to carry out a site suitability investigation in support of a resource consent at 1291-1295 Tauwhare Rd, Eureka. Refer to Figure 1 for a plan of the proposed development area.

The purpose of this report is to evaluate the surface and subsurface conditions of the site and to provide geotechnical recommendations for the proposed subdivision.

Our scope of works included the following:

- Desktop study of relevant publicly available geotechnical and geological publications;
- Preparation of a report outlining our findings on the ground conditions;
- Preliminary site suitability recommendations for the proposed development.

2 SITE DETAILS

2.2. SITE DESCRIPTION

The property at 1291-1295 Tauwhare Rd is located on a gently to moderately steep undulating alluvial plain landscape (<5° - 15°), situated approximately 1.5km to the north of Tauwhare Township, Waikato.

At the time of investigations, the site was covered in ankle height pasture.

2.3. REGIONAL GEOLOGY

The geological map of the area indicates that the site is underlain by soils belonging to a deposit known as the Hinuera Formation. These deposits are described as cross-bedded pumice sand, silt and gravel with interbedded peat (GNS Science, 2020).

3 PROPOSED DEVELOPMENT

It is proposed to subdivide the existing sections into five lots, creating three residential lots for future development as detailed below:

- Lot 1 (0.825 ha) – New residential lot/dwelling proposed on Lot 1.
- Lot 2 (0.87 ha) – New residential lot/dwelling proposed on Lot 2.
- Lot 3 (0.8 ha) – New residential lot/dwelling proposed on Lot 3.
- Lot 4 (1.058 ha) – No changes proposed on Lot 4.
- Lot 5 (121.719) – Amalgamation of existing Lot 1 & balance of Lot 2.

Site development plans are attached in Appendix A.

4 SOILS INVESTIGATION

4.2. GROUND CONDITIONS

Testing to determine ultimate bearing capacity of soils was carried out on the 25th of November 2020 in accordance with NZS 3604:2011; the non-specific design standard for Timber Framed Buildings at six test positions. This is outlined in Appendix Figure 2 'Test Location Plan'.

Testing comprised of:

- 4 augers with accompanied shear vane tests.
- 6 Scala penetrometer tests.
- A visual inspection and walk over of the site.

Ground conditions and soil characteristics are outlined in Appendix B 'Soil Logs'.

4.3. ACHIEVEMENT OF 'GOOD GROUND'

Test results indicate near surface soils have bearing capacities less than 100 kPa (300 kPa ultimate bearing capacity). Therefore, soils do not meet the definition of 'Good Ground' in accordance with NZS 3604:2011 the non-specific design standard for Timber Framed Buildings.

Further testing at building consent stage is required.

4.4. LIQUEFACTION ASSESSMENT

A calibrated desktop (Level B) liquefaction assessment has been conducted in accordance with the relevant guidance documents[1]. The assessment employed ground truthing using onsite testing of 2900mm below existing ground level and calculation of peak ground acceleration.

The following factors were employed in the determination of liquefaction risk:

- Site located in Late Pleistocene sediments, which are of a recent deposition.
- Groundwater was not encountered during investigations up to a depth of 2900mm below existing ground level.

Based on the above information, given the age and lithology of the site, Probase Engineering classifies the site as having a **'Moderate Liquefaction Vulnerability'**. Therefore, foundations need to consider liquefaction in their design.

4.5. SLOPE STABILITY ASSESSMENT

A slope stability study has been conducted through a site investigation and desktop analysis for the site. The subject site topography can be generally described as undulating, forming an upper terrace adjacent to the eastern boundary and falling towards the west at gentle to moderate gradients to a lower terrace area.

- Probase Engineering deems **slope stability hazard risk not significant** as the ground topography near the proposed dwelling location is generally only gently to moderately sloping (<5° - <15°).
- The methods below shall be undertaken during earthworks construction:
    - Any cut which creates a slope exceeding 18° (1:3) and is of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any fill placed which creates a slope (batter and/or bund) exceeding 18° (1:3) and of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any retaining wall should be specifically designed to for the appropriate surcharge.

5 BUILDING DEVELOPMENT RECOMMENDATIONS

A preliminary assessment of the soils logs has deemed the following foundation options suitable:

- Waffle slab foundation.
- SED piles.

This is based of limited testing and is for resource consent. Further testing at building consent stage is required to confirm foundation, prior to construction.

6 STORMWATER MANAGEMENT

6.2. STORMWATER REQUIREMENTS FOR PROPOSED DEVELOPMENT

Stormwater Management for the proposed new Lots 1-3 will comprise of utilizing detention tanks to accommodate temporary detention storage on-site for roof water runoff using a controlled outflow device.

Controlled outflows must be designed to match pre-development, equivalent greenfield flows and be discharged downstream.

It is recommended that the overflow pipe is directed towards a swale or dispersal trench. Secondary drainage for the 50-year, 2% AEP storm event or larger will pass through the tanks and be discharged into the swale or dispersal trench. Overflows will be released (at a rate equivalent to Greenfields flows) to the natural downstream environment.

6.3. STORMWATER DESIGN

When roof areas are known, detention storage in the water tanks (and thus the height of the outflow orifice) can be determined. The following factors will be used:

Existing Site

- To calculate existing runoff: peak 10 year, 10% AEP, 10-minute storm – **89.9mm/hr** (HIRDS V4 historical data rainfall figure, no allowance for climate change).
- Coefficient of runoff for existing site – 0.30.

Developed Site

- To calculate post-development runoff: peak 10 year, 10% AEP, 10-minute storm **96.8mm/hr** (HIRDS V4 rainfall figure, RCP2.6).
- Coefficient of runoff for roof area is 0.95.
- Surface water runoff volume for the developed site to be determined for the 60-minute critical storm event.
- Detention storage must be designed based on Regional Infrastructure Technical Specification (RITS) March 2018, Section 4, Stormwater, comprising of hydraulic modeling data using 24-nested design storms.

Secondary Drainage

Secondary drainage in the event of blockage/failure of the primary system will cause surcharging of the system.

The secondary flow path must provide passage for stormwater in the event that the primary system is blocked or at capacity. As per Clause 4.1.3 of RITS, the secondary stormwater flow path shall be capable of conveying the 100-year ARI storm event within a defined path and without causing undue risk or damage to persons or property.

When final levels of the site are determined this should be confirmed to ensure a defined secondary flow path can be provided from the site to meet this requirement.

6.4. STORMWATER DESIGN SUMMARY

- All roof water from the proposed new development will be directed to new rain water tanks. Temporary detention storage will be calculated for a 10-year, 10% AEP storm event. The remaining water in the tanks (permanent storage) will be available for water supply. Refer to Figure 6.4.

- Outflows from the tanks will be attenuated at a rate equivalent to the pre-development Greenfields flow via a small diameter orifice (uPVC pipe).

- Overflows from the water tanks during heavy rain, for storms in excess of 10% AEP 10year storm event, will simply pass through the water storage tank via an overflow pipe. Excess flows will be stored in and released from a new swale/soakage trench which will allow overflow to naturally dissipate.

- The location for the swale is to be determined onsite and is required to be located more than 3.0m away from the house footings and a minimum of 1.5m from adjacent boundary lines.

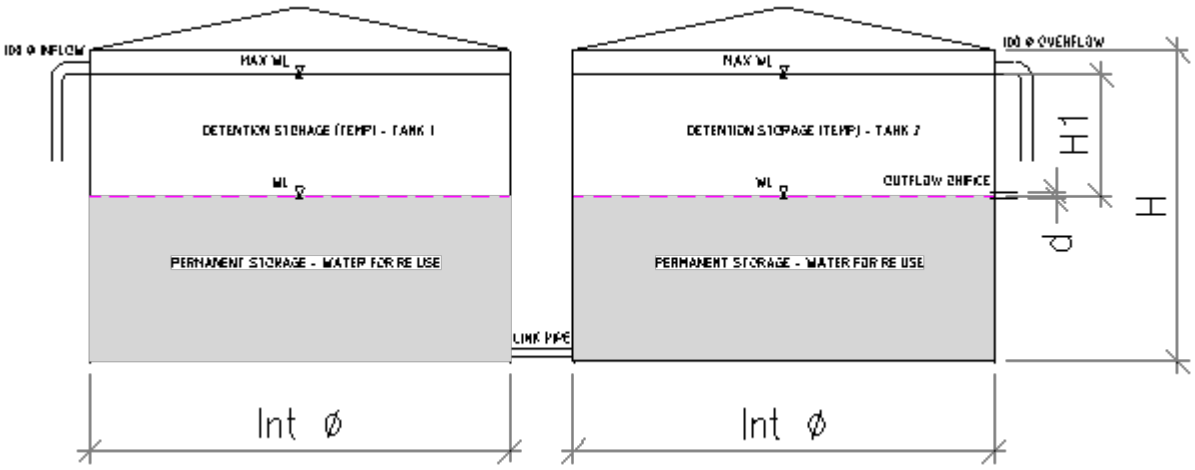


Figure 6.4 Schematic of Above Ground Water Detention Tanks

7 WASTEWATER MANAGEMENT

The design must be in accordance with current standard AS/NZS 1547:2012 and up-to-date engineering practice in on-site wastewater disposal.

7.2. LAND APPLICATION OPTIONS FOR TREATED WASTEWATER

1. Primary treatment - Land application after treatment via discharge control trenches. Discharge to the disposal field is via gravity or pumping.
2. Secondary treatment - Land application after treatment via subsoil drippers lines (irrigation). Discharge to the disposal field, drip line system is via pumping. This option requires ongoing maintenance and associated costs. However, it has the added benefit of recycling water via the irrigation lines, reusing water for plants and gardens.

Both Primary and Secondary wastewater treatment systems are viable options for the site. Soils investigations revealed that the soil is made up of **Sandy Loams or Category 2.**

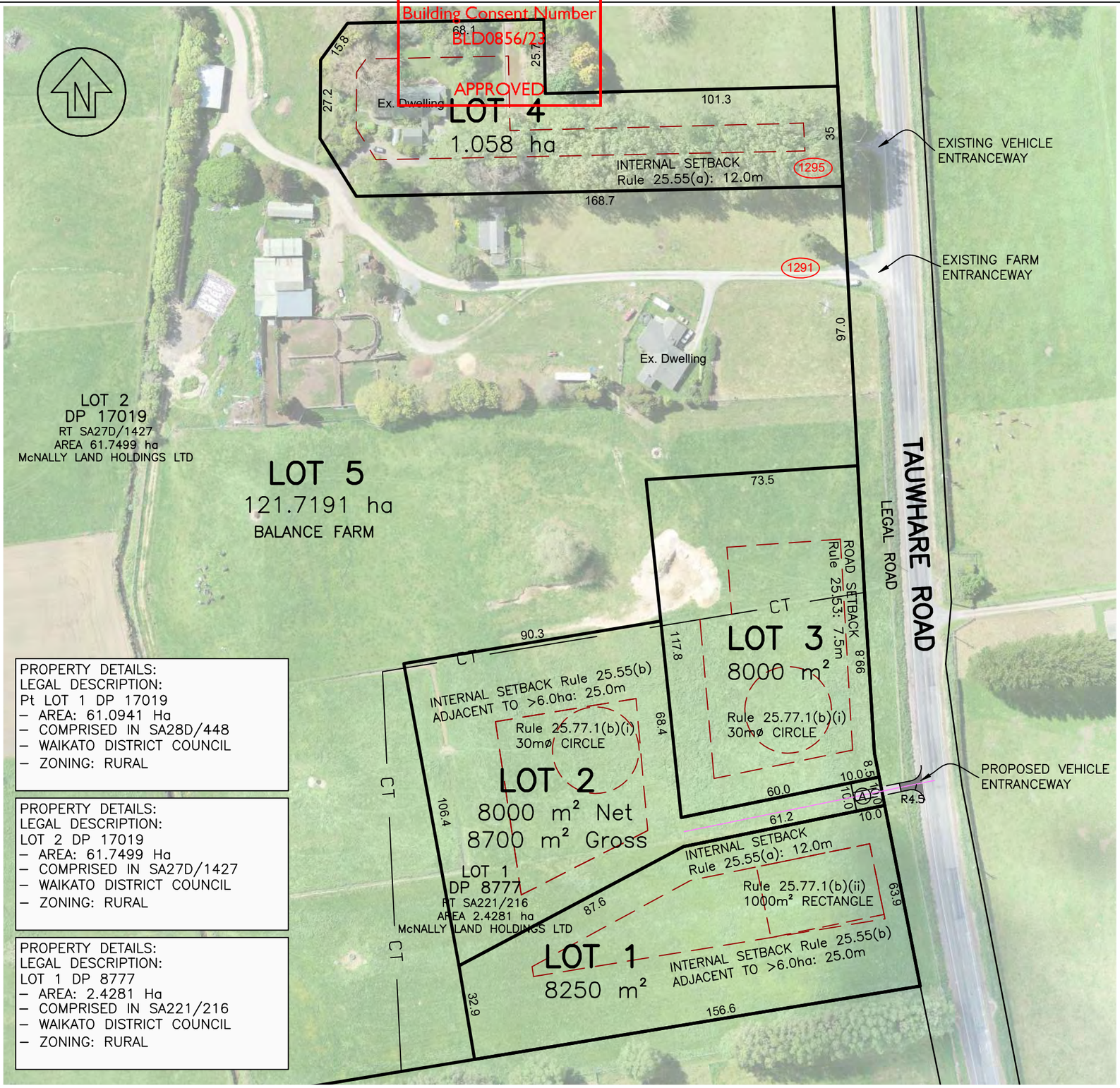
The following table summarises the design requirements:

Treatment Level:	Disposal Type:	Design Loading Rate (max):
Primary Treatment	Traditional Trenches	15mm/day
Secondary Treatment	Drip Irrigation	5mm/day

PROBASE ENGINEERING	Project Title: 1291 - 1295 Tauwhare Rd, Eureka		
	Figure Title: Location Plan		
	Author: BJM	Date: 27/11/20	Job No: P20782	Figure: 1

APPENDIX A

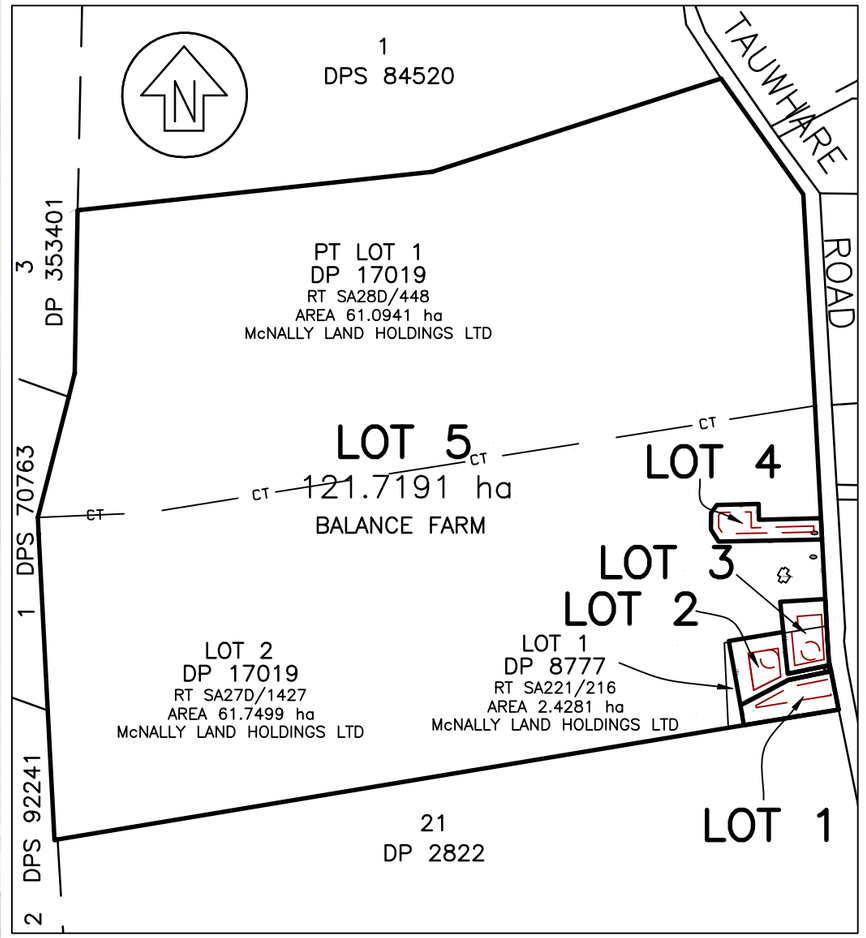
Site Development Plans



PROPERTY DETAILS:
LEGAL DESCRIPTION:
Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 2 DP 17019
– AREA: 61.7499 Ha
– COMPRISED IN SA27D/1427
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 1 DP 8777
– AREA: 2.4281 Ha
– COMPRISED IN SA221/216
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL



LOCATION DIAGRAM
SCALE 1:10000

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOTS 1 & 3 HEREON

NOTES:

1. AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.

NICKLIN CE
SURVEYING PLANNING ENGINEERING
Tel: (07)827–4945
www.nicklince.com
info@nicklince.co.nz
6 Wilson Street
P.O. Box 754
Cambridge 3450

PROJECT TITLE
SUBDIVISION APPLICATION PLAN
LOTS 1 – 5 BEING SUBDIVISION OF LOT 1 DP 8777,
LOT 2 DP 17019 & PT LOT 1 DP 17019
A MCNALLY – 1291 & 1295 TAUWHARE ROAD, EUREKA

PLAN TITLE
CONSENT PLAN

ALTERATION	JOB	SHEET
	4585	02
CAD RNW	ORIGINAL SCALE AT A3	ISSUE 1
DATE 03 NOV 2020	1:1500	

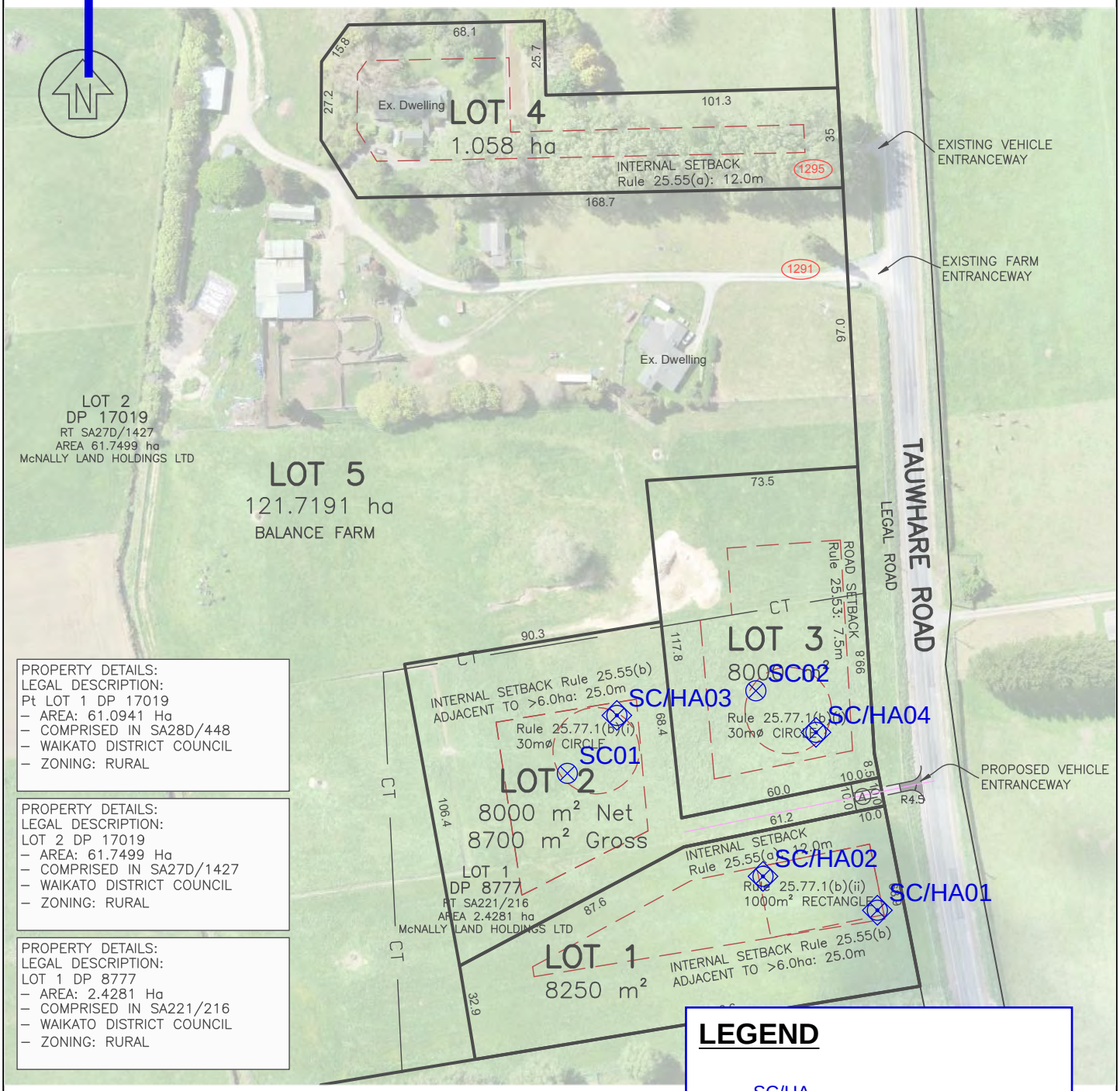
C:\USERS\CADCOMPUTER\NICKLIN CE\NICKLIN CE TEAM SITE – DOCUMENTS\4585 ANDREW MCNALLY (135 HUNTER, 1291–1295 TAUWHARE)\CAD\CONSENT PLANS\4585–02 CONSENT ISSUE 1.DWG

APPENDIX B

Hand Auger Logs

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED



PROPERTY DETAILS:
LEGAL DESCRIPTION:
Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
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PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 2 DP 17019
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– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 1 DP 8777
– AREA: 2.4281 Ha
– COMPRISED IN SA221/216
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

LEGEND

SC/HA — Hand Auger w. Scala

SC — Scala Penetrometer

PROBASE ENGINEERING

Project Title: 1291 - 1295 Tauwhare Rd, Eureka			
Figure Title: Site Plan			
Author: BJM	Date: 27/11/20	Job No: P20782	Figure: 2

PROBASE ENGINEERING — FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

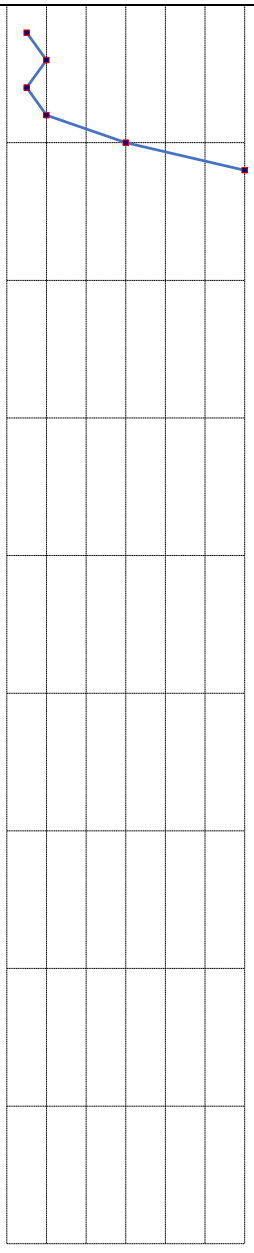
BOREHOLE ID: SC/HA01

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	
	2						
	2		Sandy SILT; orangish brown. Very loose to loose, moist, sensitive; sand, fine.				
	2						
0.5	1			0.5			
	2						
	3						
	2						
	2		Fine to medium SAND; light brownish grey. Loose, moist.			HINUERA FORMATION	
1.0	2			1.0			
	3		Below 1.1m, fine to coarse SAND, medium dense to dense.				
	6						
	10						
	8		Below 1.3m, fine to coarse SAND, some gravel, gravel, fine to medium.				
1.5	11			1.5			
	13						
	7						
	11						
	7						NOT ENCOUNTERED
2.0			End of borehole at 1.8m - Too dense to auger.	2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING — FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC/HA02

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	
	2		SILT, some sand; light brownish grey. Loose, moist.				
	1		Fine to coarse SAND, some gravel; reddish brown.			H.R.D*	N.E*
	2						
0.5	6			0.5			
	12						
	19		End of borehole at 0.6m - Too dense to auger.				
	16		End of scala at 0.8m - Too dense to scala.				
1.0				1.0			
			H.R.D* = Holocene River Deposits				
			N.E* = Not Encountered				
1.5				1.5			
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC/HA03

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	NOT ENCOUNTERED
	3						
	7		Sandy SILT; brown. Medium dense, moist, sensitive; sand, fine to coarse.			HINUERA FORMATION	
	7						
0.5	6			0.5			
	4		Fine to coarse SAND; light greyish brown. Medium dense, moist.				
	4						
	5						
	5						
1.0	6			1.0			
	6						
	4						
	4						
	4						
1.5	3		Below 1.4m, loose to medium dense.	1.5			
	3						
	4						
	4						
	6						
2.0				2.0			
			End of borehole at 2.0m - Target depth.				
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

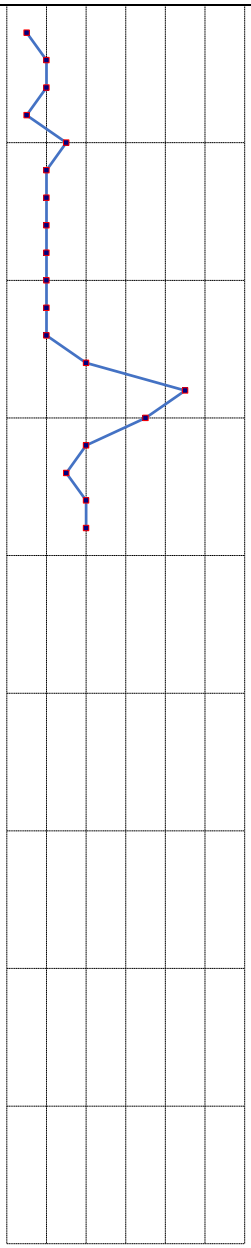
BOREHOLE ID: SC/HA04

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	
	2		Sandy SILT; orangish brown. Very loose to loose, moist, sensitive; sand, fine.			HINUERA FORMATION	NOT ENCOUNTERED
	3						
	2						
0.5	1			0.5			
	2						
	1						
	2		Silty fine to medium SAND; orangish brown. Loose, moist.				
	2						
1.0	2			1.0			
	3						
	3						
	4		Below 1.2m, medium dense.				
	4						
1.5	6			1.5			
	11		Gravelly SAND; Light brownish grey. Dense, moist.				
	8						
	7		End of borehole at 1.6m - Too dense to auger.				
	4						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC01

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1						
	2						
	2						
0.5	1			0.5			
	3						
	2						
	2						
	2						
	2						
1.0	2			1.0			
	2						
	2						
	4						
	9						
1.5	7			1.5			
	4						
	3						
	4						
	4						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC02

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1						
	2						
	2						
	3						
0.5	2			0.5			
	3						
	2						
	1						
	1						
1.0	2			1.0			
	2						
	4						
	4						
	4						
1.5	5			1.5			
	7						
	8						
	8						
	6						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

APPENDIX C

Natural Hazard Risk Assessment

Risk Assessment: Natural Hazards

Project Name: P20782 - 1291-1295 Tauwhare Rd, Waikato **Date: 27.11.2020**

Completed By: BM

Natural Hazard	Risk score			Mitigation Measures	Material Damage if Natural Hazard Occurred
	Likelihood	Consequence	Factor		
Earthquake	1	5	Low	All structures to be built in accordance with the Building Code and other relevant standards. As part of the geotechnical investigations at the site, a Level B liquefaction assessment in accordance with the MBIEs' "Planning and Engineering Guidance for Potentially Liquefaction-prone Land" has been completed - refer to report.	Structural damage, earth movement.
Tsunami	1	5	Low	No mitigating actions possible. Site is above sea level and approx. 55km from the nearest coast line.	Structural damage, earth movement.
Erosion	1	3	Low	No signs of erosion were present during site investigations.	Structural damage, earth movement.
Volcanic or geothermal activity	1	5	Low	Site is not in the vincinity of active volcanos or geothermal activity.	Structural damage, earth movement.
Landslip	1	4	Low	Slopes within the site are generally gentle to moderate and landslip is not considered likely.	Structural damage, earth movement.
Subsidence	1	3	Low	No human inducted activity (ie mining, water extraction) known in the immediate area to cause potential subsidence. No potential natural causes known as site is not near any known fault lines (active or inactive)	Structural damage, earth movement.
Sedimentation	4	1	Low	Sedimentation has the potential to flow from the property during construction. Sediment traps and bagging should be used to caputure sediment during construction phases to mitigate potential sediment flowing to neighbouring properties.	Deposition of soils.
Wind	6	1	Moderate	Site is located in a rural area. All structures (bracing) to be built in accordance with the Building Code and other relevant standards (AS/NZS 1170).	Structural damage.
Drought	1	3	Low	Soils encountered have non expansive properties.	Soil shrinkage.
Fire	1	5	Low	No immediate hazards in the vicinty.	Structural damage.
Flooding	1	4	Low	The site does not sit within the Waikato Council defined flood hazard areas.	Water damage to property and possessions.

APPENDIX D

Producer Statement Author Certificate

Waikato Building Consent Group
Working together

Hamilton City Council
Te kaunihera o Kirikiriroa
Private Bag 3010
Hamilton 3240
New Zealand
TEL 07 838 6699
FAX 07 838 6599
EMAIL info@hcc.govt.nz
hamilton.govt.nz

Producer Statement Author

Registration # 535

This is to recognise that **James Harper** is approved by The Waikato Building Consent Group as a producer statement author for the following scope of works:

Engineering - Geotechnical, Wastewater and Stormwater Systems

This approval is limited to items:

PS1 – Design
PS4 – Construction Review

Insurance Expiry Date: 14/02/2021

- Limited in validity to a period of one year to the **01/07/2021** unless cancelled in writing sooner.
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ENGINEERING ASSESSMENT AND DESIGN REPORT

Lot 1 Tauwhare Road, Tauwhare

New Vision Architecture Ltd

20 DECEMBER 2021

PROJECT NO. 13210

TITUS
CONSULTING ENGINEERS

Approved for issue by:

X

Raymond Reynolds CMEngNZ (Eng. Technologist) 1167588
Senior Civil Engineer

DOCUMENT HISTORY AND STATUS

Rev.	Issued To	Date	Prepared	Reviewed	Approved
A	New Vision Architecture Ltd	20/12/2021	AF	JV	RR

RECORD OF REVISION CHANGES

(No changes to date)

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Overview

Titus Consulting Engineers has been engaged by New Vision Architecture Ltd to perform an engineering assessment and design report for a new single storey timber-framed building and garage at Lot 1 Tauwhare Road, Tauwhare.

The report includes the following:

- Section 2: Site and Soils Assessment

The assessments and design meet the requirements of the local authority, Waikato District Council, and the following technical documents:

- The Building Code
- NZS3604:2011
- Module 1 MBIE/NZGS
- District Plan
- Waikato Local Authority Shared Services (RITS)
- Waikato Regional Council Plan

1.2 Site Details

The site is located 1.5km north of Tauwhare Township, 23km east of Hamilton. The site is currently a vacant rural subdivision lot, covered in grass. The site is bordered by farmland to the west, north and south with Tauwhare Road to the east. The area near the proposed foundation is initially flat changing to moderately sloping approximately a third through the site which flattens at the western side of the site.

There are no significant water courses or gullies on the site.

Figure 1: Site Photo

1.3 Planning Requirements

The following requirements based on the Regional Council Plan, Consent Notices and Subdivisional Reports are noted, and have been duly considered in the proposed recommendations.

- No consent notices or planning issues have been noted.

This report is subject to revision based on any unsighted planning requirements.

2 SITE AND SOILS ASSESSMENT

2.1 Assessment Parameters

This section details findings of a site and soils assessment in accordance with NZS3604:2011 cl. 3.1.3.1 Determination of 'Good Ground'.

In particular the investigation focussed on assessing:

- The bearing capacity of the soil in accordance with NZBC – B1 (New Zealand Building Code),
- Checking for organic and peat soils,
- Checking for soft and very soft clays containing gravel or other hard material and,
- Checking for uncontrolled fill.

NZBC requires 5 blows per 100mm down to a depth of twice the footing width or 3 blows per 100mm at greater depths to establish good ground in terms of bearing capacity of soils.

Foundations outside of the scope of NZBC or proprietary specifications require *specific engineering design* (SED).

The proposed building has an approximate floor area of 280m^2.

2.2 Soil Investigation

The site assessment conducted on 16th of December 2021 included the following:

- General site walkover
- Hand Auger Tests: 6
- Shear Vane Tests: 9
- Soakage Test: 1

Test locations are shown in Appendix A.

Topsoil was found to depths between 200 and 400mm below ground level. Underlying soils consist predominantly of sand. Overall, the hand augers showed brownish orange silt with some sand underneath the topsoil. Subsequent layers consisted of greyish brown sand with some silt which became dark greyish brown sand with gravel until end of boreholes at 2000mm. Soil Investigation logs are attached in Appendix B.

The ground water level was not found within 2.0m of the surface (tested mid-December).

No soft clays were found on the site (kPa < 25).

No peat soils were found on the site.

Soakage testing yielded a raw soakage rate of 120mm/hr. An appropriate factor of safety shall be applied before use in design calculations.

2.3 Slope stability

2.3.1 Compliance with NZS3604:2011

Clause 3.1.2 (b) of NZS 3604:2011 and the figure below define requirements with respect to building foundations located near the top of a bank, these include "*The horizontal distance (H) from the top to the bottom shall not exceed 3 m.*" and "*The slope beyond the bank shall not exceed 5° for a distance of 10 m.*"

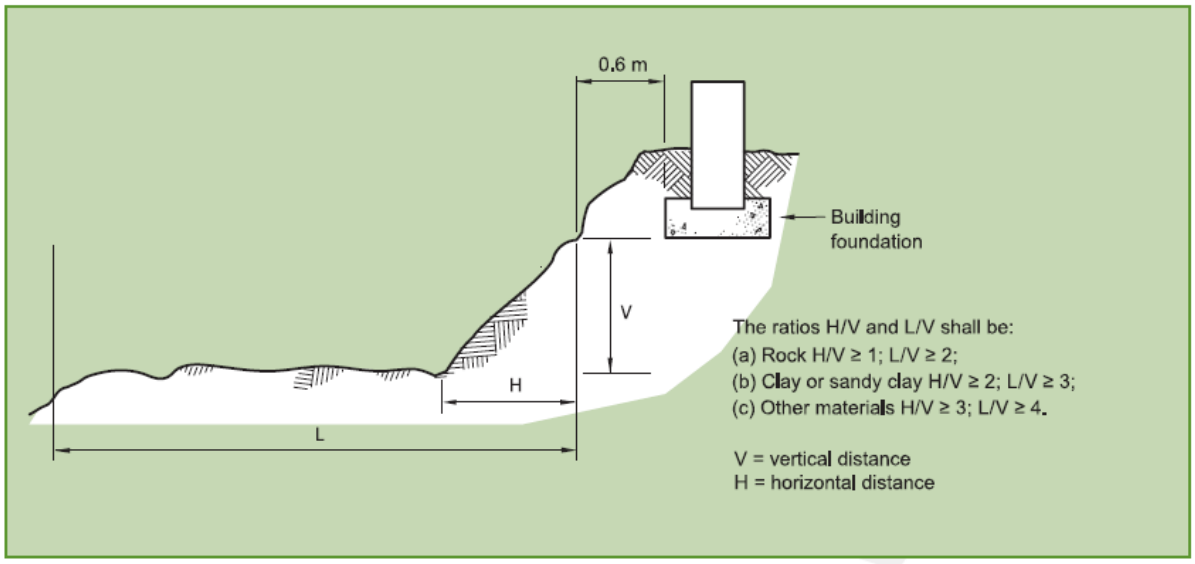

Figure 2: Relationship of foundation to sloping ground surface (Figure 3.1 from NZS3604:2011)

The location of the proposed building on the site complies with the above figure. As such, no further slope investigation is required.

Any cut to fill earthworks required to establish a suitable building platform shall be specifically designed.

2.3.2 Retaining

No retaining was noted on the site.

2.4 Preliminary Liquefaction Assessment

A preliminary liquefaction assessment has been undertaken for the site taking into consideration requirements of MBIE Guidance (Module 1 and 4 (2021)), Planning and engineering guidance for potentially liquefaction prone land (2017) and the "ensuring new buildings can withstand liquefaction effects" section of the Building Performance website.

According to GNS (GNS Science, 2021), the underlying geology of the site is classified as (Late Pleistocene) river deposits (Hinuera Formation), as shown in Appendix D. The Late Pleistocene sediments are approximately up to 27,000 years old and are described as cross-bedded sands, gravels, silts with minor peat lenses (GNS Science, 2021).

Waikato Regional Council have produced a Level A liquefaction map for the region (Waikato Regional Hazards Portal, 2021). This shows that liquefaction at the site is considered "possible". The site is considered to be "Small-scale urban infill" as per the table below.

***Table 3.7:** Example matrix for determining minimum level of detail required for liquefaction categorisation at building consent stage*

		Increasing likelihood and severity of ground damage			
		LIQUEFACTION VULNERABILITY CATEGORY[1,3,4]			
		LIQUEFACTION CATEGORY IS UNDETERMINED			
		LIQUEFACTION DAMAGE IS UNLIKELY		LIQUEFACTION DAMAGE IS POSSIBLE	
Increasing new capital investment and total exposure to a single event	DEVELOPMENT SCENARIO[2]	Very Low	Low	Medium	High
	Sparsely populated rural area (lot size more than 4 Ha) eg A new farm building	Level A	Level A	Level A[5]	Level A[6]
	Rural-residential setting (lot size of 1 to 4 Ha) eg A 'lifestyle' property	Level A	Level B	Level B[5]	Level B[6]
	Small-scale urban infill (original lot size less than 2500 m²) eg Demolish old house and replace with four townhouses	Level B	Level B	Level B[5]	Level D
	Commercial or industrial development[7] eg A warehouse building in an industrial park	Level B	Level B	Level C	Level D
	Urban residential development (lot size less than 1 Ha; typically <1000 m²) eg Home in a new subdivision	Level B	Level C[8]	Level C	Level D

As such a level B study is recommended for the development to gain building consent. A Level B study consists of the information used in a Level A assessment but is calibrated with subsurface investigations on site. A comparison between the ideal conditions for liquefaction occurrence and conditions found for on site is shown in the Table below. This shows that ideal conditions are present for the formation of liquefaction in the case of a large enough seismic event. As such liquefaction is considered possible at this location.

Table 2: Conditions for liquefaction occurrence

Soil conditions considered susceptible to liquefaction occurrence	Site
Holocene to Late Pleistocene sediments	Yes
Cohesionless	Yes
Non-cohesive silt to medium to fine sand	Yes
Loosely packed	Some Layers
Shallow water table (<4m)	Likely
Thick non-liquefiable crust at the ground surface	Unlikely

The seismic PGA given to this site (or nearest appropriate location) as derived from Module 1 (MBIE 2021) is listed below in Table 3 for both SLS and ULS scenarios. This table shows the seismic risk on the site is considered relatively low.

Table 3: Seismic values for the site (MBIE, 2021)

Module 1 MBIE/NZGS			
Importance Level 2			
Design Life:		50 Years	
Ground Acceleration (SLS)		Ground Acceleration (ULS)	
Hamilton		Hamilton	
Class D		Class D	
1/25		1/500	
M_{eff}	5.9	M_{eff}	5.9
PGA, a_{max} (g)	0.06	PGA, a_{max} (g)	0.25

Using information provided in Table 2 and 3 it is considered that the following recommendation is in line with MBIE guidance. This shows the site shall be classed as TC2.

2.5 Static Settlement

The expected settlements on site are expected to be within the design limits of the proposed foundation.

2.6 Soil Expansivity

Due to the nature of the material found on site the soils are not considered to be expansive.

2.7 Good Ground

“Good Ground” in terms of NZS3604:2011 is not found on site due to the liquefaction potential.

2.8 Recommendations

The following foundations options are suitable given the soil conditions on site, however, are subject to confirmation of the specific requirements of the recommended foundation, liquefaction susceptibility and any filling proposed for the site.

Any cut to fill earthworks required to establish a suitable building platform shall be specifically designed.

2.8.1 SED (TC2) Waffle Raft Foundation

Waffle Raft foundations constructed in accordance with the engineers’ specifications and in accordance with the Table below are acceptable.

The excavations should be inspected by a suitably qualified engineer and any topsoil, soft areas or tree roots should be under cut. The whole excavation shall then be backfilled in

accordance with the Table below. The sand pad should extend at least 1.0m outside the proposed slab perimeter.

Table 4: Waffle Raft Foundation Sand Pad Recommendation

Minimum depth of excavation	900mm
Backfill material	Sand (Granular fill (brown rock) below 500mm)
Compaction standard	Target: 5 blows/100mm (Scala penetrometer) Minimum achieved: 8 blows/300mm (Scala penetrometer) 260kPa
Inspections required	1 - Sub grade prior to back fill 2 - Compacted and finished sand pad
Foundation type	TC2 Concrete Waffle Raft (Ultimate Bearing of 260kPa)
Comments	The foundation designer shall ensure adherence to all proprietary specifications.

These recommendations should be considered in conjunction with the structural foundation design and reviewed by an appropriately qualified engineer.

A suitably qualified engineer should be engaged to perform inspections in compliance with the Building Code.

2.8.2 NZS3604:2011 Slab on ground (Separate Garage)

The following is an extract from Canterbury Residential Technical Guidance – Part A: Technical Guidance, Section 5.6;

"Uninhabited detached garages (ie, that are not constructed as an integral part of a house) and outbuildings are considered to be Importance Level 1 (IL1) structures….IL1 structures have no seismic load requirements….This leaves a 'life safety' design requirement at Ultimate Limit State (ULS) for a 1/100 year event, which should be able to be provided in most cases on a TC2 site by a suitably detailed structure on a TC1 type foundation system."

As such a TC1 foundation is deemed appropriate for the proposed shed.

A NZS3604:2011 slab on good ground with site preparation in accordance with the table below is acceptable.

The excavations should be inspected by a suitably qualified engineer and any topsoil, soft areas or tree roots should be under cut. The whole excavation shall then be backfilled in accordance with the table below.

Table 5: NZS3604:2011 Slab on Ground Digout and SandPad Recommendation

Minimum depth of excavation to base of footings (good ground)	500mm
Backfill material	Sand (Granular fill (brown rock) below 500mm)
Compaction standard / base of footings	5 blows/100mm (Scala penetrometer) 300kPa (Vane Shear)
Inspections required	1 a– Base of footing 1 b - and Sub grade prior to back fill (if required) 2 - Compacted and finished sand pad (if required)
Foundation type	NZS3604:2011 slab on ground with footings
Comments	The foundation designer shall ensure adherence to all NZS3604:2011 specifications.

2.8.3 Specific Engineering Design Foundation

Alternative foundations may be considered and are required to be designed by a suitably qualified engineer.

A suitably qualified engineer should be engaged to perform inspections in compliance with the Building Code.

3 LIMITATIONS

This report does not assess risk of contamination of soils. This report does not provide, a foundation design, an assessment of flood risk or a FFL recommendation.

Testing portrays a limited percentage of ground conditions at Lot 1 Tauwhare Road, Tauwhare and may not be representative of all soils present on site.

Assessment of the water table depth and moisture content is subject to seasonal variation.

During excavation and construction, the site should be examined by a suitably qualified engineer in order to assess whether the exposed subsoils are compatible with the inferred soil conditions on which the recommendations have been based and potentially further investigation and design rationalisation may be required.

This report has been prepared solely for New Vision Architecture Ltd, its professional advisors and local authorities in relation to Lot 1 Tauwhare Road, Tauwhare. No liability is accepted for its use for any other purpose or by any other entity. Reliance by other parties or future owners of the property on the information or opinions contained in the report shall be verified with Titus Consulting Engineers.

Should you be in any doubt as to the recommendations of this report it is essential that you discuss these issues with Titus Consulting Engineers prior to proceeding with any work based on this report.

APPENDICES

APPENDIX A – Proposed Site Layout Plan & Test Locations

APPENDIX B - Soil Investigation Logs

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Log: 1 of 1

BH1

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210

Water Table:	Depth (mm):	Geology:	Graphic Log:	Material Description:	Blows /100mm: 5 10 15	Shear Strength (kPa): Undrained:	Remoulded:	Sensitivity:
Not Found	100	Undefined		Topsoil	0			
	200				0			
	300	Hinuera Formation		SILT, light brownish orange, low plasticity, moist, stiff	0	93	48	1.9
	400				2			
	500				2			
	600				1			
	700			Silty fine SAND, light brownish grey, well graded, moist, very loose to medium dense	1			
	800				1			
	900				3			
	1000				3			
	1100				3			
	1200				3			
	1300				3			
	1400			*End of Borehole @1300mm*	3			
	1500				2			
	1600				3			
	1700				2			
	1800				3			
	1900							
	2000							
	2100							

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Log: 1 of 1

BH2

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210

Water Table:	Depth (mm):	Geology:	Graphic Log:	Material Description:	Blows /100mm: (5 10 15)	Shear Strength (kPa): Undrained:	Remoulded:	Sensitivity:
Not Found	100	Undefined		Topsoil	0			
	200				0			
	300			SILT, light brownish orange, low plasticity, moist, stiff	0			
	400				2	83	40	2.1
	500				1			
	600				1			
	700				1			
	800	Hinuera Formation		Fine SAND, light brownish grey, poorly graded, moist, very loose to loose	0.5			
	900				0.5			
	1000				1			
	1100				1			
	1200				2			
	1300			Silty medium SAND, light brownish grey, well graded, moist, loose to medium dense	3			
	1400				3			
	1500				2			
	1600				2			
	1700			Silty medium SAND with some gravel, dark brownish orange, well graded, moist, loose to medium dense	2			
	1800				3			
	1900							
	2000							
	2100			*End of Borehole @2000mm*				

TITUS Consulting Engineers office@tituscivil.co.nz +64(0)7 242 0017

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Log: 1 of 1

BH3

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210

Water Table:	Depth (mm):	Geology:	Graphic Log:	Material Description:	Blows /100mm:	Shear Strength (kPa): Undrained:	Remoulded:	Sensitivity:
Not Found	100	Undefined		Topsoil	0			
	200				0			
	300			SILT with some sand, light brownish orange, low plasticity, moist, stiff	0			
	400				2	76	43	1.8
	500				2			
	600				2			
	700	Hinuera Formation		Medium SAND with some silt, light greyish brown, well graded, moist, loose to medium dense	2			
	800				2			
	900				2			
	1000				2			
	1100				2			
	1200				2			
	1300				2			
	1400				2			
	1500				4			
	1600			Coarse SAND with some gravel and silt, dark greyish brown, well graded, loose	3			
	1700				4			
	1800				4			
	1900							
	2000							
	2100			*End of Borehole @2000mm*				

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Log: 1 of 1

BH4

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210

Water Table:	Depth (mm):	Geology:	Graphic Log:	Material Description:	Blows /100mm:	Shear Strength (kPa): Undrained:	Remoulded:	Sensitivity:
Not Found	100, 200, 300, 400	Undefined		Topsoil	0, 0, 0, 0			
	500, 600, 700	Hinuera Formation		SILT, brownish grey, low plasticity, moist, stiff	1, 2, 2	88	43	2.1
	800, 900			Medium SAND with some silt and gravel, brownish grey, well graded, moist, very loose to loose	1, 2			
	1000, 1100, 1200			Gravelley medium SAND, dark brownish grey, well graded, moist, medium dense	5, 4, 4			
	1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100			*Refusal due to gravel @1200mm*	8, 8, 4, 5, 5, 10			

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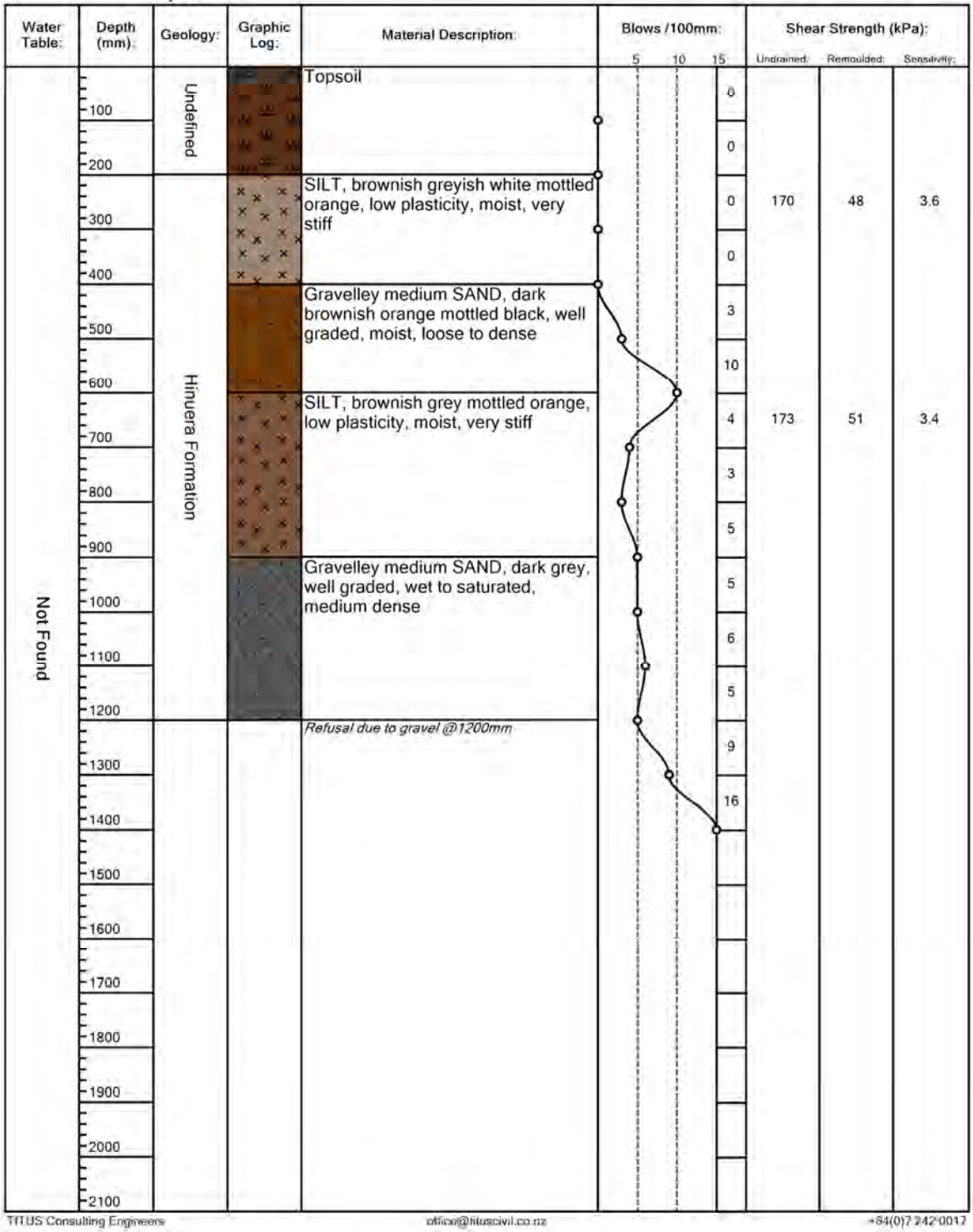
Log: 1 of 1

BH5

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210



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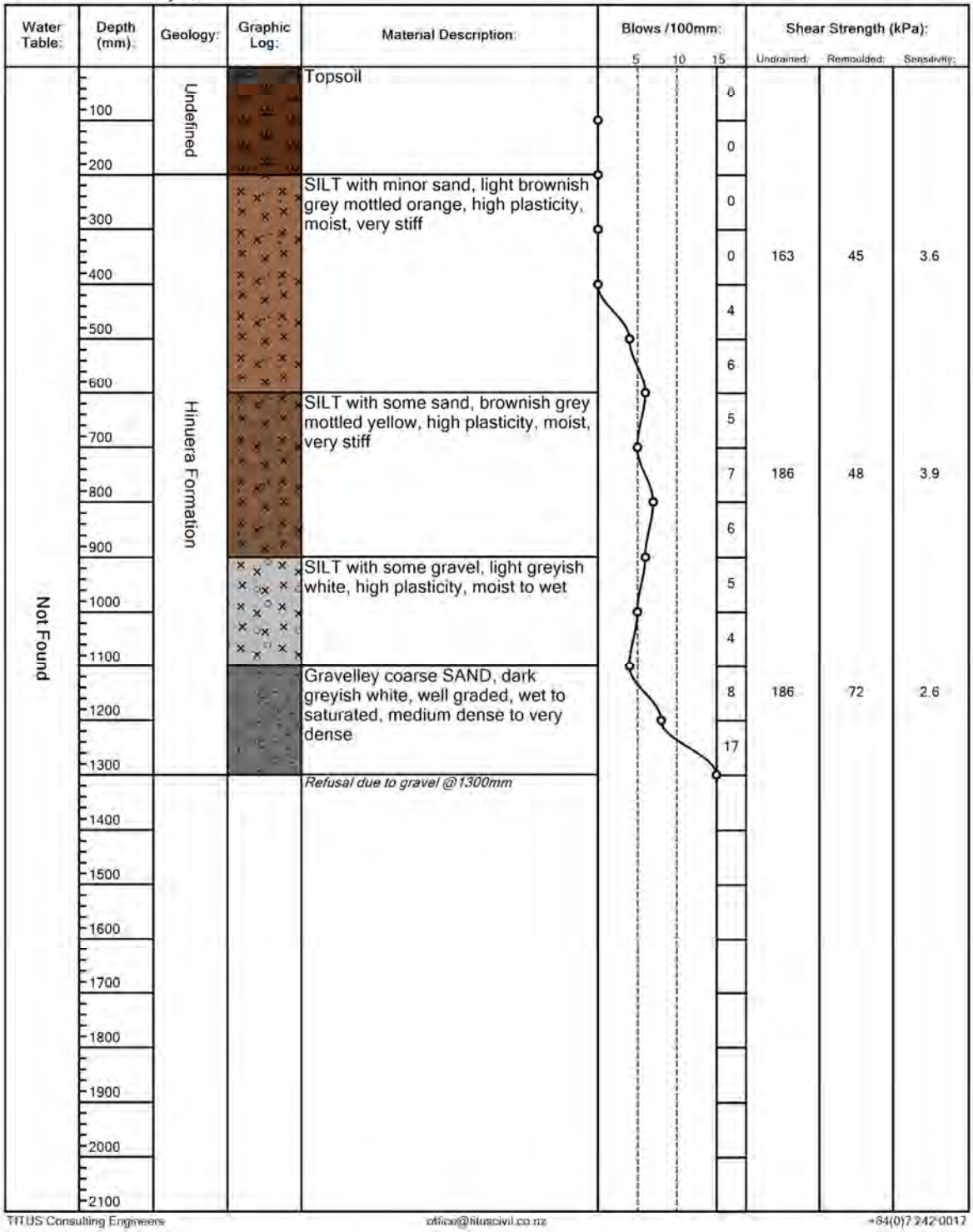
Log: 1 of 1

BH6

Address: Lot 1 Tauwhare Road Tauwhare
Date: 16/12/2021
Testers: ToyG, AlexF

Project №: 13210



APPENDIX C - Percolation Test

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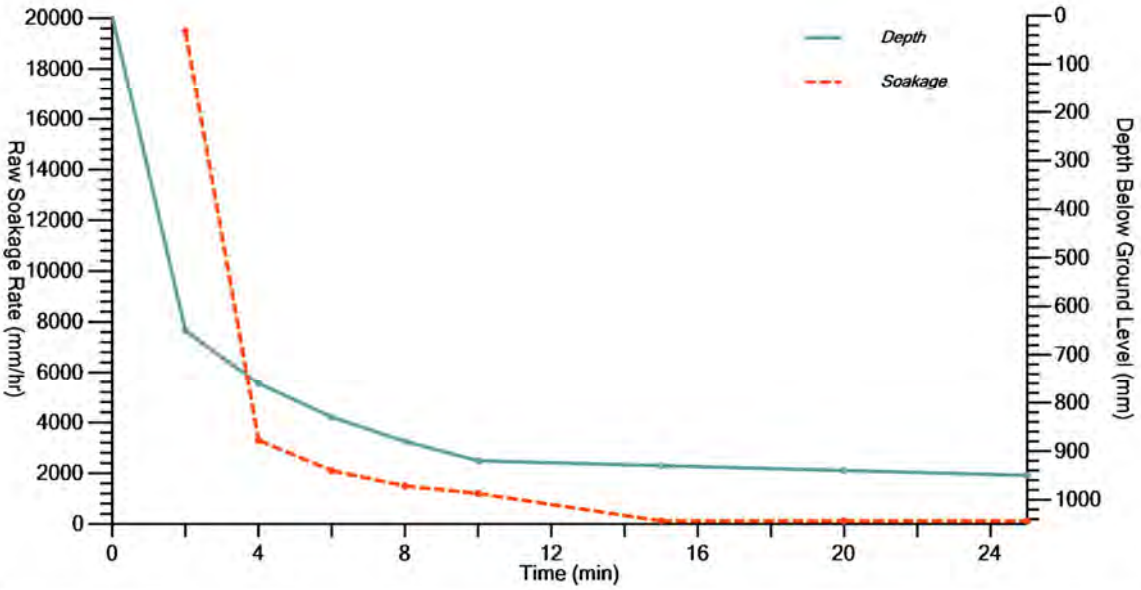
Percolation Test Sheet

Project ID 13210
Address Lot 1 Tauwhare Road Tauwha



Reading	Time Elapsed (min)	Drop (mm)	Soakage Rate (mm/hr)	Refill
1	2	650	19500	
2	4	110	3300	
3	6	70	2100	
4	8	50	1500	
5	10	40	1200	
6	15	10	120	
7	20	10	120	
8	25	10	120	

Log	BH1
Date	16/12/2021
Staff	ToyG, AlexF
BH Depth	1300 mm
Ground Water	Not Encountered
Main Soil Type	SAND
Seasonal Variation	Conservative
Raw Soakage	120 mm/hr

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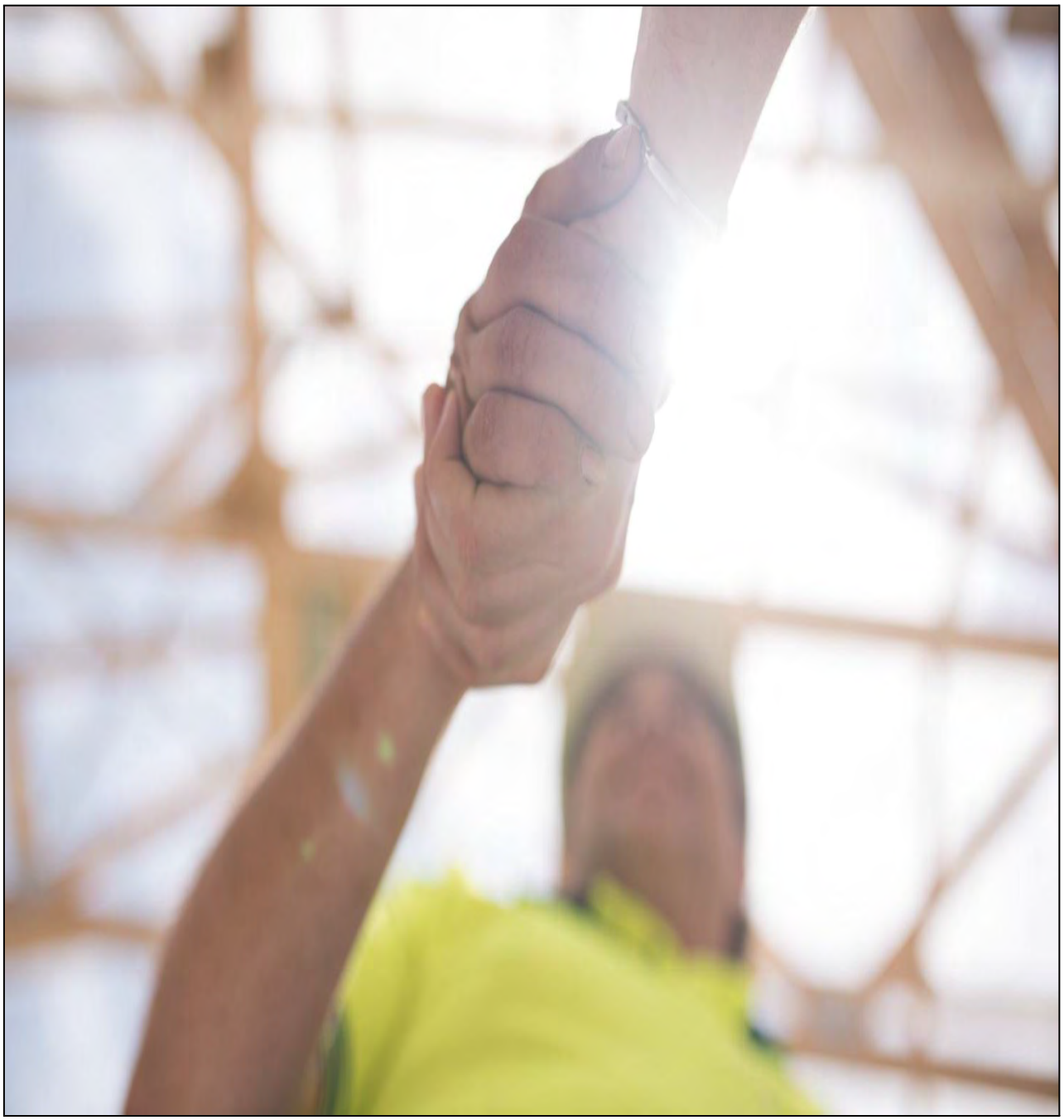
APPENDIX D - Underlying Geology

kewene
tama katore whanau trust

Fire Sprinkler Design



18 October 2022

Kewene Tama Katore Whanau Trust PO Box 1566 Waikato Mail Centre 3240 New Zealand
Free call 0800 11 50 62

kewene
tama katore whanau trust

Principle Property Limited
Mr Robert G. Davies
79 Botanical Road
Tauranga South
Tauranga

18 October 2022

Kia ora Rob

Re: Residential Fire Sprinkler Design 1271 Tauwhare Road

Thank you for the opportunity to prepare the attached residential fire sprinkler design for your construction property at 1271 Tauwhare Road, Tauwhare.

Please find our Fire Sprinkler Design and PS1 Producer Statement in the attached document. The design meets all requirements of the New Zealand Standard ***NZS 4517:2010 Fire Sprinklers for Houses***.

If you need any clarification regarding the design or assistance with construction for your architect or plumber please feel free to have them contact me directly.

Please advise me once the plumber starts the installation so I might attend the site to supervise the installation of the system and provide the final testing, commissioning, the final inspection, fill out the final checklist and finally provide to you the PS4 Producer Statement for the Waikato District Council Code Compliance Certificate documentation.

Nga mihi nui
Kwene Tama Katore Whanau Trust

Kevin J. Davies
Fire Designer
Fire & Emergency NZ Station Officer (Ret)

FIRE SPRINKLER DESIGN

1721 Tauwhare Road

This design has been prepared for Principle Property Limited for their project to build a residential home at 1721 Tauwhare Road, Tauwhare for Mr & Mrs Davies and has been designed to meet the New Zealand Standard NZS 4157:2010.

General

Within the Government's Building Code Compliance overview it states:

> ***"...domestic fire sprinkler designers, homeowners and building consent authorities (BCAs) when working through the building consent process for the installation of domestic fire sprinklers…[must] ensure NZS 4517 fire sprinkler systems remain cost effective. Sprinkler system certification, as required for commercial and industrial fire sprinkler systems, needs to be avoided…".***

The following design specifies the requirements for a sprinkler system for the subject home and will control a fire occurring in the house so that survivable conditions are maintained throughout the house for at least 10 minutes and meets the objective of avoiding high costs associated with commercial sprinkler systems.

System Description (a quick look)

This is a ***looped combination system*** that provides the fire sprinkler system water supply and the domestic water supply demand through a common system of pipework.

Sprinkler heads are quick response spray with a thermal element response time index of 50(m.s)½ or less using a nominal temperature rating of 68°C.

Water Supply for the sprinkler system will be tank supply by an auto start pump with a minimum storage to provide 10 minutes of water for the system. Tank top up will be rainwater from the roof and trucked supply if necessary.

Pipework is Polybutene-1 (PB-1) 28mm ID and has a rated working pressure of at least 1,600 kpa (230psi) at 20°C

Extent of sprinklered protection is extended to all living areas and hallways and includes the garage. Excluded are: The ceiling/roof spaces; Cupboards; and Wardrobes.

The spaces excluded are each less than 5m2 in area and can be exempt from the design in accordance with the standard NZS 4517:2010.

Detailed System Design

System Components
No components are subjected to pressures in excess of component rating.

Sprinkler Heads are the fast acting residential type with an activation temperature of 68°C. They are the concealed type to avoid user damage and are UL and CCC tested and approved. They have a K Factor of 5.6 with a minimum working pressure of 48kPa and a maximum working pressure of 1200kPa. ***(Appendix A)***

The pipework is specified as Polybutene-1 (PB-1) pipe and thermoplastic polymer fittings that meet the Australia/NZ Joint Standard AS/NZS 2642 & the Australia/NZ Joint Standard AS/NZS 4129/4130 ***(Appendix B)*** and is a looped combined system.

The size of the pipe for the sprinkler water supply is 28mm ID and drops to a 15mm ID sprinkler head fitting at the site of the sprinkler head.

The working pressure of the pipe is rated at 1,600 kpa (230psi) at 20°C.

None of the pipework would be exposed to hot gases from a fire in the sprinklered space as they are protected by 10mm ceiling plasterboard.

The Polybutene-1 (PB-1) pipe joints are not solvent cemented but are crimped. The underground pipe from the Tanks supply to the home is protected by 300mm trench depth overlaid with warning protection tape at 200mm. As there are no metal components in this system no earthing is required.

It is specified that the pipework is not to be used as support for any services such as electrical wiring etc.

Pipework supports must be spaced no more than 4m apart and will allow for thermal and seismic movement to ensure no failure of the system. Supports

must be placed at the sprinkler head to ensure that there is no movement of the head when activated.

Flow and test facilities are provided as required by the NZS standard and the locations are indicated on the design plan ***(Appendix C)***. The Flow Test Valve must be a minimum of 20mm. The discharge from any flow test is to be directed into the stormwater discharge. The Pressure Gauge is to be 65mm or larger and be permanently marked to indicate the minimum acceptable static pressure of 230kPa and the design pressure of 180kPa (Total Friction loss of 83kPa + operation of 2 sprinkler heads @ 49.21kPa x 2 = 98.42kPa Total 179.52kPa say 180kPa).

Water Flow Detectors are being investigated to provide a device at each sprinkler head to provide audible warning throughout the home when a sprinkler head is activated. We are testing flow detectors that will work with a combination system and if we are satisfied they are to be installed.

Sprinkler Type will be a quick response spray with a thermal element response time index of 50(m.s)½ or less using a nominal temperature rating of 68°C.

The sprinkler heads are not to be painted and are to be handled carefully when installed and worked around to ensure no damage occurs. Subsequent finishing work by trades are to be instructed to ensure careful consideration to ensure no damage occurs to the heads.

There is no ceiling geometry or other building design implications that would cause high ambient temperatures that would require sprinkler heads other than those specified.

Location of Sprinklers are as indicated in the design plan ***(Appendix C)***. All sprinkler heads are placed normally to meet NZS 4517:2010 specifications. It is noted that the ceiling in the lounge area is raked and the sprinklers are located 2.3m from the outside walls to place the sprinklers closer to the apex in the vaulted ceiling and as close together as possible to ensure effectiveness while ensuring the sprinklers are not closer together than 1.8m.

Water Supply will be from tank supply with a total capacity of 60,000 Litres (two 30,000Litre tanks) with water level indicators. The pressure to the system will be provided by pump with the following specification:

Davey Pump - XJ90T

- 1100 Watt Pump Complete with Torrium 2 Controller
- 90 litres per Minute
- 210 KPA or 30 PSI - Max Pressure 460 KPA
- 32mm BSP Female Input and 25mm BSP Male Output

The Pump will provide pressure of 460kPa (maximum) which exceeds the standard of 110% of the design pressure at the highest design flow of 90L/m ***(Appendix D)***.

The pump is to have automatic starting when pressure in the system drops. It is to have its own power supply which runs separately from the main switchboard to the pump motor. The switchboard switch shall be labelled ***"SPRINKLER FIRE PUMP - DO NOT SWITCH OFF"*** in white letters on a red background.

The water supply is to give a minimum storage to provide 10 minutes of sprinkler system water flow as designed. The water supply to the tanks is to be free from particulates and matter that could adversely affect the system and roof rainwater will run through a debris and sludge trap before entering the tanks.

Hydraulic Calculations are provided as follows:

Calculating Pipe Length

Fitting	Number	Factor	Equivalent Length (m)
Tee (branch)	0	0.7	**0.0**
Tee (flow)	36	0.8	**28.8**
Elbow	4	1.4	**5.6**
Bends	0	0.7	**0.0**
Total equivalent pipe length of fittings			**34.4**
Length of pipe			**112.0**
Grand Total equivalent pipe length			**146.4**
For a loop, equivalent pipe length = Equivalent pipe length x 0.14			**20.5**

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Calculating Dynamic Loss (using the Hazen-Williams formula for Pressure Loss/m)

Section Name	Flow Rate (L/min)	Pressure Loss per metre (kPa)	Equivalent pipe length (m)	Dynamic pressure loss (kPa)
Total Loop	90.0	2.11	20.5	43.26
Total dynamic pressure loss kPa				43.26

Calculating Static Loss

$P = h \times 10$

Where:

P = Loss due to sprinkler (kPa)

h = The difference in height between sprinkler head and the pump intake (3m ceiling height + Tank buried in the ground 1m = 4m)

4 x 10 = 40kPa Static Loss

Total Pressure Loss

Pressure Loss	kPa
Dynamic Loss	43
Static Loss	40
Meter Loss (no water meter)	0
Total Pressure Loss	83
Design pressure at the pump - total design flow of 90 L/min	460
Pressure available for the sprinkler	377
Note: Value of pressure loss to the nearest 1 kPa	

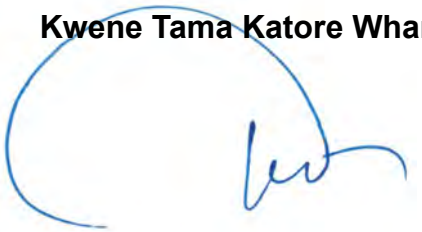
Fire Designer Qualifications

The designer of this system has in excess of 14 years service with Fire & Emergency New Zealand and in addition served within overseas Fire Services, retiring at the qualified rank of Station Officer from FENZ. He has worked at a senior level including as a Fire Chief. These roles in the Fire

Services have required a complete understanding of Fire Safety and the methods of calculating the hydraulics for fire fighting purposes and have also required the need to inspect the compliance of fire fighting systems.

It is confirmed by the Fire Designer that coordination of fire safety requirements have been and will continue to be communicated to the architect and tradespeople involved in this project to ensure that the drawings for this build project includes the specifications of this design and that design and installation meets the standard of NZS 4517:2010 ***(Appendix E).***

Kwene Tama Katore Whanau Trust



Kevin J. Davies
Fire Designer
Fire & Emergency NZ Station Officer (Ret)

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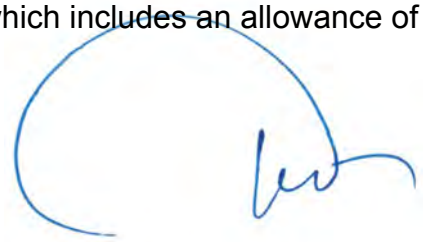
PRODUCER STATEMENT (PS1)

DOMESTIC SPRINKLER SYSTEM DECLARATION (DESIGN)

NZS 4517:2010

On the 18th October 2022 for the property at 1271 Tauwhare Road, Tauwhare, Waikato, the attached design was developed to comply with the requirements of NZS 4517:2010.

The required flow at the reference point is 90L/min at a pressure of 180kPa, which includes an allowance of 12 L/min for simultaneous domestic flow.



Kevin J. Davies

Organisation: Kwene Tama Katore Whanau Trust

Qualification/Position: Fire Designer
Fire & Emergency NZ Station Officer (Ret)

Date: 18 October 2022

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APPENDIX A

(Sprinkler Head Specification)

Item Name	Fire sprinkler
Material	Brass
Type	Pendent/Upright/Sidewall/Conceal
Finish	Brass/Chrome Plated/White Painting
Glass Bulb	3mm/5mm
Temp Rating	57/68/79/93/141/182 Degree
Thread Size	1/2" 3/4" 1"
Thread Standard	BSPT/NPT
Response	Standard/Quick
Flow Rate	80±4 or 115±6
K Factor	5.6/8.0
Coverage	Standard Coverage
Max Working Pressure	1.2Mpa(12Bar/175Psi)
Min Operating Pressure	0.05Mpa(0.5Bar/7Psi)
Certificate	CCC/UL

Temp	Max Ceiling Temp	Glass Ball Color
57°C	27°C	Orange
68°C	38°C	Red
79°C	49°C	Yellow
93°C	63°C	Green
141°C	111°C	Blue
182°C	152°C	Purple

Return to Sprinkler head Fast Acting

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APPENDIX B

BUTELINE PLUMBING SYSTEM

The Buteline 25 Year Warranty

Buteline NZ Ltd ("**Buteline**") warrants that all products within the Buteline Plumbing System (including pipes and fittings) ("**Buteline System**") will be free from manufacturing defects for a period of 25 years from the date of manufacture ("**Warranty**") and that the Buteline System meets:

- The durability requirements of the New Zealand Building Code;
- The Australia/New Zealand joint standard AS/NZS 2642; and
- The standards set out in the Acceptable Solutions and Verification Methods G12 Water Supplies document (3rd edition, amendment 12) prepared by the Ministry of Business, Innovation & Employment.

This Warranty is strictly subject to the following terms and conditions.

Installation Requirements: Installation of the Buteline System must be carried out:

- By a licensed plumber;
- Strictly in accordance with the latest version available at the date of installation, of Buteline's Plumbers Technical & Installation Manual, which may be found at www.buteline.com/nz/buteline;
- In compliance with local and national plumbing regulations; and
- In accordance with the Acceptable Solutions and Verification Methods G12 Water Supplies document (3rd edition, amendment 12) prepared by the Ministry of Business, Innovation & Employment, including the requirement to use a suitable tempering valve for all hot water systems to be utilised for personal hygiene.

Exclusions: This Warranty does not apply if:

- The Installation Requirements set out above have not been met;
- The Buteline System has not been installed in a proper and workmanlike manner to the highest possible standard expected of a licensed plumber;
- The Buteline System has been installed in an incompatible or unsuitable environment where it is not fit for purpose, including if any system design is unsuitable;
- The Buteline System has not been used or maintained in accordance with Buteline's instructions;
- The Buteline System has been modified, incorrectly adjusted or operated; or
- The Buteline System has been subjected to corrosive or foreign solutions or chemicals (including highly chlorinated water that does not meet the standards set by the World Health Organisation) either internally within or externally around the Buteline System.

Consumer Guarantees Act: This Warranty is in addition to and does not exclude or limit a consumer's rights in relation to the Buteline System or its installation under the Consumer Guarantees Act 1993 (New Zealand).

Limitations: This Warranty is subject to the following limitations:

- Buteline's liability under this Warranty is limited to the cost of repairing or replacing the defective products within the Buteline System (at Buteline's discretion).
- Buteline will not be liable for the cost of any inspection, return, removal or reinstallation of any defective products or labour or other costs which may arise as a result of any claim under this Warranty.
- The Warranty only applies to pipes, fittings and joints within the Buteline System and does not extend to any other pipe, fitting or joint not made by Buteline or Pexline.
- Any claim under this Warranty must be made within 30 days of any potential claim being identified.
- Buteline does not in any way warrant the workmanship of any party that installs the Buteline System, nor does it warrant the system design incorporating the Buteline System by any party.
- This Warranty is only valid for products sold and installed in New Zealand, Asia and the Pacific.

Claims: To claim under this Warranty:

- Please contact Buteline at the following address: warranty@buteline.co.nz and send us the invoice for the products (as proof of purchase) and the installer's details, including their plumbing licence number.
- A Buteline representative will be in contact within 48 hours of receipt of your claim.
- Any products that are the subject of a claim cannot be destroyed or removed from the installation site until we have inspected the same or waived our right to do so in writing.

WaterMark
AS/NZS 2642
Lic WMKA 1338
Lic WMKA 1640
SAI Global

Telarc
Quality ISO 9001

Buteline NZ Limited
29 Lady Ruby Drive, East Tamaki, Auckland, New Zealand
PO Box 204308, Highbrook, Auckland 2161, New Zealand
Phone: +64 (0) 9 273 5800 Email: warranty@buteline.co.nz

www.buteline.com

NZGC1220

Return to The pipework

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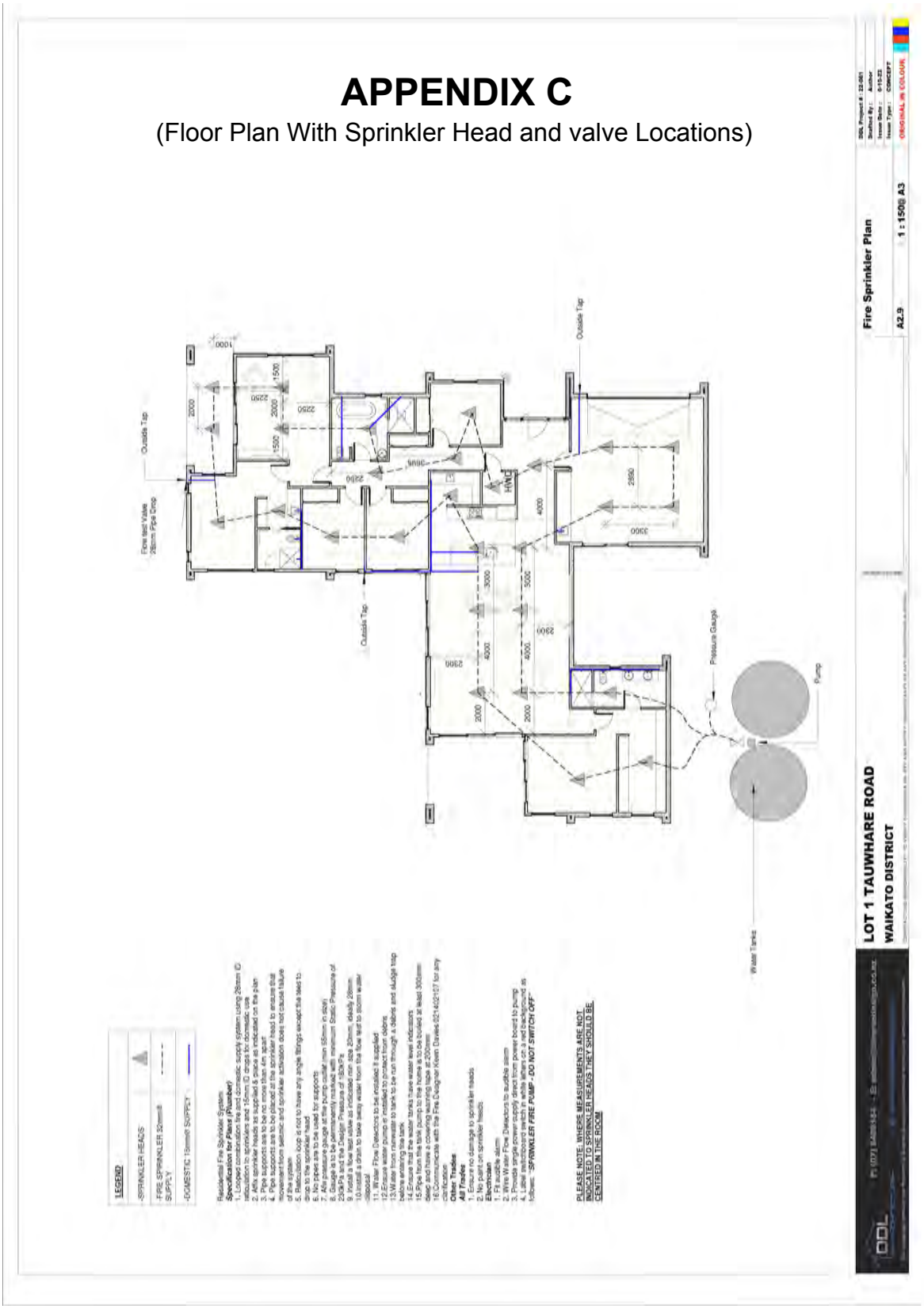
APPENDIX C

(Floor Plan With Sprinkler Head and valve Locations)



[Return to Flow and test facilities](#) [Return to Location of Sprinklers](#)

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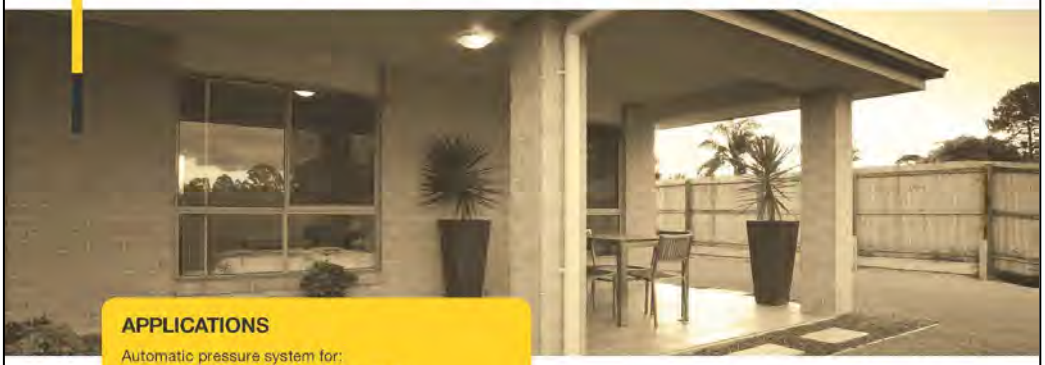
APPENDIX D

(Pump Specification & Performance XJ90T)

Home Pressure Systems

DAVEY



APPLICATIONS

Automatic pressure system for:
> Household and domestic water supply
> Farming and agricultural water systems
> Irrigation and turf watering systems
> Automatic general water transfer

Tested in compliance with AS/NZS 4020 for use in contact with safe drinking water

The Everyday Series Davey with Torrium2

Home Pressure System

Model Numbers: E1T (XJ50T), E2T (XJ70T), E3T (XJ90T)

Compact, single stage jet assisted centrifugal pressure system. Flows to 430 L/min and heads up to 65m.

proudly australian since 1924

WHY CHOOSE THE DAVEY EVERYDAY SERIES (XJ/T) WITH TORRIUM2?

SYSTEM

The XJ Pressure System consists of an XJ pump fitted with a Torrium2 controller. The Torrium2 is supplied connected electrically to the XJ pump motor for Easy non-tradesmen installation and assembly.

The combination of the high pressures supplied by the jet assisted XJ pump and constant flow control provided by the Torrium2 allows a strong comfortable shower from a pump that does not cycle, plus the reliability of adaptive technology.

The complete Everyday Series Pressure System is compact and quiet providing easy installation (especially where space is at a premium) and non-intrusive operation.

All parts of the entire system that are in contact with the water are manufactured from safe, corrosion resistant materials allowing for use on a variety of water qualities.

Compliance with the strict requirements of ISO 9001.2000 quality standards ensures consistency of quality of the system.

PUMP

Single stage centrifugal pump with closed vane impeller and jet assist, providing compact design and high pressure performance.

Made from corrosion resistant engineering plastic materials ensures long service life, low maintenance and reliable water quality.

Our high quality, low-drag mechanical shaft seal means a long life and reliable starting.

TORRIUM2 CONTROLLER

For more information visit davey.com.au

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Home Pressure Systems

DAVEY

EASE OF INSTALLATION

For ease of installation, the plumbing can be connected to either the vertical or the right angle discharge outlet, which can rotate a full 360°. A spanner, sized to fit the coupling, is included in the box. Also, for increased draw off, an optional pressure tank, up to 18 litres, can be mounted on the vertical outlet.

ELECTRICAL CONNECTION

For easy installation, Torrium2 comes with a 2 metre long power lead, fitted with an Australian three pin plug.

OPERATING LIMITS

Maximum system pressure*	480kPa
Capacities to	90 L/min
Maximum total head	48m
Maximum suction head	7m
Maximum ambient temperature	50°C
Maximum water temperature	50°C
Minimum water temperature	1°C

Torrium2 cut-in pressure is normally 80% of the pumps last shut-off head.

*Note: See high pressure operation note on page 4.

MATERIALS OF CONSTRUCTION

PART	MATERIAL
Pump	
Impellers	Glass filled polycarbonate
Pump casing	Glass filled noryl
Pump shaft	303 stainless steel
Seal ring (stationary)	Ceramic
Seal ring (rotating)	Carbon (synthetic)
Seal spring	304 stainless steel
O-rings	Nitrile rubber
Jet and venturi	Acetal
Priming plug	Glass filled polypropylene
Motor shell	Marine grade aluminium
Motor shell finish	Baked polyester
Torrium2	
Housing	Glass fibre reinforced nylon
Pressure tank diaphragm	Santoprene 87
Pressure tank springs	Molybond coated tempered steel
Sensor plate	316 Stainless Steel
Inlet union	Glass fibre reinforced nylon
Orings	Nitrile

ELECTRICAL DATA

Type	E1T (XJ50T)	E2T (XJ70T)	E3T (XJ90T)
Supply Voltage	220-240V ±6%		
Supply frequency	50Hz		
Phase	Single		
Speed	2850rpm		
Full load current	3.6A	5.1A	6.6A
Locked rotor current	12A	18A	28A
Input power (P1)	0.84kW	1.15kW	1.4kW
Output power (P2)	0.56kW	0.8kW	1.1kW
Enclosure class	IP55		
Insulation class	Class F		
Starting	P.S.C.		

Note: All performance at 240V 50Hz

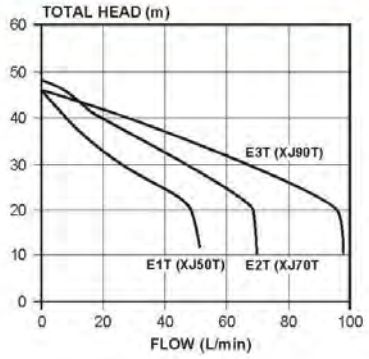
TORRIUM2	
Voltage	110V-240V±10%
Phase	Single
Hz	50 / 60
IP rating	56
Maximum load current	10A
Maximum motor size*	1.8kW
Surge protection	Varistor

*At 240V input

INSTALLATION & PRIMING

- Installations with suction lift require a good quality foot valve to avoid loss of prime - remove in-built check valve.
- To prime, fill pump body and suction line through priming plug hole located above suction inlet and replace plug.

HYDRAULIC PERFORMANCE

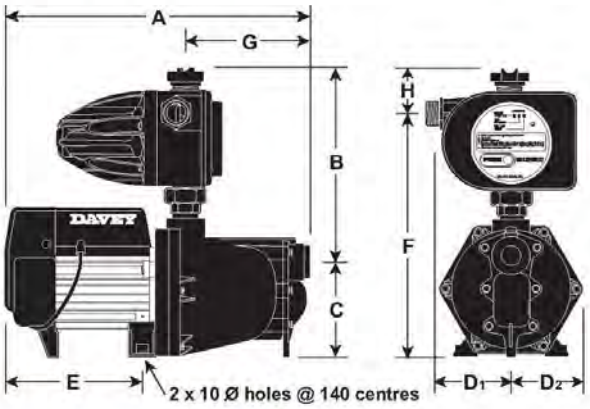


Home Pressure Systems

DAVEY

DIMENSIONS (MM)

Type	A	B	C	D_1	D_2	E	F	G	H	Inlet	Outlet	Net Weight (kg)
E1T (XJ50T)	430	265	146	115	102	185	335	185	75	1" F	1" M	10
E2T (XJ70T)	455	265	146	115	102	210	335	185	75	1" F	1" M	12
E3T (XJ90T)	505	265	146	115	102	260	335	185	75	1¼" F	1" M	15



HIGH PRESSURE INSTALLATION AND NOTES

XJ pressure systems are intended to source water from wells, tanks, creeks, rivers or other low pressure water supplies. In some cases, XJ pumps may be required to be installed taking water directly from mains or municipal water sources.

In such circumstances all applicable local plumbing code requirements must be followed.

In addition the following limits apply to the XJ system:-

- For TOTAL system pressures of 600 kPa, the standard XJ system with or without Supercell 8C or 18C may be used provided the mains or municipal pressure does not exceed 100 kPa.
- For mains or municipal pressures exceeding 100 kPa, a break tank system is required, or use a Davey HS system.

For further details consult the XJ Installation & Operating Instructions.

Return to Water Supply

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APPENDIX E
(Architect & Trades Communication)

Residential Fire Sprinkler System

Specification for Plans (Plumber)

1. Looped combination fire and domestic supply system using 28mm ID reticulation to sprinklers and 15mm ID drops for domestic use
2. Affix sprinkler heads as supplied & place as indicated on the plan
3. Pipe supports are to be no more than 4m apart
4. Pipe supports are to be placed at the sprinkler head to ensure that movement from seismic and sprinkler activation does not cause failure of the system
5. Reticulation loop is not to have any angle fittings except the tees to drop to the sprinkler head
6. No pipes are to be used for supports
7. Afix pressure gauge at the pump outlet (min 65mm in size)
8. Gauge is to be permanently marked with minimum Static Pressure of 230kPa and the Design Pressure of 180kPa
9. Install a flow test valve as indicated min size 20mm, ideally 28mm
10. Install a drain to take away water from the flow test to storm water disposal
11. Water Flow Detectors to be installed if supplied
12. Ensure water pump is installed to protect from debris
13. Water from rainwater to tank to be run through a debris and sludge trap before entering the tank
14. Ensure that the water tanks have water level indicators
15. Pipe from the tank pump to the home is to be buried at least 300mm deep and have a covering warning tape at 200mm
16. Communicate with the Fire Designer Kevin Davies 021402107 for any clarification

Other Trades

All Trades

1. Ensure no damage to sprinkler heads
2. No paint on sprinkler heads

Electrician

1. Fit audible alarm
2. Wire Water Flow Detectors to audible alarm
3. Provide single power supply direct from power board to pump
4. Label switchboard switch in white letters on a red background as follows: ***"SPRINKLER FIRE PUMP - DO NOT SWITCH OFF"***

Return to Fire Designer Coordination

SEPTIC TANK SPECIALISTS
For all your drain laying needs

PO Box 333 Morrinsville 3340

Ph Office 021 432 087

smeleests@outlook.com

Stormwater Design Report

Name: Diverse Design

Site Address: Lot 1 1271 Tauwhare Rd Tauwhare

Designer : Malcolm Lynch

Date : 22.11.2022

Summary

Stormwater Management for a proposed new dwelling comprises of the disposal of surface water runoff from the roof.

The roof runoff will be directed to 3x 25,000lt water tanks which will be used to attenuate stormwater to the existing "greenfield" flow rate for the roof area. The overflows from the water tanks can be directed via a 100mm PVC pipe with a bubble up out to the existing swale drain.
The driveway area is concrete so will need catchpits as per site plan.

The soakage system has been sized to accommodate the 10% (10 year) AEP. Events larger than the design storm will create surcharging of the stormwater system.

Ongoing wet weather may waterlog the ground and future development near the site may affect the ground water levels such that the water table differs from this assumption. Septic Tank Specialists have taken all care to design the soakage system in accordance with NZ Building Code, E1, TP10 and current Council standards, however no liability is accepted for extreme weather (outside of the design event) or changes in ground water table.

Maintenance of Soakage Systems

The ability of soakage systems to operate effectively can be compromised when sediment clogs the soakage surface. Preventative maintenance by way of periodic inspection of catch pits or bubble ups and removal of any collected material in the sump is required. Site runoff during building works and landscaping must be prevented from entering the soakage system (ensure on-site sediment and erosion control devices are in place).

Stormwater Design Parameters

- Critical Storm over 24 hours for design is 60 minutes. Storm durations from 10mins to 72hrs were considered.
- The Design Rainfall Intensity is 42.16mm/hr for a 10-year ARI 60-minute storm event using the Rainfall Data from the HIRDS V4.
- Developed Site – Design Runoff Volume disposed with firstly attenuation then overflow via a PVC pipe & bubble up.
- Coefficient of runoff is 0.95 for the dwelling & 0.85 for the driveway areas.
- Total Impervious areas: House 373m^2 & Driveway 320m^2

Refer to Appendix A, Stormwater Design Calculations.

Stormwater Design Summary

All runoff from the proposed new dwelling will be disposed of into water tanks with the overflow from these via a PVC pipe & bubble up. An approximate position of the soakage system has been detailed on the site plan.

The final position for the soakage system is to be confirmed on site and is required to be located more than 3.0m away from house footings, a minimum of 1.5m from adjacent boundary lines, and 0.5m from road reserve boundaries.

Secondary Drainage

Secondary drainage in the event of blockage/failure of the primary system will cause surcharging of the soakage system. It is intended that a bubble up pipe can be connected to the overflow pipe to allow for any overflow.

The secondary flow path must provide passage for stormwater in the event that the primary system (soakage in this instance) is blocked or at capacity. As per Clause 4.1.3 of RITS, the secondary stormwater flow path shall be capable of conveying the 100-year ARI storm event within a defined path and without causing undue risk or damage to persons or property.

When final levels of the site are determined this should be confirmed to ensure a defined secondary flow path can be provided from the site to meet this requirement.

Septic Tank Specialists Ltd

Malcolm Lynch

WBCG 0512

Certifying Drain Layer 07933

Appendices

Appendix A: Stormwater Design Calculations

Appendix B: Water Tank Detail

Appendix C: Site Plan

Appendix A Stormwater Design Calculations for 113 Happy Valley Rd

Proposed Roof Area 373m2

Total Area 373m2

Hirds V4 Rainfall

Q = CIA / 3600

10yr 10min = 89.8 x 1.24 = 111.35mm

10yr 60min = 34 x 1.24 = 42.16mm

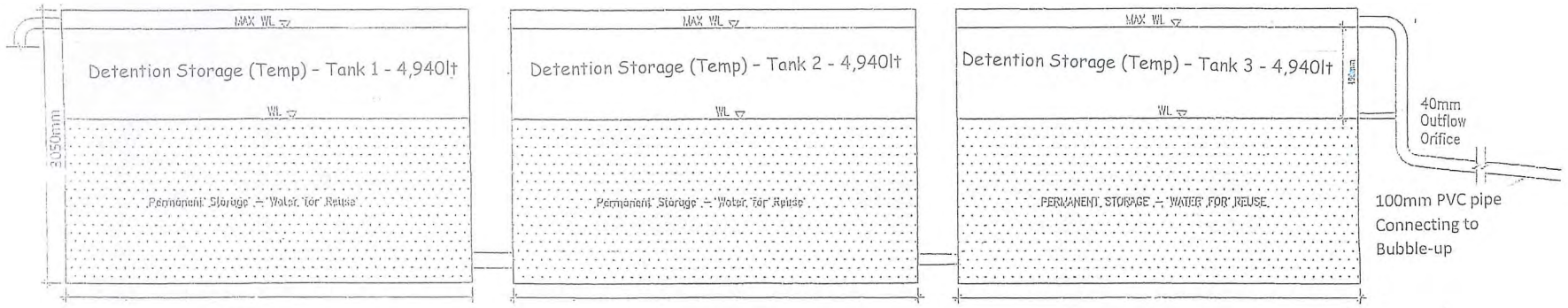
(x 1.24 for Global Warming)

Roof Area		Driveway Area	
Q10 =	$\frac{0.95 \times (111.35 \times 6) \times 373}{3600}$ = 65.76 l/s	Q10 =	$\frac{0.85 \times (111.35 \times 6) \times 320}{3600}$ = 50.47 l/s
Q60=	$\frac{0.95 \times 42.16 \times 373}{3600}$ = 0.59 l/s	Q60=	$\frac{0.85 \times 42.16 \times 320}{3600}$ = 3.18 l/s
Vol10=	$\frac{65.76 \times 10 \times 60}{1000}$ = 39.45 m3	Vol10=	$\frac{50.47 \times 10 \times 60}{1000}$ = 30.28 m3
Vol60=	$\frac{4.14 \times 60 \times 60}{1000}$ = 14.90m3	Vol60=	$\frac{3.18 \times 60 \times 60}{1000}$ = 11.44m3

Appendix B: Water Tank Detail

SEPTIC TANK SPECIALISTS

For all your drain laying needs



3900mm
Tank 1 – 25,000L

3900mm
Tank 2 – 25,000L

3900mm
Tank 3 – 25,000L

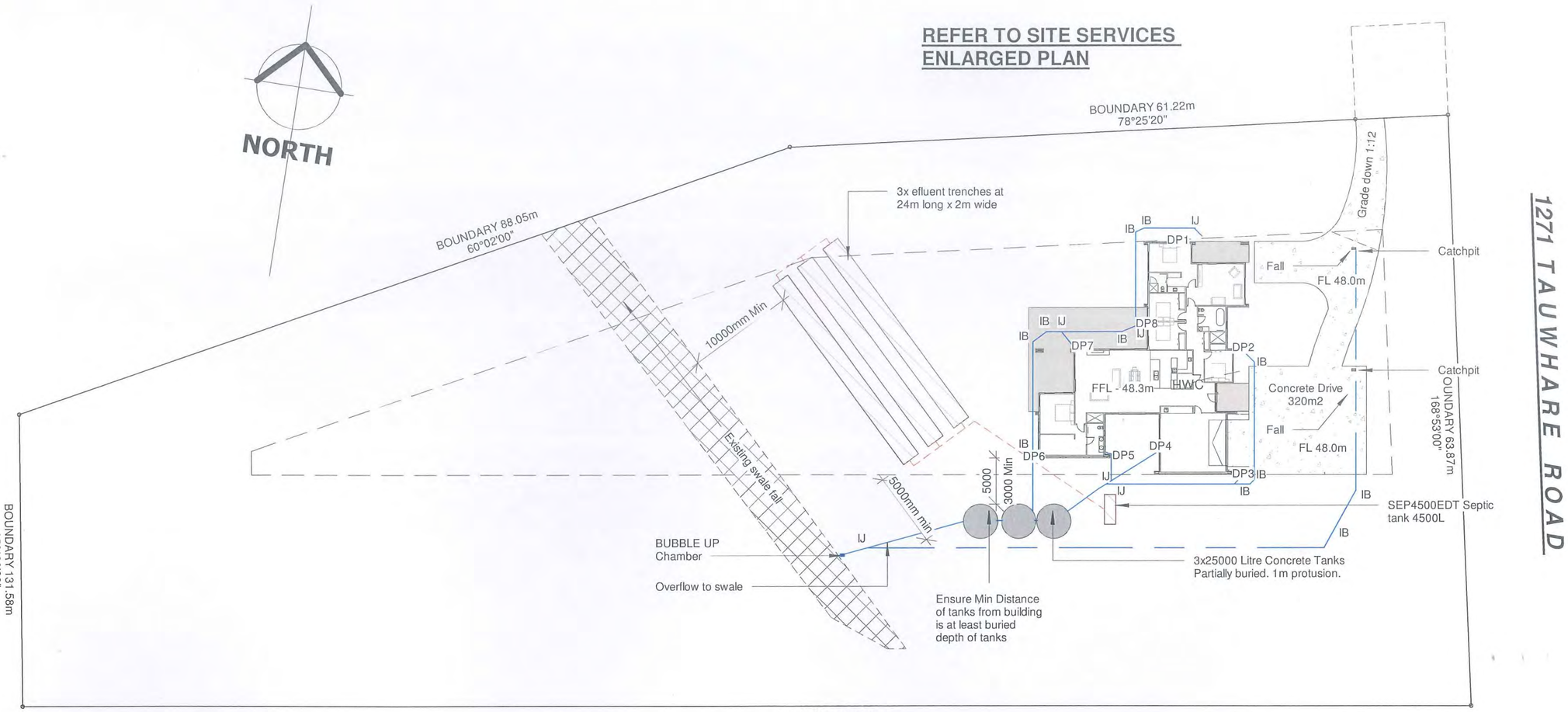
Total Tank Volume	75,000lt
Total Storage Volume Required	15,000lt
Permanent Storage Available	60,000lt

Tank Internal Diameter	3.6m
Orifice Height	0.49m
Tank Height	2500mm

Pre-development Flow	0.59l/s
Outflow Orifice Diameter	40mm

Waikato District Council
Building Consent Number
BLD0856/23
APPROVED

Appendix C: Site Plan



PLUMBING SYSTEM AS 3500

Fixture Type	Waste Size	Min Grad	Material
Ensuite 1 WC	*100mm*	*1:60*	*uPVC*
Ensuite 1 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite1 Shower	*65mm*	*1:40*	*uPVC*
Ensuite 2 WC	*100mm*	*1:60*	*uPVC*
Ensuite 2 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite 2 Shower	*65mm*	*1:40*	*uPVC*
Bath Vanity	*65mm*	*1:40*	*uPVC*
Bath Bath	*65mm*	*1:40*	*uPVC*
Bath Shower	*65mm*	*1:40*	*uPVC*
Kitchen Sinks	*65mm*	*1:40*	*uPVC*
Laundry	*65mm*	*1:40*	*uPVC*
TV	*80mm*	*n/a*	*uPVC*
FWG	*65mm*	*1:40*	*uPVC*
Main ww Line	*100mm*	*1:60*	*uPVC*
Main SW Line	*100mm*	*1:60*	*uPVC*

NOTE: all water pipes in garage or roof space to be insulated to comply with NZS4503
DN 65 (65mm @1:40) drains may be used as branch drains only (up to 25 fixtures), provided no soil fixtures (except urinals) are connected thereto. Where toilets are connecting please use DN100 (100mm @1:40.)
Refer to Table 3.3.1 of AS 3500 for max fixture unit loading.

Note:

Kitchen & Laundry sinks to have flow restrictors installed as well as overflow fitting

note for sinks in island benches

AAV to kitchen sink for ventilation

HWC overflow to drain to a small rock garden to ensure no hindrance to neighbouring property

DWG to drain to a small rock garden to ensure no hindrance to neighbouring property

SETOUT ONLY - REFER SED SEWER DESIGN FOR FULL WASTEWATER DESIGN

PLUMBING LEGEND

STORMWATER LINE	———
WASTEWATER LINE	– – – –
WATER LINE	– – – – – –
INSPECTION BEND	IB
INSPECTION JUNCTION	IJ
SILT TRAP	▪
CATCH PIT	▪
BUBBLE UP	▪

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT

CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Site Services

A1.2 | 1 : 500@ A3

DDL Project # : 22-061
Drafted By : RV
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

SEPTIC TANK SPECIALISTS
For all your drain laying needs

PO Box 333 Morrinsville 3340

Ph Office 021 432 087

smeleests@outlook.com

Wastewater Treatment & Disposal Design Report

As per ARC TP58 & ASNZS1547:2012

On-Site Wastewater Disposal Site Evaluation

Investigation Checklist

Name : Diverse Design

Site Address : Lot 1 1271 Tauwhare Rd Tauwhare

Designer : Malcolm Lynch

Date : 22.11.2022

On-site Wastewater Disposal Site Evaluation Investigation Checklist

Part A : Contact Details

1. Applicant Details

Applicant Name	Malcolm Lynch
Company Name	Septic Tank Specialists Ltd

Name(s)

Property Owner Name(s)	Diverse Design

Nature of Applicant	Waste Water Consultant & Certifying Drainlayer

*(*i.e. Owner, Lessee, Prospective Purchaser, Developer)*

2. Consultant/Site Evaluator Details:

Consultant/Agent Name	Septic Tank Specialists Ltd
Site Evaluator Name	Malcolm Lynch
Postal Address	Po Box 333
	Morrinsville 3340
Phone Number	Business:
	Mobile: 021 432087
Name of Contact Person	Malcolm Lynch
E-mail Address	smeleests@outlook.com

3. Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on this site?

(Please tick)

Yes		No	√

If yes, give Reference number(s) and Description

4. List any other consents in relation to this proposal site and indicate whether or not they have been applied for or granted.

If so, specify Application Details and Consent No.

(e.g. Land Use, Water Take, Subdivision, Earthworks Storm Water Consents)

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

Part B : Property Details

1. Property for which this application relates:

Physical Address of Property	Lot 1 1271 Tauwhare Rd Tauwhare
Territorial Local Authority	Waikato District Council
Regional Council	Waikato Regional Council
Legal Status of Activity	Permitted Controlled Discretionary
Relevant Regional Rule(s) (Note 1)	5.5.20
Total Property Area (m2)	8318m2
Map Grid Reference of Property (Note 2)	

Notes:
1. In the Auckland Region, the relevant Permitted Activity criteria is as specified in the ARC Air Land and Water Plan (ARC: ALWP) Rule 5.5XX (refer Appendix C TP58) and until this plan comes into force the PA criteria is specified in the ARC Transitional Regional Plan for "On-site Disposal of Domestic Wastewater".
2. NZMS 260 series scale 1: 50,000

2. Legal description of land (as shown on Certificate of Title)

Lot No	1	DP No	
Other (specify)			

Part C: Site Assessment – Surface Evaluation

(Refer TP58 – Sn 5.1 General Purpose of Site Evaluation and Sn 5.2.2(a) Site Surface Evaluation)

1. Has a desk study been undertaken for this property?

(Please tick)

Yes		No	√

If yes, please specify the findings of the Desk Study and if not please specify why this was not considered necessary.

Geo Tech report attached

2. Has a Slope Stability Assessment been carried out on the property?

(Please tick)

Yes	√	No	

If no, why not?

Soil test & site assessment attached

If yes, please give details of report (and if possible, please attach report)

Author	Raymond Reynolds
Company/Agency	Titus Consulting Engineers
Date of Report	20.12.2021
Brief Description of Report Findings	
As per report	

3. Site Characteristics

Provide descriptive details below:

Performance of Adjacent Systems:
No apparent problems
Estimated Rainfall and seasonal variation:
1000mm-2000mm
Vegetation Cover:
Grass cover
Slope Shape:
As per Geotech report
Slope Angle:
As per Geotech report
Surface Water Drainage Characteristics:
N/A
Flooding Potential: YES/NO
No
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 year and/or 20 year and/or 100 year return period flood level, relative to disposal area.
Surface Water Separation:
N/A
Site Clearances (Provide general description here and specific dimensions in Part 6 below and in Site plan:
As per Geotech report
Site Characteristics:
As per Geotech report

4. Site Geology of the subject property

As per Geotech report attached

5. What Aspect(s) does the proposed disposal system face? (please tick)

North		West	
North-West		South-West	
North-East		South-East	
East		South	√

6. Site Clearances, which should also be shown on the site plan:

Separation Distance From	Treatment Separation Distance (m)	Disposal Field Separation Distance
Boundaries	1.5m >	1.5m>
Surface Water	10m>	10m>
Groundwater	N/A	N/A
Stands of Trees/Shrubs	N/A	N/A
Wells, water bores	N/A	N/A
Embankments/retaining walls	N/A	N/A
Buildings	3m>	3m>
Other (specify)		

Part D: Site Assessment – Subsoil Investigation

(Refer TP58 – Sn 5.1 General Purpose of Site Evaluation, and Sn 5.2.2(a) Site Surface Evaluation and Sn 5.3 Subsurface Investigations)

1. Please identify the soil profile determination method:

Test Pit		Depth		No of Test Pits	
Bore Hole	0	Depth		No of Bore Holes	0
Other (specify)					
Soil Report Attached?	Yes				

2. Was fill material intercepted during the subsoil investigation?

(Please tick)

Yes		No	√

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

3. Has percolation testing been carried out?

(Please tick)

Yes	√	No	

If yes, please specify the method

Hand auger
Test Report Attached? Yes

4. Are surface water interception/diversion drains required?

(Please tick)

Yes		No	√

If yes, please show on site plan

5. Please state the depth of the seasonal water table:

(Please tick)

Winter		1m	
Summer		2m	
Please indicate whether measured		or estimated	√

6. Are there any potential short circuit paths?

(Please tick)

Yes		No	√

If yes, please explain how these have been addressed

7. Based on results of subsoil investigation above, please indicate the disposal field soil category *(Refer TP58 Table 5.1)*

Is topsoil present?	Yes	If so topsoil depth?	200mm-400mm

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

Reasons for placing in stated category

As Per Geotech Report & AS/NZS 1547:2012

Part E: Discharge Details

1. Water supply source for the property

(please tick):

Rainwater (roof collection)	√
Bore/well	
Public supply	

2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available

(Refer TP58 Table 6.1 and 6.2)

Number of bedrooms	5	Including Media Room
Design occupancy	8	(Number of people)
Per capita Wastewater production	180	(L per person per day)
Other – specify		
Total Daily Wastewater Production	1440	(Litres per day)

3. Do you propose to install:

a) Full water saving devices?		No	
b) Water recycling – what %		No	

If you have answered yes, please provide additional information including the estimated reduction in water usage:

4. Is Daily Wastewater Discharge Volume more than 2000 litres?

(Please tick)

Yes	
No	√

Note: if answer to the above is yes, an ARC wastewater discharge permit will be required

5. Gross Lot Area to Discharge Ration:

Gross Lot Area	8318m2	(Litres per day) (from above)
Total Daily Wastewater Production	1440	
Lot Area to Discharge Ratio	05.77	

6. Does this proposal comply with the Council Gross Lot Area to Discharge Ratio of greater than 1.5

(Please tick)

Yes	√	No	

7. Does this proposal comply with the Council Gross Lot Area to Discharge Ratio of greater than 3

(Please tick)

Yes	√	No	

8. Is a council Discharge Consent Required?

(Please tick)

Yes		No	√

Part F: Primary Treatment (*Refer TP58 Section 7.2)*

1. Please indicate below the no. and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing:

Number of tanks	Type of tank	Capacity of tank (litres)
1	Primary	4500

2. Is a Septic Tank Outlet Filter to be installed?

(Please tick)

Yes	√	No	

If yes, state the type

Part G: Secondary and Tertiary Treatment *(Refer TP58 Section 7.2)*

1. Please indicate the type of additional treatment, if any, proposed to be installed in system:

(Please tick)

Secondary Treatment		
Home Aeration Plant		
Commercial Aeration Plant		
Intermediate Sand Filter		
Recirculating Sand Filter		
Recirculating Textile Filter		
Clarification Tank		
Tertiary Tank		
Ultraviolet Disinfection		
Chlorination		
Other (Please specify)		

Part H: Land Disposal Method *(Refer TP58 Section 8)*

1. Please indicate the proposed loading method:

(Please tick)

Gravity	√
Dosing Siphon	
Pump	

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

(Please tick)

Yes		No	√

3. If a pump is being used, please provide the following information:

Total Design Head	(m)
Pump Chamber Volume	(L)
Emergency Storage Volume	(L)

4. Please identify the type(s) of land disposal method proposed for this site:

(Refer TP58 Sections 9 and 10)

(Please tick)

Surface Dripper Irrigation	
Sub-Surface Dripper Irrigation	
Standard Trench	√
Deep Trench	
Mound	
Evapo-transpiration Beds	
Other (Please specify)	

5. Please identify the loading rate you propose for the option selected in Part H:

Loading Rate	20mm	(L/M2/day)
Disposal Area	Basal	(m2) 72
	Areal	(m2)

Explanation (*Refer TP58 Sections 9 and 10)*

As per Table L1 ASNZS1547:2012

6. What is the available reserve wastewater disposal area? *(Refer TP58 Table 5.3)*

Reserve Disposal Area (m2)	72m2
Percentage of Primary Disposal Area (%)	100%

7. Please provide a detailed description of the design and the dimensions of the disposal field and attach a detailed plan of the field relative to the property site:

Description and Dimensions of Disposal Field:

Conventional effluent trench as per Figure L1 ASNZS1547:2012

(Please tick)

Plan attached?	Yes	√	No	

If not explain why not:

Part I: Maintenance & Management (*Refer TP58 Section 12.2*)

1. Has a maintenance agreement been made with the treatment and disposal system suppliers? *(Please tick)*

Yes	√	No	

Part J: Assessment of Environmental Effects

1. Is an assessment of environmental effects (AEE) included with application?

(Refer TP58 section 5. Ensure all issues concerning potential effects addressed)

(Please tick)

Yes	√	No	

2. Are there any specific environmental constraints?

(Please tick)

Yes		No	√

If yes, please explain

Part K: Is your Application Complete?

1. In order to provide a complete application you have remembered to:

(Please tick)

Fully Complete the Assessment Form	√
Include a Location Plan & Site Plan	√
Include a Property Title (Certificate of Title)	
Attach an Assessment of Environmental Effects (AEE)	√

AEE: Section 5 questions above of groundwater, soil type, loading rates, separation distance, field size, flood risk, maintenance and reserve area are all covered in questions above

2. Declaration

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

Name: Malcolm Lynch
Certifying Drain layer

Signature M.L. Lynch

Date: 22.11.2022

SEPTIC TANK SPECIALISTS

For all your drain laying needs

PO Box 333 Morrinsville 3340

Ph Office 021 432 087

smeleests@outlook.com

Wastewater Treatment & Disposal Design Summary

As per ARC TP58 & ASNZS1547:2012

On-Site Wastewater Disposal

Name : Diverse Design

Site Address : Lot 1 1271 Tauwhare Rd Tauwhare

Date: 22.11.2022

Summary

We have been engaged by Diverse Design to assess & design the Wastewater Treatment & Disposal system needed for the new dwelling located at Lot 1 1271 Tauwhare Rd.

Working in conjunction with the soil test report from Titus Consulting Engineers we would recommend a primary treatment 4500lt septic tank with 72m3 of effluent fields located south of the new dwelling.

This recommendation is based upon AS/NZS 1547:2012 On-Site Domestic Wastewater Management, Consent Notice requirements and the Waikato Regional Plan rule 3.5.7.6 Permitted Activity Rule – Discharge of Sewage from Improved On-Site Domestic Sewage Treatment and Disposal Systems.
The volume of effluent to be discharged shall not exceed three cubic metres per day averaged over any one month period.
The design, construction, operation and maintenance of the system shall meet the following standards:
Pre-treatment of effluent to a standard not to exceed concentrations of 20g/m^3 of Biological Oxygen Demand and 30g/m^3 of suspended solids
During times of normal wet winter groundwater level, there shall be at least 600 millimetres Separation distance between the groundwater level and the bottom of the disposal trench or 300 millimetres between the groundwater level and dripper irrigation lines, where dripper irrigation lines are used and the design loading rate for effluent disposal is less than five millimetres/day.
There shall be no adverse change in groundwater quality as a result of the discharge, or in combination with other discharges
There shall be no adverse change in surface water quality as a result of the discharge, or in combination with other discharges
There shall be no direct discharge of effluent into groundwater or surface water.
The discharge shall not result in any objectionable effects from odour beyond the boundary of the subject property.
The sewage disposal system shall not be sited within 30 metres of a Natural State Water Body or Fisheries Class Water Body as specified in the Water Management Class Maps, and 10 metres from any other surface water body.
Written proof of compliance with this Rule shall be provided to the Waikato Regional Council on require in the form of either:
certification by a person who is qualified and experienced in the field of onsite sewage treatment and disposal that the system will consistently satisfy the above standards taking into account the relevant site constraints, or
documentation which demonstrates achievement of the standards.
The discharge shall not occur within 20 metres of a Significant Geothermal Feature.

Environmental constraints and soil types are combined to identify the wastewater treatment quality required, the most appropriate land disposal method and soil loading rate have been determined.

Proposed new dwelling will have 4 bedrooms + a media room (considered a bedroom for design purposes)

Occupancy for design – 8 people

180lt per day per person = 1440lt per day usage

All aspects have been considered, from the site assessment, both positive and negative and combined with the site development plan, the determined location and area available for land disposal of wastewater & separation distances of 1.5-3m from any building, 1.5m from any property boundary & 20m from any water supply bore has been considered as the most appropriate. This also allows for easy access for operation & maintenance & is not compromised by activities on the ground surface in the future.

Septic Tank Specialists Ltd

Malcolm Lynch

WBCG 0512

Certifying Drain Layer 07933

Appendix A: Primary system Details

Appendix B: Effluent Trench Details

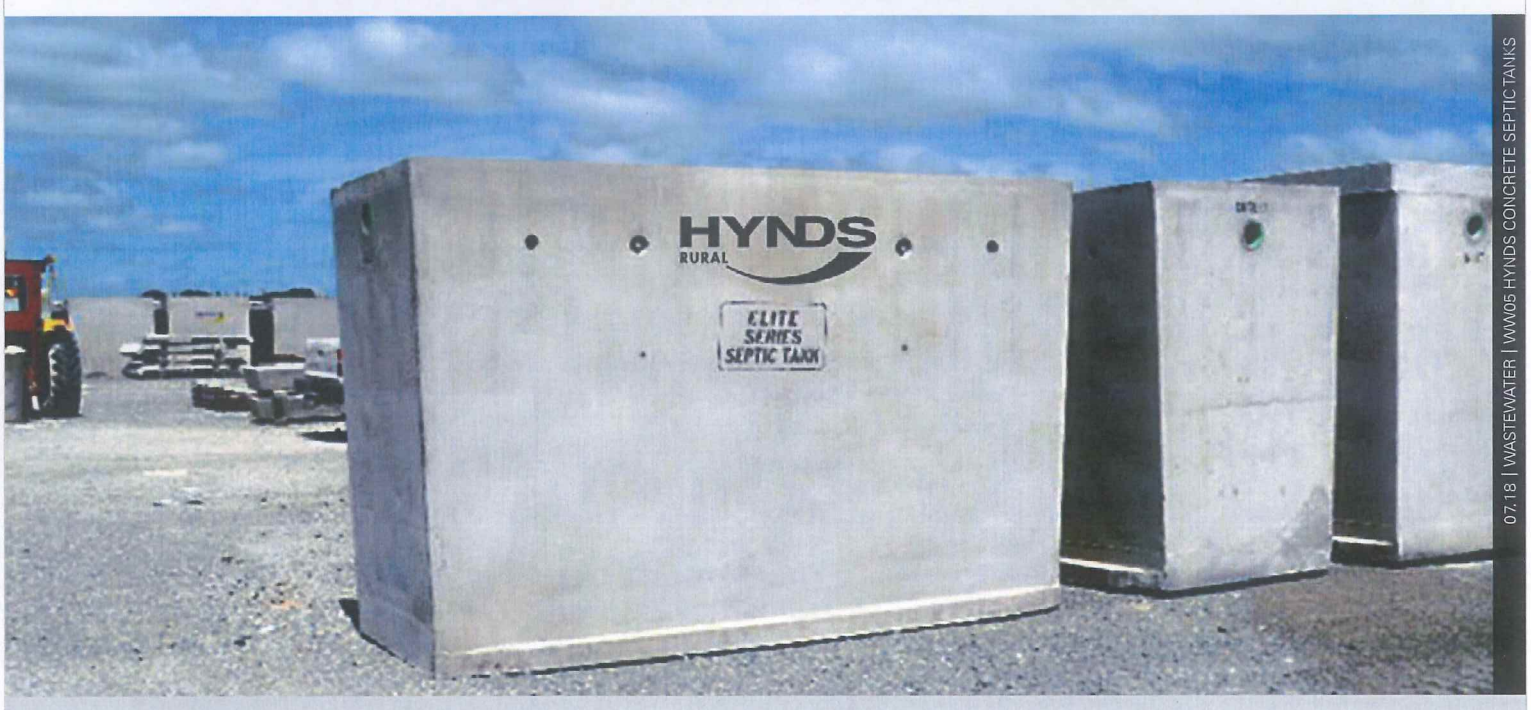
Appendix C: Site Plan

Scan for more information

Hynds Concrete Septic Tanks

Technical Guide WW 5

Hynds Elite Series septic tanks manufacture robust, high-quality concrete septic tank.



07.18 | WASTEWATER | WW05 HYNDS CONCRETE SEPTIC TANKS

Applications

- Residential houses
- Small industrial units
- For low environmental impact areas

Product Attributes

- Range of sizes available
- Accepts a variety of filters
- Fully sealed
- Easy installation
- 4500L made to NZ standards

Quality

- ISO 9001:2008 Quality Management

Hynds Elite Series Septic Tanks - robust, high-quality concrete.

The tank's purpose is to separate solids from the household wastewater, store and partially decompose as much solid material as possible, while allowing the liquid (or effluent) to travel into the drain field which further assists break down of the waste to be safely taken into the environment.

Design Specifications

- 3300, 4500 and 5000, 7600 litre working capacities available.
- Tank and lid components manufactured from steel reinforced high strength concrete.
- Rebated lid allows a water-tight seal between the precast lid and the tank walls.
- Air breathing space located above working level results in optimum performance.
- Precast concrete lid will support a maximum 500 kg point load (pedestrian loading only).
- Inverted precision steel moulds fabricate each tank within a single production casting.
- Fitted internally with standard, 100 mm diameter, uPVC septic tank square junctions.

Fitout Options

- To allow complete versatility when planning a septic tank installation, the Elite Series Septic Tank offers factory-fitted options to increase treatment performance onsite:
  - Single chamber – outlet filter T100.
  - Dual chamber – outlet filter T100. Fitted with leak-proof baffle to enhance flow control and solids settling.
  - Triple chamber with filter and pump, or gravity dose options.

Lifting

- Lifted by integrated foot anchors or by securing equal length chains or straps beneath the outside lifting steps.
- Safe lifting practices should be followed during lifting and manoeuvring of the septic tank.
- Lifting equipment specifications can be supplied upon request.

Installation

- Septic tanks should be installed in stable soil conditions.
- Surface storm water should be diverted away from the lid to prevent water ingress.
- The horizontal joint between the lid and tank can be optionally sealed on-site by the placement of a sealing strip (available from Hynds Sales Centres) prior to lowering the lid into position.
- Check with your local council drainage authority for requirements on septic tank location and the drainage system for your site.
- After installation, tanks should be filled with water to avoid floating.

Septic Tank Use

- Size of tank: see council requirements for tank sizing
- Filter
  A septic tank should have a well performing outlet filter which will prevent solid material entering the drainfield and reduce surging during peak period usage.
- Chemicals
  All household cleaning products should be labelled septic tank friendly. Avoid inserting bleach and harsh chemicals which destroy the live acting bacteria within the tank.
- Drain field
  Ensure the drainfield is not in traffic areas, and do not allow stock to graze on this area.

Maintenance

- A septic tank requires routine emptying of solid indigestible matter which collects on the bottom of the tank. Recommended 3-5 yearly.
- The septic tank outlet filter should be checked for cleaning 6 monthly.
- Ensure the drainfield does not have any wet or saturated areas which might indicate failure.

TABLE 1 Septic Tanks North Island

Product Code	Description	Length (mm)	Height (mm)	Width (mm)	Base to bottom of inlet	Base to bottom of outlet	Weight (T)
3300 HAMILTON & AUCKLAND							
SEP3300T	Septic tank conc 3300L ***1 Chamber - no lid***	2575	1700	1200	1515	1450	2230
SEP3300DT	Septic tank conc 3300L ***2 Chambers - no lid***	2575	1700	1200	1515	1550	2573
SEP3300LZ100	Septic tank ***Lid*** conc 3300L 100mm thick ***(lid only)***	2575	100	1200			789
SEP3300LZ150	Septic tank ***Lid*** conc 3300L 150mm thick ***(lid only)***	2575	150	1200			1165
4500 HAMILTON, AUCKLAND & PALMERSTON NORTH (Made to NZ standard) AS/NZS 1546							
SEP4500EST	Septic tank conc 4500L ***1 Chamber - no lid***	3260	1815	1240	1600	1545	3.8
SEP4500EDT	Septic tank conc 4500L ***2 Chambers - no lid***	3225	1815	1240			4.1
SEP4500EL150	Septic tank ***Lid 1 Chamber*** conc 4500L 150mm thick (2 conc Plug) ***(lid only)***	3225	150	1240			1.5
SEP4500EL150S	Septic tank ***Lid 1 Chambers*** conc 4500L 150mm thick (1 x 150mm riser & conc lid) ***(lid only)***						
SEP4500EL150D	Septic tank ***Lid 2 Chambers*** conc 4500L 150mm thick (2 x 150mm riser & conc lid) ***(lid only)***	3225	150	1240			
7600 HAMILTON & AUCKLAND							
SEP7600T	Septic tank conc 7600L ***1 chamber - no lid***	3240	1510	2145	1330	1280	4.26
SEP7600L150	Septic tank lid conc 7600L 150mm thick ***(lid only)***	3240	160	2145			2.58
SEP7600L225	Septic tank lid conc 7600L 225mm thick ***(lid only)***	3240	225	2145			3.85
SEPTF100	Septic tank filter Taylex 100						
SEPTFCONE	Septic tank filter cone Taylex T100						
SEPTA-02	Septic tank bacteria activator 2Litre						
ACCESSORIES							
SM9020	Septic tank lid sealant						
SEPTF100	Septic tank filter Taylex 100						
SEPTFCONE	Septic tank filter cone Taylex T100						
As required	Septic tank pump (sized accordingly)						
WALMAC3	Septic tank float Switch						
WALALARM	Septic tank high level alarm						
SYPHONFK	Septic tank Flow King dose system						

TABLE 2 Septic Tanks South Island

3300L HORNBY							
SEP3300MC	Septic tank conc 3300L 1 chamber ***- no lid***	2350	1840	1166	1655	1590	2.45
SEP3300MCT	Septic tank lid conc 3300L 150mm (1 conc Plug) ***(lid only)***	2350	150	1166			0.51
SEP3300MCTH	Septic tank lid conc 3300L 200mm (1 conc Plug) ***(lid only)***	2350	200	1166			0.965
SEP3300PMC	Septic tank conc 3300L 2 chambers - ***no lid***	2350	1990	1166	1655		2.95
5000L HORNBY							
SEP5000F	Septic tank conc 5000L 3 chamber ***including*** 80mm lid & T300 Filter	3610	1535	1610	1300	1250	5.92
SEP5000FP	Septic tank conc 5000L 3 chamber ***including*** 80mm lid, T300 Filter & 7m Head (CIDV150) & controller	3610	1535	1610	1300	1250	5.92
SEP5200MC	Septic tank conc 5200L 3 Chamber ***including*** 80mm lid & footing	3610	1535	1610	1300	1250	5.92
SEP5200MCS	Septic tank conc 5200L 1 chamber ***including*** 80mm lid & footing	3610	1535	1610	1300	1250	5.92
4500L WINTON							
SEP4500EST	Septic tank conc 4500L 1 Chamber including footing - ***no lid***	2990	1910	1280	1690	1610	3.59
SEP4500EL150	Septic tank Lid conc 4500L 150mm thick ***(lid only)***	2990	150	1260			1.22
ACCESSORIES							
SM9020	Septic tank lid sealant						
SEPTF100	Septic tank filter Taylex 100						
SEPTFCONE	Septic tank filter cone Taylex T100						
SEPCDV150	Septic tank pump - white int - 7m head						
WALMAC3	Septic tank float switch						
SEPCONTROL	Septic tank - electronic controller - N2PZ						
SYPHONFK	Septic tank Flow King dose system						

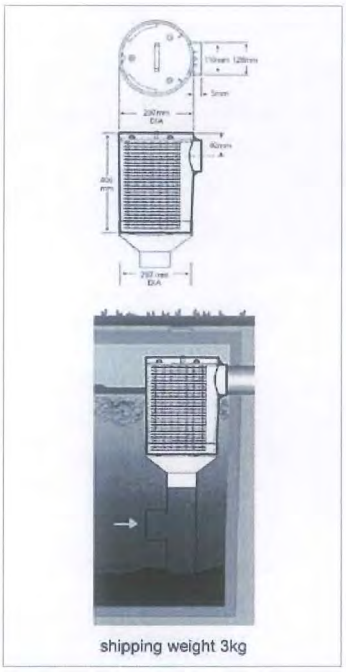


FIG. 2 T100 Filter

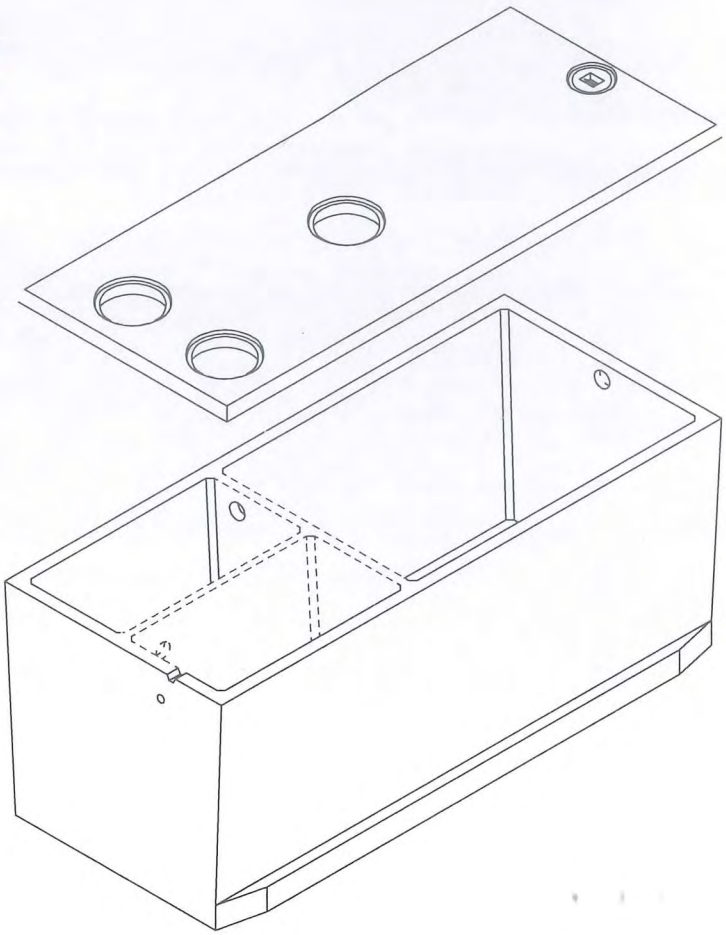
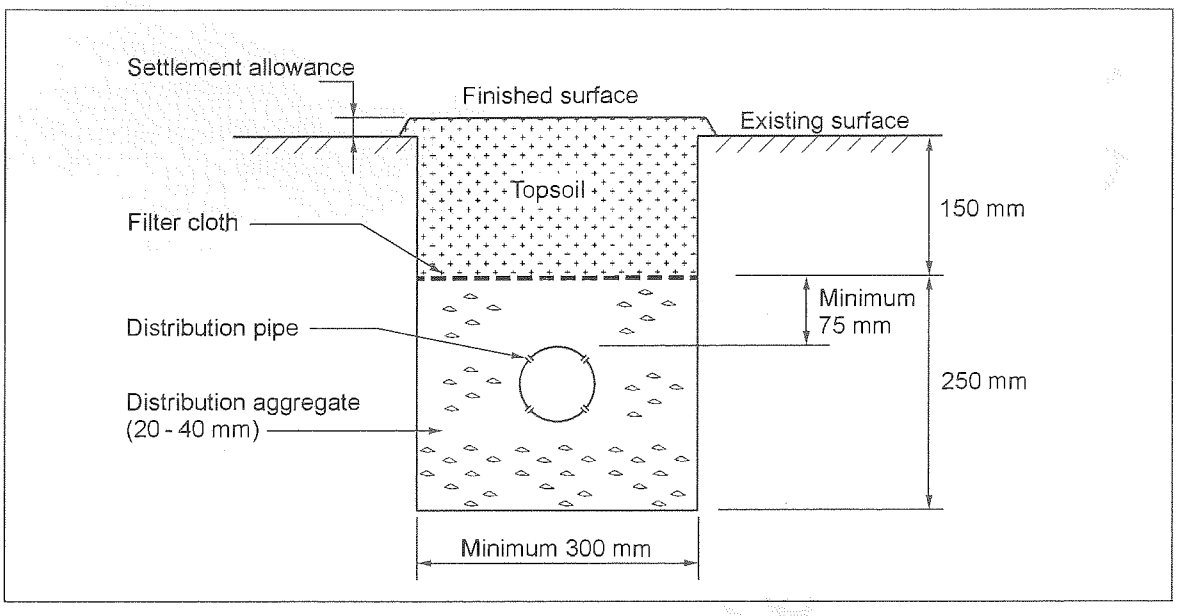


FIG. 3 Single, dual or triple Chamber

FIG. 1 Pumps

Items that should not be inserted into a wastewater treatment system

- Sanitary towels, nappies, baby wipes
- Coffee grounds
- Antibiotics or pharmacy drugs
- Dyes
- Fatty or oily substances, e.g. food scraps
- Fibres, cloths
- Cigarette stubs
- Acids
- Pesticides, herbicides
- Pesticides
- Solvents
- Oil, lubes, thinners, spirit, paints
- Dressings, paper towels, plaster



NOTE: LPED lines can be used to replace distribution pipes when dose loading effluent into trenches.

FIGURE L1 CONVENTIONAL PIPED TRENCH

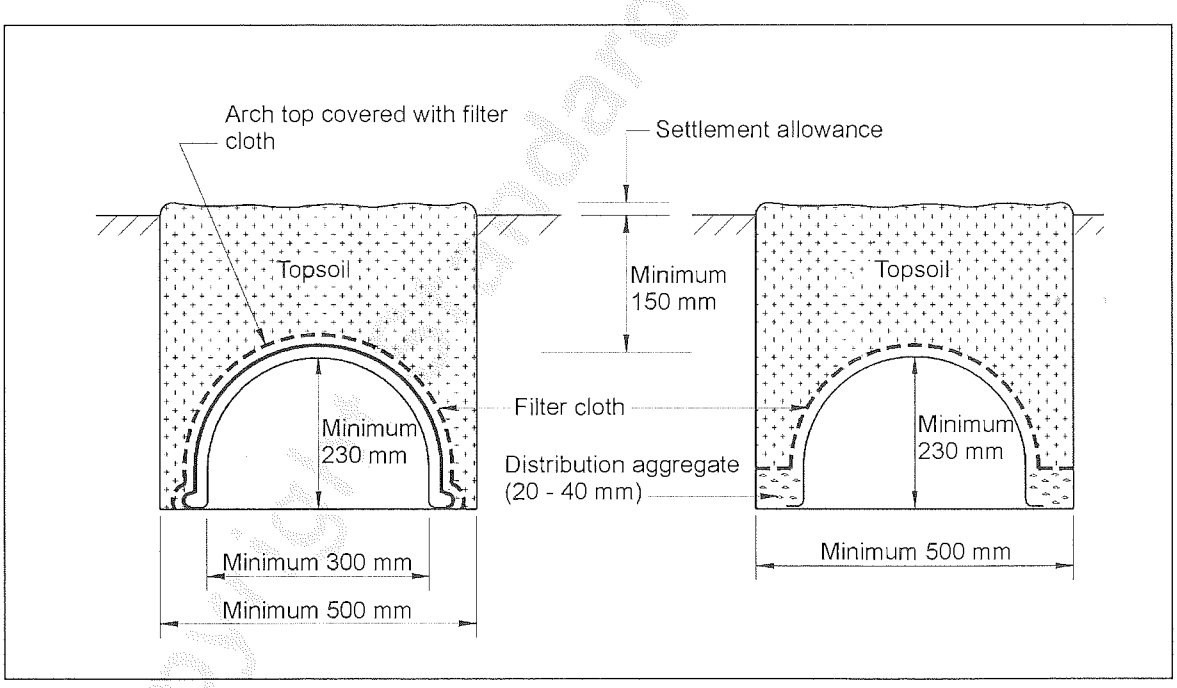
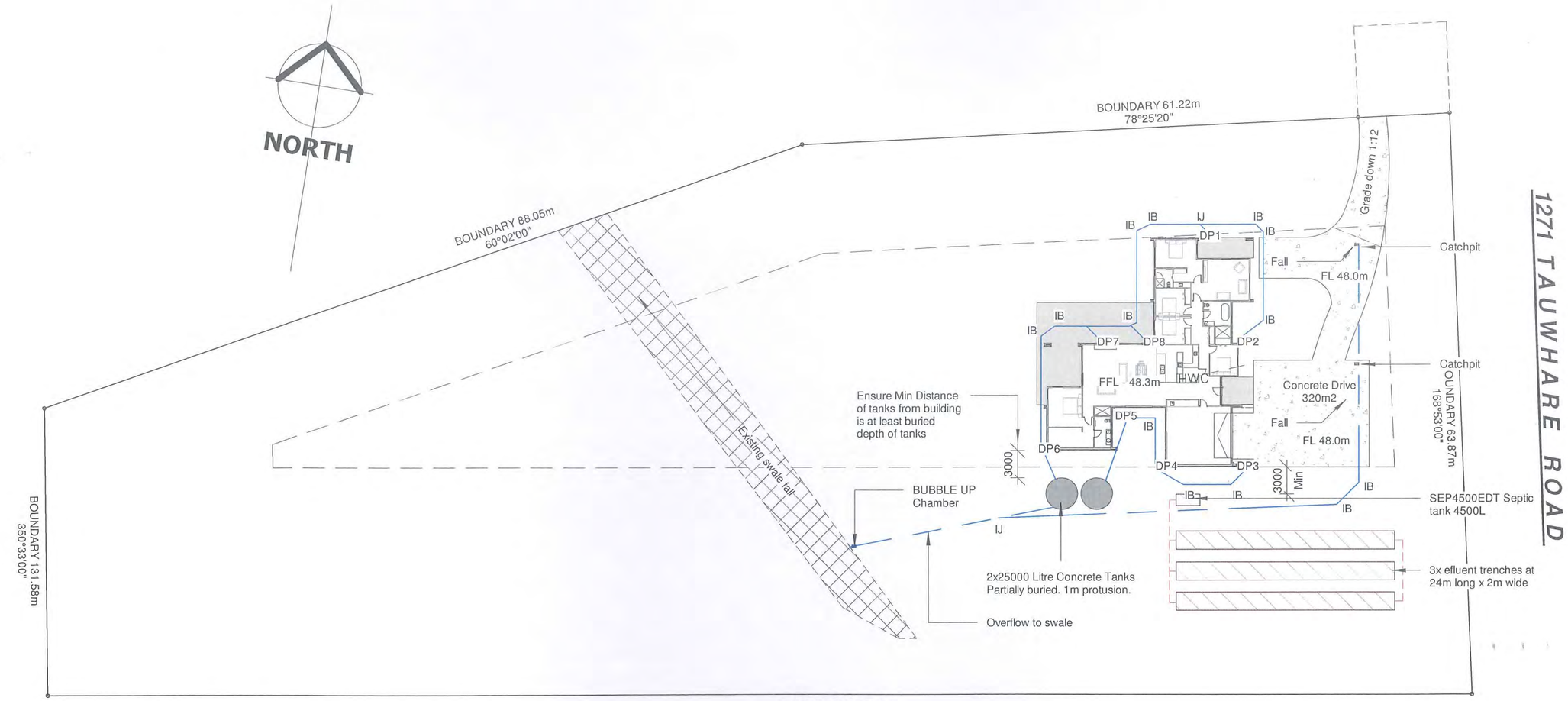


FIGURE L2 SELF-SUPPORTING ARCH TRENCH

Appendix C: Site Plan



PLUMBING SYSTEM AS 3500

Fixture Type	Waste Size	Min Grad	Material
Ensuite 1 WC	*100mm*	*1:60*	*uPVC*
Ensuite 1 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite1 Shower	*65mm*	*1:40*	*uPVC*
Ensuite 2 WC	*100mm*	*1:60*	*uPVC*
Ensuite 2 Vanity	*65mm*	*1:40*	*uPVC*
Ensuite 2 Shower	*65mm*	*1:40*	*uPVC*
Bath Vanity	*65mm*	*1:40*	*uPVC*
Bath Bath	*65mm*	*1:40*	*uPVC*
Bath Shower	*65mm*	*1:40*	*uPVC*
Kitchen Sinks	*65mm*	*1:40*	*uPVC*
Laundry	*65mm*	*1:40*	*uPVC*
TV	*80mm*	*n/a*	*uPVC*
FWG	*65mm*	*1:40*	*uPVC*
Main ww Line	*100mm*	*1:60*	*uPVC*
Main SW Line	*100mm*	*1:60*	*uPVC*

NOTE: all water pipes in garage or roof space to be insulated to comply with NZS4503
DN 65 (65mm @1:40) drains may be used as branch drains only (up to 25 fixtures), provided no soil fixtures (except urinals) are connected thereto. Where toilets are connecting please use DN100 (100mm @1:40.)
Refer to Table 3.3.1 of AS 3500 for max fixture unit loading.

Note:

Kitchen & Laundry sinks to have flow restrictors installed as well as overflow fitting

note for sinks in island benches

AAV to kitchen sink for ventilation

HWC overflow to drain to a small rock garden to ensure no hindrance to neighbouring property

DWG to drain to a small rock garden to ensure no hindrance to neighbouring property

SETOUT ONLY - REFER SED SEWER DESIGN FOR FULL WASTEWATER DESIGN

PLUMBING LEGEND

STORMWATER LINE	———
WASTEWATER LINE	– – – –
WATER LINE	– – – – –
INSPECTION BEND	IB
INSPECTION JUNCTION	IJ
SILT TRAP	▪
CATCH PIT	▪
BUBBLE UP	▪

DDL ARCHITECTURE
P: (07) 8498184 - E: admin@diversedesign.co.nz
W: www.diversedesign.co.nz

LOT 1 TAUWHARE ROAD
WAIKATO DISTRICT
CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS ON SITE AND NOTIFY CONSULTANTS OF ANY DISCRETIONS IN DETAIL

REVISIONS:

Rev.	Description	Date
2	Consent Issue	11-11-12

Site Services

A1.2 | 1 : 500@ A3

DDL Project # : 22-061
Drafted By : Author
Issue Date : 6-10-22
Issue Type : CONSENT
ORIGINAL IN COLOUR

Waikato District Council
Building Consent Number
BLD0856/23

APPROVED

Producer Statement Design (PS1) / Statement of Design and Compliance

Issued by: *(Designer)* Malcolm Lynch

Building Consent number:

Company Name: Septic Tank Specialists Ltd

To: Council
☐ Hamilton City Council ☐ Hauraki District Council ☐ Matamata-Piako District Council ☐ Otorohanga District Council
☐ Thames-Coromandel District Council ☑ Waikato District Council ☐ Waipa District Council ☐ Waitomo District Council

Waikato Building Consent Group Reg. No.: 0512 Expiry Date: 14-01-2023 Other No. *(specify)*:

Owner: Diverse Design

Project Address: 1271 Tauwhare Rd Tauwhare

Lot: 1 DP:

Description of Building Work: New dwelling

Scope of work covered by statement: Design wastewater & stormwater systems for treatment & disposal

System / Product used (if applicable):

I *(Designer's name)*: Malcolm Lynch

have been engaged by (owner/developer/contractor): Owner

To provide design services in respect of (tick applicable):

☑ The requirements of the Building Regulations 1992, Clause(s): *(Please be specific e.g. E2.3.5)* ARC TP58, ASNZS1547:2012, TP10 & E1/VM1

☐ Alternative Solution(s):

The proposed building work is described on the drawings titled:

Site Plan

numbered: A1.1 ☑ Copies attached

authorised amendments(s): *(if applicable)* ☐ Copies attached

☑ I have sighted the Building Consent and read the Advisory Notes. As an independent design professional covered by a current policy of professional indemnity insurance to a minimum value of $ 2,000,000. I can confirm the design drawings, specifications, and other documents according to which the building is proposed to be constructed and in accordance with the listed amendments (if any), complies with the requirements of the Building Consent and the New Zealand Building Code.

☑ I confirm that all work I have undertaken has been within the scope of my skills, knowledge, and experience.

☑ I have remained within the scope of works set for me by the *Waikato Building Consent Group Producer Statement Author register (if applicable).

☑ I understand that this Statement, if accepted, may be relied upon for the purpose of establishing compliance with the Building Code and the Building Consent.

Signed by: *(Designer)* M.L. Lynch Name of Designer: *(Print clearly)* Malcolm Lynch

Date: 22 · 11 · 2022 Address: PO Box 333 Morrinsville

Ph: Office 021432087 Mb: 0210478656 Fx: Email: smeleests@outlook.com

Qualifications / Experience: Certifying Drain Layer 07933

*The Waikato Building Consent Group Producer Statement Author register is held by the Waikato Building Consent Group, Email: info@buildwaikato.co.nz For information on the Waikato Building Consent Group visit the Build Waikato website.

PS1 Template Version 2022-01-29

Resource Consent

(Resource Management Act 1991)

www.waikatodistrict.govt.nz

DECISION ON APPLICATION: LUC0201/23

Pursuant to Sections 34A(1), Section 104, 104B, 104C, 108 and 108AA of the Resource Management Act 1991, the Waikato District Council, under delegated authority, grants land use consent for a Discretionary Activity under the Operative District Plan AND a Restricted Discretionary Activity under the Proposed Waikato District Plan – Appeals Version:

Activity:

Operative District Plan:

To construct a dwelling that does not comply with the permitted earthworks standards at a site in the General Rural Zone.

Proposed District Plan - Appeals Version:

To construct a residential unit that does not comply with the permitted earthworks standards at a site in the General Rural Zone.

Applicant: Rob Davies

Location Address: 1271 Tauwhare Road TAUWHARE

Legal Description: Lot 1 DP 561952 Comprised in Record of Title 996572

This consent is subject to the conditions detailed in the attached Schedule 1.

The reasons for this decision are detailed in the attached Schedule 2.

D McIntosh

_____

CONSENTS TEAM LEADER

Dated: 15 February 2023

Schedule 1

Conditions of Consent

Resource Consent No: LUC0201/23

General Conditions

1 The development shall be undertaken in general accordance with the information and plans submitted by the Consent Holder in support of application number (LUC0201/23) and officially received by Council on 11/10/2022 except as amended by the conditions below.

Copies of the approved plans are attached. In the case of inconsistency between the application and the conditions of this consent, the conditions of consent shall prevail.

2 Pursuant to Section 36 of the Resource Management Act 1991 the Consent Holder shall pay the actual and reasonable costs incurred by the Waikato District Council when monitoring the conditions of this consent.

3 The Consent Holder shall ensure that the earthworks volume shall not exceed 2060m^3.

4 The Consent Holder shall ensure that the earthworks area shall not exceed 3400m^2.

Prior to Construction

5 The Consent Holder shall notify the Waikato District Council Monitoring Department at least 2 working days prior to the commencement of activities associated with this consent.

Advice Note:
To notify Waikato District Council Monitoring Department, email monitoring@waidc.govt.nz with the consent number, address of property and date for when the works will commence.

6 Construction Management Plan
The Consent Holder must submit a Construction Management Plan (CMP) to Waikato District Council's Team Leader Monitoring, for approval a minimum of 10 working days prior to the commencement of activities associated with this consent. The CMP must include, but not be limited to, the following:

(a) The staging of works planned and the description of works including site plans,
(b) Proposed Earthwork plan including depth of cut/fill, volumes and cross sections, original and final contours, and erosion & sediment control measures.
(c) Detail of any fill material (any imported material must be clean fill only), volume, source and treatment,
(d) Vegetation disposal and the location of the clean fill site that any clean fill has been removed to,
(e) Health and Safety Plan,
(f) Machinery to be used on site,
(g) Hours of work,
(h) Dust mitigation methods,

(i) Noise management,
(j) Liaison with neighbours.

7 Erosion and Sediment Controls
Prior to undertaking any earthworks activities on the site; erosion and sediment control measures shall be installed in accordance with the Waikato Regional Council's Erosion and Sediment Control Guidelines for Soil Disturbing Activities: January 2009 and maintained in accordance with these guidelines to the satisfaction of a Monitoring Officer from the Waikato District Council.

During Construction

8 The activities associated with this consent must be undertaken in accordance with the approved CMP. In the case of inconsistency between the CMP and the conditions of this consent, the conditions of consent must prevail.

Post construction

9 All areas of earthworks (excluding any area covered by buildings) must be re-vegetated to achieve 80% ground cover within 12 months of the earthworks being commenced to the satisfaction of a Monitoring Officer of the Waikato District Council.

10 Once the earthworks are complete, the Consent Holder shall ensure that erosion and sediment controls shall be maintained and remain in place until (at least) the minimum required cover is achieved and may only be removed once the Waikato District Council Team Leader-Monitoring is satisfied that the risk from erosion and instability has been reduced to a less than minor risk and has provided approval in writing.

11 On completion of all earthworks on site, a suitably qualified and experienced Geotechnical Engineer must provide a Geotechnical Completion Certification report in general accordance with the Regional Infrastructure Technical Specifications and for certification by the Monitoring officer, Waikato District Council. This report must state the extent of inspection, supply test results and a statement of professional opinion on 'Suitability of Land for Building Construction' regarding the nominated building site in respect of the following:

(a) That the building site is suitable for conventional residential development with standard foundations in accordance with NZS3604; or
(b) Where the building site is not suitable for conventional residential development, then any non-compliance must be clearly stated and sufficient geotechnical engineering detail provided, so that at Building Consent stage specific foundations could be designed, without the requirement for further geotechnical input.

Advisory Notes

Lapse Date

1 This Resource Consent for land use lapses five years after the commencement of the consent, unless:

(a) the Consent is given effect to prior to that date.

or

(b) an application is made to the consent authority to extend the period after which the consent lapses, and the consent authority decides to grant an extension after taking into account

(i) whether substantial progress or effort has been, and continues to be, made towards giving effect to the consent; and

(ii) whether the applicant has obtained approval from persons who may be adversely affected by the granting of an extension; and

(iii) the effect of the extension on the policies and objectives of any plan or proposed plan.

Other consents/permits may be required

2 To avoid doubt; except as otherwise allowed by this resource consent, all land uses must comply all remaining standards and terms of the relevant Waikato District Plan. The proposal must also comply with the Building Act 2004, Regional Infrastructure Technical Specifications, Waikato Regional Plans and National Environmental Standards. All necessary consents and permits shall be obtained prior to development.

Enforcement Action

3 Failure to comply with the conditions of consent may result in Council taking legal action under the provisions of Part 12 of the Resource Management Act (1991).

Private Covenants

4 Please be aware if a private covenant is registered on the Record of Title, it is the responsibility of the consent holder to investigate the relevance of that covenant, as some covenants may restrict certain activities occurring on the site.

Tracking of Debris onto the Road

5 The Consent Holder is to be advised that any debris that is tracked or spilled onto any public road as a result of the exercise of this consent is to be removed as soon as practical, and within a maximum of 24 hours after the occurrence, or as otherwise directed by the Waikato District Council's Roading Operations Engineer. The Consent Holder, upon becoming aware of the need to clean up the roadway, must advise Waikato District Council's Roading Operations Engineer of the need for the road to be cleaned up, and what actions are being taken to do so. The cost associated with the clean-up of the roadway and any drainage facilities, including all temporary traffic control, is the responsibility of the Consent Holder.

Wastewater Field

6 The Consent Holder is to be advised that should the proposed onsite wastewater effluent disposal field and reserve area for the future dwelling is proposed to be constructed over the earthworks filling area, a suitably qualified Engineer's recommendations is to be provided with the Building Consent application, to mitigate any potential instability issues to be created in the future.

Schedule 2

Reasons for Decision

Resource Consent No: LUC0201/23

1 The actual and potential effects created by the proposal are acceptable for the following reasons:

(a) Although the proposed earthworks exceed the permitted volume, area and are to occur within 1.5m of the property boundary, the earthworks are required to construct a suitable building platform and will be temporary in nature (and therefore a temporary effect). The earthworks will not create any adverse noise or dust effects that cannot be suitably mitigated through conditions of consent. Erosion and sediment control measures will be installed prior to works commencing and maintained for the duration of the works.

2 The proposal is consistent with the relevant objectives and policies of Chapter 13: Amenity Values of the Operative District Plan.

3 The proposal is consistent with the relevant objectives and policies of Part 2: EW – Earthworks, Part 3: GRUZ – General Rural Zone of the Proposed Waikato District Plan – Appeals Version.

4 The proposal is consistent with the operative Waikato Regional Policy Statement, and all other relevant matters.

5 Overall, the proposal meets the purpose (section 5) and principles (sections 6-8) of the Resource Management Act 1991.

Resource Consent

(Resource Management Act 1991)

www.waikatodistrict.govt.nz

DECISION ON APPLICATION: SUB0100/21

Pursuant to Sections 34A(1), Section 104, 104B, 104D, 106, 108, 108AA and 220 of the Resource Management Act 1991, the Waikato District Council, under delegated authority, grants subdivision for a Non-Complying Activity under the Operative District Plan AND a Discretionary Activity under the Proposed District Plan:

Activity:	Subdivide to create five new lots from three parent titles via the subdivision generally and boundary relocation rules and involves a new entrance that fails separation distance requirements.
Applicant:	A G McNally
Location Address:	1295 Tauwhare Road TAUWHARE
Legal Description:	Part Lot 1 DP 17019 comprised in Record of Title SA28D/448 Lot 2 DP 17019 comprised in Record of Title SA27D/1427 Lot 1 DP 8777 comprised in Record of Title SA221/216

This consent is subject to the conditions detailed in the attached Schedule 1.

The reasons for this decision are detailed in the attached Schedule 2.

_____

CONSENTS TEAM LEADER

Dated: 19 March 2021

Schedule 1

Conditions of Consent

Resource Consent No: SUB0100/21

General Conditions

1 The Land Transfer Plan to give effect to this resource consent shall be generally consistent with the approved plans prepared by Nicklin CE Ltd as follows:

(a) *'Subdivision Application Plan, Lots 1 – 5 being Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Pt Lot 1 DP 17019 A McNally – 1291 & 1295 Tauwhare Road, Eureka, Consent Plan',* Job 4585 Sheet 2, dated 3 November 2020;

(b) *Subdivision Application Plan, Lots 1 – 5 being Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Pt Lot 1 DP 17019 A McNally – 1291 & 1295 Tauwhare Road, Eureka, Consent Plan Easements',* Job 4585 Sheet 3, dated 5 November 2020;

(c) *Subdivision Application Plan, Lots 1 – 5 being Subdivision of Lot 1 DP 8777, Lot 2 DP 17019 & Pt Lot 1 DP 17019 A McNally – 1291 & 1295 Tauwhare Road, Eureka, Building Offsets Plan',* Job 4585 Sheet 3, dated 12 March 2021.

Copies of the approved plans are attached.

2 Pursuant to Section 36 of the Resource Management Act 1991 the Consent Holder shall pay the actual and reasonable costs incurred by the Waikato District Council when monitoring the conditions of this consent.

3 Council's processing fees are to be paid in accordance with the Council's schedule of fees and charges prior to the signing of the s224 certificate.

4 Prior to the commencement of construction works, the Consent Holder shall appoint a developer's representative who shall supervise and provide certification of the engineering works.

5 The Consent Holder shall notify the Waikato District Council, in writing, of their intention to commence any of the physical works associated with this consent, a minimum of 10 working days prior to commencing. Notification shall include the following details:

(a) Names and telephone number/s of the Developer's Representative/s

(b) Site Address to which the consent relates

(c) The Waikato District Council subdivision reference number

(d) Work to be undertaken

(e) Expected duration of the works

Advice Note:
The preferred means of notification is via email to subdivisions@waidc.govt.nz

6 Prior to s223 and s224 approval all buildings shall comply with the permitted activity rules relating to building coverage, setbacks, daylight angles relative to the new boundaries and number of dwellings with the exception of the farm sheds within Lot 5 that are within the 25m setback from the common boundary with Lot 4 as shown in the approved Building Offsets Plan dated 12 March 2021.

Prior to the application for s224 approval the Consent Holder shall comply with the following Conditions:

Telecommunications

7 Written Confirmation shall be provided from a network utility operator for telecommunications confirming that connections and reticulations have been placed to the boundaries of Lots 1, 2 and 3.

OR

The Consent Holder shall provide, to the satisfaction of Council, written confirmation from an appropriate wireless network utility authority demonstrating that the provision of wireless telecommunication services is available to service Lots 1, 2 and 3.

Power Supply

8 Written Confirmation shall be provided from a network utility operator for power supply confirming that connections and reticulations have been placed to the boundaries of Lots 1, 2 and 3.

Erosion and sediment controls for earthworks

9 Prior to undertaking any soil disturbing activity on the subject property, erosion and sediment control measures must be installed in accordance with the Waikato Regional Council's Erosion and Sediment Control Guidelines for Soil Disturbing Activities: January 2009.

Advice Note:
Installed erosion and sediment controls must be maintained in place until minimum grass coverage (80%) is achieved within the exposed areas subjected to earthworks, for certification by the Land Development Engineer, Waikato District Council.

Earthworks

10 The consent holder shall ensure that all earthworks required for the proposed subdivision are undertaken in accordance with the recommendations given in the 'Site Suitability Report, Ref: P20782- Rev: 0, dated 27th November 2020, by 'Probase Engineering Ltd" and to comply with the requirements of Waikato District Plan (Waikato Section).

Vehicle crossing serving Lots 1, 2 & 3

11 A new light commercial vehicle crossing on Tauwhare Road must be constructed to ROW 'A', including gate and stock-proof fencing, in the location shown on the approved subdivision consent plan (Issue 2). All works must be completed in accordance with Section 3.3.19 including figure D3.3.4 of the Regional Infrastructure Technical Specification (RITS), for certification by the Land Development Engineer, Waikato District Council.

Advice Note:
A Corridor Access Request (CAR) including appropriate Traffic Management Plan, is required to be made to, and approved by, Road Controlling Authority before any activity is undertaken within the road corridor.

ROW 'A' construction

12 ROW 'A' must be constructed as a sealed ROW in accordance with the Appendix A of the Waikato District Plan (Waikato Section) and the Regional Infrastructure Technical Specifications for certification by the Waikato District Council's Land Development Engineer.

Construction Certification

13 A 'Contractors Certificate – construction', for vehicle crossings and ROW, by each individual contractor as part of the consented subdivision, must be provided for certification by the Land Development Engineer, Waikato District Council.

Advice Note:
An acceptable format for certification upon completion of works can be found in the NZS4404-2010 Schedule 1B (Contractor`s certificate upon completion of land development/subdivision).

14 A 'Certificate of Completion of Development Works' prepared and signed by a suitably qualified professional must be provided for certification by the Land Development Engineer, Waikato District Council, to confirm that all works have been carried out in accordance with the consented conditions and appropriate standards.

Advice Note:
An acceptable format for a 'Certificate of Completion of Development Works' can be found NZS4404-2010 Schedule 1C (Certification upon completion of land development/subdivision).

Consent Notices

15 The following conditions must be complied with on an ongoing basis and must therefore be the subject to a consent notice registered against the relevant title(s) in accordance with Section 221 of the Resource Management Act 1991:

Any earthwork, foundation design, on-site wastewater management and on-site stormwater management at time of building consent application for Lots 1, 2 and 3 must be undertaken strictly either:

- In accordance with the restrictions and recommendations of the 'Site Suitability Report, Ref: P20782- Rev: 0, dated 27th November 2020, by 'Probase Engineering Ltd"; or
- In accordance with an alternative report, undertaken by a suitably qualified and experienced Engineer (Geo Professional), approved in writing by Waikato District Council.

All works must be undertaken to the entire satisfaction of the Waikato District Council.

16 If hardwire telecommunications supply reticulation is not installed to the boundary of Lots 1, 2 and 3, the following condition shall be complied with on an ongoing basis and shall therefore be the subject of a consent notice registered against the relevant title(s) in accordance with section 221 of the Resource Management Act 1991:

(a) No underground hardwire telecommunications supply reticulation is available to the boundary of Lots 1, 2 and 3, as confirmation was obtained from a telecommunications provider advising that provision for a wireless telecommunication connection is available to Lots 1, 2 and 3.

Consent notices shall be prepared by Waikato District Council's Solicitor. Please request your consent notice be prepared prior to requesting 224 approval.

Advisory Notes:

Lapse Date

1 This Resource Consent for land use lapses five years after the commencement of the consent, unless:

(a) the Consent is given effect to prior to that date.

or

(b) an application is made to the consent authority to extend the period after which the consent lapses, and the consent authority decides to grant an extension after taking into account
   (i) whether substantial progress or effort has been, and continues to be, made towards giving effect to the consent; and
   (ii) whether the applicant has obtained approval from persons who may be adversely affected by the granting of an extension; and
   (iii) the effect of the extension on the policies and objectives of any plan or proposed plan.

Corridor Access Request

2 Prior to undertaking any works within the Council road reserve, a Corridor Access Request (CAR), including traffic management plan, for the works to be carried out in the road reserve, and submitted to the Waikato District Council for approval not less than fifteen (15) working days before starting these works.

Schedule 2

Reasons for Decision

Resource Consent No: SUB0100/21

1 The actual and potential effects created by the proposal are acceptable because:

- Although the proposal creates two additional lots, the proposal only results in one additional development right.

- While the combination of the proposed general subdivision and boundary relocation will result in the creation of four rural-residential lots, one of the lots already contains a dwelling and associated curtilage and any views of development within the other three lots will be set against the open, rural backdrop of the balance lot (Lot 5) which is 121ha and therefore of an ample size to absorb the visual effect of the resultant rural-residential development.

- The four rural residential sized lots are generally compliant with the required child lot sizes under the Operative District Plan and are of a comparable size to other rural-residential lots within the surrounding area. They are also capable of accommodating notional building platforms which comply with all boundary setbacks.

- While the new entrance fails the required entrance separation distance requirement from an existing entrance on the opposite side of Tauwhare Road, Council's Land Development Engineer has advised that discretion can be applied for this non-compliance due to the anticipated low traffic volumes for the new rural-residential lots and good sightlines in both directions along Tauwhare Road. These factors will ensure that the potential for traffic conflicts remains low.

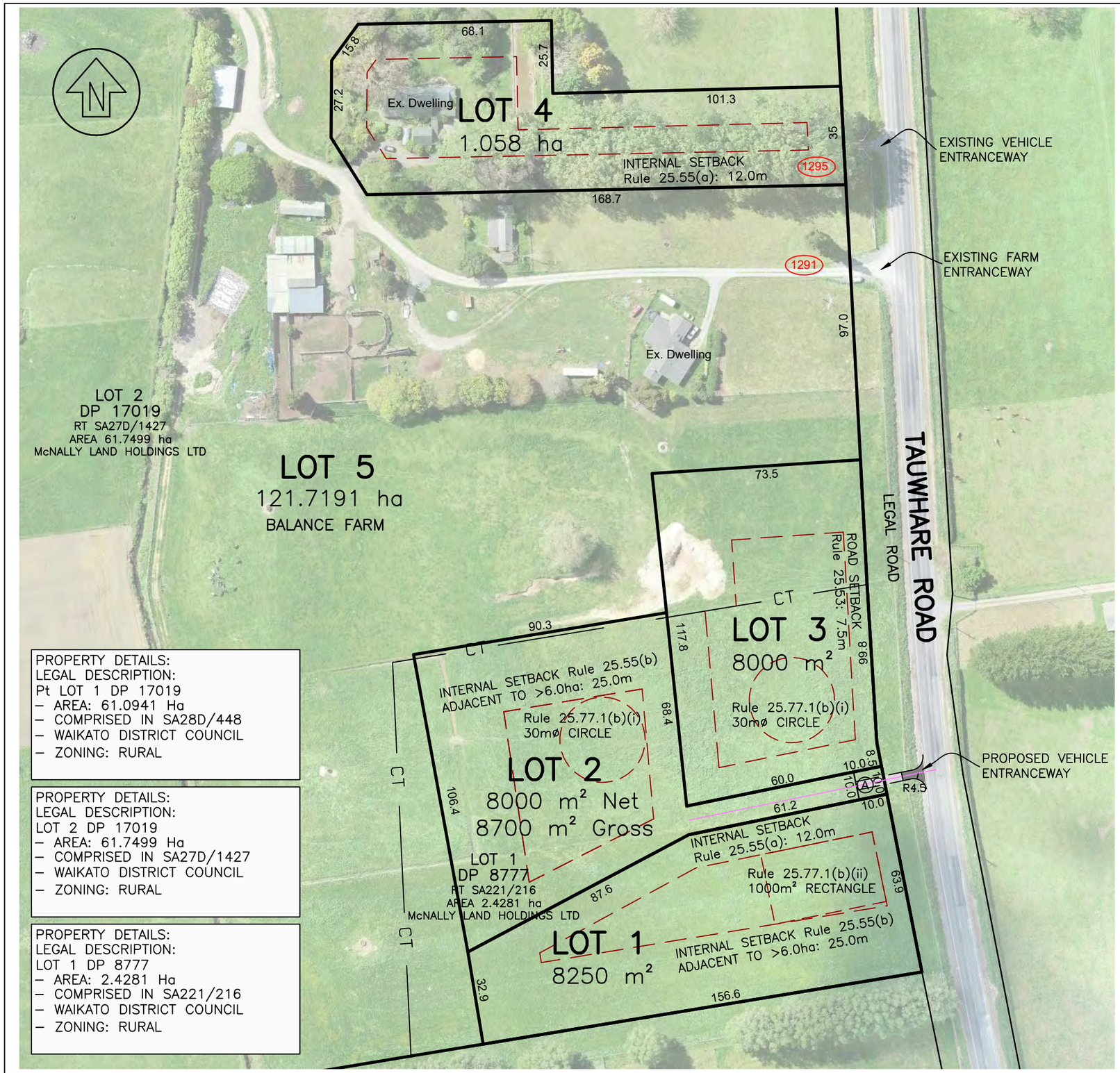
- Lots 4 and 5 will retain existing on-site services and the Applicant has provided a Geotechnical Investigation Report which concludes that Lots 1 -3 are suitable for on-site water, wastewater and stormwater systems.

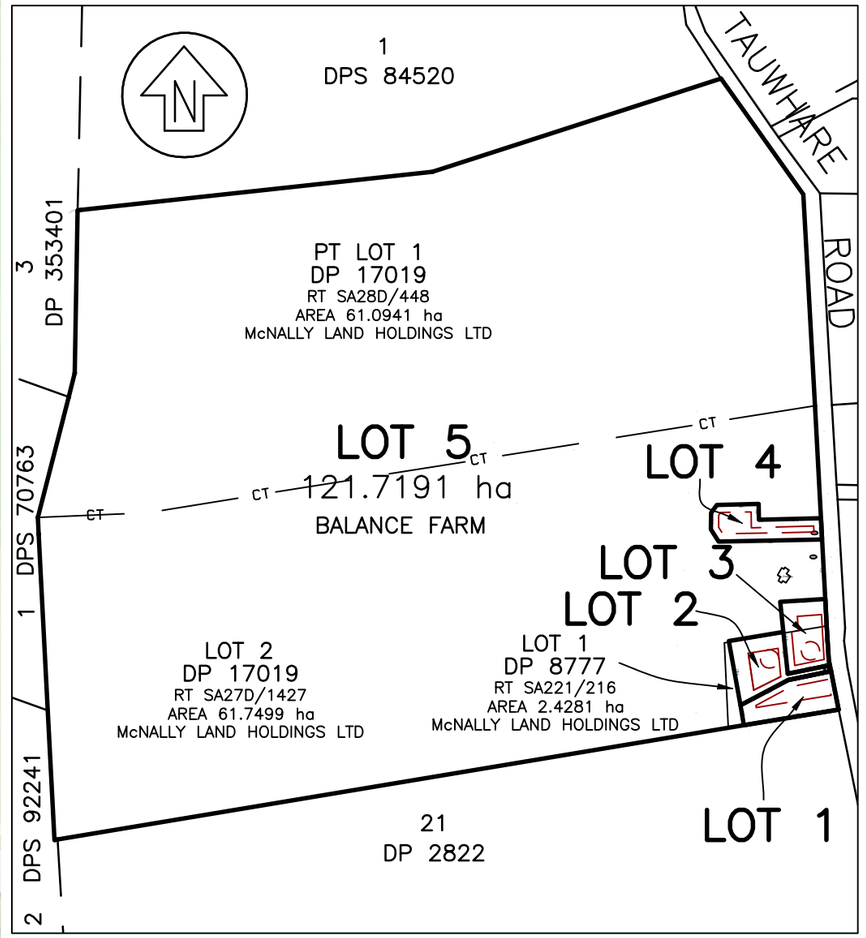
2 The proposal is consistent with the objectives and policies of the Operative District Plan.

3 The subdivision meets the provisions of section 106 of the RMA because legal and physical access is provided for and the applicant has addressed the risks of natural hazards through design and mitigation measures proposed.

4 The proposal is consistent with the operative Waikato Regional Policy Statement, the Hauraki Gulf Marine Park Act 2000 and all other relevant matters.

5 Overall, the proposal meets the purpose (section 5) and principles (sections 6-8) of the Resource Management Act 1991.





LOCATION DIAGRAM

SCALE 1:10000

APPROVED PLAN
SUB0100/21
15 March 2021

PROPERTY DETAILS:
LEGAL DESCRIPTION:
Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 2 DP 17019
– AREA: 61.7499 Ha
– COMPRISED IN SA27D/1427
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 1 DP 8777
– AREA: 2.4281 Ha
– COMPRISED IN SA221/216
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOTS 1 & 3 HEREON

NOTES:

1. AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.

NICKLIN CE
SURVEYING PLANNING ENGINEERING
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www.nicklince.com
info@nicklince.co.nz
6 Wilson Street
P.O. Box 754
Cambridge 3450

PROJECT TITLE
SUBDIVISION APPLICATION PLAN
LOTS 1 – 5 BEING SUBDIVISION OF LOT 1 DP 8777,
LOT 2 DP 17019 & PT LOT 1 DP 17019
A MCNALLY – 1291 & 1295 TAUWHARE ROAD, EUREKA

PLAN TITLE
CONSENT PLAN

ALTERATION	JOB	SHEET
	4585	02
CAD RNW	ORIGINAL SCALE AT A3	ISSUE 1
DATE 03 NOV 2020	1:1500	

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NATIONAL GRID TRANSMISSION LINE CONDITIONS

1. All land use activities, including the construction of new buildings/structures, earthworks, fences, any operation of mobile plant and/or persons working near exposed line parts shall comply with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001) or any subsequent revision of the code.

2. No buildings or structures (except non–conductive fencing) shall be located within 12m of the centreline of the HAMILTON – WAIHAU A National Grid transmission line.

3. No buildings or structures shall be located within 12m from any outer visible edge of any National Grid Transmission support structure; except for non–conductive fencing, which can be located 6m from any outer visible edge of the support structure foundation.

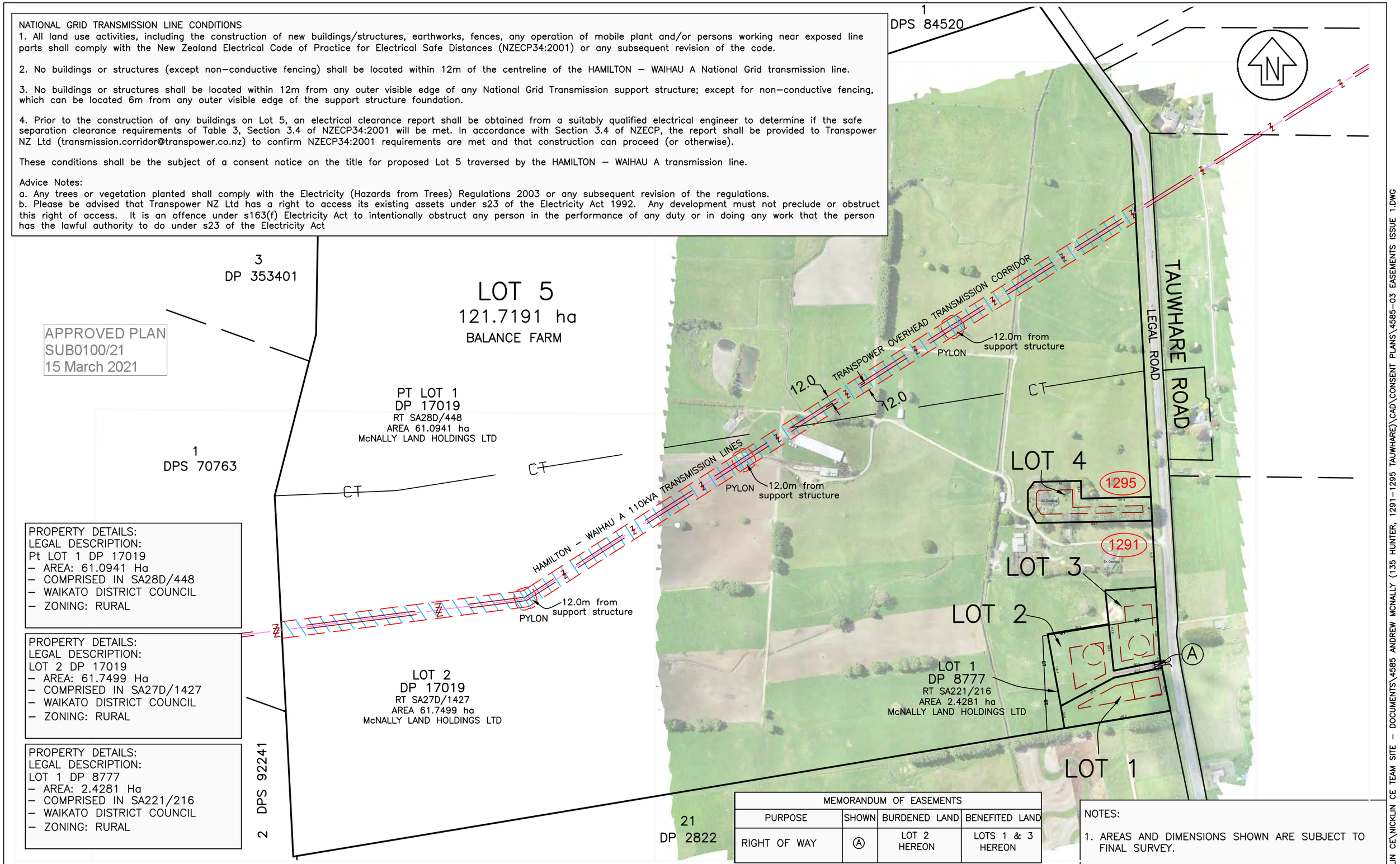
4. Prior to the construction of any buildings on Lot 5, an electrical clearance report shall be obtained from a suitably qualified electrical engineer to determine if the safe separation clearance requirements of Table 3, Section 3.4 of NZECP34:2001 will be met. In accordance with Section 3.4 of NZECP, the report shall be provided to Transpower NZ Ltd (transmission.corridor@transpower.co.nz) to confirm NZECP34:2001 requirements are met and that construction can proceed (or otherwise).

These conditions shall be the subject of a consent notice on the title for proposed Lot 5 traversed by the HAMILTON – WAIHAU A transmission line.

Advice Notes:

a. Any trees or vegetation planted shall comply with the Electricity (Hazards from Trees) Regulations 2003 or any subsequent revision of the regulations.

b. Please be advised that Transpower NZ Ltd has a right to access its existing assets under s23 of the Electricity Act 1992. Any development must not preclude or obstruct this right of access. It is an offence under s163(f) Electricity Act to intentionally obstruct any person in the performance of any duty or in doing any work that the person has the lawful authority to do under s23 of the Electricity Act



PROPERTY DETAILS:
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Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

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– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOTS 1 & 3 HEREON

NOTES:

1. AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.

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PROJECT TITLE

SUBDIVISION APPLICATION PLAN
LOTS 1 – 5 BEING SUBDIVISION OF LOT 1 DP 8777,
LOT 2 DP 17019 & PT LOT 1 DP 17019
A McNALLY – 1291 & 1295 TAUWHARE ROAD, EUREKA

PLAN TITLE

CONSENT PLAN
EASEMENTS

ALTERATION	JOB	SHEET
	4585	03
CAD RNW	ORIGINAL SCALE AT A3	ISSUE 1
DATE 05 NOV 2020	1:5000	

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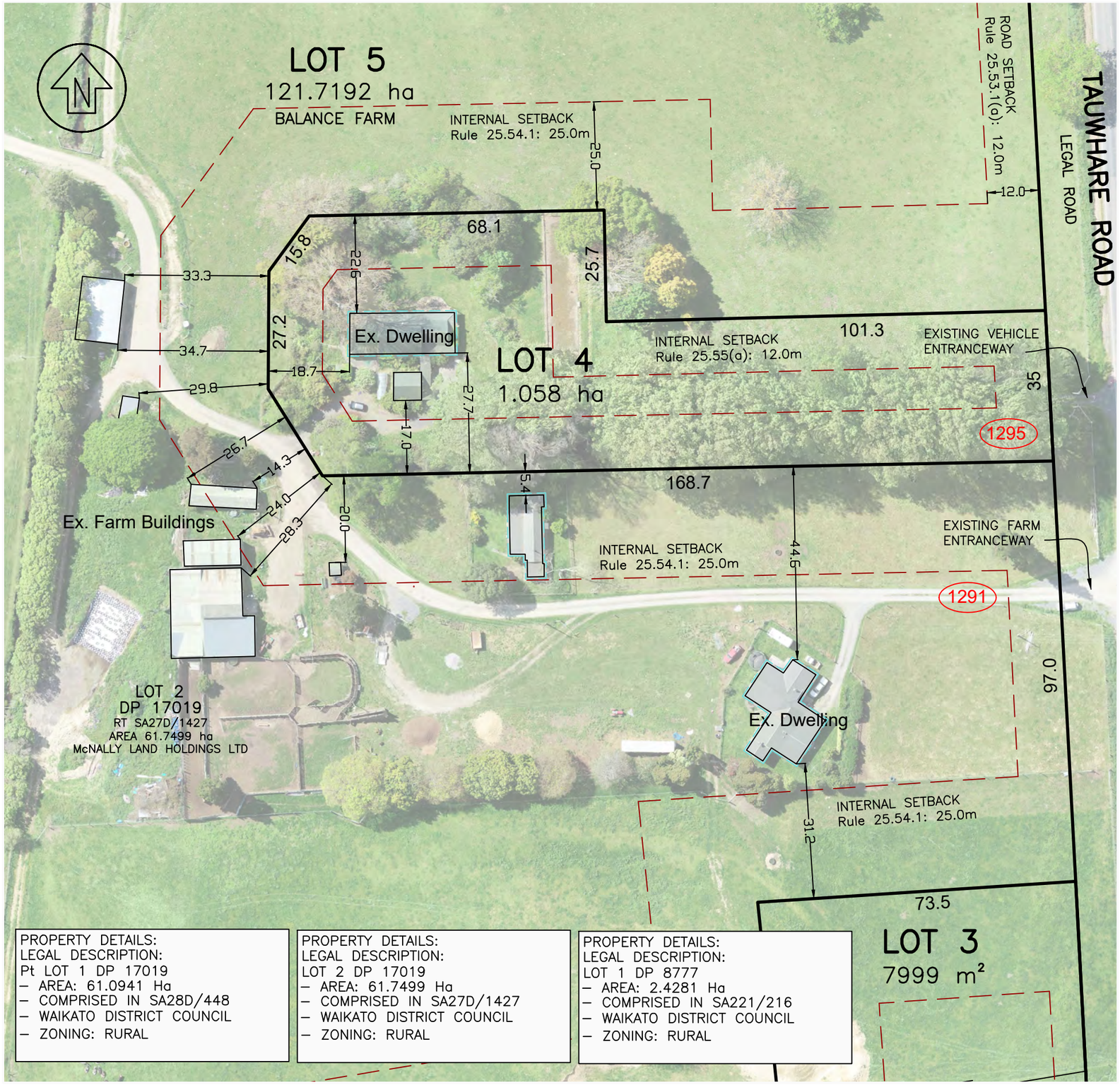

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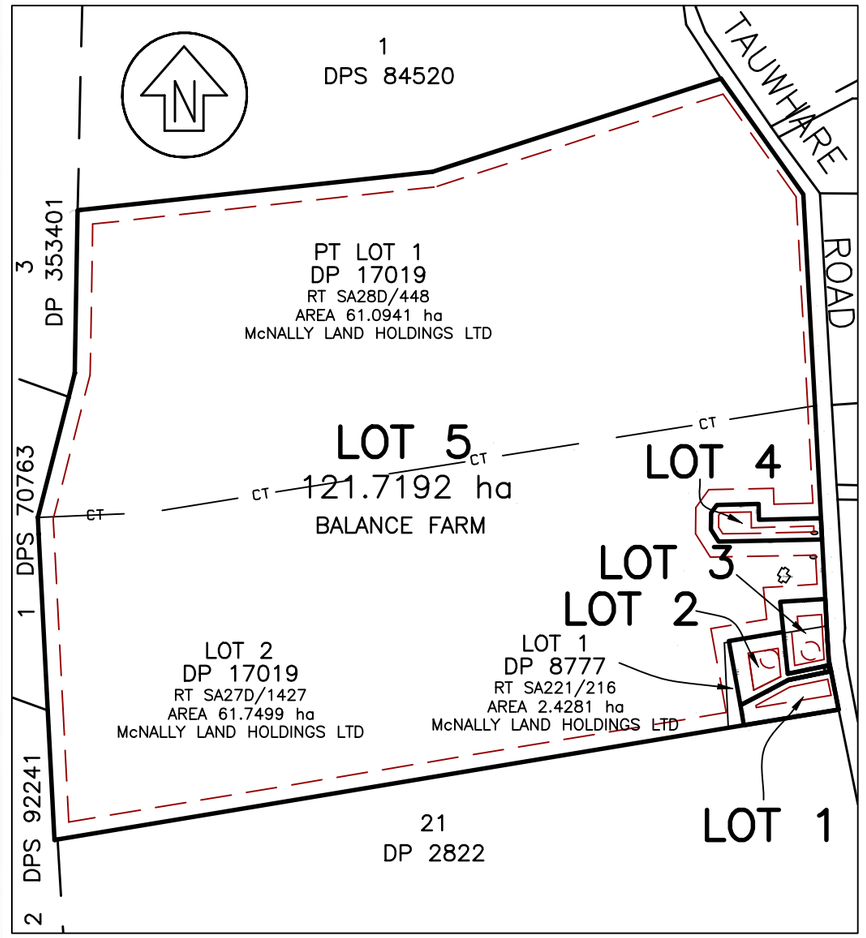

LOCATION DIAGRAM
SCALE 1:10000

APPROVED PLAN
SUB0100/21
15 March 2021

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOTS 1 & 3 HEREON

NOTES:

1. AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.

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PROJECT TITLE
SUBDIVISION APPLICATION PLAN
LOTS 1 – 5 BEING SUBDIVISION OF LOT 1 DP 8777,
LOT 2 DP 17019 & PT LOT 1 DP 17019
A MCNALLY – 1291 & 1295 TAUWHARE ROAD, EUREKA

PLAN TITLE
BUILDING OFFSETS PLAN

ALTERATION	JOB	SHEET
	4585	02
CAD RNW	ORIGINAL SCALE AT A3	ISSUE 1
DATE 12 MAR 2021	1:1000	

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APPENDIX E

PROBASE ENGINEERING REPORT

SITE SUITABILITY REPORT

1291-1295 Tauwhare Rd
Eureka
P20782

Client: Nicklin CE

By: BJM

Date: 27th November 2020

Email: James@probase.co.nz

Report Summary

Probase Engineering Ltd was engaged by Nicklin CE to conduct a Site Suitability Assessment for the site at 1291-1295 Tauwhare Rd, Eureka to assess the suitability for residential development. The property is intended to be subdivided into 5 lots.

This report is for resource consent and planning purposes only. Further investigations will be required for building consent purposes.

Report Prepared for: **Nicklin CE**

Note: The information contained in this document is solely for the use of the Client identified above for the purpose for which it has been prepared and the Author undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

Revision:	Date:	Details:	Prepared by:	Reviewed by:
0	27/11/2020	Final	Ben McKay	James Harper

Summary

The following provides a summary of the requirements Probase Engineering recommends for the subdivision of 1291-1295 Tauwhare Rd, Eureka.

- **Liquefaction Assessment**
  - Soils are mapped as Hinuera Formation, comprised of silty SANDs.
  - Groundwater was not encountered at depths shallower than termination depth of 2900mm, and soil moisture did not increase significantly with depth.
  - Liquefaction vulnerability classified as having '**Moderate Vulnerability'**.

- **Slope Stability Assessment**
  - Probase Engineering deems **slope stability hazard risk not significant** as the ground topography near the proposed dwelling location is generally only gently to moderately sloping (<5° - <15°).
  - The methods below shall be undertaken during earthworks construction:
    - Any cut which creates a slope exceeding 18° (1:3) and is of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any fill placed which creates a slope (batter and/or bund) exceeding 18° (1:3) and of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any retaining wall should be specifically designed to for the appropriate surcharge.

- **Foundations**:
  - The following foundations may be suitable options for the proposed residential development:
    - Waffle slab foundation.
    - SED piles.
  - **Further testing will be required** at building consent stage to confirm preliminary recommendations.

- **Waters:**
  - Probase Engineering recommends the use of above ground detention tanks to mitigate stormwater discharges (with a portion available for potable water use for a new dwelling). It is recommended that the overflow pipe is directed to a swale.
  - Wastewater treatment and disposal via either Primary or Secondary Treatment.
  - **Specific engineering investigation, assessment and design will be required** by a suitably qualified engineering professional at the building consent stage.

TABLE OF CONTENTS

APPENDICES

1 BACKGROUND AND PROPOSED SCOPE

On 18th November 2020, Probase Engineering was engaged by Nicklin CE to carry out a site suitability investigation in support of a resource consent at 1291-1295 Tauwhare Rd, Eureka. Refer to Figure 1 for a plan of the proposed development area.

The purpose of this report is to evaluate the surface and subsurface conditions of the site and to provide geotechnical recommendations for the proposed subdivision.

Our scope of works included the following:

- Desktop study of relevant publicly available geotechnical and geological publications;
- Preparation of a report outlining our findings on the ground conditions;
- Preliminary site suitability recommendations for the proposed development.

2 SITE DETAILS

2.2. SITE DESCRIPTION

The property at 1291-1295 Tauwhare Rd is located on a gently to moderately steep undulating alluvial plain landscape (<5° - 15°), situated approximately 1.5km to the north of Tauwhare Township, Waikato.

At the time of investigations, the site was covered in ankle height pasture.

2.3. REGIONAL GEOLOGY

The geological map of the area indicates that the site is underlain by soils belonging to a deposit known as the Hinuera Formation. These deposits are described as cross-bedded pumice sand, silt and gravel with interbedded peat (GNS Science, 2020).

3 PROPOSED DEVELOPMENT

It is proposed to subdivide the existing sections into five lots, creating three residential lots for future development as detailed below:

- Lot 1 (0.825 ha) – New residential lot/dwelling proposed on Lot 1.
- Lot 2 (0.87 ha) – New residential lot/dwelling proposed on Lot 2.
- Lot 3 (0.8 ha) – New residential lot/dwelling proposed on Lot 3.
- Lot 4 (1.058 ha) – No changes proposed on Lot 4.
- Lot 5 (121.719) – Amalgamation of existing Lot 1 & balance of Lot 2.

Site development plans are attached in Appendix A.

4 SOILS INVESTIGATION

4.2. GROUND CONDITIONS

Testing to determine ultimate bearing capacity of soils was carried out on the 25th of November 2020 in accordance with NZS 3604:2011; the non-specific design standard for Timber Framed Buildings at six test positions. This is outlined in Appendix Figure 2 'Test Location Plan'.

Testing comprised of:

- 4 augers with accompanied shear vane tests.
- 6 Scala penetrometer tests.
- A visual inspection and walk over of the site.

Ground conditions and soil characteristics are outlined in Appendix B 'Soil Logs'.

4.3. ACHIEVEMENT OF 'GOOD GROUND'

Test results indicate near surface soils have bearing capacities less than 100 kPa (300 kPa ultimate bearing capacity). Therefore, soils do not meet the definition of 'Good Ground' in accordance with NZS 3604:2011 the non-specific design standard for Timber Framed Buildings.

Further testing at building consent stage is required.

4.4. LIQUEFACTION ASSESSMENT

A calibrated desktop (Level B) liquefaction assessment has been conducted in accordance with the relevant guidance documents[1]. The assessment employed ground truthing using onsite testing of 2900mm below existing ground level and calculation of peak ground acceleration.

The following factors were employed in the determination of liquefaction risk:

- Site located in Late Pleistocene sediments, which are of a recent deposition.
- Groundwater was not encountered during investigations up to a depth of 2900mm below existing ground level.

Based on the above information, given the age and lithology of the site, Probase Engineering classifies the site as having a **'Moderate Liquefaction Vulnerability'**. Therefore, foundations need to consider liquefaction in their design.

4.5. SLOPE STABILITY ASSESSMENT

A slope stability study has been conducted through a site investigation and desktop analysis for the site. The subject site topography can be generally described as undulating, forming an upper terrace adjacent to the eastern boundary and falling towards the west at gentle to moderate gradients to a lower terrace area.

- Probase Engineering deems **slope stability hazard risk not significant** as the ground topography near the proposed dwelling location is generally only gently to moderately sloping (<5° - <15°).
- The methods below shall be undertaken during earthworks construction:
    - Any cut which creates a slope exceeding 18° (1:3) and is of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any fill placed which creates a slope (batter and/or bund) exceeding 18° (1:3) and of a height greater than 1000mm must only be carried out under the supervision of a suitably qualified engineer.
    - Any retaining wall should be specifically designed to for the appropriate surcharge.

5 BUILDING DEVELOPMENT RECOMMENDATIONS

A preliminary assessment of the soils logs has deemed the following foundation options suitable:

- Waffle slab foundation.
- SED piles.

This is based of limited testing and is for resource consent. Further testing at building consent stage is required to confirm foundation, prior to construction.

6 STORMWATER MANAGEMENT

6.2. STORMWATER REQUIREMENTS FOR PROPOSED DEVELOPMENT

Stormwater Management for the proposed new Lots 1-3 will comprise of utilizing detention tanks to accommodate temporary detention storage on-site for roof water runoff using a controlled outflow device.

Controlled outflows must be designed to match pre-development, equivalent greenfield flows and be discharged downstream.

It is recommended that the overflow pipe is directed towards a swale or dispersal trench. Secondary drainage for the 50-year, 2% AEP storm event or larger will pass through the tanks and be discharged into the swale or dispersal trench. Overflows will be released (at a rate equivalent to Greenfields flows) to the natural downstream environment.

6.3. STORMWATER DESIGN

When roof areas are known, detention storage in the water tanks (and thus the height of the outflow orifice) can be determined. The following factors will be used:

Existing Site

- To calculate existing runoff: peak 10 year, 10% AEP, 10-minute storm – **89.9mm/hr** (HIRDS V4 historical data rainfall figure, no allowance for climate change).
- Coefficient of runoff for existing site – 0.30.

Developed Site

- To calculate post-development runoff: peak 10 year, 10% AEP, 10-minute storm **96.8mm/hr** (HIRDS V4 rainfall figure, RCP2.6).
- Coefficient of runoff for roof area is 0.95.
- Surface water runoff volume for the developed site to be determined for the 60-minute critical storm event.
- Detention storage must be designed based on Regional Infrastructure Technical Specification (RITS) March 2018, Section 4, Stormwater, comprising of hydraulic modeling data using 24-nested design storms.

Secondary Drainage

Secondary drainage in the event of blockage/failure of the primary system will cause surcharging of the system.

The secondary flow path must provide passage for stormwater in the event that the primary system is blocked or at capacity. As per Clause 4.1.3 of RITS, the secondary stormwater flow path shall be capable of conveying the 100-year ARI storm event within a defined path and without causing undue risk or damage to persons or property.

When final levels of the site are determined this should be confirmed to ensure a defined secondary flow path can be provided from the site to meet this requirement.

6.4. STORMWATER DESIGN SUMMARY

- All roof water from the proposed new development will be directed to new rain water tanks. Temporary detention storage will be calculated for a 10-year, 10% AEP storm event. The remaining water in the tanks (permanent storage) will be available for water supply. Refer to Figure 6.4.

- Outflows from the tanks will be attenuated at a rate equivalent to the pre-development Greenfields flow via a small diameter orifice (uPVC pipe).

- Overflows from the water tanks during heavy rain, for storms in excess of 10% AEP 10year storm event, will simply pass through the water storage tank via an overflow pipe. Excess flows will be stored in and released from a new swale/soakage trench which will allow overflow to naturally dissipate.

- The location for the swale is to be determined onsite and is required to be located more than 3.0m away from the house footings and a minimum of 1.5m from adjacent boundary lines.

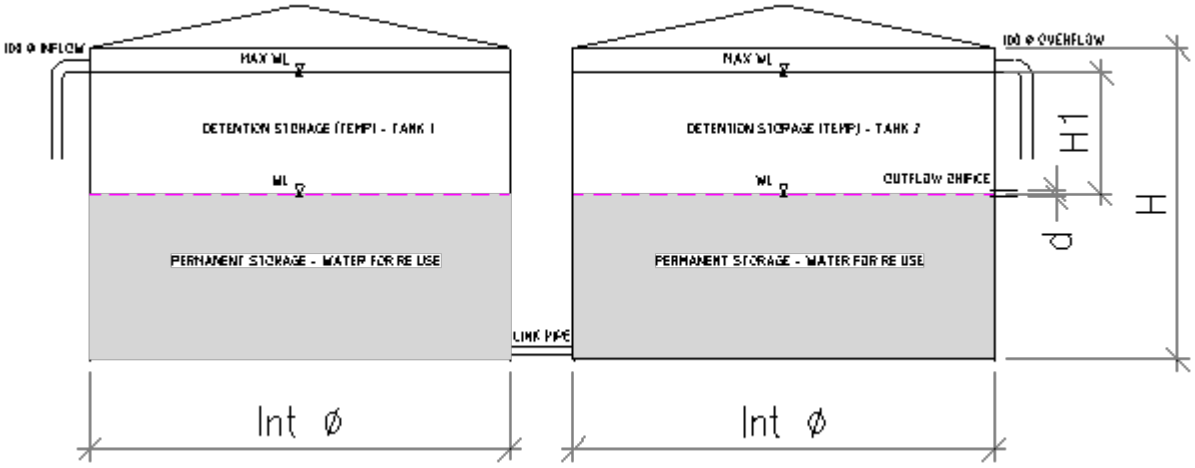


Figure 6.4 Schematic of Above Ground Water Detention Tanks

7 WASTEWATER MANAGEMENT

The design must be in accordance with current standard AS/NZS 1547:2012 and up-to-date engineering practice in on-site wastewater disposal.

7.2. LAND APPLICATION OPTIONS FOR TREATED WASTEWATER

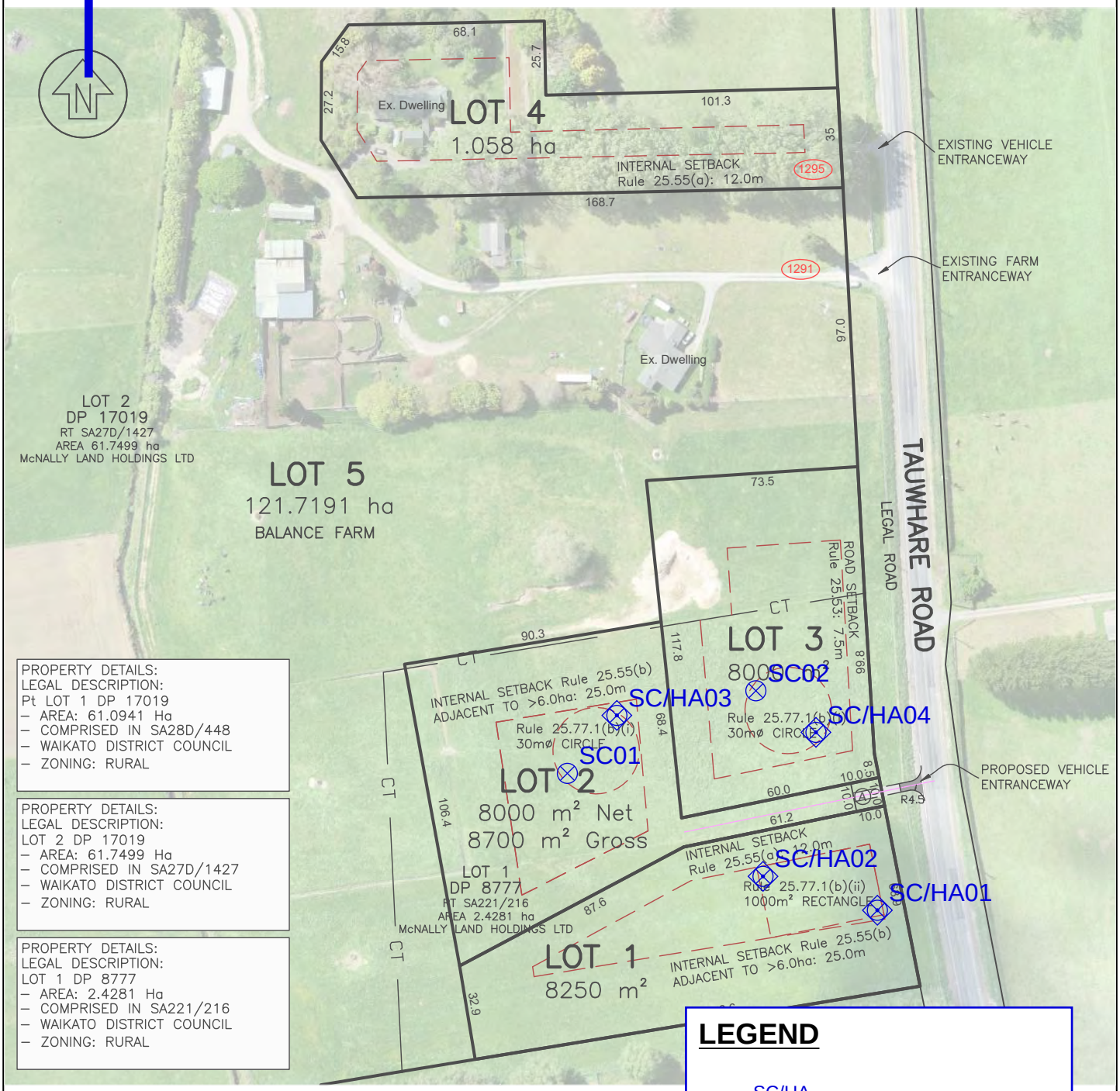
1. Primary treatment - Land application after treatment via discharge control trenches. Discharge to the disposal field is via gravity or pumping.
2. Secondary treatment - Land application after treatment via subsoil drippers lines (irrigation). Discharge to the disposal field, drip line system is via pumping. This option requires ongoing maintenance and associated costs. However, it has the added benefit of recycling water via the irrigation lines, reusing water for plants and gardens.

Both Primary and Secondary wastewater treatment systems are viable options for the site. Soils investigations revealed that the soil is made up of **Sandy Loams or Category 2.**

The following table summarises the design requirements:

Treatment Level:	Disposal Type:	Design Loading Rate (max):
Primary Treatment	Traditional Trenches	15mm/day
Secondary Treatment	Drip Irrigation	5mm/day

PROBASE ENGINEERING	Project Title: 1291 - 1295 Tauwhare Rd, Eureka		
	Figure Title: Location Plan		
	Author: BJM	Date: 27/11/20	Job No: P20782	Figure: 1



PROPERTY DETAILS:
LEGAL DESCRIPTION:
Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 2 DP 17019
– AREA: 61.7499 Ha
– COMPRISED IN SA27D/1427
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

PROPERTY DETAILS:
LEGAL DESCRIPTION:
LOT 1 DP 8777
– AREA: 2.4281 Ha
– COMPRISED IN SA221/216
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

LEGEND

SC/HA — Hand Auger w. Scala

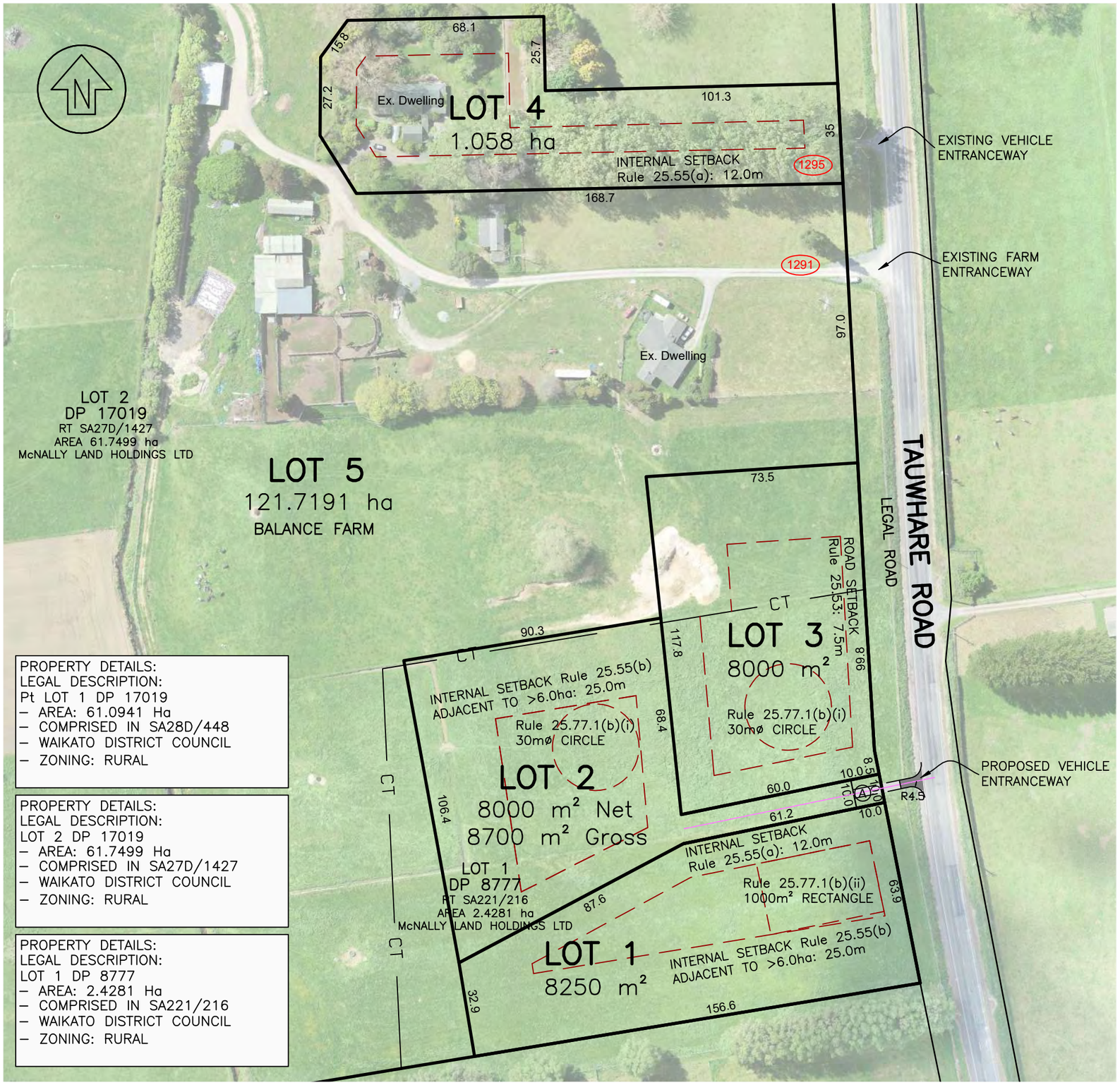
SC — Scala Penetrometer

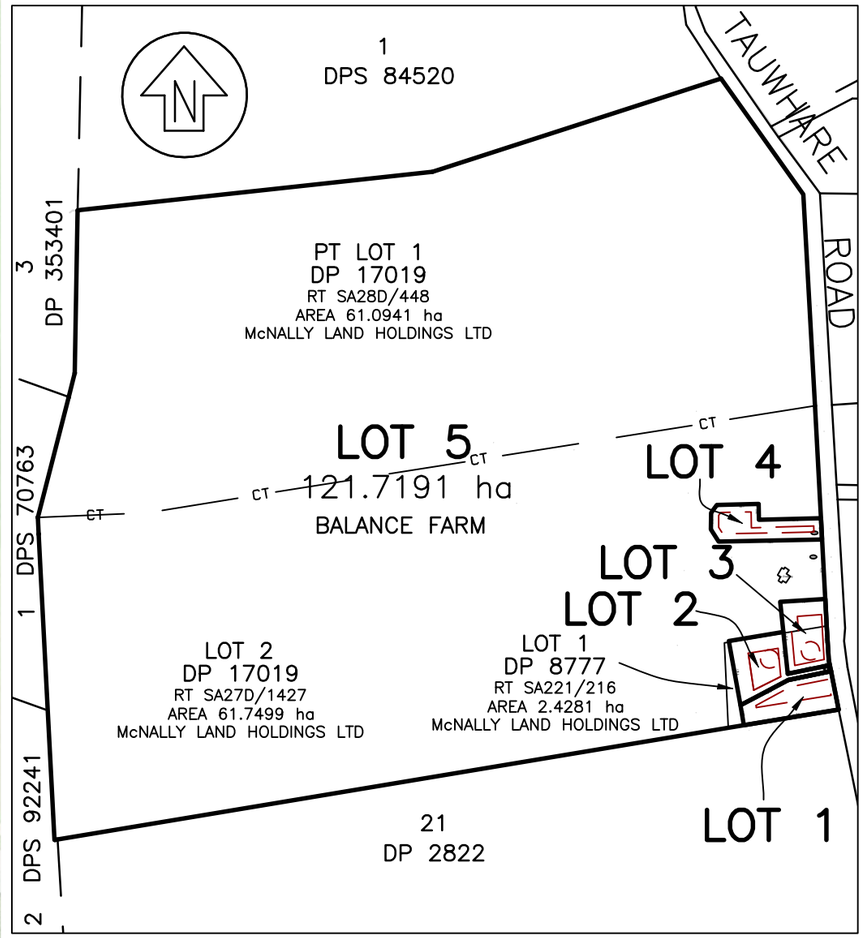
PROBASE ENGINEERING

Project Title: 1291 - 1295 Tauwhare Rd, Eureka			
Figure Title: Site Plan			
Author: BJM	Date: 27/11/20	Job No: P20782	Figure: 2

APPENDIX A

Site Development Plans





LOCATION DIAGRAM

SCALE 1:10000

PROPERTY DETAILS:
LEGAL DESCRIPTION:
Pt LOT 1 DP 17019
– AREA: 61.0941 Ha
– COMPRISED IN SA28D/448
– WAIKATO DISTRICT COUNCIL
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LEGAL DESCRIPTION:
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– AREA: 2.4281 Ha
– COMPRISED IN SA221/216
– WAIKATO DISTRICT COUNCIL
– ZONING: RURAL

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOTS 1 & 3 HEREON

NOTES:

1. AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.

NICKLIN CE
SURVEYING PLANNING ENGINEERING
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info@nicklince.co.nz
6 Wilson Street
P.O. Box 754
Cambridge 3450

PROJECT TITLE
SUBDIVISION APPLICATION PLAN
LOTS 1 – 5 BEING SUBDIVISION OF LOT 1 DP 8777,
LOT 2 DP 17019 & PT LOT 1 DP 17019
A MCNALLY – 1291 & 1295 TAUWHARE ROAD, EUREKA

PLAN TITLE
CONSENT PLAN

ALTERATION	JOB	SHEET
	4585	02
CAD RNW	ORIGINAL SCALE AT A3	ISSUE 1
DATE 03 NOV 2020	1:1500	

C:\USERS\CADCOMPUTER\NICKLIN CE\NICKLIN CE TEAM SITE – DOCUMENTS\4585 ANDREW MCNALLY (135 HUNTER, 1291–1295 TAUWHARE)\CAD\CONSENT PLANS\4585–02 CONSENT ISSUE 1.DWG

APPENDIX B

Hand Auger Logs

PROBASE ENGINEERING — FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

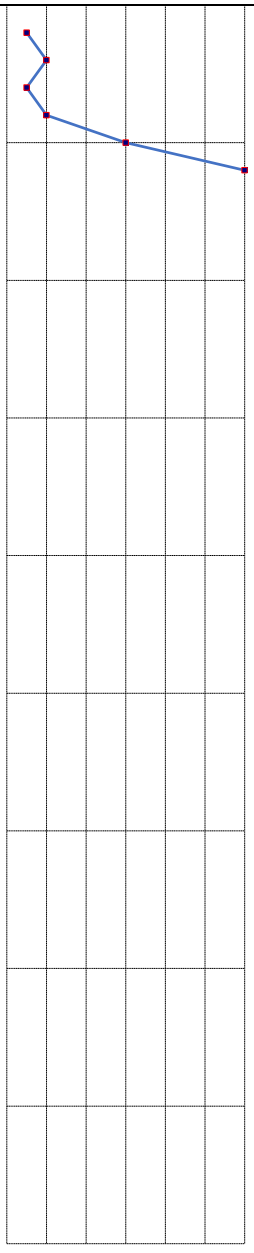
BOREHOLE ID: SC/HA01

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	NOT ENCOUNTERED
	2						
	2		Sandy SILT; orangish brown. Very loose to loose, moist, sensitive; sand, fine.			HINUERA FORMATION	
	2						
0.5	1			0.5			
	2						
	3						
	2						
	2		Fine to medium SAND; light brownish grey. Loose, moist.				
1.0	2			1.0			
	3		Below 1.1m, fine to coarse SAND, medium dense to dense.				
	6						
	10						
	8		Below 1.3m, fine to coarse SAND, some gravel, gravel, fine to medium.				
1.5	11			1.5			
	13						
	7						
	11						
	7						
2.0			End of borehole at 1.8m - Too dense to auger.	2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE FOUNDING EXCELLENCE ENGINEERING

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC/HA02

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	
	2		SILT, some sand; light brownish grey. Loose, moist.				
	1		Fine to coarse SAND, some gravel; reddish brown.			H.R.D*	N.E*
	2						
0.5	6			0.5			
	12						
	19		End of borehole at 0.6m - Too dense to auger.				
	16		End of scala at 0.8m - Too dense to scala.				
1.0				1.0			
			H.R.D* = Holocene River Deposits				
			N.E* = Not Encountered				
1.5				1.5			
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC/HA03

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	NOT ENCOUNTERED
	3						
	7		Sandy SILT; brown. Medium dense, moist, sensitive; sand, fine to coarse.			HINUERA FORMATION	
	7						
0.5	6			0.5			
	4		Fine to coarse SAND; light greyish brown. Medium dense, moist.				
	4						
	5						
	5						
1.0	6			1.0			
	6						
	4						
	4						
	4						
1.5	3		Below 1.4m, loose to medium dense.	1.5			
	3						
	4						
	4						
	6						
2.0				2.0			
			End of borehole at 2.0m - Target depth.				
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING — FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

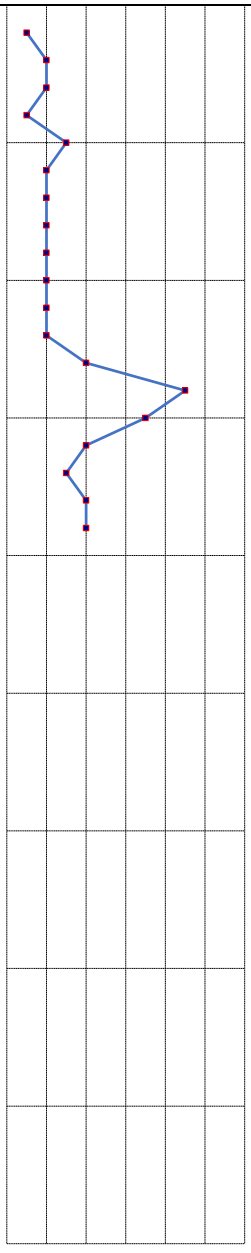
BOREHOLE ID: SC/HA04

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1		TOPSOIL; dark brown. Moist.			T/S	
	2		Sandy SILT; orangish brown. Very loose to loose, moist, sensitive; sand, fine.			HINUERA FORMATION	NOT ENCOUNTERED
	3						
	2						
0.5	1			0.5			
	2						
	1						
	2		Silty fine to medium SAND; orangish brown. Loose, moist.				
	2						
1.0	2			1.0			
	3						
	3						
	4		Below 1.2m, medium dense.				
	4						
1.5	6			1.5			
	11		Gravelly SAND; Light brownish grey. Dense, moist.				
	8						
	7		End of borehole at 1.6m - Too dense to auger.				
	4						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC01

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1						
	2						
	2						
	1						
0.5	3			0.5			
	2						
	2						
	2						
	2						
1.0	2			1.0			
	2						
	2						
	4						
	9						
1.5	7			1.5			
	4						
	3						
	4						
	4						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

PROBASE ENGINEERING FOUNDING EXCELLENCE

PROJECT:	1291-1295 Tauwhare Rd, Eureka	JOB No.	P20782
CLIENT:	Nicklin CE	DATE:	25/11/2020
		TESTED BY :	BJM
NOTES:	Refer to attached Site Plan for testing locations	SHEAR VANE ID:	1592

BOREHOLE ID: SC02

Depth (m)	No of Blows	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10	SOIL DESCRIPTION	Depth (m)	UNDRAINED SHEAR (kPa)	Geologic Unit	Ground Water
	1						
	2						
	2						
	3						
0.5	2			0.5			
	3						
	2						
	1						
	1						
1.0	2			1.0			
	2						
	4						
	4						
	4						
1.5	5			1.5			
	7						
	8						
	8						
	6						
2.0				2.0			
2.5				2.5			
3.0				3.0			
3.5				3.5			
4.0				4.0			
4.5				4.5			

APPENDIX C

Natural Hazard Risk Assessment

Risk Assessment: Natural Hazards

Project Name: P20782 - 1291-1295 Tauwhare Rd, Waikato **Date: 27.11.2020**

Completed By: BM

Natural Hazard	Risk score			Mitigation Measures	Material Damage if Natural Hazard Occurred
	Likelihood	Consequence	Factor		
Earthquake	1	5	Low	All structures to be built in accordance with the Building Code and other relevant standards. As part of the geotechnical investigations at the site, a Level B liquefaction assessment in accordance with the MBIEs' "Planning and Engineering Guidance for Potentially Liquefaction-prone Land" has been completed - refer to report.	Structural damage, earth movement.
Tsunami	1	5	Low	No mitigating actions possible. Site is above sea level and approx. 55km from the nearest coast line.	Structural damage, earth movement.
Erosion	1	3	Low	No signs of erosion were present during site investigations.	Structural damage, earth movement.
Volcanic or geothermal activity	1	5	Low	Site is not in the vincinity of active volcanos or geothermal activity.	Structural damage, earth movement.
Landslip	1	4	Low	Slopes within the site are generally gentle to moderate and landslip is not considered likely.	Structural damage, earth movement.
Subsidence	1	3	Low	No human inducted activity (ie mining, water extraction) known in the immediate area to cause potential subsidence. No potential natural causes known as site is not near any known fault lines (active or inactive)	Structural damage, earth movement.
Sedimentation	4	1	Low	Sedimentation has the potential to flow from the property during construction. Sediment traps and bagging should be used to caputure sediment during construction phases to mitigate potential sediment flowing to neighbouring properties.	Deposition of soils.
Wind	6	1	Moderate	Site is located in a rural area. All structures (bracing) to be built in accordance with the Building Code and other relevant standards (AS/NZS 1170).	Structural damage.
Drought	1	3	Low	Soils encountered have non expansive properties.	Soil shrinkage.
Fire	1	5	Low	No immediate hazards in the vicinty.	Structural damage.
Flooding	1	4	Low	The site does not sit within the Waikato Council defined flood hazard areas.	Water damage to property and possessions.

APPENDIX D

Producer Statement Author Certificate

Waikato Building Consent Group
Working together

Hamilton City Council
Te kaunihera o Kirikiriroa

Private Bag 3010
Hamilton 3240
New Zealand

TEL 07 838 6699
FAX 07 838 6599
EMAIL info@hcc.govt.nz
hamilton.govt.nz

Producer Statement Author

Registration # 535

This is to recognise that **James Harper** is approved by The Waikato Building Consent Group as a producer statement author for the following scope of works:

Engineering - Geotechnical, Wastewater and Stormwater Systems

This approval is limited to items:

PS1 – Design
PS4 – Construction Review

Insurance Expiry Date: 14/02/2021

- Limited in validity to a period of one year to the **01/07/2021** unless cancelled in writing sooner.
- This author can be removed from the register at anytime for any reason if the review panel find this person unfit to provide producer statements.

TELOS GROUP
REAL ESTATE

Rates Notice

Rates Information Database

Use the rates information database to find out rates information about property in the Waikato district.

If you would like your details made confidential, please complete the Request to Suppress Personal Information form and return to Waikato District Council. Please note that it is not necessary to complete the form if you have no objection to your name and postal address being published in the Complete Rating Information Database.

If you have a question about your rates, please contact the rates team on 0800 492 452 or complete our online request form for a staff member to contact you directly.

Property details

Property location	1271 Tauwhare Road TAUWHARE
Valuation number	04431/305.01
Legal description	LOT 1 DP 561952 INT IN ESMT

Property charges (2024/2025)

	Targeted rate factor	Factor applicable	Amount
General Rate	0.21142c/$	1550000.00	$3,277.01
Uniform Annual General Charge (UAGC)	Fixed Charge	1.00	$526.15
Tauwhare Community Centre	per dwelling	1.00	$30.00
Central District Rubbish and Recycling Collection	per dwelling	1.00	$255.56

Total rates payable $4,088.72 incl. GST

Property charges proposed (2025/2026)

The rates charges shown here are based on the proposed Long Term Plan (2025 – 2034) work program which is currently being consulted on. These are draft only and represent the charges that would be applied if the proposed Long Term Plan is adopted in its current form after consultation with the community.

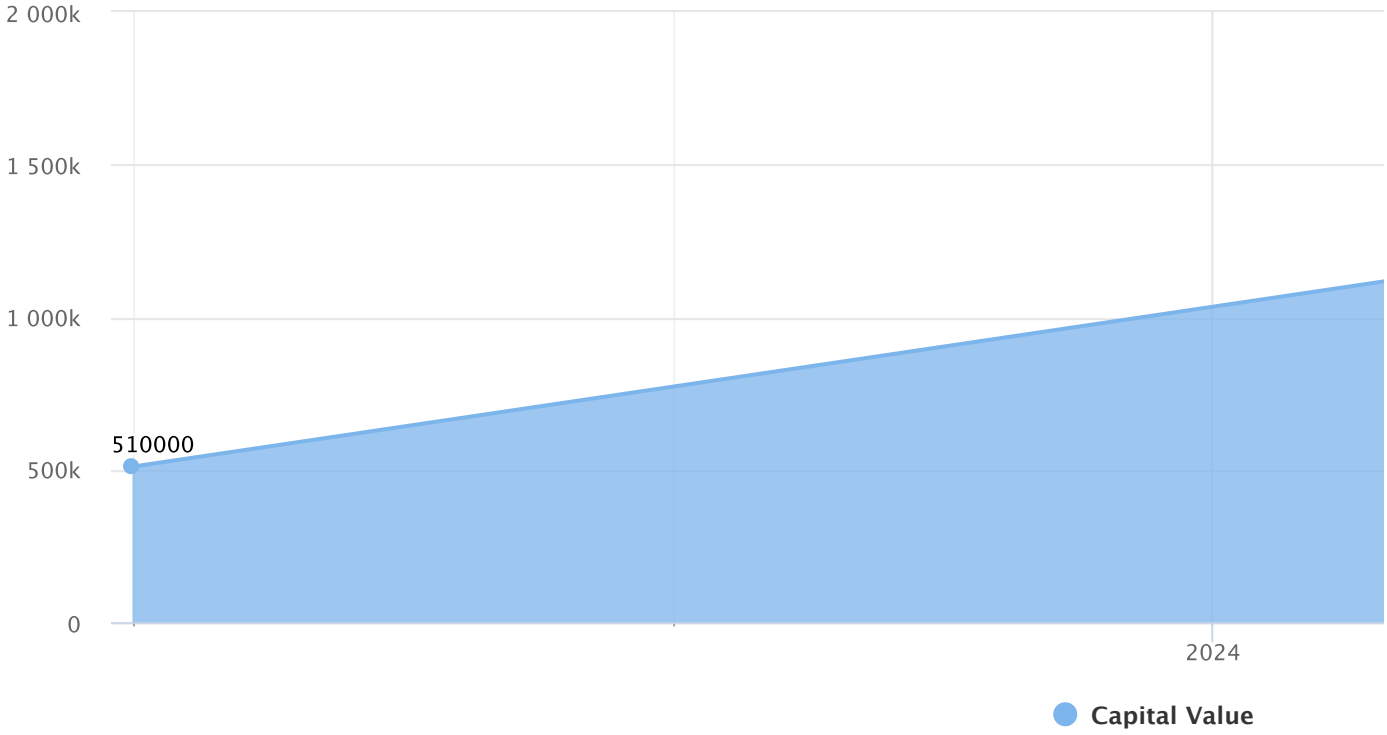
The Long Term Plan will be finalised after community consultation and adopted on the 30 June 2025, and the charges will be confirmed on this date.

You can find information on the Long Term Plan consultation process and how to engage at https://www.waikatodistrict.govt.nz/say-it.

	Targeted rate factor	Factor applicable	Amount
General Rate	0.22040c/$	1550000.00	$
Uniform Annual General Charge (UAGC)	Fixed Charge	1.00	$548.49

Total rates payable $3,964.62 incl. GST

Property valuation history



TELOS GROUP
REAL ESTATE

Valuation Report

VALUATION REPORT

Fergusson Lockwood
Registered Valuers & Property Consultants

1271 Tauwhare Road, Eureka, Waikato District – 3287

Prepared For:	ANZ Bank New Zealand Limited
Client Ref:	Robert Gordon Davies
Date of Valuation:	4 October 2024

VALUATION SUMMARY

Address:	1271 Tauwhare Road, Eureka, Waikato District - 3287
Instructed By:	Robert Gordon Davies
Prepared For (CLIENT):	ANZ Bank New Zealand Limited
Property Type:	Lifestyle site and dwelling
Borrower:	Robert Gordon Davies
Purpose of Valuation:	Market Valuation 'As Is' for Finance for Mortgage Security Purposes.
Brief Description:	The subject property comprises a recently completed dwelling of 310m², constructed with a brick, and vertical shiplap weatherboard exterior cladding, and having a corrugated Colorsteel gable roof, internally providing five-bedroom, three-bathroom accommodation with an internal two-car garage. Situated on an 8,320m² rural zoned land parcel, having an easy contour, and being located in the Eureka locality of the Waikato District.
Property Inspected:	The interior and exterior of this property have been inspected by the undersigned Registered Valuer. Please refer to photos throughout the report.
Date of Valuation:	4 October 2024
GST Statement:	Our valuation and the market evidence referred to in this report are GST inclusive (if any) unless otherwise stated.
Special Assumptions:	Please refer to Section 1.16 of this report.
Significant Risks:	Please refer to Sections 12 of this report.
Market Value 'As Is':	**$1,840,000 (One Million Eight Hundred and Forty Thousand Dollars)** This value is inclusive of $35,000 chattels.

Prepared By:

Taylor Jacobs
Registered Valuer
Director
BBS (VPM)
(Valuation and Property Management)

Carne Groube
Assistant Valuer
BBS (VPM)
(Valuation and Property Management)

SWOT ANALYSIS

Strengths

- Good quality improvements

Weaknesses

- Fronts a main arterial route
- Limited site development

Opportunities

- Site development

Threats

- Market uncertainty due to higher OCR and interest rates
- Market uncertainty due to higher inflation rate
- Depreciating house prices
- Lower demand for lifestyle property

CONTENTS

DETAILED PROPERTY REPORT AND VALUATION

1 Introduction

[The following section relates to IVS 101, 20.3 (a) – (n). Text in italics is wording from IVS 104]

1.1 Instruction

We have received instructions dated 27 October 2024 from Robert Davies, to provide a full market valuation report for finance for mortgage security purposes for 1271 Tauwhare Road, Eureka.

1.2 Identification and Status of the Valuer

This valuation has been prepared by Registered Valuer, T Jacobs and Assistant Valuer, C Groube who have all the appropriate experience and qualifications necessary to undertake this valuation. Mr. Jacobs or Mr. Groube have no direct or indirect interest in this property and are not aware of any conflicts of interest. The Registered Valuer holds a current Annual Practicing Certificate, and Fergusson Lockwood & Associates Limited holds appropriate level of Indemnity Insurance for the value level assessed in the report.

This section specifies procedures carried out in the valuation process to ensure each valuation is completed to a high standard. The following table outlines the valuer's role in undertaking this valuation.

Valuation Role	Valuer Involvement
Inspection of Property Exterior and Interior:	Carne Groube, Taylor Jacobs
Calculations:	Carne Groube
Information Review:	Carne Groube
Reporting Authoring:	Taylor Jacobs
Quality Assurance/Reviewing:	Taylor Jacobs
Principal Valuer:	Taylor Jacobs

1.3 Client & Intended Users

This report has been prepared solely for the use of and is confidential to ANZ Bank New Zealand Limited and Robert Gordon Davies.

1.4 Purpose of the Valuation

Market Valuation 'As Is' for Finance for Mortgage Security Purposes.

1.5 Identification of the Asset

The superior interest in land and buildings located at 1271 Tauwhare Road, Eureka, and held within Record of Title 996572.

1.6 Basis of Value

Highest and Best Use

This valuation has been undertaken on the basis of the 'Highest and Best Use' of the property. International Valuation Standards describe "Highest and Best Use" as being: *"The highest and best use must be physically possible (where applicable), financially feasible, legally allowed and result in the highest value"*.

Market Value

The International Valuation Standards (IVS) and PINZ Standards defines 'Market Value' as: *"Market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion"*.

1.7 Qualifying Statement and Disclaimers

This valuation has been prepared on the basis of a willing seller / willing buyer concept, with reference to comparable sales evidence. It reflects, in our opinion, the market value as at the date of the property inspection. The valuation may not reflect the situation that could occur should the property be sold under forced sale conditions. This valuation may change in the future because of varying market conditions and the physical state of the property.

1.8 Valuation Dates

Date of Inspection:	4 October 2024
Date of Valuation:	4 October 2024
Report Issue Date:	10 October 2024

1.9 Standing Instructions

This valuation is undertaken on the basis that it complies and is in accordance with the Residential Valuation Standing Instructions Version 1.3.

1.10 International Valuation Standards – Compliance Statement

This valuation has been performed in accordance with the ethical and professional requirements of the International Valuation Standards effective 31 January 2022, and we confirm the following;

- Statements of fact presented in this report are correct to the best of the signatory Valuer's knowledge.
- Analyses and conclusions contained in this report are limited only by any stated assumptions and conditions.
- The signatory Valuer has no interest in the subject property.
- The valuation was performed in accordance with the applicable ethical code and performance standards.
- The signatory Valuer is fully Registered and holds the required professional education qualifications, and has valuation expertise relating to this type of property in this location.
- The signatory Valuer has physically inspected the subject property and no one except any persons specified in the report has provided professional assistance in its preparation.

1.11 Extent of Investigation

This report is for valuation purposes only and should not be regarded as a structural survey of the improvements nor a survey of the land.

Our inspection of the main buildings on the property have been carried out for the purpose of making a valuation and should not be considered to represent a detailed structural survey.

This report is prepared on the assumption that, except where noted in this report;

i) The buildings have been competently designed and built, and are structurally sound and watertight.

ii) The buildings do not contain any latent or patent defects which would result in;

   a) the building ceasing to be watertight;

   b) gradual decay of the building including its structure.

iii) Where applicable, the buildings comply with the Building Act 2004 and the Building Codes contained in the First Schedule of The Building Regulations 2005 (or any amendment or substitution of that Code).

The valuation has been prepared on the basis that the property and all buildings comply with the Local Authority's minimum requirements and should for any reason this not be the case then this valuation is conditional upon compliance by the Owner.

We have inspected readily accessible places and it was not possible to inspect the unexposed and inaccessible structural components. Therefore, we are unable to report on the condition of these, however, we could not determine any major factors which would suggest there is any structural unsoundness. We have not inspected services such as electrical wiring and plumbing. Our valuation has been undertaken on the basis that any lifts, hot and cold-water systems, electrical systems, ventilating systems, air conditioning and other devices, fittings, installations or conveniences that are contained within the building are in a proper working order and are functioning for the purpose for which they were designed, and conform to the current building, fire and government regulations and codes. No guarantee is given in respect of rot, termite, pest infection, or other hidden defects. We have not conducted a land survey of the subject property and assume all improvements lie within the title boundaries.

1.12 Methamphetamine and/or other drugs and/or other similar hazardous contamination

Our valuation assumes that the subject property does not have and/or has not previously had any contamination whatsoever from Methamphetamine and/or other drugs and/or other similar hazardous substances. We do not undertake any investigation into the past and/or present uses of either the subject property or any adjoining or nearby land/property to establish whether there is any potential for contamination from Methamphetamine and/or other drugs and/or other similar hazardous substances. We have therefore prepared this valuation on the assumption that the subject property does not have and/or has not previously had any contamination whatsoever from Methamphetamine and/or other drugs and/or other similar hazardous substances. Should you have any concerns around the issue of whether the subject property may have (or have had) contamination from Methamphetamine and/or other drugs and/or other similar hazardous substances, you should seek the appropriate independent advice from professionals specialising in such areas. In the event that the subject property is deemed to have (or have had) any contamination whatsoever from Methamphetamine and/or other drugs and/or other similar hazardous substances, our valuation is not to be relied upon as contamination from Methamphetamine and/or other drugs and/or other similar hazardous substances may affect the value of the subject property.

1.13 Nature and Source of the Information Relied Upon

Information has been sourced from;

- Land Information New Zealand
- Property Guru
- REINZ Statistical Data
- Local Authority District Plan

1.14 Restrictions on Use, Distribution or Publication

The report is not to be relied upon by any other person or for any other purpose other than those parties identified under '1.3 Client and Intended Users' and '1.4 Purpose of the Valuation'. We accept no liability to third parties, nor do we contemplate that this report will be relied upon by third parties. We invite other parties who may come into possession of this report to seek our written consent to them relying on this report. We reserve the right to withhold our consent or to review the contents of this report in the event that our consent is sought. This valuation is to be read in conjunction with our 'Valuation Policy Statements' and our 'Terms and Conditions of Trade. These statements are attached to and form part of this valuation report.

Our valuation has been prepared at the date of valuation, and reliance on this report is limited to a 90-day period post the valuation date stated within this report.

1.15 Currency

Unless otherwise stated, all figures including the valuation contained within this report are expressed in New Zealand Dollars (NZD).

1.16 Assumptions and Special Assumptions

None Known.

1.17 Valuation Standards

This valuation has been prepared with conformity to the International Valuation Standards 31 January 2022, and the Guidance Papers for Valuers and Property Professionals. Specifically, our valuation has been prepared in accordance with the following:

International Valuation Standards

- Glossary
- Framework

General Standards

- IVS 101 - Scope of Work
- IVS 102 - Investigations and Compliance
- IVS 103 - Reporting
- IVS 104 - Basis of Value
- IVS 105 - Valuation Approaches and Methods

Asset Standards

- IVS 400 - Real Property Interests

Guidance Papers

- ANZVGP 111 – Valuation Procedures Real Property
- ANZVGP 112 – Valuation for Mortgage and Loan Security
- ANZPGP 210 – Disclaimer Clauses and Qualification Statements
- NZVGP 501 – Goods and Services Tax (GST) in Property
- NZVGP 503 – Valuation Reports prepared by Unregistered Valuers
- NZPGP 601 – Methods of Measurement Guide

2 Title

The subject property is contained within the following Record of Title, and is described as below.

Title Type: Record of Title

Identifier: 996572

Land Registration District South Auckland

Estate (Tenure): Fee Simple

Area: 8320m² more or less

Legal Description: Lot 1 Deposited Plan 561952

Registered Owners: Robert Gordon Davies

Interests of Note: See attached Record of Title, and we note the following interests:

- 12459898.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.8.2022 at 3:33 pm
- Appurtenant hereto is a right of way created by Easement Instrument 12459898.6 - 12.8.2022 at 3:33 pm
- The easements created by Easement Instrument 12459898.6 are subject to Section 243 (a) Resource Management Act 1991
- Land Covenant in Covenant Instrument 12459898.7 - 12.8.2022 at 3:33 pm (Limited as to duration)
- 12952099.2 Mortgage to ANZ Bank New Zealand Limited - 15.3.2024 at 5:33 pm

Comment on Interest: The consent notice pursuant states any earthworks, foundation design, on-site wastewater management, and on-site stormwater management for a building consent application on the lot must be undertaken either in accordance with the restrictions and recommendations of the site suitability report prepared by Probese Engineering Limited dated 27 November 2020, or in accordance with an alternative report undertaken by a suitably qualified and experienced engineer, approved in writing by the council.

The easement registered is for a right of way and a right to convey electricity, and provides services to the site, and in our view, these registrations do not unduly affect the value of the land.

The land covenant instrument registered on the title outlines restrictions upon the lot that relate to the construction, landscaping and use of the lot, and these covenants should be considered if any work were to take place. It is also noted that the lot is located in close proximity to rural activities and as such, the registered owner of the lot acknowledges the associated noise and potential disturbances that come from these activities.

We have searched these documents and whilst we do not profess to have legal expertise, we do not consider that these interests unduly affect the value of the land.

The above interests have been taken into account in our valuation assessment. Refer: 'Appendix A - Copy of Record of Title'

3 Statutory Valuation and Charges

3.1 Rating Valuation

The subject property is contained within the following Rating Valuation, and is described as below.

Local Authority:	Waikato District Council
Rating Valuation Date:	1 October 2023
Land Value:	$630,000
Improvements Value:	$920,000
Rating Value:	$1,550,000
Rating Value Comment:	The above Rating Valuation has been undertaken on a mass appraisal basis for rates assessment purposes, is effective as at the date of valuation, and is considered to be below the market value of the subject property as at the valuation date.

4 Location

Source: Property Guru

Situation Comment: The subject property is situated on the western side of Tauwhare Road, 500m north of Tahuroa Road, 3.2km south of State Highway 26, and 1.6km north of Tauwhare Village.

Neighbourhood Comment: Tauwhare Road is a rural road, located to the east of Hamilton. The surrounding properties comprise developed dairy farms, grazing blocks and other lifestyle units. In recent times this has become an established lifestyle location and several smaller size lifestyle block subdivisions have occurred within the last 15-year period. Most of the new homes that have been built are of a high quality and are well presented on sites ranging in sizes from 5000m^2 to 1.5ha.

Amenities Comment: Tauwhare Village to the south has a home kill business, with Matangi Village to the west, providing a convenience store and a takeaways shop. The property is 'in zone' for Tauwhare School, Te Miro School, and Motumaoho School. With increasing lifestyle development taking place, Newstead/ Matangi/Tauwhare are regarded as a desirable lifestyle locations, although not quite as desirable as the established recognised lifestyle area of Tamahere. Hamilton City provides an extensive range of services and amenities with schooling to all levels including university and a full services hospital.

5 Resource Management

Territorial Authority: Waikato District Council

Plan Name: District Plan

Plan Status: Operative

Zoning: Rural

Zone Overlays: N/A

Permitted Activity: The following activities are permitted under the Operative Waikato District Plan if they comply with all effects and building rules;

- Lawfully established Agriculture and Horticulture activities
- Temporary events
- Home occupation
- On-site services
- Network Utility (excluding aerials)
- Existing electricity and telecommunications lines
- Gas transmission lines

Development Controls (if relevant): The following development controls relate to the Rural Zone under the Operative Waikato District Plan;

- General Subdivision
  - (1) Subdivision is a restricted discretionary activity if;
    - (a) the subdivision creates no more than one additional certificate of title from each existing viable certificate of title that existed prior to subdivision, other than utility and access allotments, and
    - (b) the land being subdivided comprises land with each certificate of title issued
      - (i) prior to 6 December 1997, or
      - (ii) after 6 December 1997 if it was created by:
        - a process other than subdivision under the Resource Management Act 1991, or
        - a boundary adjustment where the land was contained in a viable certificate of title issued prior to 6 December 1997, or
        - despite rule 25.5(e), a subdivision which created a utility allotment exclusively for the purposes of a network utility from land contained in a certificate of title issued prior to 6 December 1997.
- Allotment Size:
  - (1) Subdivision is a restricted discretionary activity if:
    - (a) the parent certificate of title is at least 20ha and

(b) every child certificate of title has a minimum net site area of 8000m^2 and a maximum of 1.6ha, except for an access allotment or a utility allotment, and

(c) no more than one certificate of title produced by the subdivision has an area greater than 1.6ha, and

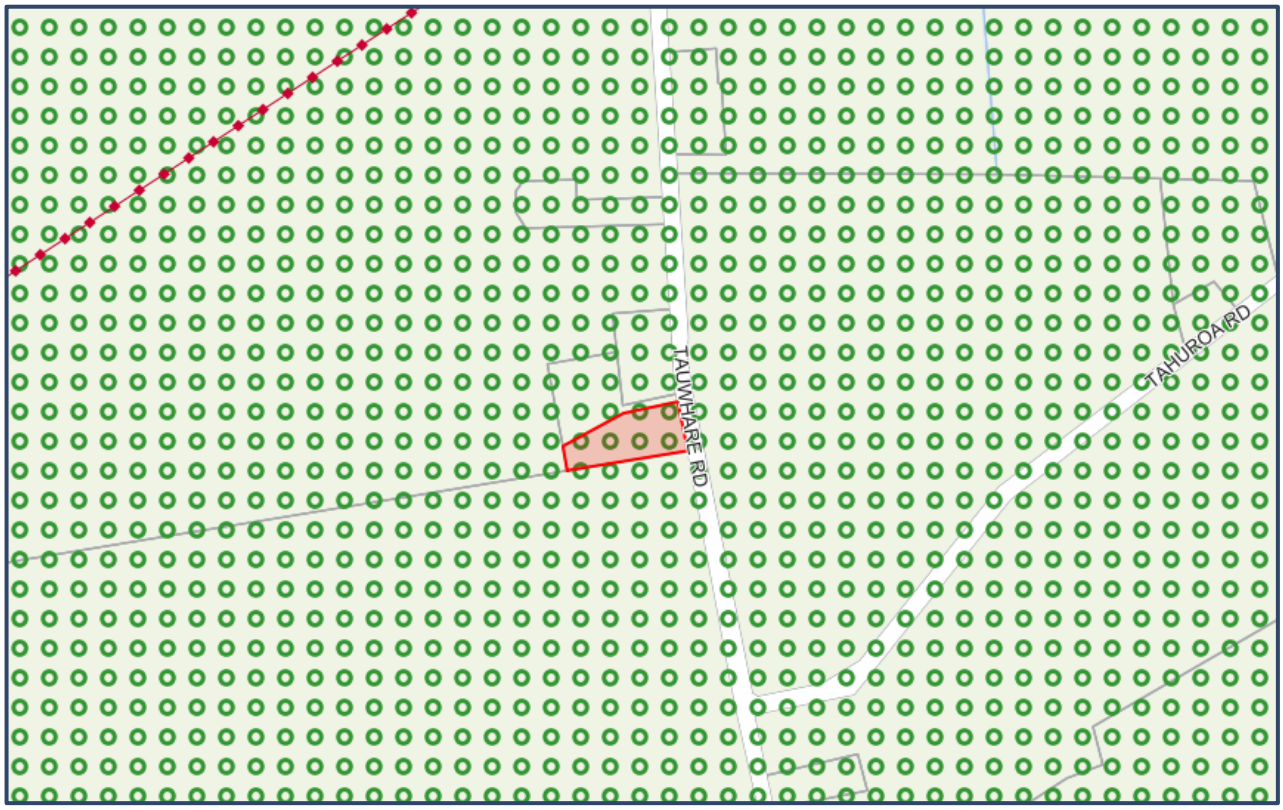
(d) a utility allotment for a network utility does not exceed 50m^2.

Zoning Effect:

The current use of the property is a permitted activity, is considered to be its highest and best use, and does not detrimentally affect the saleability of the property.

Zoning Map

The subject property is located on the western side of Tauwhare Road as seen in red in the below image.



Source: Waikato District Council GIS Planning Maps

6 Site Description and Services

Source: Property Guru

Site Area:

8320m² more or less

Site Description:

This is a slightly irregular shaped front site, with the boundary shape and dimensions shown on the above images and attached Record of Title.

The subject lot forms part of a recently established three-lot rural residential lifestyle subdivision. The three lots utilise a shared entrance with the subject forming the southern of the three lots. The topography of the site is flat to easy, with the contour falling from road frontage to an the level building platform and continues to fall to the western boundary.

Appreciable views are obtained to the west over neighbouring farmland, with views to the north obscured by adjacent lifestyle properties, to the south over the LIC quarantine farm, and east to hills surrounding the Tauwhare village.

Services:

Services will be provided in the form of power reticulated to the dwelling from road frontage. Roof water collection will be collected to two concrete inground tanks, pumped on demand via UV filter to dwelling. The dwelling will have an inground septic system and wastewater disposal field.

Environmental:

Site Contamination - None known

7 Improvements

7.1 Overview

Overview Description:

The main improvement comprises a recently completed dwelling of 310m², constructed with a brick, and vertical shiplap weatherboard exterior cladding, and having a corrugated Colorsteel gable roof, internally providing five-bedroom, three-bathroom accommodation with internal two-car garage.

7.2 Dwelling

7.2.1 Floor Area

Ground Floor: 310m^2 including internal garage

Internal Garage: 44.5m^2 approximately

Where floor areas have been stated, onsite measurements have been undertaken in accordance with the PCNZ/PINZ guide for the measurement of residential properties and NZPGP 601 – Methods of Measurement.

7.2.2 Construction

Foundations: Concrete

Flooring: Concrete

Exterior Cladding: Brick, and vertical shiplap weatherboard

Window Joinery: Aluminium double glazed

Roofing: Corrugated Colorsteel

Roof Style: Gable

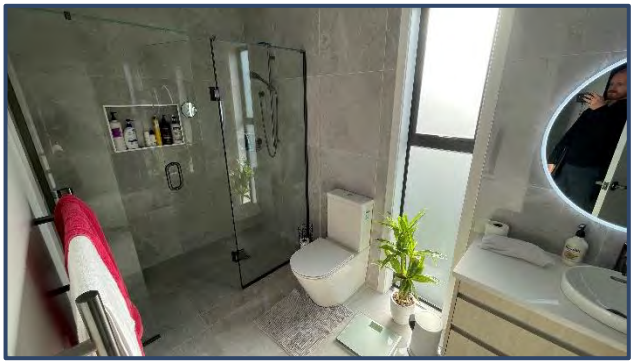
Spouting: Colorsteel

Wall Linings: Plasterboard

Ceiling Linings: Plasterboard

7.2.3 Accommodation






Features:

Features:

Entry:

Single-door entry from front entrance portico into a large entrance hallway with tile flooring.

Kitchen:

Having twin sinks in engineered stone island benchtop with soft close cupboards below, dishwasher space, further polished stone benchtop with under bench oven, four burner ceramic cooktop to tile splashback with integrated extractor above, tile flooring. To the rear of the kitchen is a scullery with L-shaped polished stone benchtop having single stainless steel sink insert, under bench and wall storage with tile flooring.

Dining:

Open plan extension of the kitchen and living area with carpet flooring, and vaulted ceiling.

Living:

Open plan extension of the dining area with carpet flooring, gas fire, ranch sliding doors to the exterior portico, vaulted ceiling, and carpet flooring.

Master:

Large double bedroom with carpet floor coverings, sliding door to exterior covered portico, large walk-in wardrobe, and adjoining ensuite with tile floor-to-wall shower, twin feature vanity, toilet, heated towel rail, and tile floor coverings.

Media:

Located to the northern end of the dwelling, having carpet flooring and ranch slider to a deck and portico.

Office:

Having wall storage and carpeted floor coverings.

Guest Master:

Double bedroom with carpet floor coverings, sliding door to the exterior of the dwelling, walk-in wardrobe with built in vanity having stainless steel sink insert, under bench cupboards, adjoining ensuite with corner shower, heated towel rail, toilet and tile flooring.

Bedrooms:

Three additional double bedrooms with carpet floor coverings, and wall storage.

Bathroom:

Having a freestanding oval bath, heated towel rail, partitioned toilet, feature vanity with hand basin, walk-in tiled shower, and tile flooring.

Hallway:

Carpet floor central hallway providing access from the entrance way through to the main bedroom dwelling with large walk-in storage cupboard with attic access, and bifold doors to wall storage.

Garage:

Internally accessed two-car garage with an automatic sectional insulated double garage door, with built-in laundry having single stainless steel sink in Formica benchtop with under bench and wall storage.

Interior Comments:

The interior of the dwelling provides a functional design and layout with most rooms opening off the open plan living area and central hallway. The dwelling has medium-sized rooms, and the kitchen and bathroom fixtures are of a new quality. Overall, we consider the subject dwelling provides a good level of five-bedroom accommodation.

7.2.4 Chattels

Chattels Description:

In our valuation we have included the usual chattels such as fixed floor coverings, and pendant light fittings.

7.3 Other Improvements

Site Development:

Site development includes a concrete driveway and parking area, post batten and wire site boundary fencing, covered external porticos, and concrete paths.

7.4 Presentation and Condition

Structural Comment:

We have not undertaken a structural survey and we are not qualified to comment on such matters. Accordingly, it would be prudent to obtain a report from a suitably qualified person if there are any concerns regarding the structural integrity of the home. We advise that our valuation has been carried out on the basis that there are no major defects, and we did not notice any from our property inspection. We point out that we do not have a copy of the LIM report and we are not able to make comment as to whether all buildings have Building Permits and Code of Compliances, with our valuation subject to all buildings having the required consents and building permits.

Exterior Comment:

The exterior of the dwelling is considered to be in a new condition for age and we did not notice any major items that require immediate attention.

Interior Comment:

The interior of the dwelling is considered to be in a new condition for age and we did not notice any major items that require immediate attention.

7.5 Essential Repairs

N/A

7.6 Construction Costs (As if Complete)

N/A

7.7 Code of Compliance

N/A

8 Valuation Rationale

Highest and Best Use

In assessing what we consider to be the appropriate market value for the land, we have considered the "highest and best" use for the land. International Valuation Standards effective 31 January 2022 defines Highest and Best Use as *"The highest and best use must be physically possible (where applicable), financially feasible, legally allowed and result in the highest value"*. Given the zoning of the subject, we consider the Highest and Best Use for the subject to be the current lifestyle occupation.

Valuation Approaches

When undertaking valuations, consideration must be given to the relevant and appropriate valuation approaches. The three approaches described and defined below are the main approaches used in valuations of Land and Buildings. These valuation approaches are; the Market Approach, the Income Approach and the Cost Approach.

The Market Approach provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available.

The Income Approach provides an indication of value by converting future cashflow to a single current value. Under the Income Approach, the value of an asset is determined by reference to the value of income, cashflow or cost savings generated by the asset.

The Cost Approach provides an indication of value using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of value by calculating the current replacement or reproduction cost of an asset and making deductions for physical deterioration and all other relevant forms of obsolescence.

Methods Adopted

The Comparable Transactions Method involves direct comparison of recent market sales. Subjective adjustments for a range of characteristics including (but not limited to) quality, size, aspect, location, views, amenity and other improvements. This method is seen to be the most appropriate method in establishing market value.

Under the Net Rate method, the sale prices are analysed to derive a residual value for the dwelling, after deducting the value of the land, other improvements, and chattels. The residual dwelling value is analysed to a rate per square meter of floor area. Having analysed the sales to a net rate, comparison is then made with the subject dwelling to determine an appropriate rate, which is then applied to the dwelling floor area to establish its value. The value of the land, other improvements and chattels are then added to the dwelling value to establish the market value of the property by using this method.

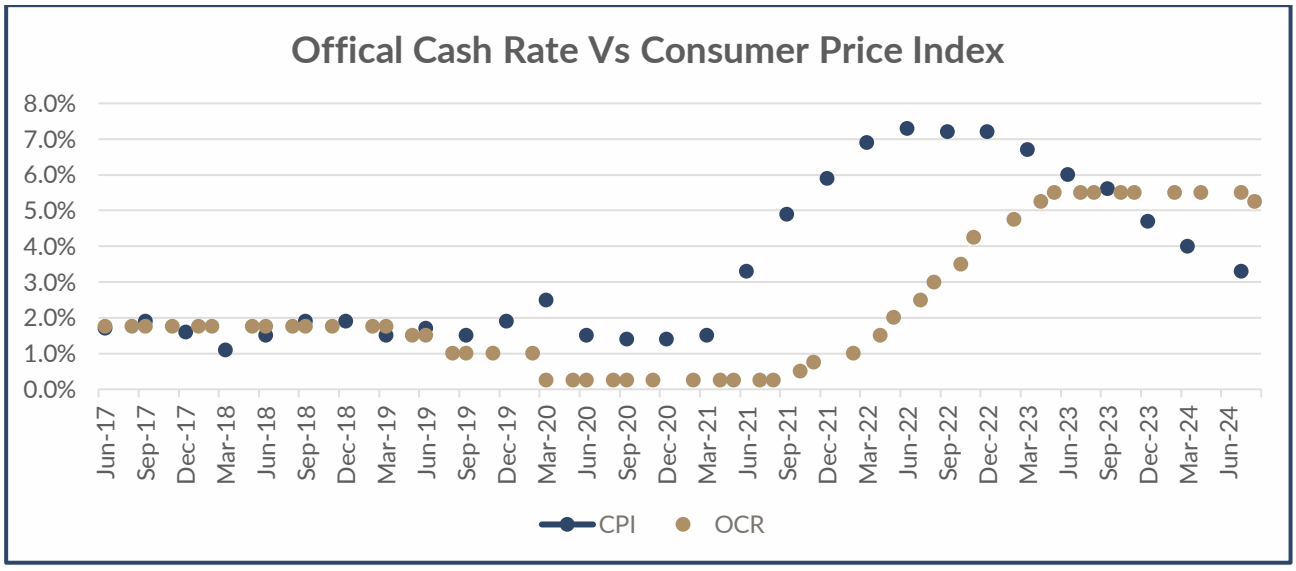
In assessing the value of this property, we have had regard to prices that have been paid for lifestyle properties within this part of the Waikato District.

9 Market Commentary

Macro Market Comments

The Consumer Price Index (CPI) is a measure of inflation for New Zealand households, recording changes in the price of goods and services. The Monetary Policy Committee (MPC) within the Reserve Bank of New Zealand is required to keep inflation between 1% and 3% on average over the medium term, with a focus on keeping future average inflation near the 2% target midpoint. Since inflation targeting was introduced in New Zealand, inflation has averaged around 2.2%. However, since June 2021 New Zealand has seen a rapid rise in inflation, with the CPI reaching 7.3% in the twelve months to June 2022. The following data shows the CPI peaking in June 2022, and has since fallen over the previous five quarters to 3.3% in the twelve months to June 2024, with a quarterly inflation 0.4%.

The Official Cash Rate (OCR) is monetary policy utilised by the Reserve Bank of New Zealand to achieve and maintain price sustainability and support maximum sustainable employment. The government requires the RBNZ to keep inflation between 1% and 3% over the medium term. The Monetary Policy Committee within the Reserve Bank of New Zealand (RBNZ) lowered the Official Cash Rate (OCR) to 0.25% in March 2020, an all-time low, in order to assist stimulate the economy in response to the international Covid-19 outbreak. However, in response to significant inflation rise, the RBNZ increased the OCR from 0.25% in September 2021 to 5.5% in May 2023, to help maintain price stability and support maximum sustainable employment. The July 2024 update saw the Monetary Policy Committee vote to leave the OCR to 5.5%, with the Committee stating "Restrictive monetary policy has significantly reduced consumer price inflation, with the Committee expecting headline inflation to return to within the 1 to 3 percent target range in the second half of this year". The August 2024 announcement came with the first decrease in the OCR since March 2020 to 5.25%, with the committee stating "New Zealand's annual consumer price inflation is returning to within the Monetary Policy Committee's 1 to 3 percent target band", however further easing will depend on "the Committee's confidence that pricing behaviour remain consistent with a low inflation environment, and that inflation expectations are anchored around the 2 percent target".



Source: Stats NZ & Reserve Bank of New Zealand (RBNZ)

The Gross Domestic Product (GDP) measures the monetary value of final goods and services, that is, those that are bought by the final user, produced in a country in a given period of time. It counts all of the output generated within the borders of a country. New Zealand's GDP follows a uniform trend of growth with GDP during the period June 2010 to March 2020 having a yearly average of between 1.0% to 4.1%. Since the outbreak of COVID-19 in early 2020, New Zealand's annual GDP growth fell to -1.5% in December 2020, followed by a quick rise in growth to 6% annually in December 2021, backed by record low interest rates and increased consumer spending habits. Yearly GDP growth has since returned to the uniform rate, however New Zealand has seen growth below 2% for the last eight quarters, including five quarters of negative growth.

The Employment Rate within New Zealand rose quarter on quarter since September 2020 (66.4%), rising to 69.1% in September 2023, however falling to 68.4% in the quarter ending March 2024. The Unemployment

Rate within New Zealand has risen 1.0% since September 2021 to now sit at 4.3% for March 2024, being the highest rate recorded since March 2021.

Net migration within New Zealand returned to positive rates in July 2022, following nineteen quarters of negative net migration between the period of November 2020 and June 2022. Provisional Stats New Zealand data indicates a Net Migration rate of 82,828 for the year ended May 2024, with Citizens of India, Philippines, China, and New Zealand driving net migration gains in the 2024 12-month period.

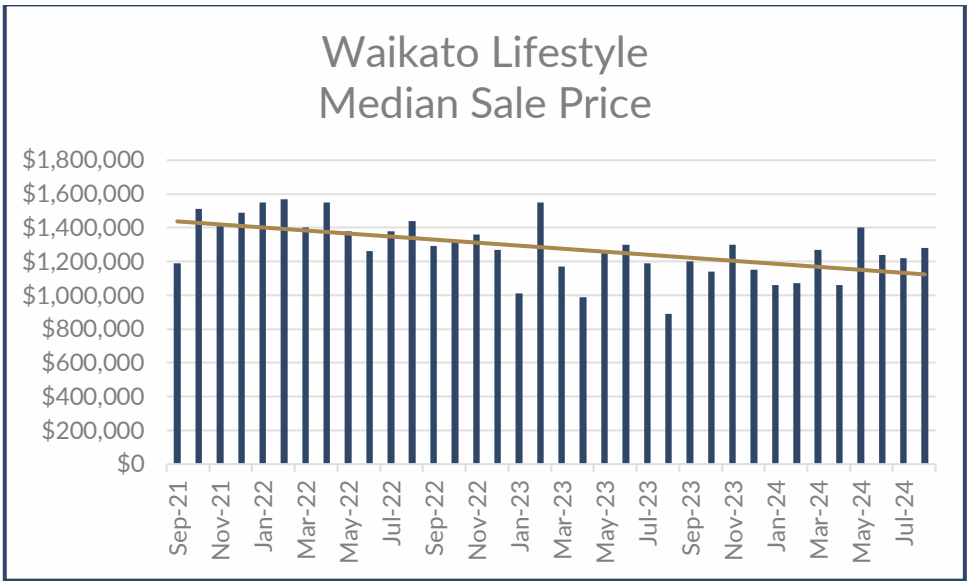
Following the Red setting of the COVID-19 Protection Framework period the residential market has for 2022 and 2023 slowed. Local Real Estate Agents are indicating an increased level of housing stock and properties are now taking longer to sell. Mortgage Brokers indicate that there are now less first home buyer transactions due to changes to the CCCFA impacting lending. Finance is a central obstacle for some buyers, and this has impacted the number of property transactions since December 2021. This coupled with current interest rates is causing a decreased demand for the available housing stock that comes to the market, and this has had a noticeable effect on median house prices throughout the Region.

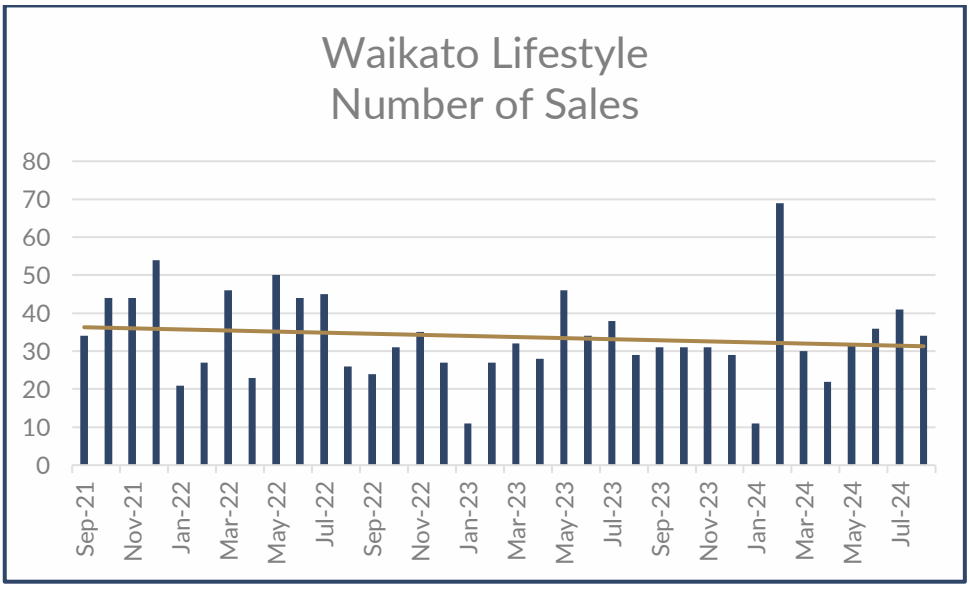
Local Market Overview

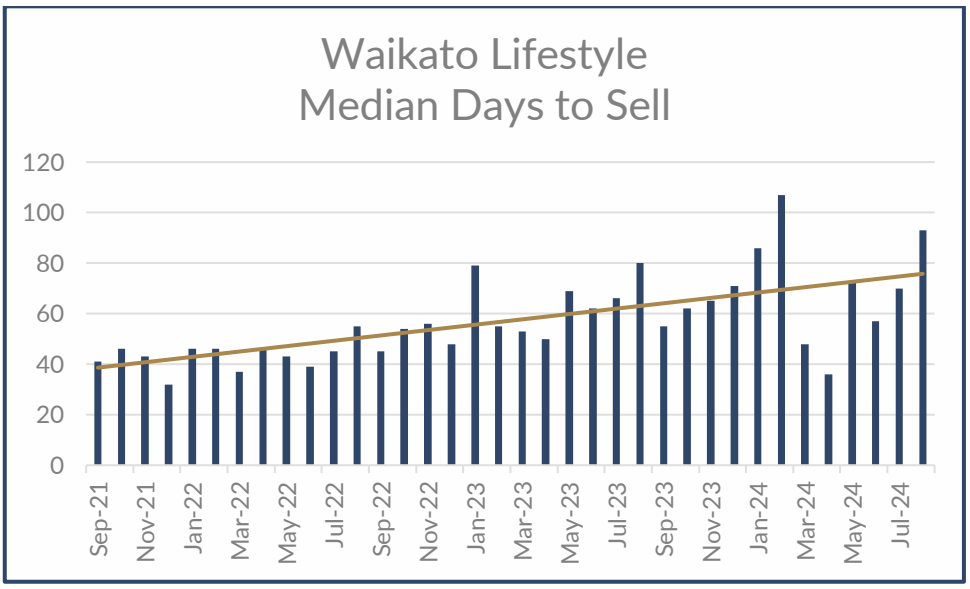
The following graphs show statistics from the Real Estate Institute of New Zealand in respect to the median sale price, the number of transactions per month and the number of days to sell lifestyle properties in the Waikato District. The graphs are detailed below, which indicate a negative trend line for growth in median sale prices, being $1,280,000 for August 2024, a neutral trend line for the volume of sales per month with 34 transactions in August 2024, and a positive trend line for the median days to sell, which for August 2024 was 93 days.

Lifestyle properties traded in the last six-month period within the subject's immediate locality have achieved prices between $750,000 for inferior quality lifestyle properties located in inferior locations to $2,200,000 for excellent quality larger dwellings in developed lifestyle locations. Given the subjects size, level of development, and location, we would expect its market value to lie towards the middle of the aforementioned range.

Local Market Graphs







10 Sales Evidence

For your information, we list below details of the sales that we consider are most comparable. We have compared these sales using the Market Approach, more specifically the 'Comparable Transactions Method' with analysis of improved sales on sale price and on a net building rate basis. When analysing each of these comparable sales listed, we have had regard to:

- The size, age, appearance, construction and design of the dwelling
- The land area, contour, view and development
- The location of each of the comparable sales

10.1 Sales Evidence – Developed Sites

Sale No. 1

1246A State Highway 26 – Sold September 2024 for $1,765,000

This is a circa 2011 single-level dwelling of 261m², constructed of fibre cement weatherboard exterior cladding and having a Colorsteel gable roof, internally providing four-bedroom, two-bathroom accommodation with a two-car internal access garage and an inground swimming pool. All improvements are situated on a 20,400m² front lifestyle land parcel in the Eureka locality of the Waikato District.

Land & Location	Larger land parcel, similar location
Dwelling:	Smaller, inferior level of accommodation, inferior quality and condition
Dwelling Net Rate	$2,910/m^2
Other Improvements:	Superior
Value Comparison:	Lower value

Sale No. 2

502D Tauwhare Road – Sold June 2024 for $1,800,000

This is a circa 2014 single-level dwelling of 234m², constructed of fibre cement weatherboard and plaster exterior cladding and having a Colorsteel mono pitch roof, internally providing five-bedroom, three-bathroom accommodation with a two-car external garage. All improvements are situated on a 5101m² rear lifestyle land parcel in the Matangi locality of the Waikato District.

Land & Location:	Smaller land parcel, superior location
Dwelling:	Smaller, comparable level of accommodation, inferior quality
Dwelling Net Rate	$3,290/m^2
Other Improvements:	Superior
Value Comparison:	Lower value

Sale No. 3

16 Enclave Lane – Sold January 2024 for $1,830,000

This is a circa 2018s era single=level 289m² dwelling constructed with a brick and cedar exterior cladding, and having a trapezoidal Colorsteel gable roof, providing five-bedroom, two-bathroom accommodation with internal two-car garage. Other improvements include an inground swimming pool. All improvements are situated on an 8,264m² lifestyle land parcel in the Taupiri locality of the Waikato District.

Land & Location:	Superior development and location
Dwelling:	Smaller, inferior level of accommodation, inferior quality and condition
Dwelling Net Rate	$3,080/m²
Other Improvements:	Superior
Value Comparison:	Lower value

Sale No. 4

156 Seddon Road – Sold April 2024 for $1,855,000

This is a 2010s era single-level dwelling of 303m², constructed of brick and fibre cement weatherboard exterior cladding and having a Colorsteel gable roof, internally providing four-bedroom, two-bathroom accommodation with a two-car internal access garage and a further two-car Colorsteel garage. All improvements are situated on a 13,700m² front lifestyle land parcel in the Puketaha locality of the Waikato District.

Land & Location:	Larger land parcel, superior location
Dwelling:	Similar size, internally providing one less bedroom and bathroom, of an inferior quality
Dwelling Net Rate	$2,810/m²
Other Improvements:	Superior
Value Comparison:	Higher value

Sale No. 5

7A Llennoc Lane – Sold September 2024fpr $1,950,000

This is a circa 2012s era single-level dwelling of 229m², constructed of concrete block and fibre cement weatherboard exterior cladding and having a Colorsteel hip roof, internally providing four-bedroom, two-bathroom accommodation with a two-car internal access garage, inground swimming pool, and a large two bay Colorsteel garage with a self-contained rumpus room. All improvements are situated on a 10,300m² rear lifestyle land parcel in the Matangi locality of the Waikato District.

Land & Location:	Larger land parcel, superior location
Dwelling:	Smaller, inferior level of accommodation, inferior condition
Dwelling Net Rate	$3,060/m²
Other Improvements:	Superior
Value Comparison:	Higher value

Sale No. 6

228A State Highway 26 – Sold June 2024 for $2,025,000

This is a 2020 era single-level dwelling of 303m², constructed of concrete block exterior cladding and having a tile gable roof, internally providing five bedroom, three bathroom accommodation with a three-car internal access garage. All improvements are situated on an 11,200m² front lifestyle land parcel in the Newstead locality of Hamilton City.

Land & Location:	Larger land parcel, superior location
Dwelling:	Similar size similar quality
Dwelling Net Rate	$3,380/m²
Other Improvements:	Comparable
Value Comparison:	Higher value

Sale No. 7

13 Kew Place – Sold August 2023 for $2,100,000

This is a 2010s era two-storey dwelling of 325m², constructed of concrete block and fibre cement board exterior cladding and having a low pitch gable roof, internally providing four-bedroom, three-bathroom accommodation with a two-car internal access garage. All improvements are situated on a 6727m² rear lifestyle land parcel in the Tamahere locality of the Waikato District.

Land & Location:	Smaller land parcel, superior location
Dwelling:	Larger, one less bedroom, inferior condition
Dwelling Net Rate	$2,710/m²
Other Improvements:	Comparable
Value Comparison:	Higher value

10.2 Reconciliation of Sales Evidence

The following is a summary of the above market evidence:

Address	Sale Date	Sale Price	Land Size (m^2)	Dwelling Size (m^2)	Net Rate ($/$m^2$)	Comments
1246A State Highway 26	13.09.2024	$1,765,000	20400	261	$2,910	**Inferior**
502D Tauwhare Rd	05.06.2024	$1,800,000	5101	234	$3,290	**Inferior**
16 Enclave Lane	19.01.2024	$1,830,000	8264	289	$3,080	**Inferior**
156 Seddon Rd	19.04.2024	$1,855,000	13700	303	$2,810	**Superior**
7A Llennoc Lane	12.09.2024	$1,950,000	10300	229	$3,060	**Superior**
228A State Highway 26	20.06.2024	$2,025,000	11200	303	$3,380	**Superior**
13 Kew Place	27.08.2023	$2,100,000	6727	325	$2,710	**Superior**
Subject	**04.10.2024**	**$1,840,000**	**8320**	**310**	**$3,390**	

Of the above market evidence, on a straight comparison basis, we consider the sale that sets the lower market value range for the subject property to be the 16 Enclave Lane sale, being for a property with a smaller, recently constructed dwelling with a similar bedroom accommodation, one less bathroom, and similar level of build specification and quality. The property is located in a superior location, with a similar size site. The property sold January 2024 for $1,830,000. We consider the subject to have a higher level of value.

The sale we consider to set the upper market value for the subject property is the sale of 156 Seddon Road. The dwelling is smaller, internally providing an inferior level of accommodation, of an inferior quality. Situated on a larger land parcel, in a superior location, and having a superior level of other improvements. The property sold in April 2024 for $1,855,000 and given the smaller land parcel and inferior location of the subject property, we consider the subject property to have a lower level of value.

When applying the “Market Approach” we analyse our sales where the value of the land is assessed by reference to sales of similar sites. The market-related value for the dwellings is calculated on a net rate basis and this is assessed by deducting from a comparable sale price, the value of the land and site development and dividing the residual price by the total floor area of the buildings to indicate a rate per m^2. Adjustments are made to reflect the property's physical differences, and the adjusted rate is applied to the subject dwelling.

The property sales listed analyse to a building net rate range of between $2,710/$m^2$ to $3,380/$m^2$ with the majority being within the $2,810/$m^2$ to $3,290/$m^2$ range. The sale we consider to have the most comparable dwelling is the sale of 228A State Highway 26, being for a dwelling with a similar floor area, similar accommodation level, and similar quality and condition. Our analysis of the sale indicated a net building rate of $3,380/$m^2$ and given the similar floor area of the subject and the other comparable aspects of the dwelling, we have utilised a similar net rate for the subject dwelling. Our valuation reflects a net building rate of $3,390/$m^2$ and this is well supported by the above market evidence.

11 Valuation

11.1 Market Value Conclusion

We assess the 'As Is' Market Value of the subject property using the Comparable Transaction Method at **$1,840,000 (One Million Eight Hundred and Forty Thousand Dollars)** detailed as follows:

Valuation				
Value of Improvements				
Dwelling Improvements				
Dwelling	310m²	@	$3,390/m²	$1,051,000
Value of Dwelling				**$1,051,000**
Other Improvements				
Site Developments & Services				$74,000
Porticos	29.6m²			$30,000
Value of Other Improvements				**$104,000**
Total Value of Improvements				**$1,155,000**
Land Value				
Total	8,320m²	@	$78/m²	$650,000
Total Value of Land				**$650,000**
Total Value Excluding Chattels				**$1,805,000**
Chattels				$35,000
Market Valuation				**$1,840,000**

This valuation is inclusive of GST (if any).

11.2 Reasonable Selling Period

Having regard to REINZ sale statistics and in particular the average days to sell, in our opinion a reasonable selling period for this property would be 50 days. (Refer Section 10.1).

11.3 Current Contract

N/A

11.4 Previous Sale (Within last 3 Years)

According to Property Guru the subject property was purchased in March 2024 for $600,000.

12 Significant Risks

12.1 Market Risk and Market Uncertainty

This valuation is based on property transactions and market conditions as at the date of valuation. It is current at the date of valuation only, and the value assessed herein may change significantly and unexpectedly over a relatively short period of time including as a result of factors that the Valuer could not reasonably have been aware of as at the date of valuation. We do not accept responsibility or liability for any losses arising from such subsequent changes in value.

Given the market risks and uncertainty noted, we recommend that the user(s) as identified under Section 1.3 of this report, review this valuation periodically.

Local Economic Conditions

The property market in its current state, is ever changing, driven by changing market related inputs and economic conditions. There was a significant increase in the median sale price for residential and lifestyle properties within the Waikato Region through the 2021 calendar year. Following changes in lending criteria by central government, the availability of finance halted the demand for residential and lifestyle properties through the 2022 calendar year, decreasing the number of sales and increasing the days of sale for similar types of properties. The rising OCR through this period, increased interest rates, coupled with increasing inflation, and political unease leading to the 2023 election has created greater market uncertainty. Drivers of value has forced the median sale price of residential and lifestyle properties to depreciate over this period. We have however, throughout the Waikato Region we have seen a slowing of median sale price depreciation, with recent data provided by REINZ showing appreciation of median sale prices in selected locations.

The property market at present is in a state of change, and it is likely that economic influences may well result in a subdued property market for the balance of 2024.

13 Mortgage Recommendation & Risk Assessment

13.1 Mortgage Recommendation

The subject property is suitable for first mortgage lending subject to the risks identified in Section 13.2 Risks of this report. We confirm that the reliant lender can rely on the contents of our report for mortgage lending purposes.

13.2 Risk Assessment

Property Risk Ratings	1	2	3	Market Risk Ratings	1	2	3
Location & Neighbourhood				Reduced Value next 1-2 years			
Land (including Planning & Title)				Market Volatility			
Environmental Issues				Local Economy Impact			
Improvements				Market Segment Conditions			

***Risk ratings: 1 = Low, 2 = Medium, 3 – High**

Note: Our observations within the Risk Assessment and the body of this report provide our opinion of the property as at the date of valuation. This opinion has been based on many factors including our research data and knowledge of the property market, and reflects the nature and standard of the property, inherent characteristics and current market conditions. The Risk Assessment herein forms part of the full valuation report and must not be relied upon in isolation.

Property Risk

Location & Neighbourhood

Land (including Planning & Title)

Environmental Issues

Improvements

Market Value

Reduced Value next 1 - 2 Years - Market uncertainty surrounding rising interest rates and depreciating house prices.

Market Volatility - Volatility of the market in relation to rising interest rates and purchaser borrowing power.

Local Economy Impact

Market Segment Conditions

Appendix A - Current Title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**996572**
Land Registration District	**South Auckland**
Date Issued	12 August 2022

Prior References
SA221/216

Estate	Fee Simple
Area	8320 square metres more or less
Legal Description	Lot 1 Deposited Plan 561952
Registered Owners	

Robert Gordon Davies

Interests

12459898.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.8.2022 at 3:33 pm

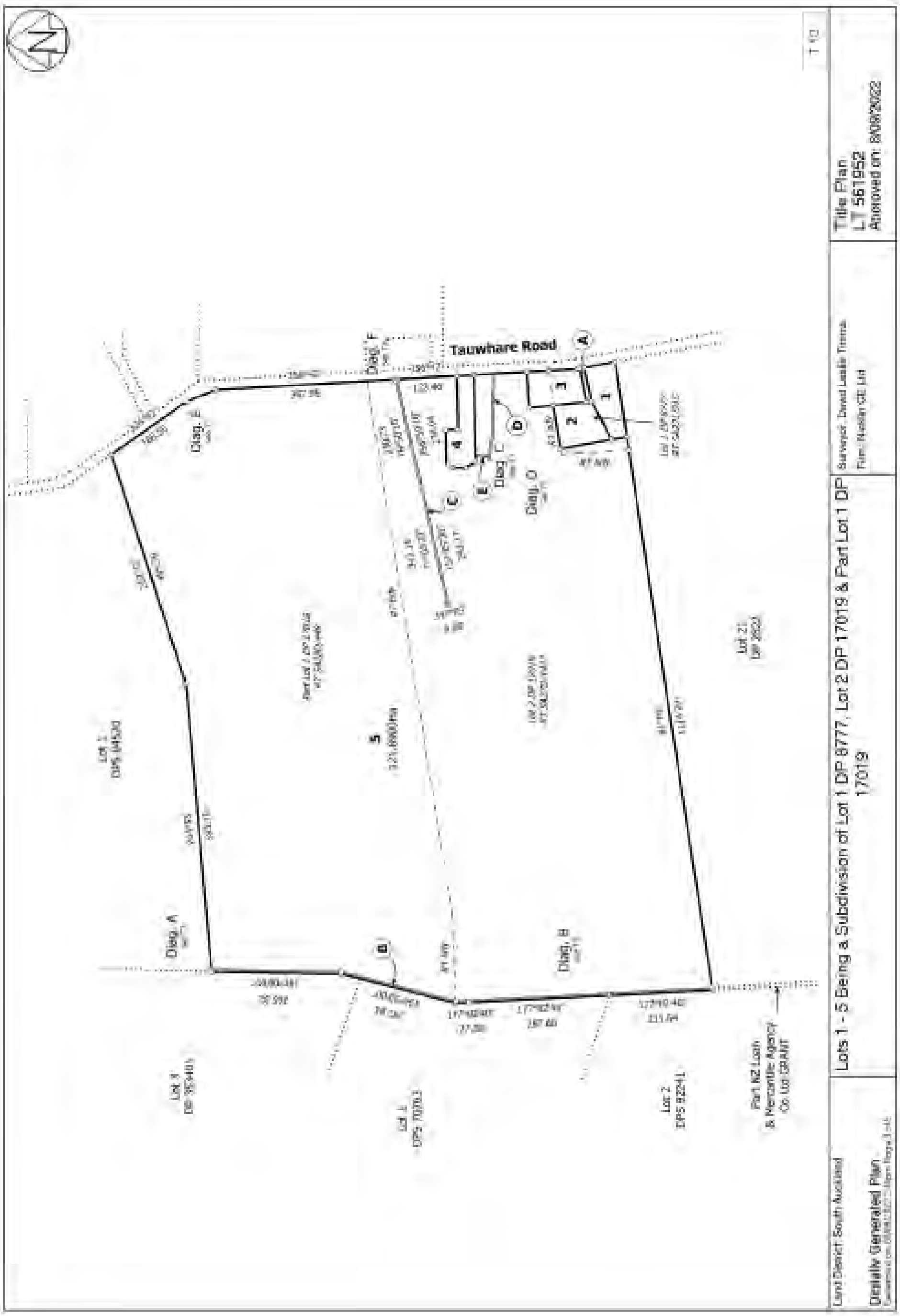
Appurtenant hereto is a right of way created by Easement Instrument 12459898.6 - 12.8.2022 at 3:33 pm

The easements created by Easement Instrument 12459898.6 are subject to Section 243 (a) Resource Management Act 1991

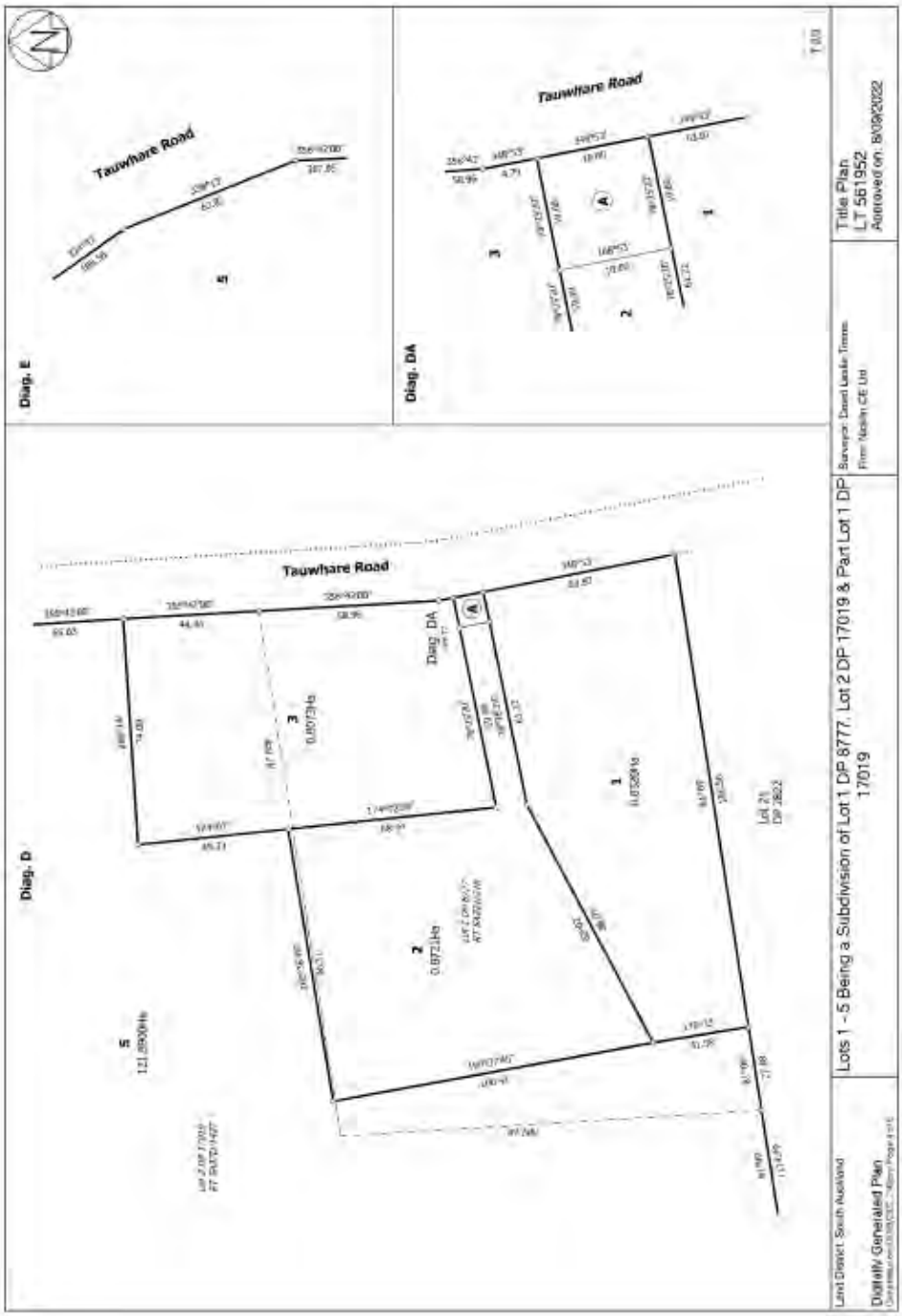
Land Covenant in Covenant Instrument 12459898.7 - 12.8.2022 at 3:33 pm (Limited as to duration)

12952099.2 Mortgage to ANZ Bank New Zealand Limited - 15.3.2024 at 5:33 pm

Identifier **996572**



Identifier **996572**



Appendix B – Historic Title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier 996572
Land Registration District South Auckland
Date Issued 12 August 2022

Prior References
SA221/216

Estate Fee Simple
Area 8320 square metres more or less
Legal Description Lot 1 Deposited Plan 561952
Original Registered Owners
McNally Land Holdings Limited

Interests

10444015.5 Mortgage to ASB Bank Limited - 31.5.2016 at 4:02 pm

10444015.6 Mortgage to (now) Andrew Geoffrey McNally, Fiona Brambley Trustee Limited and Eltan Trust Management Limited - 31.5.2016 at 4:02 pm

12459898.3 Discharge of Mortgage 10444015.6 - 12.8.2022 at 3:33 pm

12459898.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.8.2022 at 3:33 pm

Appurtenant hereto is a right of way created by Easement Instrument 12459898.6 - 12.8.2022 at 3:33 pm

The easements created by Easement Instrument 12459898.6 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Covenant Instrument 12459898.7 - 12.8.2022 at 3:33 pm (Limited as to duration)

12563799.1 Discharge of Mortgage 10444015.5 - 20.9.2022 at 4:44 pm

12563799.2 Transfer to Principle Property Limited - 20.9.2022 at 4:44 pm

12952099.1 Transfer to Robert Gordon Davies - 15.3.2024 at 5:33 pm

12952099.2 Mortgage to ANZ Bank New Zealand Limited - 15.3.2024 at 5:33 pm

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Transaction ID 4000583
Client Reference ssoffe001

Historical Search Copy Dated 27/09/24 10:34 am, Page 1 of 1

Appendix C - Instruction

Fergusson Lockwood
Registered Valuers & Property Consultants

26 September 2024

Attention: Rob Davies
Email: robdavies12@gmail.com

Dear Rob

Scope of Works - 1271 Tauwhare Road, Eureka

Thank you for your enquiry regarding the following property. Below is an outline of the valuation process, scope of works, and work to be engaged, which is to be read in conjunction with our Terms of Trade and Fee Quote.

Timeframe

Our timeframe for this job is five to seven working days from acceptance, on the condition that all terms of service are met by the client.

Identification of Valuer

This valuation will be prepared by Registered Valuer, T Jacobs and Assistant Valuer, C Groube who have all the appropriate experience and qualifications necessary to undertake this valuation. Mr. Jacobs or Mr Groube have no direct or indirect interest in this property and are not aware of any conflicts of interest. The Registered Valuer holds a current Annual Practicing Certificate and holds Indemnity Insurance with Fergusson Lockwood & Associates Limited appropriate for the value level assessed in the report.

Client & Intended Users

This report has been prepared solely for the use of and is confidential to ANZ Bank New Zealand Limited and Robert Davies.

Identification of Asset

The superior interest in land and buildings located at 1271 Tauwhare Road, Eureka, held within Record of Title 996572.

Purpose of Valuation

Market Valuation 'As Is' for Finance for Mortgage Security Purposes.

Basis of Value

Market Value is defined under the International Valuation Standards as *"Market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion"*.

Highest and Best Use is defined as *"The highest and best use must be physically possible (where applicable), financially feasible, legally allowed and result in the highest value"*.

Valuation Date

As at date of Inspection.

Type of Report

Full Market Valuation Report

Valuation Currency

Unless otherwise stated, all figures including the valuation contained within this report are expressed in New Zealand Dollars (NZD).

Valuation Compliance Statement

The valuation will be prepared with conformity to the International Valuation Standards 31 January 2022, and the Guidance Papers for Valuers and Property Professionals.

The Nature and Extent of the Valuer's Work and any Limitations Thereon

The valuation report to be prepared is for valuation purposes only and should not be regarded as a structural survey of the improvements nor a survey of the land.

Our inspection of the main buildings on the property will be carried out for the purpose of making a valuation and should not be considered to represent a detailed structural survey.

The report will be prepared on the assumption that, except where noted in this report;

iv) The buildings have been competently designed and built, and are structurally sound and watertight.

v) The buildings do not contain any latent or patent defects which would result in;

   a) the building ceasing to be watertight;

   b) gradual decay of the building including its structure.

vi) Where applicable, the buildings comply with the Building Act 2004 and the Building Codes contained in the First Schedule of The Building Regulations 2005 (or any amendment or substitution of that Code).

The valuation will be prepared on the basis that the property and all buildings comply with the Local Authority's minimum requirements and should for any reason this not be the case then the valuation will be conditional upon compliance by the Owner.

We will inspect readily accessible places where possible, and where it is not possible to inspect the unexposed and inaccessible structural components, we will be unable to report on the condition of these. We will not inspect services such as electrical wiring and plumbing. Our valuation will been undertaken on the basis that any lifts, hot and cold-water systems, electrical systems, ventilating systems, air conditioning and other devices, fittings, installations or conveniences that are contained within the building are in a proper working order and are functioning for the purpose for which they were designed, and conform to the current building, fire and government regulations and codes. No guarantee is given in respect of rot, termite, pest infection, or other hidden defects. We will not conducted a land survey of the subject property and assume all improvements lie within the title boundaries.

Restrictions on use, distribution and publication of the report

The report is not to be relied upon by any other person or for any other purpose other than those parties identified under Section '1.3 Client and Intended Users' and Section '1.4 Purpose of the Valuation' of our valuation report. We accept no liability to third parties, nor do we contemplate that this report will be relied upon by third parties. We invite other parties who may come into possession of this report to seek our written consent to them relying on this report. We reserve the right to withhold our consent or to review the contents of this report in the event that our consent is sought. This valuation is to be read in conjunction with our 'Valuation Policy Statements' and our 'Terms and Conditions of Trade. These statements are attached to and form part of this valuation report.

Our valuation has been prepared at the date of valuation, and reliance on this report is limited to a 90-day period post the valuation date stated within this report.

The Nature and Sources of Information Relied Upon

Information will be sourced from;

- Land Information New Zealand
- Property Guru
- REINZ Statistical Data
- Local Authority District Plan

Significant Assumptions and/or Special Assumptions

None known

Payment

Payment for the valuation services shall be made in full prior to the release of the final report, unless a written arrangement is in place, in which we would require payment on or before the 20th of the following month. Interest may be charged on any amount owing after the due date at the rate of 2.5% per month or part month. Fergusson Lockwood & Associates Limited reserve the right to require payment of a 50% deposit prior to the commencement of valuation services.

Payment via credit card will incur a 1.99% surcharge of the total invoice.

Additional Fees

Any additional professional services provided to the client beyond the scope of work outlined above will incur an additional fee charged at a rate of $350 per hour plus GST.

Yours faithfully

Zachary Mason
Director
Registered Valuer
B.LPM (Rural Val & Agri Mgmt)

Taylor Jacobs
Director
Registered Valuer
BBS (Valuation & Property Mgmt)

Fraser Belgrave
Director
Registered Valuer
B.App Sci (Rural Val)

Terms of Trade

1. Definitions

1.1 'Fergusson Lockwood & Associates shall mean Fergusson Lockwood & Associates Limited (2010) Limited, or any agents or employees thereof.

1.2 'Client' shall mean the client, any person acting on behalf of and with the authority of the client, or any person purchasing services from Fergusson Lockwood & Associates Limited.

1.3 'Services' shall mean without limitation the provision of rural, commercial and urban property valuation and consultancy services, farm management consultant services, arbitration and mediation services relating to and share milking contracts and associated services provided by Fergusson Lockwood & Associates Limited to the client and shall include without limitation all charges for labour and work, hire charges, insurance charges, or any fee or charge associated with the supply of services by Fergusson Lockwood & Associates Limited to the client.

1.4 'Price' shall mean the cost of the services subject to clause 4 of this contract.

2. Acceptance

2.1 Any instructions received by Fergusson Lockwood & Associates Limited from the client for the supply of services shall constitute acceptance of the terms and conditions contained herein.

3. Collection and Use of Information

3.1 The client authorises Fergusson Lockwood & Associates Limited to collect, retain and use any information about the client, for the purpose of assessing the client's credit worthiness, enforcing any rights under this contract or marketing any services provided by Fergusson Lockwood & Associates Limited to any other party.

3.2 The client authorises Fergusson Lockwood & Associates Limited to disclose any information obtained to any person for the purposes set out in clause 3.1.

3.3 Where the client is a natural person the authorises under clauses 3.1 and 3.2 are authorities or consents for the purposes of the Privacy Act 1993.

4. Price

4.1 Where no price is stated in writing or agreed to orally the services shall be deemed to be supplied at the current amount that such services are ordinarily supplied by Fergusson Lockwood & Associates Limited at the time of the contract.

5. Payment

5.1 Payment for the valuation services shall be made in full prior to the release of the final report, unless a written arrangement is in place, in which we would require payment on or before the 20th of the following month

5.2 Interest may be charged on any amount owing after the due date at the rate of 2.5% per month or part month.

5.3 Any expenses, disbursements and legal costs (on a solicitor client basis) incurred by Fergusson Lockwood & Associates Limited in the enforcement of any rights contained in this contract shall be paid for by the client, including any reasonable solicitor's fees or debt collection agency fees.

5.4 Receipt of a cheque, bill of exchange or other negotiable instrument shall not constitute payment until such negotiable instrument is paid in full.

5.5 Fergusson Lockwood & Associates Limited reserve the right to require payment of a 50% deposit prior to the provision of services.

5.6 Payment via credit card will incur a 1.99% surcharge of the total invoice.

6. Quotation

6.1 Where a quotation is given by Fergusson Lockwood & Associates Limited for services:

a) The quotation shall be valid for one (1) month from the date of issue; and

(b) The quotation shall be exclusive of Goods and Services Tax unless specifically stated to the contrary.

6.2 Where services are required in addition to the quotation the client agrees to pay for the additional price of such services.

7. Delivery / Risk

7.1 The provision of services remain at Fergusson Lockwood & Associates Limited risk until delivery to the client but when title passes to the client pursuant to clause 9.1 of this contract, the services are at the client's risk whether delivery has been made or not.

7.2 Delivery of services shall be deemed complete when Fergusson Lockwood & Associates Limited gives possession of the services to the client, or possession of the services is given to a courier, or other carrier or bailee for the purposes of transmission to the client.

7.3 The time agreed for delivery shall not be an essential term of this contract unless the client gives written notice to Fergusson Lockwood & Associates Limited making time of the essence.

8. Agency

8.1 The client authorises Fergusson Lockwood & Associates Limited to contract either as principal or agent for the client for the provision of services that are the matter of this contract.

8.2 Where Fergusson Lockwood & Associates Limited enters into a contract of the type referred to in clause 8.1 it shall be read with and form part of this agreement and the client agrees to pay any amounts due under that contract.

9. Title

9.1 Title in the services passes to the client when the client has made payment for all services supplied by Fergusson Lockwood & Associates Limited.

9.2 Where the client has not paid for any services in its possession property in such services shall remain with Fergusson Lockwood & Associates Limited and the services shall be held by the client as bailee. The client acknowledges Fergusson Lockwood & Associates Limited may register a financing statement on the Personal Property Security Register to protect its rights under this clause. The client waives its right to receive any verification statement in relation to any financing statement registered.

9.3 Any plans or specifications, provided by Fergusson Lockwood & Associates Limited and for which no payment has been made, are the sole property of Fergusson Lockwood & Associates Limited and are not to be copied by the client.

10. Disputes and Return of Goods

10.1 No claim relating to the services shall be considered unless made within seven (7) days of delivery of the services to which the claim relates.

10.2 Any dispute between the parties shall be referred to arbitration with in accordance with the Arbitration Act 1996 unless Fergusson Lockwood & Associates Limited elects otherwise. These terms of trade shall constitute an arbitration agreement for the purposes of that Act.

11. Liability

11.1 We shall accept liability to pay damages for losses arising as a direct result of a breach of contract or negligence on our part in respect of services provided in connection with it, or arising out of, the engagement set out in this letter (or any variation or addition thereto): but, to the extent permitted by law, any liability of the company, its directors and consultants (whether in contract, negligence or otherwise) shall in no circumstances exceed our Indemnity Insurance cover of $5,000,000.

11.2 To the maximum extent permitted by law, the company, its directors or consultants, shall in no circumstances be liable for any loss, damage, cost or expense arising in any way on or connected with fraudulent acts or omissions, misrepresentations or wilful default on the part of the client and its advisors, directors, employees or agents.

11.3 You agree that if you make any claim against us, and that loss is attributed to by your own actions, the liability for your loss will be apportioned as is appropriate having regard to the respective responsibility for the loss, in the amount you may recover from us under any cause of action will be reduced by the extent of your contribution to that loss.

11.4 Indemnity

To the maximum extent permitted by law, you will agree to indemnify Fergusson Lockwood & Associates Limited and its directors, consultants and employees in respect of any liability suffered or incurred as a result of or in connection with this project, any reports or other work products we produce. This indemnity will not apply in respect of any negligence, wilful misconduct or breach of law on our part.

12. Consumer Guarantees Act

12.1 The guarantees contained in the Consumer Guarantees Act 1993 are excluded where the customer acquire goods or services from Fergusson Lockwood & Associates Limited for the purposes of a business in terms of section 2 and 43 of that Act.

13. Personal Guarantee of Company Directors and Trustees

13.1 If the client is a company or trust the director(s) or trustees(s) signing this contract agree that they are also signing in their personal capacity and jointly and severally personally guarantee to Fergusson Lockwood & Associates Limited the payment of the balance of the client's credit facility, and the payment of any and all other monies now or hereafter owed by the client to Fergusson Lockwood & Associates Limited. Any personal guarantee made by any party shall not exclude the client in any way whatsoever from the liabilities and obligations contained in this contract. The guarantors and client shall be jointly and severally liable under the terms and conditions of this contract.

14. Cancellation

14.1 Fergusson Lockwood & Associates Limited shall, without any liability, and without any prejudice to any other right it has in law or equity, have the right by notice to suspend or cancel in whole or in part any contract for the supply of goods to the customer if the customer fails to pay any money owing after the due date or the customer commits and act of bankruptcy as defined under the current insolvency laws.

14.2 Any cancellation or suspension under clause 14.1 of this agreement shall not affect Fergusson Lockwood & Associates Limited claim for money due at the time of cancellation or suspension or for damages for any breach of any terms of this contract or the customer's obligations to Fergusson Lockwood & Associates Limited under this contract.

15. Miscellaneous

15.1 The client shall not assigns all or any of its rights or obligations under this contract without the written consent of Fergusson Lockwood & Associates Limited.

15.2 In providing the services Fergusson Lockwood & Associates Limited shall exercise the degree of skill, care and diligence normally exercised by Fergusson Lockwood & Associates Limited in similar circumstances.

15.3 Where services are carried out on a time charge basis, Fergusson Lockwood & Associates Limited shall maintain up to date records which clearly identify relevant time and expenses incurred in providing the services to the client.

15.4 Fergusson Lockwood & Associates Limited shall not be liable for delay or failure to perform its obligations if the cause of the delay or failure is beyond its control.

15.5 Failure by Fergusson Lockwood & Associates Limited to enforce any of the terms and conditions contained in this contract shall not be deemed to be a waiver of any of the rights or obligations Fergusson Lockwood & Associates Limited has under this contract.

15.6 The law of New Zealand shall apply to this contract except to the extent expressly negatived or varied by this contract.

15.7 Where the terms of this contract are at variance with the order or instruction form the client, this contract shall prevail.

15.8 If any provision of this contract shall be invalid, void or illegal or unenforceable the validity existence, legality and enforceability of the remaining provisions shall not be affected, prejudiced or impaired.

Statement of General Valuation Policies

Buildings

This report is for valuation purposes only and should not be regarded as a structural survey of the improvements nor a survey of the land.

Our inspection of the main buildings on the property have been carried out for the purpose of making a valuation and should not be considered to represent a detailed structural survey. This report is prepared on the assumption that, except where noted in this report;

i) The buildings have been competently designed and built, and are structurally sound and watertight.

ii) The buildings do not contain any latent or patent defects which would result in;

   a) the building ceasing to be watertight

   b) gradual decay of the building including its structure

iii) Where applicable, the buildings comply with the Building Act 2004 and the Building Codes contained in the First Schedule of The Building Regulations 1992 (or any amendment or substitution of that Code).

The valuation has been prepared on the basis that the property and all buildings comply with the Local Authority's minimum requirements and should for any reason this not be the case then this valuation is conditional upon compliance by the Owner.

It was not possible to inspect the unexposed and inaccessible structural components and therefore we are unable to report on the condition of these, however, we could not determine any major factors which would suggest there is any structural unsoundness. We have not inspected services such as electrical wiring and plumbing. Our valuation has been undertaken on the basis that any lifts, hot and cold-water systems, electrical systems, ventilating systems, air conditioning and other devices, fittings, installations or conveniences that are contained within the building are in a proper working order and are functioning for the purpose for which they were designed, and conform to the current building, fire and government regulations and codes. No guarantee is given in respect of rot, termite, pest infection, or other hidden defects.

Building Measurements

Where floor areas of buildings are stated in this report, these are approximate only. We have taken onsite measurements and calculated floor areas in accordance with the PCNZ/PINZ guide for the measurement of residential properties and NZPGP 601 – Methods of Measurement.

Resource Management Act

We are not aware of any requirements the property has under The Resource Management Act 1991 and have not completed an audit, or know of any circumstances that indicate an audit is necessary. Should any party require compliance with this Act application can be made to the Local Authority for a Land Information Memorandum. Our valuation has been completed on the basis of all necessary Consents being in place, fully operative, and compliant.

Title Boundaries

A formal survey of the property was not completed with boundaries being determined by reference to a copy of the Record of Title and this valuation, therefore, is on the basis that the improvements described in this report are located within the accepted boundaries of the property.

Mortgage Lending

Where this valuation is used for mortgage lending purposes, the following points should be noted:

i) This valuation has been completed on a 'willing seller - willing buyer' basis and not under forced sale circumstances, in which case the value realised may be below the value given in this report.

ii) It should be noted that the value provided in this valuation is our opinion of the market value taking into account present market conditions. This value may change in the future, sometimes over a relatively short time period, due to changing market conditions and changes to the state of the property.

Use

Our responsibility in connection with this valuation report is limited to the client to whom the report is addressed and to the client only. We disclaim all responsibility and will accept no liability to any other party. Any person, other than the client to whom this report is addressed, who uses or relies on this valuation does so at their own risk.

Purpose

This valuation has been completed for the specific purpose stated in this report. No responsibility is accepted in the event that this report is used for any other purpose.

Site & Environmental Contamination

Substances such as asbestos, other chemicals, toxic waste, or other potentially hazardous materials, could, if present, adversely affect the value of the property. Unless otherwise stated in this report, the extent of hazardous substances which may or may not be present on or in the property, was not considered by the Valuer in the conclusion of value. The stated value estimate is on the assumption that there is no material on or in the property that would cause loss in value. No responsibility is assumed for any such conditions and the recipient of this report is advised the Valuer is not qualified to detect such substances, quantify the impact on values, or estimate the remedial cost.

Statutory Information

Information may have been obtained from a search of official records, inspection of documents or data, or by enquiry to Local Government or Government Bodies or Departments or Statutory Authorities. Where information has been supplied by other parties, that information is believed to be reliable, but we make no Warranty to that fact and cannot accept responsibility should it not be so.

Subdivision

Where the valuation has been prepared based on a Subdivision Plan provided, and values given to proposed individual allotments, such values are subject to approval of the Subdivision Plan provided by the appropriate Local Authority, compliance with all Conditions of such approval and issue of separate Records of Title for each allotment. Where the issue of separate Titles has not occurred and the property is valued as a single entity, this would require deductions from the Gross Realisation for such items as costs of sale, holding costs, development costs, profit and risk, etc, and would produce a lesser value than the aggregate of all the individual allotment values. Where the Subdivision Plan provided to us is not approved by the appropriate Local Authority, or is approved in an amended form, then we reserve the right to reassess our valuation.

New Buildings & Improvements

Where the valuation includes added value for buildings or other improvements yet to be completed, such added value is subject to development complying with all Local Body and other Government requirements and assumes that all Building Consents, Code Compliance Schedules, or other regulatory building matters are complied with, and that all work is completed to a good tradesman like standard, and in the manner, form, and with the materials advised to us.

Where the added value of such proposed buildings or improvements is relied on by any Lender for mortgage lending purposes, loan funds should only be advanced on approved Valuation Progress Payment Certificates as development progresses.

Furthermore, the valuation report is based on the assumption that the building work and site improvements will be developed and completed according to the plans and specifications described in the report and that the standard of construction / development is in accordance with that assumed within the report. A final inspection is required by the Valuer on completion to confirm or vary the valuation figure as any significant deviation in respect of style, layout, design or construction standards may invalidate the value conclusions reached in the report. The Valuer assumes no responsibility for unforeseeable events that alter market conditions prior to the completion of the development.

Terms of Trade

This Valuation Report is subject to Fergusson Lockwood & Associates Ltd Terms of Trade enclosed within this report.

1. Definitions

1.1 'Fergusson Lockwood & Associates shall mean Fergusson Lockwood & Associates Limited (2010) Limited, or any agents or employees thereof.

1.2 'Client' shall mean the client, any person acting on behalf of and with the authority of the client, or any person purchasing services from Fergusson Lockwood & Associates Limited.

1.3 'Services' shall mean without limitation the provision of rural, commercial and urban property valuation and consultancy services, farm management consultant services, arbitration and mediation services relating to and share milking contracts and associated services provided by Fergusson Lockwood & Associates Limited to the client and shall include without limitation all charges for labour and work, hire charges, insurance charges, or any fee or charge associated with the supply of services by Fergusson Lockwood & Associates Limited to the client.

1.4 'Price' shall mean the cost of the services subject to clause 4 of this contract.

2. Acceptance

2.1 Any instructions received by Fergusson Lockwood & Associates Limited from the client for the supply of services shall constitute acceptance of the terms and conditions contained herein.

3. Collection and Use of Information

3.1 The client authorises Fergusson Lockwood & Associates Limited to collect, retain and use any information about the client, for the purpose of assessing the client's credit worthiness, enforcing any rights under this contract or marketing any services provided by Fergusson Lockwood & Associates Limited to any other party.

3.2 The client authorises Fergusson Lockwood & Associates Limited to disclose any information obtained to any person for the purposes set out in clause 3.1.

3.3 Where the client is a natural person the authorises under clauses 3.1 and 3.2 are authorities or consents for the purposes of the Privacy Act 1993.

4. Price

4.1 Where no price is stated in writing or agreed to orally the services shall be deemed to be supplied at the current amount that such services are ordinarily supplied by Fergusson Lockwood & Associates Limited at the time of the contract.

5. Payment

5.1 Payment for the valuation services shall be made in full prior to the release of the final report, unless a written arrangement is in place, in which we would require payment on or before the 20th of the following month

5.2 Interest may be charged on any amount owing after the due date at the rate of 2.5% per month or part month.

5.3 Any expenses, disbursements and legal costs (on a solicitor client basis) incurred by Fergusson Lockwood & Associates Limited in the enforcement of any rights contained in this contract shall be paid for by the client, including any reasonable solicitor's fees or debt collection agency fees.

5.4 Receipt of a cheque, bill of exchange or other negotiable instrument shall not constitute payment until such negotiable instrument is paid in full.

5.5 Fergusson Lockwood & Associates Limited reserve the right to require payment of a 50% deposit prior to the provision of services.

5.6 Payment via credit card will incur a 1.99% surcharge of the total invoice.

6. Quotation

6.1 Where a quotation is given by Fergusson Lockwood & Associates Limited for services:

a) The quotation shall be valid for one (1) month from the date of issue; and

(b) The quotation shall be exclusive of Goods and Services Tax unless specifically stated to the contrary.

6.2 Where services are required in addition to the quotation the client agrees to pay for the additional price of such services.

7. Delivery / Risk

7.1 The provision of services remain at Fergusson Lockwood & Associates Limited risk until delivery to the client but when title passes to the client pursuant to clause 9.1 of this contract, the services are at the client's risk whether delivery has been made or not.

7.2 Delivery of services shall be deemed complete when Fergusson Lockwood & Associates Limited gives possession of the services to the client, or possession of the services is given to a courier, or other carrier or bailee for the purposes of transmission to the client.

7.3 The time agreed for delivery shall not be an essential term of this contract unless the client gives written notice to Fergusson Lockwood & Associates Limited making time of the essence.

8. Agency

8.1 The client authorises Fergusson Lockwood & Associates Limited to contract either as principal or agent for the client for the provision of services that are the matter of this contract.

8.2 Where Fergusson Lockwood & Associates Limited enters into a contract of the type referred to in clause 8.1 it shall be read with and form part of this agreement and the client agrees to pay any amounts due under that contract.

9. Title

9.1 Title in the services passes to the client when the client has made payment for all services supplied by Fergusson Lockwood & Associates Limited.

9.2 Where the client has not paid for any services in its possession property in such services shall remain with Fergusson Lockwood & Associates Limited and the services shall be held by the client as bailee. The client acknowledges Fergusson Lockwood & Associates Limited may register a financing statement on the Personal Property Security Register to protect its rights under this clause. The client waives its right to receive any verification statement in relation to any financing statement registered.

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11.2 To the maximum extent permitted by law, the company, its directors or consultants, shall in no circumstances be liable for any loss, damage, cost or expense arising in any way on or connected with fraudulent acts or omissions, misrepresentations or wilful default on the part of the client and its advisors, directors, employees or agents.

11.3 You agree that if you make any claim against us, and that loss is attributed to by your own actions, the liability for your loss will be apportioned as is appropriate having regard to the respective responsibility for the loss, in the amount you may recover from us under any cause of action will be reduced by the extent of your contribution to that loss.

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To the maximum extent permitted by law, you will agree to indemnify Fergusson Lockwood & Associates Limited and its directors, consultants and employees in respect of any liability suffered or incurred as a result of or in connection with this project, any reports or other work products we produce. This indemnity will not apply in respect of any negligence, wilful misconduct or breach of law on our part.

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14. Cancellation

14.1 Fergusson Lockwood & Associates Limited shall, without any liability, and without any prejudice to any other right it has in law or equity, have the right by notice to suspend or cancel in whole or in part any contract for the supply of goods to the customer if the customer fails to pay any money owing after the due date or the customer commits and act of bankruptcy as defined under the current insolvency laws.

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15.5 Failure by Fergusson Lockwood & Associates Limited to enforce any of the terms and conditions contained in this contract shall not be deemed to be a waiver of any of the rights or obligations Fergusson Lockwood & Associates Limited has under this contract.

15.6 The law of New Zealand shall apply to this contract except to the extent expressly negatived or varied by this contract.

15.7 Where the terms of this contract are at variance with the order or instruction form the client, this contract shall prevail.

15.8 If any provision of this contract shall be invalid, void or illegal or unenforceable the validity existence, legality and enforceability of the remaining provisions shall not be affected, prejudiced or impaired.

OUR TEAM

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FLA Fergusson Lockwood
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TELOS GROUP
REAL ESTATE

Rental Appraisal

Tuesday, 17 June 2025

QUINOVIC
HAMILTON & CAMBRIDGE

1271 Tauwhare Road, Eureka

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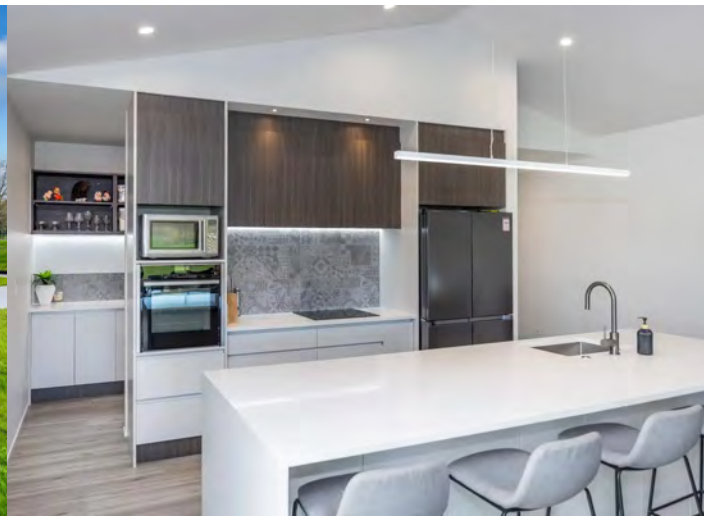


Your Clients

Discerning professionals will appreciate the high spec finishes this property has to offer. Along with the peaceful rural aspect, this property provides an executive environment to enjoy in peace and privacy.

Your Income

Target Client Rental Range: $950-$1050 p/wk

Mark Laurence – Principal

QUINOVIC HAMILTON 871 Victoria Street, Hamilton, P O Box 1014 Hamilton 3204

M: 021 571 732 T: 07 839 0400 E: Mark@QuinovicHamilton.co.nz W: Quinovic.co.nz/Hamilton

TELOS GROUP
REAL ESTATE

School Zones

Nearby Schools

In Catchment

Tauwhare School — 1.72km
CONTRIBUTING | 1 - 6

Matangi School — 7.08km
CONTRIBUTING | 1 - 6

Newstead Model School — 8.18km
CONTRIBUTING | 1 - 6

Goodwood School — 9.59km
CONTRIBUTING | 1 - 6

Silverdale Normal School — 11.3km
CONTRIBUTING | 1 - 6

All Nearby

Tauwhare School — 1.72km
CONTRIBUTING | 1 - 6

Oneschool Global Waikato — 2.76km
COMPOSITE | 1 - 13

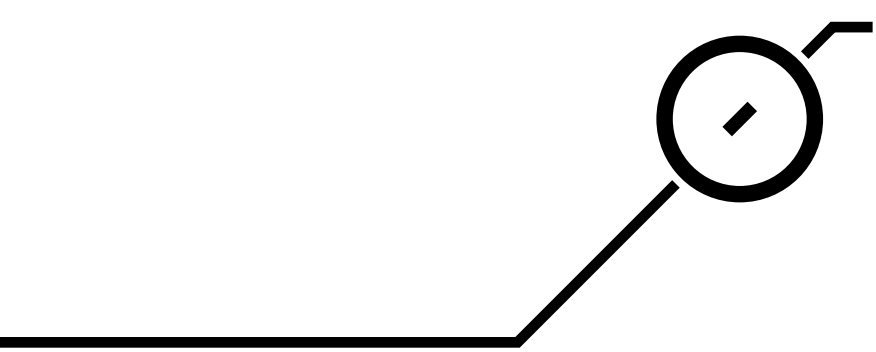
Te Kura o Ngaati Hauaa — 5.15km
FULL PRIMARY | 1 - 8

Matangi School — 7.08km
CONTRIBUTING | 1 - 6

TELOS GROUP
REAL ESTATE

C	Newstead Model School CONTRIBUTING 1 - 6	8.18km
C	Motumaoho School CONTRIBUTING 1 - 6	8.3km
C	Goodwood School CONTRIBUTING 1 - 6	9.59km
P	Te Miro School FULL PRIMARY 1 - 8	10km
P	Hamilton Seventh-Day Adventist School FULL PRIMARY 1 - 8	11.24km
C	Silverdale Normal School CONTRIBUTING 1 - 6	11.3km

TELOS GROUP
REAL ESTATE

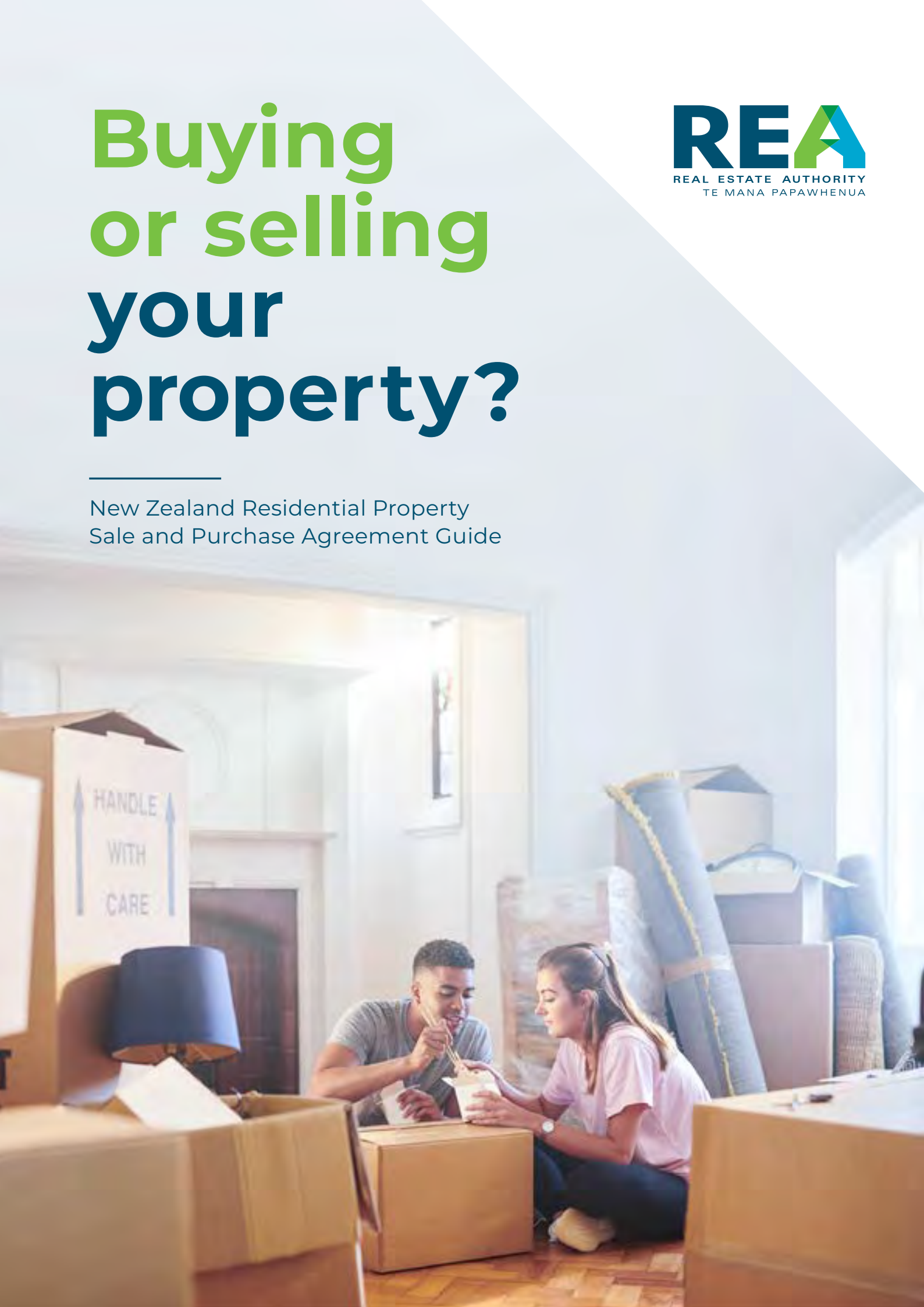


REA Guides

Buying or selling your property?

REAL ESTATE AUTHORITY
TE MANA PAPAWHENUA

New Zealand Residential Property
Sale and Purchase Agreement Guide



REAL ESTATE AUTHORITY
TE MANA PAPAWHENUA

This guide tells you...

what a sale and purchase agreement is

what's in a sale and purchase agreement

what happens after you sign the sale and purchase agreement

what happens if you have a problem

where to go for more information

Where to go for more information

This guide is available in other languages. You can find translated copies of this guide on rea.govt.nz and settled.govt.nz.

The New Zealand Residential Property Agency Agreement Guide is also available on settled.govt.nz. The guide tells you more about the agreement you sign with the agency helping to sell your property.

We welcome any feedback you have on this publication.

The information in this guide was accurate when published. However, the requirements this information is based on can change at any time. Up-to-date information is available at rea.govt.nz.

Key things to know about sale and purchase agreements

- A sale and purchase agreement is a legally binding contract between you and the other party involved in buying or selling a property.
- You must sign a written sale and purchase agreement to buy or sell a property.
- You need to read and understand the sale and purchase agreement before you sign it.
- Even if a standard sale and purchase agreement is being used, you should always get legal advice before you sign the agreement and throughout the buying and selling process.
- You can negotiate some of the terms and conditions in a sale and purchase agreement.
- You can include additional clauses, such as what to do if there are special circumstances. Your lawyer plays an important role in providing advice on what the sale and purchase agreement should say.
- A sale and purchase agreement becomes unconditional once all the conditions are met.
- In most cases, the real estate professional is working for the seller of the property, but they must treat the buyer fairly.
- If your real estate professional or anyone related to them wants to buy your property, they must get your written consent to do this. They must also give you a valuation of your property by an independent registered valuer.
- The sale and purchase agreement is only available in English. You may need assistance interpreting it if English is not your primary language.

What a sale and purchase agreement is

A sale and purchase agreement is a legally binding contract between you and the other party involved in buying or selling a property. It sets out all the details, terms and conditions of the sale. This includes things such as the price, any chattels being sold with the property, whether the buyer needs to sell another property first or needs a property inspection and the settlement date.

A sale and purchase agreement provides certainty to both the buyer and the seller about what will happen when.

What's in a sale and purchase agreement

Your sale and purchase agreement should include the following things.

Basic details of the sale

Different sale methods like tender or auction might mean the sale and purchase agreement can look different, but all sale and purchase agreements should contain:

- the names of the people buying and selling the property
- the address of the property
- the type of title, for example, freehold or leasehold
- the price
- any deposit the buyer must pay
- any chattels being sold with the property, for example, whiteware or curtains
- any specific conditions you or the other party want fulfilled
- how many working days you have to fulfil your conditions (if there are any conditions)
- the settlement date (the date the buyer pays the rest of the amount for the property, which is usually also the day they can move in)
- the rate of interest the buyer must pay on any overdue payments (such as being late on paying the deposit or the remaining amount at the settlement date).

General obligations and conditions you have to comply with

The sale and purchase agreement includes general obligations and conditions that you will need to comply with. For example, these may include:

- access rights – what access the buyer can have to inspect the property before settlement day
- insurance – to make sure the property remains insured until the settlement date and outline what will happen if any damage occurs before settlement day
- default by the buyer – the buyer may have to compensate the seller if they don't settle on time, for example, with interest payments
- default by the seller – the seller may have to compensate the buyer if they don't settle on time, for example, by paying accommodation costs
- eligibility to buy property in New Zealand – people who have migrated to New Zealand may not be permitted to immediately buy property or may need to get consent from the Overseas Investment Office.

Your lawyer will explain these clauses to you.

Check...

Always check your sale and purchase agreement with a lawyer before signing.

Buying or selling a property where the owner isn't able to participate, like a mortgagee sale or deceased estate, can mean the real estate professional has limited information about the property. It pays to allow for this when deciding what conditions the buyer and seller might need.

Remember...

Before you sign a sale and purchase agreement, whether you're the buyer or the seller, the real estate professional must give you a copy of this guide. They must also ask you to confirm in writing that you've received it.

Specific conditions a buyer may include

Some buyers will present an unconditional offer, which means there are no specific conditions to be fulfilled. Some buyers will include one or more conditions (that must be fulfilled by a specified date) in their offer such as:

- title search – this is done by the buyer's lawyer to check who the legal owner of the property is and to see if there are any other interests over the property such as caveats or easements
- finance – this refers to the buyer arranging payment, often requiring bank approval for a mortgage or loan
- valuation report – a bank may require the buyer to obtain a valuation of the property (an estimate of the property's worth on the current market) before they agree to a loan
- Land Information Memorandum (LIM) – provided by the local council, this report provides information about the property such as rates, building permits and consents, drainage, planning and other important information
- property inspection – a buyer paying for an inspection provides an independent overview of the condition of the property rather than relying on an inspection that has been arranged by the seller
- engineer's or surveyor's report – similar to the above but more focused on the entire section and the structure of the property
- sale of another home – the buyer may need to sell their own home in order to buy another.

The real estate professional helps the buyer and the seller to include the conditions they each want. Even though the real estate professional works for the seller, they also have to deal fairly and honestly with the buyer. While they're not expected to discover hidden defects, they can't withhold information and must tell the buyer about any known defects with the property. If a buyer needs time to check a property for defects, including a property inspection condition may be important.

What happens after you sign the sale and purchase agreement

Signing the sale and purchase agreement is not the end of the sale or purchase process.

Both parties work through the conditions until the agreement is unconditional

A conditional agreement means the sale and purchase agreement has one or more conditions that must be met by a specified date and before the sale goes through.

The buyer pays the deposit. Depending on what the sale and purchase agreement says, the buyer may pay the deposit when they sign the agreement or when the agreement becomes unconditional. If the deposit is made to the real estate agency, it must be held in their agency's trust account for 10 working days before it can be released to the seller.

An agreement for sale and purchase commits you to buy or sell

Once you've signed the sale and purchase agreement and any conditions set out in it have been met, you must complete the sale or purchase of the property.

The length of time between the conditions being met and the settlement date varies. Settlement periods can be lengthy if the property hasn't been built yet or the sale and purchase agreement includes conditions for one party to buy or sell another property. The real estate professional has obligations to keep you informed of important updates that come up during this time.

Pre-settlement inspection

This is the chance for the buyer to check the property and chattels are in the same condition they were when the sale and purchase agreement was signed and to check that the seller has met any conditions, for example, there is no damage to walls or chattels haven't been removed from the property.

It's important to raise any concerns you find at the pre-settlement inspection with your lawyer and the real estate professional as soon as possible to allow enough time for an issue to be resolved. If it's less than 24 hours before settlement, the vendor may not be obligated to set things right.

Payment of a commission

Once the sale is complete, the seller pays the real estate professional for their services. The real estate agency usually takes the commission from the deposit they're holding in their trust account. The seller should make sure the deposit is enough to cover the commission. The real estate professional cannot ask the buyer to pay for their services if they have been engaged by the seller.

The buyer pays the rest

The buyer pays the remainder of the amount for the property on the day of settlement, usually through their lawyer.

Buying a tenanted property

If the property is tenanted, the agreement for sale and purchase should specify this. It may also contain a specific date for possession that may differ from the settlement date.

If the buyer requires the property to be sold with 'vacant possession', it is the seller's responsibility to give the tenant notice to vacate in accordance with the tenant's legal rights.

It is recommended that you seek legal advice if you are buying a property that is currently tenanted.

What happens if you have a problem

If something has gone wrong, first discuss your concern with the real estate professional or their manager. All agencies must have in-house procedures for resolving complaints.

If you can't resolve the issue with the real estate agency or you don't feel comfortable discussing it with them, you can contact the Real Estate Authority (REA). We can help in a number of ways if your complaint is about the real estate professional. For example, we can help you and the real estate professional or agency to resolve the issue and remind them of their obligations under the Real Estate Agents Act 2008. When you contact us, we'll work with you to help you decide the best thing to do.

Call us on **0800 367 7322**, email us at **info@rea.govt.nz** or visit us online at **rea.govt.nz**

About settled.govt.nz

Settled.govt.nz guides you through home buying and selling.

Buying or selling your home is one of the biggest financial decisions you will make. It's a complex and sometimes stressful process with potentially significant emotional and financial impacts if things go wrong.

Settled.govt.nz provides comprehensive independent information and guidance for home buyers and sellers. You can find information about the risks and how they can impact you and get useful tips on how to avoid some of the major potential problems.

Settled.govt.nz will help to inform and guide you through the process from when you're thinking of buying or selling right through to when you're moving in or out. You'll find valuable information, checklists, quizzes, videos and tools. From understanding LIMs, to sale and purchase agreements, to when to contact a lawyer, **settled.govt.nz** explains what you need to know.

Settled.govt.nz is brought to you by the Real Estate Authority – Te Mana Papawhenua (REA).

For more information

For more information on home buying and selling, visit **settled.govt.nz** or email **info@settled.govt.nz**

About the Real Estate Authority – Te Mana Papawhenua (REA)

REA is the independent government agency that regulates the New Zealand real estate profession.

Our purpose is to promote and protect the interests of consumers buying and selling real estate and to promote public confidence in the performance of real estate agency work.

What we do

Our job is to promote a high standard of conduct in the real estate profession and protect buyers and sellers of property from harm.

- We provide independent information for people who are buying and selling property through our settled.govt.nz website.
- We provide guidance for real estate professionals and oversee a complaints process.
- We license people and companies working in the real estate industry.
- We maintain a Code of Conduct setting out the professional standards real estate professionals must follow.
- We maintain a public register of real estate professionals that includes information about disciplinary action taken in the last 3 years.

The Real Estate Agents Authority is a Crown agent, established under the Real Estate Agents Act 2008. The Real Estate Authority is the operating name of the Real Estate Agents Authority.

For more information

To find out more about REA, visit rea.govt.nz, call us on 0800 367 7322 or email us at info@rea.govt.nz

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