

Application for change or cancellation of resource consent condition (S.127)

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges — [both available on the Council's web page](#).

1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement?

☐ Yes ☒ No

If yes, who have you spoken with? _____

2. Type of Consent being applied for

☒ Change of conditions (s.127)

3. Consultation:

Have you consulted with Iwi/Hapū? ☐ Yes ☒ No

If yes, which groups have
you consulted with?

Who else have you
consulted with?

*For any questions or information regarding iwi/hapū consultation, please contact Te Hono at Far North District Council
tehonosupport@fndc.govt.nz*

4. Applicant Details:

Name/s:

Suraj & Rashmi Chandrashekar

Email:

Phone number:

Postal address:

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

POSTCODE

U42U

Office Use Only
Application Number:

5. Address for Correspondence

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

Name/s:

Northland Planning & Development 2020 Ltd

Email:

Phone number:

Postal address:

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

Postcode

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

6. Details of Property Owner/s and Occupier/s

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

Name/s:

Suraj Chandrashekar

Property Address/
Location:

66 Stratford Drive, Cable Bay

Postcode

0420

7. Application Site Details

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

Name/s:

Suraj Chandrashekar

Site Address/
Location:

Postcode

0420

Legal Description:

Lot 43 DP 384236

Val Number:

00085-24877

Certificate of title:

336781

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

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff?

☐ Yes

☒ No

Is there a dog on the property?

☐ Yes

☒ No

7. Application Site Details (continued)

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details.

This is important to avoid a wasted trip and having to re-arrange a second visit.

Please contact Applicant

8. Detailed description of the proposal:

This application relates to the following resource consent: RC 2300599

Specific conditions to which this application relates:

Conditions 1, 4, 5 & 6

Describe the proposed changes:

Proposed alterations to existing dwelling, landscaping plan and stormwater management.

9. Would you like to request Public Notification?

☐ Yes ☒ No

10. Other Consent required/being applied for under different legislation

(more than one circle can be ticked):

☒ Building Consent

☐ Regional Council Consent (ref # if known)

☐ National Environmental Standard consent

☐ Other (please specify)

11. Assessment of Environmental Effects:

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

Your AEE is attached to this application ☒ Yes

12. Draft Conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? ☒ Yes ☐ No

If yes, do you agree to extend the processing timeframe pursuant to Section 37 of the Resource Management Act by 5 working days? ☒ Yes ☐ No

13. Billing Details:

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

Name/s: (please write in full) Suraj & Rashmi Chandrashekar

Email:

Phone number:

Postal address:

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

Fees Information:

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

Declaration concerning Payment of Fees:

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

Name: (please write in full)

SURAJ CHANDRASHEKAR

Signature: (signature of bill payer)

Date 31/08/26

14. Important Information:

Note to applicant

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

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

Privacy Information:

Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive

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

Declaration

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

Name: (please write in full)

SURAT CHANDRASHEKAR

Date 31/08/26

Signature:

Checklist (please tick if information is provided)

- ☒ Payment (cheques payable to Far North District Council)
- ☐ Details of your consultation with Iwi and hapū
- ☒ A current Certificate of Title (Search Copy not more than 6 months old)
- ☒ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ☒ Applicant / Agent / Property Owner / Bill Payer details provided
- ☒ Location of property and description of proposal
- ☒ Assessment of Environmental Effects
- ☐ Written Approvals / correspondence from consulted parties
- ☒ Reports from technical experts (if required)
- ☒ Copies of other relevant consents associated with this application
- ☒ Location and Site plans (land use) AND/OR
- ☐ Location and Scheme Plan (subdivision)
- ☒ Elevations / Floor plans
- ☐ Topographical / contour plans

Please refer to chapter 4 (Standard Provisions) of the Operative District Plan for details of the information that must be provided with an application. This contains more helpful hints as to what information needs to be shown on plans.

Variation to 2300599 - RMALUC**S & R Chandrashekar****66 Stratford Drive, Cable Bay**

18 September 2026

Please find below an application to vary conditions on an existing land-use consent RC 2300599-RMA-LUC. This application is supported by an Assessment of Environmental Effects.

Pursuant to Section 127 of the Resource Management Act, the Applicant is seeking to vary the conditions of RC 2300599 - RMALUC which established a residential dwelling within the site legally described as Lot 43 DP 384236. The application was assessed as a Discretionary Activity within the Coastal Living zone under the Operative District Plan (ODP). Consent was granted on 22nd June 2021.

The variation to RC 2300599 - RMALUC is a **Discretionary Activity** under Section 127 of the RMA.

Regards,

Alex Billot

Director/Senior Planner

NORTHLAND PLANNING & DEVELOPMENT 2020 LIMITED

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Appendices

- 1. Far North District Council Application Form**
- 2. Record of Title – LINZ**
- 3. Consent Notice 5363500.2 – LINZ**
- 4. Consent Notice 7389051.2 – LINZ**
- 5. Plan Set – Total Design**
- 6. Updated Landscape Plan – Hawthorn Landscape Architects**
- 7. Stormwater Management Report & Plans for proposed concrete area – PK Engineering**
- 8. RC 2300599 - RMA LUC – Approved Decision & Plans – FNDC**

Assessment of Environment Effects Report

1. Description of the Proposed Activity

- 1.1. Pursuant to Section 127 of the Resource Management Act, the Applicant is seeking to vary Conditions 1, 4, 5 & 6 of resource consent RC 2300599 - RMALUC which was required to establish a dwelling on the site located in the Coastal Living zone. The proposal breached Visual Amenity, Sunlight, Stormwater Management and Setback from boundaries and was assessed as a Discretionary Activity under the Operative District Plan (ODP). A variation to Condition 10 within Consent Notice 7389051.2 was also sought to enable the option to use storage tanks for firefighting water supply or have a domestic sprinkler system installed. The consent was approved on 22nd June 2021.
- 1.2. The Applicant is proposing to enclose the lower storey of the existing dwelling to include one bedroom with ensuite and a games room. This alteration will be utilised in association with the upper storey unit. The Plan Set showing the proposed alterations is contained within **Appendix 5**, prepared by Total Design. These works are anticipated to begin within the next 1-2 years.
- 1.3. It is also proposed to alter the approved landscaping previously approved under RC 2300599. An updated Landscape Plan (**Appendix 6**) has been prepared by Hawthorn Landscape Architects which reflects a reduced amount of planting within the site, given that under the Proposed District Plan – Appeals Version (PDP-AV), the site is not located within the Coastal Environment.
- 1.4. Approximately 25m² of new concrete has also been added around the garage which slightly increases the amount of impermeable surfaces. The approved amount of impermeable surfaces under RC 2300599 was 322m² or 36.8% of the total site area and was assessed as a Discretionary Activity. The additional concerted area will increase by 25m² bringing the total impermeable surfaces on site to 347m² or 39.6%. This does not alter the activity status or degree of non-compliance applied for in relation to impermeable surfaces. An updated Stormwater Management Report (SMR) has been prepared by PK Engineering to address this and is attached within **Appendix 7**.

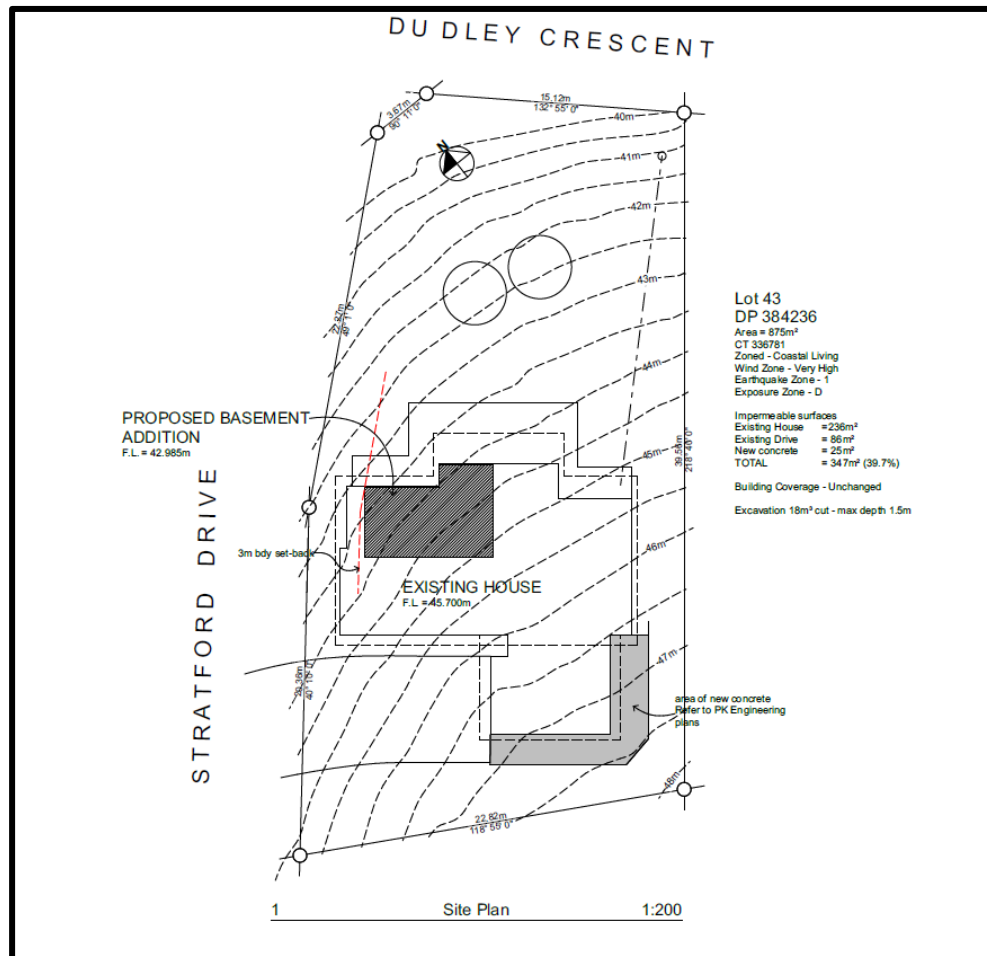


Figure 1: Site Plan showing proposed basement alteration and location of new concrete area around the existing garage.

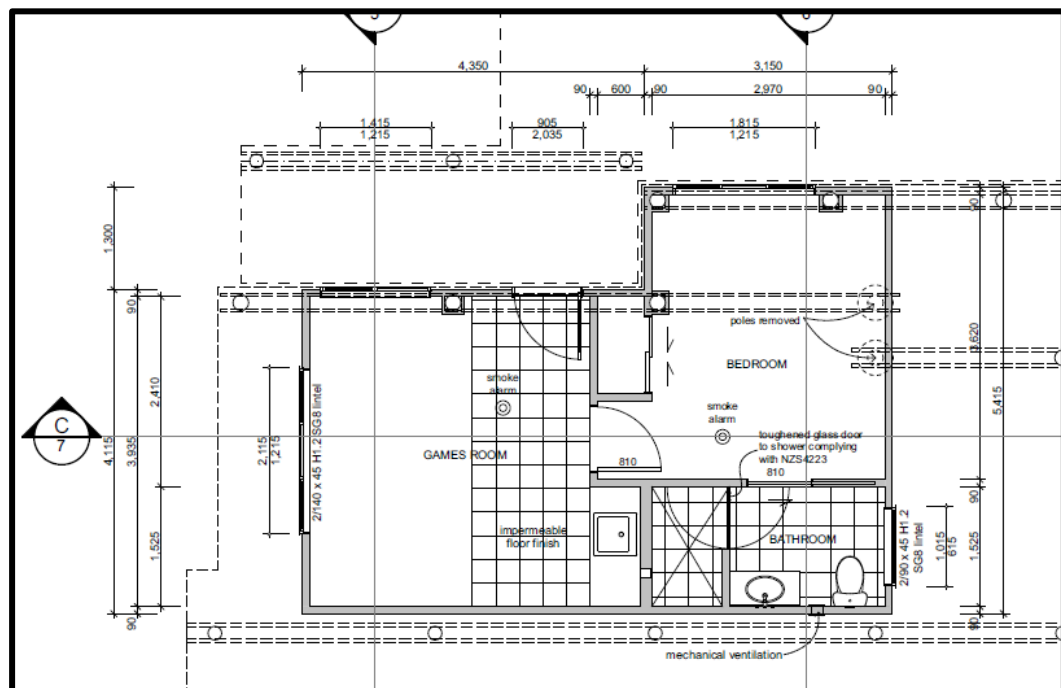


Figure 2: Proposed floor plan for lower level.

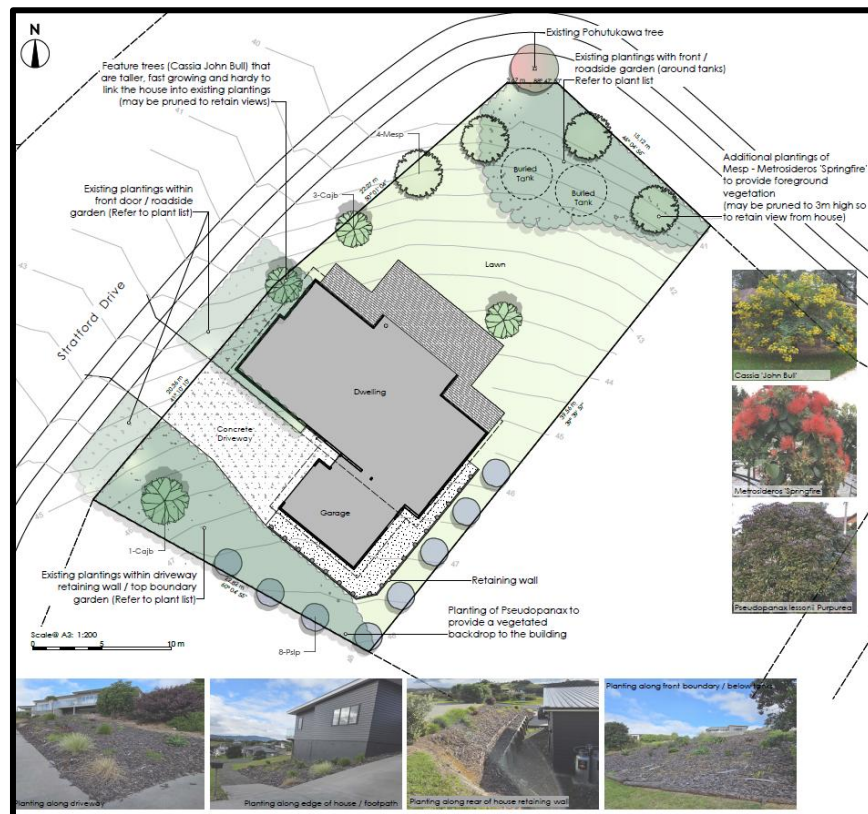


Figure 3: Proposed altered landscape plan.

- 1.5. The proposal does not result in any additional breaches to what was sought under RC 2300599 and as such, it is considered appropriate to apply for a variation to the existing approved consent to reflect the new plan set, landscape report and stormwater report.
- 1.6. To enable the revised plan set, landscape plan and SMR, the application seeks to vary the following conditions as follows:

CONDITIONS:

- **Condition 1 -**

*The activity shall be carried out in accordance with the approved plans prepared by Arcline, referenced Chandrashekar residence, dated 16/03/2021 **and the approved plans prepared by Total Design, referenced Proposed Additions & Alterations to House, dated 27/07/2026**, and attached to this consent with the Council's "Approved Stamp" affixed to them.*

- Site Plan (services), Sheet 03, 16/03/2021

- Floor Plan, Sheet 05, 16/03/2021
- Elevations, Sheet 06, 16/03/2021
- Elevations, Sheet 07, 16/03/2021
- **Proposed Additions & Alterations to House – Site Plan, Drawing 1. Dated 27/07/26**
- **Proposed Additions & Alterations to House – Proposed Ground Floor Plan, Drawing 2. Dated 27/07/26**
- **Proposed Additions & Alterations to House – Elevations, Drawing 3. Dated 27/07/26**

- Condition 4 – Implementation of the landscape plan prepared by Hawthorn Landscape Architects, dated ~~14 March 2021, provided with RMA LUC 2300599~~ **15/06/2026** is to be undertaken within the first two planting seasons (approximately March-September) directly following commencement of any of the works relating to this **approved variation** consent and maintained by the consent holder thereafter, all to the satisfaction of the Far North District Council's Monitoring Manager or duly delegated officer.
- Condition 5 - The consent holder shall obtain all necessary Building consents which may be required for the proposal, which will include plans and details of proposed on-site stormwater management.
 - a. Note. Plans must be prepared noting the design / recommendations of T&A Structures Chartered Professional Engineers Stormwater Management Report ref: 009-FND-21SD dated 06/03/2021 and associated preliminary engineering plans and calculations which were provided with the application.
 - b. Note. Stormwater management for the proposed alterations are to be in accordance with the recommendations of PK Engineering Stormwater Management Report ref: 26-021 dated 23-07-2026.**
- Condition 6 - The consent holder shall provide within one month of completion of the roof suitable evidence by way of as-built plans and/or producer statement from a Suitably Qualified Engineer or an Independent Qualified Person (IQP), to illustrate that the stormwater attenuation works permitted under this consent has been completed in accordance with the approved plans, to the satisfaction of Council. **Once construction of the additional concreted area behind the garage is complete, the consent holder must provide confirmation from a Suitably Qualified person that the stormwater**

attenuation works for the additional 25m² concrete area detailed within the Stormwater Management Report ref: 26-021, prepared by PK Engineering, dated 23-07-2026, has been completed in accordance with the Stormwater Management Report referenced above.

- 1.7. The variation to RC 2300599 - RMA SUB is a **Discretionary Activity** under Section 127 of the RMA.

Proposed District Plan – Appeals Version

- 1.8. The Appeals Version of the PDP (PDP-AV) is now available and details provisions which are subject to appeal. Provisions that are not appealed will be treated as 'operative' replacing equivalent provisions of the operative plan. If there are live appeals against a proposed provision, the proposed provision and any equivalent provisions may need to be considered through the resource consent process. Given the stage that the PDP-AV is at, greater weighting is applied to the PDP-AV rather than the ODP. As the appeals are addressed, those remaining matters in the ODP will fall away.
- 1.9. The PDP-AV Rural Lifestyle zone (RLZ) provisions have not been appealed and as such, replace the corresponding ODP zone rules. In terms of the RLZ rules, the impermeable surface coverage within the site would result in a Restricted Discretionary Activity. Matters of discretion relate to the effects of the impermeable surfaces which have been previously addressed within RC 2300599 as well as the updated SMR attached within **Appendix 7**. The proposed lower storey alterations will not alter the percentage of the site covered by buildings. The site is not identified as being within the Coastal Environment Overlay within the PDP-AV nor the Regional Policy Statement (RPSN) Maps and as such, visual aspects are now not applicable, hence the reasoning behind the reduced landscaping requirements applied for as part of this application. The site is not identified as being affected by any other overlays.
- 1.10. Given the proposal does not result in a more restrictive activity status or any new rule infringements compared to what has previously been approved under RC 2300599, it is considered appropriate for the proposal to proceed as a variation under Section 127 of the Act.

2. Description of the Site and Surrounding Environment

- 2.1. The subject site is located at 66 Stratford Drive Cable Bay. The site is bounded by Stratford Drive along the northwestern boundary and Dudley Crescent along the northeastern boundary. The site adjoins privately owned allotments on the southeastern and southwestern boundaries as can be seen in *Figure 4* below.



Figure 4: Aerial image of the site and immediate environment.

- 2.2. The site contains the dwelling approved under RC 2300599, with access being from Stratford Drive. Lots in the surrounding environment are similarly developed or vacant sites, which are of similar land area to the subject site.
- 2.3. The site is zoned as Coastal Living (CLZ) under the Operative District Plan (ODP) and is zoned as Rural Lifestyle (RLZ) under the Proposed District Plan – Appeals Version (PDP-AV). The site is not located within the Coastal Environment under the PDP-AV nor the Regional Policy Statement for Northland (RPSN) Maps.
- 2.4. The site is within an area which is serviced by reticulated wastewater and stormwater services.

- 2.5. The site is not shown to be susceptible to river or coastal hazards, nor is the site shown to be within an area of outstanding landscape or high natural character. There are no PNAs which affect the site and the site is not shown to be within an area where kiwi are present. The site is not shown to contain any recorded archaeological sites.
- 2.6. Soils within the site are classified as LUC 6 and given the operative and proposed zoning of the site, the National Policy Statement for Highly Productive Soils (NPS-HPL) is not considered relevant to the application.
- 2.7. The site is not known to be within or adjoin any statutory acknowledgement areas.

Title

- 2.8. The subject site is legally described as Lot 43 DP 384236 and is held in Record of Title 336741, with a title date of 25 May 2007.
- 2.9. Consent Notice 5363500.2 and 7389051.2 are registered on the Record of Title. Consent Notice 5363500.2 is attached with this application however is not applicable to the subject site. It refers to allotments which have since been subdivided. As mentioned, a variation to condition 10 of consent notice 7389051.2 was applied for and approved under RC 2300599. This variation has been registered on the title. As per RC 2300599, the proposed activity complies with the relevant consent notice conditions.

3. Reasons for Consent

Section 127 of the Resource Management Act (RMA)

- 3.1. This application seeks to vary conditions of an existing resource consent RC 2300599 - RMA LUC as described in Section 1.0 above resulting from changes to the alterations to the lower storey of the existing dwelling, landscaping and addition of a minor area of concrete to the site. Section 127(3) states that Sections 88-121 apply, with all the necessary modifications, as if the application were an application for a resource consent for a Discretionary Activity.
- 3.2. The site is zoned 'Coastal Living' under the ODP and has been rezoned to 'Rural Lifestyle' under the PDP-AV. The reasons for consent under the ODP remain the same as the original application. There are no other works proposed that would require additional consents under either of the applicable district plans.

National Environmental Standards

National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NESCS)

- 3.3. As per RC 2300599, the site is not known to have any activities undertaken (past or present) that are listed on the HAIL. The application is considered Permitted in terms of this regulation.

4. Statutory Assessment

Section 104 of the Resource Management Act 1991

- 4.1. Applications to vary or cancel conditions of a resource consent are subject to Sections 88-121 where they are applicable. This includes Section 104, which sets out matters for consideration when deciding a resource consent.
- 4.2. Section 104(1) of the RMA states that when considering an application for resource consent – *“the consent authority must, subject to Part II, have regard to –*
- (a) any actual and potential effects on the environment of allowing the activity; and*
 - (ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment that will or may result from allowing the activity; and*
 - (b) any relevant provisions of –*
 - i. a national environmental standard:*
 - ii. other regulations:*
 - iii. a national policy statement:*
 - iv. a New Zealand Coastal Policy Statement:*
 - v. a regional policy statement or proposed regional policy statement:*
 - vi. a plan or proposed plan; and*
 - (c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.”*

- 4.3. The Council has previously granted resource consent to establish a dwelling and associated impermeable surfaces on the subject site. The proposal will see reduced landscaping as well as some additional stormwater drainage proposed for the small area of concrete introduced around the existing garage. The lower storey of the dwelling will be enclosed and utilised as additional space for the Applicants and their family. The proposal will not alter how the site is perceived from the outside environment given these changes are minor in nature and will not alter the exterior or footprint of the existing dwelling.
- 4.4. In respect of potential adverse effects, the Council has previously concluded that any potential adverse effects will be no more than minor and that there are no affected persons. The extent of works is contained within the site boundaries and correspondingly the potential adverse effects.
- 4.5. The reduced landscaping has been assessed as appropriate given that the site is not located within the Coastal Environment under the RPSN Maps or the PDP-AV maps. The dwelling exterior will continue to utilise a natural recessive colour scheme and the lower storey extension will utilise the same cladding and colour scheme to provide coherence and be visually appealing. The proposed landscaping will compliment this. In terms of visual effects, these are considered to be less than minor as well as effects on character and amenity. Landscaping will still be provided for, with the Landscaping Plan being prepared by a Landscape Architect and the dwelling will utilise a natural recessive colour scheme as well as any concreted surfaces being tinted.
- 4.6. PK Engineering have recommended that the stormwater runoff from the additional 25m² concrete area is to be collected via a concrete swale drain and conveyed to a sump before discharging to the onsite detention system. The attenuated discharge is then to be directed to the nearest existing stormwater infrastructure. The above recommendations provided by PK Engineering are considered to adequately manage stormwater effects to a less than minor degree. The existing stormwater attenuation methods onsite and provided for within RC 2300599 will remain unchanged.
- 4.7. The proposal does not result in any adverse effects on adjoining property owners or public road, given that effects can be managed within the site boundaries. Given that there will be no

change to the perceived building footprint, it is considered that effects on adjoining properties will be less than minor.

- 4.8. Given the minor nature of the changes proposed and the fact that there are no additional rule breaches created compared to what was approved under RC 2300599, it is considered appropriate to vary the conditions of consent to reflect the updated plan sets and/or reports.

Far North Operative District Plan and Proposed District Plan - Appeals Version

- 4.9. An assessment of the relevant objectives and policies of the ODP were provided as part of the original application under RC 2300599. This assessment concluded that the proposal was generally consistent with the relevant objectives and policies of the ODP.
- 4.10. In terms of the PDP-AV, the site is within the Rural Lifestyle zone which has generally been applied to areas zoned under the ODP as Coastal Living. The RLZ provides allotments which can primarily accommodate a residential activity while having the option of growing their own food and other domestic activities. Retaining a sense of spaciousness and rural character is important within the RLZ. Given the proposal will not see a change in use of the site or how the site is perceived from the surrounding environment, it is considered the proposal meets the objectives and policies of the RLZ. Amenity and character will be maintained by retaining the natural and recessive colour scheme and the proposed landscaping and natural hazards will not be exacerbated. As detailed earlier in this assessment, the proposal does not result in any new rule infringements under the PDP-AV, that have not already been addressed as part of the original RC 2300599. As such, it is considered that all effects have been adequately addressed.
- 4.11. Given the proposed variation will not alter the existing use of the site, it is considered that the proposal will remain consistent with the objectives and policies of the relevant statutory documents and no further assessment will be provided for.

5. Part 2 Assessment

- 5.1. The application must be considered in relation to the purpose and principles of the Resource Management Act 1991 which are contained in Section 5 to 8 of the Act inclusive.
- 5.2. The proposal will meet Section 5 of the RMA as the proposal will sustain the potential of the natural and physical resource whilst meeting the foreseeable needs of future generations.

- 5.3. Section 6 of the Act sets out matters of national importance. The application is considered to meet this Section of the Act.
- 5.4. Section 7 identifies “other matters” to be given particular regard by a Council when assessing an application for resource consent, including the maintenance and enhancement of amenity values. The proposal maintains amenity values in the area as the proposal is in keeping with the existing character of the surrounding environment.
- 5.5. Section 8 requires Council to ‘take into account’ the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). It is considered that the proposal would not be contrary to the principles of Te Tiriti.
- 5.6. Overall, the application is consistent with the relevant provisions of Part 2 of the RMA, as expressed through the objectives, policies and rules reviewed in earlier sections of this application. Given that consistency, it is concluded that the proposal achieves the purpose of sustainable management set out by Sections 5-8 of the Act.

6. Conclusion

- 6.1. The Applicant is seeking to vary the conditions of an existing resource consent RC 2300599 to reflect the proposed changes to the plan set, the landscaping plan and stormwater management within the site. The proposed variation will not alter the existing use of the site as previously approved.
- 6.2. The proposal to vary the existing conditions of consent is a Discretionary Activity under Section 127 of the RMA.
- 6.3. The Council has previously assessed potential adverse effects arising from the development of the site with a residential dwelling and associated impermeable surfaces and concluded that the activity will not have, and is not likely to have, adverse effects on the environment that are more than minor. There are no affected persons.
- 6.4. It is therefore considered appropriate to grant the variation to consent conditions on a non-notified basis, under s127 of the Act.

7. Limitations

- 7.1. This report has been commissioned solely for the benefit of our client, in relation to the project as described above, and to the limits of our engagement, with the exception that the Far North District Council or Northland Regional Council may rely on it to the extent of its appropriateness, conditions and limitations, when issuing their subject consent.
- 7.2. Copyright of Intellectual Property remains with Northland Planning and Development 2020 Limited, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants or agents, in respect of any information contained within this report.
- 7.3. Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.
- 7.4. Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary.



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy




R.W. Muir
Registrar-General
of Land

Identifier **336781**
Land Registration District **North Auckland**
Date Issued 25 May 2007

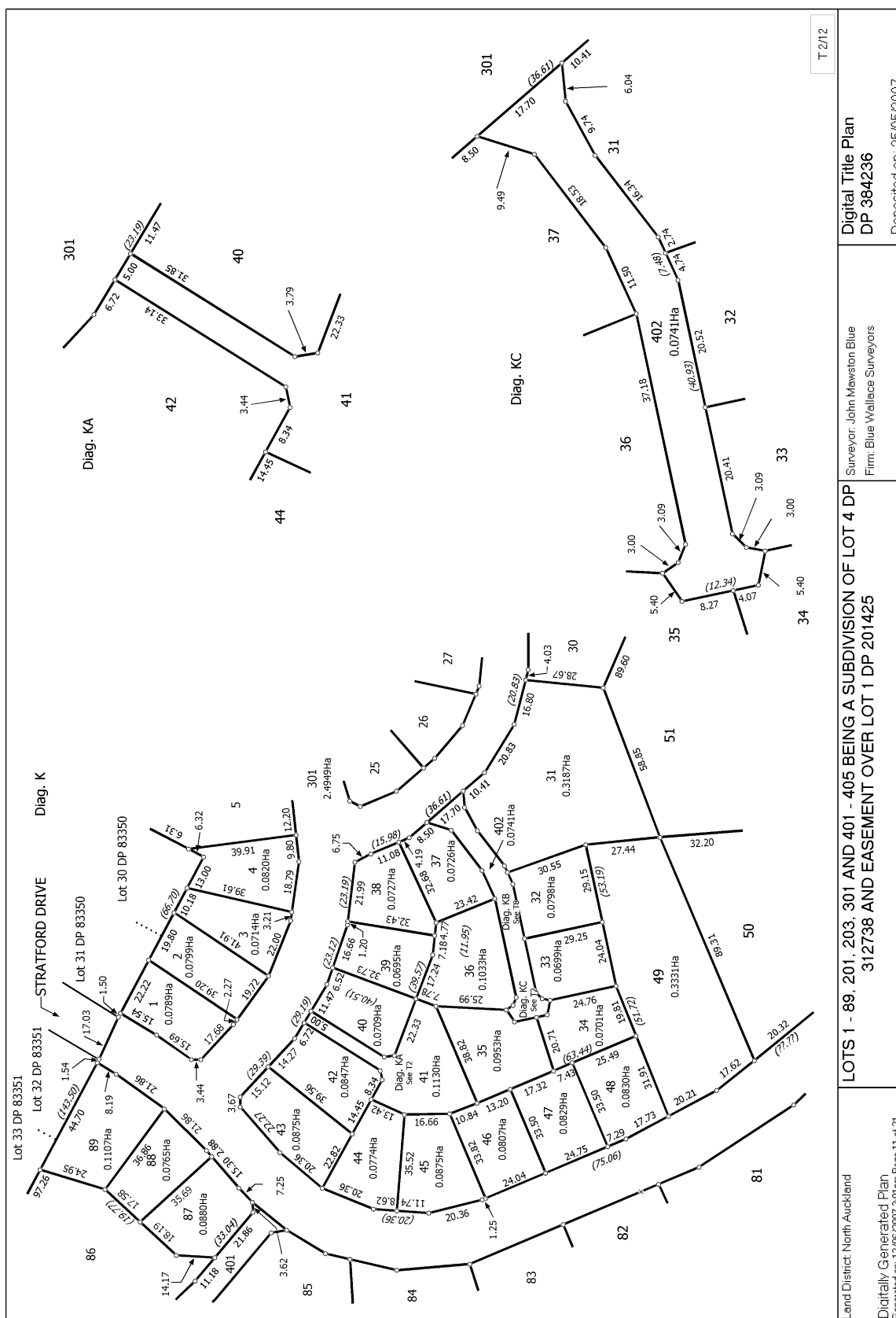
Prior References
50077

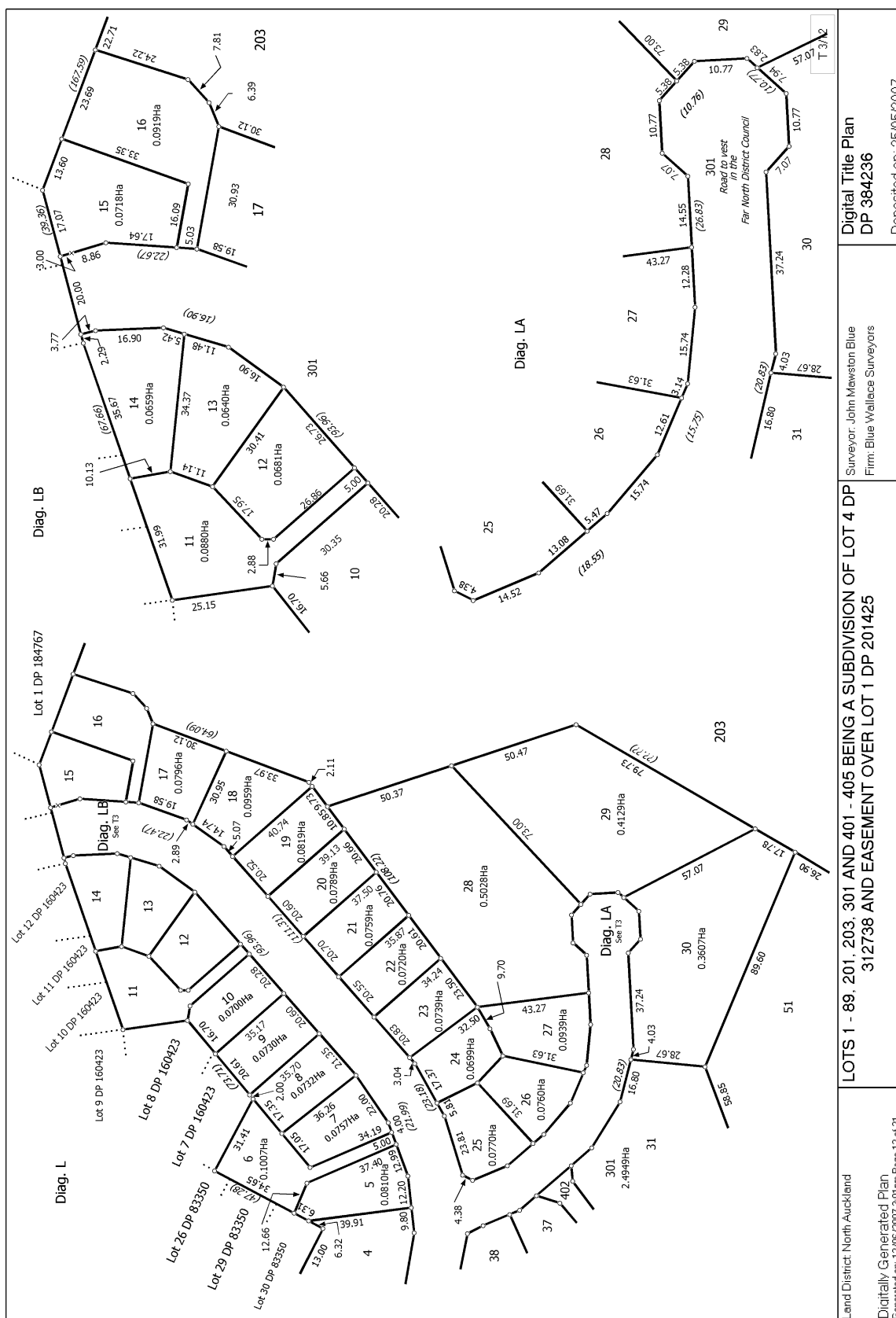
Estate Fee Simple
Area 875 square metres more or less
Legal Description Lot 43 Deposited Plan 384236
Registered Owners
Suraj Chandrashekar

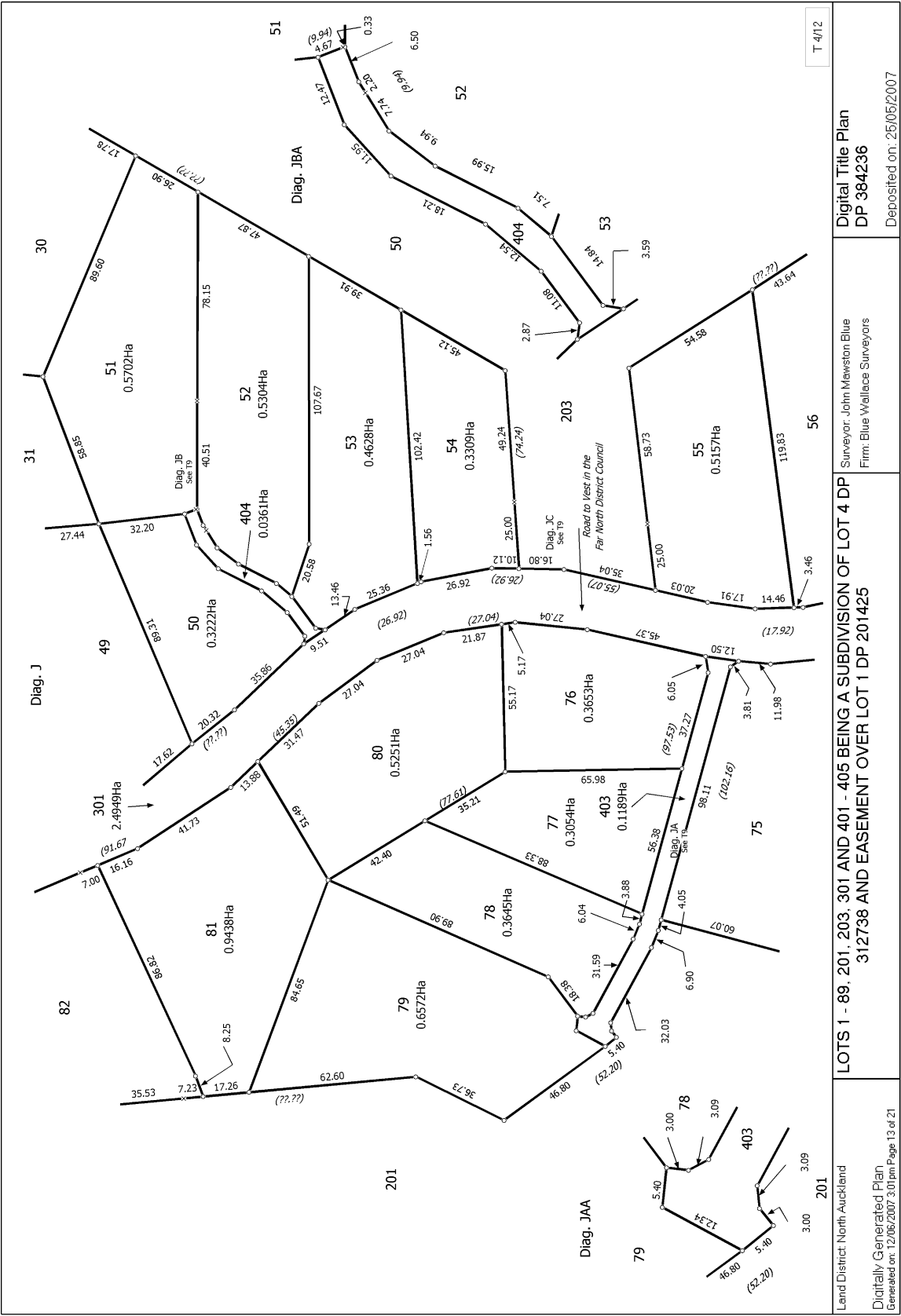
Interests

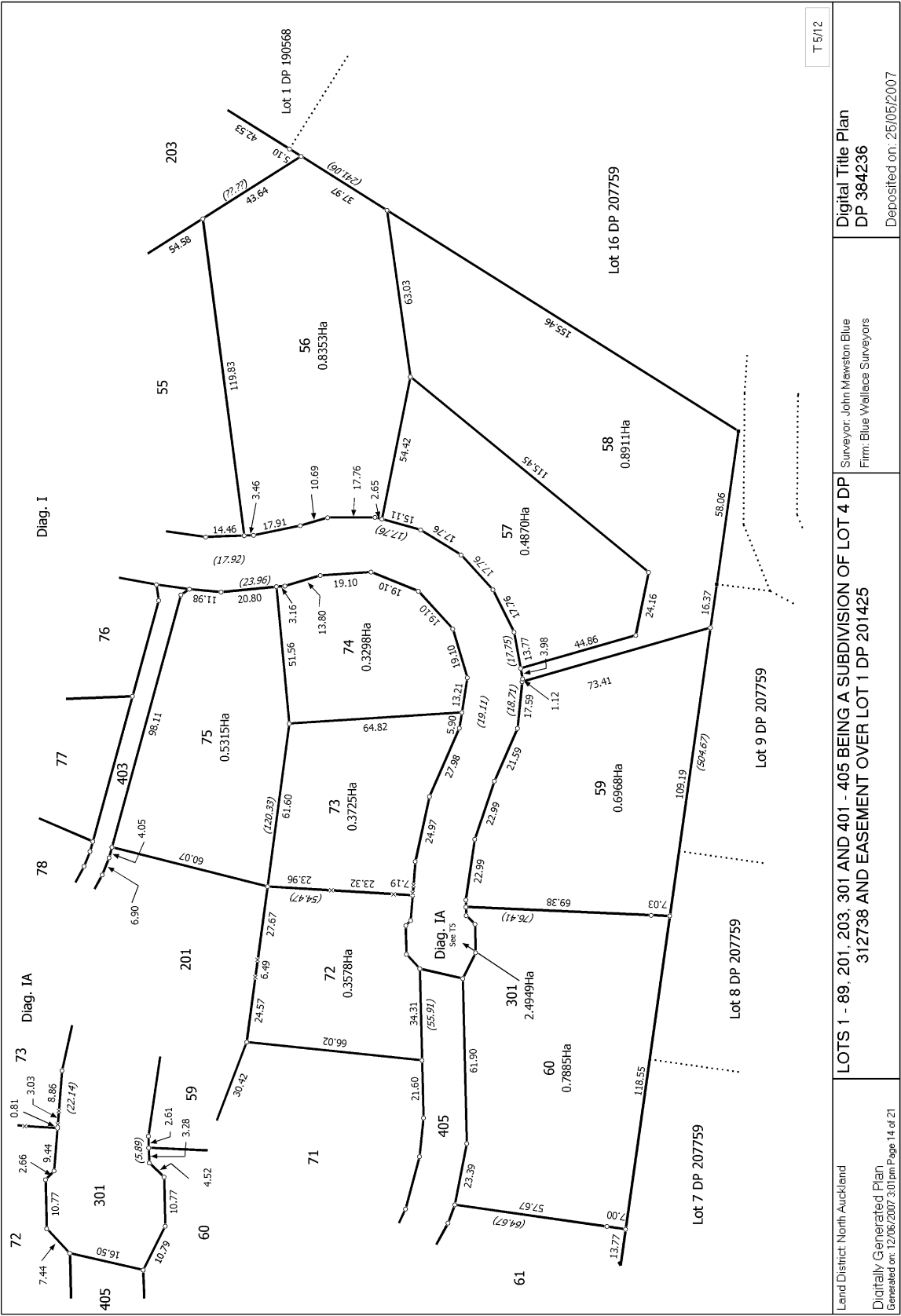
5363500.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 3.10.2002 at 3:37 pm
Appurtenant hereto is a water supply easement created by Easement Instrument 5363500.4 - 3.10.2002 at 3:37 pm
7389051.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 25.5.2007 at 9:00 am
Land Covenant in Easement Instrument 7389051.13 - 25.5.2007 at 9:00 am
Fencing Covenant in Easement Instrument 7389051.13 - 25.5.2007 at 9:00 am
11437146.2 Mortgage to ASB Bank Limited - 4.6.2019 at 1:25 pm
12309576.1 Variation of Consent Notice 7389051.2 pursuant to Section 221(5) Resource Management Act 1991 - 13.1.2022 at 10:58 am
12618430.1 Variation of Mortgage 11437146.2 - 24.11.2022 at 4:09 pm

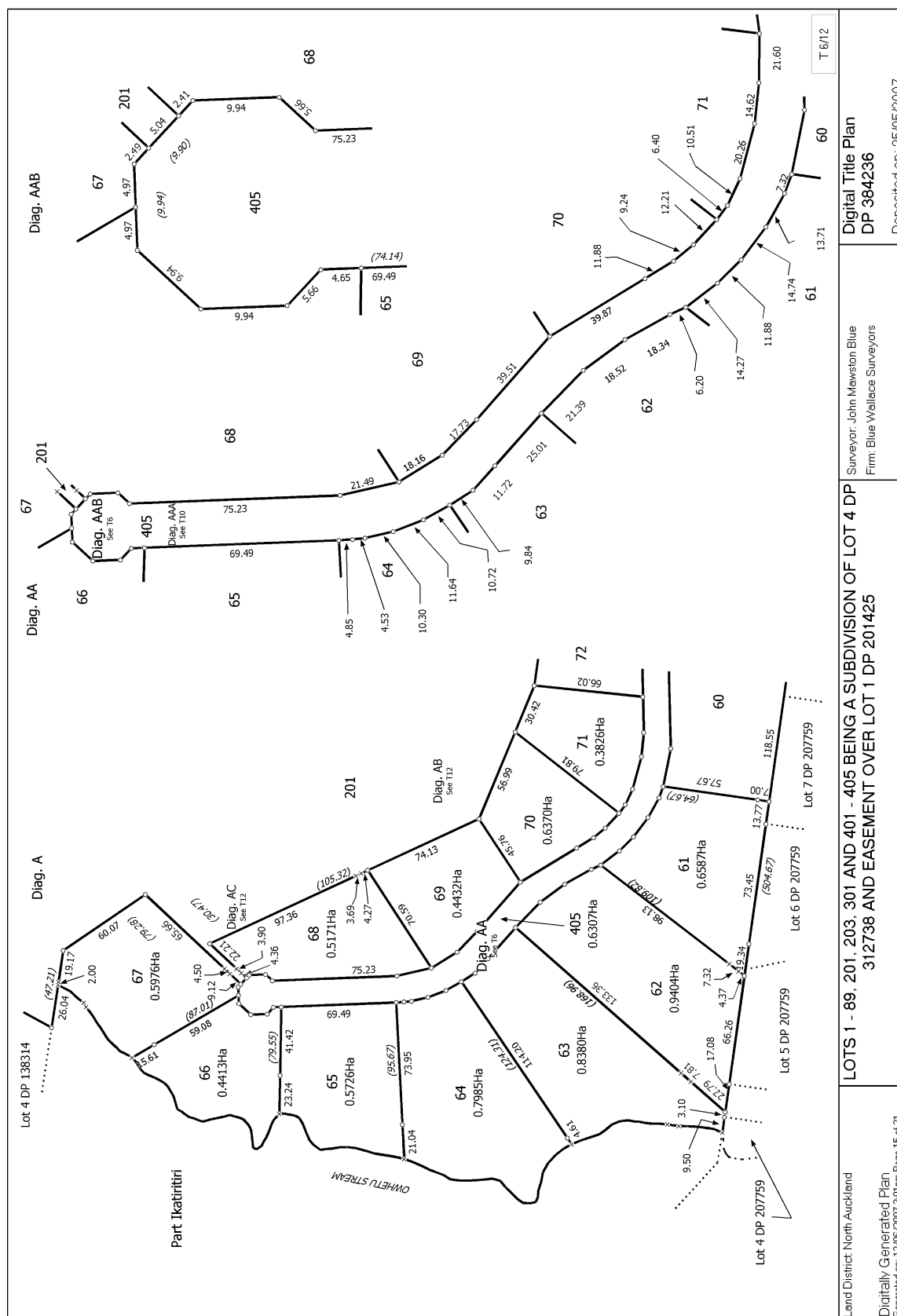


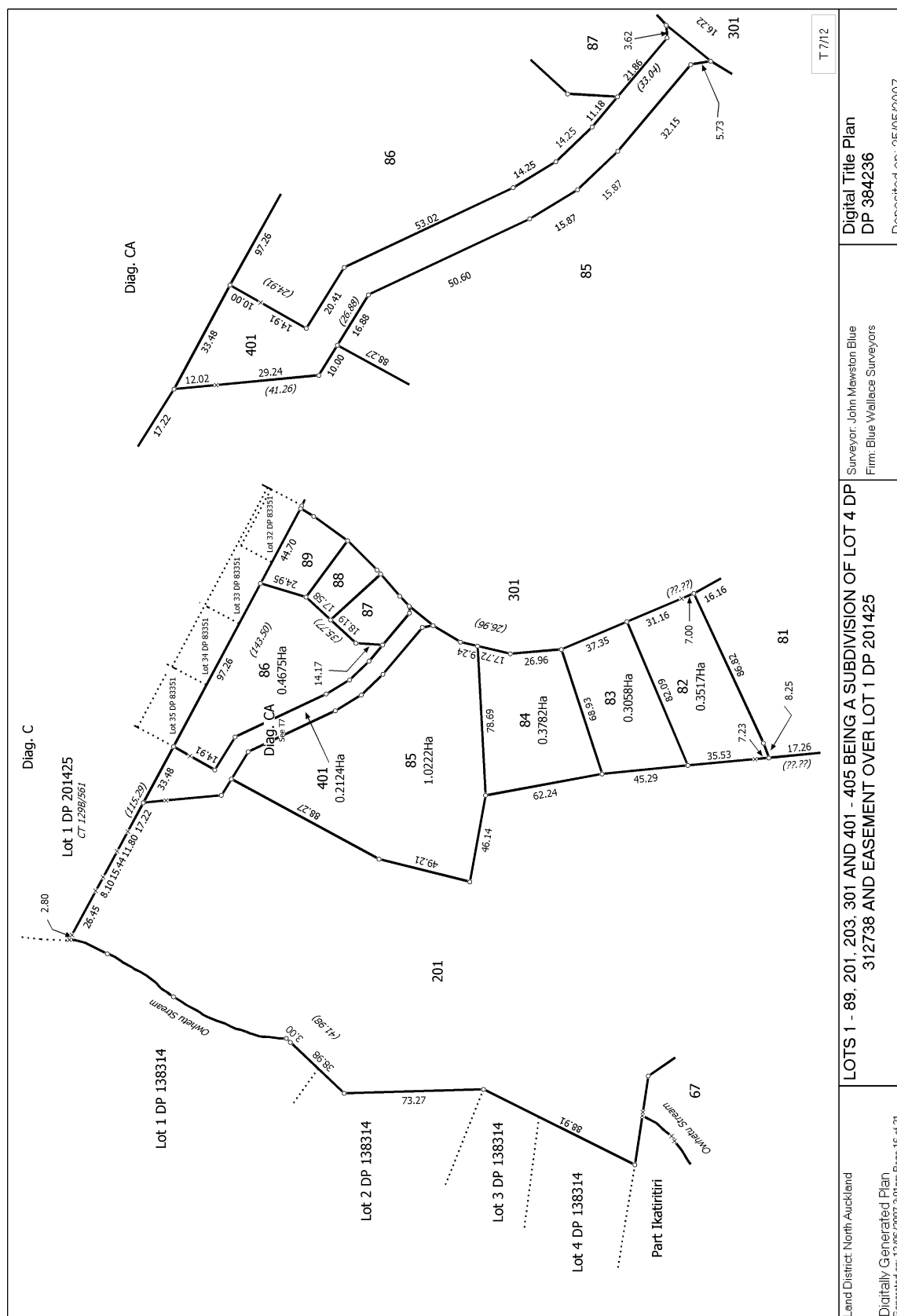


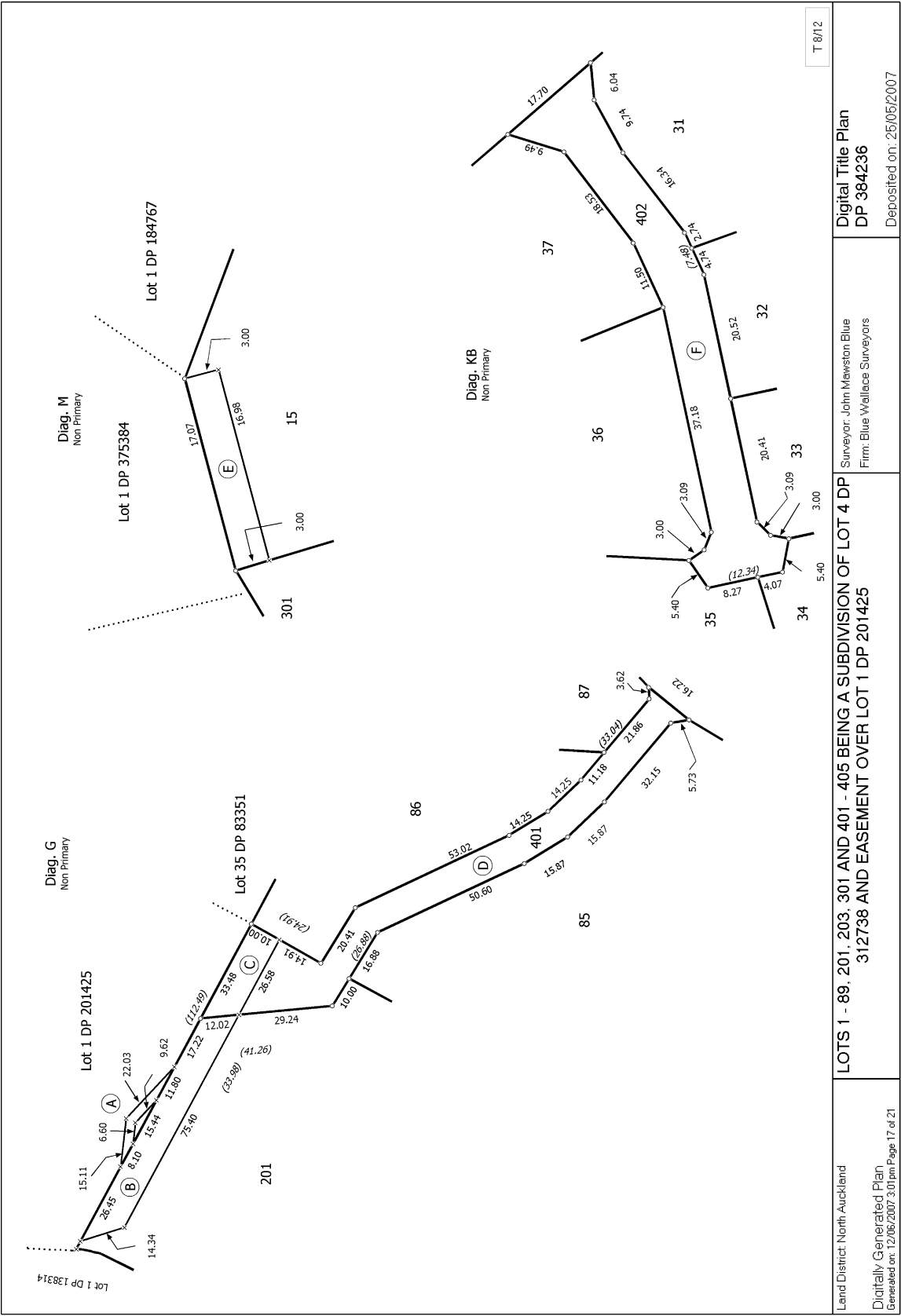


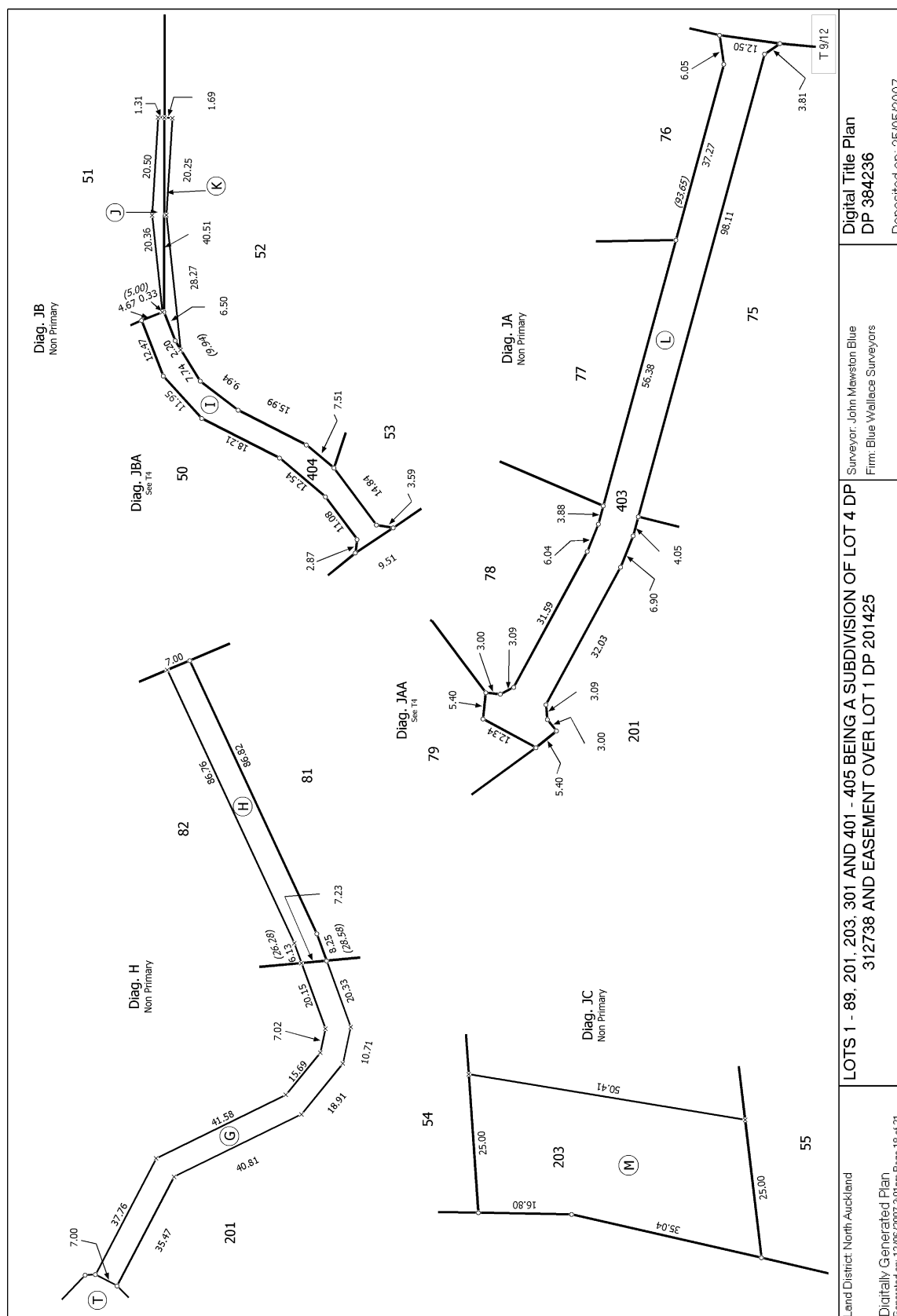


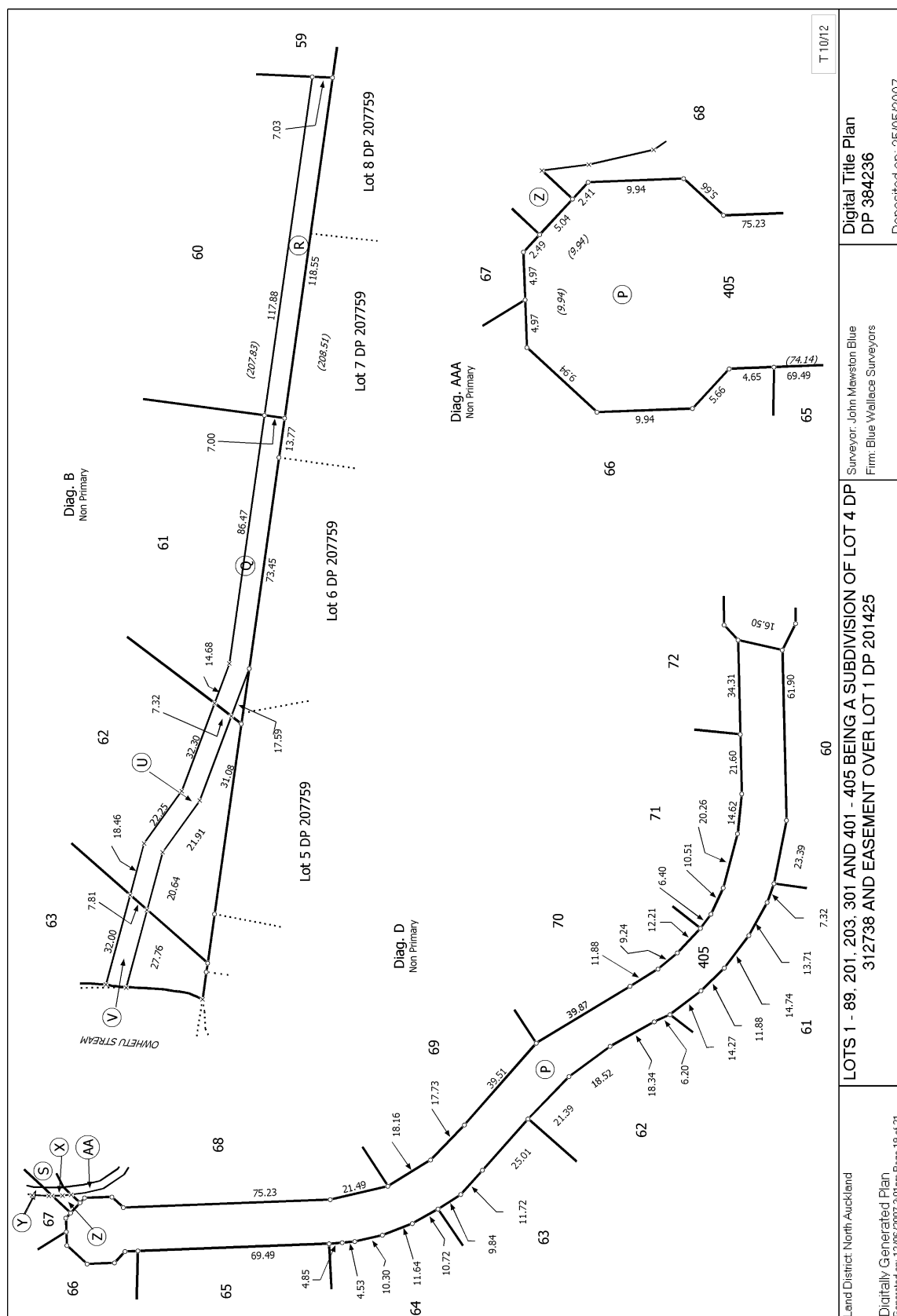


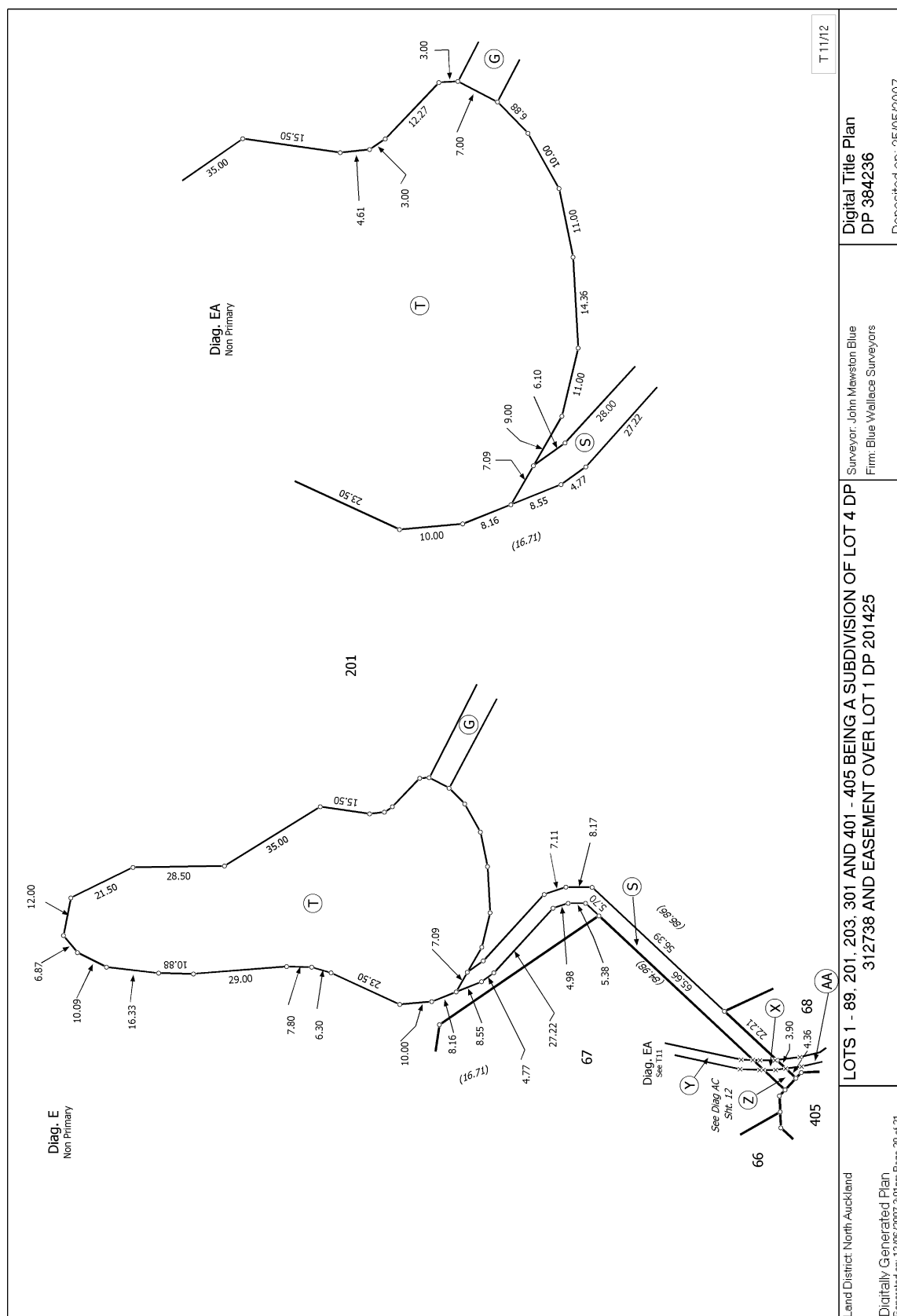


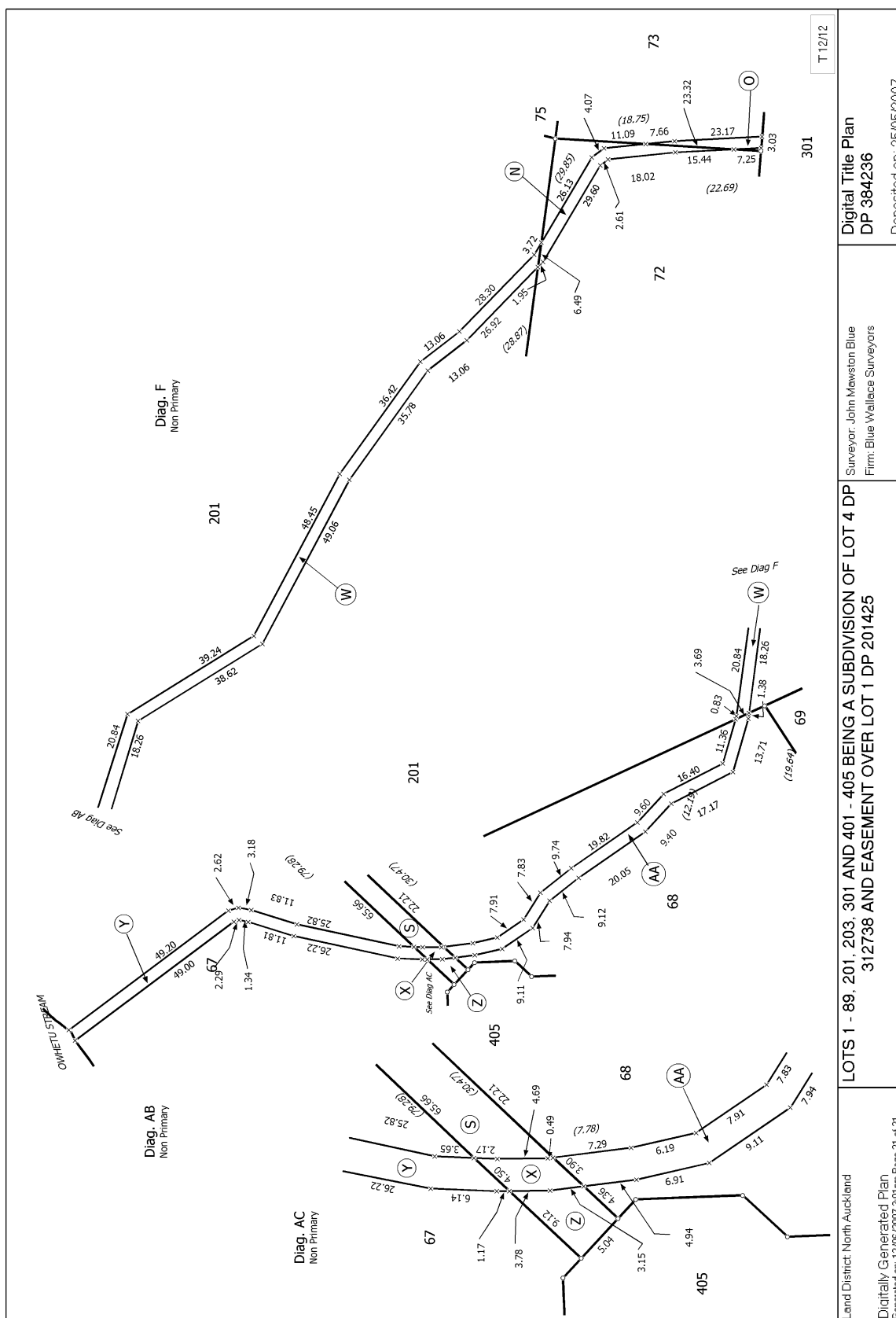












FAR NORTH DISTRICT COUNCIL



THE RESOURCE MANAGEMENT ACT 1991

SECTION 221 : CONSENT NOTICE

CONO 5363500.2 Consen

Cpy - 01/01, Pgs - 001, 11/10/02, 09:21



DocID: 310574704

REGARDING RC 2000414 The subdivision of
Lot 1 DP 172885, and Lot 3 - 5 DP 82177
North Auckland Registry.

PURSUANT to Section 221 for the purposes of Section 224 of the Resource Management Act 1991, this Consent Notice is issued by the FAR NORTH DISTRICT COUNCIL to the effect that conditions described in the schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and is to be registered on the appropriate titles.

SCHEDULE

Lot 1:

Any activity which proposes earthworks exceeding 50 cubic metres in the area from the dwelling to the eastern boundary is to proceed only after the submittal to Council of an approved archaeological site survey of the area involved.

Lot 2:

All access to the site (Pt Lot 1 DP 172885) is to come from Stratford Drive and/or Dudley Crescent.

SIGNED:


by the FAR NORTH DISTRICT COUNCIL
under delegated authority:
RESOURCE CONSENTS MANAGER

DATED at **KAIKOHE** this 18th day of July 2002



**Far North
District Council**

CONO 7389051.2 Cons

Cpy - 01/01, Pgs - 003, 25/05/07, 09:19



DocID: 312896978

Private Bag 752, Memorial Ave

Kaikōhe 0400, New Zealand

Freephone: 0800 920 029

Phone: (09) 405 2750

Fax: (09) 401 2137

Email: ask.us@fndc.govt.nz

Website: www.fndc.govt.nz

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221 : CONSENT NOTICE

REGARDING RC 2051164
the Subdivision of Lot 4 DP 312738
North Auckland Registry

PURSUANT to Section 221 and for the purpose of Section 224 (c)(ii) of the Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that conditions described in the schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and these are to be registered on the appropriate titles of Lots on DP 384236.

SCHEDULE

LOTS 66 AND 67

1. Prior to the construction of any building on the lot the property owner shall provide a report prepared by a suitability qualified Chartered Professional Engineer which identifies the 100 year AFI Flood level for the site and specifies a safe minimum floor level above the identified flood level.

LOTS 56 – 67, 201 AND 203

2. The parent site boundary shall be fenced where there is bush to be protected as required by conditions (2) (1) and (3) (29) to ensure that stock from a neighbouring site cannot access the bush protection areas.

LOTS 28 – 31 AND 49 - 86

3. The defined building sites shall be pegged and temporary fencing constructed around the perimeter of the building site to ensure that bush clearance and construction works do not extend outside of these defined areas.
4. That the wastewater treatment and disposal system shall be designed by a Registered Engineer in accordance with the Auckland Regional Council Technical Publication N^o 58 and to the satisfaction of the Far North District Council.
5. The wastewater treatment and disposal system shall be regularly maintained and upgraded and / or replaced as necessary to ensure that it continues to operate properly.

LOTS 29 – 31, 49 – 86, 201 AND 203

6. The owner shall preserve the indigenous trees and bush on allotments 201 and 203 and all bush areas outside of the identified building platforms on allotments 28, 29, 30, 31, allotments 49 to 86 inclusive and shall not without the prior written consent of the Council and then only in strict compliance with any conditions imposed by the Council, cut down, damage or destroy any of such trees or bush or suffer or permit the cutting down damaging or destruction of any such trees or bush. The owner shall be deemed to be not in breach of this prohibition if any of such trees or bush shall die from natural causes not attributable to any act or default by or on behalf of the owner or for which the owner is responsible.

LOTS 51, 52, 60 – 63, 67 – 69, 72, 73, 75, 81, AND 82

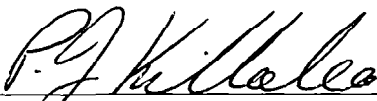
7. Without the prior approval of the Council, no building shall be erected, nor any works which increase impermeable surfaces be undertaken, nor any planting or structure placed which may create a flow obstruction, on any area of the site which has been proposed as a secondary/overland (Q_{100}) flow. [Refer to easements G, H, I, J, K, L, N, O, Q, R, T, U, V, W, X, Y, and AA]

ALL LOTS:

8. The Incorporated Body or other legal entity requested to be formed pursuant to Condition (3) (4) shall be responsible for the ongoing maintenance of the common areas, and the stormwater and waste water systems. The owner of each residential and rural residential allotment within the subdivision will be required to be a member of the approved entity.
9. The requirements of the approved management plan shall be complied with at all times and in particular the following matters shall be observed at all times:
 - No building shall exceed a height of 6 metres as measured by the rolling height method set out in the District Plan.
 - The colours of all buildings are to comply with British Standard specification BS5252 Colour Range and have a reflective value of 30 % or less.
10. Any new residential building erected on site, shall have installed domestic sprinkler systems in accordance with the requirements of the New Zealand Fire Service.
11. No building shall be erected on the proposed lots without the prior approval of the council to specific designs for foundations, prepared by a registered engineer with geotechnical expertise.
12. No occupier of the land shall keep or introduce on to the site carnivorous or omnivorous exotic animals (such as ferrets, cats or dogs) which have the potential to be kiwi predators.
13. Exotic vegetation which could adversely affect natural regeneration or local forest health is not to be introduced on the site. This includes the introduction of invasive plant species, including those currently listed on the nationally-banned-for-sale list (see Northland regional Pest Management Strategy). Planting of other exotic species should be confined to the immediate vicinity of dwellings. And species with berry-type fruits are to be grown within netting to prevent seed spread by birds.

14. Animal pest and weed eradication shall be ongoing in accordance with the animal pest and weed eradication programme approved by Far North District Council detailing the methodology for animal pest and weed eradication within the bush covenant areas. Any predator / pest control work carried out is to be done in a manner which will not endanger kiwi.
15. A landscaping plan from a suitably-qualified person shall be provided to the Council's satisfaction, which indicates the means to lessen the visual impact of buildings, access ways and any earthworks. This plan shall be submitted with the resource consent application for the construction of a dwelling or accessory building on sites within the subdivision. On approval of this plan, the landscaping specified is to be provided within six months and adequately maintained thereafter. Plants requiring removal due to damage, disease or other cause shall be replaced with a similar specimen before the end of the next following planting season.

SIGNED:


By the FAR NORTH DISTRICT COUNCIL
Under delegated authority:
RESOURCE CONSENTS MANAGER

Mr Pat Killalea

DATED at **KAIKOHE** this

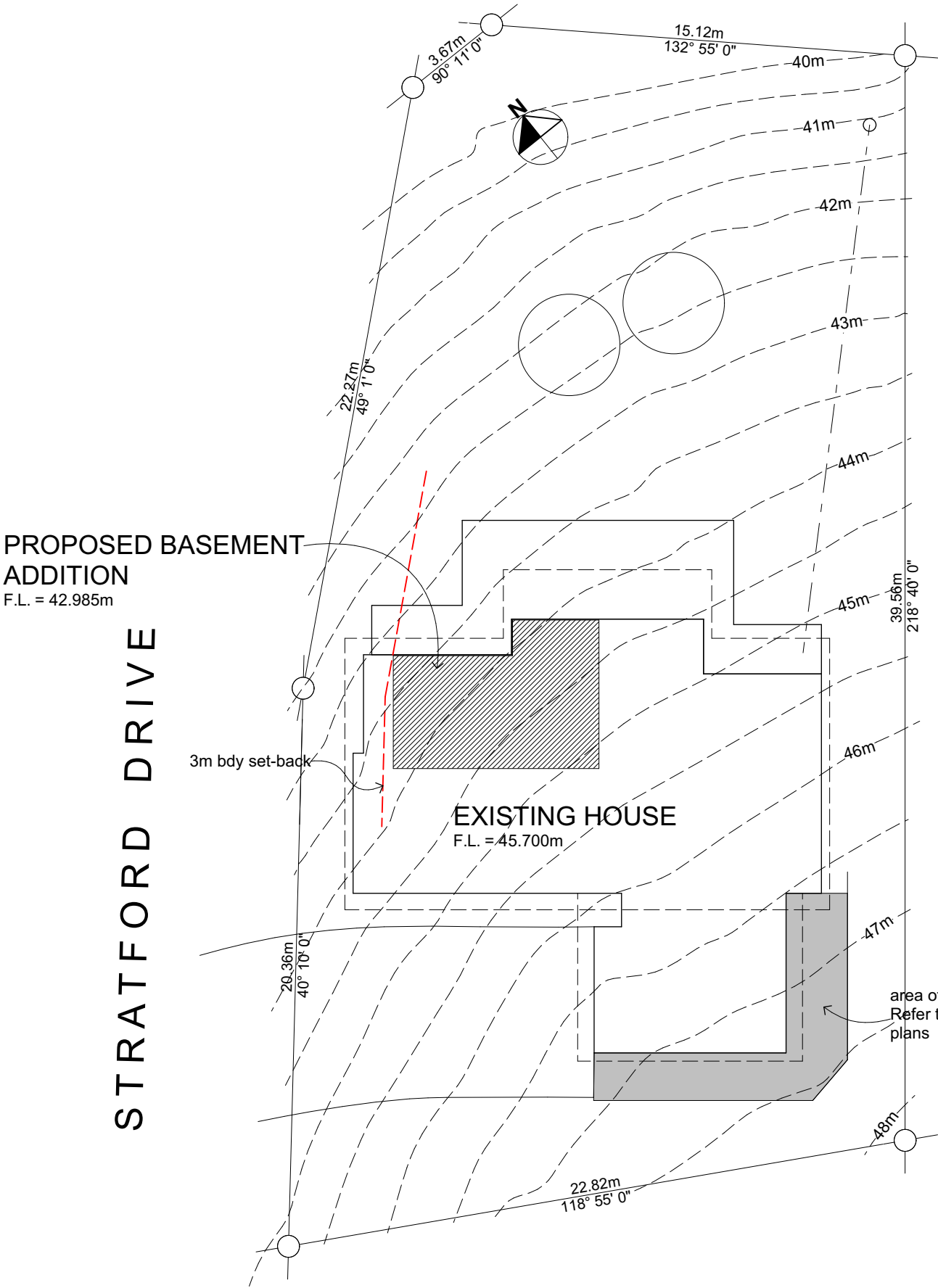
17th

day of

May

2007

DUDLEY CRESCENT



Lot 43
DP 384236

Area = 875m²
CT 336781
Zoned - Coastal Living
Wind Zone - Very High
Earthquake Zone - 1
Exposure Zone - D

Impermeable surfaces
Existing House = 236m²
Existing Drive = 86m²
New concrete = 25m²
TOTAL = 347m² (39.7%)

Building Coverage - Unchanged

Excavation 18m³ cut - max depth 1.5m



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Use figured dimensions in preference to scaling.
All construction to comply with NZS 3604: 2011 and/or NZBC

PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

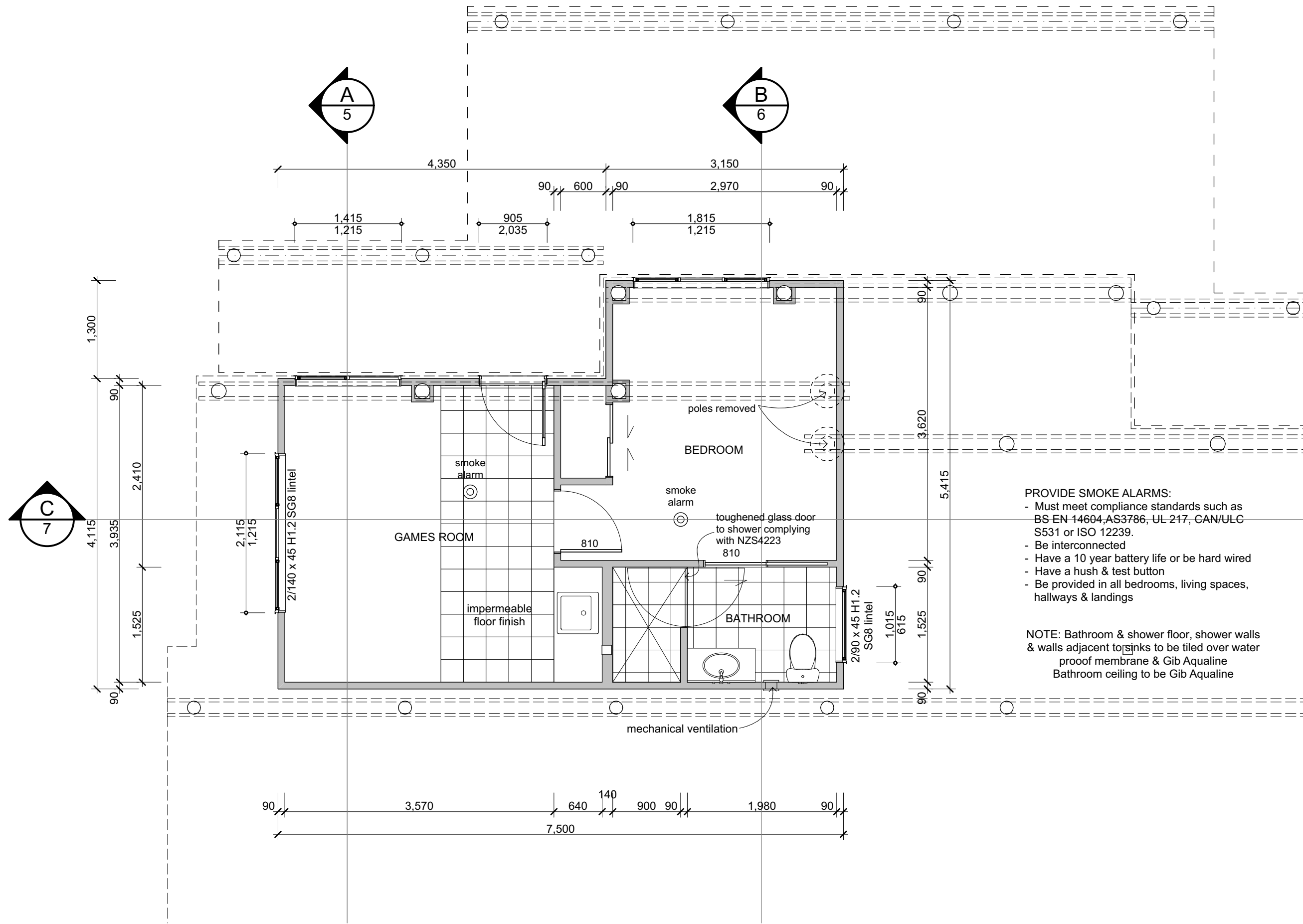
PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

DRAWING:
Site Plan

Drawn: BH	Date: 27/07/2026
SCALE: 1:200	DRAWING No: 1 of 15
PROJECT No: 1831	



National Bank Building
90 Keri Road,
P.O. Box 575
KERIKERI 0245
Tel. (09) 407 7049
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1 Proposed Ground Floor Plan 1:50



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PROJECT:
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S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

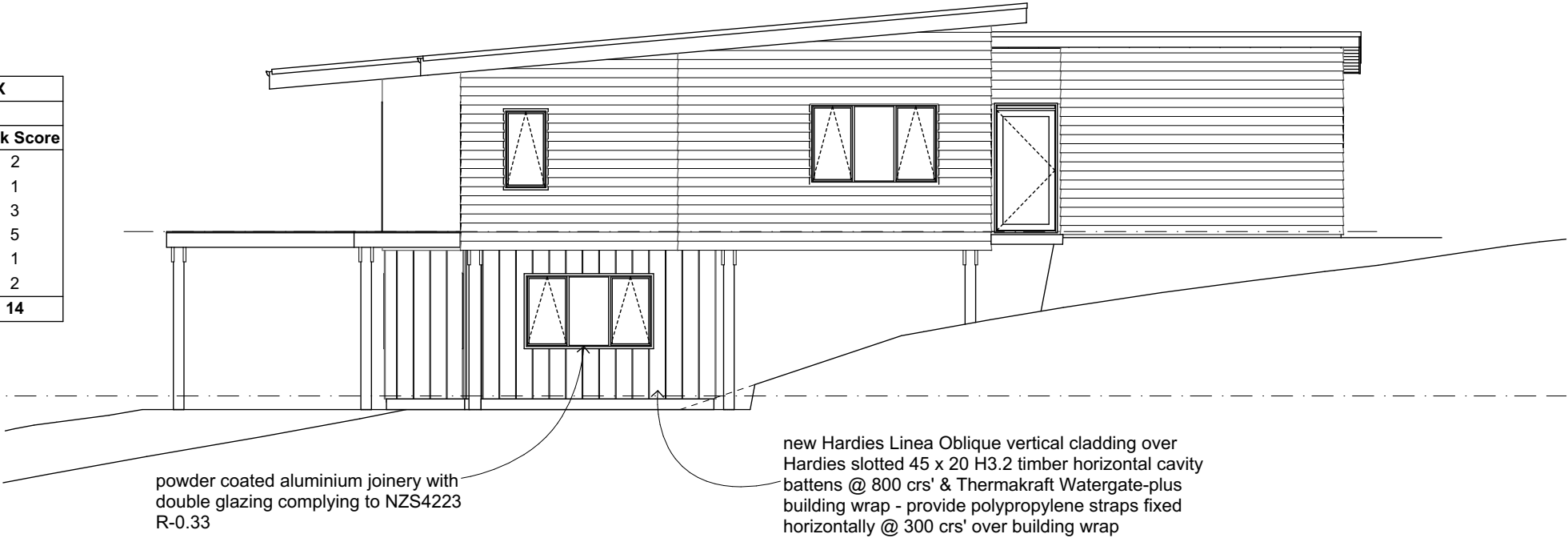
DRAWING:
Proposed Ground Floor Plan

Drawn: BH	Date: 27/07/2026
SCALE: 1:50	DRAWING No: 2 of 15
PROJECT No: 1831	



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BUILDING ENVELOPE RISK MATRIX		
North West Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	Very High risk	2
Number of storeys	Medium risk	1
Roof/wall intersection design	High risk	3
Eaves width	Very High risk	5
Envelope complexity	Medium risk	1
Deck design	Medium risk	2
Total Risk Score:		14



E-02

North West Elevation

1:100



E-03

North East Elevation

1:100



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PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

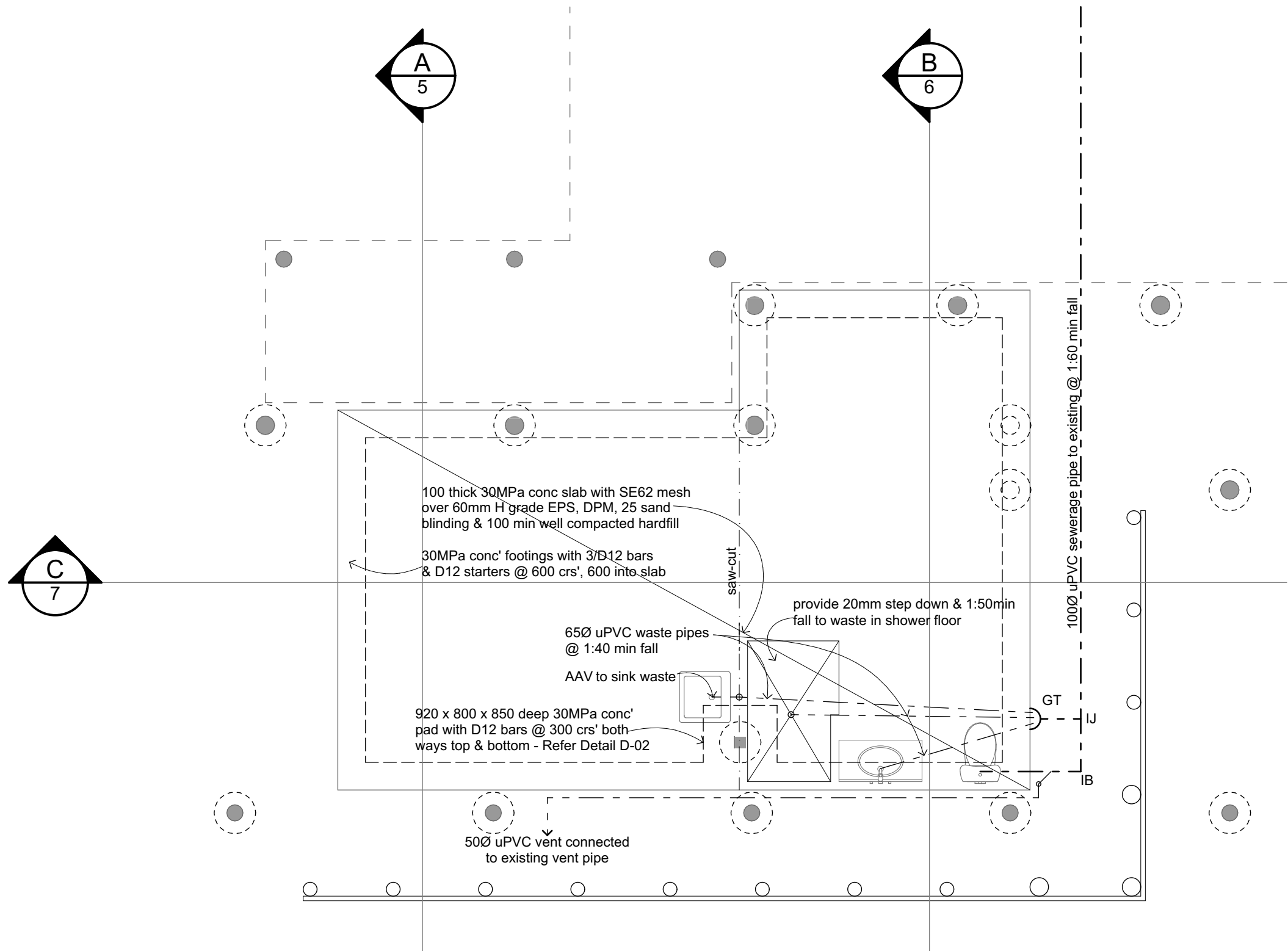
DRAWING:
Elevations

Drawn: BH	Date: 27/07/2026
SCALE: 1:100	DRAWING No: 3 of 15
PROJECT No: 1831	



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PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

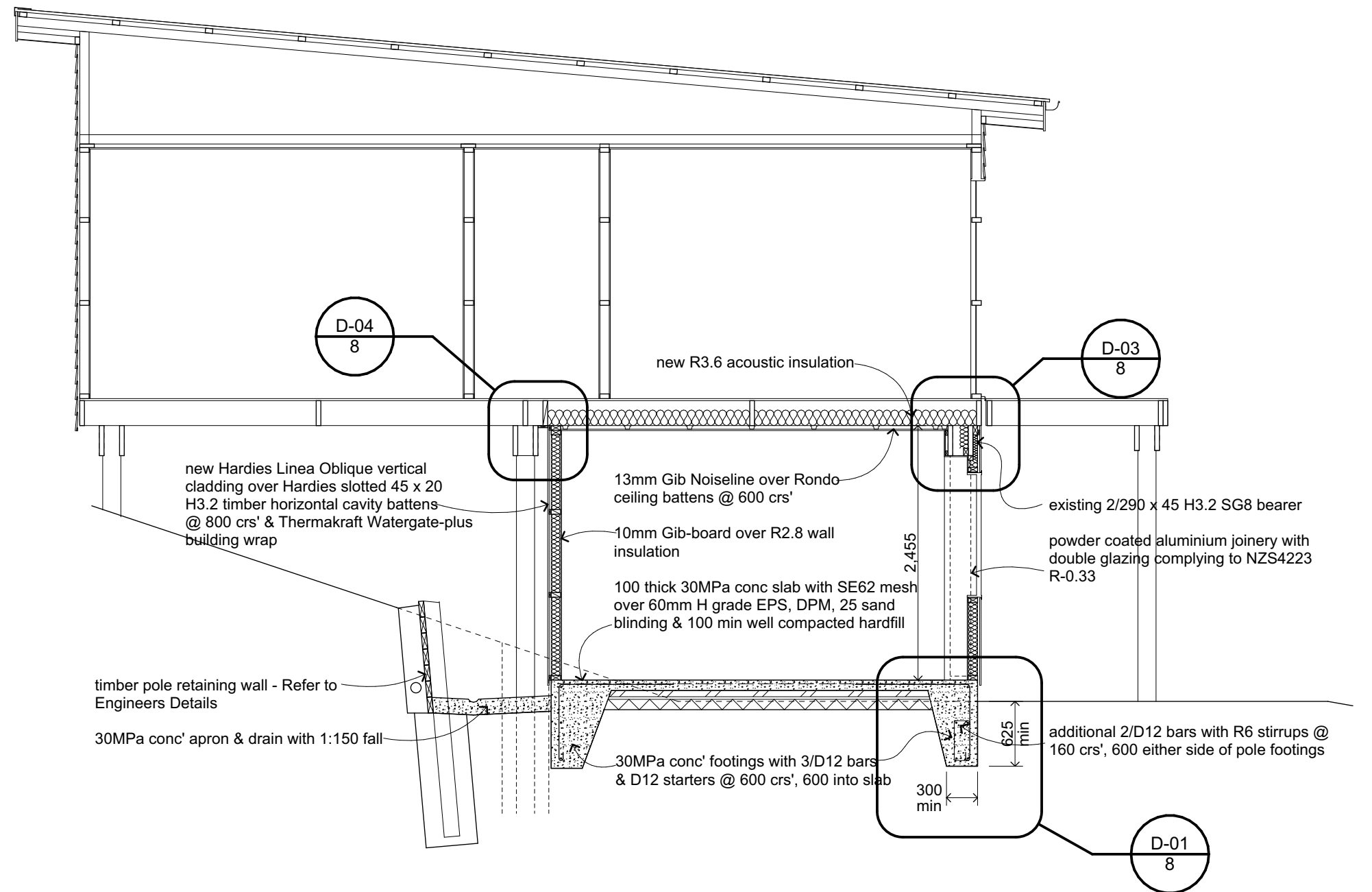
PROJECT ADDRESS:
66 Stratford Drive
Cable Bay
DRAWING:
Foundation Plan

Drawn: BH	Date: 27/07/2026
SCALE: 1:50	DRAWING No: 4 of 15
PROJECT No: 1831	



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A

Section A - A

1:50



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PROJECT:
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S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
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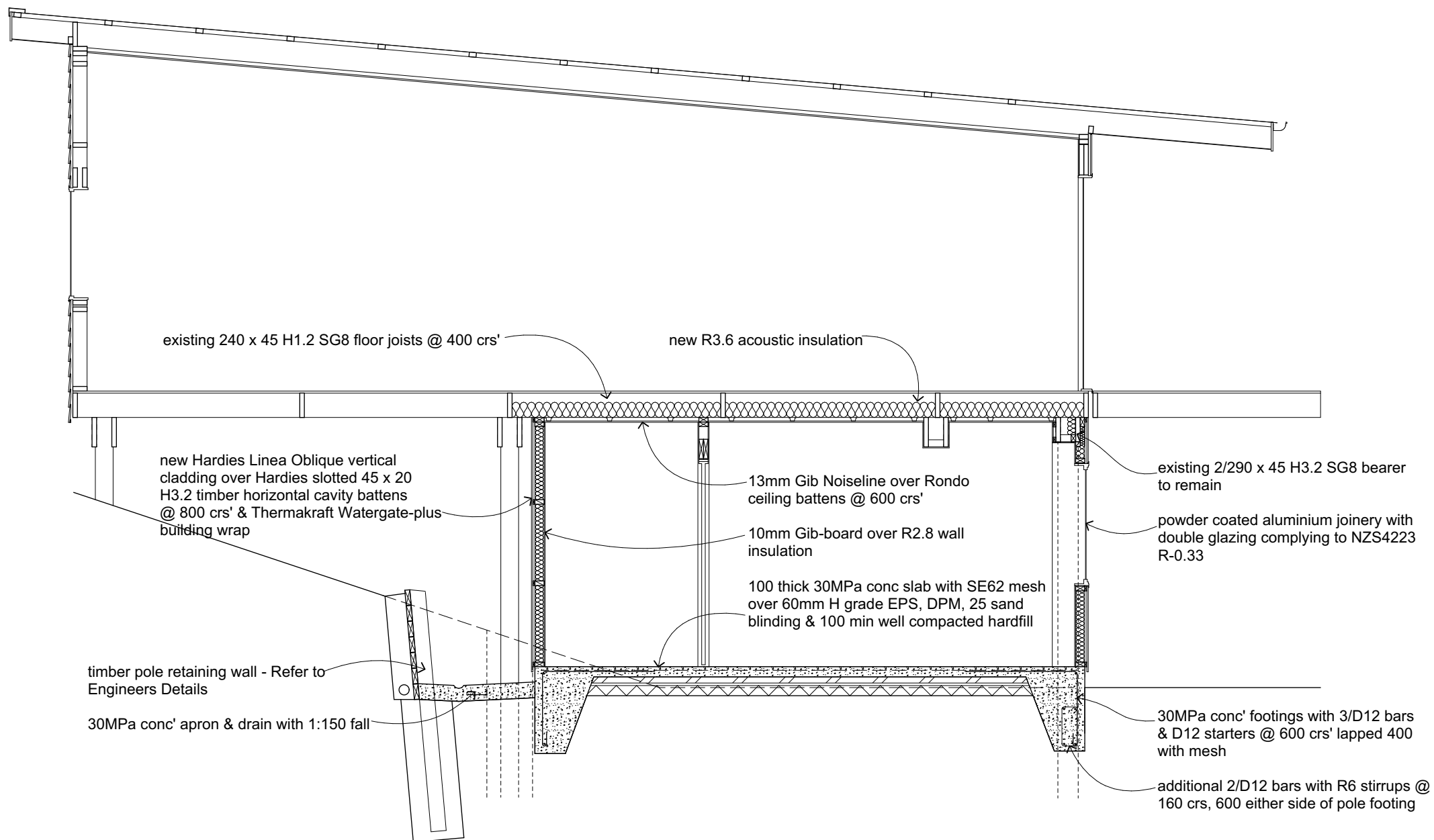
DRAWING:
Cross Section A - A

Drawn: BH	Date: 27/07/2026
SCALE: 1:50	DRAWING No: 5 of 15
PROJECT No: 1831	

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PROJECT:

Proposed Additions & Alterations to House

S & R Chandrashekar

PROJECT ADDRESS:

**66 Stratford Drive
Cable Bay**

DRAWING:

Cross Sections B - B

Drawn: BH	Date: 27/07/2026
SCALE: 1:50	DRAWING No: 6 of 15
PROJECT No: 1831	



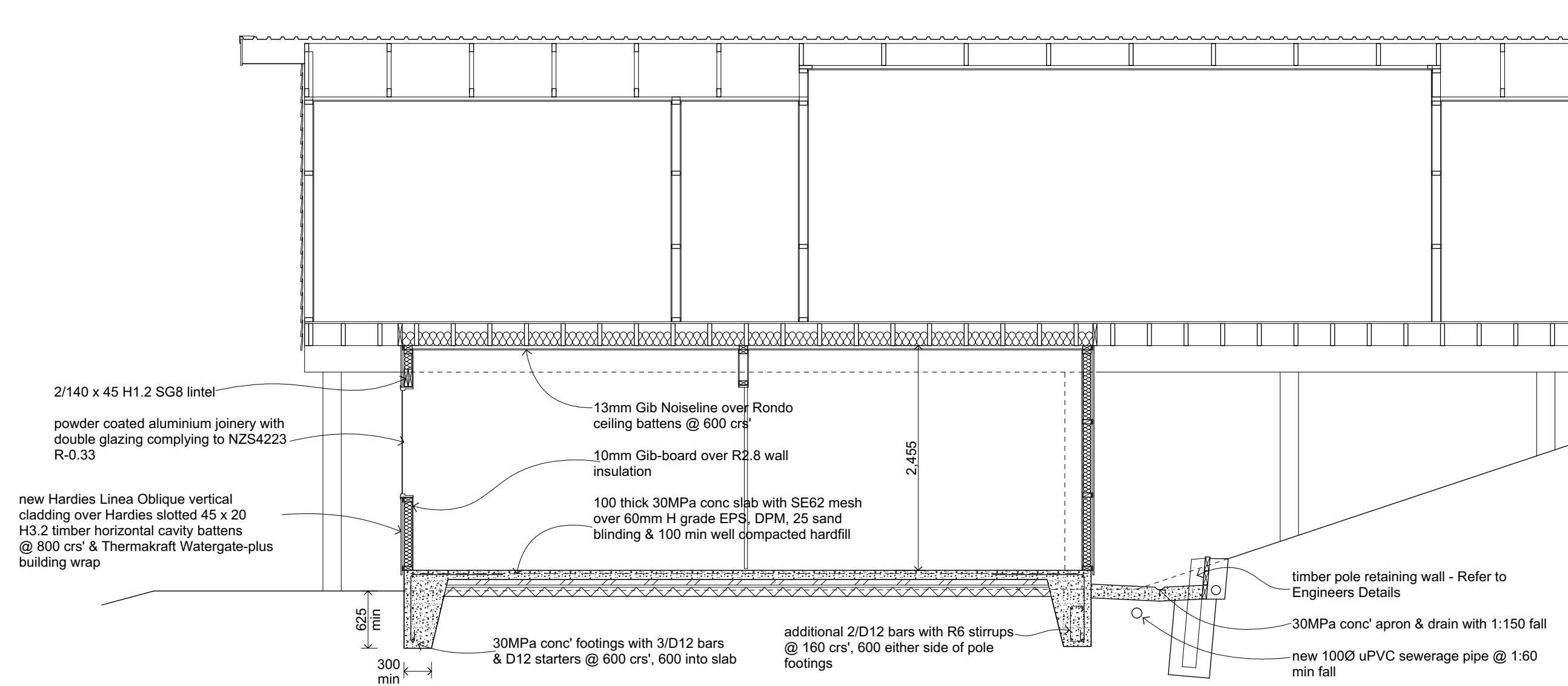
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B

Section B - B

1:50



C Section C - C

1:50



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PROJECT:
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S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

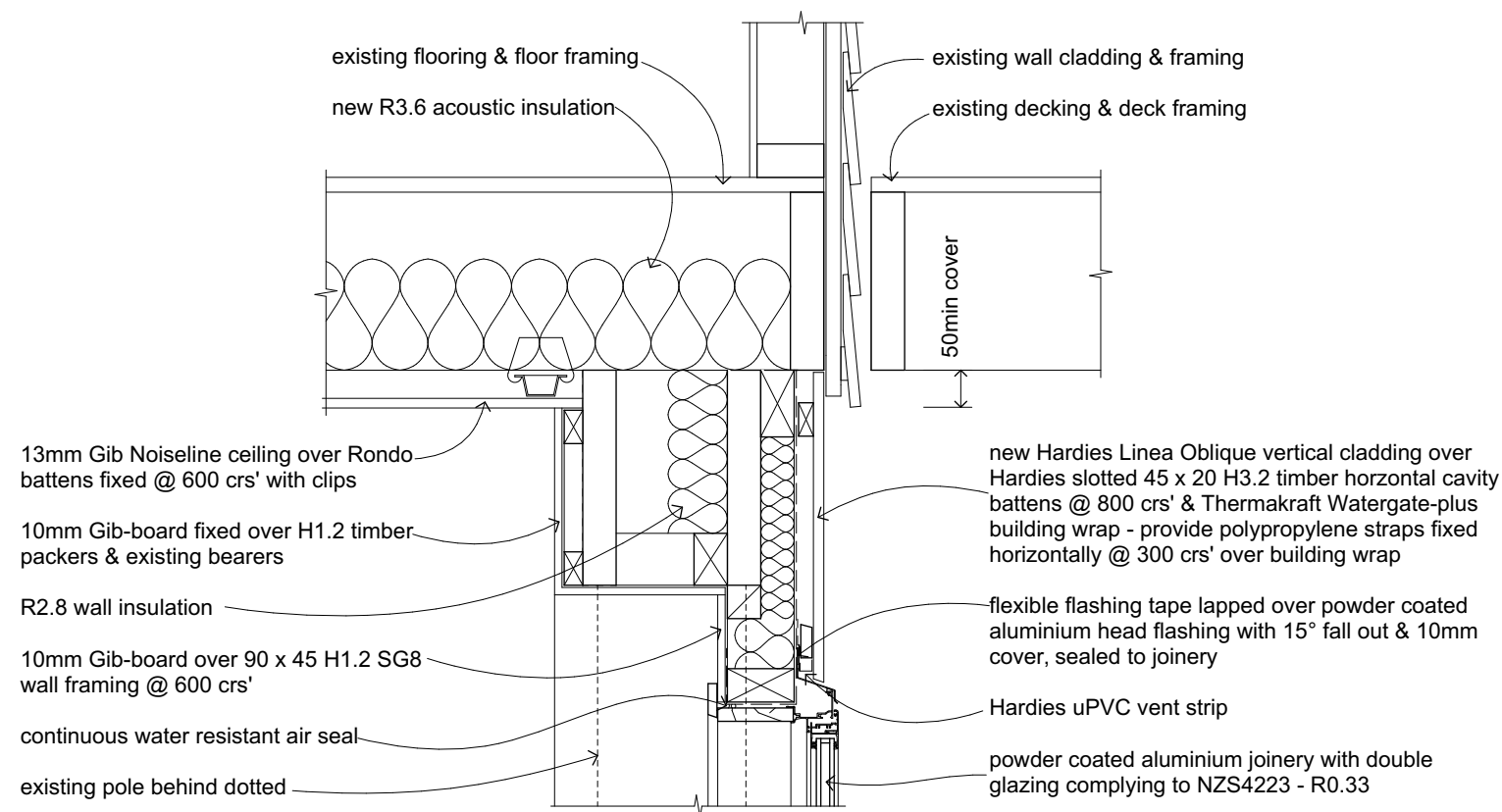
DRAWING:
Cross Section C - C

Drawn: BH	Date: 27/07/2026
SCALE: 1:50	DRAWING No: 7 of 15
PROJECT No: 1831	

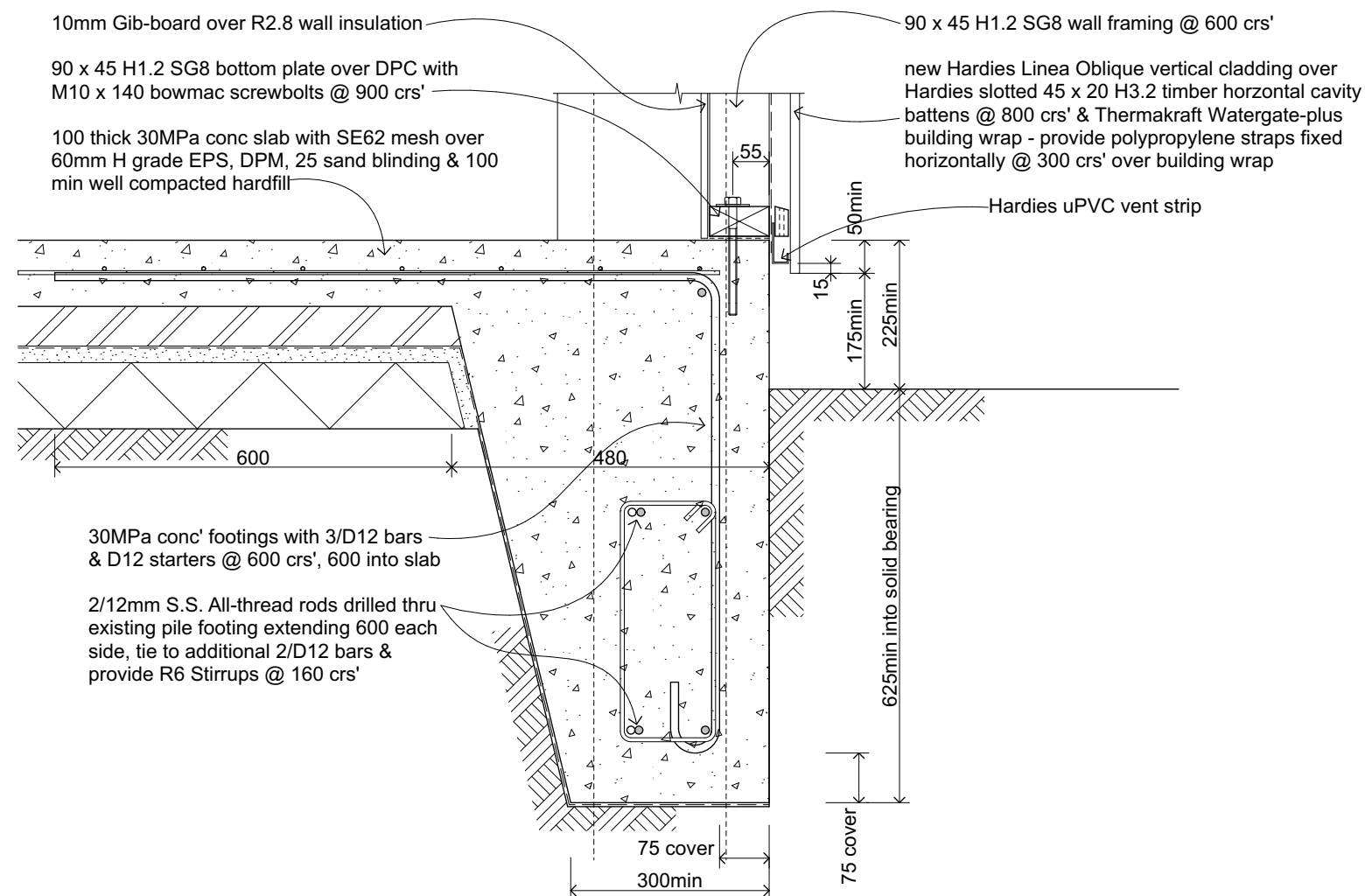


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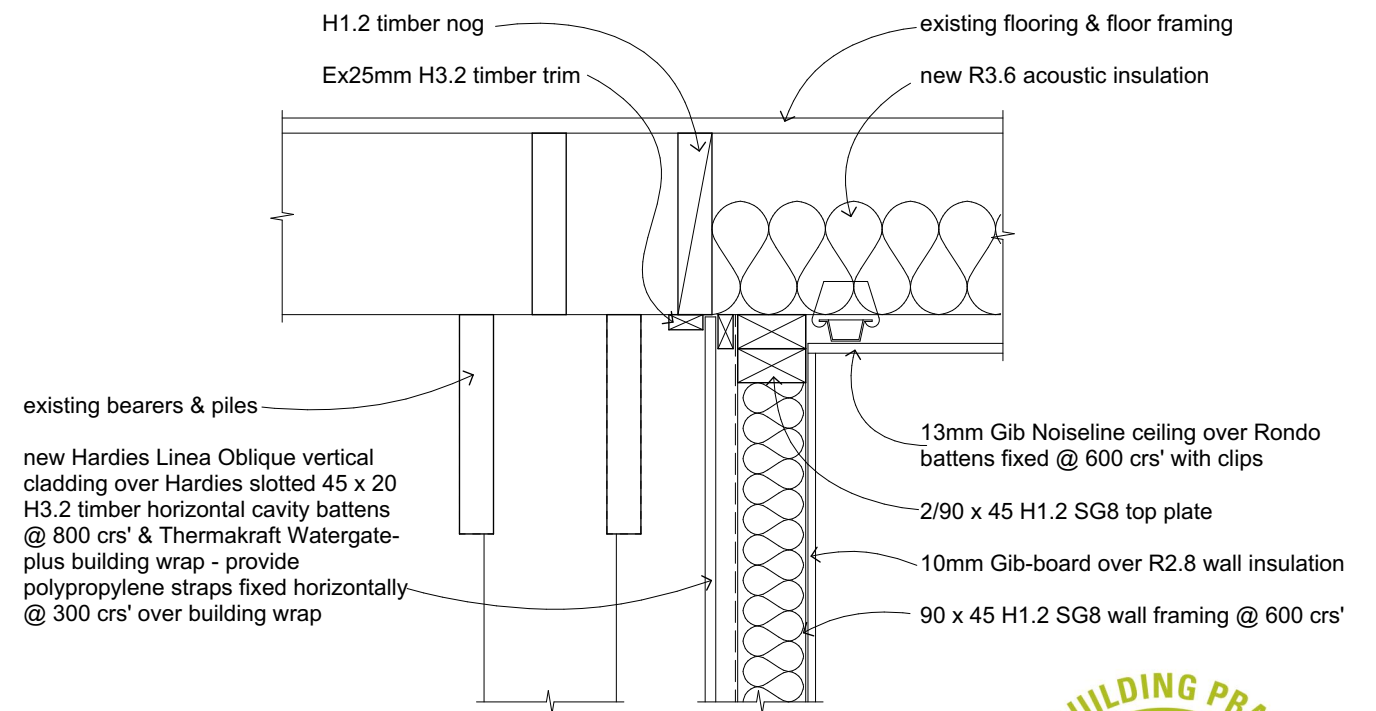
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D-03 Inter Floor Detail 1:10



D-01 Footing Detail 1:10



D-04 Inter Floor Detail 1:10



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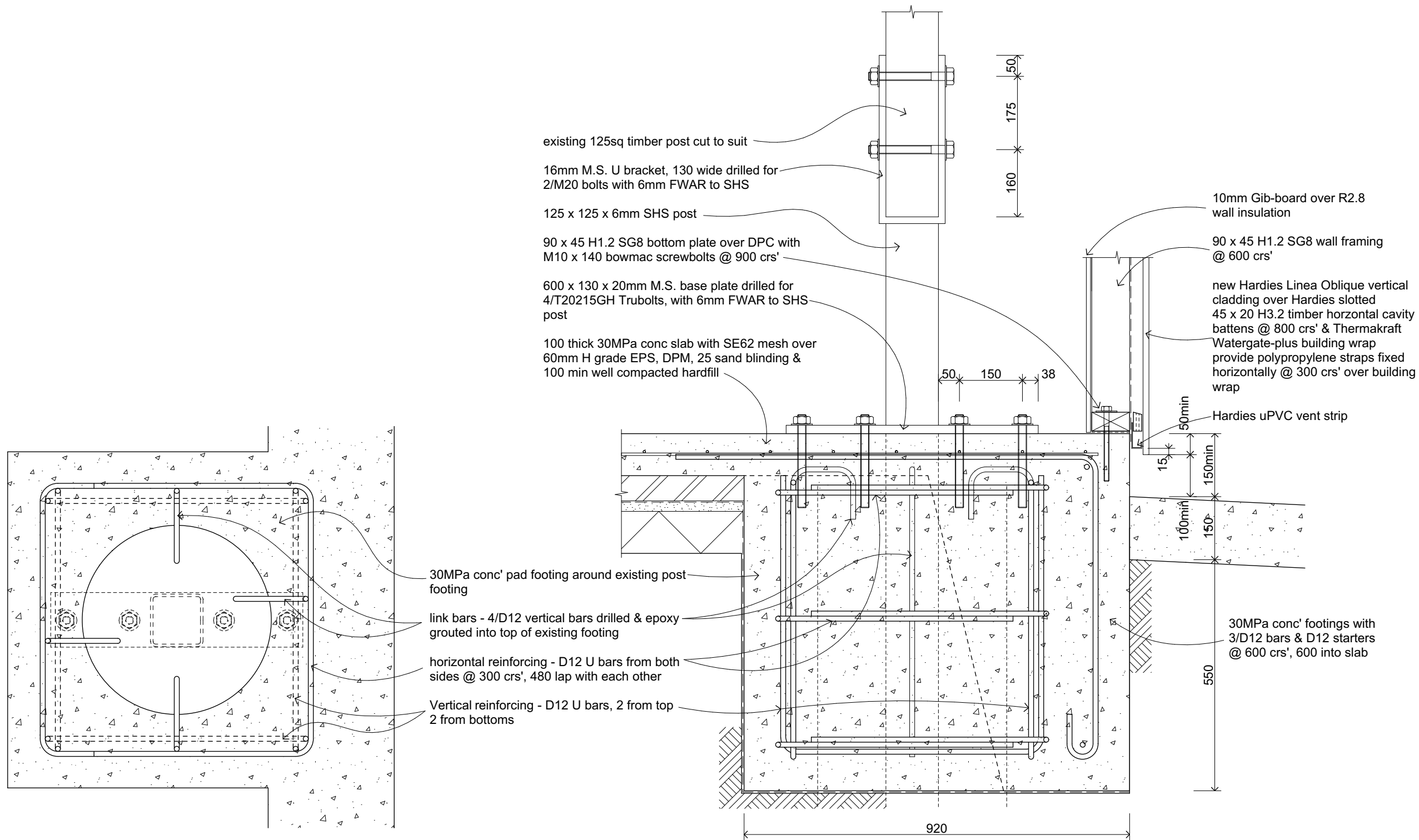
DRAWING:
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SCALE: 1:10	DRAWING No: 8 of 15
PROJECT No: 1831	



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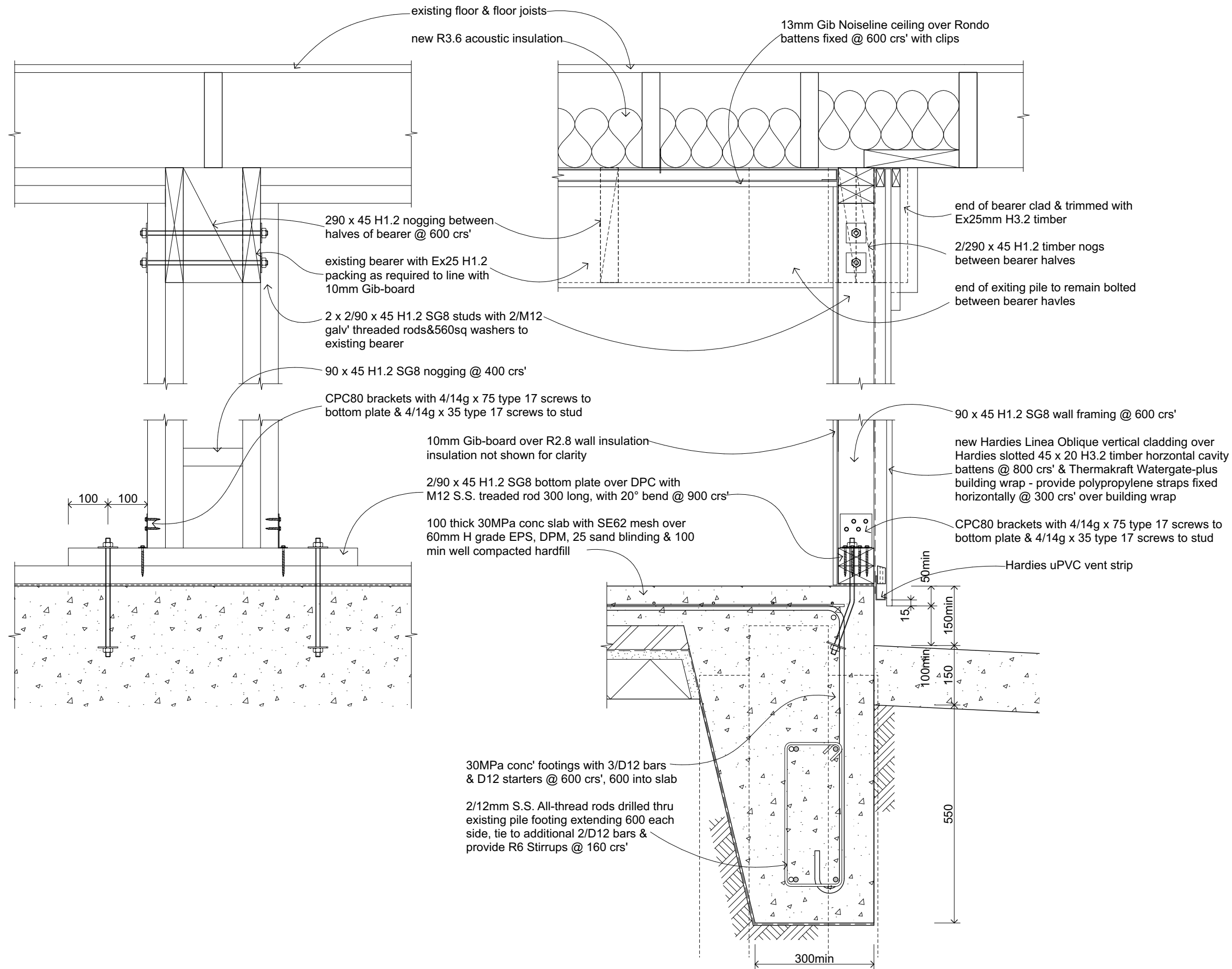
PROJECT ADDRESS:
66 Stratford Drive
Cable Bay
DRAWING:
Details

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SCALE: 1:10	DRAWING No: 9 of 15
PROJECT No: 1831	



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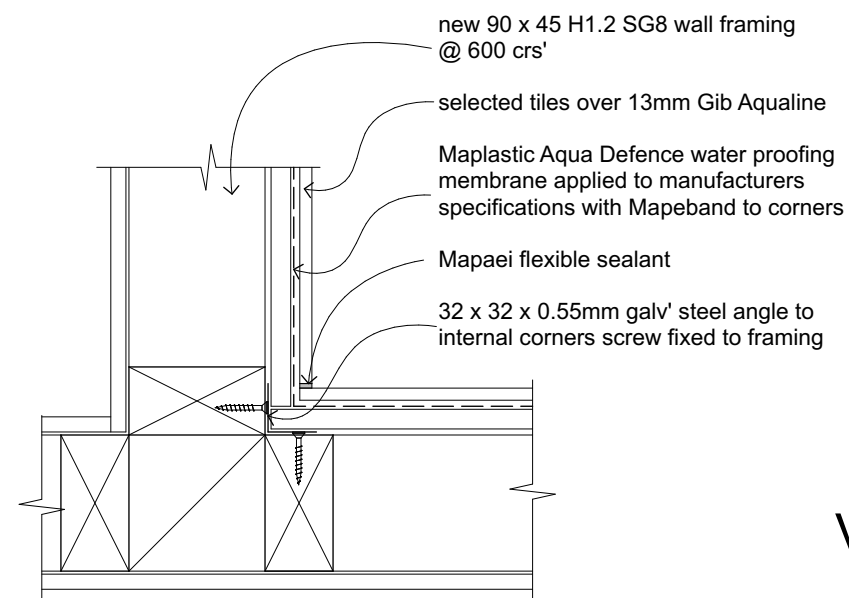
PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay
DRAWING:
Details

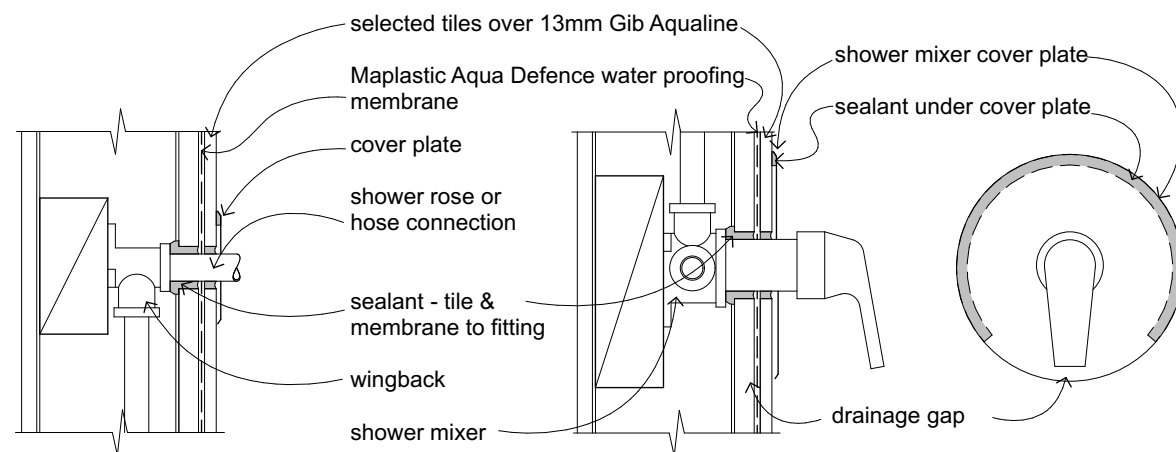
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SCALE: 1:10	DRAWING No: 10 of 15
PROJECT No: 1831	

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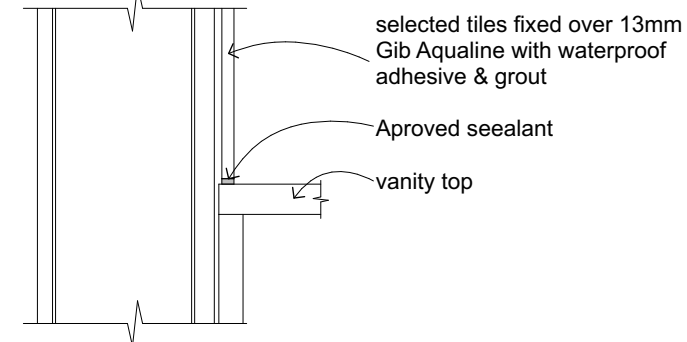
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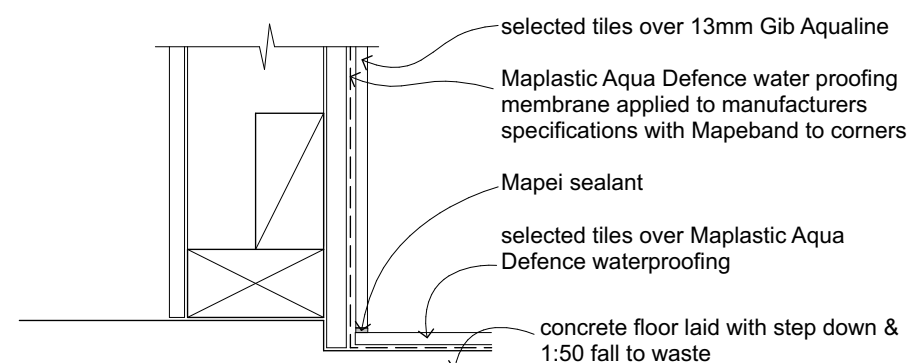
VERTICAL CORNER



PENETRATIONS



VANITY TOP TO WALL



WALL TO FLOOR JUNCTION



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PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

PROJECT ADDRESS:
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Cable Bay

DRAWING:
Details

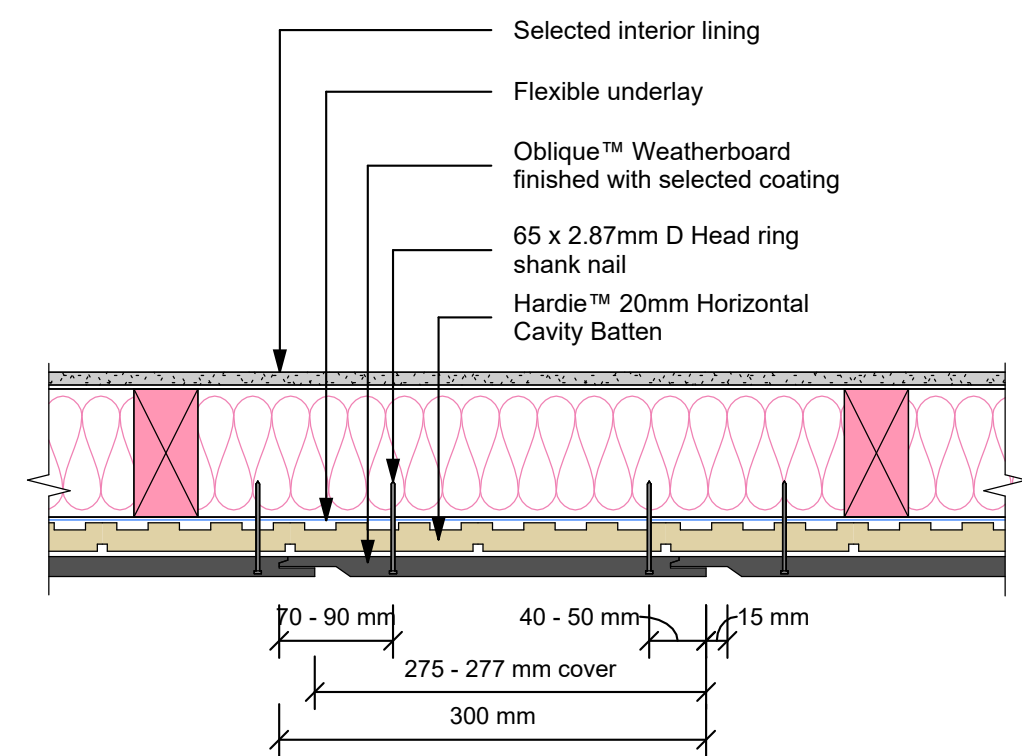
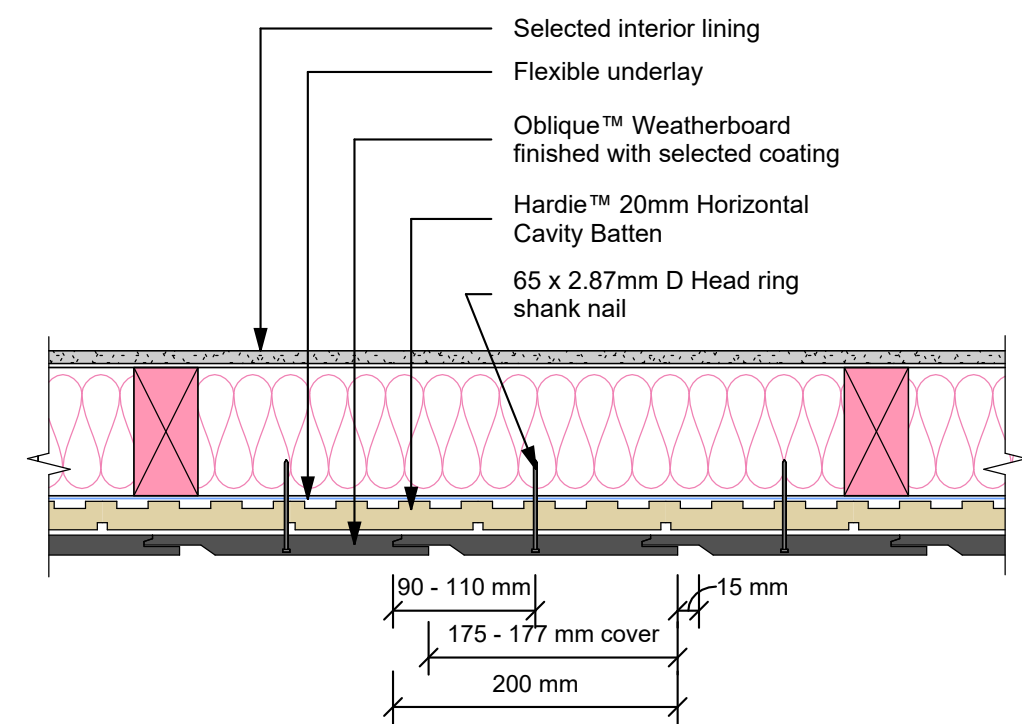
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SCALE: 1:5	DRAWING No: 11 of 15
PROJECT No: 1831	

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Figure 7: Cladding fixing up to VH wind zone and fire rated walls



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PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

DRAWING:
Details

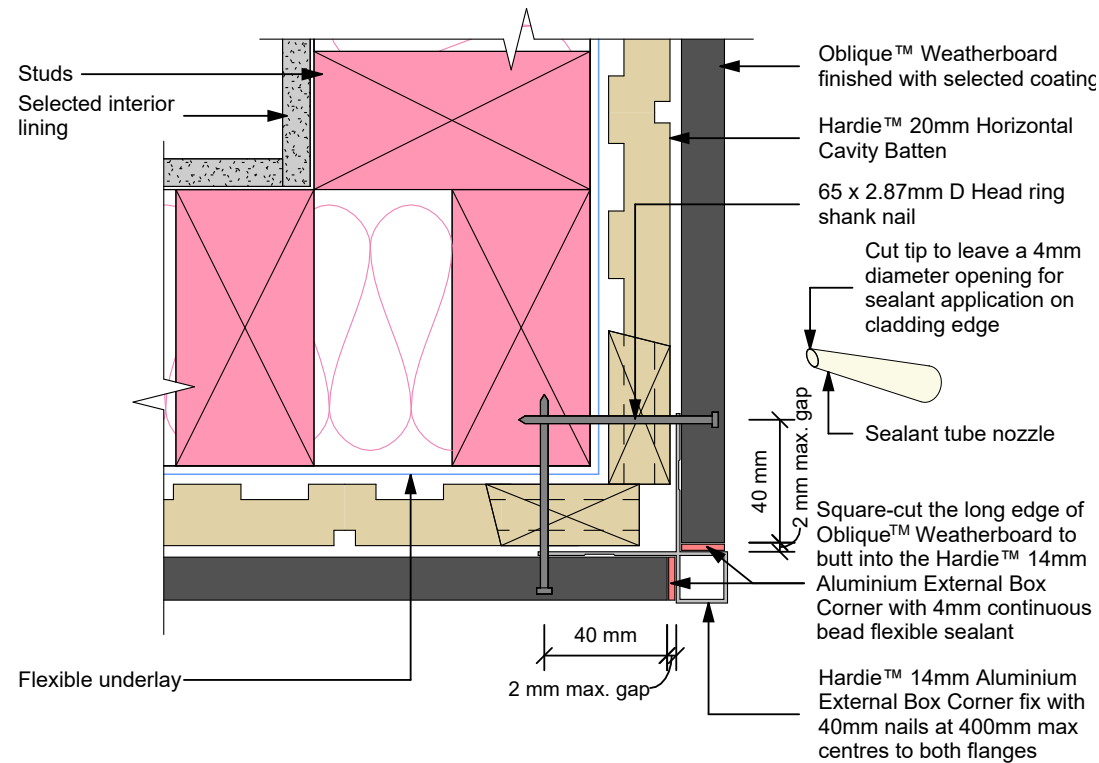
Drawn: BH	Date: 27/07/2026
SCALE: 1:1	DRAWING No: 12 of 15
PROJECT No: 1831	



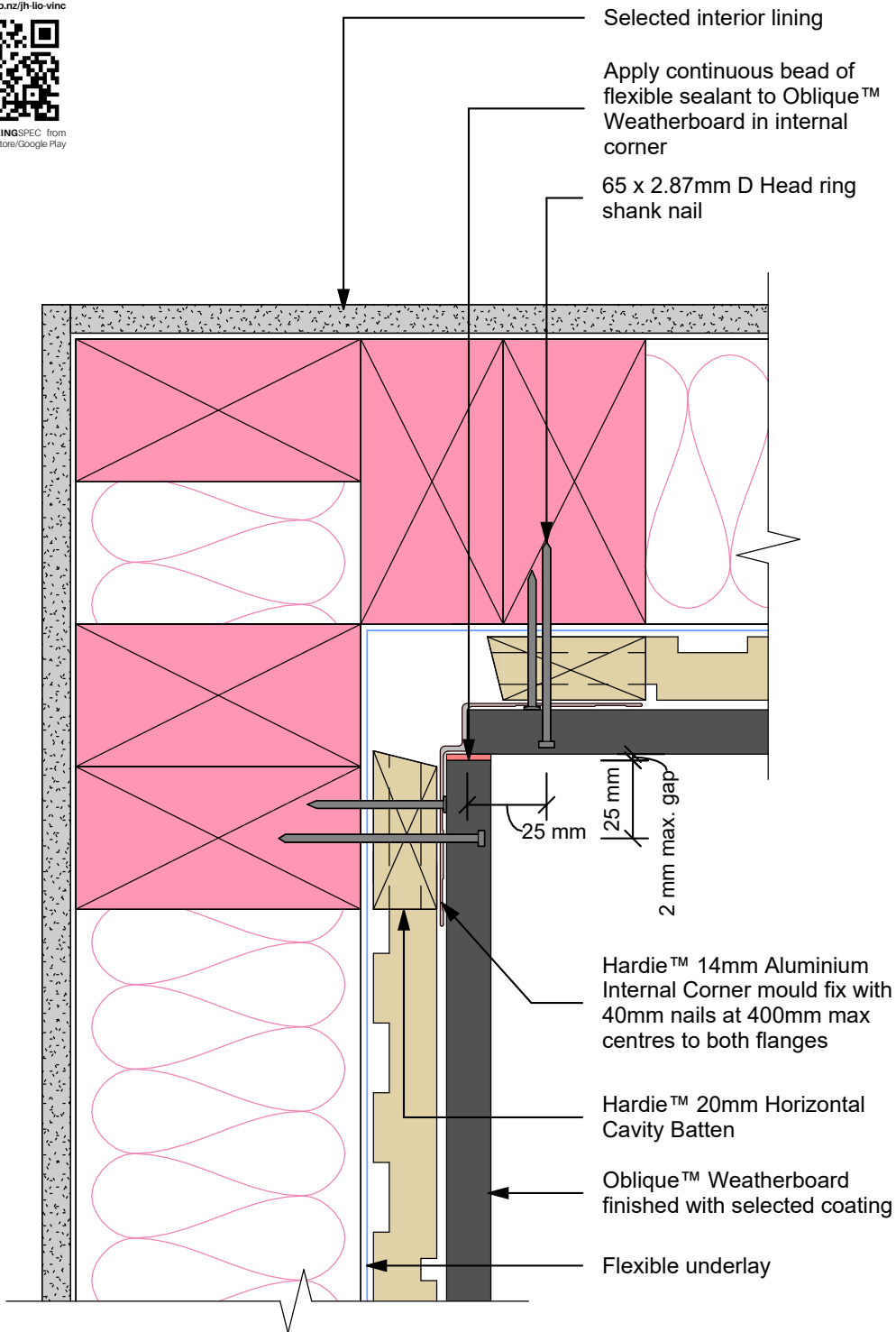
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Figure 10: Hardie™ 14mm External aluminium box corner

Figure 12: Hardie 14mm Internal aluminium corner



Note: Site cut edges to be primed



Note: Site cut edges to be primed



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PROJECT:

Proposed Additions & Alterations to House

S & R Chandrashekar

PROJECT ADDRESS:

**66 Stratford Drive
Cable Bay**

DRAWING:
Details

Drawn: BH	Date: 27/07/2026
SCALE: 1:1	DRAWING No: 13 of 15
PROJECT No: 1831	



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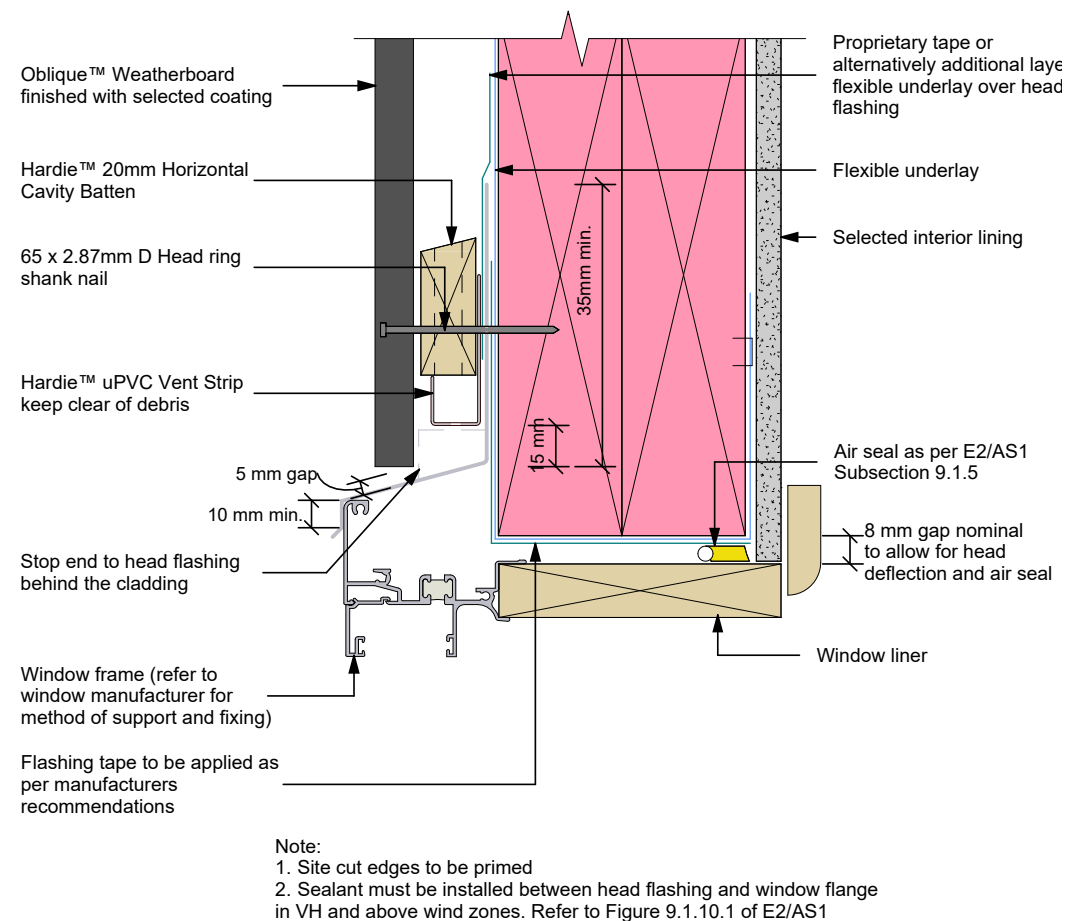


Figure 18: Window head

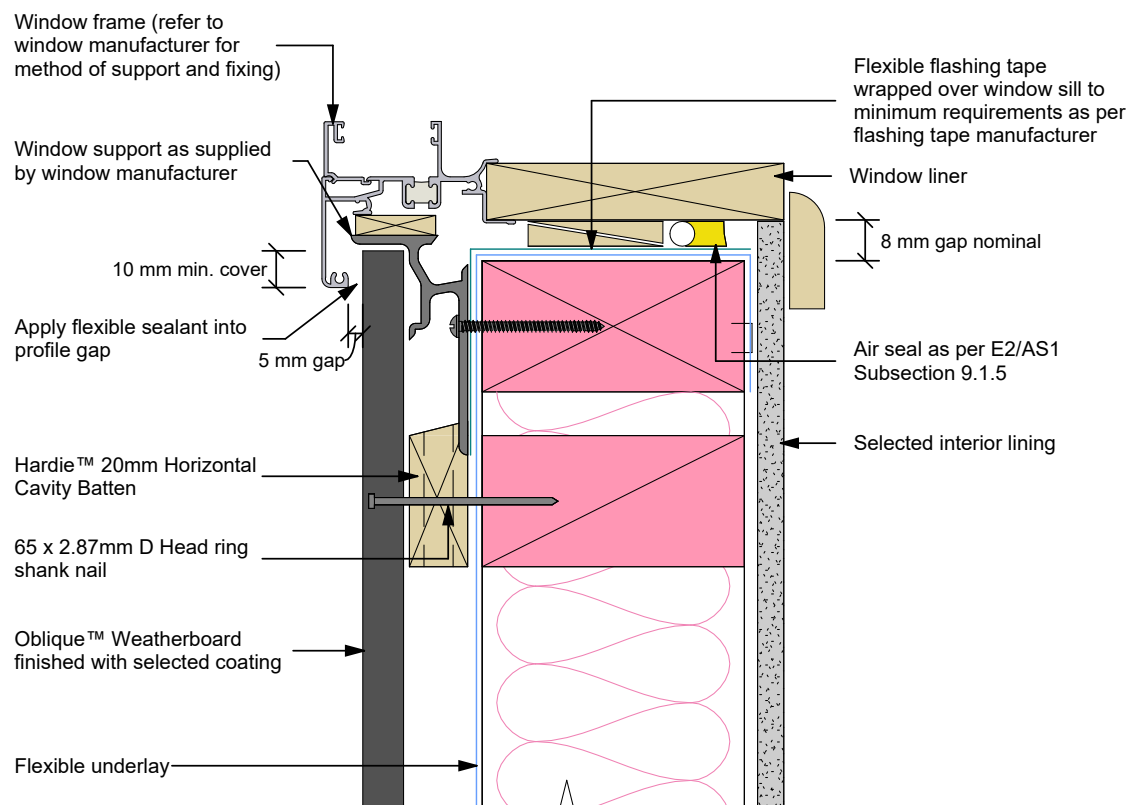


Figure 15: Window sill

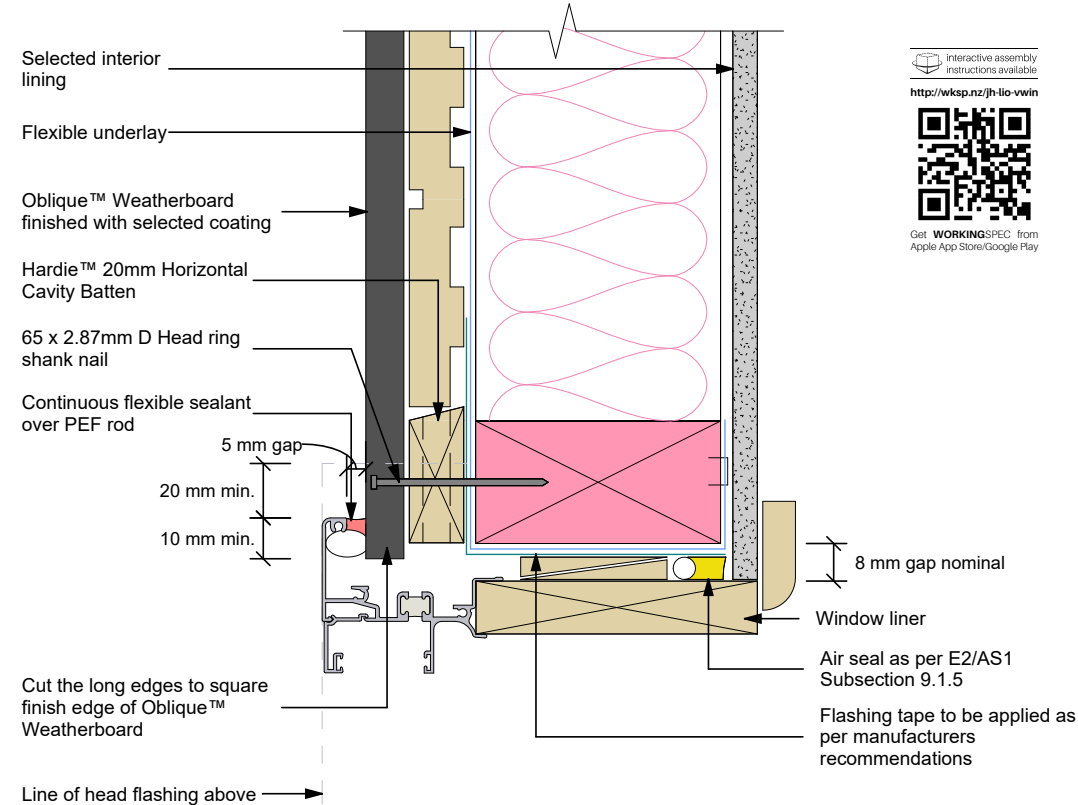


Figure 16: Window jamb

General notes

1. Flashing materials must be selected based on environmental exposure, refer to the NZS 3604 and Table C.1.1.1A of the NZBC E2/AS1
2. Flexible underlay must comply with acceptable solution E2/AS1
3. Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact
4. When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening
5. Site cut edges to be primed
6. When using scribes by the jamb, the gap between joinery and cladding at the jamb and sill can be nil



Always Check the LBP Register to ensure your building practitioner is licensed

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No.	Date	Revision	Detail
-----	------	----------	--------

Check all dimensions on site before construction. Use figured dimensions in preference to scaling. All construction to comply with NZS 3604: 2011 and/or NZBC

PROJECT:

**Proposed Additions & Alterations to House
S & R Chandrashekar**

PROJECT ADDRESS:

**66 Stratford Drive
Cable Bay**

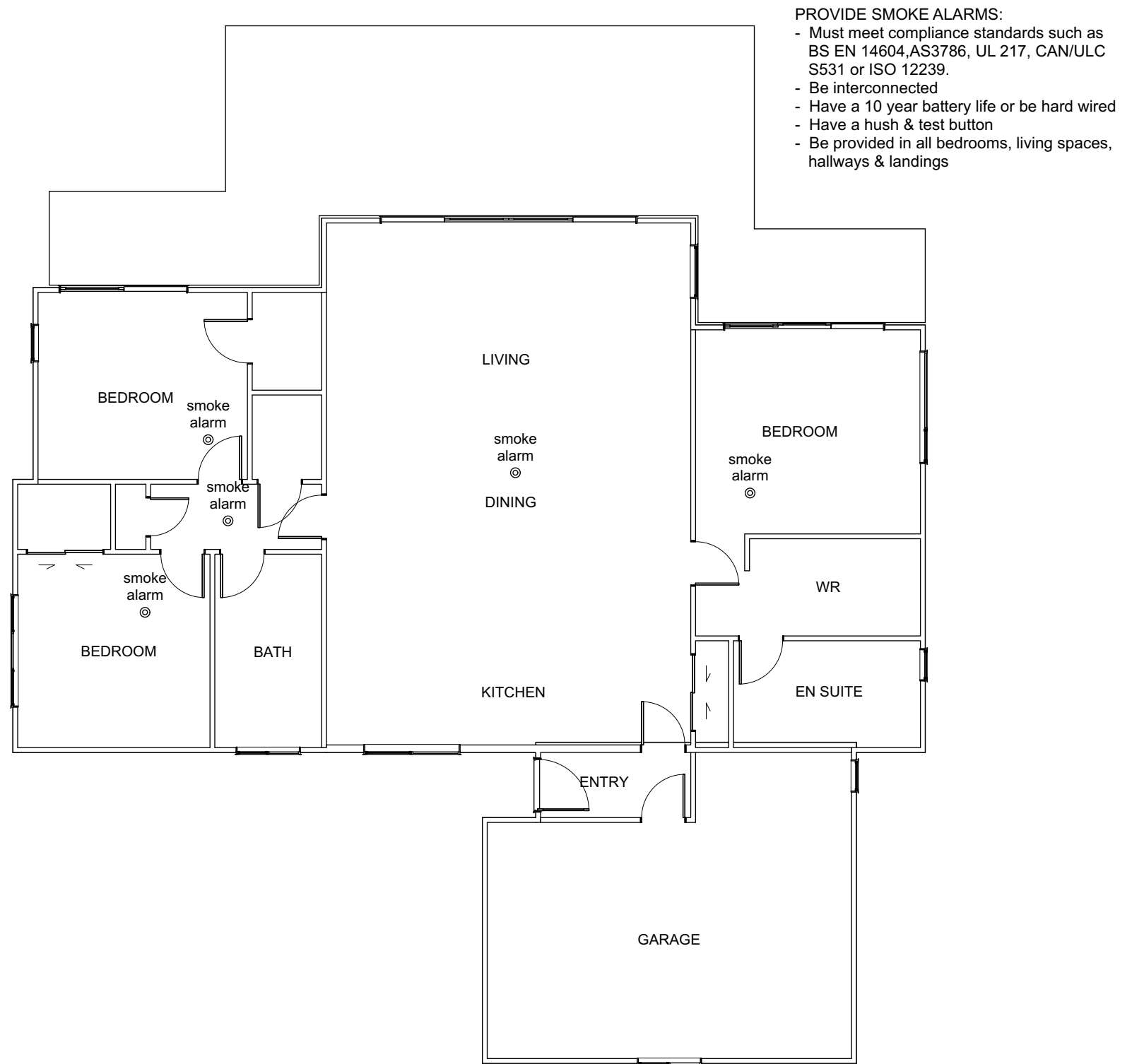
DRAWING:

Details

Drawn: BH	Date: 27/07/2026
SCALE: 1:1	DRAWING No: 14 of 15
PROJECT No: 1831	



National Bank Building
90 Kerikeri road,
P.O.Box 575
KERIKERI 0245
Tel. (09) 407 7049
Mobile. (021) 241 9879
E-mail. brian@totaldesign.co.nz



2.

Existing Floor Plan

1:100



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No.	Date	Revision	Detail
-----	------	----------	--------

Check all dimensions on site before construction.
Use figured dimensions in preference to scaling.
All construction to comply with NZS 3604: 2011 and/or NZBC

PROJECT:
Proposed Additions & Alterations to House
S & R Chandrashekar

PROJECT ADDRESS:
66 Stratford Drive
Cable Bay

DRAWING:
Smoke Alarms to Existing

Drawn: BH	Date: 27/07/2026
SCALE: 1:100	DRAWING No: 15 of 15
PROJECT No: 1831	



National Bank Building
90 Kerikeri road,
P.O.Box 575
KERIKERI 0245
Tel. (09) 407 7049
Mobile. (021) 241 9879
E-mail. brian@totaldesign.co.nz



Plantings within the Existing Garden beds

- Driveway / Retaining Wall / Top Boundary**
2 × Lomandra 'White Sands' (at the start of the driveway)
2 × Gardenia
2 × Poor Knights Lily
2 × Liriope
21 × Lomandra "Lime Green Tuff"
4 × Red Bromeliads
5 × Agaves
1 × Hibiscus
4 × Rengarenga (NZ Rock Lily)
1 × Aeonium

- Front Door / Roadside**
2 × Lomandra 'White Sands' (at the start of the driveway)
2 × Gardenia
2 × Poor Knights Lily
2 × Liriope
1 × Lomandra "Lime Green Tuff"
5 × Rengarenga (NZ Rock Lily)
2 × Red Bromeliads
2 × Hibiscus
2 × Agaves
1 × Aeonium
1 × Leptospermum "Red Damask"

- Front / Roadside Garden (around tanks)**
2 × Lomandra 'White Sands'
4 × Liriope
4 × Hebe
4 × Gardenia
4 × Poor Knights Lily
4 × Rengarenga (NZ Rock Lily)
2 × Lomandra "Lime Green Tuff"
3 × Hibiscus
2 × Agaves
3 × Red Bromeliads

Proposed Trees			
Code	Qty	Botanical Name	Common Name
Cajb	4	Cassia 'John Bull'	Buttercup Tree
Mesp	4	Metrosideros 'Springfire'	Pohutukawa var.
Pslp	8	Pseudopanax lessonii Purpurea	Burgundy foliage





HAWTHORN
Landscape Architects

15/06/2026

LANDSCAPE PLAN

Chandrashekar Residence
66 Stratford Drive
Cable Bay

Scale as shown	Drawn By Cad Design
Drawing # 1.0	Rev # A

1. This drawing is the property of Hawthorn Landscape Architects Ltd and must not be used, copied or reproduced without prior written permission. Contractors shall verify and be responsible for all dimensions on site.

2. Do not scale off this drawing.

3. Landscape Architect to be notified of any variations between on site dimensions and those shown on the plan. Hawthorn Landscape Architects accepts no liability for unauthorised changes to the details changes to the details shown in these drawings.

5. All construction work based on these plans is to comply with relevant local authority regulations and all NZ building codes and standards.

Landscape Planting Implementation + Maintenance

Implementation Scope

The scope of the planting is:

- i. Preparation of planting areas;
- ii. Timing of planting;
- iii. Plant material;
- iv. Siting of plants in accordance with the planting plan;
- v. Planting;
- vi. Watering in newly planted shrubs, and;
- vii. General maintenance, and;
- viii. Weed pest and disease control.

Preparation of Planting Areas

- i. Undertake clearance of any exotic weed species.
- ii. The initial weed control should be carried out during the autumn months prior to the winter planting, when plants are still actively growing and therefore more susceptible to herbicides.
- iii. Spot spray planting areas three weeks before planting. A follow up spray should be applied if required.

For grasses spray:

- Spray 100ml glyphosate (e.g. Roundup)+ 20ml penetrant per 10litres water

Timing of Planting

- i. Planting shall only be undertaken when there is adequate ground moisture. If planting is undertaken early or late in the season, plants should be irrigated during any dry periods.

Plant Material

- i. Plants shall be purchased from a reputable nursery. All plants shall be best nursery stock, being healthy and vigorous. Root systems shall be well developed and in balance with the amount of foliage growth of the plant.
- ii. Root-bound plants or those with badly spiraling root systems shall not be acceptable. Plants should have a root ball of fine, fresh root growth. This should be sliced through vertically with a sharp knife when removing the planter bag.
- iii. Plants are to be planted as soon as possible after delivery and no later than 3 days after delivery.

Siting of Plants

- i. Planting shall be in accordance with and as shown on the Landscape Plans.

Planting

- iii. Plants should be well watered in their containers prior to planting.
 - iv. Holes for the larger (pb3 and above) plants should be dug approximately 1.5 times wider that the root ball, so that the roots are not cramped. Some loose soil should be left in the bottom of the hole to aid root growth and drainage.
 - v. Approximately one tablespoon of good quality eighteen to twenty-four month slowrelease fertiliser should be placed in the bottom of the plant hole, and mixed in with the loose soil, ensuring that the fertiliser is not sitting directly on the roots (as it may burn them).
 - vi. Soil returned around the roots should be firmed with the foot, with a small amount of loose soil left at the top of the hole.
 - vii. Holes for large plants may exceed the depth of topsoil. In these cases the subsoil is to be thoroughly broken and well mixed with topsoil, which has been added as a 100mm layer to the bottom of the planting hole. Any compacted soil pan is to be thoroughly broken by relevant measures ensuring good root penetration and drainage.
 - viii. Individual specimens should be planted approx 50mm proud of the existing ground level to prevent waterlogging.
 - ix. The base of the planting hole is to be filled and firmed with backfilling material to a level where the top of the plant root ball is level with surrounding ground.
 - x. All care shall be taken to keep the root ball of the plant intact during placement.
 - xi. Individual specimen trees shall be mulched with 70mm layer of bark mulch. The plantings with wetland covenant areas do not need to be barked mulched.
- The foreground and backdrop plantings can either be bark mulch per individual tree or whole planted area mulched.

Specimen Tree Planting

- i. Ground preparation to take place prior to planting; consisting of a 1m3 hole for each pb95 grade tree. Integrate existing soil within this hole with a 50/50 mix of locally sourced compost and topsoil.
- ii. Trees should be planted approx 50mm proud of the existing ground level to prevent waterlogging.
- iii. Finish with a 70mm layer of locally sourced, high quality mulch to a 1m diameter around tree trunk, do not mound up around trunk.
- iv. Stake trees with appropriate wooden stakes and soft tree tie.

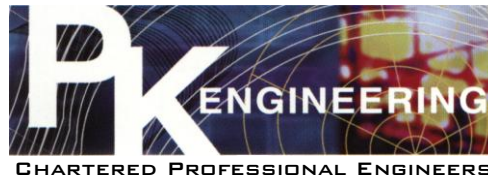
Watering In

Immediately after planting all of the plants are to be thoroughly watered until the planting hole is saturated. The foliage of plants is also to be thoroughly wetted. This is to be done even if soil conditions are already wet.

General Maintenance

- i. Maintenance weed control should commence within three months following the planting, and then twice annually
- ii. Maintenance shall be undertaken for a minimum period of 3 years following practical completion in accordance with this specification and the accompanying plan.
- iii. Care should be taken to identify and control any weeds that may have been introduced to the property in potting mix associated with the new plants.
- iv. All weeds should be cleared from the site by appropriate physical and chemical control. The majority of weeds growing close to the plant can be pulled by hand (taking care not to damage the roots of the plant) or, if appropriate, sprayed with herbicide by an experienced operator.
- v. During this three-year maintenance programme, any dead plants will need to be replaced.

 HAWTHORN Landscape Architects	
15/06/2026	
LANDSCAPE PLANTING IMPLEMENTATION + MAINTENANCE Chandrashekar Residence 66 Stratford Drive Cable Bay	
Scale as shown	Drawn By Cad Design
Drawing # 2.0	Rev # A
1. This drawing is the property of Hawthorn Landscape Architects Ltd and must not be used, copied or reproduced without prior written permission. 2. Contractors shall verify and be responsible for all dimensions on site. 3. Do not scale off this drawing. 4. Landscape Architect to be notified of any variations between on site dimensions and those shown on the plan. Hawthorn Landscape Architects accepts no liability for unauthorised changes to the details changes to the details shown in these drawings. 5. All construction work based on these plans is to comply with relevant local authority regulations and all NZ building codes and standards.	



STRUCTURAL CALCULATIONS

FOR

PROPOSED ALTERATIONS

FOR

SURAJ & RASHMI CHANDRASHEKAR

AT

66 STRATFORD DRIVE
CABLE BAY

Job No: 26-021

Date of First Submission: 23RD JULY 2026

Revision	Date of issue	Description
BC1	23/07/2026	First Issue

Designed By	Rahul Chandrashekar Structural Engineer BE (Civil), ME (Civil – Structural), MEngNZ	
Reviewed & Approved By	Pradeep Kumar Principal Engineer BE Hons, CPEng, CMEngNZ, MIPENZ, IntPE	

**Title**

Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.

26-021

Page

1

Designer

R.C

Date

June 2026

1. PROJECT INFORMATION:

Proposed Additions & Alterations

Client: Suraj & Rashmi Chandrashekar

Address: 66 Stratford Drive, Cable Bay

This Design Report will cover the following:

1. Verification of Existing Subfloor Bracing & Wall Bracing for basement area.
2. Verification of new bearer spans due to elimination of two foundation poles.
3. Foundation Slab and Beam Design
4. Timber Pole Retaining Wall Design

2. CODES CONSIDERED:

1. NZ Building Code B1 & B2
2. Structural Design Actions: AS/NZS 1170.0, 1: 2002
3. Wind Design Actions: AS/NZS 1170.2: 2021
4. Timber Structural Standard: NZS 3603: 1993
5. Timber Framed Buildings: NZS 3604: 2011
6. Concrete Structures: NZS 3101: 2006

3. SITE INFORMATION:

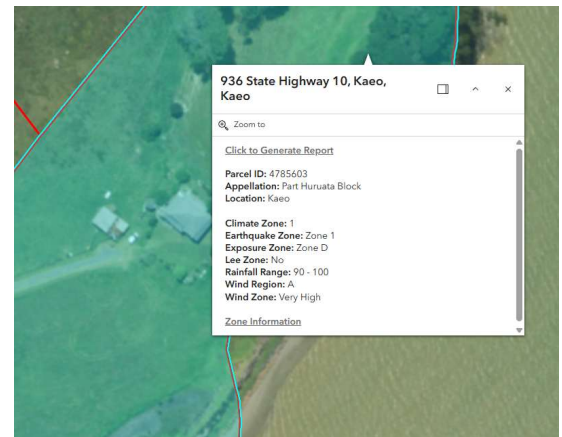
Earthquake Zone: Zone 1

Exposure Zone: Zone D

Wind Zone: High

Importance Level: 2

Information above has been obtained from BRANZ Map. This information is provided only for reference. Specific Wind Speeds are calculated below.

**4. EXISTING DWELLING & NEW BASEMENT STRUCTURAL INFORMATION:**

Existing Building Height $H_H := 3.71 \text{ m}$

Basement Height $H_{basement} := 2.455 \text{ m}$

Max Subfloor Height $H_{Hsubfloor} := 2.6 \text{ m}$

Basement Width $W_{basement} := 5.42 \text{ m}$

Existing House Width $W_H := 10.0 \text{ m}$

Basement Length $L_{basement} := 7.5 \text{ m}$

Existing House Length $L_H := 17.08 \text{ m}$

Roof Pitch $\alpha_{House} := 5.0^\circ$



Title
Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.
26-021

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2

Designer
R.C

Date
June 2026

5. Design Loads:

5.1 Roof Load:

Dead load:

Roofing	: 0.08kPa
Truss Roof/Rafters	: 0.12kPa
Ceiling Battens	: 0.02kPa
Ceiling Lining	: 0.12kPa
Insulation	: 0.02kPa
Misc.	: 0.03kPa

$$G_{total} := 0.39 \text{ kPa}$$

Roof pitch: $\alpha := 5^\circ$

$$G_{roof} := \frac{G_{total}}{\cos\left(\frac{\pi}{180 \text{ deg}} \cdot \alpha\right)} = 0.39 \text{ kPa}$$

Distributed live load:

$$Q_{roof} := 0.25 \text{ kPa}$$

5.2 Wall Load:

External Walls:

Framing	: 0.12kPa
External Cladding	: 0.15kPa
Wall Lining	: 0.12kPa
Insulation	: 0.03kPa
Misc.	: 0.02kPa

$$G_{wall_ext} := 0.44 \text{ kPa}$$

Internal Walls:

Framing	: 0.12kPa
Wall Lining (GIB)	: 0.24kPa
Insulation	: 0.03kPa
Misc.	: 0.02kPa

$$G_{wall_int} := 0.41 \text{ kPa}$$



Title
Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.
26-021

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Designer
R.C

Date
June 2026

5.3 Floor Load:

Dead load (Existing House):

21mm Particle Board : 0.15kPa
Floor Joists : 0.13kPa
Insulation : 0.05kPa
Misc. : 0.05kPa

Dead load (New Basement):

Foundation Slab : 2.5kPa
DPC : 0.05kPa
Misc. : 0.05kPa

$$G_{floor} := 0.38 \text{ kPa}$$

$$G_{slab} := 2.6 \text{ kPa}$$

Distributed live load:

$$Q_{floor} := 2.0 \text{ kPa}$$

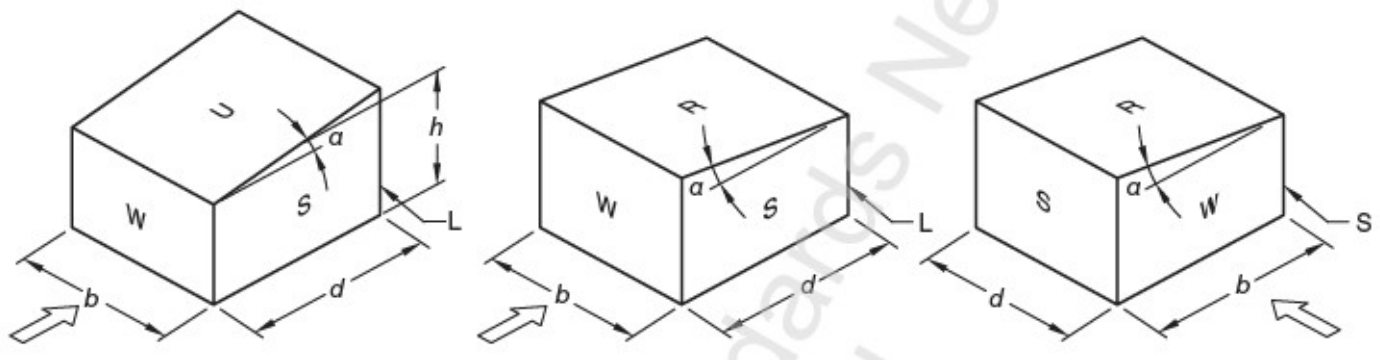
$$Q_{deck} := 2.0 \text{ kPa}$$

5.4 Wind Load:

The proposed building is considered to be of Importance Level 2 according to NZS 1170.0 - 2002 Consider Design Working Life of 50 Years.

Annual probability of Exceedance for Wind (ULS) = 1/ 500 Table 3.3 NZS 1170.0 - 2002

Annual probability of Exceedance for Wind (SLS) = 1/ 25 Table 3.3 NZS 1170.0 - 2002





Title
Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.
26-021

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4

Designer
R.C

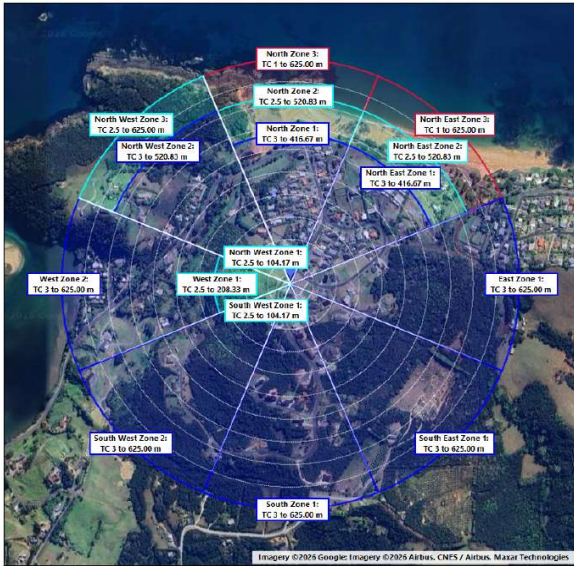
Date
June 2026

TERRAIN/HEIGHT MULTIPLIER (Mz,cat)

revolutio

SHIELDING MULTIPLIER (Ms)

revolutio



TITLE: Proposed Alterations & Additions
PROJECT: S & R Chandrashekar
CODE: 26-021

CHECKWIND 8.4.9
Wednesday, June 3, 2026 4:22:15 PM
Rahul Chandrashekar @ PK Engineering

TITLE: Proposed Alterations & Additions
PROJECT: S & R Chandrashekar
CODE: 26-021

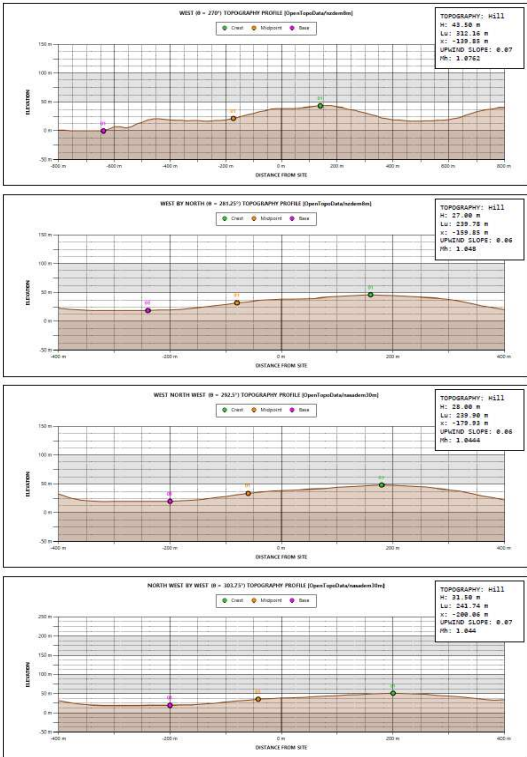
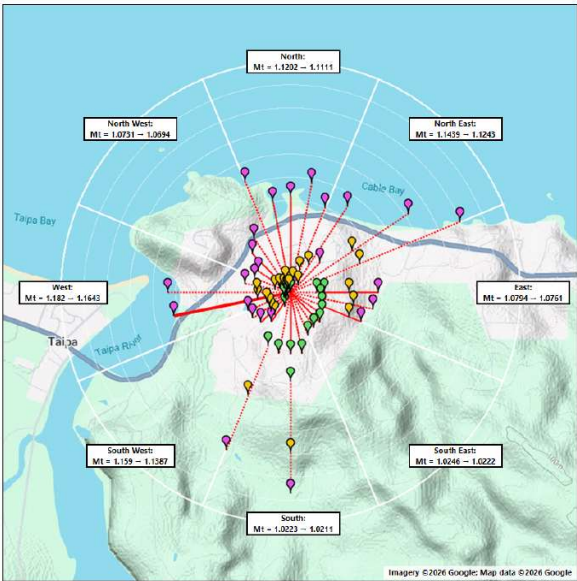
CHECKWIND 8.4.9
Wednesday, June 3, 2026 4:22:15 PM
Rahul Chandrashekar @ PK Engineering

TOPOGRAPHIC MULTIPLIER (Mt)

revolutio

TOPOGRAPHY PROFILES

revolutio



TITLE: Proposed Alterations & Additions
PROJECT: S & R Chandrashekar
CODE: 26-021

CHECKWIND 8.4.9
Wednesday, June 3, 2026 4:22:15 PM
Rahul Chandrashekar @ PK Engineering

TITLE: Proposed Alterations & Additions
PROJECT: S & R Chandrashekar
CODE: 26-021

CHECKWIND 8.4.9
Wednesday, June 3, 2026 4:22:15 PM
Rahul Chandrashekar @ PK Engineering

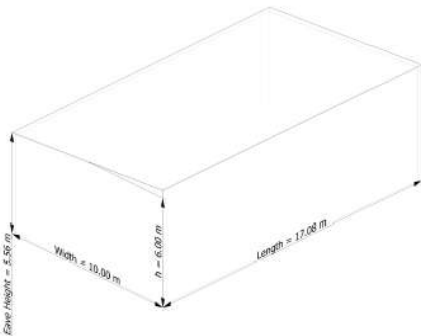


Title Proposed Additions & Alterations At 66 Stratford Drive For S & R Chandrashekar	Job No. 26-021	Page 5
	Designer R.C	Date June 2026

CHECKWIND AS/NZS 1170.2-2021 SITE REPORT

revolutio

STRUCTURE:	HOUSE	LATITUDE:	-34.993624	CRITICAL DIRECTION:	West
ORIENTATION:	-56.25°	LONGITUDE:	173.479878	Md:	1.0
WIDTH:	10.00 m	ELEVATION:	38.50 m	Mc:	1.0
LENGTH:	17.08 m			TC:	2.91
HEIGHT (h):	6.00 m	WIND		Mz,cat:	0.8386
BASE RL:	0.00 m	REGION:	NZ1	Ms:	1.0
		ULTIMATE ARI:	500 YEARS	Mh:	1.1643
IMPORTANCE LEVEL:	2	ULTIMATE VR:	45 m/s	Mlee:	1
DESIGN LIFE:	50 YEARS	SERVICEABILITY VR:	39 m/s	Me1:	1
				Mt:	1.1643
		SNOW		Vs1t,β:	43.94 m/s
		REGION:	N0	qs1t,β:	1.1584 kPa
		ELEVATION CLASS:	NA	Vserv,β:	38.08 m/s
				qserv,β:	0.8701 kPa
		SEISMIC			
		RISK COEFFICIENT:	0.12		



66 Stratford Drive, Cable Bay, Northland Region , NZ

TITLE:	Proposed Alterations & Additions	CHECKWIND 8.4.9
PROJECT:	S & R Chandrashekar	Wednesday, June 3, 2026 4:22:15 PM
CODE:	26-021	Rahul Chandrashekar @ PK Engineering

The wind analysis confirms the site to be in a High Wind Zone. But the original Architectural Plans (EBC-2022-482 / 0) indicate a Very High Wind Zone.

We will consider a Very High Wind Zone for this purpose.



Title
Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.
26-021

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Designer
R.C

Date
June 2026

6. VERIFICATION OF EXISTING SUBFLOOR BRACING:

Since two foundation poles and a couple of diagonal braces will be eliminated with the construction of the basement, we will need to verify the existing subfloor bracing to ensure sufficient stability.

Existng House Foundations Type 1 - 200 SED H5 Normal Density Poles encased in $\phi 450\text{mm}$ Concrete bore embedded minimum 1.8m below ground level.

Existng House Foundations Type 2 - 175 SED H5 Normal Density Poles encased in $\phi 450\text{mm}$ Concrete bore embedded minimum 1.5m below ground level.

GIB EzyBrace® Bracing Software			GIB
Demand Calculation Sheet			
Job Details			
Name:	Proposed Additions & Alterations		
Street and Number:	66 Stratford Drive		
Lot and DP Number:			
City/Town/District:	Cable Bay, Northland		
Designer:	RC		
Company:	PK Engineering Ltd		
Date:	Thursday, 4 June 2026		
Building Specification			
Number of Storeys	1		
Floor Loading	2 kPa		
Foundation Type	Subfloor		
Subfloor Cladding Weight	Light		
	Single		
Cladding Weight	Light		
Roof Weight	Light		
Room in Roof Space	No		
Roof Pitch (degrees)	5.0		
Roof Height above Eaves (m)	1.306		
Building Height to Apex (m)	6.0		
Ground to Lower Floor (m)	2.6		
Average Stud Height (m)	2.4		
Building Length (m)	17.08		
Building Width (m)	10.0		
Building Plan Area (m²)	170.8		
Building Location			
Wind Zone = Very High		Earthquake Zone 1	
		Soil Type D & E (Deep to Very Soft)	
		Annual Prob. of Exceedance: 1 in 500 (Default)	
Bracing Units required for Wind		Bracing Units required for Earthquake	
	Along	Across	Along & Across
Single Level	473	660	639
Subfloor Level	1127	1776	1182

GIB EzyBrace® Version 12/18a

 PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed Additions & Alterations At 66 Stratford Drive For S & R Chandrashekar	Job No. 26-021	Page 7
		Designer R.C	Date June 2026

6.1 Verification of existing foundations for subfloor bracing:

$n_{poles} := 21$ Number of House poles (Accounted for the two poles which will be eliminated)

$F_{wind} := 5.0 \text{ kN}$ Lateral Force on Poles as per Bracing Capacity (100 BUS Bracing Capacity)

$L_{SA} := 2.65 \text{ m}$ Assumed Unrestrained Length of Pole Type A

$L_{SB} := 1.7 \text{ m}$ Assumed Unrestrained Length of Pole Type B

Embedment Check (For Deflection Foundation Type A)

PK ENGINEERING LIMITED				4-Jun-26
POLE1	Cantilever Pole Design			
JOB REF.:	Chandrashekar - Additions			JOB NO. : 26-021
REF.:	Existing Foundation Type A			DESIGNER : RC
INPUT DATA :				
Height H(m)		2.65		
Pole Dia. d(mm)		200		
Encasement B(mm)		450		
DESIGN :				
Total Lateral Force			Ptot =	5.00 kN
Max. Pole Moment			Mp =	13.25 kN-m
STRESSES :		Actual	Allowable	
Pole	Fb =	16.86609 Mpa	38 Mpa	OK
DEFLECTION:			H*0.006	
Pole		13.84 mm	15.9	OK
EMBEDMENT :		By Rutledge		
		Safe Lateral Bearing Capacity of Soil =		75 kpa
Minimum Depth of Embedment				
		No Restraint at Ground Surface =	1.3086404 m	
		Full Restraint =	1.2917115 m	

$$L_{req} := 1.31 \text{ m}$$

$$L_{prov} := 1.8 \text{ m}$$

$$L_{req}$$

$$<$$

$$L_{prov}$$

Checks OK

Embedment Check (For Deflection Foundation Type B)

PK ENGINEERING LIMITED				4-Jun-26
POLE1	Cantilever Pole Design			
JOB REF.:	Chandrashekar - Additions			JOB NO. : 26-021
REF.:	Existing Foundation Type A			DESIGNER : RC
INPUT DATA :				
Height H(m)		1.70		
Pole Dia. d(mm)		175		
Encasement B(mm)		450		
DESIGN :				
Total Lateral Force			Ptot =	5.00 kN
Max. Pole Moment			Mp =	8.50 kN-m
STRESSES :				
Pole	Fb =	Actual 16.15077 Mpa	Allowable 38 Mpa	OK
DEFLECTION:				
Pole		6.23 mm	H*0.006 10.2	OK
EMBEDMENT :				
	By Rutledge			
	Safe Lateral Bearing Capacity of Soil =			75 kpa
Minimum Depth of Embedment				
	No Restraint at Ground Surface =		1.1096471 m	
	Full Restraint =		1.0345871 m	

$$L_{req} := 1.2 \text{ m}$$

$$L_{prov} := 1.5 \text{ m}$$

$$L_{req}$$

$$<$$

$$L_{prov}$$

Checks OK

Summary of Existing Subfloor Bracing:

- The total subfloor bracing capacity with the foundation poles is 2100 BUS which exceeds the demand.
- It is OK to eliminate the two poles and the diagonal bracing and add a basement.

 PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed Additions & Alterations At 66 Stratford Drive For S & R Chandrashekar	Job No. 26-021	Page 8
		Designer R.C	Date June 2026

6.2 Basement Area Wall Bracing:

Since we have established that the existing dwelling has sufficient subfloor bracing from the foundation poles, we can carry out the bracing design for the basement area as a separate component that would further enhance the subfloor bracing capacity of the existing dwelling.

GIB EzyBrace® Bracing Software		GIB
Demand Calculation Sheet		
Job Details		
Name:	Proposed Additions & Alterations (Basement Area)	
Street and Number:	66 Stratford Drive	
Lot and DP Number:		
City/Town/District:	Cable Bay, Northland	
Designer:	RC	
Company:	PK Engineering Ltd	
Date:	Thursday, 4 June 2026	
Building Specification		
Number of Storeys	1	
Floor Loading	2 kPa	
Foundation Type	Slab	
	Single	
Cladding Weight	Light	
Roof Weight	Light	
Room in Roof Space	No	
Roof Pitch (degrees)	0	
Roof Height above Eaves (m)	0.19	
Building Height to Apex (m)	2.5	
Ground to Lower Floor (m)	0.1	
Average Stud Height (m)	2.4	
Building Length (m)	7.5	
Building Width (m)	5.42	
Building Plan Area (m²)	40.65	
Building Location		
Wind Zone = Very High	Earthquake Zone 1	
	Soil Type D & E (Deep to Very Soft)	
	Annual Prob. of Exceedance: 1 in 500 (Default)	
Bracing Units required for Wind		Bracing Units required for Earthquake
	Along Across	Along & Across
Single Level	181 232	Single Level 101



Title
Proposed Additions & Alterations
At 66 Stratford Drive
For S & R Chandrashekar

Job No.
26-021

Designer
R.C

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Date
June 2026

GIB EzyBrace® Bracing Software



Single Level Along Resistance Sheet

Job Name: Proposed Additions & Alterations (Basement Area)

Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	Wind	EQ
									Demand	
									181	101
									Achieved	
									313 173%	293 290%
1	BL1-1	0.55	0	2.5	GS1-N	GIB®	30	31		
									30 Check	31 Check
2	BL2-1	0.60	0	2.5	GS1-N	GIB®	33	34		
	BL2-2	0.60	0	2.5	GS1-N	GIB®	33	34		
									66 Check	67 Check
3	BL3-1	1.40	0	2.5	GS1-N	GIB®	93	81		
									93 Check	81 Check
4	BL4-1	1.00	0	2.5	GS1-N	GIB®	62	57		
	BL4-2	1.00	0	2.5	GS1-N	GIB®	62	57		
									125 OK	114 OK

GIB EzyBrace® Bracing Software



Single Level Across Resistance Sheet

Job Name: Proposed Additions & Alterations (Basement Area)

Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind (BUs)	EQ (BUs)	Wind	EQ
									Demand	
									232	101
									Achieved	
									360 155%	331 328%
A	BLA-1	0.90	0	2.5	GS1-N	GIB®	54	51		
	BLA-2	0.90	0	2.5	GS1-N	GIB®	54	51		
									109 OK	102 OK
B	BLB-1	1.00	0	2.5	GS1-N	GIB®	62	57		
	BLB-2	0.80	0	2.5	GS1-N	GIB®	47	45		
									109 OK	102 OK
C	BLC-1	1.20	0	2.5	GS1-N	GIB®	79	69		
	BLC-2	1.00	0	2.5	GS1-N	GIB®	62	57		
									142 OK	126 OK



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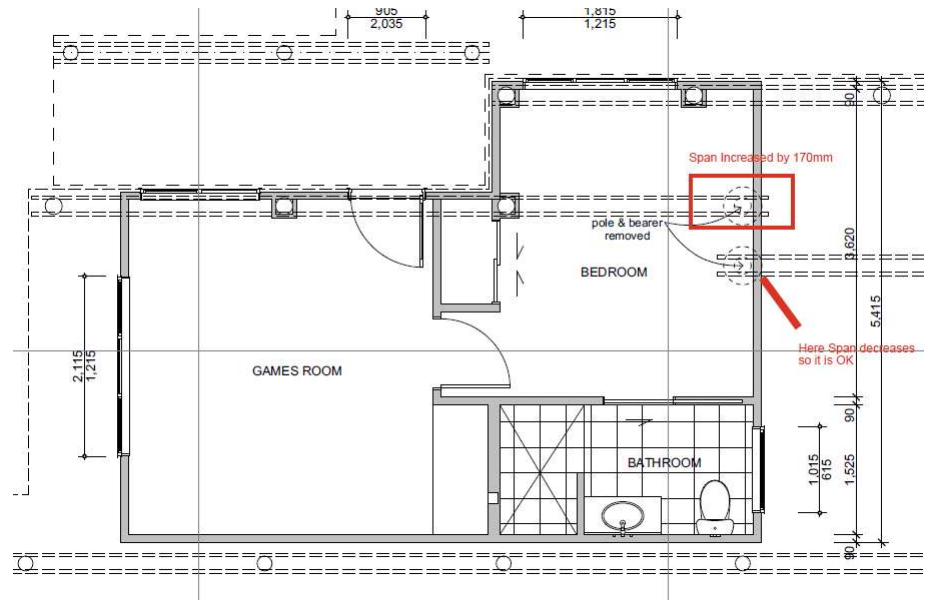
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7. VERIFICATION OF EXISTING BEARER AND NEW STUDS UNDER POINT LOAD:

7.1 Existing Bearer FB2 (2/ 290x45 SG8 H3.2):

As per the original design the existing bearer FB2 spanned 2.8m between supports and given the location, it only carried floor load.

With the elimination of the foundation pole, the existing bearer span increases by 170mm. The bearer will be verified for the new length below with the existing floor loads.



$$L_B := 2.98 \text{ m} \quad \text{Max Span}$$

$$LD_{floor} := 2.75 \text{ m} \quad \text{Floor Loaded Dimension}$$

Dead Load

$$G_B := G_{floor} \cdot LD_{floor} = 1 \frac{\text{kN}}{\text{m}}$$

Live Load

$$Q_B := Q_{floor} \cdot LD_{floor} = 5.5 \frac{\text{kN}}{\text{m}}$$

Design for strength

Load Cases Considered:

1 : 1.35G

2 : 1.2G + 1.5Q

Design for Serviceability

Load Cases Considered:

3 : G + ψ_s * Qs (short-term loading)

$$\psi_s := 0.7$$

4 : G + ψ_l * Ql (long-term loading)

$$\psi_l := 0.4$$

Load Case 1

$$UDL_{B.1} := 1.35 \cdot G_B = 1.4 \frac{\text{kN}}{\text{m}}$$

Load Case 2

Govern

$$UDL_{B.2} := 1.2 \cdot G_B + 1.5 \cdot Q_B = 9.5 \frac{\text{kN}}{\text{m}}$$

Load Case 3

$$UDL_{B.3} := G_B + \psi_s \cdot Q_B = 4.9 \frac{\text{kN}}{\text{m}}$$

Load Case 4

$$UDL_{B.4} := G_B + \psi_l \cdot Q_B = 3.2 \frac{\text{kN}}{\text{m}}$$



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Check 2/ 290x45 SG8 H3.2

$$b := 90 \text{ mm} \quad d := 290 \text{ mm}$$

$$f_b := 14 \text{ MPa} \quad E := 6.7 \text{ GPa} \quad f_s := 3.0 \text{ MPa} \quad f_c := 18 \text{ MPa}$$

$$Z := \frac{b \cdot d^2}{6} = 1.26 \cdot 10^6 \text{ mm}^3 \quad I := \frac{b \cdot d^3}{12} = 1.83 \cdot 10^8 \text{ mm}^4 \quad A := d \cdot b = 26100 \text{ mm}^2$$

$$K_4 := 1.0 \quad L_{ay} := 400 \text{ mm}$$

$$\frac{L_{ay}}{b} = 4.4 \quad \frac{d}{b} = 3.2 \quad k_8 := 1.0 \quad \Phi := 0.8 \quad k_1 := 0.8$$

Check for Strength

$$M_o := \frac{UDL_{B.2} \cdot L_B^2}{8} = 10.5499 \text{ kN m} \quad \text{Moment Demand}$$

$$\Phi M_{n.med} := \Phi \cdot k_1 \cdot k_8 \cdot K_4 \cdot f_b \cdot Z = 11.3 \text{ kN m}$$

$$\Phi M_{n.med}$$

$$>$$

$$M_o$$

Checks OK

Check for Deflection SLS1 (k2 = 1)

$$k_2 := 1.0$$

$$\Delta_{max.1} := \frac{5 \cdot UDL_{B.3} \cdot L_B^4}{384 \cdot E \cdot I} \cdot k_2 = 4.1013 \text{ mm}$$

$$<$$

$$\frac{L_B}{400} = 7.45 \text{ mm}$$

Checks OK

Check for Deflection SLS2 (k2 = 2)

$$k_2 := 2.0$$

$$\Delta_{max.1} := \frac{5 \cdot UDL_{B.4} \cdot L_B^4}{384 \cdot E \cdot I} \cdot k_2 = 5.4377 \text{ mm}$$

$$<$$

$$\frac{L_B}{300} = 9.9333 \text{ mm}$$

Checks OK

Summary of Existing Floor Bearer:

a) The existing floor bearer is structurally adequate for the additional span of 170mm.
The beam can span for a total length of 2.98m between supports.



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7.2 Proposed Studs under Point Load (2/ 90x45 SG8 H3.2):

$N_o := 15.0 \text{ kN}$ Maximum Load on Post

$L_s := 2.455 \text{ m}$ Length of Studs

$d_s := 90 \text{ mm}$ $b_s := 90 \text{ mm}$ Effective Dimensions

$f_{bs} := 14 \text{ MPa}$ $f_{cs} := 18 \text{ MPa}$ $E_s := 6.7 \text{ GPa}$

$$z_s := \frac{b_s \cdot d_s^2}{6} = 1.215 \cdot 10^5 \text{ mm}^3 \quad A_s := b_s \cdot d_s = 8100 \text{ mm}^2$$

Check For Combined Stresses

About the Strong Axis X-X (Restrained only at the ends)

$k_{10} := 1.0$ Effective length factor (Pinned ends)

$L_{ax} := 2.455 \text{ m}$ Effective Length length

$$S_x := \max \left(\left(\left(\frac{L_{ax}}{d_s} \right) \left(\frac{k_{10} \cdot L_s}{d_s} \right) \right) \right) = 27.2778 \quad \text{Slenderness ratio}$$

$k_g := 0.4$ Stability factor

$k_1 := 0.8$ Load duration factor (Brief)

$\Phi := 0.8$ Strength Reduction factor

$$\Phi N_{cx} := \Phi \cdot k_1 \cdot k_g \cdot f_{cs} \cdot A_s = 37.3248 \text{ kN} > N_o \quad \text{Checks OK}$$

About the Strong Axis Y-Y (Restrained at 800mm with nogs)

$k_{10} := 1.0$ Effective length factor (Pinned ends)

$L_{ay} := 800 \text{ mm}$ Effective Length

$$S_x := \max \left(\left(\left(\frac{L_{ax}}{b_s} \right) \left(\frac{k_{10} \cdot L_s}{b_s} \right) \right) \right) = 27.2778 \quad \text{Slenderness ratio}$$



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$$k_g := 0.4$$

Stability factor

$$k_l := 0.8$$

Load duration factor (Brief)

$$\Phi := 0.8$$

Strength Reduction factor

$$\Phi N_{cy} := \Phi \cdot k_l \cdot k_g \cdot f_{cs} \cdot A_s = 37.3248 \text{ kN} > N_o \quad \text{Checks OK}$$

Summary of Proposed Studs under Point Load:

a) Use 2/ 90x45 SG8 H1.2 studs under the point load as per the detail provided for a maximum height of 2.455m.



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8. FOUNDATION BEAM & SLAB DESIGN:

Analysis has been carried out using SAFE Standard 23.2.0 Analysis Software

8.1 Foundation Loading:

$G_{slab} := 2.5 \text{ kPa}$ Slab Dead Load (Automatic Addition in the Software)

$G_{beam} := 4.68 \frac{\text{kN}}{\text{m}}$ Beam self weight (Automatic Addition in the Software)

$Q_{slab} := 2.0 \text{ kPa}$ Slab Live Load

$G_{wall_ext} := 0.44 \text{ kPa}$ Wall Framing Dead Load

8.2 Subgrade Modulus Considered for the Analysis

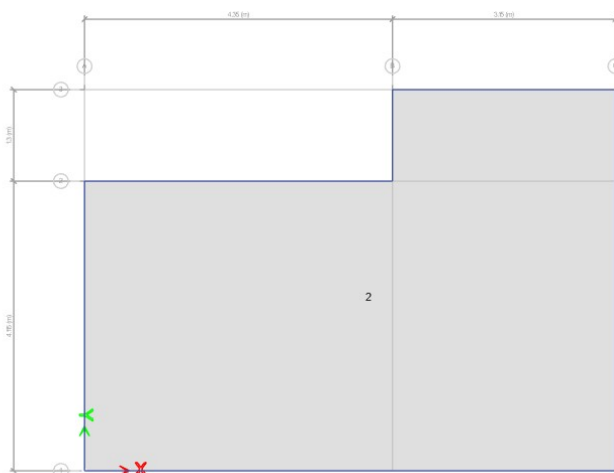
$q_{bearing} := 100 \text{ kPa}$ Soil undrained shear strength as per PK Engineering Ltd Geotechnical report

$\Delta_{allow} := \frac{4400 \text{ mm}}{300} = 14.6667 \text{ mm}$ Allowable Settlement (Category 2 Structure)

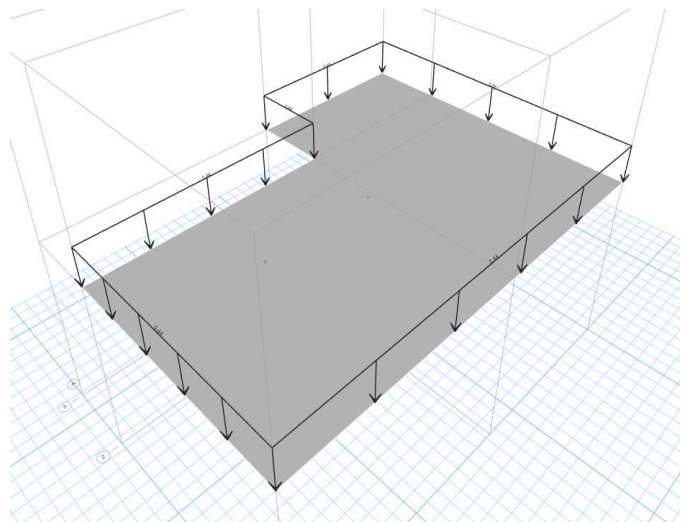
$K := \frac{q_{bearing}}{\Delta_{allow}} = 6818 \frac{\text{kN}}{\text{m}^3}$ Subgrade Modulus

8.3 Assigned Loads:

Live Load (On Slab)



Dead Load from Framing (On Beam)





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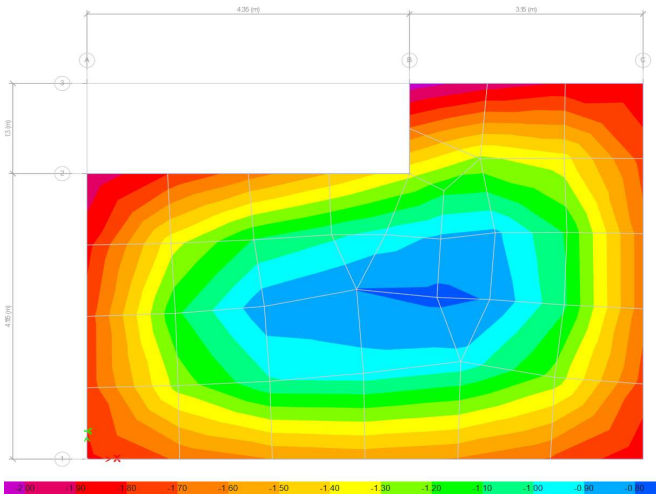
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8.4 Settlement Check of Foundation:



Case 1 - 1.2G + 1.5Q

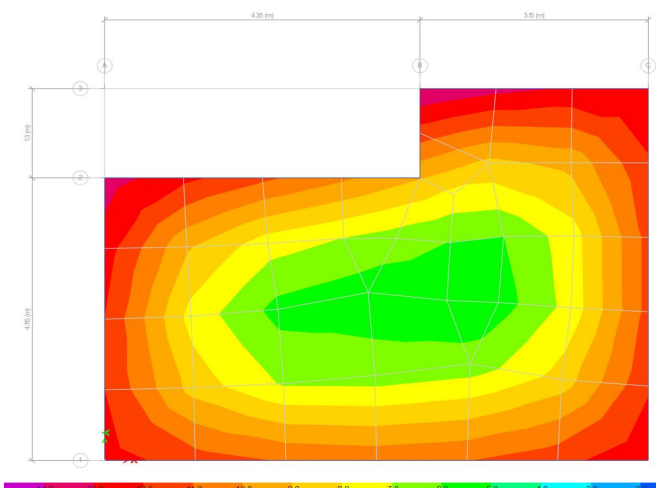
Max Settlement = 2.054mm

Min Settlement = 0mm

Differential Settlement = 2.054mm

Checks OK

8.5 Soil Pressure Check of Foundation:



Case 1 - 1.2G + 1.5Q

$P_{max} := 14 \text{ kPa}$

Max Pressure Exerted

$P_o := 100 \text{ kPa}$

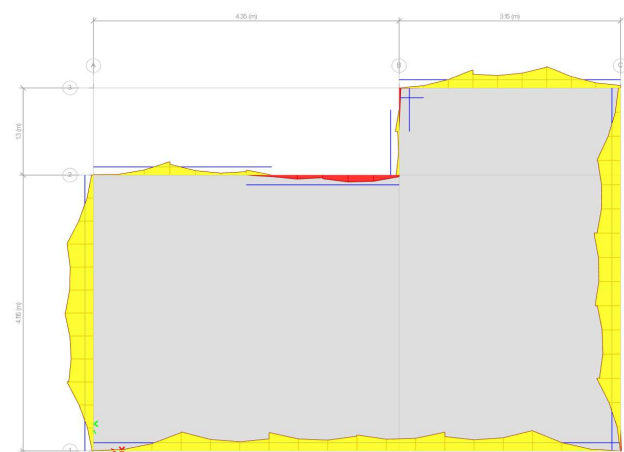
Allowable Bearing Pressure

$P_{max} < P_o$

Checks OK

8.6 Steel Reinforcement Requirement (Most Critical Case - 1.2G + 1.5Q):

Case 1 - Foundation Beams



$A_{s_top.req} := 40 \text{ mm}^2$

$A_{s_bot.req} := 26 \text{ mm}^2$

Providing 1D12 bars top and bottom with D12 tie bars at 400mm c/c.

$A_{s_top.prov} := 113.09 \text{ mm}^2$

$A_{s_bot.prov} := 113.09 \text{ mm}^2$

Checks OK



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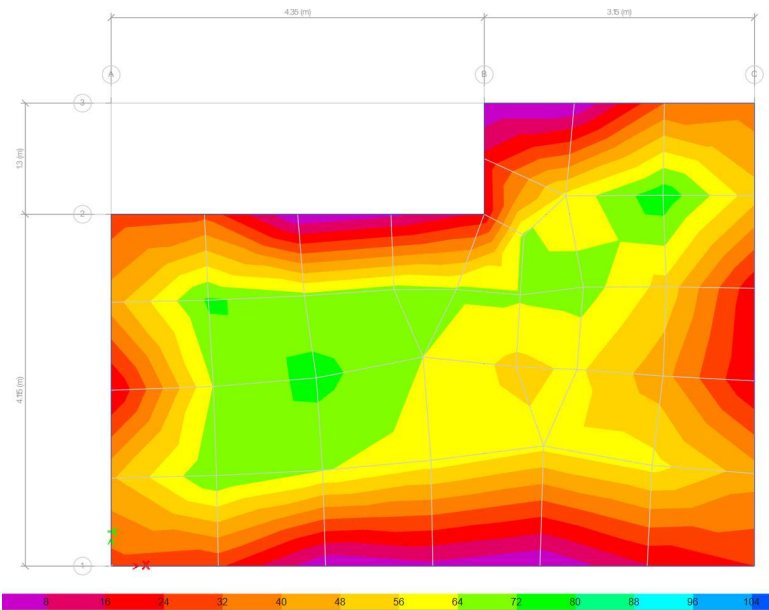
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Case 2 - Foundation Slab



$$A_{s_req} := 90.68 \text{ mm}^2$$

Providing one layer of SE62 mesh
with 5/ $\phi 6.1$ mm bars per meter (at
200mm c/c).

$$A_{s_prov} := 146.12 \text{ mm}^2$$

Checks OK

Summary of Foundation:

- Use 300mm wide x 625mm deep foundation beams with 1D12 bar top and bottom and 1D12 face bar tied with D12 bars at 400mm c/c.
- Use 100mm thick foundation slab with one layer of SE62 mesh with top cover 40mm.



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9. RETAINING WALL DESIGN:

9.1 Cantilevered Timber Pole Wall Design:

PK ENGINEERING LIMITED									
POLWAL CANTILEVER POLE RETAINING WALL DESIGN									
JOB REF.: Chandrashekar - Alterations to Dwelling									
REF: Timber Pole Wall									
JOB NO.: 26-021									
DESIGNER: RC									
8-Jun-26									
INPUT DATA:									
POLES					BACKFILL				
Height	H (m)	0.54	1.08	1.62	2.16	2.70	Soil Density	18	Kn/m ³
Pole Dia. at Ground Level	d (mm)	150	150	225	250	300	Int. Friction	30	degree
Pole Spacing	lp (m)	1	1	1	1	1.1	Wall Friction	20	degree
Surcharge	S (kPa)	1	1	1	1	1	Backfill Slope	18	degree
Encasement	B (mm)	500	500	500	500	500	Wall Slope	85	degree
							Water Table Ht	0	m
RAILS									
Spacing	C (mm)	150							
Rail Type	(1 = Yes)						Ka =	0.32597569	
Half Round	(Ex150)								
	2/150*50	1							
Elastic Modulus		250000							
DESIGN:									
Lateral Backfill Force	Pah =	0.8555	3.4220	7.6994	13.6878	23.5260	kN		
Due to Surcharge	Pas =	0.1760	0.3521	0.5281	0.7041	0.9681	kN		
Due to Water	Pw =	0.0000	0.0000	0.0000	0.0000	0.0000	kN		
Total Lateral Force	Ptot =	1.0315	3.7740	8.2275	14.3920	24.4941	kN		
Max. Pole Moment	Mp =	0.2015	1.4220	4.5854	10.6157	22.4804	kN-m		
Force on Lowest Rail	Fr =	0.4582	0.9334	1.4087	1.8840	2.3592	kN/m		
STRESSES:									
		Actual					Allowable		
Pole	Fb =	0.6080	4.2906	4.0994	6.9186	8.4787	10.3913	Mpa	OK
Rail		0.1833	0.3734	0.5635	0.7536	0.9437	6.0000	Mpa	OK
EMBEDMENT:									
By Rutledge									
Safe Lateral Bearing Capacity									
Minimum Depth of Embedment									
No Restraint at Ground Surface		0.2305	0.4777	0.8243	1.2638	1.9150	m		
Full Restraint		0.1309	0.3477	0.6243	0.9499	1.3823	m		
SUMMARY:									
Retained Height	H (m)	0.54	1.08	1.62	2.16	2.70			
Pole Dia. SED	d (mm)	150.00	150.00	225.00	250.00	300.00			
Pole Spacing	Lp (m)	1.00	1.00	1.00	1.00	1.10			
Encasement	B (mm)	500.00	500.00	500.00	500.00	500.00			
Total Length Required	H+D (m)	0.77	1.56	2.44	3.42	4.61			
Total Length Used		1.54	2.38	3.62	4.66	5.70			
Embedment	D (m)	1.00	1.30	2.00	2.50	3.00			
Standard Pole Lengths									
	2.7	3	3.6	4.2	4.8	5.4	6		



CHARTERED PROFESSIONAL ENGINEERS

ISSUED
FOR CONSENT

PROJECT:

**PROPOSED ALTERATIONS
FOR SURAJ & RASHMI
CHANDRASHEKAR**

PROJECT ADDRESS:

**66 STRATFORD DRIVE
CABLE BAY**

LEGAL DESCRIPTION

LOT 43 DP 384236

JOB NO:

26-021

DATE OF FIRST SUBMISSION:

23RD JULY 2026

BC SET BC1: 23/07/2026

STRUCTURAL DRAWING SCHEDULE:

S0	GENERAL NOTES
S1	BASEMENT BRACING PLAN
S2	BASEMENT FOUNDATION PLAN
S3	BASEMENT DETAILS A
S3A	BASEMENT DETAILS B
S3B	BASEMENT DETAILS C
S4	RETAINING WALL DETAIL

STORMWATER DRAWING SCHEDULE:

SW1	STORMWATER OVERVIEW PLAN
SW2	STORMWATER ATTENUATION PLAN VIEW
SW3	STORMWATER ATTENUATION DETAILS
SW4	SWALE DRAIN DETAILS

BC1

LEVEL 2
ANZ Bank Building
90 Kerikeri road,
P.O.Box 464
KERIKERI

Tel. (09) 4073255
email: teampk@pkengin.co.nz

NOTES

A : GENERAL

1. THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND WITH ARCHITECTURAL, SERVICES, CIVIL AND OTHER PROJECT DRAWINGS. ANY DISCREPANCIES SHALL BE REFERED TO THE ENGINEER FOR RESOLUTION.
2. THE PRESENCE, LOCATION AND DETAILS OF NIBS, PLINTHS, RECESSES, REBATES, PENETRATIONS, SLEEVES, CHASES, DUCTS, CAST-IN FIXINGS, INSERTS, BRACKETS, FLASHINGS, DAMP-PROOFING AND WATERPROOFING etc ARE NOT NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, SERVICES, CIVIL, AND OTHER PROJECT DRAWINGS AND SPECIFICATIONS FOR THESE ITEMS.
3. THE LOCATION, SIZE AND DETAILS OF ALL NIBS, PLINTHS, RECESSES, REBATES, PENETRATIONS etc. IN STRUCTURAL MEMBERS, MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION UNLESS SHOWN ON THE STRUCTURAL DRAWINGS. THESE ITEMS SHALL BE CAST-IN, FORMED, OR SHOP FABRICATED AND SHALL NOT BE CUT OR CORED ON SITE, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER.
4. SUBSTITUTION FOR OR AMENDMENT OF DETAILS SHOWN OR MATERIALS SPECIFIED SHALL NOT BE CARRIED OUT WITHOUT APPROVAL OF THE ENGINEER.
5. IN THE EVENT THAT THERE IS ANY CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATION THEN THE REQUIREMENTS OF THE DRAWINGS SHALL TAKE PRECEDENCE, WITH THE DETAIL DRAWINGS TAKING PRECEDENCE OVER THESE GENERAL NOTES.
6. UNLESS OTHERWISE SPECIFIED OR DETAILED ON THE DRAWINGS, THESE NOTES AND DETAILS SHALL APPLY. INCLUSION OF THESE NOTES IN THIS CONTRACT DOES NOT IMPLY THAT ALL DETAILS APPLY.

B : DIMENSIONS

1. ALL DIMENSIONS ARE IN MILLIMETRES, EXCEPT LEVELS AND COORDINATES WHICH ARE IN METRES.
2. DO NOT SCALE THE DRAWINGS.
3. ALL DIMENSIONS TO EXISTING WORK SHALL BE VERIFIED BY SITE MEASUREMENT PRIOR TO FABRICATION U.N.O.

C : FOUNDATIONS

1. FOUNDATIONS ARE TO BE FOUNDED ON ORIGINAL UNDISTURBED GROUND, AT A MINIMUM DEPTH OF 450 mm. BEFORE ANY CONCRETE IS PLACED A QUALIFIED ENGINEER SHALL VERIFY THAT THE SAFE BEARING CAPACITY OF THAT GROUND IS AS FOLLOWS :

ALLOWABLE WORKING SOIL STRESS = 100 KPa
2. ANY SOFT SPOTS AT FORMATION LEVEL ARE TO BE DUG OUT AND REPLACED WITH WELL-COMPACTED HARDFILL.
3. THE TOP SURFACE OF ALL HARDFILL TO RECEIVE A DPC IS TO BE CHOKED WITH SAND.
4. WHERE REQUIRED PLACE 40 mm SITE CONCRETE UNDER FOUNDATIONS.
5. PLACE DPC UNDER ALL FOUNDATIONS AND GROUND-BEARING SLABS. DPC TO BE PERMATHENE DAMPSTOP 767 or ARMAFOIL INDUSTRIES MOISTOP 748.

D : CONCRETE

1. ALL STRUCTURAL CONCRETE WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH NZS 3109:2000.
2. ALL STRUCTURAL CONCRETE SHALL BE SPECIAL GRADE TO NZS 3104:2003. STRENGTHS SHALL BE AS FOLLOWS U.N.O. :

FOUNDATIONS - 30 MPa
CAST INSITU SLABS, BEAMS & COLUMNS - 30 MPa
PRE-CAST ITEMS - 40 MPa
3. SURFACE FINISHES SHALL BE TO NZS 3114:1987, TYPICALLY AS FOLLOWS U.N.O. :

BURIED FOUNDATIONS - F1 or U1
CONCRETE EXPOSED TO VIEW - F4 or U3
4. REINFORCEMENT SHALL BE TO :

NZS 3402 HOT ROLLED STEEL BARS
NZS 3422 WELDED FABRIC OF DRAWN STEEL WIRE
5. NOMENCLATURE :

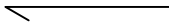
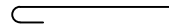
D - DEFORMED BAR GRADE 300E
HD - DEFORMED BAR GRADE 500E
R - PLAIN BAR GRADE 300E
HR - PLAIN BAR GRADE 500E
6. NO REINFORCING IS TO BE WELDED WITHOUT THE WRITTEN AUTHORITY OF THE ENGINEER. THE WELDING OF REINFORCING IS TO BE IN ACCORDANCE WITH AS/NZS 1554.3:2002
7. NO REINFORCING SHALL BE RE-BENT ON SITE UNLESS SHOWN ON THE DRAWINGS, AND WHERE RE-BENT SHALL ONLY BE RE-BENT ONCE.
8. SAWCUTS TO BE 5mm WIDE AND EXTEND TO A THIRD DEPTH OF SLAB. SAW CUTTING TO TAKE PLACE NO LATER THAN 24 HOURS FOR AVERAGE AMBIENT TEMPERATURE ABOVE 20°C AND 48 HOURS FOR BELOW 20°C.

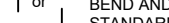
9. MINIMUM SPLICE LAP LENGTHS FOR DEFORMED STEEL :

BAR DESIGNATIONLAP LENGTH
HD10 - 560
HD12 - 670
HD16 - 900
HD20 - 1120
HD24 AND LARGER - REFER DRAWINGS
D10 - 335
D12 - 400
D16 - 540
D20 - 670
D24 AND LARGER - REFER DRAWINGS

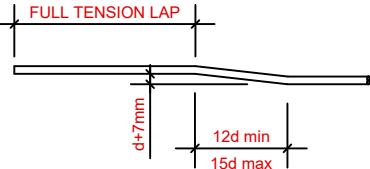
10.

(a)  DENOTES 

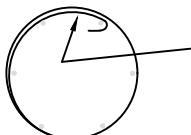
(b)  DENOTES 

(c)  DENOTES  or  BEND AND STANDARD LEG

(d) CRANKED BARS SHALL BE DIMENSIONED AS FOLLOWS :



(e) END ANCHORAGE OF SPIRAL REINFORCEMENT :

 ANCHOR AT ENDS WITH COMPLETE HORIZONTAL LOOP AND ADDITIONAL HALF TURN WITH 135° HOOK AROUND LONGITUDINAL BAR (OR APPROVED WELDED EQUIVALENT)

11. MINIMUM COVER :

POSITION	COMPONENT	TYPE OF REINFORCEMENT	COVER
CAST AGAINST & PERMANENTLY EXPOSED TO THE GROUND	ALL COMPONENTS	ALL REINFORCING	75
OTHER	BEAMS & COLUMNS	PRIMARY REINFORCEMENT	50
		SECONDARY REINFORCEMENT INCLUDING STIRRUPS, TIES AND SPIRALS.	40
	WALLS, SLABS PANELS & RIBS	ALL REINFORCING	35

12. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER. CONSTRUCTION JOINTS SHALL BE PREPARED BY RETARDING THE INTERFACE SURFACE, THEN WATER BLASTING TO PRODUCE A SURFACE WHICH IS CLEAN,FREE OF LAITANCE AND INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF NOT LESS THAN 5 mm.
13. ALL CONCRETE SHALL BE FULLY CURED. SPRAY-ON MEMBRANES SHALL BE COMPATIBLE WITH FINISHES.

E : STEELWORK

1. ALL STEELWORK SHALL BE FABRICATED AND ERECTED TO NZS 3404:1997.
2. STEEL GRADES :

HOT ROLLED STRUCTURAL SECTIONS TO OneSteel-300PLUS.
RECTANGULAR HOLLOW SECTIONS TO AS1163 GRADE C350.
HOT ROLLED PLATES AS3678 GRADE 250.
CIRCULAR HOLLOW SECTIONS TO AS1163 GRADE C250.

3. ALL WELDING TO AS/NZS 1554.1 CATEGORY SP U.N.O. ALL WELDING SHALL BE CARRIED OUT BY PERSONS HOLDING A CURRENT TEST CERTIFICATE FOR THE REQUIRED POSITIONS ISSUED BY A RECOGNISED AUTHORITY. WELDS TO BE GRADE E48XX OR EQUIVALENT ELECTRODE MATERIAL.
4. ALL WELDS SHALL BE 6 mm FILLET WELD ALL ROUND U.N.O., SUBJECT TO MINIMUM WELD SIZE REQUIREMENT OF AS/NZS 1554.1.
5. ALL STRUCTURAL BOLTS AND NUTS SHALL BE GRADE 8.8 TO AS1252 C/W HARDENED WASHER.

F : DRILL-IN FIXINGS

1. EXPANSION ANCHORS :

EXPANSION ANCHORS SHALL BE HOT DIP GALVANISED RAMSET TRUBOLTS OR APPROVED EQUIVALENT.
2. CHEMICAL ANCHORS :

THE CHEMSET ANCHORAGE SYSTEM SHALL BE THE RAMSET EPCON CERAMIC FILLED EPOXY SYSTEM INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. HOLES SHALL BE DRILLED WITH A MASONRY BIT AND THOROUGHLY CLEANED BEFORE ANCHOR INSTALLATION. IN DRY, INTERIOR AREAS THE ANCHOR BOLTS MAY BE RAMSET THREADED ANCHORS WITH PASSIVATED ZINC COATING.

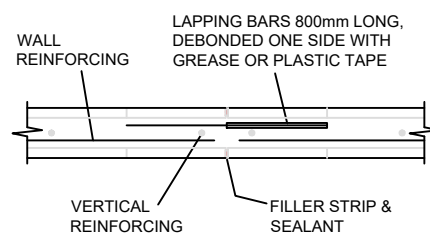
IN EXTERIOR AREAS, THE ANCHORS SHALL BE FULLY THREADED MILD STEEL ROUNDS HOT DIP GALVANISED AFTER FABRICATION.

G : MASONRY

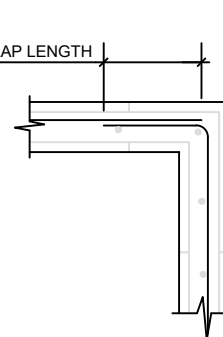
1. REINFORCED CONCRETE MASONRY SHALL COMPLY WITH NZS 4230:1990 & NZS 4210:2001.
2. MASONRY SHALL BE GRADE B ALL CELLS FILLED MIN. 28 DAYS GROUT STRENGTH 17.5 MPa.
3. ALL BLOCKS 200 SERIES U.N.O.
4. BLOCKS SHALL BE LAID IN STRETCHER BOND.
5. IF HIGH GROUTING IS USED, CLEAN OUT PORTS SHALL BE PROVIDED AT EVERY VERTICAL BAR.
6. CONTROL JOINTS IN MASONRY SHOULD BE NO GREATER THAN 6m APART.
7. MORTAR JOINTS ON EXPOSED WALLS SHALL BE RAKED WITH A HALF ROUND TOOL WHEN MORTAR IS PARTIALLY SET.
8. UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. MINIMUM SPLICE LAP LENGTH FOR DEFORMED BARS SHALL BE :

40 BAR DIAMETERS FOR GRADE 300 STEEL
60 BAR DIAMETERS FOR GRADE 500 STEEL.
60 BAR DIAMETERS FOR GRADE 500 STEEL.

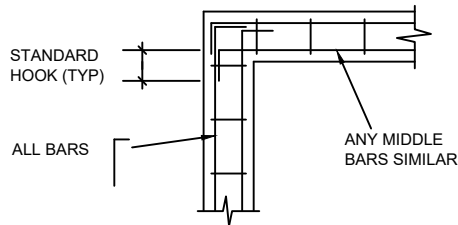
9. PLAN - CONSTRUCTION JOINT :



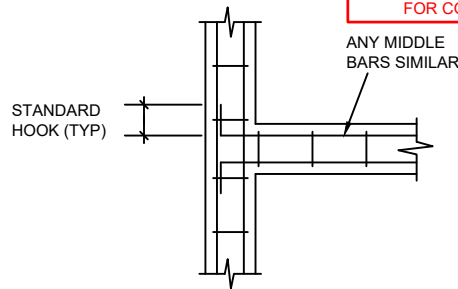
10. PLAN - TYPICAL CORNER DETAIL :



11. PLAN - FOUNDATION CORNER :

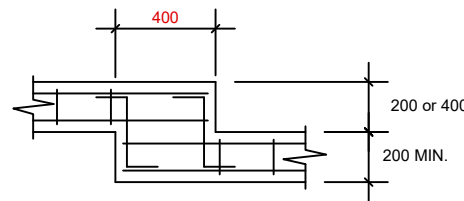


12. PLAN - FOUNDATION JUNCTION :



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FOR CONSENT

13. ELEVATION - FOUNDATION STEP :

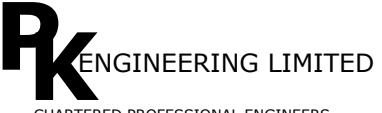


H : TIMBER

1. ALL STRUCTURAL TIMBER WORK SHALL COMPLY WITH NZS 3603:1993 AND NZS 3604:2011.
2. TIMBER FRAMING SHALL BE RADIATA PINE MSG 8 GRADE, NZTPA H1 TREATED, UNLESS OTHERWISE NOTED.
3. ALL H1 TIMBER IN CONTACT WITH CONCRETE SHALL BE PROTECTED WITH A DPM LAYER.
4. ALL MEMBERS FORMED BY PAIRS (OR MORE) OF TIMBERS TO BE NAILED TOGETHER AT 150 CRS. STAGGERED, ALTERNATE SIDES.
5. ALL TIMBER SHALL BE NEW, SOUND AND FREE FROM DEFECTS AND SHALL HAVE A MOISTURE CONTENT OF NOT MORE THAN 18% AT THE TIME OF INSTALLATION. SEASONED OR DRY TIMBER STORED ON SITE SHALL BE PROTECTED FROM WEATHER AT ALL TIMES.
6. ALL NAILS, BOLTS, FASTENERS, CONNECTORS AND OTHER HARDWARE SHALL BE HOT DIP GALVANISED AFTER MANUFACTURE UNLESS SPECIFIED OTHERWISE. ALL HARDWARE SHALL BE SECURED WITH FASTENERS WHICH ARE COMPATIBLE WITH THE HARDWARE IN MATERIALS AND FINISH AND COMPLY WITH THE HARDWARE MANUFACTURER'S RECOMMENDATION.
7. BOLTS SHALL BE GRADE 4.6 COMPLETE WITH WASHERS UNDER BOTH HEAD AND NUT.
8. COACH SCREWS :

THE DIAMETER OF THE HOLE FOR THE SHANK OF A COACH SCREW SHALL BE NOT LESS THAN THE SHANK DIAMETER AND SHALL NOT EXCEED IT BY MORE THAN 1.5 mm. THE DIAMETER OF THE HOLE FOR THE THREADED PORTION SHALL NOT EXCEED THE ROOT DIAMETER OF THE SCREW, AND ITS DEPTH SHALL BE AT LEAST TWO DIAMETERS GREATER THAN THE INTENDED DEPTH TO WHICH THE SCREW IS TO BE DRIVEN.
9. COACH SCREWS SHALL NOT BE HAMMERED INTO PLACE BUT TURNED WITH A WRENCH.

ALL H3.2, H4 OR H5 TREATED TIMBER CUT ON SITE SHALL BE TREATED WITH "METALEX" ON THE CUT SURFACE.

 P.K. ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri road, P.O.Box 464 KERIKERI Tel. (09) 4073255 E-mail. TeamPK@pkengin.co.nz	PROJECT: PROPOSED ALTERATIONS	CLIENT: SURAJ & RASHMI CHANDRASHEKAR	DRAWING: GENERAL NOTES	Drawn: RC	Checked: PK	Date: 23/07/2026	Scale: AS SHOWN	CAD FILE NAME: 26-021.dwg	SHEET No: S0	BC1
					This design and drawing is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission				PROJECT No: 26-021		

BRACING LEGEND:

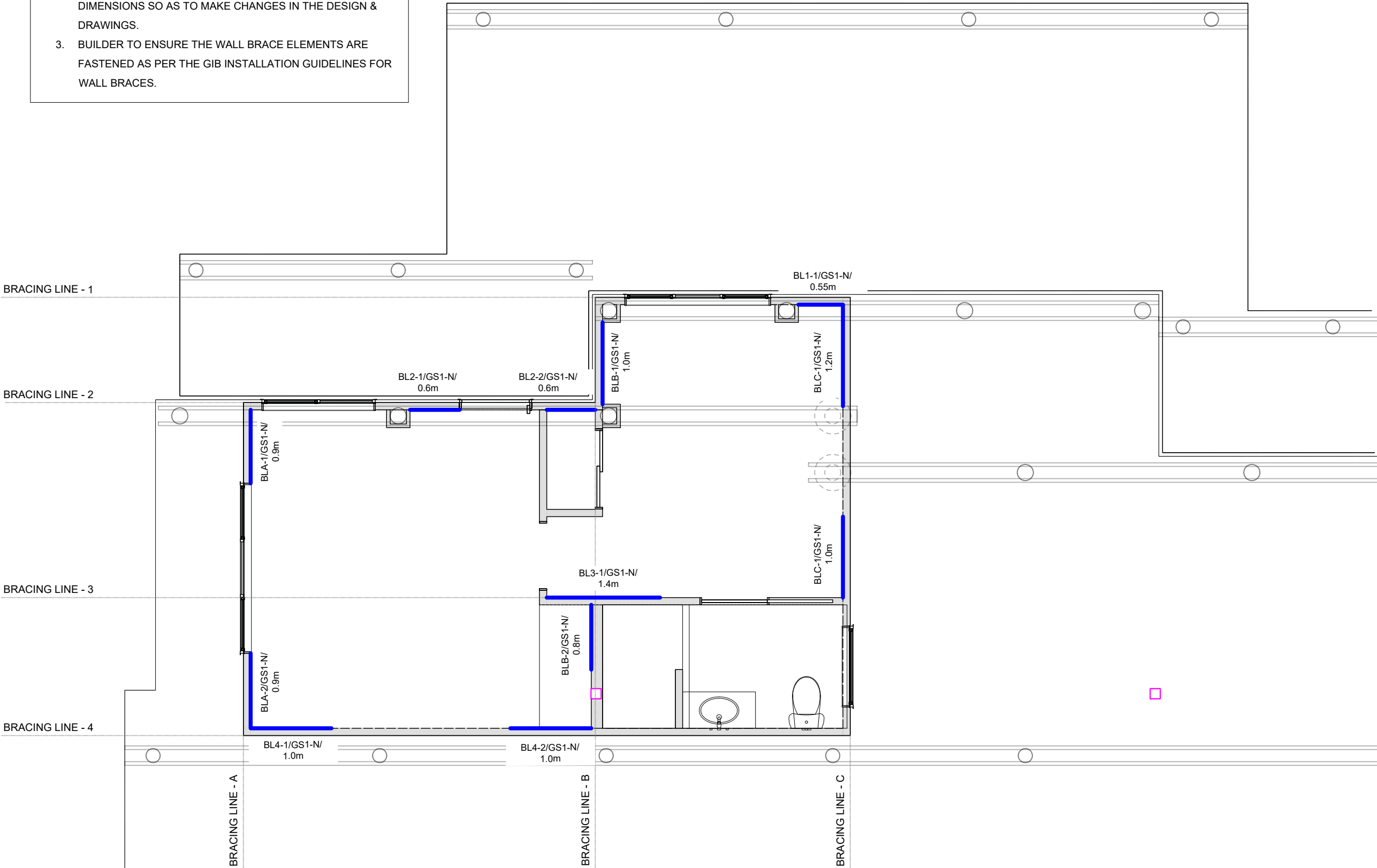
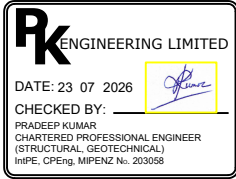
GS1-N
10mm OR 13mm GIB PLATERBOARD ON ONE SIDE OF
THE FRAMING ONLY (FRONT OR REAR SHEET)

SPECIAL NOTES:

1. ARCHITECT & BUILDER TO VERIFY ALL THE DIMENSIONS ON SITE PRIOR TO CONSTRUCTION.
2. DESIGN ENGINEER TO BE NOTIFIED IF ANY CHANGES IN DIMENSIONS SO AS TO MAKE CHANGES IN THE DESIGN & DRAWINGS.
3. BUILDER TO ENSURE THE WALL BRACE ELEMENTS ARE FASTENED AS PER THE GIB INSTALLATION GUIDELINES FOR WALL BRACES.

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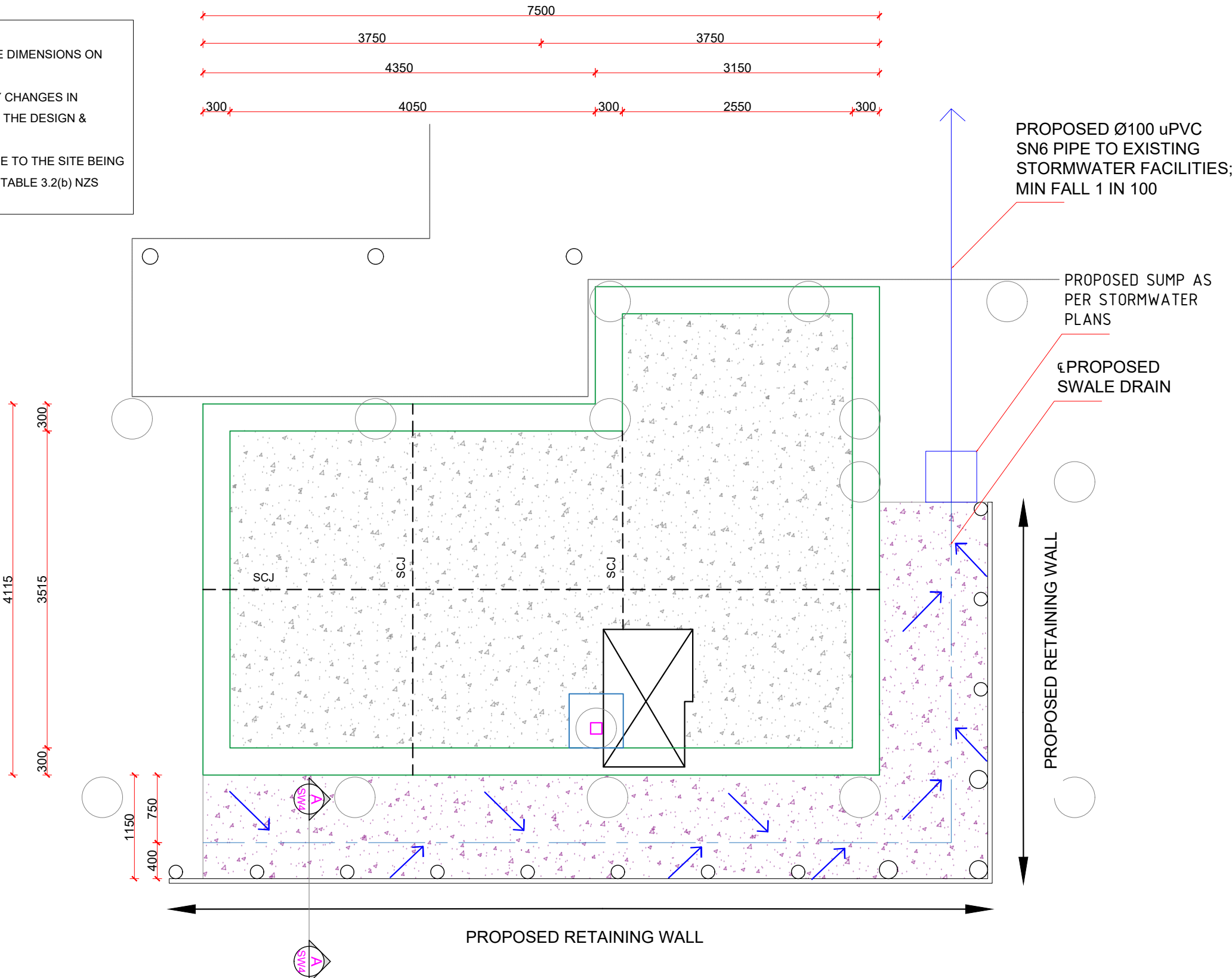


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STATUS: FOR CONSENT			
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CLIENT: S & R CHANDRASHEKAR			
SITE: 66 STRATFORD DRIVE CABLE BAY			
TITLE: PROPOSED ALTERATIONS BASEMENT BRACING PLAN			
SCALE AT A3: 1:50	DATE: 23/07/26	DRAWN: RC	CHECKED: PK
PROJECT NO: 26-021	DRAWING NO: S1	REVISION: BC1	

FOUNDATION KEY		
REFERENCE	ELEMENT TYPE	SYMBOL
---	EXISTING TIMBER POST 125X125 SQ. SG8 H5	
---	EXISTING CONCRETE BORES Ø450mm FOUNDATION BORE	
---	NEW FOUNDATION BEAM 300mm WIDE X 625mm DEEP	
---	PAD THICKENING 920X800mm PAD, 850mm DEEP	
---	FOUNDATION SLAB 100mm THICK WITH SE62 MESH	
---	SAW-CUT JOINT AS PER SPECIFICATIONS ON SHEET S0	SCJ
---	SHOWER REBATE AS PER ARCHITECT'S SPECIFICATIONS	
---	SWALE DRAIN SLAB 150mm THICK WITH SE62 MESH	

SPECIAL NOTES:

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2. DESIGN ENGINEER TO BE NOTIFIED IF ANY CHANGES IN DIMENSIONS SO AS TO MAKE CHANGES IN THE DESIGN & DRAWINGS.
3. 30MPa CONCRETE GRADE TO BE USED DUE TO THE SITE BEING CONSIDERED AS COASTAL FRONTAGE AS TABLE 3.2(b) NZS 3101: 2006



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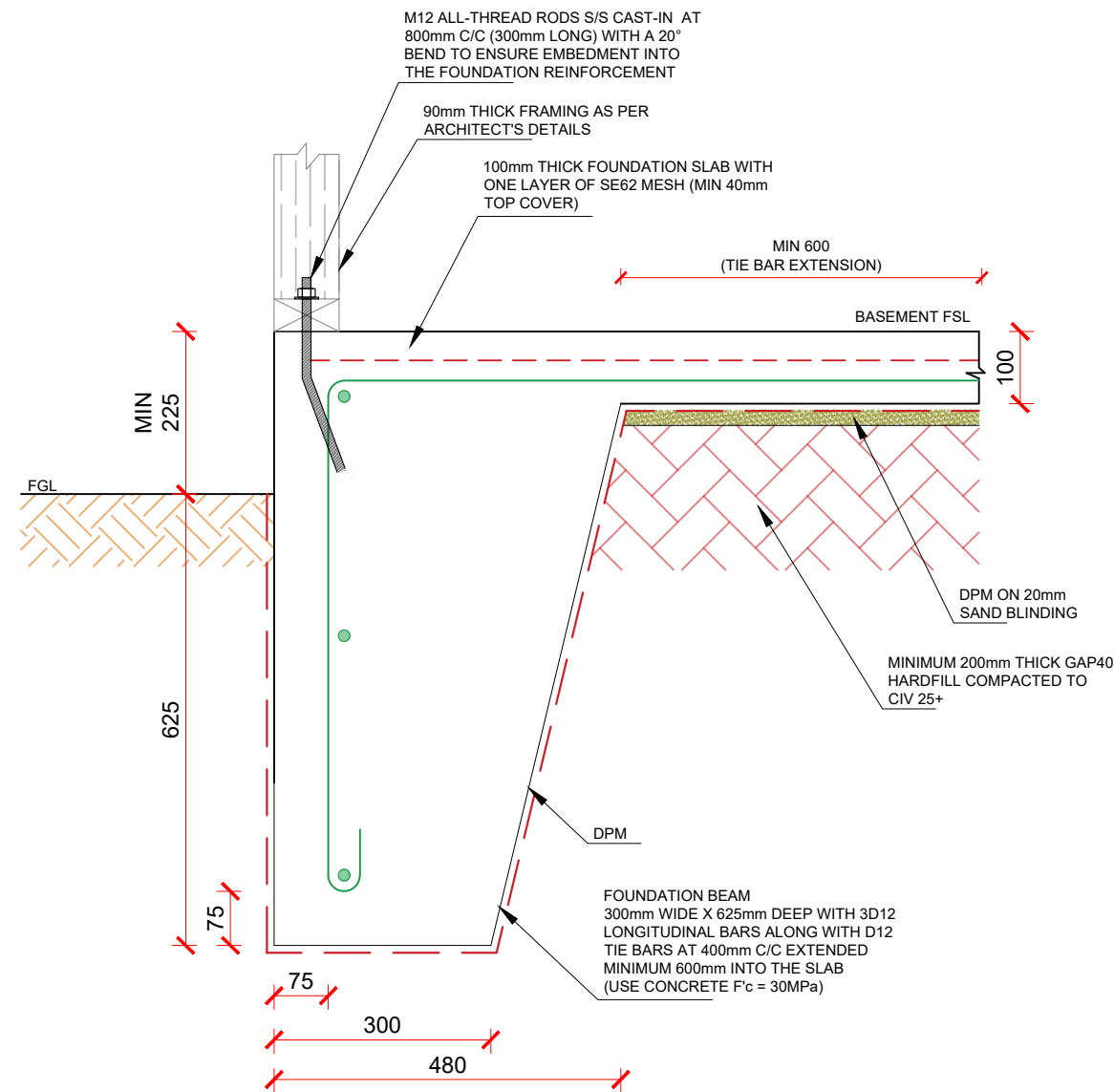
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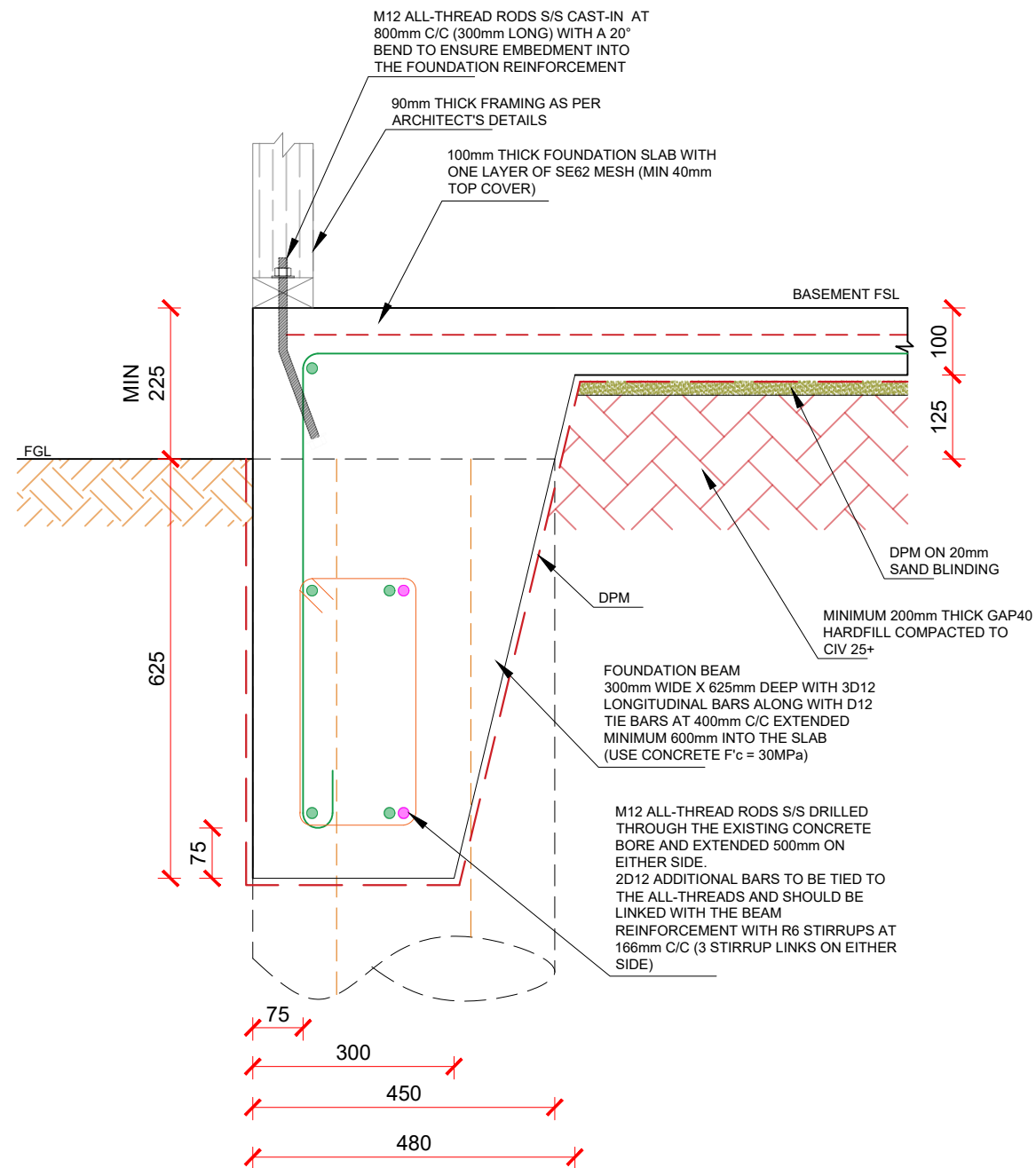
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SITE:	66 STRATFORD DRIVE CABLE BAY		
TITLE:	PROPOSED ALTERATIONS BASEMENT FOUNDATION PLAN		
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:50	23/07/26	RC	PK
PROJECT NO:	DRAWING NO:	REVISION:	
26-021	S2	BC1	



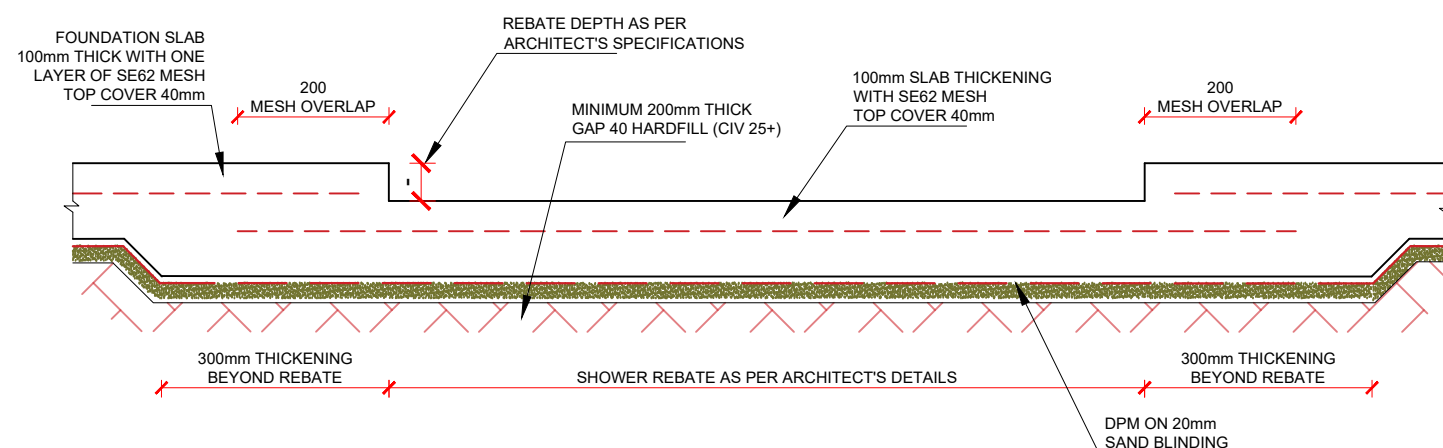
BD1 - FOUNDATION BEAM DETAIL (CASE A)

SCALE @1:10



BD2 - FOUNDATION BEAM DETAIL (CASE B)

SCALE @1:10



BD3 - TYPICAL SHOWER REBATE DETAIL

SCALE @1:10

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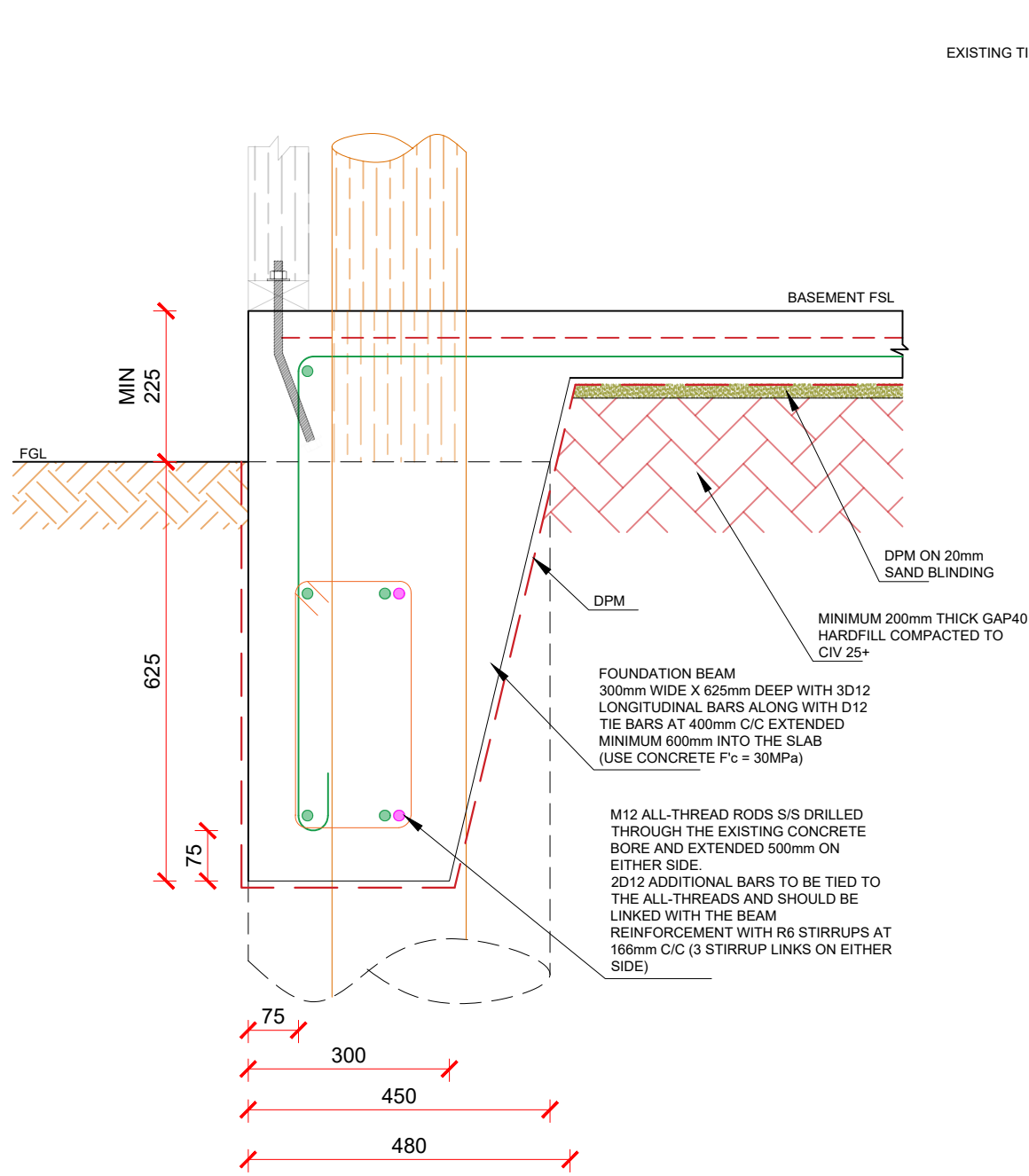
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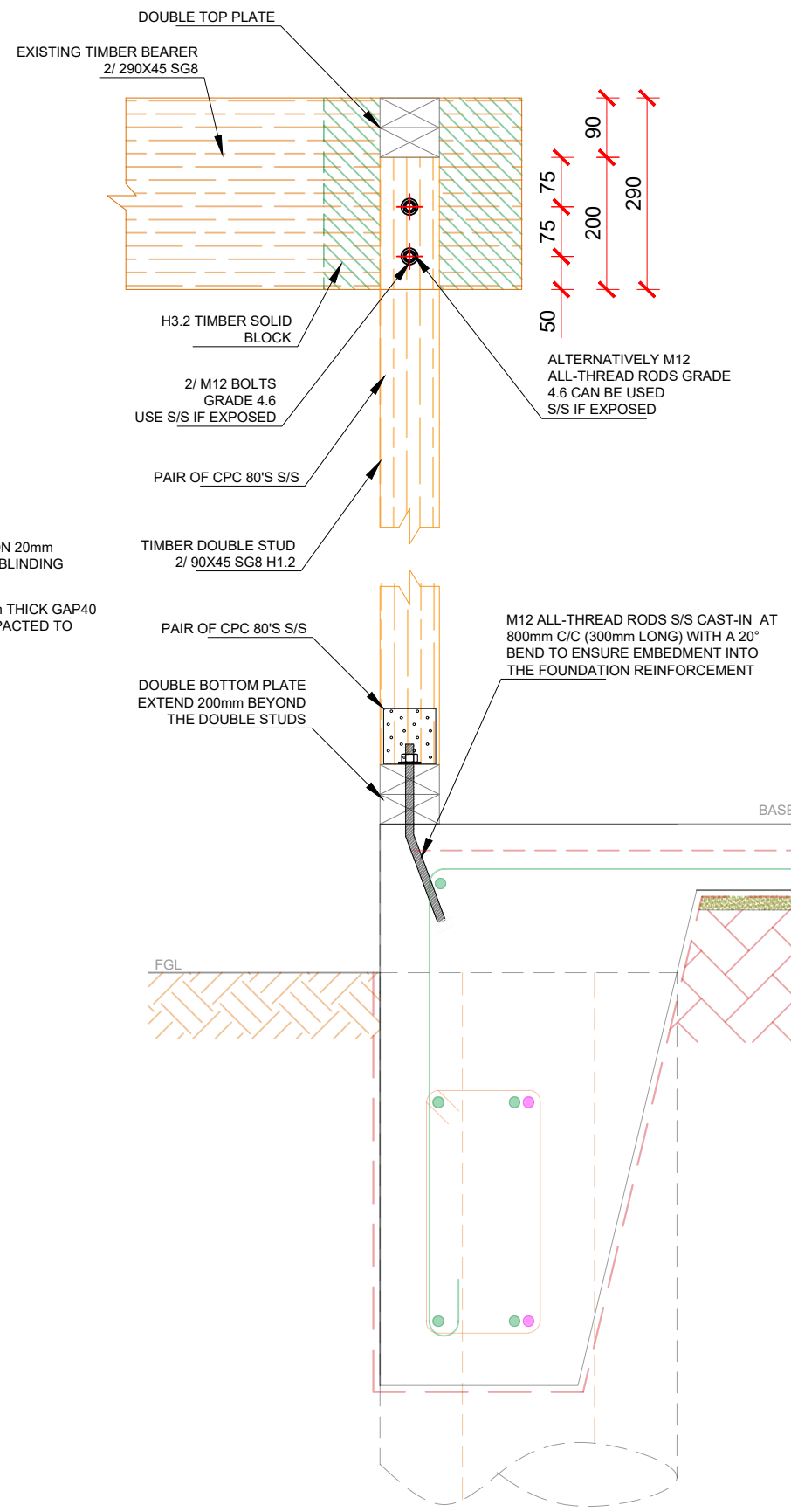
TITLE: PROPOSED ALTERATIONS
BASEMENT DETAILS A

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1:10	23/07/26	RC	PK
PROJECT NO:	DRAWING NO:	REVISION:	
26-021	S3	BC1	



BD4 - FOUNDATION BEAM DETAIL (CASE C)

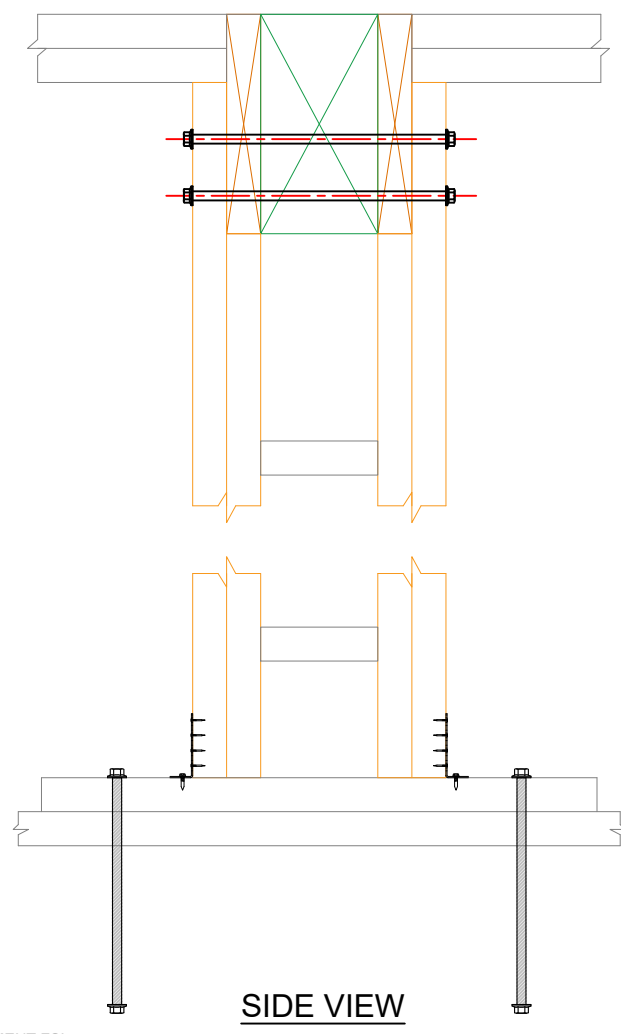
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ELEVATION

BD5 - EXISTING BEARER TO NEW WALL FRAMING DETAIL

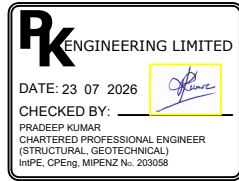
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SIDE VIEW

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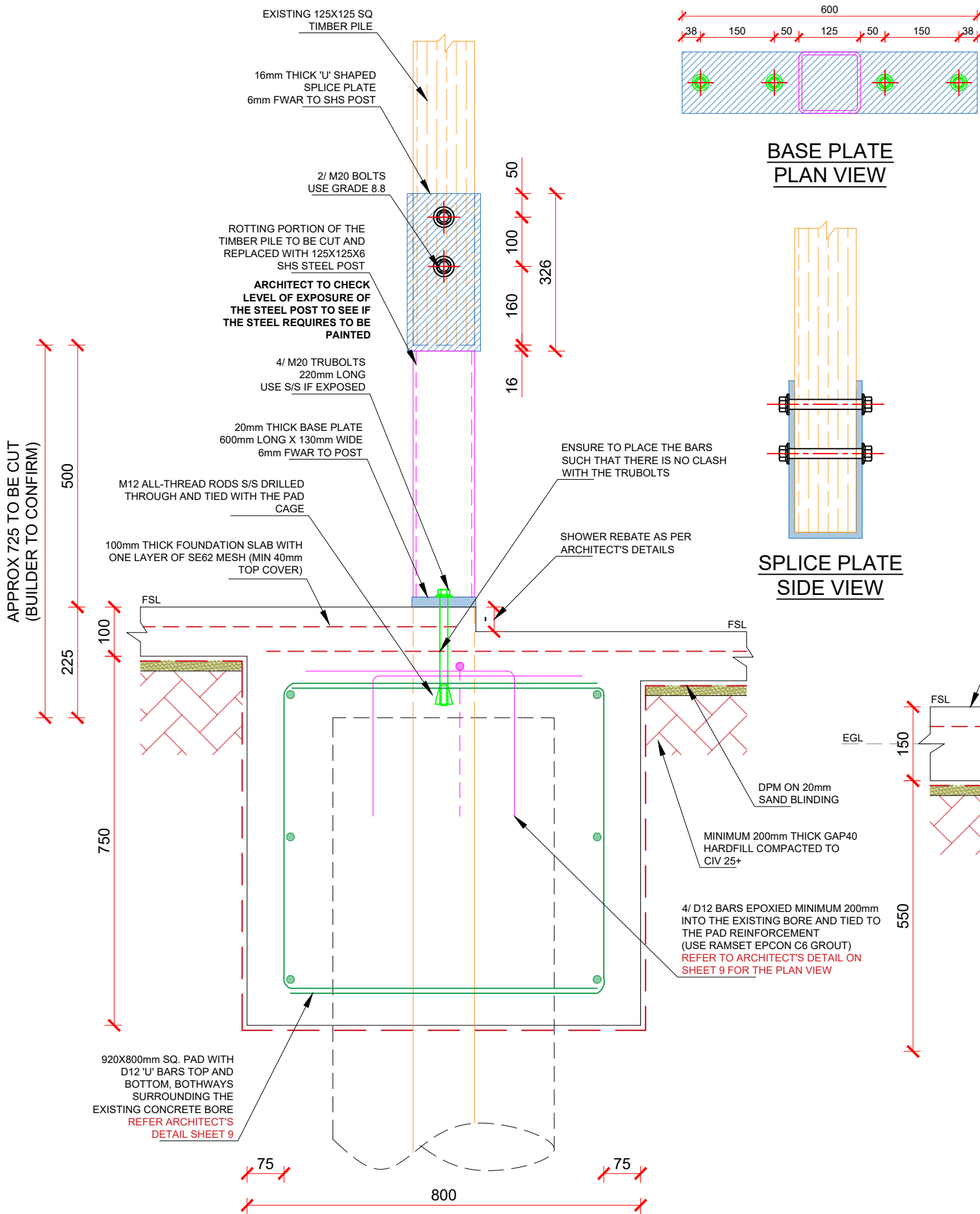
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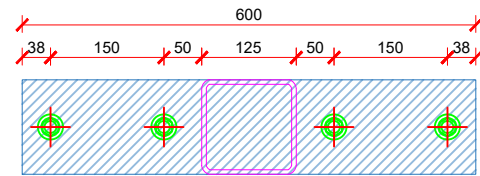
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SITE:	66 STRATFORD DRIVE CABLE BAY		
TITLE:	PROPOSED ALTERATIONS BASEMENT DETAILS B		
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:10	23/07/26	RC	PK
PROJECT NO:	DRAWING NO:		REVISION:
26-021	S3A		BC1

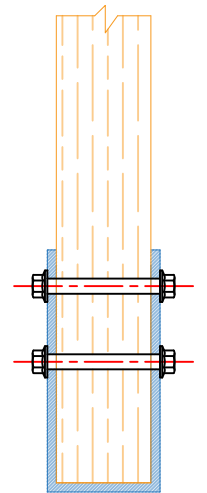


BD6 - LOAD-BEARING TIMBER PILE RETROFIT DETAIL

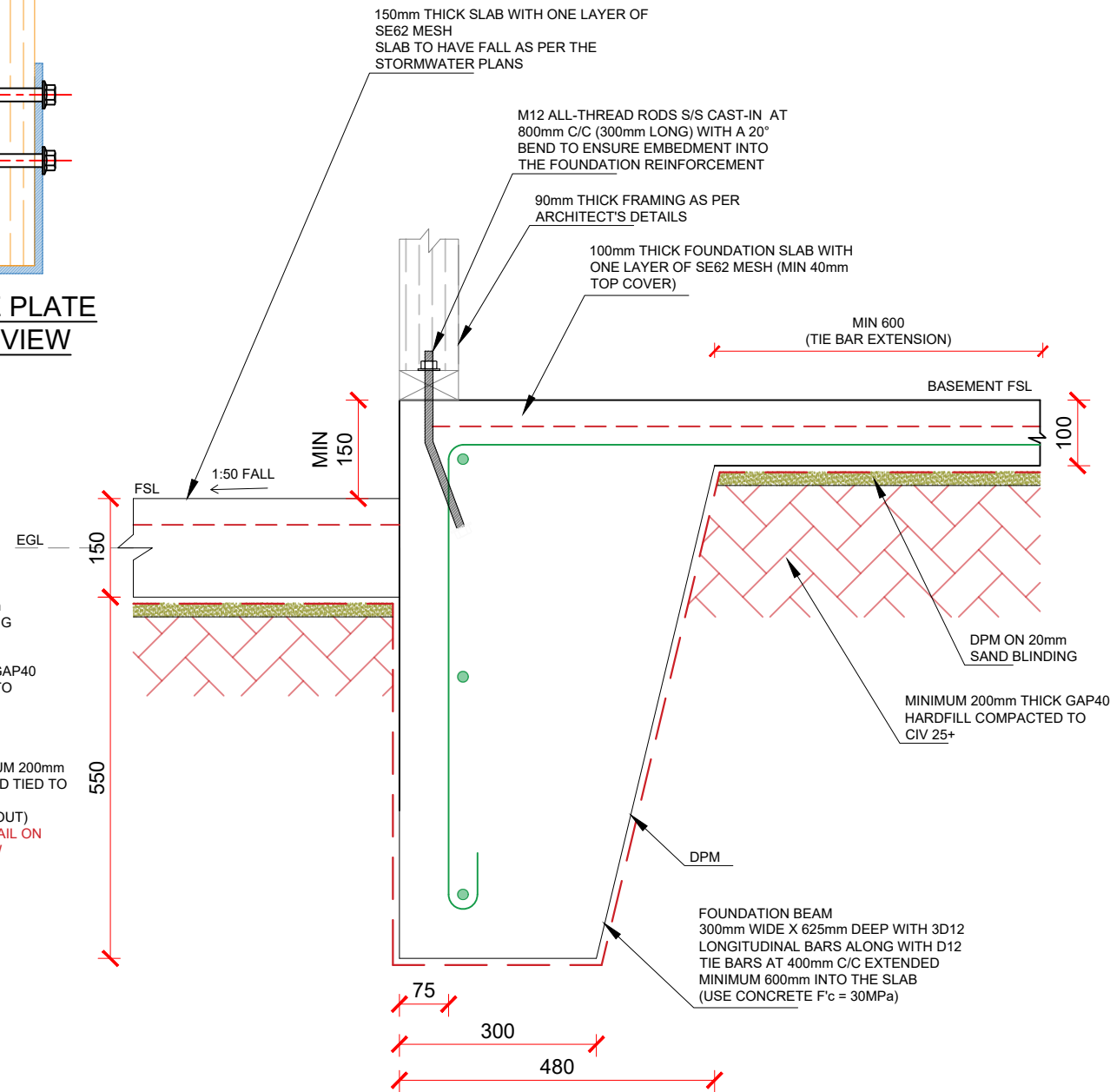
SCALE @1:10



BASE PLATE
PLAN VIEW



SPLICE PLATE
SIDE VIEW



BD7 - FOUNDATION BEAM DETAIL (CASE D)

SCALE @1:10

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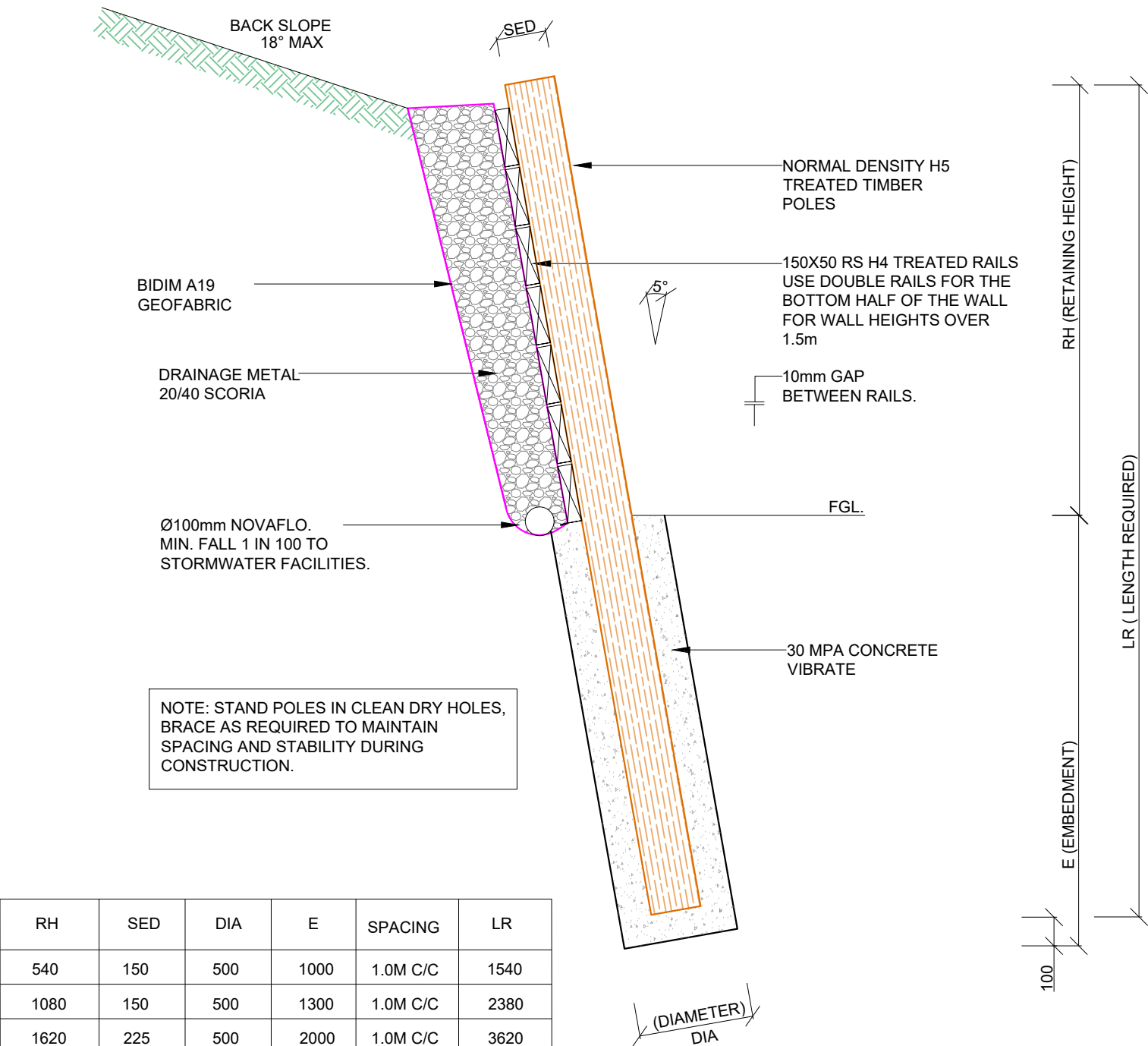
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SITE: 66 STRATFORD DRIVE
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TITLE: PROPOSED ALTERATIONS
BASEMENT DETAILS C

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1:10	23/07/26	RC	PK
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26-021	S3B	BC1	



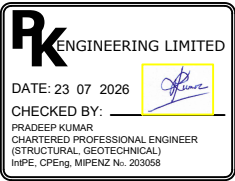
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1080	150	500	1300	1.0M C/C	2380
1620	225	500	2000	1.0M C/C	3620
2160	250	500	2500	1.0M C/C	4660
2700	300	500	3000	1.0M C/C	5700

WD-3 CANTILEVERED TIMBER POLE RETAINING WALL

SCALE @1:20

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STATUS: FOR CONSENT			



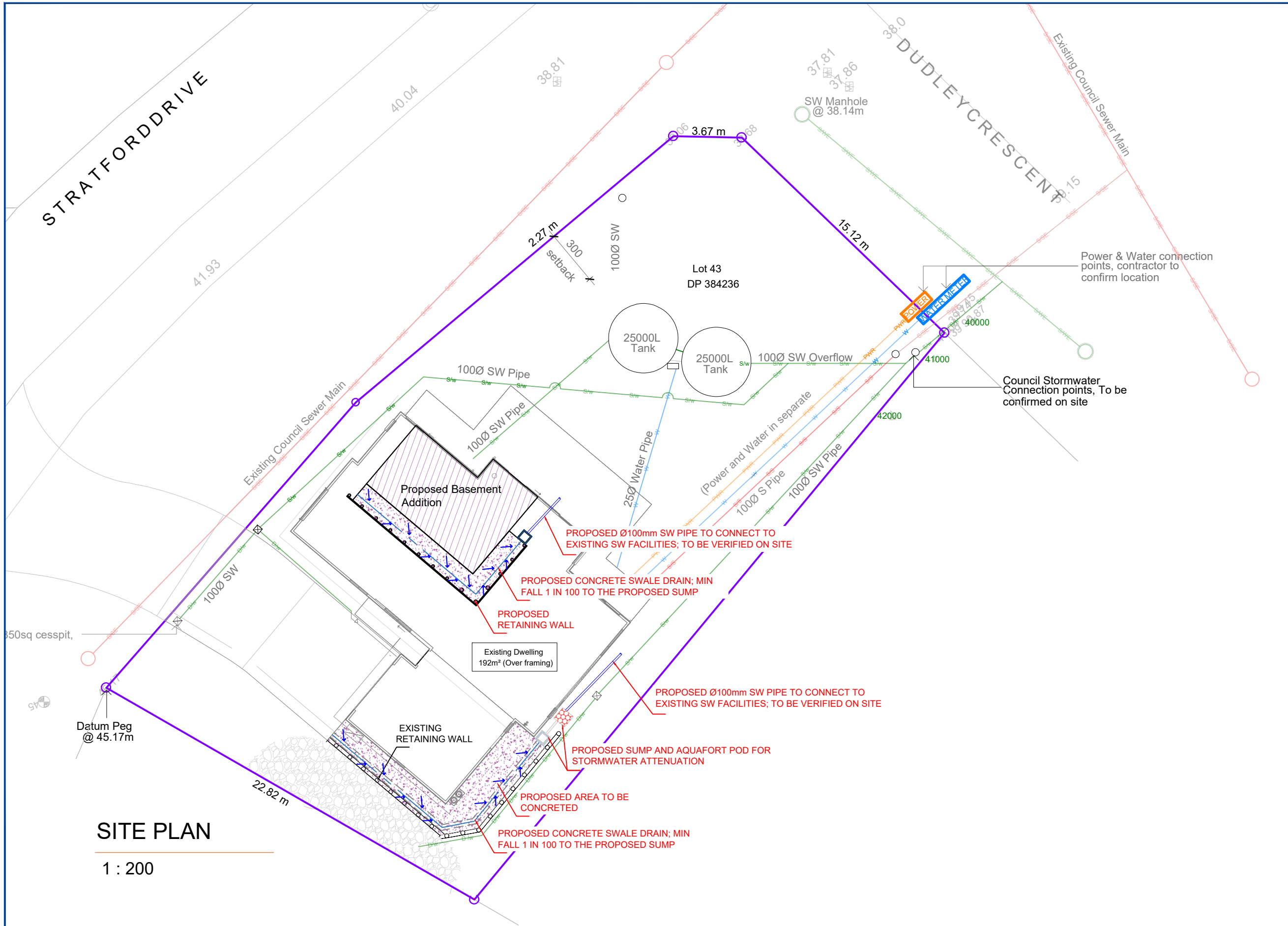
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SITE: 66 STRATFORD DRIVE
CABLE BAY

TITLE: PROPOSED ALTERATIONS
RETAINING WALL DETAIL

SCALE AT A3: 1:20	DATE: 23/07/26	DRAWN: RC	CHECKED: PK
PROJECT NO: 26-021	DRAWING NO: S4	REVISION: BC1	



SITE PLAN
1 : 200

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STATUS: FOR CONSENT			

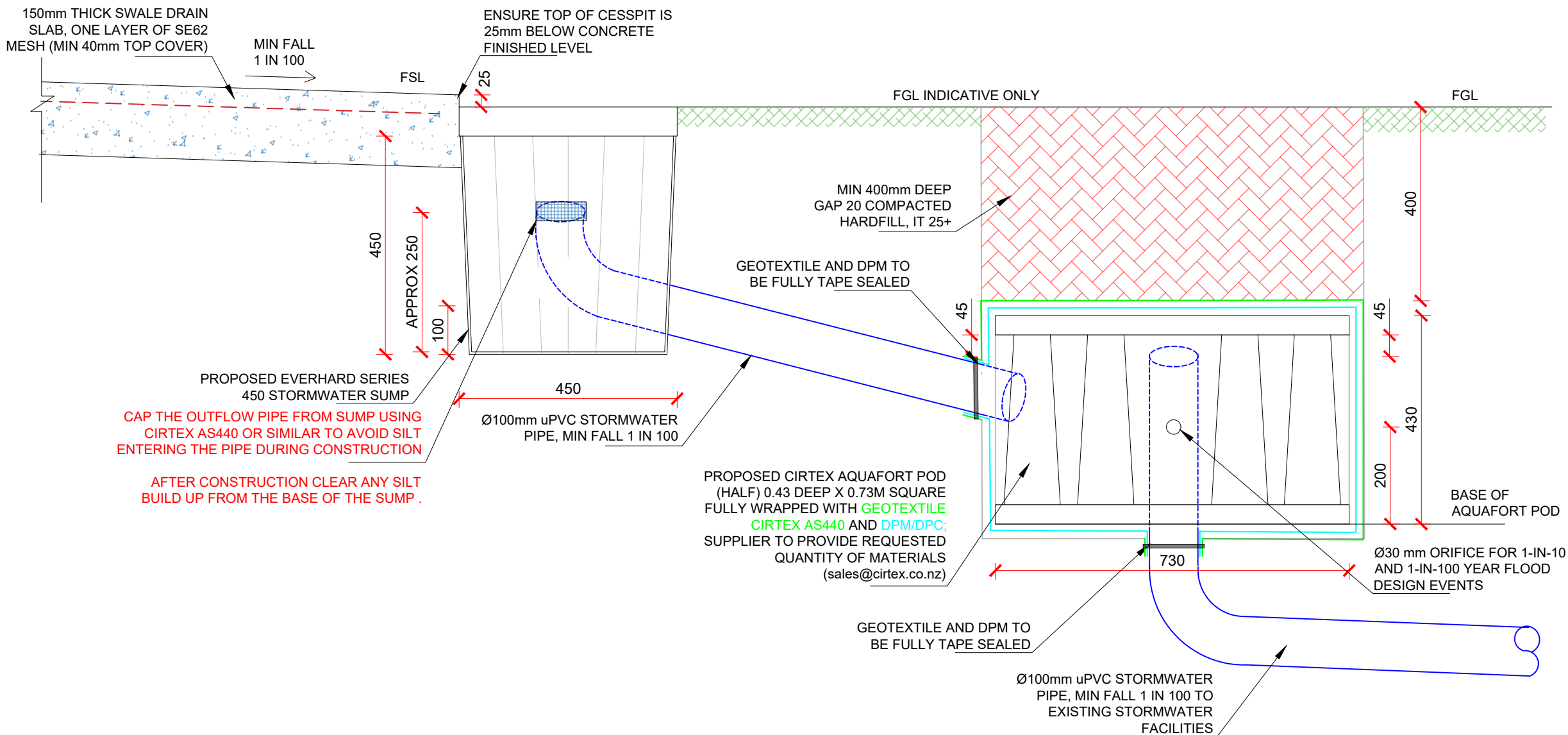


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SITE:	66 STRATFORD DRIVE CABLE BAY
TITLE:	PROPOSED ALTERATIONS STORMWATER OVERVIEW PLAN

SCALE AT A3: 1:200	DATE: 23/07/26	DRAWN: CJ	CHECKED: PK
PROJECT NO: 26-021	DRAWING NO: SW1	REVISION: BC1	

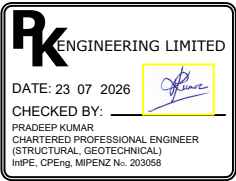


STORMWATER ATTENUATION DETAIL

SCALE @1:10

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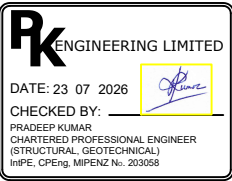
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CABLE BAY

TITLE: PROPOSED ALTERATIONS
SW ATTENUATION DETAIL

SCALE AT A3: 1:10	DATE: 23/07/26	DRAWN: CJ	CHECKED: PK
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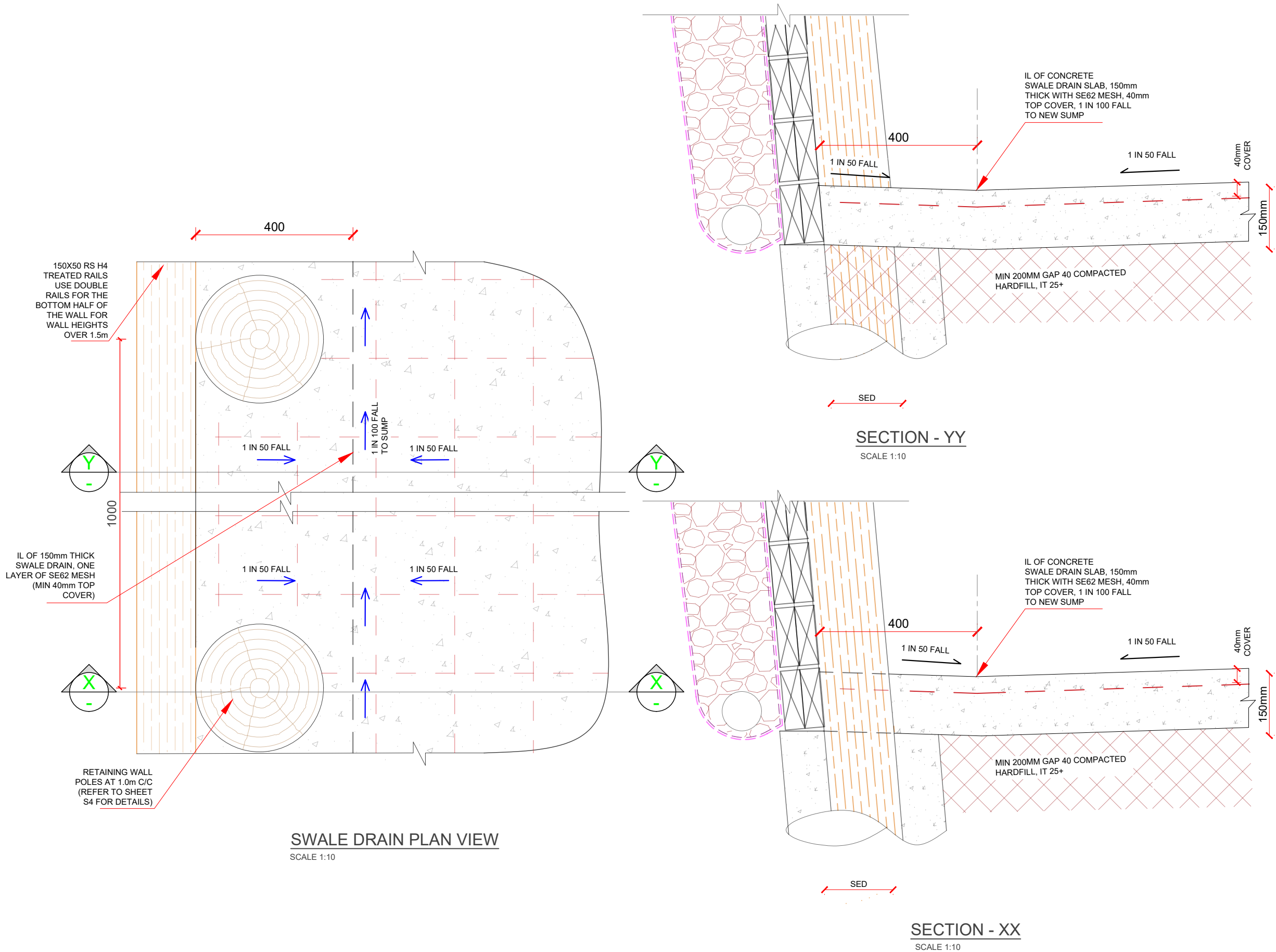
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CLIENT: S & R CHANDRASHEKAR

SITE: 66 STRATFORD DRIVE
CABLE BAY

TITLE: PROPOSED ALTERATIONS
SWALE DRAIN DETAIL

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PROJECT NO: 26-021	DRAWING NO: SW4	REVISION: BC1	



CONCRETE SWALE DRAIN DETAIL
SCALE 1:10



STORMWATER MANAGEMENT REPORT

FOR
THE PROPOSED ALTERATIONS
AT
66 STRATFORD DRIVE
CABLE BAY
LOT 43 DP 384236
FOR
SURAJ & RASHMI CHANDRASHEKAR

Job No:	26-021
Date:	23-07-2026

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri, New Zealand Telephone: 09 407 3255

Email: teampk@pkengin.co.nz

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1. INTRODUCTION 3

2. GENERAL SITE DESCRIPTION 3

3. STORMWATER MANAGEMENT 3

4. RECOMMENDATIONS 4

5. CONCLUSION 4

APPENDIX

Structural and Stormwater drawings

Structural and Stormwater calculations

1. INTRODUCTION

This report was requested by Suraj & Rashmi Chandrashekar and has been prepared to assess the stormwater management requirements for the proposed alterations to the existing dwelling at 66 Stratford Drive, Cable Bay.

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2. GENERAL SITE DESCRIPTION

The lot encompasses an area of 875 m² and the existing building covers an area of 192.8m². The site is located at 66 Stratford Drive, Cable Bay.

Existing stormwater management has been provided for the existing roof area (236 m²) and existing driveways and paths (86 m²), comprising a total impermeable area of approximately 322 m² (36.8% of the total site area). This report addresses the stormwater management only for the proposed 25 m² concrete area adjacent to the existing concrete driveway and retaining wall along the southern boundary of the site.

3. STORMWATER MANAGEMENT

Based on the site plans received from the client, prepared by Arcline Architecture, titled "*Proposed New Dwelling for Suraj & Rashmi Chandrashekar* " (Building Consent No. EBC-2022-482/0), together with observations made during our site visit, the existing stormwater infrastructure appears to be functioning satisfactorily and is considered adequate for the existing development.

The new impermeable surfaces associated with this report consist of the proposed concreted area 25m² located between the existing southeastern extent of the building and existing retaining wall and proposed retaining wall extension, all other alterations do not change the surface runoff co-efficient.

The stormwater runoff from the proposed concrete area will be attenuated to ensure that the post-development peak discharge does not exceed 80% of the pre-development peak flow. Based on the design calculations, the maximum allowable discharge for the proposed development is:

- **0.82** Litres per second in a 1 in 100-year event
- **0.535** Litres per second in a 1 in 10-year event

To achieve the required peak flow limits using stormwater attenuation, we recommend that;

Stormwater runoff from the proposed 25 m² concrete area is collected via a concrete swale drain and conveyed to an Everhard Series 450 Stormwater Sump, before discharging into a Cirtex Aquafort Half Pod (0.73 m² × 0.43 m deep) for on-site detention. The attenuated discharge is then directed to the nearest existing stormwater infrastructure (to be verified on site), as indicated on the Site Plan and detailed on Drawings SW1–SW4.

In arriving at the above attenuation requirements, we have used coefficients of 0.9 for gravel, 0.59 for grass (predevelopment flows) and 1.0 for concrete (post development flows). HIRDS rainwater data RCP6 2081-2100 with 100-year ARI and 10- year storm intensity has been used in the calculations.

A Ø100mm uPVC stormwater pipe has been sized for piping the water from the attenuation pod to nearest existing stormwater facilities.

A Ø30mm orifice is designed for 1 in 10 and 1 in 100-year flood events which is to be provided at 0.2m from the base of the pod. The stormwater design calculations are provided along with this report.

4. RECOMMENDATIONS

I recommend that:

- Stormwater management design be carried out in accordance with section 3 of this report

5. CONCLUSION

Provided the recommendations in this report are adhered to, stormwater flows can be adequately managed for the proposed alterations at 66 Stratford Drive, Cable Bay.



Pradeep Kumar.
B.E hons, NZCE, MIPENZ,
IntPE, CP Eng.
(Structural, Geotechnical)
Chartered Professional Engineer.



STORMWATER CALCULATIONS

Engineering Appendix – Stormwater Attenuation Calculations

1. Design Basis

Pre-development area = 25 m² (Gravel, C = 0.90)

Post-development area = 25 m² (Concrete, C = 1.00)

Rational Method:

$$Q = CiA/3600$$

2. Peak Flow Calculations

100-year: Pre = 1.025 L/s, Post = 1.138 L/s

10-year: Pre = 0.669 L/s, Post = 0.743 L/s.

3. Allowable Discharge

FNDC allowable discharge = 80% of pre-development peak.

100-year allowable = 0.820 L/s.

10-year allowable = 0.535 L/s.

4. Storage Assessment

Cirtex Aquafort results:

10-year: Storage = 0.10 m³, Water depth = 0.187 m.

100-year: Storage = 0.20 m³, Water depth = 0.374 m.

5. Single Orifice Design

One sharp-edged outlet orifice is adopted for all design events.

Design flow = 0.820 L/s (0.00082 m³/s)

Design head = 0.20 m

Cd = 0.62

$$Q = C_d A \sqrt{(2gh)}$$

$$A = \pi D^2 / 4$$

$$D = \sqrt{(4Q / (\pi C_d \sqrt{(2gh))})}$$

Calculated diameter = 0.029 m

Adopt a 30 mm diameter sharp-edged orifice located in a 100 mm outlet pipe with the centreline approximately 0.20 m above the base of the attenuation tank.

HIRDS V4 Intensity-Duration-Frequency Results

Sitename: MANGONU

Coordinate system: WGS84

Longitude: 173.532

Latitude: -34.997

DDF Model Parameters c d e f g h i
 Values: 0.000873 0.507065 -0.03744 0 0.259575 -0.01155 3.192124
 Example: Duration (h ARI (yrs) x y Rainfall Rate (mm/hr)
 24 100 3.178054 4.600149 9.114049

Rainfall intensities (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	52.2	40	33.6	24.3	17	8.92	5.67
2	0.5	57.3	43.9	36.9	26.7	18.7	9.8	6.24
5	0.2	74.9	57.4	48.3	35	24.5	12.9	8.19
10	0.1	88	67.5	56.8	41.2	28.8	15.1	9.65
20	0.05	101	77.8	65.6	47.5	33.2	17.5	11.2
30	0.033	110	84.1	70.8	51.3	35.9	18.9	12.1
40	0.025	115	88.5	74.6	54.1	37.8	19.9	12.7
50	0.02	120	92	77.5	56.2	39.3	20.7	13.2
60	0.017	124	94.9	79.9	58	40.6	21.4	13.6
80	0.013	129	99.4	83.8	60.8	42.5	22.4	14.3
100	0.01	134	103	86.7	62.9	44	23.2	14.8
250	0.004	153	117	98.8	71.7	50.2	26.5	16.9

Intensity standard error (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	6.9	4.3	3.3	2.3	1.7	1	0.74
2	0.5	7.5	4.7	3.6	2.5	1.8	1.1	0.82
5	0.2	10	6.7	5.2	3.6	2.6	1.5	1.1
10	0.1	13	8.9	6.9	4.7	3.4	2	1.4
20	0.05	16	12	9.2	6.1	4.5	2.6	1.8
30	0.033	19	14	11	7.2	5.3	3.1	2.1
40	0.025	21	15	12	8.1	6	3.5	2.4
50	0.02	23	17	13	8.8	6.5	3.8	2.6
60	0.017	24	18	14	9.5	7	4.1	2.8
80	0.013	26	20	16	11	7.9	4.6	3.1
100	0.01	29	22	17	12	8.6	5	3.4
250	0.004	39	31	25	16	12	7.3	4.9

Rainfall intensities (mm/hr) :: RCP2.6 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	55.8	42.8	36	26	18.1	9.41	5.94
2	0.5	61.4	47.1	39.6	28.7	19.9	10.4	6.55
5	0.2	80.6	61.8	52	37.6	26.2	13.7	8.63
10	0.1	94.8	72.7	61.2	44.4	30.9	16.1	10.2
20	0.05	109	84	70.7	51.3	35.7	18.7	11.8
30	0.033	118	90.7	76.4	55.4	38.6	20.2	12.8
40	0.025	124	95.5	80.5	58.3	40.7	21.3	13.4
50	0.02	129	99.3	83.7	60.7	42.3	22.1	14

60	0.017	133	102	86.3	62.6	43.7	22.8	14.4
80	0.013	140	107	90.5	65.6	45.8	23.9	15.1
100	0.01	145	111	93.7	68	47.4	24.8	15.7
250	0.004	165	127	107	77.5	54.1	28.3	17.9

Rainfall intensities (mm/hr) :: RCP2.6 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	55.8	42.8	36	26	18.1	9.41	5.94
2	0.5	61.4	47.1	39.6	28.7	19.9	10.4	6.55
5	0.2	80.6	61.8	52	37.6	26.2	13.7	8.63
10	0.1	94.8	72.7	61.2	44.4	30.9	16.1	10.2
20	0.05	109	84	70.7	51.3	35.7	18.7	11.8
30	0.033	118	90.7	76.4	55.4	38.6	20.2	12.8
40	0.025	124	95.5	80.5	58.3	40.7	21.3	13.4
50	0.02	129	99.3	83.7	60.7	42.3	22.1	14
60	0.017	133	102	86.3	62.6	43.7	22.8	14.4
80	0.013	140	107	90.5	65.6	45.8	23.9	15.1
100	0.01	145	111	93.7	68	47.4	24.8	15.7
250	0.004	165	127	107	77.5	54.1	28.3	17.9

Rainfall intensities (mm/hr) :: RCP4.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	56.8	43.5	36.6	26.5	18.4	9.54	6.01
2	0.5	62.5	47.9	40.3	29.1	20.3	10.5	6.63
5	0.2	82	62.9	52.9	38.3	26.7	13.9	8.75
10	0.1	96.5	74	62.3	45.2	31.5	16.4	10.3
20	0.05	111	85.5	72	52.2	36.4	18.9	12
30	0.033	120	92.4	77.8	56.4	39.3	20.5	12.9
40	0.025	127	97.3	82	59.4	41.4	21.6	13.6
50	0.02	132	101	85.3	61.8	43.1	22.5	14.2
60	0.017	136	104	87.9	63.8	44.5	23.2	14.6
80	0.013	142	109	92.2	66.9	46.6	24.3	15.4
100	0.01	147	113	95.4	69.2	48.3	25.2	15.9
250	0.004	168	129	109	79	55.1	28.8	18.2

Rainfall intensities (mm/hr) :: RCP4.5 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	59.7	45.7	38.5	27.8	19.3	9.93	6.22
2	0.5	65.7	50.4	42.4	30.7	21.3	11	6.88
5	0.2	86.5	66.3	55.8	40.4	28.1	14.5	9.1
10	0.1	102	78.2	65.8	47.7	33.2	17.1	10.8
20	0.05	118	90.4	76.1	55.2	38.4	19.9	12.5
30	0.033	127	97.7	82.3	59.7	41.5	21.5	13.5
40	0.025	134	103	86.7	62.8	43.7	22.7	14.2
50	0.02	139	107	90.2	65.4	45.5	23.6	14.8
60	0.017	144	110	93	67.4	46.9	24.3	15.3
80	0.013	151	116	97.5	70.8	49.3	25.5	16
100	0.01	156	120	101	73.3	51	26.5	16.6
250	0.004	178	137	115	83.5	58.2	30.2	19

Rainfall intensities (mm/hr) :: RCP6.0 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
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1.58	0.633	56.4	43.2	36.3	26.3	18.3	9.49	5.98
2	0.5	62	47.5	40	28.9	20.1	10.5	6.6
5	0.2	81.4	62.4	52.5	38.1	26.5	13.8	8.7
10	0.1	95.8	73.5	61.9	44.8	31.2	16.3	10.3
20	0.05	111	84.9	71.5	51.8	36.1	18.8	11.9
30	0.033	119	91.7	77.3	56	39	20.4	12.9
40	0.025	126	96.6	81.4	59	41.1	21.5	13.6
50	0.02	131	100	84.6	61.4	42.8	22.3	14.1
60	0.017	135	104	87.3	63.3	44.1	23	14.6
80	0.013	141	109	91.5	66.4	46.3	24.2	15.3
100	0.01	146	112	94.7	68.7	48	25	15.8
250	0.004	167	128	108	78.4	54.7	28.6	18.1

Rainfall intensities (mm/hr) :: RCP6.0 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	62.3	47.7	40.1	29	20.1	10.3	6.41
2	0.5	68.7	52.6	44.3	32	22.2	11.4	7.1
5	0.2	90.5	69.4	58.4	42.3	29.4	15.1	9.42
10	0.1	107	81.9	69	50	34.7	17.8	11.1
20	0.05	123	94.7	79.8	57.8	40.2	20.7	12.9
30	0.033	133	102	86.3	62.5	43.4	22.4	14
40	0.025	140	108	90.9	65.9	45.8	23.6	14.8
50	0.02	146	112	94.6	68.6	47.7	24.6	15.3
60	0.017	151	116	97.5	70.7	49.2	25.4	15.9
80	0.013	158	121	102	74.2	51.6	26.6	16.6
100	0.01	164	126	106	76.9	53.4	27.6	17.3
250	0.004	186	143	121	87.6	61	31.5	19.7

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	57.5	44	37	26.8	18.6	9.63	6.06
2	0.5	63.2	48.4	40.8	29.5	20.5	10.6	6.69
5	0.2	83	63.7	53.6	38.8	27	14	8.83
10	0.1	97.8	75	63.2	45.8	31.9	16.5	10.4
20	0.05	113	86.6	73	52.9	36.8	19.2	12.1
30	0.033	122	93.6	78.9	57.2	39.8	20.7	13.1
40	0.025	128	98.6	83.1	60.2	42	21.9	13.8
50	0.02	134	103	86.4	62.7	43.7	22.7	14.3
60	0.017	138	106	89.1	64.6	45	23.5	14.8
80	0.013	144	111	93.4	67.8	47.2	24.6	15.5
100	0.01	149	115	96.7	70.2	48.9	25.5	16.1
250	0.004	170	131	110	80	55.8	29.1	18.4

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h
1.58	0.633	68.2	52.2	43.9	31.8	21.9	11.1	6.84
2	0.5	75.3	57.7	48.6	35.1	24.3	12.3	7.6
5	0.2	99.6	76.4	64.3	46.6	32.2	16.3	10.1
10	0.1	118	90.3	76	55.1	38.1	19.4	12
20	0.05	136	105	88.1	63.8	44.2	22.5	13.9
30	0.033	147	113	95.3	69.1	47.8	24.4	15.1

40	0.025	155	119	100	72.8	50.4	25.8	16
50	0.02	162	124	105	75.8	52.5	26.8	16.6
60	0.017	167	128	108	78.2	54.2	27.7	17.2
80	0.013	175	134	113	82.1	56.9	29	18
100	0.01	181	139	117	85	58.9	30.1	18.7
250	0.004	206	158	133	96.9	67.2	34.4	21.3

24h	48h	72h	96h	120h
3.48	2.06	1.49	1.18	0.974
3.83	2.27	1.64	1.29	1.07
5.03	2.98	2.16	1.7	1.41
5.93	3.51	2.54	2.01	1.66
6.85	4.06	2.94	2.32	1.93
7.41	4.39	3.18	2.51	2.08
7.81	4.63	3.36	2.65	2.2
8.13	4.82	3.49	2.76	2.29
8.39	4.97	3.6	2.85	2.36
8.8	5.22	3.78	2.99	2.48
9.11	5.41	3.92	3.1	2.57
10.4	6.19	4.48	3.54	2.94

24h	48h	72h	96h	120h
0.15	0.057	0.058	0.036	0.051
0.16	0.06	0.062	0.038	0.057
0.25	0.11	0.097	0.066	0.084
0.35	0.17	0.14	0.1	0.11
0.49	0.26	0.2	0.15	0.15
0.59	0.32	0.24	0.18	0.18
0.67	0.37	0.27	0.21	0.21
0.74	0.42	0.3	0.23	0.23
0.79	0.45	0.32	0.25	0.24
0.9	0.52	0.37	0.29	0.27
0.98	0.57	0.4	0.32	0.3
1.4	0.83	0.57	0.45	0.42

24h	48h	72h	96h	120h
3.62	2.13	1.53	1.21	1
3.99	2.35	1.69	1.33	1.1
5.26	3.1	2.23	1.76	1.46
6.21	3.66	2.64	2.08	1.72
7.18	4.24	3.06	2.41	1.99
7.77	4.58	3.31	2.61	2.16
8.2	4.83	3.49	2.75	2.28
8.53	5.03	3.63	2.86	2.37

8.81	5.19	3.75	2.95	2.44
9.24	5.45	3.94	3.1	2.57
9.58	5.65	4.08	3.21	2.66
10.9	6.46	4.67	3.68	3.04

24h	48h	72h	96h	120h
3.62	2.13	1.53	1.21	1
3.99	2.35	1.69	1.33	1.1
5.26	3.1	2.23	1.76	1.46
6.21	3.66	2.64	2.08	1.72
7.18	4.24	3.06	2.41	1.99
7.77	4.58	3.31	2.61	2.16
8.2	4.83	3.49	2.75	2.28
8.53	5.03	3.63	2.86	2.37
8.81	5.19	3.75	2.95	2.44
9.24	5.45	3.94	3.1	2.57
9.58	5.65	4.08	3.21	2.66
10.9	6.46	4.67	3.68	3.04

24h	48h	72h	96h	120h
3.66	2.15	1.55	1.22	1.01
4.03	2.37	1.71	1.34	1.11
5.32	3.13	2.25	1.77	1.47
6.28	3.69	2.67	2.1	1.73
7.27	4.28	3.09	2.43	2.01
7.87	4.63	3.34	2.63	2.18
8.3	4.88	3.53	2.77	2.3
8.63	5.08	3.67	2.89	2.39
8.91	5.25	3.79	2.98	2.47
9.35	5.51	3.97	3.13	2.59
9.69	5.71	4.12	3.25	2.68
11.1	6.53	4.71	3.71	3.07

24h	48h	72h	96h	120h
3.77	2.2	1.58	1.24	1.03
4.16	2.43	1.75	1.37	1.13
5.5	3.22	2.32	1.82	1.5
6.51	3.81	2.74	2.15	1.78
7.53	4.42	3.18	2.5	2.06
8.16	4.78	3.44	2.71	2.23
8.61	5.04	3.63	2.85	2.36
8.95	5.25	3.78	2.97	2.45
9.25	5.42	3.91	3.07	2.53
9.7	5.69	4.1	3.22	2.66
10.1	5.9	4.25	3.34	2.76
11.5	6.75	4.86	3.82	3.16

24h	48h	72h	96h	120h
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3.64	2.14	1.54	1.21	1
4.01	2.36	1.7	1.34	1.11
5.29	3.11	2.25	1.77	1.46
6.25	3.68	2.66	2.09	1.73
7.24	4.26	3.07	2.42	2
7.83	4.61	3.33	2.62	2.17
8.26	4.86	3.51	2.76	2.29
8.59	5.06	3.65	2.88	2.38
8.87	5.22	3.77	2.97	2.46
9.3	5.48	3.96	3.12	2.58
9.65	5.68	4.1	3.23	2.67
11	6.5	4.7	3.7	3.06

24h	48h	72h	96h	120h
3.88	2.25	1.61	1.27	1.05
4.28	2.49	1.79	1.4	1.16
5.67	3.3	2.37	1.86	1.53
6.71	3.91	2.81	2.2	1.82
7.77	4.54	3.26	2.56	2.11
8.41	4.92	3.53	2.77	2.28
8.88	5.19	3.73	2.92	2.41
9.24	5.4	3.88	3.05	2.51
9.55	5.57	4.01	3.14	2.59
10	5.86	4.21	3.3	2.72
10.4	6.07	4.36	3.42	2.82
11.9	6.94	4.99	3.92	3.23

24h	48h	72h	96h	120h
3.69	2.16	1.55	1.22	1.01
4.06	2.38	1.72	1.35	1.12
5.36	3.15	2.27	1.78	1.47
6.33	3.72	2.68	2.11	1.74
7.33	4.31	3.11	2.45	2.02
7.93	4.67	3.36	2.65	2.19
8.37	4.92	3.55	2.79	2.31
8.71	5.12	3.69	2.91	2.4
8.99	5.29	3.82	3	2.48
9.43	5.55	4	3.15	2.61
9.78	5.75	4.15	3.27	2.7
11.2	6.58	4.75	3.74	3.09

24h	48h	72h	96h	120h
4.11	2.37	1.69	1.32	1.09
4.54	2.62	1.87	1.46	1.2
6.04	3.49	2.5	1.95	1.61
7.16	4.15	2.97	2.32	1.91
8.3	4.82	3.44	2.7	2.21
9	5.22	3.73	2.92	2.4

9.51	5.51	3.95	3.08	2.54
9.89	5.74	4.11	3.21	2.64
10.2	5.92	4.25	3.32	2.73
10.7	6.23	4.46	3.48	2.87
11.1	6.46	4.62	3.62	2.97
12.7	7.38	5.28	4.14	3.4

AquaFort Soakage Calculator (Q = CiA)

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PROJECT NAME	Chandreshekar
REVISION	
PROJECT NUMBER	26-021
ARI	10 Year

PROJECT NOTES

AquaFort System Dimensions

L	0.78	m	Area	0.61	m ²
W	0.78	m	Vol (gross)	0.26	m ³
D	0.430	m	Vol (net)	0.22	m ³

ΣCA	25	m ²
Inf Rate	0.00E+00	m/sec
Constant Outflow	0.53	l/s

AquaFort Modules

L	1	0.73 m per modu
W	1	0.73 m per modu
D	Half	0.430 m per modu

Duration	i	Q	V _{runoff}	V _{inf}	Outflow	V _{stor}	Balance
	mm/hr	l/sec	m ³	m ³	m ³	m ³	m ³
10 min	107.0	1	0.4	0.0	0.3	0.1	0.1
20 min	81.9	1	0.7	0.0	0.6	0.0	0.2
30 min	69.0	0	0.9	0.0	1.0	0.0	0.2
1 hr	50.0	0	1.3	0.0	1.9	0.0	0.2
2 hrs	34.7	0	1.7	0.0	3.8	0.0	0.2
6 hrs	17.8	0	2.7	0.0	11.4	0.0	0.2
12 hrs	11.1	0	3.3	0.0	22.9	0.0	0.2
24 hrs	6.7	0	4.0	0.0	45.8	0.0	0.2
48 hrs	3.9	0	4.7	0.0	91.6	0.0	0.2

Red Cells: user entry
Blue Cells: indicate excess system capacity (values are posit
Yellow Cells: indicate storage shortfall (values are negative
For details on AquaFort Modules please visit www.cirtex.co.nz or phone 0800 247 839
Refer to Cirtex® Stormwater Calculator Terms & Condition of

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PROJECT NOTES

L	1	0.73 m per modu
W	1	0.73 m per modu
D	Half	0.430 m per modu

Refer to Cirtex® Stormwater Calculator Terms & Condition of



**Far North
District Council**

FAR NORTH DISTRICT COUNCIL

**FAR NORTH OPERATIVE DISTRICT PLAN
DECISION ON RESOURCE CONSENT APPLICATION (LANDUSE)**

Resource Consent Number: 2300599-RMALUC

Pursuant to section 104B of the Resource Management Act 1991 (the Act), the Far North District Council hereby grants resource consent to:

Suraj Chandrashekar and Rashmi Chandrashekar

The activity to which this decision relates:

Part A - Landuse

Proposal to construct a dwelling on the site located in the Coastal Living Zone. The proposal breaches: 10.7.5.1.1 Visual Amenity, 10.7.5.1.5 Sunlight, 10.7.5.1.6 Stormwater Management and 10.7.5.1.7 Setback from Boundaries

Part B – S221(3)

Variation of a consent notice condition under s221(3)

Subject Site Details

Address: 66 Stratford Drive, Cable Bay 0420
Legal Description: Lot 43 DP 384236
Certificate of Title reference: CT-336781

Pursuant to Section 108 of the Act, this consent is issued subject to the following conditions:

1. The activity shall be carried out in accordance with the approved plans prepared by Arcline, referenced Chandrashekar residence, dated 16/03/2021, and attached to this consent with the Council's "Approved Stamp" affixed to them.
 - Site Plan (services), Sheet 03, 16/03/2021
 - Floor Plan, Sheet 05, 16/03/2021
 - Elevations, Sheet 06, 16/03/2021
 - Elevations, Sheet 07, 16/03/2021
2. The building is to be finished in the following schedule of colours and materials shown below, or to be finished according to the approved colour scheme within the BS 5252 Colour Range with a LRV of 30% or less. The building is to be finished in accordance with the approved schedule within six months of completion of the exterior of the building and maintained for the duration of the consent.'

- i. Exterior cladding – Black Bean with an LVR of 6%
 - ii. Joinery – Matt Black powder Coated
 - iii. Roof Ebony with an LVR of 5%
 - iv. Non reflective glass
3. All concreted surfaces (including access) shall be tinted to remove any potential visual impacts. The consent holder shall provide evidence via email rcmonitoring@fndc.govt.nz that all concreted surfaces comply with this condition.
4. Implementation of the landscape plan prepared by Hawthorn Landscape Architects, dated 14 March 2021, provided with RMALUC 2300599 is to be undertaken within the first two planting seasons (approximately March-September) directly following commencement of any of the works relating to this consent and maintained by the consent holder thereafter, all to the satisfaction of the Far North District Council's Monitoring Manager or duly delegated officer
5. The consent holder shall obtain all necessary Building consents which may be required for the proposal, which will include plans and details of proposed on-site stormwater management.
 - a. Note. Plans must be prepared noting the design / recommendations of T&A Structures Chartered Professional Engineers Stormwater Management Report ref: 009-FND-21SD dated 06/03/2021 and associated preliminary engineering plans and calculations which were provided with the application.
6. The consent holder shall provide within one month of completion of the roof suitable evidence by way of as-built plans and/or producer statement from a Suitably Qualified Engineer or an Independent Qualified Person (IQP), to illustrate that the stormwater attenuation works permitted under this consent has been completed in accordance with the approved plans, to the satisfaction of Council.
7. The consent holder shall ensure that the proposed crossing place off Stratford Drive does not obstruct the existing roadside sump, if so, the proposed crossing place location shall be moved prior to applying for a vehicle crossing permit.
8. The consent holder shall ensure with the construction of any dwelling, and in addition to a potable water supply, a water collection system with sufficient supply for firefighting purposes is to be provided by way of tank and is to be positioned so that it is safely accessible for this purpose. These storage provisions shall be approved by the Fire and Emergency New Zealand Fire Region Manager or be in accordance with the New Zealand Fire Fighting Water Supply Code of Practice SNZ PAS 4509.
9. At the time of lodging the building consent, provide a Sediment and Erosion Control Plan for the approval of Council. This plan shall be created in accordance with Auckland Council Guideline Document 2016/005 (GD05) and is to contain information on the measures proposed to minimise silt and sediment runoff during earthworks, stormwater control and location of such measures. This shall include a perimeter silt fence across the lower edge of the construction site. These measures are to be maintained during the construction phase and can only be removed once appropriate stabilisation has been completed.

Decision B

Pursuant to Section 221 (3) of the Resource Management Act 1991, the Council approves the variation to consent notice 7389051.2, condition (10) in so far as it relates to Lot 43 DP 384236 as shown below.

10. Any new residential building erected on site, shall have installed domestic sprinkler systems in accordance with the requirements of the New Zealand Fire Service or alternatively install a minimum of 10,000lt water storage tank/s for the exclusive use for firefighting purposes. The domestic outlet shall be located at such a level from the bottom of the tank to ensure the 10,000lt is not available for domestic use and dedicated as fire-fighting water

Advice Notes

1. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.
2. During the assessment of your application it was noted that a private Land Covenant exists on your property. Council does not enforce private land covenants, and this does not affect Council approving your plans. However, you may wish to get independent legal advice, as despite having a resource consent from Council, the private land covenant can be enforced by those parties specified in the covenant.
3. The site is subject to a Management Plan and the consent holder is advised to ensure that the requirements of that plan are being observed.

Reasons for the Decision

1. The Council has determined (by way of an earlier report and resolution) that the adverse environmental effects associated with the proposed activity are no more than minor and that there are no affected persons or affected customary rights group or customary marine title group.
2. District Plan Rules Affected:

Rule # & Name	Non-Compliance Aspect
10.7.5.1.1 Visual Amenity	The proposal does not comply with the permitted standard as the proposed floor area of the dwelling and attached garage is 192m ² .
10.7.5.1.5 Sunlight	the dwelling does not comply with the permitted sunlight threshold on the road boundary.
10.7.5.1.6 Stormwater	The total impermeable surface coverage is 36% or 322m ² of the total site area which breaches the permitted threshold

Management	of 10% of the total site area.
10.7.5.1.7 Setback from Boundaries	The permitted setback distance is 3m from boundaries for sites with an area of less than 5000m ² in the Coastal Living zone. The proposal does not meet this setback requirement on the road boundary, as the dwelling is located 1.9 metres from the boundary.

Adverse effects will be minor:

It is considered the relevant and potential effects have been addressed within the assessment of effects above, and it has been concluded that the adverse effects will be less than minor.

Objectives and policies of the District Plan:

The following objectives and policies of the District Plan have been considered:

- a) Chapter 10 – Coastal Environment
- b) Chapter 10, Section 7 – Coastal Living

The relevant objectives and policies of the Plan are those related to the Coastal Environment and the Coastal Living Zone. The proposal is considered to create no more than minor adverse effects on the coastal environment. The proposal is considered to be consistent with the coastal character of the surrounding area and is considered to have negligible effects on the coastal amenity value of the area. It is also considered that the size and scale of the dwelling is not visually obtrusive. In addition to this the building will be finished in natural and recessive colours. The proposal is considered to be consistent with the objectives and policies of the Plan.

3. In accordance with an assessment under s104(1)(b) of the RMA the proposal is consistent with the relevant statutory documents.
 - a) The Northland Regional Policy Statement 2018
 - b) Northland Regional Plan 2019
 - c) New Zealand Coastal Policy Statement 2010
4. In accordance with an assessment under s104(1)(c) of the RMA. No other non – statutory documents were considered relevant in making this decision.
5. No other matters were considered in relevant in making this decision.
6. Part 2 Matters
The Council has taken into account the purpose & principles outlined in sections 5, 6, 7 & 8 of the Act. It is considered that granting this resource consent application achieves the purpose of the Act.
7. In summary it is considered that the activity is consistent with the sustainable management purpose of the RMA.

Approval

This resource consent has been prepared by Whitney Peat, Resource Planner and is granted under delegated authority (pursuant to section 34A of the Resource Management Act 1991) from the Far North District Council by:



Pat Killalea, Principal Planner

Date: 22nd June 2021

Right of Objection

If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Lapsing of Consent

Pursuant to section 125 of the Act, this resource consent will lapse 5 years after the date of commencement of consent unless, before the consent lapses;

The consent is given effect to; or

An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Act.