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

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Schedule 4). 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**

2. Type of Consent being applied for

(more than one circle can be ticked):

✔ **Land Use**
◯ **Fast Track Land Use***
◯ **Subdivision**
◯ **Consent under National Environmental Standard** (e.g. Assessing and Managing Contaminants in Soil)
◯ **Discharge**
◯ **Change of Consent Notice (s.221(3))**
◯ **Extension of time (s.125)**
◯ **Other (please specify)** _____

** The fast track is for simple land use consents and is restricted to consents with a controlled activity status.*

3. Would you like to opt out of the Fast Track Process?

◯ **Yes** ✔ **No**

4. Consultation

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

If yes, which groups have you consulted with?	See correspondence attached with this application
Who else have you consulted with?	Heritage NZ Pouhere Taonga, adjoining lot owners

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

5. Applicant Details

Name/s: Paul & Erina Van Koningsveld

Email: [redacted]

Phone number: Work [redacted] Home [redacted]

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

15 Chapel Street
Russell
Postcode 0202

6. 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: [redacted]

Phone number: Work [redacted] Home

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

112 Commerce Street, Kaitaia
Postcode 0441

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

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

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

Name/s: Erina Van Koningsveld and Paul Andre Van Koningsveld

Property Address/ Location:

15 Chapel Street
Russell
Postcode 0202

8. Application Site Details

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

Name/s: Paul & Erina Van Koningsveld

Site Address/ Location:
15 Chapel Street
Russell

Postcode 0202

Legal Description: Part Sec 12 Town of Russell **Val Number:** 00411-65000

Certificate of title: NA8B/491

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

Site visit requirements:

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

Is there a dog on the property? ◯ **Yes** ✔ **No**

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

Please contact applicant to arrange site visit.

9. Description of the Proposal:

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

Proposal to construct a new driveway and associated retaining walls to 15 Chapel Street, Russell within the site and within the row boundary with 17 Chapel Street. The proposal is in breach of the permitted standards for setback, sunlight, stormwater management and excavations in the Russell Township zone under the operative district plan. Consent under HA-R8 of the PDP is also sought.

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

10. Would you like to request Public Notification?

◯ **Yes** ✔ **No**

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

(more than one circle can be ticked):

- ✔ **Building Consent** 2023-1123 Ref # here (if known)
- ◯ **Regional Council Consent (ref # if known)** Ref # here (if known)
- ◯ **National Environmental Standard consent** Consent here (if known)
- ◯ **Other (please specify)** Specify 'other' here

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

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

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

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

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

13. Assessment of Environmental Effects:

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

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

13. 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**

14. 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) Paul Van Koningsveld

Email: [redacted]

Phone number: Work [redacted] Home [redacted]

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

15 Chapel Street
Russell

Postcode 0202

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) Paul van Koningsveld

Signature: [redacted] Date 09-Sep-2025
(signature of bill payer

MANDATORY

15. Important Information:

Note to applicant
You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.
You may apply for 2 or more resource consents that are needed for the same activity on the same form. You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement. A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

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

15. Important information continued...

Declaration

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

Name: (please write in full)	Paul Van Koningsveld	
Signature:	[redacted]	Date 09-Sep-2025

A signature is not required if the application is made by electronic means

Checklist (please tick if information is provided)

- ✔ Payment (cheques payable to Far North District Council)
- ✔ A current Certificate of Title (Search Copy not more than 6 months old)
- ✔ Details of your consultation with Iwi and hapū
- ✔ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ✔ 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 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

Land-Use Consent for

Paul Van Koningsveld

15 Chapel Street, Russell

Date: 21 October 2025

Attention: Liz Searle & Whitney Peat, RC Team Leaders

Please find attached:

- an application for a Land-use Resource Consent to construct retaining walls and driveway areas within the ***Russell Township zone*** in the Operative District Plan and within the ***Kororareka Russell township zone*** in the Proposed District Plan and;
- an Assessment of Environmental Effects indicating the potential and actual effects of the proposal on the environment.

The proposed activity includes reconstruction of a driveway which involves associated retaining walls to be constructed in order to support the driveway. The site is zoned Russell Township and is within the Russell Township Basin and Gateway Area under the Operative District Plan (ODP) and within the Proposed District Plan (PDP) the site is located within the Kororareka Russell Township zone as well as being subject to overlays for Coastal Environment and Heritage Area Part D. The existing driveway is deteriorating and is in a state of disrepair. The proposed driveway will be located within the boundaries of an existing right of way easement which services the subject site as well as a new addition within the subject site. Given the extent of the retaining walls and location of the existing right of way, infringements of the permitted rules for setback and sunlight are created as well as impermeable surfaces and excavations under the ODP. As natural timber stain is not included within the HA-S2 Standard of the PDP, the proposal results an infringement of this standard and therefore creates an infringement of Rule HA-R8. The proposed activity has been assessed as a **Discretionary Activity** under both the ODP and PDP.

Written approval from all affected neighbours has been obtained as well as correspondence with Heritage NZ Pouhere Taonga and Iwi. NTA were contacted as part of the original proposal, which has now been slightly revised. PK Engineering have provided detailed plans and reports in support of the application.

Regards,

Alex Billot

Resource Planner

Reviewed by:

Rochelle Jacobs

Director/Senior Planner

NORTHLAND PLANNING & DEVELOPMENT 2020 LIMITED

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Attachments:

1. **Far North District Council Application**
2. **Record of Title –** *LINZ*
3. **Transfer Document 699239 -** *LINZ*
4. **Plan Set –** *PK Engineering*
5. **Earthworks Report –** *PK Engineering*
6. **Stormwater Report –** *PK Engineering*
7. **Structure Calculations –** *PK Engineering*
8. **Forms & Letters –** *PK Engineering*
9. **Correspondence –** *Heritage NZ Pouhere Taonga*
10. **Correspodnence –** *Iwi*
11. **Correspondence –** *FNDC Roading Team*
12. **Licence to Occupy –** *FNDC*
13. **Written Approval 11 Chapel Street –** *Iain Livingstone & Hamsih MacInnes*
14. **Written Approval 19 & 21 Baker Street and 17 Baker Street –** *Ulla Norlander, Erina, Grieg and Paul Van Koningsveld*
15. **Approved Form 4 EBC-2026-226/0 -** *FNDC*

Assessment of Environment Effects Report

1. Description of the Proposed Activity

1.1. This Land Use Consent application is to construct a new driveway to replace the existing deteriorating driveway. The driveway and retaining walls are proposed within the right of way easement within 17 Chapel Street, which provides rights of access to 15 Chapel Street, as well as within the boundaries of 15 Chapel Street. PK Engineering Ltd (PK) were engaged to complete the design of the driveway which has resulted in the requirement for retaining walls up to 2.83 metres in height being required along the western side of the drive. A 0.5m beam and 1 metre balustrade will also be placed on top of the retaining walls, as indicated within the plans from PK. Two CIRTEX underground tanks are also proposed underneath the drive as part of the proposed stormwater attenuation for 15 Chapel Street. The retaining walls and driveway are required in order to enable access to the subject site. Due to the recent heavy rain events over the past couple of years, there has been slippage along the existing driveway, restricting access to the site.

1.2. To provide some context, the retaining walls will run along the western boundary of 17 Chapel Street, given the location of the existing ROW easement, this is the only place where the driveway to 15 Chapel Street can be located and therefore, the retaining walls need to be located on the western boundary (but within) 17 Chapel Street. The retaining wall and drive then run along the western boundary of 15 Chapel Street, up to the boundary of Allotment 3A and Allotment 4, where the retaining wall then steps into 15 Chapel Street by 1.2m. The retaining wall then runs for the remaining length of the western boundary of 15 Chapel Street, 1.2m within the site boundary. Another retaining wall is then located along the southern boundary of 15 Chapel Street, where the site adjoins Lot 1 DP 21073. This retaining wall runs for a length of 4.5 metres. The retaining wall also encroaches slightly into the road reserve, as will be discussed further within this report. Refer to SR1, SR2A, SR2B, SR3A and SR3B of the Plan Set for further detail on the above.

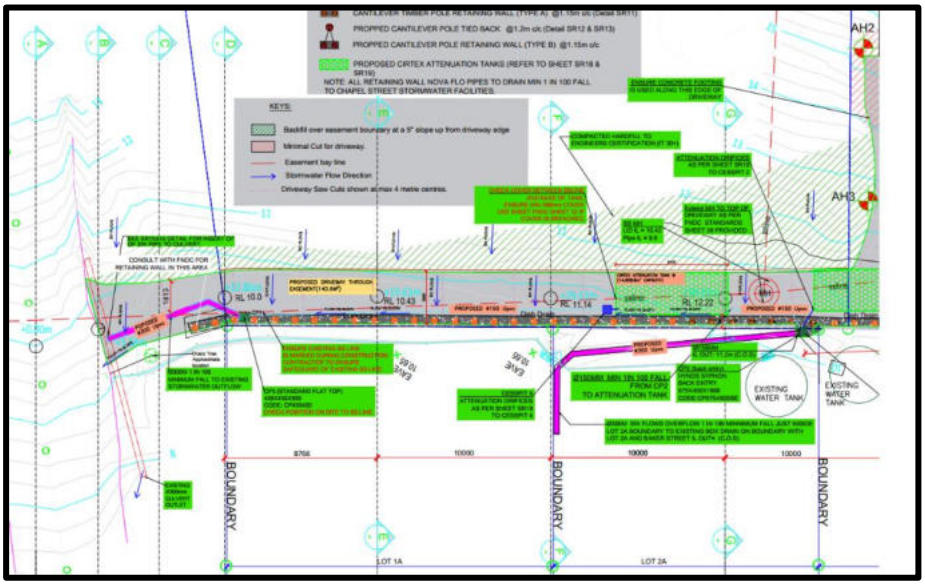


Figure 1: SR2A showing the location of the driveway and retaining wall along 17 Chapel Street and the and the adjoining allotments to the west.

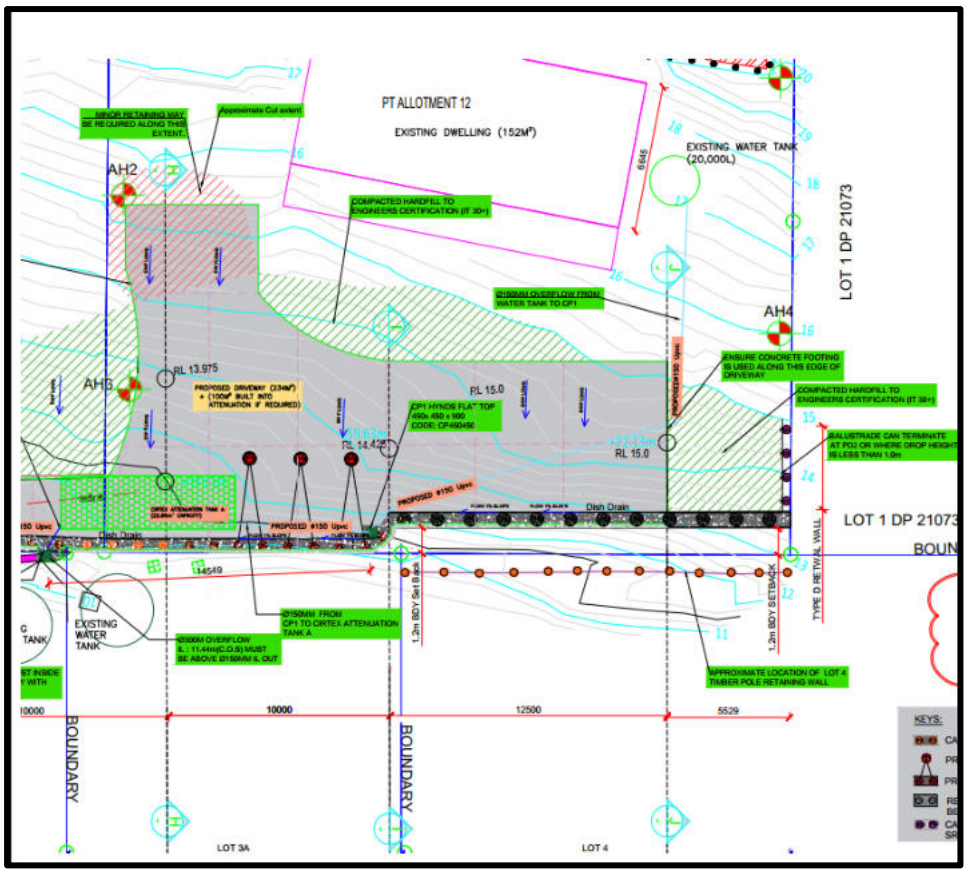


Figure 2: Sheet SR2B of the Plan Set showing the retaining wall and driveway within 15 Chapel Street and the adjoining allotments.

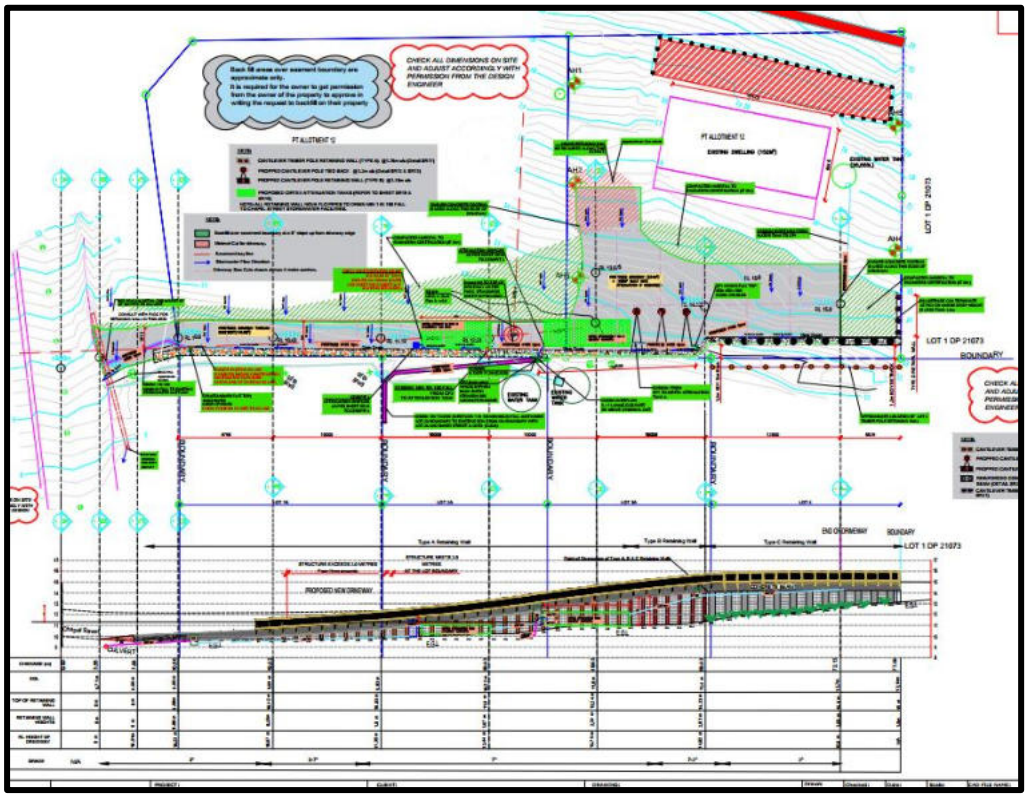


Figure 3: SR1 of the Plan set showing an overview of the proposal as a whole.

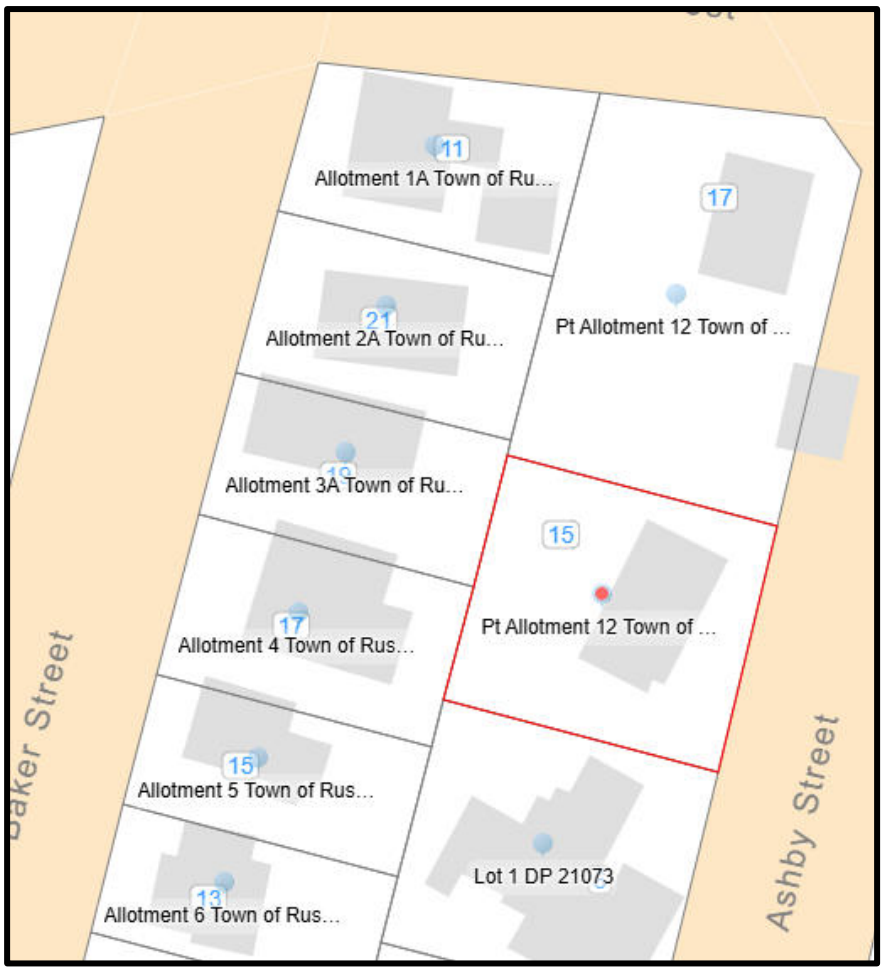


Figure 4: Cadastral Map of the subject sites and the adjoining allotments.

1.3. The applicant has applied for building consent for the works, which has been issued on 8th August 2023 under EBC-2023-1123. Subsequent variations have been lodged since this date given the plan variations which have occurred. The Applicant has advised that the latest plan set which is attached with this application has been lodged to the Building Consent Team under EBC-2026-226/0 for which a Form 4 was issued on 23rd September 2025 and is attached within **Appendix 15.** We understand at time of lodging that this building consent application is currently on hold awaiting further information relating to engineering matters.

1.4. Given the topography of this area, the driveway has partially been created within the Chapel Street reserve. As part of the original building consent application, a Licence to Occupy a Portion of Road was included and granted. This is attached within **Appendix 12** of this application. An email was sent to FNDC Legal Team on 28/11/2024 advising of the updated plans and requesting advice on whether a new Licence to Occupy would be required. No response has been received to date. It is requested that this application and associated plans are sent through to the Legal Team and/or the new roading team for comment.

1.5. Correspondence was had with the Traffic Engineer at FNDC in November 2024 as part of the pre-application process for the resource consent application. This involved an earlier set of plans being provided which have been revised. Given that there was a proposed

encroachment of the driveway and retaining into the road reserve, comments were sought from the FNDC Traffic Engineer to establish if there were any concerns. The FNDC Traffic Engineer advised that the setback to boundary (encroachment of the driveway and retaining walls) were supported in principle. It was further advised that *'final approval could only be made once the resource consent application is lodged'*. Given the current situation with the roading department no follow up correspondence has been had regarding the updated plans. We seek that this matter is addressed internally within FNDC.

FNDC Operative District Plan

1.6. The site is zoned Russell Township and falls within the Russell Township Basin and Gateway Area. Due to the location of the retaining walls and the height, the proposal results in the following permitted activity rule infringements:

- **10.9.5.1.6 Sunlight**
- **10.9.5.1.7 Stormwater Management**
- **10.9.5.1.8 Setback from Boundaries**
- **12.3.6.1.3 Excavations**

1.7. Written Approvals have been obtained by the affected adjoining allotments and are attached within **Appendices 13 & 14** of this application. The following allotments have provided written approval to the proposal:

- Allotment 1A Town of Russell / 11 Chapel Street, Russell (orange star)
- Allotment 2A Town of Russell / 21 Baker Street, Russell (red star)
- Allotment 3A Town of Russell / 19 Baker Street, Russell (yellow star)
- Part Allotment 12 Town of Russell / 17 Chapel Street, Russell (green star)

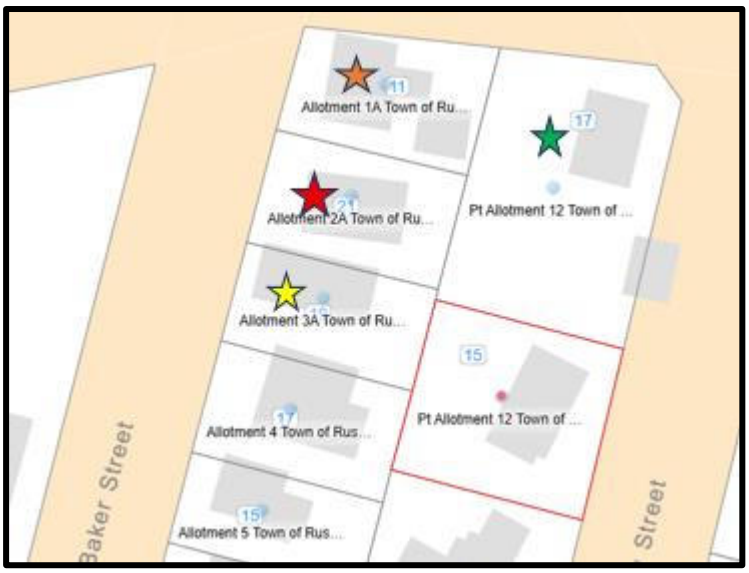


Figure 5: Image showing location of allotments which have provided written approval.

Proposed District Plan

1.8. Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Part D.

1.9. The applicant has advised that the colour scheme of the proposed retaining walls will be matte black or a natural timber stain or similar, with the balustrade being similar colour or a white or off-white colour (not stained). As natural timber stain is not included within the HA-S2 Standard of the PDP, the proposal results in an infringement of this standard and therefore a breach of Rule HA-R8.

1.10. It is worth noting that as part of Hearing 4 of the PDP that this particular matter of finishings sitting outside of the 'Resene' products was discussed at length. While Hearing 4 heard matters specific to the Coastal Environment, Natural Features and Landscapes, a similar rule as detailed above is proposed in Heritage Areas. The recommendation in the S42A Report Writers Right of Reply back to the panel is to no longer specifically reference 'Resene' Products. Similar changes have been recommended in the s42A Right of Reply on Heritage.

1.11. Where compliance is not achieved with RDIS-1, RDIS-2 or RDIS-3 of HA-R8, the activity is assessed as a Discretionary Activity under the PDP.

2. Site Description

2.1. The subject site is legally described as Part Section 12 Town of Russell and is zoned Russell Township. Most of the allotments in the surrounding area, including the subject site, have been developed with residential dwellings. This is shown in ***Figure 6*** below.

2.2. The site is developed with an existing dwelling. The site is accessed from Chapel Street, via a right of way over the adjoining allotment to the north, 17 Chapel Street, Russell.

2.3. The site increases in elevation from the western boundary, with lots to the west of the site being located at a lower elevation, as can be seen in the site photos provided with this application. As a result, the retaining wall and balustrade are required to be the height proposed, given the drop in elevation at the boundary where the driveway is to be constructed.

Figure 6: Aerial view of the site and surrounding environment.

Site Photos

2.4. A site visit was completed in November 2023, with a compilation of the photos taken shown below.

Figure 7: Image of the subject driveway to the left. Adjoining allotment to the right. Existing encroachment into road reserve can be seen.

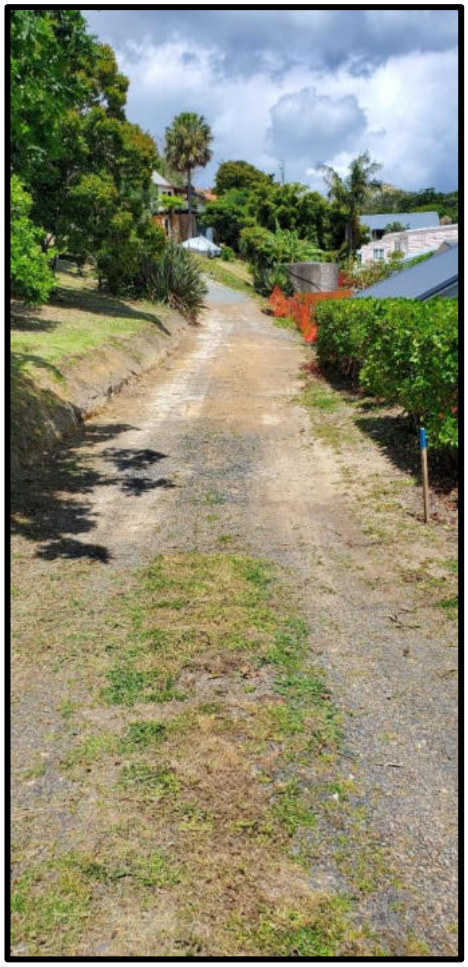


Figure 8: Existing driveway to be replaced. Orange fence is an area where slippage has occurred.

Figure 9: Existing slippage into 21 Baker Street.

Figure 11: Existing driveway. Dwelling to the left is located within 17 Chapel Street.

Figure 12: Existing shed within Allotment 1A which is located near driveway.

Figure 10: Dwelling and boundary within 15 Chapel Street.

Figure 13: Image of slip from driveway along boundary with 21 Baker Street.

3. Title

3.1. The subject site is held within Record of Title NA8B/491 issued 22 April 1966. The site is legally described as Part Section 12 Town of Russell with an area of 954m^2.

3.2. The title has rights over 17 Chapel Street for right of way under Transfer Document 699239. There are no other interests registered on the title.

Site Features

3.3. Within the Operative District Plan, the site is located in the Russell Township zone and is within the Russell Township Basin and Gateway Area. The site is located outside of the 3 Heritage Precincts and is not subject to any outstanding landscapes or features.

Figure 14: FNDC Zoning Maps.

3.4. Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Part D.

Figure 15: Proposed District Plan Zoning Maps.

3.5. With regard to the Regional Policy Statement for Northland, the site is located within the coastal environment but is not identified as containing any areas of high natural character.

3.6. The subject site is not mapped as being subject to any natural hazards and is not mapped as being HAIL.

3.7. The site does not contain any areas of PNA. The site is shown to be located within an area of kiwi being present in high densities.

3.8. The site is not located within a Statutory Acknowledgement area however is mapped as being located within an area of interest for Ngāpuhi and Ngātiwai. The relevant Iwi have been contacted as part of the pre-application process with no response received to date.

3.9. The sites soil classification is noted as 'Town'.

3.10. The NZAA Maps indicate that there are a number of recorded archaeological sites within the surrounding environment, however none registered within 15 or 17 Chapel Street. NZAA Archaeological Site Q05/1172 is noted as being a Historic House located at 5 Baker Street, which is separated from the subject site by a number of allotments. Consultation has been had with Heritage NZ Pouhere Taonga (HNZPT), where HNZPT recommended that the proposal proceed under the guidance of an ADP. Given the advice of HNZPT and the fact that the proposal will see an existing driveway upgraded, no archaeological assessment has been obtained nor considered necessary for the proposed works. The correspondence with HNZPT is contained within **Appendix 9** of this application.

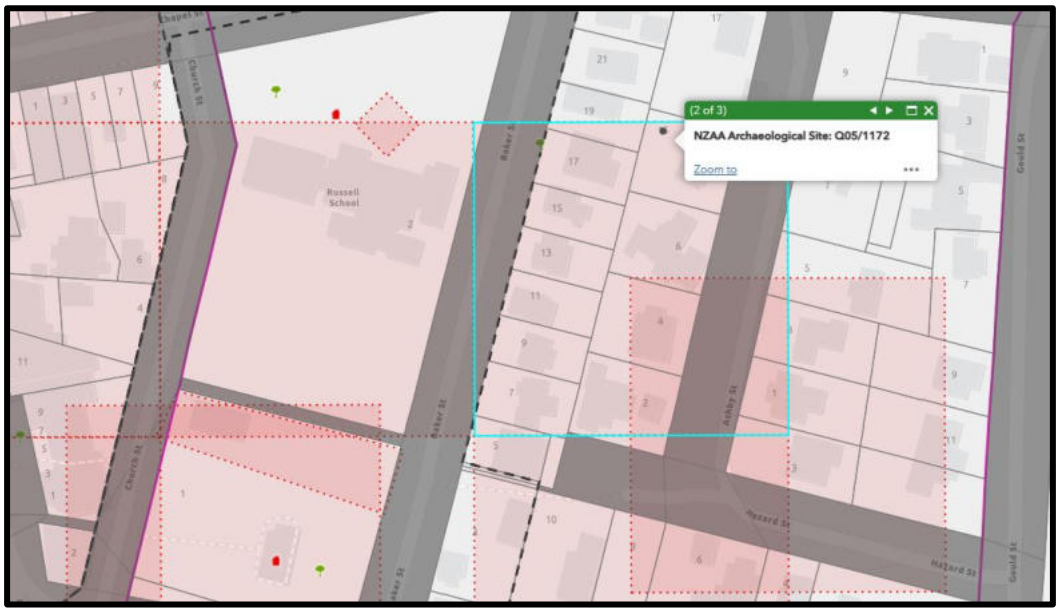


Figure 16: NZAA Maps.

3.11. The site is in an area serviced by Council's reticulated wastewater and stormwater services. There is a wastewater pipe which is located within proximity to the proposed works. This has been accounted for as part of the design process.

Figure 17: FNDC 3waters maps.

3.12. The site is not shown to be affected by coastal or river flood hazards, however a portion of the site is shown to have liquefaction vulnerability. This does not encroach into the area of works within 17 Chapel Street.

Figure 18: Hazard Maps.

4. Weighting of Plans

4.1. Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Part D. When the Proposed Plan was first notified there were a number of rules which were identified as having immediate legal effect.

4.2. The Council notified its' PDP on 27 July 2022. The period for public submissions closed on the 21 October 2022. A summary of submissions was notified on the 4 August 2023. The further submission period closed on the 5 September 2023. It is apparent from the summary of submissions relating to the applicable zone that a large number relate to the application of these provisions. Based on the volume and comprehensive nature of these submissions, the Council has confirmed that no other rules will have legal effect until such time as a decision is made on those provisions.

4.3. District Plan hearings on submissions are currently underway and are scheduled to conclude in October 2025. No decision on the PDP has been issued. For this reason, little weight is given to the PDP provisions.

5. Activity Status of the Application

Operative District Plan

5.1. The subject site is zoned Russell Township and is within the Russell Township Basin and Gateway Area. Given the works will occur within 15 & 17 Chapel Street, Russell, assessment of the permitted standards against both sites will be undertaken below.

5.2. As detailed above, part of the retaining walls crosses into the legal road reserve. Chapter 17 details that *'the rules in this Plan do not apply to designated land so long as works are in accordance with the designation. Any activity or development which would prevent or hinder the public work or project or work to which the designation relates may not proceed unless it has the consent of the requiring authority.'* Access in the form of a driveway from a formed legal road through to a site is considered to fall within the designation. The consent of the requiring authority is completed in the form of a Licence to Occupy which has already been obtained as part of the original building consent application. As such, for the purposes of this assessment the rules relating to providing for the vehicle crossing from Chapel Street to the site is considered to fall within the purposes of the designation. The works associated with the parking and manoeuvring are of benefit to the subject site such that these would not fall within the purposes of the designation and an assessment of this will be included below.

Russell Township Zone

Assessment of the Permitted Section 10.9 Russell Township zone		
Plan Reference	**Rule**	**Performance of Proposal**
10.9.5.1.1	**Relocated Buildings**	**Not applicable.** The proposal is for retaining walls and driveway work and does not involve relocatable buildings.
10.9.5.1.2	**Residential Intensity**	**Permitted.** The dwelling on site is existing and no changes to this structure are sought.
10.9.5.1.3	**Scale of Activities**	**Not applicable.** The proposal is for retaining walls and driveway which will be utilised for residential activities.
10.9.5.1.4	**Building Height**	**Permitted.** As shown in the drawings from PK, the retaining wall structures will be well below the 7.2m maximum for Russell Township zone, with the maximum height being 4.33 metres (2.83m retaining, 0.5m beam and 1 metre balustrade).
10.9.5.1.5	**Building Scale**	**Permitted.** This rule refers to the 'net floor area' of all buildings on site not exceeding 20% of the 'net site area' where the site is located within the Russell Township Basin and Gateway Area. The proposal will see the driveway re-established as well as retaining walls. These structures do not have a floor area, given the nature of the structures and as such, the net floor area within the sites is not considered to alter as a result of this proposal.
10.9.5.1.6	**Sunlight**	**Discretionary** The proposed retaining wall will run along the boundaries of Allotment 1A (11 Chapel Street), Allotment 2A (21 Baker Street) and Allotment 3A (19 Baker Street), as well as be within the boundaries of Pt Allotment 12 (17 Chapel Street), due to this being a ROW. The retaining wall steps back in to the subject site where the site adjoins Allotment 4 (17 Baker Street), such that the distance from this adjoining boundary is over 1.2 metres.

		As shown within the Plan Set from PK, the proposed structure will breach the permitted and restricted discretionary sunlight standards along either part or all of the adjoining boundaries with Allotment 1A, 2A and 3A. Written approval from the adjoining owners has been obtained as will be discussed further in this report. An exemption will be applied along the boundary with Allotment 1A as well as Lot 1 DP 21073, as the length of the structures where the sunlight infringement occurs along these boundaries is less than 10 metres and the height of the structures is less than 2.7 metres. As such, the sunlight breach applied for as part of this consent occurs only along the boundaries of Allotment 2A and Allotment 3A. This will be detailed further in this section with accompanying images for clarity.
10.9.5.1.7	**Stormwater Management**	**Discretionary** As shown within the Stormwater Report from PK, the impermeable surfaces within 15 Chapel Street equate to 584m^2 or 61% of the total site area. This results in a breach of the permitted and restricted discretionary thresholds. The impermeable surface coverage within 17 Chapel Street equates to 255.81m^2 or 25%, which complies with the permitted standard.
10.9.5.1.8 (P) **10.9.5.2.6 (RDA)** **10.9.5.3 (DA)**	**Setback from Boundaries**	**Discretionary.** The proposed retaining wall will run along the boundaries of Allotment 1A (11 Chapel Street), Allotment 2A (21 Baker Street) and Allotment 3A (19 Baker Street), as well as be within the boundaries of Pt Allotment 12 (17 Chapel Street), due to this being a ROW. The retaining wall steps back in to the subject site where the site adjoins Allotment 4 (17 Baker Street), such that the distance from this adjoining boundary is over 1.2 metres. As such, consent is required for a setback breach from the boundaries of Allotment 1A, Allotment 2A, Allotment 3A and Pt Allotment 12. Written approval from these property owners has been obtained.

		There is also a portion of retaining wall to be located along the boundary of Lot 1 DP 21073. As per the plans from PK (Sheet SR22) the length of this portion of retaining wall along this boundary is 4.517 metres. An exemption is therefore applied to this portion of retaining wall, where no setback is required for a maximum length of 10m along one such boundary. Consent is also sought for setback from road boundaries as the retaining wall will be located within the road reserve. NTA have been contacted as part of this application, and their approval has been obtained, however as mentioned, the revised plans have not been sent through as the NTA has been disestablished and the Council roading department has been made redundant. This will be detailed further in this section with accompanying images for clarity.
10.9.5.1.9	**Outdoor Activities**	**Not applicable**. Only residential activities will be carried out on this site.
10.9.5.1.10	**Transportation**	This will be assessed below.
10.9.5.1.11	**Hours of Operation - Non-Residential Activities**	**Not applicable**. Only residential activities will be carried out on this site.
10.9.5.1.12	**Keeping of Animals**	**Not applicable**. Only residential activities will be carried out on this site.
10.9.5.1.13	**Noise**	**Permitted.**
10.9.5.1.14	**Helicopter Landing Area**	**Not applicable**. No helicopter landing area is proposed.

District Wide Matters

5.3. An assessment of the relevant District Wide matters is outlined below:

Chapter 12 – Natural and Physical Resources		
Plan Reference	**Rule**	**Performance of Proposal**
12.1	**Landscape and Natural Features**	**Not applicable**
12.2	**Indigenous Flora and Fauna**	**Not applicable.**
12.3 Soils & Minerals		
12.3.6.1.3 (P) **12.3.6.2.2 (RDA)**	**EXCAVATION AND/OR FILLING, EXCLUDING MINING AND QUARRYING, IN THE RESIDENTIAL, INDUSTRIAL, HORTICULTURAL PROCESSING, COASTAL RESIDENTIAL AND RUSSELL TOWNSHIP ZONES**	**Restricted Discretionary** Under the FNDC operative Plan, a cut/fill face *excludes any face of a height greater than 1.5 metres but no greater than 3m, which is to be retained by a properly engineered retaining wall and for which building consent has been issued.* The retaining walls as part of this proposal are below 3 metres in height and will be retained by a properly engineered retaining wall which building consent has/will been/be issued for. The maximum height of the retaining wall will be 2.83m which occurs at the dividing boundary between Allotment 3A and Allotment 4. Excavations for the works are anticipated to be 14.3m^3 of cut and 381.1m^3 of fill which equates to a total volume of 395.4m^3 over an area of 520m^2. This exceeds the permitted threshold of 200m^3 in any 12-month period but can comply with the RDA provisions of less than 500m^3 in any 12-month period.
12.3.6.1.4 (P)	**NATURE OF FILLING MATERIAL IN ALL ZONES**	**Permitted.**
12.4	**NATURAL HAZARDS**	**Permitted.** The site is not within a hazard area, nor are any residential units being established.
12.5	**HERITAGE**	**Permitted.** The Russell Township and Basin Gateway overlay is addressed within the Russell Township zone rules. The overlay is not a listed Heritage Area or heritage buffer within this chapter such that none of the rules are considered applicable.

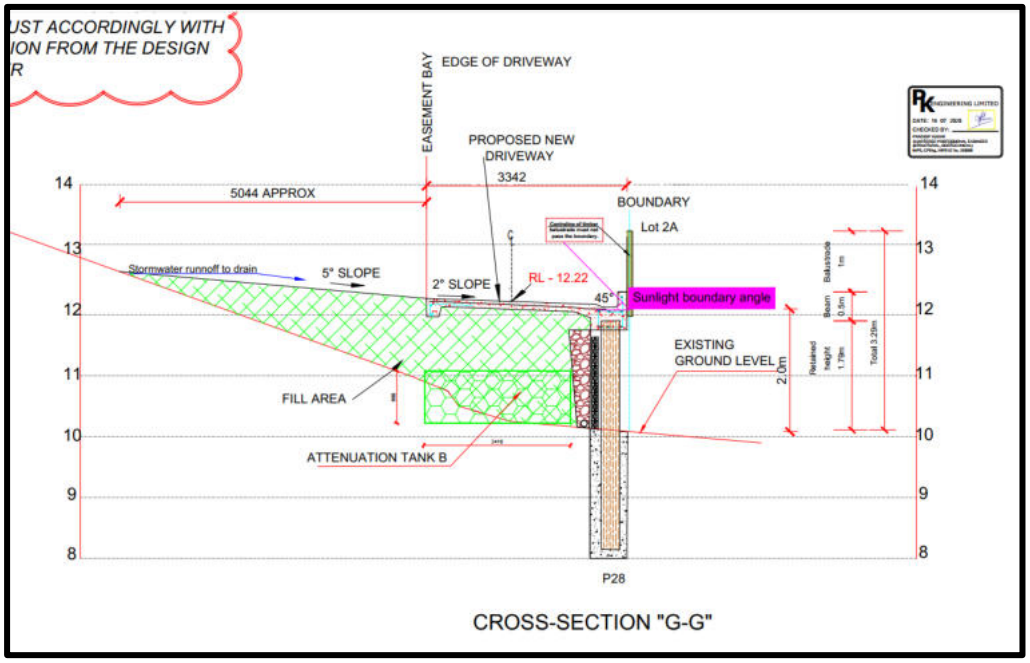
12.6	**AIR**	**Deleted Chapter.**
12.7	**LAKES, RIVERS, WETLANDS AND THE COASTAL MARINE AREA**	**Permitted.** The site does not contain nor immediately adjoin any waterbodies.
12.8	**HAZARDOUS SUBSTANCES**	**Complies** Not applicable
12.9	**RENEWABLE ENERGY AND EFFICIENCY**	**Complies** Not applicable
Chapter 15 – Transportation		
15.1.6A	**TRAFFIC**	**Permitted.** The proposal will not alter the TIF of the site as there will be no change in the use of the site.
15.1.6B	**PARKING**	**Permitted.** Existing situation will be improved with new parking and manoeuvring area being formed.
15.1.6C	**ACCESS**	**Permitted.** Access remains existing. The situation will be improved with new retaining walls as well as a formed driveway to the subject site within the existing ROW easement.

Operative District Plan Infringements

5.4. The proposal breaches the following District Plan rules:

10.9.5.1.6 Sunlight

5.5. The proposal results in a sunlight breach where the retaining wall adjoins Allotment 2A & Allotment 3A, due to the existing ground level and the height of the retaining wall. Written approval from these affected property owners has been obtained. Refer to SR7, SR8 and SR9 of the Plan Set for further detail. The sunlight infringements have been assessed as a **Discretionary Activity.**



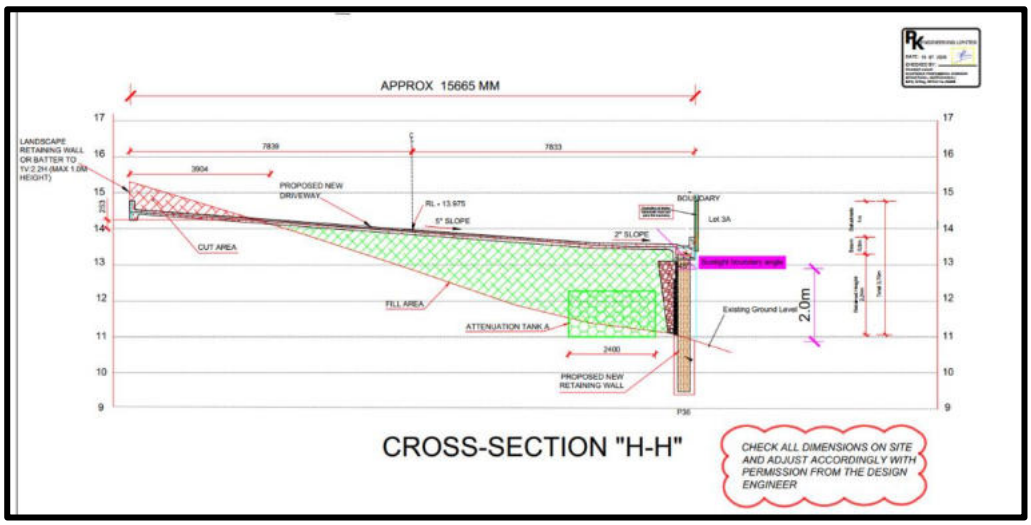


Figure 19: Cross Section G-G & H-H showing sunlight breach along the boundary of Allotment 2A (21 Baker Street) and 17 Chapel Street.

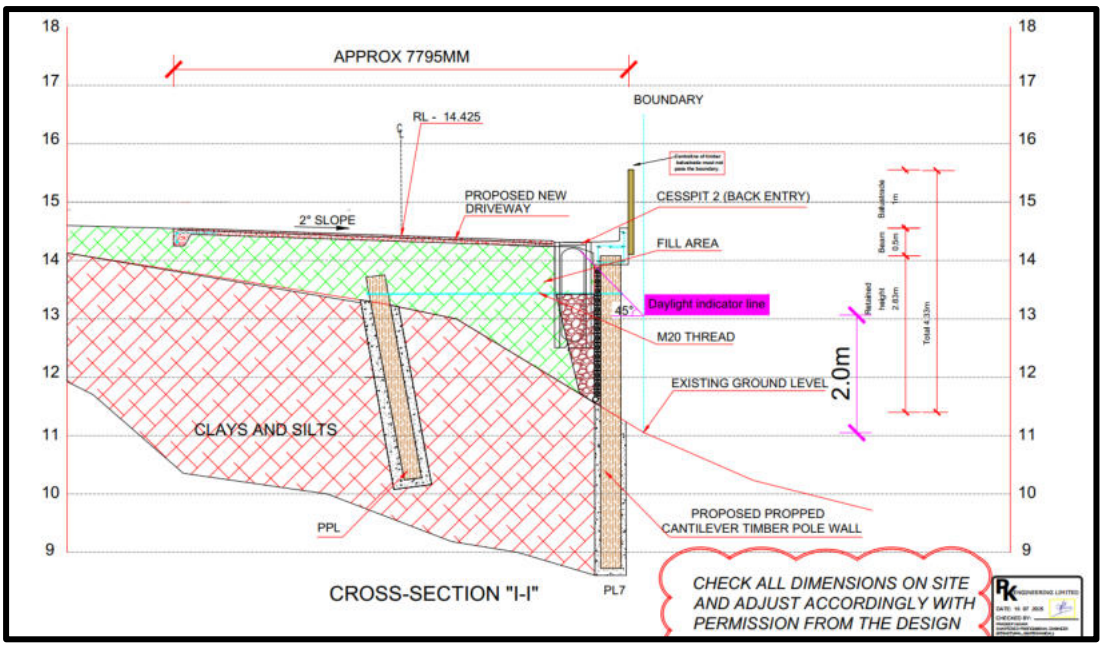


Figure 20: Cross section I-I showing sunlight breach along the boundary of Allotment 3A (19 Baker Street) and 15 Chapel Street.

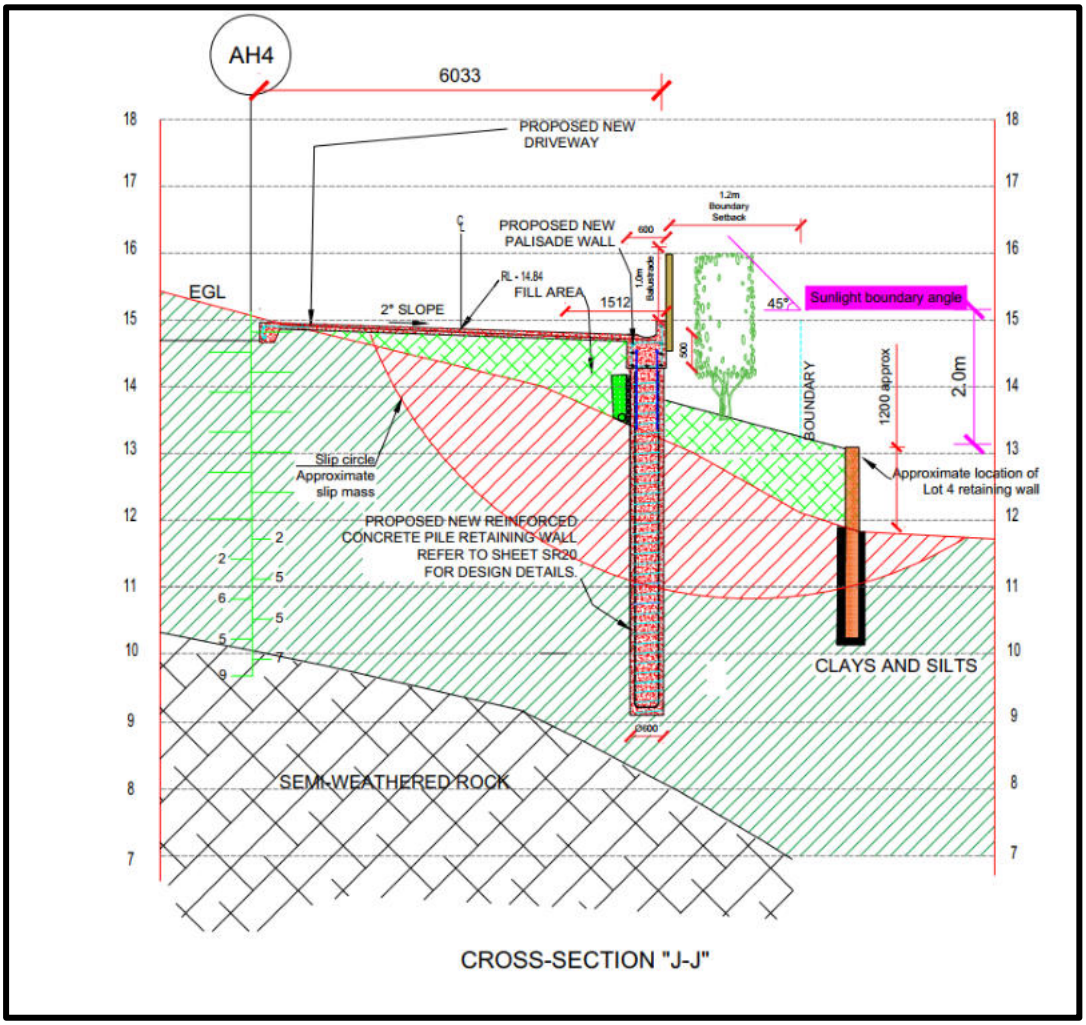


Figure 21: Cross section J-J showing no sunlight breach along the boundary of Allotment 4 (17 Baker Street) and 15 Chapel Street. No sunlight infringement occurs along the boundary of Allotment 4.

5.6. An exemption is being applied for the sunlight infringement along the boundary with 17 Chapel Street and Allotment 1A (11 Chapel Street). The sunlight infringement occurs where the structure exceeds 2 metres in height along the boundary with Allotment 1A, which occurs for a length of less than 10 metres. The structure does not exceed 2.7m in height, where the maximum height of the structure will be 2.5m in height as shown in cross section F-F below. As such, an exemption is applied in this instance. Refer to SR3A and SR6 of the Plan Set for further detail.

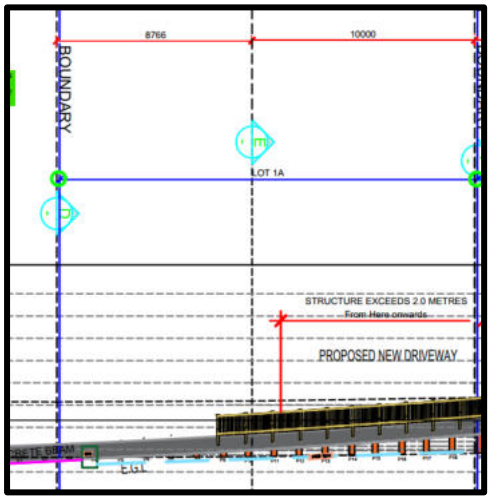


Figure 22: Snip showing length of the retaining wall along Allotment 1A where it exceeds 2 metres in height, being less than 10m in length.

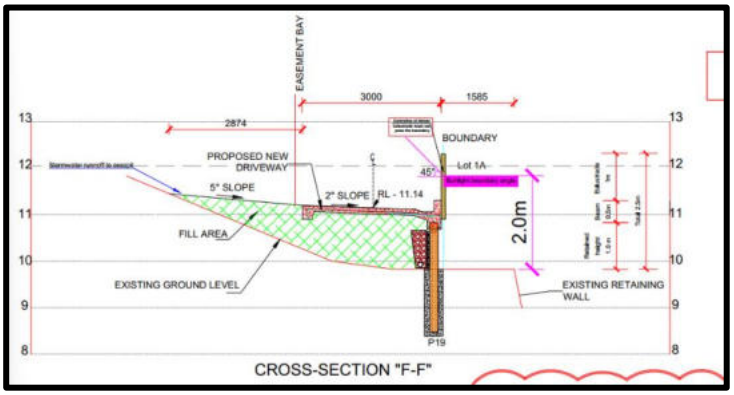


Figure 23: Cross-section F-F along the boundary of Allotment 1A and 17 Chapel Street, showing sunlight breach where the structure exceeds 2m in height.

5.7. An exemption is also applied along the boundary of 15 Chapel Street and Lot 1 DP 21073. As this occurs within a different site (15 Chapel Street rather than 17 Chapel Street as per the above exemption), it is considered that a separate exemption can be applied given the site where the retaining wall will be located is independent. This retaining wall is 4.517m in length with a maximum height of 2.63 metres (1.63m retaining with a 1m balustrade). This portion of retaining can therefore meet the requirements for an exemption given the structure along this boundary is less than 10m in length and less than 2.7m in height. Refer to SR2B and SR22 or the Plan Set for further detail.

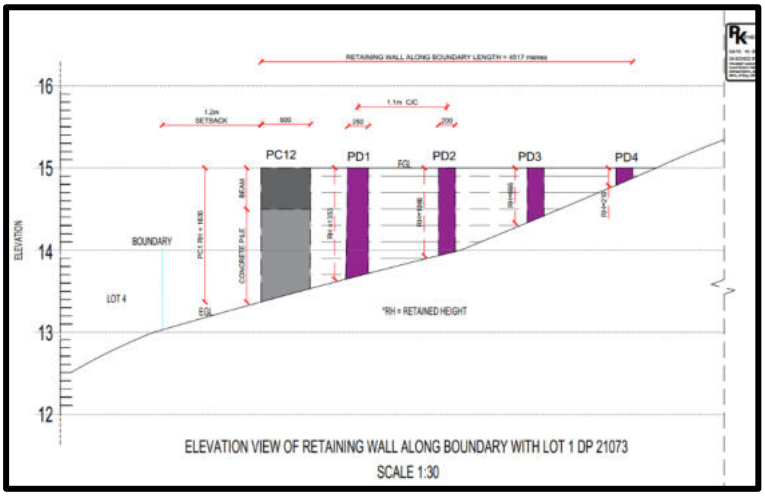


Figure 24: Elevation and length of the proposed retaining wall along the boundary of 15 Chapel Street and Lot 1 DP21073.

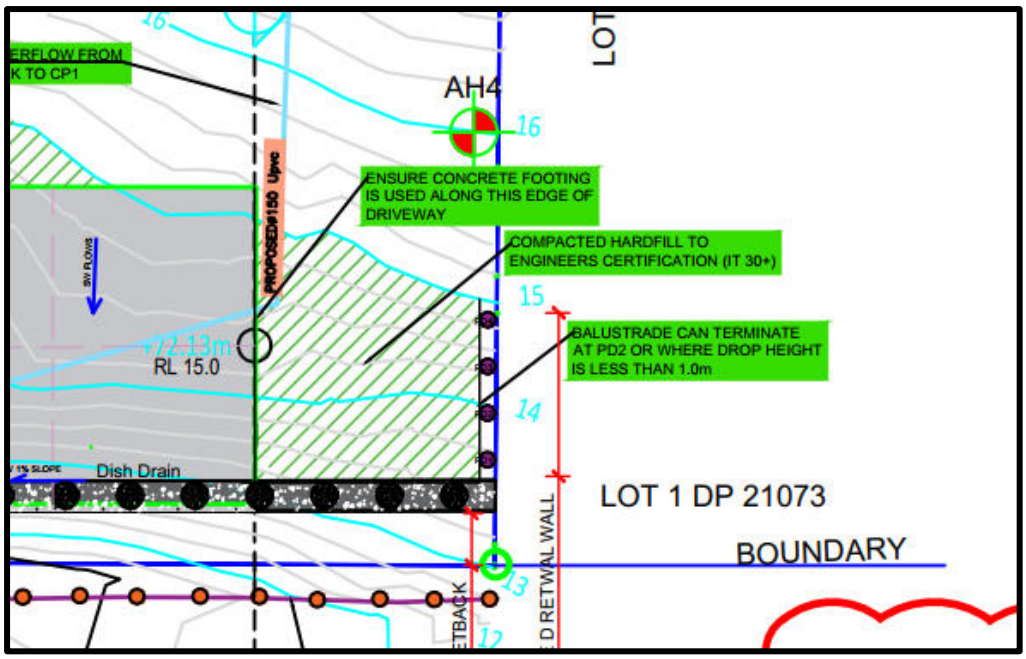


Figure 25: Snip of SR2B of the Plan Set showing location of subject retaining wall.

10.9.5.1.7 Stormwater Management

5.8. As detailed within the Stormwater Report (SWR) from PK, the resultant impermeable surfaces within 15 Chapel Street will exceed the permitted and RDA standards for the zone. PK have calculated that the total amount of impermeable surfaces within 15 Chapel Street will amount to 584m^2 or 61% of the total site area. This has included future provision of 100m^2 of driveway as well as 98m^2 for buildings. PK completed a catchment analysis which resulted in the recommendation of two CIRTEX Rainsmart tanks being included within the design to attenuate stormwater flows to predevelopment levels. This will be discussed further in this report.

5.9. PK determined that the proposal results in a total impermeable surface coverage of 255.81m^2 (25%) within 17 Chapel Street. This complies with the permitted standard of 35% and therefore no infringement of the permitted standards is created within 17 Chapel Street.

5.10. The stormwater management infringement within 15 Chapel Street has been assessed as a **Discretionary Activity.**

10.9.5.1.8 Setback from Boundaries

5.11. As the retaining wall exceeds 1.5 metres, it is classified as a building under the Operative Plan. As the retaining wall is to be built along the boundary of the ROW, where it adjoins Allotment 1A, Allotment 2A and Allotment 3A, as well as being located within the road reserve, the minimum setback distance cannot be achieved, and therefore a setback breach occurs along the above-mentioned boundaries. Written approval from the affected property owners has been obtained. Written approval from Part Allotment 12 (17 Chapel Street) has also been obtained, as the retaining wall will be located within the ROW easement boundaries, which 17 Chapel Street is the burdened land of the easement. The retaining wall is stepped back at

least 1.2 metres from the dividing boundary with Allotment 4 (17 Baker Street) and therefore no setback breach occurs along this boundary.

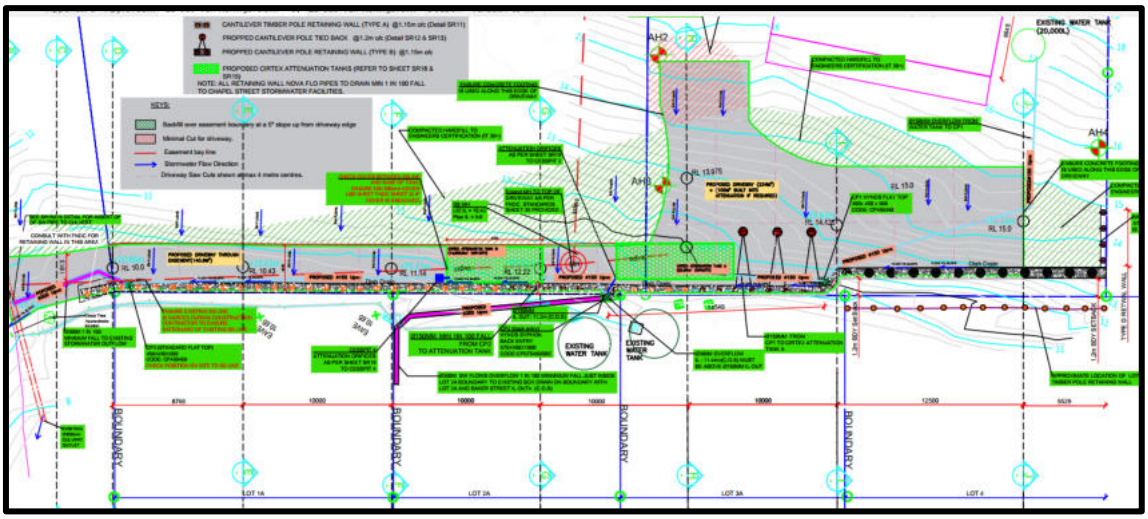


Figure 26: Image showing location of retaining wall along boundary, and where it steps in along the boundary within Allotment 4.

5.12. There is also a 4.5m retaining wall located on the boundary of 15 Chapel Street and Lot 1 DP 21073. Given that this portion of the retaining wall along this boundary is less than 10m long, an exemption is applied in this instance such that the adjoining property owner has not been considered an affected party. Refer to **Figures 24 & 25** above and SR22 of the Plan Set for details of the length of the retaining wall along this boundary.

5.13. The setback infringements have been assessed as a **Discretionary Activity,** given the setback provided within the RDA provisions cannot be met.

12.3.6.1.3 Excavations

5.14. Under the FNDC operative Plan, a cut/fill face *excludes any face of a height greater than 1.5 metres but no greater than 3m, which is to be retained by a properly engineered retaining wall and for which building consent has been issued.*

5.15. The retaining walls that form part of this proposal are below 3 metres in height and will be retained by a properly engineered retaining wall which building consent has been issued for. The maximum height of the retaining wall is 2.83 metres which is located at Cross Section I-I as shown within SR9 of the Plan set.

5.16. PK have completed an Earthworks Report which calculated the cut volume to be 14.3m3 with a fill volume of 381.1m3 bringing the total amount of excavations to 395.4m3 over an area of 520m2. The proposal therefore breaches the permitted standard of 300m3 of excavations within a 12 month period, however complies with the RDA provisions of 500m3 of excavations within a 12 month period.

Overall Status of the proposal

5.17. As per Rules *10.9.5.3 and 12.3.6.3 Discretionary Activities*, the proposal results in infringements of more than one of the standards for permitted or restricted discretionary activities as set out under Rules 10.9.5.1 and 10.9.5.2 and therefore, the proposal will be assessed as a **Discretionary Activity** and the relevant assessment criteria set out under Chapter 11 and Section 12.3.7 will be assessed as part of this application.

Proposed District Plan

5.18. Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Part D. When the Proposed Plan was first notified there were a number of rules which were identified as having immediate legal effect.

5.19. In terms of works on designated land, as the works will not be completed by the requiring authority, they are not exempt from assessment. As such, an assessment of the works within the legal road will form part of this assessment as well.

Chapter	Rule Reference	Compliance of Proposal
Hazardous Substances	The following rules have immediate legal effect: Rule HS-R2 has immediate legal effect but only for a new significant hazardous facility located within a scheduled site and area of significance to Māori, significant natural area or a scheduled heritage resource Rules HS-R5, HS-R6, HS-R9	**Not applicable.** The site does not contain any hazardous substances to which these rules would apply.
Heritage Area Overlays	All rules have immediate legal effect (HA-R1 to HA-R14) All standards have immediate legal effect (HA-S1 to HA-S3)	The site is located within Heritage Area Kororareka Part D and within the Kororareka Russell Township Zone. HA-R1 – **Not applicable.** The proposal does not result in the maintenance and repair of buildings or structures as the proposal will result in a new structure. HA-R2 – **Not applicable.** The proposal is not an addition or alteration to existing buildings or structures. HA-R3 – **Not applicable.** The proposal does not result in the strengthening or fire protection of a scheduled heritage resource.

		HA-R4 – **Not applicable** to the sites overlay. HA – R5 – **Permitted.** The proposal can comply with the rules within the earthworks chapter that have immediate legal effect and are not within 20m of a heritage resource. HA-R6 – **Not applicable.** HA-R7 – **Not applicable.** HA-R8 – **Discretionary.** The retaining wall (where it is classified as a building) will not be visible from a public place and the retaining wall does not have frontage to the CMA. The retaining wall can comply with HA-S1 as it is not located within 20 metres of a scheduled Heritage Resource. As detailed earlier in this application, the proposed colour scheme of the proposed retaining walls will be matte black or a natural timber stain or similar, with the balustrade being similar colour or a white or off-white colour (not stained). As natural timber stain is not included within the HA-S2 Standard of the PDP, the proposal results in a breach of this standard and therefore a breach of Rule HA-R8. HA-R9 – HAR14 – **Not applicable.** HA-S1 – **Permitted**. The proposal will not be located within 20m of a scheduled heritage resource. HA-S2 – As above, the proposal cannot meet this standard. **Consent required.** HA-S3 – **Permitted.** The proposal will proceed under the guidance of an ADP.
Historic Heritage	All rules have immediate legal effect (HH-R1 to HH-R10) Schedule 2 has immediate legal effect	**Not applicable.** The site does not contain any areas of historic heritage.
Notable Trees	All rules have immediate legal effect (NT-R1 to NT-R9) All standards have legal effect (NT-S1 to NT-S2) Schedule 1 has immediate legal effect	**Not applicable.** The site does not contain any notable trees.

Sites and Areas of Significance to Māori	All rules have immediate legal effect (SASM-R1 to SASM-R7) Schedule 3 has immediate legal effect	**Not applicable.** The site does not contain any sites or areas of significance to Māori.
Ecosystems and Indigenous Biodiversity	All rules have immediate legal effect (IB-R1 to IB-R5)	**Not applicable.** The site does not contain any ecosystems or indigenous biodiversity to which these rules would apply.
Subdivision	The following rules have immediate legal effect: SUB-R6, SUB-R13, SUB-R14, SUB-R15, SUB-R17	**Not applicable.** The proposal is not for a subdivision.
Activities on the Surface of Water	All rules have immediate legal effect (ASW-R1 to ASW-R4)	**Not applicable.** The proposal does not involve activities on the surface of water.
Earthworks	The following rules have immediate legal effect: EW-R12, EW-R13 The following standards have immediate legal effect: EW-S3, EW-S5	**Permitted.** Earthworks as part of this proposal will proceed under the guidance of an ADP in accordance with Rule EW-R12 and EW-S3. The works will be carried out in accordance with the Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016. Erosion and sediment controls are shown within the report from PK.
Signs	The following rules have immediate legal effect: SIGN-R9, SIGN-R10 All standards have immediate legal effect but only for signs on or attached to a scheduled heritage resource or heritage area	**Not applicable.** No signs are proposed as part of this application.
Orongo Bay Zone	Rule OBZ-R14 has partial immediate legal effect because RD-1(5) relates to water	**Not applicable.** The site is not located in the Orongo Bay Zone.

5.20. Consent is required under HA-R8 given the proposal cannot comply with HA-S2. Consent is required as a **Discretionary Activity** under the PDP.

Vehicle Crossing Bylaw

5.21. The infrastructure associated with the vehicle crossing is in essence being reconstructed. While this is the case, a landuse consent for these works is being sought. Section 7(2) of the Vehicle crossing bylaw stipulates - *An **approval** is not required for a **vehicle crossing** constructed, reconstructed, upgraded or relocated as part of a subdivision or land use consent where a resource consent has been granted for this work, or permission has been granted by the **council** for a private **road** or right-of-way under section 348 of the Local Government Act 1974.* As such a vehicle crossing permit is not a requirement.

National Environmental Standards

National Environmental Standards for assessing and Managing Contaminants in Soils to Protect Human Health 2011

5.22. Review of historical photos and discussions with the owner did not indicate that the site has been or currently is, utilised for activities listed on the HAIL. The site is also not identified as containing HAIL activities on the Council database. For this reason, the NESCS is not a consideration of this application.

5.23. The proposal is therefore deemed to be a **Permitted Activity** in terms of the National Environmental Standards for assessing and Managing Contaminants in Soils to Protect Human Health.

5.24. In terms of other National Environmental Standards, there are no others deemed relevant to the proposal.

6. Statutory Assessment

Section 104B of the Act

6.1. Section 104B governs the determination of applications for Discretionary and Non-Complying Activities. With respect to both Discretionary and Non-Complying Activities, a consent authority may grant or refuse the application and impose conditions under Section 108.

Section 104(1) of the Act

6.2. Section 104(1) of the Act 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."

6.3. Actual and potential effects arising from the development as described in 104(1)(a) can be both positive and adverse (as described in Section 3 of the Act). Positive effects arising from this development is that the driveway will be constructed in accordance with the Engineering Design by PK, which will ensure that the driveway can withstand future weather events, ensuring access to 15 Chapel Street is not impeded as it has been in the past. Stormwater and excavations will be managed to ensure that there are no downstream effects as per the reports prepared by PK. Adverse effects are in relation to setback, sunlight, stormwater and excavation effects, which will be mitigated to a less than minor degree as will be detailed within this report.

6.4. Section 104(1)(ab) requires that the consent authority consider 'any measure proposed or agreed to be the applicant for the purposes of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity.' All reasonable efforts will be taken to minimize any significant impacts on the environment. Moreover, sediment and erosion control measures will be implemented to prevent any negative effects from the earthworks. This has been offered as a condition of consent. This approach ensures that the proposed activity will have no more than minor effects on the environment, in line with the relevant regulations and guidelines.

6.5. Section 104(1)(b) requires that the consent authority consider the relevant provisions of the above listed documents. An assessment of the relevant statutory documents that corresponds with the scale and significance of the effects that the activity may have on the environment has been provided in Section 7 below.

6.6. Section 104(1)(c) states that consideration must be given to 'any other matters that the consent authority considers relevant and reasonable, necessary to determine the application.' There are no other matters relevant to this application.

7. Environmental Effects Assessment

Operative District Plan

7.1. The proposal is assessed as a Discretionary Activity as per District Plan Rules *10.9.5.3 and 12.3.6.3 Discretionary Activities*. The Council may impose conditions of consent on a discretionary activity, or it may refuse consent to the application. When considering a discretionary activity application, the Council will have regard to assessment criteria set out under Chapter 11 and Section 12.3.7.

Building Height, Scale and Sunlight

7.2. As discussed earlier in this report, the proposal results in sunlight infringements along the boundaries of Allotment 2A (21 Baker Street) and Allotment 3A (19 Baker Street). Exemptions have been applied along the boundaries of Allotment 1A (11 Chapel Street) and Lot 1 DP21073 (6 Ashby Street) such that no effects on these two allotments have been considered as part of this application.

7.3. Written Approval has been obtained from the owners of Allotment 2A and 3A, such that effects can be disregarded to a certain extent. ***Figure 27*** below shows the allotments which have provided written approval (indicated by the 'star'), allotments where exemptions have been applied (indicated by the 'circles') and allotments where no sunlight infringement occurs (indicated by the 'rectangle'). It is noted that Allotment 1A, although not affected by the sunlight breach, have provided written approval to the proposal.

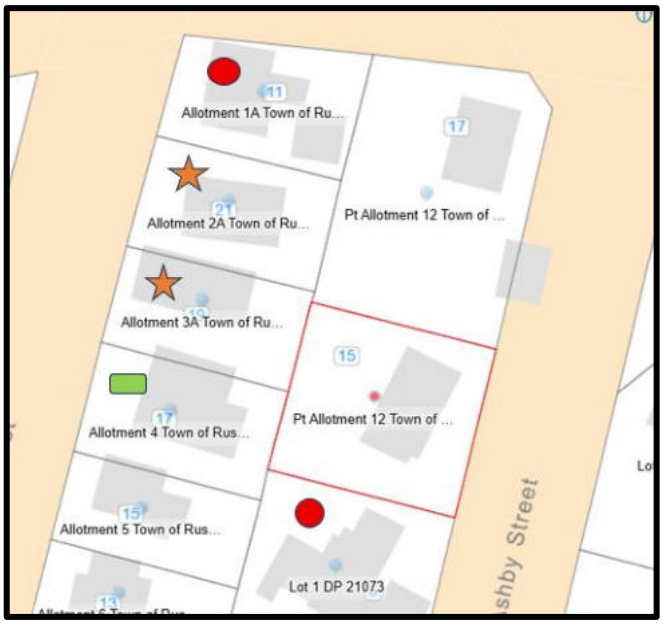


Figure 27: Image showing subject allotments as detailed above.

7.4. Assessment of Chapter 11.2 Building Height, Scale and Sunlight has been provided below.

(a) The extent to which adjacent properties will be adversely affected in terms of visual domination, overshadowing, loss of privacy and loss of access to sunlight and daylight.
(b) The ability to mitigate any adverse effects by way of increased separation distances between buildings or the provision of landscaping and screening.
(c) The extent of the building area and the scale of the building and the extent to which they are compatible with both the built and natural environments in the vicinity.
(d) The spatial relationship between the new building and adjacent residential units, and the outdoor space used by those units.
(e) The nature of the activity to be carried out within the building and its likely generated effects.

7.5. Written approval from all affected adjacent properties has been obtained and as such, it is deemed that effects on the adjoining properties will be less than minor. The retaining wall has been properly engineered designed to ensure that the works are geotechnically sound. There is an existing retaining wall located within Allotment 1A, with the new retaining wall being located on the dividing boundary. Next to the existing retaining wall there is an existing garage, such that effects to daylight and sunlight are not considered impacted. The existing

dwellings on Allotment 2A and 3A are setback a sufficient distance from the boundary such that access to sunlight and daylight are also considered to remain unaffected.

7.6. Increased separation distances are not considered applicable as the retaining wall is to be located on the boundary due to the location of the existing ROW easement. Landscape and screening are also not considered applicable as this could jeopardise the integrity of the retaining wall.

7.7. Due to the topography of the site and surrounding allotments, the retaining walls are considered to be compatible with the surrounding environment due to the necessity of such structures in the area. The retaining walls will provide safe access to the subject site as well as mitigating downstream effects on the adjoining properties, as such the scale and extent of the retaining wall is considered compatible.

7.8. The proposal is considered to generate positive effects on the surrounding environment as it will ensure safe access to the site and mitigate downstream effects on the neighbouring properties, especially in high rainfall events where stormwater from the driveway runs down into these properties, as shown in the below images. The positive effects from the proposal are considered to outweigh any negative effects and with the written approval from the affected neighbours being obtained, it is considered that the works are supported.

Figure 28: Image of driveway taken from subject site, looking towards Chapel Street. Retaining wall will be located on the boundary to the left of the photo.

Figure 29: Slip which has occurred during a rain event where it has affected the neighbouring allotment (Allotment 2A).

Figure 30: Existing retaining wall which is located within Allotment 1A, with the new retaining wall being on the dividing boundary (refer to site plan for further detail). Garage is located on Allotment 1A.

Setback from Boundaries

7.9. As discussed earlier in this report, the retaining wall will be located along the western boundary of the existing ROW easement, which is contained within Part Allotment 12 (17 Chapel Street). The retaining wall will also be partially constructed within the road reserve. Written approval has been obtained from NTA, Allotment 1A, 2A and 3A, where a setback breach occurs. Where the site adjoins Allotment 4, the retaining wall is set back 1.2 metres such that no setback breach occurs.

7.10. An exemption has been applied where the retaining wall is located along the boundary of Lot 1 DP 21073 (6 Ashby Street), given that the length of the retaining wall along this boundary is less than 10m in length. No effects have been considered on Lot 1 DP 21073 given the exemption has been applied.

7.11. Given that written approval has been obtained from the owners of Allotment 1A, 2A and 3A, effects can be disregarded on these allotments to a certain extent.

7.12. An assessment of Section 11.6 Setback from Boundaries has been undertaken below.

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

7.12.1. The proposed development seeks to construct a retaining wall and upgraded driveway within the existing ROW easement and within the subject site as well as a small portion within the road reserve. The proposed works are required due to the existing ground slipping, restricting access to the subject site as well as creating downstream effects on the properties at lower elevation. The works within the road reserve will see a new retaining wall placed next to the existing retaining wall (shown in Figure 31 below).

Figure 31: Image of existing retaining wall within Chapel Street Road reserve. Refer to site plan for further detail on new retaining wall location.

7.12.2. The proposed scale and proportions of the retaining walls are deemed appropriate and necessary for the site and are in keeping with the surrounding environment.

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

7.12.3. The retaining walls which are subject of the setback breach, are not considered to intrude into the street scene or reduce the outlook and privacy of adjacent properties. The retaining walls have been designed by PK Engineering and are deemed necessary to ensure that the ground is retained properly. The new retaining wall where it is located in the road reserve, will be located slightly east of the existing retaining wall such that outlook and privacy will remain unchanged, given the use of this area will remain unchanged. Due to the nature of the retaining wall and the benefits it will create on the adjacent properties and the fact that written approval has been obtained from these property owners, it is considered that effects on outlook and privacy are less than minor.

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

7.12.4. The retaining walls do not restrict visibility for vehicle manoeuvring. The retaining walls will enable safer vehicle manoeuvring within the subject site.

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

7.12.5. The proposed retaining walls are not considered to create any adverse effects. The proposed retaining walls are required to ensure the stability of the public road and neighbouring sites. Due to the site topography, existing landscaping and positioning of adjoining properties visibility of the structures will be minimal. No mitigation measures are proposed as the retaining walls are not considered to create any effects that are more than minor.

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

7.12.6. Maintenance and construction activities can occur within the existing ROW easement. A License to Occupy has been issued where the retaining wall encroaches into the road reserve such that maintenance and construction activities can occur where the retaining wall is located outside of the private property boundaries.

Summary

7.13. Overall, the setback and sunlight breaches have occurred due to the location of the proposed retaining walls. The new retaining walls are required to ensure the structural stability of Chapel Street, and also to manage downstream effects on neighbouring properties. The proposed retaining walls are not considered to adversely affect the adjoining neighbouring properties, and all written approvals have been obtained. The proposal will ensure Chapel Street and the new driveway remain geotechnically sound such that there will be a positive impact on Councils infrastructure. The retaining walls are engineer designed and building consent has been obtained for these. The proposal is not considered to create any adverse effects on the surrounding environment.

Stormwater Management

7.14. As assessed earlier in this report, the proposal will result in a breach of the permitted standards for impermeable surfaces within 15 Chapel Street. PK have completed a Stormwater Report which included a catchment analysis to determine what would be required to attenuate stormwater flows back to predevelopment levels. PK have recommended and included within their design, two CIRTEX Rainwater tanks which will be located underneath the proposed driveway. PK determined that the tanks are designed to attenuate stormwater flows from a 1:10 year and a 1:100 year storm event. See PK's Stormwater Report for further detail on this. Multiple cesspits and stormwater pipes have been proposed to accommodate the stormwater flows safely to the council culvert on Chapel Street and Council stormwater network on Baker Street.

7.15. An assessment of Section 11.3 of the ODP has been undertaken below.

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

7.16. The proposal will result in additional impermeable surfaces. PK have completed a Stormwater Report to account for the proposed and existing impermeable surface coverage within the site.

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

7.17. The proposed tank attenuation is considered to be low impact design.

(c) Any cumulative effects on total catchment impermeability.

7.18. Given the attenuation methods proposed, cumulative effects are not anticipated.

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

7.19. The proposal will slightly alter the natural contour and drainage patterns given the nature of the proposal however stormwater will be controlled and directed via properly engineered methods to ensure there are no adverse effects. The proposal will result in a superior outcome compared to what is currently in existence, given stormwater flows on to the adjoining sites at present.

(e) The physical qualities of the soil type.

7.20. Not applicable.

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

7.21. No adverse effects are anticipated.

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

7.22. Disposal of effluent is via connection to the reticulated wastewater system which will remain unchanged. Stormwater will be controlled and directed to underground water tanks which is considered to not result in adverse effects on water quantity and quality of water bodies.

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

7.23. The proposal will replace the existing deteriorated driveway. All proposed impermeable surfaces are considered necessary.

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

7.24. No landscaping is proposed nor considered necessary given runoff will be directed to the proposed underground water tanks.

(j) Any recognised standards promulgated by industry groups.

7.25. There are no known industry group standards applicable.

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

7.26. Refer to PK Stormwater Report.

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

7.27. Climate change has been accounted for within PK's Stormwater Report.

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

7.28. PK have proposed a suitable solution to attenuate flows back to predevelopment levels.

Excavations

7.29. Under the FNDC operative Plan, a cut/fill face *excludes any face of a height greater than 1.5 metres but no greater than 3m, which is to be retained by a properly engineered retaining wall and for which building consent has been issued.*

7.30. The retaining walls that form part of this proposal are below 3 metres in height and will be retained by a properly engineered retaining wall which building consent has been issued/applied for. The maximum height of the retaining wall is 2.83 metres which is located at Cross Section I-I as shown within SR9 of the Plan set.

7.31. PK have completed an Earthworks Report which calculated the cut volume to be 14.3m^3 with a fill volume of 381.1m^3 bringing the total amount of excavations to 395.4m^3 over an area of 520m^2. The proposal therefore breaches the permitted standard of 300m^3 of excavations within a 12-month period, however, complies with the RDA provisions of 500m^3 of excavations within a 12-month period.

7.32. PK have completed an Earthworks report which details recommendations for the excavations to be completed on the site. A silt fence has been proposed within the boundaries of Allotment 2A (21 Baker Street) as well as within the road reserve, as shown in ***Figure 32*** below which was taken from the Earthworks Report. It is worth noting that the Applicant owns Allotment 2A and therefore no issues are anticipated to arise with having the silt fence located within this allotment.

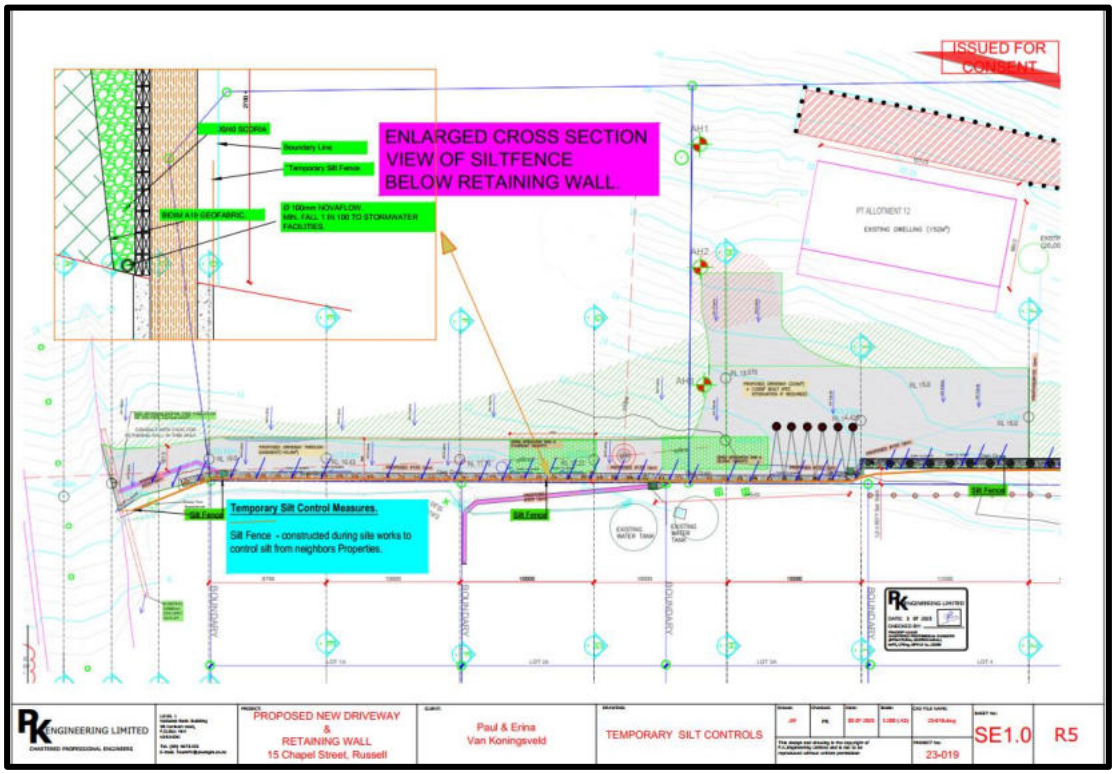


Figure 32: Snip of PK eng plans showing proposed silt fence location.

7.33. An assessment of Section 12.3.7 of the ODP has been undertaken below for completeness.

(a) the degree to which the activity may cause or exacerbate erosion and/or other natural hazards on the site or in the vicinity of the site, particularly lakes, rivers, wetlands and the coastline;

7.34. The site is not located in close proximity to lakes, rivers, wetlands or the coastline such that no adverse effects are anticipated on these features. Silt and sediment control methods have been proposed which will ensure that erosion is not exacerbated. As mentioned, the proposal will result in a superior outcome in terms of erosion and natural hazards, as at present, stormwater and erosion is uncontrolled given the deteriorating naturae of the driveway. The proposal includes methods to control erosion and stormwater such that positive effects will be created.

(b) any effects on the life supporting capacity of the soil;

7.35. No effects anticipated.

(c) any adverse effects on stormwater flow within the site, and stormwater flow to or from other properties in the vicinity of the site including public roads;

7.36. Stormwater flow will be adequately controlled as per the design by PK.

(d) any reduction in water quality;

7.37. No reduction in water quality is anticipated.

(e) any loss of visual amenity or loss of natural character of the coastal environment;

7.38. No loss of visual amenity or natural character is anticipated given that the proposal is for a retaining wall which is required to retain the driveway to the site.

(f) effects on Outstanding Landscape Features and Outstanding Natural Features (refer to Appendices 1A and 1B in Part 4, and Resource Maps);
(g) the extent to which the activity may adversely affect areas of significant indigenous vegetation or significant habitats of indigenous fauna;
(h) the extent to which the activity may adversely affect heritage resources, especially archaeological sites;
(i) the extent to which the activity may adversely affect the cultural and spiritual values of Maori, especially Sites of Cultural Significance to Maori and waahi tapu (as listed in Appendix 1F in Part 4, and shown on the Resource Maps);

7.39. No effects are anticipated.

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

7.40. No cumulative effects are anticipated given erosion and stormwater will be controlled via the methods proposed by PK.

(k) the effectiveness of any proposals to avoid, remedy or mitigate any adverse effects arising from the activity;

7.41. The proposed mitigation methods are considered to mitigate effects to a less than minor degree.

(l) the ability to monitor the activity and to take remedial action if necessary;

7.42. Monitoring can easily be undertaken during construction of the proposal. Remedial action can be undertaken if deemed necessary.

(m) the criteria in Section 11.20 Development Plans in Part 2.

7.43. The construction machinery will be temporary such that effects within (a) are not considered to be more than minor. No landscaping is proposed or considered necessary. Vehicular and pedestrian access will be determined by the allocated contractor. No mining or quarrying operations are proposed. Hours of operation will be during normal construction hours. Noise generation will be temporary such that no adverse effects are anticipated. No blasting is proposed. The excavation works will be temporary such that ongoing effects are not anticipated.

(n) the criteria (p) in Section 17.2.7 National Grid Yard.

7.44. Not applicable.

Summary

7.45. It is considered that the proposal will have no more than minor effects on the surrounding environment. Excavations will be adequately controlled via construction as per the methods proposed by PK. Conditions of consent can be imposed to ensure this. The proposal will result in a superior outcome compared to what is currently in existence.

Proposed District Plan

7.46. The applicant has advised that the colour scheme of the proposed retaining walls will be matte black or a natural timber stain or similar, with the balustrade being similar colour or a white or off-white colour (not stained). As natural timber stain is not included within the HA-S2 Standard of the PDP, the proposal results in a breach of this standard and therefore a breach of Rule HA-R8.

7.47. It is worth noting that as part of Hearing 4 of the PDP that this particular matter of finishings sitting outside of the 'Resene' products was discussed at length. While Hearing 4 heard matters specific to the Coastal Environment, Natural Features and Landscapes, a similar rule as detailed above is proposed in Heritage Areas. The recommendation in the S42A Report Writers Right of Reply back to the panel is to no longer specifically reference 'Resene' Products. Similar changes have been recommended to the Heritage Rules such as timber stains and natural materials can also be utilised without triggering the need for consent.

7.48. Where compliance is not achieved with RDIS-1, RDIS-2 or RDIS-3 of HA-R8, the activity is assessed as a Discretionary Activity under the PDP.

7.49. As there is no assessment criteria under HA-R8 and given the points made above, the proposal is not considered to result in any adverse effects. Approval from HNZPT has been obtained as part of the preapplication process with no objections raised.

8. Policy Documents

8.1. In accordance with Section 104(1)(b) of the Act, the following documents are considered relevant to this application:

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

8.2. An assessment of the relevant statutory documents that corresponds with the scale and significance of the effects that activity may have on the environment has been provided below.

National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

8.3. After reviewing historical photos of the subject site and area as well as the FNDC maps which indicate HAIL sites, it is considered that the subject site is not known to have been or currently be, used for any purposes which would classify the site as a HAIL site. Therefore, the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health is not considered relevant to this application.

8.4. It is considered that no other National Environmental Standards are applicable to this proposal.

National Policy Statements

8.5. There are currently 8 National Policy Statements in place. These are as follows:

- National Policy Statement on Urban Development
- National Policy Statement for Freshwater Management
- National Policy Statement for Renewable Electricity Generation
- National Policy Statement on Electricity Transmission
- New Zealand Coastal Policy Statement
- National Policy Statement for Highly Productive Land.
- National Policy Statement for Indigenous Biodiversity
- National Policy Statement For Greenhouse Gas Emissions from Industrial Process Heat

8.6. The only relevant National Policy Statement in this case is the NZ Coastal Policy Statement as the site is located within the Coastal Environment. An assessment of this is detailed below.

New Zealand Coastal Policy Statement 2010

8.7. The subject site is located within the coastal environment, but not within an area of high natural character.

8.8. The proposal is considered to achieve the objectives and policies of the NZCPS as the proposal does not adversely impact on the integrity, form, functioning or resilience of the coastal environment.

8.9. The proposal seeks to construct new retaining walls where required. The proposal is consistent with the character and residential landscape of the coastal community of Russell. The proposal will provide safer access to the site as well as ensure downstream effects on neighbouring properties are mitigated. The coastline will not be restricted by this proposal, and the natural character and amenity of the area will be preserved. The proposal is considered to result in positive economic effects by providing employment through the construction phase of the building, while creating less than minor effects on the residential/coastal character of the locality.

8.10. The proposed activity is consistent with the objectives and policies of the New Zealand Coastal Policy Statement as the proposed retaining walls are in keeping with the existing development in the surrounding area.

Regional Policy Statement

8.11. The relevant policy statement applicable to the application is the Operative Regional Policy Statement for Northland (RPS). The activity is not known to be located within an outstanding landscape or areas of high natural character, however it is located within the coastal environment under the RPS. The proposal is consistent with the NZCPS; therefore, it is considered the proposal is compatible with the intent of the RPS.

8.12. There will be no cumulative impact by undertaking this development as it has been anticipated with the creation of the site and the development of the building guidelines. No incompatible land uses are anticipated. The development will maintain the character of the surrounding area and will be adequately serviced by all necessary infrastructure.

8.13. The relevant objectives relate to Tangata Whenua and natural character. The relevant policies relate to water quality management and effects on natural character.

8.14. As per the assessment above, the proposal is not considered to create any adverse effects in relation to the natural environment. The proposal is considered to have a functional need to be located within the subject site and legal road, and is not considered to be objectionable to the surrounding environment, as has been discussed throughout this report.

8.15. It is considered that with the imposition of the recommendations of this report, the activity is not contrary to the relevant RPS policies.

Far North District Plan

8.16. The relevant objectives and policies of the Plan are those related to the Coastal Environment and the Russell Township zone as well as the Earthworks Chapter. 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 character of the surrounding area and is considered to have negligible effects on the amenity value of the area. The proposal is considered to be consistent with the objectives and policies of the Plan.

Assessment of Objectives and Policies within the Coastal Environment

Objectives

10.3.1 To manage coastal areas in a manner that avoids adverse effects from subdivision, use and development. Where it is not practicable to avoid adverse effects from subdivision use or development, but it is appropriate for the development to proceed, adverse effects of subdivision use, or development should be remedied or mitigated.

10.3.2 To preserve and, where appropriate in relation to other objectives, to restore, rehabilitate protect, or enhance:

(a) the natural character of the coastline and coastal environment;

(b) areas of significant indigenous vegetation and significant habitats of indigenous fauna;

(c) outstanding landscapes and natural features;

(d) the open space and amenity values of the coastal environment;

(e) water quality and soil conservation (insofar as it is within the jurisdiction of the Council).

10.3.3 To engage effectively with Māori to ensure that their relationship with their culture and traditions and taonga is identified, recognised, and provided for.

10.3.4 To maintain and enhance public access to and along the coast whilst ensuring that such access does not adversely affect the natural and physical resources of the coastal environment, including Māori cultural values, and public health and safety.

10.3.5 To secure future public access to and along the coast, lakes and rivers (including access for Māori) through the development process and specifically in accordance with the Esplanade Priority Areas mapped in the District Plan.

10.3.6 To minimise adverse effects from activities in the coastal environment that cross the coastal marine area boundary.

10.3.7 To avoid, remedy or mitigate adverse effects on the environment through the provision of adequate land-based services for mooring areas, boat ramps and other marine facilities.

10.3.8 To ensure provision of sufficient water storage to meet the needs of coastal communities all year round.

10.3.9 To facilitate the sustainable management of natural and physical resources in an integrated way to achieve superior outcomes to more traditional forms.

Policies

10.4.1 That the Council only allows appropriate subdivision, use and development in the coastal environment. Appropriate subdivision, use and development is that where the activity generally:

(a) recognises and provides for those features and elements that contribute to the natural character of an area that may require preservation, restoration or enhancement; and

(b) is in a location and of a scale and design that minimises adverse effects on the natural character of the coastal environment; and

(c) has adequate services provided in a manner that minimises adverse effects on the coastal environment and does not adversely affect the safety and efficiency of the roading network; and

(d) avoids, as far as is practicable, adverse effects which are more than minor on heritage features, outstanding landscapes, cultural values, significant indigenous vegetation and significant habitats of indigenous fauna, amenity values of public land and waters and the natural functions and systems of the coastal environment; and

(e) promotes the protection, and where appropriate restoration and enhancement, of areas of significant indigenous vegetation and significant habitats of indigenous fauna; and

(f) recognises and provides for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga; and

(g) where appropriate, provides for and, where possible, enhances public access to and along the coastal marine area; and

(h) gives effect to the New Zealand Coastal Policy Statement and the Regional Policy Statement for Northland.

10.4.2 That sprawling or sporadic subdivision and development in the coastal environment be avoided through the consolidation of subdivision and development as far as practicable, within or adjoining built up areas, to the extent that this is consistent with the other objectives and policies of the Plan.

10.4.3 That the ecological values of significant coastal indigenous vegetation and significant habitats are maintained in any subdivision, use or development in the coastal environment.

10.4.4 That public access to and along the coast be provided, where it is compatible with the preservation of the natural character and amenity, cultural, heritage and spiritual values of the coastal environment, and avoids adverse effects in erosion prone areas.

10.4.5 That access by tangata whenua to ancestral lands, sites of significance to Māori, maahinga mataitai, taiapure and kimono areas in the coastal marine area be provided for in the development and ongoing management of subdivision and land use proposals and in the development and administration of the rules of the Plan and by non-regulatory methods. Refer Chapter 2, and in particular Section 2.5, and Council's "Tangata Whenua Values and Perspectives (2004)".

10.4.6 That activities and innovative development including subdivision, which provide superior outcomes and which permanently protect, rehabilitate and/or enhance the natural character of the coastal environment, particularly through the establishment and ongoing management of indigenous coastal vegetation and habitats, will be encouraged by the Council.

10.4.7 To ensure the adverse effects of land-based activities associated with maritime facilities including mooring areas and boat ramps are avoided, remedied or mitigated through the provision of adequate services, including where appropriate:

(a) parking;

(b) rubbish disposal;

(c) waste disposal;

(d) dinghy racks.

10.4.8 That development avoids, remedies or mitigates adverse effects on the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

10.4.9 That development avoids, where practicable, areas where natural hazards could adversely affect that development and/or could pose a risk to the health and safety of people.

10.4.10 To take into account the need for a year-round water supply, whether this involves reticulation or on-site storage, when considering applications for subdivision, use and development.

10.4.11 To promote land use practices that minimise erosion and sediment run-off, and storm water and waste water from catchments that have the potential to enter the coastal marine area.

10.4.12 That the adverse effects of development on the natural character and amenity values of the coastal environment will be minimised through:

(a) the siting of buildings relative to the skyline, ridges, headlands and natural features;

(b) the number of buildings and intensity of development;

(c) the colour and reflectivity of buildings;

(d) the landscaping (including planting) of the site;

(e) the location and design of vehicle access, manoeuvring and parking areas.

8.17. The proposed retaining walls are considered appropriate and necessary for the site and are not objectionable within the surrounding environment. They will be screened from the Coastal Marine Area by the existing built development in the surrounding environment.

8.18. The subject site is located over 300m from the coastline. The effects on Outstanding Landscapes are considered to be nil.

8.19. The proposal is not considered to adversely affect Māori and their relationship with their culture and traditions.

8.20. Public access is not considered relevant in this case as the site does not adjoin the coast, lakes or rivers. The site is not within an Esplanade Priority Area as mapped in the District Plan.

8.21. The proposal does not cross the coastal marine area boundary.

8.22. No mooring areas, boat ramps or other marine facilities are proposed. The site does not adjoin the coast.

8.23. The proposal is not considered to have any adverse effects on the natural character of the coastal environment as the proposal is not objectionable to the surrounding environment.

Assessment of the objectives and policies within the Russell Township Zone

Objectives

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

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

8.24. The proposal is to construct retaining walls within the existing ROW easement and also which cross onto legal road reserve. The design of the retaining walls is modest and will continue to blend into the surrounding landscape. The retaining wall design and location is not objectionable to the existing development in the locality. The proposal is considered to be of low density and does not create any adverse visual effects. It is considered that the subject site was created with the intention of residential development within the site.

Policies

10.7.4.1 That the adverse effects of subdivision, use, and development on the coastal environment are avoided, remedied or mitigated.

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

10.7.4.3 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the zone in regards to s6 matters, and shall avoid adverse effects as far as practicable by using techniques including:

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

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

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

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Māori with their culture, traditions and

taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Māori culture makes to the character of the District (refer Chapter 2, and in particular Section 2.5, and Council's "Tangata Whenua Values and Perspectives (2004)");

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

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

8.25. As mentioned throughout this report, any effects created from the proposal will be mitigated to a less than minor effect.

8.26. The proposal is not considered to impact Māori and their relationships with their cultures and traditions. No additional planting is proposed due to the nature of the proposal. The retaining walls will support access to the subject site and will be located within a ROW easement, such that additional planting outside of the ROW easement is outside of the applicant's jurisdiction. There are no known historic sites that will be affected by the proposal.

8.27. Due to the scale of the proposal and the location of the proposal in regard to the site boundaries, it is considered that any visual effects on the CMA will be less than minor.

8.28. The proposal is to construct retaining walls within the ROW easement boundaries to ensure vehicular access to the dwelling can remain unimpeded. The site is located more than 100 metres from the coastal marine area.

Assessment of Objectives and Policies within the Soils & Minerals Chapter

Objectives

12.3.3.1 To achieve an integrated approach to the responsibilities of the Northland Regional Council and Far North District Council in respect to the management of adverse effects arising from soil excavation and filling, and minerals extraction.

12.3.3.2 To maintain the life supporting capacity of the soils of the District.

12.3.3.3 To avoid, remedy or mitigate adverse effects associated with soil excavation or filling.

12.3.3.4 To enable the efficient extraction of minerals whilst avoiding, remedying or mitigating any adverse environmental effects that may arise from this activity.

8.29. The proposal has included adequate mitigation measures to ensure effects are less than minor. No effects on the life supporting capacity of soils are anticipated. No extraction of minerals are proposed.

Policies

12.3.4.1 That the adverse effects of soil erosion are avoided, remedied or mitigated.

12.3.4.2 That the development of buildings or impermeable surfaces in rural areas be managed so as to minimise adverse effects on the life supporting capacity of the soil.

12.3.4.3 That where practicable, activities associated with soil and mineral extraction be located away from areas where that activity would pose a significant risk of adverse effects to the environment and/or to human health. Such areas may include those where:

(a) there are people living in close proximity to the site or land in the vicinity of the site is zoned Residential, Rural Living, Coastal Residential or Coastal Living;

(b) there are significant ecological, landscape, cultural, spiritual or heritage values;

(c) there is a potential for adverse effects on lakes, rivers, wetlands and the coastline;

(d) natural hazards may pose unacceptable risks.

12.3.4.4 That soil excavation and filling, and mineral extraction activities be designed, constructed and operated to avoid, remedy or mitigate adverse effects on people and the environment.

12.3.4.5 That soil conservation be promoted.

12.3.4.6 That mining tailings that contain toxic or bio-accumulative chemicals are contained in such a way that adverse effects on the environment are avoided.

12.3.4.7 That applications for discretionary activity consent involving mining and quarrying be accompanied by a Development Plan.

12.3.4.8 That as part of a Development Plan rehabilitation programmes for areas no longer capable of being actively mined or quarried may be required.

12.3.4.9 That soil excavation and filling in the National Grid Yard are managed to ensure the stability of National Grid support structures and the minimum ground to conductor clearances are maintained.

12.3.4.10 To ensure that soil excavation and filling are managed appropriately, normal rural practices as defined in Chapter 3 will not be exempt when determining compliance with rules relating to earthworks

8.30. As detailed within this report, adverse effects will be mitigated to a less than minor degree via silt and erosion control methods. The site is not within a rural area. The proposal does not include soil and mineral extraction. Adverse effects will be mitigated to a less than minor degree. Soil conservation is not considered applicable. No mining tailings are proposed. No Development Plan is proposed. The proposed works are not within the National Grid Yard. Soil excavation and filling will be managed appropriately as per PK's Earthworks Report.

Proposed District Plan

8.31. Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Part D. Assessment of the relevant objectives and policies has been undertaken below.

Kororareka Russell Township

Objectives

KRT-O1 The Kororāreka Russell Township zone provides for residential and non-residential activities that:

a. are compatible with the historic heritage values of the zone;
b. maintain the character and amenity of the receiving environment; and
c. recognise and protect any part of a site subject to the coastal environment, or High Natural Character.

KRT-O2 Land use and subdivision in the Kororāreka Russell Township zone recognises and protects the natural character, landscape, historic heritage, amenity and cultural values of the site and surrounding area.

KRT-O3 Non-residential activities contribute to the function and well-being of the community while complementing the character, scale and amenity of the Kororāreka Russell Township zone.

KRT-O4 Land use and subdivision in the Kororāreka Russell Township zone is supported by appropriate infrastructure.

KRT-O5 Land use and subdivision in the Kororāreka Russell Township Zone provides communities with functional and high amenity living environments

8.32. The proposal will result in a driveway and supporting retaining wall which is needed due to the deteriorating condition of the driveway. The proposal is considered to maintain the character and amenity of the receiving environment. The coastal environment has been recognised throughout this report. Natural character, landscape, historic heritage, amenity and cultural values have been considered throughout this report with no adverse effects anticipated. No non-residential activities are proposed. The proposal includes private infrastructure. The proposal will result in functional use of the driveway.

Policies

KRT-P1 Enable land use and subdivision in the Kororāreka Russell Township zone where:

a. landscaping and areas of open space are maintained around buildings on the site;
b. it is consistent with scale, character and design anticipated in the surrounding residential environment;
c. there is appropriate infrastructure to support residential and non-residential development;
d. heritage resources are protected; and
e. values of coastal environment and High Natural Character are recognised and protected.

KRT-P2 Require all subdivision in the Kororāreka Russell Township zone to provide the following reticulated services to the boundary of each lot:

a. telecommunications;

i. fibre where it is available; or
ii. copper where fibre is not available;
b. local electricity distribution network; and
c. wastewater, portable water and stormwater where they are available.

KRT-P3 Provide for a variety of housing typologies within the Kororāreka Russell Township zone, where land is appropriately serviced by infrastructure and does not compromise historic heritage and amenity values.

KRT-P4 Enable non-residential activities that:
a. are of a residential scale;
b. support the social and economic well-being of the community;
c. do not detract from the vitality and viability of the adjoining Mixed-Use zone; and
d. avoid, remedy or mitigate adverse effects on the residential and, amenity, and function of the Kororāreka Russell Township zone.

KRT-P5 Provide for retirement villages where they:
a. contribute to the diverse needs of the community;
b. can be appropriately serviced by development infrastructure;
c. compliment the character and amenity values of the surrounding area; and
d. address road safety and efficiency.

KRT-P6 Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:
a. the public benefit of the proposed activity;
b. the siting and design of buildings, structures, outdoor storage areas, parking, internal roading and vegetation;
c. any adverse effects on the character and amenity of adjacent zones;
d. the temporary or permanent nature of any adverse effects;
e. the need for and location of earthworks and vegetation clearance;
f. the provision of low impact design principles; and
g. the likelihood of the activity creating or exacerbating a natural hazard.
h. the protection of:
- *historic heritage*
- *Indigenous biodiversity;*
- *the natural character of the coastal environment and margins of wetlands, lakes and rivers;*
- *landforms;*
- *sites and areas of significance to Māori and cultural values; and*
- *identified and potential public access corridors and esplanade reserves;*

i. provision for areas of open space and outdoor living space;
j. provision of landscaping, screening and planting;
k. consistency with the design, character, scale and amenity of the surrounding residential environment;

l. level of privacy, visual dominance and shading effects on adjoining sites;
m. protection of pedestrian scale, layout and development within Kororāreka Russell;
n. sunlight and daylight access;
o. the adequacy of available or programmed development infrastructure;
p. level of integration with other activities within the zone;
q. hours of operation;
r. provision for car parking;
s. integration and connectivity within the surrounding road network;
t. the ability of the site to address waste water, stormwater, soakage, water supply including fire fighting;
u. community well-being, health and safety;
v. number of planned or potential people on site;
w. any site constraints or natural hazard mitigation; and
x. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6

8.33. The proposal does not include any areas of open space which would be required to be landscaped given the nature of the proposal. The proposed retaining walls are considered necessary to enable use of the driveway such that the scale and character is considered consistent. The required infrastructure such as stormwater tanks will be provided as part of the proposal. The proposal is not anticipated to affect heritage resources. Values of the coastal environment will be maintained.

8.34. The proposal is not for subdivision and therefore KRT-P2 is not applicable. The proposal will not result in additional housing and therefore KRT-P3 is not applicable. The proposal does not involve non-residential activities and therefore KRT-P4 is not applicable. The proposal is not for a retirement village and therefore KRT-P5 is not applicable.

8.35. In terms of KRT-P6 the relevant matters are considered applicable –

(b) The proposed location of the retaining walls and driveway is the only suitable location given these will be located within the existing ROW easement.
(d) all effects are considered to be mitigated to a less than minor degree.
(e) earthworks are considered necessary given the nature of the proposed works.
(f) low impact design principles have been incorporated into the design.
(g) the proposal is not considered to exacerbate natural hazards
(h) there are no features listed that are applicable to the proposal.
(i) open space and outdoor living areas will remain unaffected.
(j) no landscaping is considered necessary.
(l) written approval has been obtained from the affected neighbours such that effects of shading are considered to be less than minor.
(n) as above
(r) carparking has been provided for within the design
(t) stormwater has been accounted for within the design
(x) the site is not known to have a historical, spiritual or cultural connection.

Summary

8.36. The above assessment of the relevant policy documents demonstrates that the proposal will be consistent with the relevant objectives and policies of those statutory documents.

9. Notification Assessment – Sections 95A to 95G of the Act

Public Notification Assessment

9.1. Section 95A requires a council to follow specific steps to determine whether to publicly notify an application. The following is an assessment of the application against these steps:

Step 1 Mandatory public notification in certain circumstances

An application must be publicly notified if, under section 95A(3), it meets any of the following criteria:
(a) the applicant has requested that the application be publicly notified:
(b) public notification is required under section 95C:
(c) the application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.

9.1.1. It is not requested the application be publicly notified and the application is not made jointly with an application to exchange reserve land. Therefore Step 1 does not apply, and Step 2 must be considered.

Step 2: Public Notification precluded in certain circumstances

(4) Determine whether the application meets either of the criteria set out in subsection (5) and,—
(a) if the answer is yes, go to step 4 (step 3 does not apply); and
(b)if the answer is no, go to step 3.
(5) The criteria for step 2 are as follows:
(a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification:
(b)the application is for a resource consent for 1 or more of the following, but no other, activities:
(i)a controlled activity:
(ii)[Repealed]
(iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity.
(iv)[Repealed]
(6)[Repealed]

9.1.2. Public Notification is not precluded as the proposal is a discretionary activity. Therefore Step 3 must be considered.

Step 3: Public Notification required in certain circumstances

(7) Determine whether the application meets either of the criteria set out in subsection (8) and,—
(a)if the answer is yes, publicly notify the application; and
(b)if the answer is no, go to step 4.

(8)The criteria for step 3 are as follows:
(a)the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification:
(b)the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.

9.1.3. The proposal is not subject to a rule or NES requiring public notification and the proposal does not have effects that will be more than minor. Therefore, Public Notification is not required, and Step 4 must be considered.

Step 4: Public notification in special circumstances

9.1.4. Section 95A(9) states that a council must publicly notify an application for resource consent if it considers that 'special circumstances' exist, notwithstanding that Steps 1 – 3 above do not require or preclude public notification. Special circumstances are not defined in the Act.

9.1.5. There are no special circumstances that exist to justify public notification of the application because the proposal is for a discretionary activity and the proposal is not considered to be controversial or of significant public interest, particularly given that the proposal will result in a driveway and supporting retaining walls which provide vehicular access to a residential site, which is considered as neither exceptional or unusual.

Public Notification Summary

9.1.6. From the assessment above it is considered that the application does not need to be publicly notified, but assessment of limited notification is required.

Limited Notification Assessment

9.2. If the application is not publicly notified, a consent authority must follow the steps of section 95B to determine whether to give limited notification of an application.

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

(2) Determine whether there are any—
(a) affected protected customary rights groups; or
(b)affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity).
(3) Determine—
(a)whether the proposed activity is on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11; and
(b)whether the person to whom the statutory acknowledgement is made is an affected person under section 95E.
(4) Notify the application to each affected group identified under subsection (2) and each affected person identified under subsection (3).

9.2.1. There are no protected customary rights groups or customary marine title groups or statutory acknowledgement areas that are relevant to this application. Therefore Step 1 does not apply, and Step 2 must be considered.

Step 2: Limited notification precluded in certain circumstances

(5) Determine whether the application meets either of the criteria set out in subsection (6) and,—
(a)if the answer is yes, go to step 4 (step 3 does not apply); and
(b)if the answer is no, go to step 3.
(6) The criteria for step 2 are as follows:
(a)the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:
(b) the application is for a controlled activity (but no other activities) that requires a resource consent under a district plan (other than a subdivision of land).

9.2.2. There is no rule in the plan or national environmental standard that precludes notification. The application is not for a controlled activity. Therefore Step 2 does not apply, and Step 3 must be considered.

Step 3: Certain other affected persons must be notified

(7) In the case of a boundary activity, determine in accordance with section 95E whether an owner of an allotment with an infringed boundary is an affected person.
(8) In the case of any other activity, determine whether a person is an affected person in accordance with section 95E.
(9) Notify each affected person identified under subsections (7) and (8) of the application.
The proposal is not for a boundary activity nor is it a prescribed activity.

9.2.3. The proposal includes two boundary activities as part of the proposed retaining walls cross the site boundary into the legal road reserve. Permission to Occupy this area has been requested by the applicants from council in the form of a Licence to Occupy. NTA have also been contacted separately in processing this resource consent.

9.2.4. Written approval has also been obtained from the owners of Allotment 1A, 2A and 3A and as such, effects on these allotments are considered to be less than minor. In terms of Allotment 4 (17 Baker Street), the retaining wall is setback 1.2 metres from the site boundary with no sunlight infringements along the boundary, such that this neighbour is considered to be unaffected by the proposal. Exemptions have been applied for setback and sunlight along the boundary with Lot 1 DP 21073 such that no effects have been considered on this allotment.

9.2.5. As written approvals have been obtained by the affected adjoining property owners, as well as a License to Occupy being obtained and approval from the FNDC Roading Team (although for an earlier version of the plans), it is considered that all affected parties have been appropriately notified and there are no other parties deemed to be adversely affected by the proposal.

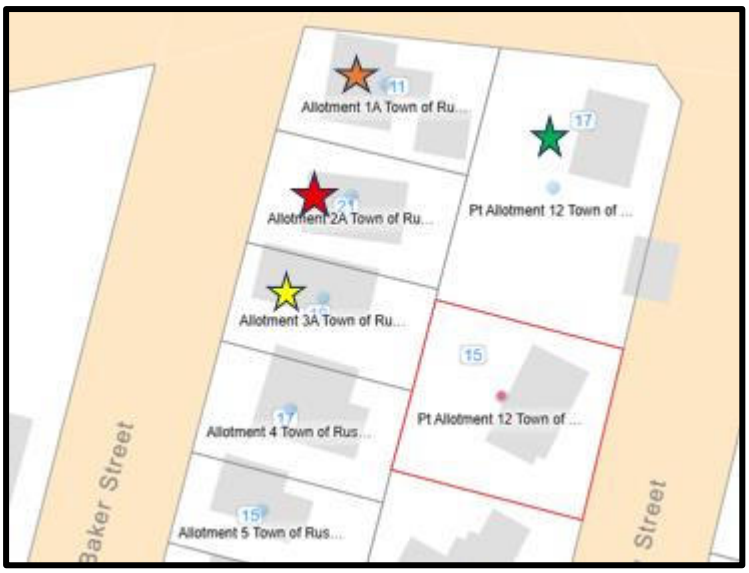


Figure 33: Image showing location of owners whom have provided written approval.

9.2.6. In deciding who is an affected person under section 95E, a council under section 95E(2):

(2) The consent authority, in assessing an activity's adverse effects on a person for the purpose of this section,—
(a) may disregard an adverse effect of the activity on the person if a rule or a national environmental standard permits an activity with that effect; and
(b) must, if the activity is a controlled activity or a restricted discretionary activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and
(c) must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11.

9.2.7. A council must not consider that a person is affected if they have given their written approval, or it is unreasonable in the circumstances to seek that person's approval.

9.2.8. With respect to section 95B(8) and section 95E, the permitted baseline was considered as part of the assessment of environmental effects undertaken in Section 6 of this report, which found that the potential adverse effects on the environment will be minor. In regard to effects on persons, the assessment in Sections 6, 7 & 8 are also relied on, and the following comments made:

- The proposed retaining walls are not considered to adversely affect the adjoining allotment (15 Ashby Road) as there is a permitted activity rule which allows for an exemption of up to 10m. This exemption is being utilised.
- The retaining walls ensures the integrity of the existing driveway servicing the residential dwelling at 15 Chapel Street remains, and does not adversely impact upon neighbouring sites. The retaining walls will not affect privacy nor enjoyment of outdoor spaces.
- The proposal is consistent with other development in the area.
- The proposal will fulfil the intended purpose of the site.

- All recommendations within PK Engineering Reports will be adhered to, to ensure effects are kept to a less than minor degree.
- Sediment and erosion methods have been offered as a condition of consent to ensure that sediment runoff is contained to the development area.
- The proposal is not considered to be contrary to the objectives and policies under the District Plan.
- All other persons are sufficiently separated from the proposed development and works, such that there will be no effects on these people.

Step 4: Further notification in special circumstances

(10) whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification under this section (excluding persons assessed under section 95E as not being affected persons),

9.2.9. The proposal is to construct retaining walls to support the proposed driveway. It is considered that no special circumstances exist in relation to the application.

Limited Notification Assessment Summary

9.2.10. Overall, from the assessment undertaken the Northern Transport Alliance is considered affected.

10. Part 2 Assessment

10.1. 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.

10.2. The proposal will meet Section 5 of the RMA as the proposal will sustain the potential of natural and physical resource whilst meeting the foreseeable needs of future generations as the site is being used for its intended use. In addition, the proposal will avoid adverse effects on the environment and will maintain the character of the site and surrounding environment.

10.3. Section 6 of the Act sets out a number of matters of national importance. The subject site is located within the coastal environment however the proposal is considered to be consistent with the objectives and policies of the NZCPS as well as consistent with development in the area. Stormwater runoff and sediment control has been offered as a condition of consent such that the proposal is not anticipated to create any more than minor effects on the surrounding environment. The subject site does not contain any outstanding natural features or landscapes nor any areas of significant indigenous vegetation or habitats of significant fauna. The proposal is not considered to have any adverse effects on these features. The proposal is not considered to have any adverse effects on Māori and their culture and traditions with their ancestral lands nor any effects on heritage sites. The subject site is not known to be susceptible to natural hazards and does not increase the risk of natural hazards.

10.4. Section 7 identifies a number of "other matters" to be given particular regard by a Council in the consideration of any assessment 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.

10.5. Section 8 requires Council to take into account the principals of the Treaty of Waitangi. It is considered that the proposal raises no Treaty issues. The subject site is not located within an area of significance to Māori. The proposal has taken into account the principals of the Treaty of Waitangi, and is not considered to be contrary to these principals.

10.6. Overall, the application is considered to be consistent with the relevant provisions of Part 2 of the Act, as expressed through the objectives, policies and rules reviewed in earlier sections of this application. Given that consistency, we conclude that the proposal achieves the purposes of sustainable management set out by section 5 of the Act.

11. Conclusion

11.1. The proposed retaining walls and driveway are suitable in the context of the site and surrounding environment. Erosion and sediment control will be undertaken and is offered as a condition of consent to prevent sediment from entering adjoining sites.

11.2. No significant adverse effects are anticipated to arise from the activity included in the application and no consideration of alternatives has been undertaken. Overall, it is considered that the proposal will result in no more than minor effects on the environment.

11.3. In terms of section 104(1)(a) of the Act, the actual and potential effects of the proposal will be less than minor. The relevant provisions within Part 2 of the Act have been addressed as part of this application. The overall conclusion from the assessment of the statutory considerations is that the proposal is considered to be consistent with the sustainable management purpose of the Resource Management Act 1991.

11.4. It is also considered that the proposal will have less than minor adverse effects on the wider environment. Written approvals have been obtained from affected parties such that effects on these parties can be disregarded to a degree. There are no special circumstances.

11.5. In terms of section 104(1)(b) of the Act, the proposal is found to be generally consistent with the objectives, policies and assessment criteria of the relevant statutory documents as set out in this report.

11.6. As a Discretionary Activity, the application has been assessed under the matters specified under Section 104 and 104B of the Resource Management Act 1991. It is considered that the proposal results in no more than minor effects on the environment. It is considered appropriate for consent to be granted on a non-notified basis, subject to fair and reasonable conditions.

12. Limitations

12.1. 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.

12.2. 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.

12.3. 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.

12.4. 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
Limited as to Parcels
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA8B/491**

Land Registration District **North Auckland**

Date Issued 22 April 1966

Prior References
NA750/40

Estate Fee Simple

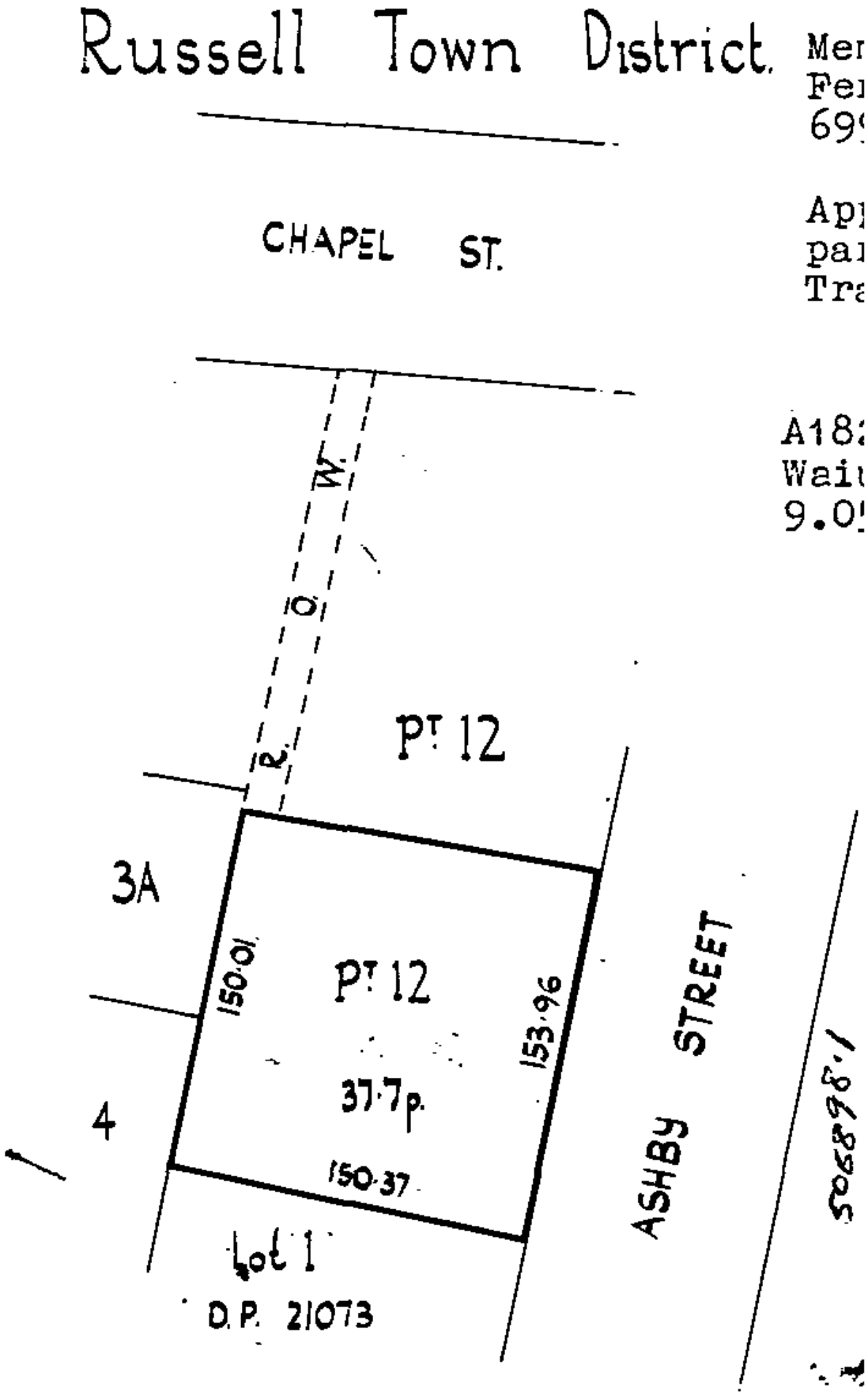
Area 954 square metres more or less

Legal Description Part Section 12 Town of Russell

Registered Owners
Paul Andre Van Koningsveld and Erina Van Koningsveld

Interests

Appurtenant hereto is a right of way created by Transfer 699239


Russell Town District.
CHAPEL ST.
W.
O.
R.
Pt 12
3A
150·01
Pt 12
153·96
37·7p.
4
150·37
Lot 1
D.P. 21073
ASHBY STREET
50·68 98·1

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Limited as to Parcels

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

R.W. Muir
Registrar-General of Land

Identifier	**NA1D/35**
Land Registration District	**North Auckland**
Date Issued	10 May 1963

Prior References
NA750/40

Estate	Fee Simple
Area	1012 square metres more or less
Legal Description	Part Section 12 Town of Russell

Registered Owners
Paul Andre Van Koningsveld, Erina Van Koningsveld and Greig Van Koningsveld

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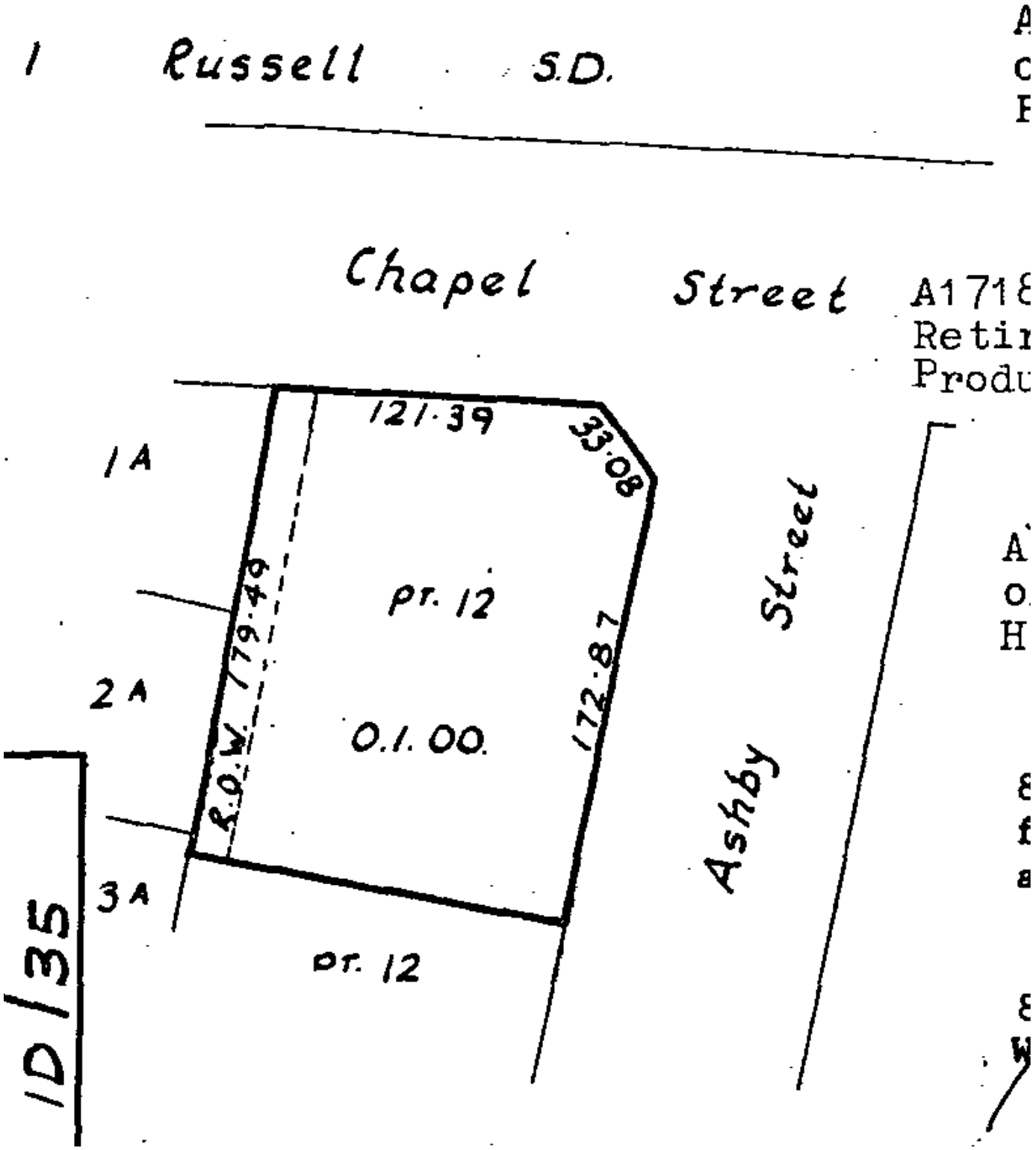
Interests

Subject to a right of way over part created by Transfer 699239 - 10.5.1963

12926111.2 Mortgage to Bank of New Zealand - 1.2.2024 at 6:12 pm


1 Russell S.D.
Chapel Street
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121·39
33·08
1A
2A
3A
R.O.W. 179·49
pt. 12
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172·87
Ashby Street
pt. 12
1D/35

699239 TE 10051963

3/- D Scheme Plan 8377 (N) not released.

(Approved by the District Land Registrar, Auckland, No. 3360)

New Zealand) (C)

Under the Land Transfer Act, 1952

Memorandum of Transfer

I, WILLIAM DAVID BARNETT of Dargaville, Garage Foreman being registered as proprietor of an estate in fee simple

Exd pa 1.7.63

subject however to such encumbrances, liens and interests as are notified by memoranda underwritten or endorsed hereon in all that piece of land situated in the Land District of Auckland containing ONE ROOD (0a.1r.0p.)

more or less being ~~Lot 1 of a subdivision of~~ part Section 12 of the Town of Russell and being part of the land comprised in Certificate of Title Volume 750 Folio 40

SUBJECT TO a. Agreement as to fencing contained in Transfer No. 484145
b. Memorandum of Mortgage No. 585867 to the Public Trustee under which there is no money due and owing the principal sum of £1,000

all of the said land being more particularly shown on the diagram endorsed hereon.

AGREEMENT, TRANSFER, ASSIGNMENT, and MORTGAGE stamped with duty of
£ 24,10:- on 25/9/62
£ : : on / /
Dist. Commissioner of Stamp Duties WHANGAREI

29 XI 62 6134 *00.*3.0

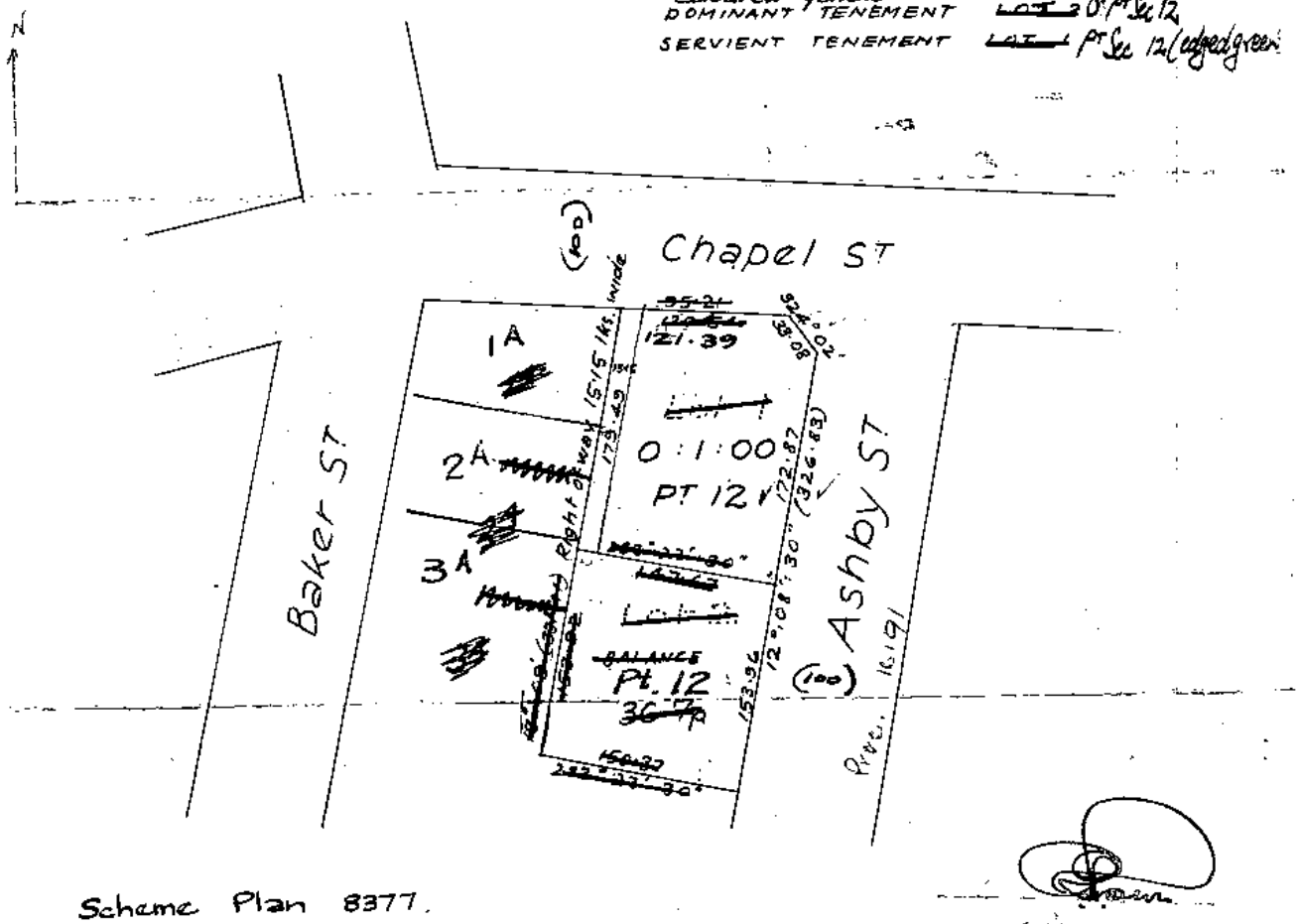
N.Z. Stamp Duty WRPDENOTING

Memorandum of Easement

RIGHT OF WAY OVER ~~Pt Lot 1~~ Pt Sec 12 (edged green) coloured yellow

DOMINANT TENEMENT ~~Lot 3~~ Of Pt Sec 12

SERVIENT TENEMENT ~~Lot 1~~ Pt Sec 12 (edged green)



Scheme Plan 8377.

27 6 63.

Section 12 Town of Russell

Parts of ~~Block 12 Russell Town~~

NORTH AUCKLAND LAND DIST. BLK. I RUSSELL S.D.

Scale: 1 chain /in

REFERENCE

Date of receipt of plan 7.2.61 D.O. File No. 5/8377

Date copy submitted to Local Authority for comments under Section 3(4) of the Act 10.2.61

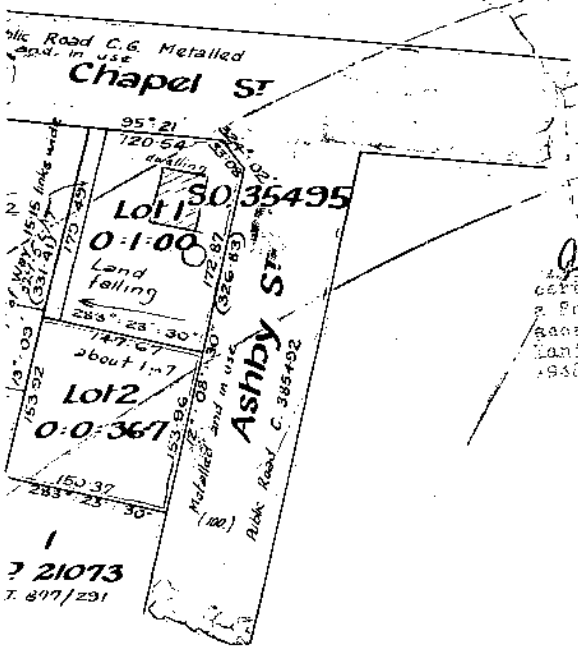
Date of receipt of comments of Local Authority

Date of submission of copy of approved plan to:

Surveyor-General _____ Local Authority _____

District Land Registrar _____

Approval date: 2. 6. 61.



Alexander Reid
certify that this
a Scheme Plan under
Land Subdivision
1946.

A Reid
Asst. Chief Surveyor
12/6/61.

Extn No 26

T Sec 12 Russell Town

H. Barnett Owner

Bay of Islands County

Land Dist.

B.H. Logan Registered Surveyor

December 1960

Approved:

S. H. Barnett

Registered Owner

Approved:
Conditionally on the Rights of Way shown on the plan being duly granted

A Reid
Asst. Chief Surveyor

hereby Certify that this scheme
cordance with the provisions
Act 1946 and the regulations

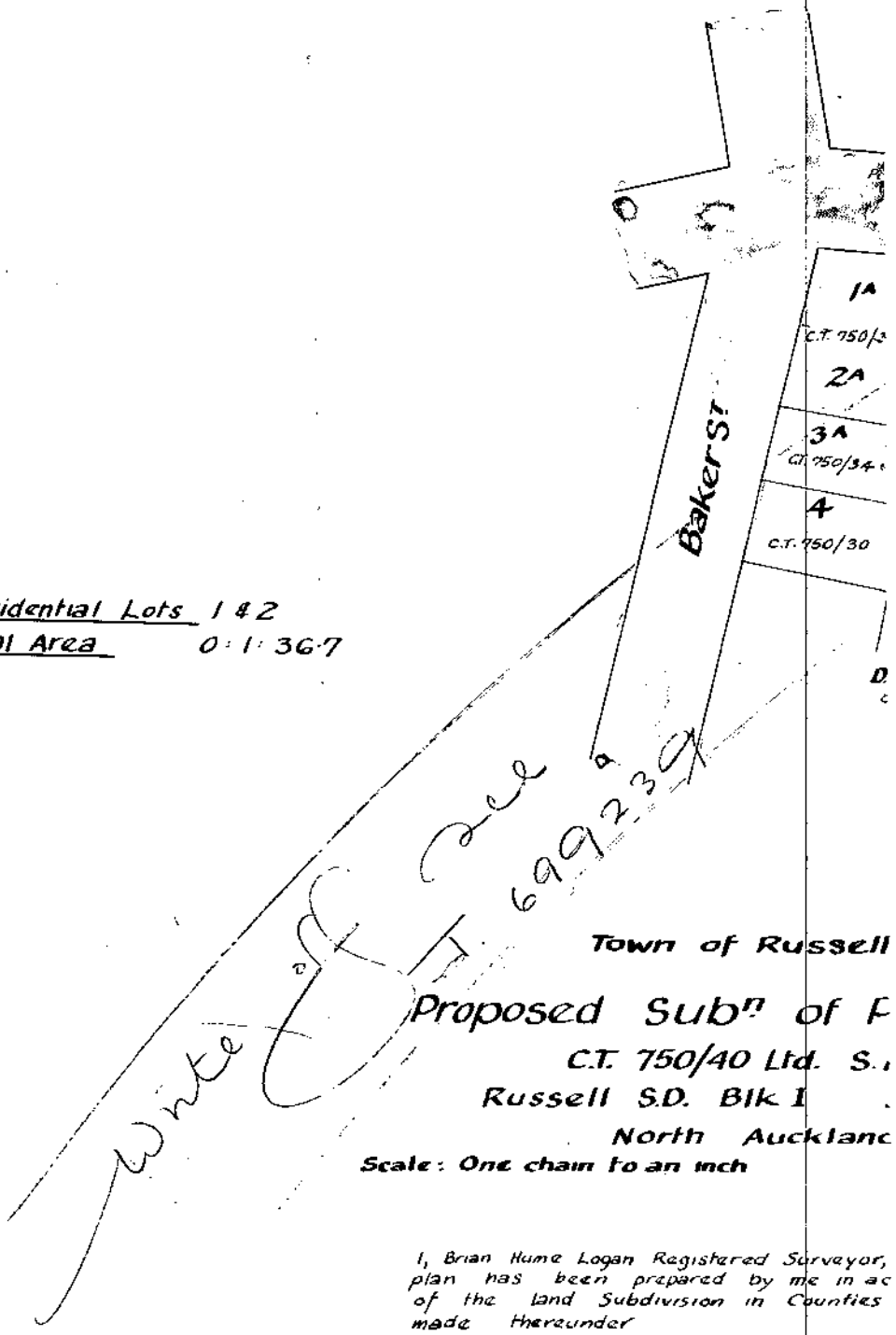
B H Logan
Registered Surveyor

8377

699239 TE 1005 1963

Memorandum of Easements

Re: Right of Way over Pt Lot 1 coloured yellow.
Dominant Tenement : Lot 2
Servient Tenement : Lot 1

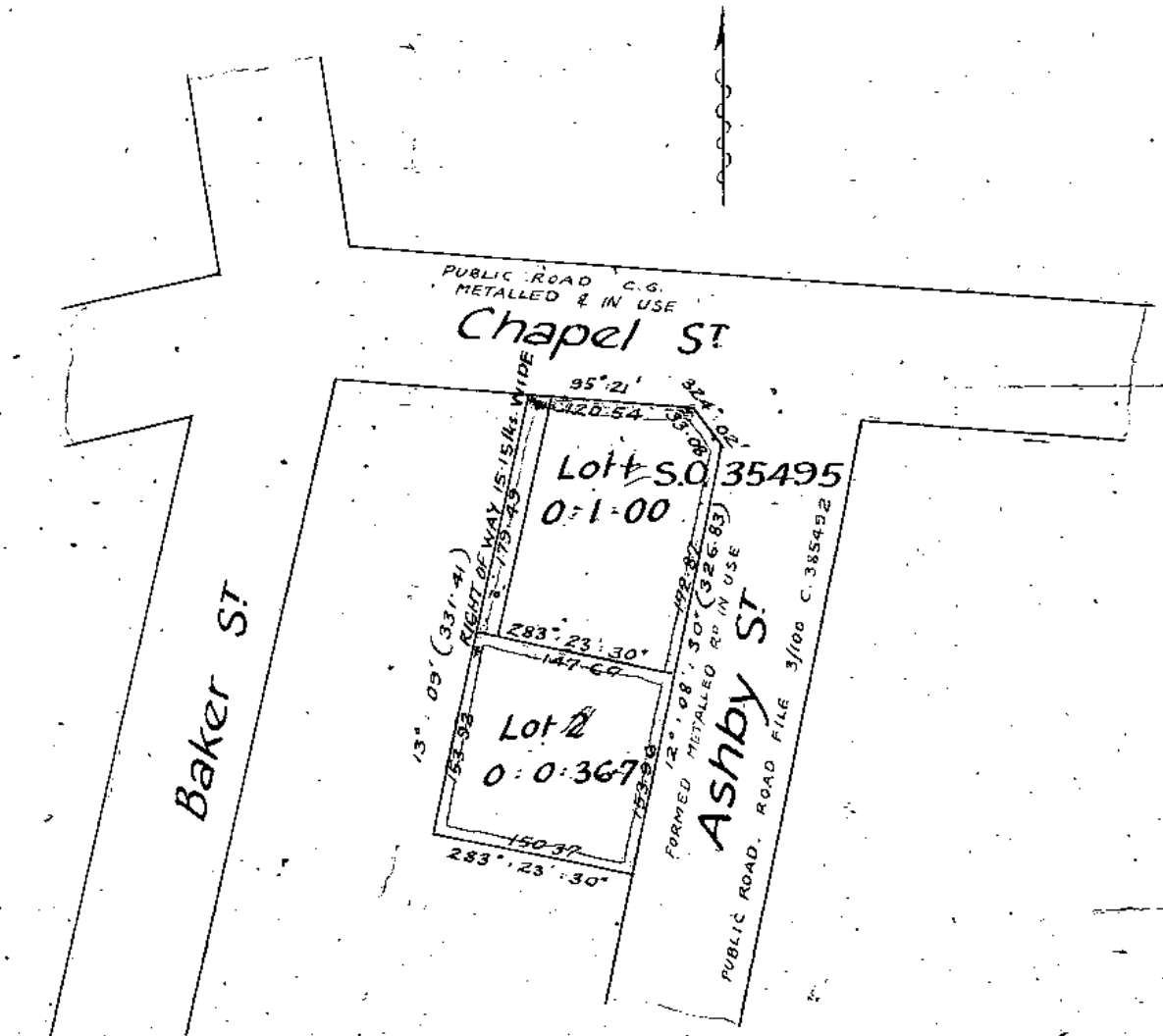


I, Brian Hume Logan Registered Surveyor, plan has been prepared by me in ac of the Land Subdivision in Counties made thereunder

Rec. Sht. B1
B.J.D. 7.2.61
No Prev. S.P.

0 1 2 3

699239 TE 10051963



Lodged by:
Mr D. Barnett
31 Killarney St
Takapuna.

Parts of ~~Blk.~~ 12 Rec. Town of Russell ~~Town~~

NORTH AUCKLAND LAND DIST. BLK. I RUSSELL S.D.

Scale: 1 chain to an inch.

043 R.

To LTS for report as diagram acceptable for record?

In consideration of the sum of TWO THOUSAND FOUR HUNDRED AND THIRTY POUNDS (£2,430) paid to me by KENNETH SAMUEL BARGH of Russell, Town Clerk

WDB. (the receipt of which sum is hereby acknowledged)

Do hereby Transfer to the said Kenneth Samuel Bargh

all my estate and interest in the said piece of land above described reserving nevertheless to myself the said William David Barnett and my assigns full and free right and liberty to me and them the registered proprietor or proprietors for the time being of ~~all that parcel of land shown as Lot 2 on the diagram endorsed hereon being~~ the other part of Section 12 of the Town of Russell and being the balance of the land in the said Certificate of Title or any part thereof and my and their tenants servants agents workmen and visitors from time to time and at all times hereafter at my and their will and pleasure to go pass and repass with or without vehicles of all descriptions through over and along that portion of the said piece of land first hereinbefore described shown coloured yellow on the diagram endorsed hereon and of a uniform width of 15.15 links to the end and intent that the right of way hereby reserved shall be forever hereafter appurtenant to the said piece of land secondly hereinbefore described for all purposes connected with the use occupation and enjoyment thereof, PROVIDED that I shall not be liable nor be called upon to erect or repair or contribute towards the cost of the erection or repair of any dividing or boundary fence between the land hereby transferred and any land owned by me adjoining thereto but this proviso shall not enure for the benefit of any purchaser from me of such adjoining land or any part thereof.

In witness whereof I have hereunto subscribed my name this 26th day of November one thousand nine hundred and sixty-two

Signed by the above named WILLIAM DAVID BARNETT } W D Barnett

in the presence of }

[illegible]
[illegible]
[illegible]

699239

No.

Correct for the purposes of the Land Transfer Act.

TRANSFER OF Lot 1 of a subdivision of part Section 12 Town of Russell

Solicitor for the Transferee

WILLIAM DAVID BARNETT ..... Transferor

KENNETH SAMUEL BARGH ..... Transferee

Particulars entered in the Register-Book Vol. 750
Folio 40
the 10th day of May 1963
at 2.12 o'clock

Assistant Land Registrar
of the District of Auckland.

DISTRICT LAND REGISTRAR NORTH AUCKLAND

DLR. The design endorsed on this agreement [illegible] will require [illegible] to agree with CT. [illegible] (1) The subdivision of boundary is not to be [illegible]
(2) [illegible]
(3) [illegible]
(4) The [illegible] be completed [illegible]
(5) [illegible]
(6) [illegible]
(7) [illegible]
[illegible] 18.5.63

1. The [illegible] plan as [illegible] and it is [illegible] confer with the [illegible] Surveyor with a view to correcting it.
2. Any alterations to the [illegible] should be replied to in the [illegible]

10/35

RISHWORTH & HARRISON & KENNEDY
SOLICITORS
WHANGAREI

Solicitors for the Transferee

LAND & DEEDS
Nature: T
Firm: Peak Kirker
10 MAY 1963
Time: 2.12
Fee: £ 4 : 12 : 0
Abstract No. 1187

THE LAW SOCIETY OF THE DISTRICT OF AUCKLAND

ISSUED FOR CONSENT

PK ENGINEERING LIMITED

CHARTERED PROFESSIONAL ENGINEERS

PROJECT:

PROPOSED NEW RETAINING WALLS & DRIVEWAY FOR PAUL & ERINA VAN KONINGSVELD

PROJECT ADDRESS:

15 Chapel Street, Russell

LEGAL DESCRIPTION:

Part Allotment 12, Section 12 Town of Russell

JOB NO:

23-019

DATE:

7/3/2024 (ORIGINAL DATE OF ISSUE)

REVISION:

REVISION 1: 2 NOV 2023
-Added Sunlight angles to Cross sections.
-Removed proposed Tanks
-Updated Cesspit 4 to Cesspit 1 from Ø150mm to Ø300mm Stormwater pipe.

REVISION 2: 7 MARCH 2024
-ADDED NEW SHEET SR3C FOR HEIGHTS OF STRUCTURE ALONG BOUNDARY OF 17 CHAPEL AND 11 CHAPEL STREET
- CHANGED SR1 AND SR2A TO SHOW THE REVISED STORMWATER OUTLET TO CULVERT
-UPDATED SHEET SR6 CROSS SECTIONS TO INCLUDE HEIGHTS OF THE STRUCTURES KEY FEATURES.
- CHNAGED OUTLET TO CHAPEL STREET INTO CULVERT WITH NEW SHEETS SR15,SR16 & SR17 FOR DETAILS.

DRAWING INDEX:

SR0	GENERAL NOTES
SR1	SITE PLAN
SR2A	ENLARGED SITE PLAN (A)
SR2B	ENLARGED SITE PLAN (B)
SR3A	DRIVEWAY ELEVATION PROFILE (A)
SR3B	DRIVEWAY ELEVATION PROFILE (B)
SR4	CROSS SECTION (A-A) (B-B)
SR5	CROSS SECTION (C-C) (D-D)
SR6	CROSS SECTION (E-E) (F-F)
SR7	CROSS SECTION (G-G)
SR8	CROSS SECTION (H-H)
SR9	CROSS SECTION (I-I)
SR10	CROSS SECTION (J-J)
SR11	CANTILEVER RW DETAIL - TYPE A
SR12	PROPPED CANTILEVER RW DETAIL - TYPE B
SR13	PROPPED CANTILEVER POLE DETAIL
SR14	HYNDS CESSPIT DETAIL
SR15	CULVERT CESSPIT DETAIL
SR16	CULVERT CESSPIT DETAIL
SR17	CULVERT CESSPIT DETAIL
SR18	SW ATTENUATION TANKS PLAN VIEWS
SR19	SW ATTENUATION TANKS DETAILS
SR20	RC PILE WALL DETAIL - TYPE C
SR21	CANTILEVER RETAINING WALL DETAIL -TYPE D
SR22	ELEVATION PROFILE ALONG RETAINING WALL TYPE C

SHEET 39 FNDC 2023 STANDARDS MANHOLE REQUIREMENTS
SHEET 32 FNDC 2023 PIPE PROTECTION AND BULKHEAD DETAILS

REVISION 3: 16 OCTOBER 2024
- ADDED CIRTEX STORMWATER ATTENUATION TANK TO DRAWINGS
- NEW SHEETS SR18 & SR19 ADDED FOR ATTENUATION TANK DETAILS
- UPGRADED DRAINAGE INFORMATION (PIPE NETWORK) FOR ALL PROPOSED DRAINAGE FROM PROPOSED DRIVEWAY TO COUNCIL INFRASTRUCTURE
- UPDATED PLAN WITH SURVEYED LOCATION OF FNDC SS LINE ADDED SHEET 39 OF FNDC STANDARDS FOR MANHOLE
- UPDATED RETAINING WALL STAGE 2 CONCEPT TO A SINGLE CONCRETE PALISADE WALL SETBACK 1.2M FROM NEIGHBOUR BOUNDARY.

REVISION 4: 23 JANUARY 2025
- **IN RESPONSE TO RFI DATED 10 DECEMBER 2024, ADDED TIMBER BALUSTRADE BETWEEN SECTION LINES I-I AND J-J IN SHEETS SR1 & SR3B**
- **TIMBER BALUSTRADE ADDED IN CROSS SECTION VIEW IN SHEET SR10**

REVISION 5: 14 July 2025
- **In regards to overall driveway design the elevation geometry has changed reducing retaining wall heights along the first half from Chapel Street.**
- **Changes include new SW - Drainage Layout (2 x Cirtex Tanks)**
- **Stage 2 conceptual has been removed to include the Retaining wall Type D and C walls. and the full design is prepared for Building Consent.**
- **Saw Cut Join Positions have been added to Plan View.**
- **Structural Details have been updated and include Sheet SR20 and SR21**

NOTES:

VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING WORK. USE WRITTEN DIMENSIONS IN PREFERENCE TO SCALING THESE DRAWINGS. READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS, STRUCTURAL CALCULATIONS, FIRE REPORT & STRUCTURAL SPECIFICATIONS. BUILDING TO COMPLY WITH NZS3604. ENSURE TO HAVE THE ENGINEERING CALCULATIONS, STRUCTURAL SPECIFICATIONS, STRUCTURAL DRAWINGS & BUILDING PERMIT ON SITE EACH DAY BEFORE COMMENCING WORK. ALL PRODUCTS ARE TO BE STORED & INSTALLED TO MANUFACTURERS SPECIFICATIONS. ALL EXPOSED STRUCTURAL STEEL IS TO BE GALVANIZED AND FINISHED OFF AS PER THE STRUCTURAL STEEL SPECIFICATIONS.

REVISION 6: 16 July 2025

- **Added another drawing sheet SR22 with the elevation profile of the the retaining wall type d along the boundary with Lot 1.**
- **Added aditional retaining height to the retaining wall type d design detail**

A3

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

Tel. (09) 4073255
Fax. (09) 4073256
E-mail. pk.engin@xtra.co.nz

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

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.

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 :

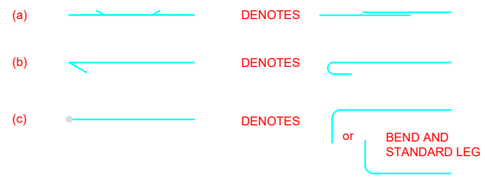
BAR DESIGNATION		LAP LENGTH
HD10	-	560
HD12	-	670
HD16	-	900
HD20	-	1120

HD24 AND LARGER - REFER DRAWINGS

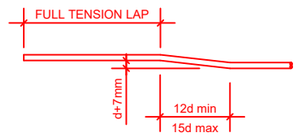
D10	-	335
D12	-	400
D16	-	540
D20	-	670

D24 AND LARGER - REFER DRAWINGS

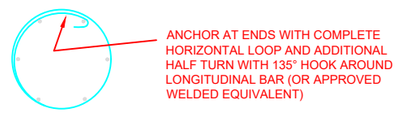
10.



(d) CRANKED BARS SHALL BE DIMENSIONED AS FOLLOWS :



(e) END ANCHORAGE OF SPIRAL REINFORCEMENT :



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

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.

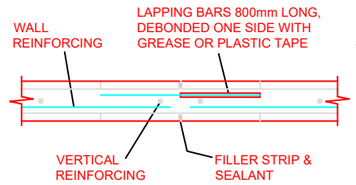
8. UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. MINIMUM SPLICE LAP LENGTH FOR DEFORMED BARS SHALL BE :

   40 BAR DIAMETERS FOR GRADE 300 STEEL

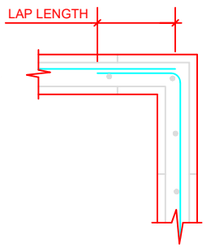
   60 BAR DIAMETERS FOR GRADE 500 STEEL.

60 BAR DIAMETERS FOR GRADE 500 STEEL.

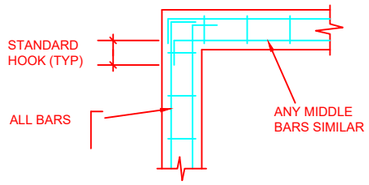
9. PLAN - CONSTRUCTION JOINT :



10. PLAN - TYPICAL CORNER DETAIL :

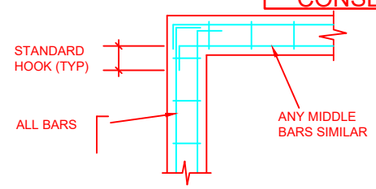


11. PLAN - FOUNDATION CORNER :

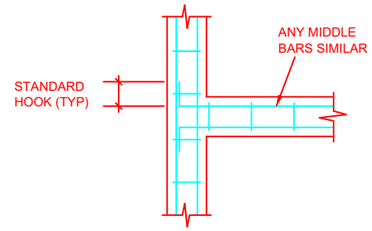


ISSUED FOR CONSENT

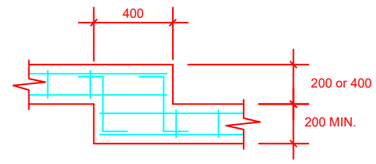
11. PLAN - FOUNDATION CORNER :



12. PLAN - FOUNDATION JUNCTION :



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.

PK ENGINEERING LIMITED
DATE: 23 05 2023
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

PK 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:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	GENERAL NOTES	JW	PK	16 07 2025	AS SHOWN	23-019.dwg	S0	R6

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PROJECT No: 23-019

ISSUED FOR CONSENT

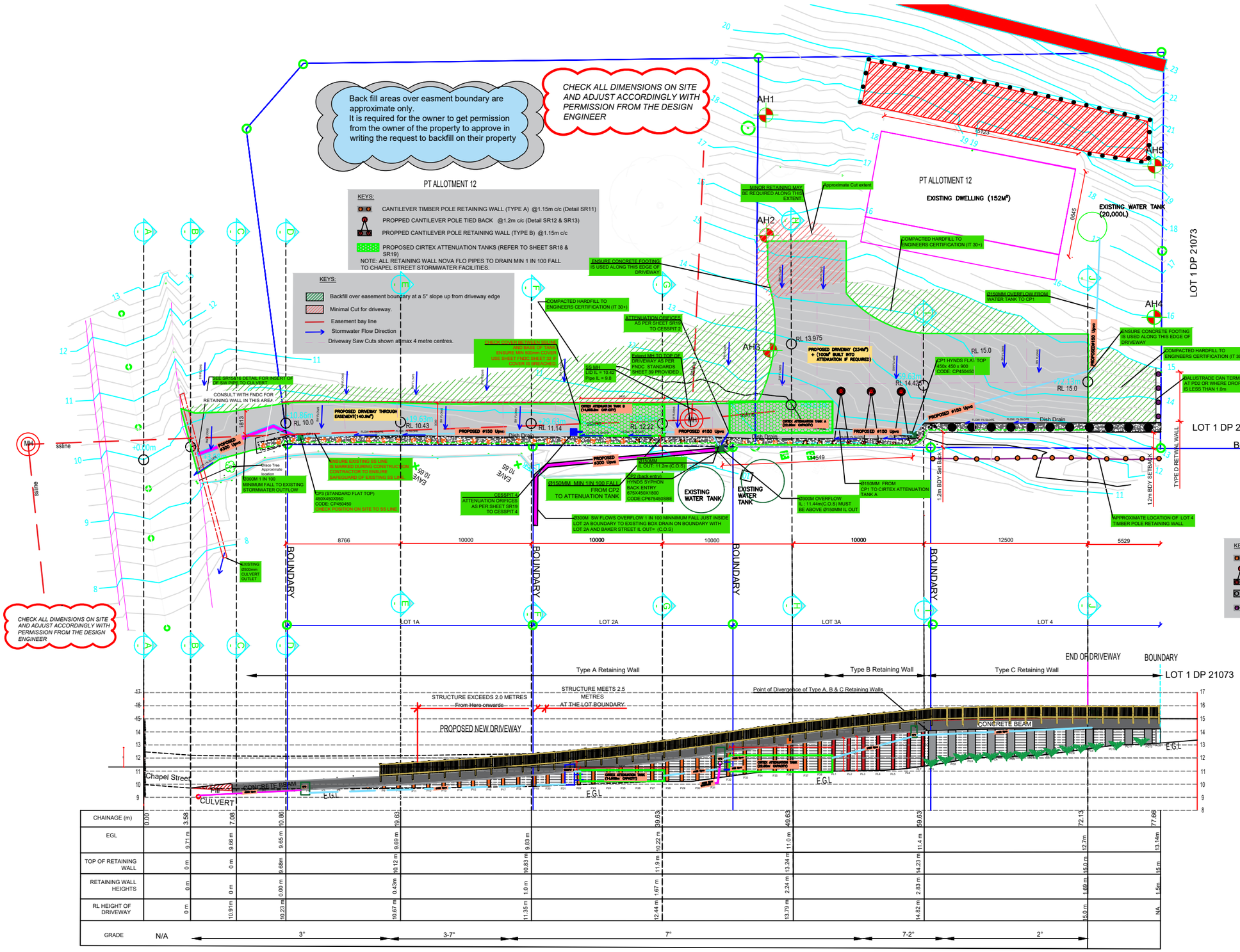
Back fill areas over easment boundary are approximate only.
It is required for the owner to get permission from the owner of the property to approve in writing the request to backfill on their property

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:
- CANTILEVER TIMBER POLE RETAINING WALL (TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL (TYPE B) @1.15m c/c
- PROPOSED CIRTEX ATTENUATION TANKS (REFER TO SHEET SR18 & SR19)

NOTE: ALL RETAINING WALL NOVA FLO PIPES TO DRAIN MIN 1 IN 100 FALL TO CHAPEL STREET STORMWATER FACILITIES.

KEYS:
- Backfill over easement boundary at a 5° slope up from driveway edge
- Minimal Cut for driveway.
- Easement bay line
- Stormwater Flow Direction
- Driveway Saw Cuts shown at max 4 metre centres.



KEYS:
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE(TYPE C) @1.5m c/c. WITH CONCRETE BEAM (DETAIL SR20)
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE D) @1.1m c/c (Detail SR21)

CHAINAGE (m)	0.00	3.58	7.08	10.86	19.63	29.63	39.63	49.63	59.63	72.13	77.66
EGL	9.71 m	9.66 m	9.65 m	9.83 m	10.22 m	11.0 m	11.4 m	12.7m	13.14m		
TOP OF RETAINING WALL	0 m	0 m	9.88m	10.12 m	10.83 m	11.9 m	13.24 m	14.23 m	15.0 m	15 m	
RETAINING WALL HEIGHTS	0 m	0 m	0.00 m	0.43m	1.0 m	1.67 m	2.24 m	2.83 m	1.69 m	1.5m	
RL HEIGHT OF DRIVEWAY	0 m	10.91m	10.23 m	10.67 m	11.35 m	12.44 m	13.79 m	14.82 m	15.0 m	NA	
GRADE	N/A	3°	3-7°	7°	7-2°	2°					

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

PK 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 NEW DRIVEWAY & RETAINING WALLS
15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: SITE PLAN

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
JW	PK	16 07 2025	1:300 (A3)	23-019.dwg	SR1	R6

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PROJECT No: 23-019

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(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

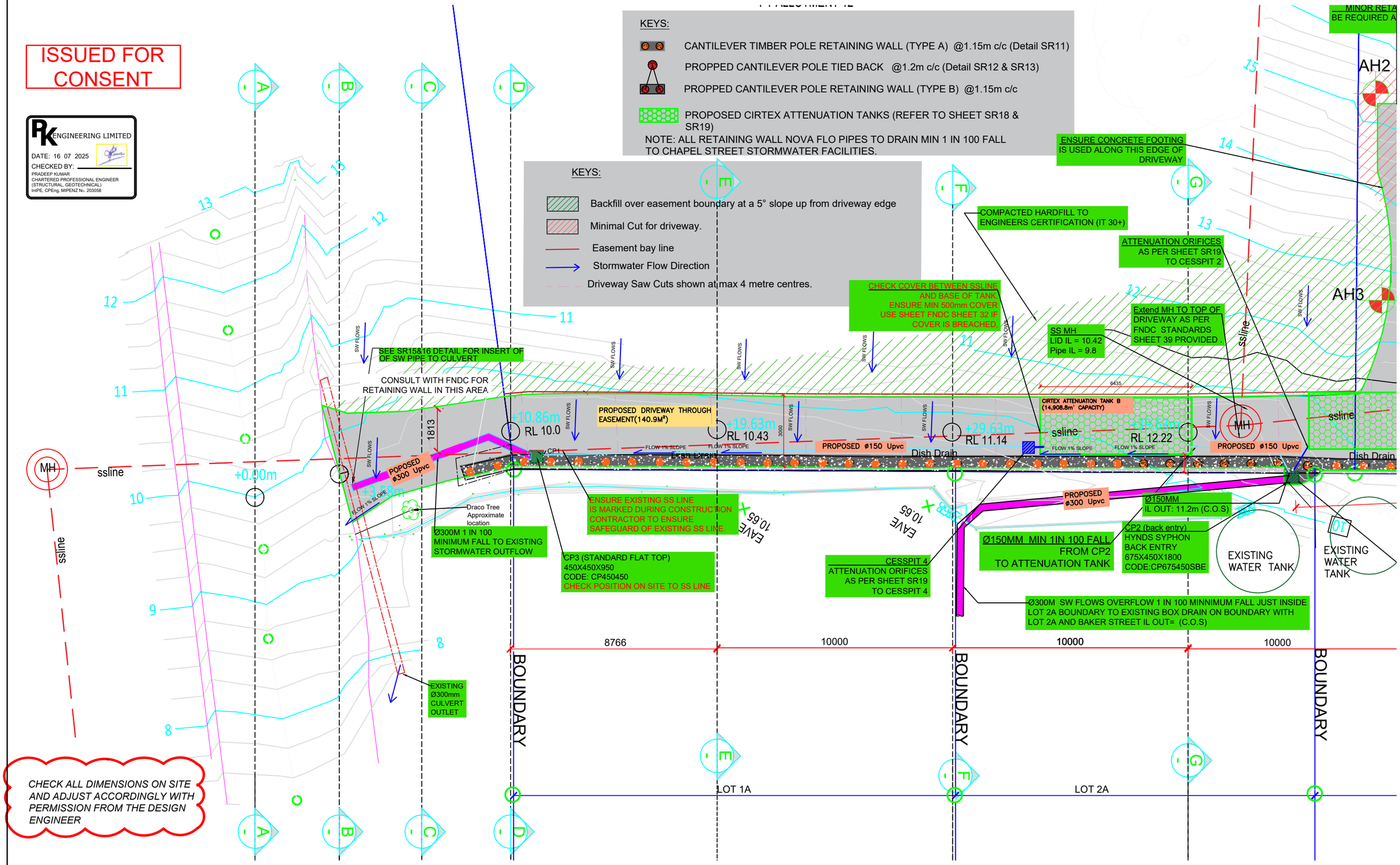
KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL (TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL (TYPE B) @1.15m c/c
- PROPOSED CIRTEX ATTENUATION TANKS (REFER TO SHEET SR18 & SR19)

NOTE: ALL RETAINING WALL NOVA FLO PIPES TO DRAIN MIN 1 IN 100 FALL TO CHAPEL STREET STORMWATER FACILITIES.

KEYS:

- Backfill over easement boundary at a 5° slope up from driveway edge
- Minimal Cut for driveway.
- Easement bay line
- Stormwater Flow Direction
- Driveway Saw Cuts shown at max 4 metre centres.



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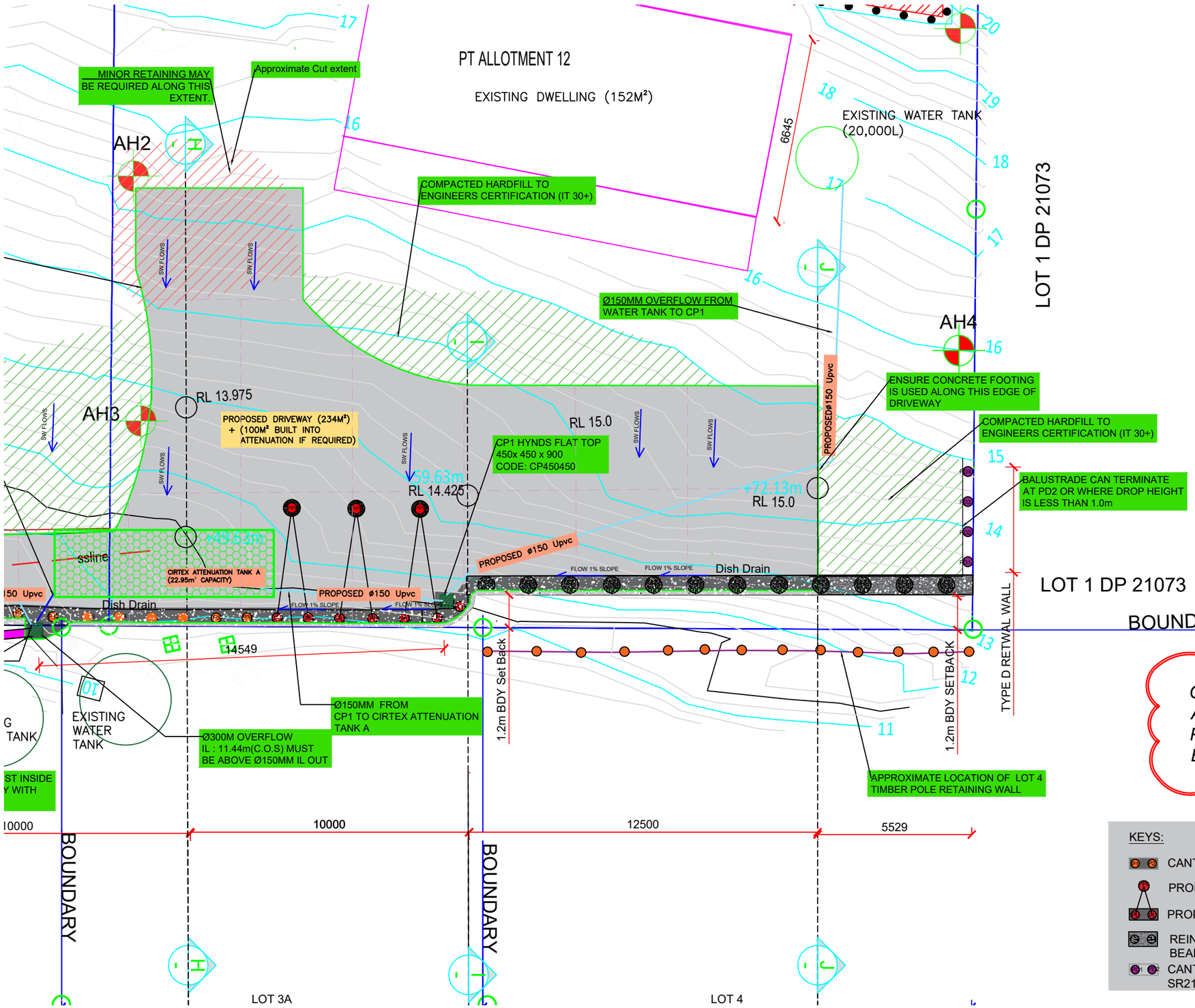
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri road, P.O.Box 464 KERIKERI Tel. (09) 4073255 E-mail. TeamPK@pkengin.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: ENLARGED SITE PLAN A	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:150(A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019	SHEET No: SR2A	R6



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CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE(TYPE C) @1.5m c/c. WITH CONCRETE BEAM (DETAIL SR20)
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE D) @1.1m c/c (Detail SR21)

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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	ENGLARGED SITE PLAN B	JW	PK	16 07 2025	1:150 (A3)	23-019.dwg	SR2B	R6

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PROJECT No: 23-019

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL @1.15m c/c
- CONCRETE CAPPING BEAM
- PROPOSED TIMBER BALUSTRADE.

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(STRUCTURAL, GEOTECHNICAL)
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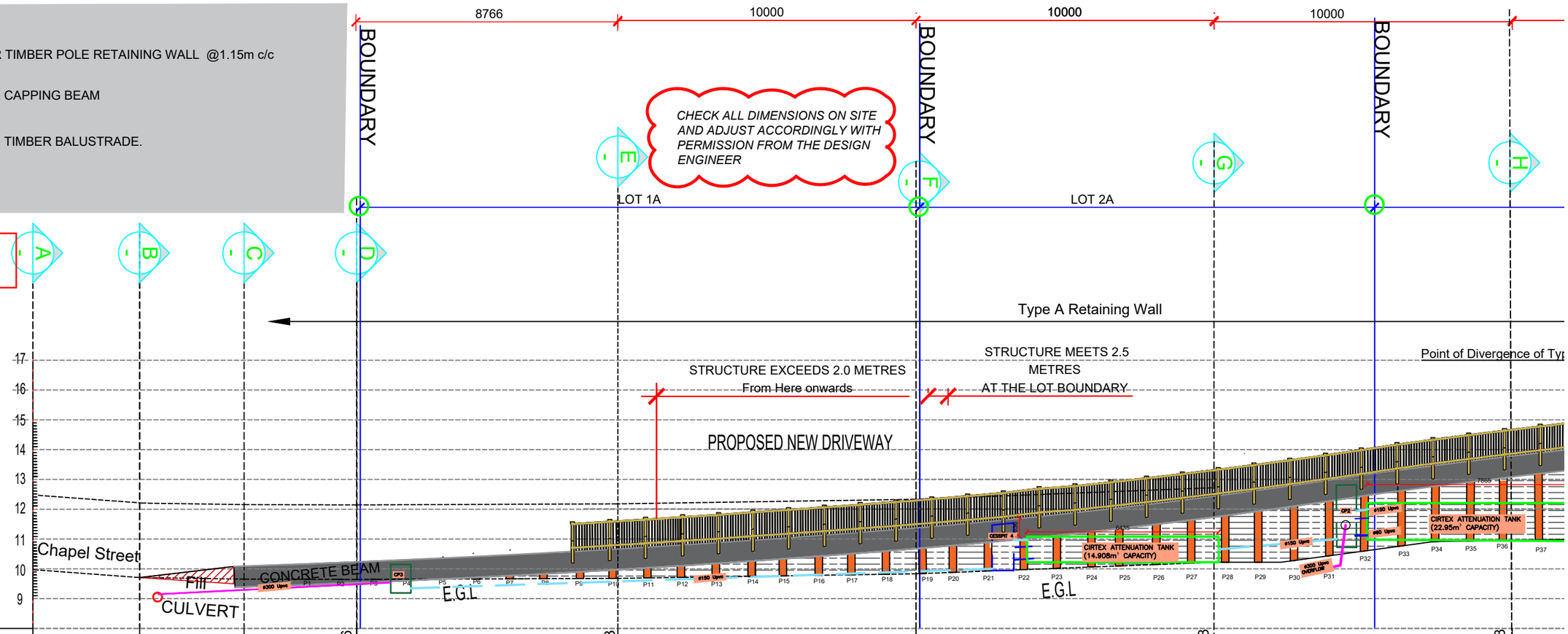

CHAINAGE (m)	0.00	3.58	7.08	10.86	19.63		39.63		49.63
EGL	9.71 m	9.66 m	9.65 m	9.69 m	9.83 m		10.22 m	11.0 m	
TOP OF RETAINING WALL	0 m	0 m	9.68m	10.12 m	10.83 m		11.9 m	13.24 m	
RETAINING WALL HEIGHTS	0 m	0 m	0.00 m	0.43m	1.0 m		1.67 m	2.24 m	
RL HEIGHT OF DRIVEWAY	0 m	10.91m	10.23 m	10.67 m	11.35 m		12.44 m	13.79 m	
GRADE	N/A	3°			3-7°		7°		

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PROJECT:
PROPOSED NEW DRIVEWAY
&
RETAINING WALLS
15 Chapel Street, Russell

CLIENT:
Paul & Erina
Van Koningsveld

DRAWING:
DRIVEWAY ELEVATION PROFILE A

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:
JW	PK	16 07 2025	1:150 (A3)	23-019.dwg

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PROJECT No: 23-019

SHEET No: SR3A

R6

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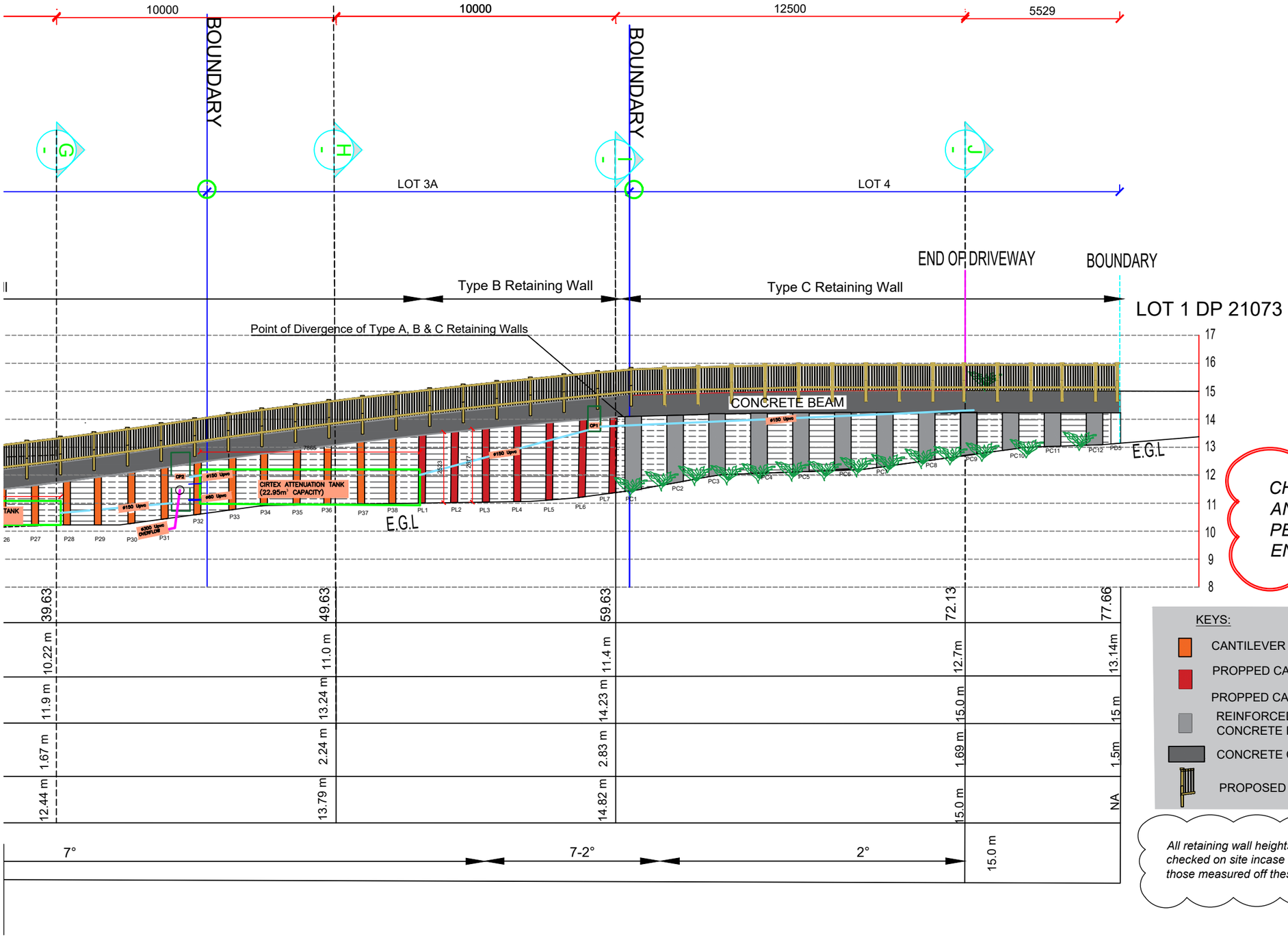

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE @1.5m c/c. WITH 0.5M THICK CONCRETE BEAM
- CONCRETE CAPPING BEAM 0.5M DEEP
- PROPOSED TIMBER BALUSTRADE.

All retaining wall heights should be checked on site incase of variations to those measured off these plans

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90 Kerikeri road,
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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	DRIVEWAY ELEVATION PROFILE B	JW	PK	16 07 2025	1:150 (A3)	23-019.dwg	SR3B	R6

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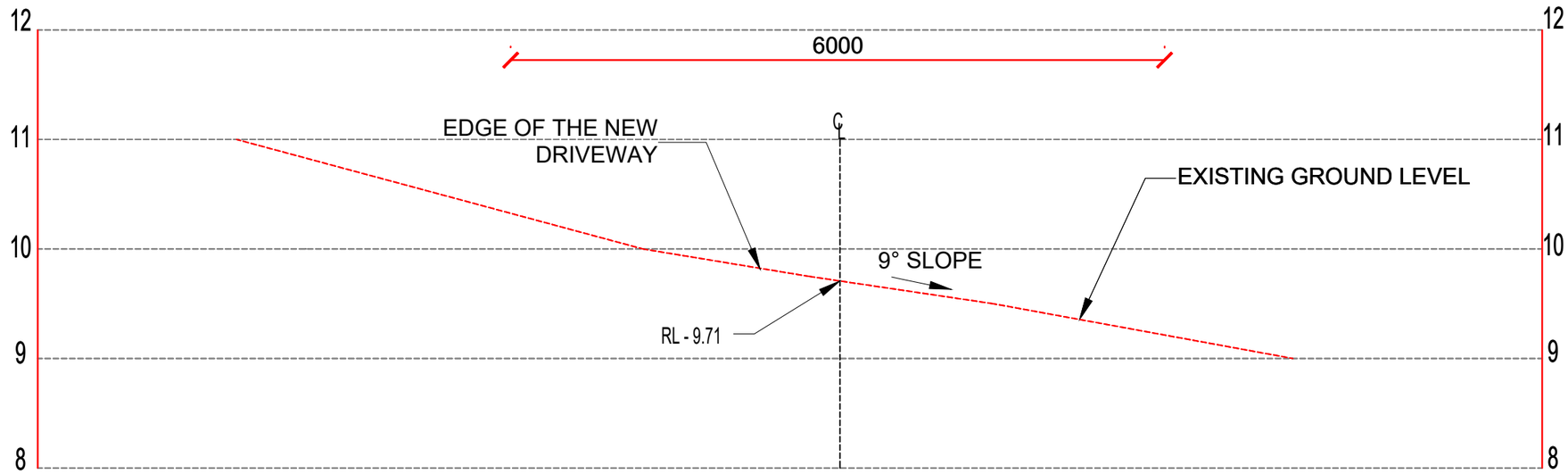
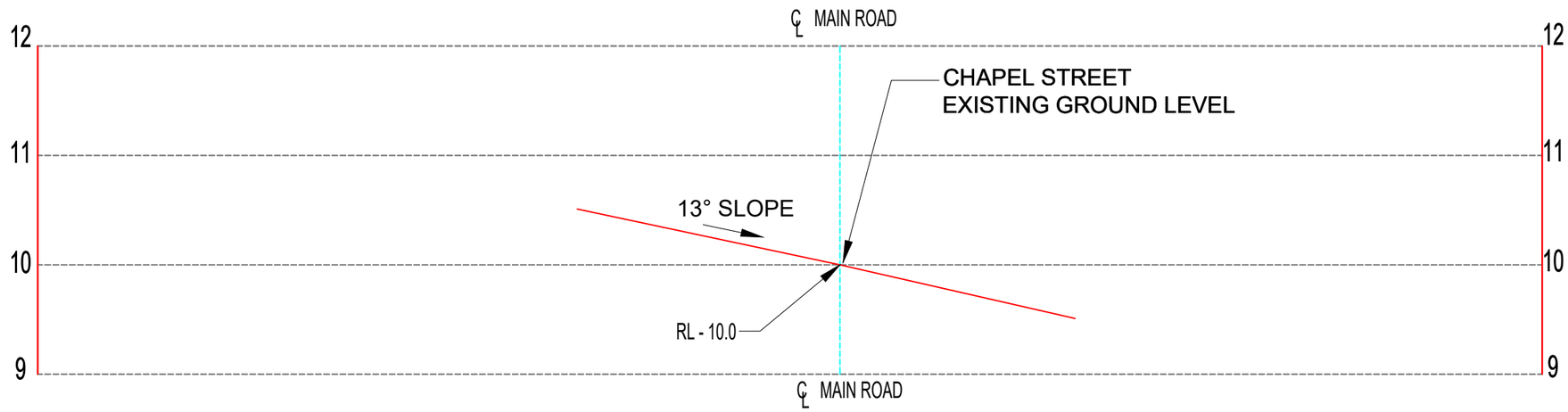
PROJECT No: 23-019



CROSS-SECTION "B-B"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "A-A"

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CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

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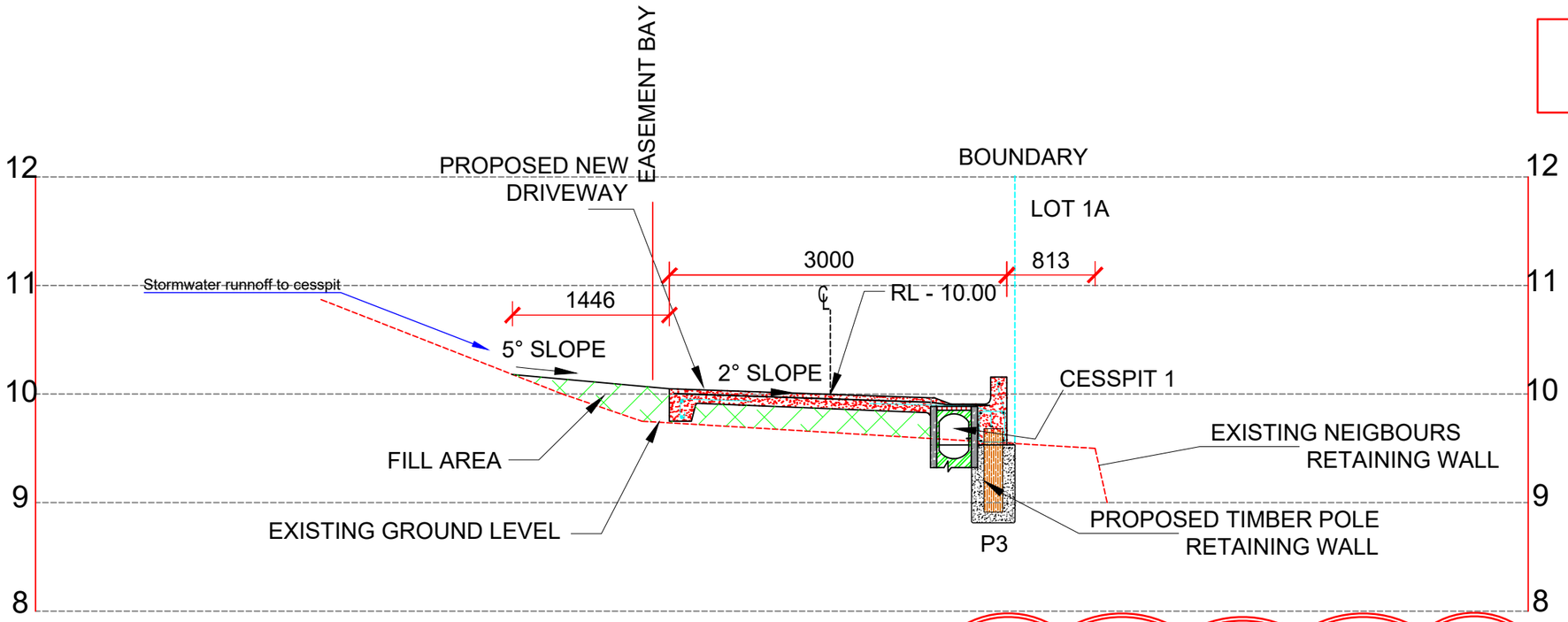
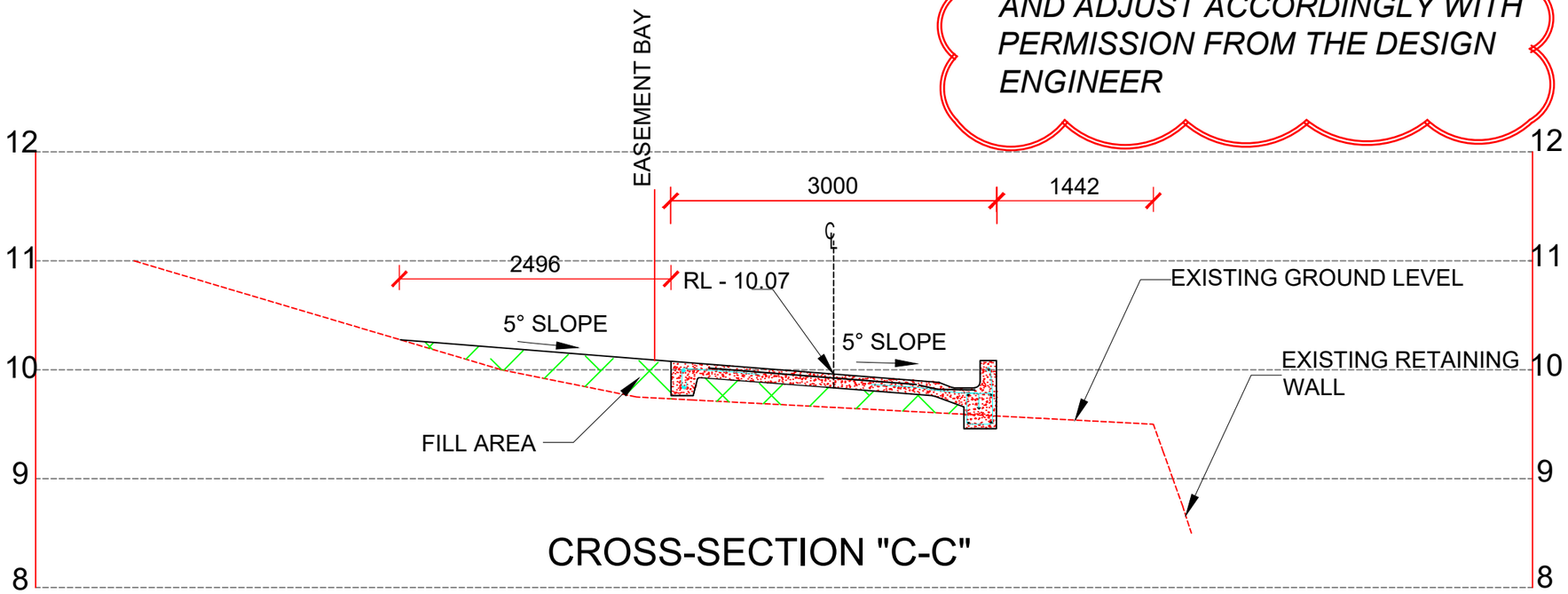


CROSS-SECTION "D-D"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "C-C"

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW	Checked: PK	Date: 16 07 2025	Scale: 1:40 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR5	R6
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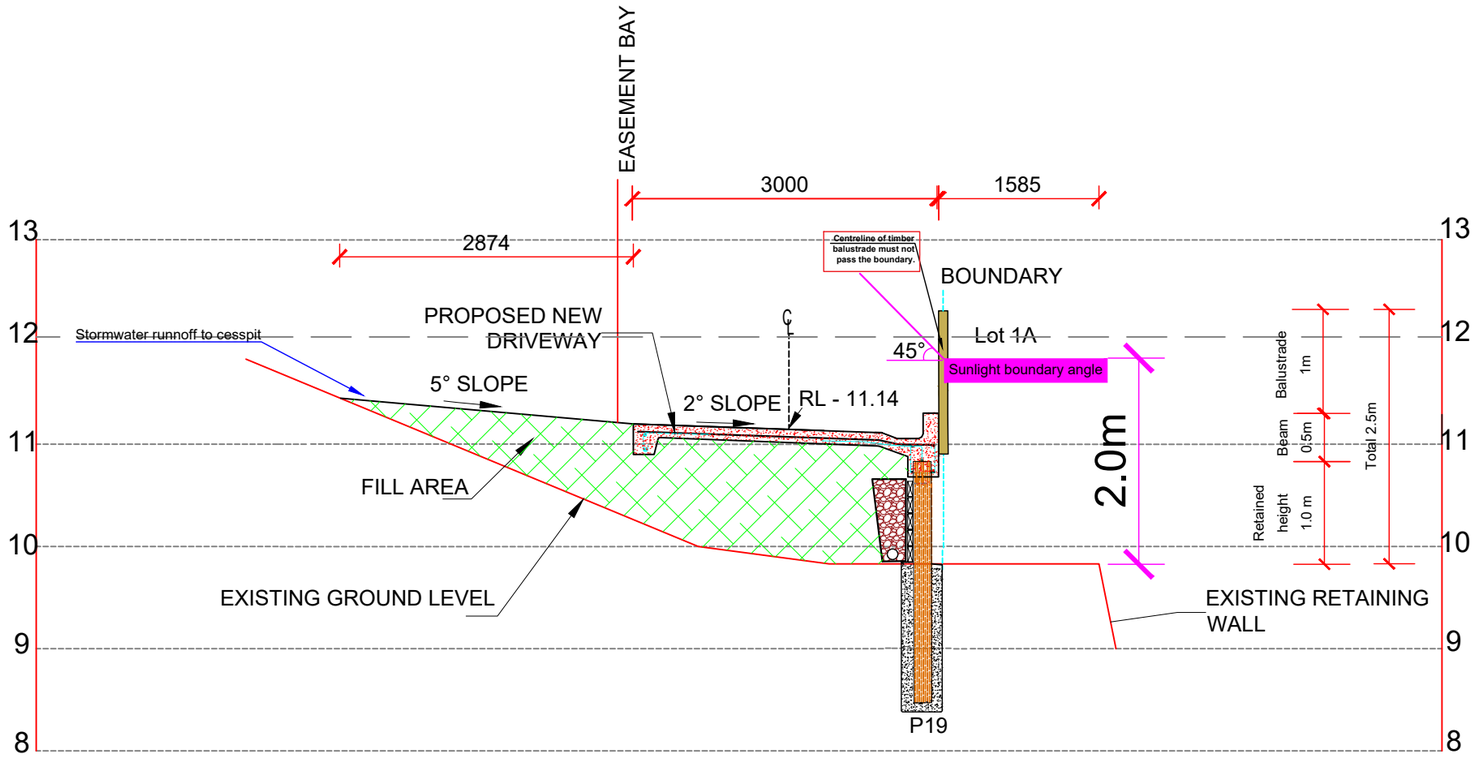
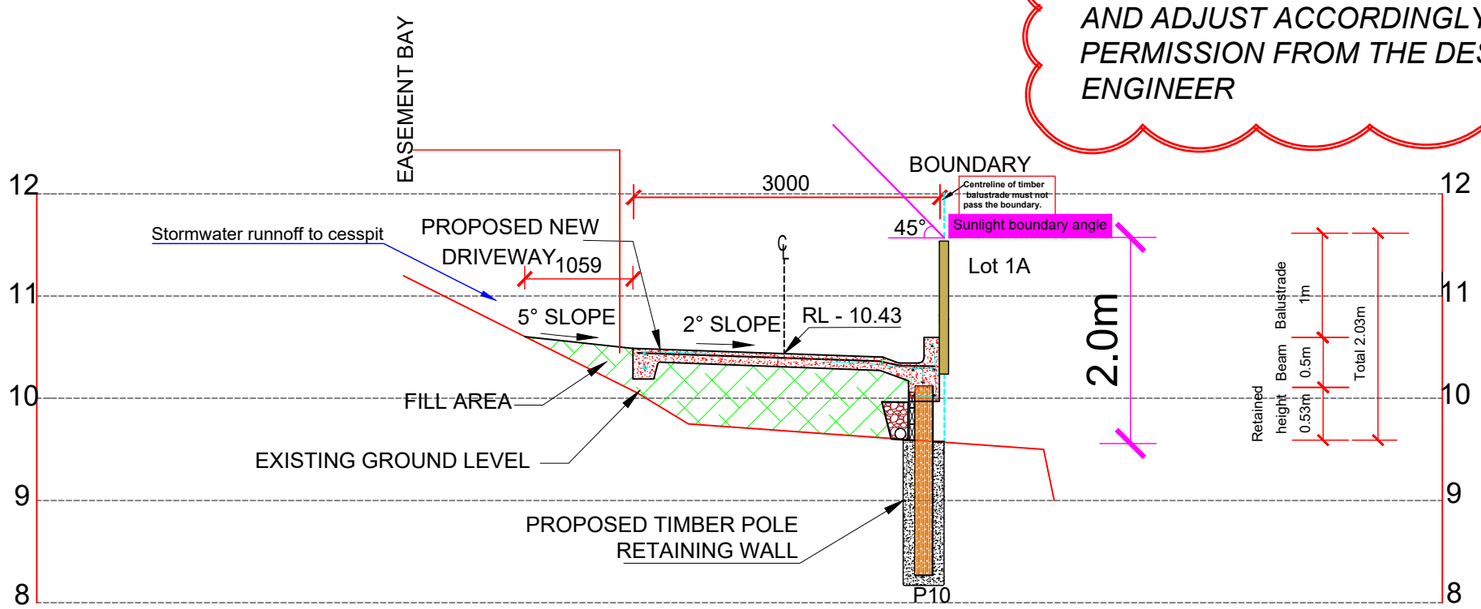
ISSUED FOR CONSENT



CROSS-SECTION "F-F"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "E-E"

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E-mail. TeamPK@pkengin.co.nz

PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	CROSS-SECTIONS	JW	PK	16 07 2025	1:60 (A3)	23-019.dwg	SR6	R6

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PROJECT No: 23-019

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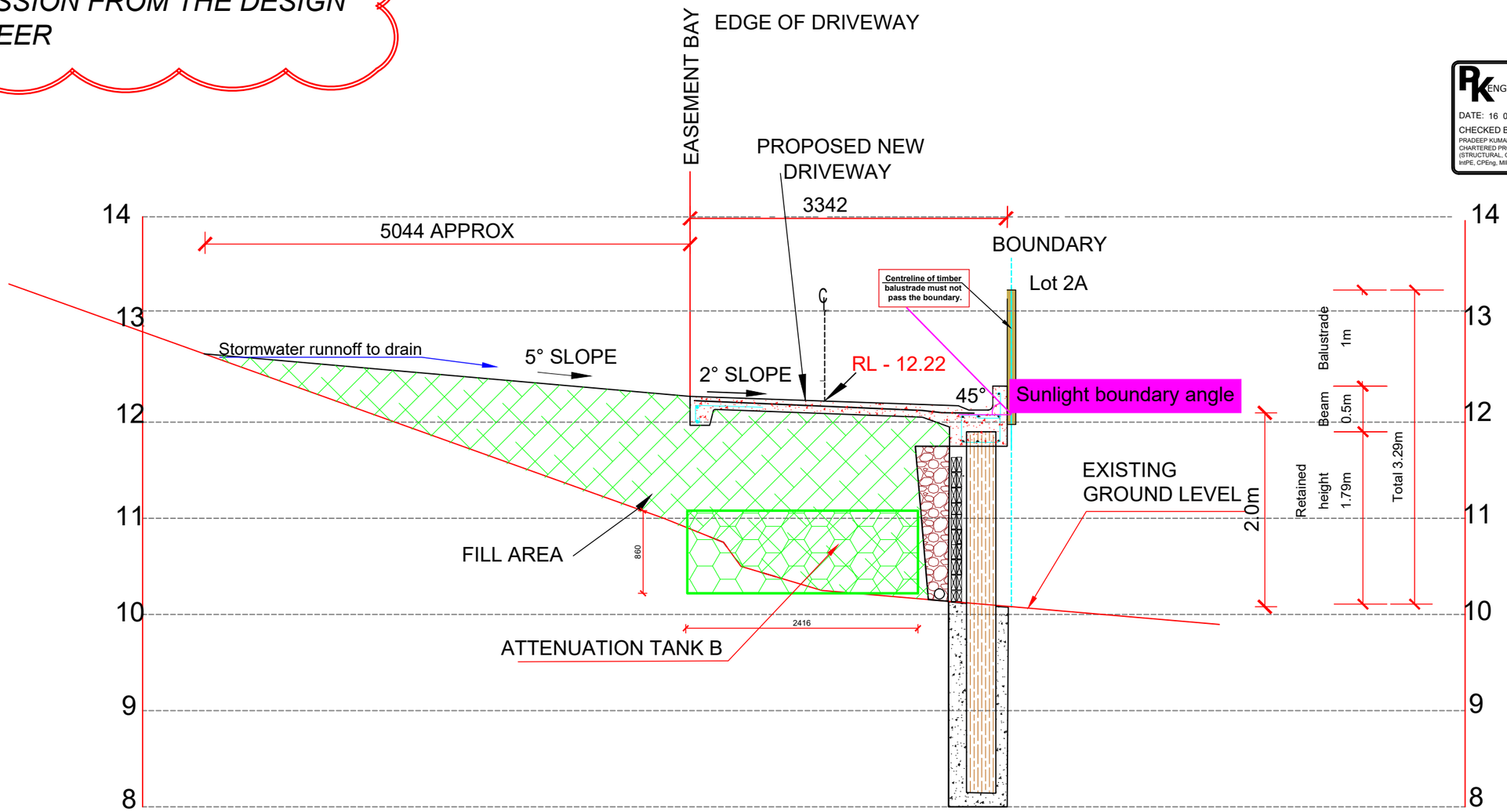
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



CROSS-SECTION "G-G"

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW	Checked: PK	Date: 16 07 2025	Scale: 1:50 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR7	R6
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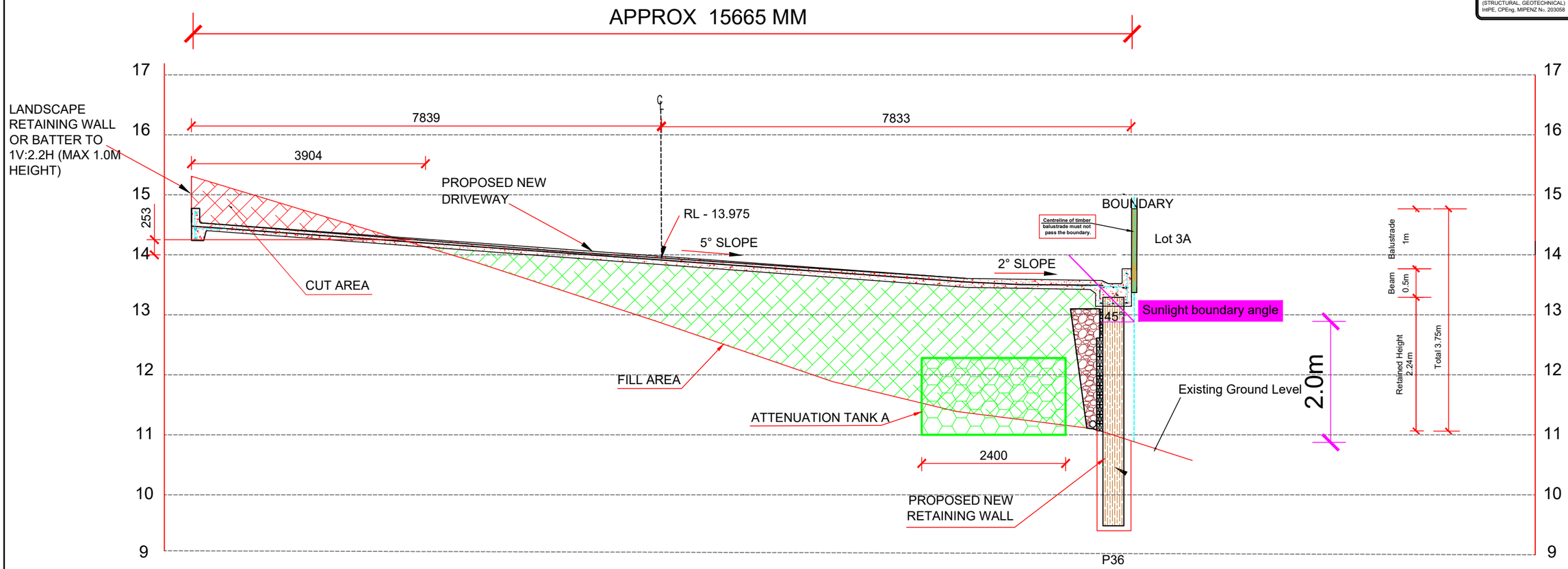
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



CROSS-SECTION "H-H"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

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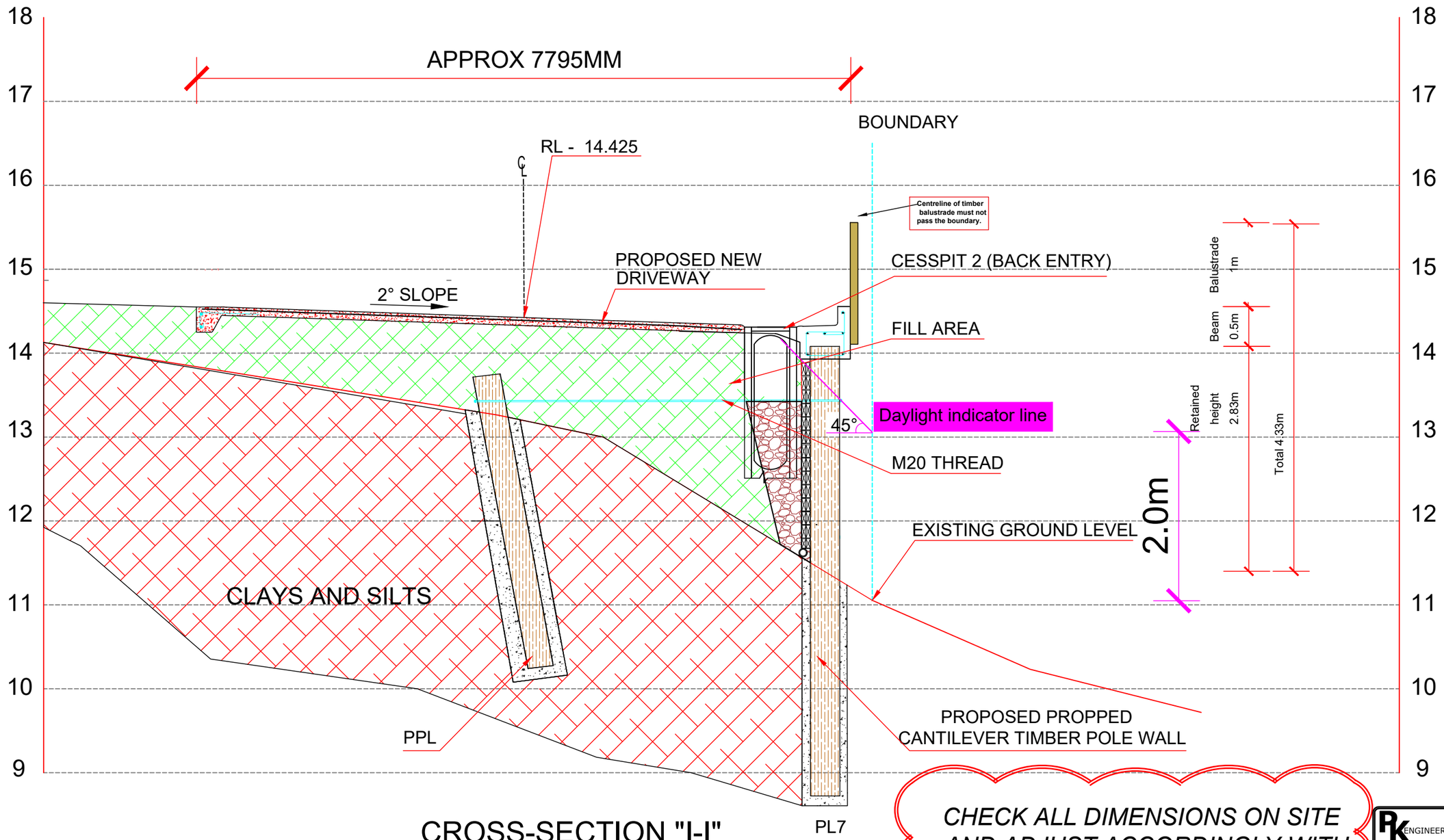

CROSS-SECTION "I-I"

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DATE: 16 07 2025
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PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW	Checked: PK	Date: 16 07 2025	Scale: 1:50 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR9	R6
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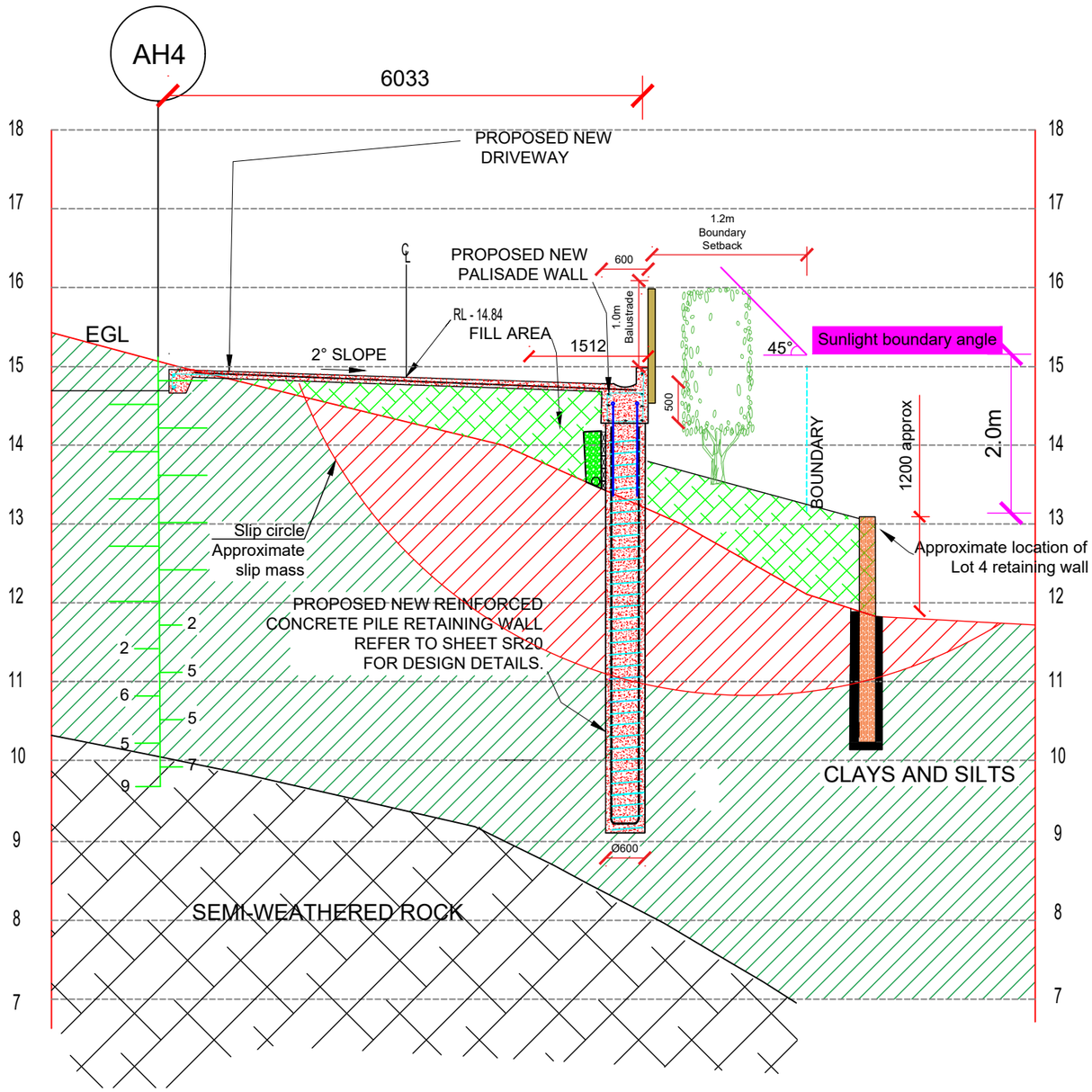
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



CROSS-SECTION "J-J"

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW	Checked: PK	Date: 16 07 2025	Scale: 1:70 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR10	R6
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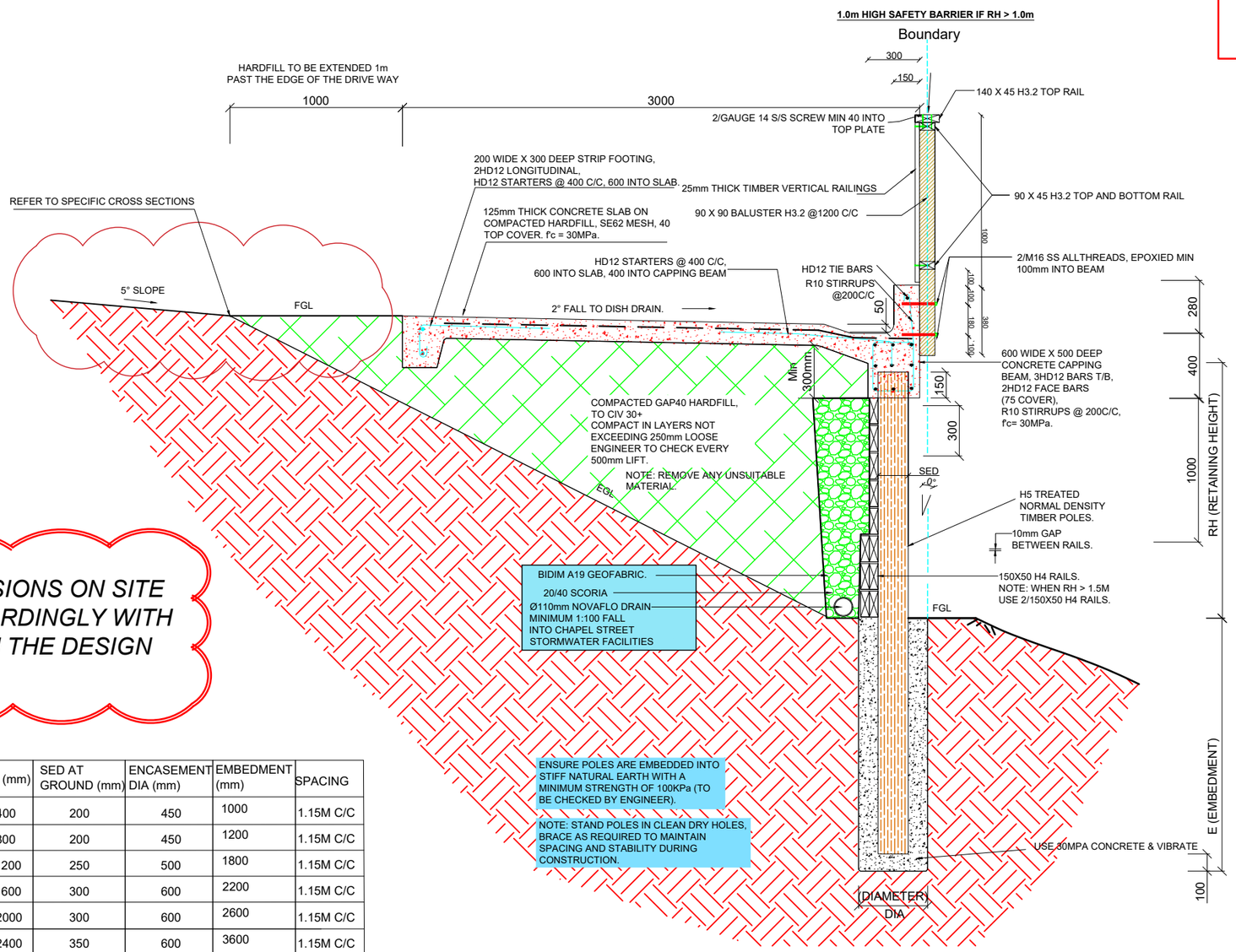

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

POLE NO.	RH (mm)	SED AT GROUND (mm)	ENCASEMENT DIA (mm)	EMBEDMENT (mm)	SPACING
P 1-9	400	200	450	1000	1.15M C/C
P 10-16	800	200	450	1200	1.15M C/C
P 17-22	1200	250	500	1800	1.15M C/C
P 23-27	1600	300	600	2200	1.15M C/C
P 28-31	2000	300	600	2600	1.15M C/C
P 32-36	2400	350	600	3600	1.15M C/C
P 37-38	2650	375	600	4000	1.15M C/C

ENGINEER TO INSPECT AND APPROVE
OF ALL BORED HOLES PRIOR TO
PLACEMENT OF POLES.

TYPICAL DRIVEWAY SECTION - PROPOSED CANTILEVER RETAINING WALL (TYPE A)
SCALE 1:30

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PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS
15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: CANTILEVER RW DETAIL (TYPE A)

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
JW	PK	16 07 2025	1:30	23-019.dwg	SR11	R6

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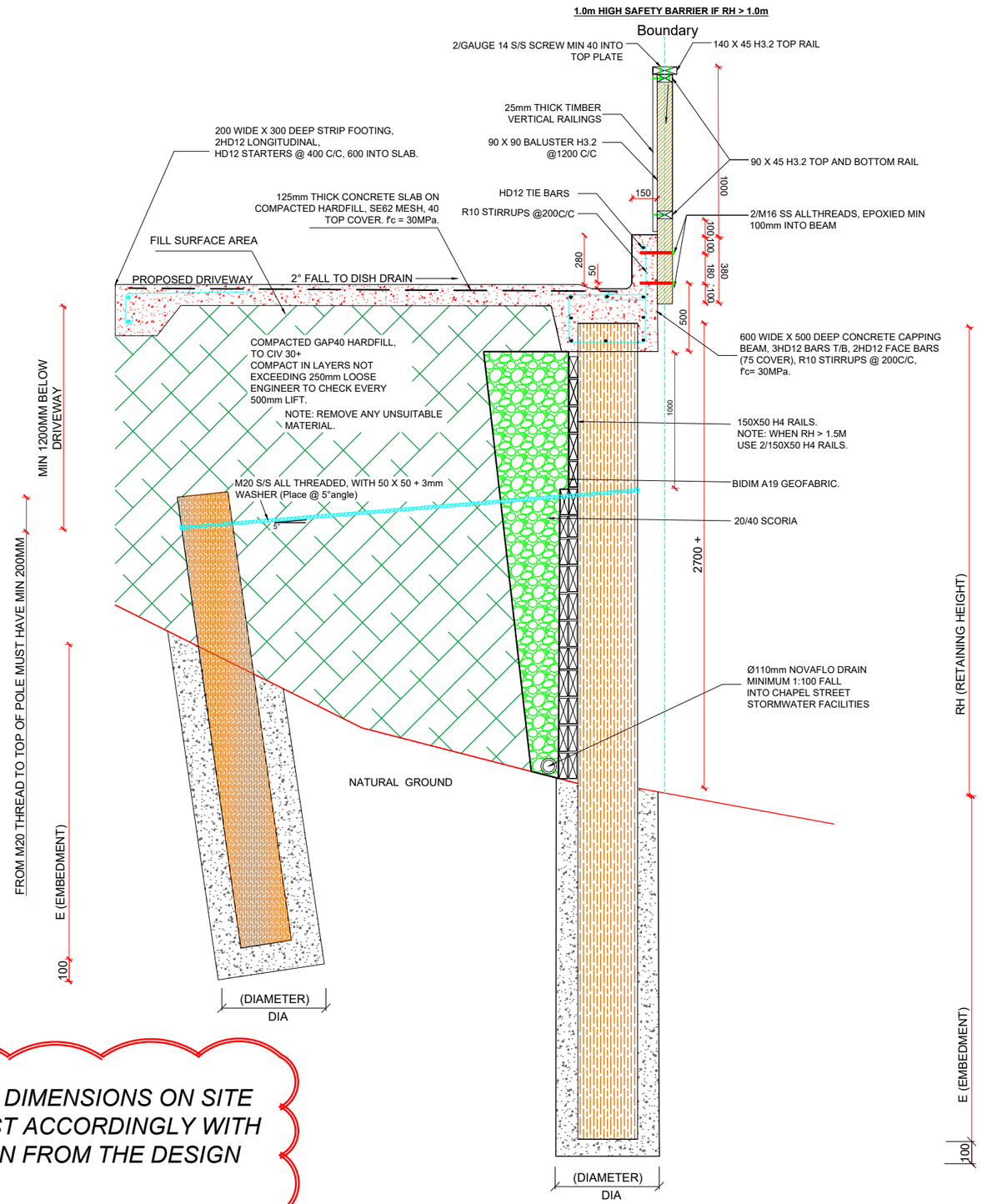
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



POLE NO.	RETAINED HEIGHT (MM)	PROPPED HEIGHT (MM)	POLE SED (MM)	ENCASEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1- 4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PROPPED CANTILEVER RETAINING WALL (TYPE B)

SCALE 1:30

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: PROPPED CANTILEVER RW DETAIL-TYPE B

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:
JW	PK	16 07 2025	1:30	23-019.dwg

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PROJECT No: 23-019

SHEET No: SR12

R6

ISSUED FOR CONSENT

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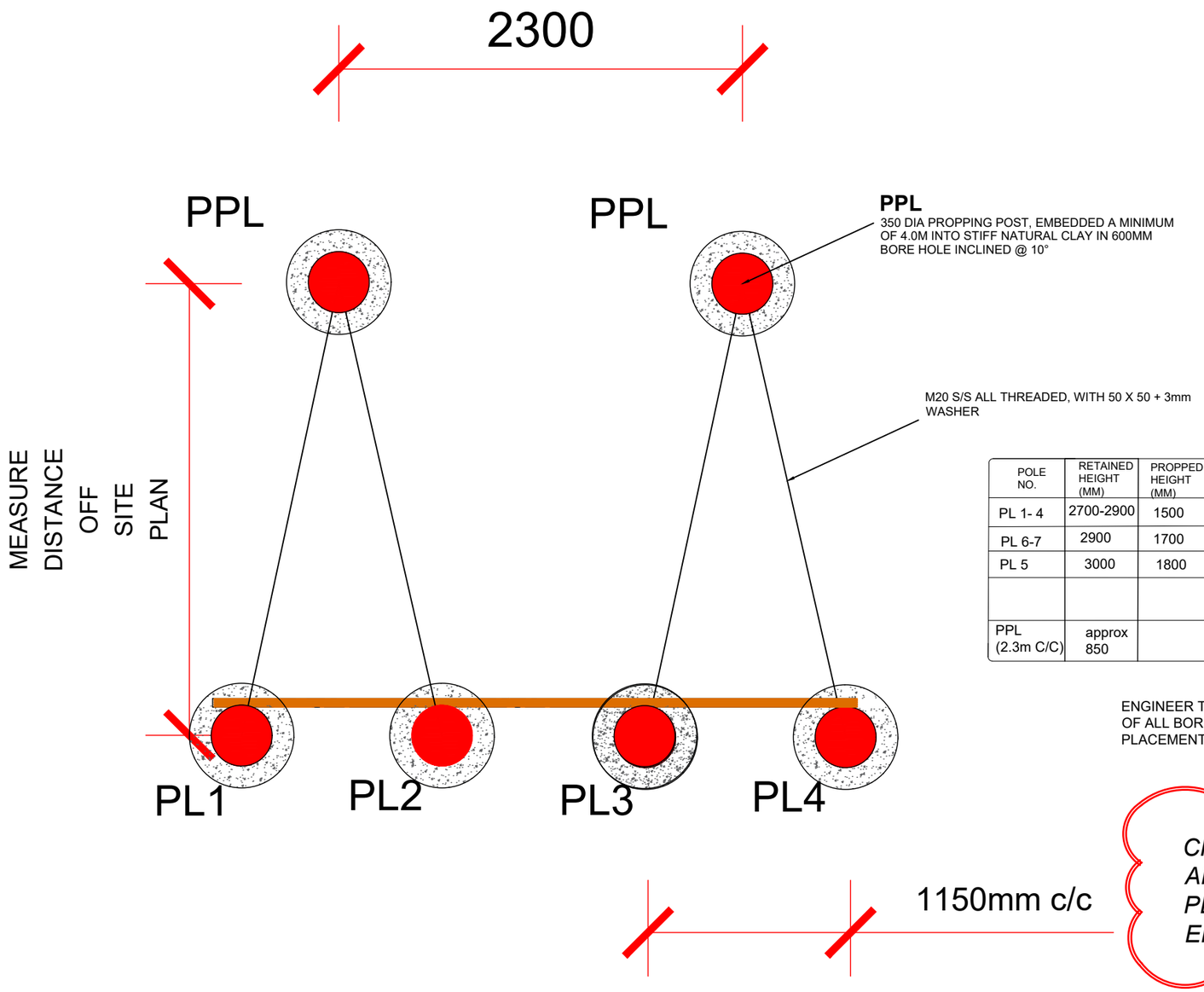
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



POLE NO.	RETAINED HEIGHT (MM)	PROPPED HEIGHT (MM)	POLE SED (MM)	ENCASEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1- 4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

ENGINEER TO INSPECT AND APPROVE OF ALL BORED HOLES PRIOR TO PLACEMENT OF POLES.

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PROPPED CANTILEVER POLE DESIGN TABLE TYPE B
SCALE 1:30

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PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS
15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: PROPPED CANTILEVER POLE DETAIL

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
JW	PK	16 07 2025	1:30	23-019.dwg	SR13	R6

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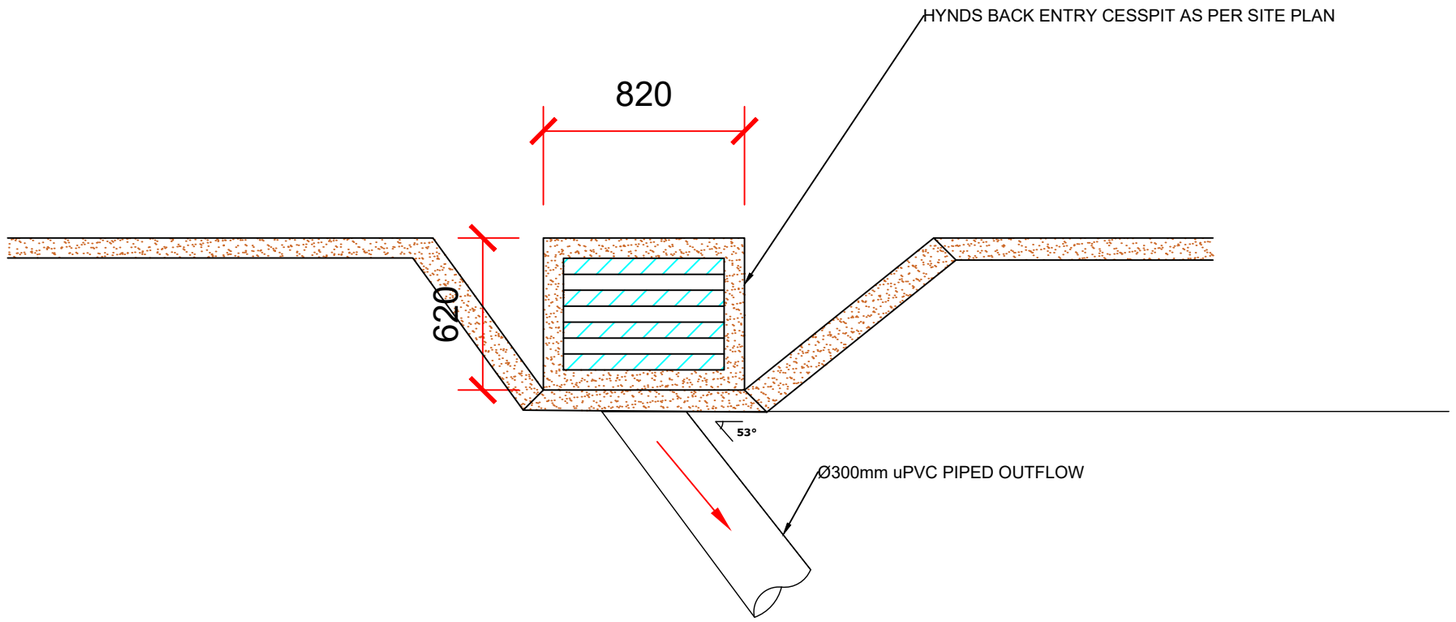
PROJECT No: 23-019



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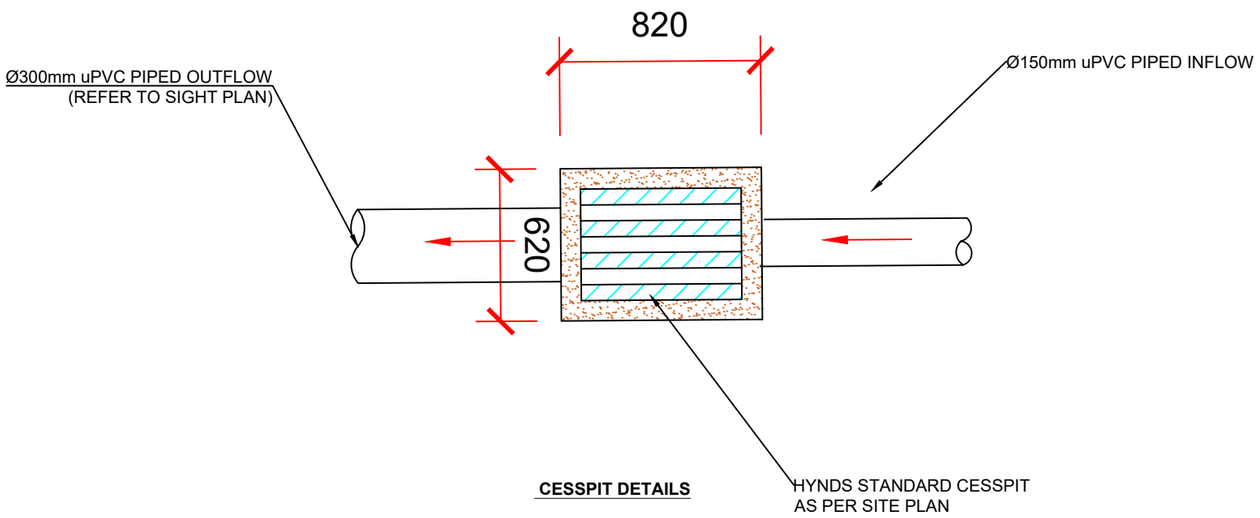
BACK ENTRY CESSPIT DETAILS



CESSPIT DETAILS

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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	CESSPIT DETAILS	JW	PK	16 07 2025	1:25 (A3)	23-019.dwg	SR14	R6

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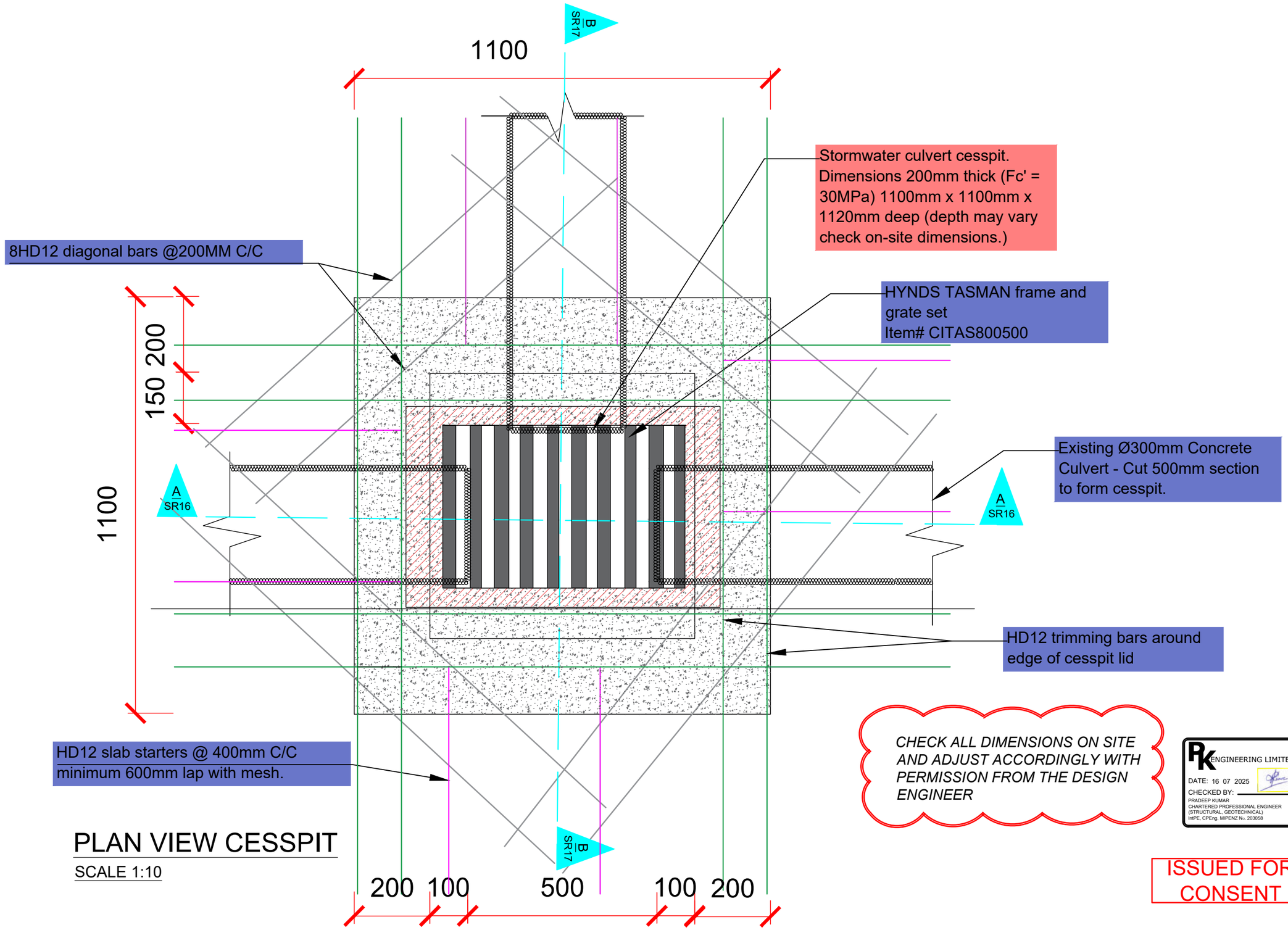
PROJECT No: 23-019



PLAN VIEW CESSPIT

SCALE 1:10

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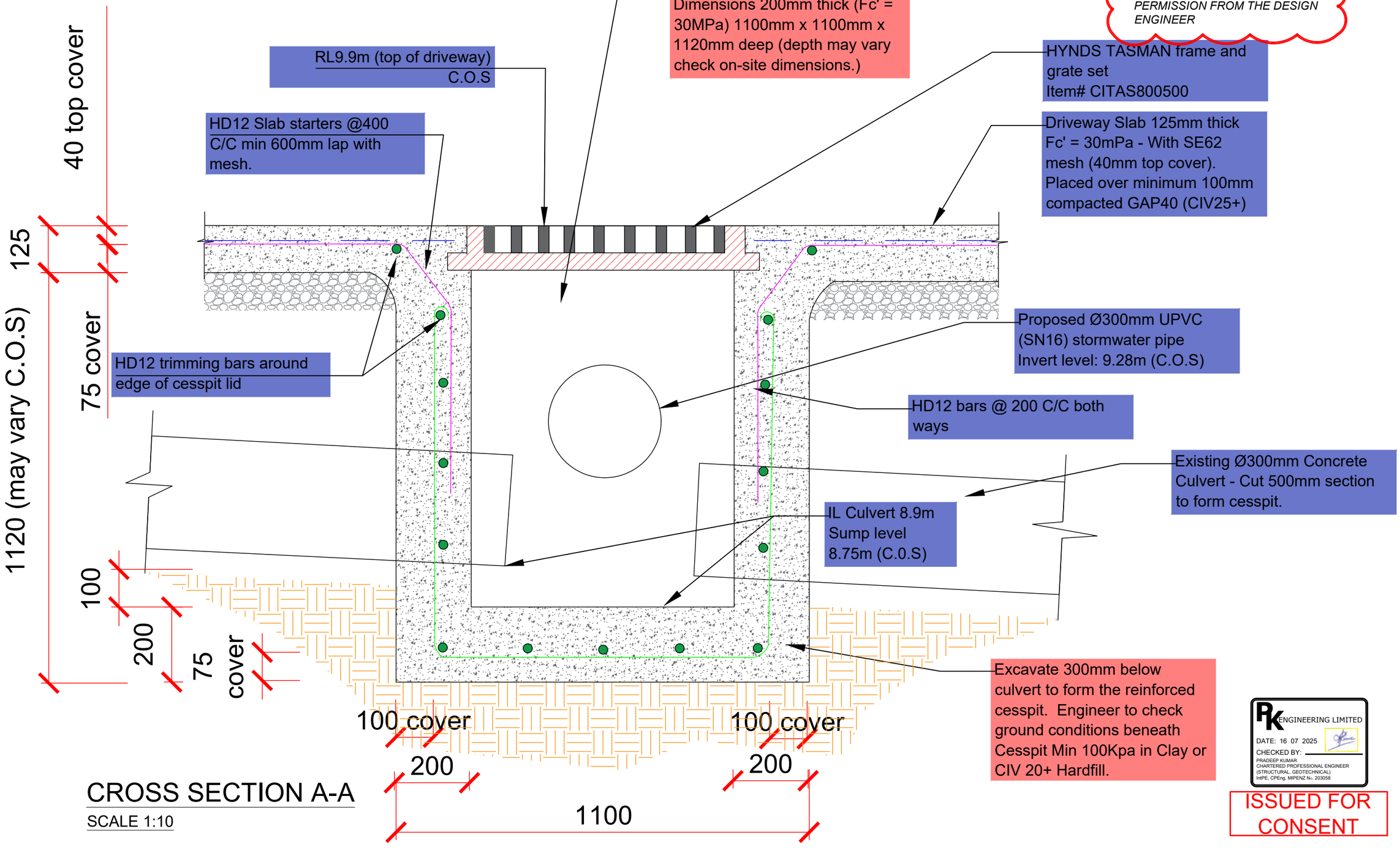

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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	CULVERT CESSPIT DETAIL	JW	PK	16 07 2025	1:10 (A3)	23-019.dwg	SR15	R6

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PROJECT No: 23-019

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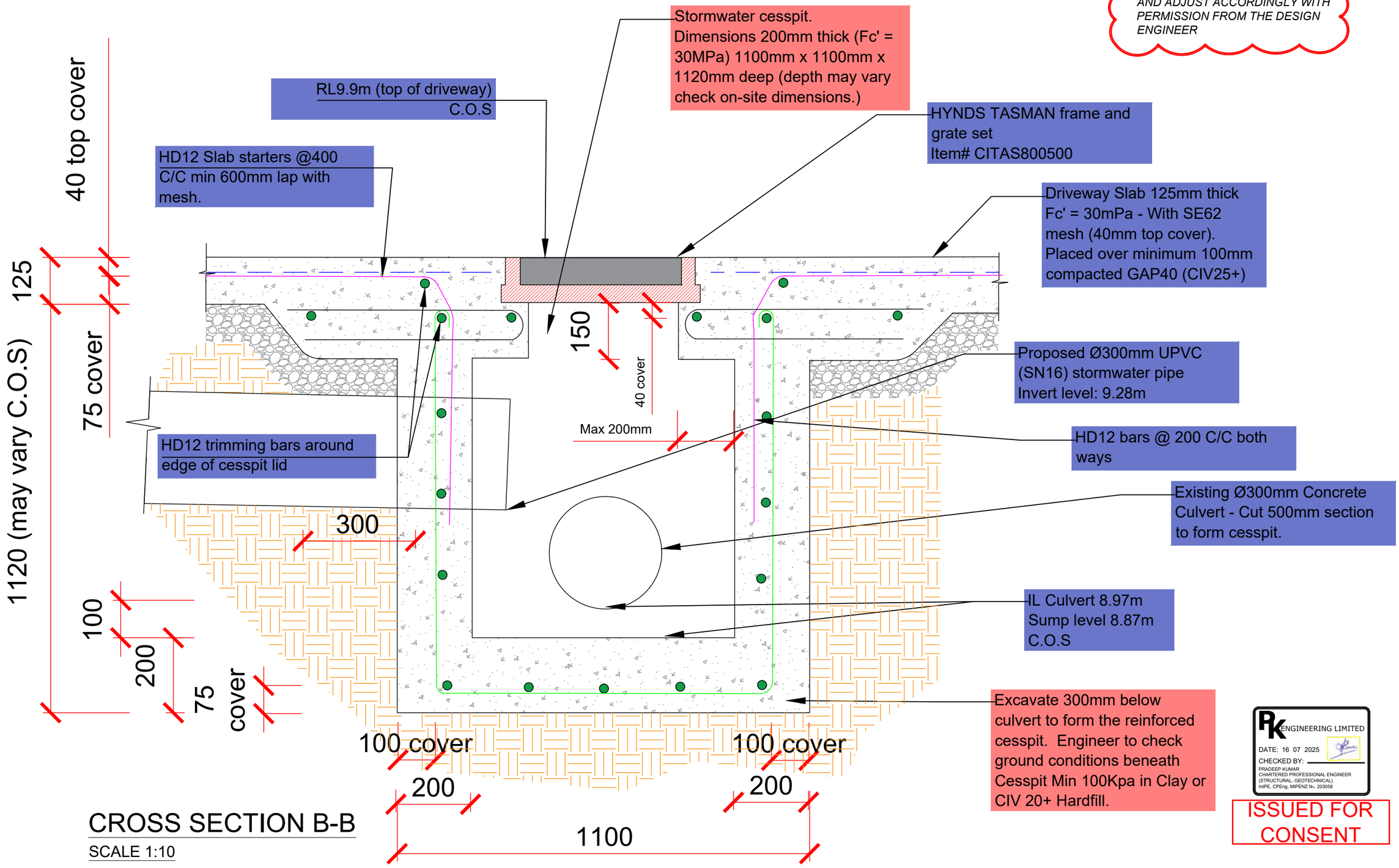

CROSS SECTION B-B

SCALE 1:10

PK ENGINEERING LIMITED
DATE: 16 07 2025
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CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
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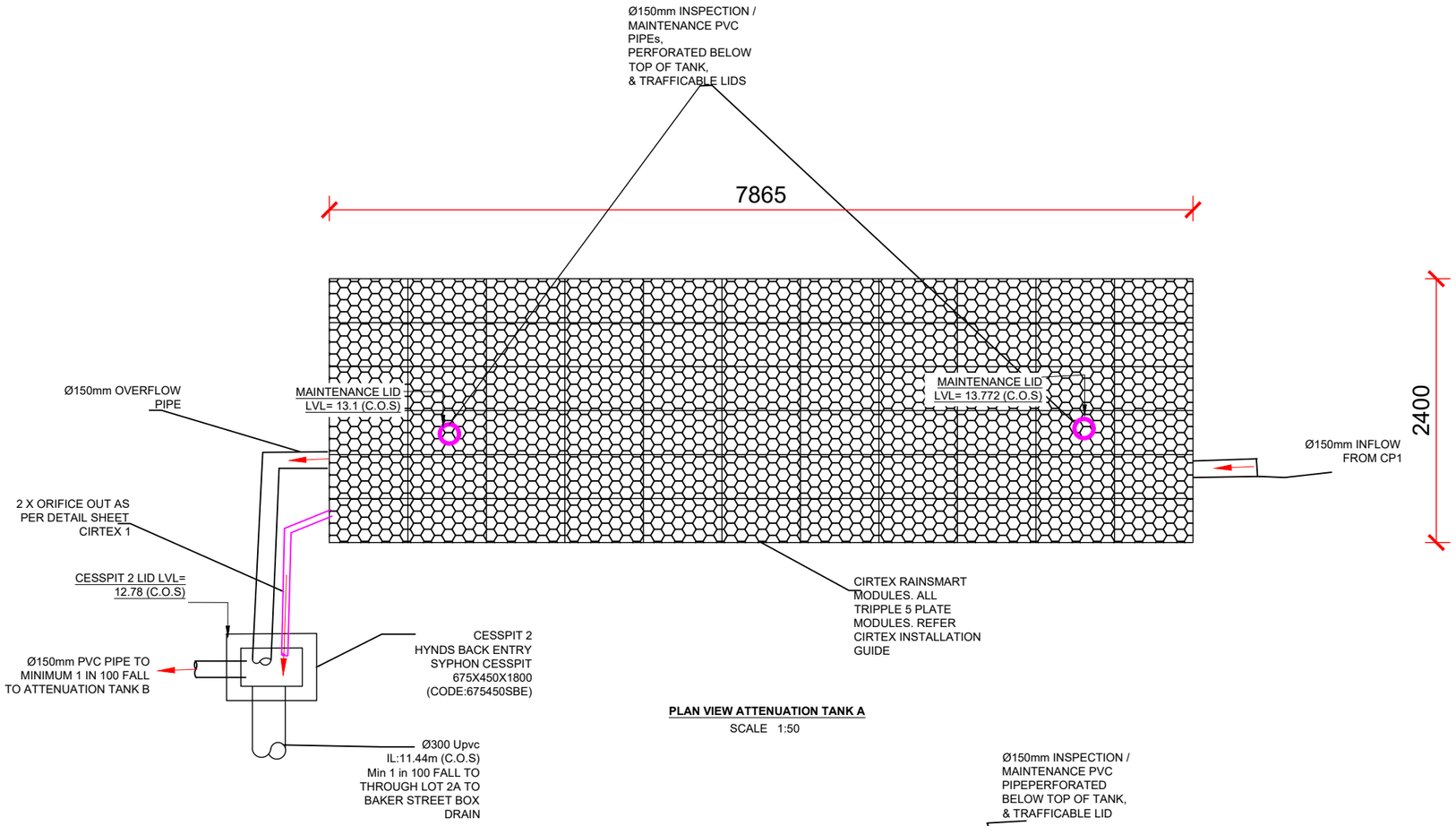
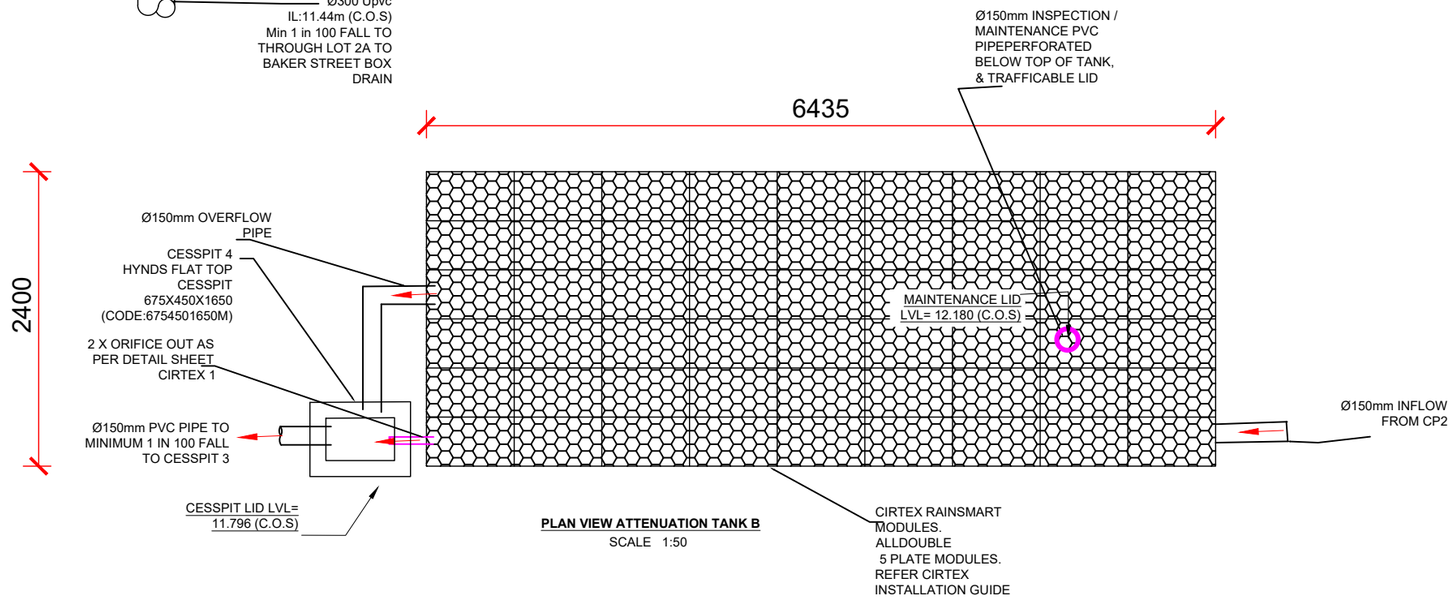
CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



PLAN VIEW ATTENUATION TANK A

SCALE 1:50



PLAN VIEW ATTENUATION TANK B

SCALE 1:50

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CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No.: 203058

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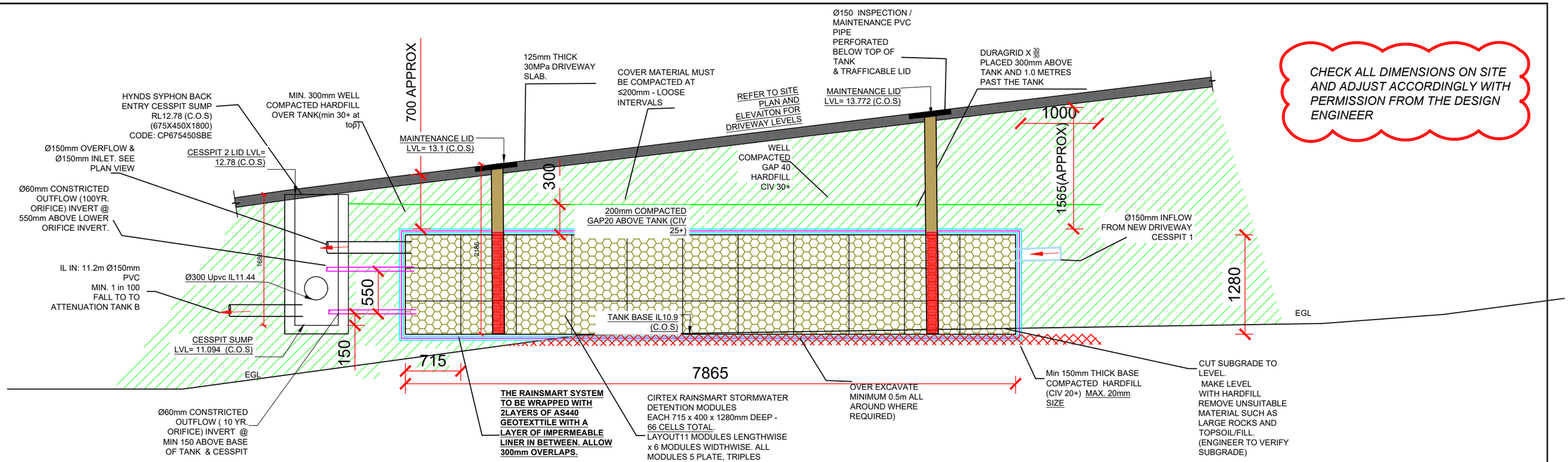


CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

SECTION THROUGH ATTENUATION TANK A

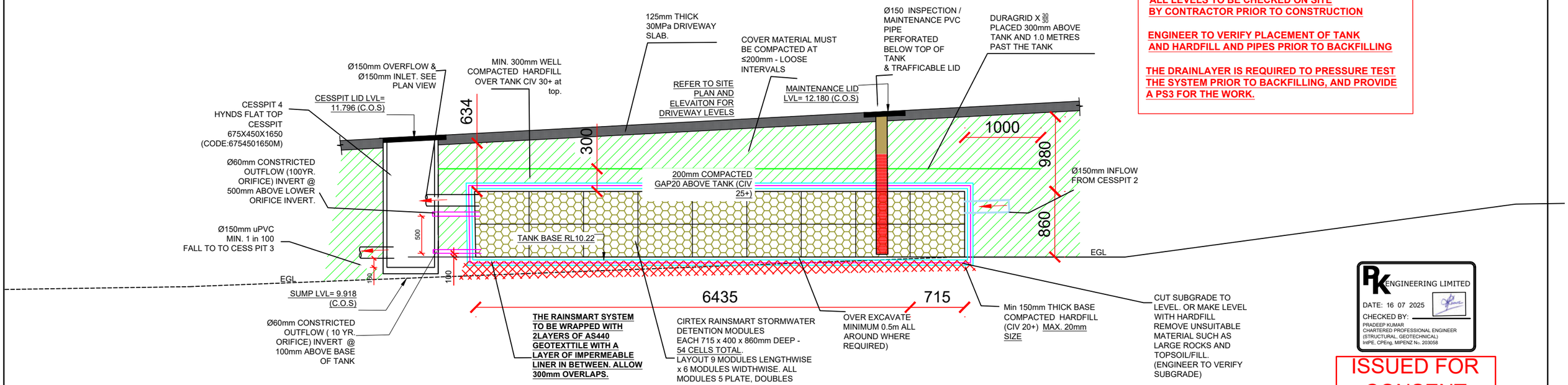
SCALE 1:50

CIRTEX INSTALATION GUIDELINES HAVE BEEN PROVIDED AND SHOULD BE READ IN CONJUNCTION WITH THIS DETAIL.

ALL LEVELS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION

ENGINEER TO VERIFY PLACEMENT OF TANK AND HARDFILL AND PIPES PRIOR TO BACKFILLING

THE DRAINLAYER IS REQUIRED TO PRESSURE TEST THE SYSTEM PRIOR TO BACKFILLING, AND PROVIDE A PS3 FOR THE WORK.



SECTION THROUGH ATTENUATION TANK B

SCALE 1:50

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(STRUCTURAL, GEOTECHNICAL)
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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	Attenuation Tanks Details	JW	PK	16 07 2025	1:50 (A3)	23-019.dwg	SR19	R6

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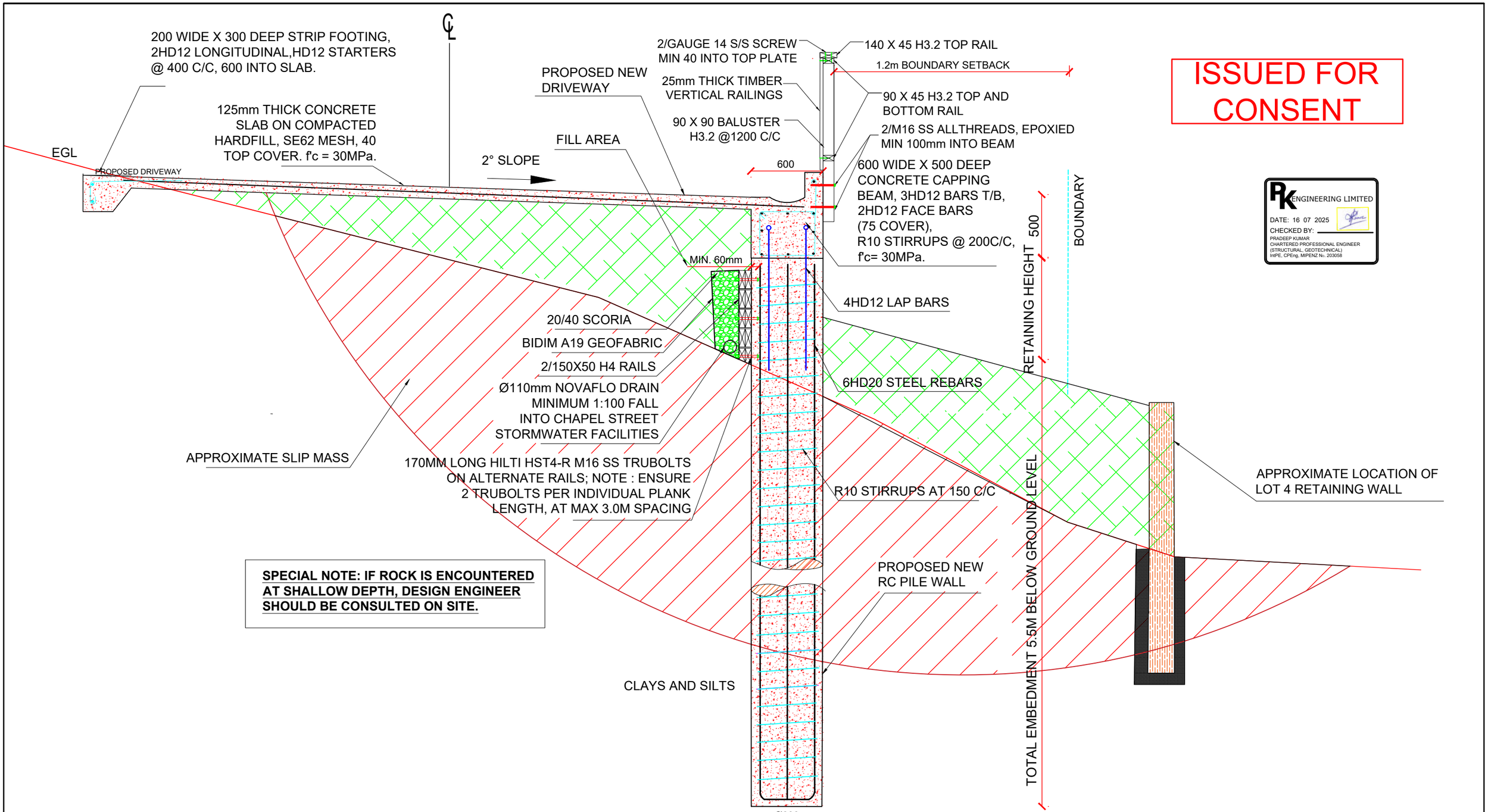
PROJECT No: 23-019



SPECIAL NOTE: IF ROCK IS ENCOUNTERED AT SHALLOW DEPTH, DESIGN ENGINEER SHOULD BE CONSULTED ON SITE.

ISSUED FOR CONSENT

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

PLAN VIEW OF RC PILE

RC PILE WALL DETAIL-TYPE C

SCALE 1:30

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90 Kerikeri road,
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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	RC PILE WALL DETAIL -TYPE C	JW	PK	16 07 2025	1:30	23-019.dwg	SR20	R6

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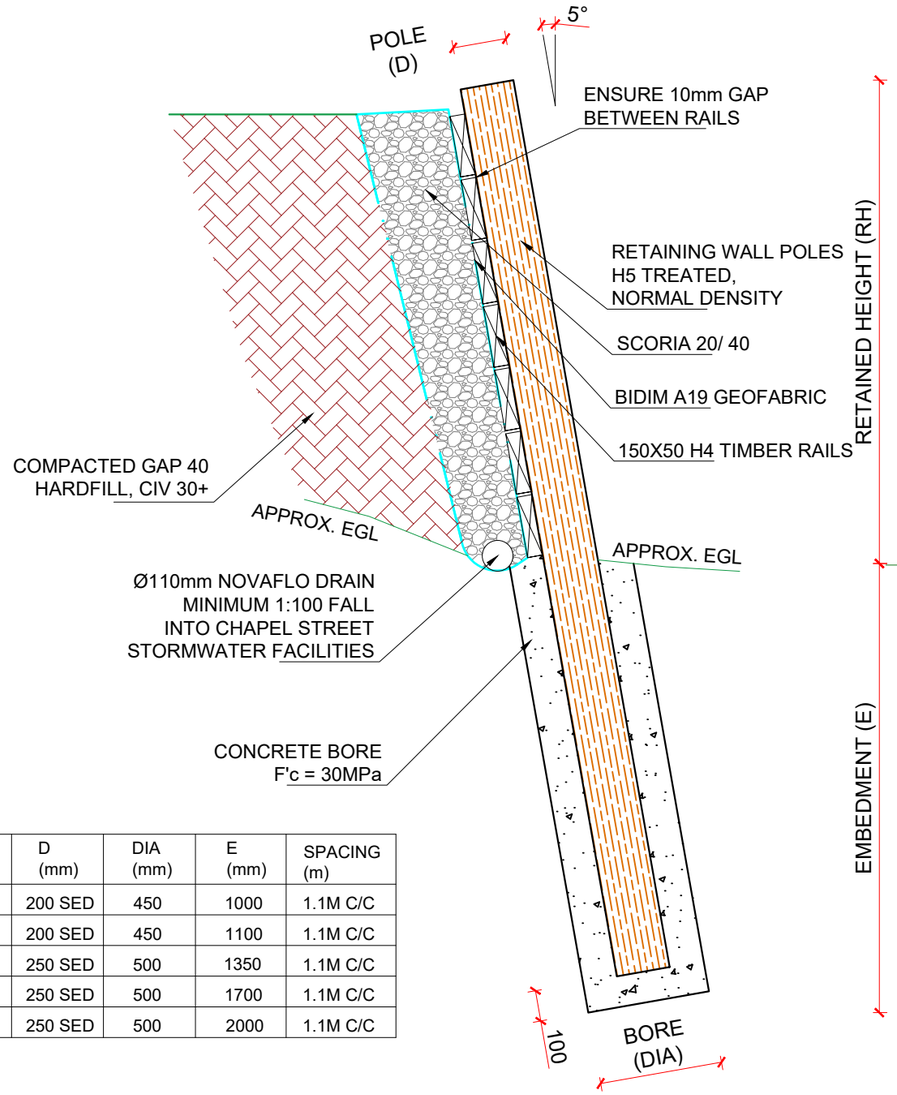
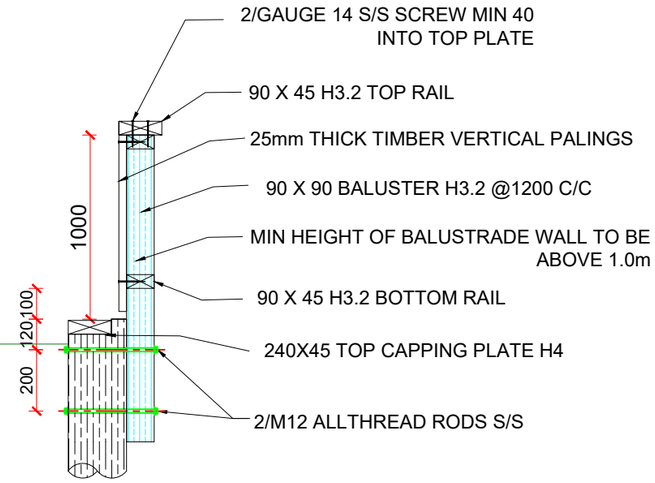


RH (mm)	D (mm)	DIA (mm)	E (mm)	SPACING (m)
400	200 SED	450	1000	1.1M C/C
800	200 SED	450	1100	1.1M C/C
1150	250 SED	500	1350	1.1M C/C
1300	250 SED	500	1700	1.1M C/C
1500	250 SED	500	2000	1.1M C/C



BALUSTRADE WALL CONNECTIONS DETAILS

SCALE 1:20

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY:
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CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

CANTILEVER TIMBER POLE RETAINING WALL- TYPE D

SCALE @1:20

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National Bank Building
90 Kerikeri road,
P.O.Box 464
KERIKERI

Tel. (09) 4073255
E-mail. TeamPK@pkengin.co.nz

PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS
15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: CANTILEVER RW DETAIL-TYPE D

Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:
JW	PK	16 07 2025	1:20	23-019.dwg

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PROJECT No: 23-019

SHEET No: SR21

R6

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DATE: 16 07 2025
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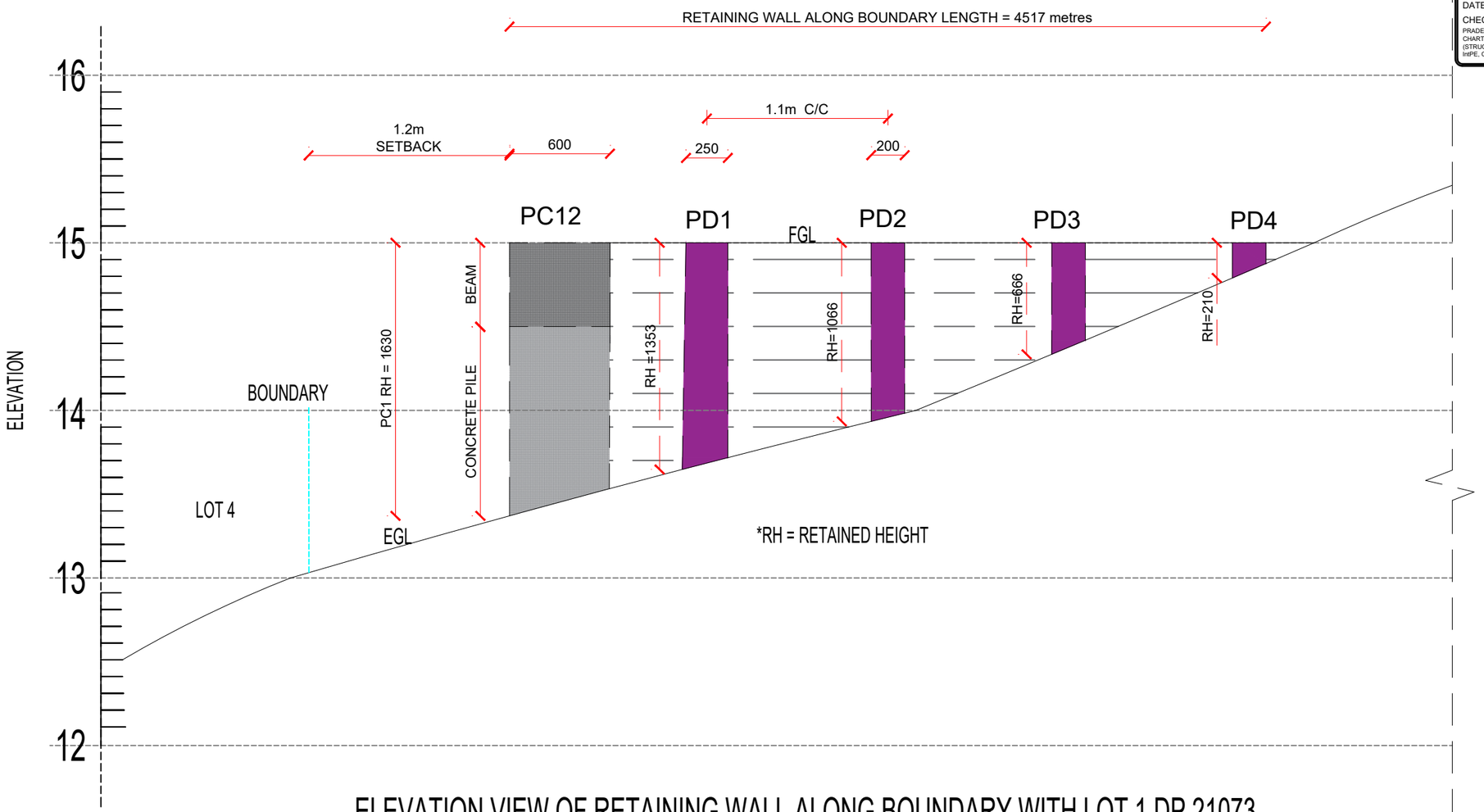
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058



ELEVATION VIEW OF RETAINING WALL ALONG BOUNDARY WITH LOT 1 DP 21073

SCALE 1:30

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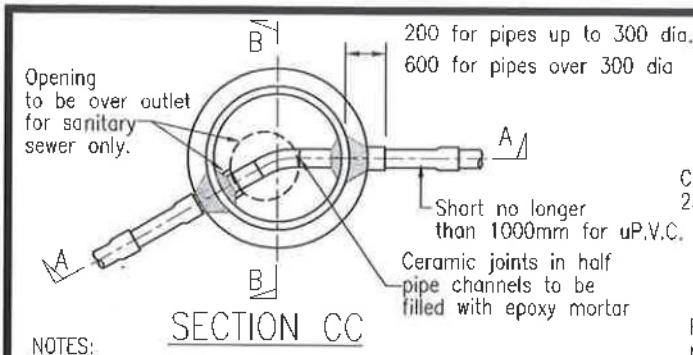
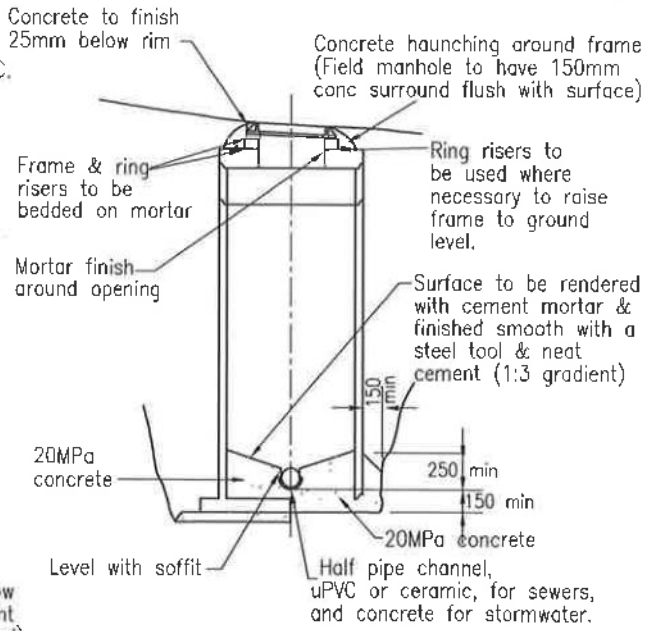
Sheet 39 Standard Precast Manhole



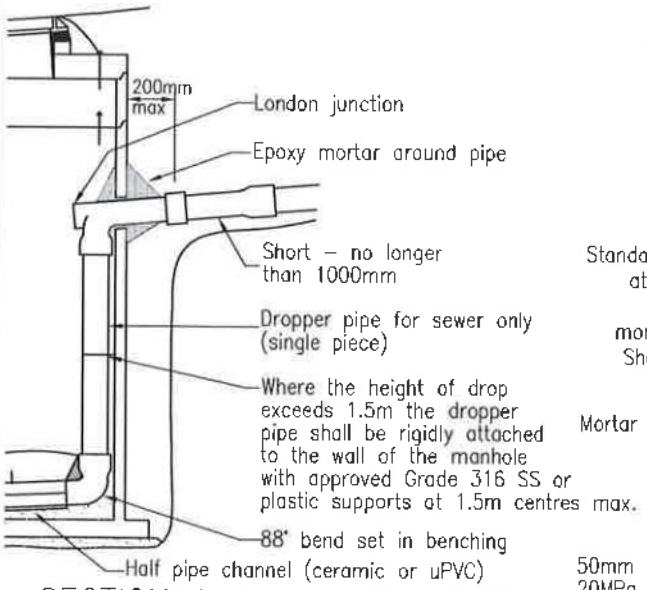
SECTION CC

NOTES:

1. This detail is applicable for pipe diameters up to 600mm & for manhole depths up to 5.0m.
2. 150mm thick reinforced concrete lids with heavy duty ductile iron frames & covers to be used in driveways, carriageways & berms. 100mm thick concrete lids with light duty cast iron frames & covers may be used elsewhere.
3. Precast manhole bases shall be used in all instances with minimum sized holes cut for pipe entry.
4. No additional thin plastering of benching or benching of inverts is permitted.
5. All concrete to be 20MPa.
7. Where non-concrete pipe connections are made to concrete manholes, then a gritted starter pipe shall be installed to allow bond between manhole and pipe material. Also, a 3flexible joint should be specified as part of gritted starter pipe (as standard).
8. All manholes >1.2m in depth shall be provided with manhole step rungs. These shall follow the requirements on sheet 40



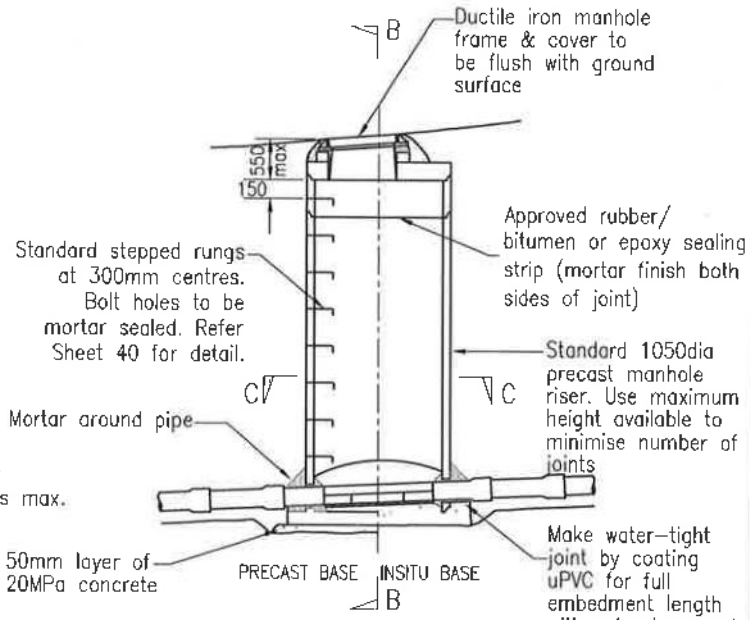
SECTION BB



SECTION A–A INTERNAL DROP

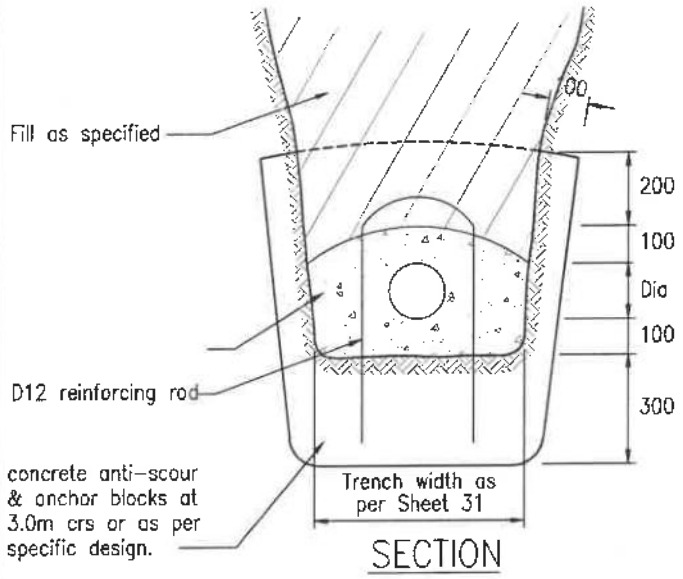
Note:

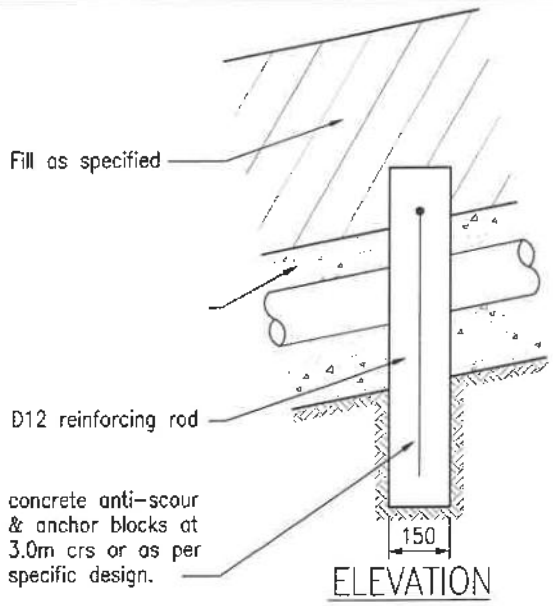
1. This detail is applicable for pipe diameters up to 250mm & for manhole depth up to 5.0m & for manhole diameters ⩾ 1200mm.
2. External drops shall not be used



SECTION AA

STANDARD PRECAST MANHOLE SEWER AND STORMWATER FOR ALL ENVIRONMENTS	Date:	FEB 2022
	Revision:	0.2
FAR NORTH DISTRICT COUNCIL ENGINEERING STANDARDS	Scale:	AS SHOWN
	SHEET No.	39



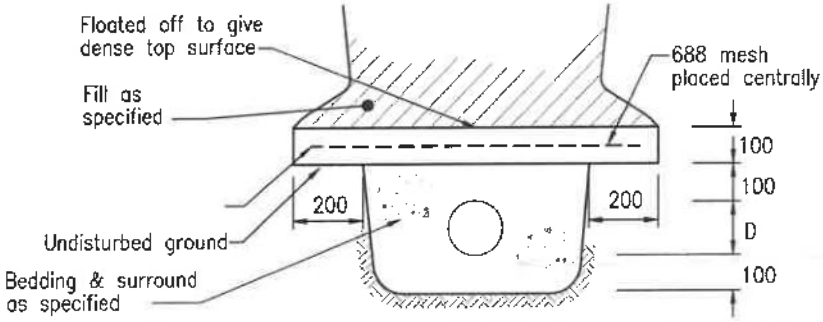


STEEP PIPE DETAILS

(For pipeline gradients 1:3 or steeper and diameter ⩽ 450mm)

NOTES:

1) Some variation is possible using aluminium plate cut off walls bolted to larger diameter pipes.
2) Larger diameter pipes will require specific pier design to counter the downward component of water and pipe weight.

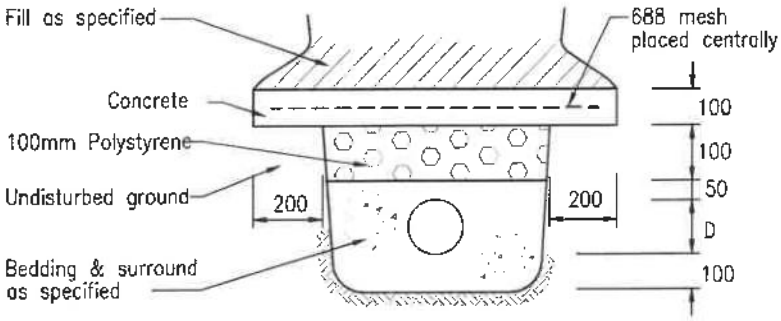


REINFORCED CONCRETE SLAB PROTECTION FOR STORMWATER AND WASTEWATER

(Where additional loading or other requirements necessitate)

GENERAL:

A. All concrete to be 20MPa at 28 days as per NZS 3104:2021
B. Cement stabilised bedding and back fill: 1 part cement to 20 parts aggregate.
C. Allow 48 hours curing prior to back filling any concrete or stabilised material.
. Slab protection to be laid in lengths no greater than 2.0M



REINFORCED CONCRETE SLAB PROTECTION FOR WATER PIPELINES

PIPE PROTECTION AND BULKHEAD DETAILS (FOR ALL ENVIRONMENTS)	Date:	FEB 2022
	Revision:	0.2
FAR NORTH DISTRICT COUNCIL ENGINEERING STANDARDS	Scale:	AS SHOWN
	SHEET No.	32

CHARTERED PROFESSIONAL ENGINEERS

EARTHWORKS SPECIFICATION

FOR

PROPOSED NEW DRIVEWAY AND RETAINING WALLS

AT

15 CHAPEL STREET, RUSSEL

FOR

PAUL AND ERINA VAN KONINGSVELD

Job No: 23-019

Date: 28/10/2023 (Original Date of Issue)

Rev 1 (16/10/2024) – Change Earthwork volume to account for Attenuation Tank – Fix Calculation Errors.
Rev 2 (03/07/2025) – Change Earthwork Volume to suit the Rev 5 Driveway alignment. – Update calculation

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SECTION 1 CUT FILL REPORT

Generated 28/10/23

Volume Summary							
Name	**Type**	**Cut Factor**	**Fill Factor**	**2d Area** (sq.m)	**Cut** (Cu. M.)	**Fill** (Cu. M.)	**Net** (Cu. M.)
Earthwork Hardfill	full	1.000	1.000	500	0	381.1	0

Volume Summary							
Name	**Type**	**Cut Factor**	**Fill Factor**	**2d Area** (sq.m)	**Cut** (Cu. M.)	**Fill** (Cu. M.)	**Net** (Cu. M.)
Earthwork Clay Cut	full	1.3	1.3	35	14.3		0

Totals				
	2d Area (sq.m)	**Cut** (Cu. M.)	**Fill** (Cu. M.)	**Net** (Cu. M.)
Total	520	14.3	381.1	395.4

* Value adjusted by cut or fill factor other than 1.0

SECTION 2 SITE PREPARATION AND GROUNDWORK

2.1Scope

This section covers materials to be supplied and work to be done in stripping of vegetation and topsoil, earthworks, excavation and filling, formation of building platforms and placing of hardfill, excavation for foundations, drains and services, formation, metaling and surfacing of roading and paths.

2.2 Standard Details

Standard details where attached to the drawings or this Specification shall be used as applicable.

2.3 Quantities

The Contractor shall be responsible for establishing the total volume of excavation and for the total volume of hard filling required as described above and shall allow for these in his tender.

To establish these quantities, tenderers shall have free access on the site to take levels, dig inspection pits and carry out any other exploratory works as necessary, provided that such works do not damage, impair or endanger property adjacent to the site or any protected areas.

2.4 Acceptance

The Contractor shall be deemed to have satisfied himself by personal inspection of the site or by other methods of the nature of the subsoil material and the feasibility of his proposed methods of excavation.

No extra payment shall be made on the grounds of insufficient information.

2.5 Setting Out

The Contractor shall be deemed responsible for correctly setting out the work and completing it accurately to line and level.

2.6 Nuisance

The work shall be carried out in such a manner as to cause the least inconvenience to neighbours, and the public as is reasonably possible. The Contractor shall be responsible for erecting all barricades, signs etc, to protect the public and persons using adjacent buildings and properties.

The Contractor is responsible for keeping areas surrounding the site clean.

2.7 Protection

Provide and maintain all necessary temporary shoring and supports to excavations. The Contractor shall be responsible for the sufficiency of all temporary protection work and shall make good any damage done.

2.8 Earthworks

2.8.1 General

The Contractor shall at all times comply with the general requirements of earthworks construction as detailed in NZS 4431:2022, Code of Practice for Earth Fill for Residential Development, NZS 4404:2010 Land Development and Subdivision Infrastructure, NZS 3917:2013 Conditions of Contract for Building and Civil Engineering Construction and Far North District Council Engineering Standards and Guidelines 2023.

2.8.2 Excavation

Excavation may be carried out by any means (subject to limitations on the use of explosives) provided that the subsoil below final trimmed levels remain undisturbed.

The Contractor shall maintain the excavations, leaving the surface smooth, firm and graded so that surface water will be readily drained, providing adequate temporary drainage. Provide temporary retention for excavated faces adjacent to boundaries as required.

Should weather conditions or the methods of excavation be such as to result in undue disturbance of subsoil material, then the Contractor, shall, if required to do so by the Engineer, suspend the work and complete it when conditions permit, if necessary, using more suitable methods.

No extra payment shall be made in such cases, but appropriate extensions of the contract period may be granted if deemed necessary by the Engineer.

2.8.3 Excavation for Construction Work

Excavate and trim to levels required for buildings and paved areas as shown on drawings. The excavated sub-grade level is to be inspected and approved by P.K. Engineering Limited prior to the placement of fill. Any local areas that have become softened shall be excavated and replaced with filling meeting this specification.

2.8.4 Excavation in rock

No excavation of rock shall be carried out without prior approval of the Engineer, and only after agreement has been reached between the Principal, Contractor and Engineer as to the method of payment.

Subsoil material shall not be classified as rock unless it cannot be excavated without the use of either explosives, heavy machinery or rock rippers. Heavy machinery shall be of not less size or power than a Caterpillar D8 or its equivalent fitted with rock rippers or pneumatic or diesel breakers.

2.8.5 Foundation excavation

All foundation excavations shall be approved by P.K. Engineering Limited as work proceeds and no backfilling, site concrete nor foundation concrete shall be placed until approval has been given.

2.9 Filling

2.9.1 Bulk Filling Materials

Cut-to-fill for the building platform to levels shown on the drawings. Fill is to be sourced from onsite cut-to-fill operations. Remove from the site any unsuitable excavated material. Any imported fill material shall be to the prior written approval of the Engineer. No filling shall be placed in heavy rain, in standing water, or in wet conditions.

2.9.2 Compaction

Monitoring and testing of earthworks will be undertaken by P K Engineering Limited. The Contractor shall inform the Engineer at least 48 hours prior to commencement of earthworks operations to ensure that inspections and testing can be carried out at the following minimum frequencies:

a) Bulk filling : 1 test per 50m3
b) Trench backfilling : 1 test per 50m3 and every 1m depth above pipe:

Fill is to be placed in layers not exceeding 100mm loose depth. Fill materials shall be conditioned to an appropriate water content and compacted by a minimum of 8 passes per layer using an approved compactor. Any fill which deteriorates from the specified condition during earthworks operations shall be reworked, compacted and the retested to demonstrate the compaction requirements have been achieved.

2.9.3 Testing

Compaction on each layer of fill placed shall achieve the following minimum standards:

a) Average shear strength 120Kpa with no test less than 100Kpa.
b) Maximum air voids average 5% with no test less than 8%

Test the building platform and truck pavement areas. The compacted fill is to be certified by PK Engineering Limited to comply with the compaction criteria.

2.9.4 Filling Under Concrete Pavements

Make up the area to the underside of concrete pavement with bulk filling as required and blind surface with 7mm quarry dust to give a uniform dense surface. Do not blind with coarse sand which can be disturbed during casting of the slab.

The finished level shall at no point be more than 10mm above the correct level, and the average level shall be at, or lower than, the correct level. The finished surface tolerance shall be such that no point varies more than 12mm from a 3metre straight edge parallel to the centre line, or from a cross section camber board.

2.9.5 Backfilling Service Trenches

Fine material shall be placed by hand in layers not exceeding 150mm loose depth and compacted by hand ramming up to 300mm above the pipe. The remainder of the backfilling shall be placed and compacted by suitable mechanical equipment. No pipe is to be damaged by compaction. Any damaged pipe shall be replaced at the Contractors expense.

2.10 Tidy Up

On completion all areas shall be tidied up, rubbish and surplus material removed, and the site left neat and tidy.

3.1 REINSTATEMENT

3.1.1 General

Reinstatement of the final ground surface shall be undertaken on all areas affected by the Contract Works.
Reinstatement shall include but not be limited to:

I. General maintenance of areas affected from the footpath to adjacent property.

II. Areas outside those paved shall be reinstated with topsoil and those outside the paved and areas to be planted shall be reinstated in grass. The topsoil shall be re spread from stockpile to a minimum depth of 150 mm. The respread topsoil shall be worked to provide a fine seedbed suitable for grass seed or suitable for laying turf where directed.

III. Areas annotated on the plans "Area to be planted" shall be mulched with bark to a depth of 100 mm. The bark shall be clean graded bark with a maximum dimension of 100 mm.

IV. All plants, trees and shrubs disturbed by the Contract Works shall be replaced with similar plants, trees and shrubs.

Any other areas damaged by the Contractor's operations shall be returned to an equivalent condition to that which existed prior to the Contractors operation.

The berms shall be shaped to provide a constant crossfall between the edge of any concrete boarders.

The finished profile shall be suitable for grass mowing with a domestic type mower where topsoil and grass or turf is applied.

The surface of the berm shall be free from all spoil heaps, loose debris and machinery tracks.
The minimum crossfall shall exceed 2% (1:50).

The maximum crossfall shall not exceed 3% (1:33) within 0.5 m of the edge of the road construction or 10% (1:10) elsewhere, except where shown otherwise on the Drawings.

3.1.2 Services

All service access lids and surrounds shall be re-levelled so that at the end of construction the lids and surrounds conform to the finished surface level and shape.

3.1.3 Topsoil and Grass

3.1.3.1 Topsoil

Areas to be topsoiled and grassed will generally be equal to and flatter than 3:1 in grade and as indicated by the Engineer.
The surface of the area to be topsoiled shall be broken up prior to topsoiling. Topsoil shall be spread to a depth of 150 mm and lightly raked to provide an even surface for grassing.
Topsoil shall be a dark brown friable loose loam containing a high percentage of humus and free from stones and other debris.

3.1.3.2 Grassing:

Unless otherwise specified or directed by the Engineer, fertiliser and grass seed shall be evenly applied over the total area of topsoil in the following proportions:

	Mixture	Application Rate
Fertiliser	3 parts Superphosphates 1 oart Sulohate of Ammonia	150 gm/m2
Grass Seed [Certified]	70% Allstar Rye Grass 20% Lobi Chewings Fescue 10% Eqmont Browntop	30 gm/m2

Sowing of grass seed shall be undertaken only during the period March to May, or September to November, inclusive.

After sowing, the fertiliser and grass seed shall be thoroughly raked in and lightly compacted and the whole area left in a neat and tidy condition.

A strike rate of 75% shall be achieved. If necessary, repeat sewings shall be made to comply with this requirement.

3.1.3.3 Turf:

Turf shall be kikuyu grass laid to produce an even surface suitable for mowing using a domestic mower.

3.1.3.4 Fertiliser

A minimum of one week prior to seeding, agricultural lime and base fertiliser shall be incorporated into the top 50mm of the seedbed. The lime and other base fertilisers rates shall be based on soil test results. But each shall be a minimum of 150gm/sq.m.

A fertiliser such as Nitrophoska Blue or Ammophos at a rate of 250 kg/ha shall be applied three weeks following germination or turf laying with appropriate spreading equipment.

One month after application of Nitrophoska Blue, the Contractor shall fertilise area sown with an application of sulphate of Ammonia at a rate of 200 kg/ha.

SECTION 4 MATERIALS

4.1 SUPPLY

The Contractor shall supply all materials required for construction.

4.2 DOCUMENTATION

The Contractors Quality Assurance procedures shall incorporate means for the control of the quality of all materials and products used in the work.

The Contractor shall supply supporting or confirming documentation for all materials or manufactured products supplied to the site and incorporated in the works. The documentation shall cover all sampling, testing, inspection, and proof of compliance with relevant standards including producer statements and compliance certificates where required under the Building Act.

The documents shall include sampling and testing of aggregate and chip stockpiles in accordance with the Minimum Standards as set out in section 4.

4.3 GRANULAR FILL

Sand Equivalent (SE) 20

Crushing Resistance (NZS 4407: 2015 test 3.10) SOkN

Soaked CBR (NZS 4407:2015 Test 3.15) 20

Grading: Maximum Size 5'75 mm,

Grading envelope shall be well graded with <20% passing the 600micron sieve. The granular fill shall comply with compaction in TNZ F/1 Clause 10.5.1

4.4 BEDDING MATERIAL

Shall be in accordance with NZS 3116:2002

4.5 SUBBASE AGGREGATE

The sub-basecouse shall be GAP65. The GAP 40 shall have a soaked CBR (NZS 4407:2015 Test 3.15) not less than 40 and shall meet the minimum FNDC engineering standards 3.4.2.2

Plasticity Index - maximum 6 Clay index - maximum 4

Sand equivalent - minimum 15

4.6 BASECOURSE AGGREGATE

Shall be PAP40 to NZTA M/4 or to FNDC Engineering Standards 3.4.2.1 Plasticity Index - maximum 6

Clay index - maximum 4

4.7 RUNNING COURSE AGGREGATE

Shall comply with TNZ B/2.

SECTION 5 QUALITY ASSURANCE

5.0 GENERAL:

Quality Assurance shall comply with TNZ Q/3:1995 and follow the requirements of the tables included in this section.

5.1 QUALITY PLAN

The Contractor shall prepare a draft quality plan detailing Method Statements for the planning, detailing and construction of the works in accordance with the specifications. The Contractor shall follow the guidelines in TQS2 in preparing the Quality Plan. For sealing, line marking and sign manufacturing the Contractor shall refer to the guidelines in TQS1. The Engineer will review the draft plan and make comments within 5 working days of receiving the plan. The Contractor to the satisfaction of the Engineer shall carry out any changes necessary before any major earthworks are started. The accepted Final Quality Plan will then form the basis for the Quality Assurance and total management of the contract works.

The Contractor shall manage the project so that the objectives are met.

The Quality Plan shall include but not be limited to the preparation, implementation and management of the following:

5.1.1 Contract Programme

The Contractor shall prepare a baseline programme. The format for the programme shall be in Microsoft Project and submitted to the Engineer in hardcopy and on disk. The Contractor shall set the baseline which once set shall not be changed and will form the basis for the contract critical path. The programme shall include but is not limited to:

I. all tasks and stages necessary to complete the project works as outlined in the document.
II. all critical path items and reporting periods delivery of temporary traffic management plans
III. delivery of Quality plan
IV. delivery dates of site safety plan
V. site inspection dates during the Defect Liability Period.

It is expected that the Contractor will allow for a minimum one site inspection within a 30 day period.

The programme shall be updated every two weeks and a hard copies shall be included with the monthly claim.

5.1.2 Site Safety Plan

The Contractor shall be responsible for their own safety and ensure that their actions or failures to act do not harm any other person. The Contractor shall also be responsible for the safety and health of all its employees, subcontractors and general public. The Contractor shall comply with the Health and safety section.

The Contractor shall prepare a Site Safety Plan for inclusion in the Quality Plan, covering the services of this contract. The Site Safety Plan shall be made available at the site at all times.
The Site Safety Plan shall detail the procedures required to ensure the contract services are executed in a safe and efficient manner and shall include as a minimum:

I. Traffic Management Plan incorporating the requirements of the Code of Practice for Temporary traffic Control.
II. Hazard Management Plan which will include an Environmental Effects Register.

5.1.3 Identification and rectification of non-complying work

The Contractor shall prepare a non-compliance work sheet identifying the processes they intend to take for a non compliance item and demonstrate the methods of an appropriate method of repair and completion of the re-work where required.

5.1.4 Testing and measurement

The Contractor shall prepare a schedule of testing. The schedule shall state the type and frequency of tests, programming, completion and review of all testing. The schedule of testing shall follow, but not be limited to, the requirements of the Quality Assurance section 4.0.

The Contractor shall state in his Quality Plan the type, number and frequency of all " testing the proposes to undertake during the contract period in order to meet the requirements of the Contract Documents.

A Schedule of Testing is included in Section 4 and details the minimum permissible level of testing for the Contract Works.

In accordance with the General Conditions of Contract all test results shall be IANZ certified for both sampling and testing.

5.1.5 Contractor's Records

The Contractor shall produce and maintain records, which clearly demonstrate that the materials, completed work measurement, and works methods including those for inspections, programming and reporting meet the requirements of the Contract Documents.

Copies of all sheets to be used for this purpose and a brief explanation of their use shall be included in the Quality Plan.

5.1.6 Non-Complying Materials and workmanship

Should any inspection by the Engineer find evidence of non- compliance with materials or workmanship, the Engineer may request from the Quality Manager a written explanation and details of what remedial steps will be taken by the Contractor to rectify the non-compliance. This shall be outlined in the Quality Plan.

5.2.2 Personnel

Including but not limited to the nomination of all personnel involved in the contract and their specific roles and responsibilities.

5.2.2.1 Contractors Personnel

The Contractor shall name the following key personnel who are to be employed on the contract works.

I. Contractor's Representative:

II. Contract Manager: Responsible for the overall management of the contract works.

5.2.2.2 The Weekly Report

Weekly reports for that week shall be submitted so that they are received by the Engineer no later than 10.00 am on the last working day of the week

The Report shall comprise the following for each reported day:

i. a description of works carried out and locations

ii. labour and plant types and working hours

iii. a summary of all certified Quality Plan Statements submitted; non- compliance and corrective action reports submitted

iv. priced Daily Job Records (DJRs) for all unscheduled works completed on a dayworks basis

v. traffic management plans submitted

vi. delays due to wet weather and other events, affecting progress of the works; accident reports

vii. any additional information either required by the Contract Documents and/ or instructed to be submitted by the Engineer

5.2.2.3 Site Safety Report

A monthly Site Safety Report shall be prepared by the Contractor and submitted with the Monthly claim. The Site Safety Report shall comprise the following for the reported month:

i. Updated Accident Register

ii. Non- compliance reports; corrective action reports

iii. Safety audit reports

iv. Investigations and corrective actions for all accidents, breaches of the safety requirements and new hazards identified.

5.2.2.4 Temporary Speed *Restrictions*

Temporary Speed restrictions as may be required are to be forwarded to the Network Manager for approval by FNDC prior to placement of signs.

5.2.2.5 MATERIALS TESTING AND TESTING FREQUENCY

The Contractor shall produce a test compliance certificate from a Telarc certified laboratory for all materials at the specified frequency (or part thereof) as a minimum requirement of its quality plan. The contractor shall carry out the development of the quality plan during the Stage 1 works. The final quality plan must be approved by the engineer prior to implementing.

SECTION 6 FNDC QUALITY CONTROL TESTING

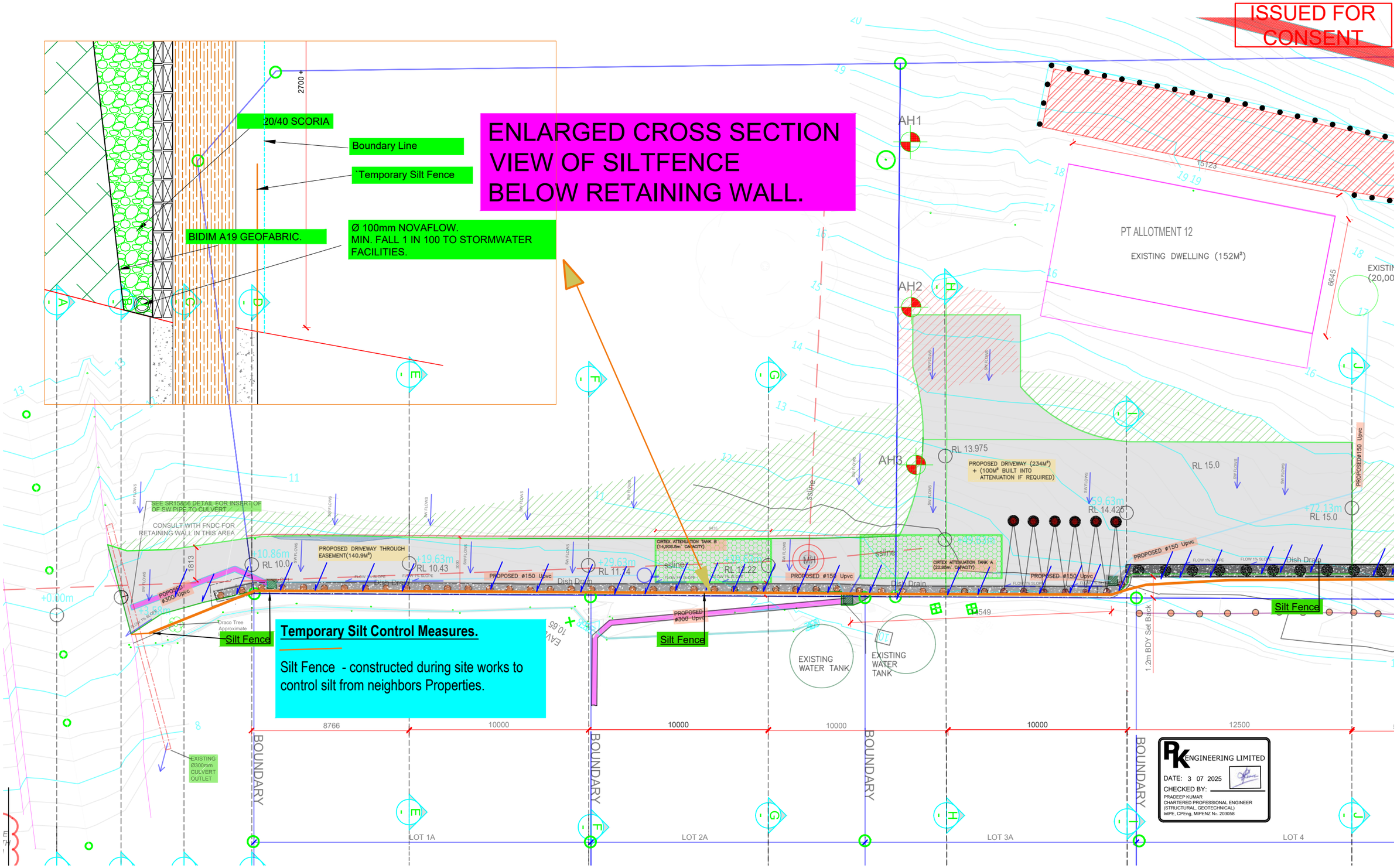
TABLE 1. SCHEDULE OF TESTING - EARTHWORKS - INSITU FOUNDATION				
Test Item Material Type	**Stage**	**Testing**		
		Test Type	**Level to be Achieved for Acceptance**	**Minimum Test Frequency**
In situ Foundation Material	Subgrade (0·1m) in cut below the pavement	Inferred CBR (Scala Penetrometer)	For a depth of 150mm below the underside of the granular fill layer the inferred CBR shall be 25 (<37 mm per blow) For a depth 150 - 700mm below the underside of the granular fill layer the inferred CBR shall be 23 (<60 mm per blow) The CBR shall be inferred from the Scala Penetrometer Test. Using fig 3.1 NZS 4404 210	1test shall be performed at 1Om intervals for each platform. The testing interval relative to each platform shall be staggered so one test is performed every 1Om interval along the alignment length. Or clegg hammer test at 5m centers (Min IT 30+)
	Shape	Transverse Shape	Straight Edge in accordance with NZTA F/1 No ponding of water	Make 4 tests per platform, per 4Om length of finished subgrade surface across the full width of the subgrade surface. Or clegg hammer test at 5m centers (Min IT 30+)
		Longitudinal Shape	Straight Edge in accordance with NZTA F/1 No ponding of water	4 tests per 4Om length of finished subgrade surface at random points across the full subgrade surface. Or Clegg hammer at 5m center (Min IT 30+)

Notes: 1 The number of millimetres per blow shall be determined in accordance with NZS 4402, test 6.5.2 - "Hand method using a Dynamic Cone Penetrometer", Scala Penetrometer Test

TABLE 2. SCHEDULE OF TESTING - EARTHWORKS - EMBANKMENT FOUNDATION					
Test Item Material Type	**Stage**	**Testing**			
		Test Type	**Level to be Achieved for Acceptance**		**Minimum Text Frequency**
In situ Foundation Material	Embankment Foundation Preparation	Shear Vane Strength Determined from Pilcon shear vane head reading corrected using equation in section 3.4.2 of BS 1377-1:2016	Embankment Height (deemed to be the vertical height of fill either from crest to toe, or centreline to base, whichever is the greater.) • m - 5m • 5m - 10m • 10m - 15m	Vane Shear Strength under embankment <:50kPa <:65kPa <:80kPa	1test per 50 m^2 of foundation prepared. A test result submitted for acceptance shall consist of 5 measurements within the section prepared for backfilling. Until criteria achieved, test natural ground every 500mm in auger hole to a depth below the existing ground level equivalent to the height of fill above existing ground.
			Applies to all embankment fills. The average of the five measurements shall meet the stated acceptance criteria. Additional undercut will be required in the areas listed in the Project Specification where organic materials are resent.		

ISSUED FOR CONSENT

ENLARGED CROSS SECTION VIEW OF SILTFENCE BELOW RETAINING WALL.



PK 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 NEW DRIVEWAY & RETAINING WALL 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: TEMPORARY SILT CONTROLS	Drawn: JW	Checked: PK	Date: 03 07 2025	Scale: 1:200 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SE1.0	R5
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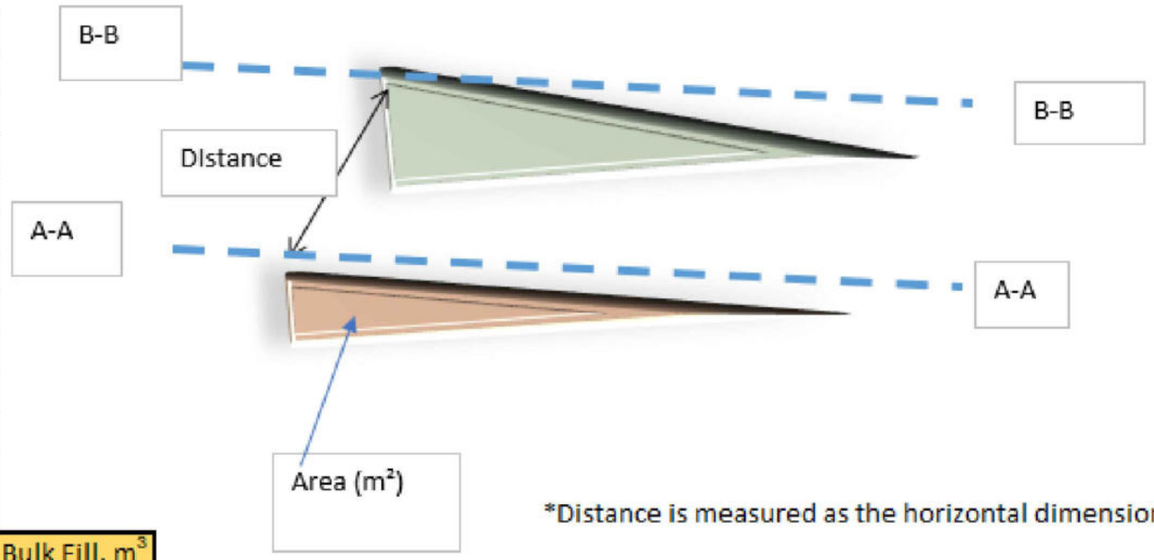
ISSUED FOR CONSENT

Fill (Hardfill)

Cross Sections	Area	DIstance	Volume
A-A	0	0	0
B-B	0	0	0
C-C	0.97954	3.51	1.7190927
D-D	0.744	3.82	3.2919614
E-E	1.692056	8.75	10.657745
F-F	3.945	10	28.18528
G-G	8.1	10	60.225
H-H	14.8	10	114.5
I-I	10.2	10	125
J-J	2.5105	10	63.5525
Retwal end	0.9285	5.2	8.9414
			416.1
Cirtex Attenuation tanks			**35.0**
			381.1 Bulk Fill, m^3

Volume Equation = Area (A-A) + Area (B-B)/2 * Distance



*Distance is measured as the horizontal dimension between cross sections

PK ENGINEERING LIMITED
DATE: 3 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

Cut

Cross Sections	Area	DIstance	Volume
A-A	0	0	0
B-B	0	0	0
C-C	0	0	0
D-D	0	0	0
E-E	0	0	0
F-F	0	0	0
G-G			
H-H	0	0	10
I-I	0	0	0
J-J	0	0	0
Cirtex Attenuation tank b			**4.3**
			14.3 Bulk Cut m (approx)
			18.59 Cut Factor (1.3)

These Earthworks Volumes
are approximate only and
include all backfill behind retaining walls
and drainage. (for planning purposes
only.

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PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALL 15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: EARTHWORKS VOLUMES

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PROJECT No: 23-019

Chartered Professional Engineers

Stormwater Report

FOR

The Proposed New Driveway and Retaining Walls

FOR

Paul and Erina Van Koningsveld

AT

15 Chapel Street, Russell

Job No: 21-113A
Date: 6/10/2024 (Original Date of Submission)
Revision 2: (16/07/2025)

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand
Telephone: 09 407 3255 Email: teampk@pkengin.co.nz

1.0– Stormwater Report

Refer to the Site plan in Drawings titled "Proposed New Retaining Wall and Driveway For Paul and Erina Van Koningsveld'' (Rev 4) in order to see the proposed new driveway layout and relevant features for this stormwater report.

The following tables show the calculated impermeable surfaces across the 15 Chapel street proposed new driveway- existing dwelling and the proposed new driveway area with easement through 17 chapel street and the FNDC reserve.

Post Developed Total Combined Impermeable surfaces.

Proposed New driveway over 15 & 17 Chapel Street and ROW over FNDC reserve. = 369.5m²
15 Chapel Street Existing House = 152m²
Total = 521.5m²

Post Developed Impermeable Surfaces respective of 15 Chapel Street (See below FNDC Map)

15 Chapel Street Survey Area = 953m²

Proposed New driveway = 234m²
Future proofing driveway = 100m²
Existing House = 152m²
Future proofing = 98m²
Total = 584m²

Post Developed Impermeable Surfaces respective of 17 Chapel Street (See below FNDC Map)

17 Chapel Street Survey Area = 1,011m²

Proposed New driveway over 17 chapel street easement (for 15 chapel street)

= 110m²

Existing House = 130.81 m²

Existing Driveway = ~15m²

Total = 255.81m²

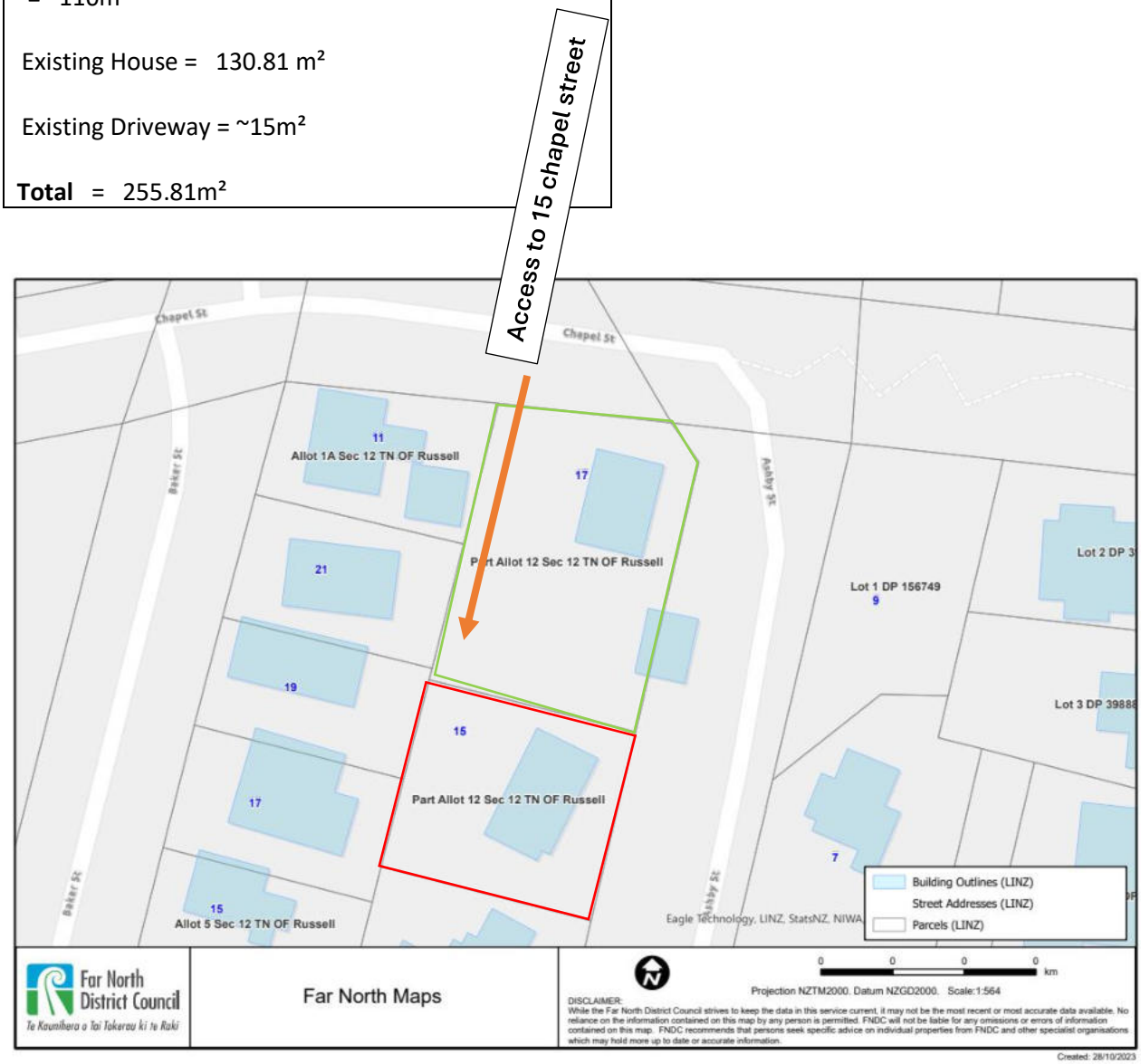

Figure 1: FNDC Maps Parcels

Post Developed Impermeable Surfaces respective of 15 chapel street Right of Way over FNDC reserve

Proposed Driveway area over FNDC reserve = 25.5m²

The Site of the proposed development is zoned as Urban living (Russel township) on the district plan operative maps. The urban living impermeable surfaces must be no greater than 35% to qualify as a permitted activity.

The proposed development for 15 chapel street increases the impermeable surfaces to 61% of the total land area, making the development restricted discretionary activity under the district plan. Therefore, attenuation will be required to control stormwater from the driveway and house water flows before it reaches the public drains.

In order to control the stormwater from the site for the proposed new driveway
a catchment analysis has been modelled using the grassed and impermeable surfaces needing to be controlled during a 1 in 100-year storm event with intensity of 199mm/hr. Calculations for this provided in Appendix A using coefficients of 0.59 pre-development and 0.96 post development

The data for the catchment analysis was acquired from HIRDS NIWA Rainfall design system V4 – RCP6.0 scenario -2081-2100. Intensity summary reports provided in Appendix A.

We propose to utilise two CIRTEX Rainsmart tanks to attenuate stormwater flows to predevelopment levels. The Rainsmart tanks are to attenuate stormwater flows from the existing house plus an allowance for future proofing and the driveway plus an allowance for future proofing giving a grand total of stormwater flows from 584m^2 to be attenuated. The CIRTEX Rainsmart tanks are designed to attenuate stormwater flows from a 1:10 year and a 1:100year storm event the attenuation calculations, CIRTEX Rainsmart calculations, CIRTEX Rainsmart construction drawings and Cirtex Rainsmart installation guide accompany this report in Appendix A.

A summary of the attenuation parameters is given below in Table 1.

Table 1. Attenuation parameters

	Orifice diameter mm	Orifice invert location		
ARI 10	60	850mm below overflow invert		
ARI 100	60	550mm below overflow invert		
			Cirtex Doubles 2.4m Wide x 6.435m Long x 0.86m Deep	Cirtex Tripples 2.4m Wide x 7.865m Long x 1.28m Deep.
Tank Size	2 x	36,233.58 litres @		
ARI 10		23024 litres		
ARI 100		35775 litres		

A total of 0.0577m³/sec of flow is required to be picked up by the driveway dish drain and piped to the council stormwater network. The proposed new dish drain along the driveway during a 1:100 year event could accommodate 0.2032m³/sec of flow thus giving plenty of capacity.

Multiple Cesspits and stormwater pipes have been proposed to accommodate the stormwater flows safely to the council culvert on chapel street and council stormwater network on baker street. See sheet SG1 of drawings titled "Proposed New Retaining Wall and Driveway for Paul and Erina Van Koningsveld'' (Rev 6) for the layout.

Any future development has been allowed for in regard to the pipe networks capacity.

For any further information, please contact us on 09 407 3255.

Yours Sincerely,

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

APPENDIX A

- Stormwater management design PS1
- Attenuation Calculations
- Proposed driveway kerb dish drain flow check
- Hirds V4 intensity data sheet.
- Cirtex Rainsmart calculator x 2
- Cirtex Rainsmart Brochure
- Cirtex Rainsmart installation guide
- PK Engineering Rainsmart tank plan view Sheet 'SR18'
- PK Engineering Rainsmart tank construction detail Sheet 'SR19'
- Construction Monitoring Schedule
- FNDC -ES 2023 Sheet 32 (Pipe Protection details)
- Cirtex Rainsmart suggested maintenance procedures.

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APPENDIX A

STORMWATER CALCULATIONS

For

STORMWATER ATTENUATION DESIGN HOUSE & DRIVE +FUTURE PROOFING

15 CHAPEL STREET

RUSSELL

FOR

PAUL & ERINA VAN KONINGSVELD

Job No: 23-019
Date: 16 JULY 2025

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri, New Zealand

Telephone: 09 407 3255, Email: TeamPK@pkengin.co.nz

PK ENGINEERING

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engineering new zealand

New Zealand Institute of Architects Incorporated

ACENZ

Building Code Clause(s) E1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: PK Engineering Ltd
(Design Firm)

TO: Paul & Erina Van Koningsveld
(Owner/Developer)

TO BE SUPPLIED TO: Far North District Council
(Building Consent Authority)

IN RESPECT OF: Stormwater Design
(Description of Building Work)

AT: 15 Chapel Street
(Address)

Town/City: Russell -PT ALLOT 12 SECT 12 TN **LOT**..... **DP**..... **SO**.....
(Address)

We have been engaged by the owner/developer referred to above to provide:

Design and detailing of the Stormwater attenuation system

.....
(Extent of Engagement)

services in respect of the requirements of Clause(s) E1 .....of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment E1- E1.3.3 .....or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule.....

The proposed building work covered by this producer statement is described on the drawings titled:

Stormwater attenuation design .....and numbered Calcs C1-C6, DWG's SR18-SR19 ;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions .....
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☒ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, Pradeep Kumar ..... am: ☒ CPEng 203058 # ☐ Reg Arch ..... #
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE (Hons) IntPE, CPEng
The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.
The Design Firm is a member of ACENZ: ☐

SIGNED BY Pradeep Kumar .....(Signature).....
(Name of Design Professional)

ON BEHALF OF PK Engineering Ltd .....Date 16/07/2025
(Design Firm)

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA

PK ENGINEERING

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GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional engineers New Zealand (now Engineering New Zealand), Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suit of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 Design Review Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 Construction Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011[2]

PS4 Construction Review Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, Engineering NZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as Engineering New Zealand (formerly IPENZ) or the New Zealand Institute of Architects (NZIA), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

*Professional Indemnity Insurance

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-CM5 for Engineers[3]). The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013

2 NZIA Standard Conditions of Contract SCC 2011

3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)

4 PN Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org
www.nzia.co.nz

ACENZ engineering new zealand NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED

CHARTERED PROFESSIONAL ENGINEERS

1 IN 10 YEAR ATTENUATION DESIGN SHEETS

1 — Rational method — 48hr

Pre – Development water flow

(Original water flow)

	Roof & decks	Concrete & smooth seal	Metaled area Or rough seal	Other Impervious	Vegetation	Bush
Total area. Area (m^2)	1 (m^2)	2 (m^2)	3 (m^2)	4 (m^2)	5 (m^2)	6 (m^2)
584.00	0	0	0	0	636	0
Runoff coefficent	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
Use "C" values from FNDC TR55 chart	FALSE	FALSE	FALSE	FALSE	0.59	FALSE
Generally do not use slope adjustment Ci factor if using TR55	0.9	0.96	0.8	0.65	0.59	0.59
Rainfall intensity	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.14	6.14	6.14	6.14	6.14	6.14
Use an appropiate event for the situation						
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.000	0.000	0.000	0.001	0.000

Pre – development flow of developed area	Qp (m^3/sec)	Qp (L/sec)
	0.0006	0.64

Post – Development water flow

	Any area where there is a change in the impermiablity values				Pre-development area where there a change in impermeable surfaces not collected in atenuation system		Any area where to the impermial
Total area. Area (m^2)	Roof & decks 1 (m^2)	Concrete & smooth seal 2 (m^2)	Driveway Or rough seal 3 (m^2)	Vegetation 4 (m^2)	Concrete & smooth seal 5 (m^2)	Metaled area or vegetation 6 (m^2)	Metaled area or seal 7 (m^2)
584.00	250	334			0	0	0
OK							
	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
Use "C" values from FNDC TR55 chart	0.96	0.96	FALSE	FALSE	0.2	0.3	FALSE
Generally do not use slope adjustment Ci factor if using TR55	0.96	0.96	0.9	0.59	"C" value difference between Pre & Post Maximum value 0.2 (at the moment)		0.9
Rainfall intensity rate	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.89	6.89	6.89	6.89	6.14	6.14	6.14
Use an appropiate event for the situation							
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.001	0.000	0.000	0.000	0.000	0.000
	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)
	0.46	0.61	0.00	0.00	0.00	0.00	0.00

Total included in attenuation system calc's post – development flow	Qa (m^3/sec)	Qa (L/sec)
	0.000	0.43

Total impermeable excluded from attenuation system collection	Qby (m^3/sec)	Qby (L/sec)	Total no change attenuation syst Qby (m^3/sec)
	0.000	0.00	0.000

Post – Pre development flow	Qtpp (m^3/sec)	Qtpp (L/sec)
	0.0004	0.43

Total post development flow Developed flow + undeveloped flow	Qatt (m^3/sec)	Qatt (L/sec)
0 to 10min	0.0011	1.07

1b — Rational method — 48hr

Total catchment pre-development flow

	Roof & decks	Concrete & smooth seal	Metaled area Or rough seal	Other Impervious	Vegetation	Bush
Total area. Area (m^2)	1 (m^2)	2 (m^2)	3 (m^2)	4 (m^2)	5 (m^2)	6 (m^2)
584.00	0	0	0	0	584	0
Runoff coefficent	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
Use "C" values from FNDC TR55 chart	FALSE	FALSE	FALSE	FALSE	0.59	FALSE
Generally do not use slope adjustment Ci factor if using TR55	0.9	0.96	0.8	0.8	0.59	0.59
Rainfall intensity	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.14	6.14	6.14	6.14	6.14	6.14
Use an appropiate event for the situation						
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.000	0.000	0.000	0.001	0.000

Catchment area pre – development flow	Qcap (m^3/sec)	Qcap (L/sec)
	0.0006	0.59

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2

						Calculation (initial) usable height hmax (m)	Calculation (final) Additional area m^2
	Round	Square		Calculation (initial) Total tank area m^2	Calculation (initial) Total tank volume m^3		
Select 1 for type of tank/area, 0 for other	0	1				0.85	Nil
Estimate storage volume			Tank radius	34.32	29.17	OK	**Total area**
Adjust to match max Vstored	Num. Of tanks		r (m)		**Initial calculation**	OK	Same as initial
Round area	0		1.75	0.00	**hstor max.**	0.854	**Final volume**
	Num. Of tanks	Width	Length	m^2	**Vstored max.**	29.30	Same as initial
Square/rectangular area	1	2.4	14.3	34.32	**Vstored min.**	0.124	
					0.05 to3.5% left @ 48hr	0.42	
Short tube, 0.76	Orifice type "u"	g				OK	Same as initial
Thin sharp, 0.62	0.76	9.8067			**Graph, 24hr Vstored 2520m**	0.344	Not used
					Max.10% left @ 24hr from initial calc.	1.17	1.17
					or add extra volume		

	48hr	24hr	12hr	6hr	2hr	60	30
Pre - development flow	C20	L20	U20	AD20	AM20	AV20	BE20
of developed area	0.00064	0.00107	0.00173	0.00270	0.00512	0.00737	0.01036

3

							Slope factor adjustment at
Pre-development flow matches 2hr 40min. Intensity	Qp (m^3/sec)	Qp (L/sec)		**Qin max.**			
Uses (80min.crossover O126) as a source value	0.0041	4.1055		0.01400		48hr program	Min.crossover
Do not change	OK					Min.crossover	Chart point (min.)
For calculation purposes this section changes	Dia check	Dia	Area	**Qout 1520 (L/sec**	Qout (m^3/sec)	Chart point (min.)	0.91
the dia only and thereby the area	0.0411	0.04104	0.0013	3.946	0.00395	1520	peak flow
The information is not used for anything else		41.04		0		1520	Chart point (max.)
				If additional storage is required use the original/inital orifice size and calc. height			0.15

4

Calculate maximum storage volume

Chart intensity hr values steps used	Chart intensity accumulated minute steps	Storm duration-THR (hr)	Storm duration-event data, TMIN mins	Attenuation calc. t Direct to Atten. Qa (L/sec)	Catchment pre-devel plus orifice flow out Qtin (L/sec)	**For period 2081-2100 CC (RCP6)** Intensity. **Post-devel** I, (mm/hr) 100 yr	**Russell Current(0 deg) Pre-devl** I, (mm/hr) 100yr
48	720	12.00	720	0.43	0.91	6.89	6.14
24	1080	6.00	360	0.7	1.6	11.7	10.3
12	1260	3.00	180	1.3	2.5	19.4	16.6
6	1380	2.00	120	2.1	3.9	30.8	25.9
2	1410	0.50	30	4.2	6.7	59.6	49.1
1	1425	0.25	15	6.1	9.2	86.4	70.7
30	1430	0.08	5	8.5	12.3	121	99.4
20	1435	0.08	5	10.2	14.4	146	120
10	1440	0.08	5	14.0	18.8	199	163
10	1445	0.08	5	14.0	18.8	199	163
20	1450	0.08	5	10.2	15.3	146	120
30	1455	0.08	5	8.5	13.5	121	99.4
	1470	0.25	15	6.1	10.8	86.4	70.7
2	1500	0.50	30	4.2	8.8	59.6	49.1
6	1620	2.00	120	2.1	5.7	30.8	25.9
12	1800	3.00	180	1.3	3.3	19.4	16.6
24	2160	6.00	360	0.7	1.6	11.7	10.3
48	2880	12.00	720	0.4	0.9	6.89	6.14

				Qout max.	**Qout max.**	**Vstored max.**
Catchment flow Qpat (cell MAX(P109:P130)	**Qcap max.**	Qp (m^3/sec)	Qp (L/sec)	(m^3/sec)	(L/sec)	Vol. stored, (m^3)
Catchment flow = orifice flow out + catchment pre-development flow	9.100	0.0091	9.1	0.00911	9.11	29.266
						OK
For calculation purposes this section changes	Dia check	Dia	Area			OK
the dia only and thereby the area	0.0612	0.06110	0.0029			
The information is not used for anything else		61.10				
		Use this orifice size for final design				

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1 IN 100 YEAR ATTENUATION DESIGN SHEETS

1 — Rational method — 48hr

Pre – Development water flow

(Original water flow)	Roof & decks	Concrete & smooth seal	Metaled area Or rough seal	Other Impervious	Vegetation	Bush
Total area. Area (m^2)	1 (m^2)	2 (m^2)	3 (m^2)	4 (m^2)	5 (m^2)	6 (m^2)
584.00	0	0	0	0	636	0
Runoff coefficent	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
Use "C" values from FNDC TR55 chart	FALSE	FALSE	FALSE	FALSE	0.53	FALSE
Generally do not use slope adjustment Ci factor if using TR55	0.9	0.96	0.8	0.65	0.53	0.53
Rainfall intensity	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.14	6.14	6.14	6.14	6.14	6.14
Use an appropiate event for the situation						
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.000	0.000	0.000	0.001	0.000

Pre – development flow of developed area	Qp (m^3/sec)	Qp (L/sec)
	0.0006	0.64

Post – Development water flow

	Any area where there is a change in the impermiablity values				Pre-development area where there a change in impermeable surfaces not collected in atenuation system		Any area where to the impermial
Total area. Area (m^2)	Roof & decks 1 (m^2)	Concrete & smooth seal 2 (m^2)	Driveway Or rough seal 3 (m^2)	Vegetation 4 (m^2)	Concrete & smooth seal 5 (m^2)	Metaled area or vegetation 6 (m^2)	Metaled area or seal 7 (m^2)
584.00	250	334			0	0	0
OK							
Use "C" values from FNDC TR55 chart	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
	0.96	0.96	FALSE	FALSE	0.2	0.3	FALSE
Generally do not use slope adjustment Ci factor if using TR55	0.96	0.96	0.9	0.53	"C" value difference between Pre & Post Maximum value 0.2 (at the moment)		0.9
Rainfall intensity rate	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.89	6.89	6.89	6.89	6.14	6.14	6.14
Use an appropiate event for the situation							
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.001	0.000	0.000	0.000	0.000	0.000
	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)	Qc (L/sec)
	0.46	0.61	0.00	0.00	0.00	0.00	0.00

Total included in attenuation system calc's post – development flow	Qs (m^3/sec)	Qs (L/sec)
	0.000	0.43

Total impermeable excluded from attenuation system collection	Total no change attenuation syst
Qby (m^3/sec) / Qby (L/sec)	Qby (m^3/sec)
0.000 / 0.00	0.000

Post – Pre development flow	Qtpp (m^3/sec)	Qtpp (L/sec)
	0.0004	0.43

Total post development flow Developed flow + undeveloped flow	Qstt (m^3/sec)	Qstt (L/sec)
0 to 10min	0.0011	1.07

1b — Rational method — 48hr

Total catchment pre-development flow

	Roof & decks	Concrete & smooth seal	Metaled area Or rough seal	Other Impervious	Vegetation
Total area. Area (m^2)	1 (m^2)	2 (m^2)	3 (m^2)	4 (m^2)	5 (m^2)
584.00	0	0	0	0	584
Runoff coefficent	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)	Ci (coefficient)
Use "C" values from FNDC TR55 chart	FALSE	FALSE	FALSE	FALSE	0.53
Generally do not use slope adjustment Ci factor if using TR55	0.9	0.96	0.8	0.8	0.53
Rainfall intensity	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)	I (mm/hr)
Rainfall Data from NIWA. Hirds 4, RCP6, 2081-2100	6.14	6.14	6.14	6.14	6.14
Use an appropiate event for the situation					
Flow rate of surface water	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)	Qc (m^3/sec)
	0.000	0.000	0.000	0.000	0.001

Catchment area pre – development flow	Qcap (m^3/sec)	Qcap (L/sec)
	0.0006	0.53

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2

	Round	Square		Calculation (initial) Total tank area m^2	Calculation (initial) Total tank volume m^3	Calculation (initial) usable height hmax (m)	Calculation (final) Additional area m^2
Select 1 for type of tank/area, 0 for other	0	1				0.85	Nil
Estimate storage volume			Tank radius	34.32	29.17	OK	**Total area**
Adjust to match max Vstored	Num. Of tanks		r (m)		**Initial calculation**	OK	Same as initial
Round area	0		1.75	0.00	**hstor max.**	0.854	**Final volume**
	Num. Of tanks	Width	Length	m^2	**Vstored max.**	29.30	Same as initial
Square/rectangular area	1	2.4	14.3	34.32	**Vstored min.**	0.124	
					0.05 to3.5% left @ 48hr	0.42	
Short tube, 0.76	Orifice type "u"	g				OK	Same as initial
Thin sharp, 0.62	0.76	9.8067			**Graph, 24hr Vstored 2520m**	0.344	Not used
					Max.10% left @ 24hr from initial calc.	1.17	1.17
					or add extra volume		

	48hr	24hr	12hr	6hr	2hr	60	30
Pre - development flow	C20	L20	U20	AD20	AM20	AV20	BE20
of developed area	0.00064	0.00107	0.00173	0.00270	0.00512	0.00737	0.01036

3

	Qp (m^3/sec)	Qp (L/sec)		**Qin max.**			Slope factor adjustment at Min.crossover Chart point (min.)
Pre-development flow matches 2hr 40min. Intensity	0.0041	4.1055		0.01400			
Uses (80min.crossover O126) as a source value						48hr program Min.crossover Chart point (min.)	
Do not change	OK						
For calculation purposes this section changes	Dia check	Dia	Area	**Qout 1520 (L/sec**	Qout (m^3/sec)		
the dia only and thereby the area	0.0411	0.04104	0.0013	3.946	0.00395	1520	0.31 peak flow
The information is not used for anything else		41.04		0		1520	Chart point (max.)
							0.15

If additional storage is required use the original/inital orifice size and calc. height

4

Calculate maximum storage volume

Chart intensity hr values steps used	Chart intensity accumulated minute steps	Storm duration-THR (hr)	Storm duration-Event data, TMIN mins	Attenuation calc. t Direct to Atten. Qa (L/sec)	Catchment pre-devel plus orifice flow out Qtin (L/sec)	**For period 2081-2100 CC (RCP6)** Intensity. **Post-devel** I, (mm/hr) 100 yr	**Russell Current(0 deg) Pre-devl** I, (mm/hr) 100yr
48	720	12.00	720	0.43	0.91	6.89	6.14
24	1080	6.00	360	0.7	1.6	11.7	10.3
12	1260	3.00	180	1.3	2.5	19.4	16.6
6	1380	2.00	120	2.1	3.9	30.8	25.9
2	1410	0.50	30	4.2	6.7	59.6	49.1
1	1425	0.25	15	6.1	9.2	86.4	70.7
30	1430	0.08	5	8.5	12.3	121	99.4
20	1435	0.08	5	10.2	14.4	146	120
10	1440	0.08	5	14.0	18.8	199	163
10	1445	0.08	5	14.0	18.8	199	163
20	1450	0.08	5	10.2	15.3	146	120
30	1455	0.08	5	8.5	13.5	121	99.4
	1470	0.25	15	6.1	10.8	86.4	70.7
2	1500	0.50	30	4.2	8.8	59.6	49.1
6	1620	2.00	120	2.1	5.7	30.8	25.9
12	1800	3.00	180	1.3	3.3	19.4	16.6
24	2160	6.00	360	0.7	1.6	11.7	10.3
48	2880	12.00	720	0.4	0.9	6.89	6.14

	Qcap max.	Qp (m^3/sec)	Qp (L/sec)	**Qout max.** (m^3/sec)	**Qout max.** (L/sec)	**Vstored max.** Vol. stored, (m^3)
Catchment flow Qpat (cell MAX(P109:P130)	9.100	0.0091	9.1	0.00911	9.11	29.266
Catchment flow = orifice flow out + catchment pre-development flow						OK
For calculation purposes this section changes	Dia check	Dia	Area			OK
the dia only and thereby the area	0.0612	0.06110	0.0029			
The information is not used for anything else		61.10				

Use this orifice size for final design

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Telephone: 09 407 3255, Email: TeamPK@pkengin.co.nz

This will have further development at a later stage, including a 2yr orifice size & position (3 orifices in total).

	Fixed value	100yr	10yr
u	g	Desc hrs	Desc hrs
0.76	9.8067	0.6	1.1

Adjust until orifices are closest to the values of tab 10yr & 100yr "cell D136"

Change orifice factor "u" to suit, short tube 0.76 & thin sharp edge 0.62

	Va100yr	Qav	ho100yr	hav	Or100yr
100yr	29.30	0.0136	0.85	0.43	0.0887
100yr tab	*Cell H86*		*Cell H82*		61.1

	Va10yr	Qav	ho10yr	hav	Or10yr
10yr	18.93	0.0048	0.55	0.28	0.0587
10yr tab	*Cell H86*		*Cell H82*		58.4

	Vdet	Qav	htop	hhalf	
100 - 10yr	10.37	0.0034	0.30	0.15	0.1500

	Vocomb	Qav	hchart	hav	Ok	
10yr cor.	21.35	0.0054	0.70	0.35	0.0587	0.0027
						Area

	Vtop	Qav	htop	hav	Ortop
100-10yrcor	7.95	0.0037	0.3	0.15	0.0600

0.85	ho100yr	Total storage height required
0.059	Or10yr	Size of lower orifice (fitted 150mm above bottom/base if tank for attenuation only)
0.55	ho10yr	Storage height at which Ortop is fitted
0.060	Ortop	Size of second orifice (fitted at ho10yr above lower orifice Or10yr)

0.30 Height from overflow outlet invert to Ortop invert

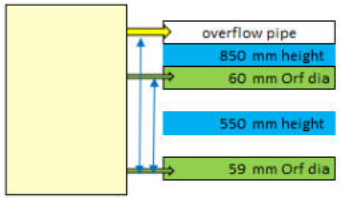

Table 1. Attenuation parameters

	Orifice diameter mm	Orifice invert location		
ARI 10	60	850mm below overflow invert		
ARI 100	60	550mm below overflow invert		
			Cirtex Doubles 2.4m Wide x 6.435m Long x 0.86m Deep	Cirtex Tripples 2.4m Wide x 7.865m Long x 1.28m Deep.
Tank Size	2 x	36,233.58 litres @		
ARI 10		23024 litres		
ARI 100		35775 litres		

PK ENGINEERING
Chartered Professional Engineers
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Proposed Driveway Kerb Dish Drain Flow Check

Rainfall Intensity for 1 hour duration storm (1 in 100)	200	mm/hr
Impermeable area	374.9	m^2
Grass area	1341.03	m^2
Coefficient for impermeable, Ci	0.98	
Coefficient for grass, C_g	0.5	
Q design	0.0577	m^3/s

when H < 50mm

Manning's Coefficient, n (concrete)	0.012	(assumed)
Flow Depth	0.05	m
Kerb Dish Drain Slope	8.7%	
Standard Kerb Dish Drain Section Area, Ad	0.0075	m^2
Wet Perimeter, Pd	0.3541	m
Hydraulic Radius, R	0.021	m
Mass flow rate, V	1.881	m/s
Volumetric Flow Rate, Q	0.014	m^3/s

If H > 50mm

Manning's Coefficient, n (concrete)	0.012	(assumed)
Flow Depth	0.085	m
Kerb Dish Drain Slope	7.0%	
Standard Kerb Dish Drain Section Area, Ad	0.0384	m^2
Wet Perimeter, Pd	1.5563	m
Hydraulic Radius, R	0.025	m
Mass flow rate, V	1.869	m/s
Volumetric Flow Rate, Q	0.0718	m^3/s

HIRDS V4 Intensity-Duration-Frequency Results
Sitename: 15 chapel street
Coordinate system: WGS84
Longitude: 174.125
Latitude: -35.262

DDF Model Parameters:	c	d	e	f	g	h	i
Values:	0.00087956	0.494652	-0.03374	-0.0003	0.264375	-0.01319	3.345646

Example:	Duration (hrs)	ARI (yrs)	x	y	Rainfall Rate (mm/hr)
	24	100	3.178054	4.600149	10.37213

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

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	75.3	56.7	47.3	33.9	23.2	11.8	7.38	4.47	2.6	1.87	1.46	1.21
2	0.5	83.1	62.6	52.3	37.4	25.8	13.1	8.19	4.94	2.88	2.07	1.62	1.34
5	0.2	110	82.7	69.1	49.5	34.1	17.4	10.9	6.55	3.83	2.75	2.16	1.78
10	0.1	129	97.5	81.5	58.4	40.3	20.6	12.9	7.75	4.53	3.26	2.56	2.11
20	0.05	149	112	94	67.4	46.5	23.8	14.9	8.95	5.24	3.77	2.96	2.44
30	0.033	161	121	101	72.7	50.2	25.7	16.1	9.67	5.66	4.07	3.2	2.64
40	0.025	169	127	107	76.5	52.8	27.1	16.9	10.2	5.96	4.29	3.37	2.78
50	0.02	176	132	111	79.5	54.8	28.1	17.6	10.6	6.2	4.46	3.5	2.89
60	0.017	181	136	114	81.8	56.5	29	18.1	10.9	6.39	4.6	3.61	2.98
80	0.013	189	143	119	85.6	59.1	30.3	18.9	11.4	6.69	4.81	3.78	3.12
100	0.01	195	147	123	88.5	61.1	31.4	19.6	11.8	6.92	4.98	3.91	3.23
250	0.004	220	166	139	99.8	68.9	35.4	22.2	13.4	7.83	5.63	4.43	3.65

RainSmart® Soakage Calculator

TDT G 010 001
Last modified: 06/12/2019

PROJECT NAME	Sample
REVISION	
PROJECT NUMBER	23-019
ARI	100yr

PROJECT NOTES

Existing hse. and drive + future proofing total area 584m2
TRIPLES

RainSmart System Dimensions

L	7.87	m	Area	18.89	m^2	ΣCA	334	m^2	
W	2.40	m	Vol (gross)	24.18	m^3	Inf Rate	0.00E+00	m/sec	
D	1.28	m	Vol (net)	22.97	m^3	Constant Outflow	3.31	l/s	

RainSmart Modules

L	11	*0.715*	*m per module*
W	6	*0.400*	*m per module*
D	Triple	*1.280*	*m per module*

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	199.0	18	11.1	0.0	2.0	9.1	13.9
20 min	146.0	14	16.3	0.0	4.0	12.3	10.7
30 min	121.0	11	20.2	0.0	6.0	14.2	8.7
1 hr	86.4	8	28.9	0.0	11.9	16.9	6.0
2 hrs	59.6	6	39.8	0.0	23.8	16.0	7.0
6 hrs	30.8	3	61.7	0.0	71.5	0.0	23.0
12 hrs	19.4	2	77.8	0.0	143.0	0.0	23.0
24 hrs	11.7	1	93.8	0.0	286.0	0.0	23.0
48 hrs	6.9	1	110.5	0.0	572.0	0.0	23.0

Red Cells: user entry

Blue Cells: indicate excess system capacity (values are positive)

Yellow Cells: indicate storage shortfall (values are negative)

For details on RainSmart Modules
please visit www.cirtex.co.nz or phone 0800 247 839

Refer to Cirtex® Stormwater Calculator Terms & Condition of use

RainSmart® Soakage Calculator

TDT G 010 001
Last modified: 06/12/2019

PROJECT NAME	Sample
REVISION	
PROJECT NUMBER	23-019
ARI	100yr

PROJECT NOTES

Existing hse. and drive + future proofing total area 584m2
DOUBLE CIRTEX

RainSmart System Dimensions

L	6.44	m	Area	15.46	m^2	ΣCA	250	m^2
W	2.40	m	Vol (gross)	13.30	m^3	Inf Rate	0.00E+00	m/sec
D	0.86	m	Vol (net)	12.64	m^3	Constant Outflow	3.31	l/s

RainSmart Modules

L	9	*0.715*	*m per module*
W	6	*0.400*	*m per module*
D	Double	*0.860*	*m per module*

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	199.0	14	8.3	0.0	2.0	6.3	6.3
20 min	146.0	10	12.2	0.0	4.0	8.2	4.4
30 min	121.0	8	15.1	0.0	6.0	9.2	3.5
1 hr	86.4	6	21.6	0.0	11.9	9.7	3.0
2 hrs	59.6	4	29.8	0.0	23.8	6.0	6.7
6 hrs	30.8	2	46.2	0.0	71.5	0.0	12.6
12 hrs	19.4	1	58.2	0.0	143.0	0.0	12.6
24 hrs	11.7	1	70.2	0.0	286.0	0.0	12.6
48 hrs	6.9	0	82.7	0.0	572.0	0.0	12.6

Red Cells: user entry

Blue Cells: indicate excess system capacity (values are positive)

Yellow Cells: indicate storage shortfall (values are negative)

For details on RainSmart Modules
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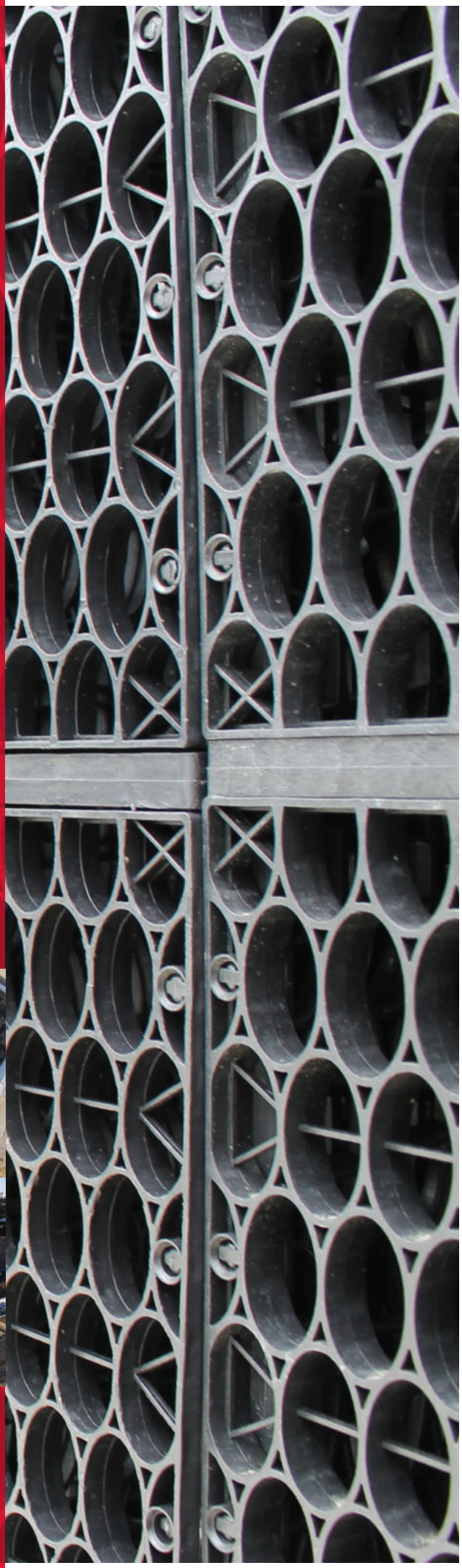
STORMWATER MODULES



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RAINSMART® STORMWATER MODULES

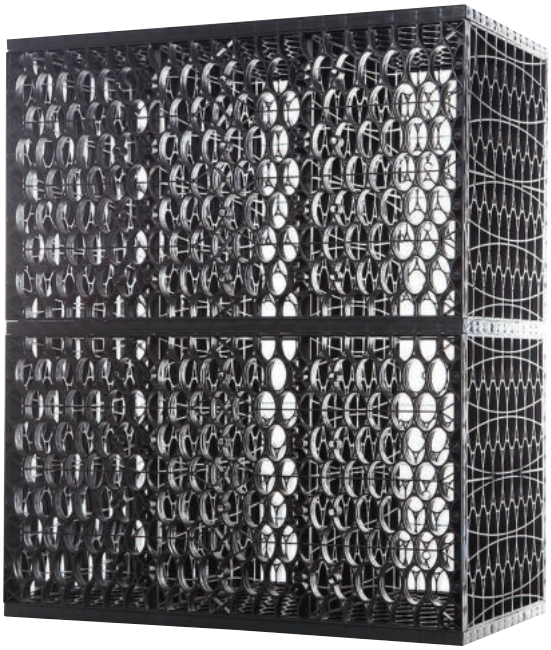
The RainSmart® system is suited for subsurface infiltration, retention and detention stormwater applications.

Manufactured using recycled materials, RainSmart provides a lightweight, structural component to an engineered design. The system is ideally suited for the construction of underground infiltration, retention, detention tanks, grass swale, subsurface interception channels, septic leach drains and lightweight void fillers for roof garden and planter box applications.

The RainSmart system supersedes traditional gravel and pipe-based systems. The system provides a void space ratio of over 95%, compared to 30 – 40% in typical gravel and pipe based systems. Consequently, the RainSmart system offers a smaller footprint for the same storage volume. This provides a significant saving in the amount of excavation, soil transport, imported clean aggregate, thus reducing earthworks related installation costs and causes minimum site disruption.

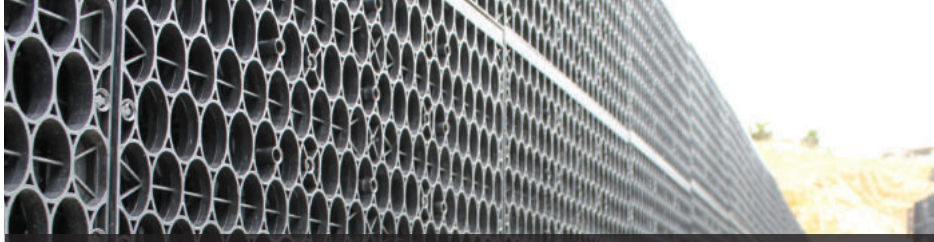
Modules are available in kit form, making transporting economical and easy to handle. The lightweight and stackable nature of the tank modules ensures installation is quick and easy, eliminating the use of heavy machinery.

With a modular design and structural capabilities, RainSmart distributes loads evenly and allows for usage in both trafficable and landscaped areas offering a high safety factor. The design also enables the user to create any shape and size of the underground stormwater structure, without disturbing the surrounding site and maximising land use.



RainSmart systems constructed with linear access pipes are invaluable for inspection and maintenance purposes. This allows the designer to efficiently control the build up of sediments in the tank and for flushing the system if ever required.

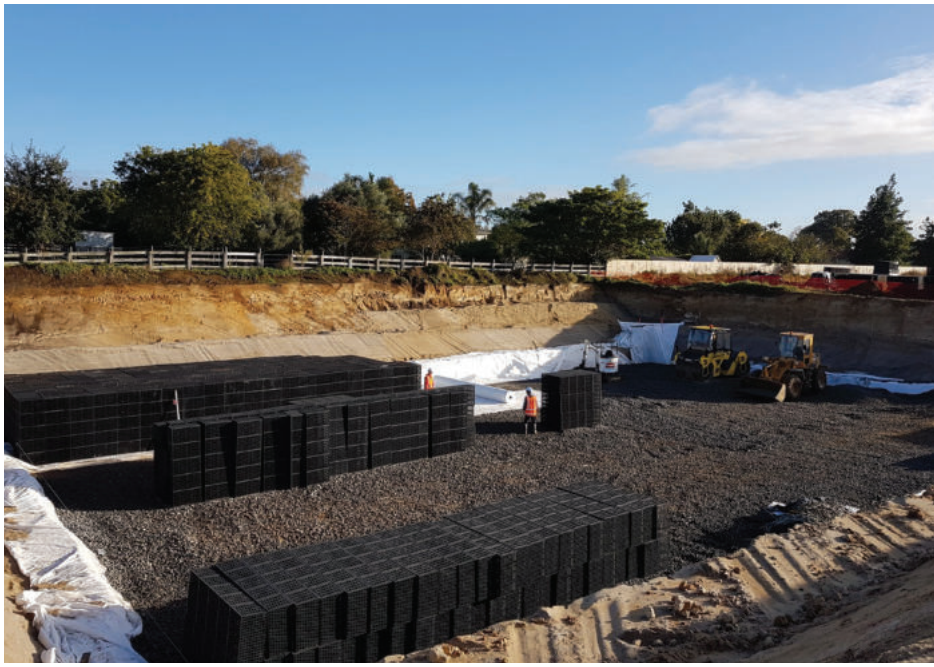
System sizing tools and standard CAD drawings in dwg. and pdf. are available for the RainSmart system on request.



PRODUCT CODES

Code	Product	Size	Modules/m³*
76349	5 Plate Tank Single	0.715 x 0.4 x 0.44	8.37
76354	5 Plate Tank Double Layer	0.715 x 0.4 x 0.86	4.28
13635	5 Plate Tank Triple Layer	0.715 x 0.4 x 1.28	2.88
13666	5 Plate Tank Quad Layer	0.715 x 0.4 x 1.7	2.16
76351	5 Plate Tank Penta Layer	0.715 x 0.4 x 2.12	1.74

*Modules required per 1m³ of stormwater storage, considering a 95% void ratio. 4 and 7 plate options available.



FEATURES

- A **robust** yet **lightweight system** that is simple to install without specialised equipment
- **Environmentally friendly**
- **Recharges groundwater table** through infiltration
- **Mitigation of** downstream **flooding**
- **Removes** the need for **above ground ponds and tanks** that use valuable space and create health and safety risks
- RainSmart linear access systems offer an **economical and low maintenance system**
- **Modular structure** for design flexibility
- **Trafficable** when installed with ≥ 600mm pavement cover

DRAINAGE CELL

RainSmart® Drainage Cell is a light weight three-dimensional drainage panel with a high load-bearing capacity, used for subsurface water management.

RainSmart Drainage Cell provides a perfect solution for subsoil drainage and gas collection systems, as well as low impact design and weight sensitive applications such as roof gardens. The drainage cell offers a uniform surface along with an internal void space for effective drainage of excess water. It will also provide drainage behind concrete panels, concrete block and timber retaining walls. When used in roof garden applications it provides water retention for passive irrigation, helping to build a perch water table in the above soil profile for the vegetation to flourish during prolonged dry periods.

Made from recycled polypropylene, RainSmart Drainage Cell is inert to soil borne chemicals and bacteria. RainSmart cells shallow and effective drainage profile helps landscapes to make use of mature plants on roof gardens that need soil depth and water retention properties. High summer temperatures can cause thermal expansion in concrete and lead to waterproofing cracking. The unique design of the RainSmart Drainage Cell and its void properties helps this heat to escape, reducing the risk of cracking and so enhancing the life of buildings.

This product is environmentally friendly, made from selected recycled polypropylene that recharges the groundwater table through the principle of infiltration when used on any natural ground surface. It has a unique diamond cup structure.

Deck loads are reduced, weighing only 3.2 kg/sqm compared to 250 kg/sqm of gravel for the same effective drainage.

RainSmart Drainage Cell provides a cost-effective and easy to install choice over alternative and traditional aggregate drainage layers used in retaining wall applications. It will reduce the thickness by up to 75% owing to the high void ratio of the RainSmart cell. It is also a lot simpler and faster to install, allowing large areas to be prepared for backfilling without the need to import different aggregates (backfill and drainage aggregate) into the same backfilling process.

FEATURES ›

- High compressive **load carrying capacity of up to 140 tons/m²**
- **High lateral flow capacity**
- **Maintains actual void size** for **effective drainage** after backfill and compaction
- **Thin which reduces depth of cover** and the use of mature planting in shallow conditions is enabled
- **Holds and creates a perch water table**, providing ideal moist conditions for plant growth
- **Reduces hydrostatic forces** upon sub-grade walls

PRODUCT CODES ›

Code	Size	Product Plate
76284	0.6m x 0.5m	30mm (Plates)
76285	0.6m x 0.5m	50mm (Plates)

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RAINSMART®

INSTALLATION GUIDE

ISO: 015 001 | MAY 2024 | VERSION 2

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PRE-CONSTRUCTION CHECKLIST

TOOLS YOU WILL NEED

- Laser level
- Measuring tape (long enough to mark RainSmart system footprint)
- Knife
- Screw driver
- String line
- Spray paint
- Reciprocating saw (to cut in inspection & maintenance ports)

If you're assembling RainSmart modules:

- Rubber mallet
- Work tables or smooth, hard surface such as concrete or plywood.

MATERIALS YOU WILL NEED

- RainSmart plates
- DuraForce® geotextile (typically AS410 for soakage systems & AS440 for lined systems)
- DuraGrid X geogrid (only for load bearing applications)
- Impermeable liner (only for stormwater retention/recycling applications)
- Clean bedding & backfill material compactable to a minimum of 95% MDD, angular free draining stone/sand with a max particle size of 20mm)
- Pipe Boot Kits (if not using kits, you'll need duct tape and a stainless steel band clamp for each inlet and outlet pipe)
- Metallic tape to mark system edges, to allow for system location post-construction
- Cover soil to meet the site specific requirements, as per the engineers specification

Inspection and maintenance ports (if required)

- Pipe for inspection & maintenance ports (typically 150mm and 300mm PVC pipe, respectively)
- Ring, collar & cap (to fit each port)
- Pipe Boot Kits (fabric pipe boot, duct tape, stainless steel band clamp for each inspection and maintenance port)
- Traffic load rated ring, cover and frame, where required

EQUIPMENT YOU WILL NEED

- Forklift and other equipment/tools needed to unload curtain-sider truck
- Walk-behind trench roller/plate compactor
- Tracked skid steer or suitable loader, as per table on page 16
- Roller (2-3 tonne smooth drum)

Note: This list does not include equipment or tools needed to excavate or level the floor of the excavation.

BEFORE YOU TURN THE FIRST SOD

1. Be sure to contact your Cirtex representative at least two weeks prior to installation. We can provide the necessary support to facilitate your installation.

2. All pictures, illustrations and instructions have been included to guide you through a typical installation. The approved engineering drawings should ALWAYS take precedence over these instructions.

3. Coordinate the installation of the RainSmart system at the end of the construction activities to minimise the construction traffic over the system. If the installation is completed during construction activities then the system MUST be roped off and construction traffic routed around the system. The installation contractor is responsible for all loads placed or driven over the RainSmart system during the construction process (including excavators, loaders, dump trucks, forklifts, concrete trucks, material delivery trucks and cranes). Rope off the area to prevent unauthorised traffic from driving over the RainSmart system. If sequencing of the project makes this impossible, a construction road or pad may be constructed over the RainSmart system. Consult the project engineer and/or Cirtex for assistance before allowing construction traffic on the system. **(For additional information see Step 12: Secure the installation, page 18)**

4. After installation of the RainSmart system, stormwater should not be allowed to enter the system until the site is completely stabilised and all pretreatment systems (designed to remove debris and heavy sediment) are active. Otherwise, the RainSmart system may become prematurely contaminated with sediment from the project.

IMPORTANT INFORMATION

Throughout this document you will see three types of notes:

TIP

Ideas to improve your profitability on the installation.

IMPORTANT

Steps that require extra attention.

WARNING

Critical issues that MUST be handled correctly to ensure a successful installation.

1. EXCAVATION

The excavation limits and the location of the RainSmart system should be staked out. The design drawings should be used to determine these locations. If the excavation limits are not shown on the plans, then add 500mm- 600mm on each side of the RainSmart system to determine the limits. Excavate the designated surveyed area according to plans, following all relevant regulations. Typical excavations should include:

- 500mm-600mm perimeter around RainSmart system to allow for proper compaction of backfill.
- Enough depth to accommodate 50mm-100mm of bedding material below the RainSmart modules if required.
- Enough depth to allow for a minimum of 600mm of cover material or as per engineer plans.

Level the bottom of the excavation (Fig. 1) as shown on plans. Most excavations have a flat base, however a slight fall towards an outlet is allowable.

Prepare the subgrade according to plans. Base of excavation shall be smooth, level and free of debris. Compact to at least 95% Standard Proctor Density (or as required by engineer) unless infiltration of stormwater into subgrade is desired. A thin layer, 100mm of material, is recommended to establish a level working platform (may not be needed in areas with sandy soils). A CBR > 5% must be achieved prior to beginning installation of RainSmart modules.

If the subgrade is heaving or appears excessively soft, the design engineer should be consulted for advice. In many cases a layer of GridTex 40/40 and 190mm-300mm of compactable material, that drains well will be sufficient to amend the bearing capacity of the soil.

Fig. 1
Excavate according to plans, following all relevant regulations

IMPORTANT

For trafficable applications - minimum cover of 600mm and maximum cover of 2m is required. Non-trafficable applications (inaccessible by vehicles) require minimum cover of 300mm and maximum cover of 2m.

2. ASSEMBLE RAINSMART MODULES

RainSmart modules are supplied flat packed and will need to be assembled on site. Building the modules should take 2-3 minutes per module layer. This is a conservative estimate used to approximate the total man hours needed for assembly.

MODULES	TIME
Half	2-3 Minutes
Single	2-3 Minutes
Double	4-6 Minutes
Triple	6-9 Minutes
Quad	8-12 Minutes
Penta	10-15 Minutes

WARNING

Times relate to assembly only. Placement time frames will be dependent on site accessibility and layout.

Assembly Instructions - following the drawings in Fig. 2 and Fig. 3: Connect five small plates onto one large panel using the short pegs (not the long pegs). Attach small plates onto the large panel at the locations marked in red on Fig. 2. Only use these peg locations marked in yellow on Fig 2. if you are building a 7-plate module. Use 7-plate modules for installation with more than 2m of cover and for installations beneath traffic loads with less than 600mm of cover. Please note, the RainSmart plate configuration shall be specifically designed by the project engineer for installations with >2m of cover or <600mm of cover.

Next, working from one end to the other, attach a second large plate on the opposite side of the first. Once the top and bottom large plates are attached, two more larger side plates are attached to complete the sides of the module. This is a single RainSmart module.

Completed RainSmart modules should be staged as close to the installation area as possible. Some projects may require 7 plate modules.

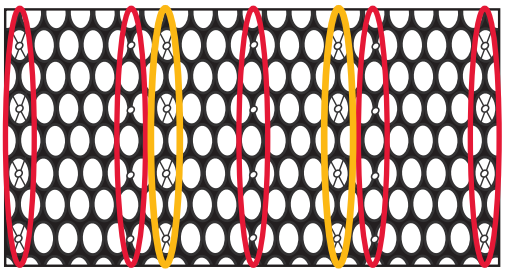


Fig. 2
For standard 5-plate installations, attach small plates at locations circled in red such that all small and large pegs are on same side.

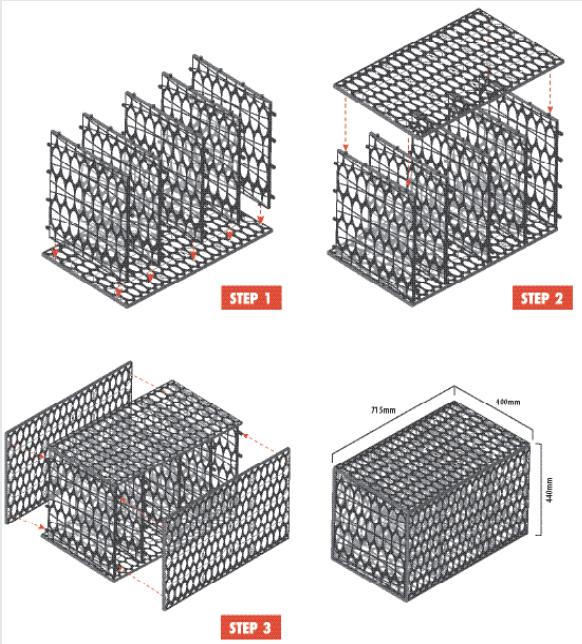


Fig. 3
Follow these steps to assemble a standard RainSmart 5 Plate Single module.

IMPORTANT

To build a DOUBLE module (or larger) follow the directions above, starting at "Assembly Instructions" using the top of the existing module as the base large plate for the next layer up.

3. PREPARE BASE

Examine prepared excavation and conditions for smoothness, compaction and level. Do not start RainSmart system installation until unsatisfactory conditions are corrected. Check for presence of high water table, which must be kept at levels below the bottom of the RainSmart system structure at all times. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance. If existing conditions are found unsatisfactory, contact project manager for resolution.

Standing water in the excavation will prevent proper base preparation and must be removed, if present.

Grade and level base as shown on plans with no more than 10mm variance.
Base must be free of debris and large rocks.

Fig. 5
Base must be smooth to ensure modules fit together without gaps.

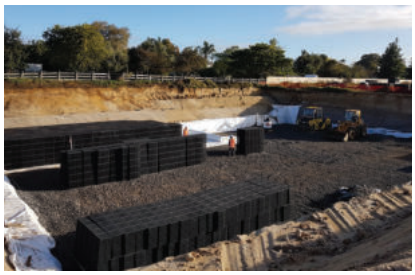


Fig. 4
Preassembled modules can be placed in the excavation or installation can be sped up by assembling the modules in the excavation.

BASE MATERIAL MUST BE:

Compaction	To 95% MDD minimum
Shape	Angular
Size	Not larger than 20mm in diameter
Consistency	Free of lumps, debris and sharp objects that could puncture the geotextile
Applicability	Stone or sand is acceptable if it meets these requirements. In **NO** case shall clays be used

TIP

In regions with sandy soils meeting the requirements noted and where the subgrade elevation is above the ground water table, imported backfill materials may not be needed.

Creating a smooth, level platform will allow for faster installation of RainSmart modules, as they will fit together evenly, eliminating detail work that can delay your progress (Fig. 5).

4. PLACE GEOTEXTILE

DuraForce AS410 geotextile will be required below the RainSmart system on most projects, but not all. Check your plans to confirm that geotextile is to be placed between the base and the RainSmart system.

Cut full-width strips of geotextile to the proper length and place them over the base, covering the floor of the excavation. The geotextile should extend at least the height of the module plus 1m beyond the edge of the RainSmart system footprint. This will enable the whole module to be wrapped to the dimensions required. All overlaps are then to be suitably secured, weighted down, taped or stapled in order to minimise the ingress of unwanted materials.

Fig. 6
Pull wrinkles out of geotextile so material lays flat

Fig. 7
Overlap geotextile by a minimum of 300mm

Adjacent panels of geotextile should be overlapped by 300mm or more, as shown on the plans (Fig. 7). Use pins, staples, sandbags or other ballast to hold the DuraForce geotextile in place, preventing it from blowing or sliding out of position. Patch any holes made in the DuraForce geotextile by placing a patch of fabric over the damaged area. The patch must be large enough to cover the damaged area with at least 300mm of overlap on undamaged fabric.

If an impermeable liner and/or additional geotextile is required per plans, install these now as shown on the project plans.

TIP

Some contractors choose to cut the geotextile strips long enough to wrap up the sides and over the top of the RainSmart module in a single piece (Fig. 6). If space allows and the folded flaps of geotextile will not slow your progress, you may want to consider doing this. If a liner is required on your project, this method should be used to protect the liner.

5. INSTALL RAINSMART MODULES

Determine the starting location. It is often helpful to use an inlet or outlet pipe to guide you. Using a string line, establish two adjacent edges of the RainSmart modules footprint. Ensure that your corner is square. Mark these two edges with spray paint and remove the string line (Fig. 8 and Fig. 8a)

Begin placing RainSmart modules in the corner of the marked area. DO NOT place modules on their sides, as this will void the warranty. Check your plans to ensure correct orientation of the RainSmart modules (Fig. 9).

Check the plans to ensure the RainSmart modules are running in the correct direction (North/South vs. East/West) to match the footprint shown.

- RainSmart modules width - 400mm
- RainSmart modules length - 715mm

Fig. 8
Use a string line & marking paint to square the system footprint.

Fig. 8a

RainSmart modules should fit together evenly. Minor gaps between modules <10mm or variations in the height of the modules <10mm are acceptable (Fig. 10), but reasonable efforts should be made to minimise these variations. Minor gaps will be eliminated during compaction of side backfill material. No lateral connections between adjacent RainSmart modules are required, but modules can be cable tied as a housekeeping measure.

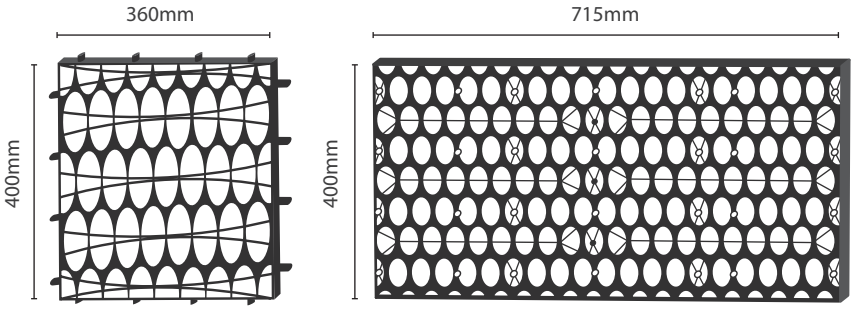


Fig. 9
Make sure the modules are oriented properly and in the correct way in the excavation.

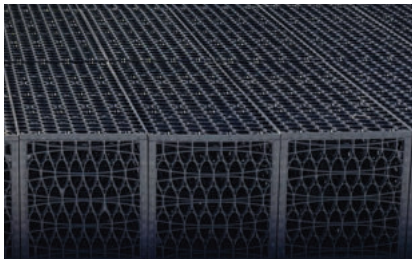


Fig. 10
Minor variations (less than 10mm) in height are acceptable.

If any questions or concerns are not covered by these instructions please contact Cirtex on **0800 247 839** or email **sales@cirtex.co.nz**

After placement of the RainSmart modules, wrap with geotextile which is brought up around the sides and lapped over the top of the full structure. Should any gaps be evident additional fabric can be cut and placed over any of these areas. Fold excess fabric at corners to lay flat against sides of structure, securing folds and seams with staples or similar methods.

Identify locations of inlet, outlet, inspection ports, and any other penetrations. All pipes should be positioned at 90 degree to the module structure. Any inlets, outlets etc should be installed using the RainSmart 160mm or 300mm access plates where the geotextile fabric shall be cut to enable hydraulic continuity at the pipe penetrations and must be secured around the pipe using a suitable coupling or a stainless steel clamp prior to backfilling.

Cutting of the modules to accommodate pipework may be acceptable, if required. However, will need to be approved by the engineer.

Modules require ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system and are to be stipulated by the project engineer.

Vents are often installed using 90 degree elbows with PVC pipe into soft landscape areas with 'U' bend or venting bollard to inhibit the ingress of debris, alternatively a ground level concrete steel cover can be fixed to suit. If the manhole/catch pit connected to the RainSmart system is unsealed, vent connections back to the manhole can be used.

IMPORTANT

If using a liner, be careful not to puncture it with stakes or pins while placing your string line.

WARNING

Do not place the modules on their sides as this will void warranty.

TIP

Moving RainSmart modules into the excavation quickly is essential to a successful installation. Many contractors fabricate a platform that can be lifted by their forklift to quickly move a large number of modules with each trip.

TIP

RainSmart modules should be constructed around any pipe joints as the joint collars will typically not feed through the 160mm or 300mm access plates.

6. INSTALL INSPECTION/MAINTENANCE PORTS [IF REQUIRED]

If required by the design engineer, all ports should be made from pipe long enough to extend from the bottom of the RainSmart system to finished grade. They are typically PVC pipe, but can be formed from other types of pipe, as well.

Identify the location of all ports and remove the RainSmart module from each location.

Inspection ports:
Typically made from 150mm PVC pipe, cut the pipe to length, leaving enough excess to trim the top when final grade is reached (Fig. 11).

If the pipe is not already perforated, drill several holes in the pipe starting at the bottom. Perforations should extend as high as the height of the RainSmart module units being used. No perforations should be visible above the top of the RainSmart module once the port is in place.

Using your reciprocating saw, cut the horizontal RainSmart module plates (Fig. 12) in the centre, between the two internal plates, to accommodate the port. If the pipe will not fit between the two interior plates, one or both plates may be moved to the outer connection locations on the large plate (Fig. 13). All horizontally oriented plates will need to be cut EXCEPT FOR THE BOTTOM PLATE.

In total you will need to cut:

MODULES	PLATES
Single	1 Plate
Double	2 Plates
Triple	3 Plates
Quad	4 Plates
Penta	5 Plates

IMPORTANT

Do not over-cut the RainSmart module plates, minimise the gaps between the pipe and the RainSmart module plates. This is particularly important with the top plate.

TIP

If the location of inspection ports is not shown on your plans, use a single inspection port located in the middle of the RainSmart system.

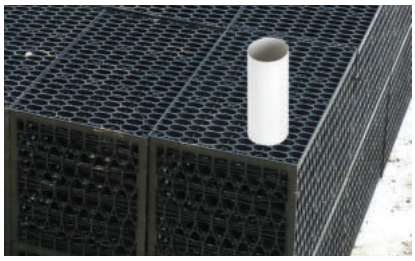


Fig. 11
Installed inspection port.

Fig. 12
Cut the horizontal plates to accommodate all ports.

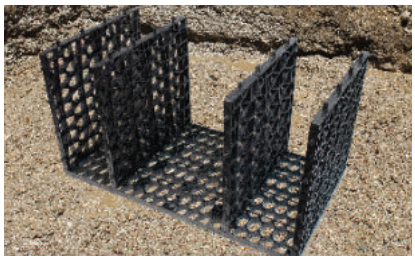


Fig. 13
Additional space for port can be created by moving the internal plates towards the ends

If any questions or concerns are not covered by these instructions please contact Cirtex on **0800 247 839** or email **sales@cirtex.co.nz**

For all systems deeper than a single module, you will need to disassemble the RainSmart module in order to cut the interior plates. Reassemble the RainSmart module when cutting is completed, and replace the RainSmart module into the proper location. (Fig. 15)

Install the pipe into the RainSmart module (Fig. 16)

Seal the opening on top of the pipe with a cap or temporary lid to prevent debris from entering the system.

Maintenance ports
Typically made from 300mm PVC pipe (check plans for actual type and size of pipe), cut the pipe to length, leaving enough excess to trim the top when final grade is reached.

Using your reciprocating saw, cut several 200mm notches into the bottom of the pipe as shown on plans (Fig. 14).

Fig. 14
Cut 200mm notches into the bottom of maintenance port.

Fig. 15
If after adjusting the internal plates, the pipe will not fit, the top plate can be cut off centre and one of the internal plates can be removed.

TIP

If using prefabricated pipe boot kits, install them onto the pipe now, leaving the band clamps loose so that final adjustments may be made in Step 7.

TIP

If the location of maintenance ports is not shown on your plans, include a port within 3m of all inlet and outlet pipes (a single maintenance port can cover multiple pipe connections), and include additional maintenance ports, as needed, to prevent the distance between ports from exceeding 20m.

IMPORTANT

Do not over-cut the RainSmart module plates, minimise the gaps between the pipe and the RainSmart module plates. This is particularly important with the top plate.

Using your reciprocating saw, cut the horizontal plates in the centre, between the two internal plates, to accommodate the port. If the pipe will not fit between the two interior plates, one or both plates may be moved to the outer connection locations on the large plate (Fig. 13). All horizontally oriented plates will need to be cut EXCEPT FOR THE BOTTOM PLATE.

In total you will need to cut:

MODULES	CUT	MOVE
Half	1 Large Plate	2 Small Plates
Single	1 Large Plate	2 Small Plates
Double	2 Large Plates	4 Small Plates
Triple	3 Large Plates	6 Small Plates
Quad	4 Large Plates	8 Small Plates
Penta	5 Large Plates	10 Small Plates

For all modules you will need to disassemble the RainSmart module in order to cut and/ or move the interior plates.

Reassemble the RainSmart module when cutting is completed. Remember to insert the non-corrosive anti-scour pad in the bottom of the RainSmart module (should fit directly below the maintenance port), and replace the RainSmart module into the proper location (Fig. 15).

Install the pipe into the RainSmart module (Fig. 17) and seal the opening on top of the pipe with a cap or temporary lid to prevent debris from entering the system.

TIP

If using Prefabricated Pipe Boot Kits, install them onto the pipe now, leaving the band clamps loose so that final adjustments may be made in Step 7.

Fig. 16
Installed maintenance port

Fig. 17
Install port into RainSmart System

7. WRAP RAINSMART SYSTEM WITH GEOTEXTILE

Clean off any debris that may be lying on top of the exposed geotextile around the perimeter of the RainSmart system.

Cut strips of geotextile to fit over the top and down both sides of the RainSmart system with at least 600mm of excess material on each side of the system. This 600mm flap should overlay the geotextile placed below the RainSmart modules, creating a clean 600mm overlap to wrap the system.

Adjacent strips of geotextile should overlap at least 300mm or as shown on plans. Use duct tape, sand bags or other ballast to temporarily secure overlaps.

Fold geotextile for outside corners similar to sheets on a bed, and lay excess material flat against RainSmart system. Leave corners loose to avoid creating weak spots in the material. Temporarily secure excess fabric with duct tape. Ensure geotextile is flush against RainSmart system.

IMPORTANT

Take special care with inside corners on the footprint of the system. Cut geotextile as needed to ensure that it lays flat against the RainSmart system. Use additional pieces of geotextile to seal the corner and any cuts that are made . Allow for 300mm overlap.

Fig. 18
Encapsulate RainSmart system with geotextile

Connect inlet & outlet pipes

Where the inlet and outlet pipes connect to the RainSmart system, cut an "X" into the geotextile. Pull the flaps of the "X" over the pipe so that the flaps of the "X" point AWAY from the RainSmart module. Use a stainless steel band clamp to seal the flaps to the pipe.

If used, adjust all pipe boots so that the fabric lays snug against the RainSmart system. Tighten the band clamps with a screw driver. Use duct tape to secure the boot flap to the outside of the geotextile envelope.

Fig. 21

WARNING

Inlet and outlet pipes must enter the RainSmart module allowing water to flow directly into or out of the system without filtering through the geotextile or module side wall. Failing to correctly connect pipes to the RainSmart module, will void the warranty. Where possible, use RainSmart 160mm or 300mm access plates.

TIP

If using prefabricated pipe boot kits, install them onto the inlet and outlet pipes, leaving the band clamps loose so that final adjustments may be made.

8. BACKFILL SIDES

Place backfill material (same as bedding materials in Step 3) around perimeter of the RainSmart system, distributing the material evenly to prevent shoving of the RainSmart modules.

Use a trench roller or plate compactor to compact backfill in 300mm lifts.

Continue placing and compacting backfill in 300mm lifts until the material reaches the top of the RainSmart modules.

Fig. 22
Vibratory compaction of side backfill is always required , regardless of what backfill material is used.

WARNING

Care should be taken to NOT damage the geotextile or liner during backfill placement and compaction.

IMPORTANT

Vibratory compaction of the side backfill (Fig. 22) is a critical step that both compacts the backfill and eliminates the minor gaps between individual RainSmart modules. While some backfill materials will yield a 95% proctor density without compaction, **vibratory compaction of the material must be completed to ensure the stability of the system.** Skipping this step will void the manufacturer's warranty.

9. BACKFILL TOP

Dump backfill material adjacent to the RainSmart system and, using your skid-steer or dozer, place the material over the RainSmart system (Fig. 23). Install 100mm of clean backfill over the RainSmart system and compact backfill layer with walk-behind plate compactor (max 450kg). Place site specified cover material, over backfill layer, in no more than 300mm lifts. Continue compacting backfill material with a walk behind plate compactor until 450mm cover is achieved. Once 450mm cover is achieved, compact cover material using a 2-3 tonne smooth drum roller.

Largest track dozers that can be used with 450mm of cover over the RainSmart system:

MACHINE	OPERATING WEIGHT	TRACK DIMENSIONS	GROUND PRESSURE
Case 850K LGP	9.38 t	0.70m x 2.35m = 1.67 m²	2.80 t/m²
Caterpillar D5K LGP	9.68 t	0.66m x 2.31m = 1.52 m²	3.17 t/m²
John Deere 550J LGP	8.27 t	0.61m x 2.18m = 1.33 m²	2.95 t/m²
Komatsu D39PX-21	8.90 t	0.63m x 2.36m = 1.49 m²	3.00 t/m²
New Holland D95 LGP	9.38 t	0.71m x 2.36m = 1.68 m²	2.81 t/m²

** This list is not intended to be all inclusive, but representative.

If your machine is not listed, you'll need to find your vehicle's operating weight and measure the area where the tracks contact the ground. Take these dimensions and multiply them (length x width), then multiply by 2 (since the machine has two tracks), then divide the operating weight by the total sqm of contact area to determine the contact pressure of the machine. If the contact pressure is less than 4.8t and the operating weight is less than 9.0t the machine will work with 450mm of cover.

Fig. 23
Use skid-steer to place backfill over RainSmart modules.

TIP

When placing backfill over RainSmart modules, work in the direction of the geotextile overlap to avoid pushing material between the fabric layers.

WARNING

Dump trucks should not drive over or dump material on top of the RainSmart system, until pavement construction is fully complete.

WARNING

Some materials will compact significantly while others may shove excessively as you work. Never allow your lift thickness to compact to less than 300mm without adding more material.

10. PLACE GEOGRID

Geogrid is required for all load-bearing applications (Fig. 24), such as systems placed beneath parking lots and roads. It is not required above systems used in open space where traffic is prohibited, such as sport fields or natural areas. Typically DuraGrid X 30/30 is used in this application.

Geogrid must be placed 300mm above the RainSmart system. Overlap adjacent panels by 300mm minimum or as specified in plans. Geogrid should extend 1m beyond the footprint of the RainSmart tank. In areas with lighter residential traffic, this can be reduced to 500mm.

Fig. 24
Overlap geogrid 300mm or as required by plans.

11. PLACE ADDITIONAL COVER MATERIAL AS NEEDED

If additional cover or pavement base is required by the plans, begin placing and compacting material in the same manner as discussed in Step 9. Push cover material parallel to the geogrid for best results.

Maximum cover for RainSmart modules is 2m with 4 internal plates. If your system exceeds these limits contact a Cirtex representative.

TIP

To achieve proper compaction requirements, it may be beneficial to begin placing material in 150mm lifts.

12. SECURE THE INSTALLATION

The contractor is to ensure the RainSmart system is protected from contamination during the construction phase of the project.

The RainSmart system should also be secured to prevent damage from construction equipment once it has been installed.

Rope off area (preferred method)
Use warning tape or temporary fencing to prevent unauthorised traffic from driving over the RainSmart system.

Regardless of which method is selected to secure the installation, it must remain in place until one of the following conditions is met:

- Pavement has been placed
- Construction activity at the site has been completed.

Fig. 25
Secure RainSmart system installation using barriers.

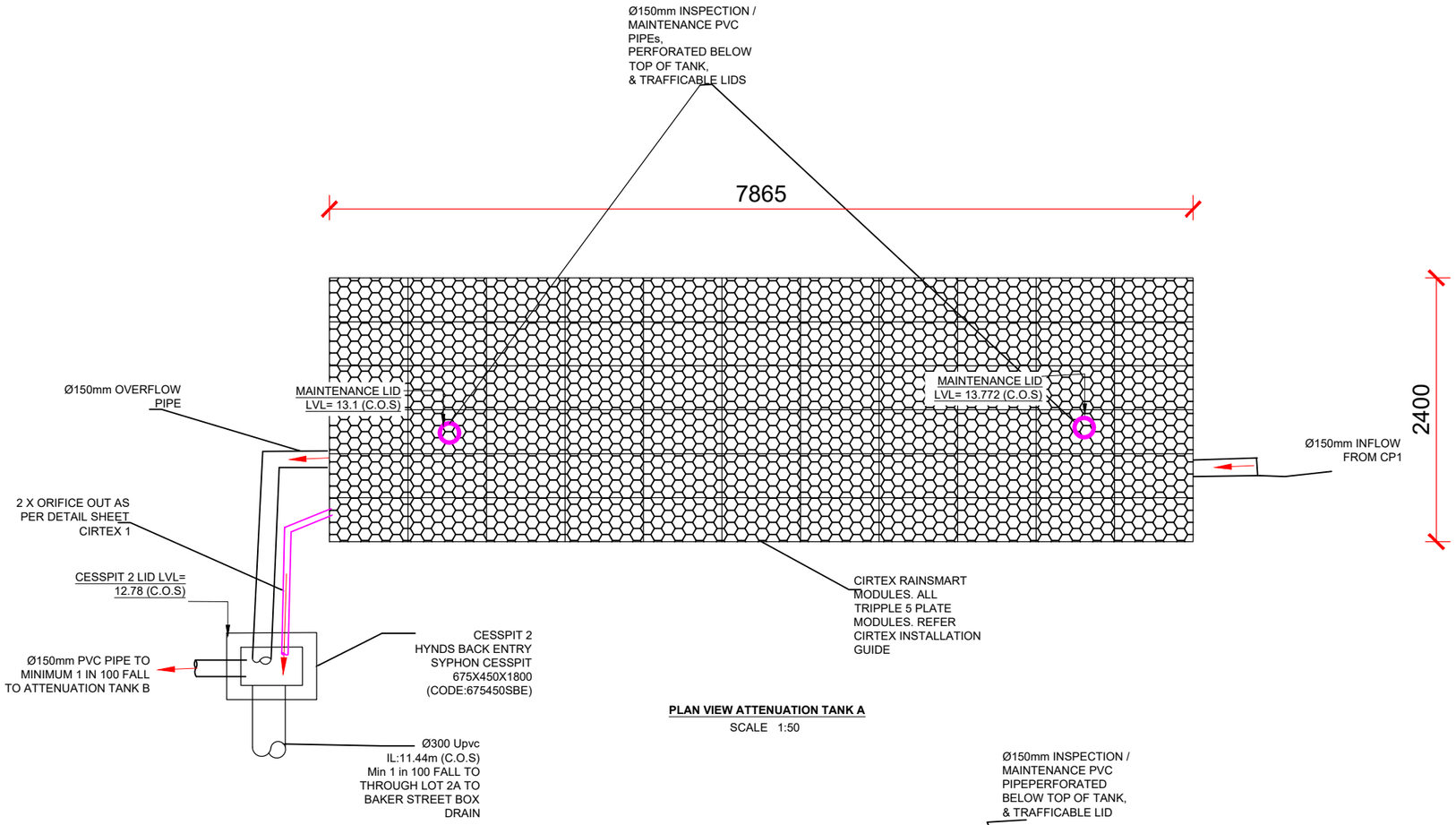
IMPORTANT

Some projects require the use of cranes above the RainSmart system. While it is advisable to avoid this scenario, it may be feasible to utilise a crane over the RainSmart system based on the depth of the RainSmart system installation and the size and weight of the crane. Please consult the project engineer or Cirtex for assistance prior to allowing a crane to drive over the RainSmart system.

13. INSTALLING PRETREATMENT DEVICES

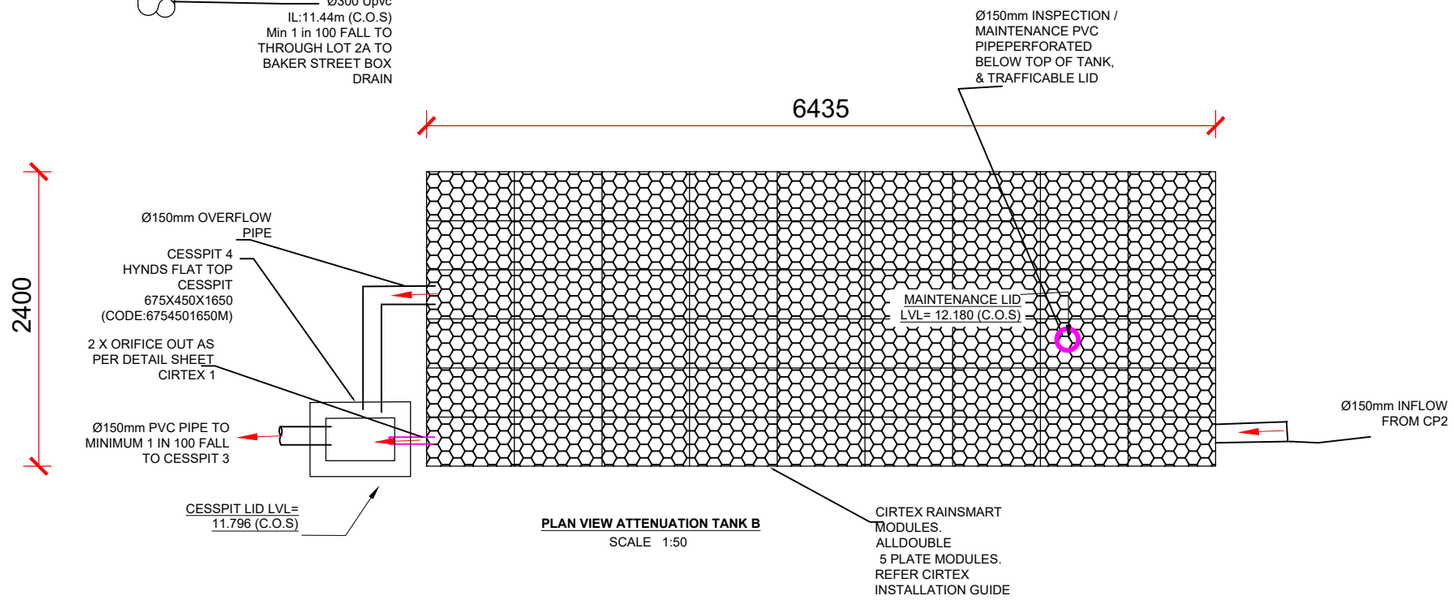
If required by the engineer, install pre-treatment devices prior to activating the RainSmart system to keep debris from entering the system.

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



PLAN VIEW ATTENUATION TANK A

SCALE 1:50



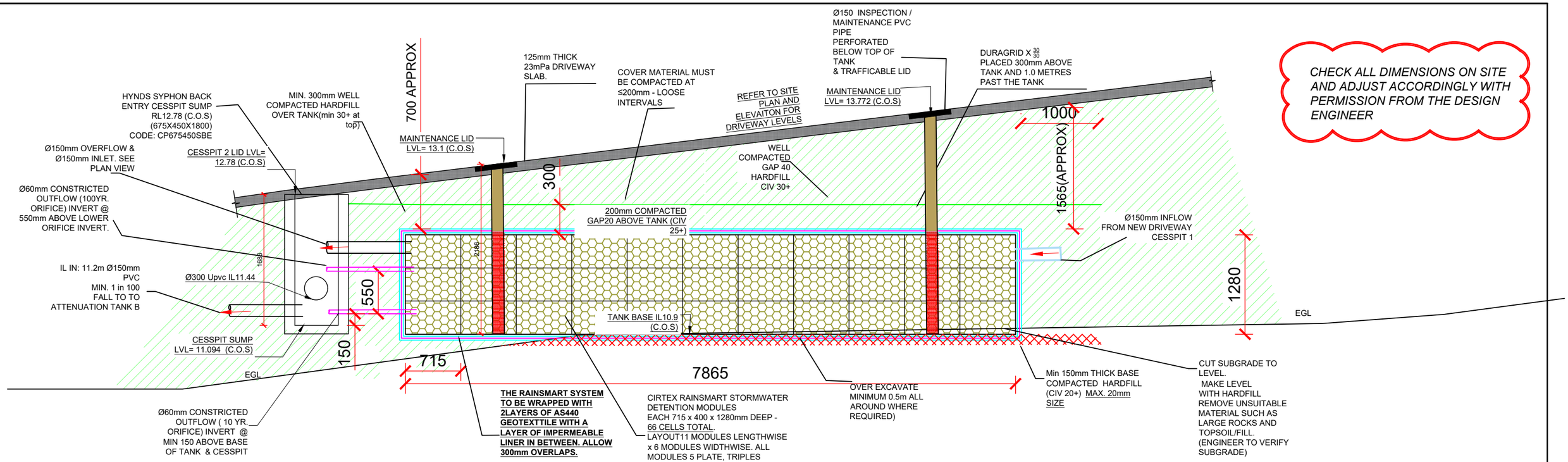
PLAN VIEW ATTENUATION TANK B

SCALE 1:50

PK ENGINEERING LIMITED
DATE: 3 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No.: 203058

ISSUED FOR CONSENT

PK 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 NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: Attenuation Tanks Plan Views	Drawn: JW	Checked: PK	Date: 03 07 2025	Scale: 1:50 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR18	R5
					This design and drawing is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission				PROJECT No: 23-019		



CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

SECTION THROUGH ATTENUATION TANK A

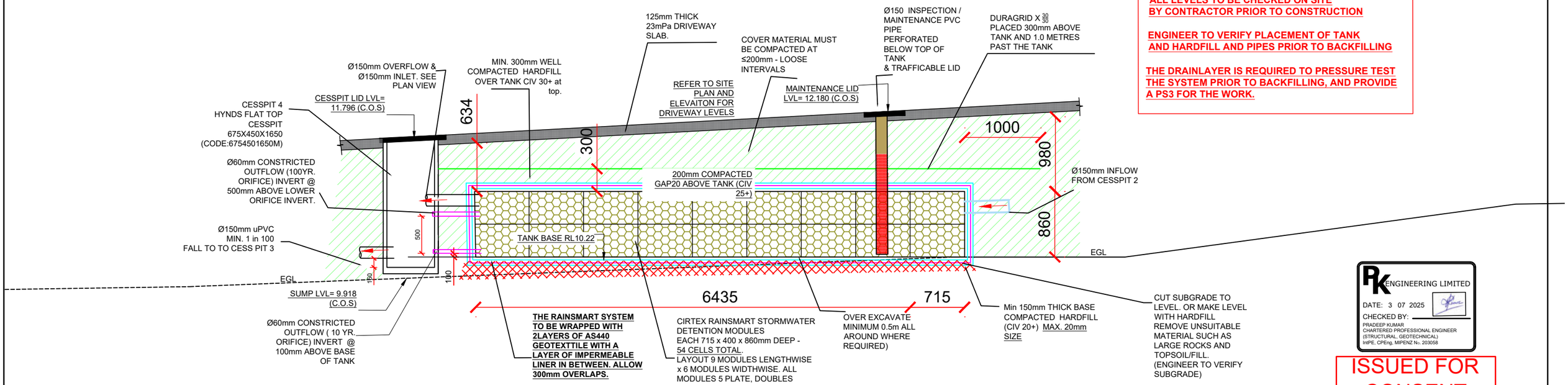
SCALE 1:50

CIRTEX INSTALATION GUIDELINES HAVE BEEN PROVIDED AND SHOULD BE READ IN CONJUNCTION WITH THIS DETAIL.

ALL LEVELS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION

ENGINEER TO VERIFY PLACEMENT OF TANK AND HARDFILL AND PIPES PRIOR TO BACKFILLING

THE DRAINLAYER IS REQUIRED TO PRESSURE TEST THE SYSTEM PRIOR TO BACKFILLING, AND PROVIDE A PS3 FOR THE WORK.



SECTION THROUGH ATTENUATION TANK B

SCALE 1:50

PK ENGINEERING LIMITED
DATE: 3 07 2025
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

ISSUED FOR CONSENT

PK ENGINEERING LIMITED
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PROJECT:	CLIENT:	DRAWING:	Drawn:	Checked:	Date:	Scale:	CAD FILE NAME:	SHEET No:	
PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	Attenuation Tanks Details	JW	PK	03 07 2025	1:50 (A3)	23-019.dwg	SR19	R5

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PROJECT No: 23-019

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS

SITE INSPECTION / CONSTRUCTION MONITORING REQUIREMENTS FOR SPECIFIC ENGINEERING DESIGN SCHEDULE

Job Number: 23-019 PS1 Date: 03/07/2025

RE: PROPOSED DRIVEWAY AND RETAINING WALLS AT 15 CHAPEL STREET, RUSSELL.

The Producer Statement for Design PS1 requires a Chartered Professional Engineer be engaged to undertake construction monitoring of the specific engineering design items to an Engineering New Zealand/ACENZ **CM2** level. We propose the Chartered Professional Engineer undertake the following site inspections specified below:

Item of Inspection	Inspection Requirements	Preferred Inspectors
Cesspits and pipes	1. Correct position, type and fall. (Drainlayer to provide PS3 at completion of work)	Geotechnical Engineer
Cast in Situ Sump to Council Culvert on Chapel Street And installation of 300 dia Upvc outflow to Baker street Box Drain.	1. Pre-pour inspection 2. Council to inspect the culvert sump at pre-pour also. 3. Council to check 300mm line installation to box drain at baker street. 4. (Drainlayer to provide PS3 at completion of work)	Geotechnical Engineer Council Inspector.
Cirtex Rainsmart Attenuation Tank Installation	1. Check Subbase and correct positions of tanks prior to installation 2. Check correct number of Cells are used	Geotechnical Engineer

	3. Check the drainpipes are installed as per plans prior to backfilling. I.e Correct type, fall and position. 4. Drainlayer to pressure test the tanks ensuring tanks are working without leaks prior to backfilling and provide PS3 at completion of work. 5. Check hardfill compaction over tank and placement of Geogrid.	
Sanitary Sewer	1. Check the separation to the existing Sanitary sewer line from other services is ok. 2. Check the cover from the SS line to base of Attenuation tanks is greater than 500mm. 3. Check the Manhole riser is placed correctly (Council to inspect the installation of the manhole and Drainlayer to provide PS3)	Geotechnical Engineer Council inspector
Proposed Driveway	1. Driveway Subgrade prior to hardfill placement. 2. Hardfill testing under the driveway slab (Min CIV 30+) 3. Driveway falls and dish drain 4. Geometry. 5. Driveway Beams and slab pre-pour	Geotechnical Engineer Structural Engineer

Notes:

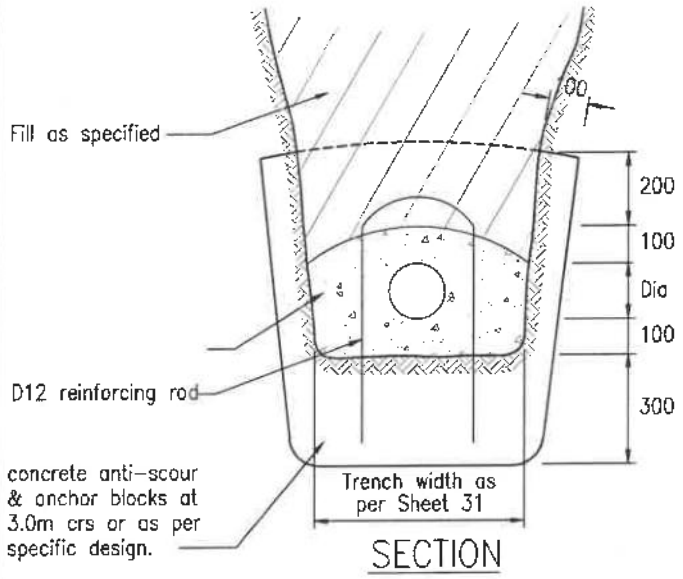
a) *The above items of inspection do not cover work constructed in accordance with NZS 3604: 2011 or NZS 4229: 2013 (non-specific design), for which inspections are to be undertaken by the appropriate Building Consent Authority.*

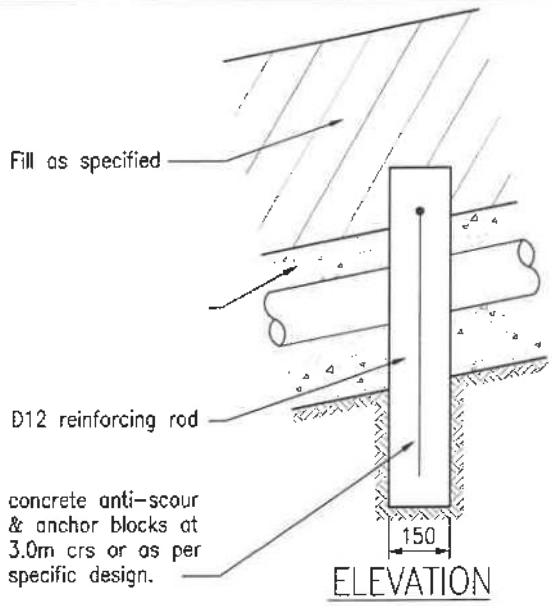
b) *The above items are the minimum required to enable the Chartered Professional Engineer to issue a Producer Statement Construction Review PS4 for the specific design items.*

c) *The contractor/Builder is to provide at least 48 hours' notice of the requirement for an inspection. The above timeframes are indicative, the Engineer & Contractor are to agree the timing of the inspection prior to work commencing on site.*

d) *A copy of this schedule (stamped by Council) and the Council's inspection schedule is to be held on site during the works, and the Contractor/Builder is to provide reasonable and safe access to enable works to be inspected according to the schedule.*

e) *The above schedule does not necessarily represent the actual number of inspections to be undertaken. The number of inspections will depend on the construction method, sequence of works and whether unforeseen conditions or difficulties are encountered on site.*



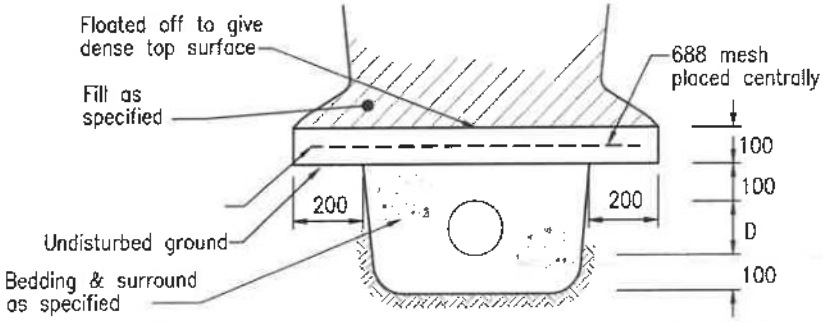


STEEP PIPE DETAILS

(For pipeline gradients 1:3 or steeper and diameter ⩽ 450mm)

NOTES:

1) Some variation is possible using aluminium plate cut off walls bolted to larger diameter pipes.
2) Larger diameter pipes will require specific pier design to counter the downward component of water and pipe weight.

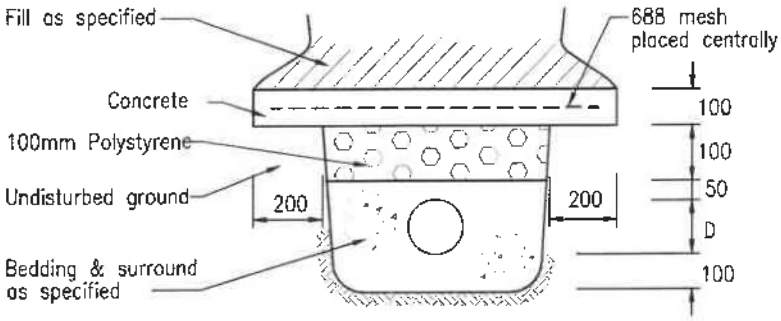


REINFORCED CONCRETE SLAB PROTECTION FOR STORMWATER AND WASTEWATER

(Where additional loading or other requirements necessitate)

GENERAL:

A. All concrete to be 20MPa at 28 days as per NZS 3104:2021
B. Cement stabilised bedding and back fill: 1 part cement to 20 parts aggregate.
C. Allow 48 hours curing prior to back filling any concrete or stabilised material.
. Slab protection to be laid in lengths no greater than 2.0M



REINFORCED CONCRETE SLAB PROTECTION FOR WATER PIPELINES

PIPE PROTECTION AND BULKHEAD DETAILS (FOR ALL ENVIRONMENTS)	Date:	FEB 2022
	Revision:	0.2
FAR NORTH DISTRICT COUNCIL ENGINEERING STANDARDS	Scale:	AS SHOWN
	SHEET No.	32

CIRTEX®
GAIN MORE GROUND

RAINSMART®

SUGGESTED MAINTENANCE PROCEDURES

0800 CIRTEX (247 839) | WWW.CIRTEX.CO.NZ

OVERVIEW

Cirtex Industries Ltd distributes the RainSmart modular stormwater system for effective management of soak away, recharge, detention and attenuation systems. The individual modules can be configured in many ways to suit site specific requirements. The system is capable of withstanding traffic loads when installed according to the manufacturer's specifications, allowing the system to be used under trafficked areas such as carparks and driveways. The system has a 95% void space, compared with 30 – 40% in traditional gravel pits and includes the option of innovative access ports to assist with maintenance.

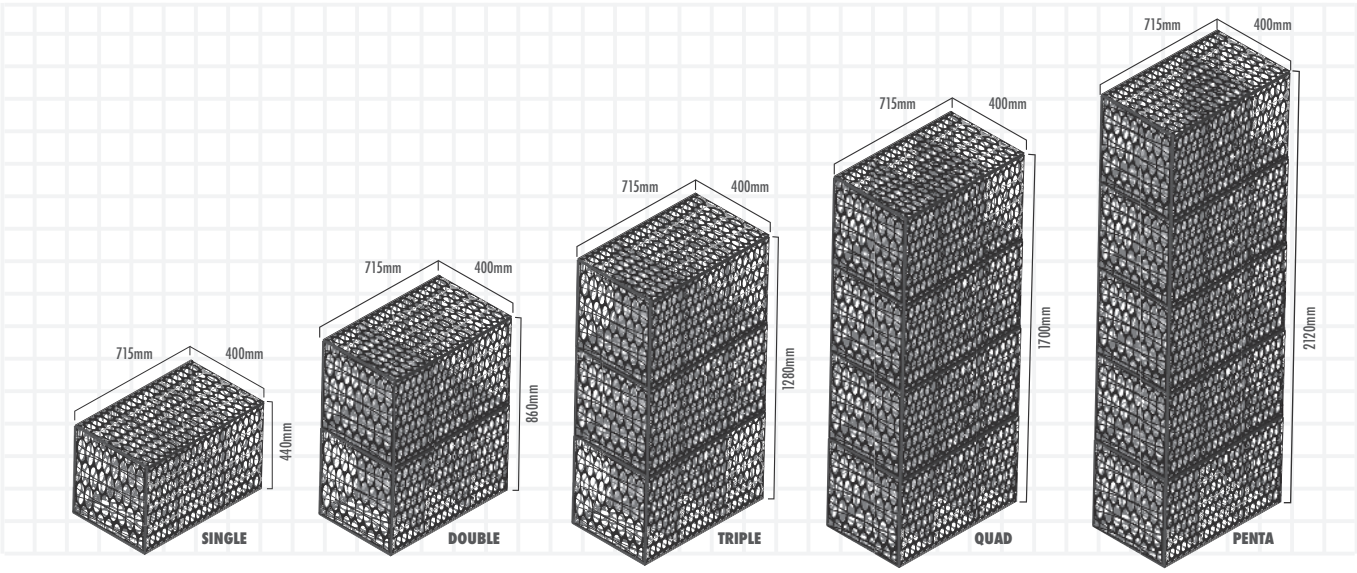
Background

A number of areas of New Zealand use stormwater recharge pits and retention/attenuation systems to allow for a predetermined amount of each rainfall event to flow directly back into the ground or to manage storm flows on site. Traditionally this has been done with scoria filled pits sized according to the impervious area being treated. These scoria filled trenches have typically been accepted by local authorities, despite being difficult to maintain.

RainSmart System – The Options

There are typically 3 main types of soakage / recharge pit constructed with the RainSmart system, each having specific requirements for maintenance.

1. RainSmart without access ports, see section 1, this is the economical alternative to the gravel trench option, having the advantage of higher void space and the ability to take heavy loadings without settlement. No specific access is provided except the water entry pipe.
2. RainSmart with access ports, see section 2, this system allows for access to the tank at either end for the purposes of flushing sediment out.
3. RainSmart with linear water entry system. See section 3, this system not only allows access for flushing, but uses a unique water entry system along the length of the module, to allow water entry at low velocity, reducing the volume of water borne sediment entering the modules in the first place.



SECTION 1.

Maintenance of RainSmart system without access ports

RainSmart systems installed without access ports should have a pre-flush filter on the inlet. This is typically a 200 micron mesh screen filter as commonly available from drainage merchants. These filters are effective at screening down to approximately 100 micron particle size. The amount of sediment entering the tanks needs to be ascertained by the design engineer and will vary for each site. The following data is given as an indication.

On a typical hardstand site which is well maintained, it is reasonable to expect that only 0.1 cubic metres of sediment per year will enter a tank system per 1000 m² of hardstand area serviced, which is protected by a 200 micron screen filter. A RainSmart recharge pit servicing this area will typically be about 17 cubic metres. Therefore the volume of sediment accumulation over a 10 year cycle would be in the order of 1 cubic metre, or 6% of module volume.

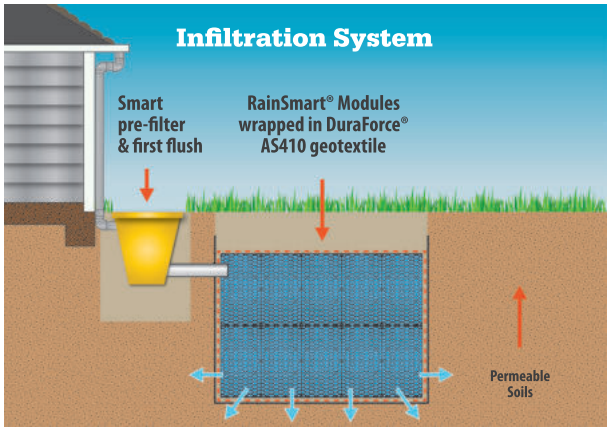
NB: These figures are typical figures only and will vary from site to site. A suitably qualified stormwater engineer must ascertain the values for each application.

In a domestic soak away system, the reduced infiltration due to blinding off of the geotextile layer needs to be considered. In the application of peat recharge this is less of a concern as the intent is to recharge a certain volume of water to ground and this will still be effected through the sides of the lower modules even if the base has reduced flow.

Suggested procedure for inspection and maintenance

Inspection: After a period of time ascertained by the engineer, but not more than one year from initial installation, the module should be inspected to check sediment levels or performance. This can either be done with a CCTV camera or by monitoring the time taken for the system to empty after a storm event and comparing with design criteria. From this an indication can be gained as to the rate of sedimentation and further inspections scheduled.

Further inspections will be as deemed necessary by the engineer, but will be at least annually, and after every heavy rainfall event.



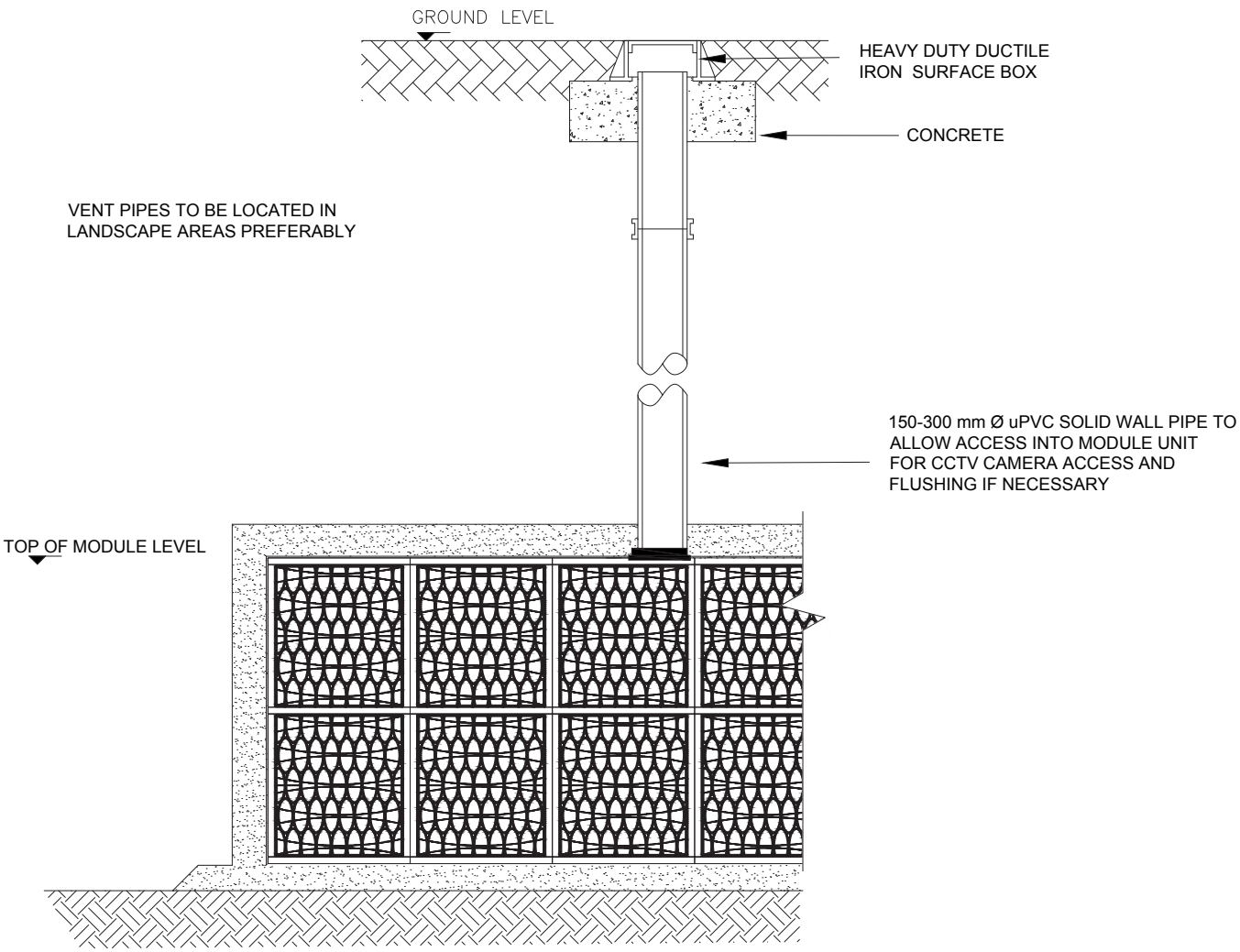
Flushing: When the tank is deemed to be ineffective the sediment can be flushed out. This requires identifying the exact location with a metal detector (assumes metallic tape at corners) or from as-built plans and digging a small access trench at each end of the module. This allows access for water to be pumped in at one end and suction cleaned at the other. After flushing the geotextile will need to be patched as per the installation instructions.

NB: For maintainable systems with access ports refer sections 2 and 3 of this guide.

SECTION 2.

Maintenance of RainSmart system with access ports

RainSmart systems installed with access ports and inspection ports can be maintained much more readily and with less cost and disruption. Best practice is to check sediment levels with the vertical access pipe one year after installation to check rate of sedimentation. Then every two to five years depending on the result of the initial investigation, the module can be flushed by simply pumping water into one of the access ports, and suction cleaning the sediment laden water out the other end of the system. The provision of access port modules down the length of the system will facilitate the sediment removal process.

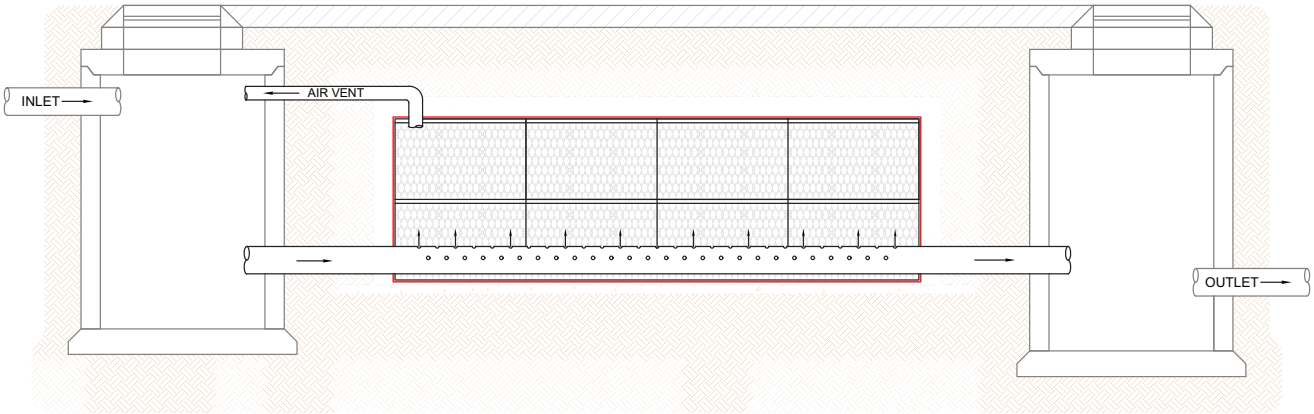


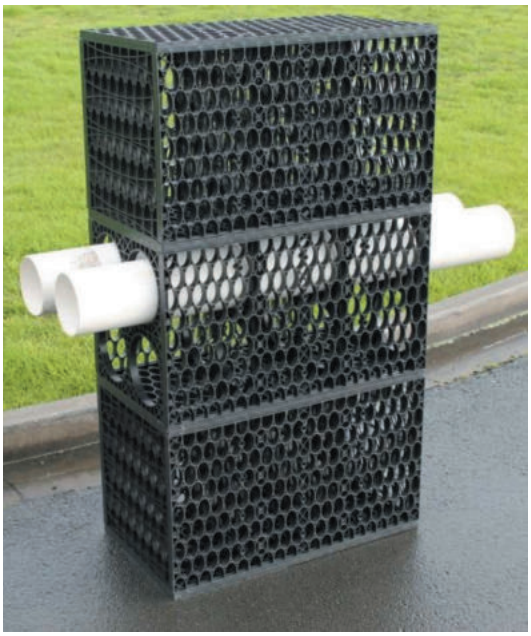
TYPICAL VENT PIPE CONNECTION

SECTION 3.

Maintenance of RainSmart system with linear access system

The linear water entry system is designed to catch the majority of the sediment within the easily accessible areas of the system. First flush stormwater enters the sump after first flowing through a coarse screen filter, then along the entry pipe at high velocity and into the exit sump. As the water level rises in the sump. The water flows into the RainSmart modules through perforations in the top of the entry pipe at low velocity. Solids either flow into the exit sump or settle in the through pipe.





Maintenance requirements are simplified as the through pipe is self cleaning, due to the flushing effect of the water entry. All that is required is regular cleaning of the sump screen filter and to check and vacuum the exit sump, as required.

It is suggested to check the sumps for sedimentation every 3 months for the first year, and then annually thereafter. It may be necessary to increase the frequency of inspection if the first year checks show a larger than anticipated rate of sediment build up.

Sediment can then be either vacuumed out from the sump or simply cleaned out with a shovel.

STRUCTURAL CALCULATIONS

FOR

PAUL AND ERINA VAN KONINGSVELD

FOR

PROPOSED NEW DRIVEWAY &
RETAINING WALLS

AT

15 CHAPEL STREET RUSSELL

Job No: 23-019
Date: 16 JULY 2025

Level 1 National Bank Building 90 Kerikeri Road, Kerikeri, New Zealand
Telephone: 09 407 3255 Fax: 09 407 3256 Email: TeamPK@pkengin.co.nz

PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 1
		Designer C.J	Date June 2025

1. PROJECT INFORMATION:

Proposed Retaining Wall & Driveway
Client:: Paul & Erina Van Koningsveld
Address: 15 Chapel Street, Russell

This Design Report will cover the Following:

1. Propped Timber Pole Retaining Wall Design
2. Cantilver Timber Pole Retaining walls
3. RC Pile Retaining Wall with RC capping beam

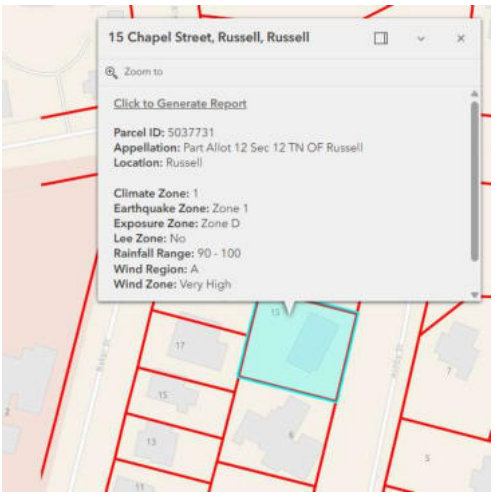
2. CODES CONSIDERED:

1. NZ Building Code B1 and B2
2. Structural Design Actions: AS/NZS 1170.0, 1: 2002
3. Timber Structural Standard: NZS 3603: 1993
4. Earthquake Geotechnical Engineering Practice Module 6: Earthquake Resistant Retaining Wall Design
5. Concrete Strucutres Standard: NZS 3101: 2006

3. SITE INFORMATION:

Earthquake Zone: Zone 1
Exposure Zone: Zone D
Wind Zone: Very High
Importance Level: 2

Information above has been obtained from BRANZ Map. This information is provided only for reference.



4. GEOTECHNICAL PARAMETERS CONSIDERED:

Undrained Shear Strength $S_U := 70\ kPa$

Backfill slope $\beta := 0\ deg$

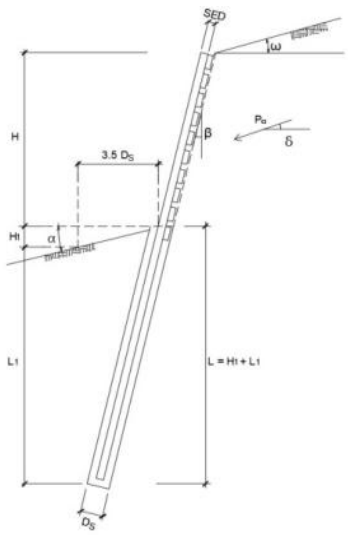
Back slope of wall $\theta := 90\ deg$

Soil Density $\gamma := 18\ \frac{kN}{m^3}$

Internal Friction Angle $\varnothing' := 30\ deg = 0.5236$

Wall Friction $\delta := 20\ deg$

Downward slope $\alpha := 0\ deg$ $\Phi_{soil} := 0$



PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 2
		Designer C.J	Date June 2025

5. CANTILEVER TIMBER POLE RETAINING WALL DESIGN (TYPE A) RETAINING UPTO 2.0m):

5.1 RETAINING UPTO 2.0m

PK ENGINEERING LIMITED											26-Jun-25
POLWAL	*CANTILEVER POLE RETAINING WALL DESIGN*										
JOB REF. :	Van Koningsveld - Chapel Street								JOB NO. :	23-019	
REF :	Timber Pole Retaining Wall- Type A								DESIGNER :	CJ	
INPUT DATA :											
	POLES							*BACKFILL*			
	Height	H (m)	0.40	0.80	1.20	1.60	2.00		Soil Density	18	Kn/m³
	Pole Dia. at Ground Level	d (mm)	200	200	250	300	300		Int. Friction	30	degree
	Pole Spacing	lp (m)	1.15	1.15	1.15	1.15	1.15		Wall Friction	20	degree
	Surcharge	S (kPa)	25	25	25	25	25		Backfill Slope	0	degree
	Encasement	B (mm)	450	450	500	600	600		Wall Slope	90	degree
									Water Table Ht	0	m
	RAILS									1	
	Spacing	C (mm)	150								
	Rail Type	(1 = Yes)							Ka =	0.27938364	
	Half Round	(Ex150)									
		2/150*50	1								
	Elastic Modulus		250000								
DESIGN :											
	Lateral Backfill Force	Pah =	0.4627	1.8506	4.1639	7.4025	11.5665	kN			
	Due to Surcharge	Pas =	3.2129	6.4258	9.6387	12.8516	16.0646	kN			
	Due to Water	Pw =	0.0000	0.0000	0.0000	0.0000	0.0000	kN			
	Total Lateral Force	Ptot =	3.6756	8.2765	13.8027	20.2542	27.6310	kN			
	Max. Pole Moment	Mp =	0.7043	3.0638	7.4488	14.2293	23.7755	kN-m			
	Force on Lowest Rail	Fr =	1.2928	1.5946	1.8963	2.1981	2.4998	kN/m			
STRESSES :			Actual					Allowable			
	Pole	Fb =	0.8965	3.9000	4.8546	5.3667	8.9672	10.3913	Mpa	OK	
	Rail		0.6839	0.8435	1.0032	1.1628	1.3224	6.0000	Mpa	OK	
EMBEDMENT :											
By Rutledge											
Safe Lateral Bearing Capacity							70	kpa			
Minimum Depth of Embedment											
No Restraint at Ground Surface			0.5178	1.0061	1.4506	1.7764	2.3295	m			
Full Restraint			0.3083	0.6429	0.9511	1.1999	1.5511	m			
SUMMARY:											
	Retained Height	H (m)	0.40	0.80	1.20	1.60	2.00				
	Pole Dia. SED	d (mm)	200.00	200.00	250.00	300.00	300.00				
	Pole Spacing	Lp (m)	1.15	1.15	1.15	1.15	1.15				
	Encasement	B (mm)	450.00	450.00	500.00	600.00	600.00				
	Total Length Required	H+D (m)	0.92	1.81	2.65	3.38	4.33				
	Total Length Used		1.40	2.00	3.00	3.80	4.60				
	Embedment	D (m)	1.00	1.20	1.80	2.20	2.60				

PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 3
		Designer C.J	Date June 2025

5.2 RETAINING UPTO 2.65m

PK ENGINEERING LIMITED										26-Jun-25
POLWAL	*CANTILEVER POLE RETAINING WALL DESIGN*									
JOB REF. :	Van Koningsveld - Chapel Street							JOB NO. :	23-019	
REF :	Timber Pole Retaining Wall- Type A (2)							DESIGNER :	CJ	
INPUT DATA :										
	POLES							*BACKFILL*		
	Height	H (m)	2.40	2.65	0.00	0.00	0.00	Soil Density	18	Kn/m³
	Pole Dia. at Ground Level	d (mm)	350	375	250	300	300	Int. Friction	30	degree
	Pole Spacing	lp (m)	1.15	1.15	1.15	1.15	1.15	Wall Friction	20	degree
	Surcharge	S (kPa)	25	25	25	25	25	Backfill Slope	0	degree
	Encasement	B (mm)	600	600	500	600	600	Wall Slope	90	degree
								Water Table Ht	0	m
	RAILS								1	
	Spacing	C (mm)	150							
	Rail Type	(1 = Yes)						Ka =	0.27938364	
	Half Round	(Ex150)								
		2/150*50	1							
	Elastic Modulus		250000							
DESIGN :										
	Lateral Backfill Force	Pah =	16.6557	20.3064	0.0000	0.0000	0.0000	kN		
	Due to Surcharge	Pas =	19.2775	21.2855	0.0000	0.0000	0.0000	kN		
	Due to Water	Pw =	0.0000	0.0000	0.0000	0.0000	0.0000	kN		
	Total Lateral Force	Ptot =	35.9332	41.5919	0.0000	0.0000	0.0000	kN		
	Max. Pole Moment	Mp =	36.4576	46.1407	0.0000	0.0000	0.0000	kN-m		
	Force on Lowest Rail	Fr =	2.8015	2.9901	0.9911	0.9911	0.9911	kN/m		
STRESSES :			Actual					Allowable		
	Pole	Fb =	8.6591	8.9100	0.0000	0.0000	0.0000	10.3913 Mpa	OK	
	Rail		1.4820	1.5818	0.5243	0.5243	0.5243	6.0000 Mpa	OK	
EMBEDMENT :										
By Rutledge										
Safe Lateral Bearing Capacity							70	kpa		
Minimum Depth of Embedment										
No Restraint at Ground Surface			2.9358	3.3417	0.1000	0.1000	0.1000	m		
Full Restraint			1.9207	2.1608	0.0000	0.0000	0.0000	m		
SUMMARY:										
	Retained Height	H (m)	2.40	2.65	0.00	0.00	0.00			
	Pole Dia. SED	d (mm)	350.00	375.00	250.00	300.00	300.00			
	Pole Spacing	Lp (m)	1.15	1.15	1.15	1.15	1.15			
	Encasement	B (mm)	600.00	600.00	500.00	600.00	600.00			
	Total Length Required	H+D (m)	5.34	5.99	0.10	0.10	0.10			
	Total Length Used		6.00	6.65	3.00	3.80	4.60			
	Embedment	D (m)	3.60	4.00	3.00	3.80	4.60			

SUMMARY:
Retaining walls with different heights as discussed above is shown in detail in structural drawing sheet SR11.

PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 4
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6. PROPPED CANTILEVER TIMBER POLE RETAINING WALL DESIGN (HEIGHT 2.7m - 3.0m):

POLWALP		P K ENGINEERING LIMITED				26-Jun-25	
	PROPPED CANTILEVER POLE RETAINING WALL DESIGN-Type B (1)						
REF :	23-019 Van Koningsveld					DESIGNER :	CJ
INPUT DATA :							
	POLES				BACKFILL		
Height	H(m)	2.70		Soil density		18	Kn/m3
Pole Dia.	d(mm)	350		Internal friction		30	degree
Pole Spacing	lp(m)	1.15		Wall friction		20	degree
Surcharge	S(kPa)	25		Backfill slope		0	degree
Encasement	B(mm)	600		Wall slope		90	degree
				Water Table Ht		0	m
	RAILS						
Spacing	C(mm)	150					
Rail Type	(1 = Yes)			Ko =		0.5	
Half round (Ex150)		0					
150*50		1					
Elastic Modulus		189000	mm3				
DESIGN :							
Lateral force due to backfill				Pah =	37.72575	kN	
"	surcharge			Pas =	38.8125	kN	
"	water			Pw =	0	kN	
Total lateral force				Pbase =	54.438413	kN	
				Ptop =	22.099838	kN	
Max. pole moment				Mp base	18.676342	kN-m	
				Mp mid-ht	#VALUE!	kN-m	
Force on lowest rail				Fr =	5.41875	kN/m	
STRESSES :		Actual		Allowable			
Pole	Fb =	4.435843	Mpa	12.4	Mpa	OK	
Rail		3.791691		6	Mpa	OK	
EMBEDMENT :							
By Rutledge							
Safe lateral bearing capacity of soil =					70	kpa	
Minimum depth of embedment							
	No restraint at grnd surface =				3.5155835	m	
	Full restraint =				2.9559774	m	

PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 5
		Designer C.J	Date June 2025

POLWALP P K ENGINEERING LIMITED 26-Jun-25

PROPPED CANTILEVER POLE RETAINING WALL DESIGN-Type B (2)

REF : 23-019 Van Koningsveld DESIGNER : CJ

INPUT DATA :

POLES			BACKFILL		
Height H(m)	2.90		Soil density	18	Kn/m3
Pole Dia. d(mm)	350		Internal friction	30	degree
Pole Spacing lp(m)	1.15		Wall friction	20	degree
Surcharge S(kPa)	25		Backfill slope	0	degree
Encasement B(mm)	600		Wall slope	90	degree
			Water Table Ht	0	m
RAILS					
Spacing C(mm)	150				
Rail Type (1 = Yes)			Ko =	0.5	
Half round (Ex150)	0				
150*50	1				
Elastic Modulus	189000	mm3			

DESIGN :

Lateral force due to backfill	Pah =	43.52175	kN
" surcharge	Pas =	41.6875	kN
" water	Pw =	0	kN
Total lateral force	Pbase =	60.872088	kN
	Ptop =	24.337163	kN
Max. pole moment	Mp base	22.35809	kN-m
	Mp mid-ht	#VALUE!	kN-m
Force on lowest rail	Fr =	5.68875	kN/m

STRESSES :		Actual		Allowable		
Pole	Fb =	5.3103	Mpa	12.4	Mpa	OK
Rail		3.98062		6	Mpa	OK

EMBEDMENT :

By Rutledge

Safe lateral bearing capacity of soil =	70	kpa
Minimum depth of embedment		
No restraint at grnd surface =	3.9043364	m
Full restraint =	3.2208439	m

POLWALP P K ENGINEERING LIMITED 26-Jun-25

PROPPED CANTILEVER POLE RETAINING WALL DESIGN-Type B (3)

REF : 23-019 Van Koningsveld DESIGNER : CJ

INPUT DATA :

POLES			BACKFILL		
Height H(m)	3.00		Soil density	18	Kn/m3
Pole Dia. d(mm)	350		Internal friction	30	degree
Pole Spacing lp(m)	1.15		Wall friction	20	degree
Surcharge S(kPa)	25		Backfill slope	0	degree
Encasement B(mm)	600		Wall slope	90	degree
			Water Table Ht	0	m
RAILS					
Spacing C(mm)	150				
Rail Type (1 = Yes)			Ko =	0.5	
Half round (Ex150)	0				
150*50	1				
Elastic Modulus	189000	mm3			

DESIGN :

Lateral force due to backfill	Pah =	46.575	kN
" surcharge	Pas =	43.125	kN
" water	Pw =	0	kN
Total lateral force	Pbase =	64.213125	kN
	Ptop =	25.486875	kN
Max. pole moment	Mp base	24.361313	kN-m
	Mp mid-ht	#VALUE!	kN-m
Force on lowest rail	Fr =	5.82375	kN/m

STRESSES :		Actual		Allowable		
Pole	Fb =	5.786088	Mpa	12.4	Mpa	OK
Rail		4.075084		6	Mpa	OK

EMBEDMENT :

By Rutledge

Safe lateral bearing capacity of soil =	70	kpa
Minimum depth of embedment		
No restraint at grnd surface =	4.1057281	m
Full restraint =	3.3553994	m

PK ENGINEERING CHARTERED PROFESSIONAL ENGINEERS	Title Proposed New Retaining Wall & Driveway Design at 15 Chapel Street, Russel	Job No. 23-019	Page 6
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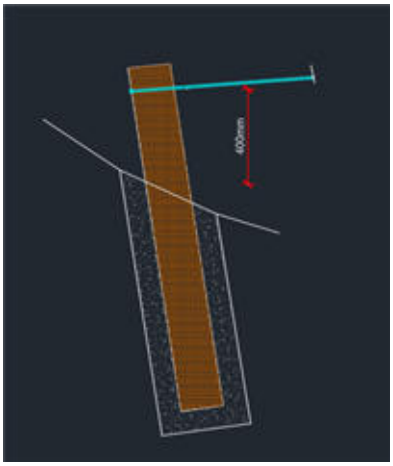
Propping mechanism:



$P_h := 50\ kN$

$e := 0.4\ m$

$M_u := P_h \cdot e = 20\ kN\ m$

PK ENGINEERING LIMITED						2-Jul-25
POLE1	*CANTILEVER POLE DESIGN*					
JOB REF. :	*Van Koningsveld*			JOB NO. :	23-019	
REF. :	Propped Timber Wall design			DESIGNER :	CJ	
INPUT DATA :						
Height H(m)		0.40				
Pole Dia. d(mm)		350				
Encasement B(mm)		600				
DESIGN :						
Total Lateral Force			Ptot =	50.00	kN	
Max. Pole Moment			Mp =	20.00	kN-m	
STRESSES :		Actual	Allowable			
Pole	Fb =	4.750227 Mpa	300	Mpa		OK
DEFLECTION:			H*0.006			
Pole		0.05 mm	2.4			OK
EMBEDMENT :		By Rutledge				
		Safe Lateral Bearing Capacity of Soil =		70	kpa	
Minimum Depth of Embedment						
		No Restraint at Ground Surface =		3.3127292	m	
		Full Restraint =		1.4226066	m	

Checking M20 All thread rods:

$T_{M20} := 316 \cdot .85 \cdot \pi \cdot 10^2$

$T_{M20} := 84.4\ kN$

$T_{max} := 25\ kN$ T_{M20} > T_{max} **Checks OK**

SUMMARY:
Retaining walls with different heights as discussed above is shown in detail in structural drawing sheet SR12 and SR13.

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7. GEOTECHNICAL PARAMETERS CONSIDERED FOR RC PILE WALL DESIGN:

Undrained Shear Strength $S_U := 200\ kPa$

Backfill slope $\beta := 0\ deg$

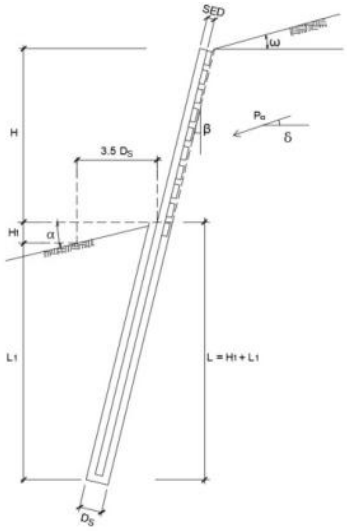
Back slope of wall $\theta := 90\ deg$

Soil Density $\gamma := 20\ \frac{kN}{m^3}$

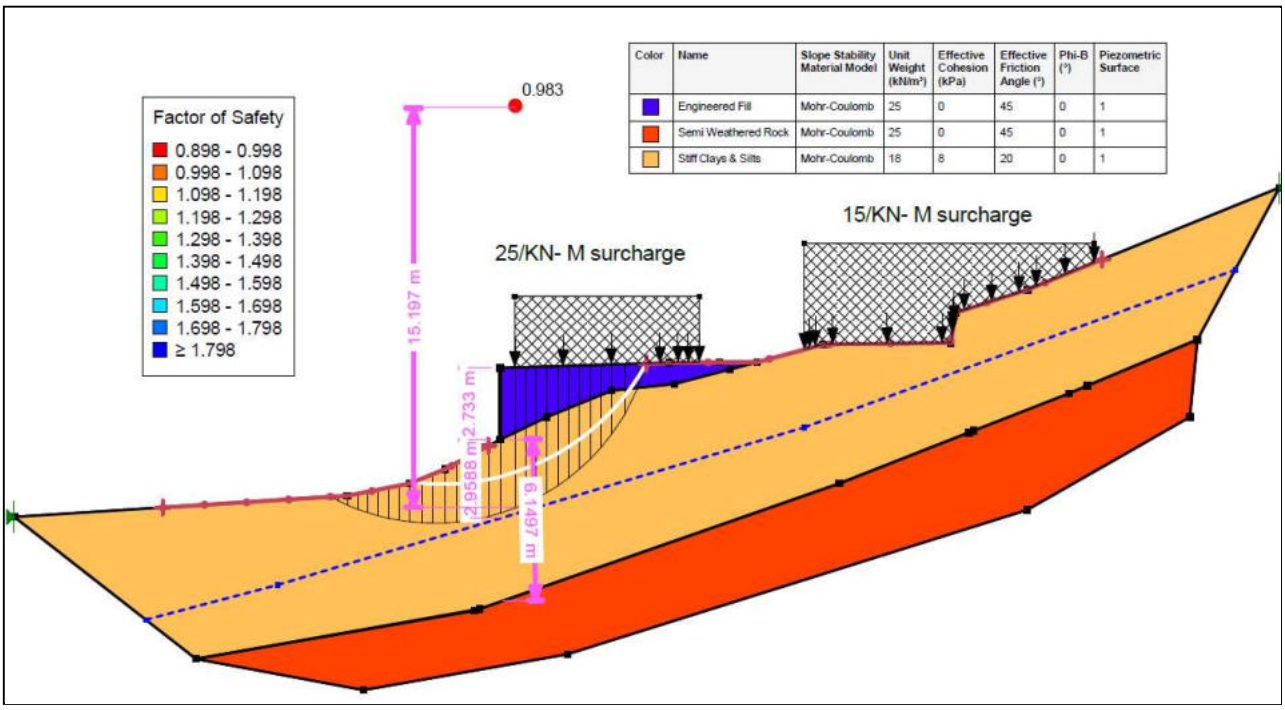
Internal Friction Angle $\varnothing' := 32\ deg = 0.5585$

Wall Friction $\delta := 21.33\ deg$

Downward slope $\alpha := 0\ deg$ $\Phi_{soil} := 0$



7.1 Determination of Forces from Slope Stability Analysis:



Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Phi-B (°)	Piezometric Surface
	Engineered Fill	Mohr-Coulomb	25	0	45	0	1
	Semi Weathered Rock	Mohr-Coulomb	25	0	45	0	1
	Stiff Clays & Silts	Mohr-Coulomb	18	8	20	0	1

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$FOS_{slip} := 0.983$ FOS of slip obtained

$FOS_{req_static} := 1.5$ Required FOS

$F_{act} := 310.793 \frac{kN}{m}$ Activating Force

$F_{res} := 305.465 \frac{kN}{m}$ Resisting Force

$F_{req_static} := \left(FOS_{req_static} \cdot F_{act}\right) - F_{res} = 160.7245 \frac{kN}{m}$ Force Required for each Pile

$F_{h_static} := F_{req_static} \cdot \cos(32\ deg) = 136.3 \frac{kN}{m}$ Horizontal Component

$F_{v_static} := F_{req_static} \cdot \sin(32\ deg) = 85.171 \frac{kN}{m}$ Vertical Component

Summary of Forces

Total Horizontal Force = $136.3 \frac{kN}{m}$

Total Vertical Force = $85.171 \frac{kN}{m}$

Designing RC pile as propped cantilever at 1.5m c/c:

$s := 1.5\ m$ Pile Spacing

$F'_c := 30\ MPa$ Pile Compressive Strength

$Q := 25\ kPa$ Live Surchage Load Considered

$P_{total} := F_{v_static} \cdot s = 127.76\ kN$ Total Axial Load Demand on each Pile

$F_{total} := F_{h_static} \cdot s = 204.45\ kN$ Total Horizontal Load on each Pile

$e := 1.7\ m$ Lever Arm

$M_u := F_{total} \cdot e = 347.57\ kN\ m$ Total Moment Demand

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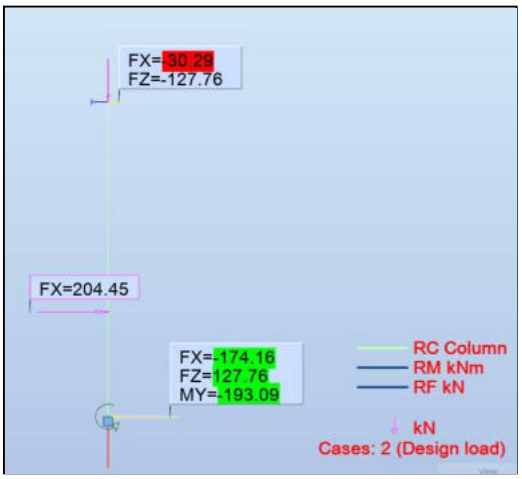
Analysis of the Propped Structure has been carried out on Autodesk ROBOT Structural Analysis Professional Software 2024



$M_o := 193.09\ kN\ m$ Moment Demand from analysis

$F_{ob} := 174.16\ kN$ Base force demand from analysis

$F_{oa} := 30.29\ kN$ Propping Force Demand from analysis

7.2.1 a) Embedment Check for Bearing when rock is not present:

$P_o := P_{total} = 127.7565\ kN$ Total Axial Load

$L_{prov} := 2.0\ m$ Assumed Embedment

$d_{bore} := 600\ mm$ Bore Diameter

$P_{bearing} := 200\ kPa$ Allowable Bearing for Rock

$P_{adhesion} := P_{bearing} \cdot 0.3 = 60\ kPa$ Allowable adhesion resistance from the soil

$\gamma_{conc} := 24\ \frac{kN}{m^3}$ Density of concrete

$A_{bore} := \frac{\pi \cdot d_{bore}^2}{4} = 0.2827\ m^2$ Area of Bore

$P_{conc} := \gamma_{conc} \cdot A_{bore} \cdot L_{prov} = 13.6\ kN$ Weight of Bore

$P_D := P_o + P_{conc} = 141.3282\ kN$ Total load of the Foundation Bore

$P_{resist} := \pi \cdot d_{bore} \cdot P_{adhesion} \cdot L_{prov} = 226.1947\ kN$ Bearing Resistance from the soil

$FOS := \frac{P_{resist}}{P_D} = 1.6005$ > $FOS_{allow} := 1.5$ **Checks OK**

7.2.1 b) Embedment Check for Lateral deflection

$e := \frac{M_o}{F_{ob}} = 1.1087\ m$ Eccentricity of Lateral Load

$L_{req} := 2.24\ m$

$L_{prov} := 2.5\ m$

L_{req} < L_{prov} **Checks OK**

PK ENGINEERING
CONSULTING ENGINEERS
PILE EMBEDMENT DESIGN

Job Ref.:	Van Koningsveld	Date:	1-Jul-25
Job No.:	23-019	Designer:	CJ

INPUT DATA :

Height	H(m)	1.11
Pile Dia.	d(mm)	600
Encasement	B(mm)	600

DESIGN :

Total Lateral Force	Ptot =	127.76	kN
Max. Pile Moment (at Ground Level)	Mp	141.8136	kN-m
	Mu	241.08312	kN-m

EMBEDMENT : By Rutledge Soil

Safe Lateral Bearing Capacity of Soil =	200	kPa
Soil Force above Rotation Pt. =	277.02	kN
Minimum Depth of Embedment		
No. Restraint at Grnd Surface =	3.53	m
Full Restraint =	2.241	m

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6.2.2 a) Embedment Check for Bearing when rock is present:

$P_o := P_{total} = 127.7565\ kN$ Total Axial Load

$L_{prov} := 0.4\ m$ Assumed Embedment

$d_{bore} := 600\ mm$ Bore Diameter

$P_{bearing} := 1000\ kPa$ Allowable Bearing for Rock

$P_{adhesion} := P_{bearing} \cdot 0.3 = 300\ kPa$ Allowable adhesion resistance from the soil

$\gamma_{conc} := 24\ \frac{kN}{m^3}$ Density of concrete

$A_{bore} := \frac{\pi \cdot d_{bore}^2}{4} = 0.2827\ m^2$ Area of Bore

$P_{conc} := \gamma_{conc} \cdot A_{bore} \cdot L_{prov} = 2.7\ kN$ Weight of Bore

$P_D := P_o + P_{conc} = 130.4708\ kN$ Total load of the Foundation Bore

$P_{resist} := \pi \cdot d_{bore} \cdot P_{adhesion} \cdot L_{prov} = 226.1947\ kN$ Bearing Resistance from the soil

$FOS := \frac{P_{resist}}{P_D} = 1.7337$ > $FOS_{allow} := 1.5$ **Checks OK**

7.2.2 b) Embedment Check for Lateral deflection

$e := \frac{M_o}{F_{ob}} = 1.1087\ m$ Eccentricity of Lateral Load

$L_{req} := 1.0\ m$

$L_{prov} := 1.5\ m$

L_{req} < L_{prov} **Checks OK**

PK ENGINEERING
CONSULTING ENGINEERS
PILE EMBEDMENT DESIGN

Job Ref.:	Van Koningsveld	Date:	1-Jul-25
Job No.:	23-019	Designer:	CJ

INPUT DATA:

Height H(m)	1.11	
Pile Dia. d(mm)	600	
Encasement B(mm)	600	

DESIGN:

Total Lateral Force	Ptot =	127.76	kN
Max. Pile Moment (at Ground Level)	Mp	141.8136	kN-m
	Mu	241.08312	kN-m

EMBEDMENT: By Rutledge Soil

Safe Lateral Bearing Capacity of Soil =	1000	kPa
Soil Force above Rotation Pt. =	419.65	kN
Minimum Depth of Embedment		
No. Restraint at Grnd Surface =	1.18	m
Full Restraint =	1.002	m

Summary of Effective Embedments when rock is not present:

1.Bearing Case = 2.0m into stiff natural earth.

2.Lateral Deflection Case = 2.5m into stiff natural earth. (Govern)

Summary of Effective Embedments when rock is present:

1.Bearing Case = 0.4m into semi weathered rock.

2.Lateral Deflection Case = 1.5m into semi weathered rock (Govern)

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7.3 Reinforcement Requirement

$P_o := 127.76\ kN$ Most Critical Axial Load on Pile

$M_o := 193.09\ kN\ m$ Most Critical Moment on Pile

$d_o := 0.6\ m$ Bore Diameter

$d_{eff} := 0.52\ m$ Effective Bore Diameter

$A_{eff} := \pi \cdot \frac{d_{eff}^2}{4} = 0.2124\ m^2$ Effective area of the Pile section

$A_g := \pi \cdot \frac{d_o^2}{4} = 0.2827\ m^2$ Gross Area of Pile Section

Assume 600 Diameter column, HD20 BAR

$D := 600\ mm$

$\frac{P_o}{D^2} = 0.3549\ MPa$ *OK*

$\frac{M_o}{D^3} = 0.8939\ MPa$ *OK*

From Reinforced Concrete Design Handbook Chart:

$\rho_T := 0.00583$

$A_{ST} := \rho_T \cdot A_g = 1648.3937\ mm^2$

Provided reinforcement:

$A_{pr} := 1885\ mm^2$ *OK*

Checking RC pile as cantilever piles at 1.5m c/c (PC9 - PC12):

$s := 1.5\ m$ Pile Spacing

$P_{total} := F_{v_static} \cdot s = 127.76\ kN$ Total Axial Load Demand on each Pile

$F_{total} := F_{h_static} \cdot s = 204.45\ kN$ Total Horizontal Load on each Pile

$e := 1.2\ m$ Lever Arm

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$M_u := F_{total} \cdot e = 245.34\ kN\ m$ Total Moment Demand

$P_o := 127.76\ kN$ Most Critical Axial Load on Pile

$M_o := M_u = 245.34\ kN\ m$ Most Critical Moment on Pile

$d_o := 0.6\ m$ Bore Diameter

$d_{eff} := 0.52\ m$ Effective Bore Diameter

$A_{eff} := \pi \cdot \frac{d_{eff}^2}{4} = 0.2124\ m^2$ Effective area of the Pile section

$A_g := \pi \cdot \frac{d_o^2}{4} = 0.2827\ m^2$ Gross Area of Pile Section

Assume 600 Diameter column, HD20 BAR

$D := 600\ mm$

From Reinforced Concrete Design Handbook Chart:

$\rho_T := 0.0064$

$A_{ST} := \rho_T \cdot A_g = 1809.5574\ mm^2$

Provided reinforcement:

$A_{pr} := 1885\ mm^2$ *OK*

Provide a ϕ600mm reinforced concrete pile embedded minimum 5.5m into natural ground. Use 6HD20 vertical bars and R10 stirrups at 150mm c/c.

7.4 Capping Beam Design :

$F_{oa} := 30.29\ kN$ Force

$L_{oa} := 1.0\ m$ Lever Arm

$M_{oa} := F_{oa} \cdot L_{oa} = 30.3\ kN\ m$ Moment Demand

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		Designer C.J	Date June 2025

7.4.1 Check Beam Strength:

PK ENGINEERING LIMITED						1-Jul-25
CONCB	*Concrete Member Design*					
JOB REF. :	Van Koningsveld			JOB NO. :		23-019
BEAM REF.	Capping beam			DESIGNER:		CJ
INPUT DATA :						
Depth D(m)		0.5				
Width B(m)		0.6		Reinforcement Limits	(mm^2)	
Ult Mt Mu		30.3	Kn.m	Asmax =	4739.119	mm^2
Fy		500	MPa	Asmin(1.4bd/Fsy) =	703.92	mm^2
Bar Diameter		12	mm	Asmin (.0007bd) =	175.98	mm^2
No. of Bars		3				
Cover		75	mm	Reinforcement required :		
F'c		30	MPa	As =	227.8254	mm^2
Eff Depth d		419	mm	Percentage =	0.090623	%
Comp Block a		5.597951	mm			
Reinforcement Provided :						
As	=	339.292	mm^2	! OK		
SHEAR CALCULATIONS :						
-	-					
		Tie Diameter		10	10	mm
		Fsy (ties)		300	300	MPa
		Vu :		21	kN	
		vi= Vu/0Bd :		0.104415	MPa	
		vc :		0.457327	MPa	
		Av :		700	700	mm^2/m
		Max. Spacing :		200	200	mm
		Spacing Reqd : (2 legs)		200	200	mm

Summary RC Pile wall:

Use ϕ600mm RC Piles spaced at 1.5m c/c embedded minimum 5.5m from Ground Level. Reinforce the Pile with 6HD20 longitudinal bars and R10 spiral stirrups at 150mm c/c. Use 600mm wide x 500mm deep capping beam with 3HD12 bars top & bottom, 2 HD12 face bars along with R10 stirrups at 200mm c/c(Cover = 75mm, F'c = 30MPa).

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8. DESIGN OF CANTILEVER TIMBER POLE RETAINING WALL NEAR BOUNDARY (TYPE D):

POLWAL	*CANTILEVER POLE RETAINING WALL DESIGN*									
JOB REF. :	Van Koningsveld - Chapel Street							JOB NO. :	23-019	
REF :	Timber Pole Retaining Wall-2							DESIGNER :	CJ	
INPUT DATA :										
	POLES							*BACKFILL*		
	Height	H (m)	0.40	0.80	1.15	1.30	1.50	Soil Density	18	Kn/m³
	Pole Dia. at Ground Level	d (mm)	200	200	250	250	250	Int. Friction	30	degree
	Pole Spacing	lp (m)	1.1	1.1	1.1	1.1	1.1	Wall Friction	10	degree
	Surcharge	S (kPa)	25	25	25	25	25	Backfill Slope	0	degree
	Encasement	B (mm)	450	450	500	500	500	Wall Slope	85	degree
								Water Table Ht	0	m
	RAILS								1	
	Spacing	C (mm)	150							
	Rail Type	(1 = Yes)						Ka =	0.27252889	
	Half Round	(Ex150)								
		2/150*50	1							
	Elastic Modulus		250000							
DESIGN :										
	Lateral Backfill Force	Pah =	0.4317	1.7267	3.5682	4.5597	6.0706	kN		
	Due to Surcharge	Pas =	2.9978	5.9956	8.6187	9.7429	11.2418	kN		
	Due to Water	Pw =	0.0000	0.0000	0.0000	0.0000	0.0000	kN		
	Total Lateral Force	Ptot =	3.4295	7.7224	12.1869	14.3026	17.3124	kN		
	Max. Pole Moment	Mp =	0.6571	2.8587	6.3236	8.3088	11.4667	kN-m		
	Force on Lowest Rail	Fr =	1.2611	1.5555	1.8130	1.9234	2.0705	kN/m		
STRESSES :			Actual					Allowable		
	Pole	Fb =	0.8365	3.6389	4.1213	5.4151	7.4732	10.3913	Mpa	OK
	Rail		0.6104	0.7528	0.8775	0.9309	1.0021	6.0000	Mpa	OK
EMBEDMENT :										
By Rutledge										
Safe Lateral Bearing Capacity							70	kpa		
Minimum Depth of Embedment										
No Restraint at Ground Surface			0.4968	0.9597	1.3171	1.5123	1.7855	m		
Full Restraint			0.2978	0.6210	0.8763	1.0045	1.1800	m		
SUMMARY:										
	Retained Height	H (m)	0.40	0.80	1.15	1.30	1.50			
	Pole Dia. SED	d (mm)	200.00	200.00	250.00	250.00	250.00			
	Pole Spacing	Lp (m)	1.10	1.10	1.10	1.10	1.10			
	Encasement	B (mm)	450.00	450.00	500.00	500.00	500.00			
	Total Length Required	H+D (m)	0.90	1.76	2.47	2.81	3.29			
	Total Length Used		1.40	1.90	2.50	3.00	3.50			
	Embedment	D (m)	1.00	1.10	1.35	1.70	2.00			
	Standard Pole Lengths	2.7	3	3.6	4.2	4.8	5.4	6		

SUMMARY:
Retaining walls with different heights as discussed above is shown in detail in structural drawing sheets SR21 and SR22.

Building Code Clause(s) B1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: PK Engineering Ltd
(Design Firm)

TO: Paul and Erina Van Koningsveld
(Owner/Developer)

TO BE SUPPLIED TO: FAR NORTH DISTRICT COUNCIL
(Building Consent Authority)

IN RESPECT OF: Proposed New Driveway and Retaining Walls
(Description of Building Work)

AT: 15 Chapel Street
(Address)

Town/City: Russell **LOT** Part Allot 12 **DP** Sec 12 TN **SO** OF Russell
(Address)

We have been engaged by the owner/developer referred to above to provide:

As per attached particulars

(Extent of Engagement)

services in respect of the requirements of Clause(s) B1 of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment B1/VM1 + B1/VM4 or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled:

Proposed Driveway & Retaining Walls - Paul &Erina Vankoningsveld and numbered As per attached particulars;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions As per attached particulars
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☒ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, Pradeep Kumar am: ☒ CPEng 203058 # ☐ Reg Arch ..... #
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE(Hons), IntPE, CPEng
The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.
The Design Firm is a member of ACENZ: ☐

SIGNED BY Pradeep Kumar (Signature)
(Name of Design Professional)

ON BEHALF OF PK Engineering Ltd Date 03/07/2025
(Design Firm)

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional engineers New Zealand (now Engineering New Zealand), Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suit of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 Design Review Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 Construction Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011[2]

PS4 Construction Review Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, Engineering NZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as Engineering New Zealand (formerly IPENZ) or the New Zealand Institute of Architects (NZIA), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

***Professional Indemnity Insurance**
As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

Professional Services during Construction Phase
There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-CM5 for Engineers[3]). The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4
Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design firm's engagement.

Attached Particulars
Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013

2 NZIA Standard Conditions of Contract SCC 2011

3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)

4 PN Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org
www.nzia.co.nz

15 CHAPEL STREET, RUSSELL: PRODUCER STATEMENT (PS1) ATTACHED PARTICULARS

Extent of Engagement

Structural Engineering design of the following specific design elements only for the proposed dwelling:

- Cantilever Timber Pole Retaining Walls
- Propped cantilever Timber Pole Retaining Wall
- RC Pile Retaining Wall
- New Driveway Slab

Note

This Producer Statement excludes structural elements, proprietary products and building systems which are covered by their own Producer Statements.

Site Verification of the following design assumptions

- Ground conditions to be in accordance with the Geotechnical Report by PK Engineering Ltd: Reference 23-019.

Construction Observation

The construction monitoring of the design components to be carried out as per the schedule attached for CM2 Construction Monitoring. We recommend that the construction monitoring be carried out by a Chartered Professional Engineer.

Engineering/Architectural Documents covered by this Producer Statement

- PK Engineering Calculations – Page 1- 14
- PK Engineering Drawings – Sheet SR0-SR21

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS

Our ref: 23-019

03rd July 2025

Far North District Council

RE: PROPOSED DRIVEWAY WITH RETAINING WALLS AT 15 CHAPEL STREET, RUSSELL

You have requested a Producer Statement for Design PS1 for clause B2 of the building code – Structural Durability. We are not able to provide this because there is no effective verification method for B2 contained within the building code. However, we can confirm the following for the structural elements shown in our documentation:

Reinforced Concrete
Concrete cover to reinforcing has been selected in accordance with NZS 3101: Part 1 - Section 3.

Timber
Timber treatment has been selected in accordance with Table 1A of B2/ AS1 of the building code.

Mild Steel
Steel protection has been specified in accordance with the "Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings" AS/NZS 2312. We note that this is on a time to first maintenance basis and assumes on-going maintenance.

We note that the owner will need to ensure adequate maintenance is carried out throughout the life of the building.

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

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS

SITE INSPECTION / CONSTRUCTION MONITORING REQUIREMENTS FOR SPECIFIC ENGINEERING DESIGN SCHEDULE

Job Number: 23-019 PS1 Date: 03/07/2025

RE: PROPOSED DRIVEWAY AND RETAINING WALLS AT 15 CHAPEL STREET, RUSSELL.

The Producer Statement for Design PS1 requires a Chartered Professional Engineer be engaged to undertake construction monitoring of the specific engineering design items to an Engineering New Zealand/ACENZ **CM2** level. We propose the Chartered Professional Engineer undertake the following site inspections specified below:

Item of Inspection	Inspection Requirements	Preferred Inspectors
Cantilever Timber Pole Retaining Wall Type A & D	1. GBC test at the bottom of the bore (min 70kPa + Undrained) 2. Pole size & treatment 3. Drainage & Scoria 4. Capping Beam pre-pour	Geotechnical Engineer Structural Engineer
Propped Cantilever Timber Pole Retaining Wall Type B	1. GBC test at the bottom of the bore (min 70kPa + Undrained) 2. Pole size & treatment 3. Drainage & Scoria 4. Propping mechanism 5. Capping Beam pre-pour	Geotechnical Engineer Structural Engineer
RC Pile Retaining Wall Type C	1. GBC test at the bottom of the bore (min 200kPa+ Undrained) 2. Specified embedment depth 3. Pile reinforcements, cover requirements	Geotechnical Engineer Structural Engineer

	4. Drainage & Scoria 5. Capping Beam pre-pour 6. Connections with horizontal rails	

Notes:

a) *The above items of inspection do not cover work constructed in accordance with NZS 3604: 2011 or NZS 4229: 2013 (non-specific design), for which inspections are to be undertaken by the appropriate Building Consent Authority.*

b) *The above items are the minimum required to enable the Chartered Professional Engineer to issue a Producer Statement Construction Review PS4 for the specific design items.*

c) *The contractor/Builder is to provide at least 48 hours' notice of the requirement for an inspection. The above timeframes are indicative, the Engineer & Contractor are to agree the timing of the inspection prior to work commencing on site.*

d) *A copy of this schedule (stamped by Council) and the Council's inspection schedule is to be held on site during the works, and the Contractor/Builder is to provide reasonable and safe access to enable works to be inspected according to the schedule.*

e) *The above schedule does not necessarily represent the actual number of inspections to be undertaken. The number of inspections will depend on the construction method, sequence of works and whether unforeseen conditions or difficulties are encountered on site.*

Form 2A

Memorandum from licensed building practitioner: Certificate of design work

Section 30C or 45, Building Act 2004

Please fill in the form as fully and correctly as possible.
If there is insufficient room on the form for requested details, please continue on another sheet and attach the additional sheet(s) to this form.

THE BUILDING	
Street address: 15 Chapel Street	
Suburb:	
Town/City: Russell	Postcode:

THE OWNER(S)		
Name(s): Paul and Erina Vankoningsveld		
Mailing address:		
Suburb:	PO Box/Private Bag:	
Town/City:		Postcode:
Phone number:	Email address:	

BASIS FOR PROVIDING THIS MEMORANDUM

I am providing this memorandum in my role as the: Please tick the option that applies ✓

○	**sole** designer of all of the RBW design outlined in this memorandum – I carried out all of the RBW design work myself – no other person will be providing any additional memoranda for the project
○	**lead** designer who carried out some of the RBW design myself but also supervised other designers – this memorandum covers their RBW design work as well as mine, and **no other** person will be providing any additional memoranda for the project
○	**lead** designer for all but specific elements of RBW – this memorandum only covers the RBW design work that I carried out or supervised and the **other** designers will provide their own memorandum relating to their specific RBW design
✓	**specialist** designer who carried out specific elements of RBW design work as outlined in this memorandum – other designers will be providing a memorandum covering the remaining RBW design work

IDENTIFICATION OF DESIGN WORK THAT IS RESTRICTED BUILDING WORK (RBW)

I Pradeep Kumar carried out / supervised the following design work that is restricted building work

PRIMARY STRUCTURE: B1

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ✓ if included. Cross ✗ if excluded	If appropriate, provide details of the RBW	Tick ✓ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
All RBW design work relating to B1 ✓	All elements outside the scope of NZS3604 i.e. requiring Specific Design	✓ Carried out ✓ Supervised	PK Engineering Ltd Structural Calcs: page 1-14 Drawings: SR0-SR21
Foundations and subfloor framing ✓	Retaining Wall Foundations	✓ Carried out ✓ Supervised	PK Engineering Ltd Structural Calcs: page 1-14 Drawings: SR0-SR21

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ✓ if included. Cross ✗ if excluded	If appropriate, provide details of the RBW	Tick ✓ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
Walls ✓	1. Propped Cantilever Timber Pole Retaining Walls 2. Cantilever Timber Pole Walls 3.RC pile retaining walls with Capping beam	✓ Carried out ✓ Supervised	PK Engineering Ltd Structural Calcs: page 1-14 Drawings: SR0-SR21
Roof ✗		◯ Carried out ◯ Supervised	
Columns and beams ✗		◯ Carried out ◯ Supervised	
Bracing ✗		◯ Carried out ◯ Supervised	
Other ✗		◯ Carried out ◯ Supervised	

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ✓ if included. Cross ✗ if excluded	If appropriate, provide details of the RBW	Tick ✓ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
EXTERNAL MOISTURE MANAGEMENT SYSTEMS: E2			
All RBW design work relating to E2 ✗		◯ Carried out ◯ Supervised	
Damp proofing ✗		◯ Carried out ◯ Supervised	
Roof cladding or roof cladding system ✗		◯ Carried out ◯ Supervised	
Ventilation system (for example, subfloor or cavity) ✗		◯ Carried out ◯ Supervised	
Wall cladding or wall cladding system ✗		◯ Carried out ◯ Supervised	
Waterproofing ✗		◯ Carried out ◯ Supervised	
Other ✗		◯ Carried out ◯ Supervised	

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ✓ if included. Cross ✗ if excluded	If appropriate, provide details of the RBW	Tick ✓ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
FIRE SAFETY SYSTEMS: C1 - C6			
Emergency warning systems Evacuation and fire service operation systems ✗ Suppression or control systems Other		◯ Carried out ◯ Supervised	
Note: The design of fire safety systems is only restricted building work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.			

WAIVERS AND MODIFICATIONS

Waivers or modifications of the Building Code are required. ◯ Yes ✗ No

If Yes, provide details of the waivers or modifications below:

Clause	Waiver/modification required
List relevant clause numbers of building code	Specify nature of waiver or modification of building code required

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work.

Name: Pradeep Kumar	LBP or Registration number: 203058
The practitioner is a: ◯ Design LBP ◯ Registered architect ☑ Chartered professional engineer	
Design Entity or Company (optional): PK Engineering Ltd	
Mailing address (if different from below):	
Street address/Registered office: Level 1, 90 Kerikeri Road	
Suburb:	Town/City: Kerikeri
PO Box/Private Bag: PO Box 464	Postcode: 0230
Phone number: 09 4073255	Mobile: 021 407769
After hours:	Fax:
Email address: TeamPK@pkengin.co.nz	Website:

DECLARATION

I Pradeep Kumar LBP, state that I have applied the skill and care reasonably required of a competent design professional in carrying out or supervising the Restricted Building Work (RBW) described in this form, and that based on this, I also state that the RBW:

- Complies with the building code, or
- Complies with the building code subject to any waiver or modification of the building code recorded on this form

Signature:

Date: 03 JULY 2025

Northland Planning Development

From: Mike Butler <MButler@heritage.org.nz>
Sent: Tuesday, 5 November 2024 1:04 pm
To: Northland Planning Development
Subject: RE: Request for comments - 15 Chapel Street, Russell
Attachments: Heritage New Zealand Northland ADP modified 081018.pdf

Kia ora,

RE: Resource Consent at 15 Chapel Street, Russell

Thank you for consulting with Heritage New Zealand Pouhere Taonga on this proposal.

Heritage New Zealand Pouhere Taonga (HNZPT) is an autonomous Crown Entity with statutory responsibility under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) for the identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage. HNZPT is New Zealand's lead agency for heritage protection.

Historic heritage is a matter of national importance under Section 6(f) of the Resource Management Act 1991 (the RMA). The definition of historic heritage under Part 2 of the RMA includes archaeology. Under section 104(1) of the RMA, a territorial authority must consider Part 2 matters (which includes section 6(f)) when making a decision on an application. Therefore, effects on archaeological sites must be taken into account by council when assessing a consent application.

The proposal has been discussed with our Northland Area Office who have undertaken a desktop study. We recommend that if any unexpected archaeological material is uncovered during the development of the subject site that the attached Accidental Discovery Protocol (ADP) is actioned.

Ngā mihi | Kind regards,

Mike Butler I Kaiwhakamāhere I Planner – Northern Regional Team l Heritage New Zealand Pouhere Taonga I for Area Manager Bill Edwards UD/21 Hobson Avenue, Kerikeri 0245 l PO Box 836, Kerikeri 0245 l DDI: (64 9) 407 0470 email infonorthland@heritage.org.nz <mailto:infonorthland@heritage.org.nz> I visit www.heritage.org.nz <http://www.heritage.org.nz/> and learn more about NZ's heritage places.

Tairangahia a tua whakarere; Tatakihia nga reanga o amuri ake nei – Honouring the past; Inspiring the future
This communication may be a privileged communication. If you are not the intended recipient, then you are not authorised to retain, copy or distribute it. Please notify the sender and delete the message in its entirety.

From: Northland Planning Development <info@northplanner.co.nz>
Sent: Monday, 4 November 2024 10:54 am
To: James Robinson <jrobinson@heritage.org.nz>; Mike Butler <MButler@heritage.org.nz>
Subject: Request for comments - 15 Chapel Street, Russell

Kia ora James and Mike,

We are preparing a Land Use Consent application at 15 Chapel Street Russell.
Within the Operative District Plan, the site is located in the Russell Township zone and is within the Russell Township Basin and Gateway Area. The site is located outside of the 3 Heritage Precincts and is not subject to any outstanding landscapes or features.

Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Kororareka Russell - Part D.

The proposal is to construct a new driveway to replace the existing deteriorating driveway. PK Engineering Ltd (PK) were engaged to complete the design of the driveway which has resulted in the requirement for retaining walls up to 2.8 metres in height being required along the western side of the drive. A 0.5m beam and 1 metre balustrade will also be placed on top of the retaining wall, as indicated within the plans from PK. An underground tank is also proposed underneath the drive as part of the proposed stormwater attenuation for 15 Chapel Street. The retaining walls and driveway are required in order to enable access to the subject site. Due to the recent heavy rain events over the past couple of years, there has been slippage along the existing driveway, restricting access to the site. The applicant is unsure of the colours for the proposed retaining and balustrade but is considering *matte black or a natural timber stain or similar - the balustrade will be painted a white or off white colour (not stained).*

Under the ODP, the proposal results in infringements of the permitted rules for Sunlight, Stormwater Management, Setback from Boundaries, Excavations and Building Scale. Under the PDP, consent is sought under HA-R8, as natural timber stain is not included within the HA-S2 Standard which states that:
The exterior facades of all buildings or structures are finished in accordance with the colour scheme from the following paint ranges or equivalent:

i. resene heritage colours;
ii. resene whites and neutrals; and
iii. resene colour range BS5252 (A01-C40 range).

It is worth noting that as part of Hearing 4 of the PDP that this particular matter of finishings sitting outside of the 'Resene' products was discussed at length. While Hearing 4 heard matters specific to the Coastal Environment, Natural Features and Landscapes, a similar rule as detailed above is proposed in Heritage Areas. The recommendation in the S42A Report Writers Right of Reply back to the panel is to no longer specifically reference 'Resene' Products. If similar changes are made to the Heritage Rules it would likely also ensure other options such as timber stains can also be utilised without triggering the need for consent.

The site is not located within 20m of a scheduled Heritage Resource and is not considered to be visible from a public place, other than the road reserve. Written approval from the affected neighbouring properties is currently being sought.

If you could please provide comments on the proposal on behalf of Heritage NZ Pouhere Taonga, that would be greatly appreciated.

If you have any further queries, please do not hesitate to get in touch.

Thanks in advance.

Kind regards,

NORTHLAND
PLANNING & DEVELOPMENT

Alex Billot
Resource Planner

Offices in Kaitaia & Kerikeri
09 408 1866
Northland Planning & Development 2020 Limited

My office hours are Monday, Thursday &
Friday 9am – 2pm

Northland Planning Development

From: Northland Planning Development
Sent: Friday, 31 January 2025 11:03 am
To: rmukirawhiti@outlook.com; ngatikutahapu@gmail.com; karetumcsecretary@gmail.com; karataumarere@gmail.com; rewiri.boyce@xtra.co.nz
Subject: Request for comments - 15 Chapel Street, Russell
Attachments: 23-019 Van Koningsveld Driveway Design (R3).pdf; 23-019 Stormwater report (16-10-24).pdf; 23-019 - Earthworks Report (16-10-24).pdf; 23-019- Retaining wall design sheets (19.6.23).pdf

Tēnā koutou,

We are preparing a Land Use Consent application at 15 Chapel Street Russell.
Within the Operative District Plan, the site is located in the Russell Township zone and is within the Russell Township Basin and Gateway Area. The site is located outside of the 3 Heritage Precincts and is not subject to any outstanding landscapes or features.
Within the Proposed District Plan the site is located within the Kororareka Russell Township zone. It is subject to overlays for Coastal Environment and is within Heritage Area Kororareka Russell - Part D.

The proposal is to construct a new driveway to replace the existing deteriorating driveway. PK Engineering Ltd (PK) were engaged to complete the design of the driveway which has resulted in the requirement for retaining walls up to 2.8 metres in height being required along the western side of the drive. A 0.5m beam and 1 metre balustrade will also be placed on top of the retaining wall, as indicated within the plans from PK. An underground tank is also proposed underneath the drive as part of the proposed stormwater attenuation for 15 Chapel Street. The retaining walls and driveway are required in order to enable access to the subject site. Due to the recent heavy rain events over the past couple of years, there has been slippage along the existing driveway, restricting access to the site. The applicant is unsure of the colours for the proposed retaining and balustrade but is considering *matte black or a natural timber stain or similar - the balustrade will be painted a white or off white colour (not stained)*.

Under the ODP, the proposal results in infringements of the permitted rules for Sunlight, Stormwater Management, Setback from Boundaries, Excavations and Building Scale. Under the PDP, consent is sought under HA-R8, as natural timber stain is not included within the HA-S2 Standard which states that:
The exterior facades of all buildings or structures are finished in accordance with the colour scheme from the following paint ranges or equivalent:

i. resene heritage colours;
ii. resene whites and neutrals; and
iii. resene colour range BS5252 (A01-C40 range).

It is worth noting that as part of Hearing 4 of the PDP that this particular matter of finishings sitting outside of the 'Resene' products was discussed at length. While Hearing 4 heard matters specific to the Coastal Environment, Natural Features and Landscapes, a similar rule as detailed above is proposed in Heritage Areas. The recommendation in the S42A Report Writers Right of Reply back to the panel is to no longer specifically reference 'Resene' Products. If similar changes are made to the Heritage Rules it would likely also ensure other options such as timber stains can also be utilised without triggering the need for consent.

The site is not located within 20m of a scheduled Heritage Resource and is not considered to be visible from a public place, other than the road reserve. Written approval from the affected neighbouring properties is currently being sought.

If you could please provide comments on the proposal on the proposal to include with our application, that would be greatly appreciated.

If you have any further queries, please do not hesitate to get in touch.

Thanks in advance.

Kind regards,

Alex Billot
Resource Planner

Offices in Kaitaia & Kerikeri
09 408 1866
Northland Planning & Development 2020 Limited

My office hours are Monday, Thursday & Friday 9am – 2pm

Rochelle

From: Pravin Singh <Pravin.Singh@fndc.govt.nz>
Sent: Tuesday, 12 November 2024 10:07 am
To: Northland Planning Development
Cc: Rochelle
Subject: RE: Proposed retaining walls and driveway - 15 Chapel Street, Russell

Hi Alex,

Thank you for your patience. I have reviewed your proposal and please use this email as inclusion with your Resource Consent application noting that we support the setback to boundary breach for your retaining wall in principle. Final approval can only be made once the resource consent application is lodged.

It is appreciated that you are circulating the plans with FNDCs Property Legal Team. I am sure they will advise if the existing License to Occupy is still relevant.

Good luck with your project and we will keep an eye out for your application once it is lodged.

Thank you.

Pravin Singh
Traffic Engineer - Transportation Safety and Traffic Engineering
M 210751175 | P 6494089402 | Pravin.Singh@fndc.govt.nz
Te Kaunihera o Te Hiku o te Ika | Far North District Council

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Northland Planning Development <info@northplanner.co.nz>
Sent: Friday, 8 November 2024 9:45 am
To: Pravin Singh <Pravin.Singh@fndc.govt.nz>
Cc: Rochelle <rochelle@northplanner.co.nz>
Subject: RE: Proposed retaining walls and driveway - 15 Chapel Street, Russell

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Hi Pravin,

Thank you for the update, it is much appreciated.

Will await to hear further from you.

Kind regards,

Alex Billot
Resource Planner

Offices in Kaitaia & Kerikeri
09 408 1866
Northland Planning & Development 2020 Limited

My office hours are Monday, Thursday & Friday 9am – 2pm

From: Pravin Singh <Pravin.Singh@fndc.govt.nz>
Sent: Thursday, 7 November 2024 2:31 pm
To: Northland Planning Development <info@northplanner.co.nz>
Cc: Rochelle <rochelle@northplanner.co.nz>
Subject: RE: Proposed retaining walls and driveway - 15 Chapel Street, Russell

Hi Alex,

This is acknowledgement that this has been received. Apologies for the delay. I have just gotten back from leave.

I have passed on my initial assessment for review and approval. I am working to turn around final comments early next week.

Kind regards,

Pravin Singh
Traffic Engineer - Transportation Safety and Traffic Engineering
M 210751175 | **P** 6494089402 | Pravin.Singh@fndc.govt.nz
Te Kaunihera o Te Hiku o te Ika | Far North District Council

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Northland Planning Development <info@northplanner.co.nz>
Sent: Monday, 4 November 2024 9:40 am
To: Pravin Singh <Pravin.Singh@fndc.govt.nz>
Cc: Rochelle <rochelle@northplanner.co.nz>
Subject: Proposed retaining walls and driveway - 15 Chapel Street, Russell

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Hi Pravin,

We are in the process of applying for resource consent for 15 Chapel Street, Russell.

The proposal is to construct a new driveway to replace the existing deteriorating driveway. PK Engineering Ltd (PK) were engaged to complete the design of the driveway which has resulted in the requirement for retaining walls up to 2.8 metres in height being required along the western side of the drive. A 0.5m beam and 1 metre balustrade will also be placed on top of the retaining wall, as indicated within the plans from PK. An underground tank is also proposed underneath the drive as part of the proposed stormwater attenuation for 15 Chapel Street. The retaining walls and driveway are required in order to enable access to the subject site. Due to the recent heavy rain events over the past couple of years, there has been slippage along the existing driveway, restricting access to the site.
As you can see in the plans provided, the driveway and some retaining encroaches into the road reserve.

As part of the original Building Consent EBC-2023-1123, a License to Occupy was issued by FNDC for the retaining wall, where it was to be located within road reserve. I have attached a copy of this. I will send through the updated plans to Council's Legal Team to update their License to Occupy if deemed necessary.

I have also attached the Earthworks and Stormwater Report as well as the retaining wall design sheets.

If you could please provide comments on the proposal to include with our resource consent application, that would be greatly appreciated.

Let me know if you have any further questions.

Thanks in advance.

Kind regards,

NORTHLAND
PLANNING & DEVELOPMENT

Alex Billot
Resource Planner

Offices in Kaitaia & Kerikeri
09 408 1866
Northland Planning & Development 2020 Limited

Far North District Council

FOR OFFICE USE	
Legalisation File No:	2230
Property ID No:	3318368
Consent No:	EBC-2023-1123
CAR:	Required

Licence to Occupy a Portion of Road

This is to certify that	**Paul Andre Van Koningsveld**
of	15 Chapel Street, Russell
Are granted permission by the Far North District Council to occupy a portion of road adjoining:	
Physical location:	**15 Chapel Street, Russell**
Legal description:	**Pt Sec 12 Town of Russell** comprised in **Certificate of Title NA8B/491**

This Licence refers to **New retaining wall on legal road (erected in conjunction with proposed new driveway (as per EBC-2023-1123)** *and subject to the undermentioned conditions:*

CONDITIONS

1. This occupation licence is issued under the provisions of the **Local Government Act 1974**, for a term being at Councils pleasure.

2. This licence constitutes Councils permission to use part of the road as shown on the annexed plan and confers no tenancy or any other property right or tenure on the licensee.

3. Any structures, fences or other erections thereon must be removed as and when so required by the council.

4. No construction shall commence on the proposed occupation until resource and building consent(s) have been approved by Council (if required).

5. The area occupied must be to the approval of the Delegated Roading Authority, but the fact of such approval will place no onus on the Council or relieve the applicant of any of the responsibilities herein stated or implied.

6. The licensee shall bear all costs relating to the maintenance of the occupied area to ensure it remains safe and in good condition, including any renewal or replacement required to ensure it can continue to perform its intended function.

7. The licensee shall take all reasonable precautions against accident or injury arising in respect of any person or property on the said land and shall indemnify the Council against all legal actions or demands that may be brought against the Council in connection with the rights hereby granted.

8. When required by the Council to do so, the applicant will, at his own cost, and without delay, disclose the true position of survey pegs or renew any which may have been destroyed or displaced.

9. Trees, shrubs, or live hedges must on no account be planted or maintained on any road without the prior consent of council.

10. The licensee has provided the Council with plans showing the shape of the occupation and measurements showing the position of the occupation in relation to the legal boundary. This plan will be filed by the Council for the purpose of reference and to assist in rediscovering the true boundary line at some future date. This requirement, however, places no responsibility on the Council.

11. The Council and any Government Department or Local Body functioning in the locality may enter upon the enclosed land and do such things as if no enclosure existed and not be held responsible to the applicant for any damage or loss, nor will the applicant have any claim for damage extending on to his land if this results from inadvertence occasioned by the legal boundary line not being clearly defined.

12. The licensee shall not assign this licence to any other person.

13. Should the ownership of **Pt Sec 12 Town of Russell** be transferred, the new owner must apply for a new licence in their name.

NOTE: When working within the road corridor (carriageway and berm) a Corridor Access Request (CAR) is required. https://www.fndc.govt.nz/Our-services/Transport/Roads/Road-closures-and-restrictions

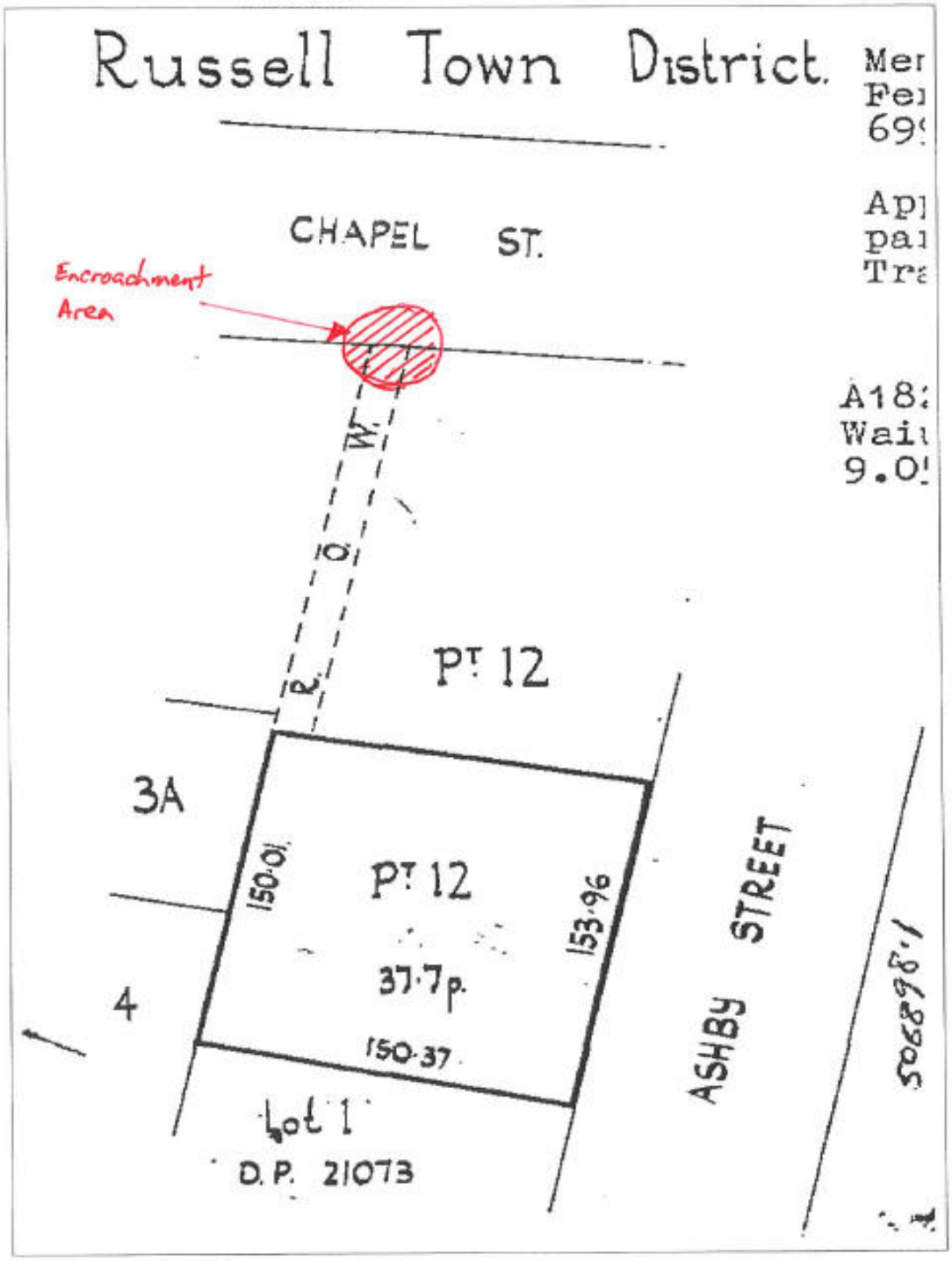
Dated this:	11th	**day of**	June	**2023**

Signed **Delegated Roading Authority**

Signed **Applicant**

Plan showing the extent of the occupation within the legal road boundary

Identifier NA8B/491



ISSUED FOR CONSENT

PK ENGINEERING LIMITED

CHARTERED PROFESSIONAL ENGINEERS

PROJECT:

PROPOSED NEW RETAINING WALLS & DRIVEWAY FOR PAUL & ERINA VAN KONINGSVELD

PROJECT ADDRESS:

15 Chapel Street, Russell

LEGAL DESCRIPTION:

Part Allotment 12, Section 12 Town of Russell

JOB NO:

23-019

DATE:

7/3/2024 (ORIGINAL DATE OF ISSUE)

REVISION:

DRAWING INDEX:

SR0	GENERAL NOTES
SR1	SITE PLAN
SR2A	ENLARGED SITE PLAN (A)
SR2B	ENLARGED SITE PLAN (B)
SR3A	DRIVEWAY ELEVATION PROFILE (A)
SR3B	DRIVEWAY ELEVATION PROFILE (B)
SR4	CROSS SECTION (A-A) (B-B)
SR5	CROSS SECTION (C-C) (D-D)
SR6	CROSS SECTION (E-E) (F-F)
SR7	CROSS SECTION (G-G)
SR8	CROSS SECTION (H-H)
SR9	CROSS SECTION (I-I)
SR10	CROSS SECTION (J-J)
SR11	CANTILEVER RW DETAIL - TYPE A
SR12	PROPPED CANTILEVER RW DETAIL - TYPE B
SR13	PROPPED CANTILEVER POLE DETAIL
SR14	HYNDS CESSPIT DETAIL
SR15	CULVERT CESSPIT DETAIL
SR16	CULVERT CESSPIT DETAIL
SR17	CULVERT CESSPIT DETAIL
SR18	SW ATTENUATION TANKS PLAN VIEWS
SR19	SW ATTENUATION TANKS DETAILS
SR20	RC PILE WALL DETAIL - TYPE C
SR21	CANTILEVER RETAINING WALL DETAIL -TYPE D
SR22	ELEVATION PROFILE ALONG RETAINING WALL TYPE C

SHEET 39 FNDC 2023 STANDARDS MANHOLE REQUIREMENTS
SHEET 32 FNDC 2023 PIPE PROTECTION AND BULKHEAD DETAILS

NOTES:

VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING WORK. USE WRITTEN DIMENSIONS IN PREFERENCE TO SCALING THESE DRAWINGS. READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS, STRUCTURAL CALCULATIONS, FIRE REPORT & STRUCTURAL SPECIFICATIONS. BUILDING TO COMPLY WITH NZS3604. ENSURE TO HAVE THE ENGINEERING CALCULATIONS, STRUCTURAL SPECIFICATIONS STRUCTURAL DRAWINGS & BUILDING PERMIT ON SITE EACH DAY BEFORE COMMENCING WORK. ALL PRODUCTS ARE TO BE STORED & INSTALLED TO MANUFACTURERS SPECIFICATIONS. ALL EXPOSED STRUCTURAL STEEL IS TO BE GALVANIZED AND FINISHED OFF AS PER THE STRUCTURAL STEEL SPECIFICATIONS.

REVISION 6: 16 July 2025

- **Added another drawing sheet SR22 with the elevation profile of the the retaining wall type d along the boundary with Lot 1.**
- **Added aditional retaining height to the retaining wall type d design detail**

A3

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

Tel. (09) 4073255
Fax. (09) 4072256
E-mail. pk.engin@xtra.co.nz

PK ENGINEERING LIMITED
DATE 16/07/2025
CHECKED BY
CHARTERED PROFESSIONAL ENGINEER
CERTIFICATE OF PROFESSIONAL ENGINEER
CERTIFICATE OF DEVELOPMENT
REF: CPEng NUMBER: 1000

AEM
IL.

NOTES

A : GENERAL

THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND WITH ARCHITECTURAL, SERVICES, CIVIL AND OTHER PROJECT DRAWINGS. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR RESOLUTION.

THE PRESENCE, LOCATION AND DETAILS OF NIBS, PLINTHS, RECESSES, REBATES, PENETRATIONS, SLEEVES, CHASES, DUCTS, CAST-IN FIXINGS, INSERTS, BRACKETS, FLASHINGS, DAMPPROOFING 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.

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.

SUBSTITUTION FOR OR AMENDMENT OF DETAILS SHOWN OR MATERIALS SPECIFIED SHALL NOT BE CARRIED OUT WITHOUT APPROVAL OF THE ENGINEER.

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.

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

ALL DIMENSIONS ARE IN MILLIMETRES, EXCEPT LEVELS AND COORDINATES WHICH ARE IN METRES.

DO NOT SCALE THE DRAWINGS.

ALL DIMENSIONS TO EXISTING WORK SHALL BE VERIFIED BY SITE MEASUREMENT PRIOR TO FABRICATION U.N.O.

C : FOUNDATIONS

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

ANY SOFT SPOTS AT FORMATION LEVEL ARE TO BE DUG OUT AND REPLACED WITH WELL-COMPACTED HARDFILL.

THE TOP SURFACE OF ALL HARDFILL TO RECEIVE A DPC IS TO BE CHOKED WITH SAND.

WHERE REQUIRED PLACE 40 mm SITE CONCRETE UNDER FOUNDATIONS.

PLACE DPC UNDER ALL FOUNDATIONS AND GROUND-BEARING SLABS. DPC TO BE PERMATHENE DAMPSTOP 767 or ARMAFOIL INDUSTRIES MOISTOP 748.

D : CONCRETE

ALL STRUCTURAL CONCRETE WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH NZS 3109:2000.

ALL STRUCTURAL CONCRETE SHALL BE SPECIAL GRADE TO NZS 3104:2003. STRENGTHS SHALL BE AS FOLLOWS U.N.O.

FOUNDATIONS	- 20 MPa
CAST IN SITU SLABS, BEAMS & COLUMNS	- 30 MPa
PRECAST ITEMS	- 40 MPa

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

REINFORCEMENT SHALL BE TO :

NZS 3402 HOT ROLLED STEEL BARS
NZS 3422 WELDED FABRIC OF DRAWN STEEL WIRE

NOMENCLATURE

D	- DEFORMED BAR GRADE 300E
HD	- DEFORMED BAR GRADE 500E
R	- PLAIN BAR GRADE 300E
HR	- PLAIN BAR GRADE 500E

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.

NO REINFORCING SHALL BE RE-BENT ON SITE UNLESS SHOWN ON THE DRAWINGS, AND WHERE RE-BENT SHALL ONLY BE RE-BENT ONCE.

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.

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 DESIGNATION		LAP LENGTH
D12	-	500
D12	-	670
D16	-	900
D20	-	1120

HD24 AND LARGER - REFER DRAWINGS

D10	-	335
D12	-	400
D16	-	540
D20	-	670

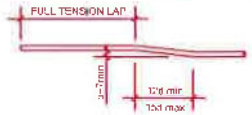
D24 AND LARGER - REFER DRAWINGS

10. (a) DENOTES

(b) DENOTES

(c) DENOTES — 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 LATANCE 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 DuraSteel 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 E49XX 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 4230:2004.

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.

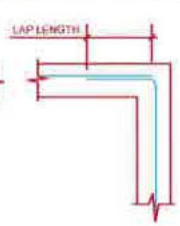
7. MORTAR JOINTS ON EXPOSED WALLS SHALL BE RAKED WITH A 10mm ROUND TOOL WHEN MORTAR IS PARTIALLY SET.

8. UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS, MINIMUM SPLICE LAP LENGTH FOR DEFORMED BARS SHALL BE

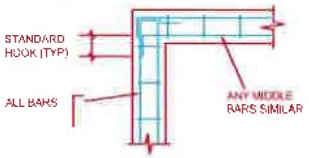
40 BAR DIAMETERS FOR GRADE 300 STEEL.
60 BAR DIAMETERS FOR GRADE 500 STEEL.
65 BAR DIAMETERS FOR GRADE 500 STEEL.

9. PLAN - CONSTRUCTION JOINT :

10. PLAN - TYPICAL CORNER DETAIL



11. PLAN - FOUNDATION CORNER :



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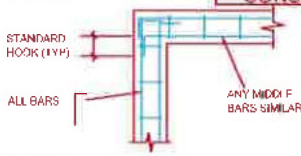
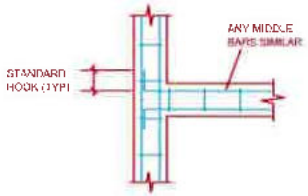
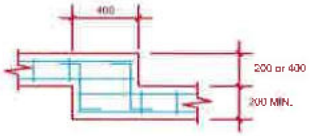
11. PLAN - FOUNDATION CORNER :



12. PLAN - FOUNDATION JUNCTION :



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 450 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 H1 OR H5 TREATED TIMBER CUT ON SITE SHALL BE TREATED WITH "METALEX" ON THE CUT SURFACE.

PK ENGINEERING LIMITED
DATE: 23 05 2023
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BEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 30 Kerikeri road, P.O Box 454 KERIKERI Tel. (09) 407 9255 E-mail: Tim@PKengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: GENERAL NOTES	Drawn: JW Checked: PK Date: 16 07 2025 Scale: AS SHOWN CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of P K Engineering Limited and is not to be reproduced without written permission	SHEET No: S0 PROJECT No: 23-019	R6

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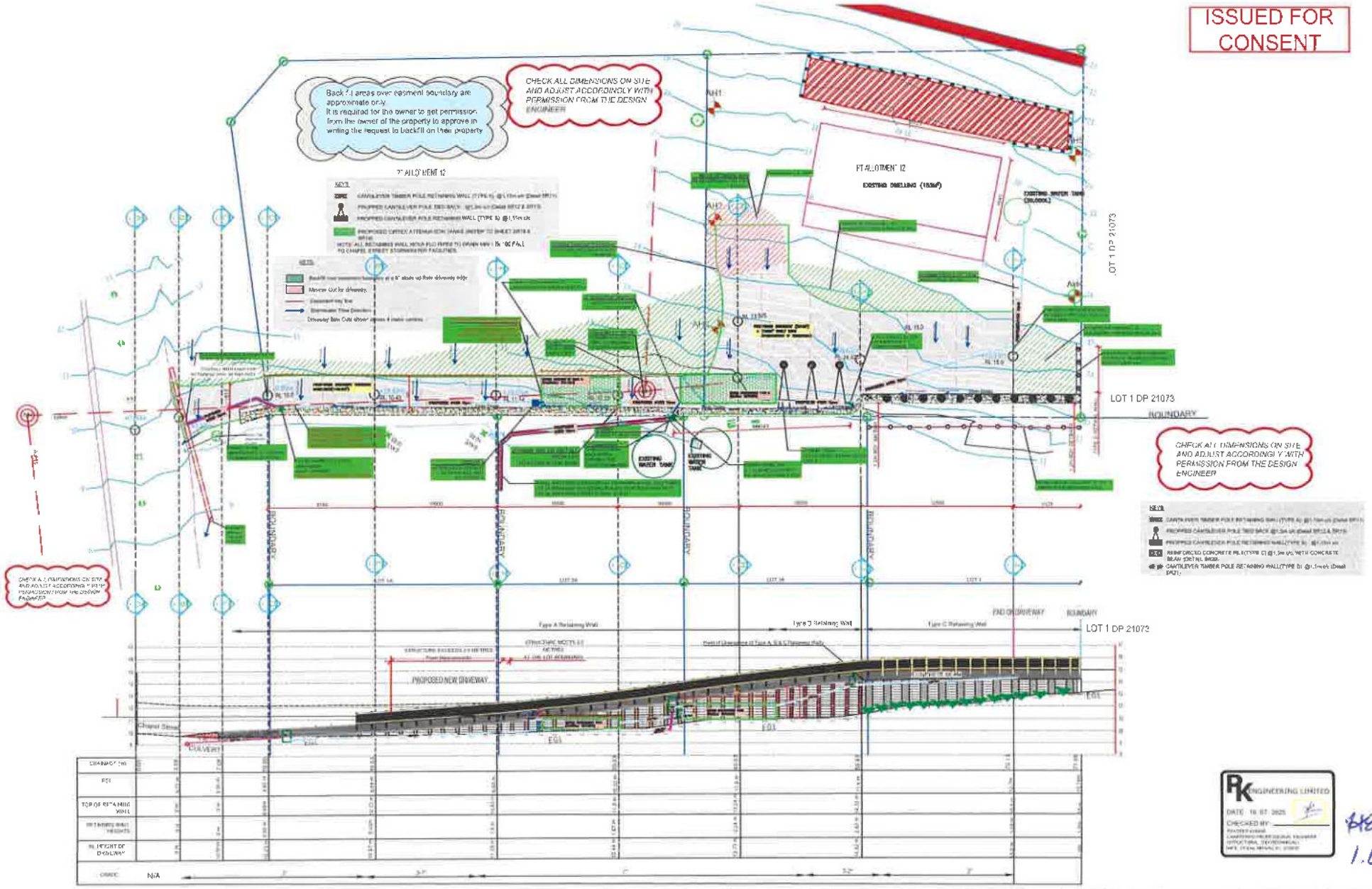

PK ENGINEERING LIMITED
DATE 16 07 2025
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I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 58 Mandeville Street, P.O. Box 464 Invercargill Tel. (09) 4073 [illegible] E-mail: [illegible]	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING SITE PLAN	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:200 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019	SHEET No SR1	R6

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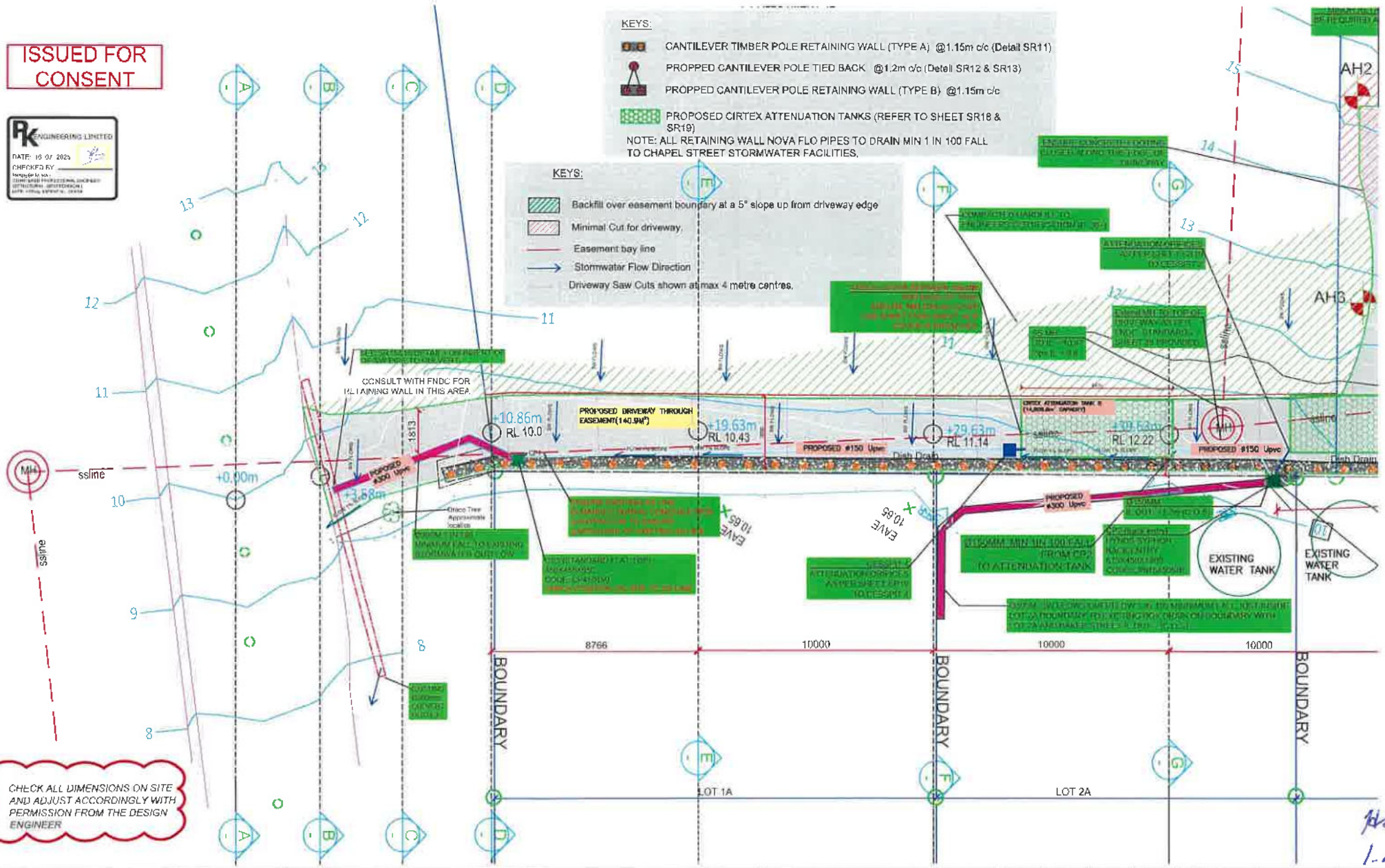
KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL (TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL (TYPE B) @1.15m c/c
- PROPOSED CIRTEX ATTENUATION TANKS (REFER TO SHEET SR18 & SR19)

NOTE: ALL RETAINING WALL NOVA FLO PIPES TO DRAIN MIN 1 IN 100 FALL TO CHAPEL STREET STORMWATER FACILITIES.

KEYS:

- Backfill over easement boundary at a 5° slope up from driveway edge
- Minimal Cut for driveway.
- Easement bay line
- Stormwater Flow Direction
- Driveway Saw Cuts shown at max 4 metre centres.



CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Cameron Road, P.O.Box 464 WHANGAREI Tel. (09) 4379255 E-mail. Team@PKE.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING ENLARGED SITE PLAN A	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:150 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No. 23-019	SHEET No. SR2A	R6

H & M
I.L.

ISSUED FOR CONSENT

PT ALLOTMENT 12

EXISTING DWELLING (152M²)

EXISTING WATER TANK (20,000L)

LOT 1 DP 21073

AH2

AH3

AH4

RL 13.975

PROPOSED DRIVEWAY (234M²) + (100M² BUILT INTO ATTENUATION IF REQUIRED)

RL 15.0

69.63m

RL 14.425

+72.13m

RL 15.0

+45.63m

PROPOSED 150 Upvc

Dish Drain

EXISTING WATER TANK

1.2m BDY Set Back

1.2m BDY SETBACK

TYPE D RETWAL WALL

LOT 1 DP 21073

BOUNDARY

10000

10000

12500

5529

BOUNDARY

BOUNDARY

LOT 3A

LOT 4

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE(TYPE C) @1.5m c/c. WITH CONCRETE BEAM (DETAIL SR20)
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE D) @1.1m c/c (Detail SR21)

HEM
I. L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri Road, P.O. Box 454 Kerikeri Tel 09 4073255 E mail Team@pk-eng.co.nz	PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	Paul & Erina Van Koningsveld	ENGLARGED SITE PLAN B	Drawn JW Checked PK Date 16.07.2025 Scale 1:50 (A3) CAD FILE NAME 23-019.dwg This design and drawing is the copyright of P K E Engineering Limited and is not to be reproduced without written permission	PROJECT No 23-019	SHEET No SR2B	R6

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL @1.15m c/c
- CONCRETE CAPPING BEAM
- PROPOSED TIMBER BALUSTRADE.

ISSUED FOR CONSENT

PK ENGINEERING LIMITED
DATE 16 07 2025
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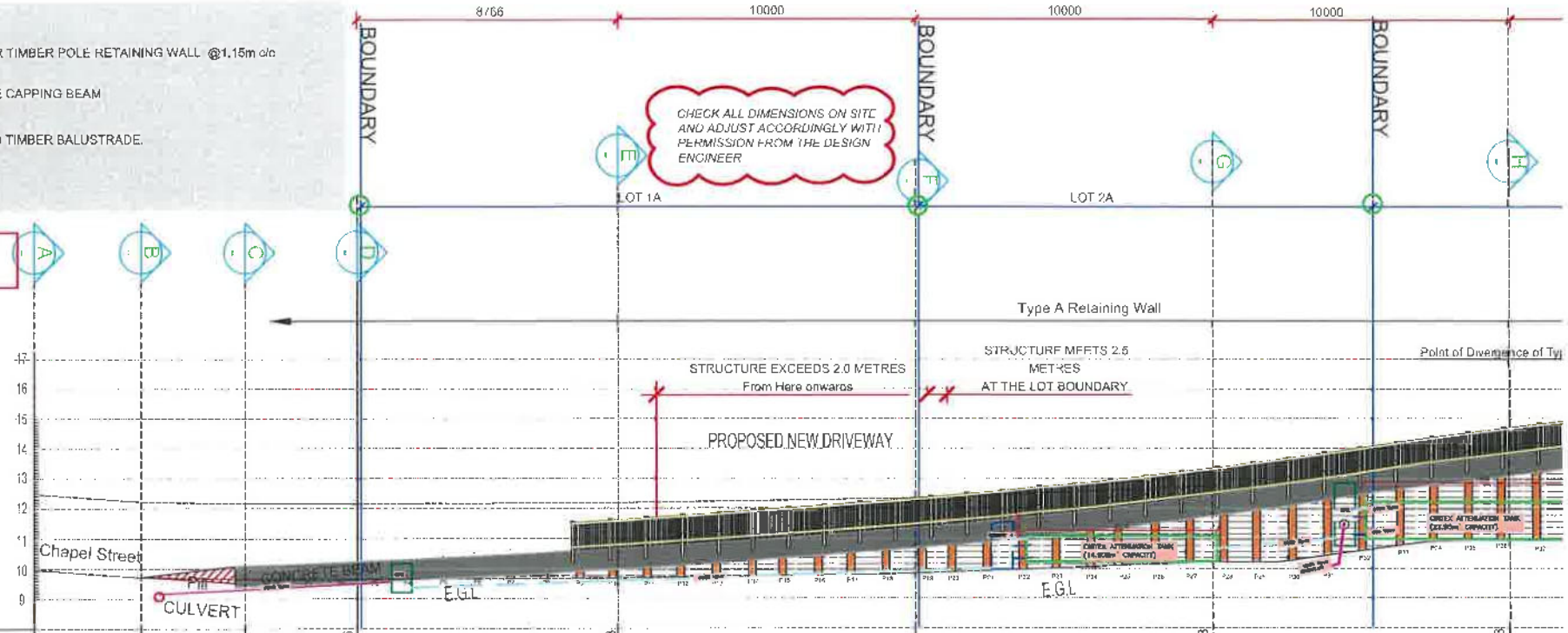

CHAINAGE (m)	0.00	3.53	7.08	10.86	19.63		39.63		49.63
EGL	9.71 m	9.66 m	9.66 m	9.69 m	9.83 m		10.22 m	11.0 m	
TOP OF RETAINING WALL	0 m	0 m	9.66m	10.12 m	10.83 m		11.9 m	13.24 m	
RETAINING WALL HEIGHTS	0 m	0 m	0.00 m	0.43m	1.0 m		1.67 m	2.24 m	
RL HEIGHT OF DRIVEWAY	0 m	10.94 m	10.23 m	10.67 m	11.35 m		12.44 m	13.79 m	
GRADE	N/A	3°		3.7°			7°		

HEM
I.L.

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90 Kerikeri road
P.O. Box 404
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Tel: 0800 437 5344
E-mail: info@pkengineering.co.nz

PROJECT
PROPOSED NEW DRIVEWAY
&
RETAINING WALLS
15 Chapel Street, Russell

CLIENT
Paul & Erina
Van Koningsveld

DRAWING
DRIVEWAY ELEVATION PROFILE A

Drawn	Checked	Date	Scale	CAD FILE NAME
JW	PK	16.07.2025	1:50 (A3)	23-019.dwg

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PROJECT No
23-019

SHEET No
SR3A

R6

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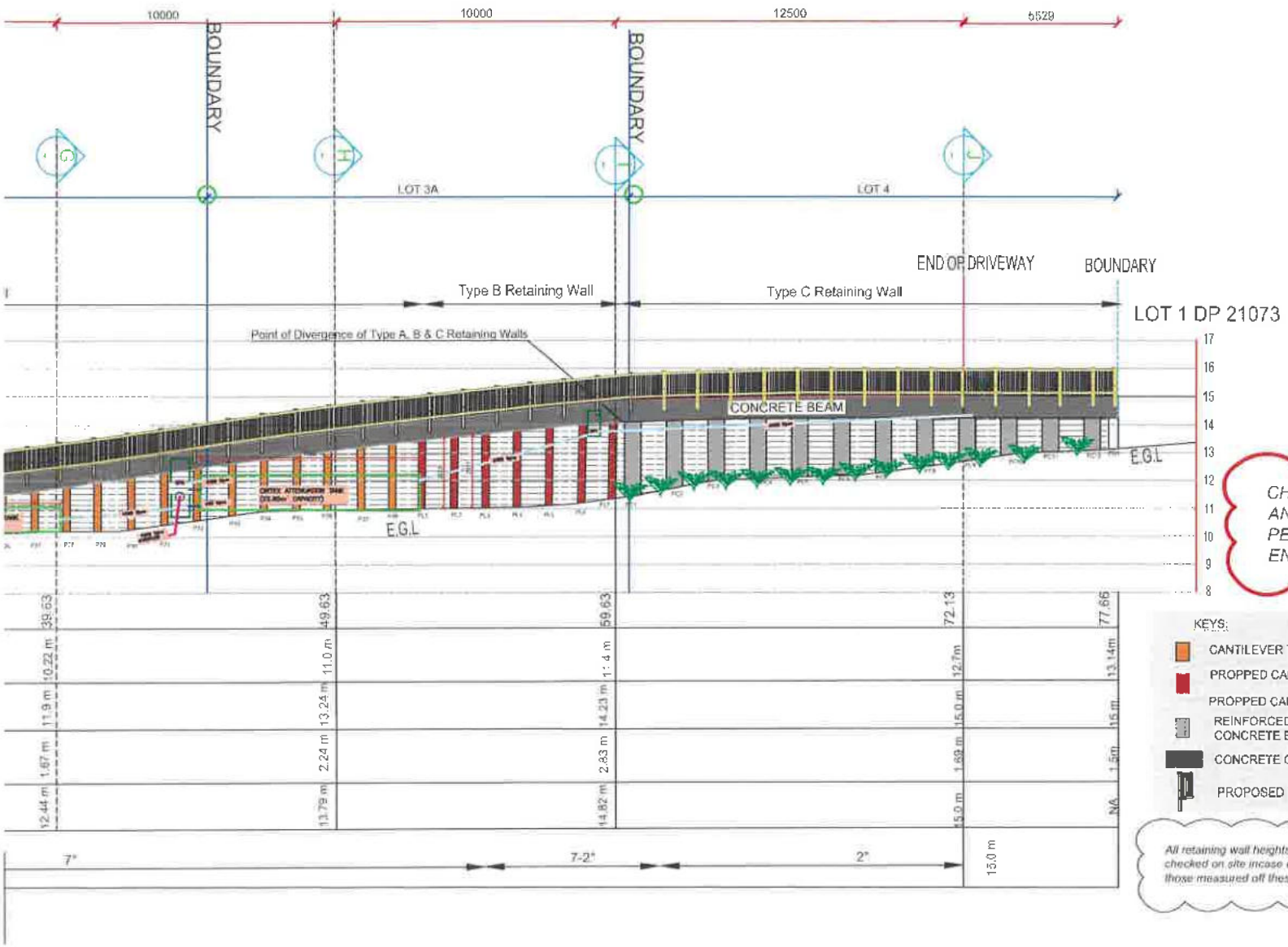


CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

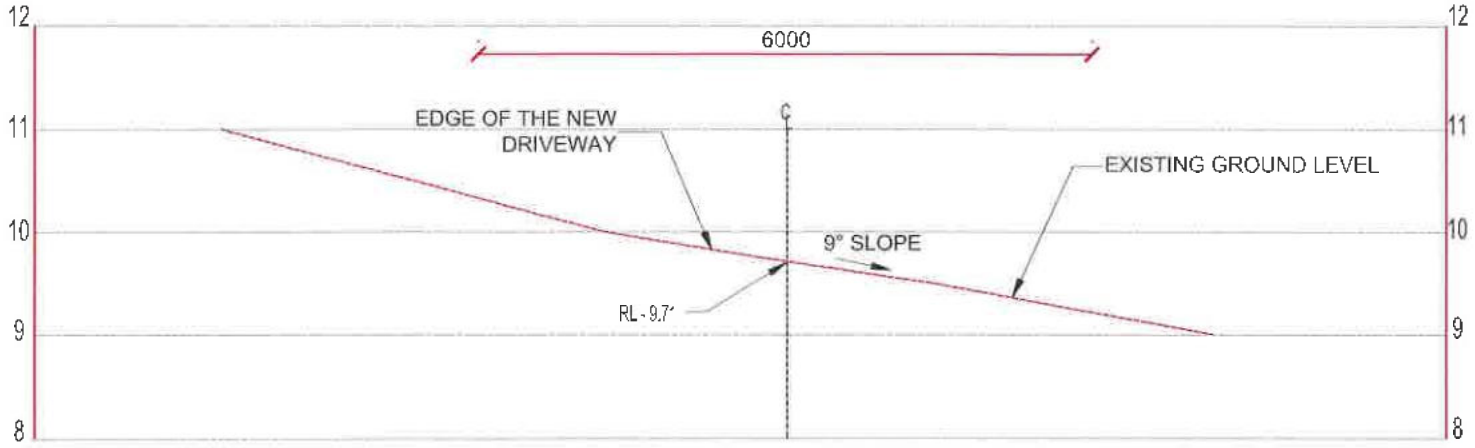
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE @1.5m c/c. WITH 0.5M THICK CONCRETE BEAM
- CONCRETE CAPPING BEAM 0.5M DEEP
- PROPOSED TIMBER BALUSTRADE.

All retaining wall heights should be checked on site incase of variations to those measured off these plans

HEM
I. L.

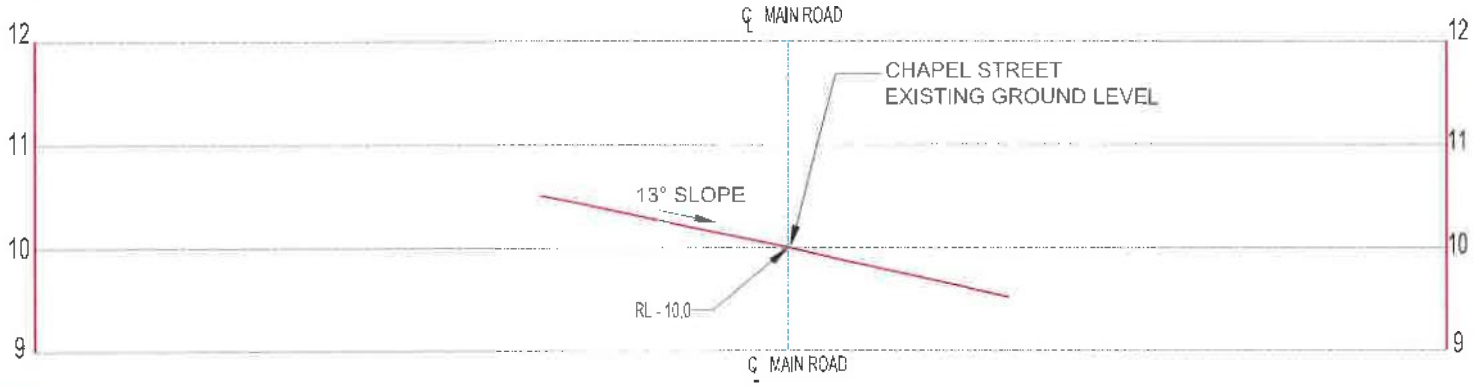
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 National Bank Building 30 Kerikeri road, P.O Box 464 KERIKERI Tel (09) 4073255 Email: Tiernan@pkengin.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING DRIVEWAY ELEVATION PROFILE B	Drawn JW	Checked PK	Date 15.07.2025	Scale 1:150 (A3)	CAD FILE NAME: 23-019.dwg
					This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission				PROJECT No 23-019

SHEET No	
SR3B	R6



CROSS-SECTION "B-B"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "A-A"

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

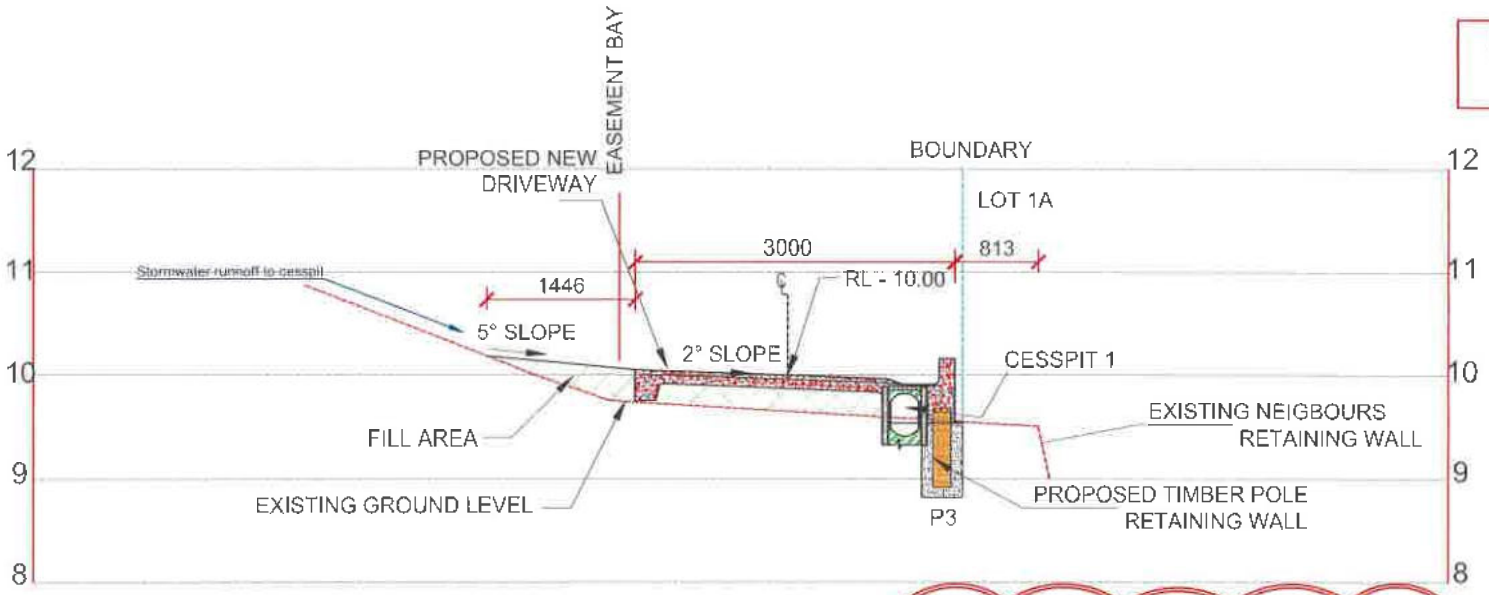
ISSUED FOR CONSENT

AE 10
1.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 Nelson Bank Building 90 Kerikeri Road, P.O Box 484 KERIKERI Tel. (09) 4073265 E-mail: Team@pkengin.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn JW	Checked PK	DATE 16 07 2025	SCALE 1:50 (A3)	CAD FILE NAME 23-019.dwg
					This design and drawing is the copyright of P.K. Engineering Limited and is not to be reproduced without written permission				PROJECT No 23-019

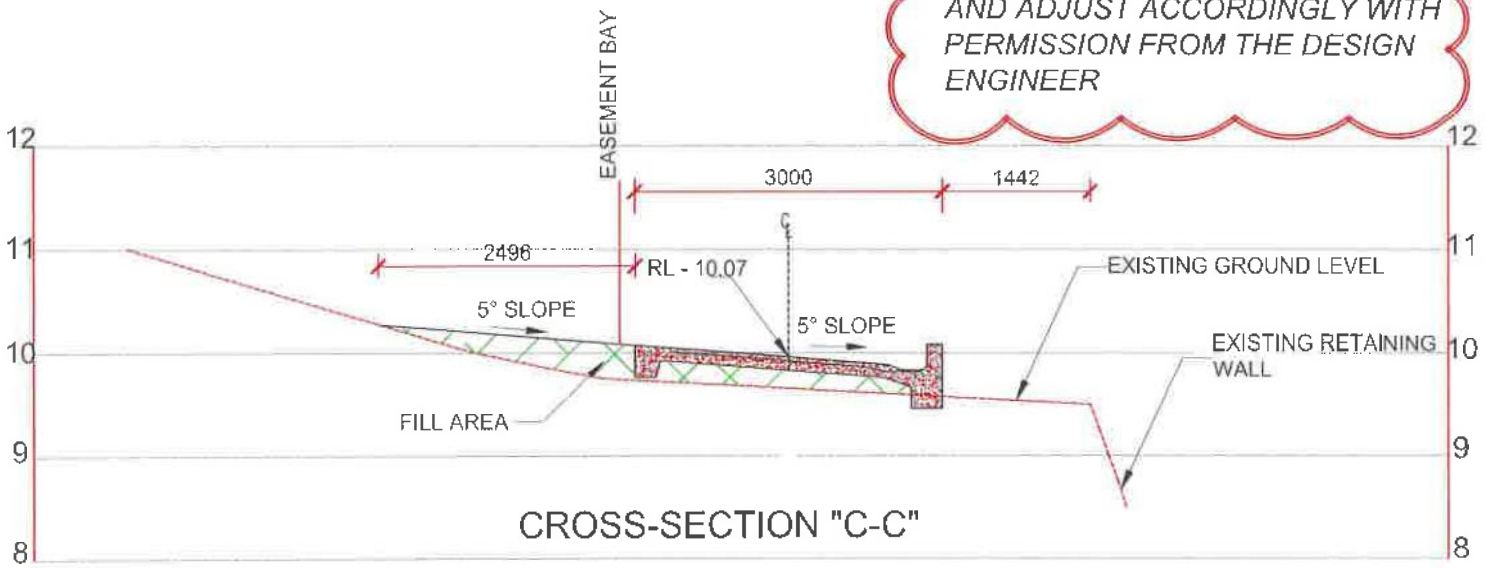
SHEET No
SR4
R6

ISSUED FOR CONSENT



CROSS-SECTION "D-D"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

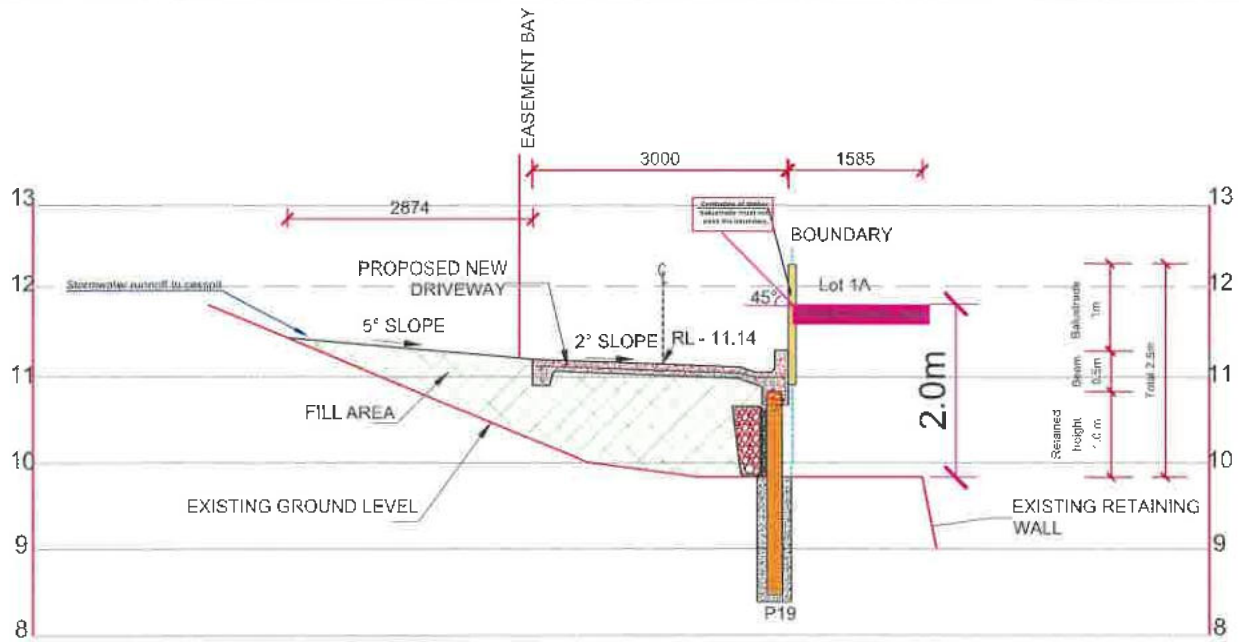


CROSS-SECTION "C-C"

HEM
I. L.

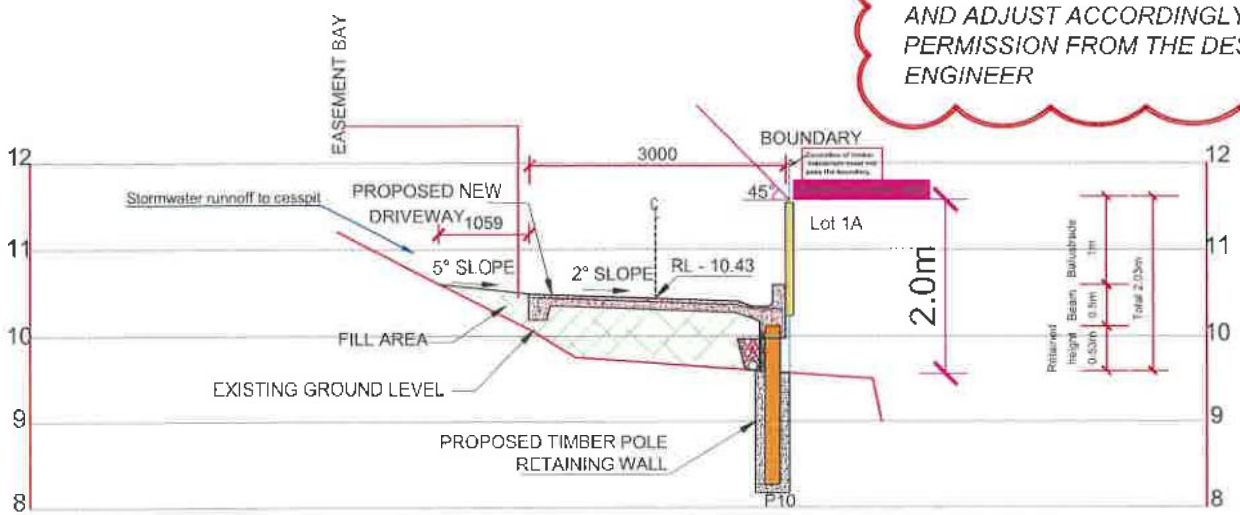
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Mallons Bank Building 20 Kerikeri Road, P.O. Box 164 KERIKERI Tel. 0800 PK PROS E-mail: Team@PKengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:40 (A3) This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	CAD FILE NAME: 23-019.dwg PROJECT No.: 23-019	SHEET No. SR5	R6

ISSUED FOR CONSENT



CROSS-SECTION "F-F"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "E-E"

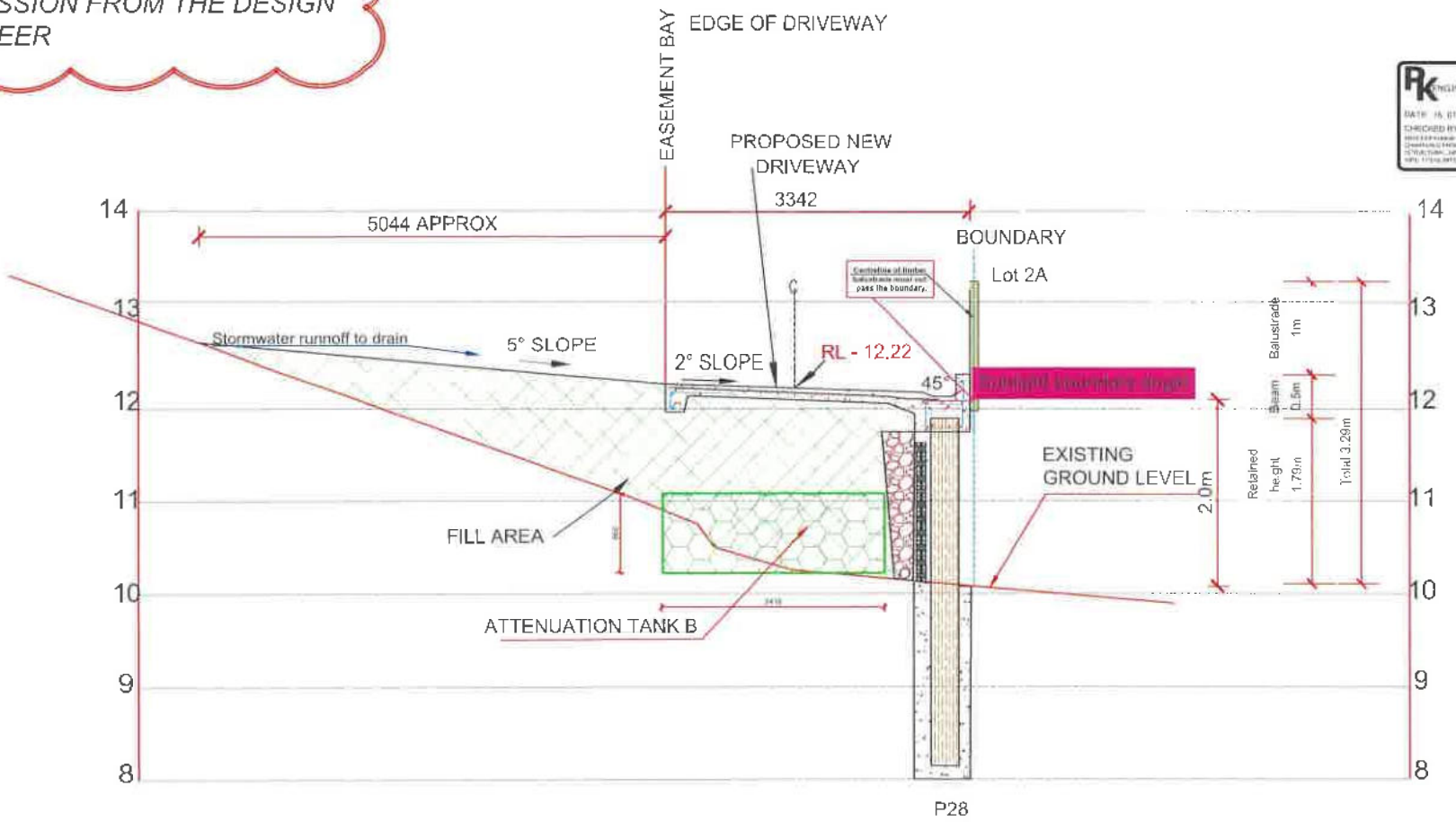
Lot E m

I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 50 Kerikeri Road, P.O. Box 464 Kerikeri Tel. (09) 407 5344 E-mail: Tess@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:50 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Ltd and is not to be reproduced without written permission	PROJECT No. 23-019	SHEET No. SR6	R6

ISSUED FOR CONSENT

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

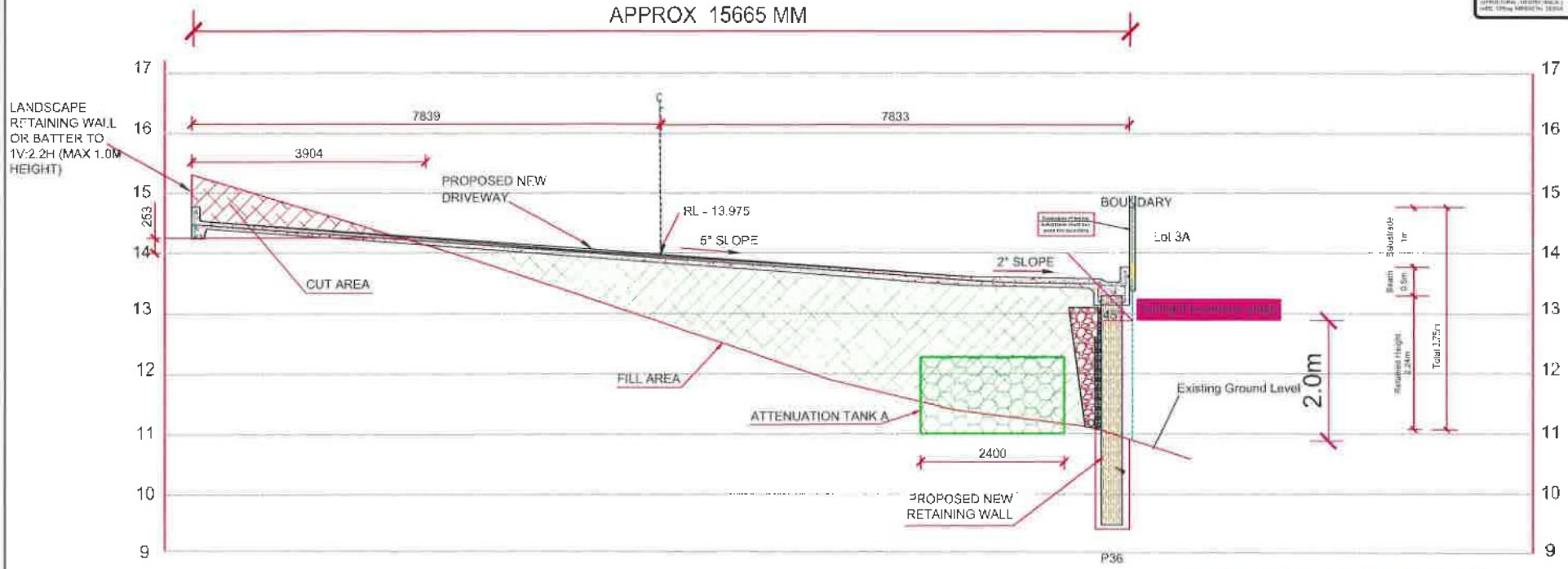


CROSS-SECTION "G-G"

HEM
I. L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 Old Post Bank Building 98 Kerikeri Road, P O Box 484 KERIKERI Tel. (09) 4070255 E-mail: "teamPK@pk-engineers.co.nz"	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:50 (A3) This design and drawing is the copyright of P K Engineering Limited and is not to be reproduced without written permission	File name: 23-019.dwg PROJECT No: 23-019	SHEET No: SR7	R6

ISSUED FOR CONSENT



CROSS-SECTION "H-H"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri Road, P.O. Box 404 KERIKERI Tel. (09) 407 5255 E-mail: Team@pk-e.engr.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn JW	Checked PK	Date 16 07 2025	Scale 1:20 (A3)	CAD FILE NAME 23-019.dwg
								PROJECT No 23-019	SHEET No SR8

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R6

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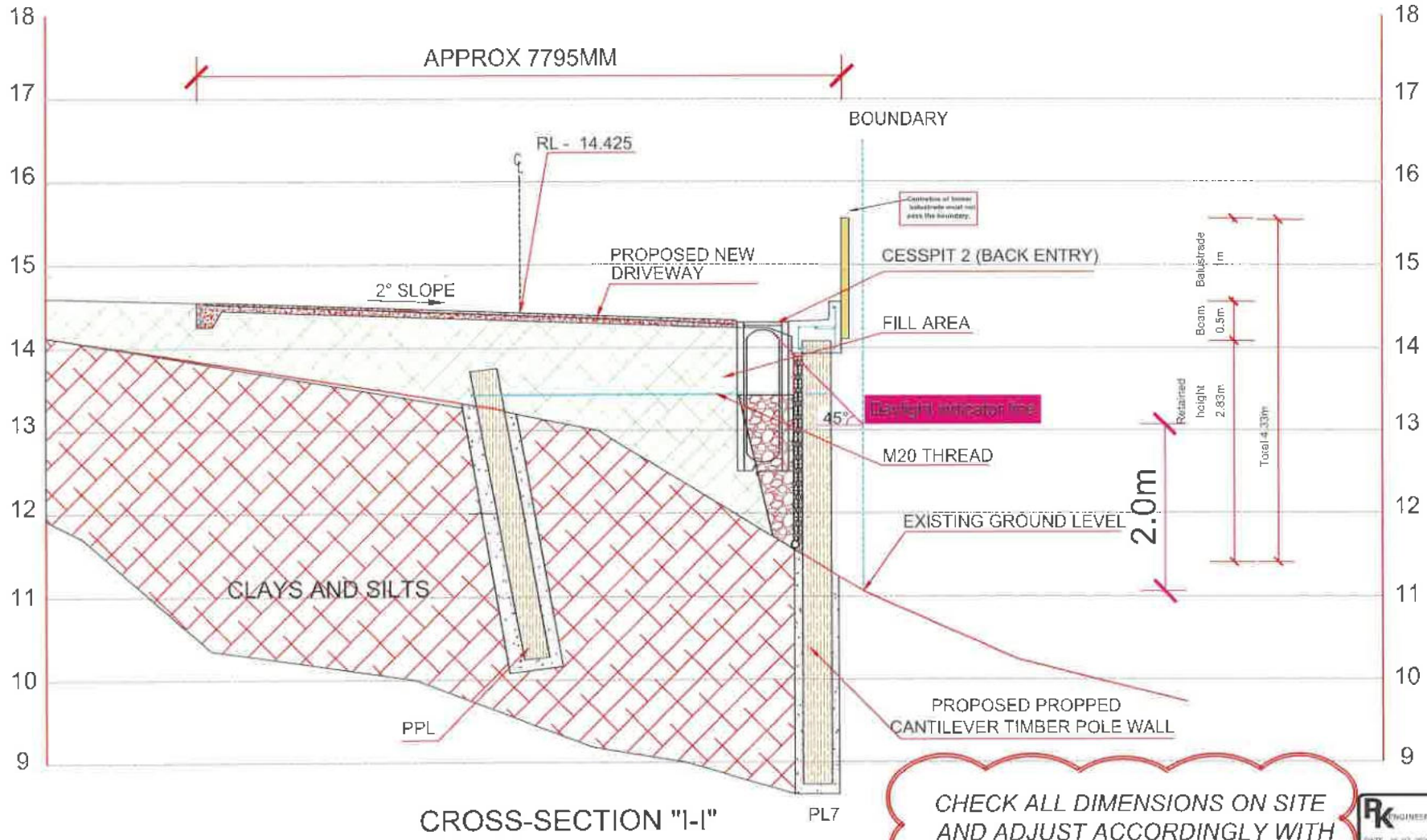


CROSS-SECTION "I-I"

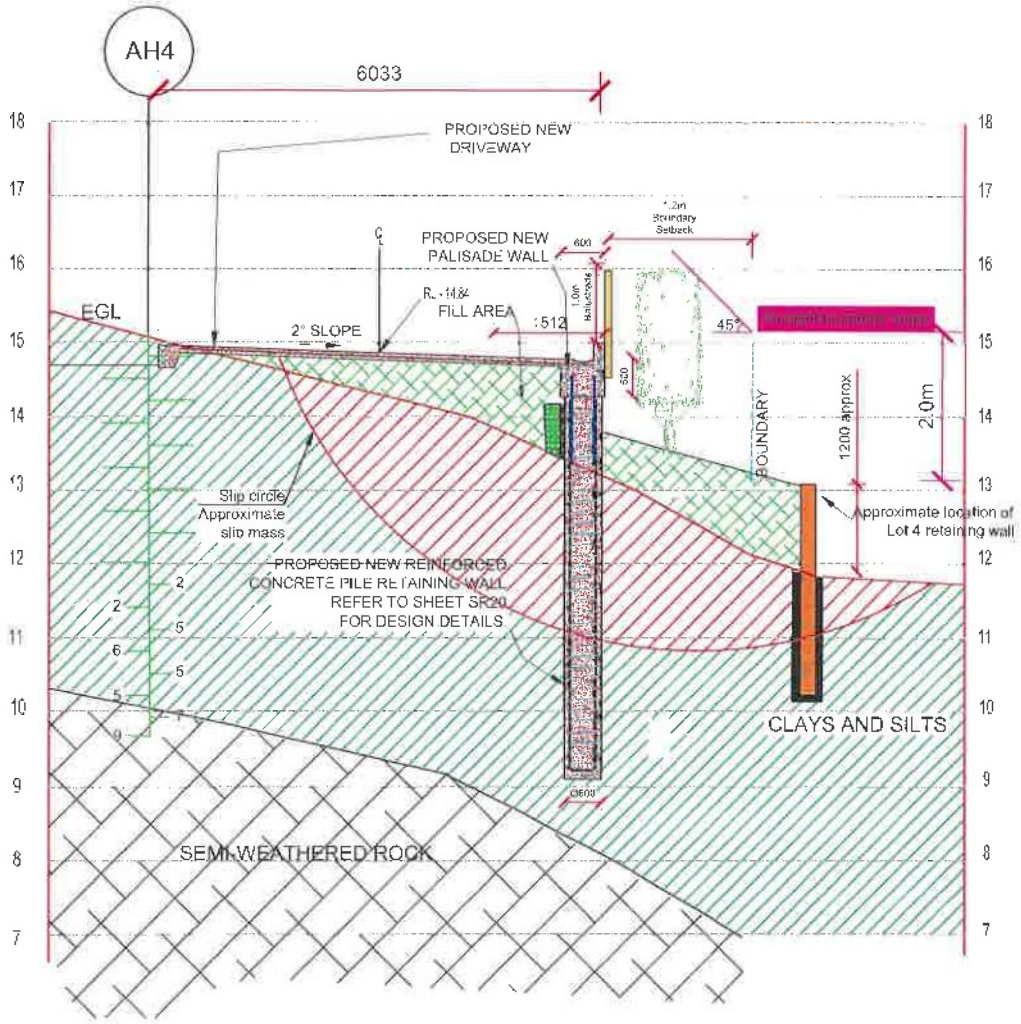
CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 40 Kerikeri Road, P.O. Box 464 KERIKERI Ph 09 407 6255 Email: team@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn LW Checked PK Date 16 07 2025 Scale 1:50 (A3) CAD FILE NAME 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No 23-019	SHEET No SR9	R6

PK 7/7
I.L.

ISSUED FOR CONSENT



CROSS-SECTION "J-J"

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 National Bank Building 90 Kerikeri Road P.O. Box 464 KERIKERI	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 10.07.2025 Scale: 1:10 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of P.K. Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019	SHEET No: SR10	R6

HE 201
I. L.

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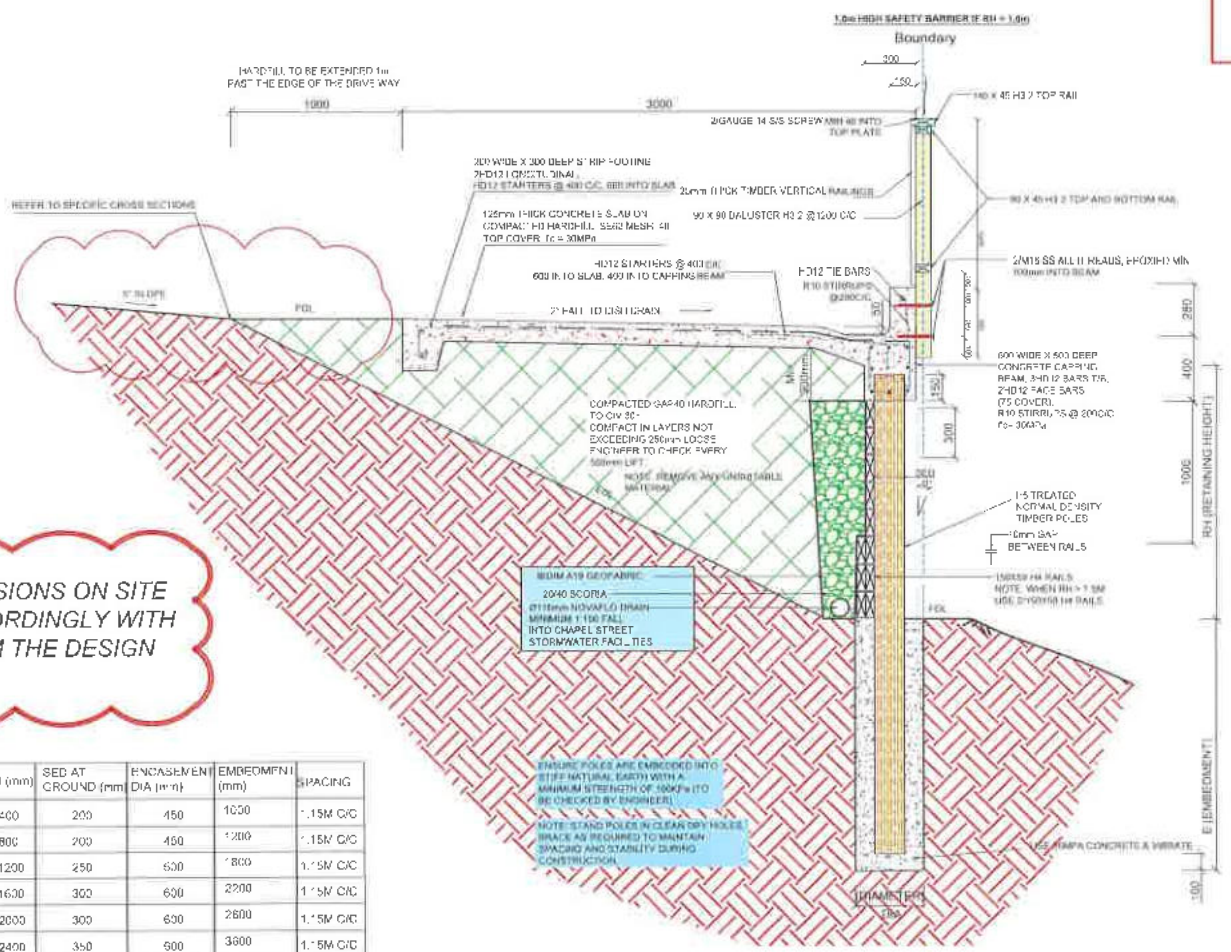

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

POLE NO.	RH (mm)	SED AT GROUND (mm)	ENCASEMENT DIA (mm)	EMBEDMENT (mm)	SPACING
P 1-9	400	200	450	1000	1.15M C/C
P 10-16	800	200	450	1200	1.15M C/C
P 17-22	1200	250	500	1800	1.15M C/C
P 23-27	1600	300	600	2200	1.15M C/C
P 28-31	2000	300	600	2600	1.15M C/C
P 32-36	2400	350	600	3000	1.15M C/C
P 37-38	2650	375	600	4000	1.15M C/C

ENGINEER TO INSPECT AND APPROVE OF ALL BORED HOLES PRIOR TO PLACEMENT OF POLES.

TYPICAL DRIVEWAY SECTION - PROPOSED CANTILEVER RETAINING WALL (TYPE A)
SCALE 1:30

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

PK ENGINEERING LIMITED
CHARTERED PROFESSIONAL ENGINEERS

LEVEL 3
National Bank Building
50 Kerikeri Road,
P.O. Box 464
KERIKERI
Tel. 0800 4279255
E-mail: Team@PKEngineers.co.nz

PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS
15 Chapel Street, Russell

CLIENT: Paul & Erina Van Koningsveld

DRAWING: CANTILEVER RW DETAIL (TYPE A)

Drawn	Checked	Date	Scale	CAD FILE NAME	SHEET No.	
JW	PK	16 07 2025	1:30	23-019.dwg	SR11	R6

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PROJECT No. 23-019

PK
I.L.

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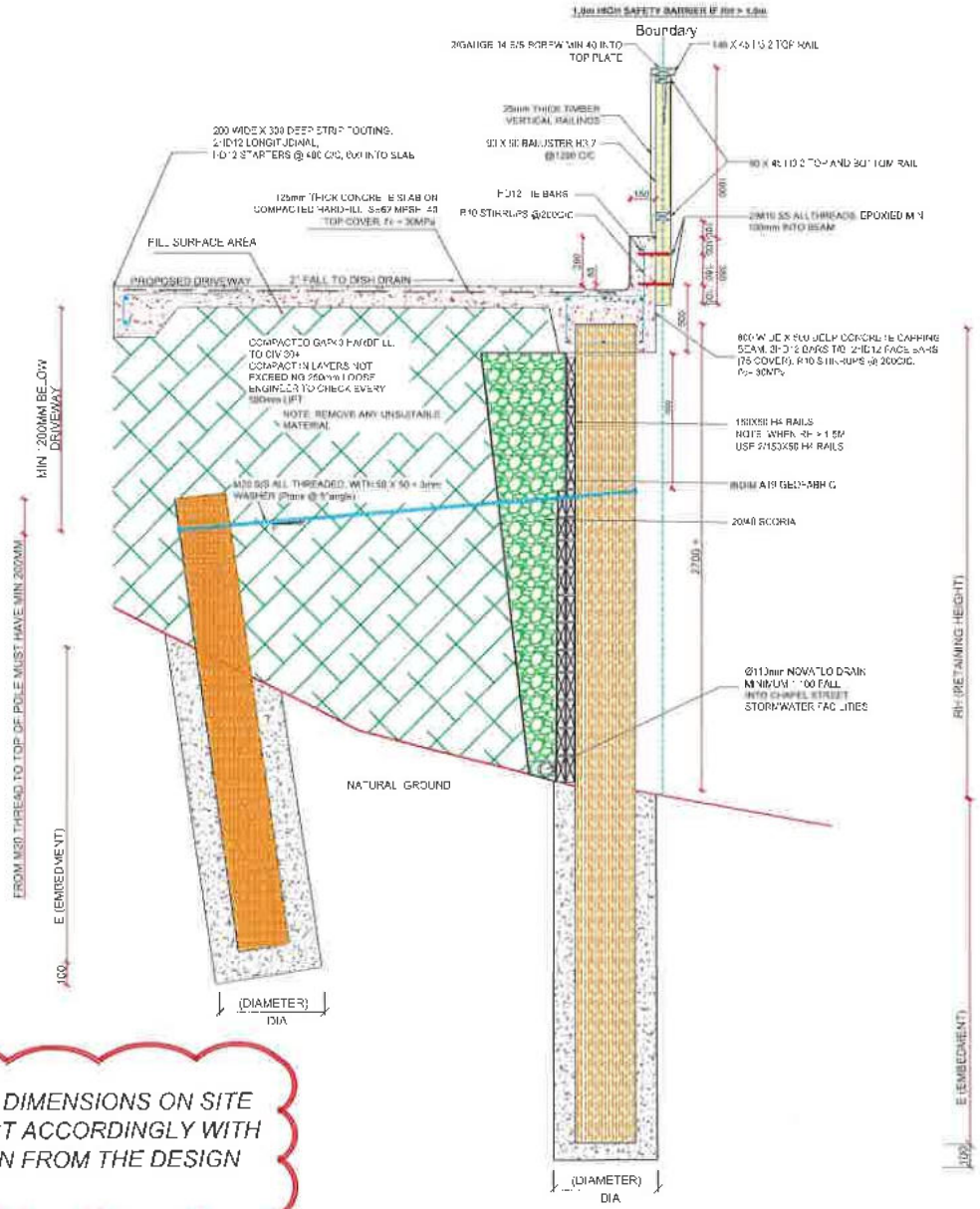


POLE NO.	RETAINED HEIGHT (MM)	PROPPED HEIGHT (MM)	POLE SED (MM)	EXCASEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1- 4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

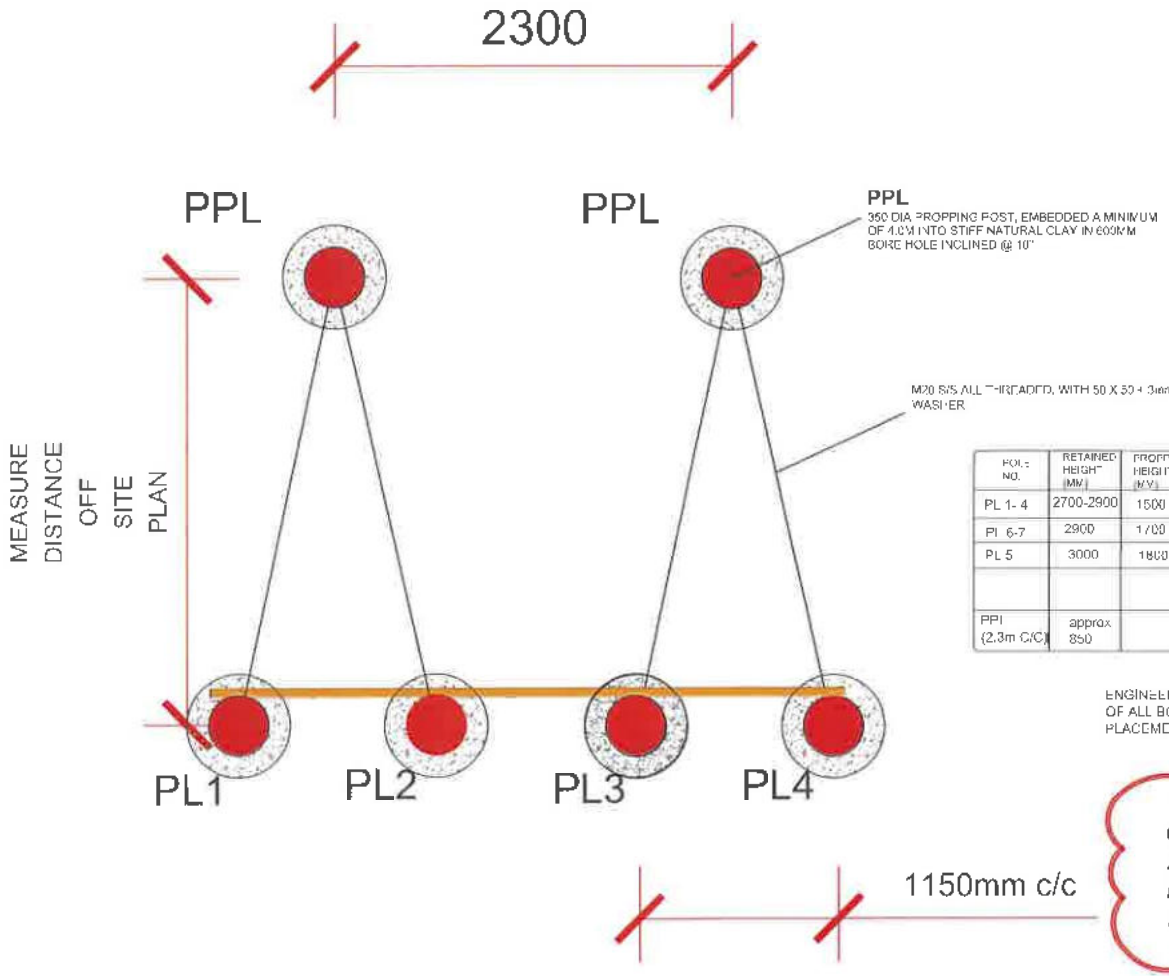
PROPPED CANTILEVER RETAINING WALL (TYPE B)
SCALE 1:30

PK ENGINEERING LIMITED
DATE: 16.07.2025
CHECKED BY:

HEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 3 National Bank Building 90 Parade Road, P.O. Box 464 KERIKERI Tel: (09) 407 3255 E mail: Team@pkengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: PROPPED CANTILEVER RW DETAIL-TYPE B	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:30 CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No: 23-019	SHEET No: SR12	R6

ISSUED FOR CONSENT



POLE NO.	RETAINED HEIGHT (MM)	PROPPED HEIGHT (MM)	POLE SED (MM)	EXCAVEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1- 4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

ENGINEER TO INSPECT AND APPROVE OF ALL BORED HOLES PRIOR TO PLACEMENT OF POLES.

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PROPPED CANTILEVER POLE DESIGN TABLE TYPE B
SCALE 1:30

HE 7M
L.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Fenton Street, P.O. Box 404 KERIKERI Tel (09) 407 7255	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING PROPPED CANTILEVER POLE DETAIL	Drawn AW	Checked PK	Date 16.07.2025	Scale 1:30	CAD FILE NAME 23-019.dwg PROJECT No 23-019	SHEET No SR13	R6

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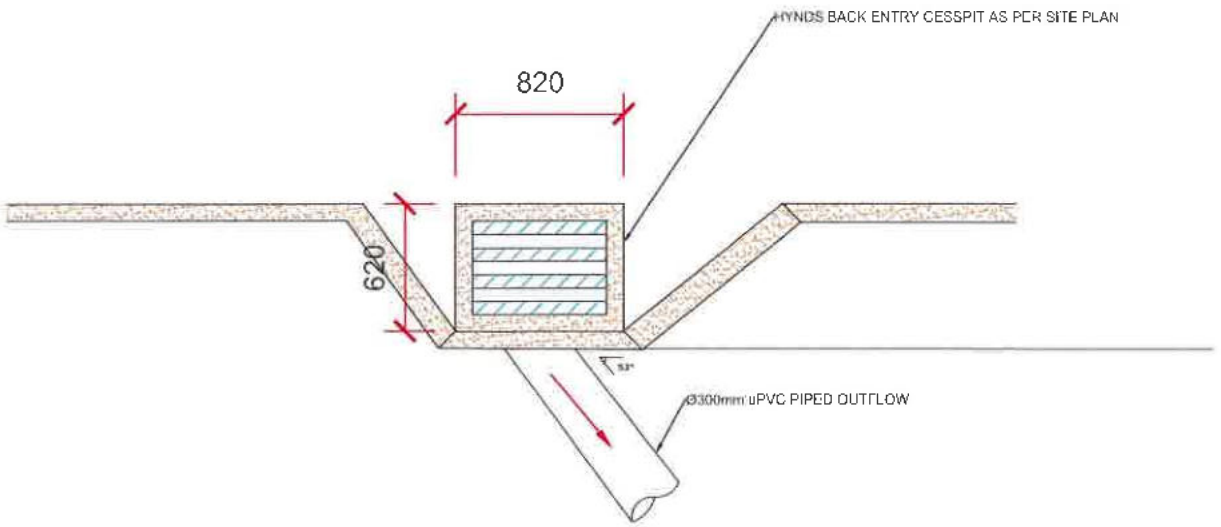
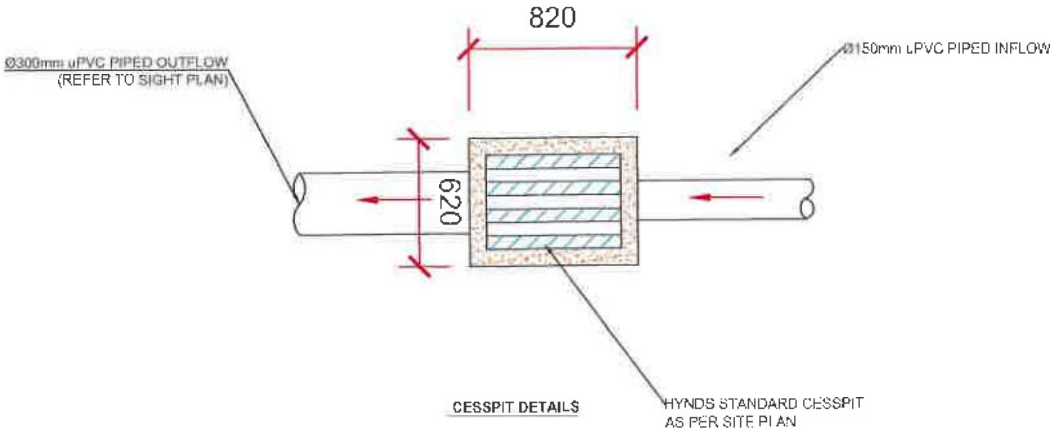


ISSUED FOR CONSENT

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

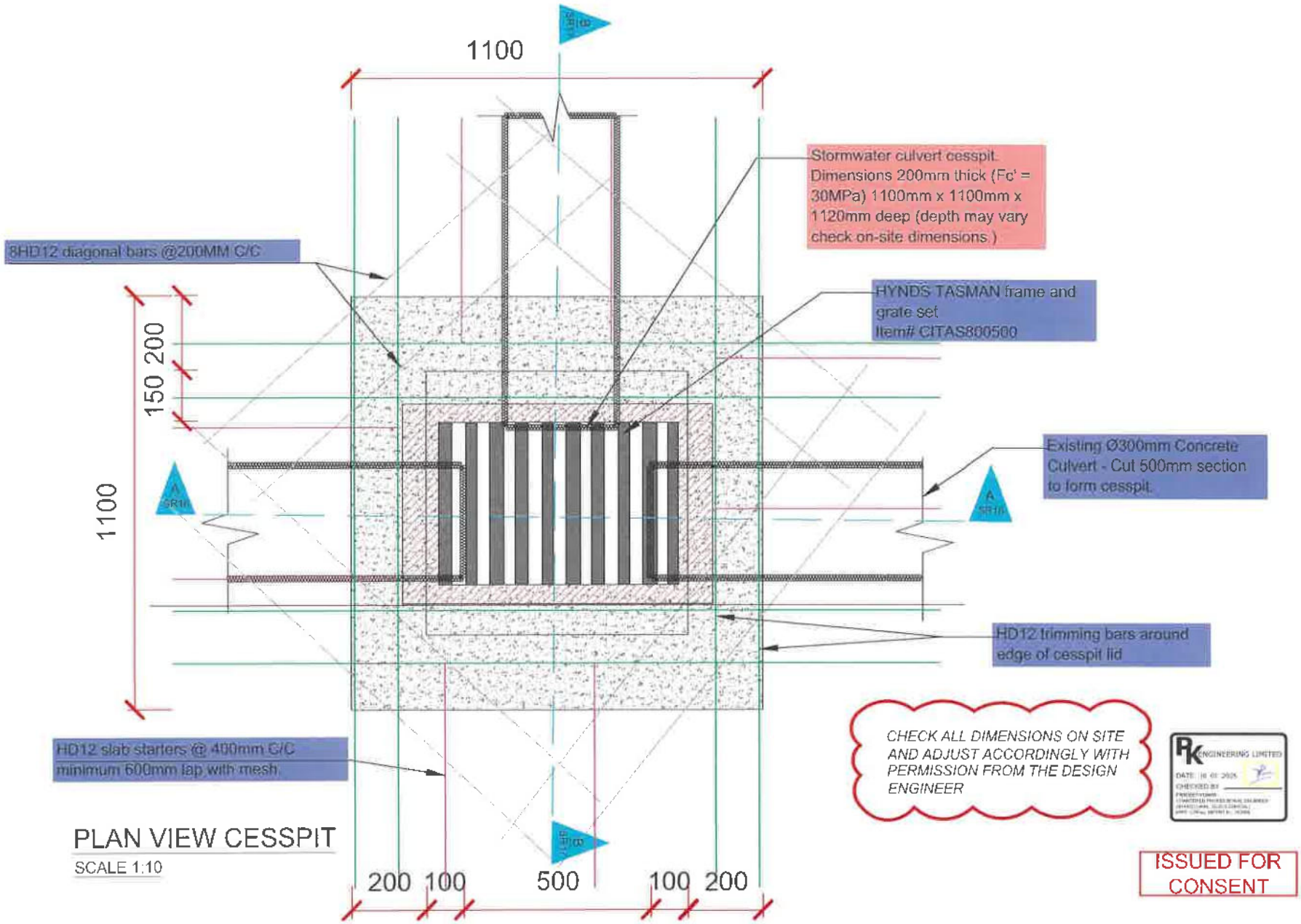
BACK ENTRY CESSPIT DETAILS



CESSPIT DETAILS

AEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Northcote Point Building 50 Kitchener Road, P.O. Box 464 KERIKERI Tel. (09) 4070200 Email: [illegible]	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CESSPIT DETAILS	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:25 (A3) This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	CAD FILE NAME 23-019.dwg PROJECT No 23-019	SHEET No SR14	R6



PLAN VIEW CESSPIT

SCALE 1:10

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY

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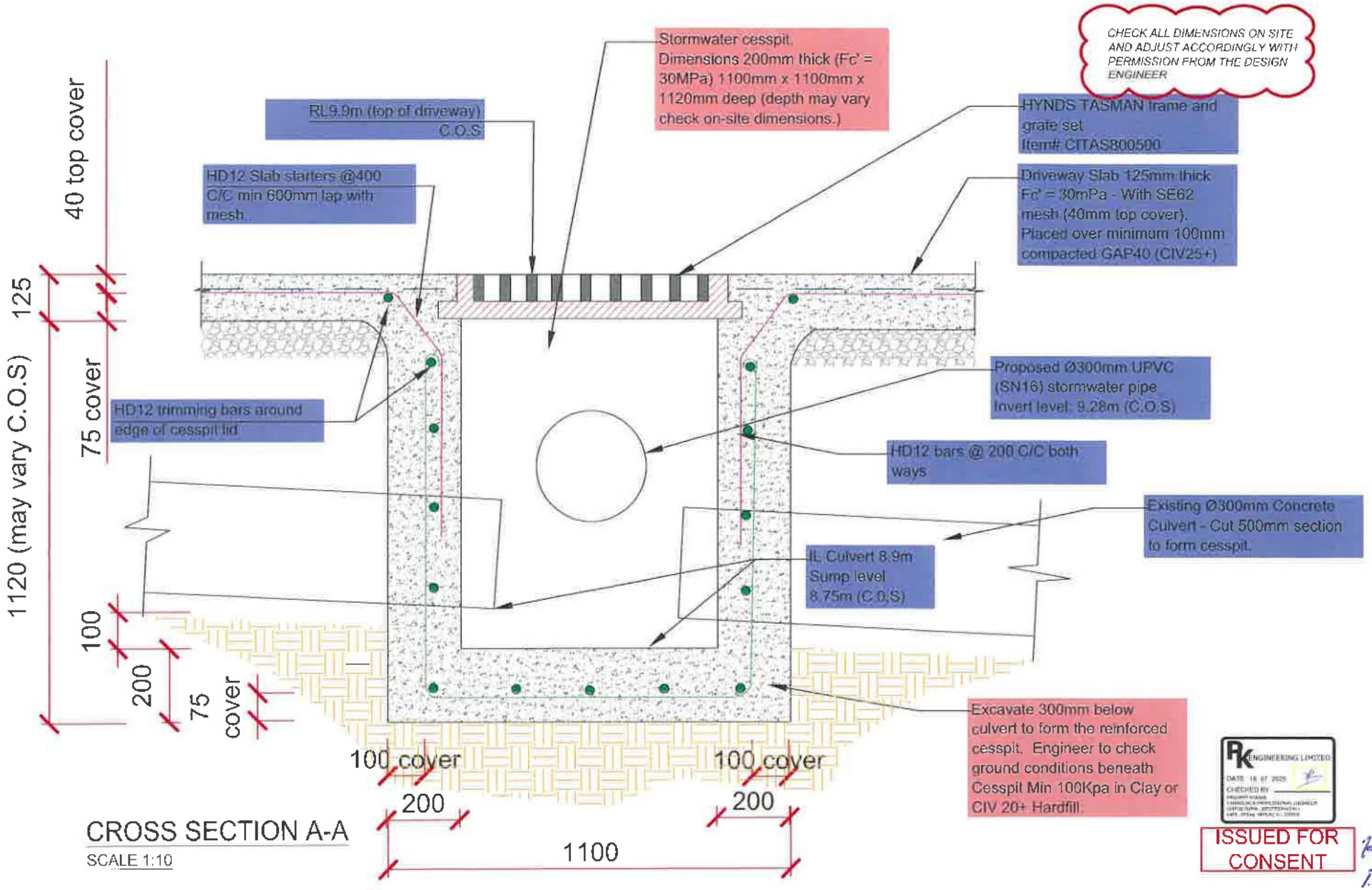
HEM
I.L.

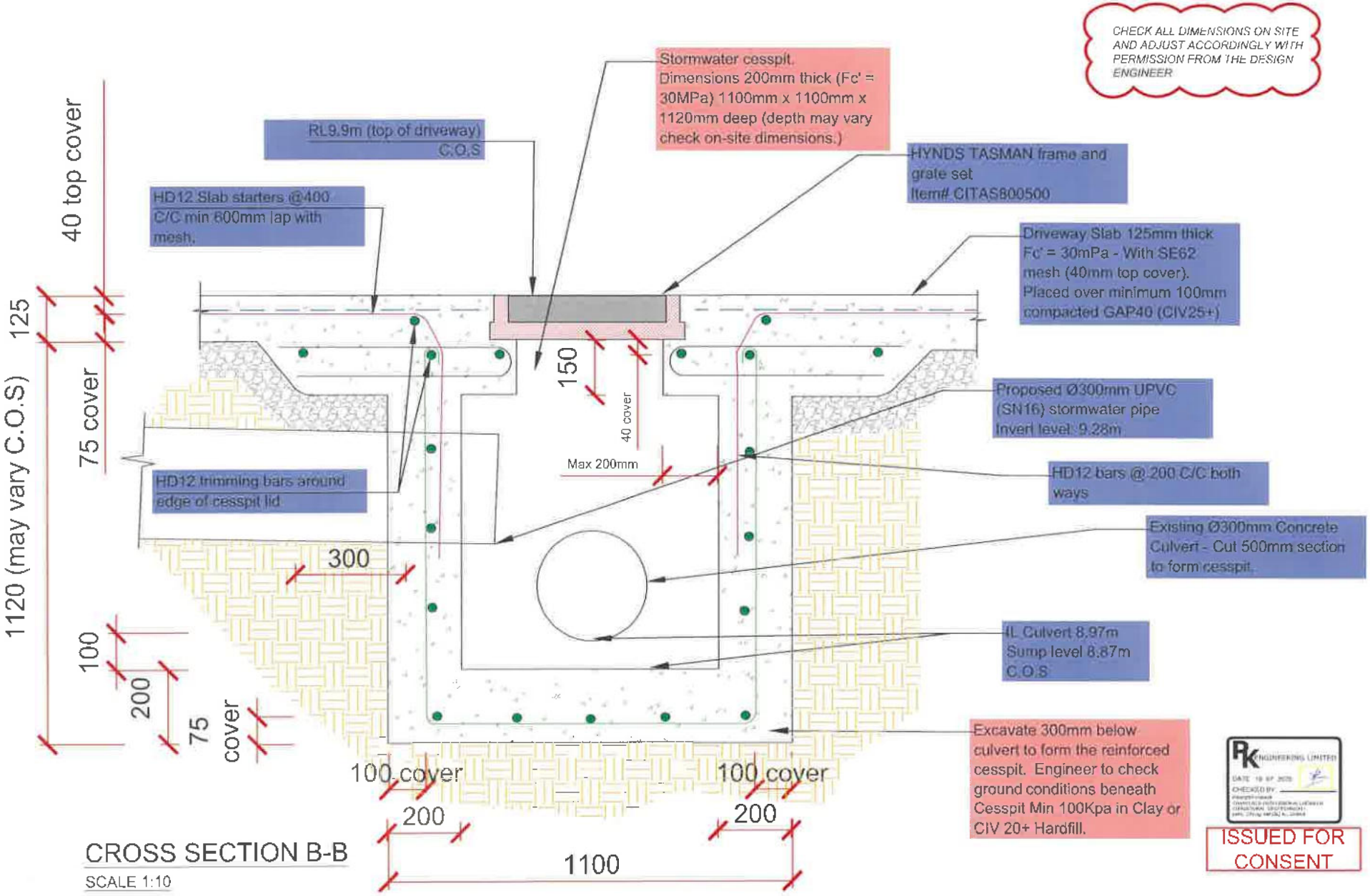
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri road, P O Box 464 KERIKERI Tel (09) 4073353 E mail TeamPK@pkeng.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CULVERT CESSPIT DETAIL	Drawn JW Checked PK Date 16 07 2025 Scale 1:10 (A3) This design and drawing is the copyright of P.K. Engineering Limited and shall not be reproduced without written permission	PROJECT No 23-019	SHEET No SR15	R6



CROSS SECTION A-A

SCALE 1:10

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri road, P.O. Box 484 Kerikeri Te 0800 / 201323 Email: Terence@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CULVERT CESSPIT DETAIL	Drawn JW / Checked PK / Date 16.07.2025 / Scale 1:10 (A3) / CAD FILE NAME 23-019.dwg	This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No 23-019	SHEET No SR15	R6



CROSS SECTION B-B

SCALE 1:10

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 90 Kerikeri Road, P.O. Box 464 KERIKERI Tel 0994 40 7153 e-mail Team@PKengineers.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CULVERT CESSPIT DETAIL	Drawn JW	Checked PK	Date 15 07 2025	Scale 1:10 (A3)	CAD FILE NAME 23-019.dwg
									PROJECT No 23-019

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SHEET No SR15 | R6

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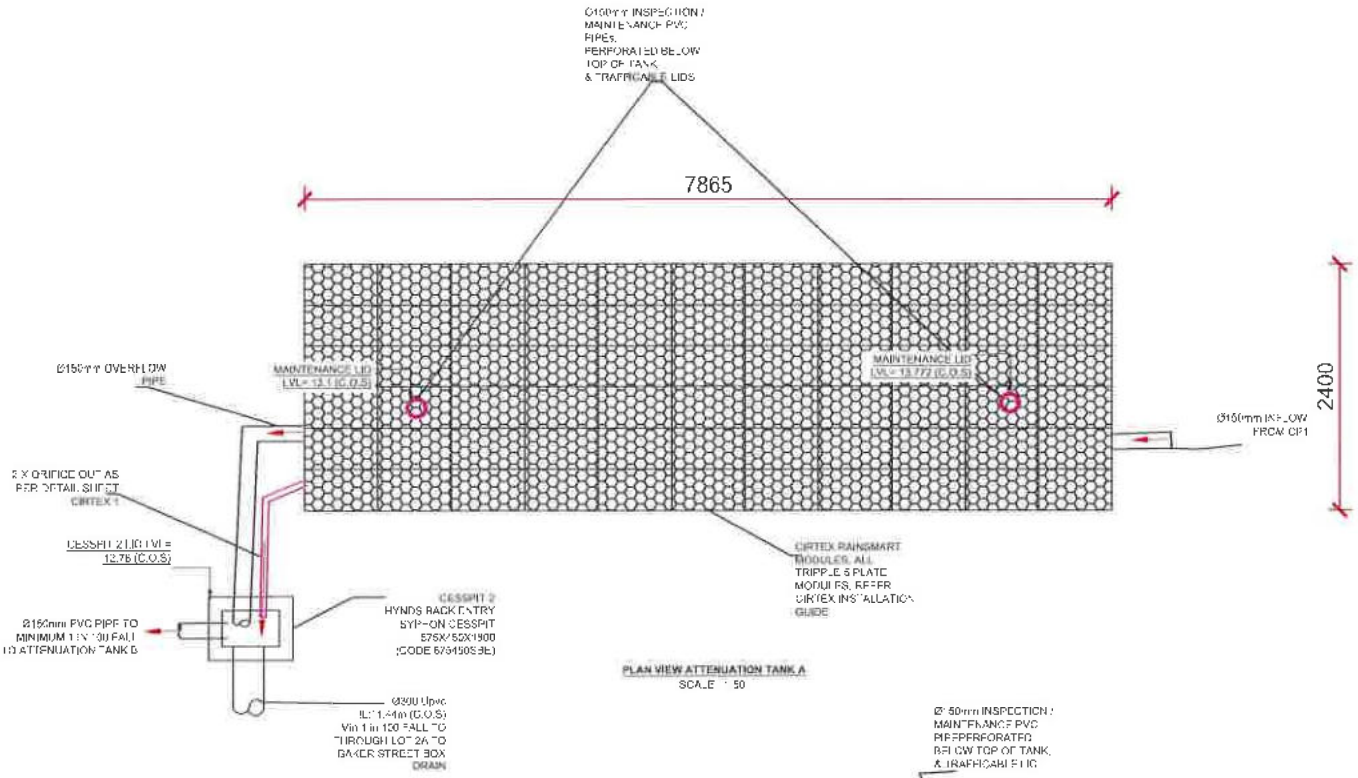
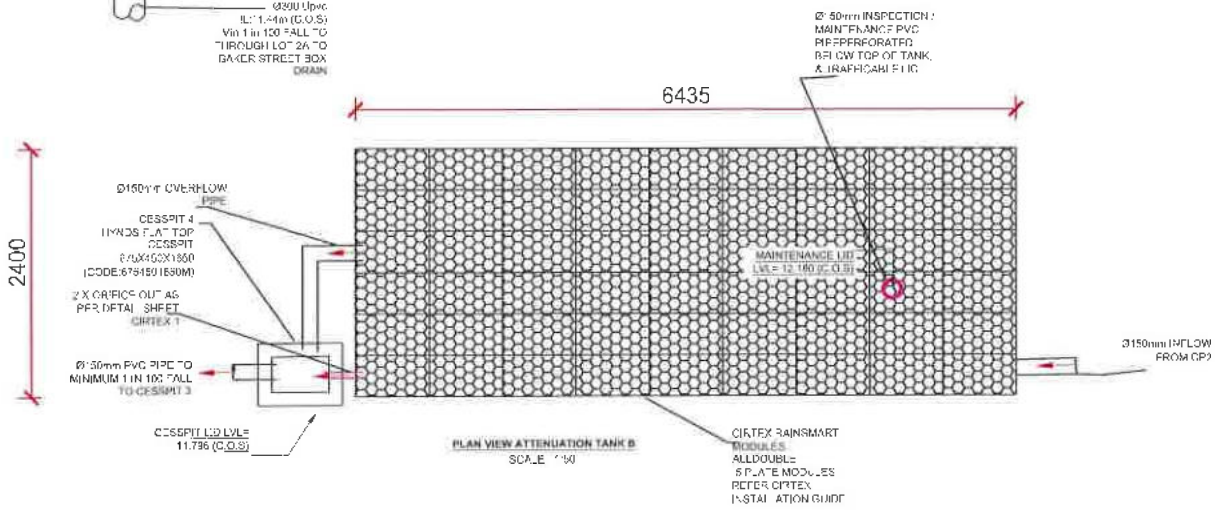


PLAN VIEW ATTENUATION TANK A
SCALE 1:50



PLAN VIEW ATTENUATION TANK B
SCALE 1:50

PK ENGINEERING LIMITED
DATE 18 07 2025
CHECKED BY

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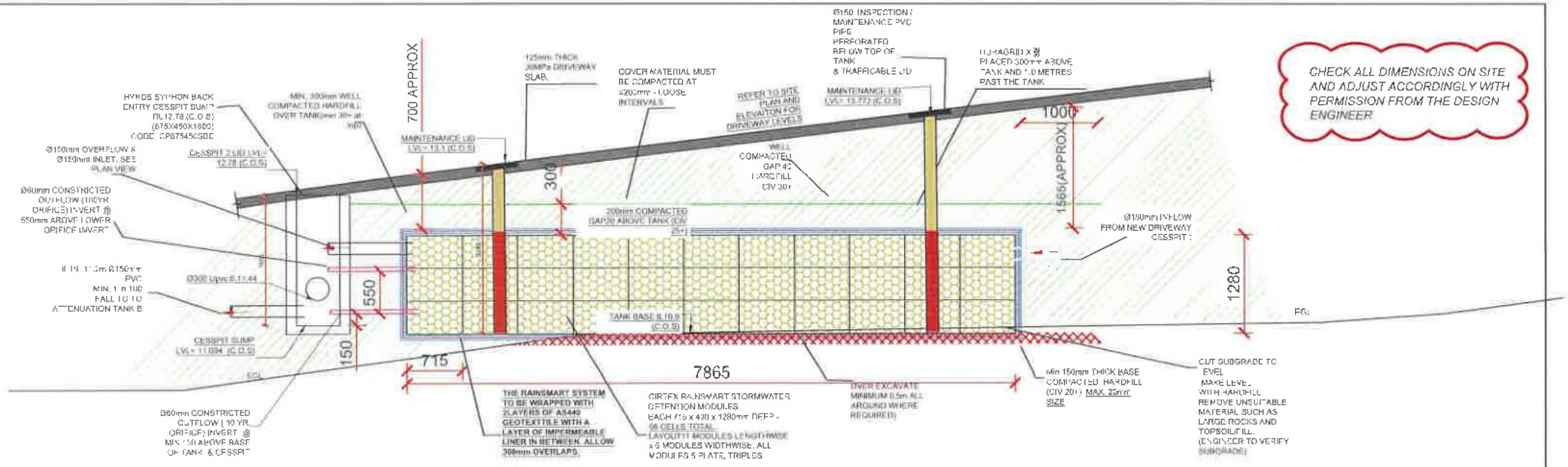
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 95 Kerikeri Road, P.O. Box 424 Kerikeri Tel. (09) 407 0110 Email: kerikeri@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING Attenuation Tanks Plan Views	Drawn: JW Checked: PK Date: 18 07 2025 Scale: 1:50 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and shall not be reproduced without written permission PROJECT No: 23-019	SHEET No: SR18	R6



CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

SECTION THROUGH ATTENUATION TANK A

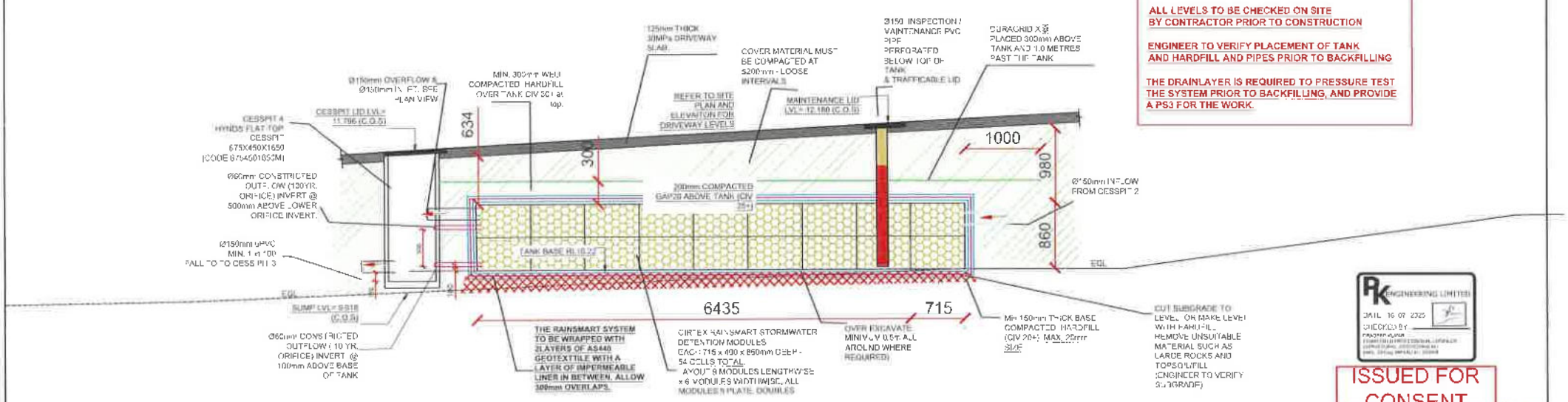
SCALE 1:50

CIRTEX INSTALATION GUIDELINES HAVE BEEN PROVIDED AND SHOULD BE READ IN CONJUNCTION WITH THIS DETAIL.

ALL LEVELS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION

ENGINEER TO VERIFY PLACEMENT OF TANK AND HARDFILL AND PIPES PRIOR TO BACKFILLING

THE DRAINLAYER IS REQUIRED TO PRESSURE TEST THE SYSTEM PRIOR TO BACKFILLING, AND PROVIDE A PS3 FOR THE WORK.



SECTION THROUGH ATTENUATION TANK B

SCALE 1:50

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

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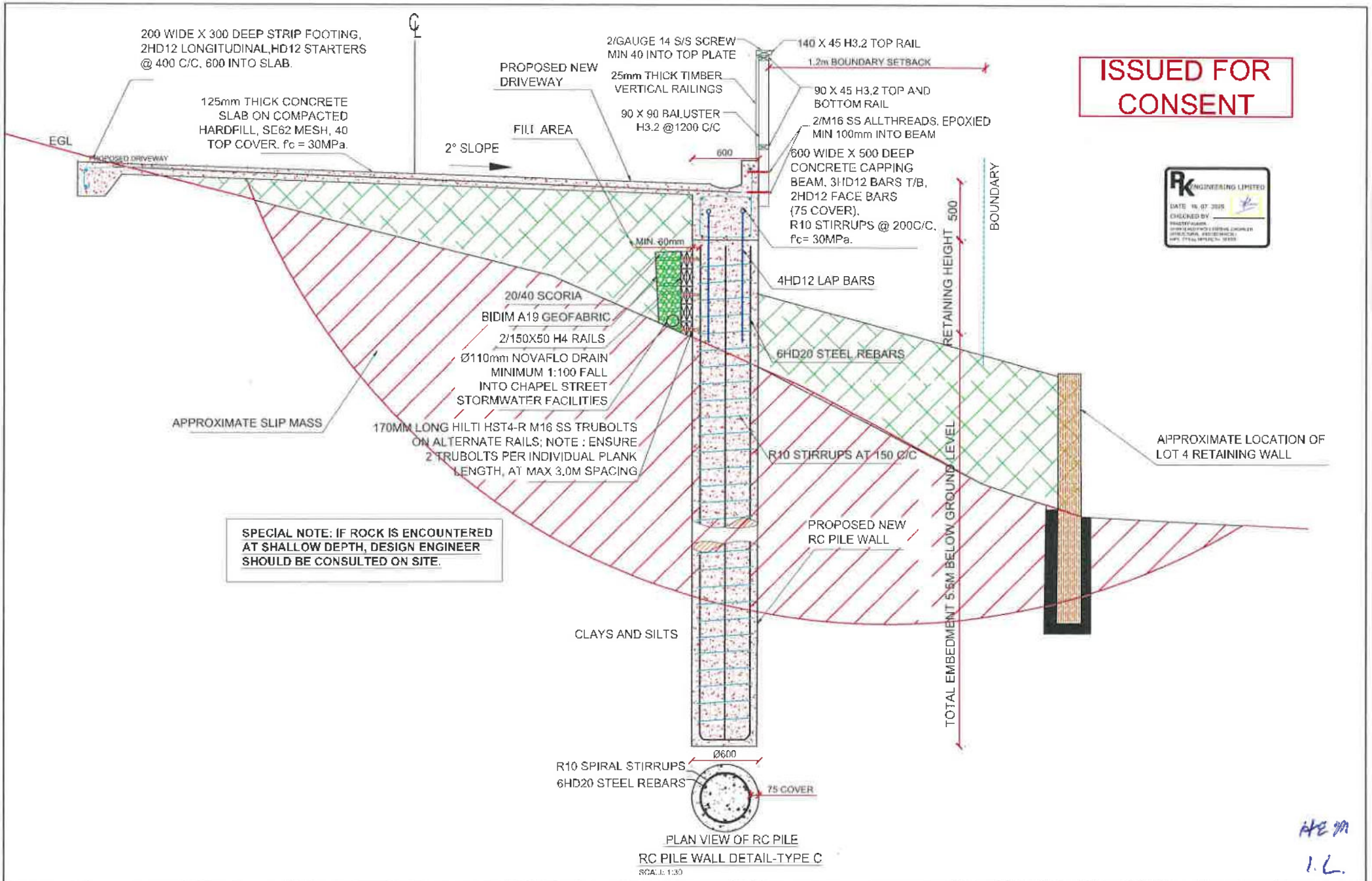
HEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 33 Kerikeri Road P O Box 404 KERIKERI Tel. (09) 407 6755 E-mail. "mail@pkengg.co.nz"	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING Attenuation Tanks Details	Drawn JW Checked PK Date 16 07 2025 Scale 1:50 (A3) CAD FILE NAME 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No. 23-019	SHEET No. SR19 R6



PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Sovereign Bank Building 90 Kerikeri Road, P.O. Box 494 KERIKERI Tel (09) 4073255 E-mail: Team@PKengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: RC PILE WALL DETAIL -TYPE C	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:30 CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of P.K Engineering Limited and is not to be reproduced without written permission	PROJECT No: 23-019	SHEET No: SR20	R6

AHE 7M

I.L.

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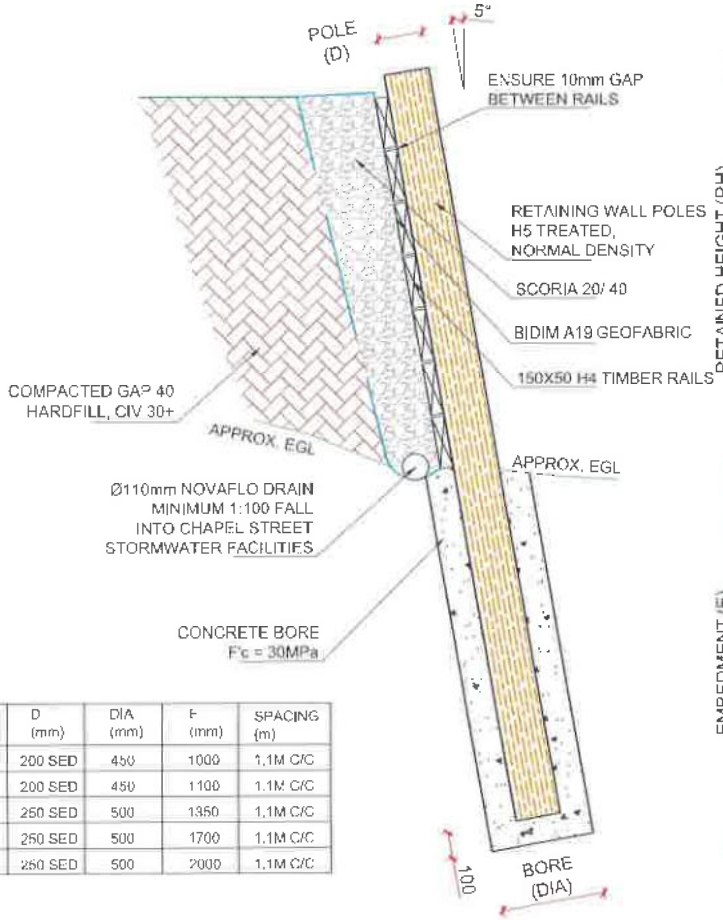
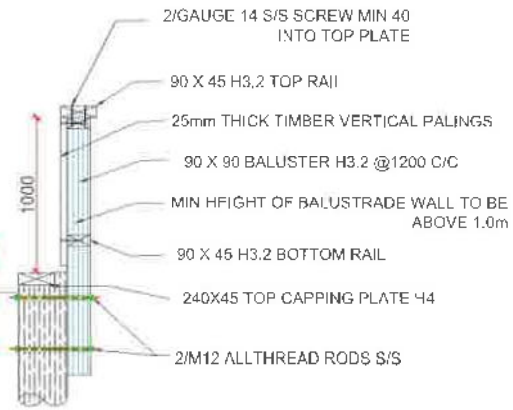


RH (mm)	D (mm)	DIA (mm)	E (mm)	SPACING (m)
400	200 SED	450	1000	1.1M C/C
800	200 SED	450	1100	1.1M C/C
1150	250 SED	500	1350	1.1M C/C
1300	250 SED	500	1700	1.1M C/C
1500	250 SED	500	2000	1.1M C/C

CANTILEVER TIMBER POLE RETAINING WALL- TYPE D

SCALE @1:20



BALUSTRADE WALL CONNECTIONS DETAILS

SCALE 1:20

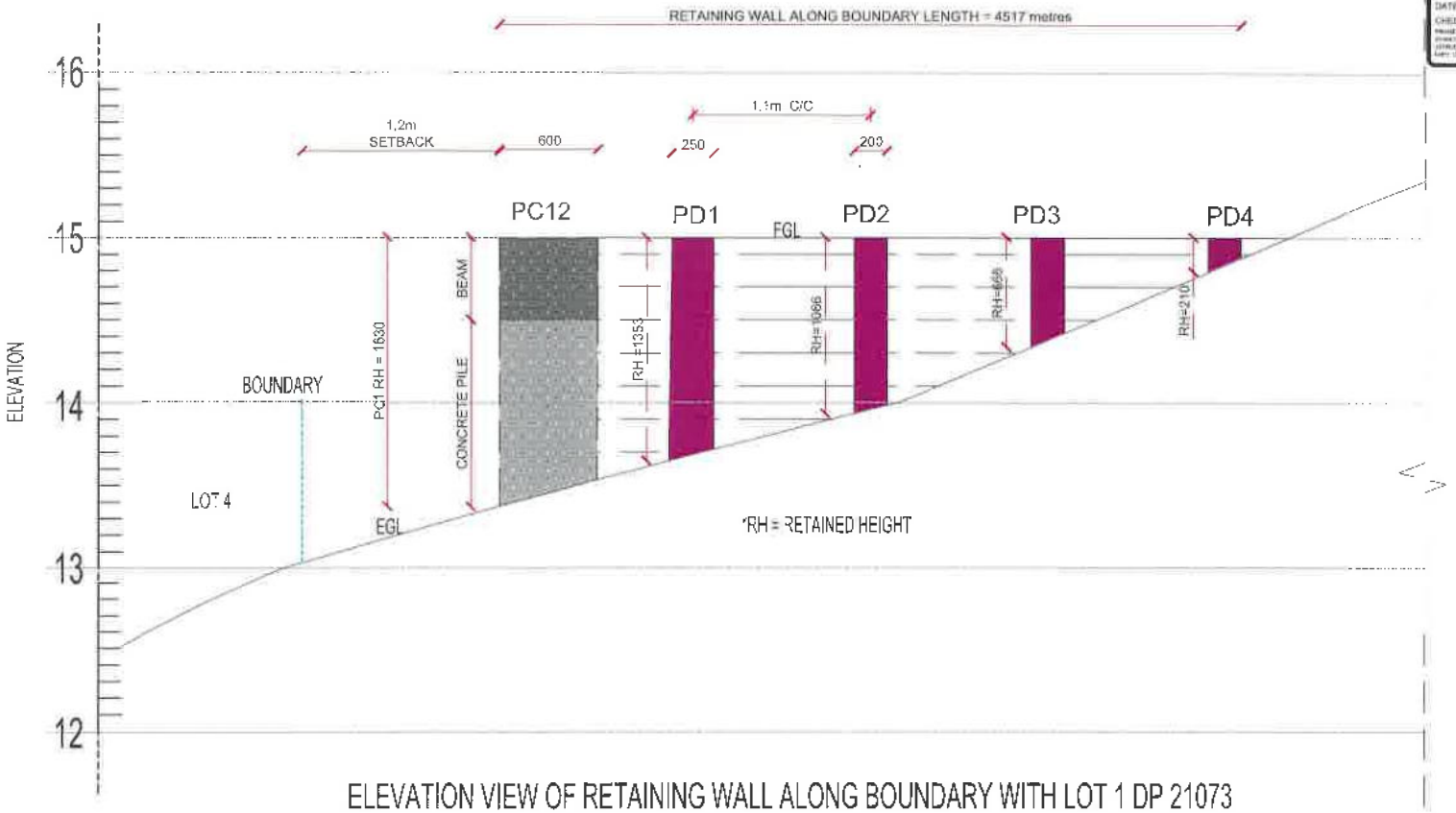
PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

HEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 National Bank Building 30 Kerikeri Road P O Box 484 Kerikeri Tel. (09) 4073255 E-mail: TeamPK@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CANTILEVER RW DETAIL-TYPE D	Drawn JW	Checked PK	Date 16-07-2025	Scale 1:20	CAD File Name 23-019.dwg
					This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission				PROJECT No. 23-019

SHEET No.	
SR21	R6

ISSUED FOR CONSENT



ELEVATION VIEW OF RETAINING WALL ALONG BOUNDARY WITH LOT 1 DP 21073

SCALE 1:30

HEM
I.L.

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Regional Director Building 18 Kerikeri Road P.O Box 454 KERIKERI Tel. (09) 407 7251 Email: Tony@pkengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: ELEVATION VIEW OF RET WALL TYPE D	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:30 This design and drawing is the copyright of P.K.Engineering Ltd and is not to be reproduced without written permission	CAD FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No: SR22	R6

Far North District Council

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Paul van Koningsveld
Address of proposed activity:	15 Chapel Street, Russell and 17 Chapel Street, Russell
Legal description:	Part Section 12 Town of Russell
Description of the proposal (including why you need resource consent):	Proposal to construct a new driveway and associated retaining within the ROW boundary on 17 Chapel Street, Russell, to service 15 Chapel Street, Russell, as per the plans provided and prepared by PK Engineering. Resource consent is requried due to the proposal breaching the permitted rules for setback, sunlight, stormwater management and excavations in the Russell Township Zone under the Operative District Plan. Consent is also required under the Proposed District Plan due to Rule HA-R8.
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	1. Plan set - Proposed new retaining walls and driveway prepared by PK Engineering 2. Job No 23-019, dated 7/3/2024, rev ~~5~~ 6, ~~14~~ 16 July 2025. i.L. 3. 4. 5. 6.

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
3. Please note that when you give your written approval to an application, council cannot take into consideration any actual or potential effects of the proposed activity on you unless you formally withdraw your written approval **before** a decision has been made as to whether the application is to be notified or not. After that time you can no longer withdraw your written approval.
4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	Iain Livingstone and Hamish Edward MacInnes
Address of affected property including legal description	11 Chapel Street, Russell / Allotment 1A Section 12 Town of Russell
Contact Phone Number/s and email address	Daytime: 021 506 432 email: iain.livingstone@hotmail.com

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

*Please note: in most instances the approval of **all** the legal owners and the occupiers of the affected property will be necessary.*

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature	Iain Livingstone	Date	6/9/25
Signature	Hamish Edward MacInnes	Date	6-Sep-25
Signature		Date	
Signature		Date	

ISSUED FOR CONSENT

PK ENGINEERING LIMITED

CHARTERED PROFESSIONAL ENGINEERS

PROJECT:

PROPOSED NEW RETAINING WALLS & DRIVEWAY FOR PAUL & ERINA VAN KONINGSVELD

PROJECT ADDRESS:

15 Chapel Street, Russell

LEGAL DESCRIPTION:

Part Allotment 12, Section 12 Town of Russell

JOB NO:

23-019

DATE:

7/3/2024 (ORIGINAL DATE OF ISSUE)

REVISION:

DRAWING INDEX:

SR0	GENERAL NOTES
SR1	SITE PLAN
SR2A	ENLARGED SITE PLAN (A)
SR2B	ENLARGED SITE PLAN (B)
SR3A	DRIVEWAY ELEVATION PROFILE (A)
SR3B	DRIVEWAY ELEVATION PROFILE (B)
SR4	CROSS SECTION (A-A) (B-B)
SR5	CROSS SECTION (C-C) (D-D)
SR6	CROSS SECTION (E-E) (F-F)
SR7	CROSS SECTION (G-G)
SR8	CROSS SECTION (H-H)
SR9	CROSS SECTION (I-I)
SR10	CROSS SECTION (J-J)
SR11	CANTILEVER RW DETAIL - TYPE A
SR12	PROPPED CANTILEVER RW DETAIL - TYPE B
SR13	PROPPED CANTILEVER POLE DETAIL
SR14	HYNDS CESSPIT DETAIL
SR15	CULVERT CESSPIT DETAIL
SR16	CULVERT CESSPIT DETAIL
SR17	CULVERT CESSPIT DETAIL
SR18	SW ATTENUATION TANKS PLAN VIEWS
SR19	SW ATTENUATION TANKS DETAILS
SR20	RC PILE WALL DETAIL - TYPE C
SR21	CANTILEVER RETAINING WALL DETAIL -TYPE D
SR22	ELEVATION PROFILE ALONG RETAINING WALL TYPE C

SHEET 39 FNDC 2023 STANDARDS MANHOLE REQUIREMENTS
SHEET 32 FNDC 2023 PIPE PROTECTION AND BULKHEAD DETAILS

NOTES:

VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING WORK. USE WRITTEN DIMENSIONS IN PREFERENCE TO SCALING THESE DRAWINGS. READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS, STRUCTURAL CALCULATIONS, FIRE REPORT & STRUCTURAL SPECIFICATIONS. BUILDING TO COMPLY WITH NZS3604. ENSURE TO HAVE THE ENGINEERING CALCULATIONS, STRUCTURAL SPECIFICATIONS, STRUCTURAL DRAWINGS & BUILDING PERMIT ON SITE EACH DAY BEFORE COMMENCING WORK. ALL PRODUCTS ARE TO BE STORED & INSTALLED TO MANUFACTURERS SPECIFICATIONS. ALL EXPOSED STRUCTURAL STEEL IS TO BE GALVANIZED AND FINISHED OFF AS PER THE STRUCTURAL STEEL SPECIFICATIONS.

REVISION 6: 16 July 2025

- **Added another drawing sheet SR22 with the elevation profile of the the retaining wall type d along the boundary with Lot 1.**
- **Added aditional retaining height to the retaining wall type d design detail**

A3

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

Tel. (09) 4073255
Fax. (09) 4073268
E-mail. pk.engin@xtra.co.nz

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

NOTES

A : GENERAL

THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND WITH ARCHITECTURAL, SERVICES, CIVIL AND OTHER PROJECT DRAWINGS. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR RESOLUTION.

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.

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.

SUBSTITUTION FOR OR AMENDMENT OF DETAILS SHOWN OR MATERIALS SPECIFIED SHALL NOT BE CARRIED OUT WITHOUT APPROVAL OF THE ENGINEER.

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.

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

ALL DIMENSIONS ARE IN MILLIMETRES, EXCEPT LEVELS AND COORDINATES WHICH ARE IN METRES.

DO NOT SCALE THE DRAWINGS.

ALL DIMENSIONS TO EXISTING WORK SHALL BE VERIFIED BY SITE MEASUREMENT PRIOR TO FABRICATION U.N.O.

C : FOUNDATIONS

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

ANY SOFT SPOTS AT FORMATION LEVEL ARE TO BE DUG OUT AND REPLACED WITH WELL-COMPACTED HARDFILL.

THE TOP SURFACE OF ALL HARDFILL TO RECEIVE A DPC IS TO BE CHOKED WITH SAND.

WHERE REQUIRED PLACE 40 mm SITE CONCRETE UNDER FOUNDATIONS

PLACE DPC UNDER ALL FOUNDATIONS AND GROUND-BEARING SLABS. DPC TO BE PERMATHENE DAMPSTOP 767 or ARMAFOIL INDUSTRIES MOISTOP 748.

D : CONCRETE

ALL STRUCTURAL CONCRETE WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH NZS 3109:2000.

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

SURFACE FINISHES SHALL BE TO NZS 3114:1987. TYPICALLY AS FOLLOWS U.N.O.

BURIED FOUNDATIONS	F1 or U3
CONCRETE EXPOSED TO VIEW	- F4 or U3

REINFORCEMENT SHALL BE TO :

NZS 3402 HOT ROLLED STEEL BARS
NZS 3422 WELDED FABRIC OF DRAWN STEEL WIRE

NOMENCLATURE

D	- DEFORMED BAR GRADE 300E
HD	- DEFORMED BAR GRADE 500E
R	- PLAIN BAR GRADE 300E
HR	- PLAIN BAR GRADE 500E

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

NO REINFORCING SHALL BE RE-BENT ON SITE UNLESS SHOWN ON THE DRAWINGS, AND WHERE RE-BENT SHALL ONLY BE RE-BENT ONCE.

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.

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 DESIGNATION		LAP LENGTH
HD10	-	562
HD12	-	675
HD16	-	900
HD20	-	1120

HD24 AND LARGER - REFER DRAWINGS

D10	-	335
D12	-	403
D16	-	540
D20	-	670

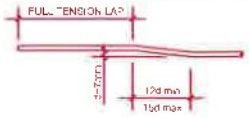
D24 AND LARGER - REFER DRAWINGS

10. (a) DENOTES

(b) DENOTES

(c) DENOTES or BEND AND STANDARD HOOK

(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 OF AN 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 DuraBeam 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 E49XX 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 4230:2004 & 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.

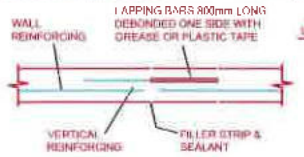
8. UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS, MINIMUM SPLICE LAP LENGTH FOR DEFORMED BARS SHALL BE

40 BAR DIAMETERS FOR GRADE 300 STEEL.

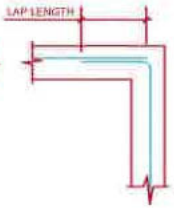
60 BAR DIAMETERS FOR GRADE 500 STEEL.

60 BAR DIAMETERS FOR GRADE 500 STEEL.

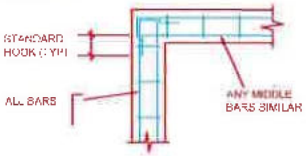
8. PLAN - CONSTRUCTION JOINT



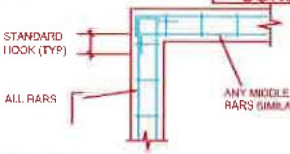
10. PLAN - TYPICAL CORNER DETAIL



11. PLAN - FOUNDATION CORNER

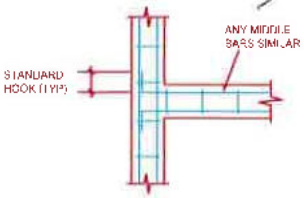


11. PLAN - FOUNDATION CORNER

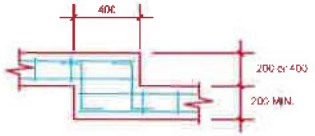


ISSUED FOR CONSENT

12. PLAN - FOUNDATION JUNCTION



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 "MEDLEX" ON THE CUT SURFACE.

PK ENGINEERING LIMITED
DATE 23 05 2023
CHECKED BY
PROJECT MANAGER
(CHARTERED PROFESSIONAL ENGINEER STRUCTURAL, GEOTECHNICAL)
NZR CPEng NPER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Regional Bank Building 40 Kerikeri Road, P.O.Box 464 Kerikeri Tel. 09 407 0350 E-mail: Team@pkengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: GENERAL NOTES	Drawn: JW Checked: PK Date: 16 07 2025 Scale: AS SHOWN CAD FILE NAME: 23-019.dwg	SHEET No: S0 R6
					This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission.	PROJECT No 23-019

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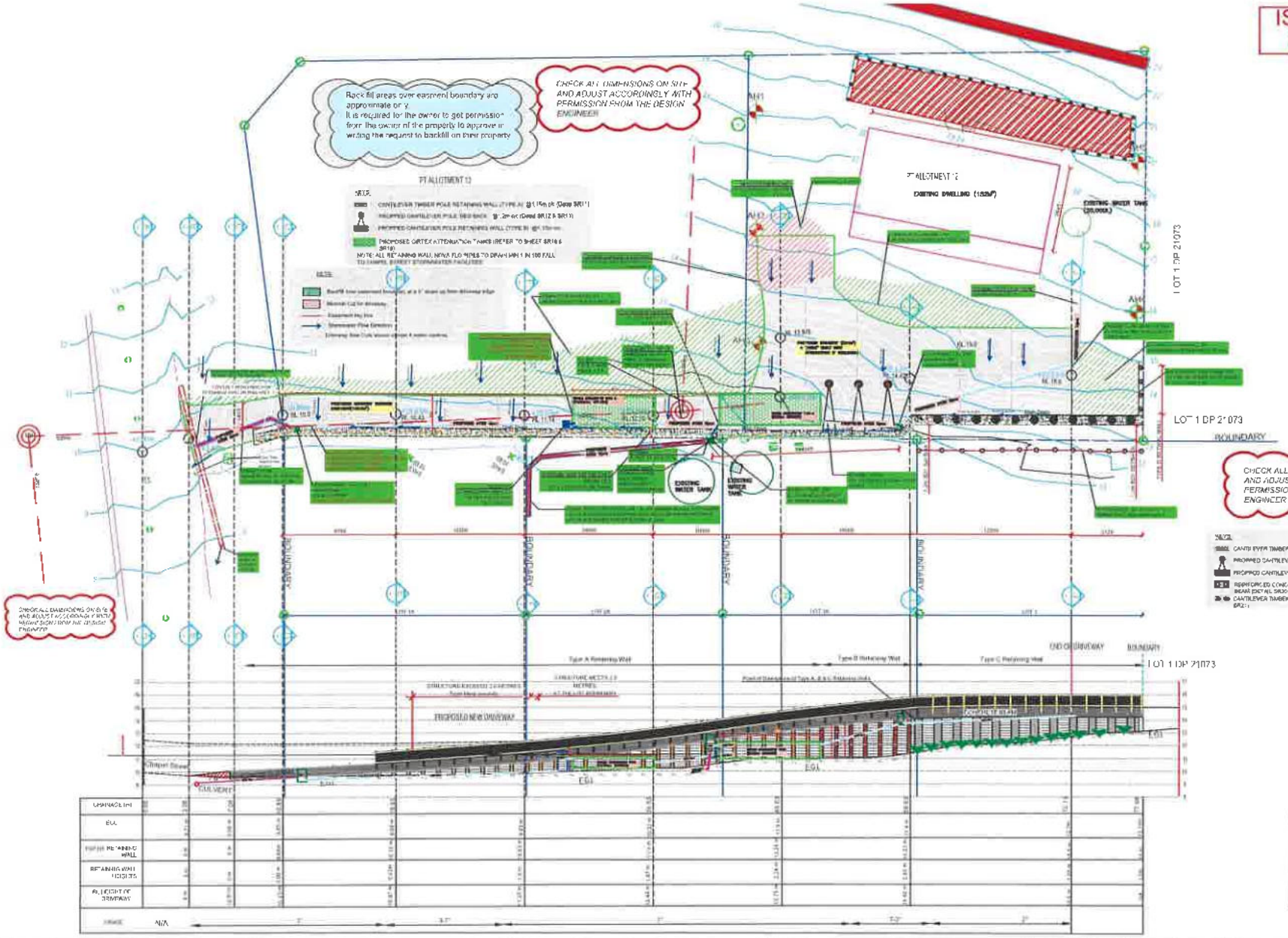

PK ENGINEERING LIMITED
DATE 18 07 2025
CHECKED BY

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 50 Kerikeri Road P.O. Box 454 KERIKERI Tel 09 407 0055 Email Kerikeri@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING SITE PLAN	Drawn JW Checked PK Date 18 07 2025 Scale 1:300 (A3) FILE NAME 23-019.dwg PROJECT No 23-019	SHEET No SR1	R6

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ISSUED FOR CONSENT

PK ENGINEERING LIMITED
DATE: 18 07 2025
CHECKED BY

KEYS:

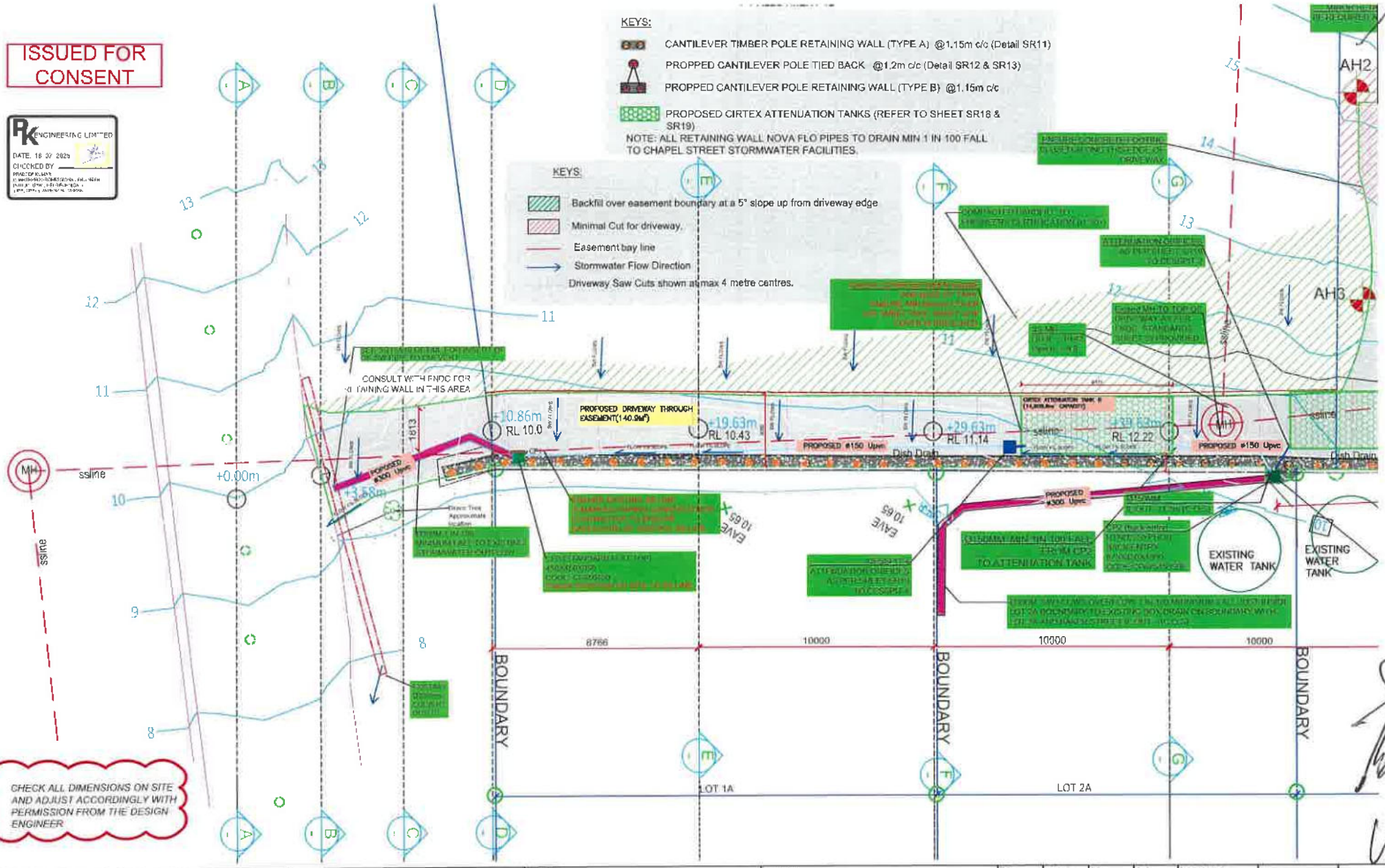
- CANTILEVER TIMBER POLE RETAINING WALL (TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL (TYPE B) @1.15m c/c
- PROPOSED CIRTEX ATTENUATION TANKS (REFER TO SHEET SR18 & SR19)

NOTE: ALL RETAINING WALL NOVA FLO PIPES TO DRAIN MIN 1 IN 100 FALL TO CHAPEL STREET STORMWATER FACILITIES.

KEYS:

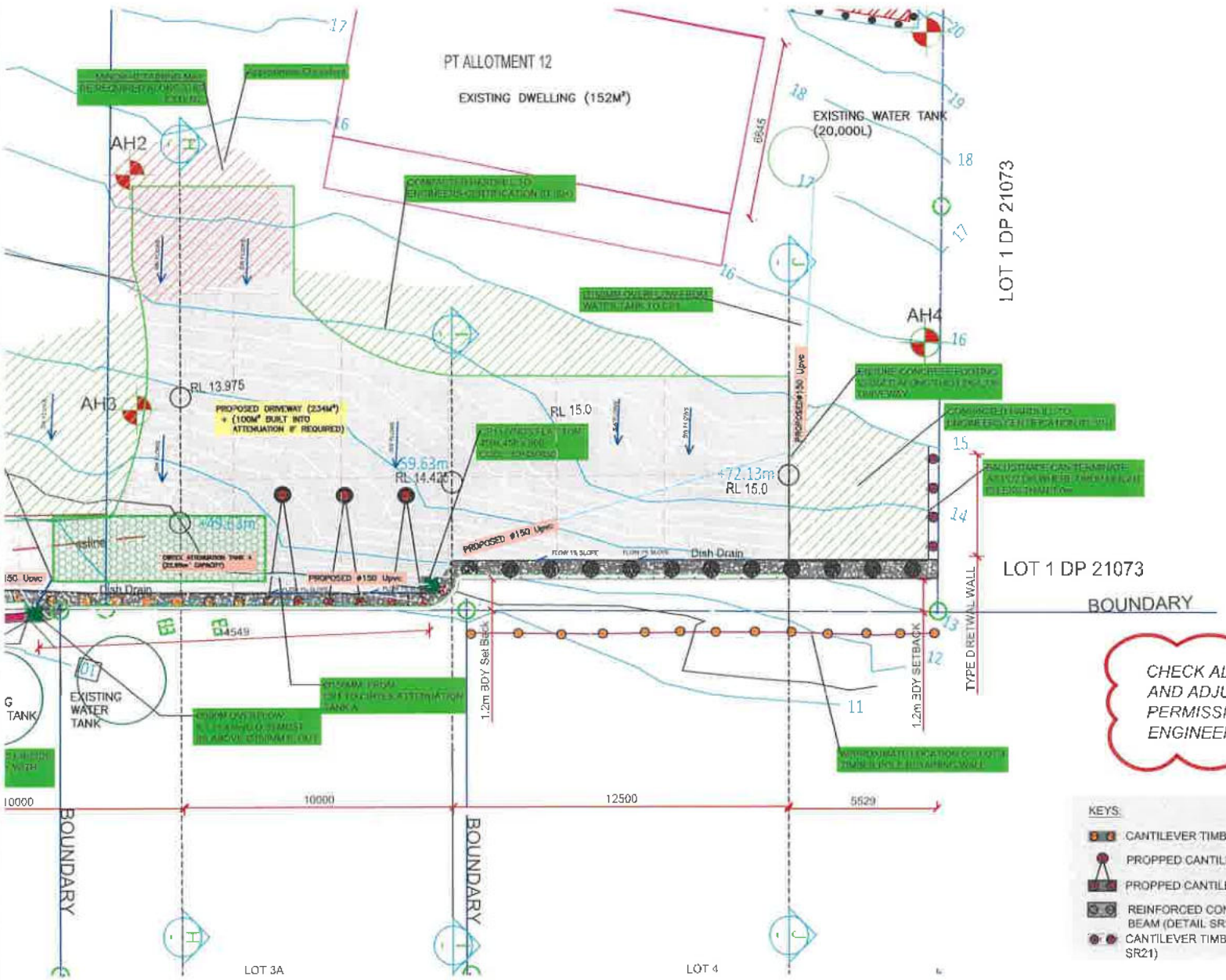
- Backfill over easement boundary at a 5° slope up from driveway edge
- Minimal Cut for driveway.
- Easement bay line
- Stormwater Flow Direction

Driveway Saw Cuts shown at max 4 metre centres.



CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank building 90 Kerikeri Road, P.O. Box 484 KEIKI KERI	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING ENLARGED SITE PLAN A	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:100(A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019	SHEET No: SR2A	R6



ISSUED FOR CONSENT

PK ENGINEERING LIMITED
DATE 15 07 2025
CHECKED BY

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c (Detail SR11)
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c (Detail SR12 & SR13)
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE(TYPE C) @1.5m c/c. WITH CONCRETE BEAM (DETAIL SR20)
- CANTILEVER TIMBER POLE RETAINING WALL(TYPE D) @1.1m c/c (Detail SR21)

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Kaipara Bank Building 10 Fire Station Road, P.O.Box 464 DARGAVILLE Tel (09) 4073255 Email: Team@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING ENGLARGED SITE PLAN B	Drawn JW Checked PK Date 16 07 2025 Scale 1:100 (A3) CAD FILE NAME 23-019.dwg This design and drawing is the copyright of P.K. Engineering Limited and is not to be reproduced without written permission PROJECT No 23-019	SHEET No SR2B	R6

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL @1.15m c/c
- CONCRETE CAPPING BEAM
- PROPOSED TIMBER BALUSTRADE.

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DATE: 16 07 2025
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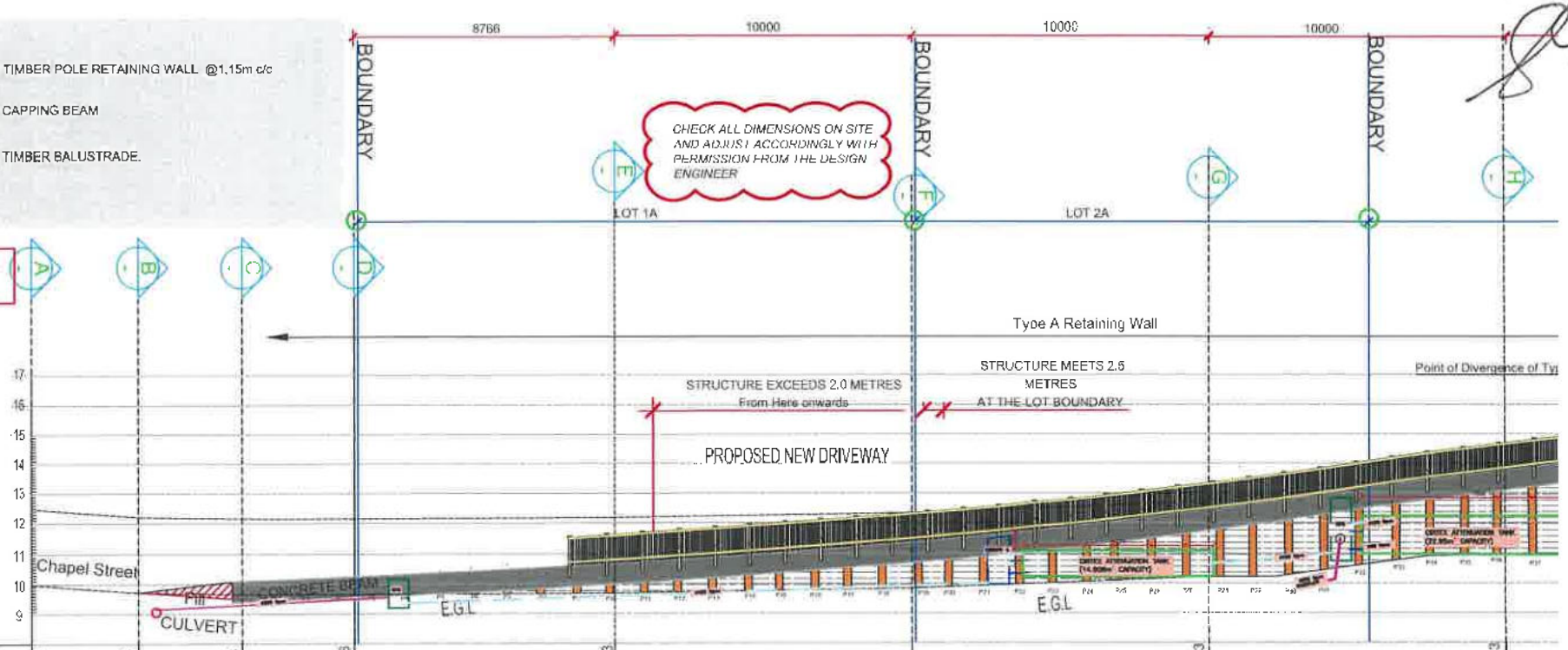

CHAINAGE (m)	0.00	3.58	7.08	10.86	19.63	39.63	49.63
EGL	9.71 m	9.66 m	9.65 m	9.69 m	9.83 m	10.22 m	11.0 m
TOP OF RETAINING WALL	0 m	0 m	9.68m	10.12 m	10.83 m	11.9 m	13.24 m
RETAINING WALL HEIGHTS	0 m	0 m	0.00 m	0.43m	1.0 m	1.67 m	2.24 m
RL HEIGHT OF DRIVEWAY	0 m	10.91m	10.23 m	10.87 m	11.35 m	12.44 m	13.79 m

GRADE N/A — 3° — 3-7° — 7°

PK ENGINEERING LIMITED
CHARTERED PROFESSIONAL ENGINEERS

LEVEL 1
National Bank Building
93 Kerikeri road,
P.O. Box 69
KERIKERI

Tel (09) 407 6255
Email: Team@pkengin.co.nz

PROJECT
PROPOSED NEW DRIVEWAY
&
RETAINING WALLS
15 Chapel Street, Russell

CLIENT
Paul & Erina
Van Koningsveld

DRAWING
DRIVEWAY ELEVATION PROFILE A

Drawn	Checked	Date	Scale	CAD FILE NAME
JW	PK	16 07 2025	1:150 ; A3	23-019.dwg

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PROJECT No: 23-019

SHEET No: SR3A

R6

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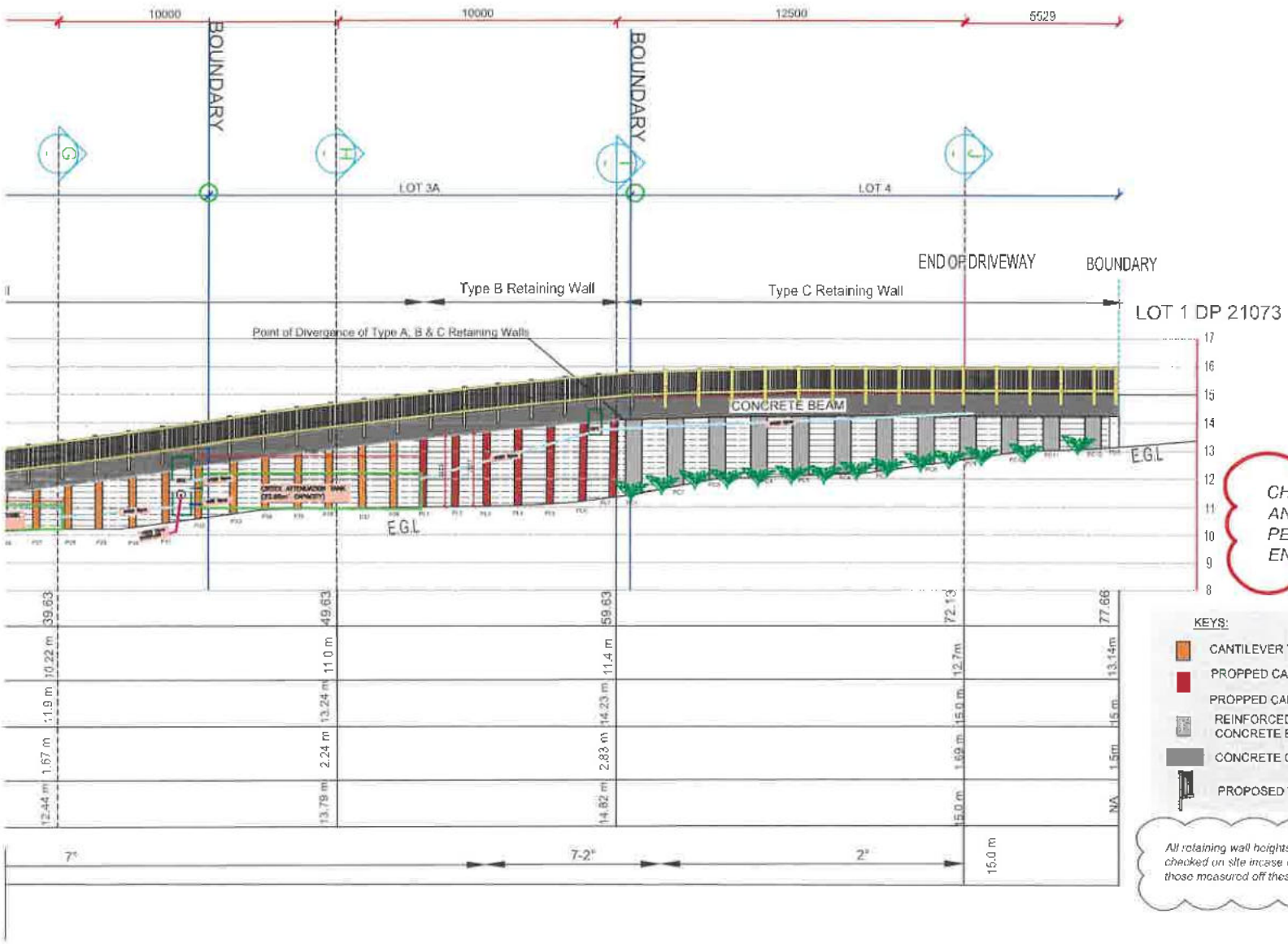


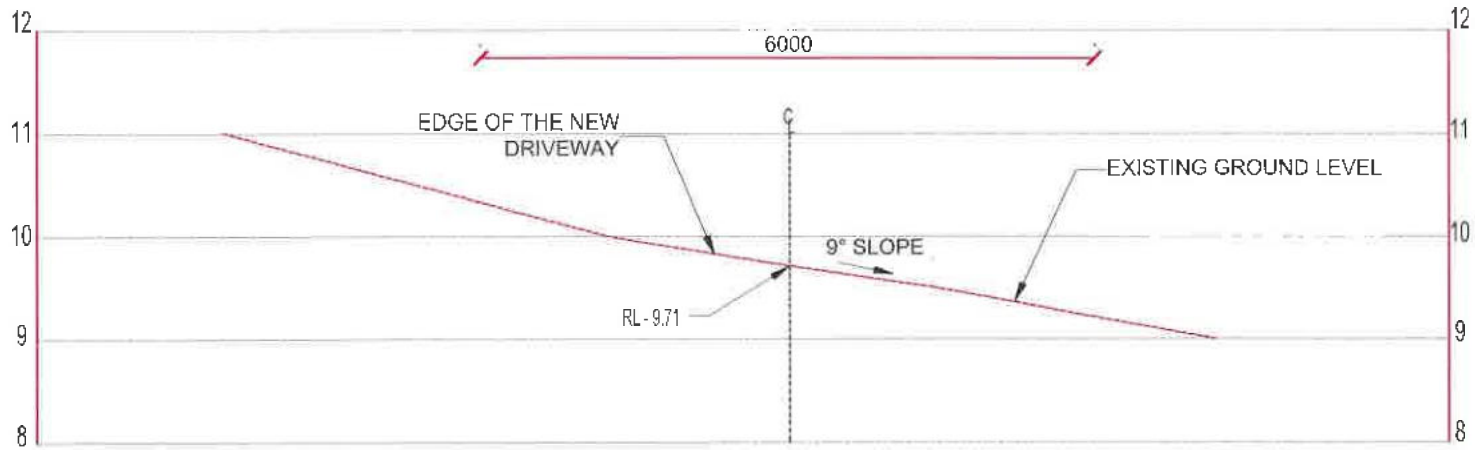
CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

KEYS:

- CANTILEVER TIMBER POLE RETAINING WALL(TYPE A) @1.15m c/c
- PROPPED CANTILEVER POLE TIED BACK @1.2m c/c
- PROPPED CANTILEVER POLE RETAINING WALL(TYPE B) @1.15m c/c
- REINFORCED CONCRETE PILE @1.5m c/c. WITH 0.5M THICK CONCRETE BEAM
- CONCRETE CAPPING BEAM 0.5M DEEP
- PROPOSED TIMBER BALUSTRADE.

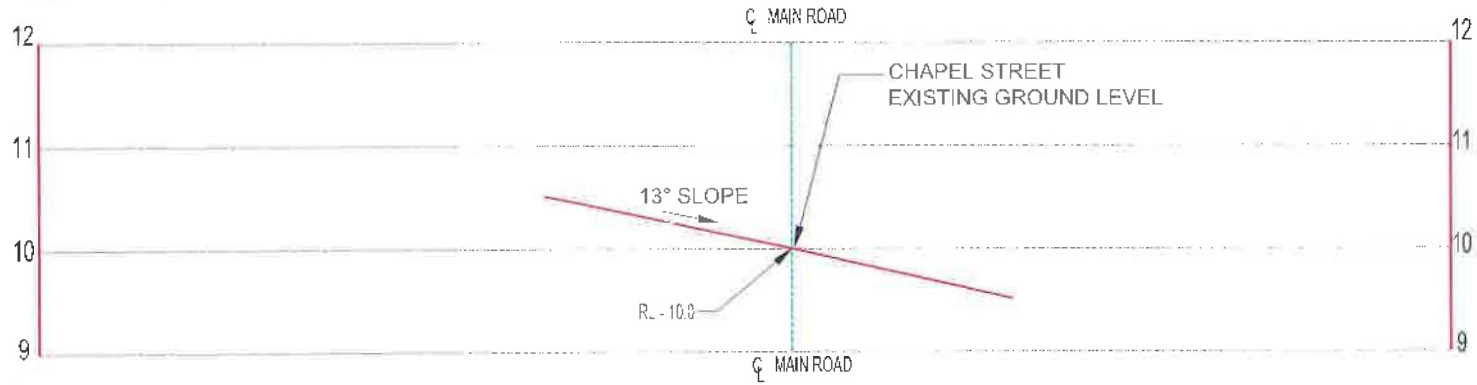
All retaining wall heights should be checked on site incase of variations to those measured off these plans

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 Nelson Suns Building 10 Kinkora Road P.O Box 464 Kerikeri Tel. 0800 467 3259 E-mail: Team@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING DRIVEWAY ELEVATION PROFILE B	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:150 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No: 23-019	SHEET No: SR3B	R6



CROSS-SECTION "B-B"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "A-A"

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DATE 16 07 2026
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PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Russell Bank Building 30 Kerikeri road, P.O Box 164 Kerikeri Tel. (09) 4073255 Email: [illegible]	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16 07 2026 Scale: 1:50 (A3) This design and drawing is the copyright of PK Engineering Limited. It shall not be used or reproduced without our written permission	CAD FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No: SR4	R6

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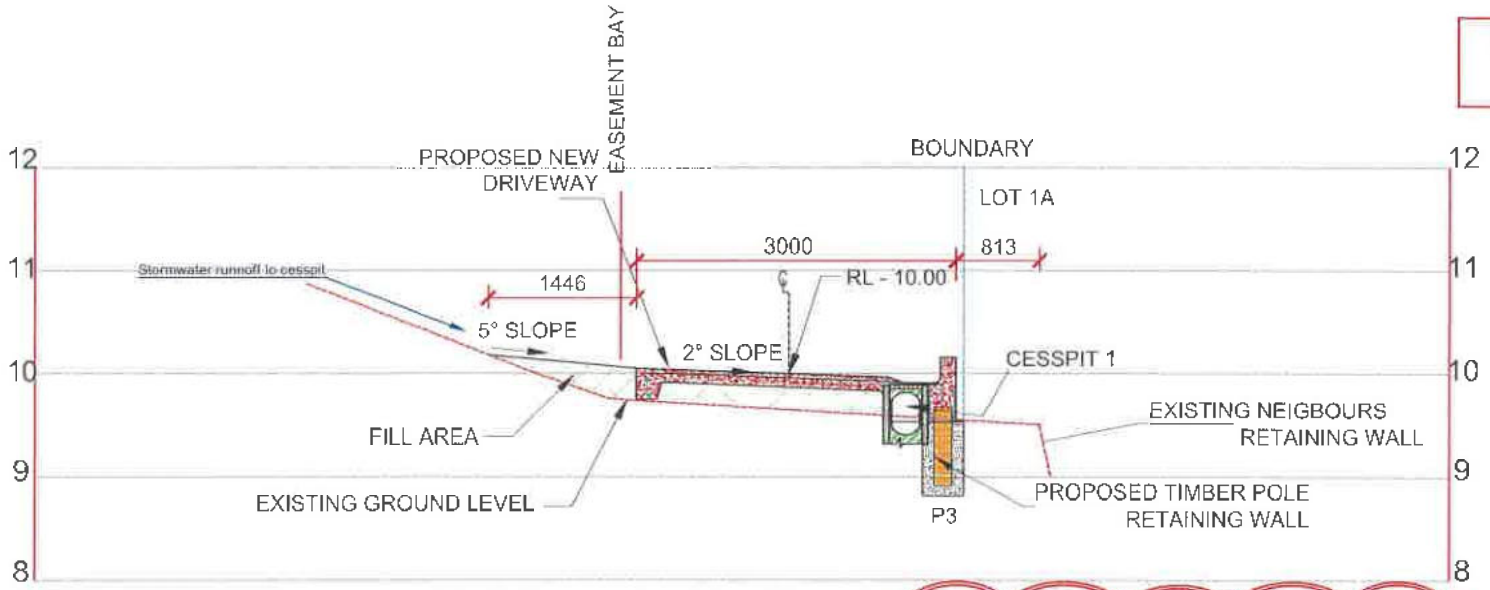
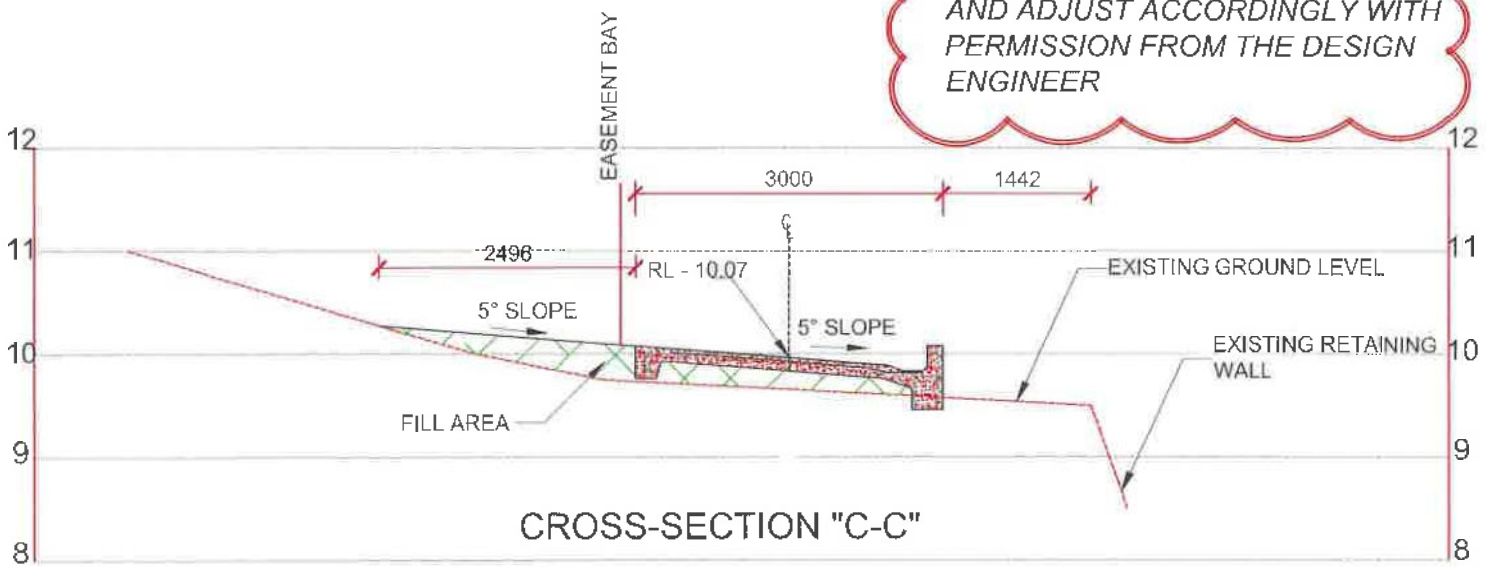


CROSS-SECTION "D-D"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "C-C"

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Talbot Park Building 90 Kerikeri Road, P O Box 464 KERIKERI Tel. (09) 407 7554 E-mail: [illegible]	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:40 (A3) This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	CAD FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No: SR5	R6

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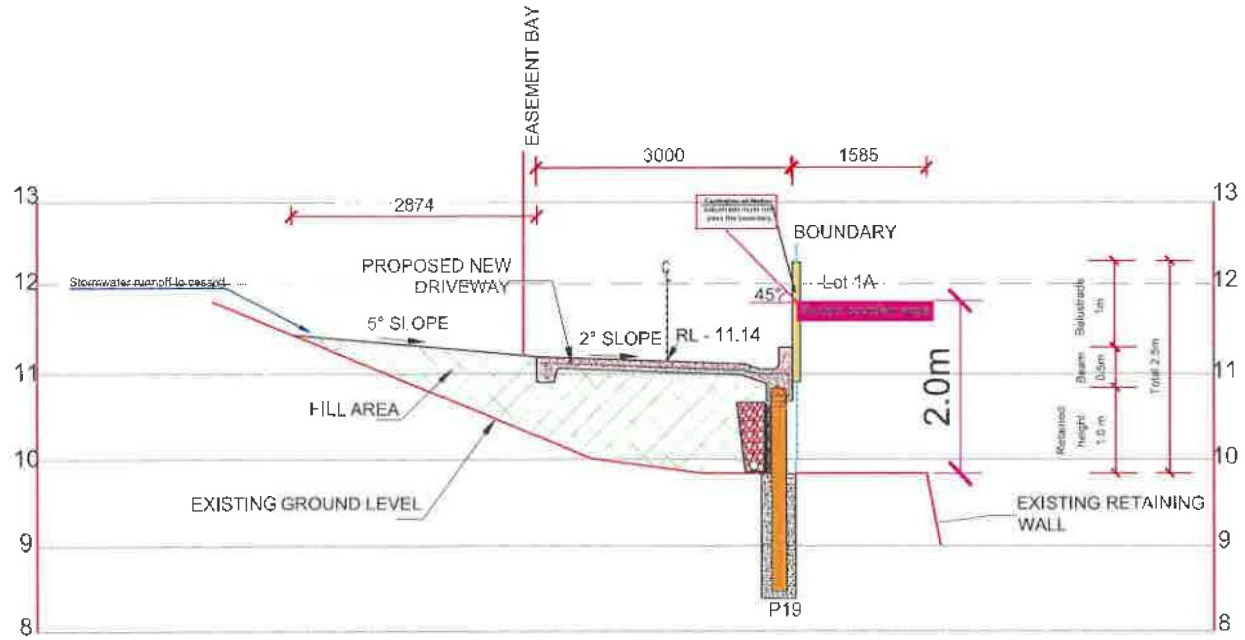
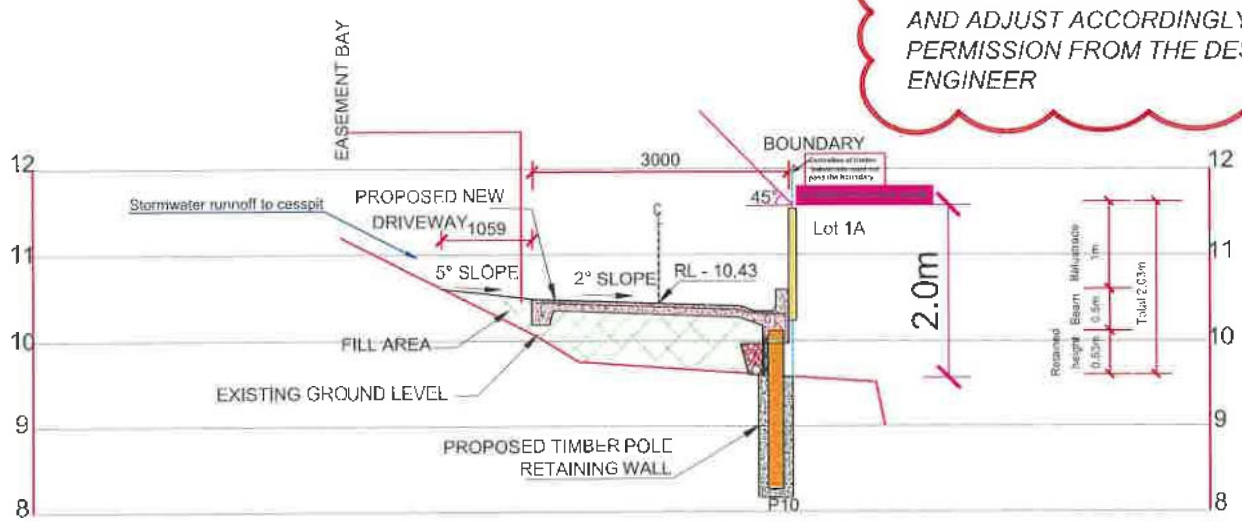


CROSS-SECTION "F-F"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



CROSS-SECTION "E-E"

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Rodney Bank Building 33 Kerikeri Road, PO Box 464 KERIKERI Tel. (09) 407 9255	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: JW Checked: PK Date: 15.07.2025 Scale: 1:50 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No: 23-019	SHEET No: SR6	R6

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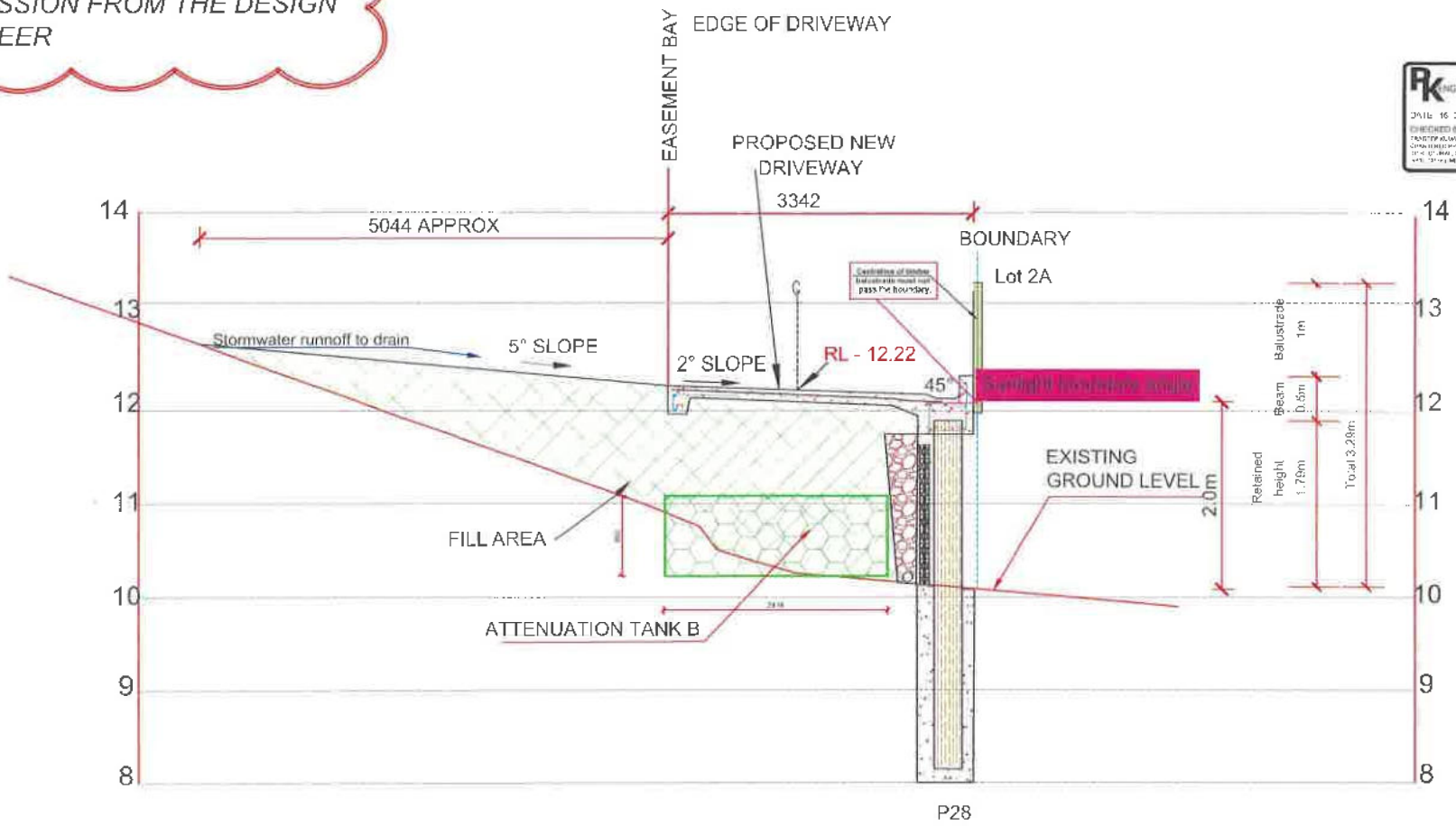

CROSS-SECTION "G-G"

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Principal: National Bank Building 90 Kerikeri road. P.O.Box 464 KERIKERI. Tel. 09 407321. E mail. Team@PKengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CROSS-SECTIONS	Drawn: LW / Checked: PK / Date: 16 07 2025 / Scale: 1:50 (A3)	CAD FILE NAME: 23-019.dwg	SHEET No: SR7	R6
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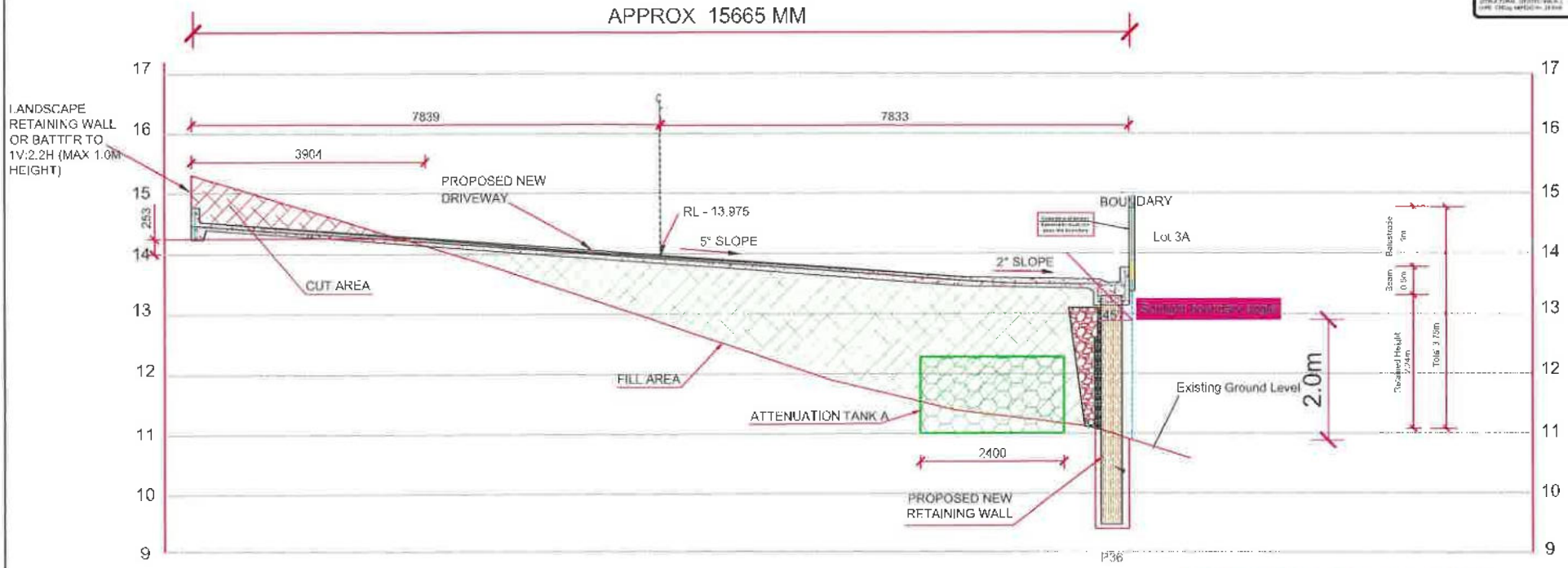

CROSS-SECTION "H-H"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Mid-coal Bank Building 98 Lawrence road, P.O.Box 464 KAIKOHE Tel. (09) 407 7555 E-mail: Team@PKengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:70 (A3) This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	CAD FILE NAME: 23-019.dwg PROJECT No. 23-019	SHEET No: SR8	R6

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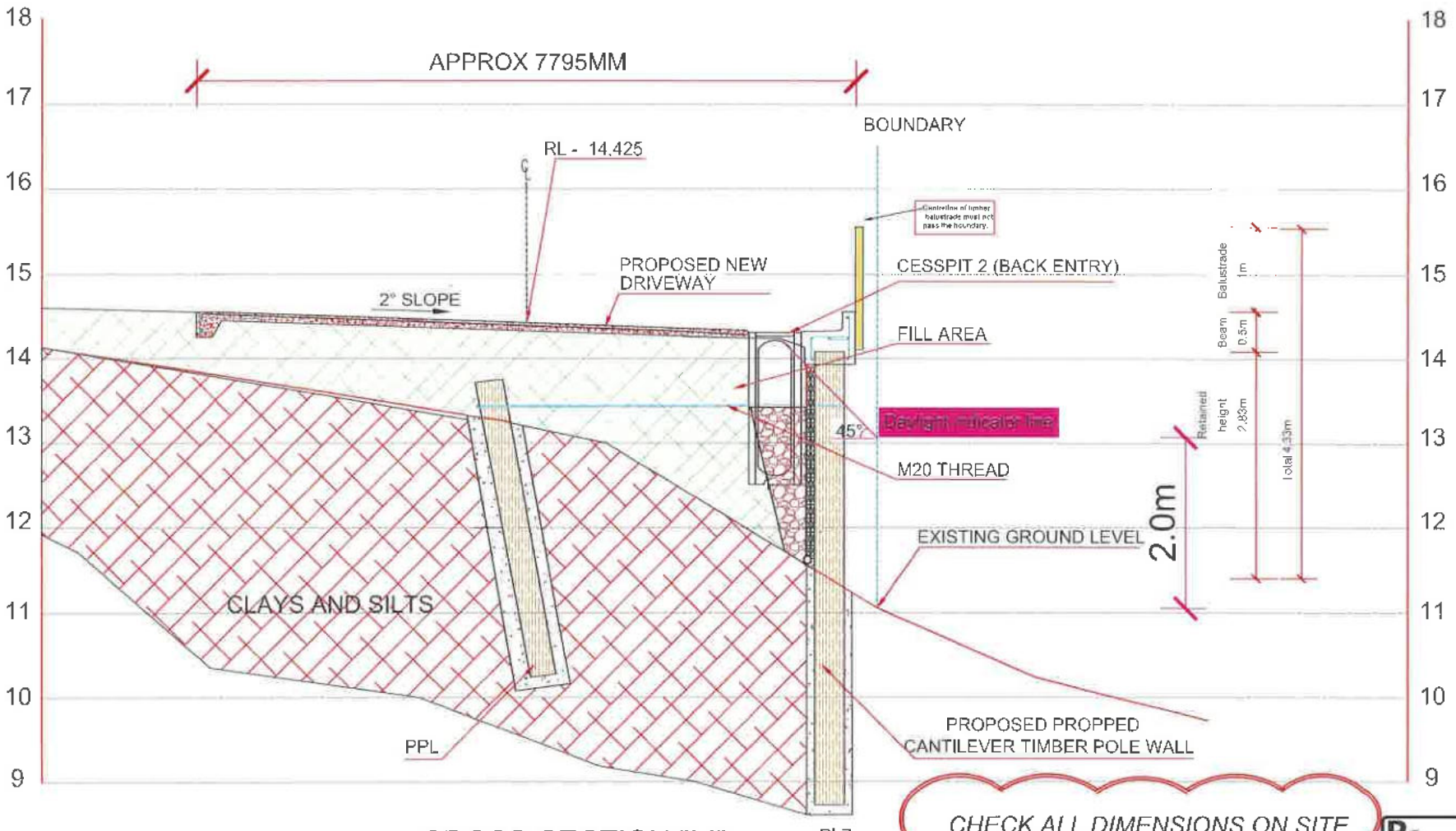

CROSS-SECTION "I-I"

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Heberley Park Building 90 Kerikeri Road, P.O.Box 464 KERIKERI Tel. (09) 407 7231 E-mail: Team@pkengineers.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:50 (A3) This design and drawings is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission	FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No: SR9	R6

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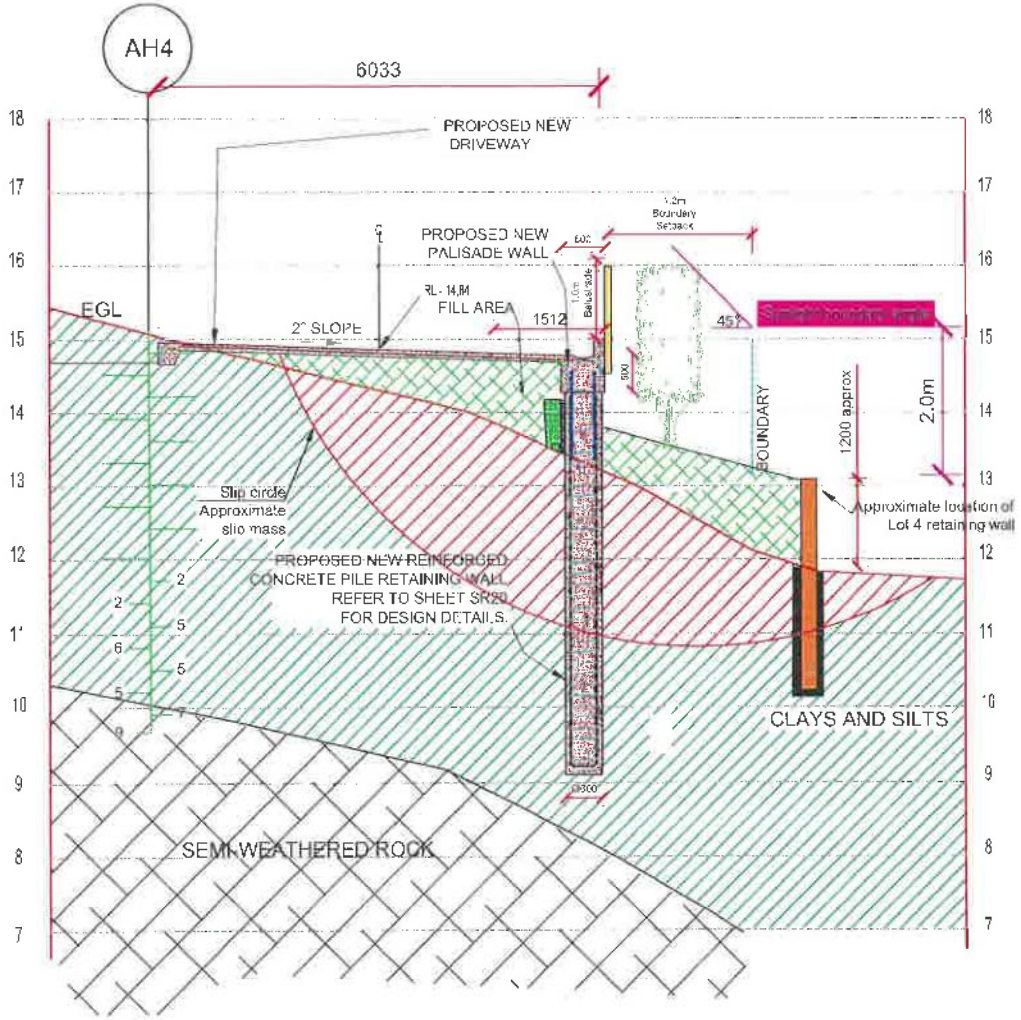

CROSS-SECTION "J-J"

PK ENGINEERING LIMITED
DATE 16 07 2025
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PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 98 Kerikeri Road, P.O. Box 164 Kerikeri Tel. (09) 407 7755 E-mail: kerikeri@pkeng.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CROSS-SECTIONS	Drawn: JW Checked: PK Date: 10.07.2025 Scale: 1:70 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of P.K Engineering Limited and is not to be reproduced without written permission	PROJECT No: 23-019	SHEET No: SR10	R6

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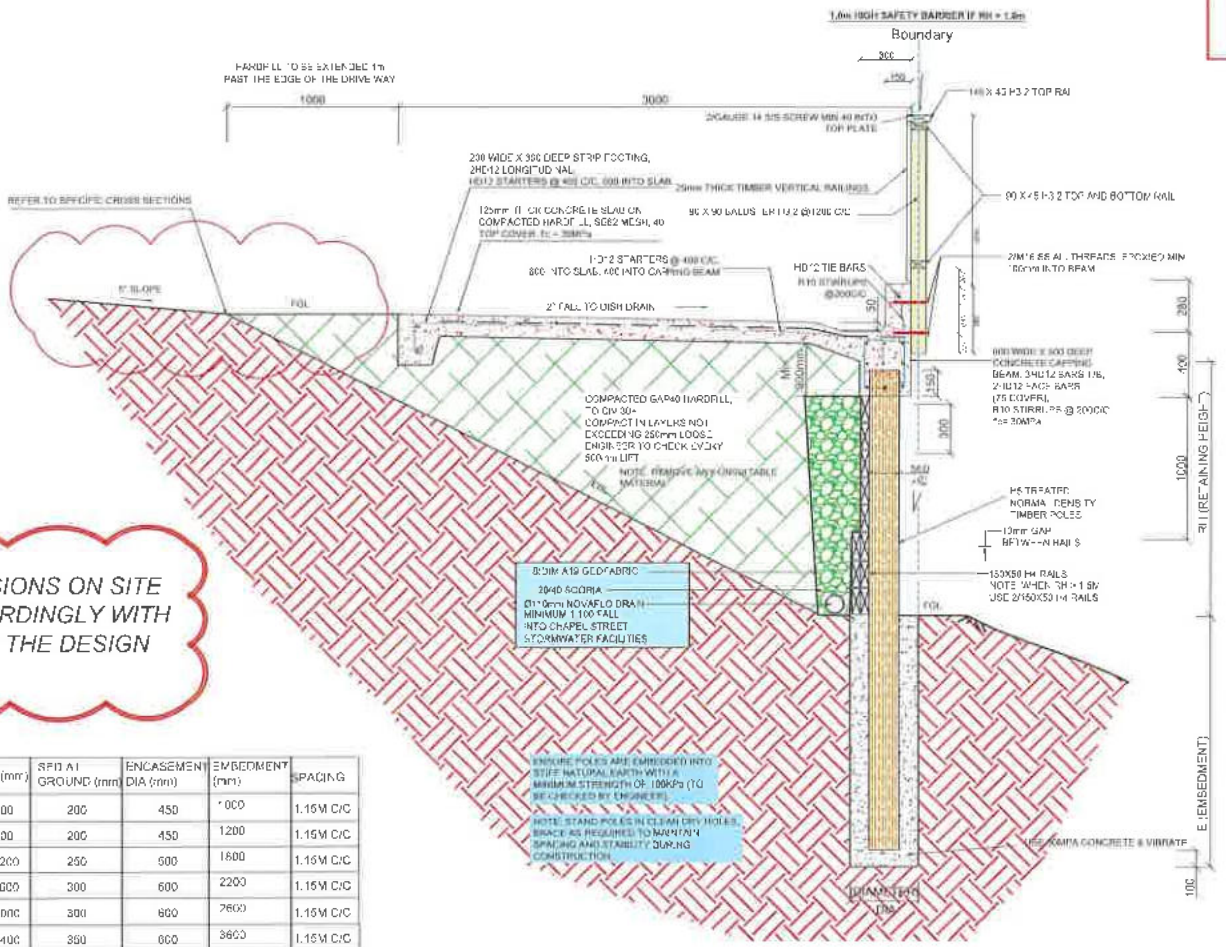

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

POLE NO.	RH (mm)	SPIG AT GROUND (mm)	ENCASEMENT DIA (mm)	EMBEDMENT (mm)	SPACING
P 1-9	400	200	450	1000	1.15M C/C
P 10-16	600	200	450	1200	1.15M C/C
P 17-22	1200	250	500	1600	1.15M C/C
P 23-27	1600	300	600	2200	1.15M C/C
P 28-31	2000	300	600	2600	1.15M C/C
P 32-36	2400	350	600	3000	1.15M C/C
P 37-38	2550	375	600	4000	1.15M C/C

ENGINEER TO INSPECT AND APPROVE OF ALL BORED HOLES PRIOR TO PLACEMENT OF POLES.

TYPICAL DRIVEWAY SECTION - PROPOSED CANTILEVER RETAINING WALL (TYPE A)
SCALE 1:30

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CANTILEVER RW DETAIL (TYPE A)	Drawn JW / Checked PK / Date 10.07.2025 / Scale 1:30	CAD FILE NAME 23-019.dwg PROJECT No 23-019	SHEET No SR11	R6

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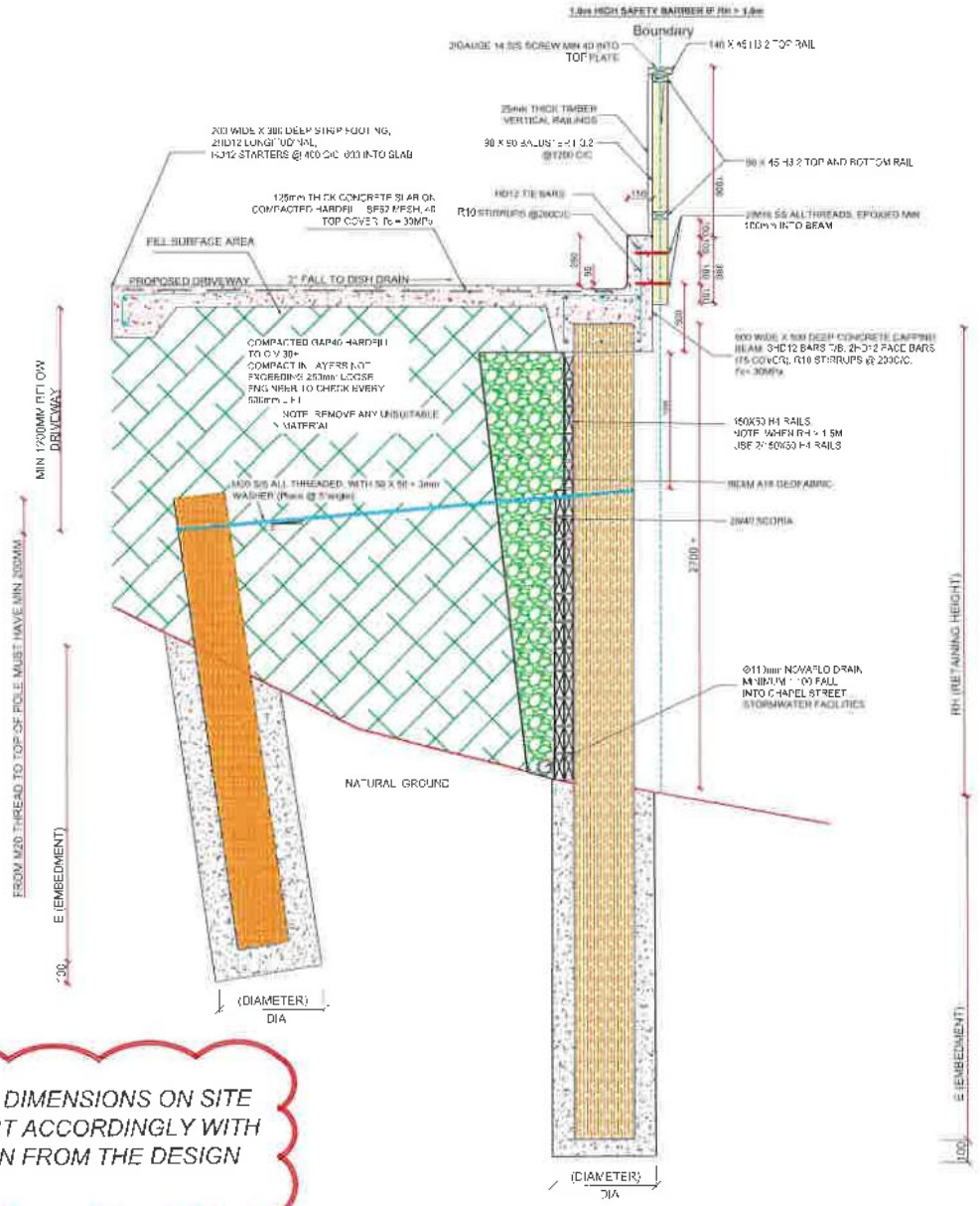

POLE NO.	RETAINED HEIGHT (MM)	PROPOSED HEIGHT (MM)	POLE SEP (MM)	ENCASEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1- 4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PROPPED CANTILEVER RETAINING WALL (TYPE B)

SCALE 1:30

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 20 Kerikeri Road, P.O. Box 884 Kerikeri Tel. (09) 4077203 E-mail: Taylor@pkengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: PROPPED CANTILEVER RW DETAIL-TYPE B	Drawn: JW Checked: PK Date: 18 07 2025 Scale: 1:30 CAD FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No: SR12	R6

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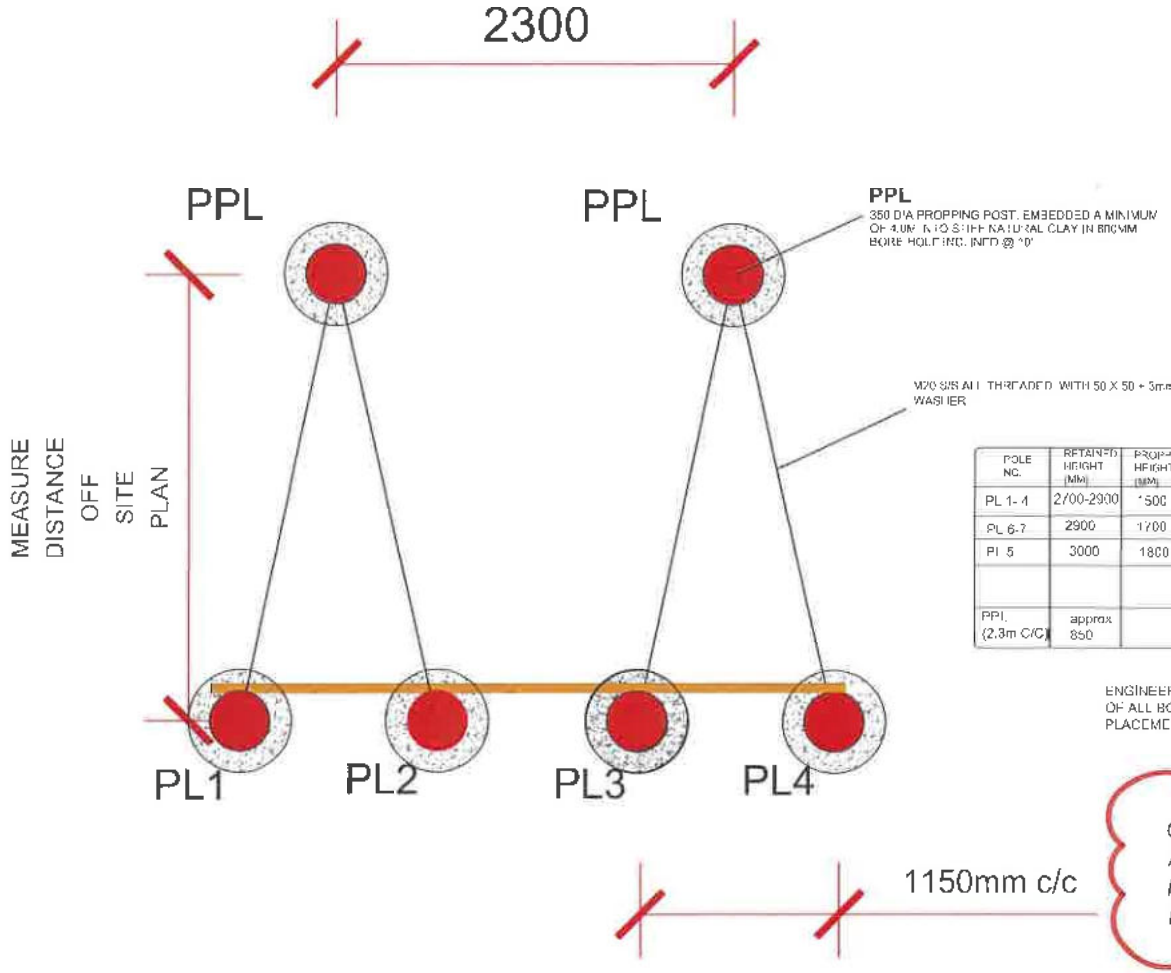

POLE NO.	RETAINED HEIGHT (MM)	PROPPED HEIGHT (MM)	POLE SHEIGHT	ENCASEMENT DIA (MM)	EMBEDMENT (MM)	TOTAL LENGTH (MM)
PL 1-4	2700-2900	1500	350	600	4000	6700
PL 6-7	2900	1700	350	600	4000	6900
PL 5	3000	1800	350	600	4200	7200
PPL (2.3m C/C)	approx 850		350	600	4000	4400

ENGINEER TO INSPECT AND APPROVE OF ALL BORED HOLES PRIOR TO PLACEMENT OF POLES.

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

PROPPED CANTILEVER POLE DESIGN TABLE TYPE B
SCALE 1:30

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Metropolitan Bank Building 80 Kerikeri Road, P.O.Box 464 KERIKERI Tel. (09) 4070285 E mail. Team@PKengineering.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: PROPPED CANTILEVER POLE DETAIL	Drawn: JW	Checked: PK	Date: 16.07.2025	Scale: 1:30	CAD FILE NAME: 23-019.dwg	SHEET No: SR13 R6
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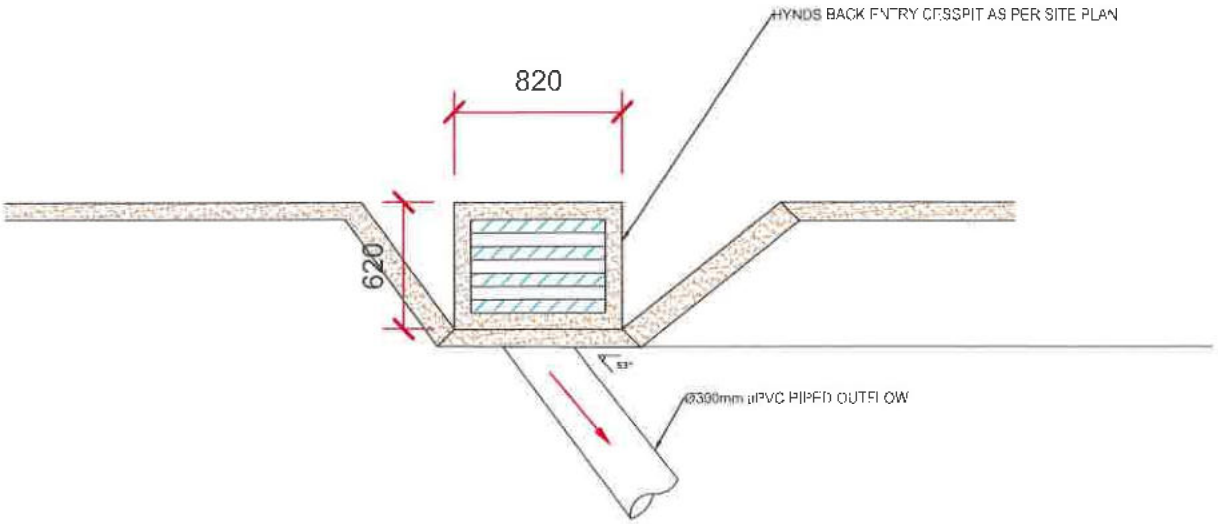
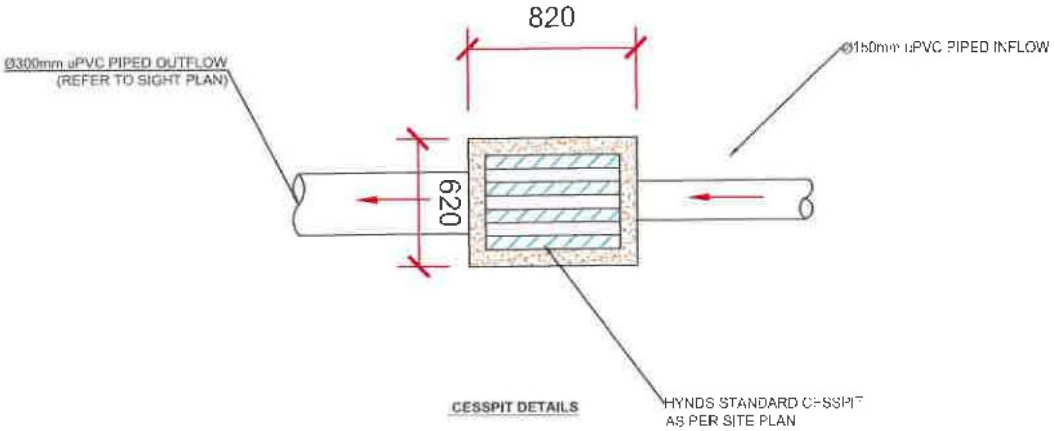


BACK ENTRY CESSPIT DETAILS

ISSUED FOR CONSENT



CESSPIT DETAILS

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Johnny Rose Building Mill Road, Kerikeri P.O. Box 484 Kerikeri Tel. (09) 4073255 E-mail: Team@pk-engineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CESSPIT DETAILS	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:25 (A3) CAD FILE NAME: 23-019.dwg PROJECT No: 23-019	SHEET No. SR14	R6

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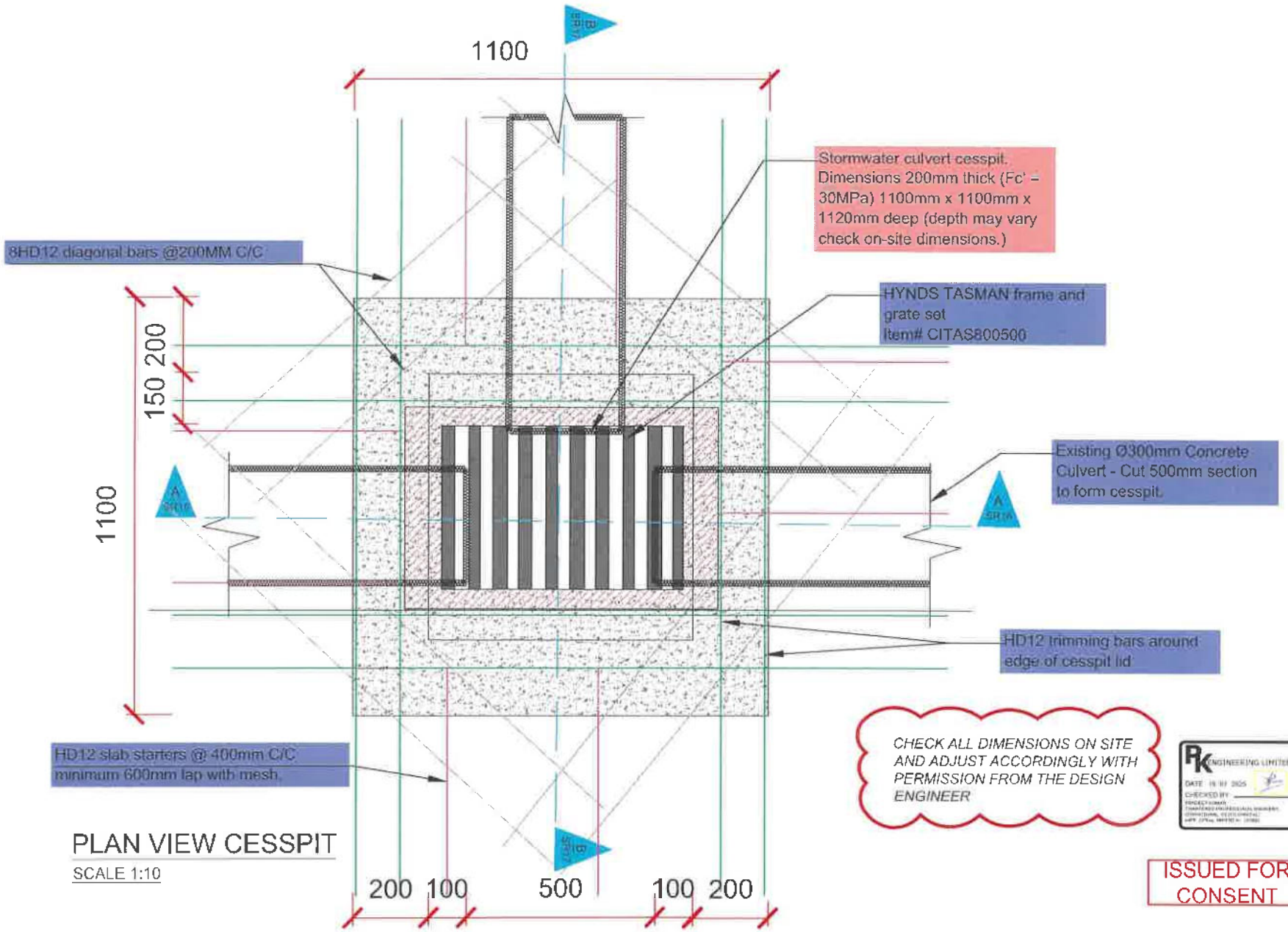

PLAN VIEW CESSPIT

SCALE 1:10

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PK ENGINEERING LIMITED
DATE
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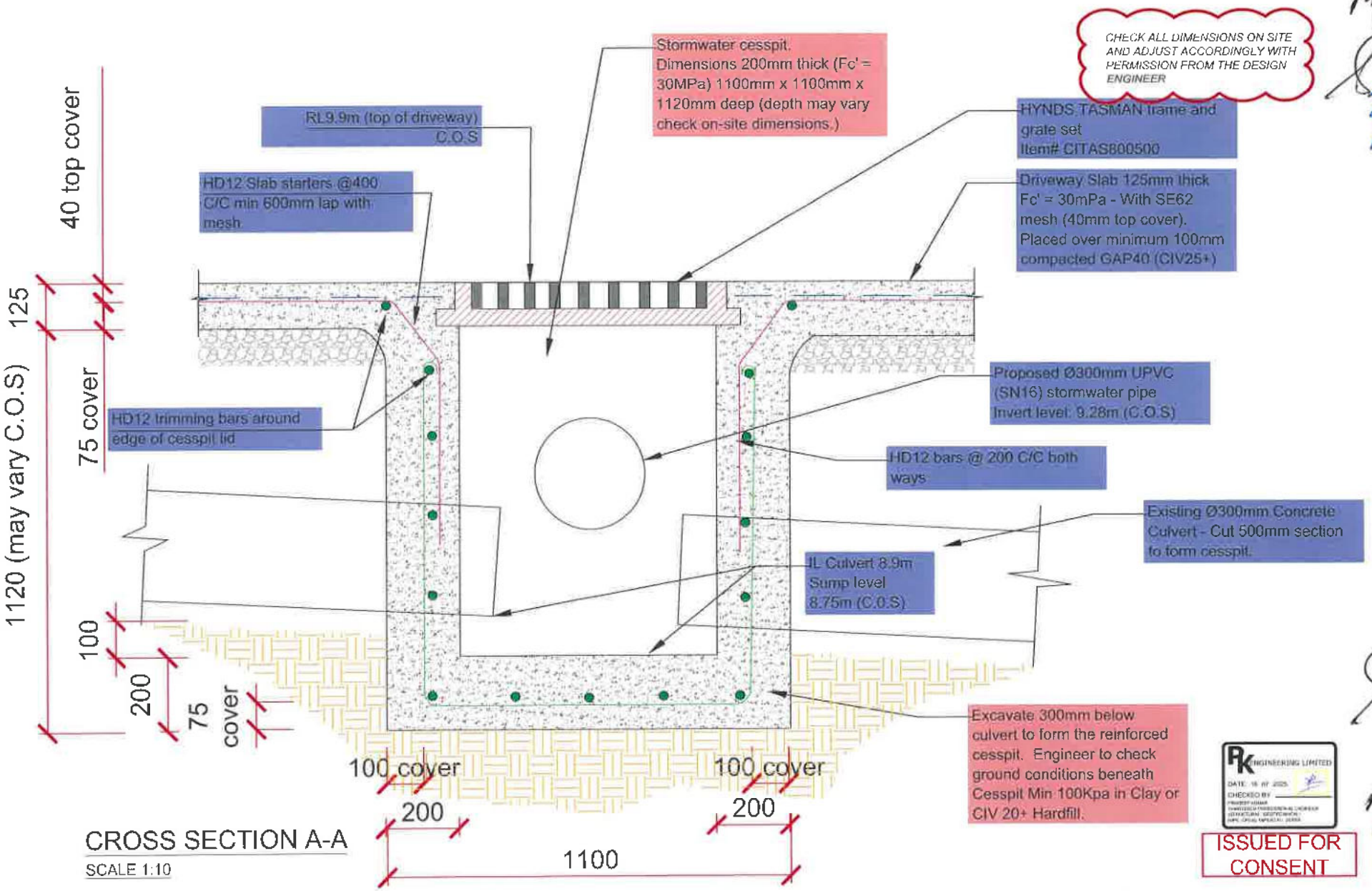
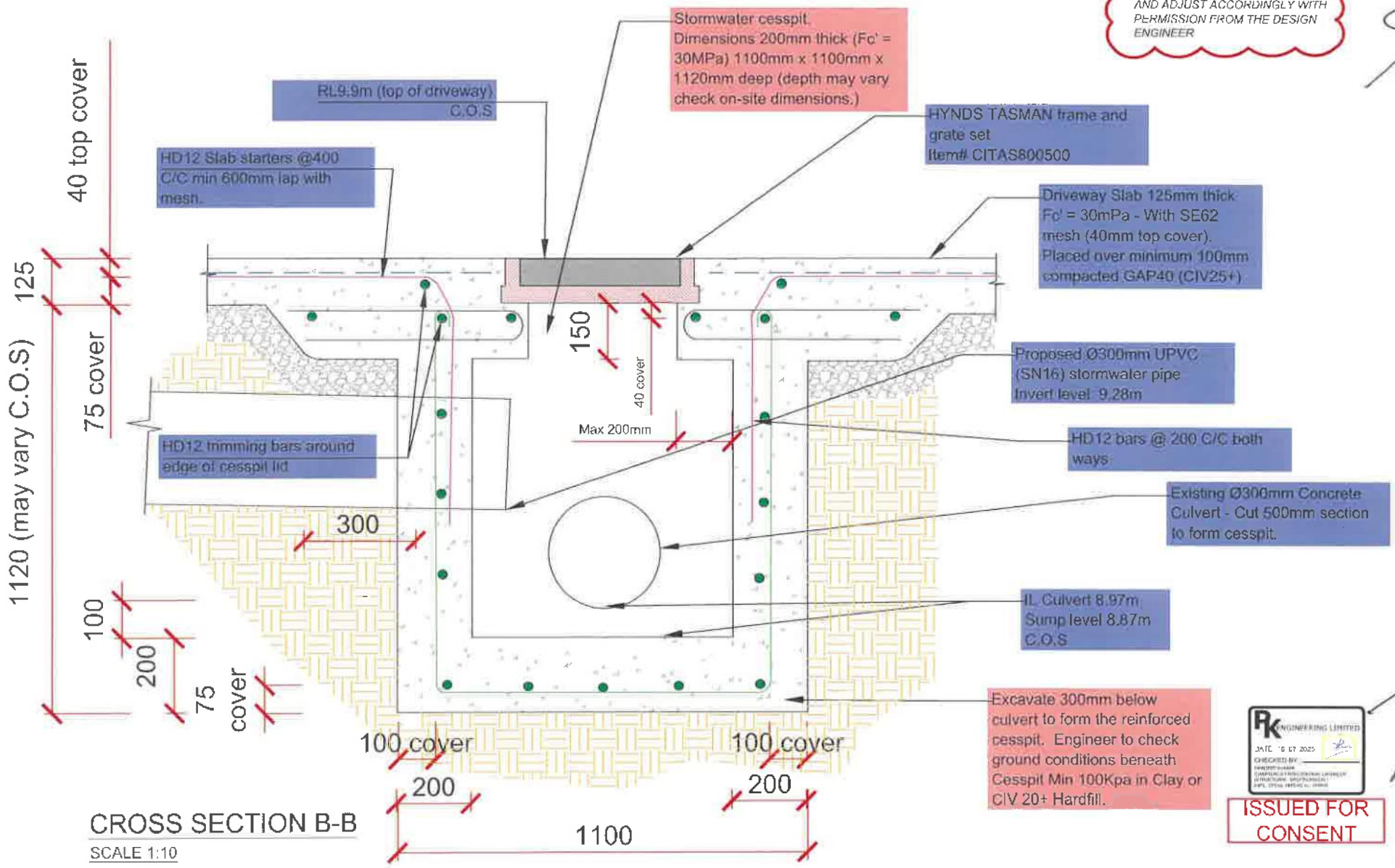
PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 3 National Bank Building 90 Kerikeri road, P O Box 450 KERIKERI Tel. (09) 407 3211 E mail: Team@PKEngineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING: CULVERT CESSPIT DETAIL	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:50 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No. 23-019	SHEET No. SR15	R6



PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 National Bank Building 93 Kerikeri road, P.O. Box 454 KERIKERI Tel: (09) 4070335 Email: Team@PKEng.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: CULVERT CESSPIT DETAIL	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:10 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019	SHEET No SR15	R6

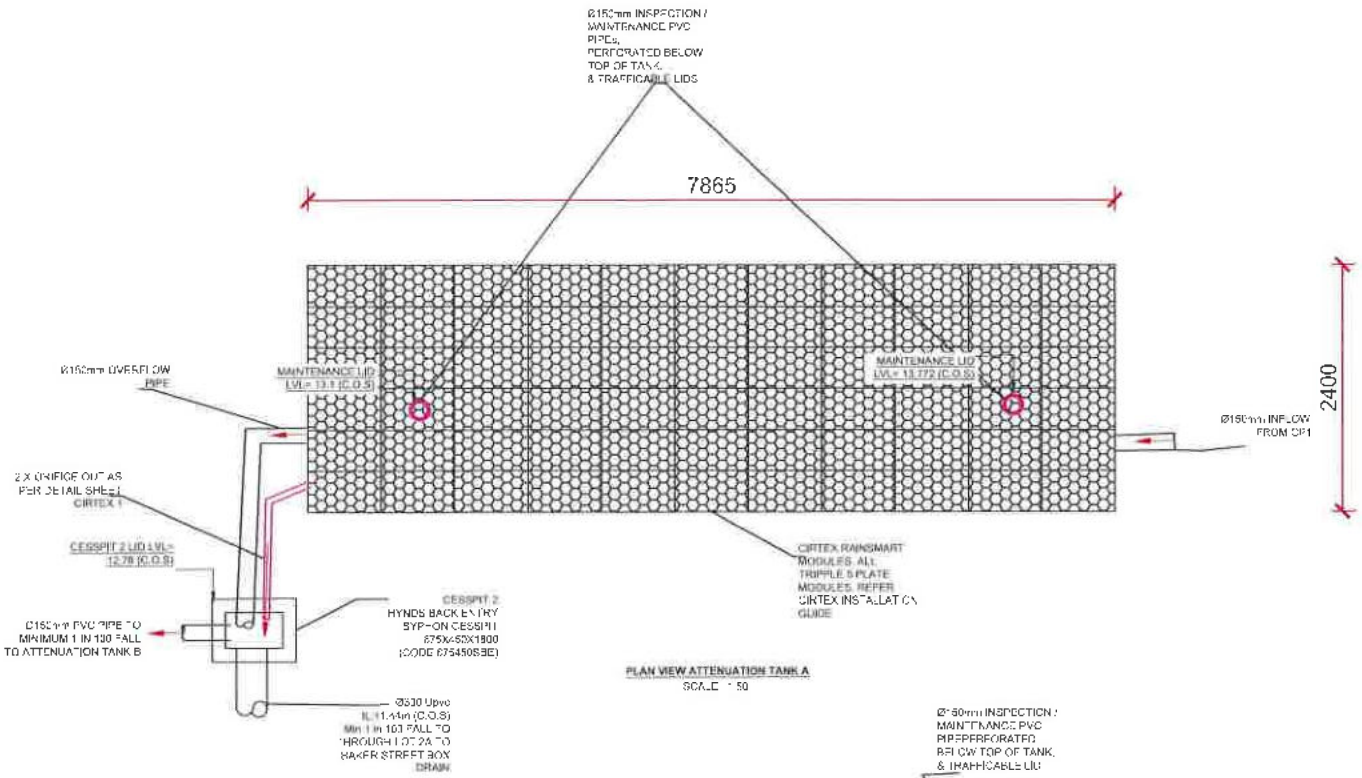


CROSS SECTION B-B

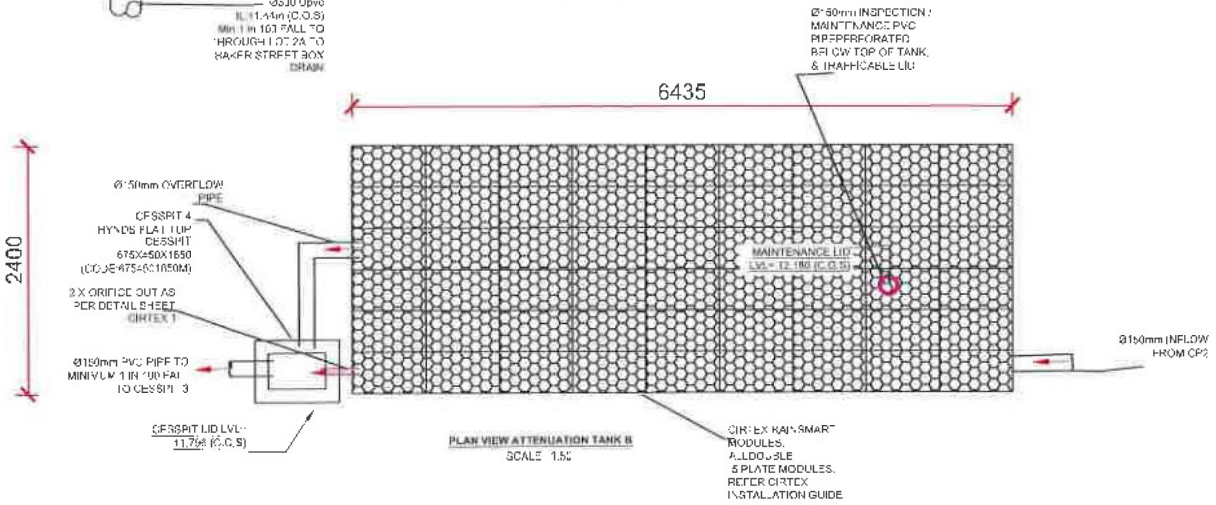
SCALE 1:10

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 3 National Bank Building 30 Kerikeri road, P.O. Box 404 KERIKERI Tel (09) 4073255 E-mail: Tasman@pkengineers.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CULVERT CESSPIT DETAIL	Drawn JW	Checked PK	Date 16.07.2025	Scale 1:10 (A3)	CAD FILE NAME 23-019.dwg
					This drawing is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission			PROJECT No. 23-019	SHEET No. SR15 R6

CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER



PLAN VIEW ATTENUATION TANK A
SCALE 1:50

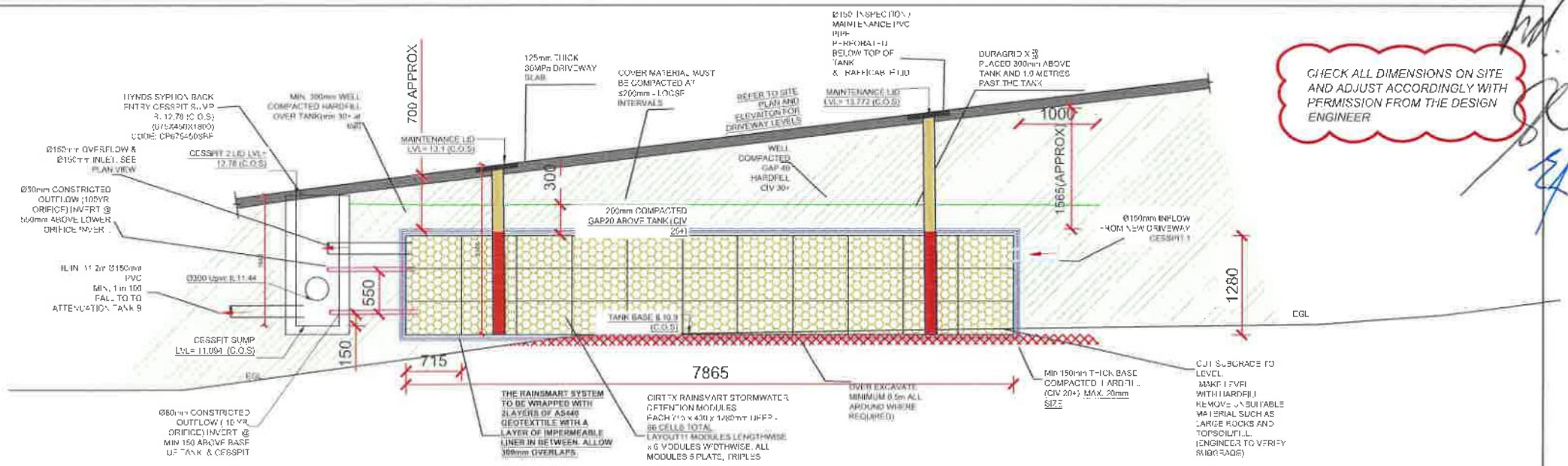


PLAN VIEW ATTENUATION TANK B
SCALE 1:50

PK ENGINEERING LIMITED
DATE 16.07.2025
CHECKED BY

ISSUED FOR CONSENT

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 1 Optional Home Auckland 93 Kitchener Road, P.O.Box 4346 Auckland Tel. 09 [illegible] Email: [illegible]	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING Attenuation Tanks Plan Views	Drawn: JW Checked: PK Date: 16.07.2025 Scale: 1:50 (A3) CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission.	PROJECT No. 23-019	SHEET No. SR18	R6



CHECK ALL DIMENSIONS ON SITE AND ADJUST ACCORDINGLY WITH PERMISSION FROM THE DESIGN ENGINEER

SECTION THROUGH ATTENUATION TANK A

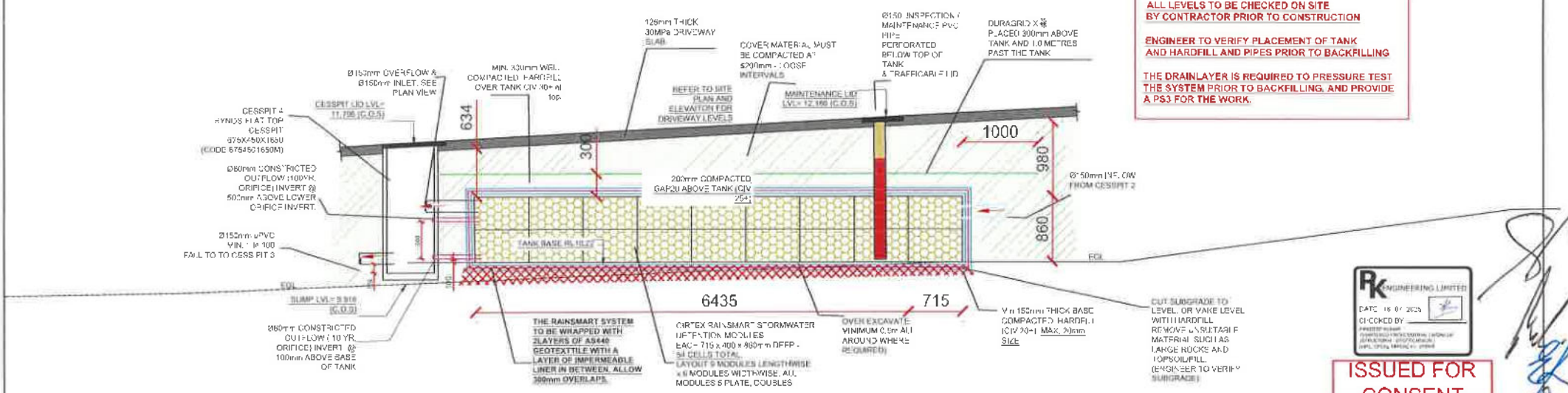
SCALE 1:50

CIRTEX INSTALATION GUIDELINES HAVE BEEN PROVIDED AND SHOULD BE READ IN CONJUNCTION WITH THIS DETAIL.

ALL LEVELS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION

ENGINEER TO VERIFY PLACEMENT OF TANK AND HARDFILL AND PIPES PRIOR TO BACKFILLING

THE DRAINLAYER IS REQUIRED TO PRESSURE TEST THE SYSTEM PRIOR TO BACKFILLING, AND PROVIDE A PS3 FOR THE WORK.



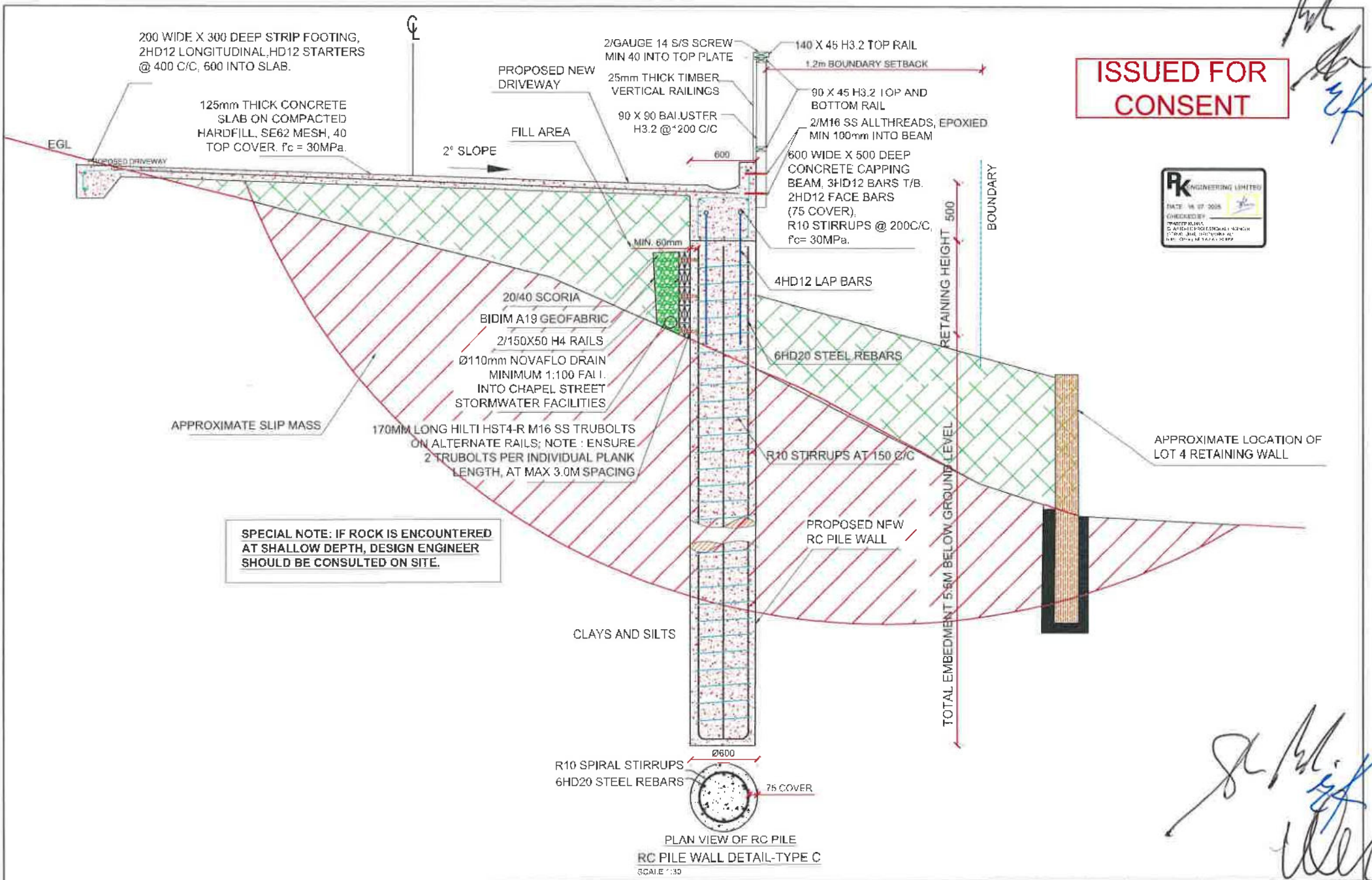
SECTION THROUGH ATTENUATION TANK B

SCALE 1:50

PK ENGINEERING LIMITED
DATE 16 07 2025
CHECKED BY

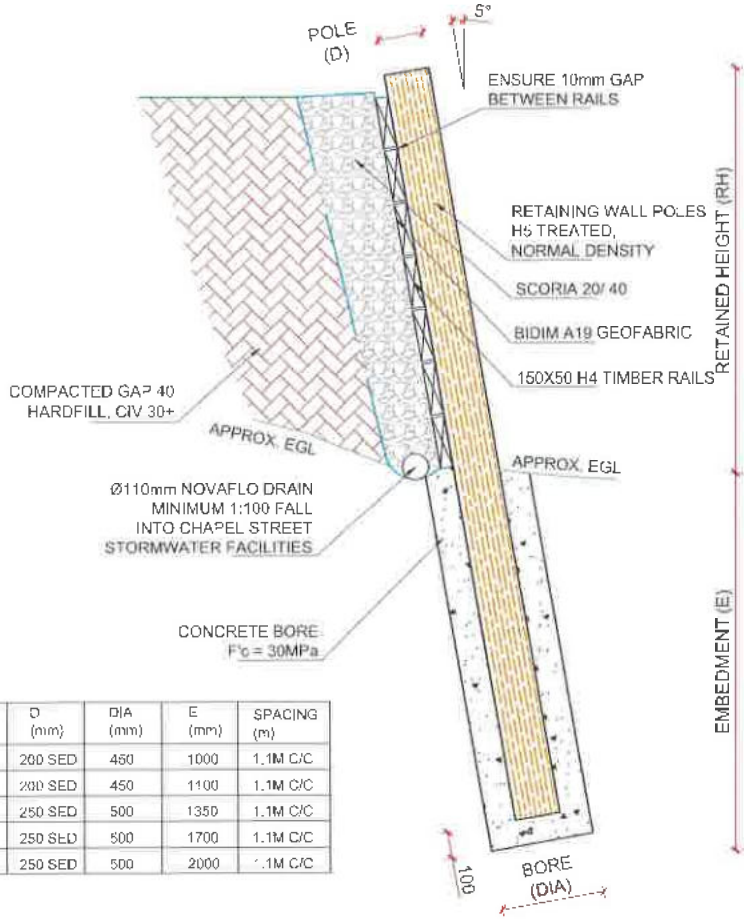
ISSUED FOR CONSENT

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	LEVEL 3 National Bank Building 90 Kerikeri Road, P.O.Box 404 KERIKERI. Tel (09) 4073253 E-mail: Team@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING Attenuation Tanks Details	Drawn JW Checked PK Date 16 07 2025 Scale 1:50 (A3) This design and drawing is the copyright of P.K.Engineering Limited and is not to be reproduced without written permission	CAD FILE NAME 23-019.dwg PROJECT No. 23-019	SHEET No. SR19	R6



PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1 National Bank Building 90 Kerikeri Road, P.O. Box 464 KERIKERI Tel. +09 407 5255 E-mail: team@pkengineering.co.nz	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING RC PILE WALL DETAIL -TYPE C	Drawn: JW Checked: PK Date: 15 07 2025 Scale: 1:30 CAD FILE NAME: 23-019.dwg This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission	PROJECT No. 23-019	SHEET No. SR20	R6

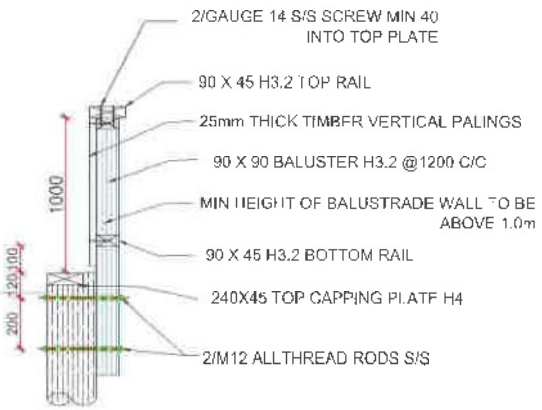
ISSUED FOR CONSENT



RH (mm)	D (mm)	DIA (mm)	E (mm)	SPACING (m)
400	200 SED	450	1000	1.1M C/C
800	200 SED	450	1100	1.1M C/C
1150	250 SED	500	1350	1.1M C/C
1300	250 SED	500	1700	1.1M C/C
1500	250 SED	500	2000	1.1M C/C

CANTILEVER TIMBER POLE RETAINING WALL- TYPE D

SCALE @1:20



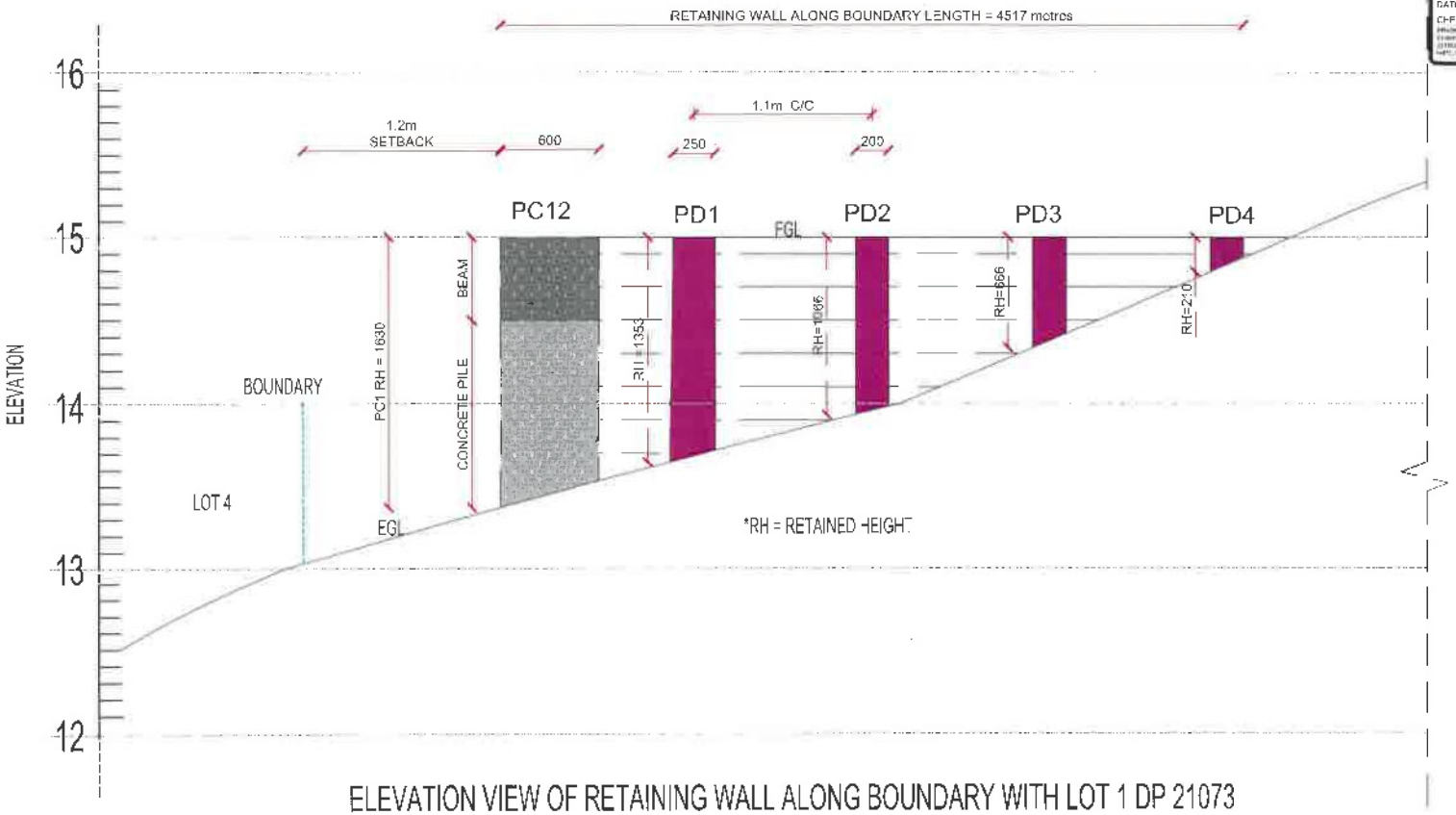
BALUSTRADE WALL CONNECTIONS DETAILS

SCALE 1:20

PK ENGINEERING LIMITED
DATE: 16 07 2025
CHECKED BY:

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	PROJECT PROPOSED NEW DRIVEWAY & RETAINING WALLS 15 Chapel Street, Russell	CLIENT Paul & Erina Van Koningsveld	DRAWING CANTILEVER RW DETAIL-TYPE D	Drawn: JW Checked: PK Date: 16 07 2025 Scale: 1:20 CAD FILE NAME: 23-019.dwg	SHEET No SR21	R6
				This design and drawing is the copyright of PK Engineering Limited and is not to be reproduced without written permission PROJECT No: 23-019		

ISSUED FOR CONSENT



ELEVATION VIEW OF RETAINING WALL ALONG BOUNDARY WITH LOT 1 DP 21073

SCALE 1:30

PK ENGINEERING LIMITED
DATE 15 07 2025
CHECKED BY

PK ENGINEERING LIMITED CHARTERED PROFESSIONAL ENGINEERS	Level 1, National Bank Building, 98 Kerikeri Road, P.O. Box 164, Kerikeri; Tel. 0800 4079255, E-mail: Team@pkengin.co.nz	PROJECT: PROPOSED NEW DRIVEWAY & RETAINING WALLS, 15 Chapel Street, Russell	CLIENT: Paul & Erina Van Koningsveld	DRAWING: ELEVATION VIEW OF RET WALL TYPE D	Drawn: JW; Checked: PK; Date: 10.07.2025; Scale: 1:30	CAD FILE NAME: 23-019.dwg	SHEET No: SR22	R6
				This design and drawing is the copyright of P.K. Engineering Limited and is not to be reproduced without written permission		PROJECT No: 23-019		

Far North District Council

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Paul Van Koningsveld
Address of proposed activity:	15 Chapel Street, Russell and 17 Chapel Street, Russell
Legal description:	Part Section 12 Town of Russell
Description of the proposal (including why you need resource consent):	Proposal to construct a new driveway and associated retaining within the ROW boundary on 17 Chapel Street, Russell, to service 15 Chapel Street, Russell, as per the plans provided and prepared by PK Engineering. Resource consent is requried due to the proposal breaching the permitted rules for setback, sunlight, stormwater management and excavations in the Russell Township Zone under the Operative District Plan. Consent is also required under the Proposed District Plan due to Rule HA-R8.
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	1. Plan set - Proposed new retaining walls and driveway prepared by PK Engineering 2. Job No 23-019, dated 7/3/2024, rev ~~5~~ 6, ~~14~~ 15 July 2025. 3. 4. 5. 6.

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
3. Please note that when you give your written approval to an application, council cannot take into consideration any actual or potential effects of the proposed activity on you unless you formally withdraw your written approval **before** a decision has been made as to whether the application is to be notified or not. After that time you can no longer withdraw your written approval.
4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	Ulla Lisbeth Norlander
Address of affected property including legal description	19 Baker Street, Russell / Allotment 3A Town of Russell
Contact Phone Number/s and email address	Daytime: 022 6896282 email: kiwiccq@gmail.com

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

*Please note: in most instances the approval of **all** the legal owners and the occupiers of the affected property will be necessary.*

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature		Date	3.09.2025
Signature		Date	
Signature		Date	
Signature		Date	

Far North District Council

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Paul Van Koningsveld
Address of proposed activity:	15 Chapel Street, Russell and 17 Chapel Street, Russell
Legal description:	Part Section 12 Town of Russell
Description of the proposal (including why you need resource consent):	Proposal to construct a new driveway and associated retaining within the ROW boundary on 17 Chapel Street, Russell, to service 15 Chapel Street, Russell, as per the plans provided and prepared by PK Engineering. Resource consent is requried due to the proposal breaching the permitted rules for setback, sunlight, stormwater management and excavations in the Russell Township Zone under the Operative District Plan. Consent is also required under the Proposed District Plan due to Rule HA-R8.
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	1. Plan set - Proposed new retaining walls and driveway prepared by PK Engineering 2. Job No 23-019, dated 7/3/2024, rev ~~5~~ 6 ~~14~~ 16 July 2025. 3. 4. 5. 6.

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
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4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	Erina Van Koningsveld, Greig Van Koningsveld and Paul Andre Van Koningsveld
Address of affected property including legal description	21 Baker Street, Russell / Allotment 2A Section 12 Town of Russell
Contact Phone Number/s and email address	Daytime: 021995563 email: fire.kings@xtra.co.nz

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

*Please note: in most instances the approval of **all** the legal owners and the occupiers of the affected property will be necessary.*

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
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4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature		Date	11/9/2025
Signature		Date	11/09/2025
Signature	E Koningsveld	Date	11-09-2025
Signature		Date	

Far North District Council

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Paul Van Koningsveld
Address of proposed activity:	15 Chapel Street, Russell and 17 Chapel Street, Russell
Legal description:	Part Section 12 Town of Russell
Description of the proposal (including why you need resource consent):	Proposal to construct a new driveway and associated retaining within the ROW boundary on 17 Chapel Street, Russell, to service 15 Chapel Street, Russell, as per the plans provided and prepared by PK Engineering. Resource consent is requried due to the proposal breaching the permitted rules for setback, sunlight, stormwater management and excavations in the Russell Township Zone under the Operative District Plan. Consent is also required under the Proposed District Plan due to Rule HA-R8.
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1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

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4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	Erina Van Koningsveld, Greig Van Koningsveld and Paul Andre Van Koningsveld
Address of affected property including legal description	17 Chapel Street, Russell / Part Section 12 Town of Russell
Contact Phone Number/s and email address	Daytime: 021995563 email: five.kings@xtra.co.nz

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

*Please note: in most instances the approval of **all** the legal owners and the occupiers of the affected property will be necessary.*

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature		Date	11/9/2025
Signature		Date	11/09/2025
Signature	EVanKoningsveld.	Date	11-09-2025
Signature		Date	

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

23 September 2025

Paul Andre Van Koningsveld
10 Kerr-Taylor Avenue
Mount Albert
Auckland 1025

Dear Sir / Madam,

Building consent number: EBC-2026-226/0
Property ID: 3318368
Address: 15 Chapel Street, Russell 0202
Description: Retaining wall and new driveway

Requirement for Resource Consent

PIM Assessment of your application has highlighted the need for Resource Consent that must be granted prior to any building works or earthworks commencing.

NB: As of 27th July 2022, some rules and standards in the Far North District Council Proposed District Plan took legal effect and compliance with these rules applies to your building consent. Please visit our website to see these rules
Far North Proposed District Plan (isoplan.co.nz)

The site is zoned **Russell Township** under the Operative District Plan and Resource Consent is required for breach of the following:

Rule:	10.9.5.1.6 SUNLIGHT No part of any building shall project beyond a 45-degree recession plane as measured inwards from any point 2m vertically above ground level on any site boundary (refer to definition of Recession Plane in Chapter 3 - Definitions).
Reason:	Retaining wall scales to be within the 2m @45 degree sunlight angle.

Rule:	10.9.5.1.7 STORMWATER MANAGEMENT The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 35%.
Reason:	35% = 333.9m2, stated as 584m2.

Rule:	10.9.5.1.8 SETBACK FROM BOUNDARIES (a) the minimum building setback from road boundaries shall be 3m; and (b) the minimum setback from any boundary other than a road boundary shall be 1.2m, except that no setback is required for a maximum total length of 10m along any one such boundary.
Reason:	Proposed works are within 3m of the road boundary and within 1.2m of a site boundary for >10m along any one such boundary.

Rule:	12.3.6.1.3 EXCAVATION AND/OR FILLING, EXCLUDING MINING AND QUARRYING, IN THE RESIDENTIAL, INDUSTRIAL, HORTICULTURAL PROCESSING, COASTAL RESIDENTIAL AND RUSSELL TOWNSHIP ZONES Excavation and/or filling, excluding mining and quarrying, on any site in the Residential, Industrial, Horticultural Processing, Coastal Residential or Russell Township Zones is permitted, provided that: (a) it does not exceed 200m3 in any 12-month period per site (b) it does not involve a cut or filled face exceeding 1.5m in height.
Reason:	Compliance with the volume not shown and a cut >1.5m proposed.

Rule:	Proposed District Plan HA-R5 Earthworks
Reason:	Compliance not shown.

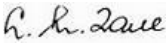
Rule:	Proposed District Plan HA-R8 New buildings or structures
Reason:	New structure proposed within a Heritage area

Please note there may be other rule breaches found during the Resource Consent process. It is your responsibility to ensure the Resource Consent approved plans match the Consented approved plans.

The application form can be downloaded from www.fndc.govt.nz and submitted to Council's (Planning Department) with the appropriate documentation and instalment fee.

If you have any queries, please contact the Duty Planner on Duty.Planner@fndc.govt.nz or 0800 920 029.

Yours faithfully



Leeanne Tane
PIM Officer
Delivery and Operations

Emailed to: five.kings@xtra.co.nz

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

FORM 4
Certificate attached to
PROJECT INFORMATION MEMORANDUM

Section 37, Building Act 2004

Building Consent Number: EBC-2026-226/0

RESTRICTIONS ON COMMENCING BUILDING WORK UNDER RESOURCE MANAGEMENT ACT 1991

The building work referred to in the attached Project Information Memorandum is also required to have the following **Resource Consent**(s) under the Resource Management Act 1991:

- **Resource Consent – REQUIRED**

As the above Resource Consent(s) will affect the building work to which the Project Information Memorandum relates, until this has been granted no building work may proceed.

Failure to comply with the requirements of this notice may result in legal action being taken against you under the Resource Management Act 1991.

Signature:	
	Trent Blakeman
Position:	Manager - Building Services – Delivery and Operations
On behalf of:	Far North District Council (Building Consent Authority)
Date:	23 September 2025