



Appendix E
Preliminary Construction
Environmental Management Plan

Prepared by Cuttriss Consultants Ltd



Preliminary Construction & Environmental Management Plan

160 Mazengarb Road, Paraparaumu

Ref: 23333

Prepared for:
Sussex Trust

PRELIMINARY CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN – 160 MAZENGARB ROAD, PARAPARAUMU

This preliminary Construction & Environmental Management Plan (CEMP) has been prepared in accordance with Greater Wellington Regional Council's (GWRC's) "*Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region*" (ESCG). Implementation of controls in accordance with this CEMP will ensure best practice measures are utilised to manage erosion and sedimentation caused by the proposed bulk earthworks and civil works construction. This document is intended as a preliminary version for consenting purposes and is to be treated as a "living" document as the project progresses.

The objectives of this preliminary CEMP are as follows:

1. Establish construction methodologies to avoid the sedimentation of the existing stormwater network and neighbouring properties bordering the site. The Contractor is to ensure that the measures put in place achieve this primary objective.
2. Ensure the works do not accelerate erosion during both the bulk earthworks and civil works construction, and as a result of the finished earthworks.
3. Where objective 2 is not possible, the effective and efficient treatment of sediment discharges and limiting the extent and duration of any erosion or sediment generation.

This document shall be reviewed and discussed with GWRC and the Contractor prior to the commencement of works. The proposed Erosion & Sediment Control (ESC) measures are to be monitored during construction for their effectiveness. If construction methodology or soil conditions dictate, they are to be upgraded or modified as required to provide the required level of treatment or additional measures shall be installed. Any changes are to be confirmed with the Engineer and Council before being implemented.

This document is to be read in conjunction with the following local and regional authority requirements:

- Cuttriss Consultants Limited Erosion and Sediment Control Plan (ESC) 23333 ESC (**Appendix A**)
- Kāpiti Coast District Council (KCDC) – Land Development Minimum Requirements (2022)
- Greater Wellington Regional Council (GWRC) – Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region (2021)

1. PROJECT DESCRIPTION

The subject site is a 7,168m², broadly rectangular site known as 160 Mazengarb Road, Paraparaumu. Furthermore, site has one existing dwelling located towards the rear of the property and there are also multiple other outbuildings such as a shed, garage and barn. The subject site has a 60m frontage along Mazengarb Road, with topography that is undulating

and falls away from the road. There are a number of mature trees located across the site, primary at the southwestern side of the subject site.

The proposal pertains to the construction of 41 residential allotments, and associated fee simple subdivision. Architectural plans showing the proposed dwellings and communal areas have been prepared by Designgroup Stapleton Elliott (DGSE). A scheme plan set has been included at **Appendix B**, prepared by Cuttriss, titled 23333 SCH, demonstrating the proposed subdivision, servicing and earthworks.

The proposed subdivision of this area involves earthworks, construction of roads, installation of services and removal of indigenous vegetation. All earthworks are intended to be carried out in accordance with best practices, and all erosion and sediment control measures are intended to be carried out in accordance with Greater Wellington Regional Council erosion and sediment control guidelines.

1.1. EXISTING SITE

The topography of the site is variable, with an undulating dune type landscape. The height varies from approximately RL 4.1m – 7.1m above mean sea level, Wellington Datum 1953.

Heights for the development were recorded prior to the change of height datum from Wellington Datum 1953 to Vertical Datum 2016. Council also supplied the most up to date flood information for the site in Wellington Datum 1953, so we have kept all information pertaining to the site is this datum for now.

The topography is illustrated on the scheme plan via existing contours captured during our topographical survey, see attached at **Appendix B**.

Torlesse Ltd have completed ground testing and prepared a Geotechnical Report for the site. The soil profile has been identified as fine to medium grained sand (0 – 0.3m deep), with medium to dense fine/coarse grained sand (0.3m – 2.5m) to very dense sand up to a depth of 2.5m to 14m. Torlesse have indicated that there is a moderate risk of liquefaction and that NZS3604:2011 shallow foundations are considered suitable for the building sites.

As revealed by percolation testing completed as part of the stormwater investigations, the soil conditions are favourable for natural infiltration. Refer Stormwater Disposal Report submitted with the Application.

1.2. PROPOSED EARTHWORKS

The proposed earthworks footprint is approximately 7605m² with a total cut volume of approximately 1300m³ and total fill volume of approximately 2300m³. The earthworks design is unable to achieve a cut/fill balance, meaning that along with roading materials, appropriate uniform fill (sand) will be imported to site to match in with insitu soils and achieve final earthwork levels. The cut to fill nature of earthworks in sandy soil requires a compaction factor

of approx. 30% to be applied to the cut volume. This is because the in-situ material reduces in volume as it is compacted, as reflected in the cut/fill figures.

Cut and fill depths vary across the site, with a maximum cut of approximately 1.5m and a maximum fill of 1.9m. There is a shortfall of material on site and approximately 1,300m³ will be cut to waste (used where possible) and 2,300m³ will be imported to site to bring it to subbase level (this excludes roading and building pad material).

Approximately 2300m³ of fill material will be imported to site, resulting in approximately 145 truck movements between a respective quarry and development location.

Suitable access points will be established for machinery to enter and exit the site. The anticipated accesses are shown on the plan 23333 ESCP (Appendix A).

Topsoil material will be stripped and removed from site as areas are exposed for construction purposes, limiting the amount of loose material stockpiled onsite. Any temporary topsoil stockpiles are to be sealed off with an excavator bucket or other appropriate techniques to minimise silt runoff until removed from site.

Cut to fill is likely to involve excavators and loaders working within the confines of the site. Compaction of fill material is to be completed in accordance with NZS 4431:2022 and is generally achieved with loaders and excavators.

The importation of roading material will involve trucks carting suitable roading aggregate from quarries. This material will be placed, spread, and compacted. Preliminary calculations indicate approximately 500m³ of compacted aggregate material will be imported to site, resulting in approximately 30 truck movements between the respective quarry and development location.

In addition to the importation of roading material for roads, it's likely that the site will be stabilised with a layer of basecourse across lots/exposed areas. Preliminary calculations indicate approximately 650m³ resulting in approximately 40 truck movements between the respective quarry and development location.

Combined with truck movements for imported fill, this brings the total approximate truck movements to 215.

The earthworks have been designed to be completed in one operation. The works will be progressively constructed and stabilised. Care will be taken to ensure runoff from stabilised areas does not discharge over areas under construction.

2. PRINCIPLES TO MINIMISE EFFECTS

The key principles in this plan for minimising sediment discharges and effects are outlined below. These have been taken from Section A2.0 of the GWRC's (ESCG), with additions based on our experience with similar projects on the Kāpiti Coast.

This approach has been successfully implemented for the earthworks recently completed on other sites on the Greater Wellington Region, including the Kāpiti Coast.

The principles will be as follows:

- Minimise Disturbance – Keep the total earthworks area to a minimum as necessary to achieve the design outcome.
- Protect Slopes – Protect existing slopes wherever possible and intercept clean water runoff and divert away from exposed slopes.
- Protect Receiving Environment – Identify receiving environments, especially water courses, and limit disturbance in the vicinity.
- Stabilisation – Progressively stabilise as earthworks are completed.
- Install Perimeter Controls & Diversions – Control “clean water” to minimise the flow of water across the earthworks site.
- Minimise External Effects - Metalling of construction access tracks.
- Inspections - Regular inspections, audits, and monitoring of ESC measures.
- Coordination – Working with GWRC, the Contractor & Engineer to ensure best practice approach is applied throughout duration of works, ensuring regular meetings to discuss effectiveness of ESCP measures; and Modify the ESCP if Required - In response to experience gained on site

3. PRINCIPLES TO MINIMISE CONSTRUCTION EFFECTS

The key principles in minimising construction effects on existing neighbours and local infrastructure will be the implementation of site-specific traffic management. With traffic management measures in place, we are confident construction traffic can be suitably managed to minimise the impacts on existing neighbours and the potential risks to other road users including children and elderly residents.

4. CONTROL METHODS (CONSTRUCTION EFFECTS)

4.1. SITE SPECIFIC TRAFFIC MANAGEMENT PLAN

Prior to the commencement of construction works onsite, a site-specific Traffic Management Plan (TMP) will be prepared by a suitably qualified person/s in accordance with the Code of Practice for Temporary Traffic Management (CoPTTM), or other relevant industry documentation. The TMP will be the primary method to ensure construction traffic on Mazengarb Road and Stella Court (where required) can safely and effectively operate with

existing residents and road users.

The objectives of the TMP will be to ensure the safe interaction between all road users on Mazengarb Road, Stella Cour, the new internal road and construction traffic, with consideration given to pedestrians and cyclists.

The TMP will be submitted to KCDC for approval prior to implementation and construction works commencing.

4.2. PRE AND POST CONSTRUCTION SURVEY

Prior to commencement of construction works and on completion of the development an onsite pre and post construction walkover of Mazengarb Road will be completed with the road controlling authority (KCDC). The purpose of this survey will be to determine:

- The current condition of roading infrastructure including seal, kerbing, crossings, sumps.
- Post-development condition of roading infrastructure including seal, kerbing, crossings, sumps.
- Establish and detail, if any, remedial works required by the contractor.

Cuttriss have been involved in pre and post construction surveys previously and have been able to utilise drone surveying along with on ground walkover by the engineer and road controlling authority. Cuttriss considers this method of pre and post construction condition assessment well suited to this development.

Any damage or wear on Mazengarb Road due to construction activities during the course of construction works will be assessed fortnightly by the Engineer and KCDC. Remedial works will be confirmed with KCDC and completed in a timely manner.

4.3. CONSTRUCTION TRAFFIC ENTRY AND EXIT LOCATIONS

The primary entry and exit locations onto site will be by way of Mazengarb Road, as indicated on 23333 ESCP (Appendix A). A stabilised entrance as detailed under Section 5.4 will be provided off from Mazengarb Road. It is noted that the primary entrance is already sealed. To minimise the instances of trucks queuing on Mazengarb Road, this entrance could be widened as necessary to ensure two trucks can pass each other within the entrance to the site. The widening is to be completed in accordance with GWRC guidelines for a stabilised entrance. Site safety fencing and signage will be erected to ensure members of the public do not enter site, this will be addressed and confirmed with the contractor and implemented prior to works commencement.

Onsite manoeuvring will be provided during to ensure construction vehicles & visitors can park onsite as necessary, reverse from their car parks, and then be able to leave site in a forward motion.

No construction vehicles, including visitors to site, will be allowed to park within Mazengarb Road. This will be noted with the contractor prior to the commencement of construction works.

The site-specific traffic management plan noted under Section 4.1 will detail traffic management methods to ensure the safe turning of any construction traffic from the temporary access point, including out on to Mazengarb Road can be achieved.

4.4. MAINTENANCE, MONITORING & REPORTING

The Engineer to the Contract/Construction Manager, or their representative will complete an audit of Mazengarb Road on a fortnightly basis or as required based on construction activities. If at any stage it is determined that damage has been caused to the above road, the engineer will notify KCDC and action remedial works as soon as practical to do so.

Weekly audits are to be completed by the Engineer or Engineer's Representative and shall include, but not be limited to:

- Date.
- Name of Auditor.
- Site Condition.
- Weather Conditions.
- Maintenance required.
- Contractor responsible for maintenance.
- General comments.

The frequency of these audits may be reduced if agreed in writing with Council.

4.5. RESIDENT NOTIFICATION

Prior to commencement of construction works onsite, resident notification will be provided via a letter drop to immediately affected neighbours to notify of the following:

- Proposed works.
- Works commencement date.
- Contractor details/point of contact.
- Project manager/points of contact.

Notification of works start via a letter drop will be issued 5 working days prior to the anticipated commencement date.

The letter drop will outline the process for reporting incidents or complaints. Section 16 below details the complaint process.

5. CONTROL METHODS

The measures outlined below, where applicable, will be constructed in accordance with GWRC's ESCG. These measures must be implemented prior to the commencement of other site earthworks as appropriate to the control. The land disturbance area must be clearly identified before the commencement of works.

Not all the measures outlined below will necessarily be implemented for this project but give a guide to the types of measures that may be used if deemed necessary as construction progresses.

5.1. CLEAN WATER DIVERSION CHANNELS AND BUNDS

The bunds shall be a minimum of 2m wide, and the external sides no steeper than 2:1. These are to be constructed using in-situ material and stabilised using existing grass.

The channels will utilise the natural infiltration of the sandy soils to dispose of runoff into the ground. The raw soakage rate has been calculated at 540mm/hr. Given the infiltration rates and limited catchments, pipe-drop structures and flumes are not considered necessary.

5.2. DIRTY WATER DIVERSION CHANNELS AND BUNDS

The bunds shall be a minimum of 2m wide, and the external sides no steeper than 2:1. These are to be constructed using in-situ material and stabilised using existing grass.

For each dirty water diversion channel and bund, the catchment has been considered. None of these catchments exceed 5ha. As such, the standard diversion arrangement in Figure 19 of the ESCG shall be used.

As above, the channels will utilise the natural infiltration of the sandy soils to dispose of runoff into the ground. The raw soakage rate has been calculated between 242mm/hr and 734mm/hr. Given the infiltration rates, pipe-drop structures and flumes, and check dams are not considered necessary.

5.3. CONTOUR DRAINS

Given the limited catchment areas and natural infiltration rates, it is unlikely contour drains will be required for day-to-day operations. However, should site conditions dictate, these should be constructed to break up the overland flow draining over disturbed slopes.

The contour drains should be at least 500mm deep, with a compacted bank height of 250mm and width of 2m. The catchment upstream of the contour drain should be less than 0.5ha. The spacing shall be as per Table 5 of the ESCG. Contour drains should be tyre/track rolled to limit sedimentation.

5.4. STABILISED ENTRANCES AND HAUL ROAD

A Stabilised Entrance shall be constructed as shown on the plan 23333 ESCP (Appendix A). These shall be constructed using 50-150mm washed aggregate, shall be at least 150mm thick, 10m long and 4m wide (minimums). It is anticipated that earthworks vehicles will work within the confines of the site, so a shaker ramp is not deemed necessary. As noted above, the primary access point shall be widened as required to ensure that two trucks can pass within the site. This entrance is already sealed, but if widening is necessary, this shall be completed in accordance with the above recommendations.

All truck movement areas will be metalled to provide all weather access. The condition of the metal access tracks will be monitored for condition and maintained as required.

Any dirt tracked onto Mazengarb Road will be swept up daily, and not washed into open drains and the downstream stormwater network.

5.5. SILT FENCES

Silt fences will be installed around the works area as detailed on the plan 23333 ESCP (Appendix A). These will remain in place until the area is fully stabilised.

The toe of silt fences is to be buried and compacted in 100mm wide and 200mm deep trenches. The fence will have waratahs/posts at spacings 2-4m apart to maintain its structure and integrity. Supporting waratahs/posts should be embedded to a minimum depth of 400mm.

Due to the high infiltration rates of the existing soil, it is not anticipated that water will pond regularly behind the silt fences. Returns shall be constructed as per Table 13 of GWRC's ESCG.

5.6. SUPER SILT FENCES

The super silt fence shall be constructed in accordance with Figure 88 of GWRC's ESCG.

Due to the high infiltration rates of the existing soil, it is not anticipated that water will pond regularly behind the super silt fences. Returns shall be constructed as per Table 14 of GWRC's ESCG.

5.7. DUST CONTROL

Dust control will form a critical component of the ESCP measures to ensure the works do not generate nuisance effects or discharge to the environment. It is anticipated construction will likely be carried out in dry conditions, which due to the nature of the in-situ sandy material, means there is a high chance of dust. This will be managed through the following controls as deemed necessary:

- Water Sprinkling – utilising a water cart or sprinkler system to ensure the ground remains moist.
- Soil Binders – Form a protective crust to reduce windblown dust generation (not suitable in trafficable areas).
- Progressive Stabilisation.
- Consolidate loose surface material.
- Avoid loading material into trucks in windy conditions.
- Limit Traffic Movements – Establish haul roads and minimise traffic movements when planning works methodology.
- Control Vehicle Speeds – Keep to a minimum to minimise dust generation.
- Maintain Road Surfaces and Entrances – Reduce material tracked onto roads; and

5.8. DECANTING EARTH BUNDS (ADDITIONAL MEASURE IF REQUIRED)

If required, the DEB will be sized to 2% of the catchment area and will have a 100mm T-bar decant in accordance with Figure 67 of GWRC's ESCG. It is not anticipated geotechnical design will be required as the base of the bund will be lower than the surrounding ground levels.

Due to the lack of clay content and high natural filtration of the in-situ material, it is not anticipated that coagulant or flocculant treatment will be required.

5.9. SILT SOCKS OR METAL BUNDS (ADDITIONAL MEASURE IF REQUIRED)

Silt socks or metal bunds will be used for stormwater runoff control across the access road if required and as an additional measure in diversion channels to slow water velocity if required. Existing sumps in Mazengarb Road and Stella Court shall also be monitored and if required silt socks placed around the sump grate to reduce the chance of sediment entering the stormwater network. If socks are used, they will be removed during truck movement times to avoid damage.

6. SITE STABILISATION

Progressive stabilisation of the site will be critical as this ensures the site is resistant to erosion as soon as possible. Stabilisation methods are to be constructed in accordance with Section E3 of GWRC's ESCG. This methodology will minimise the extent of exposed earthworks at any one time thus reducing the risk of sedimentation and erosion.

The contractor shall ensure the works are planned to stabilise as much of the site as possible before 31 May, refer Section 8 below.

It is noted that metal basecourse or similar material will likely be used to provided immediate stabilisation across site as earthworks are completed.

7. MAINTENANCE, MONITORING & REPORTING

7.1. MAINTENANCE

The following table identifies the maintenance requirements for ESCP controls. Maintenance is based on daily inspections, prediction of wet weather or as a response to effects of wet weather.

Structure	Trigger	Maintenance Action
Silt Fence	Fence flapping in wind	Reattach, increase number of fabric locks, install additional waratahs and wires if necessary.
	Sediment build-up straining structure	Remove sediment.
	Bottom of fence not anchored correctly	Reconstruct fence bottom as required to standard detail.
	Under cutting of fence	Identify options to avoid concentrated flow.
Clean/Dirty Water Channels	Silt build-up	Remove silt.
	Washed out	Reform bund to correct profile, install geotechnical lining if necessary.
Metalled access & Internal Hardstand Area	Dirt on Access and Mazengarb Road, Dirt on Internal Hardstand Area	Clean access / hardstand area and add additional metal. Ensure trucks stay on metal. Sweep Mazengarb Road if dirt is tracked.

7.2. INSPECTIONS & AUDITS

The Contractor shall inspect the sediment control structures daily and the general measures on a weekly basis. Where any diversion drains or other measures have been temporarily removed to allow construction works to be carried out, they will be reinstated prior to leaving site at the end of the day. The contractor will also inspect the measures immediately prior to and after any predicted wet weather event.

The Engineer to the Contract, or their representative will complete an audit of all ESCP measures on a fortnightly basis or as required under the GWRC conditions. If at any stage breaches are identified which could potentially impact on the primary objective of this CEMP, all works are to cease until this breach is remedied.

Fortnightly audits are to be completed by the Engineer or Engineer's Representative and shall include, but not be limited to:

- Date
- Name of Auditor.
- Site Condition.
- Weather Conditions.
- Condition of sediment control measures.
- Sediment management issues.
- Maintenance required.
- Contractor responsible for maintenance
- General comments.

7.3. FORTNIGHTLY ESC MEETINGS

The Engineer or Engineer's Representative will hold a fortnightly meeting on site with the Contractor after the audit to discuss ESC issues and progress. Any matters arising from the audit will be discussed and remedial actions required will be confirmed and actioned. As noted in Section 7.2 above, site inspections and checking of erosion and sediment control measures will be carried out by the Engineer or Engineer's Representative between meetings.

8. HEAVY WEATHER RESPONSE & CONTINGENCIES

Earthworks should be planned to minimise construction through winter, if possible, which is when most heavy weather events occur. If bulk earthworks are to continue through the winter (1 June – 1 October), the Contractor shall progressively stabilise the site to ensure the minimum amount of open ground as is practicable with ongoing operations. Due to the sandy properties and high infiltration rates of the in-situ material, it is not anticipated that winter works approval will be required to carry out bulk earthworks between 1 June and 1 October. Controls will be monitored in the lead up to this period to confirm they are functioning adequately.

8.1. PREDICTED WET WEATHER

The contractor will be required to monitor the weather daily, and in advance of any wet weather, ensure that all ESCP controls are in place and fully operational. Heavy weather is defined as 7mm in 1 hour or 20mm over 24 hours.

If site works are to cease for a period of greater than 24 hours the contractor will take the following measures:

- Inspect all ESCP controls and carry out maintenance if required.
- Ensure diversion bunds and channels are in place as required by each stage.
- Construct contour drains on all exposed slopes.
- Track roll exposed surfaces to seal off and increase roughness; and
- Seal topsoil stockpiles.

8.2. CONTINGENCIES

In the event of natural hazards, extreme climatic events and prolonged dry weather the following contingency actions may need to be undertaken:

Cause	Effect	Contingency Action
Earthquake	Slope failure	Geotechnical engineer to inspect failure and advise remedial action. Provided there are no health and safety risks, construct diversion channel at top of failure & silt fence at the toe of the failure.
	Failure of DEB	Determine extent of loss of sediment, direct water away temporarily, repair and then redirect water back to DEB.
Extreme rainfall event	Failure of DEB	Determine extent of loss of sediment, direct water away temporarily, repair and then, redirect water back to DEB.
	Scour of drains	Repair and line if required.
	Scour of slopes	Redirect water and repair slopes.
	Failure of silt fence	Clean out and repair or replace.
	Slope failure	Construct diversion channel at top of failure & silt fence at the toe of the failure. Geotechnical engineer to inspect failure and advise remedial action.

9. REVIEW & MODIFICATION OF CEMP

Following the issue of Resource Consents, and engagement of a Contractor, this document is to be reviewed with the Engineer to confirm construction methodologies and ESC measures. As the construction of the earthworks progresses, additional or modified ESC measures may be required to respond to ground conditions or construction methodologies. The Engineer or Engineer's Representative will consult with GWRC and discuss the reasons for these measures and how these are to be implemented.

GWRC approval must be obtained in writing before implementing any amendments to the approved CEMP.

10. SITE RESPONSIBILITIES

The following table sets out site responsibilities:

Name/Company	Position	Responsibilities	Contact Details
TBC	Engineer to Contract	Regular inspections of site to ensure work being undertaken in accordance with design. Fortnightly audit and meeting with contractor. Resolution of any issues. Reporting to GWRC.	TBC
TBC	Contractor	Installation and maintenance of ESCP measures. Daily inspection of structures. Weekly inspection of all measures. Weekly meeting with engineer. Implementation of any actions or remedial works as a result of audit.	TBC
Kurt Kerrison	Principal	As required by conditions of consent.	kurtk@thamespacific.com

The Contractor is to comply with this CEMP, and any subsequently approved variations. Failure to do so may result in the Principal being able to claim damages. The Engineer or Engineer's Representative is to inspect the measures to check for compliance and is responsible for reporting back to GWRC as required by the consent.

Following notice of the installation of control measures by the Contractor, and prior to commencement of bulk earthworks, the Engineer or Engineer's Representative is to give GWRC and KCDC **48 hours'** notice of commencement of works, to allow for any required inspections to take place. The Contractor is not to commence works until receiving written certification that the controls outlined in the approved ESCP have been installed, and this certification has been sent to the Manager, GWRC.

11. CONSTRUCTION TIMELINE & METHODOLOGY

The earthworks are scheduled to commence upon receipt of all required consents and following engagement of a Contractor. Specific staging of works will be discussed with the Contractor prior to the commencement of works. It is anticipated that earthworks can be completed in one operation.

11.1. ANTICIPATED CONSTRUCTION METHODOLOGY

Sequencing of works and timing for construction stages will be discussed with the Contractor prior to the commencement of works and discussed with GWRC prior to “for construction” approval of this CEMP.

The earthworks consist of stripping topsoil and temporarily stockpiling prior to removal, cut to fill earthworks, importation of suitable fill material and progressive site stabilisation with metal.

The initial setup works will commence following a site pre-start meeting with representatives from KCDC, the Contractor and Engineer. The installation of site access and ESC measures will then progress, including:

- Stabilised site entrances.
- Install ESC measures before any ground disturbance takes place.
- Site office and parking hardstand area.
- Silt fences.

Once these measures are in place and checked by the Engineer, and any nominated representatives of GWRC and KCDC, works will commence.

Earthwork processes recommended to be carried out are as follows:

- Install additional ESC measures as required.
- Obtain approval of ESC measures.
- Strip topsoil.
- Cut and fill to proposed earthworks platform levels.
- Place metal as soon as possible following cut/fill operations.
- The Contractor shall visit the site every day during operations and dry or windy days during non-working days to assess the dust nuisance. Where necessary, the Contractor shall arrange to dampen down areas of exposed sand to reduce dust. Where wet suppression by watering is used as a mitigating measure, the consent holder shall not use water from the council water mains. During periods of high winds, it is recommended that the loading of soils should not be undertaken.
- The earthworks shall be undertaken in such a way as to ensure that construction noise shall not exceed the permitted noise limits on the District Plan.

If waahi tapu or other cultural sites are unearthed during earthworks the contractor and/or owner shall follow the accidental discovery protocols as listed below:

- Work shall cease immediately within 100 metres of the site of discovery.
- The contractor and subcontractor(s) must shut down all machinery, isolate and secure the site, and advise the project manager.
- No materials relating to the artefacts or site shall be removed.
- The Engineer to the Contract/Project manager shall be notified.
- Ātiawa ki Whakarongotai Charitable Trust shall be notified
- If skeletal remains are uncovered, the contractor will advise New Zealand Police.
- An archaeologist approved by Ātiawa ki Whakarongotai Charitable Trust shall be employed at the expense of the landowner to examine and record the site.
- Ātiawa ki Whakarongotai Charitable Trust will at their discretion contact other iwi groups and organise a site inspection by appropriate tangata whenua advisors and the archaeologist.
- If as a result of the site inspection and investigation there is a need for an appropriate ceremony, Ātiawa ki Whakarongotai Charitable Trust will arrange such at the landowner's expense.
- Materials discovered will be handled and removed by the Ātiawa ki Whakarongotai Charitable Trust representatives responsible for the tikanga appropriate to their removal and preservation, or re-interment; and
- Works affecting the archaeological site shall not resume until Ātiawa ki Whakarongotai Charitable Trust, and the New Zealand Police in the case of skeletal remains, have given the appropriate consent, approval or authority for work to continue.

12. HOURS OF OPERATION

No construction work under the Contract, other than essential safety precautions, shall be performed between the hours of 6:00 pm and 7:00 am Monday to Friday, or between the hours of 5:00 pm and 8:00am Saturday, nor at any time on a Sunday or Public Holiday without the prior permission of the Engineer and of any Public Authority whose consent may be required.

Night work will only be authorised if, in the Engineer's opinion it is necessary. No night work will be permitted without prior approval of the Engineer and KCDC. Refer to consent conditions for further details.

13. SPILLS

In the event of a spill of fuel, hydraulic fluid, or other potential liquid contaminants, immediate steps shall be taken to contain the spilt contaminant. The spilt contaminant and any material used to contain it shall be removed from the site and disposed of at an authorised landfill. The consent holder shall also immediately notify the Engineer and the appropriate representative of GWRC, confirming the scale and location of the spill, and any actions taken.

14. TEMPORARY REINSTATEMENT

Some measures, such as filter socks and cut off drains across haul roads will be removed during the day while trucks and machinery are accessing the site. If required, they will be put back in position at the end of the day as part of the site close up procedure, or prior to a heavy rain event.

15. DECOMMISSIONING

Decommissioning of the ESCP control measures will only be undertaken once approval to do so is received from GWRC and/or the Engineer. Decommissioning of ESCP controls will be completed in accordance with the procedures outlined in GWRC's ESCG. Decommissioning will only be permitted after the site, or relevant parts of the site, are fully stabilised and that there is no evidence of sediment leaving the area upstream of the control.

16. COMPLAINTS PROCEEDURE

If any personnel are made aware of a complaint, the matter should be passed on to the Engineer to the Contract or the Engineers Representative (contact details are included within this document). A written record of the complaint shall include (but not be limited to):

- Name and address of complainant (if provided).
- Date and time that the complaint was received.
- Details of the alleged event.
- Weather conditions at the time of complaint; and
- Any measures taken to mitigate/remedy the complaint.

The matter can then be discussed with the Engineer, Project Manager, Principal, and the complainant. All complaints will be reported to GWRC within 24 hours of receiving the complaint.

Additional control measures can then be implemented, or remedial works undertaken if necessary.

17. CONCLUSION

This Construction & Environmental Management Plan has been prepared in accordance with Greater Wellington Regional Council's "*Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region*" and is intended as a preliminary version for consenting purposes.

The control measures and procedures within this CEMP have been described to demonstrate compliance with the above document. Implementation in accordance with this CEMP will ensure best practice measures are utilised to manage erosion and sedimentation caused by the proposed bulk earthworks and civil works construction. Provided these measures are

implemented, construction effects can be appropriately managed to ensure any potential adverse effects will be properly avoided or mitigated to an acceptable level.

Prepared by:



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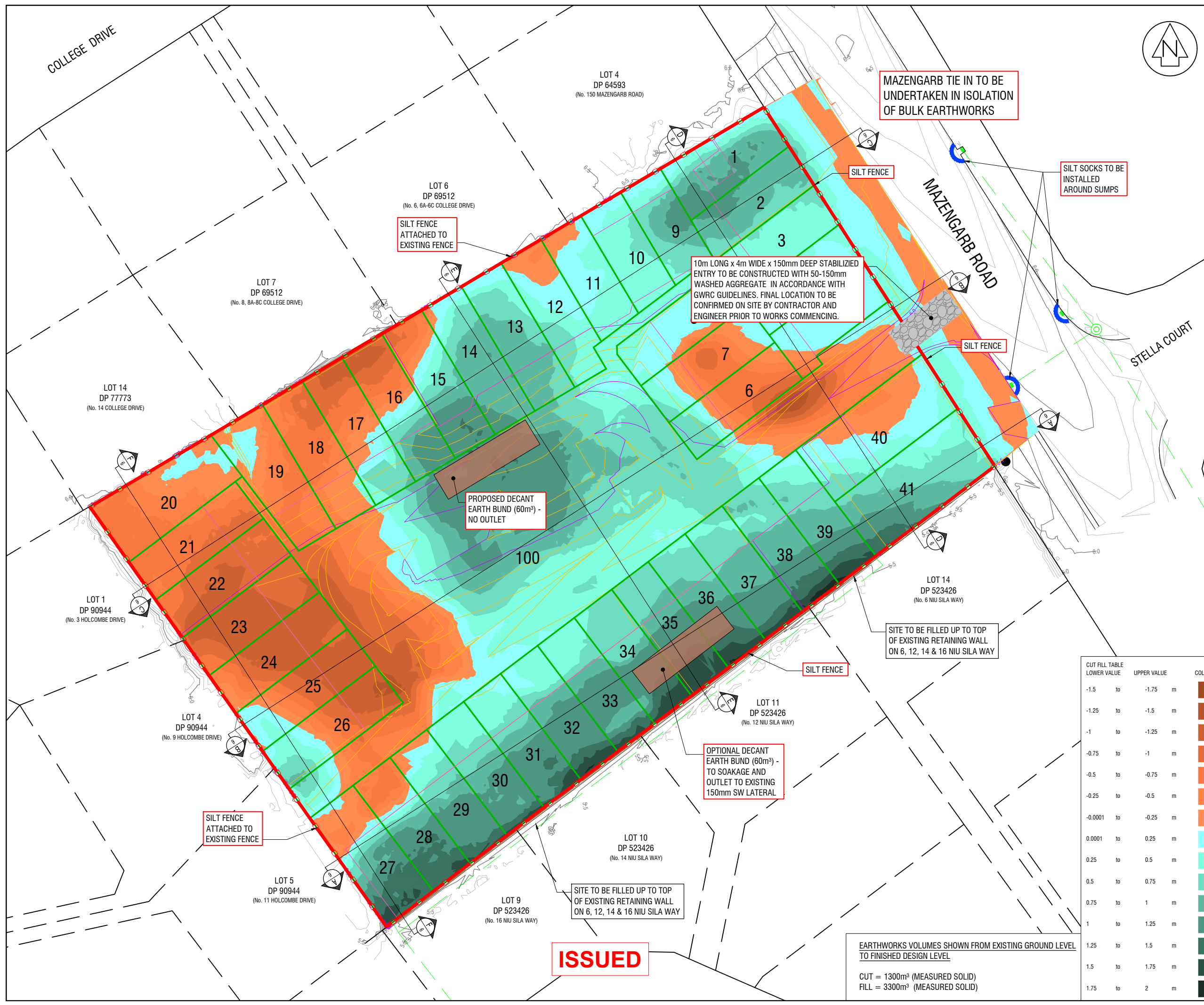
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Jamal Rautao
Civil Engineer CEngNZ (Eng. Technologist)
CUTTRISS CONSULTANTS LTD

APPENDIX A

EROSION & SEDIMENT CONTROL SITE PLAN



REVISION DETAILS	NAME	DATE

- NOTES:**
- THIS PLAN IS TO BE USED FOR RESOURCE CONSENT PURPOSES ONLY & IS NOT TO BE RELIED UPON FOR ANY OTHER PURPOSE WITHOUT THE CONSENT OF CUTTRISS CONSULTANTS LIMITED.
 - DIMENSIONS AND AREAS SHOWN ON THIS SCHEME PLAN WILL BE SUBJECT TO FINAL LAND TRANSFER SURVEY
 - COORDINATES ARE IN TERMS OF NEW ZEALAND GEODETIC DATUM 2000, WANGANUI CIRCUIT
 - LEVELS ARE IN TERMS OF MEAN SEA LEVEL WELLINGTON VERTICAL DATUM 1953. ORIGIN OF LEVELS: SP 1 DP 7773 (DC8A) RL: 5.414. SOURCED FROM LINZ ELLIPSOIDAL HEIGHT CONVERSION, DECEMBER 2021
 - NOT ALL INTERESTS ON THE RECORD OF TITLE MAY BE SHOWN ON THIS PLAN, AND SHOULD BE INVESTIGATED FURTHER
 - SERVICES HAVE BEEN LOCATED ON SITE WHERE POSSIBLE, OTHERWISE SHOWN FROM KDCDC RECORDS, AND SHOULD BE VERIFIED ON SITE
 - THE SERVICES SHOWN ON THIS PLAN ARE CONCEPTUAL ONLY, AND THE LOCATION AND DEPTHS MAY CHANGE DURING THE DETAILED DESIGN PROCESS
 - CONTOUR INTERVAL: 0.2m
 - SURVEYED BY: R EVANS & S ROBERTS, 13 MAY 2024
 - INSTRUMENT USED: TRIMBLE GPS RTK R10 VRS & TRIMBLE S7 & DJI M300 RTK
 - BOUNDARY LEVELS FOR DETERMINATION OF CRITICAL RECESSION PLANES MUST BE CONFIRMED PRIOR TO ANY APPLICATION FOR BUILDING CONSENT.
 - BOUNDARY INFORMATION HAS BEEN DETERMINED BY SURVEY CALCULATION METHODS AND HAS NOT BEEN VERIFIED ON SITE
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LEGEND

	SILT FENCE
	BOUNDARY
	TOP OF BANK
	BOTTOM OF BANK
	EXISTING CONTOURS
	PROPOSED CONTOURS

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PROJECT
**PROPOSED SUBDIVISION
 LOT 12 DP 90944
 160 MAZENGARB ROAD,
 PARAPARAUMU**

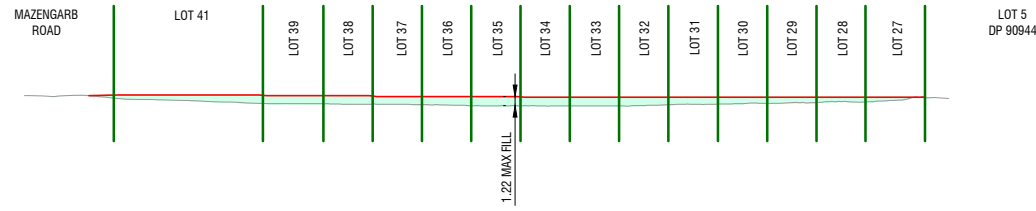
EROSION SEDIMENT CONTROL PLAN		SCALE A1 - 1:250	REDUCED SCALE A3 - 1:500
FIELDWORK	RE	05/24	DRAWING NUMBER 23333 ESC
DESIGNED	JTR	07/24	
DRAWN	JAO	07/24	
CHECKED	JTR	07/24	
SHEET 1 OF 2 SHEETS			REVISION

CUT FILL TABLE	LOWER VALUE	UPPER VALUE	COLOUR
	-1.5	to -1.75	m
	-1.25	to -1.5	m
	-1	to -1.25	m
	-0.75	to -1	m
	-0.5	to -0.75	m
	-0.25	to -0.5	m
	-0.0001	to -0.25	m
	0.0001	to 0.25	m
	0.25	to 0.5	m
	0.5	to 0.75	m
	0.75	to 1	m
	1	to 1.25	m
	1.25	to 1.5	m
	1.5	to 1.75	m
	1.75	to 2	m

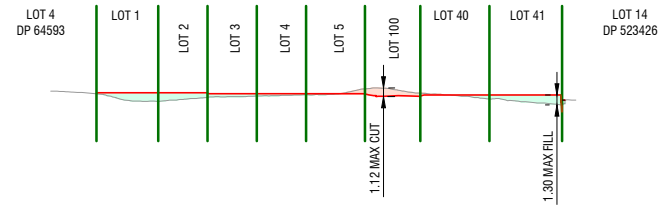
EARTHWORKS VOLUMES SHOWN FROM EXISTING GROUND LEVEL TO FINISHED DESIGN LEVEL

CUT = 1300m³ (MEASURED SOLID)
 FILL = 3300m³ (MEASURED SOLID)

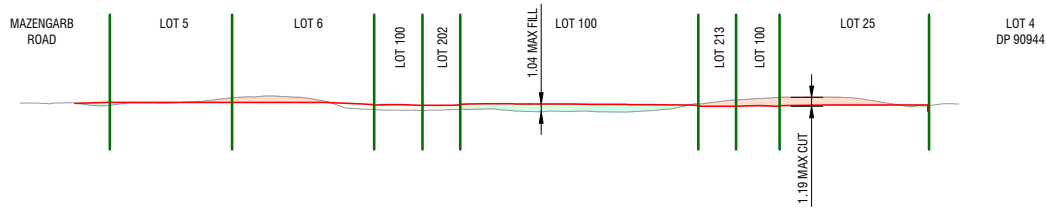
ISSUED



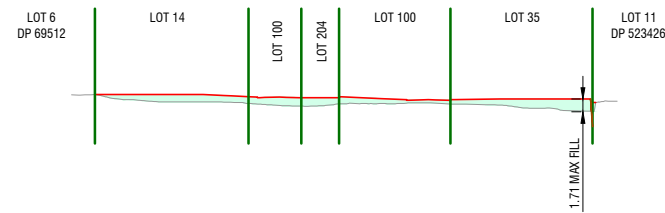
SECTION A-A



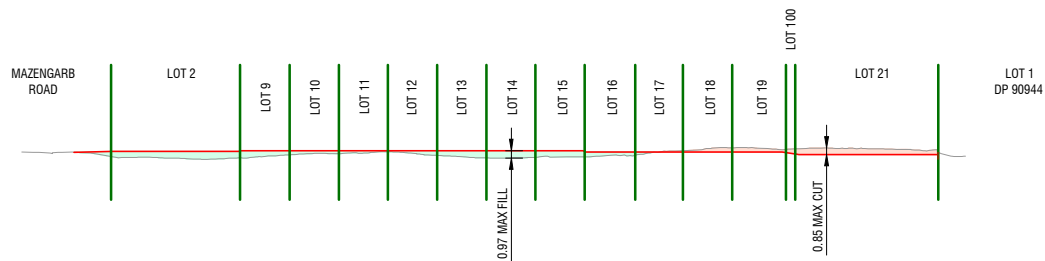
SECTION D-D



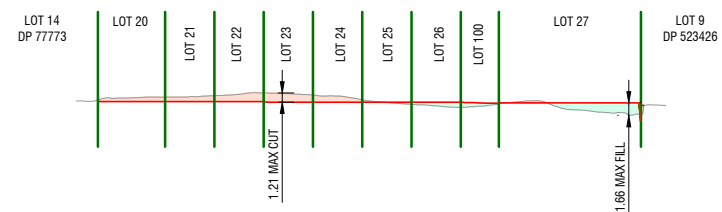
SECTION B-B



SECTION E-E



SECTION C-C



SECTION F-F

REVISION DETAILS	NAME	DATE

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 - SURVEYED BY: R EVANS & S ROBERTS, 13 MAY 2024
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LEGEND
 BOUNDARY

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PROJECT
**PROPOSED SUBDIVISION
 LOT 12 DP 90944
 160 MAZENGARB ROAD,
 PARAPARAUMU**

**EROSION SEDIMENT
 CONTROL PLAN
 - CROSS SECTIONS**

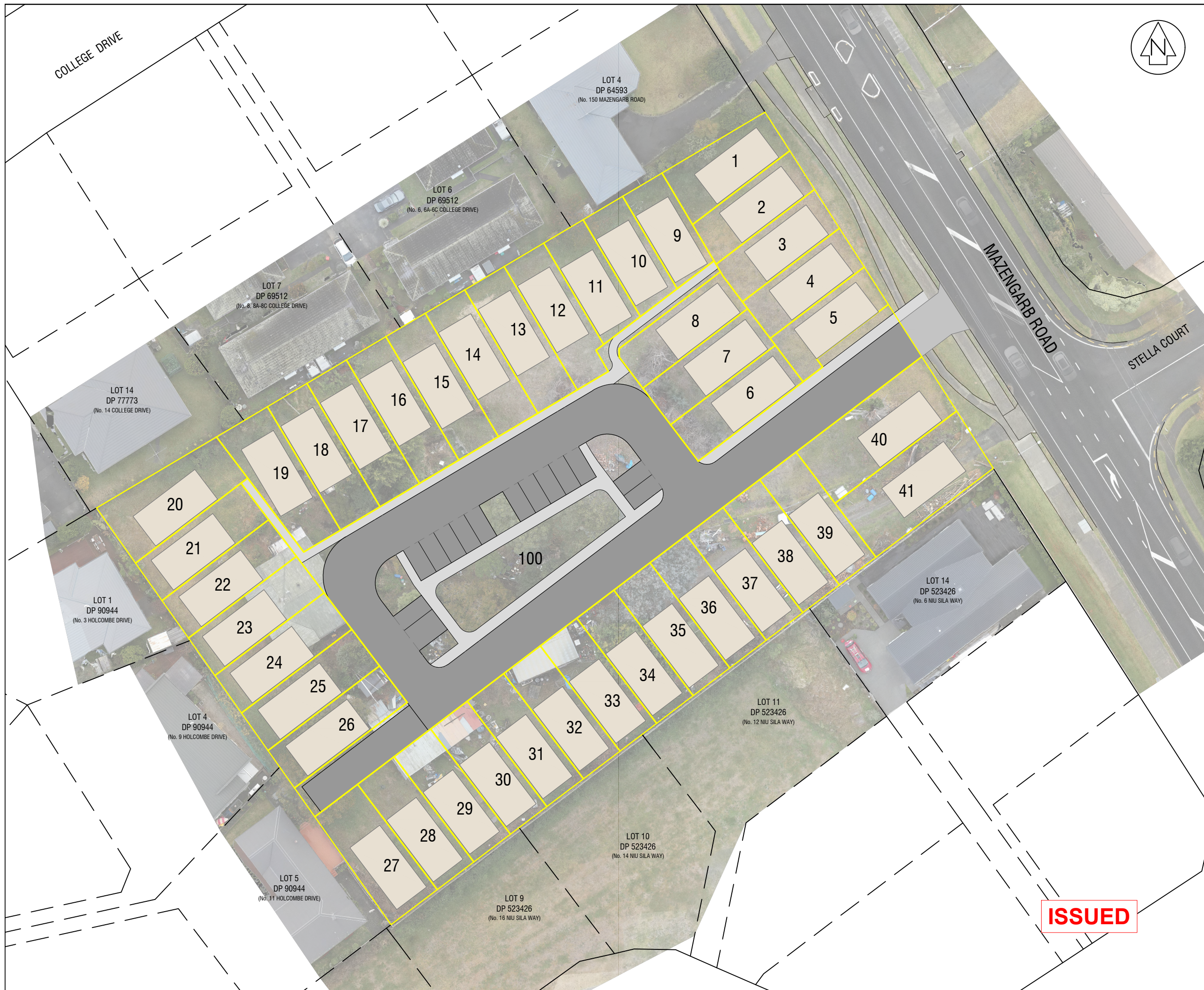
SCALE
A1 - 1:250 REDUCED SCALE
A3 - 1:500

FIELDWORK	NAME	DATE	DRAWING NUMBER	
DESIGNED	JTR	07/24	23333 ESC	
DRAWN	JTR	07/24		
CHECKED	JTR	07/24	SHEET	2 OF 2 SHEETS
			REVISION	-

ISSUED

APPENDIX B

SCHEME PLAN



REVISION DETAILS		NAME	DATE
A	ADDITIONAL DATA ADDED	NKT	07/24

- NOTES:**
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LEGEND

	BOUNDARY - EXISTING
	BOUNDARY - NEW
	PROPOSED DWELLING
	SEAL
	FOOTPATH

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 160 MAZENGARB ROAD,
 PARAPARAUMU**

**SCHEME PLAN - OVERALL
 LAYOUT**

ISSUED

SCALE			REDUCED SCALE		
A1 - 1:250			A3 - 1:500		
FIELDWORK	NAME	DATE	DRAWING NUMBER		
	RE	05/24	23333 SCH		
DESIGNED	JTR	07/24			
DRAWN	JAQ	07/24	SHEET	2	OF 19 SHEETS
CHECKED	JTR	07/24	REVISION	A	