



EARTHWORKS REPORT

234 Rangiuru Road, Otaki

DOCUMENT CONTROL RECORD

CLIENT	Classic Developments
PROJECT	Rangiuru Road, Otaki
PROJECT NO.	1678-02
DOCUMENT TYPE	R002v1-1678-02-Earthworks Report
DATE ISSUED	5 November 2025
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ISSUE AND REVISION RECORD

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CONTENTS

1.0	INTRODUCTION	1
2.0	CONSTRUCTION AND EARTHWORKS MANAGEMENT	1
2.1	WORKS DESCRIPTION	1
2.2	EARTHWORKS METHODOLOGY	2
2.3	EROSION AND SEDIMENT CONTROLS	2
2.4	SEDIMENT RETENTION POND	3
2.5	STOCKPILE	3
2.6	SITE ACCESS AND VEHICLE MOVEMENTS	3
2.7	DUST CONTROL	3
2.8	FLOCCULANT	3
2.9	DEWATERING	3
2.10	MONITORING	4
2.11	AS-BUILTS & CONSTRUCTION MONITORING	4
2.12	WINTER EARTHWORKS	4
3.0	LIMITATIONS	4
3.1	GENERAL	4

APPENDICES

APPENDIX 1 APPLICATION DRAWINGS



1.0 INTRODUCTION

The development site is located at 234, Rangioru Road, Otaki. The existing lot is formally described as Lot 2 DP 42874 and is 2.39 hectares in size.

The site is a vacant lot with no existing buildings or structures. Some mobile farm equipment is temporarily parked within the site. The proposed development will create residential lots.

This report provides comment on earthworks and associated erosion and sediment controls methodologies to ensure the safe and environmentally conscious completion of earthworks



Figure 1. Locality Plan

2.0 CONSTRUCTION AND EARTHWORKS MANAGEMENT

2.1 WORKS DESCRIPTION

Earthworks are required to facilitate this development, and these are shown on our 200 series plans. Filling will be undertaken to enable the residential lots to have building platforms above the 1% AEP flood level (including freeboard).

To complete the site subdivision, minor earthworks will be required for the following activities within the site:

- Stripping topsoil and stockpile on site (0.3m cut depth).
- Import 26,050 m³ of fill to site, with a maximum fill depth of 1.2m from the existing ground level.

Table 1: Earthwork Volumes

	Area (m ²)	Cut (m ³)	Fill (m ³)	Balance (m ³)
Bulk Earthworks	23,997	208	26260	26,050 (Fill)
Topsoil Strip	23,997	7,197	-	7,197 (Cut)
Import Fill	23,997	-	26,050	26,050 (Fill)



The earthwork volumes have been calculated to the finished subgrade level, assumed to be 200 mm below the finished ground level. This provides allowance for the import of road basecourse materials, building foundation preparation, and topsoil re-spread. It is anticipated that approximately 50% of the stripped topsoil will be removed from site.

We have allowed for a small amount of unsuitable and contaminated material to be cut and removed off site. Contaminated land and remedial works can be found in the PSI/DSI and RAP reports by ENGEO.

2.2 EARTHWORKS METHODOLOGY

Due to the flat topography of the site and the absence of an existing discharge point within the property boundary, the site will be raised to enable surface water discharge to land along the northern boundary. Permanent stormwater discharge will occur via a dispersion swale constructed along this boundary, replicating the existing sheet flow pattern observed on site.

This topography presents challenges for the construction and operation of the sediment retention pond (SRP). A key measure to minimise runoff and sediment generation during construction will be to limit the extent of exposed earth at any one time and adopt a staged earthworks approach.

- Erosion and sediment controls will be established in accordance with the approved Erosion and Sediment Control Plan (ESCP).
- Topsoil will be stripped and stockpiled on site. Stripping will be undertaken in stages to minimise open ground areas.
- Imported fill will be placed and compacted behind the stripped areas. Once compacted, these areas will be considered stabilised. The standard of compaction and method of determination will be set out in NZS4431 and NZS4402 or as otherwise specified by the Geotechnical Engineer.
- Topsoil stripping and filling will progress sequentially from south to north across the site.
- Attenuation ponds and the permanent discharge swale will be constructed once the SRP is decommissioned and the site is fully stabilised
- Pumps will be available on site to manage any dewatering requirements. Water generated from dewatering activities will be directed to water carts or the ESC pond for treatment and disposal.
- Following completion of all earthworks and final stabilisation, erosion and sediment controls will be removed in accordance with the approved decommissioning plan.

This methodology will be confirmed with the nominated contractor. Early contract discussions have indicated that it would be feasible.

While the construction programme is yet to be finalised, earthworks are anticipated to commence in early 2026 and extend over a period of approximately three months. Based on this timeframe, winter works approval is not expected to be required.

2.3 EROSION AND SEDIMENT CONTROLS

Erosion and sediment controls are proposed for the site in accordance with Greater Wellington Regional Council's compliance document – Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region.

The proposed controls are detailed on our plans (1678-02 240 and 250). These consist of:

- A Sediment Retention Pond (SRP) will be constructed in the north-east corner of the site. This will discharge overland via spreader bar, to an undistributed low area within the site.
- Diversion channels are located along earthworks boundary to divert dirty water from within the site to the SRP.
- Due to the topography, no run from adjacent properties is expected and therefore clean water diversions have not been proposed.
- Silt fences will be constructed around the edges of the site as required.
- A stabilised construction entrance will be used at the site entrance to minimise the tracking of dirt and debris onto Rangiora Road.



- Silt socks to be placed at nearby stormwater catchpits.

As-built information will be provided for the erosion and sediment controls, prior to earthworks commencing.

A pre-start meeting will be conducted prior to earthworks commencement.

The contractor will be responsible for establishing and maintaining the erosion and sediment controls to an appropriate standard.

2.4 SEDIMENT RETENTION POND

A Sediment Retention Pond (SRP) will be constructed in the north-east corner of the site to provide primary treatment for sediment-laden runoff. The SRP will discharge overland via a spreader bar to a low, undisturbed area within the site. Due to existing ground levels and outlet RL constraints, the pond is expected to maintain a permanent water level at the base.

As the site will be progressively stabilised, the SRP has been intentionally oversized to ensure effective treatment capacity is maintained despite the permanent water level. The pond will be designed and constructed in accordance with the Greater Wellington Regional Council Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Wellington Region.

The preliminary sizing parameters for the SRP are as follows:

- Volume of 480m³ (2% of the contributing catchments area)
- Side slopes of 2:1
- Depth of 1m (to allow drainage)

Finalised pond location and size will be confirmed on site and provided by the contractor.

2.5 STOCKPILE

The project will generate 7197m³ of topsoil for stockpiling and reuse. A 1256m² area has been allocated for the stockpile within the erosion and sediment controls and next to the SRP. Any runoff from this stockpile will be drained directly to the SRP. Temporary or permanent vegetative cover will be used to stabilise the stockpile depending on the reuse quantity. It is expected approximately 50% of the stockpiled material will have to be removed off-site.

2.6 SITE ACCESS AND VEHICLE MOVEMENTS

Access in and out of the site will be through the stabilised construction entrance as shown on our plans (1678-02 240). Vehicle turning areas will be dependent on the area where works are being undertaken. However, the site is large enough to accommodate turning vehicles.

Areas for the site office, parking and compounds will be provided by the contractor prior to works commencing.

2.7 DUST CONTROL

Areas subject to dust movement in open earthworks areas can be due to high wind exposure or vehicle movements. A water cart can be utilised to suppress dust movement as required. Although due to soil types, we do not expect dust movement to be an issue, it will be monitored through the project.

2.8 FLOCCULANT

Before commencement of earthworks, the contractor may be required to engage an approved consultant to carry out bench testing of soil samples from the site. If testing shows that adequate treatment is achievable without chemical flocculant, then the contractor may proceed on this basis with monitoring of the devices carried out on a weekly basis.

If the results of the site bench testing are poor then the contractor will be required to have prepared a flocculation management plan (FMP) to document the setup, operation, and maintenance of a flocculation system for the site.

2.9 DEWATERING



As the site will be filled above the anticipated groundwater level, groundwater is unlikely to be encountered during excavation. If groundwater is encountered, dewatering shall be undertaken in accordance with the GWRC Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region.

2.10 MONITORING

Rainfall monitoring will be undertaken, and the testing locations will be at the inflow and outflow (if discharging) to the SRP. Additional testing within the stream at a location at the point of reasonable mixing (if the SRP is discharging), which is defined as 50m downstream of the SRP, and at the upstream location of the SRP.

Control measures proposed in the case of heavy rain warnings include having additional silt control fences available to install, mulch covering over the land or geotextile covering and lining of channels.

In event of failure of any ESC device the Council will be notified.

2.11 AS-BUILTS & CONSTRUCTION MONITORING

ESC and SRP as-builts will be completed to ensure all measure are in correctly constructed.

Earthworks as-builts and construction monitoring will be completed progressing during construction to ensure design levels and achieved.

2.12 WINTER EARTHWORKS

Winter earthworks are not anticipated at this stage. However, if required to complete the works, a Winter Earthworks Application will be submitted for approval. The application will outline the proposed construction methodology and any additional measures to manage erosion and sediment control during the winter works period.

3.0 LIMITATIONS

3.1 GENERAL

This report is for the use by Classic Developments and should not be used or relied upon by any other person or entity or for any other project.

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Envelope Engineering Limited. No responsibility is accepted by Envelope Engineering Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.



APPENDIX 1
APPLICATION DRAWINGS



W W W . E N V E L O P E - E N G . C O . N Z

CLIENT:
CLASSIC DEVELOPMENTS

PROJECT:
234 RANGIURU ROAD
OTAKI

PLAN SET:
CIVIL ENGINEERING DRAWINGS

ISSUE:
FOR EARTHWORKS CONSENT

DATE:
21 OCTOBER 2025

REFERENCE:
1678-02

DRAWING INDEX		
DRAWING	REVISION	TITLE
1678-02-000	R1	COVER SHEET, DRAWING LIST AND LOCATION DIAGRAM
1678-02-200	R1	EARTHWORKS EXISTING CONTOURS PLAN
1678-02-210	R1	EARTHWORKS PROPOSED CONTOURS PLAN
1678-02-230	R1	EARTHWORKS PROPOSED CUT / FILL CONTOURS PLAN
1678-02-240	R1	PROPOSED EROSION & SEDIMENT CONTROL PLAN
1678-02-250	R1	PROPOSED EROSION & SEDIMENT CONTROL DETAILS SHEET 1
1678-02-251	R1	PROPOSED EROSION & SEDIMENT CONTROL DETAILS SHEET 2



LOCATION PLAN





LEGEND:

 INDICATES EXISTING CONTOURS SHOWN AT 0.2m INTERVALS

 EXTENT OF PROPOSED EARTHWORKS

NOTES:

1. LEVELS ARE IN TERMS OF NZVD2016
ORIGIN OF LEVELS
F2K5 - SP 1 DP 471186
RL 5.34m

2. COORDINATES ARE IN TERMS NZ GEODETIC DATUM
2000 WANGANUI CIRCUIT
ORIGIN OF COORDINATES
F2K5 - SP 1 DP 471186
743180.35 mN 370206.53 mE

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REVISIONS:		BY	DATE
REV	NOTES	LTL	21-10-2025
R1	RESOURCE CONSENT		

PROJECT:
CLASSIC DEVELOPMENTS
234 RANGIORU ROAD
OTAKI

TITLE:
EXISTING CONTOURS PLAN



DESIGNED: LTL	DRAWN: LTL	
CHECKED: KD	PLOT DATE: 21-10-2025	
SCALE A1: 1:500	SCALE A3: 1:1000	
STATUS: RESOURCE CONSENT		
PROJECT No: 1678-02	DRAWING No: 200	REVISION: R1



LEGEND:

- INDICATES EXISTING CONTOURS SHOWN AT 0.2m INTERVALS
- INDICATES CUT CONTOURS SHOWN AT 0.1m INTERVALS
- INDICATES FILL CONTOURS SHOWN AT 0.1m INTERVALS
- INDICATES EXTENT OF PROPOSED BULK EARTHWORKS

NOTES:

- EXISTING CONTOURS ARE A COMBINATION OF SITE SURVEY AND FROM COUNCIL GIS LIDAR DATA.
- CUT/FILL CONTOURS SHOWN ARE THE DIFFERENCE BETWEEN EXISTING LEVEL (ASSUMED 300mm AVERAGE TOPSOIL) AND PROPOSED DESIGN LEVELS (AVERAGE 200mm BELOW FGL).

BULK EARTHWORKS TOTAL SITE:

AREA:	23239m ²
CUT:	208m ³
FILL:	26260m ³
BALANCE:	26052m ³ (FILL)

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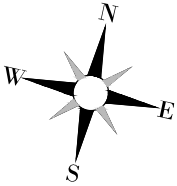
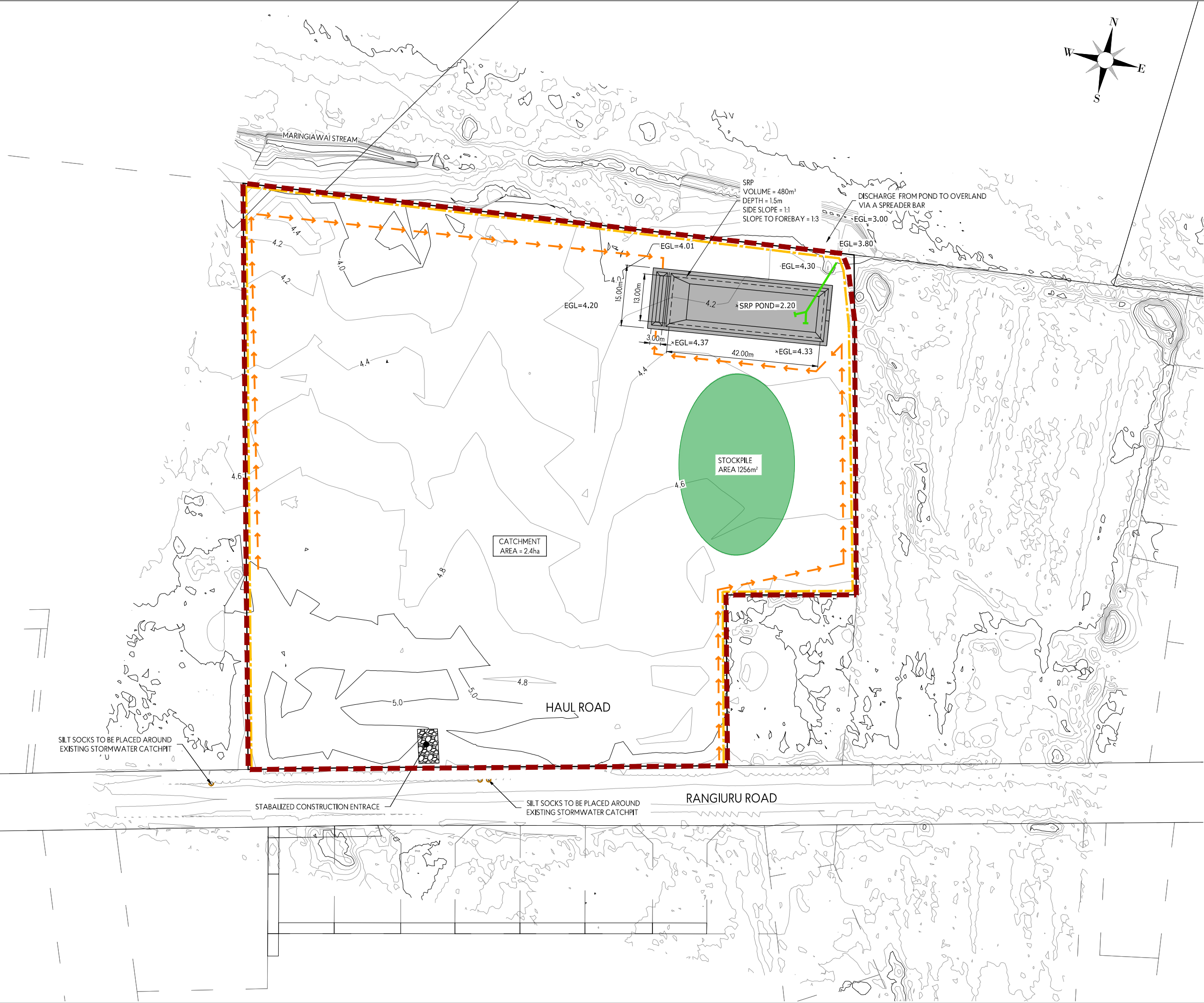
REVISIONS:		BY	DATE
REV	NOTES	LTL	21-10-2025
R1	RESOURCE CONSENT		

PROJECT:
CLASSIC DEVELOPMENTS
234 RANGIORU ROAD
OTAKI

TITLE:
PROPOSED CUT / FILL CONTOURS PLAN



DESIGNED: LTL	DRAWN: LTL	
CHECKED: KD	PLOT DATE: 21-10-2025	
SCALE A1: 1:500	SCALE A3: 1:1000	
STATUS: RESOURCE CONSENT		
PROJECT No: 1678-02	DRAWING No: 230	REVISION: R1



LEGEND:

- INDICATES EXISTING CONTOURS SHOWN AT 0.2m INTERVALS
- INDICATES EXTENT OF PROPOSED BULK EARTHWORKS
- PROPOSED SILT FENCE
- RUNOFF DIVERSION CHANNEL
- CLEANWATER DIVERSION BUND

- NOTES:**
- LEVELS ARE APPROXIMATELY IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016)
 - TRAFFICKED ROUTES THROUGH SITE TO BE STABILISED BY APPLICATION OF METAL
 - RETURNS IN SILT FENCING TO BE INSTALLED INCREMENTALLY AT BOUNDARIES OF CONSTRUCTION PHASES TO AVOID RISK OF OVERTOPPING / BLOW-OUTS OF FENCING
 - THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE GWRC "EROSION & SEDIMENT CONTROL GUIDELINES FOR THE WELLINGTON REGION."

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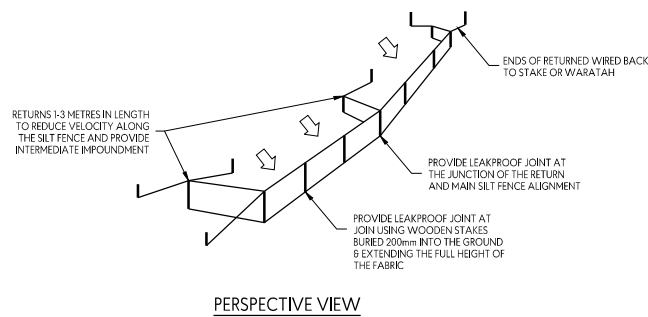
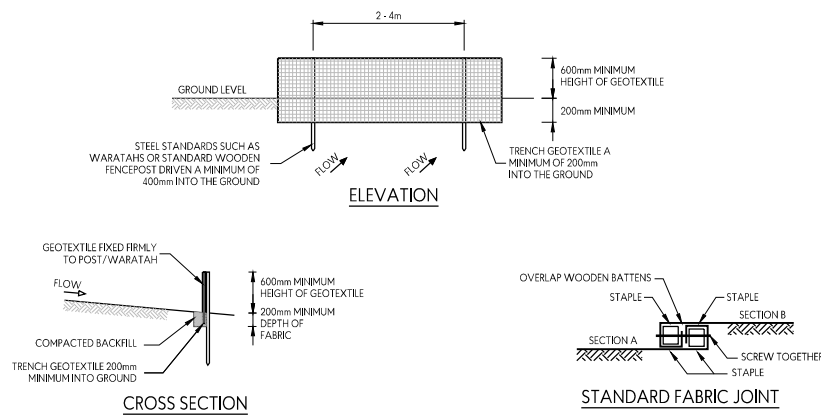
REVISIONS:			
REV	NOTES	BY	DATE
R1	RESOURCE CONSENT	LTL	05-11-2025

PROJECT:
CLASSIC DEVELOPMENTS
234 RANGIURU ROAD
OTAKI

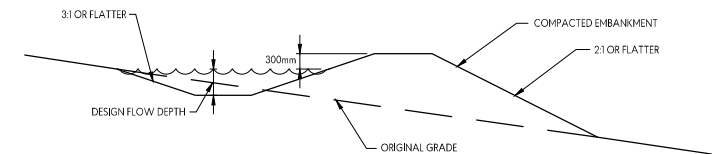
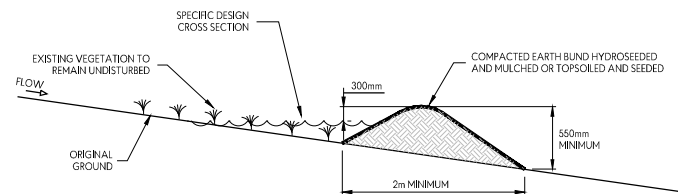
TITLE:
PROPOSED EROSION & SEDIMENT CONTROL
PLAN



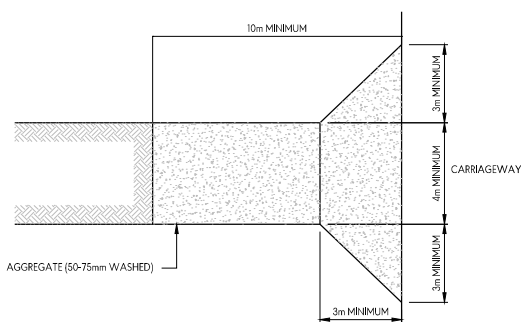
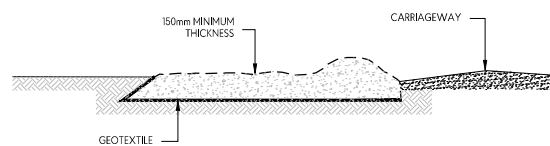
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CHECKED: KD	PLOT DATE: 05-11-2025	
SCALE A1: 1:500	SCALE A3: 1:1000	
STATUS: RESOURCE CONSENT		
PROJECT No: 1678-02	DRAWING No: 240	



SILT FENCE CONSTRUCTION



RUNOFF DIVERSION BUND CROSS SECTION



STABILISED CONSTRUCTION ENTRANCE

APPLICATION

USE A STABILISED CONSTRUCTION ENTRANCE AT ALL POINTS OF CONSTRUCTION SITE INGRESS AND EGRESS WITH A CONSTRUCTION PLAN LIMITING TRAFFIC TO THESE ENTRANCES ONLY. THEY ARE PARTICULARLY USEFUL ON SMALL CONSTRUCTION SITES BUT CAN BE UTILISED FOR ALL PROJECTS.

DESIGN:

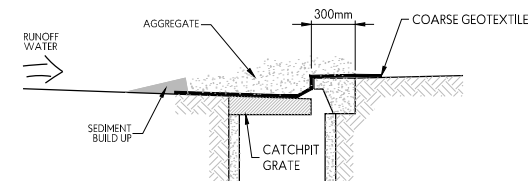
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER UNSUITABLE MATERIAL AND PROPERLY GRADE IT.
2. PROVIDE DRAINAGE TO CARRY RUNOFF FROM THE STABILISED CONSTRUCTION ENTRANCE TO A SEDIMENT CONTROL MEASURE.
3. PLACE AGGREGATE TO THE SPECIFICATIONS BELOW AND SMOOTH IT.

STABILISED CONSTRUCTION ENTRANCE AGGREGATE SPECIFICATIONS:

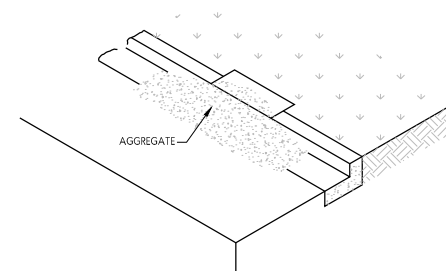
AGGREGATE SIZE	5-75mm WASHED AGGREGATE
THICKNESS	150mm MINIMUM
LENGTH	10m MINIMUM
WIDTH	4m MINIMUM

MAINTENANCE

1. MAINTAIN THE STABILISED CONSTRUCTION ENTRANCE IN A CONDITION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. AFTER EACH RAINFALL INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT FROM THE STABILISED CONSTRUCTION ENTRANCE AND CLEAN OUT AS NECESSARY.
2. WHEN WHEEL WASHING IS ALSO REQUIRED, ENSURE THIS IS DONE ON AN AREA STABILISED WITH AGGREGATE WHICH DRAINS TO AN APPROVED SEDIMENT RETENTION FACILITY.



CROSS SECTION



STORMWATER INLET PROTECTION - FILTER MEDIA DESIGN

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R1	RESOURCE CONSENT	LTL	05-11-2025

PROJECT:

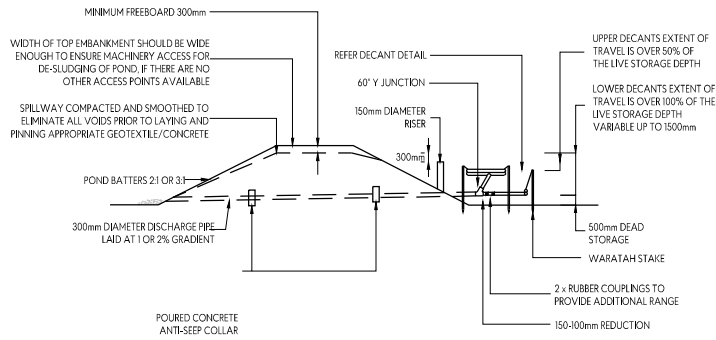
CLASSIC DEVELOPMENTS LIMITED
234 RANGIURU ROAD
OTAKI

TITLE:

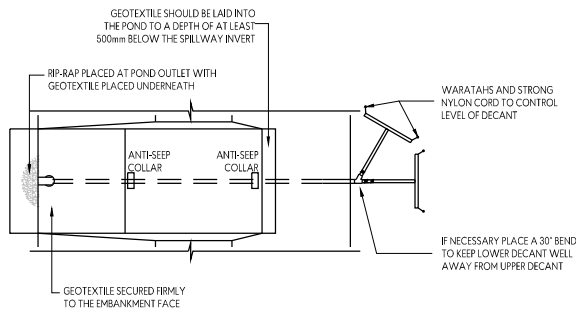
PROPOSED EROSION & SEDIMENT CONTROL
STANDARD DETAILS - SHEET 1

ENVELOPE
W W W . E N V E L O P E - E N G . C O . N Z

DESIGNED: LTL	DRAWN: MJP	
CHECKED: ---	PLOT DATE: 05-11-2025	
SCALE A1: NOT TO SCALE	SCALE A3:	
STATUS: RESOURCE CONSENT		
PROJECT No: 1678-02	DRAWING No: 250	REVISION: R1

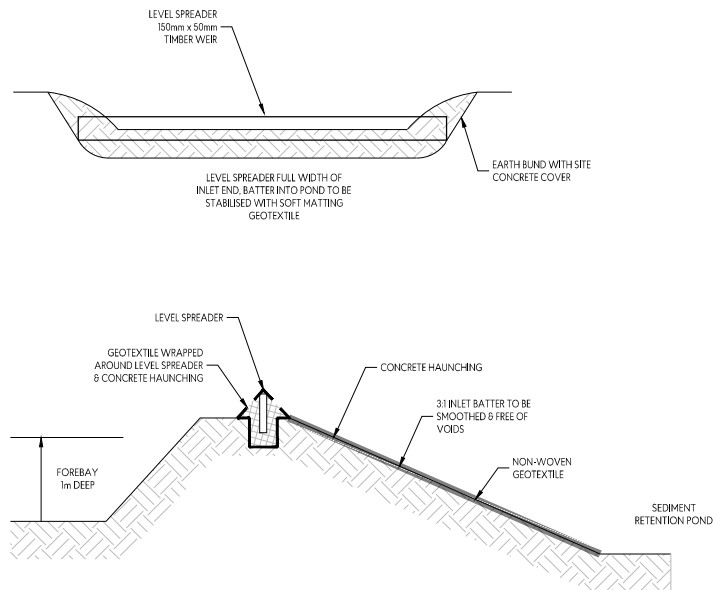


CROSS SECTION

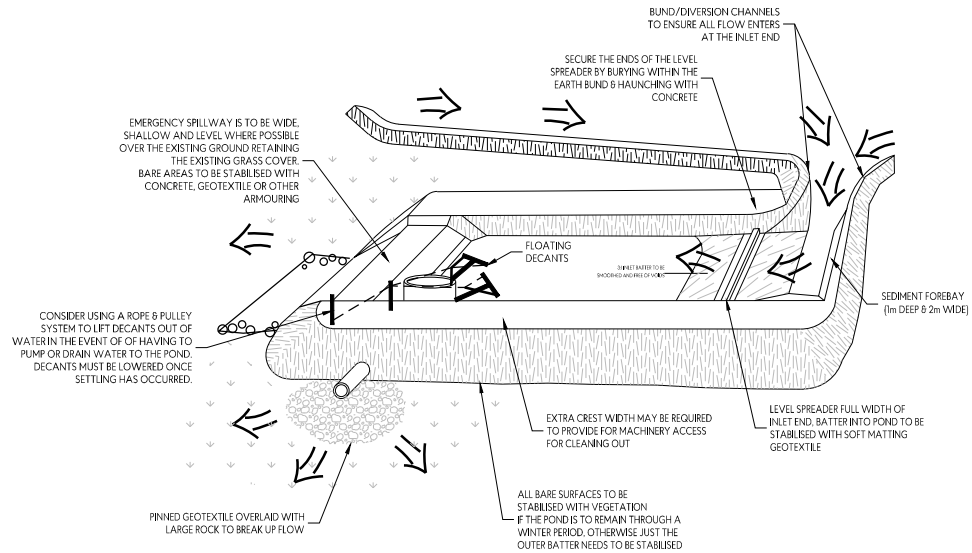


PLAN VIEW

SEDIMENT RETENTION POND FOR 1.5 - 3 ha CATCHMENT



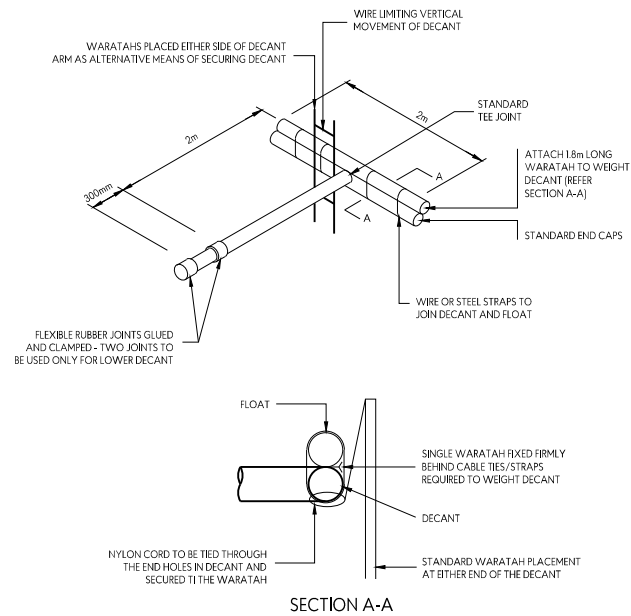
LEVEL SPREADER



SEDIMENT RETENTION POND

NUMBER OF DECANTS FOR EACH POND SHALL BE AS FOLLOWS:

- UP TO 1.5 HA CATCHMENT - 1 DECANT
- 1.5-3.0 HA CATCHMENT - 2 DECANTS
- 3 TO 5 HA CATCHMENT - 3 DECANTS



SEDIMENT RETENTION POND - DECANT DETAIL

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R1	RESOURCE CONSENT	LTL	05-11-2025

PROJECT:
CLASSIC DEVELOPMENTS
234 RANGIURU ROAD
OTAKI

TITLE:
PROPOSED EROSION & SEDIMENT CONTROL
STANDARD DETAILS - SHEET 2

ENVELOPE
W W W . E N V E L O P E . E N G . C O . N Z

DESIGNED: LTL DRAWN: MJP
CHECKED: --- PLOT DATE: 05-11-2025
SCALE A1: NOT TO SCALE SCALE A3:
STATUS: RESOURCE CONSENT
PROJECT No: 1678-02 DRAWING No: 251 REVISION: R1