



EARTHWORKS CONSTRUCTION MANAGEMENT PLAN

HND HMB LIMITED
3 PIGEON MOUNTAIN ROAD
HALF MOON BAY



86 Manukau Road, Epsom
Auckland 1023 New Zealand



simon@eighty6.co.nz



www.eighty6.co.nz

DOCUMENT CONTROL

Project Number: FP326
Project Name: 3 Pigeon Mountain Road, Half Moon Bay
Client: HND HMB Limited
Document: Earthworks Construction Management Plan
Date: 25 Mar 2026
Version: B
Status: Resource Consent

Prepared by: Yee Wen Ong

Reviewed by: Simon Xie

Approved by: Simon Xie

REVISION HISTORY

Version	Date	Status	Prepared	Reviewed	Approved
A	09 February 2026	Resource consent	Yee Wen	Simon Xie	Simon Xie
B	25 March 2026	Resource consent	Johnny Wu	Yee Wen	Simon Xie

TABLE OF CONTENT

1.	INTRODUCTION	4
2.	SITE DESCRIPTION	4
3.	PROPOSAL	6
	3.1 PROPOSED DEVELOPMENT	6
	3.2 PROPOSED EARTHWORKS	6
	3.3 PROPOSED RETAINING WALL	8
4.	EARTHWORKS	9
	4.1 EARTHWORKS STRATEGY	9
	4.2 EROSION & SEDIMENT CONTROL OBJECTIVES	9
	4.3 EROSION & SEDIMENT CONTROL	9
	4.4 NET SEDIMENT YIELD	10
	4.5 EARTHWORKS METHODOLOGY	10
	4.6 SITE STABILISATION	11
	4.7 CONSTRUCTION TRAFFIC	11
	4.8 CONSTRUCTION NOISE	11
	4.9 EROSION AND SEDIMENT CONTROL	12
	4.10 ONSITE HAZARDOUS MATERIAL	12
5.	CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE WORK	12
6.	LIMITATIONS	13

APPENDICES

- 1 Appendix A: Engineering Plans (Earthworks and Cut and Fill)
- 2 Appendix B: Topographic Survey
- 3 Appendix C: Sediment Retention Pond Design Calculation
- 4 Appendix D: USLE Calculation

1. INTRODUCTION

This report is prepared on behalf of HND HMB Limited to support a resource consent application for a 62 residential dwelling development.

This report provides information regarding the earthworks and civil operations required to achieve landform suitable for the proposed development. This includes the methodologies for erosion and sediment control during the earthworks phase of development works. This report provides details in relation to the:

- Proposed earthworks activities, the sequence and methodology of works
- Proposed prevention, avoidance and mitigation measures and consideration of options where appropriate for earthworks
- Construction noise and traffic mitigation

2. SITE DESCRIPTION

The subject site, located at 3 Pigeon Mountain Road, Half Moon Bay, Auckland, spans 1.4073 hectares. It is bounded by Ara Tai to the north, Pigeon Mountain Road to the east, Compass Point Way to the south, and residential properties to the west. The legal description of the site is Lot 1 DP 212125.

The site topography slopes from the southwestern boundary towards the northeastern boundary, with gradients ranging from 3% in the northeastern half to 13% in the southwestern half. An existing timber pole retaining wall, ranging from 1.0m to 2.5m in height, is located on the eastern boundary. Beyond the northern boundary, the slope steepens, elevating the site approximately 3m above Pigeon Mountain Road.

Currently, the site is occupied by a school comprising five large buildings centrally located, with playgrounds, a basketball court, and car parking areas. The remainder of the ground coverage consists of sports grounds.

There are three minor overland flows (total contributory catchment area less than 1 hectare) originating from within the site. Two of these flow paths exit the northern side of the site to Tai Awa, while one exits the eastern boundary and joins an overland flow running down Pigeon Mountain Road. These overland flows ultimately drain into the nearby Tamaki River.

There is no Significant Ecological Area (SEA) identified within or immediately adjacent to the site. For the existing topography plan, refer to Appendix B: Topographic Survey.



Figure 1: Location Plan (source: Auckland Council GeoMaps and Google Maps)

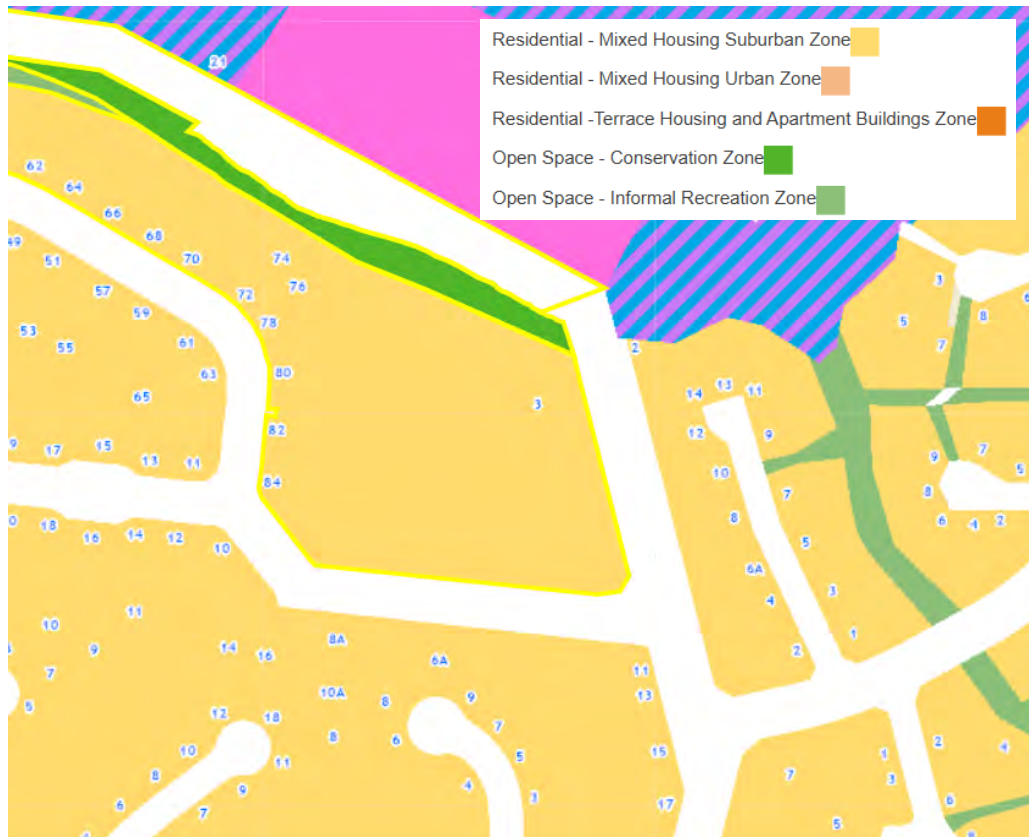


Figure 2: Auckland Unitary Plan Zoning (source: Auckland Council GeoMaps Unitary Plan)

3. PROPOSAL

3.1 PROPOSED DEVELOPMENT

The proposed development involves the creation of a 62-lot fee simple subdivision, which will include the construction of 62 new dwellings. It will form a residential community with a range of building typologies and private accessways connecting to the existing public road via Compass Point Way. The proposed site layout is shown in Figure 3 below.



Figure 3: Proposed Development Plan (source: Proposed Site Plan prepared by SHAPE Architect)

3.2 PROPOSED EARTHWORKS

The proposed development will involve earthworks for constructing the common accessways, building platforms, and utility services. A site-specific geotechnical report has been prepared by Total Ground Engineering Ltd (TGE) for the proposed development to ensure the stability and suitability of the site for construction activities.

The earthworks extent will include a portion of the berm area adjacent to Pigeon Mountain Road and Ara-Tai Road to create footpath leading to the individual lot. The extent of earthworks is shown on Engineering Plan FP326-210.

Special consideration has been given to the existing site levels and adjacent boundary levels near the two protected trees located to the northern corner, and along the western boundary where existing retaining walls are present. Measures will be implemented to ensure that the earthworks and construction of retaining walls do not adversely impact these trees or the existing retaining walls along western boundary.

The bulk earthworks will involve regarding the site to achieve the proposed finished levels. Earthworks will be undertaken across the entire 14,266m² site and will comprise approximately 2,964 m³ of cut and 6,827 m³ of fill. The maximum cut depth is 2.5m, and the maximum fill height is 3.8m.

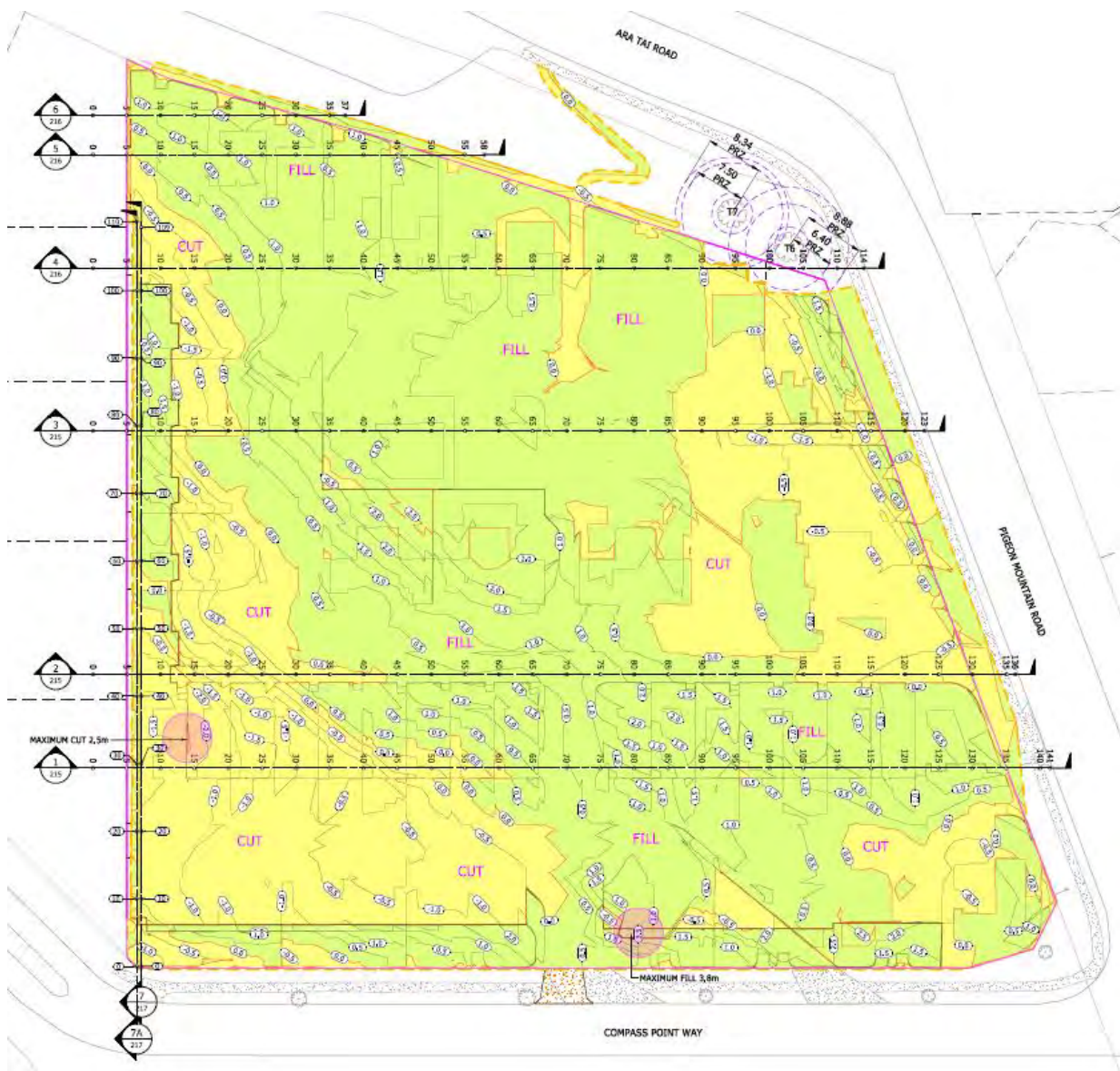


Figure 4: Cut to Fill Drawing (Source: Eighty6 Engineering)

3.3 PROPOSED RETAINING WALL

Retaining walls of various heights are proposed along the site boundaries and internal lot boundaries to form level building platforms, enable compliant gradients for pedestrian paths and vehicle access, and ensure slope stability factors of safety are achieved. All retaining walls will be constructed wholly within the subject site.

An existing timber pole retaining wall, ranging from 1.0m to 2.5m in height, is located along the western boundary. This wall will remain in place, with a new wall constructed in front of it to avoid undue construction impact on the adjacent Compass Point properties.

Drainage from the retaining walls will be collected in private catchpits and discharged to the stormwater reticulation system as shown in Engineering Plan FP326-265. Catchpit locations and additional details to be provided and approved at building consent stage.

Retaining wall along the western boundary will be constructed as part of the bulk earthworks process, while the remaining walls associated with the house will be built during house construction.

Detailed retaining wall design is subject to building consent approval and will include specific provisions to protect the integrity of the protected trees and maintain compliance with all relevant regulations.



4. EARTHWORKS

This section outlines proposed erosion and sediment control management procedures for the site during earthworks to which prevent, avoid and mitigate the adverse effects of sediment discharges to the receiving environment.

4.1 EARTHWORKS STRATEGY

Earthworks, erosion and sediment control and site stabilisation undertaken at the subject site are designed as per Auckland Council publication Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05).

These guidelines:

- Outline the principles of erosion and sediment control and the sediment transfer process.
- Provide a range of erosion and sediment control practices that can be implemented on various land-disturbing activities.

Earthworks undertaken following these guidelines will minimise any adverse environmental effects of sediment discharge during the project through the appropriate use and design of erosion and sediment control techniques and measures. All sediment control measures will be installed prior to site earthworks.

4.2 EROSION & SEDIMENT CONTROL OBJECTIVES

The objective of erosion and sediment control is to

- Reduce the amount of erosion and sediment generation
- Provide practical sediment control facilities to reduce the amount of sediment leaving the site.

The erosion and sediment control methodology for each respective earthworks stage is discussed in the following sections.

4.3 EROSION & SEDIMENT CONTROL

Sediment and erosion control measures are designed as per Auckland Council publication Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05) and Auckland Council's guidelines (TP90).

The principles of erosion control that will be applied at the site include

- Completing all works within the minimum time practicable
- Minimisation of land disturbance
- Stabilisation of exposed areas
- Surface stabilisation

The site is divided into four catchments: Catchment A (1.4 hectares), Catchment A1 (0.04 hectares), Catchment B (0.026 hectares) and Catchment B1 (0.027 hectares). The proposed erosion and sediment control measures are detailed in Appendix A: FP326-220 and are designed to manage and mitigate erosion and sedimentation during the construction phase.

Catchment A will be treated with a sediment retention pond (SRP) located at the lower north-eastern end of the site, with clean water diversion bunds proposed along the western and southern boundaries to separate clean runoff from Compass Point Way and minimise flows across the site. Dirty water diversion channel and bunds will be installed along the eastern and western boundaries of Catchment A, and along the eastern boundary of Catchment A1, to direct sediment-laden runoff to the SRP. A

150mm discharge pipe is proposed to dewater the runoff from SRP to the adjacent public catchpit located in Pigeon Mountain Road.

Catchment A1 is a small lower sub-catchment (approximately 400m²) located within the site boundary and will be managed using a dirty water diversion bund to direct runoff to the lowest point of the catchment, where a discharge pipe will convey flows to the public catchpit.

Catchment B and B1 are minor catchments (approximately 260m² and 270m²) extending from the site boundary to the earthworks boundary outside the site and will be treated with a silt fence only, as no significant excavation is anticipated in this area. Additional erosion and sediment control measures include the use of the existing driveway at 3 Pigeon Mountain Road as a stabilised construction entrance, silt fencing along the lower northern and eastern site boundaries, catchpit protection using silt socks/ sand socks at Pigeon Mountain Road and Compass Point Way, and the use of flocculation to improve sediment removal efficiency within the SRP. A flocculation management plan will be submitted to Auckland Council for approval prior to the commencement of earthworks. The SRP design calculations are provided in Appendix C.

Prior to the commencement of earthworks, all erosion and sediment control measures will be certified by a suitably qualified and experienced engineer and submitted to Auckland Council for approval. Ongoing monitoring of the erosion and sediment controls will be undertaken by the appointed Chartered Professional Engineer throughout the construction phase.

4.4 NET SEDIMENT YIELD

USLE (Universal Soil Loss Equation) calculations have been carried out and have been used to inform the design of the Erosion and Sediment control measures to ensure minimization of soil loss and to protect the site and downstream roads and receiving Tamaki Estuary during and after construction.

The calculation of the net sediment yield has been undertaken in accordance with the Universal Soil Loss Equation (USLE) methodology to estimate the volumes of sediment generated by the proposal. The results are used to compare the potential scale of earthwork’s impact on the receiving environment.

The general form of this equation is: $A = \text{soil loss (tonnes/ha/year)} = RKLSCP$

Table 1 summarised the USLE outputs for sub-catchments within the development. The detailed calculation is provided in Appendix E:

Table 1: USLE outputs

Catchment	Catchment Area (ha)	Pre-development	Post-development (Without flocculation)	Post-development (With flocculation)
A	1.4	0.07	0.46	0.09

A sediment control efficiency of 90% has been assumed for the sediment retention ponds on the basis of rainfall activated PAC treatment systems. The results indicate that the gross yield high for the overall site with limited control. However, there is a significant improvement with the implementation of flocculation. The net sediment loss is 0.09 at post development scenario which is less than the 0.07 at pre-development scenario.

4.5 EARTHWORKS METHODOLOGY AND TIMELINE

The earthworks and the construction of civil wall is expected to be completed in a single stage. The earthworks methodology will generally comprise the following:

1. Undertake start-up meetings with contractors and Auckland Council monitoring officers.
2. Construct stabilised entrance to allow construction traffic to enter and exit the site.
3. Install erosion and sediment control measures such as silt fence, form diversion bund and construct SRP in the specified positions.
4. Certification of erosion and sediment control measures by an appropriately qualified engineer.
5. Commence cut to fill operations to the required level. Cut/Fill operations to be carried out in accordance with the recommendations provided in the Geotechnical Assessment. A suitably qualified Geotechnical Engineer will advise and control the standard of compaction and earthworks testing.
6. Once cut & fill is completed, the platform, and accessway/ carparks area are to be metalled depending on the initiation of building development works.
7. Progressively remove sediment controls over the zone once satisfactory site stabilisation is achieved.

4.6 SITE STABILISATION

It is intended to undertake progressive site stabilisation to close down earthworks areas and reduce the time bare earth is exposed to erosive forces. This will be especially important where earthworks areas are worked concurrently i.e., all zones within one season, and all efforts will be made to close down complete areas as soon as practical.

Site stabilisation will generally comprise spreading topsoil or mulch over finished earthworks areas and seeding with grass. This will be undertaken progressively as earthworks areas are completed and brought up to the design grade.

A contingency for straw mulching will be allowed for and undertaken as required, such as around the SRP and bunds for rapid close-down of areas at the end of the season or where there are not sufficient grass strike over topsoiled areas. This will be reviewed throughout the earthwork's operation.

All site stabilisation shall be undertaken in accordance with GD05.

4.7 CONSTRUCTION TRAFFIC

Construction traffic will generally comprise the civil works contractor and associated staff/ subcontractors during working hours as well as transport of any required construction materials to site. Earthmoving machinery will be confined to the works area.

All construction traffic entering and exiting the site will be through the stabilised entrance located at the southern corner.

4.8 CONSTRUCTION NOISE

An assessment of construction noise and vibration effects has been carried out by SLR Consulting NZ Ltd. Several mitigation measures have been proposed, including the installation of temporary acoustic screening along the western boundary, localised temporary screening during concrete breaking activities and limiting the size of equipment used to reduce noise impacts on nearby receivers during construction.

The proposed earthworks are to adhere the measures outlined in Construction Noise and Vibration Assessment prepared by SLR Consulting NZ Ltd.

4.9 EROSION AND SEDIMENT CONTROL

The monitoring of the erosion and sediment control measures will be undertaken by the Contractor's site project manager/foreman. At the start of works, Auckland Council shall be notified of the works to allow for monitoring to be undertaken as required.

Monitoring includes:

- Inspection of stabilised construction entrance to check condition/ wear
- Inspection of runoff diversion bund to ensure no overtopping and silt fences
- Inspection of DEB and other sediment and control structures on site

Monitoring by the Contractor shall be undertaken daily while the Contract Engineer will undertake 2-3 site visits per week to monitor progress and site controls. Increased monitoring will be undertaken prior to forecasting heavy rainfall events to coordinate any required works between the Contractor and Contract Engineer in liaison with the Auckland Council Site Representative. In addition, visual checks shall be conducted in the downstream receiving environments after inclement weather to ensure that the quality of stormwater discharged from the site is satisfactory.

Maintenance of the erosion and sediment controls will be undertaken as required and will be the responsibility of the Contractor. Diversion bunds and silt fences shall be cleaned as required to remove any accumulation of sediment.

No erosion and sediment control measures will be removed without prior approval from Auckland Council.

4.10 ONSITE HAZARDOUS MATERIAL

It is not proposed to store any hazardous materials on site. However, general environmental protection measures will be implemented onsite to ensure any fuel stored onsite for the operation of machinery will be located away from any operational area or flow paths to mitigate any adverse effects in the event of spillage. In the event of any spillages, flows will be directed to the diversion bund for removal.

5. CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE WORK

Earthworks totalling approximately 6,827m³ fill and 2,964m³ cut over an area of 1.4hectares will be undertaken to develop the site at 3 Pigeon Mountain Road.

Erosion and sediment controls will be employed during earthworks and designed according to GD05 and current best practices.

These controls will be utilised to minimise sediment migration from each of the designated earthworks sub-catchment areas. These include silt fences, runoff diversion bund, SRP and DEB, and site stabilisation measures.

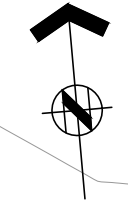
Short-term environmental effects may arise from the proposed earthworks. However, these effects are considered minor, as the erosion and sediment control measures have been designed according to the guidelines to significantly reduce the amount of sediment discharged into the public stormwater network and receiving environment.

6. LIMITATIONS

This report is for the used by HND HMB Limited to support the Resource Consent application only. The author accepts no responsibility for the content of this report if it is used by any other party or for any other objective. Any use of or reliance on the information contained in this report for decisions made by third parties is the responsibility of these third parties. The author accepts no responsibility for damage incurred by third parties resulting from the use of or reliance on this report, or if the report is used by any party for purposes other than the objectives described herein. This report has been prepared for the project described to us and its extent is limited to the scope of work agreed between the client and the author. No responsibility is accepted by the author 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 A
Engineering Plans

THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING CONSULTANTS LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.



NOTES:

1. ALL WORKS AND MATERIALS ARE TO COMPLY WITH AUCKLAND COUNCIL ENGINEERING STANDARDS .
2. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED, AS-BUILT AND INSPECTED BY THE ENGINEER / COUNCIL REPRESENTATIVE PRIOR TO COMMENCING THE EARTHWORKS ON THE SITE.
3. PROPOSED CONTOURS SHOWN ARE FINISHED GROUND LEVELS AT 0.5m INTERVAL.
4. THE EARTHWORKS SURFACE MODEL AND DRAINAGE MODEL ARE BASED ON THE TOPOGRAPHICAL PLAN PREPARED BY ENVIVO DATED 20.01.2025, LEVELS ARE IN TERMS OF NZVD 2016.

LEGEND:

- FINISHED SURFACE SHOWN AT 0.2m INTERVALS
- EXISTING CONTOURS SHOWN AT 0.5m INTERVALS
- EARTHWORKS BOUNDARY
- BUILDING PLATFORM
- PROPOSED RETAINING WALL



86 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**EARTHWORKS
FINISHED CONTOURS**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	28.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	28.02.25		

ISSUE STATUS: **RESOURCE CONSENT**

PROJECT No: FP326	SCALES: 1:300-A1 1:600-A3	REV: C
----------------------	------------------------------	---------------

DRAWING No:
FP326-200



THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING CONSULTANTS LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.




NOTES:

- ALL WORKS AND MATERIALS ARE TO COMPLY WITH AUCKLAND COUNCIL ENGINEERING STANDARDS .
- ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED, AS-BUILT AND INSPECTED BY THE ENGINEER / COUNCIL REPRESENTATIVE PRIOR TO COMMENCING THE EARTHWORKS ON THE SITE.
- DETAILS OF CONSTRUCTION NOISE AND VIBRATION CONTROL REFER TO CONSTRUCTION NOISE AND VIBRATION ASSESSMENT REV V1.4 DATED 20.03.2026 PREPARED BY SLR CONSULTING NZ LTD.

EARTHWORKS DETAILS - UNADJUSTED:
(NO ALLOWANCE FOR COMPACTION FACTOR/TOPSOIL STRIPPING & ACCESSWAY PAVEMENT CUTTING)

EARTHWORKS AREA: 14,385m²
CUT: 2,964m³
FILL: 6,827m³
NET (FILL): 3,863m³

LEGEND:

-  CUT CONTOURS SHOWN AT -0.5m INTERVALS
-  FILL CONTOURS SHOWN AT 0.5m INTERVALS
-  EARTHWORKS BOUNDARY



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

D	S92	JW	23.03.26
C	S92	YW	09.02.26
B	ADDITIONAL CROSS SECTION ADDED	JW	15.04.25
A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**EARTHWORKS
CUT AND FILL PLAN**

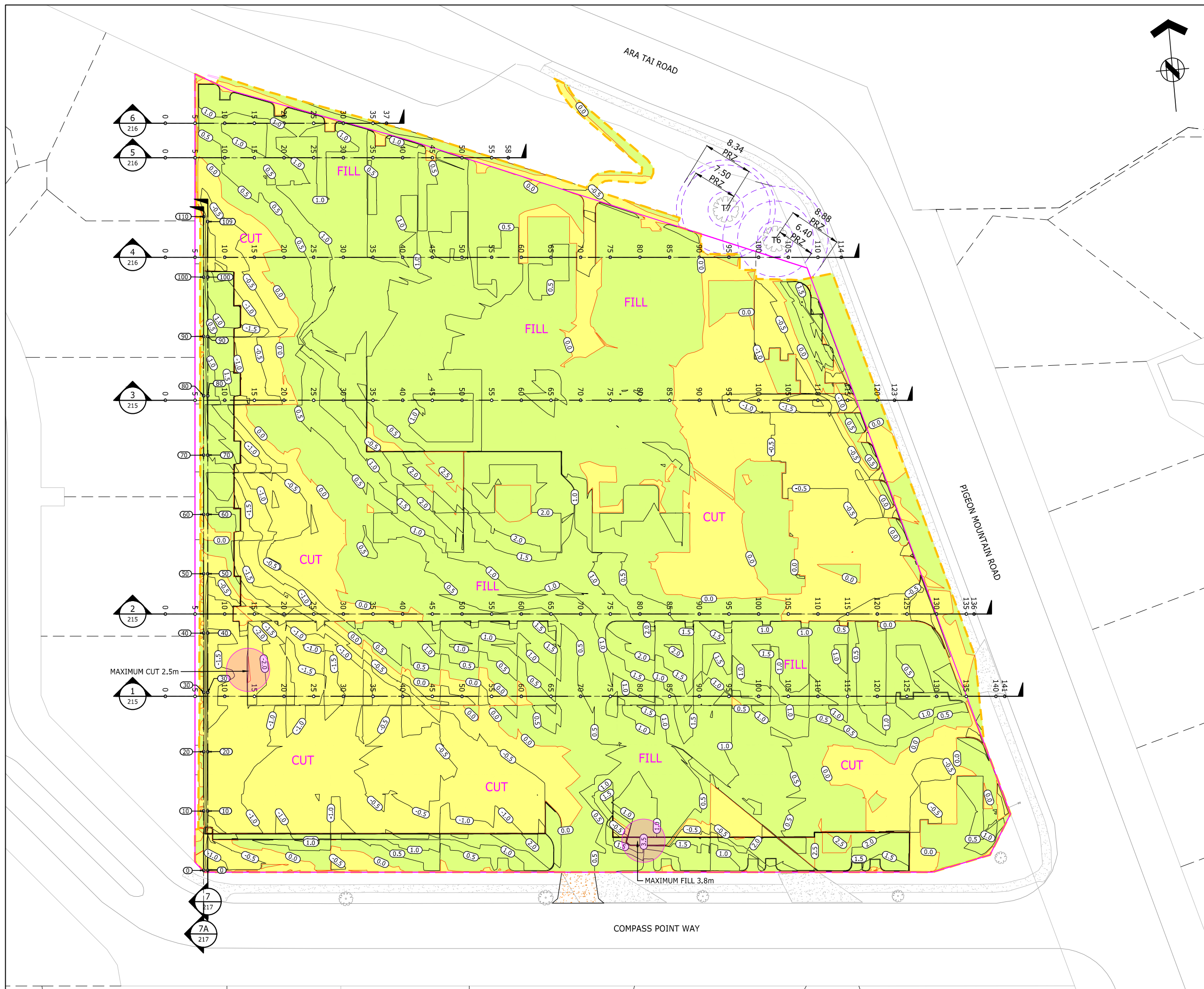
DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	28.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	28.02.25		

ISSUE STATUS: **RESOURCE CONSENT**



PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	D

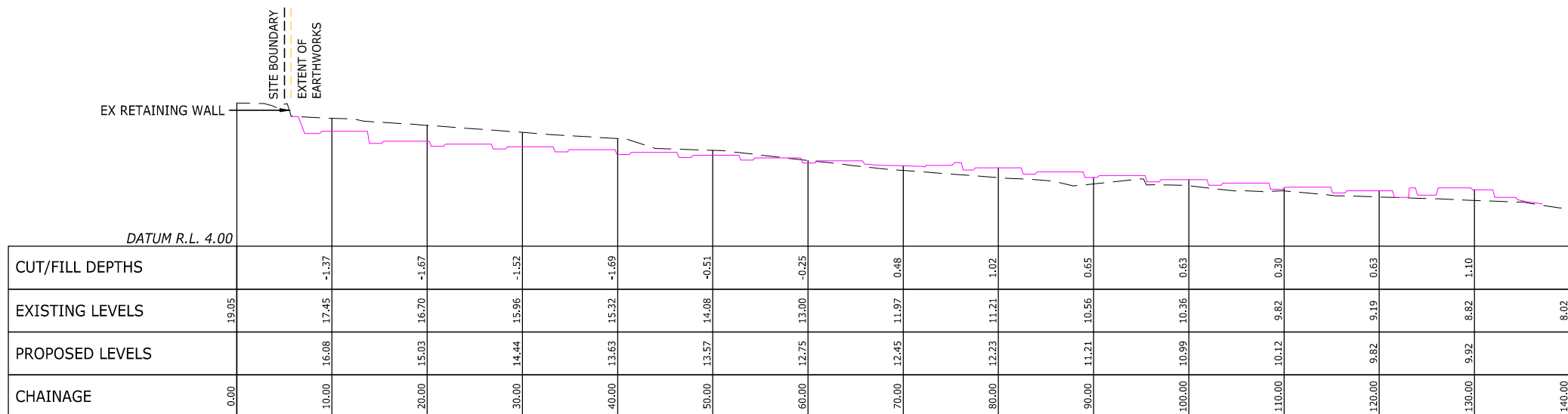
DRAWING No:

FP326-210

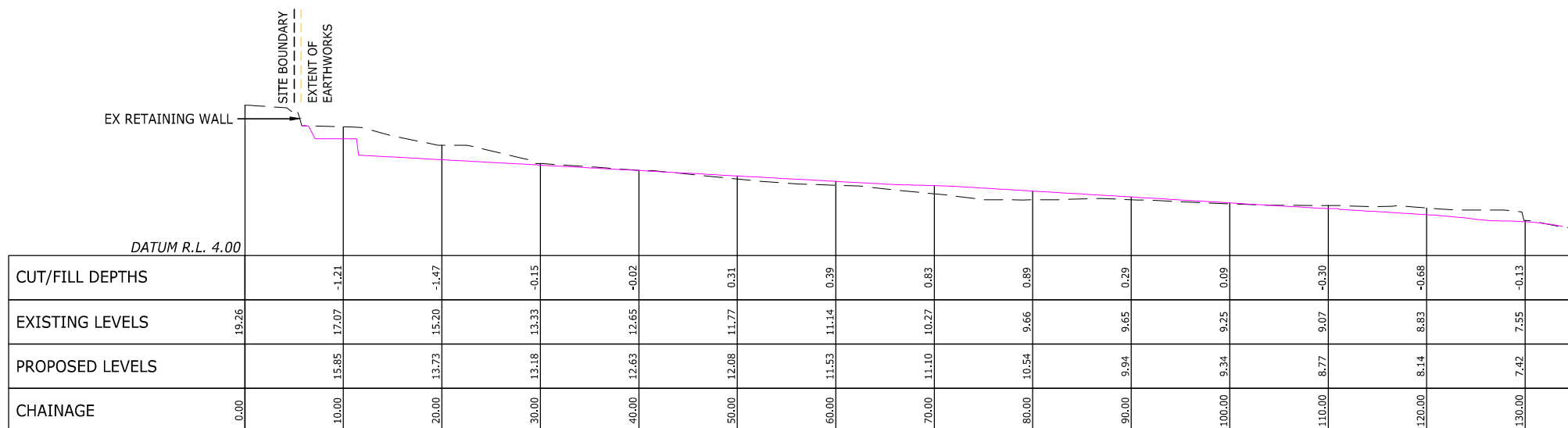


LEGEND:

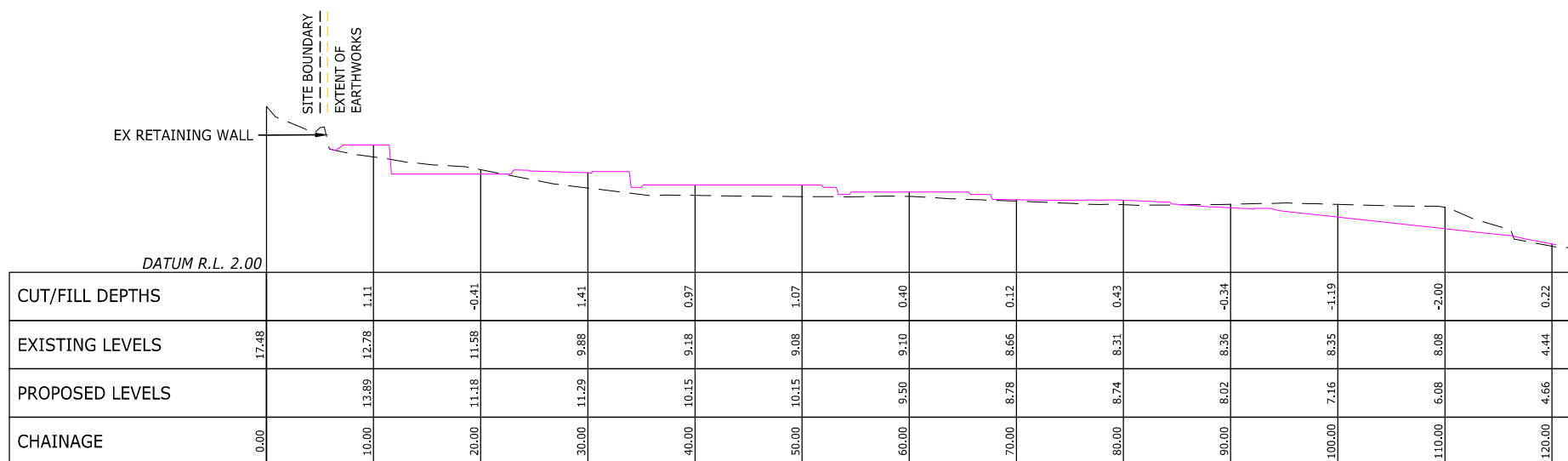
-  INDICATES FINISHED SURFACE LEVEL
-  INDICATES EXISTING SURFACE LEVEL



EARTHWORKS CROSS SECTION 1
LONGSECTION BETWEEN 0.00 AND 141.48



EARTHWORKS CROSS SECTION 2
LONGSECTION BETWEEN 0.00 AND 136.32



EARTHWORKS CROSS SECTION 3
LONGSECTION BETWEEN 0.00 AND 122.90



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**EARTHWORKS
CROSS SECTIONS
SHEET 1 OF 3**



DESIGNED: JW	DATE: 17.02.25	SIGNATURE:	PLOT BY:
DRAWN: JW	DATE: 17.02.25	SIGNATURE:	PLOT DATE:
CHECKED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY BY:
APPROVED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY DATE:

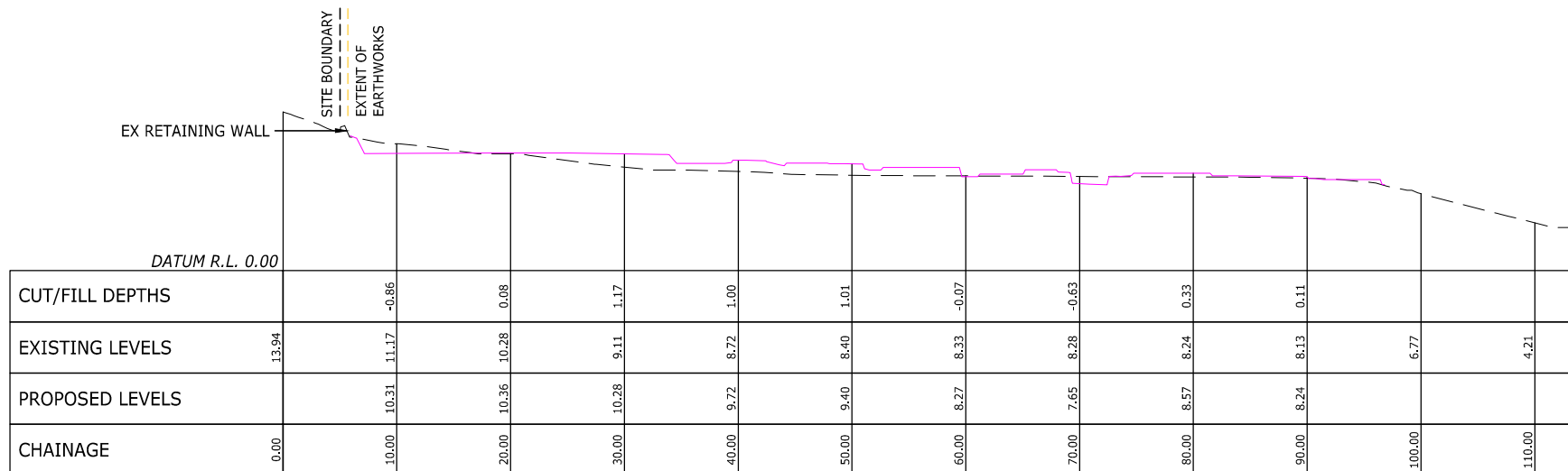
ISSUE STATUS: **RESOURCE CONSENT**

PROJECT No: FP326	SCALES: 1:300-A1 1:600-A3	REV: C
----------------------	---------------------------------	-----------

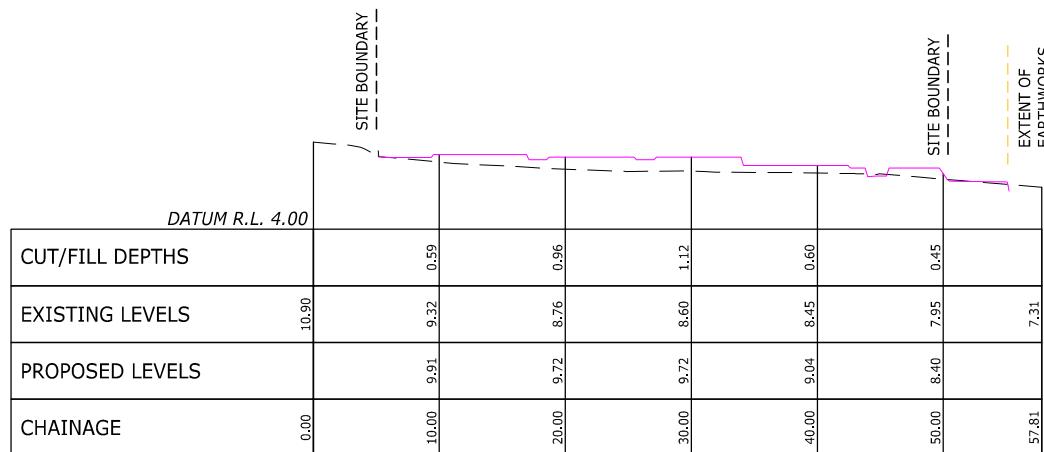
DRAWING No:
FP326-215

LEGEND:

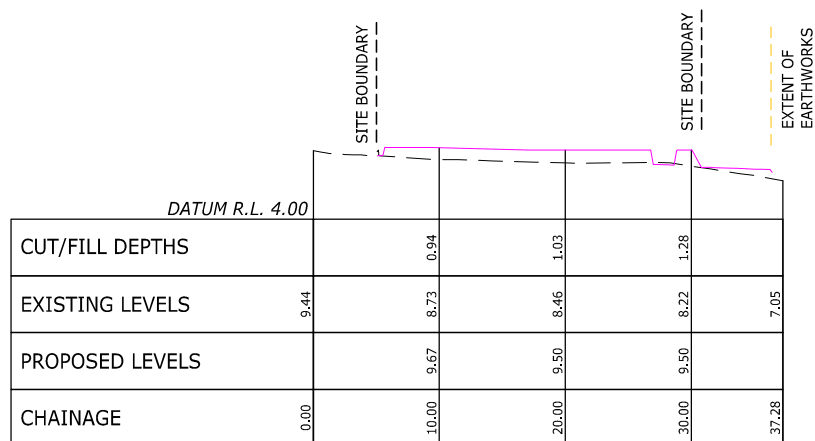
-  INDICATES FINISHED SURFACE LEVEL
-  INDICATES EXISTING SURFACE LEVEL



EARTHWORKS CROSS SECTION 4
LONGSECTION BETWEEN 0.00 AND 113.93



EARTHWORKS CROSS SECTION 5
LONGSECTION BETWEEN 0.00 AND 57.81



EARTHWORKS CROSS SECTION 6
LONGSECTION BETWEEN 0.00 AND 37.28



86 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**EARTHWORKS
CROSS SECTIONS
SHEET 2 OF 3**

DESIGNED: JW	DATE: 17.02.25	SIGNATURE:	PLOT BY:
DRAWN: JW	DATE: 17.02.25	SIGNATURE:	PLOT DATE:
CHECKED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY BY:
APPROVED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY DATE:

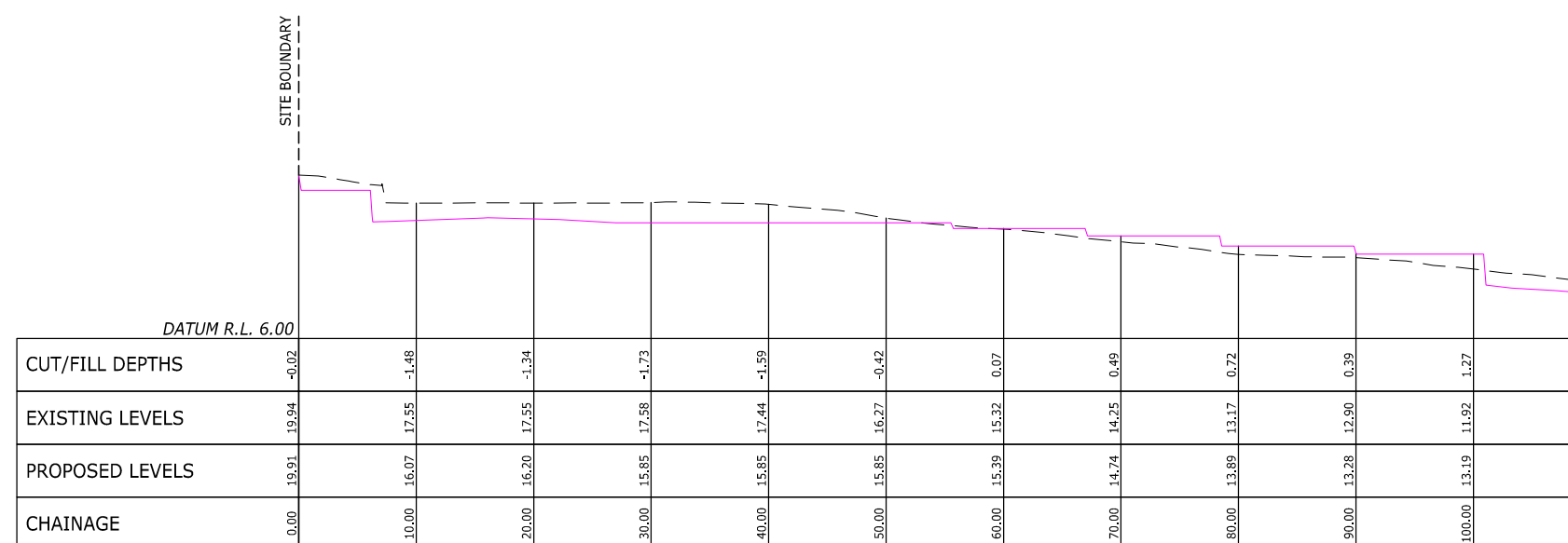
ISSUE STATUS: **RESOURCE CONSENT**

PROJECT No: FP326	SCALES: 1:300-A1 1:600-A3	REV: C
----------------------	------------------------------	---------------

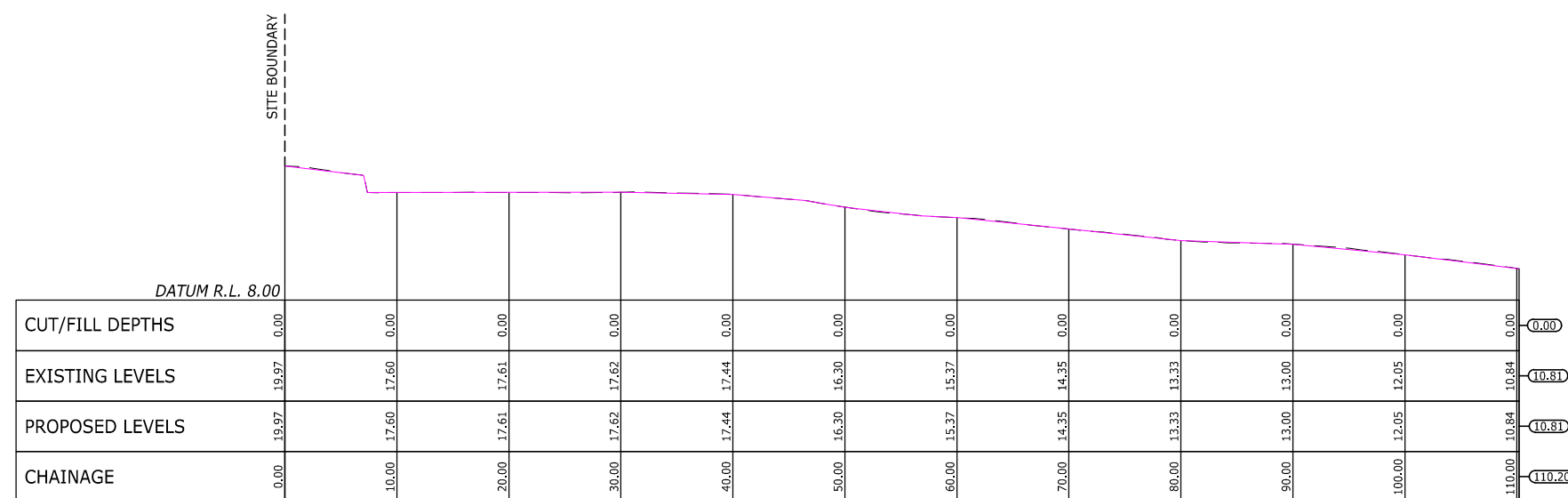
DRAWING No:
FP326-216

LEGEND:

- INDICATES FINISHED SURFACE LEVEL
- INDICATES EXISTING SURFACE LEVEL



EARTHWORKS CROSS SECTION 7
LONGSECTION BETWEEN 0.00 AND 109.37



EARTHWORKS CROSS SECTION 7A
LONGSECTION BETWEEN 0.00 AND 110.20



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**EARTHWORKS
CROSS SECTIONS
SHEET 3 OF 3**

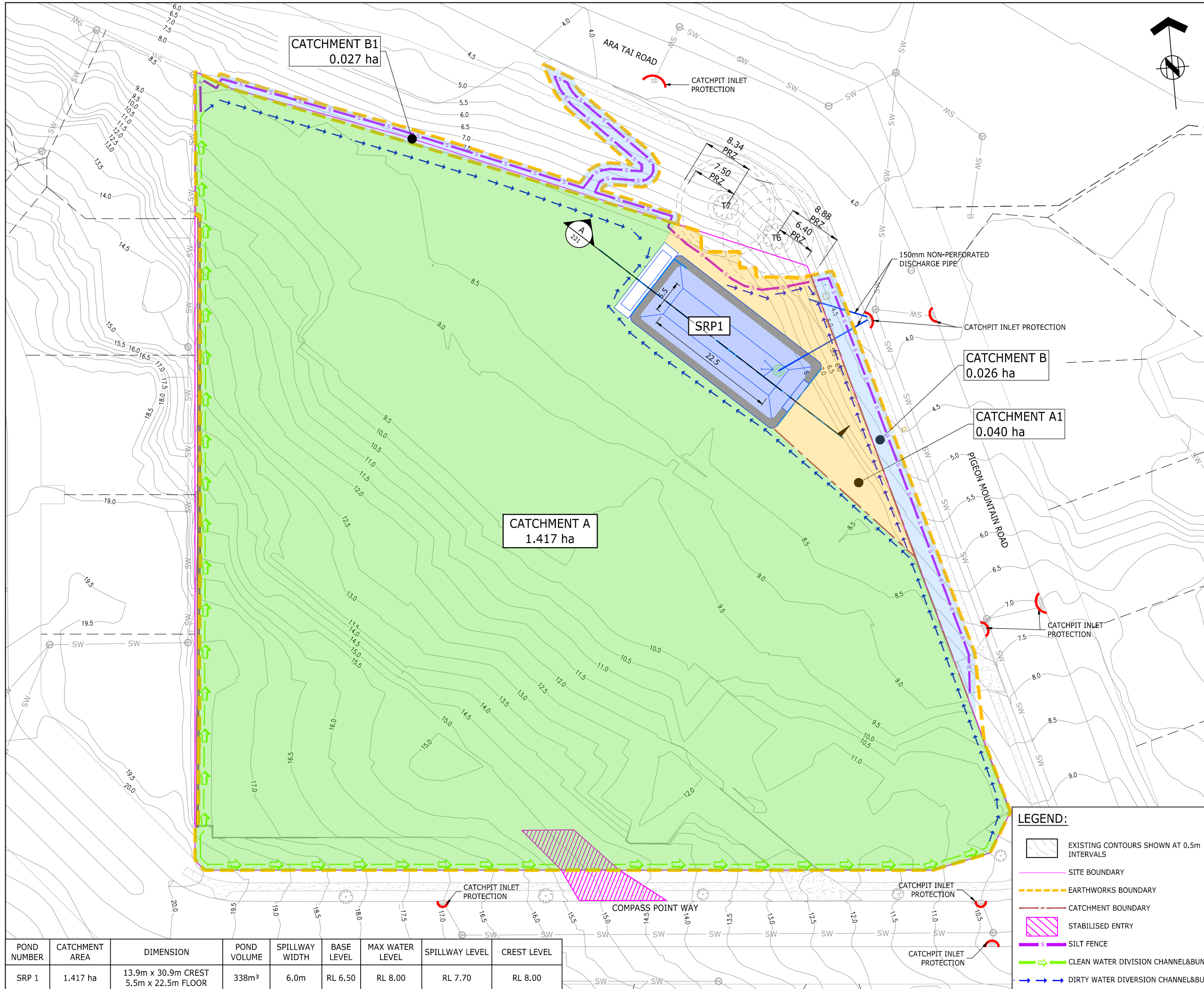
DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	28.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	28.02.25		

ISSUE STATUS:
RESOURCE CONSENT

PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

DRAWING No:
FP326-217

THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING CONSULTANTS LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.



NOTES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE OPERATIONAL PRIOR TO ANY OTHER WORKS COMMENCING ON SITE. THE CONTRACTOR SHALL ARRANGE FOR AND ATTEND A PRELIMINARY SEDIMENT CONTROL MEETING ON-SITE WITH THE ENGINEER.
- A COPY OF THE SEDIMENT CONTROL PLAN SHALL BE AVAILABLE ON THE SITE DURING WORK HOURS AND ALL PERSONNEL INVOLVED IN EARTHWORK ACTIVITIES ON THE SITE (INCLUDING OF SUB-CONTRACTORS) SHALL BE FAMILIAR WITH THE PLAN REQUIREMENTS AS THEY RELATE TO EROSION AND SEDIMENT CONTROL.
- ALL 'CLEAN WATER' RUNOFF FROM STABILISED SURFACES INCLUDING CATCHMENT AREAS ABOVE THE SITE SHALL BE DIVERTED AWAY FROM EARTHWORK AREAS VIA STABILISED SYSTEM TO PREVENT SURFACE EROSION.
- ALL EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH THE AUCKLAND COUNCIL 'EROSION AND SEDIMENT CONTROL GUIDELINES FOR LAND DISTURBING ACTIVITIES IN THE AUCKLAND REGION GD05'.
- THE MAIN SILT CONTROL MEASURES FOR THIS SITE ARE:
 - DIVERSION OF 'CLEAN WATER' FROM THE ABOVE CATCHMENTS AROUND THE EARTHWORKS AREA BY MEANS OF DIVERSION DRAINS, AND/OR OTHER APPROVED METHOD AS DIRECTED BY THE ENGINEER.
 - REMOVAL OF SEDIMENT FROM SILT-LADEN WATERS USING 'SILT FENCES'.
 - THAT THE SITE BE STABILISED AGAINST EROSION AS SOON AS PRACTICABLE AND IN A PROGRESSIVE MANNER AS EARTHWORKS ARE FINISHED OVER VARIOUS AREAS OF THE SITE.
 - MAINTENANCE OF ALL SEDIMENT CONTROL MEASURES AS REQUIRED.
- FURTHER SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER AS THE PROJECT ADVANCES. THESE WILL BE INSTALLED AS AND WHERE DIRECTED BY THE ENGINEER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE SITE HAS EFFECTIVE MEASURES OPERATING AT ALL TIMES.
- CONTRACTOR TO PROTECT ALL EXISTING INFRASTRUCTURE DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING SERVICES PRIOR TO CONSTRUCTION.
- ALL SEDIMENT RETENTION PONDS AND DEBS ARE TO BE FLOCCULATED WITH POLY ALUMINIUM CHLORIDE (PAC). SETUP OF THE PAC DOSING SYSTEM IS TO BE UNDERTAKEN BY A SUITABLY QUALIFIED SPECIALIST.



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**SEDIMENT AND EROSION
CONTROL PLAN**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	28.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	28.02.25		

ISSUE STATUS:
RESOURCE CONSENT

PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

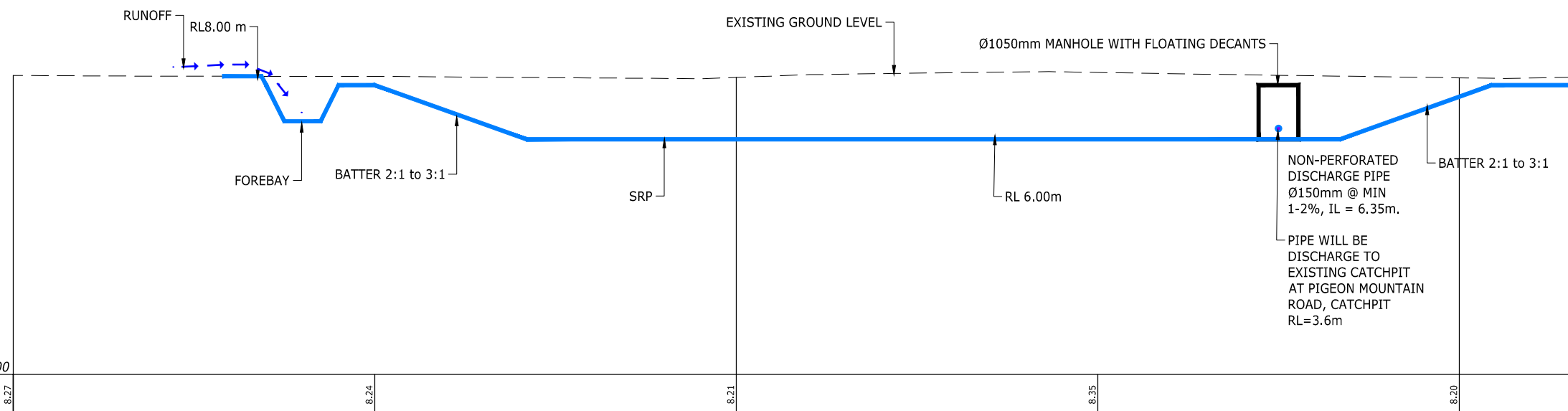
DRAWING No:
FP326-220

POND NUMBER	CATCHMENT AREA	DIMENSION	POND VOLUME	SPILLWAY WIDTH	BASE LEVEL	MAX WATER LEVEL	SPILLWAY LEVEL	CREST LEVEL
SRP 1	1.417 ha	13.9m x 30.9m CREST 5.5m x 22.5m FLOOR	338m ³	6.0m	RL 6.50	RL 8.00	RL 7.70	RL 8.00

LEGEND:

- EXISTING CONTOURS SHOWN AT 0,5m INTERVALS
- SITE BOUNDARY
- EARTHWORKS BOUNDARY
- CATCHMENT BOUNDARY
- STABILISED ENTRY
- SILT FENCE
- CLEAN WATER DIVERSION CHANNEL&BUND
- DIRTY WATER DIVERSION CHANNEL&BUND

NOTES:



CROSS SECTION A
LONGSECTION BETWEEN 0.00 AND 50.90



REF	DESCRIPTION	BY	DATE
A	S92	YW	09.02.26

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

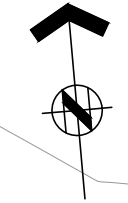
DESCRIPTION:
**SEDIMENT AND EROSION CONTROL
SRP CROSS SECTION**

DESIGNED: YW	DATE: 06.11.25	SIGNATURE:	PLOT BY:
DRAWN: YW	DATE: 06.11.25	SIGNATURE:	PLOT DATE:
CHECKED: SX	DATE: 06.11.25	SIGNATURE:	SURVEY BY:
APPROVED: SX	DATE: 06.11.25	SIGNATURE:	SURVEY DATE:

ISSUE STATUS:
RESOURCE CONSENT

PROJECT No: FP326	SCALES: 1:300-A1 1:600-A3	REV: A
----------------------	---------------------------------	------------------

DRAWING No:
FP326-221



NOTES:

1. ALL RETAINING WALLS SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE. THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1m AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.

LEGEND:

- FINISHED SURFACE SHOWN AT 0.5m INTERVALS
- EXISTING CONTOURS SHOWN AT 0.5m INTERVALS
- BUILDING PLATFORM
- PROPOSED RETAINING WALL
- PROPOSED BUILDING WALL
- EXISTING RETAINING WALL



86 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

C	S92	JW	23.03.26
B	S92	YW	09.02.26
A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**RETAINING WALL
LAYOUT PLAN**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	17.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	17.02.25		

ISSUE STATUS: **RESOURCE CONSENT**

PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

DRAWING No: **FP326-260**









THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING CONSULTANTS LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.

NOTES:

1. ALL RETAINING WALLS AND ITS DRAINAGE ARE SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE. THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORISED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1m AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.
4. ALL FIELD CATCHPIT TO BE MINIMUM 1m AWAY FROM RWs, PIPES AND BOUNDARIES. ANY CLEARANCE ISSUE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.
5. RETAINING WALL DRAINAGE FOR ANY RETAINING WALL THAT ADJOINS OR CONNECTS TO A BUILDING WALL IS NOT SHOWN ON THIS DRAWING.

LEGEND:

-  BUILDING PLATFORM
-  RETAINING WALL
-  BUILDING WALL
-  RETAINING WALL DRAINAGE
-  DN100 uPVC PIPE TO STORMWATER CONNECTION/ MANHOLE/ CATCHPIT
-  FIELD CATCHPIT (450X450)



86 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

B	S92	JW	23.03.26
A	RESOURCE CONSENT	YW	09.02.26
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**RETAINING WALL DRAINAGE
LAYOUT PLAN**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	17.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	17.02.25		

ISSUE STATUS:
RESOURCE CONSENT

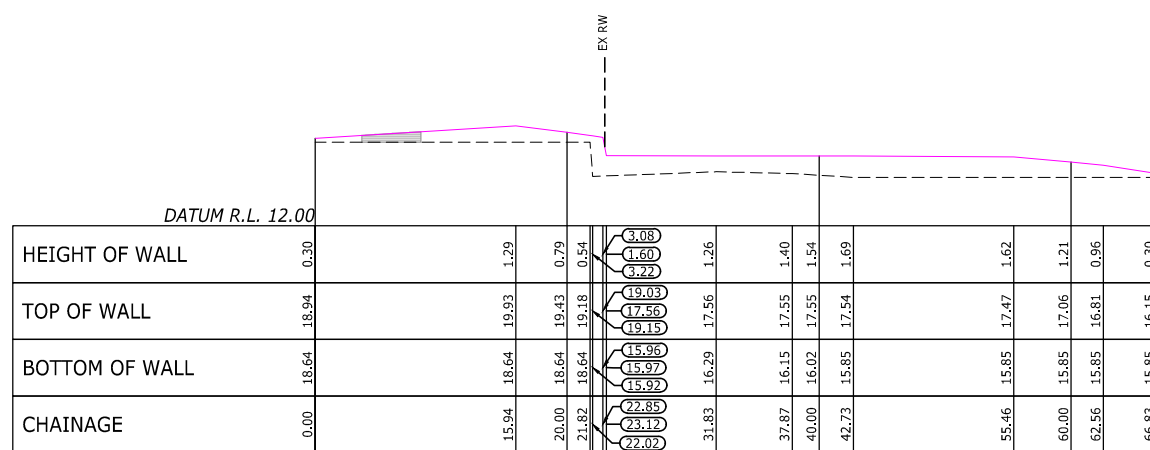
PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	B

DRAWING No:
FP326-265

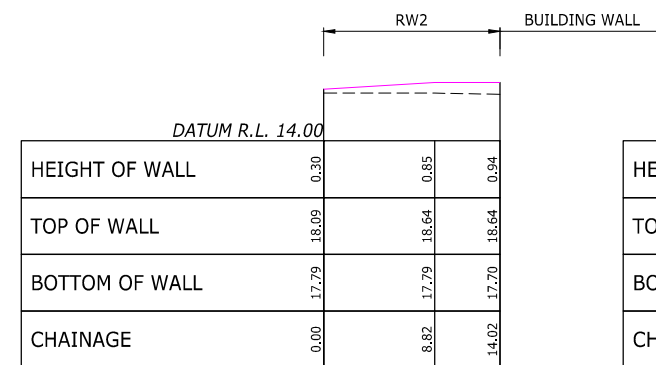


NOTES:

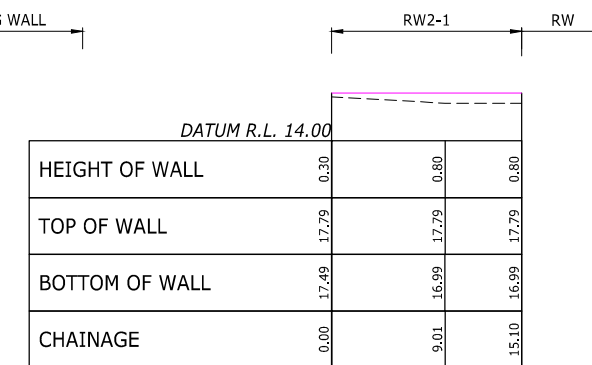
1. ALL RETAINING WALLS SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE, THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORIZED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1M AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.



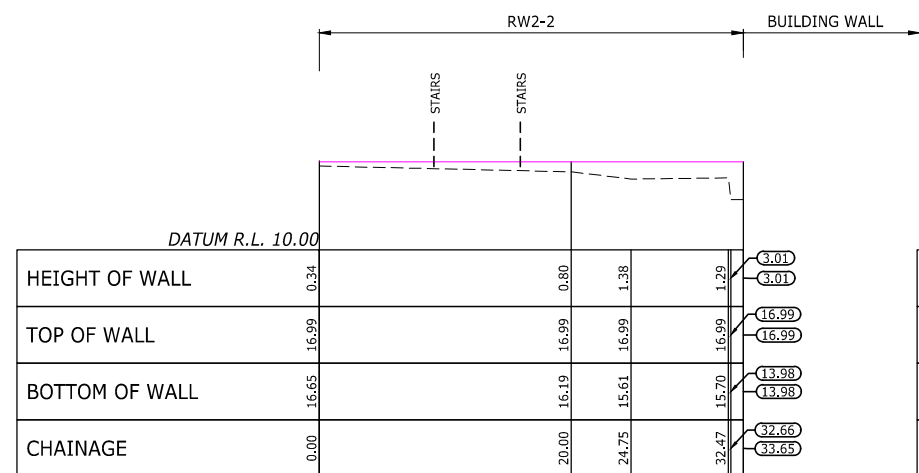
RETAINING WALL 1
LONGSECTION BETWEEN 0.00 AND 66.83



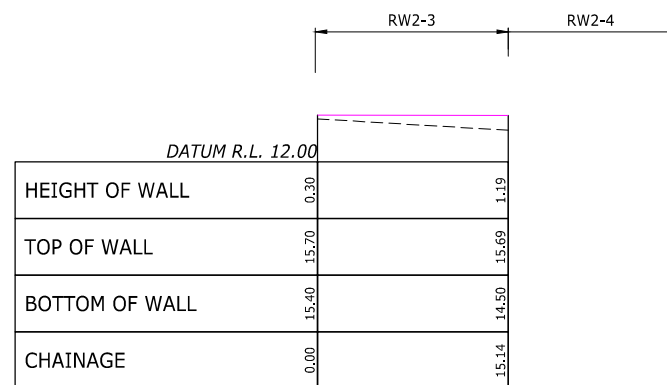
RETAINING WALL 2
LONGSECTION BETWEEN 0.00 AND 14.02



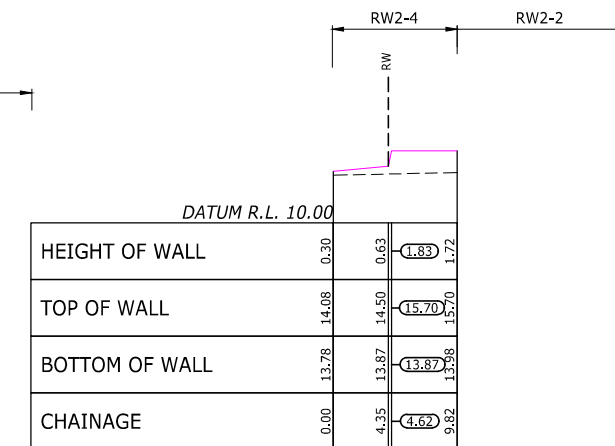
RETAINING WALL 2-1
LONGSECTION BETWEEN 0.00 AND 15.10



RETAINING WALL 2-2
LONGSECTION BETWEEN 0.00 AND 33.65



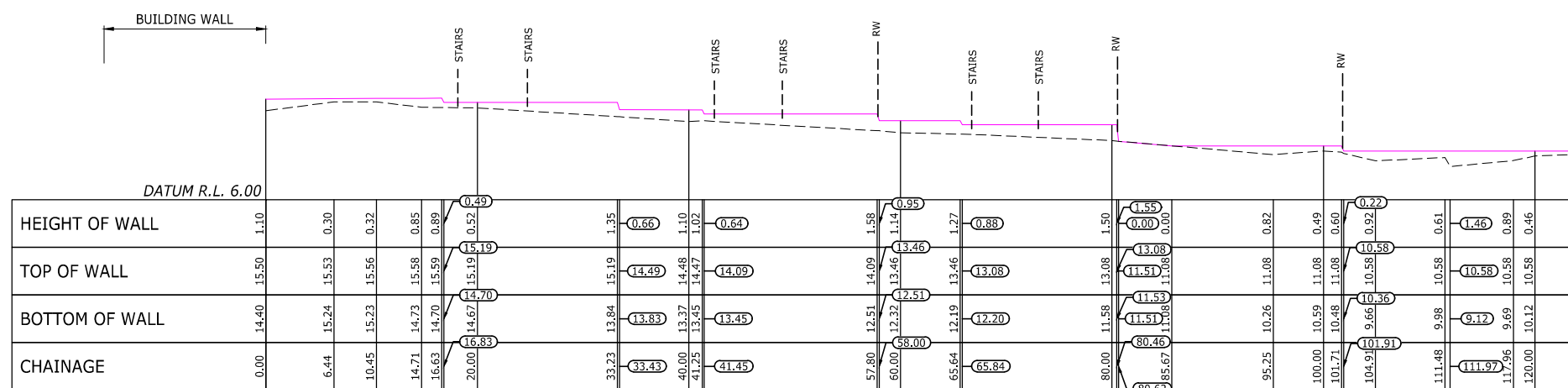
RETAINING WALL 2-3
LONGSECTION BETWEEN 0.00 AND 15.14



RETAINING WALL 2-4
LONGSECTION BETWEEN 0.00 AND 9.82

LEGEND:

- INDICATES TOP OF WALL
- INDICATES BOTTOM OF WALL



RETAINING WALL 3
LONGSECTION BETWEEN 0.00 AND 124.65



REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	AS	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**RETAINING WALL
LONGITUDINAL SECTIONS
SHEET 1 OF 4**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	17.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	17.02.25		

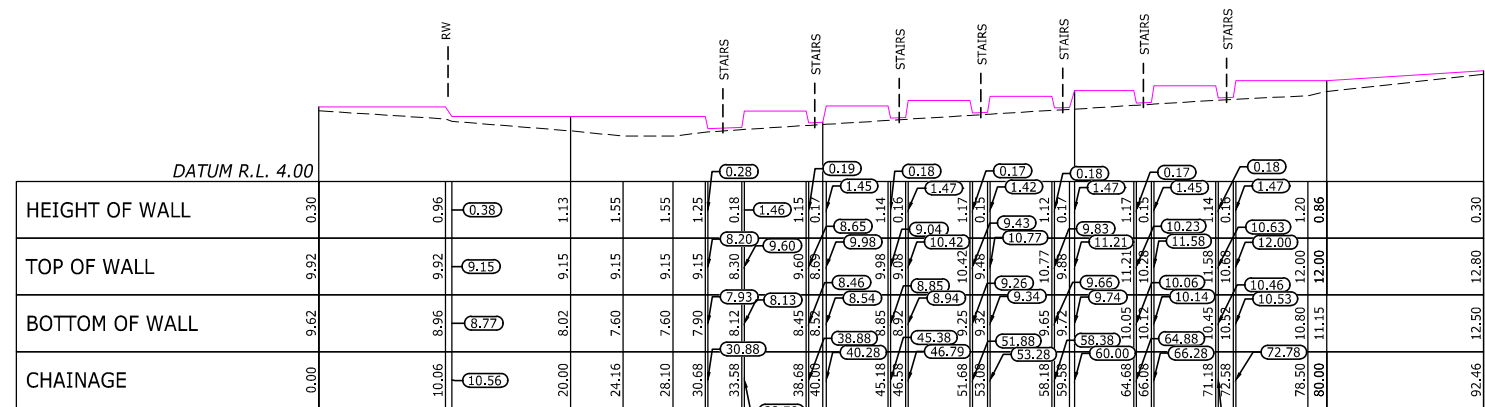
ISSUE STATUS:
RESOURCE CONSENT

PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

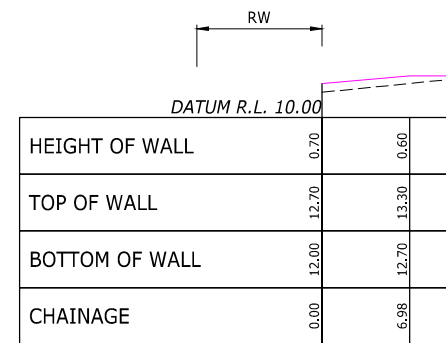
DRAWING No:
FP326-270

NOTES:

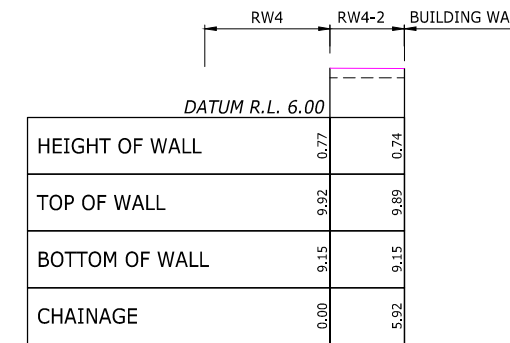
1. ALL RETAINING WALLS SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE, THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORIZED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1M AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.



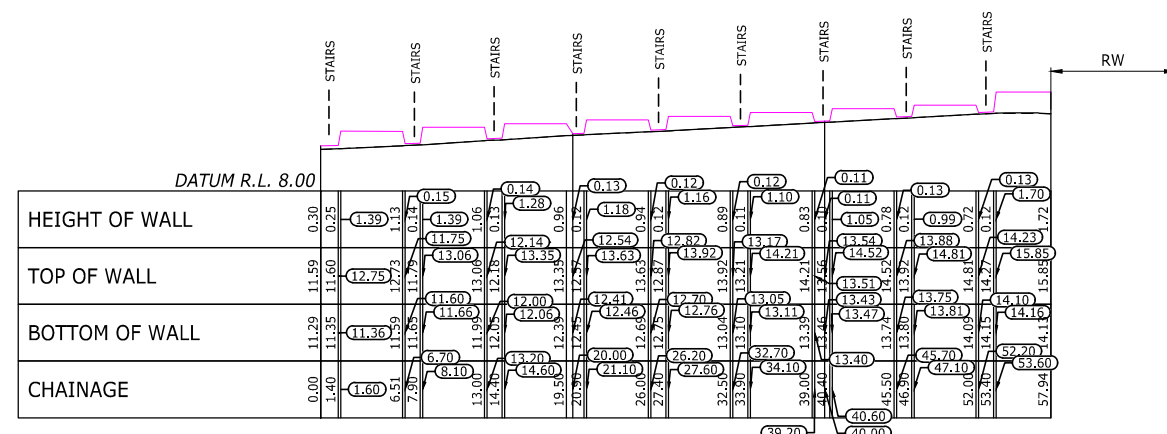
RETAINING WALL 4
LONGSECTION BETWEEN 0.00 AND 92.46



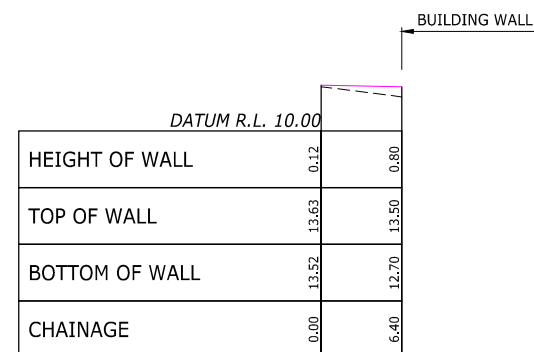
RETAINING WALL 4-1
LONGSECTION BETWEEN 0.00 AND 10.98



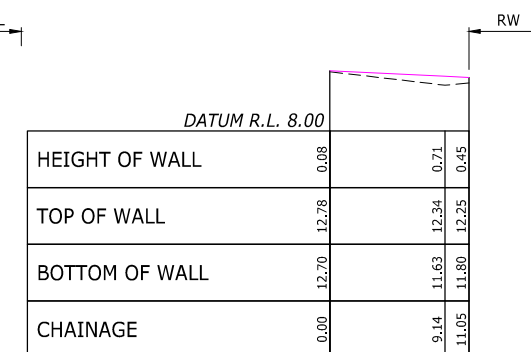
RETAINING WALL 4-2
LONGSECTION BETWEEN 0.00 AND 5.92



RETAINING WALL 5
LONGSECTION BETWEEN 0.00 AND 57.94



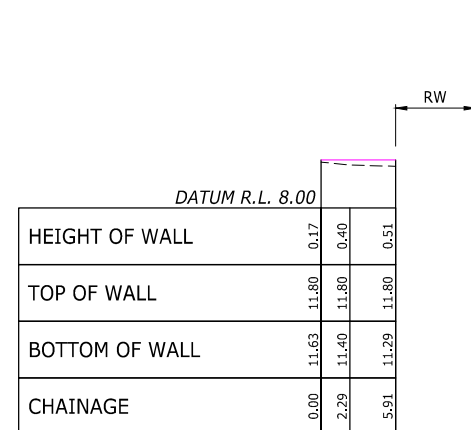
RETAINING WALL 5-1
LONGSECTION BETWEEN 0.00 AND 6.40



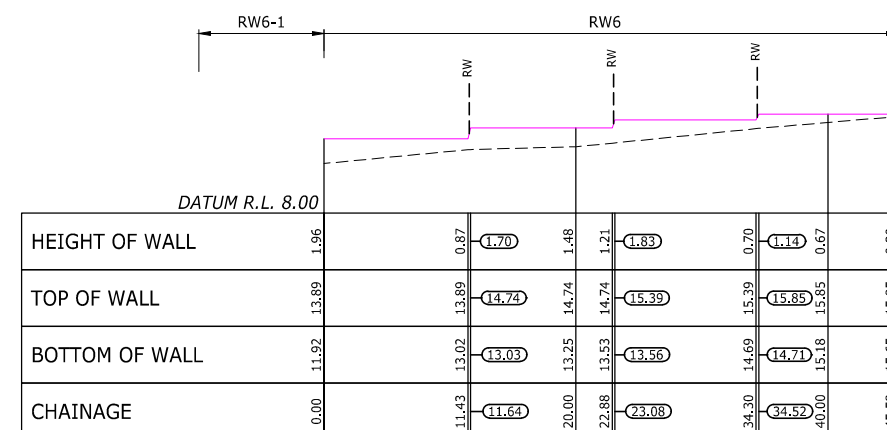
RETAINING WALL 5-2
LONGSECTION BETWEEN 0.00 AND 11.05

LEGEND:

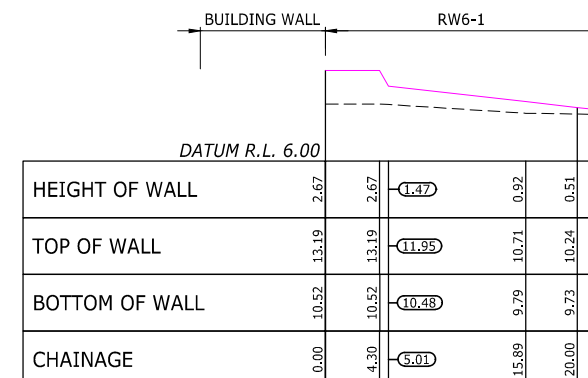
- INDICATES TOP OF WALL
- INDICATES BOTTOM OF WALL



RETAINING WALL 5-3
LONGSECTION BETWEEN 0.00 AND 5.91



RETAINING WALL 6
LONGSECTION BETWEEN 0.00 AND 45.58



RETAINING WALL 6-1
LONGSECTION BETWEEN 0.00 AND 22.48



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	AS	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**RETAINING WALL
LONGITUDINAL SECTIONS
SHEET 2 OF 4**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	17.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	17.02.25		

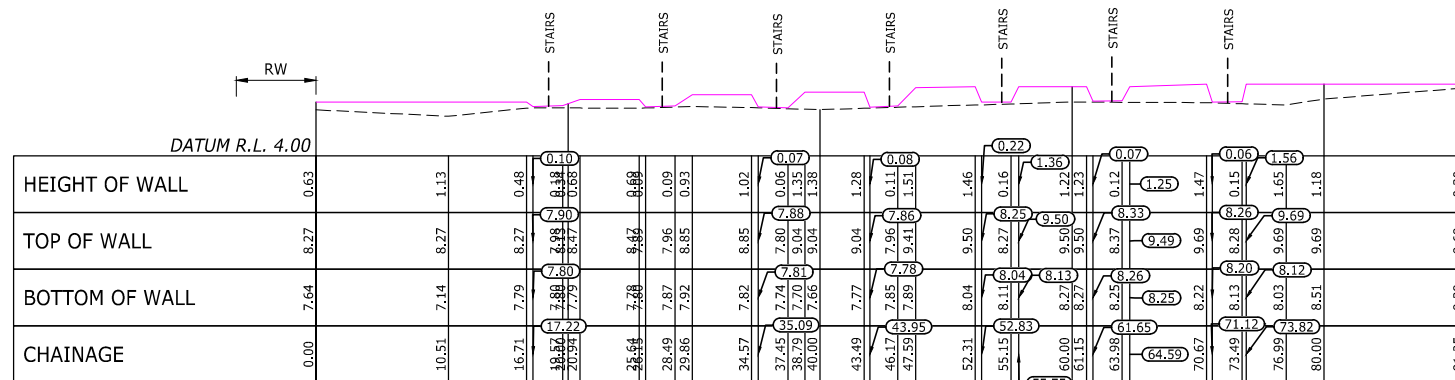
ISSUE STATUS:
RESOURCE CONSENT

PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

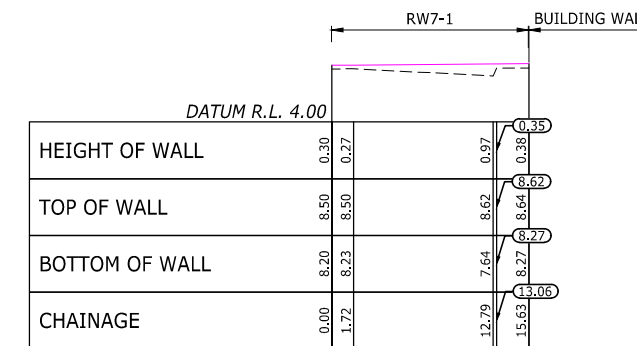
DRAWING No:
FP326-271

NOTES:

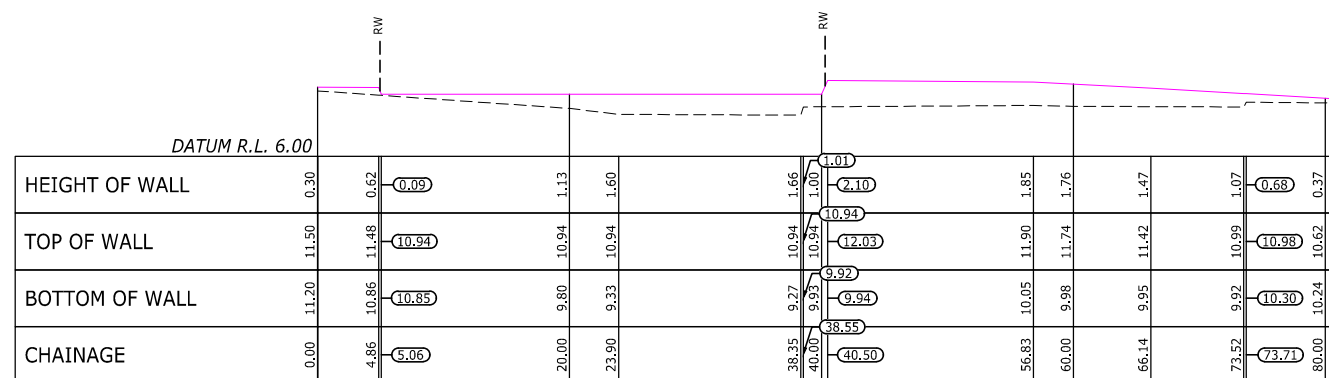
1. ALL RETAINING WALLS SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE, THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORIZED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1M AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.



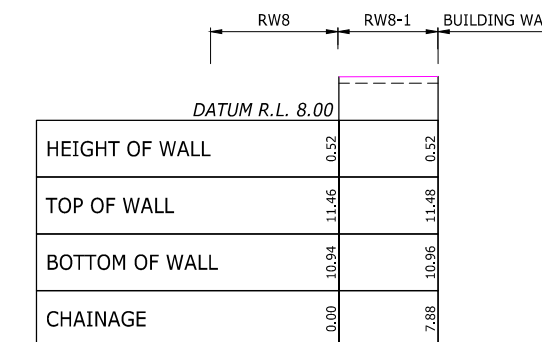
RETAINING WALL 7
LONGSECTION BETWEEN 0.00 AND 91.25



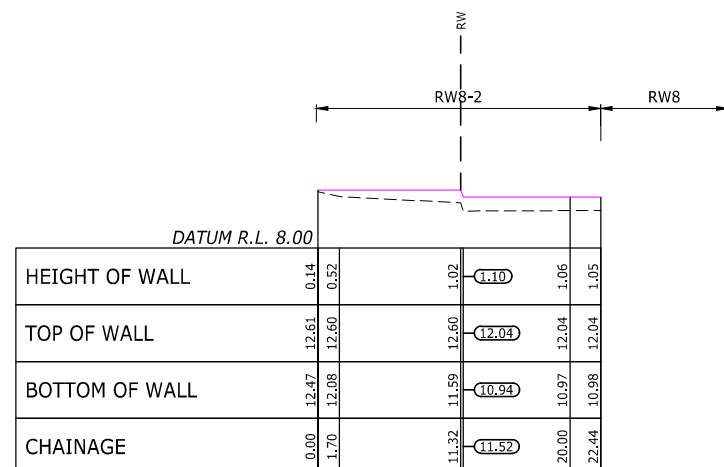
RETAINING WALL 7-1
LONGSECTION BETWEEN 0.00 AND 15.63



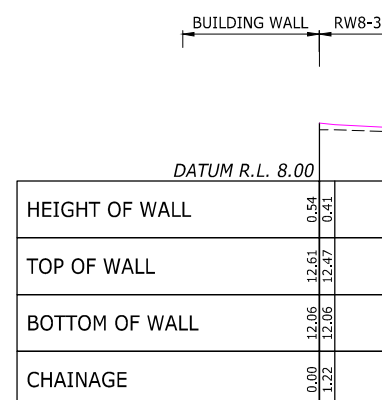
RETAINING WALL 8
LONGSECTION BETWEEN 0.00 AND 81.47



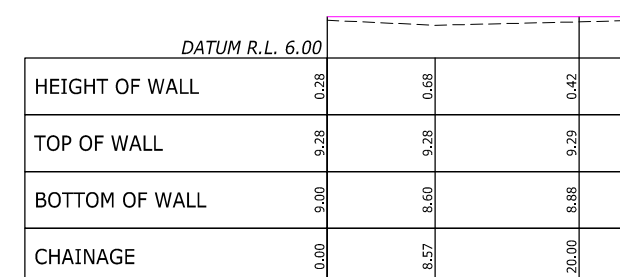
RETAINING WALL 8-1
LONGSECTION BETWEEN 0.00 AND 7.88



RETAINING WALL 8-2
LONGSECTION BETWEEN 0.00 AND 22.44



RETAINING WALL 8-3
LONGSECTION BETWEEN 0.00 AND 6.14



RETAINING WALL 8-4
LONGSECTION BETWEEN 0.00 AND 25.16

LEGEND:

- INDICATES TOP OF WALL
- INDICATES BOTTOM OF WALL



88 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

REF	DESCRIPTION	BY	DATE
C	S92	JW	23.03.26
B	S92	AS	09.02.26
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**RETAINING WALL
LONGITUDINAL SECTIONS
SHEET 3 OF 4**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	17.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	17.02.25		

ISSUE STATUS:
RESOURCE CONSENT



PROJECT No:	SCALES:	REV:
FP326	1:300-A1 1:600-A3	C

DRAWING No:
FP326-272

NOTES:

1. ALL RETAINING WALLS SUBJECT TO BUILDING CONSENT APPROVAL.
2. ALL DIMENSIONS TO BE CHECKED ON SITE. THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF, AND MAY NOT BE REPRODUCED OR ALTERED, WITHOUT THE WRITTEN PERMISSION OF EIGHTY6 ENGINEERING LIMITED. NO LIABILITY SHALL BE ACCEPTED FOR UNAUTHORIZED USE OF THIS DRAWING.
3. ALL PIPES MUST BE A MINIMUM OF 1M AWAY FROM RETAINING WALLS. ANY CLEARANCE ISSUES ARE TO BE RAISED WITH THE ENGINEER'S REPRESENTATIVE.

LEGEND:

-  INDICATES TOP OF WALL
-  INDICATES BOTTOM OF WALL



86 MANUKAU ROAD EPSOM AUCKLAND 1023
www.eighty6.co.nz

C	S92	JW	23.03.26
B	S92	AS	09.02.26
A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

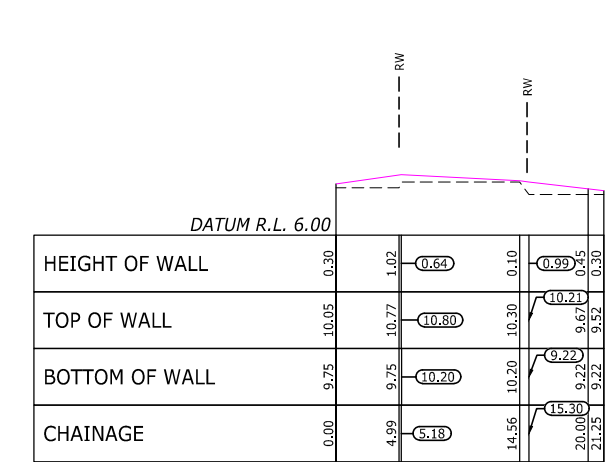
DESCRIPTION:
**RETAINING WALL
LONGITUDINAL SECTIONS
SHEET 4 OF 4**

DESIGNED: JW	DATE: 17.02.25	SIGNATURE:	PLOT BY:
DRAWN: JW	DATE: 17.02.25	SIGNATURE:	PLOT DATE:
CHECKED: SX	DATE: 17.02.25	SIGNATURE:	SURVEY BY:
APPROVED: SX	DATE: 17.02.25	SIGNATURE:	SURVEY DATE:

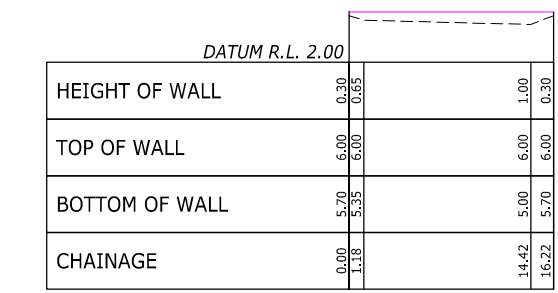
ISSUE STATUS: **RESOURCE CONSENT**

PROJECT No: FP326	SCALES: 1:300-A1 1:600-A3	REV: C
----------------------	---------------------------------	-----------

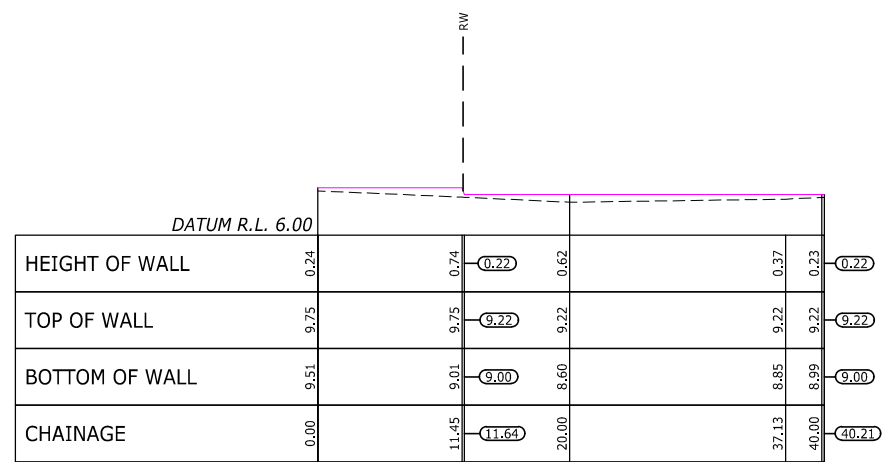
DRAWING No:
FP326-273



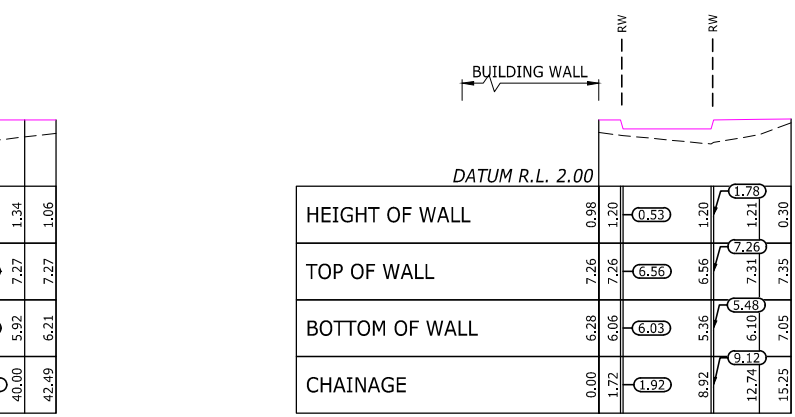
RETAINING WALL 9-1
LONGSECTION BETWEEN 0.00 AND 21.25



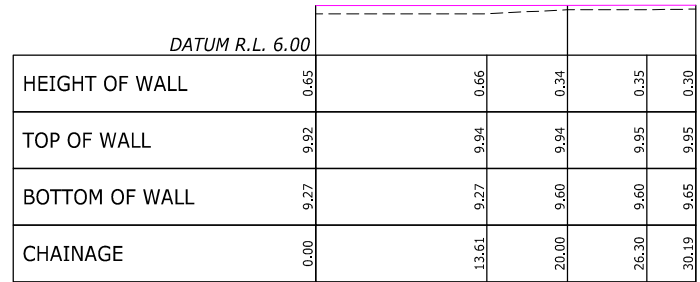
RETAINING WALL 11-1
LONGSECTION BETWEEN 0.00 AND 16.22



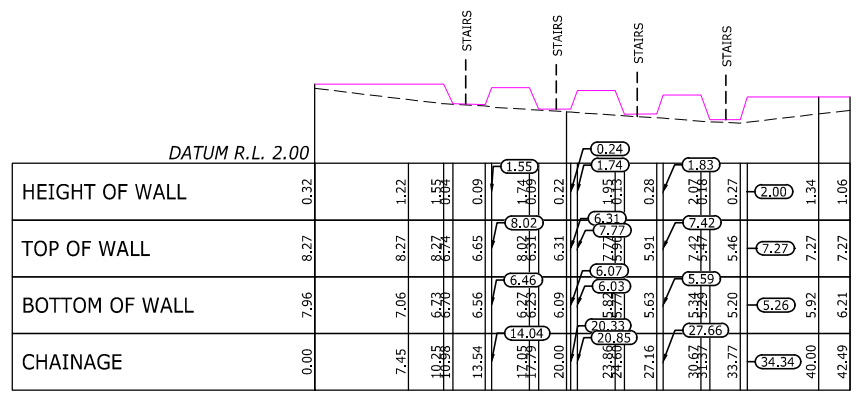
RETAINING WALL 9
LONGSECTION BETWEEN 0.00 AND 40.21



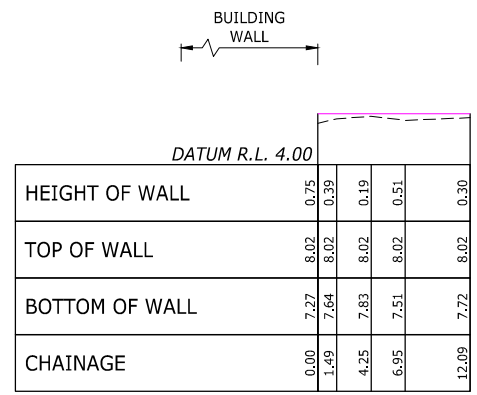
RETAINING WALL 11
LONGSECTION BETWEEN 0.00 AND 15.25



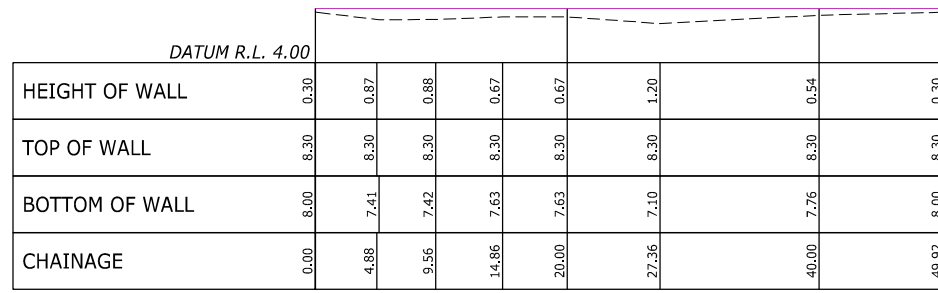
RETAINING WALL 8-5
LONGSECTION BETWEEN 0.00 AND 30.19



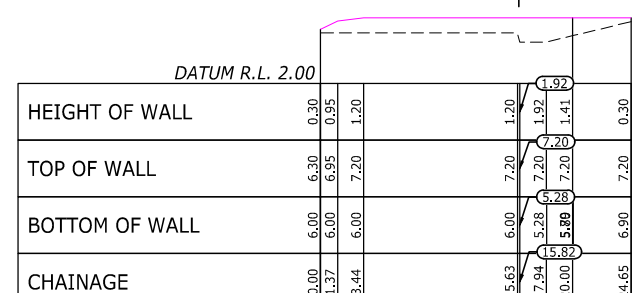
RETAINING WALL 10
LONGSECTION BETWEEN 0.00 AND 42.49



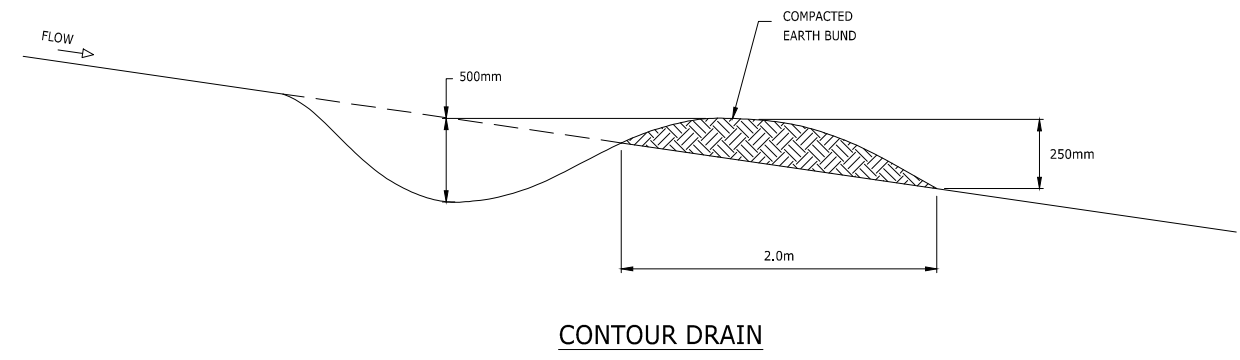
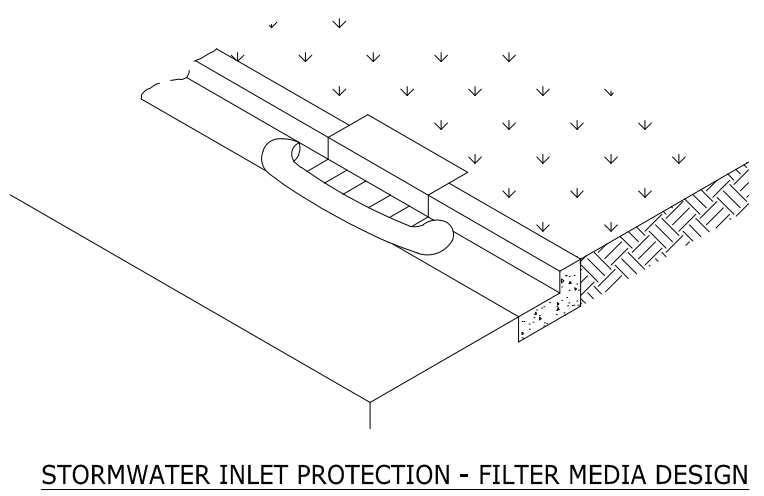
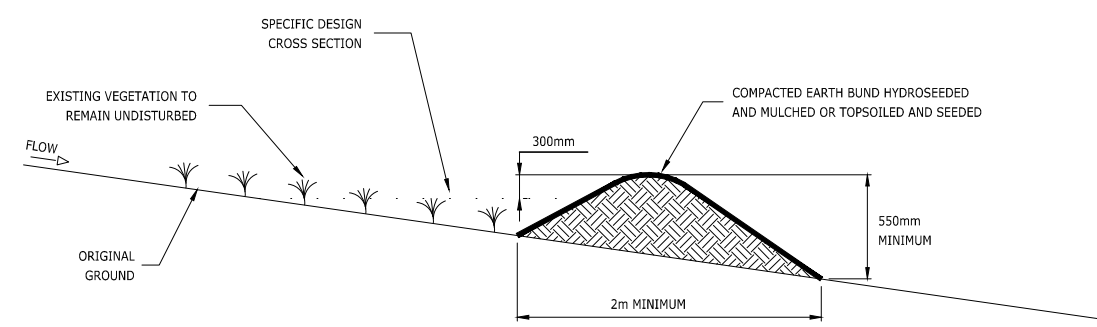
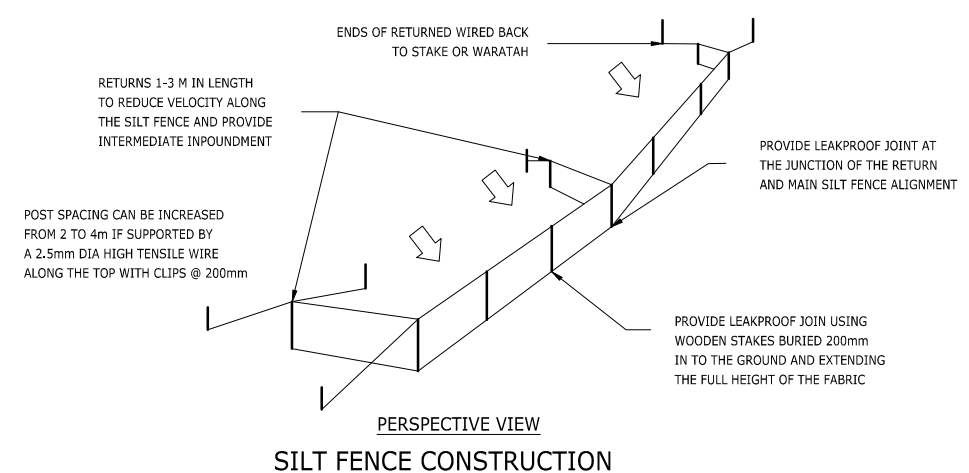
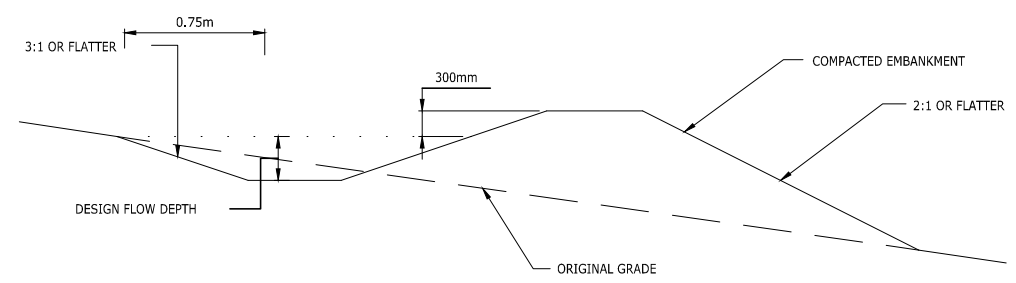
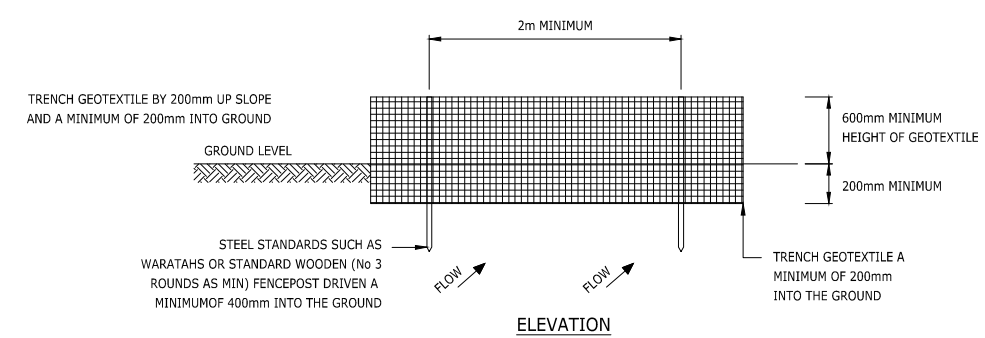
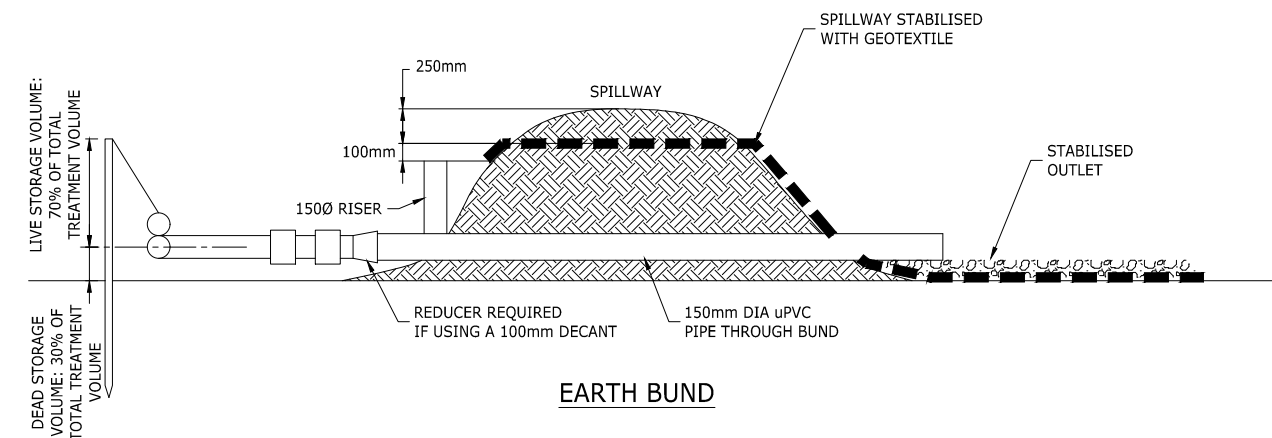
RETAINING WALL 12
LONGSECTION BETWEEN 0.00 AND 12.09



RETAINING WALL 13
LONGSECTION BETWEEN 0.00 AND 49.92



RETAINING WALL 11-2
LONGSECTION BETWEEN 0.00 AND 24.65



REF	DESCRIPTION	BY	DATE
A	RESOURCE CONSENT	JW	28.02.25

PROJECT:
**3 PIGEON MOUNTAIN ROAD
 HALF MOON BAY**

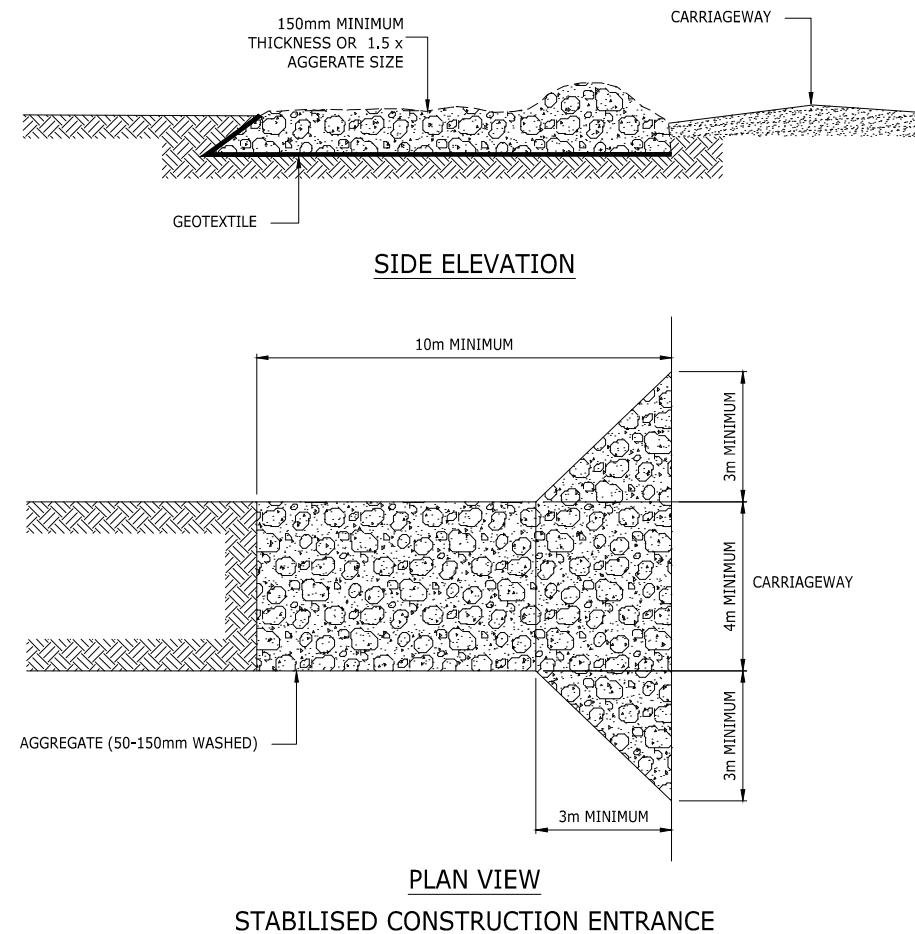
DESCRIPTION:
**SEDIMENT AND EROSION CONTROL
 STANDARD DETAILS
 SHEET 1 OF 3**

DESIGNED: JW	DATE: 17.02.25	SIGNATURE:	PLOT BY:
DRAWN: JW	DATE: 17.02.25	SIGNATURE:	PLOT DATE:
CHECKED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY BY:
APPROVED: SX	DATE: 28.02.25	SIGNATURE:	SURVEY DATE:

ISSUE STATUS:
RESOURCE CONSENT

PROJECT No: FP326	SCALES: N.T.S	REV: A
----------------------	------------------	-----------

DRAWING No:
FP326-290



STABILISED CONSTRUCTION ENTRANCE - SPECIFICATIONS:

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.

DESIGN:

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER UNSUITABLE MATERIAL AND PROPERLY GRADE IT.
2. LAY WOVEN GEOTEXTILE; PIN DOWN EDGES AND OVERLAP JOINS;
3. PROVIDE DRAINAGE TO CARRY RUNOFF FROM THE STABILISED CONSTRUCTION ENTRANCE TO A SEDIMENT CONTROL MEASURE.
4. PLACE AGGREGATE TO THE SPECIFICATIONS BELOW AND SMOOTH IT.

STABILISED CONSTRUCTION ENTRANCE AGGREGATE SPECIFICATIONS:

AGGREGATE SIZE	50-150mm WASHED AGGREGATE
THICKNESS	150mm MINIMUM OR 1.5 x AGGREGATE SIZE
LENGTH	10m MINIMUM LENGTH RECOMMENDED
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.



A	RESOURCE CONSENT	JW	28.02.25
REF	DESCRIPTION	BY	DATE

PROJECT:
**3 PIGEON MOUNTAIN ROAD
HALF MOON BAY**

DESCRIPTION:
**SEDIMENT AND EROSION CONTROL
STANDARD DETAILS
SHEET 3 OF 3**

DESIGNED:	DATE:	SIGNATURE:	PLOT BY:
JW	17.02.25		
DRAWN:	DATE:	SIGNATURE:	PLOT DATE:
JW	17.02.25		
CHECKED:	DATE:	SIGNATURE:	SURVEY BY:
SX	28.02.25		
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
SX	28.02.25		

ISSUE STATUS:
RESOURCE CONSENT

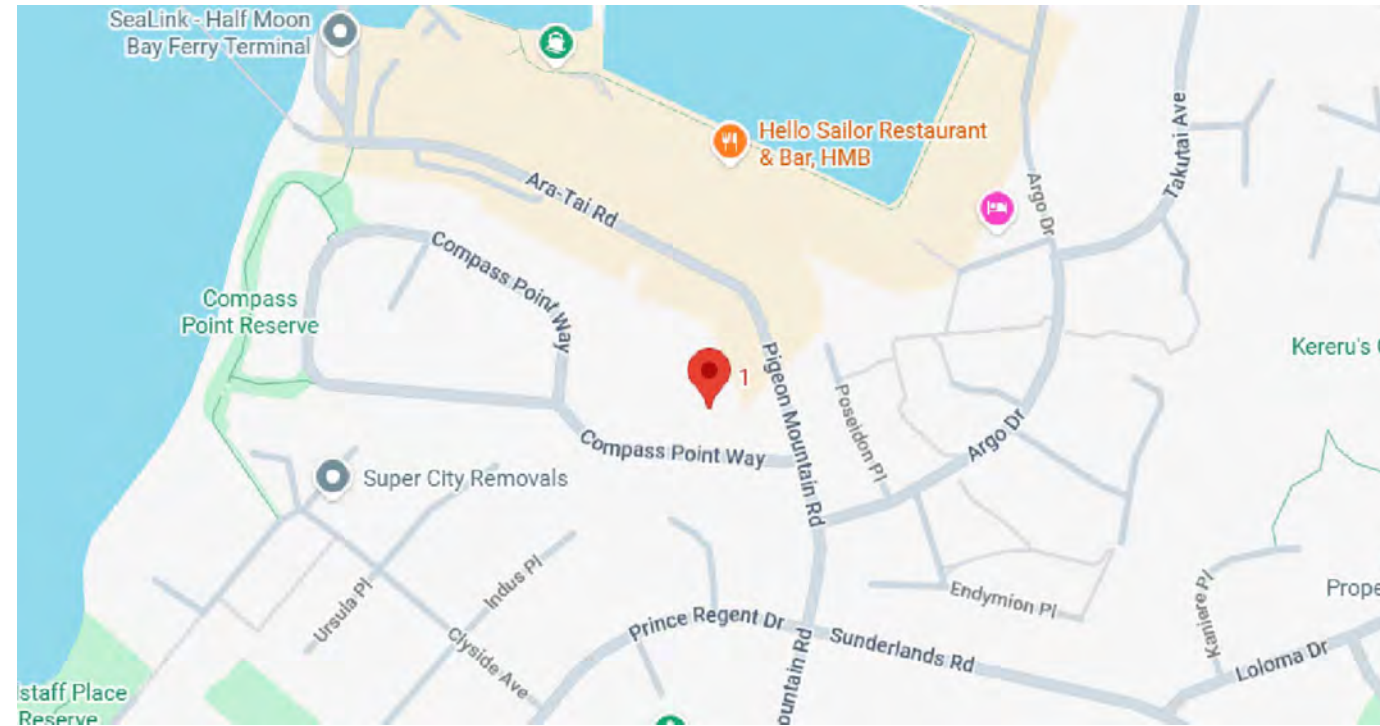
PROJECT No: FP326 SCALES: N.T.S REV: A

DRAWING No:
FP326-292

APPENDIX B
Topographic Survey



1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY TOPOGRAPHICAL SURVEY



DISCLAIMER:
THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY. SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER. THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.

FOR
INFORMATION

CONTENTS

TYPE	TITLE
010	COVER SHEET
120	SITE PLAN
121	AERIAL SITE PLAN
122+	ENLARGEMENTS
200	GRIP MAP DATA
201	RECORD OF TITLE
500	PUBLIC DRAINAGE RECORD
580	ASSET INFORMATION SHEETS
990	SITE PHOTOS AS TAKEN BY OUR SURVEYORS

EXISTING BUILDINGS (EXTERIOR CLADDING)	
BUILDING DECK	
BUILDING EAVES (TOP OF GUTTER)	
BUILDING RIDGES/ROOFLINE	
BUILDING FLOOR LEVEL	
BUILDING DOOR LEVEL	
BUILDING COLUMNS SQUARE	
BUILDING COLUMNS ROUND	
EDGE OF CONCRETE	
EDGE OF KERB	
EDGE OF CHANNEL	
EDGE OF SEAL	
IMPERMEABLE SURFACE	
FENCES	
POST/POLE	
GATE	
BOLLARD	
ROAD SIGN	
ROAD MARKER POST	
ROAD SIGN SIDE POLE	
ROAD SIGN DOUBLE	
ROAD REFLECTOR	
RUBBISH BIN	
PARKING METER	
POST BOX NZ	
MAIL-BOX	
GEOTECH SOAK TEST	
GEOTECH BORE HOLE	
GEOTECH CONE POINTER	
GEOTECH AUGER	
RAIL SWITCH	
RAIL SIGNAL	
ROAD MARKING WHITE	
ROAD MARKING YELLOW	

GAS METER	
GAS VALVE	
GAS DISTRIBUTION BOX	
GAS CYLINDER	
GAS END CAP	
GAS RDCR	
GAS LINE	
GAS PIT	
OIL LINE	
POWER DISTRIBUTION BOX	
POWER MANHOLE	
POWER POLE	
STREET LIGHT	
POWER UP LIGHT	
POWER COMMS POLE LAMP	
POWER COMMS POLE	
POWER BOLL LAMP	
POWER BARRIER POST	
POWER SIGN	
TRAFFIC LIGHT	
POWER POLE WITH LAMP	
POWER POLE ANCHOR	
POWER INSULATOR	
POWER END CAP	
POWER EARTH POINT	
OVERHEAD POWER LINE	
HIGH VOLTAGE POWER LINE	
VECTOR POWER LINE	
UNDERGROUND POWER LINE	
COMMUNICATIONS DISTRIBUTION BOX	
COMMUNICATIONS BOX FIBRE	
COMMUNICATIONS MANHOLE	
COMMUNICATIONS MANHOLE FIBRE	
COMMUNICATIONS LINE	
FIBRE OPTIC LINE	
COMMUNICATIONS CELL TOWER	
COMMUNICATIONS ANTENNA	
COMMUNICATIONS POLE	
SATELLITE DISH	

LOT BOUNDARIES	
ROAD BOUNDARIES	
ABUTTAL BOUNDARIES	
EASEMENT BOUNDARIES	
MAJOR CONTOURS (1.0m INTERVAL)	
MINOR CONTOURS (0.2m INTERVAL)	
MEASUREMENTS (METRES)	
TREES	
TRUNK SURVEYED, DRIPLINE ESTIMATED	
SURVEYED DRIPLINE & TRUNK	
EDGE OF VEGETATION	
HEDGE	
TOP OF TREE	
TREE STUMP	
SURFACE DRAIN	
STREAM/WATERCOURSE	
TOP OF BANK	
WATER LEVEL	
STORM WATER MANHOLE	
STORM WATER CESSPIT	
STORM WATER LINE	
STORM WATER PIPE INVERT	
KERB OUTLET	
STORM WATER GRATE	
DOWN PIPE	
WASTE WATER MANHOLE	
GULLY TRAP	
BUCHAN TRAP	
WASTE WATER PIPE	
WASTE WATER STANDING VENT	
WASTE WATER LINE	
VALVE	
WATER METER	
FIRE HYDRANT	
FIRE HOSE REEL	
TAP	
WATER MAIN LINE	
UNKNOWN MANHOLE	

envivo ltd po box 109 207 newmarket auckland 1149
+64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE

COVER SHEET

PROJECT/LOCATION

1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY

LEGAL DESCRIPTION

LOT 1 DP 212125

RECORD OF TITLE

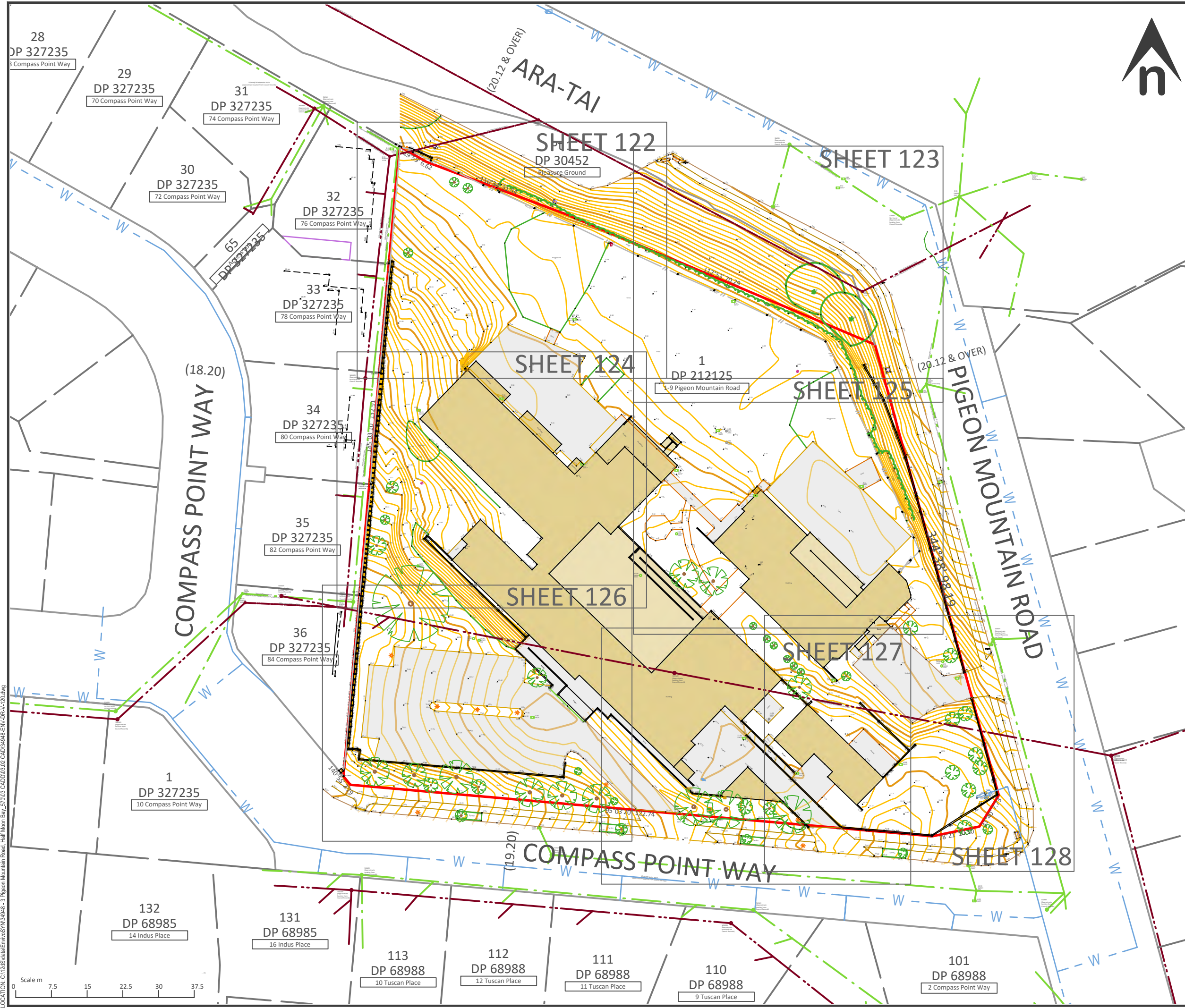
NA140A/266, 1.407 ha

NO	DATE	BY	SCALE	ZONING
1	10/11/25	SC	DATE	DATE
2	12/11/25	DATE	DATE	DATE

SCALE @A3 ZONING MIXED HOUSING SUBURBAN

PROJECT	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV
34948-ENV-00-XX-DR-V-	010	S2-	A					

DATE: 13/11/2025 09:56:07 pm LOGIN NAME: SARAH CAMMICK LOCATION: C:\2325\envivo\34948-3\Pigeon Mountain Road, Half Moon Bay_57003 CAD\03\02 CAD\34948-ENV-DR-V-120.dwg



DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY. SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER. THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.



envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE								
SITE PLAN								
PROJECT/LOCATION								
1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY								
LEGAL DESCRIPTION								
LOT 1 DP 212125								
RECORD OF TITLE								
NA140A/266, 1.407 ha								
SURVEYED	DRAWN	DESIGNED	APPROVED					
KP	SC	DATE	DATE					
10/11/25	12/11/25							
SCALE @A3	ZONING							
1:750	MIXED HOUSING SUBURBAN							
PROJECT	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV
34948-ENV-00-XX-DR-V-	120	S2-	A					

DATE: 13/11/2025 09:55:13 pm LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\2626\envivo\34948-3\Pigeon Mountain Road_half Moon Bay_57003_CADD\03.02_CADD\34948-ENV-DR-V-120.dwg





DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY.
 SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER.
 THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

- NOTES:**
- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
 - HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
 - BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
 - SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENSE.
 - EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
 - NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
 - UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
 - IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZIAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
 - CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
 - CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
 - THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.

envivo

envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE
 AERIAL SITE PLAN

PROJECT/LOCATION
 1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY

LEGAL DESCRIPTION
 LOT 1 DP 212125

RECORD OF TITLE
 NA140A/266, 1.407 ha

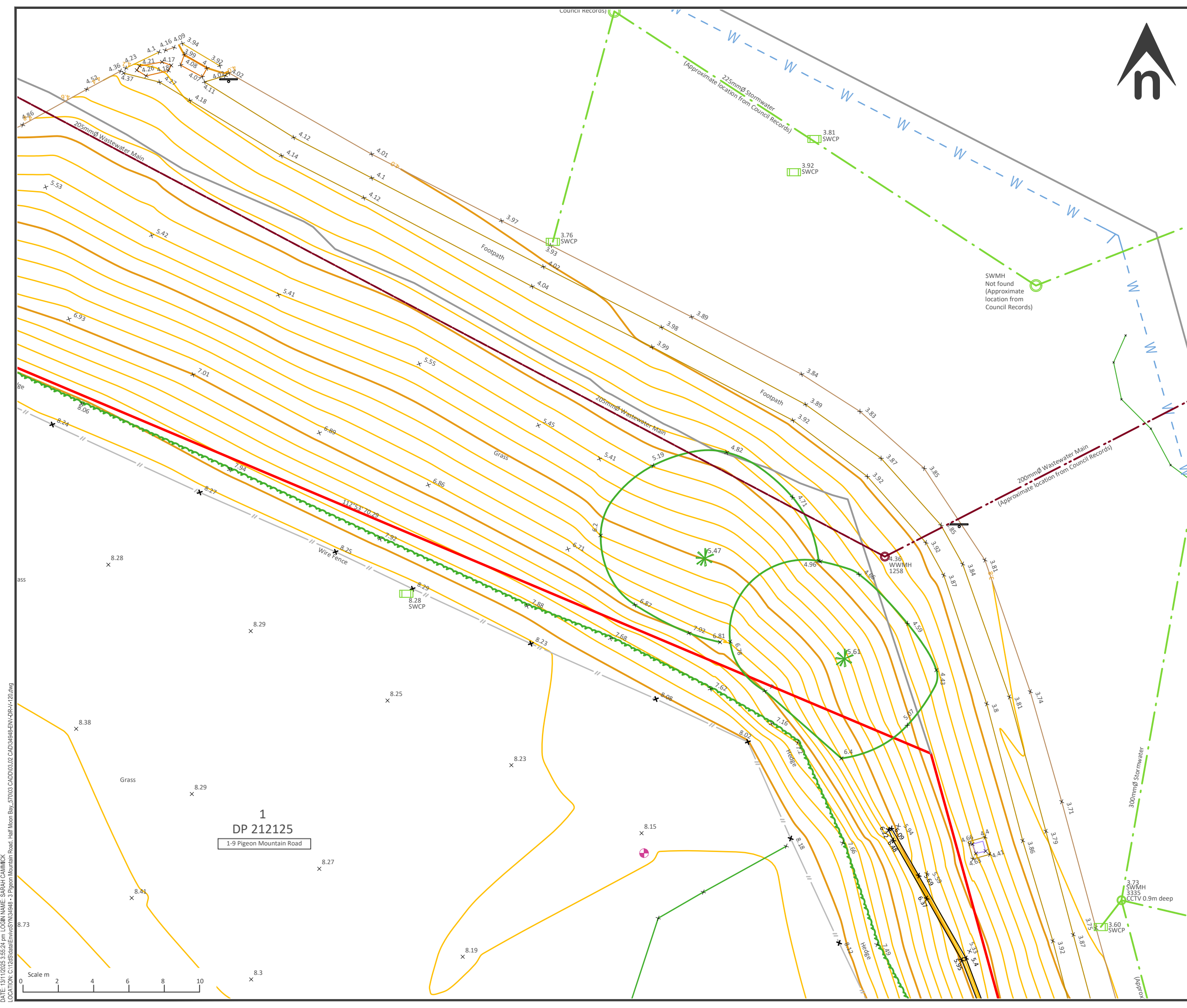
SURVEYED	DRAWN	DESIGNED	APPROVED
CP	SC	DATE	DATE

SCALE @A3	ZONING
1:750	MIXED HOUSING SUBURBAN

PROJECT	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV
34948-ENV-00-XX-DR-V-							121 - S2- A	

DATE: 13/11/2025 3:55:10 pm LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\266\34948-ENV-00-XX-DR-V-120.dwg





DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY. SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER. THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.

DATE: 13/11/2025 16:52:04 PM LOGIN NAME: SARAH CAMMICK LOCATION: C:\2625\envivo\34948-3 Pigeon Mountain Road_half Moon Bay_57703 CAD\03\03.02 CAD\34948-ENV-DR-V-120.dwg

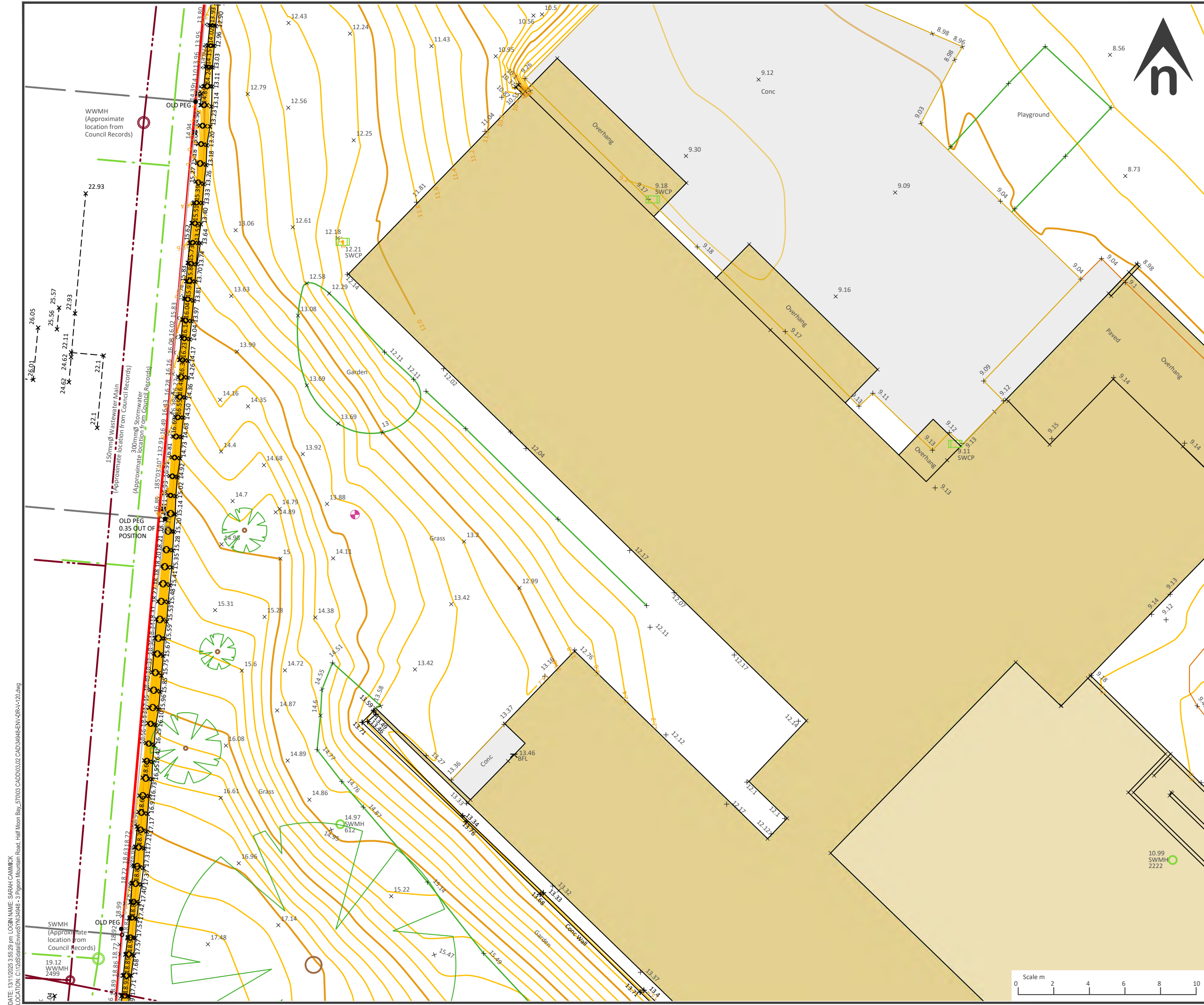
1
DP 212125
 1-9 Pigeon Mountain Road



envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE																				
SITE PLAN																				
PROJECT/LOCATION																				
1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY																				
LEGAL DESCRIPTION																				
LOT 1 DP 212125																				
RECORD OF TITLE																				
NA140A/266, 1.407 ha																				
SURVEYED																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>KP</th> <th>SC</th> <th>DESIGNED</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	KP	SC	DESIGNED	APPROVED																
KP	SC	DESIGNED	APPROVED																	
DATE																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>DATE</th> <th>DATE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>10/11/25</td> <td>12/11/25</td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	DATE	DATE	DATE	DATE	10/11/25	12/11/25														
DATE	DATE	DATE	DATE																	
10/11/25	12/11/25																			
SCALE @A3																				
1:200																				
ZONING																				
MIXED HOUSING SUBURBAN																				
PROJECT ORIG																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ORIG</th> <th>ZONE</th> <th>LOC</th> <th>TYPE</th> <th>RL</th> <th>DRG No</th> <th>SUIT</th> <th>REV</th> </tr> </thead> <tbody> <tr> <td>34948-ENV-00-XX-DR-V-</td> <td>123</td> <td>S2-</td> <td>A</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV	34948-ENV-00-XX-DR-V-	123	S2-	A								
ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV													
34948-ENV-00-XX-DR-V-	123	S2-	A																	



DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY. SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER. THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.

DATE: 13/11/2025 16:55:20 pm LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\265\envivo\envivo\34948-3\Pigeon Mountain Road_half Moon Bay_57703 CAD\03\03.02 CAD\34948-ENV-DR-V-120.dwg



REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE: SITE PLAN

PROJECT/LOCATION: 1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY

LEGAL DESCRIPTION: LOT 1 DP 212125

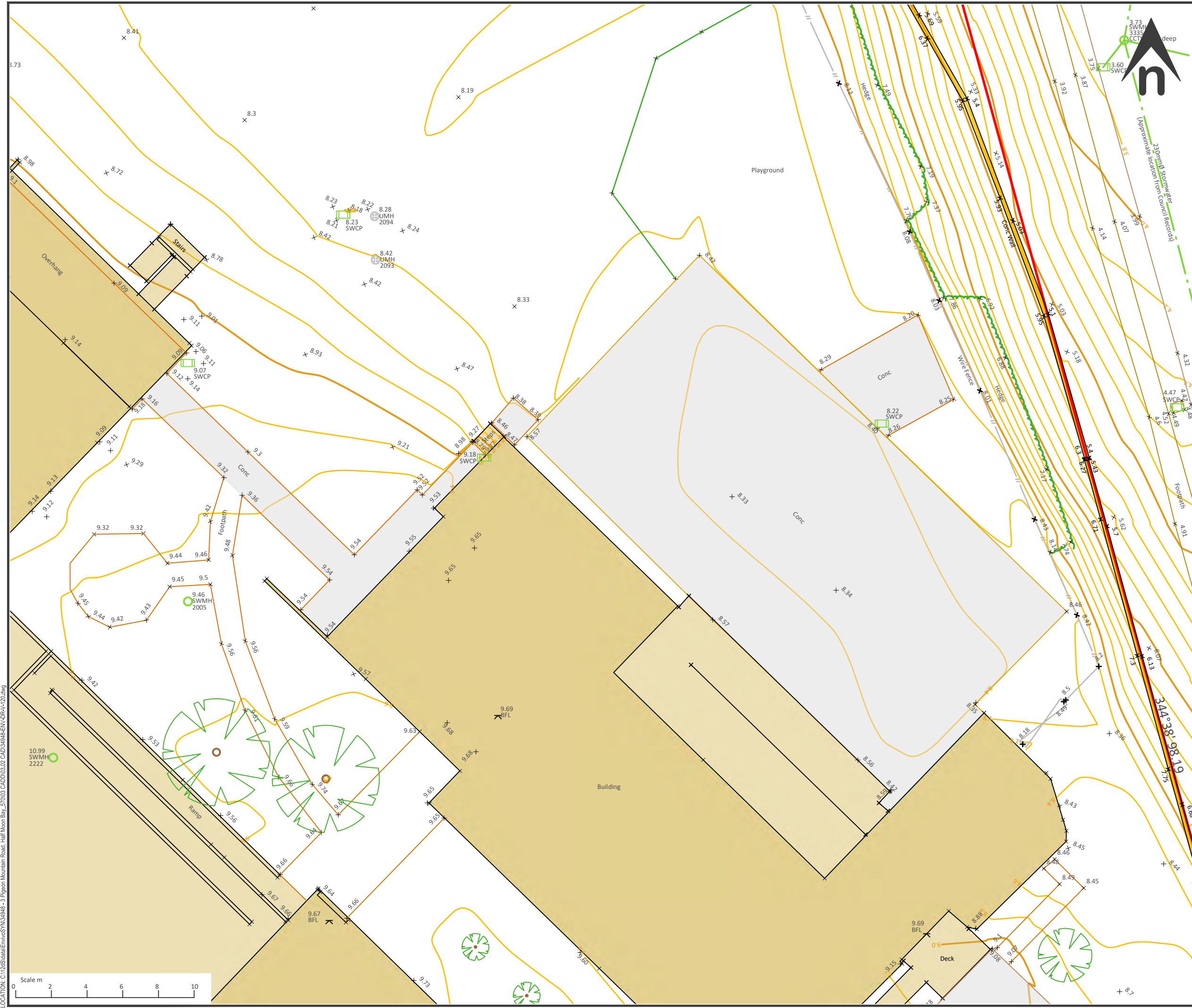
RECORD OF TITLE: NA140A/266, 1.407 ha

SURVEYED	DRAWN	DESIGNED	APPROVED
10/11/25	12/11/25		

SCALE @A3: 1:200 ZONING: MIXED HOUSING SUBURBAN

PROJECT ORIG: 34948-ENV-00-XX-DR-V-124 - S2- A





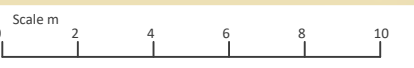
DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY.
 SCALE WITH CAUTION, THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER.
 THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.



DATE: 13/11/2025 16:55:33 pm LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\225\225\envivo\34948-3\Pigeon Mountain Road_half Moon Bay_57003 CAD\03\02 CAD\34948-ENV-DR-V-120.dwg



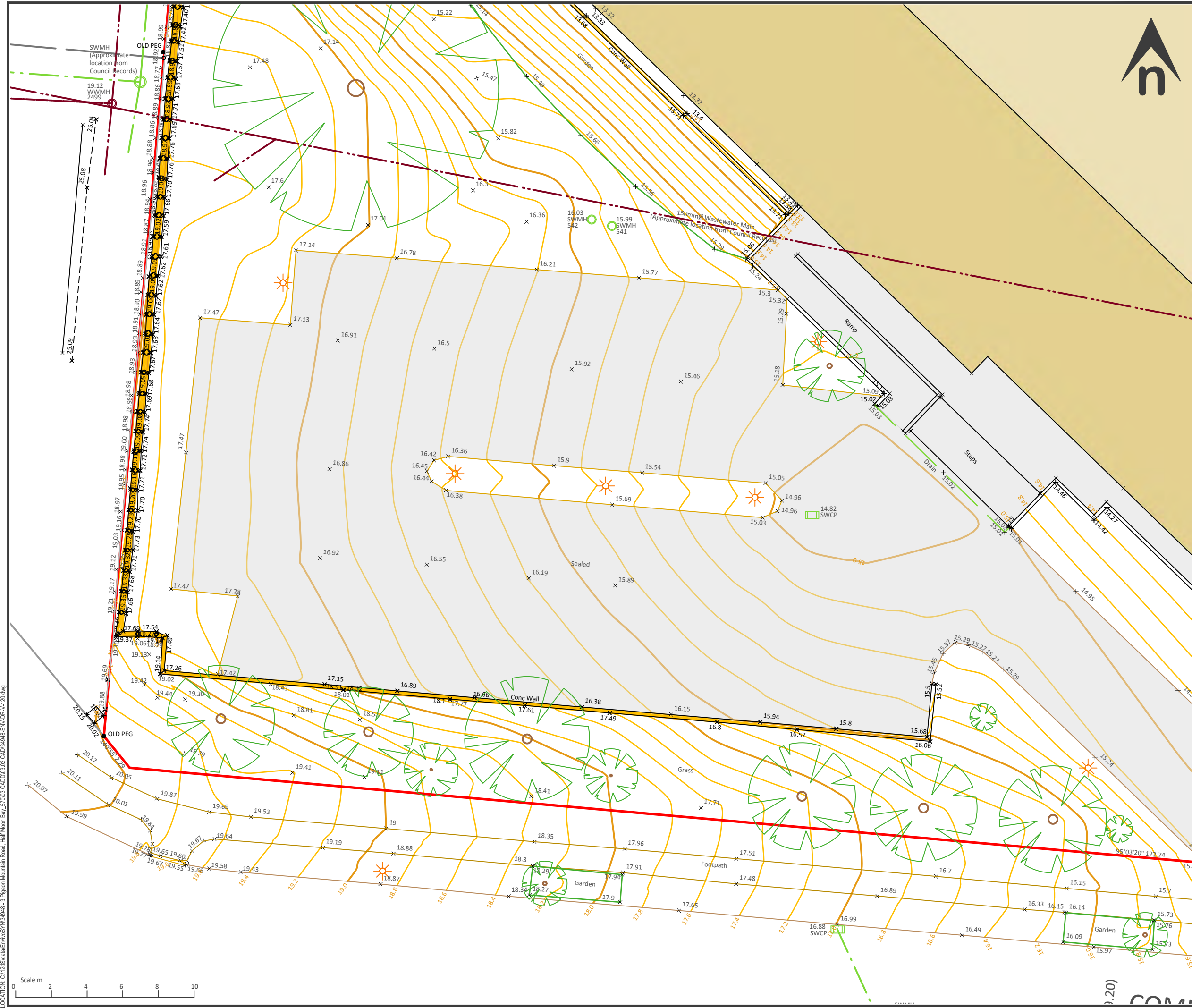


envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE	SITE PLAN
PROJECT/LOCATION	1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY
LEGAL DESCRIPTION	LOT 1 DP 212125

RECORD OF TITLE			
NA140A/266, 1.407 ha			
SURVEYED	DRAWN	DESIGNED	APPROVED
KP	SC	DATE	DATE
10/11/25	12/11/25		
SCALE @A3		ZONING	
1:200		MIXED HOUSING SUBURBAN	
PROJECT	ORIG	ZONE	LOC
34948-ENV-00-XX-DR-V-	125	S2-	A




DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY.
 SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER.
 THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.

DATE: 13/11/2025 16:55:37 PM LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\2525\envivo\34948-3 Pigeon Mountain Road, Half Moon Bay_57003 CAD\03\02 CAD\34948-ENV-DR-V-120.dwg

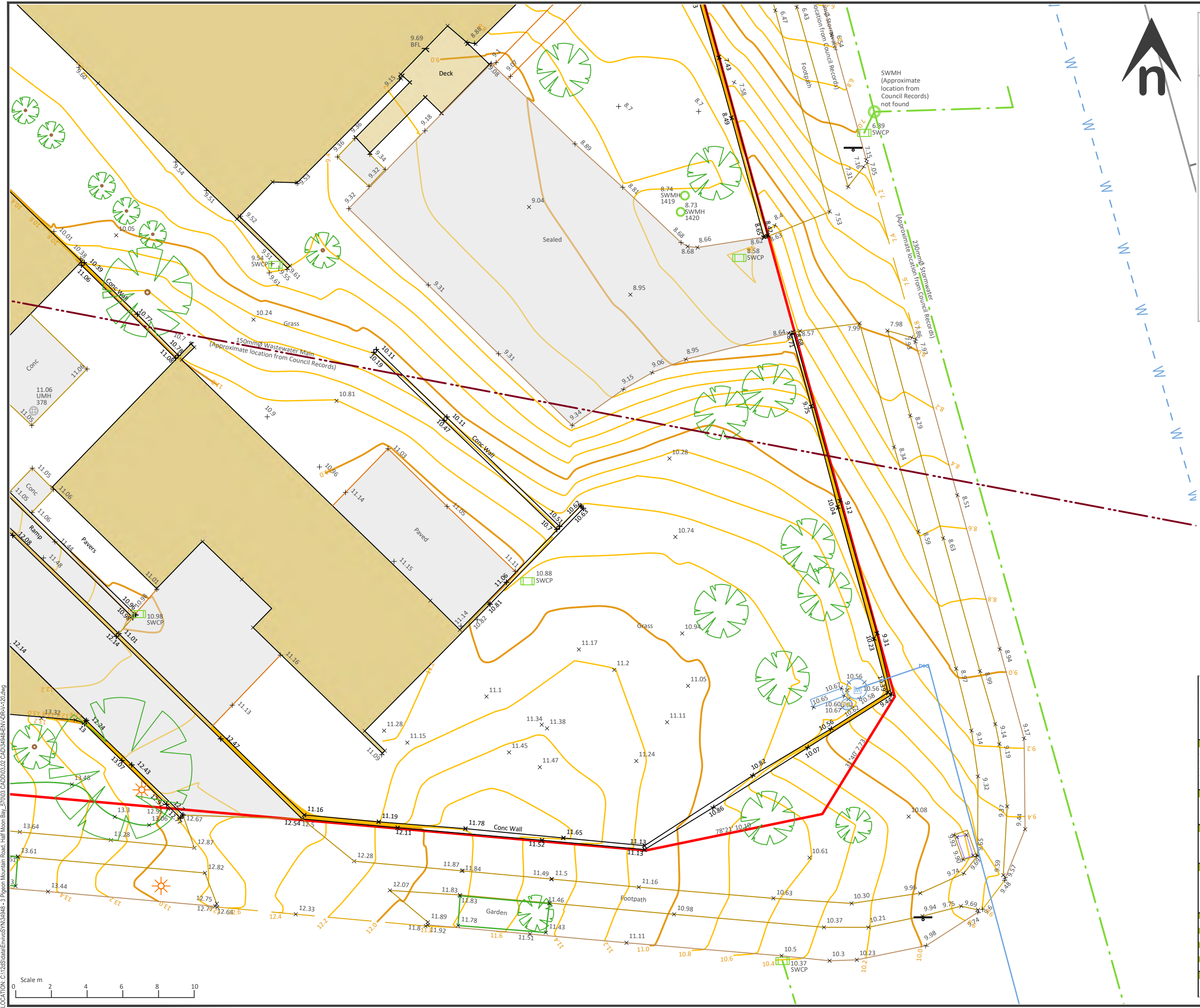




envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE	SITE PLAN							
PROJECT/LOCATION	1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY							
LEGAL DESCRIPTION	LOT 1 DP 212125							
RECORD OF TITLE	NA140A/266, 1.407 ha							
SURVEYED	DRAWN	DESIGNED	APPROVED					
KP	SC	DATE	DATE					
10/11/25	12/11/25							
SCALE @A3	ZONING							
1:200	MIXED HOUSING SUBURBAN							
PROJECT	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV
34948-ENV-00-XX-DR-V-	126	S2-	A					



DISCLAIMER:
 THIS DRAWING SHALL ONLY BE USED FOR THE PURPOSES AGREED BY ENVIVO LTD AND ITS CLIENT. ENVIVO LTD ACCEPTS NO LIABILITY OR RESPONSIBILITY WHATSOEVER FOR, OR IN RESPECT OF, ANY USE OF, OR RELIANCE UPON THIS DRAWING BY ANY THIRD PARTY. SCALE WITH CAUTION. THIS DRAWING MAY HAVE DEFORMED DURING REPRODUCTION. IF CLARITY IS REQUIRED, REFER TO ENGINEER. THE CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE THE COPYRIGHT OF ENVIVO LTD. USE OR COPYING OF THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION OF ENVIVO LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NOTES:

- HORIZONTAL DATUM IS NZGD 2000 (CIRCUIT IS MOUNT EDEN 2000).
- HEIGHT DATUM IS NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016) FROM BP 7363 SO 57793 (CL2N) RL=15.52m (JAN 2025)
- BOUNDARIES SHOWN ON THIS PLAN ARE FROM LANDONLINE. IF THE POSITION OF THE BOUNDARIES IS REQUIRED A REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- SOURCED FROM THE LINZ DATA SERVICE AND LICENSED FOR REUSE UNDER THE CC BY 4.0 LICENCE.
- EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS PERTAINING TO THIS SITE MAY NOT BE REPRESENTED ON THIS PLAN. A FULL INVESTIGATION OF LEGAL RECORDS SHOULD BE UNDERTAKEN.
- NOT ALL PUBLIC & PRIVATE DRAINAGE INFORMATION IS SHOWN ON THIS PLAN. SYMBOLS AND MODELS OF SERVICES ARE SHOWN DIAGRAMMATICALLY ONLY AND NOT TO SCALE.
- UNLESS OTHERWISE SHOWN THE POSITION AND ALIGNMENT OF SERVICES SHOWN ON THIS PLAN HAVE BEEN OBTAINED FROM COUNCIL RECORDS AND ARE SUBJECT TO THE ERRORS OR OMISSIONS OF THAT DATA, THEY SHOULD NOT BE USED FOR DESIGN PURPOSES. ALL SERVICES SHOULD BE LOCATED BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.
- IF SHOWN, SPECIFIED UNDERGROUND UTILITIES AND DRAINAGE HAVE BEEN LOCATED USING INDUSTRY BEST PRACTICE METHODS AND FOLLOWING NZUAG CODE OF PRACTICE. DIFFERENCES IN LOCATION BETWEEN THE VARIOUS METHODS IS NORMAL.
- CRITICAL LEVELS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN. THE LEVELS SHOWN ON THIS PLAN MAY NOT CORRESPOND TO THE COUNCIL'S DEFINITION OF GROUND LEVEL FOR DESIGN PURPOSES.
- CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED, THEY MAY NOT REPRESENT THE TRUE GROUND LEVELS.
- THE SIZE AND POSITION OF TREES SHOWN ON THIS PLAN IS APPROXIMATE. THE TREE 'TYPE' IS A BEST GUESS. IF CRITICAL, TREES SHOULD BE IDENTIFIED BY A QUALIFIED ARBORIST.



envivo
 envivo ltd po box 109 207 newmarket auckland 1149
 +64 9 630 9512 admin@envivo.nz www.envivo.nz

REV	BY	DATE	APP'D	REVISION/ COMMENTS

TITLE
 SITE PLAN

PROJECT/LOCATION
 1-9 PIGEON MOUNTAIN ROAD, HALF MOON BAY

LEGAL DESCRIPTION
 LOT 1 DP 212125

RECORD OF TITLE
 NA140A/266, 1.407 ha

SRVYED	DRWN	DSGN	APPRD
CP	SC	DATE	DATE

SCALE @A3 ZONING
 1:200 MIXED HOUSING SUBURBAN

PROJECT	ORIG	ZONE	LOC	TYPE	RL	DRG No	SUIT	REV
34948-ENV-00-XX-DR-V-						128	S2-	A

DATE: 13/11/2025 15:53:43 pm LOGIN NAME: SARAH CAMMICK
 LOCATION: C:\225\225\envivo\34948-3 Pigeon Mountain Road_half Moon Bay_57703 CAD\03\03.02 CAD\34948-ENV-DR-V-120.dwg



APPENDIX C
Sediment Retention Pond Design Calculation

SEDIMENT POND DESIGN
Based on GD05
"Erosion and Sediment Control Guide for Land Disturbing Activities"

PREPARED BY EIGHTY6 ENGINEERING

PROJECT No : **FP326** BY : **JW** DATE : **03-Mar-25** CHECKED : SX

SITE DESCRIPTION : 3 Pigeon Mountain Road

CONTRIBUTING CATCHMENT **1.417** ha CATCHMENT A
 WORKING AREA : **1.417** ha
 AVERAGE SITE SLOPE : **10** %
 SITE LENGTH : **130** m

Minimum Sediment Pond Size

The size of the pond, in m³, is 2 % of the total contributing catchment, in m².

Pond volume = 283.4 m³

Proposed Sediment Pond

Length/Width ratio = 3 :1 *min length/ width ratio 3:1, max 5:1* 10

Pond Dimensions =

	Width	Length		Width	Length
@ av depth	8.5	25.5			
@ spillway MH level	11.5	28.5	Crest	13.9	30.9
@ Floor level	5.5	22.5	Floor	5.5	22.5

(This is the height of the dam above the outlet manhole including freeboard and 1%AEP spillway)

Surface Area = 328 m²

Pond Depth = 1.5 m

Side Slopes = 1vt : 2 hz

Pond Volume = 338.63 m³

*Av depth(spillway level * floor level)/2*

Spreaders
 Flow Rate l/s 4.251
 Number 1 (1 per 4.5l/s)

Spillway Design

- Design for 1% AEP rainfall

The Peak Flow is calculated using the Rational Method: Q = 2.78CIA

• Runoff coefficient, C

Working Area Remaining Area
 C = **0.7** C = **0.7**

Cave = **0.7**

• Rainfall Intensity, I

Mannings, n = **0.022**

tc = 6.9 minutes *(From "A Guideline and Procedure for Hydrological Design of Urban Stormwater Systems")*

Calculate I from [Auckland Council - Rainfall Design Graph](#)
 I = **184** mm/hr

1% AEP flow = **0.51** m³/s

Spillway Detail

Use Q = CLH^{3/2} to calculate the spillway height (H)

Spillway width, L = 6 m

Free board = **0.3** m

C = **1.6** *(Assume broad crested weir)*

Spillway Height = 0.30 m *(This is the height of the flow above the outlet manhole including freeboard)*

PRELIMINARY PAC DOSING CALCULATIONS FOR 3 Pigeon Mountain Road

PROJECT No **FP326**

BY : **JW**

DATE : **03-Mar-25** CHECKED : **SX**

SITE DESCRIPTION : PROPOSED SUBDIVISION AT 3 Pigeon Mountain Road

POND 1

Roof Sizing

1. Dose rate. Al/L runoff		4		mg
1 l PAC at this dose will treat m ³ s/w		16.05		m ³ s/w
2. Catchment Area	bare	1.417		ha
	stable(x0.6)			ha
	=	1.417		Total ha
3. Catchment Runoff				
	ha x 500 m ³ =	708.5		m ³
4. Required PAC	<u>Total s/w m³</u> =	44.14		L PAC
	s/w treated per L PAC			
5. Required Rainwater				
	L PAC x 1.2 =	52.97		L
6. Roof Size:	<u>Required Rainwater</u> =	1.06		m ²
	50 L			

Header Tank

For the catchment the low flow pipe level should be set at

7. Roof size x 12		=	12.7	L area of tank base
-------------------	--	---	------	---------------------

APPENDIX D
USLE Calculation

**ESTIMATION OF SEDIMENT YIELD
BY THE UNIVERSAL SOIL LOSS EQUATION
An Empirical Method to Estimate Sheet and Rill Erosion from Land**

PREPARED BY EIGHTY6 LTD

PROJECT No : FP326 BY : JW DATE : 10-03-25 CHECKED : SX

SITE DESCRIPTION : 3 Pigeon Mountain Road - Pre Development (Catchment A) APPROVED : SX

EXPOSED AREA: 1.417 ha
WORK DURATION : 0.50 Years 26.0 Weeks

WORKING EQUATION : $A = R K L S C P$ where A = soil loss (tonnes/ha/year)

- Rainfall erosion index (R)

$R = 0.0083 (P)^{2.2} \cdot 1.7$ where : $P = 50.24$ mm
 $R = 78$

$A = R * K * L S * C * P$
WHERE:
R=Rainfall Erosion Index
K=Soil Erodibility Factor
LS=Slope Length & Steepness Factor
C=Ground Cover Factor
P=Roughness Factor

- Soil erodibility index (K) (From triangular nomograph)

All Sectors
Assume 25 % Sand
65 % Clay
10 % Silt
0 % granular
0 % organic
K = 0.15
K corrected = 0.12

- Slope length and steepness factor (LS)

Length = 130 m
Slope = 10 %
LS = 2.83

Vegetation cover factor and Erosion control practise factor (N65)

Assume : Working Area, Ex ground soil after Building demolished
C = 0.01
P = 0.8 Loose with rough surface 0.3m depth

The USLE predicts the total yield of sediment generated but makes no allowance for that retained on site. A Sediment Delivery Ratio (SDR) must be selected. American sources state that SDR rates range mostly from 0.1 to 0.7 (N.Y. Guidelines for Urban Erosion and Sediment Control).

Assume SDR = 0.5 (average)

Sediment control efficiency = 0 %

Section	USLE Parameters					A Soil Loss (t/ha/yr)	Area (ha)	Works Duration (Years)	Est. Gross Sediment Yield (tonnes)	Sediment Delivery Ratio	Sediment Control Efficiency (%)	Net Sediment Loss (tonnes)
	R	K	LS	C	P							
CAT	78	0.12	2.83	0.01	0.8	0.2	1.417	0.5	0.1	0.5	0	0.07
Sediment Generation Potential (tonnes)									0.1			
Estimated Total Net Sediment Loss (tonnes)											0.07	

**ESTIMATION OF SEDIMENT YIELD
BY THE UNIVERSAL SOIL LOSS EQUATION
An Empirical Method to Estimate Sheet and Rill Erosion from Land**

PREPARED BY EIGHTY6 LTD

PROJECT No : FP326 BY : JW DATE : 10-03-25 CHECKED : SX

SITE DESCRIPTION : 3 Pigeon Mountain Road - Post Development Without Floc (Catchment A) APPROVED : SX

EXPOSED AREA: 1.417 ha
WORK DURATION : 0.50 Years 26.0 Weeks

WORKING EQUATION : $A = R K L S C P$ where A = soil loss (tonnes/ha/year)

- Rainfall erosion index (R)

$R = 0.0083 (P)^{2.2 \times 1.7}$ where : $P = \frac{50.24}{2}$ mm
R = 78

WHERE:
R=Rainfall Erosion Index
K=Soil Erodibility Factor
LS=Slope Length & Steepness Factor
C=Ground Cover Factor
P=Roughness Factor

- Soil erodibility index (K) (From triangular nomograph)

All Sectors
Assume 25 % Sand
65 % Clay
10 % Silt
0 % granular
0 % organic (Assume topsoil stripped)
K = 0.15
K corrected = 0.12

- Slope length and steepness factor (LS)

Length = 130 m
Slope = 10 %
LS = 2.83

- Vegetation cover factor and Erosion control practise factor (C and P)

Assume : Working Area, Bare soil - compacted and smoothed
C = 1
P = 0.2 SRP without use of PAC treatment

The USLE predicts the total yield of sediment generated but makes no allowance for that retained on site. A Sediment Delivery Ratio (SDR) must be selected. American sources state that SDR rates range mostly from 0.1 to 0.7 (N.Y. Guidelines for Urban Erosion and Sediment Control).

Assume SDR = 0.5 (average)

Sediment control efficiency = 75 %

Section	USLE Parameters					A Soil Loss (t/ha/yr)	Area (ha)	Works Duration (Years)	Est. Gross Sediment Yield (tonnes)	Sediment Delivery Ratio	Sediment Control Efficiency (%)	Net Sediment Loss (tonnes)
	R	K	LS	C	P							
CAT A	78	0.12	2.83	1	0.2	5.2	1.417	0.5	3.7	0.5	75	0.46
Sediment Generation Potential (tonnes)									3.7			
Estimated Total Net Sediment Loss (tonnes)												0.46

**ESTIMATION OF SEDIMENT YIELD
BY THE UNIVERSAL SOIL LOSS EQUATION
An Empirical Method to Estimate Sheet and Rill Erosion from Land**

PREPARED BY EIGHTY6 LTD

PROJECT No : FP326 BY : JW DATE : 10-03-25 CHECKED : SX

SITE DESCRIPTION : 3 Pigeon Mountain Road - Post Development With Floc (Catchment A) APPROVED : SX

EXPOSED AREA: 1.417 ha
WORK DURATION : 0.50 Years 26.0 Weeks

WORKING EQUATION : $A = R K L S C P$ where A = soil loss (tonnes/ha/year)

- Rainfall erosion index (R)

$R = 0.0083 (P)^{2.2 \times 1.7}$ where : $P = \frac{50.24}{2}$ mm
R = 78

$A = R * K * L S * C * P$
WHERE:
R=Rainfall Erosion Index
K=Soil Erodibility Factor
LS=Slope Length & Steepness Factor
C=Ground Cover Factor
P=Roughness Factor

- Soil erodibility index (K) (From triangular nomograph)

All Sectors
Assume 25 % Sand
65 % Clay
10 % Silt
0 % granular
0 % organic (Assume topsoil stripped)
K = 0.15
K corrected = 0.12

- Slope length and steepness factor (LS)

Length = 130 m
Slope = 10 %
LS = 2.83

- Vegetation cover factor and Erosion control practise factor (C and P)

Assume : Working Area, Bare soil - compacted and smoothed
C = 1
P = 0.1 Allowing use of PAC treatment in SRP

The USLE predicts the total yield of sediment generated but makes no allowance for that retained on site. A Sediment Delivery Ratio (SDR) must be selected. American sources state that SDR rates range mostly from 0.1 to 0.7 (N.Y. Guidelines for Urban Erosion and Sediment Control).

Assume SDR = 0.5 (average)

Sediment control efficiency = 90 % Allowing use of PAC treatment in SRP

Section	USLE Parameters					A Soil Loss (t/ha/yr)	Area (ha)	Works Duration (Years)	Est. Gross Sediment Yield (tonnes)	Sediment Delivery Ratio	Sediment Control Efficiency (%)	Net Sediment Loss (tonnes)
	R	K	LS	C	P							
CAT A	78	0.12	2.83	1	0.1	2.6	1.417	0.5	1.9	0.5	90	0.09
Sediment Generation Potential (tonnes)									1.9			
Estimated Total Net Sediment Loss (tonnes)												0.09