CMW Geosciences
Great People | Practical Solutions

6 November 2023

STAGE 3 & 4

3 BELGIUM ROAD, PUKEKOHE

GEOTECHNICAL COMPLETION REPORT

Cabra Pukekohe JV

AKS2021-0009 Rev 2

AKS2021-0009		
Date	**Revision**	**Comments**
23 August 2023	A	Initial draft for internal review
13 October 2023	B	Final draft for internal review
16 October 2023	0	Final issue to client
02 November 2023	1	Updated Limitation Zone Plans
06 November 2023	2	Updated Limitation Zones

	Name	Signature	Position
Prepared by	Andrew Linton		Principal Geotechnical Engineer CMEngNZ, CPEng
Reviewed and Authorised by	Sam Gibb		Principal Geotechnical Engineer CMEngNZ, CPEng

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

In accordance with our instructions, this Geotechnical Completion Report has been prepared for Cabra Pukekohe JV as part of the documentation to be submitted to Auckland Council following earthworks to form Stages 3 and 4 of the 3 Belgium Road development in Pukekohe.

This report covers the construction period from late September 2021 through to August 2023 and is intended to be used for certification purposes for new lots (listed below) created from Lot 134, DP580011 as follows:

- 54 new residential lots numbered Lot 32 to 85 inclusive;
- 1 new commercial Superlot numbered Lot 500;
- 2 new roads numbered Lot 140, and named Spudman Rise and an extension of Muster Road;
- 1 private accessway numbered Lot 136;
- 3 new Reserve lots numbered Lots 135, 137 and 138;
- With the remainder of the site held as Balance Lot 139.

These stages of the 3 Belgium Road Development are located off Muster Road. As can be seen from the as-built plans, 28 of the lots have been affected by filling as part of the earthworks operations to a maximum depth of approximately 5.5 metres.

Construction of this subdivision has been undertaken in general accordance with;

- Auckland Council's Resource Consent number BUN60326339, Subdivision Consent number SUB60358839 and Engineering Approval letter 60385988.
- Auckland Council's Building Consent BCO10341990 for cantilever timber pole retaining walls numbered 11 to 14, 16 to 24, 28, 29, 36 and 38 to 40.
- Auckland Council's Building Consent BCO10355944 for the new concrete culvert and cantilever steel pole retaining walls numbered 43 to 46.
- NZS4431:1989
- Auckland Council's Code of Practice for Land Development and Subdivision, Chapter 2 - Earthworks and Geotechnical, Version 1.3
- McKenzie & Co consented drawing set referenced 2398, dated September 2021
- The following project related reports:
    - Ground Consulting Limited, Preliminary Site Assessment Report for a Proposed Subdivision, Ref: R2242-1A, dated 9 March 2016
    - CMW Geosciences Stage 3 & 4 Geotechnical Investigation Report, referenced AKS2021-0009AE Rev 0, dated 29 September 2021
    - Haigh Workman Ltd, Stage 3 & 4 Belgium Road Proposed Retaining Walls, Structural Drawings and PS1, referenced 21-049, dated 25 November 2021
    - CMW Geosciences Geotechnical Technical Memorandum for the Stage 2 & 3 Culvert Crossing, referenced AKS2021-0009AI Rev 1, dated 14 October 2022
    - CMW Geosciences Geotechnical Technical Memorandum for the Stage 2 & 3 Culvert Crossing, referenced AKS2021-0009AP Rev 2, dated 10 January 2023

For the construction of these stages of the development, the following roles were fulfilled as defined in NZS 4431:2022 and the Ministry for the Environment Contaminated Land Management Guidelines:

- Geotechnical Designer: CMW Geotechnical NZ Limited
- Certifier: CMW Geotechnical NZ Limited
- Recognised Laboratory: CMW Geotechnical NZ Limited
- Contractor: West City Construction
- Sub-contractor (earthworks): West City Construction

As CMW has fulfilled the roles of both earth fills Certifier and Geotechnical Designer, this report has been prepared as a combined report covering both of these aspects of the project work.

2 DESCRIPTION OF WORKS

Works within Stage 3 and 4 of the development commenced in March 2021, although at this time the works only comprised formation of a silt pond within the footprint of the future stormwater pond and cutting from Stage 3 to fill within Stage 2. The outer pond bund was placed to an engineered fill standard to ensure the integrity of both the temporary silt pond and the future stormwater pond.

Stage 3 earthworks really commenced in October 2021. This comprised cleaning out of minor gullies and unsuitable materials, as well as existing subsoil drainage from the prior horticultural activities, within the footprint of Lot 500. New subsoil drains were installed to tap into springs encountered during these undercuts, with the drains collected into a single discharge location at the western end of the Lot.

Stripping of the Lot 84 and 85 area was also undertaken around this time, with settlement monitoring plates installed through Lots 84, 85 and around Lot 500, and monitoring commencing in early November 2021. Monitoring continued through until the end of October 2022.

Stripping of the site progressed as additional areas of cut were required, with cut to fill works undertaken across much of the full site by mid-January 2022.

In February 2022 stripping of the northern Lots (Lots 68 to 72) commenced, with soft and organic material encountered along the gully alignment undercut to be replaced with engineered fill. Additional settlement markers were installed in this area, with monitoring also continuing until October 2022. A small spring was also encountered during the undercut operations, with a subsoil drain installed within Lots 68 and 69 to capture this flow and direct it to the stormwater culvert at the base of the gully. Subsoil drains were also installed within Lots 70 and 71 to assist in generally maintaining lowered groundwater levels.

Filling across the Stage 3 and 4 area was largely completed by the end of March 2022, with excess cut being transported and placed or stockpiled within the future Stage 5 area. Due to changes in finished surface levels, the originally proposed retaining walls within Lots 60 to 62 were no longer required. Cuts completed against the rear (eastern) boundary of Lots 60 to 62 were backfilled with landscape fill, with a swale formed along the crest of this slope to capture and discharge surface water flows from the adjacent properties towards the gully along the northern edge of Lots 70 and 71.

Retaining wall construction and civil services installation commenced in late March and continued progressively through to May 2023 and August 2023 respectively.

Preparation of road subgrades commenced in October 2022, and were undertaken in sections through to February 2023.

Construction of the culvert between Stages 2 and 3 commenced in March 2023, comprising installation of temporary works, foundation piles, culvert placement and adjacent fill, with construction of the retaining walls competed in June 2023.

The main items of plant used by the contractors included:

- 825 Compactor
- Bulldozers and Scoops
- Tractor and Discs
- 5 to 30 tonne Excavators
- Loaders and 6 Wheel Dump Trucks
- Graders; and
- Water Trucks.

3 GEOTECHNICAL QUALITY CONTROL

3.1 Site Observations

During the works site visits were typically undertaken several times each week to assess compliance with NZS 4431 and project specific design recommendations and specifications.

Site visits were carried out to observe and confirm compliance relating to:

- Adequate topsoil stripping;
- Fill areas prior to the placement of fill materials to ascertain that all mullock, and soft inorganic subsoils had been removed;
- Installation of subsoil drains and underfill drains, but excluding road under-channel drains;
- Backfilling of subsoil drains;
- Excavation and backfilling of sewer and stormwater trenches;
- Subsoil drain connections to outlets;
- Retaining wall pile excavations;
- Construction of cantilever pole retaining walls including ground conditions, pile size, spacing and depth; and
- Placement and compaction of engineered fills.

3.2 Compaction Control

Compaction of engineered earth fills was controlled by undrained shear strength measured by handheld shear vane calibrated using the NZGS 2001 method and by air voids as defined by NZS4402.

The criteria for undrained shear strength were a minimum single value of 110 kPa and minimum average of any 10 consecutive tests of 140 kPa.

The criteria for air voids were a maximum single value of 12% and maximum average of any 10 consecutive tests of 10%.

Vane shear strength, water content and in situ density tests were carried out on all areas of the engineered filling to at least the frequency required by the project specification.

While these tests showed on occasions that the contractor was struggling to achieve the required compaction standards with the prevailing site and soil conditions, to the best of our knowledge, all areas of fill were re-worked as necessary. Subsequent testing confirmed compliance with the specification.

4 EVALUATION OF COMPLETED EARTHWORKS

4.1 Natural Hazards

The appended as-built drawings depict the extents of a series of zones that contain limitations intended to ensure that future building and/ or earthworks on the lots is undertaken in a manner that does not lead to buildings being subject to any of the natural hazards described in Section 71(3) of the Building Act, i.e. erosion, falling debris, subsidence, slippage, and inundation. Consideration of the inundation hazard was outside the scope of CMW's brief and has been assessed by others. The applied zones include:

- **Specific Design Zones (retaining)** - intended to protect the retaining walls from overloading at the crest or undermining at the toe that could lead to instability;
- **Specific Design Zones (slope)** – intended to protect building development from long term creep effects on or adjacent to steep slopes and to protect the slopes from inappropriate loading or undermining;
- **Piled Foundation Zones** – intended to protect building development from long term creep effects in locations not requiring the engagement of an engineer to assess these effects;
- **Specific Design Zone (uncertified fill)** – applies to Lot 135 only, where landscape fill has been placed within parts of this lot.

Full descriptions of the restrictions associated with each of these zones are presented in our Opinion on Suitability in ***Appendix A***. Additional information is also provided in some of the following sections.

4.2 Liquefaction

The liquefaction risk for the lots on this development has been assessed as follows:

- Review of Auckland Council GIS maps confirms the damage category to be: Very Low Vulnerability
- In accordance with MBIE/NZGS guidance[1] the liquefaction susceptibility of the soils at this site was assessed with respect to geological age and compositional (soil fabric and density) criteria during initial investigations. Our assessment was described in our Factual and Interpretative Report referenced in Section 1 above and found a very low risk.

4.3 Land Stability and Erosion

The subdivision scheme layout includes a series of terraces for building platforms.

Design of the works to provide appropriate stability conditions that meet regulatory requirements for the land within these stages has led to the construction of cantilever pole retaining walls.

Stability conditions for finished ground profiles have been assessed under a range of groundwater conditions which satisfy ultimate limit state design criteria. The soil parameters for the analyses were selected from extensive investigation undertaken at the site and from experience in this terrain. We consider that the stability results are satisfactory for all building platform areas, and we are therefore satisfied that these areas are not subject to the natural stability hazards described in the Building Act.

On all steep land, including on engineered batter slopes, surface stability can be compromised by indiscriminate disposal of stormwater onto the ground surface and/ or by removal of vegetation. The landscape fill placed against the rear (eastern) boundary of Lots 60 to 62 is considered to be stable under normal conditions. Any development into this area will require specific design to ensure the ongoing integrity of the swale drain along the crest of this slope.

[1] Earthquake Geotechnical Engineering Practice, Module 3: Identification, assessment and mitigation of liquefaction hazards", (November 2021)

Building and landscape designers must ensure that all runoff from solid surfaces is directed into the stormwater system. It is also important that care is paid to the disposal of stormwater during construction so that concentrated discharges (e.g., from unconnected spouting) are not directed towards steep ground.

Depths of mulch and topsoil applied to sloping areas should be limited to less than 150mm to minimise the risks of saturation leading to localised slumping on a batter face. Wherever practical on such land, and particularly on steep batters, existing vegetation and grass cover should be well maintained. Any vegetation cleared beyond the immediate area of building platforms for temporary construction purposes should be replanted or replaced as soon as possible. The roots of an established vegetation cover can serve to bind the surface soils while the foliage can reduce rain infiltration and soil saturation, resulting in better resistance to erosion and shallow slumping.

4.4 Retaining Walls

Cantilever pole retaining walls have been constructed in the locations shown on the appended As-built Plans. These walls reach a maximum height of approximately 2.5 metres and were designed by Haigh Workman Limited, while the construction was observed by CMW Geosciences.

Descriptions of the building and earthworks restrictions within the vicinity of these walls (Specific Design Zones – retaining) are contained in our Opinion on Suitability in ***Appendix A.***

4.5 Uncertified Filling

Lot 135 contains an area of engineered fill within the south-eastern corner of the Lot, adjacent to the road boundary, and uncertified (landscape) filling beyond this. The landscape filling consists of topsoil and some organics and was placed as part of the landscaping works.

Due to the presence of the landscape fill materials, this lot is covered by the Specific Design Zone (uncertified fill) and descriptions of the restrictions are contained in our Opinion on Suitability in ***Appendix A.***

4.6 Fill Induced Settlement

The majority of the filling on this stage of the development was placed prior to April 2022. A series of settlement markers was installed in areas of deeper fill (Lots 68 to 70, 84, 85 and 500) prior to fill placement commencing and were periodically monitored for vertical movements. Results of the monitoring are provided in ***Appendix F***, and showed that settlement was essentially complete in October 2023**.**

On the basis of the results, we are satisfied that t_{90} primary consolidation settlement has been achieved and that fill induced settlement does not pose a hazard to future NZS 3604 type building development.

4.7 Service Line Trenches

As part of the civil works, sanitary sewer and stormwater services were trenched throughout the development as shown on the appended Stormwater and Sanitary Sewer As-built Plans.

As is normal on all subdivisions, building developments involving foundations within a 45-degree zone of influence from pipe inverts will require engineering input. The Auckland Council drawing referenced SW22 provided in ***Appendix C*** extracted from Chapter 4 of the Auckland Council Code of Practice for Land development and Subdivision depicts their requirements for stormwater pipes. Details for water and wastewater pipes are available in the Watercare COP1 - General Requirements and Procedures. Lots 39, 42, 43, 52, 53, 55, 57, 61 are known to have service trenches within the lots as shown on the appended stormwater and wastewater as-built plans. The resulting restrictions are presented in our Opinion on Suitability in ***Appendix A.***

4.8 Subsoil Drains

The appended Final Contour as-built plan (drawings 2398-3-AB-200 to 205) shows the positions of subsoil drains and their outlets that were installed during the earthworks as described in the following sub-sections.

These drains were installed at the bases of fills to assist with the earthworks operations by capturing seepages at the cleared ground level. They require no specific maintenance and while their ongoing function is not critical to stability conditions, they provide ongoing control of groundwater levels so their ongoing function should not be compromised by future works.

Typically, these drains comprise punched draincoils surrounded by drainage gravel. Specific design details are provided in the project reports and specifications. If drain depths are unclear at specific locations, they can be estimated from the depths of fills depicted on the as-built plans.

Descriptions of restrictions associated with these drains and outlets are contained in our appended Opinion on Suitability in ***Appendix A***.

4.9 Road Subgrades

Penetration resistance testing was carried out on the road subgrades during construction and the results of this testing were forwarded to McKenzie & Co Limited for pavement remedial design.

4.10 Wetland

The appended as-built plans depict the formation of a wetland within Reserve Lot 138.

Although cuts and fills to form this wetland have been undertaken in accordance with the earthworks specification, any future development within the vicinity of this wetland will require specific investigation and design

4.11 Design of Shallow Foundations

4.11.1 Bearing Capacity

Once bulk earthworks and topsoiling of the building platforms had been completed, our staff drilled hand auger boreholes on platforms in natural ground to determine representative finished ground conditions and hence evaluate likely foundation options for future building development. Our assessments of bearing capacity for the design of shallow foundations on each building platform are contained in our Opinion on Suitability in ***Appendix A.***

If higher geotechnical ultimate bearing capacities are required than have been specified, further specific site investigation and design of foundations should be carried out prior to Building Consent application.

4.11.2 Foundation Settlements

At the bearing pressures specified in ***Appendix A*** and subject to the design requirements for soil expansiveness provided below, differential settlement of shallow foundations for buildings designed in accordance with NZS 3604 (including the 600mm subfloor fill depth limit) should be within code limits.

4.11.3 Soil Expansiveness Classification

Seasonal shrinking and swelling results in vertical surface ground movement which can cause significant cracking of floor slabs and walls. NZS 3604:2011[2] excludes from the definition of 'good ground', soils with a liquid limit of more than 50% and a linear shrinkage of more than 15% due to their potential to shrink and swell as a result of seasonal fluctuations in water content. For soils exceeding these limits, NZS 3604 has historically

[2] Standards New Zealand (2011) Timber-framed buildings, NZS 3604:2011, NZ Standard

referenced AS 2870[3]. for foundation design advice. However, the November 2019 update of Acceptable Solution B1/AS1[4] provides amendments to NZS 3604 that define a method for testing and classifying the soils and provides foundation designs for specific, simple house configurations across the range of expansive soil conditions.

Nevertheless, there is evidence[5] indicating that the use of the B1/AS1 method of assessment of expansiveness may be inaccurate.

Testing of samples obtained from the site was carried out by Roadtest, an IANZ registered Testing Authority, to provide the geotechnical parameters required for our assessment as presented in Table 1.

Table 1: Soil Expansiveness Testing Schedule

Type of Test	Test Method	Quantity
Water Content	NZS4402 – 1986 2.1	16
Liquid Limit	NZS4402 – 1986 2.2	16
Plastic Limit	NZS4402 – 1986 2.3	16
Linear shrinkage	NZS4402 – 1986 2.6	16
Shrink-Swell Index test	AS1289 7.1.1 - 2003	16

Certificates for the test results outlined above are presented in ***Appendix E.***

Test results were used in conjunction with visual-tactile assessment of the site soils and BRANZ Report SR120A[6] to determine expansive site Classes as defined in AS 2870, "Residential Slabs and Footings – Construction". Resulting classifications are provided in the Statement of Suitability in ***Appendix A***.

The expansive soil hazard is addressed by a combination of design that is appropriate for the expansive Class described in our Opinion on Suitability in ***Appendix A***, together with care during site preparation for foundations and diligent maintenance of plantings near the foundations.

Site Preparation

There have been many instances of concrete floors and/ or foundations that have been poured on dry, desiccated subgrades in summer months on expansive soils and have undergone heaving and cracking requiring extensive repairs or even complete house re-builds once the soil moisture contents have returned to higher levels. In some instances, perimeter foundations have been appropriately treated but floor slabs have been poured on dry ground. Infiltration of moisture via pipe bedding has then occurred.

Foundation contractors need to be made aware of the extreme damage potentially caused by these circumstances and the need to maintain appropriate moisture contents in both the footings and building platform subgrade between the time of excavation and the pouring of concrete.

[3] Standards Australia Limited (2011) *Residential slabs and footings*, AS 2870-2011, Australian Standard, NSW

[4] Ministry of Business, Innovation and Employment (2019) *Acceptable Solutions and Verification Methods for NZ Building Code Clause B1 Structure,* B1/AS1, Amendment 19

[5] Rogers, N., McDougall, N., Twose, G., Teal, J. & Smith, T. (2020) The Shrink Swell Test: A Critical Analysis, *NZ Geomechanics News,* Issue 99, pages 66-80.

Remedial actions that may be appropriate include combinations of platform protection with a hard fill layer, pouring of a blinding layer of concrete in footing bases and soaking of the building platform with sprinklers for an extended period.

Site Maintenance

Landowners must be mindful that either the planting or removal of high water demand plants where their roots may extend close to footings (i.e. within a lateral distance of 1.5 times the mature tree height) can cause settlement or heave damage.

4.11.4 Site (Seismic) Class

Our assessments of NZS 1170.5 site Class is provided in our Opinion of Suitability and the Summary Table, both in ***Appendix A***.

4.12 Topsoil Depths

Topsoil depths have been checked by the drilling of a borehole in the approximate centre of the building platform on each lot. The results are considered indicative for each lot but may be subject to variations. Topsoil depths are between 50 and 300mm on these stages of the development.

Site specific findings are contained in our Opinion on Suitability Summary in ***Appendix A***. However, it is possible that further levelling works have been undertaken since our investigations and accordingly, we strongly recommend that lot purchasers complete their own checks of topsoil depths.

5 CLOSURE

Additional important information regarding the use of your CMW report is provided in the '*Using your CMW Report*' document attached to this report.

This report has been prepared for use by Cabra Pukekohe JV in relation to the Stage 3 & 4 3 Belgium Road, Pukekohe project in accordance with the scope, proposed uses and limitations described in the report. Should you have further questions relating to the use of your report please do not hesitate to contact us.

Although regular site visits have been undertaken for observation, for providing guidance and instruction and for testing purposes, the geotechnical services scope did not include full time site presence. To this end, our Opinion on Suitability in ***Appendix A*** and our Suitability Statement in ***Appendix B*** also rely on the Contractors' work practices and assumes that when we have not been present to observe the work, it has been completed to high standards and in accordance with the drawings, instructions and consent conditions provided to them.

Similarly, they assume that all as-built information and other details provided to the Client and/ or CMW by other members of the project team are accurate and correct in all respects.

Where a party other than Cabra Pukekohe JV seeks to rely upon or otherwise use this report, the consent of CMW should be sought prior to any such use. CMW can then advise whether the report and its contents are suitable for the intended use by the other party.

USING YOUR CMW GEOTECHNICAL REPORT

Geotechnical reporting relies on interpretation of facts and collected information using experience, professional judgement, and opinion. As such it generally has a level of uncertainty attached to it, which is often far less exact than other engineering design disciplines. The notes below provide general advice on what can be reasonably expected from your report and the inherent limitations of a geotechnical report.

Preparation of your report

Your geotechnical report has been written for your use on your project. The contents of your report may not meet the needs of others who may have different objectives or requirements. The report has been prepared using generally accepted Geotechnical Engineering and Engineering Geology practices and procedures. The opinions and conclusions reached in your report are made in accordance with these accepted principles. Specific items of geotechnical or geological importance are highlighted in the report.

In producing your report, we have relied on the information which is referenced or summarised in the report. If further information becomes available or the nature of your project changes, then the findings in this report may no longer be appropriate. In such cases the report must be reviewed, and any necessary changes must be made by us.

Your geotechnical report is based on your project's requirements

Your geotechnical report has been developed based on your specific project requirements and only applies to the site in this report. Project requirements could include the type of works being undertaken; project locality, size and configuration; the location of any structures on or around the site; the presence of underground utilities; proposed design methodology; the duration or design life of the works; and construction method and/or sequencing.

The information or advice in your geotechnical report should not be applied to any other project given the intrinsic differences between different projects and site locations. Similarly geotechnical information, data and conclusions from other sites and projects may not be relevant or appropriate for your project.

Interpretation of geotechnical data

Site investigations identify subsurface conditions at discrete locations. Additional geotechnical information (e.g. literature and external data source review, laboratory testing etc) are interpreted by Geologists or Engineers to provide an opinion about a site specific ground models, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist due to the variability of geological environments. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. Interpretation of factual data can be influenced by design and/or construction methods. Where these methods change review of the interpretation in the report may be required.

Subsurface conditions can change

Subsurface conditions are created by natural processes and then can be altered anthropically or over time. For example, groundwater levels can vary with time or activities adjacent to your site, fill may be placed on a site, or the consistency of near surface conditions might be susceptible to seasonal changes. The report is based on conditions which existed at the time of investigation. It is important to confirm whether conditions may have changed, particularly when large periods of time have elapsed since the investigations were performed.

Interpretation and use by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical report. To help avoid misinterpretations, it is important to retain the assistance of CMW to work with other project design professionals who are affected by the contents of your report. CMW staff can explain the report implications to design professionals and then review design plans and specifications to see that they have correctly incorporated the findings of this report.

Your report's recommendations require confirmation during construction

Your report is based on site conditions as revealed through selective point sampling. Engineering judgement is then applied to assess how indicative of actual conditions throughout an area the point sampling might be. Any assumptions made cannot be substantiated until construction is complete. For this reason, you should retain geotechnical services throughout the construction stage, to identify variances from previous assumption, conduct additional tests if required and recommend solutions to problems encountered on site.

A Geotechnical Engineer, who is fully familiar with the site and the background information, can assess whether the report's recommendations remain valid and whether changes should be considered as the project develops. An unfamiliar party using this report increases the risk that the report will be misinterpreted.

Environmental Matters Are Not Covered

Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated materials. These matters can be complex and are often governed by specific legislation.

The personnel, equipment, and techniques used to perform an environmental study can differ significantly from those used in this report. For that reason, our report does not provide environmental recommendations. Unanticipated subsurface environmental problems can have large consequences for your site. If you have not obtained your own environmental information about the project site, ask your CMW contact about how to find environmental risk-management guidance.

APPENDIX A: STATEMENT OF PROFESSIONAL OPINION ON SUITABILITY OF LAND FOR BUILDING CONSTRUCTION

STATEMENT OF PROFESSIONAL OPINION ON SUITABILITY OF LAND FOR BUILDING CONSTRUCTION

Development: Stages 3 & 4 of the 3 Belgium Road, Pukekohe development
Developer: Cabra Pukekohe JV
Location: 3 Belgium Road, Pukekohe

I, Andrew Linton, of CMW Geotechnical NZ Limited, Auckland, hereby confirm that:

1. As a Chartered Professional Engineer experienced in the field of geotechnical engineering, I am a Geo-professional as defined in Clause 1.2.2 of NZS 4404:2010 and was retained by the Developer as the geo-professional on the above development.
2. The extent of investigations carried out to date are described in the following reports:
    a. Ground Consulting Limited, Preliminary Site Assessment Report for a Proposed Subdivision, Ref: R2242-1A, dated 9 March 2016
    b. CMW Geosciences Stage 3 & 4 Geotechnical Investigation Report, referenced AKS2021-0009AE Rev 0, dated 29 September 2021

The conclusions and recommendations of those documents have been re-evaluated in the preparation of this report. The extent of my inspections during construction, and the results of all tests and/ or evaluations carried out are as described in my Geotechnical Completion Report dated 13 October 2023, referenced AKS2021-0009AQ Rev 0.

3. My certification of the earth fills placed on this site is contained in ***Appendix B***.
4. In my professional opinion, not to be construed as a guarantee, I consider that:
    a. The completed earthworks take into account land slope and foundation stability considerations on the building platform areas, but as shown on the appended building restriction zones plans, areas on Lots 43, 45, 55, 60 to 62, 67 69 to 72, 84 and 85 have gradients steeper than 1(v) in 4 (h) (and generally up to 1(v) in 2.5(h)) or are adjacent to land having such gradients. Accordingly, restrictions incorporating Specific Design Zones (Slope) and Piled Foundation Zones have been applied as depicted on the as-built plans.

        No building construction and no earthworks (i.e. cut or fills of any depth) should take place within the designated **Specific Design Zone (Slope) areas** unless endorsed by a Chartered Professional Engineer experienced in geomechanics and familiar with the contents of this report. The endorsement will need to consider the implications of the proposals on both global stability conditions and soil creep on the buildings, the interaction with service pipes and associated trench backfills, control of surface water, construction sequencing, timing and temporary support requirements construction of all earthworks, foundations and retaining walls and if necessary, comment on what aspects require engineering inspections and certification.

        This limitation also applies to long-term landscaping works, including any proposed minor cuts either on or near batter toes to be retained by new landscaping walls that might not normally require engineering, and to landscaping fills on or immediately above the batter slopes.

    b. **Piled Foundation Zones** have been applied to Lots 55, 69 to 72, 84 and 85 inclusive above the Specific Design Zone (Slope) areas. Building foundations within the Piled Foundation Zones may be piled without the need for specific engineering design based on the following table and with reference to the appended building restriction zone plans:

Table 2: Foundation Requirements Within Piled Foundation Zones				
Design Case	**Applies to Lot Numbers**	**Downslope Leading Edge Pile Minimum Depth (m)**	**Depth of Lateral Load to be Applied to Downslope Leading Edge Piles Only (m)**	**Pile Depth for all Load Bearing Foundations Within Remainder of Piled Foundation Zone (m)**
A	**55**	**3**	**1.0**	**2**
B	**69, 70, 71, 72, 84, 85**	**4**	**1.25**	**2**

The following design parameters may be assumed for the design of these piles:

Ø' = 30 degrees

Su = 100kPa

Geotechnical ultimate end bearing capacity at and beyond 2.0m depth = 450kPa

Ultimate side adhesion beyond 1.5m depth = 25kPa. Ignore side adhesion in the top 1.5m

These Piled Foundation Zone requirements may be amended as part of a specific design by a Chartered Professional Engineer, experienced in geomechanics and familiar with the contents of this report.

The structural engineer should attend to the pile details, including ensuring that the design allows for any differential movement that may occur between piled and un-piled portions of the building.

c. **Specific Design Zone (Retaining) areas** have been applied on Lots 32 – 41, 42-58, 63-66, 70, 71, 75-84 inclusive for the protection of the function of the retaining walls as depicted on the as-built plans. The retaining walls on this stage of the development were designed for a maximum of 12kPa surcharge load, 5° surcharge slope and 0° toe slope.

   No building construction and no earthworks (i.e. cut or fills) should take place within these Specific Design Zones that exceed these design limits on the walls unless endorsed by a Chartered Professional Engineer experienced in geomechanics and familiar with the contents of this report who consider the stability implications of the earthworks and/ or building proposals on the retaining walls.

d. **Specific Design Zone (Uncertified Fills)** has been applied to Lot 135 where only limited landscape filling work has been completed. No building construction and no earthworks (i.e. cut or fills) should take place within this Lot unless endorsed by a Chartered Professional Engineer experienced in geomechanics and familiar with the contents of this report who consider the stability implications of the earthworks and/ or building proposals

e. The function of the subsoil drains installed beneath Lots 68 to 71 and 500 inclusive, as shown on the as-built plans, must not be impaired by any building development or landscaping works. Any bored or driven piles must be positioned to avoid damaging the draincoils. Where any subsoil drain is intercepted by building works, it must be reinstated under the direction of a Chartered Professional Engineer to ensure the integrity of the subsoil drainage system.

f. The formed drainage outlets depicted on the as-built plans on Lots 68 to 71 and 500 inclusive must be kept free of debris and otherwise maintained as necessary to ensure their ongoing function.

g. A geotechnical ultimate bearing capacity of 300 kPa may be assumed for shallow foundation design on the building platforms of Lots 32 to 85 and 500 inclusive.

   However, due to the proposed commercial development on Lot 500 we recommend specific foundation and investigation and design is undertaken as part of the Building Consent process and should include assessment of:

   - additional earth fills and sub-floor fills to form final development subgrades,
   - the weight of floors,
   - widespread, semi-permanent loads within buildings including racking, fixed machinery or transient goods such as in warehousing from which there is a sustained load contribution.
   - the weight of ancillary structures or amenities such as above-ground water tanks.

   The impact on global stability and settlement conditions should also be re-assessed.

h. The site (seismic) subsoil class for each lot has been assessed in accordance with NZS1170.5:2004 Clause 3.1.3 from borelogs that included measurements of geotechnical properties. Our assessment is that all of Lots 32 to 85 and 500 inclusive are Class C- shallow soil.

i. The expansive site Class for all lots 32 to 85 has been assessed as AS2870 Class H2 (Highly). Lot 500 is assessed as being AS2870 Class H1 (Highly). We recommend that building designers note on the Building Consent drawings the need to maintain appropriate moisture levels across building subgrades and in footing excavations (as described in Section 4.11.3 of the Geotechnical Completion Report) for reference by foundation contractors.

j. No building development should take place within the 45-degree zone of influence of stormwater or sewer line or manhole inverts unless endorsed by specific design and by construction inspections undertaken by a Chartered Professional Engineer experienced in geomechanics to ensure that lateral stability and differential settlement issues are addressed and that building loads are transferred beyond the influence of pipes and trench backfills. A copy of drawing SW22 extracted from Chapter 4 of the Auckland Council Code of Practice for Land development and Subdivision this document is provided in ***Appendix B*** for clarification. Details for water and wastewater pipes are available in the Watercare COP1 - General Requirements and Procedures.

k. On the basis of the earth fill certification and subject to the geotechnical limitations, restrictions and recommendations contained in clauses 4(a), 4(b), 4(c), 4(d), 4(e), 4(f), 4(g), 4(h), 4(i) and 4(j) above:

   - The filled and natural ground within Lots 32 to 85 inclusive is generally suitable for buildings constructed in accordance with NZS 3604 and the requirements of AS2870 for the appropriate expansive soil class.
   - Where shallow foundations are appropriate, design may be carried out in accordance with AS 2870 (Class H2) or alternately, a specific foundation and structural design may be undertaken by a Chartered Professional Engineer.
   - For Lot 500, specific site investigations, design modifications and construction inspections should be carried out as necessary by a Chartered Professional Engineer, experienced in geomechanics, but in any event, we consider it prudent for all land

owners to engage a Chartered Professional Engineer to undertake site specific investigation and foundation design with a view to optimising bearing capacities, design loads, earthworks and retaining walls.

5. Road subgrades have been formed with appropriate regard for slope stability and settlement risks.
6. Stormwater wetland and reserve areas have been formed with appropriate regard for slope stability and seepage risks.

The following table summarises the conditions on each of the lots.

For and on behalf of CMW Geosciences

Andrew Linton

Principal Geotechnical Engineer CMEngNZ, CPEng

Table 3: GCR Summary Table											
Condition	Specific Design Zone (slope)	Piled Foundation Zone	Specific Design Zone (retaining)	Specific Design Zone (uncertified fills)	Subsoil Drains Present	On-site Drainage Outlet Present	Geotechnical Ultimate Bearing Capacity (kPa)	NZS 1170.5 Site (seismic) Class	AS2870 Expansive Class	Service Lines Restrictions	Indicative Topsoil Depth (mm)
GCR SOPO Clause	4(a)	4(b)	4(c)	4(d)	4(e)	4(f)	4(g)	4(h)	4(i)	4(j)	
Lot number											
32			X				**300**	**C**	**H2**		200
33			X				**300**	**C**	**H2**		200
34			X				**300**	**C**	**H2**		200
35			X				**300**	**C**	**H2**		300
36			X				**300**	**C**	**H2**		300
37			X				**300**	**C**	**H2**		200
38			X				**300**	**C**	**H2**		300
39			X				**300**	**C**	**H2**	X	250
40			X				**300**	**C**	**H2**		250
41			X				**300**	**C**	**H2**		300
42			X				**300**	**C**	**H2**	X	100
43	X		X				**300**	**C**	**H2**	X	200
44			X				**300**	**C**	**H2**		300
42	X		X				**300**	**C**	**H2**		200
46			X				**300**	**C**	**H2**		200
47			X				**300**	**C**	**H2**		200
48			X				**300**	**C**	**H2**		100
49			X				**300**	**C**	**H2**		200
50			X				**300**	**C**	**H2**		100
51			X				**300**	**C**	**H2**		250

Table 3: GCR Summary Table											
Condition	Specific Design Zone (slope)	Piled Foundation Zone	Specific Design Zone (retaining)	Specific Design Zone (uncertified fills)	Subsoil Drains Present	On-site Drainage Outlet Present	Geotechnical Ultimate Bearing Capacity (kPa)	NZS 1170.5 Site (seismic) Class	AS2870 Expansive Class	Service Lines Restrictions	Indicative Topsoil Depth (mm)
GCR SOPO Clause	4(a)	4(b)	4(c)	4(d)	4(e)	4(f)	4(g)	4(h)	4(i)	4(j)	
52			X				**300**	**C**	**H2**	X	200
53			X				**300**	**C**	**H2**	X	100
54			X				**300**	**C**	**H2**		200
55	X	X	X				**300**	**C**	**H2**	X	200
56			X				**300**	**C**	**H2**		300
57			X				**300**	**C**	**H2**	X	200
58			X				**300**	**C**	**H2**		200
59							**300**	**C**	**H2**		100
60	X						**300**	**C**	**H2**		100
61	X						**300**	**C**	**H2**	X	300
62	X						**300**	**C**	**H2**		300
63			X				**300**	**C**	**H2**		300
64			X				**300**	**C**	**H2**		300
65			X				**300**	**C**	**H2**		100
66			X				**300**	**C**	**H2**		100
67	X						**300**	**C**	**H2**		200
68							**300**	**C**	**H2**		200
69	X	X					**300**	**C**	**H2**		250
70	X	X	X		X	X	**300**	**C**	**H2**		100
71	X	X	X		X	X	**300**	**C**	**H2**		200
72	X	X					**300**	**C**	**H2**		100

Table 3: GCR Summary Table											
Condition	Specific Design Zone (slope)	Piled Foundation Zone	Specific Design Zone (retaining)	Specific Design Zone (uncertified fills)	Subsoil Drains Present	On-site Drainage Outlet Present	Geotechnical Ultimate Bearing Capacity (kPa)	NZS 1170.5 Site (seismic) Class	AS2870 Expansive Class	Service Lines Restrictions	Indicative Topsoil Depth (mm)
GCR SOPO Clause	4(a)	4(b)	4(c)	4(d)	4(e)	4(f)	4(g)	4(h)	4(i)	4(j)	
73							**300**	**C**	**H2**		100
74							**300**	**C**	**H2**		100
75			X				**300**	**C**	**H2**		200
76			X				**300**	**C**	**H2**		50
77			X				**300**	**C**	**H2**		200
78			X				**300**	**C**	**H2**		200
79			X				**300**	**C**	**H2**		200
80			X				**300**	**C**	**H2**		200
81			X				**300**	**C**	**H2**		100
82			X				**300**	**C**	**H2**		150
83			X				**300**	**C**	**H2**		200
84	X	X	X				**300**	**C**	**H2**		200
85	X	X					**300**	**C**	**H2**		200
135				X			**Subject to Specific Investigation and Design**				
500					X	X	**300**	**C**	**H1**		-

APPENDIX B: STATEMENT OF SUITABILITY OF ENGINEERED FILL FOR LIGHTWEIGHT STRUCTURES

STATEMENT OF SUITABILITY OF ENGINEERED FILLS FOR LIGHTWEIGHT STRUCTURES

To:	Auckland Council
Development:	Stages 3 & 4 of the 3 Belgium Road, Pukekohe development
Land Title(s):	Lot 134 DP 580011
Location:	10 Muster Road, Pukekohe (previously 3 Belgium Road, Pukekohe)
Resource Consent Nos:	BUN60326339 and SUB60358839
Developer:	Cabra Pukekohe JV
Geotechnical Designer:	Andrew Linton of CMW Geotechnical NZ Limited
Certifier:	Andrew Linton of CMW Geotechnical NZ Limited

This Statement of Suitability is provided as an appendix to the CMW Geosciences Geotechnical Completion Report referenced in the page footer below, that also contains all as-built plans and test results relevant to the work completed.

1. I, Andrew Linton, confirm that I am qualified as a certifier as defined in NZS4431:2022.
2. During this work, I was retained as certifier and I or my certifier's representative undertook inspections and testing as documented in the Geotechnical Completion Report.
3. I am satisfied that the engineered fill shown in the attached as-built survey was placed, compacted and tested in accordance with the attached specification and that all variations and non-compliances have been documented in the Geotechnical Completion report. Uncertified landscape fill has been spread within part of Lot 135 and will require specific investigation should any future development be proposed within this Lot.
4. Based on the information available, I certify that, to the best of my knowledge, the intent of the geotechnical designer (as presented in the design, drawings and Geotechnical Investigation Report) has been achieved.
5. The fill areas shown on the McKenzie & Co as-built cut and fill plans attached are considered suitable for development as per NZS 3604, subject to any other restrictions described in the Geotechnical Completion Report.
6. This certification does not remove the necessity for normal inspection and design of foundations as would be made in natural ground.

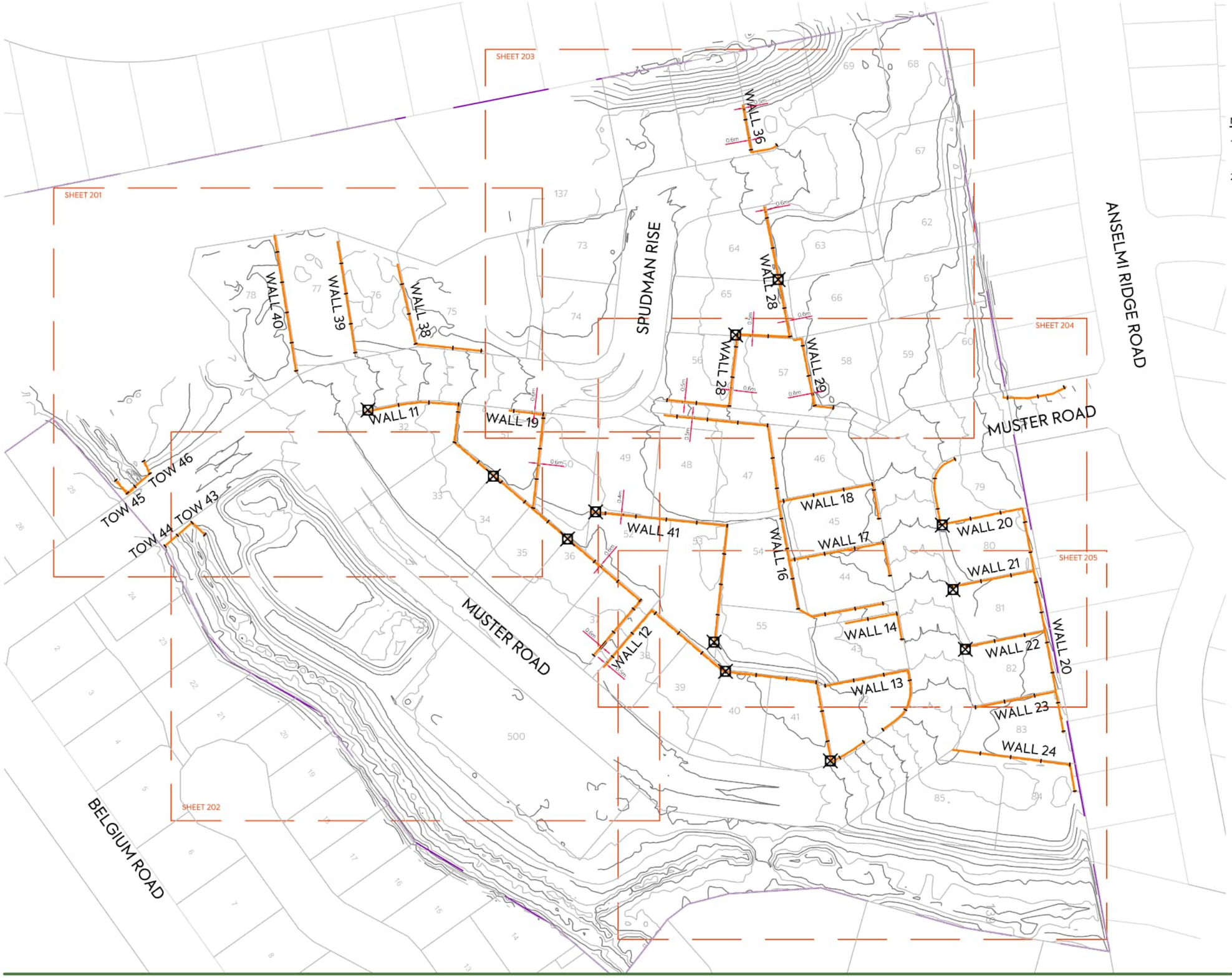
For and on behalf of CMW Geosciences

Andrew Linton

Principal Geotechnical Engineer CMEngNZ, CPEng

APPENDIX C: AS-BUILT DRAWINGS

Title	Reference No.	Date	Revision
McKenzie & Co Plans			
Retaining Wall Location Plan – Overall	2398-3-AB-150	07/09/23	A
Retaining Wall Location Plan – Sheets 1 to 5	2398-3-AB-151 to 155	07/09/23	A
Finish Contour Plan – Overall	2398-3-AB-200	04/1023	B
Finish Contour Plan – Sheets 1 to 5	2398-3-AB-201 to 205	04/1023	B
Cut to Fill Plan – Overall (Existing to Finish)	2398-3-AB-210	21/08/23	A
Cut to Fill Plan – Sheets 1 to 5 (Existing to Finish)	2398-3-AB-211 to 215	21/08/23	A
Cut to Fill Plan – Overall (Lowest Cut to Finish)	2398-3-AB-220	21/08/23	A
Cut to Fill Plan – Sheets 1 to 5 (Lowest Cut to Finish)	2398-3-AB-221 to 225	21/08/23	A
Stormwater Asbuilt Plan – Overall	2398-3-AB-400	22/06/23	A
Stormwater Asbuilt Plan – Sheets 1 to 5	2398-3-AB-401 to 405	22/06/23	A
Wastewater Asbuilt Plan – Overall	2398-3-AB-500	22/06/23	A
Wastewater Asbuilt Plan – Sheets 1 to 5	2398-3-AB-501 to 505	22/06/23	A
CMW Plans			
Specific Design Zone – Slope	Drawing 100 to 104	13-10-2023	2
Specific Design Zone – Walls	Drawing 105 to 109	13-10-2023	1
Auckland Council			
Stormwater Pipe and Manhole Construction Clearance Requirements	SW22	1/11/2015	2



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY (11m)
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN OVERALL PLAN

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:1250
DO NOT SCALE

DRAWING NO: 2398-3-AB-150

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23

NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS (1.0)
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY (11m)
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

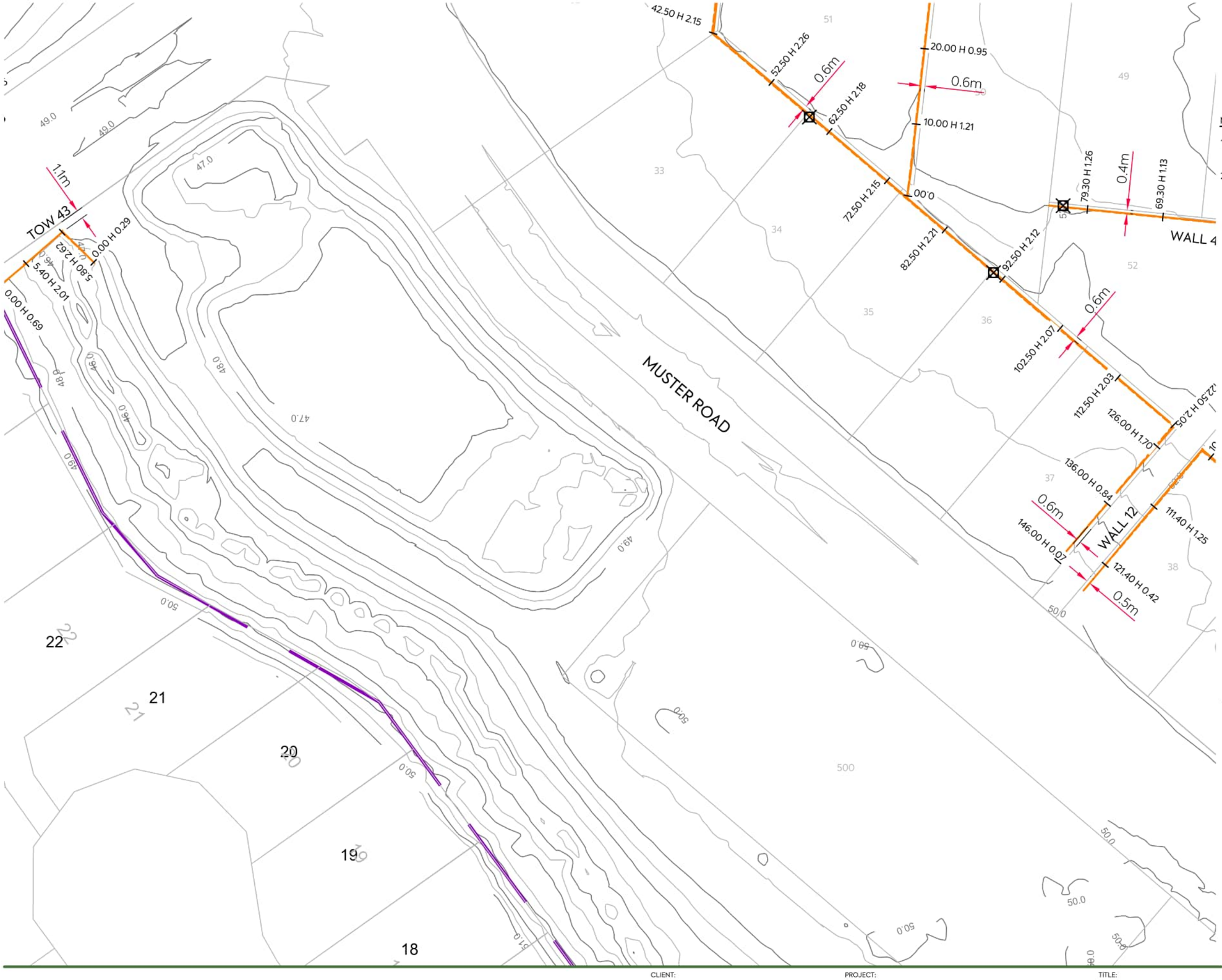
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN SHEET 1

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-151 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS (1.0)
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY (11m)
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

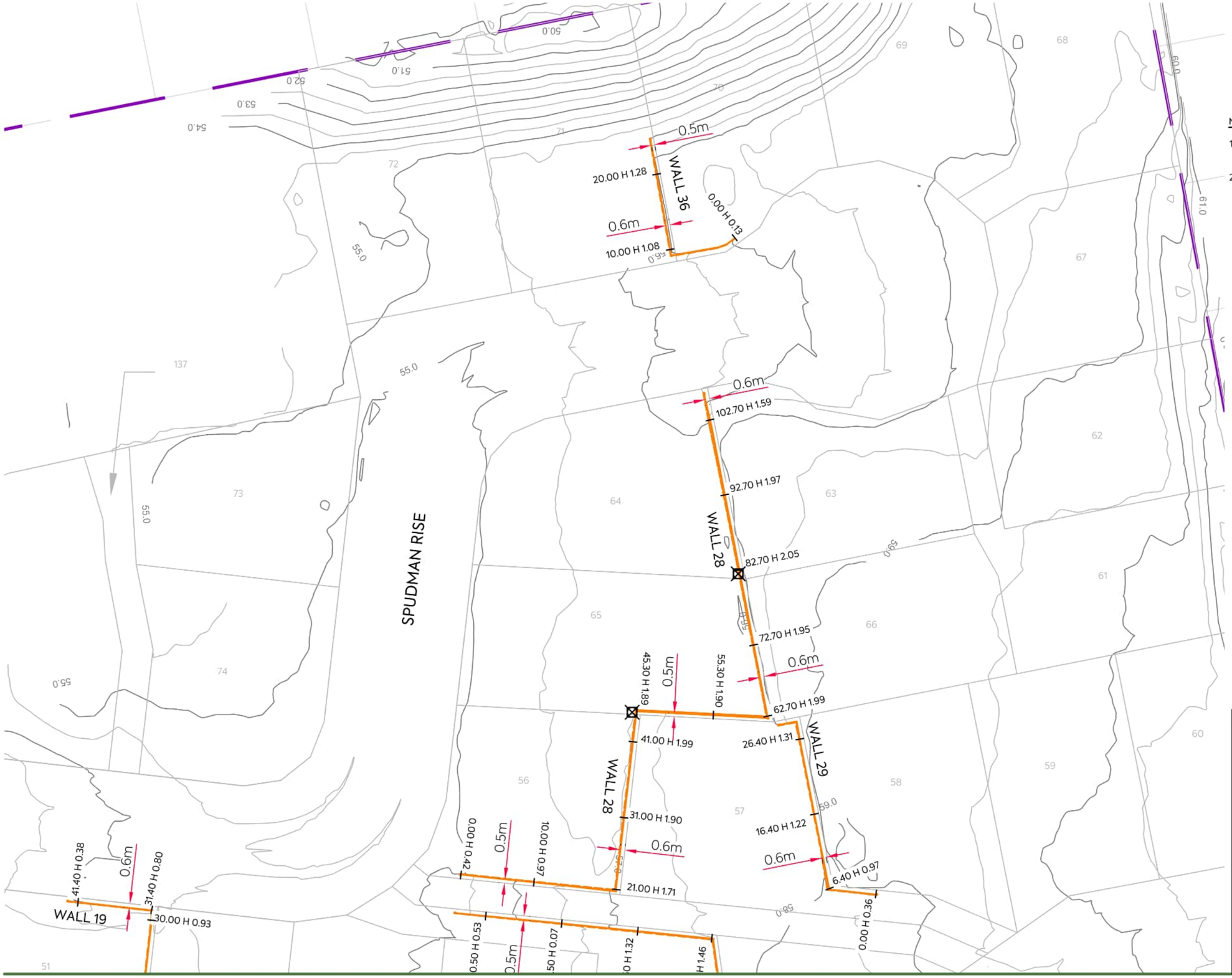
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN SHEET 2

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-152 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS (1.0)
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY (11m)
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN SHEET 3

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-153 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-150.DWG

NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

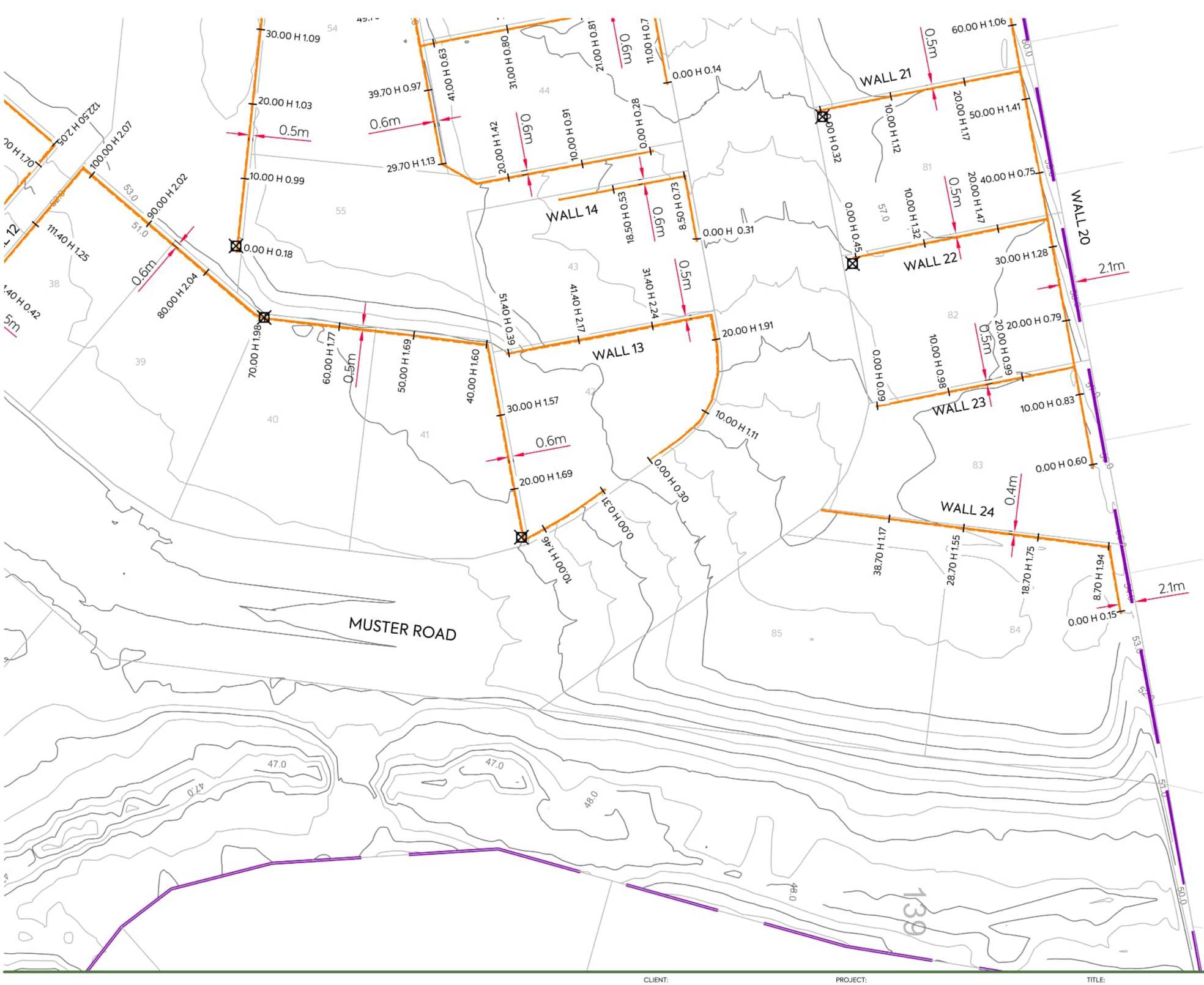
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN SHEET 4

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-154 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
2. WALL SUBSOIL DRAINAGE OUTLET LOCATION INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WESTCITY CONSTRUCTION LTD

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- RETAINING WALLS
- DIMENSION FROM BOUNDARY
- WALL SUBSOIL DRAINAGE OUTLET LOCATION

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

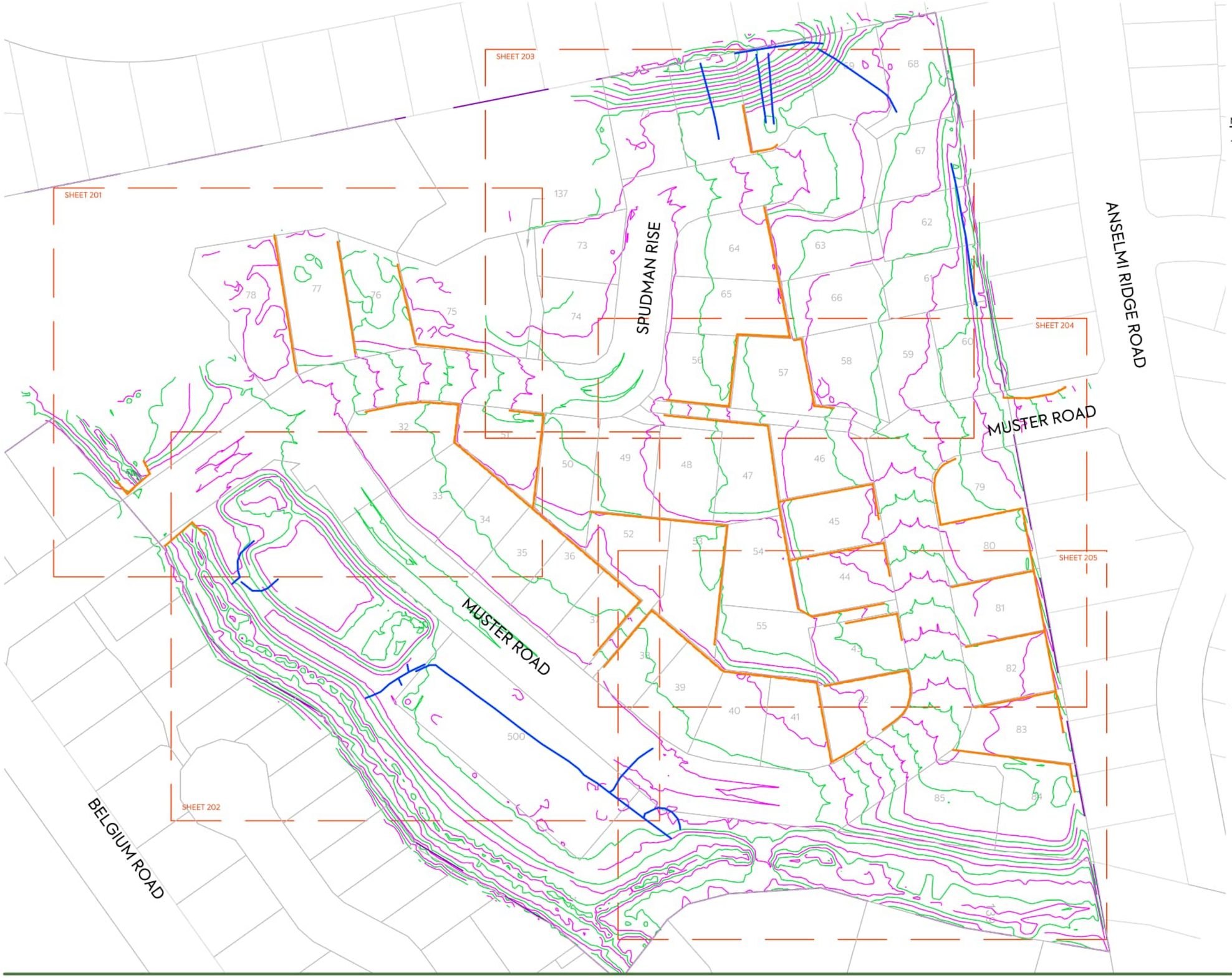
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS RETAINING WALL LOCATION PLAN SHEET 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-155 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	07/09/23



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS	1.0
FINAL CONTOURS – MINOR 0.5m INTERVALS	
UDERFILL DRAINS	
RETAINING WALLS	

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EARTHWORKS
FINISH CONTOUR PLAN
OVERALL PLAN

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:1250
DO NOT SCALE

DRAWING NO: 2398-3-AB-200

REV: B

NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- UDERFILL DRAINS
- RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

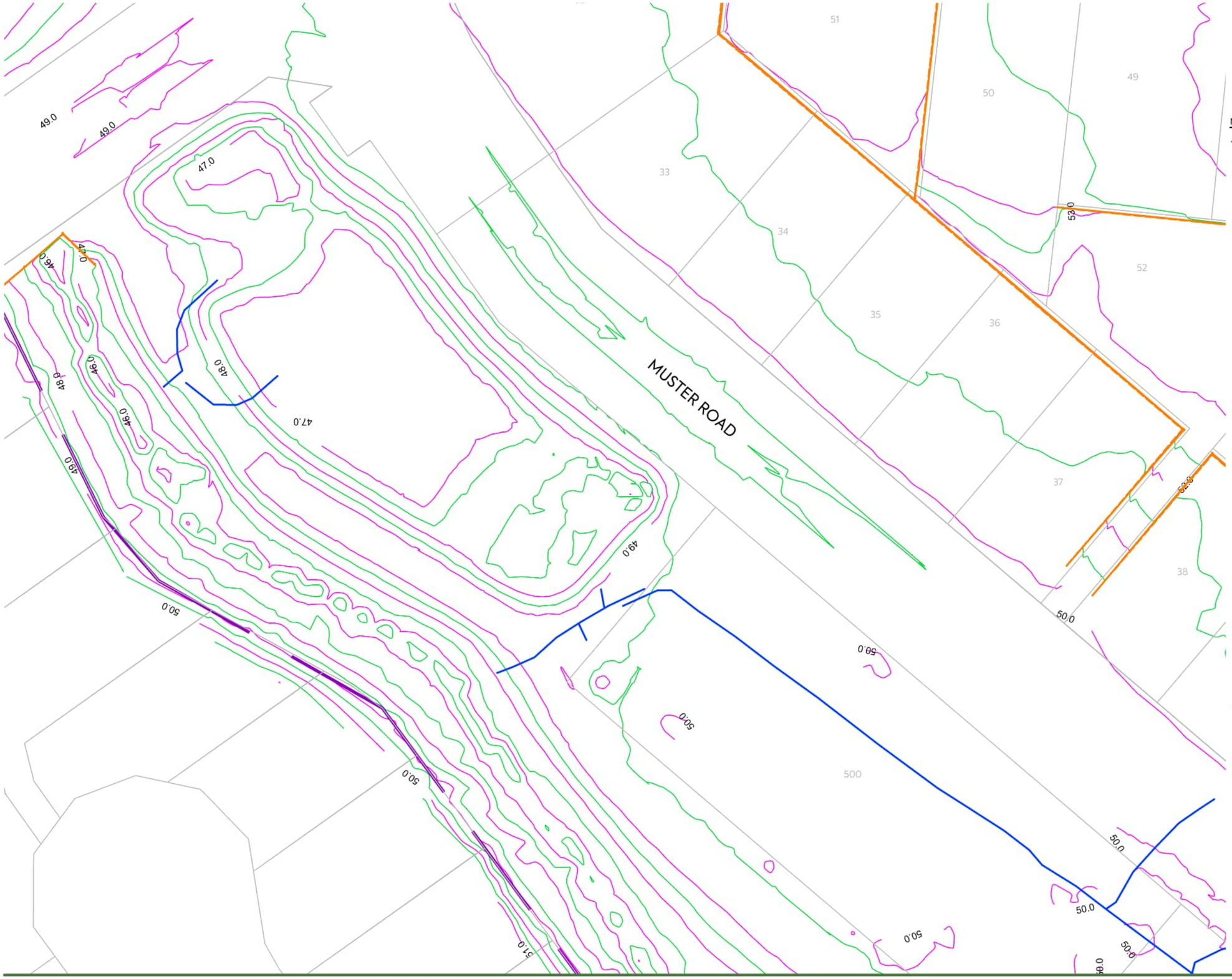
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 1

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-201

REV: B



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS — 1.0 —

FINAL CONTOURS – MINOR 0.5m INTERVALS

UDERFILL DRAINS

RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

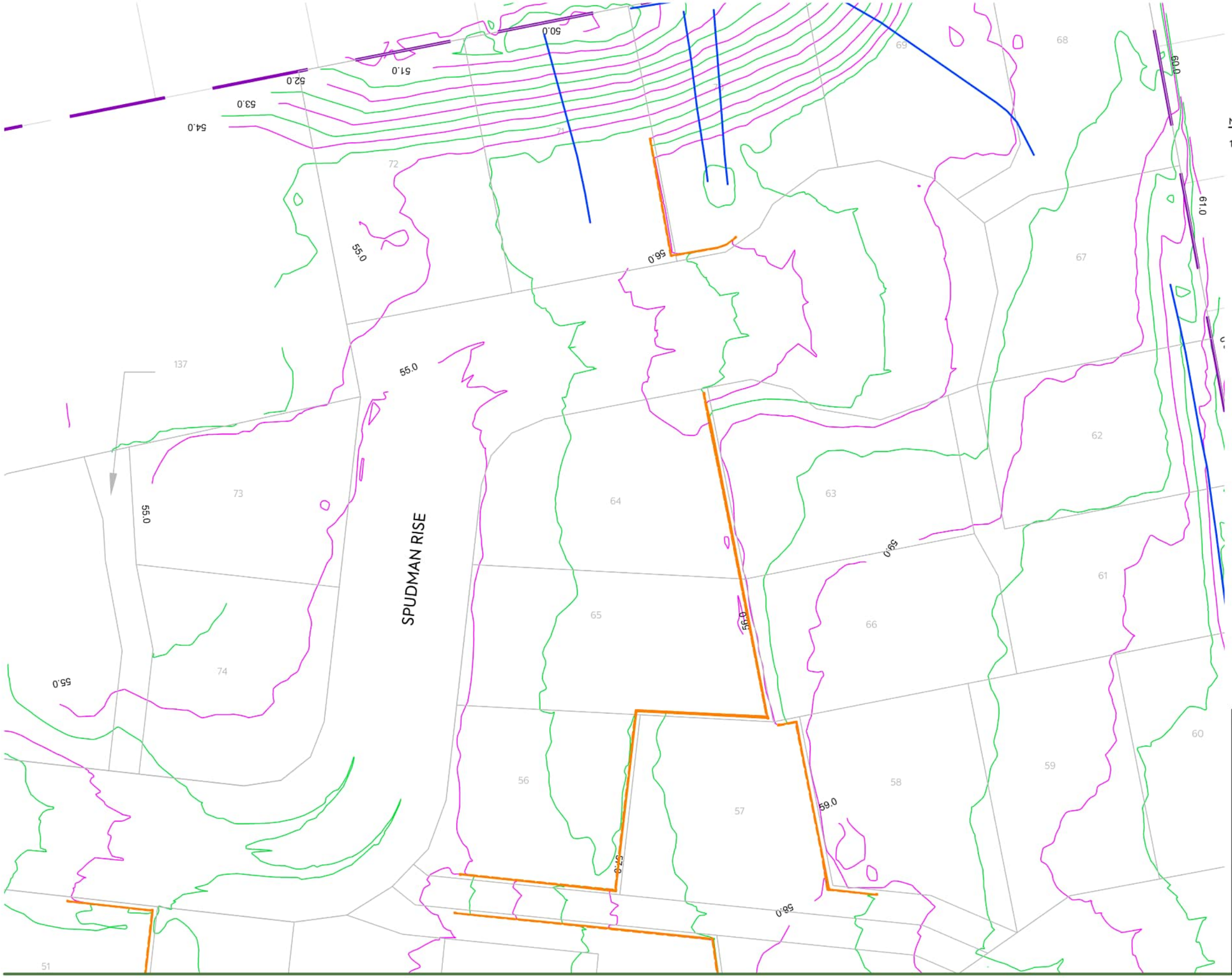
PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EARTHWORKS
FINISH CONTOUR PLAN
SHEET 2

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-202 REV: B



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- UDERFILL DRAINS
- RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

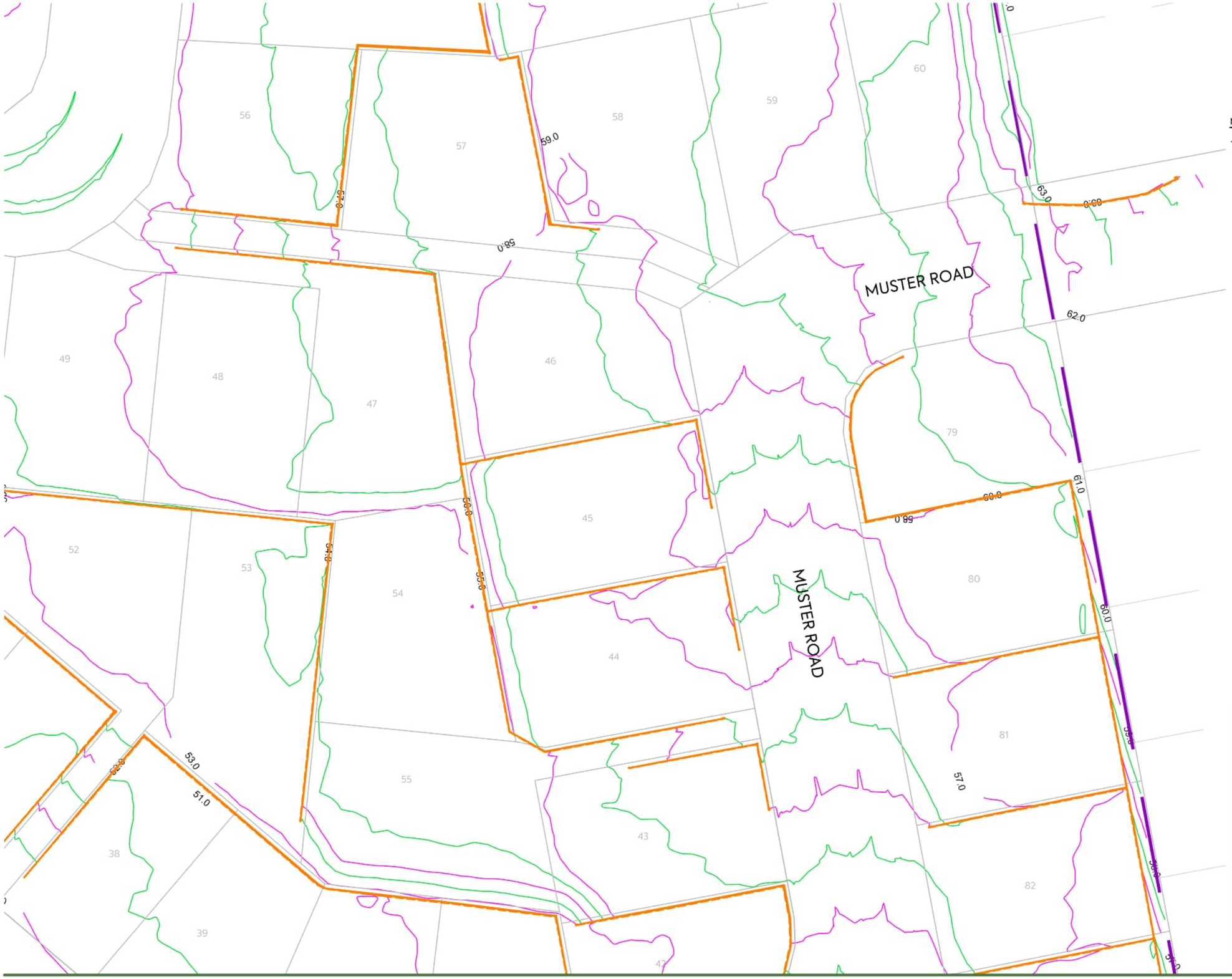
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 3

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-203

REV: B



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS — 1.0 —

FINAL CONTOURS – MINOR 0.5m INTERVALS

UDERFILL DRAINS

RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 4

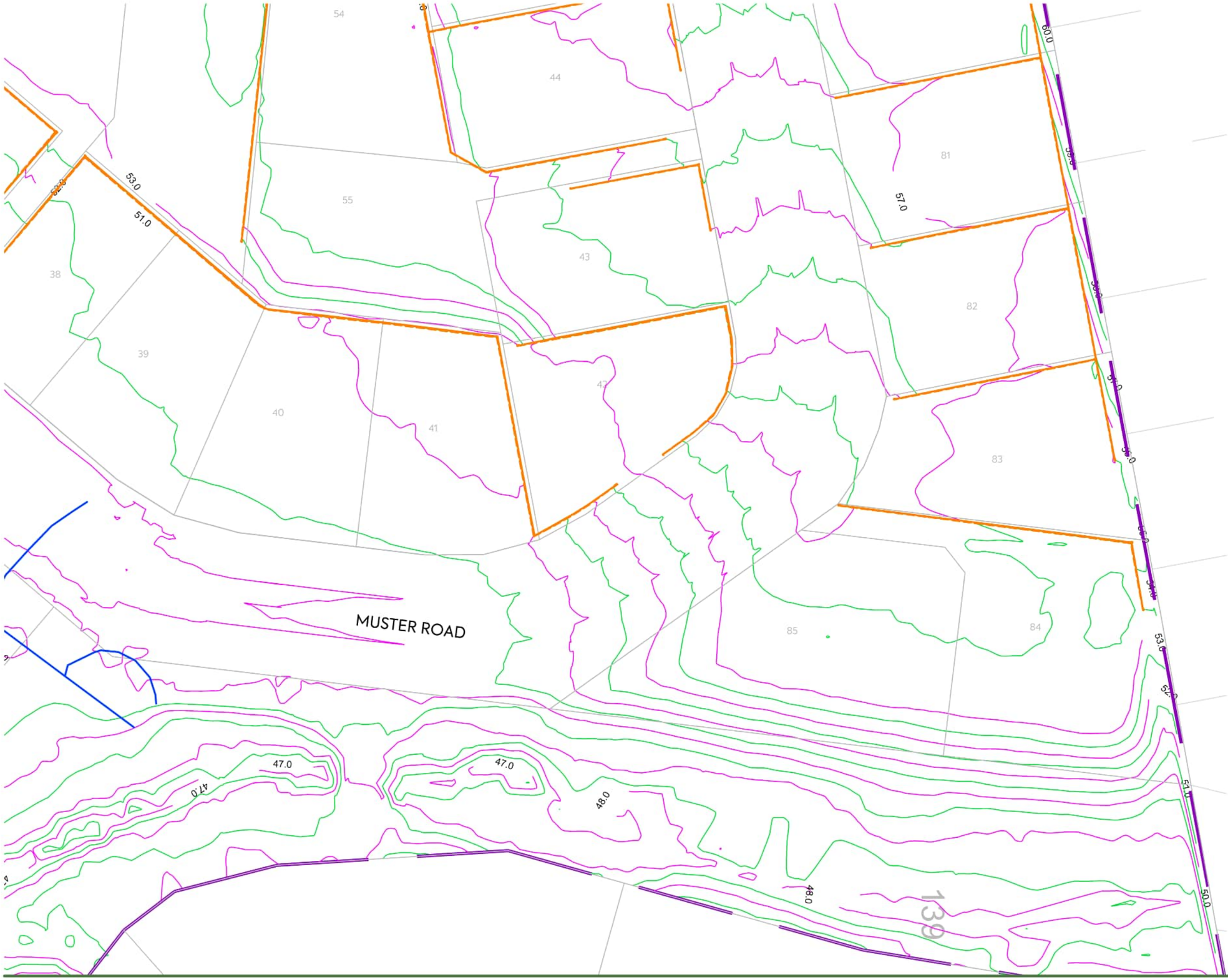
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-204

REV: B

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-200.DWG



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS — 1.0

FINAL CONTOURS – MINOR 0.5m INTERVALS

UDERFILL DRAINS

RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 5

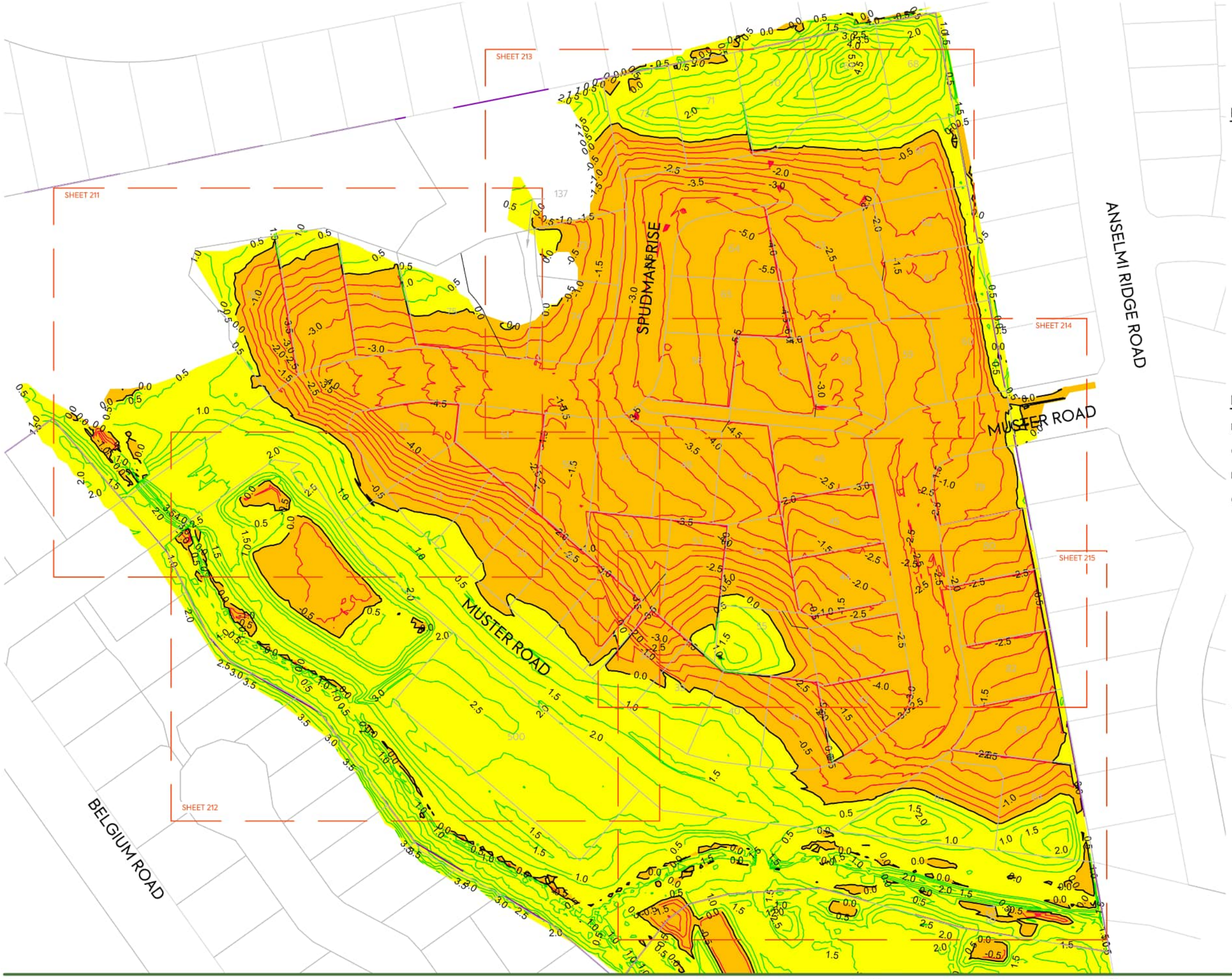
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m

DO NOT SCALE

DRAWING NO: 2398-3-AB-205

REV: B



NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA	
CUT AREA	
FILL CONTOURS	0.5
CUT CONTOURS	0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
OVERALL PLAN

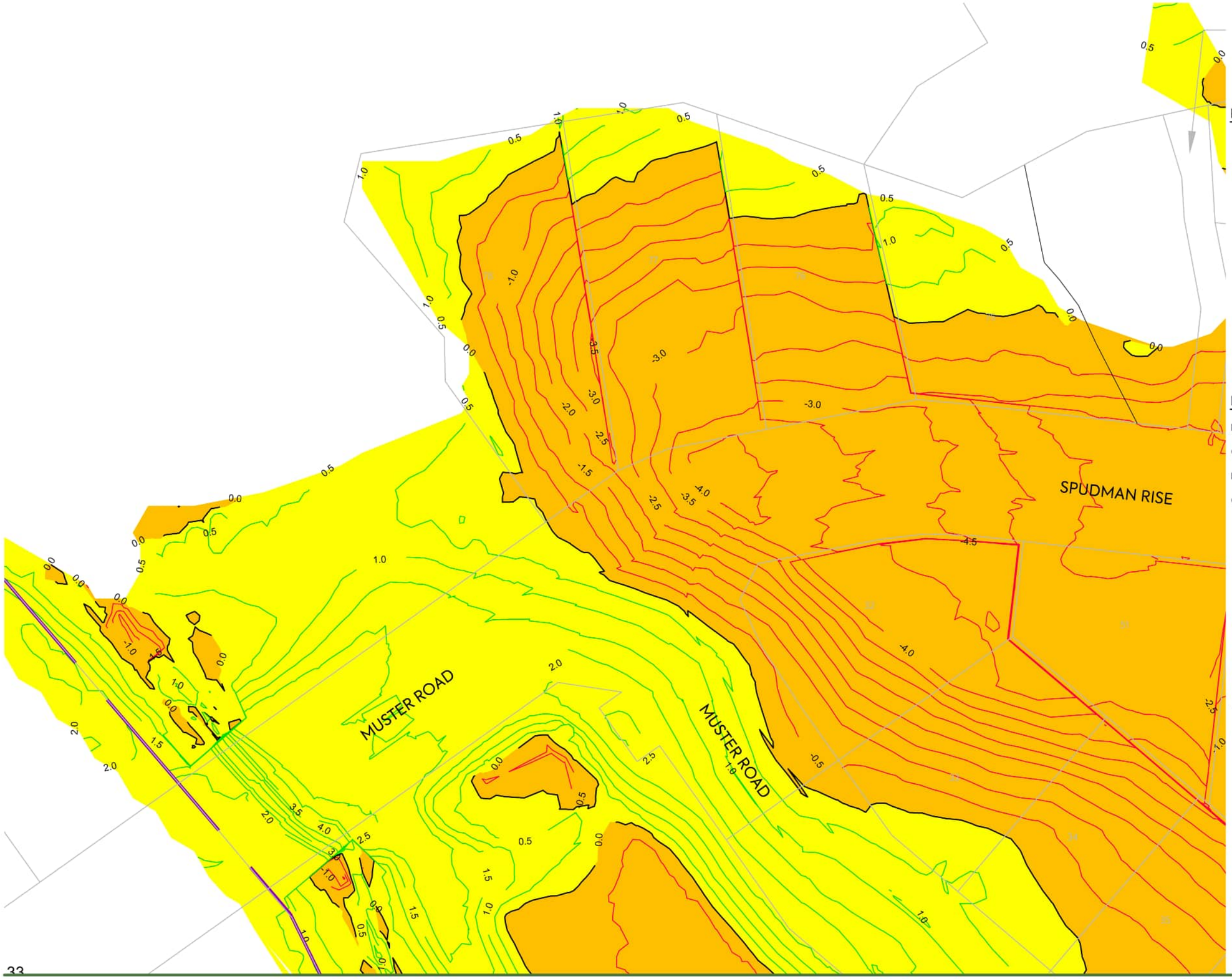
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:1250
DO NOT SCALE

DRAWING NO: 2398-3-AB-210

REV: A

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-210.DWG



NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 1

PURPOSE OF ISSUE: AS BUILT

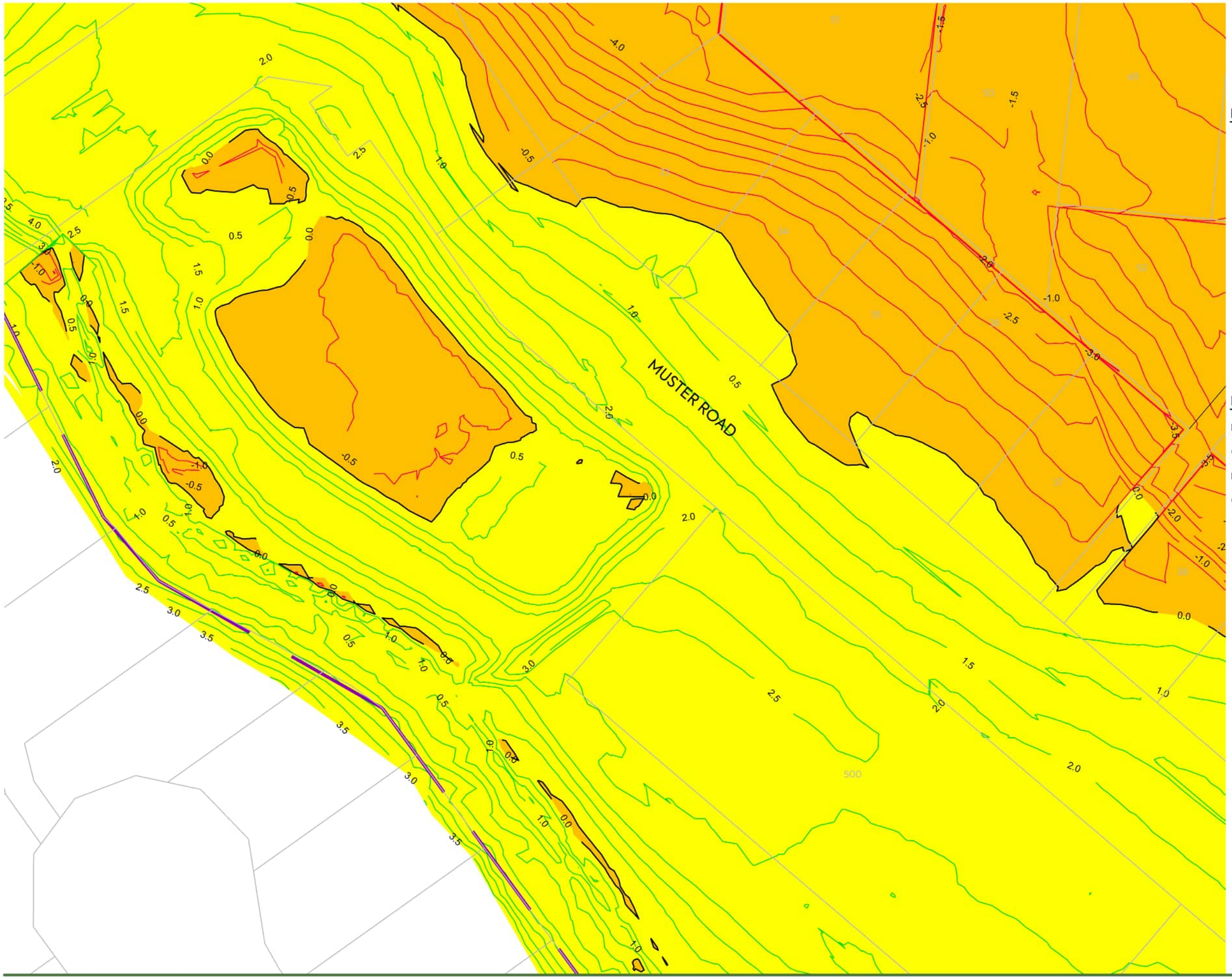
SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-211

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-210.DWG



NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 2

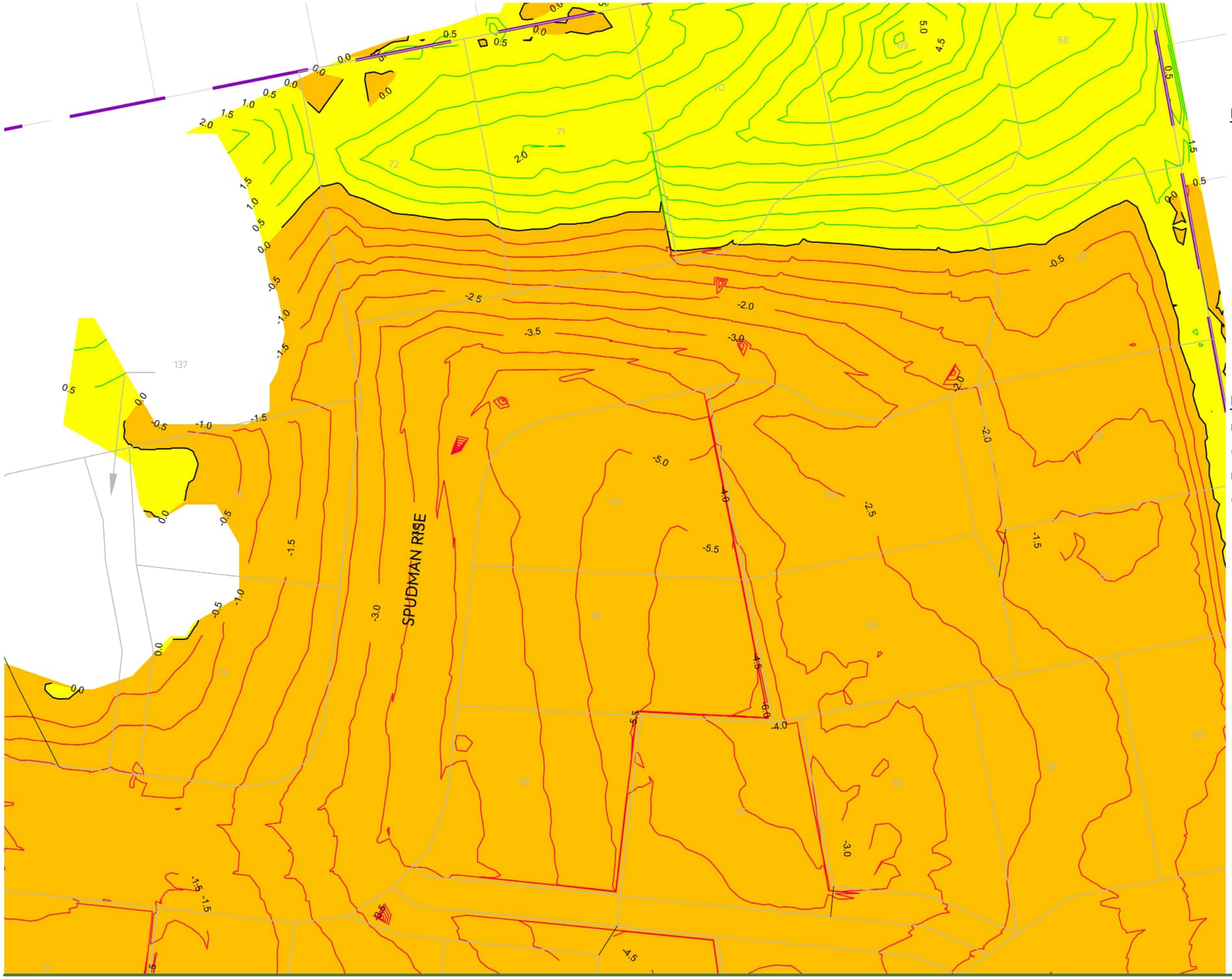
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-212

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23



NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

- FILL AREA
- CUT AREA
- FILL CONTOURS 0.5
- CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 3

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-213

REV: A

MUSTER ROAD

MUSTER ROAD

NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 4

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-214

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

MUSTER ROAD

NOTES:

1. CUT FILL CONTOURS ARE A CAPARISON BETWEEN EXISTING SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EXISTING GROUND TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 5

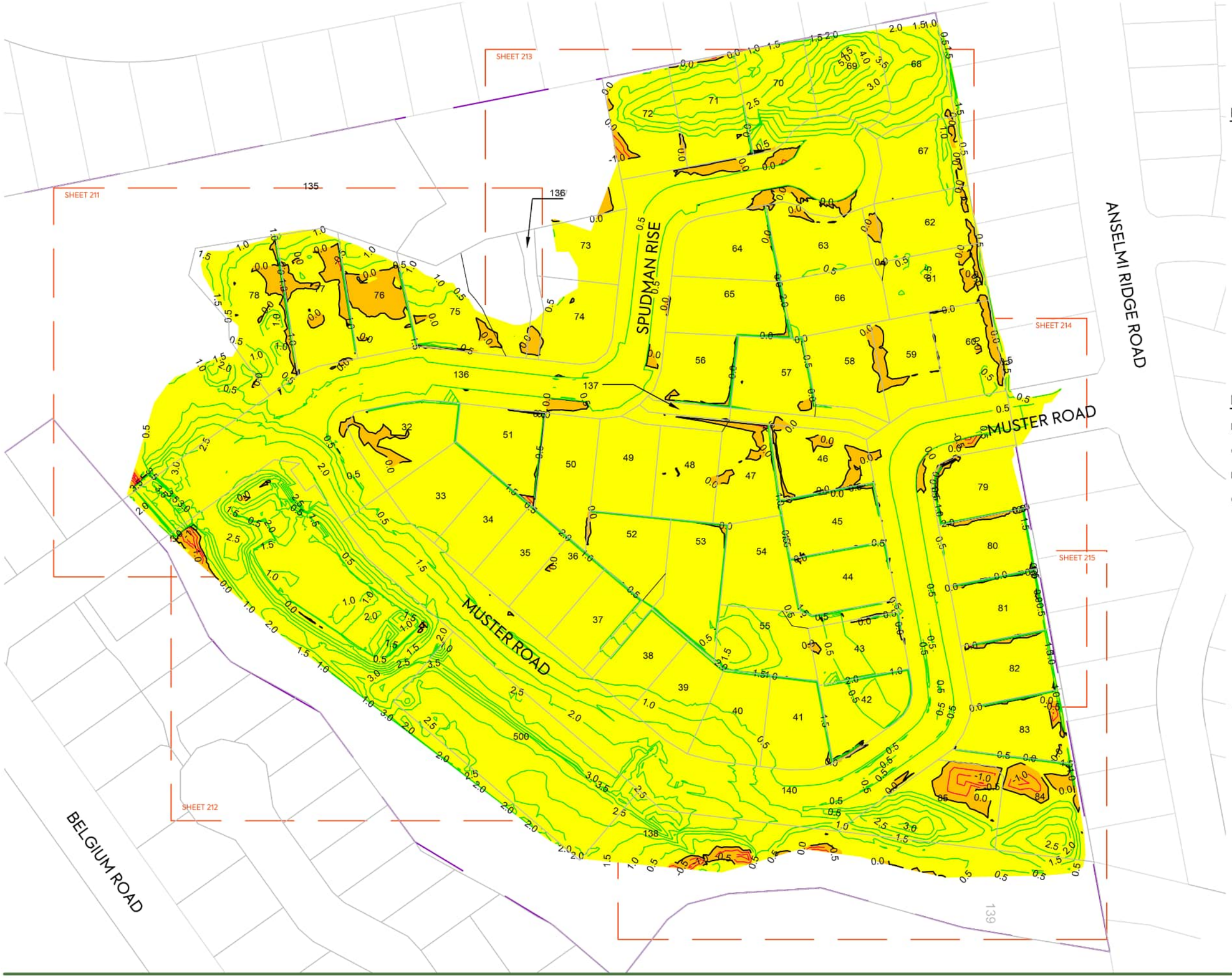
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-215

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23



NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA	
CUT AREA	
FILL CONTOURS	0.5
CUT CONTOURS	0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
LOWEST CUT TO FINISH SURFACE
CUT TO FILL PLAN
OVERALL PLAN

PURPOSE OF ISSUE: AS BUILT

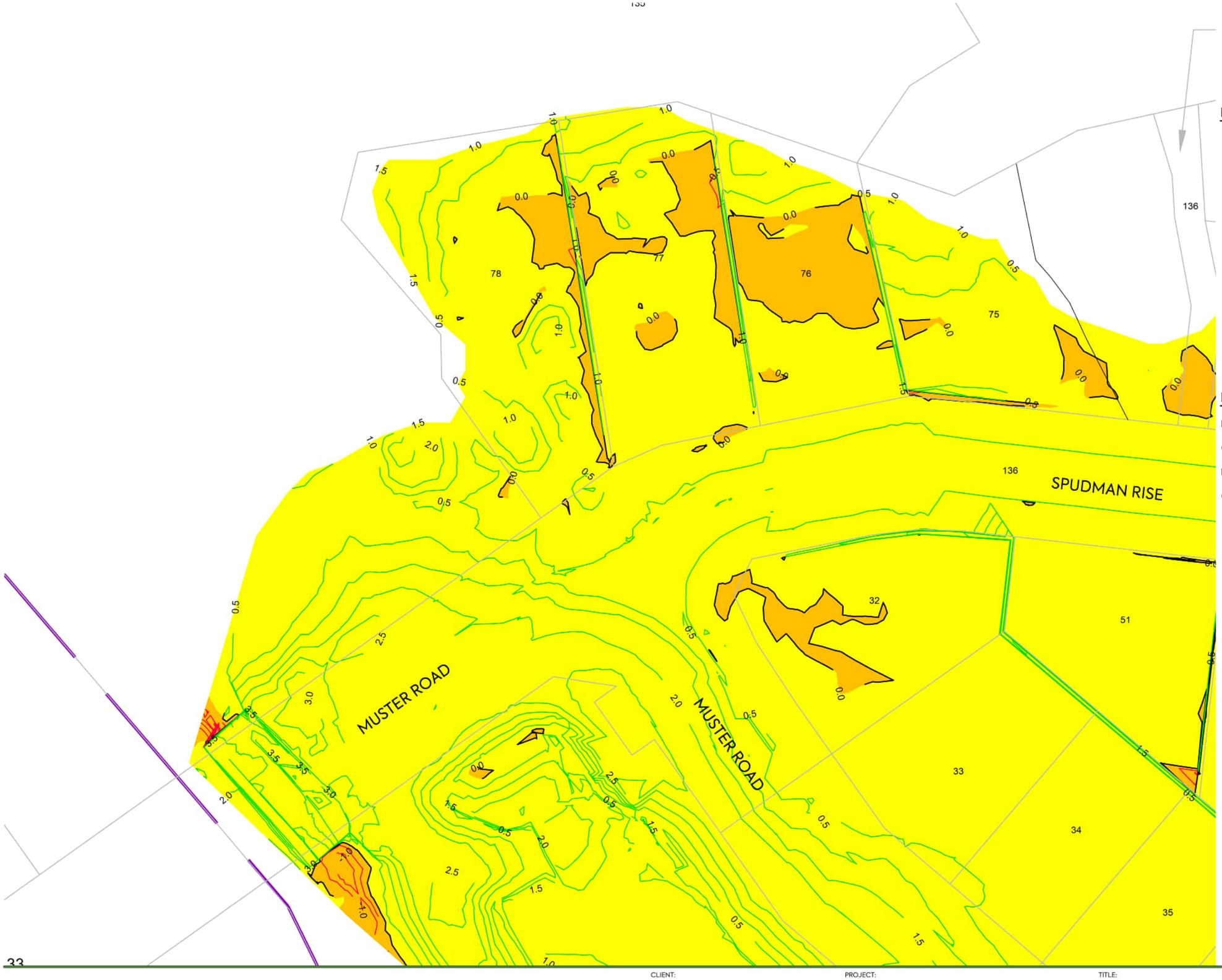
SCALE: 1:1250
DO NOT SCALE

DRAWING NO: 2398-3-AB-220

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-220.DWG



NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS LOWEST CUT TO FINISH SURFACE CUT TO FILL PLAN SHEET 1

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m

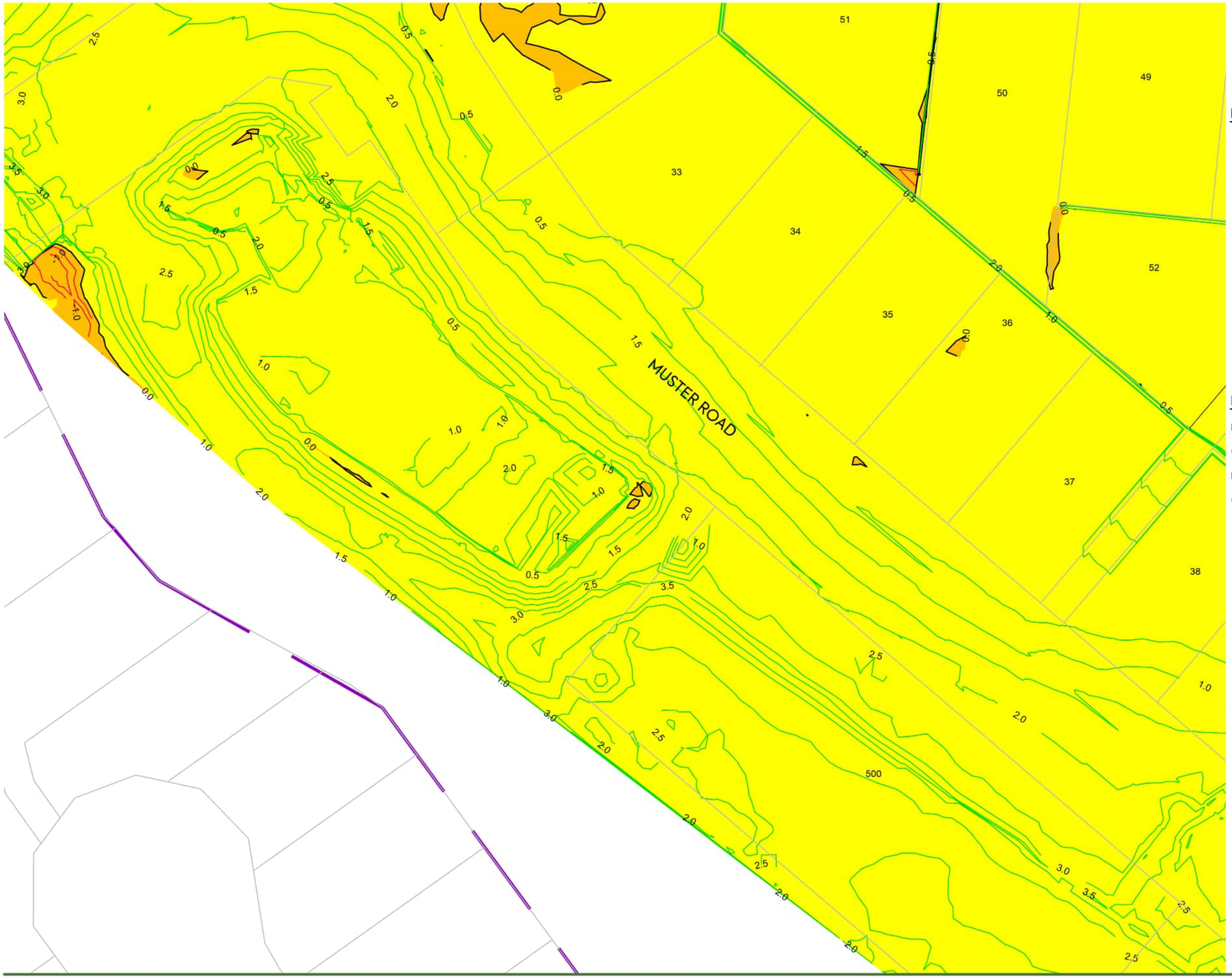
DO NOT SCALE

DRAWING NO: 2398-3-AB-221

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-220.DWG



NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
LOWEST CUT TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 2

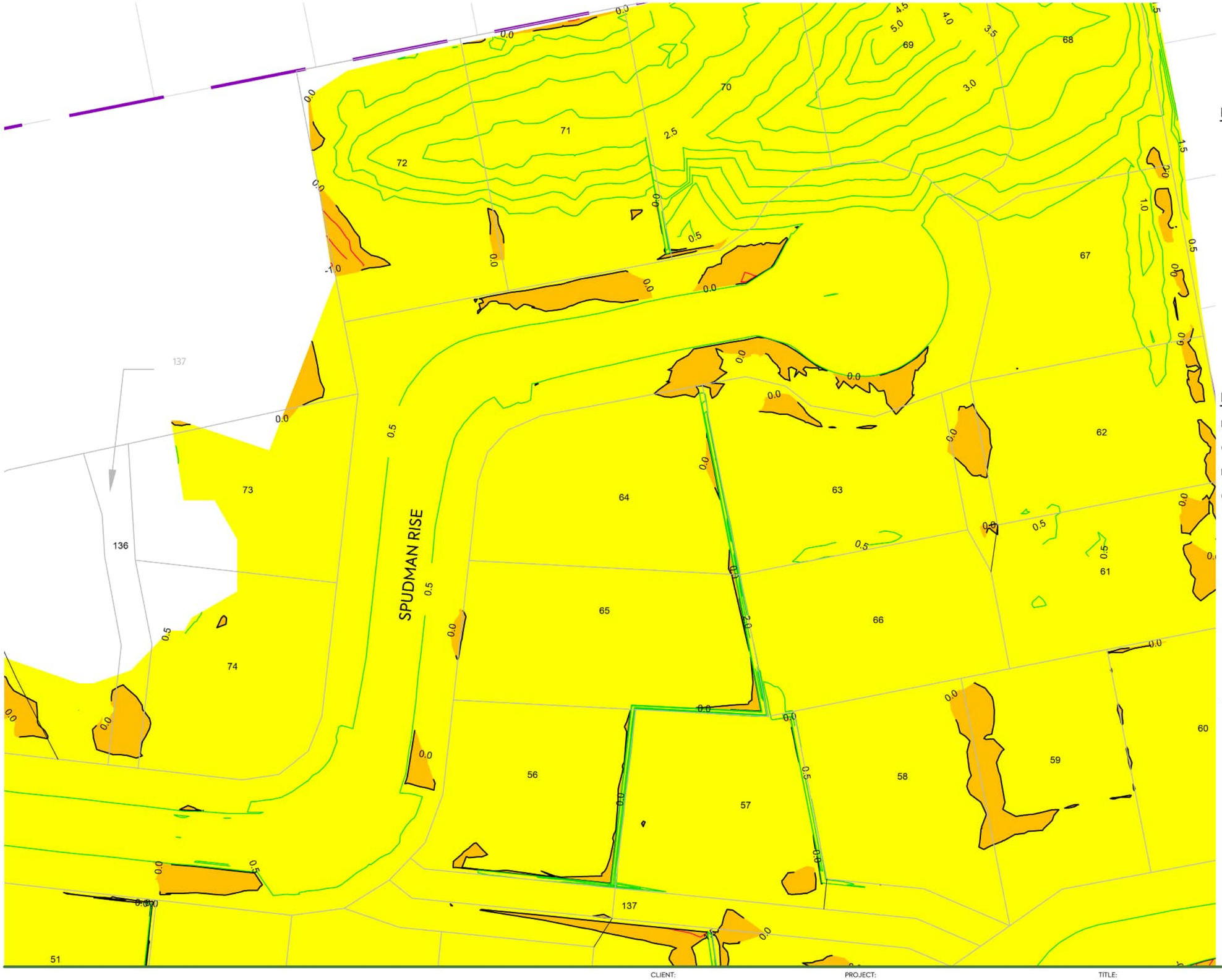
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-222

REV: A

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-220.DWG



NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS LOWEST CUT TO FINISH SURFACE CUT TO FILL PLAN SHEET 3

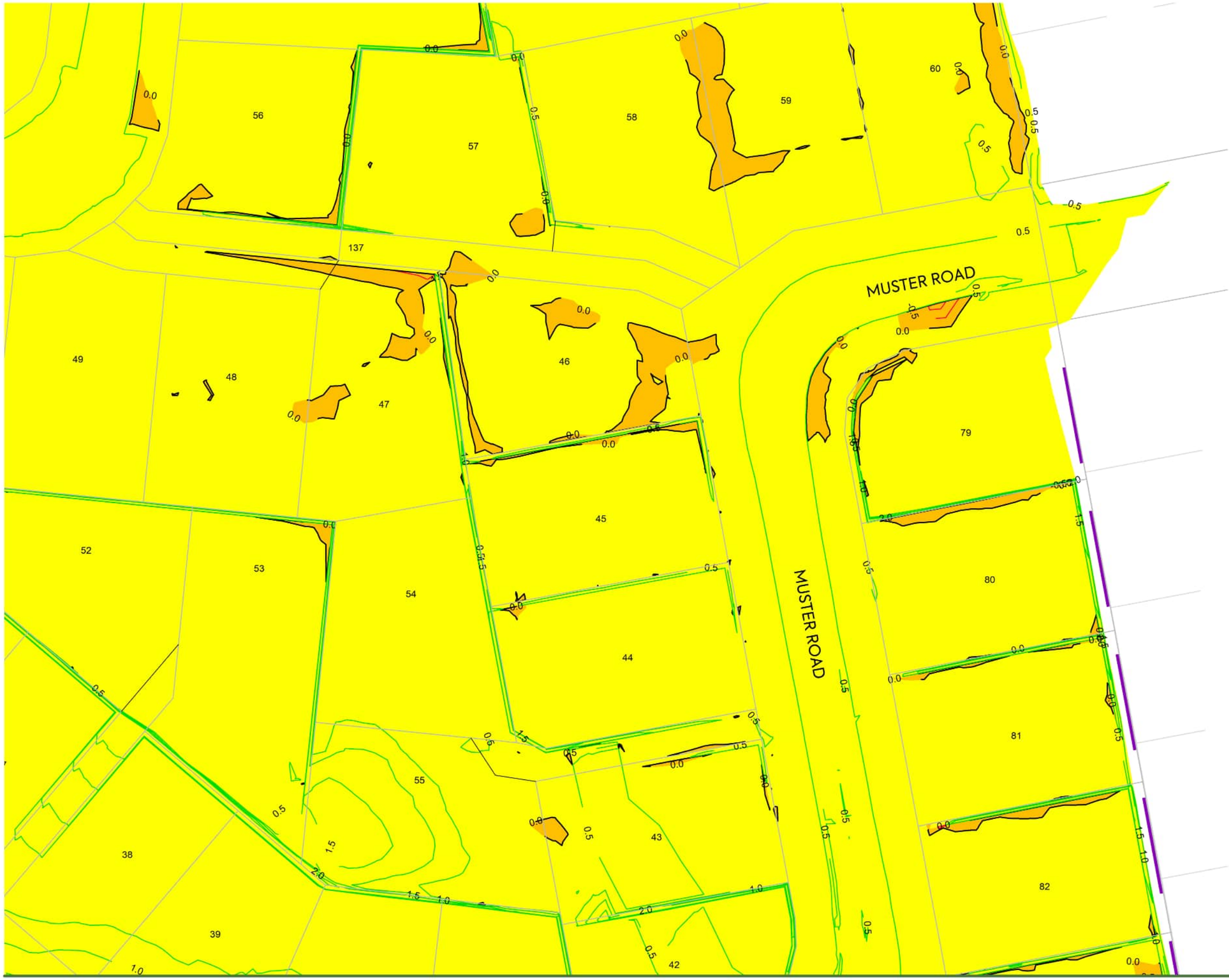
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-223 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-220.DWG



NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
LOWEST CUT TO FINISH SURFACE
CUT TO FILL PLAN
SHEET 4

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-224

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23

NOTES:

1. LOWEST CUT SURFACE INFORMATION HAS BEEN COLLECTED AND SUPPLIED BY WEST CITY CONSTRUCTION LTD.
2. CUT FILL CONTOURS ARE A CAPARISON BETWEEN LOWEST CUT SURFACE AND FINISHED SURFACE.

LEGEND:

FILL AREA

CUT AREA

FILL CONTOURS 0.5

CUT CONTOURS 0.5

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:05/10/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

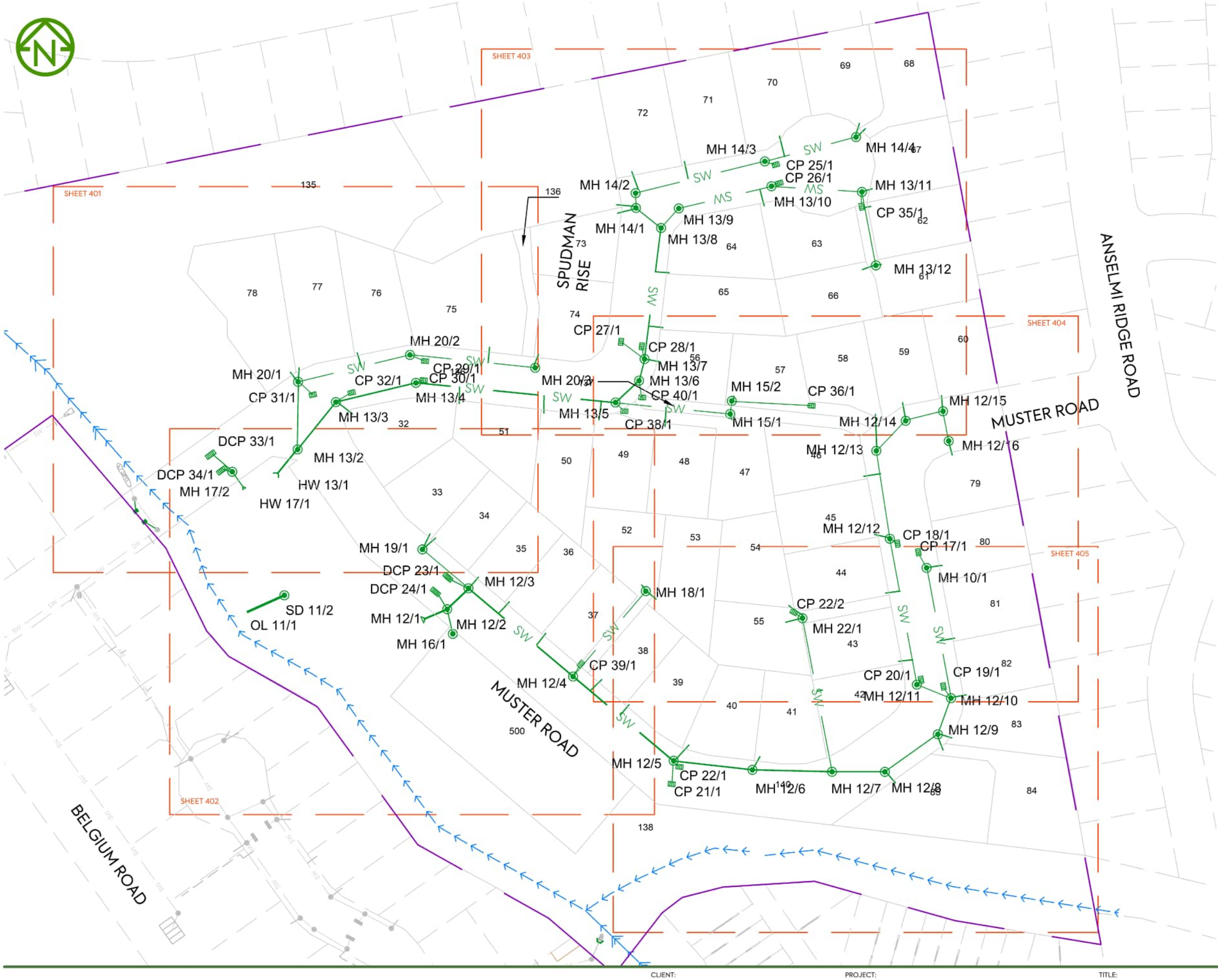
TITLE: STAGE 3&4 AS-BUILT DRAWINGS LOWEST CUT TO FINISH SURFACE CUT TO FILL PLAN SHEET 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m DO NOT SCALE

DRAWING NO: 2398-3-AB-225 REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	PC	21/08/23



NOTES:

1. ORIGIN OF COORDINATES MARK – ALP 7 DP 491030 (NZGD CODE – F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS –MARK: ALP 7 DP 491030 (NZGD CODE – F5CU) – R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES – ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS STOMRWATER AS BUILT PLAN OVERALL

PURPOSE OF ISSUE: AS BUILT

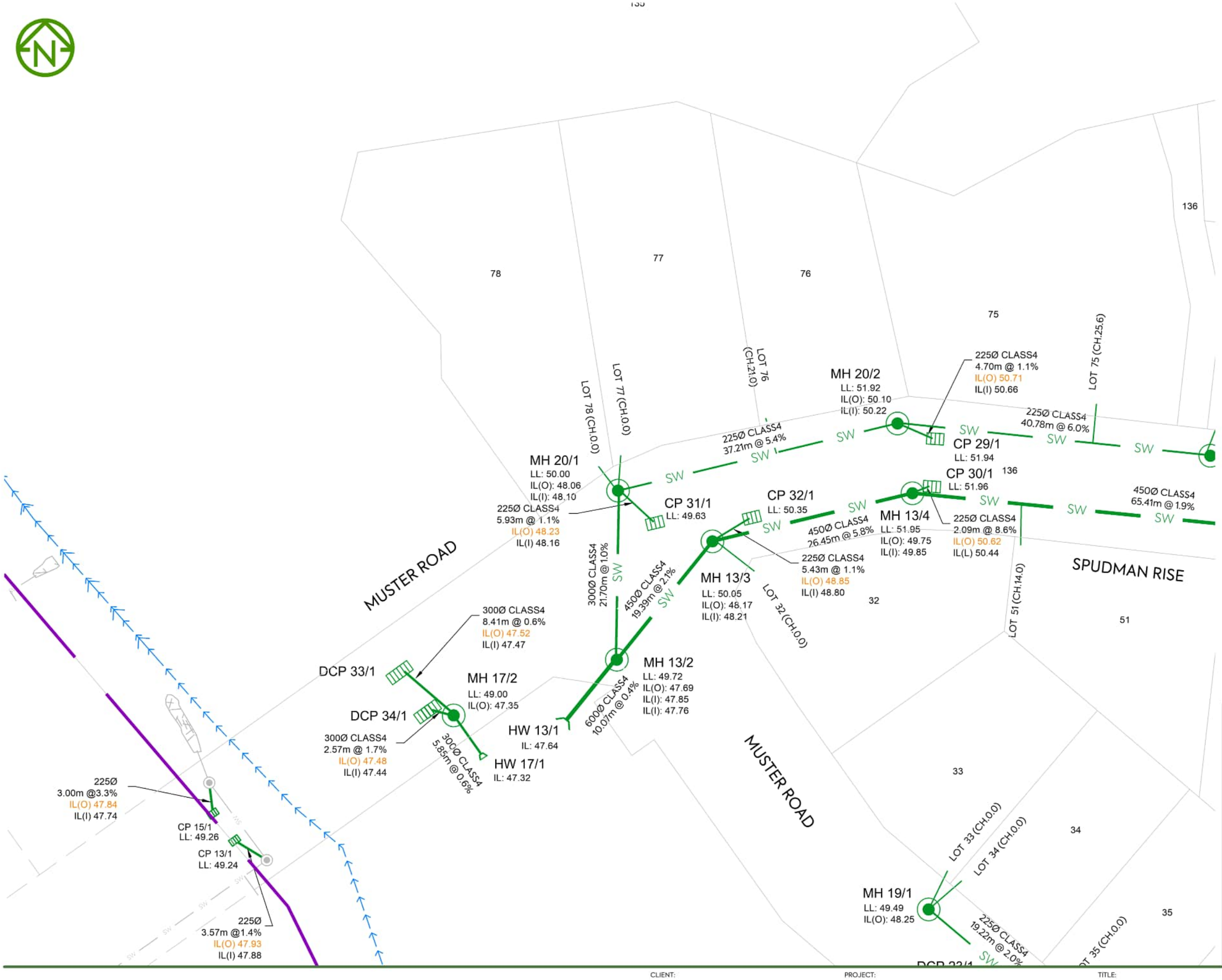
SCALE: 1:1250 DO NOT SCALE

DRAWING NO: 2398-3-AB-400 REV: A

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-400.DWG



NOTES:

1. ORIGIN OF COORDINATES MARK – ALP 7 DP 491030 (NZGD CODE – F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS –MARK: ALP 7 DP 491030 (NZGD CODE – F5CU) – R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES – ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

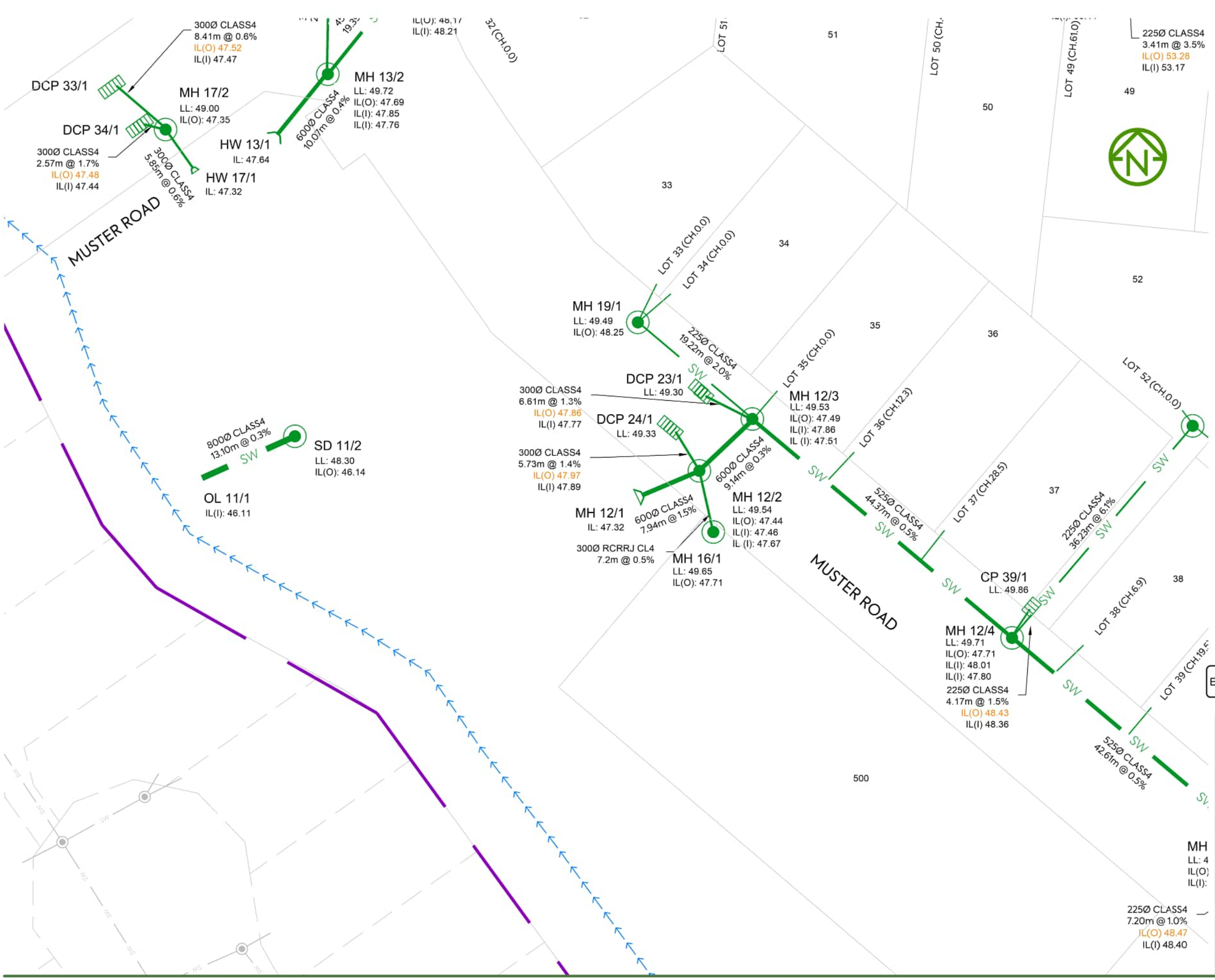
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS STOMRWATER AS BUILT PLAN SHEET 1 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-401

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK – ALP 7 DP 491030 (NZGD CODE – F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS –MARK: ALP 7 DP 491030 (NZGD CODE – F5CU) – R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES – ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

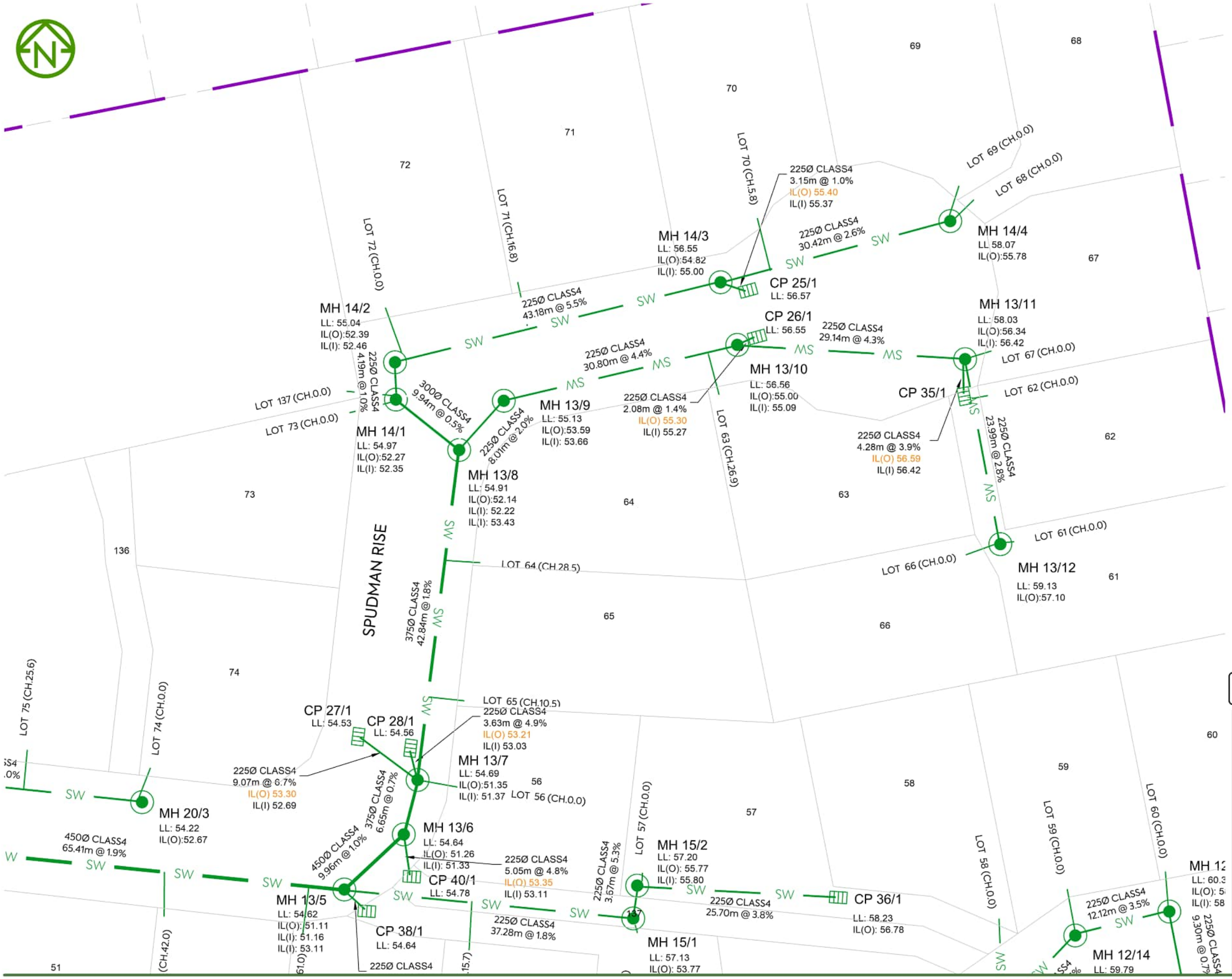
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS STOMRWATER AS BUILT PLAN SHEET 2 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500
DO NOT SCALE

DRAWING NO: 2398-3-AB-402

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK – ALP 7 DP 491030 (NZGD CODE – F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS –MARK: ALP 7 DP 491030 (NZGD CODE – F5CU) – R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES – ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

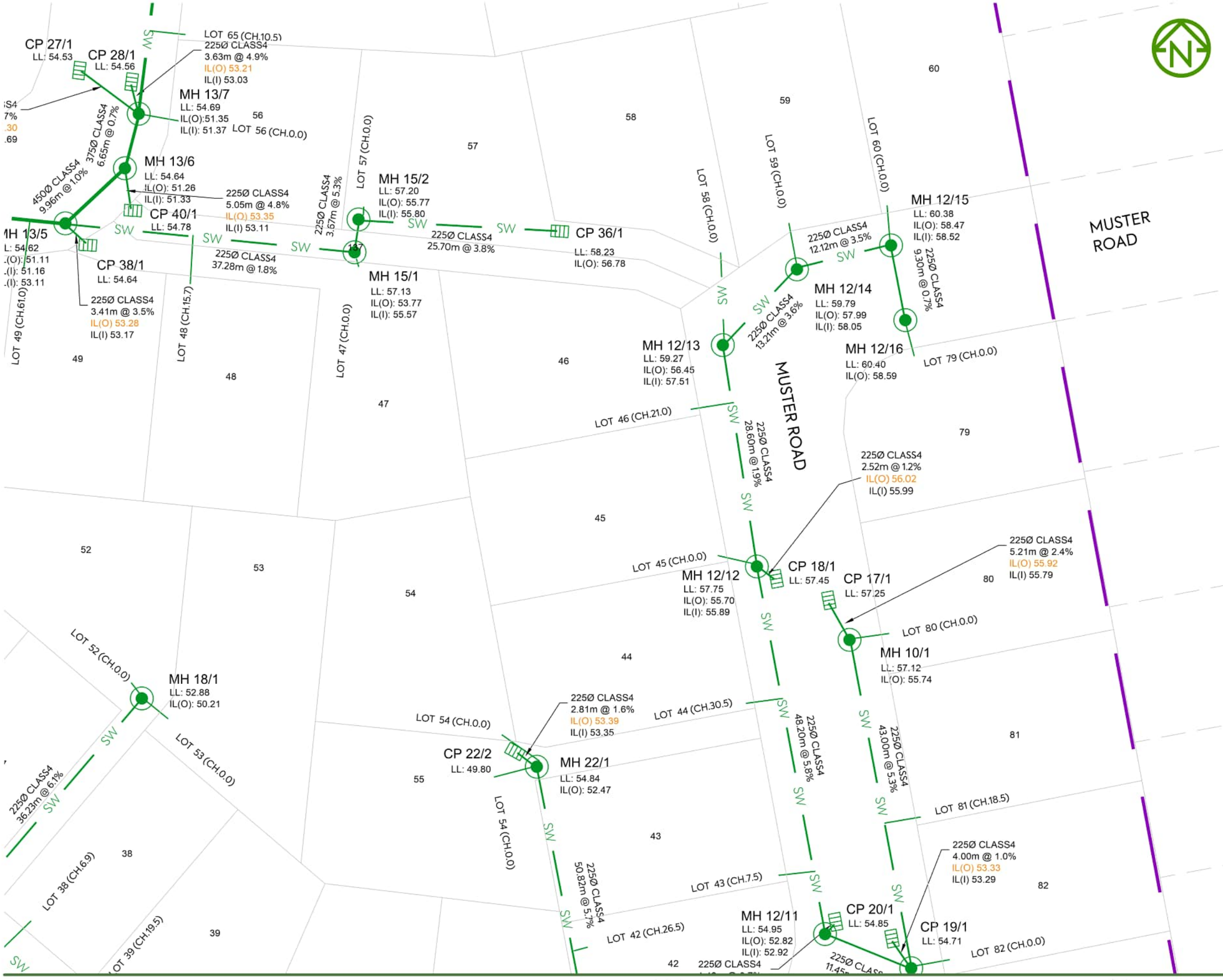
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS STOMRWATER AS BUILT PLAN SHEET 3 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-403

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK - ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES - ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

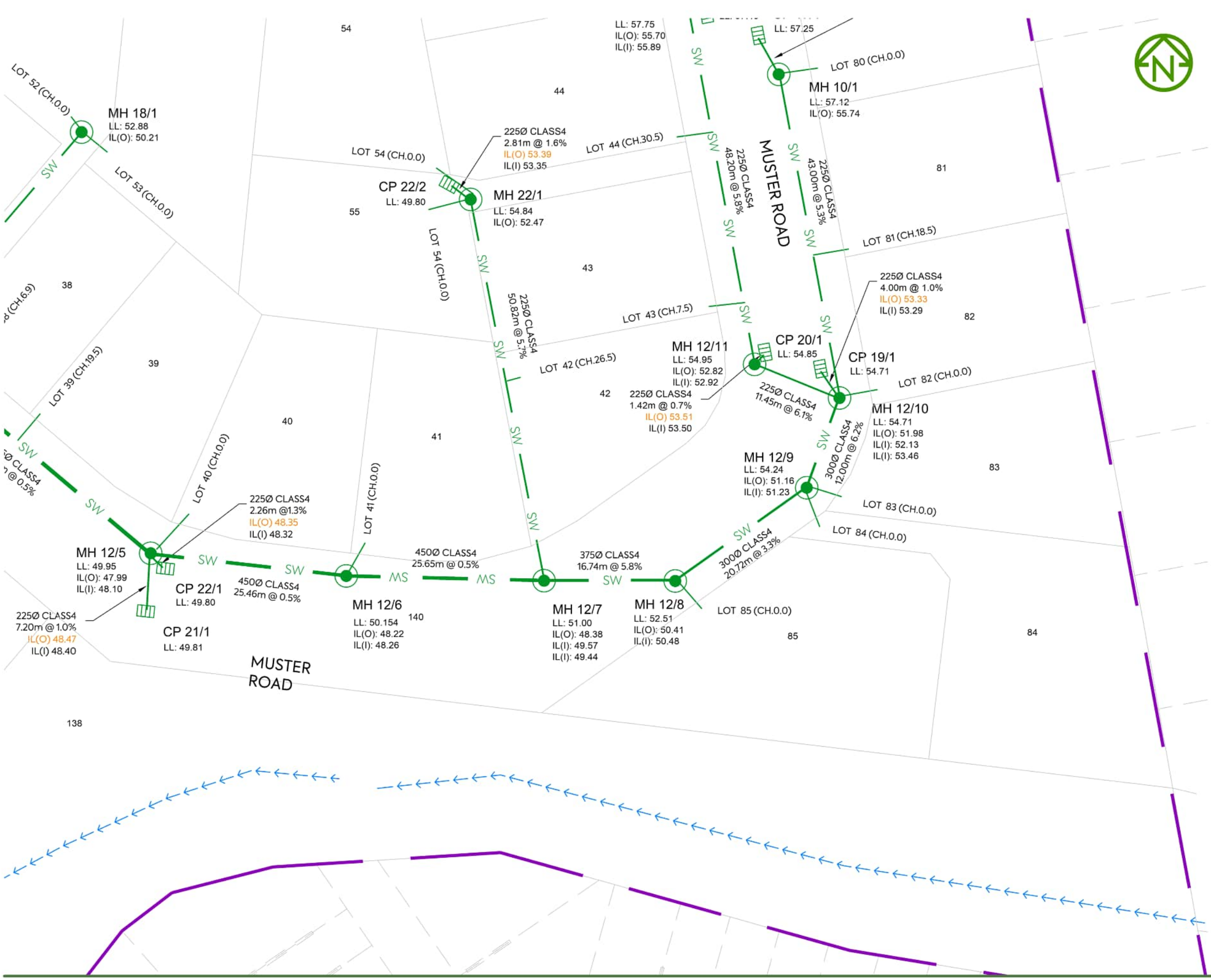
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS
STOMRWATER
AS BUILT PLAN
SHEET 4 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500
DO NOT SCALE

DRAWING NO: 2398-3-AB-404

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK – ALP 7 DP 491030 (NZGD CODE – F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946. ORIGIN OF LEVELS –MARK: ALP 7 DP 491030 (NZGD CODE – F5CU) – R.L.: 53.29m
3. ALL CESSPITS AND MH IN PLANS ARE NEW PUBLIC LINES UNLESS SHOWN OTHERWISE.
4. BEDDING FOR STORMWATER PIPES COMPLIES WITH AUCKLAND COUNCIL ENGINEERING QUALITY STANDARDS.
5. ALL STORMWATER LINES ARE RCRRJ CLASS 4 UNLESS SHOWN OTHERWISE.
6. ALL CESSPIT LEADS ARE RCRRJ CLASS 4.
7. ALL LOT CONNECTIONS ARE 100mmØ uPVC SN16. LOT CONNECTION INFORMATION ARE BASED ON DATA PROVIDED FROM WEST CITY CONTRACTORS LTD SURVEYORS. MCKENZIE AND CO CONSULTANTS LIMITED TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
8. THE LOT NUMBER AND THE DISTANCE TO THE DOWN STREAM MANHOLE IS SHOWN ON THE LOT CONNECTIONS.
9. MANHOLE & PIT INFORMATION ARE DETAILED IN THE TABLES – ON DRAWING 410 AND 411.

LEGEND

- NEW STORMWATER LINE
- NEW LOT CONNECTION
- NEW STORMWATER MANHOLE
- NEW CATCHPIT
- NEW STORMWATER WINGWALL OUTLET
- NEW STORMWATER PIPE OUTLET
- NEW DOUBLE CATCHPIT
- NEW STORMWATER ROCK RIPWRAP APPRON
- STAGE 3 BOUNDARY
- WORKS BOUNDARY
- EXISTING WATERCOURSE STREAM
- EXISTING STORMWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

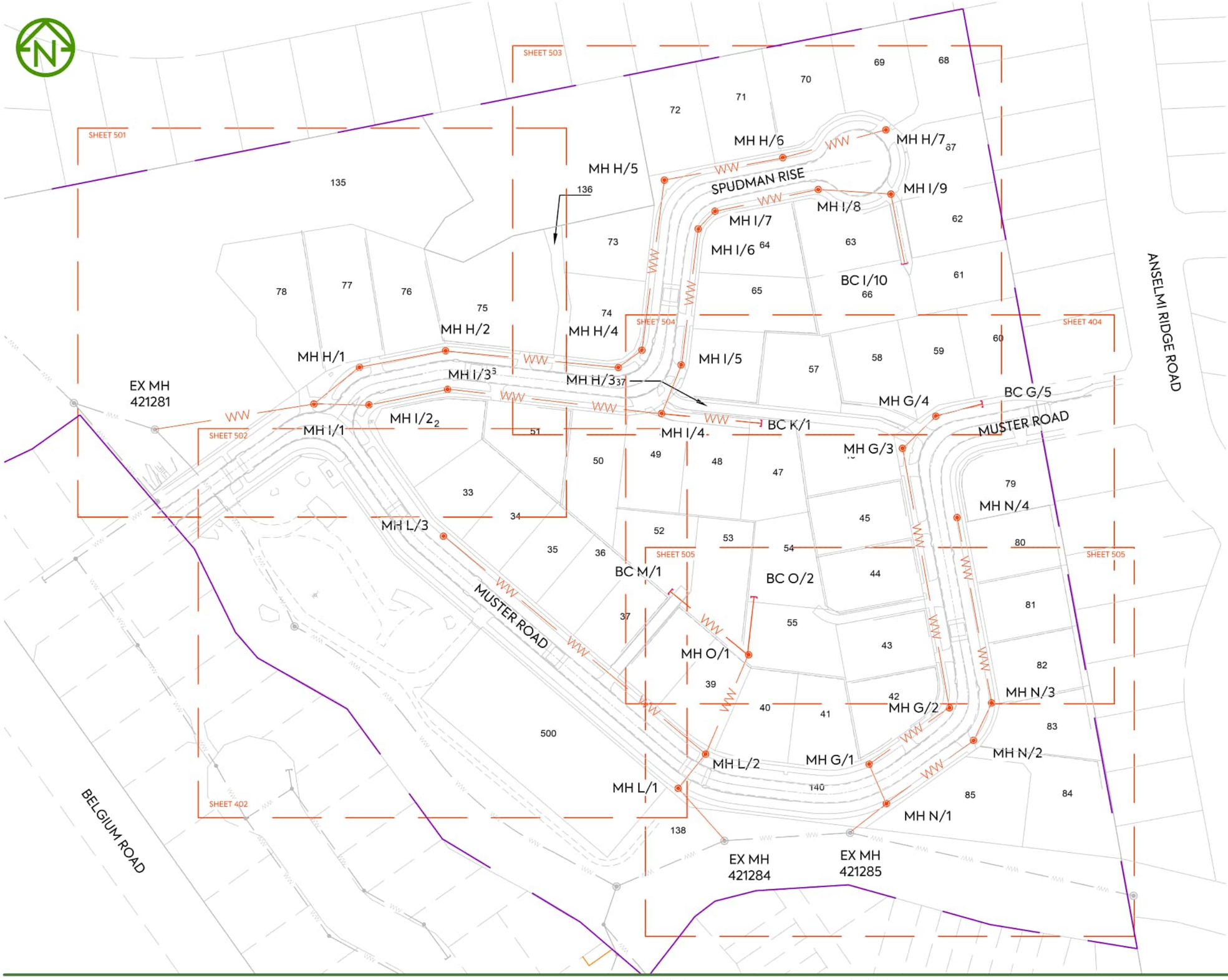
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS STOMRWATER AS BUILT PLAN SHEET 5 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500
DO NOT SCALE

DRAWING NO: 2398-3-AB-405

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LEGEND:

STAGE 3&4 BOUNDARY

LOT BOUNDARIES

NEW WASTEWATER LINE — WW

NEW LOT CONNECTION

NEW WASTEWATER MANHOLE

NEW WASTEWATER BLANK CAP

EXISTING WASTEWATER LINE — WW

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS WASTEWATER AS BUILT PLAN OVERALL

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:1250
DO NOT SCALE

DRAWING NO: 2398-3-AB-500

REV: A

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-500.DWG

NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LEGEND:

- STAGE 3&4 BOUNDARY
- LOT BOUNDARIES
- NEW WASTEWATER LINE
- NEW LOT CONNECTION
- NEW WASTEWATER MANHOLE
- NEW WASTEWATER BLANK CAP
- EXISTING WASTEWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

135
136
78
77
76
75
32
33
34
51
LOT 77 (CH.0.0)
LOT 76 (CH.10.5)
LOT 75 (CH.23.0)
LOT 78 (CH.0.0)
LOT 32 (CH.0.0)
LOT 51 (CH.14.0)
SPUDMAN RISE
MUSTER ROAD
MUSTER ROAD
EX MH 421281
150Ø UPVC SN16 52.04m @ 5.0%
MH I/1
LL: 49.56
IL (O): 47.03
IL (I): 47.09
IL (I): 47.06
150Ø UPVC SN16 18.46m @ 3.7%
MH H/1
LL: 50.28
IL (O): 47.77
IL (I): 48.71
150Ø UPVC SN16 17.32m @ 2.3%
MH I/2
LL: 50.12
IL (O): 47.46
IL (I): 48.54
150Ø UPVC SN16 27.93m @ 5.0%
MH H/2
LL: 51.99
IL (O): 50.12
IL (I): 50.20
150Ø UPVC SN16 25.52m @ 6.3%
MH I/3
LL: 52.02
IL (O): 50.15
IL (I): 50.23
150Ø UPVC SN16 50.08m @ 3.8%
150Ø UPVC SN16 69.77m @ 3.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS WASTEWATER AS BUILT PLAN SHEET 1 OF 5

PURPOSE OF ISSUE: AS BUILT

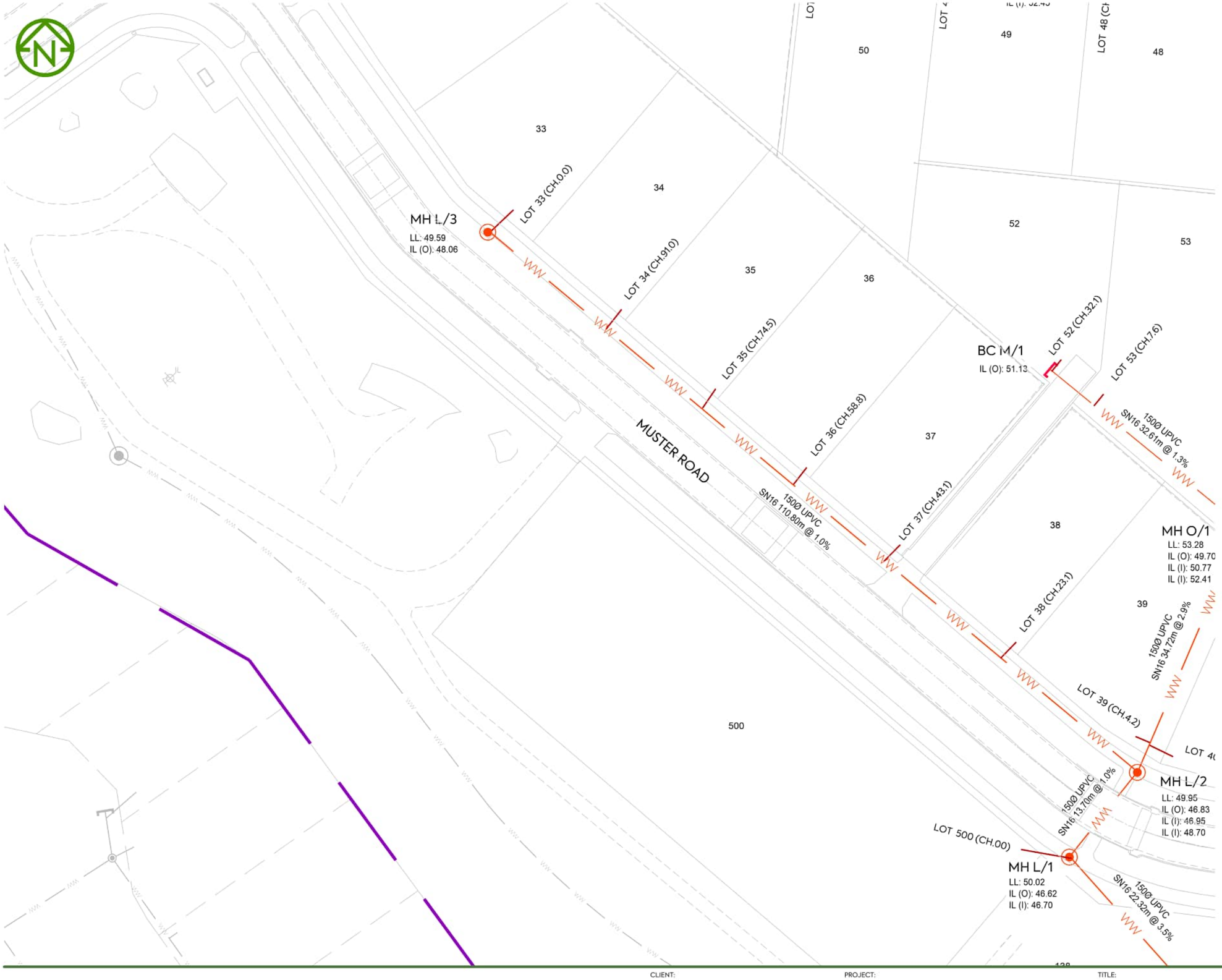
SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-501

REV: A

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23



NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LEGEND:

- STAGE 3&4 BOUNDARY
- LOT BOUNDARIES
- NEW WASTEWATER LINE
- NEW LOT CONNECTION
- NEW WASTEWATER MANHOLE
- NEW WASTEWATER BLANK CAP
- EXISTING WASTEWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

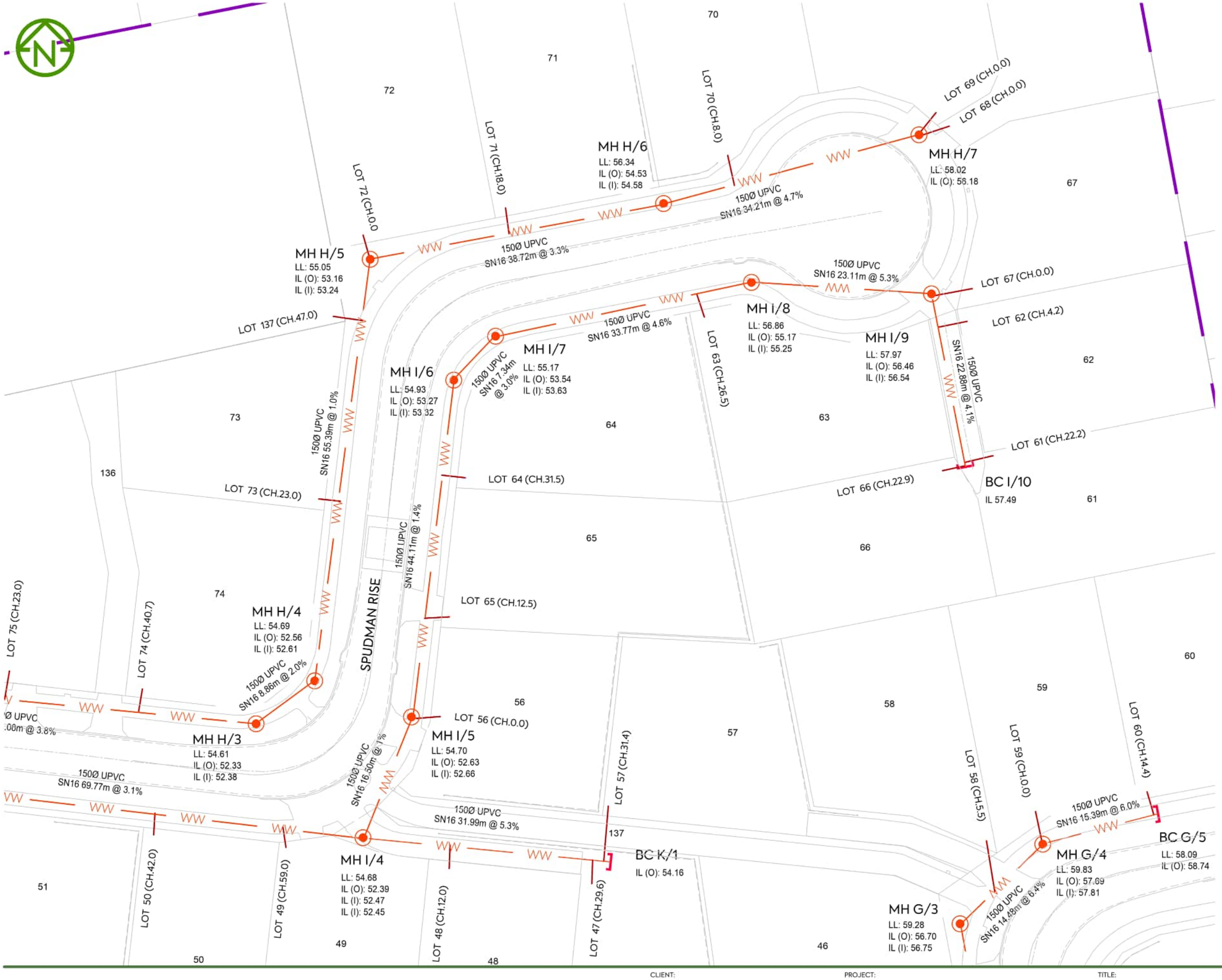
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS WASTEWATER AS BUILT PLAN SHEET 2 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-502

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2 398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LEGEND:

- STAGE 3&4 BOUNDARY
- LOT BOUNDARIES
- NEW WASTEWATER LINE
- NEW LOT CONNECTION
- NEW WASTEWATER MANHOLE
- NEW WASTEWATER BLANK CAP
- EXISTING WASTEWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:
  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS WASTEWATER AS BUILT PLAN SHEET 3 OF 5

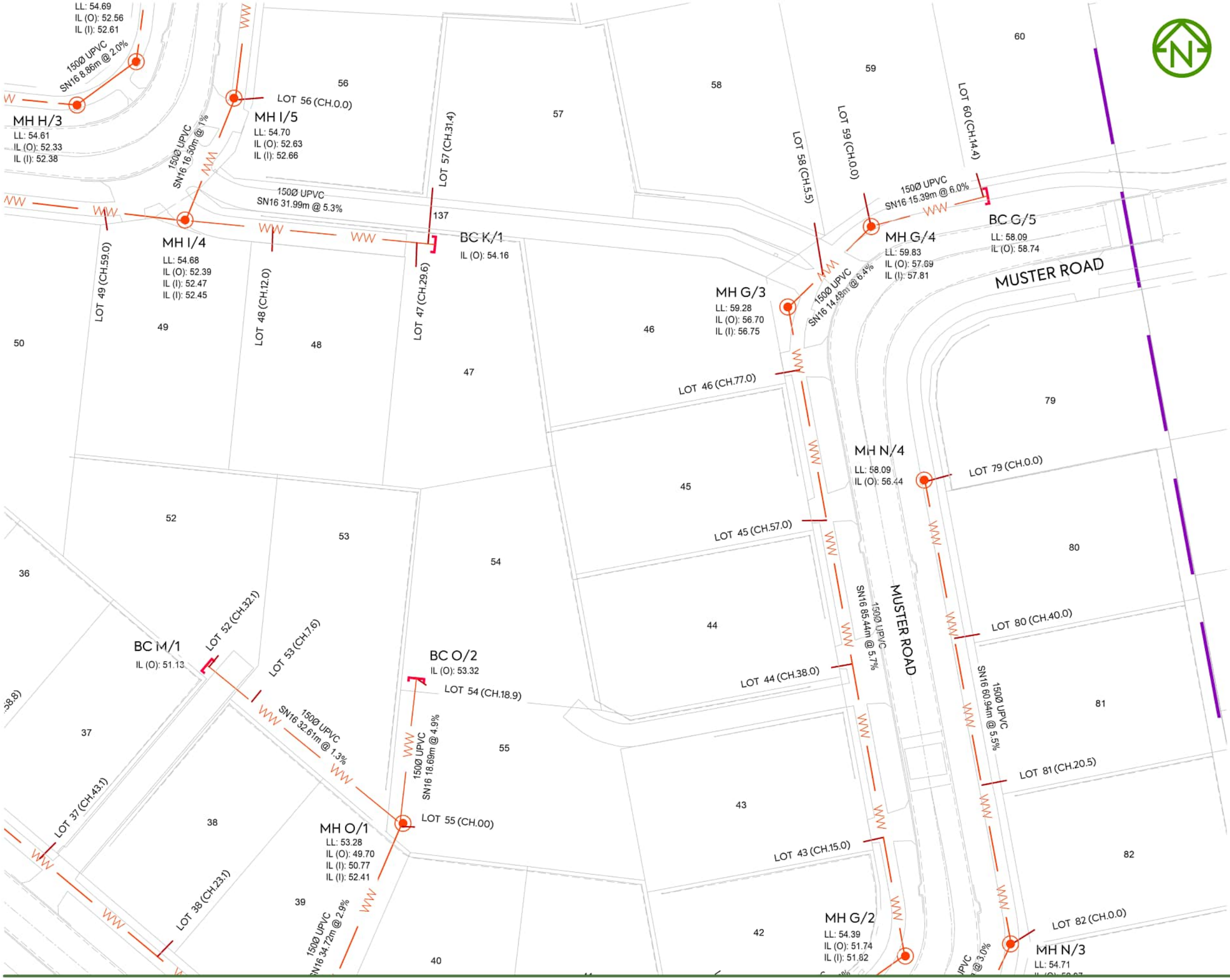
PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-503

REV: A

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-500.DWG



NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2 398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LEGEND:

- STAGE 3&4 BOUNDARY
- LOT BOUNDARIES
- NEW WASTEWATER LINE
- NEW LOT CONNECTION
- NEW WASTEWATER MANHOLE
- NEW WASTEWATER BLANK CAP
- EXISTING WASTEWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

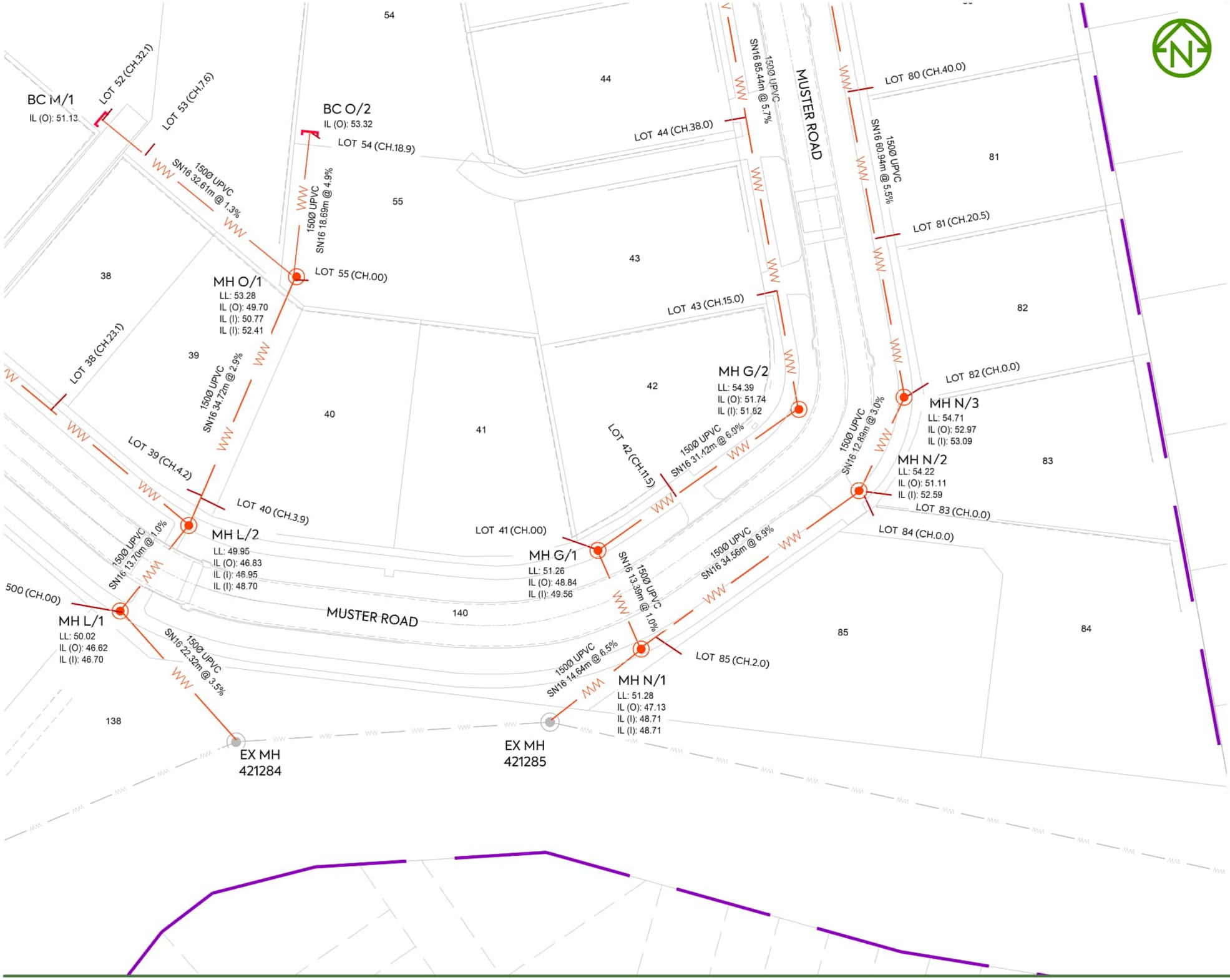
TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS
WASTEWATER
AS BUILT PLAN
SHEET 4 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500
DO NOT SCALE

DRAWING NO: 2398-3-AB-504

REV: A



NOTES:

1. ORIGIN OF COORDINATES MARK: ALP 7 DP 491030 (NZGD CODE - F5CU)
2. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
   ORIGIN OF LEVELS -MARK: ALP 7 DP 491030 (NZGD CODE - F5CU) - R.L.: 53.29m
3. ALL LOT CONNECTIONS ARE 100mm DIAMETER uPVC SN16. ALL LOT CONNECTION TERMINATE 1.0m BELOW FINISHED GROUND LEVEL AND STAKED.
4. ALL NEW PUBLIC LINES ARE 150mm DIAMETER uPVC SN16.
5. FOR PIT INFORMATION REFER TO DRAWING 2 398-3-AB-510.
6. LOT CONNECTION AND BLACK CAP POSITIONS AND DEPTHS PROVIDED BY WEST CITY CONTRACTORS LTD SURVEYORS.
7. ALL MANHOLES ARE 1050mmØ UNLESS STATED ON PLAN 510

LE

STA

LOT BOUNDARIES

NEW WASTEWATER LINE

NEW LOT CONNECTION

NEW WASTEWATER MANHOLE

NEW WASTEWATER BLANK CAP

EXISTING WASTEWATER LINE

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date: 15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	NC	DW	DS	22/06/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 AS-BUILT DRAWINGS WASTEWATER AS BUILT PLAN SHEET 5 OF 5

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500 DO NOT SCALE

DRAWING NO: 2398-3-AB-505

REV: A

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-500.DWG

NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

AKS2021-0009 Belgium Rd Stage 3 & 4
Dwg 102 Rev 2 AJL 03-11-2023

- Leading Edge Pile Zone
- Specific Design Zone - Slope

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS (1.0)
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- UDERFILL DRAINS
- RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

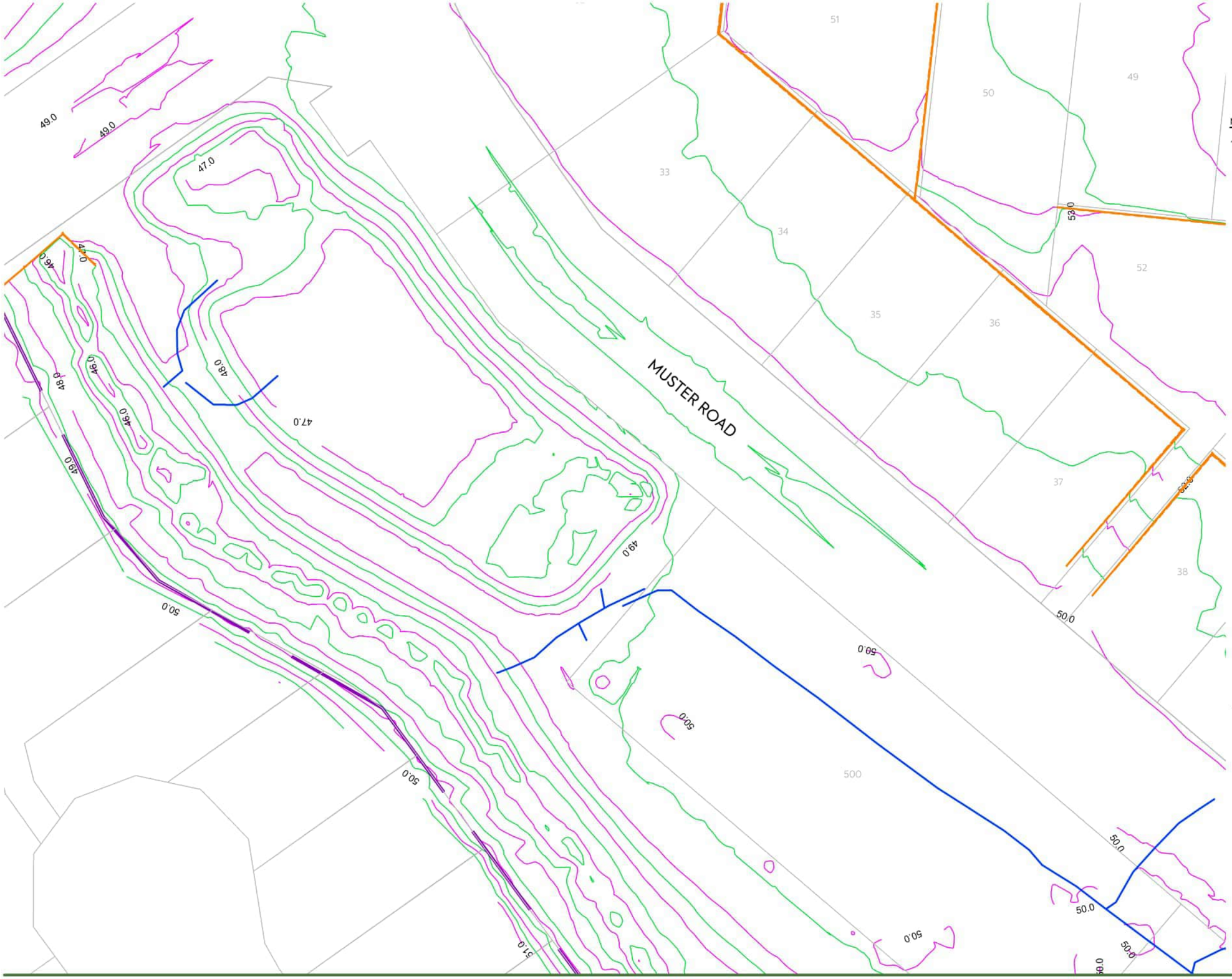
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 1

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-201

REV: B



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

AKS2021-0009 Belgium Rd Stage 3 & 4
Dwg 102 Rev 2 AJL 03-11-2023

Leading Edge Pile Zone

Specific Design Zone - Slope

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS — 1.0

FINAL CONTOURS – MINOR 0.5m INTERVALS

UDERFILL DRAINS

RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

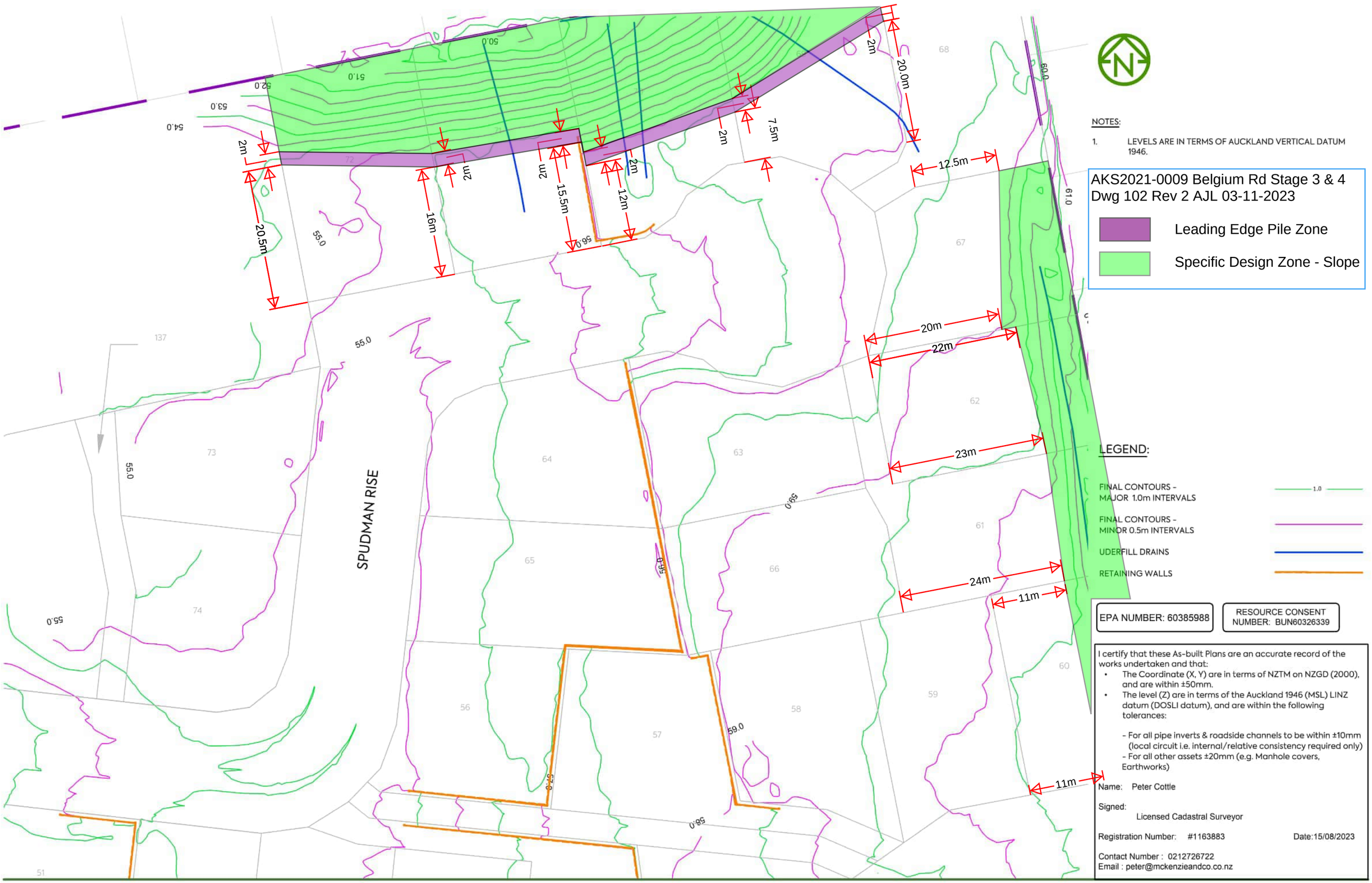
PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS
EARTHWORKS
FINISH CONTOUR PLAN
SHEET 2

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-202 REV: B



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

AKS2021-0009 Belgium Rd Stage 3 & 4
Dwg 102 Rev 2 AJL 03-11-2023

Leading Edge Pile Zone

Specific Design Zone - Slope

LEGEND:

FINAL CONTOURS – MAJOR 1.0m INTERVALS

FINAL CONTOURS – MINOR 0.5m INTERVALS

UDERFILL DRAINS

RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

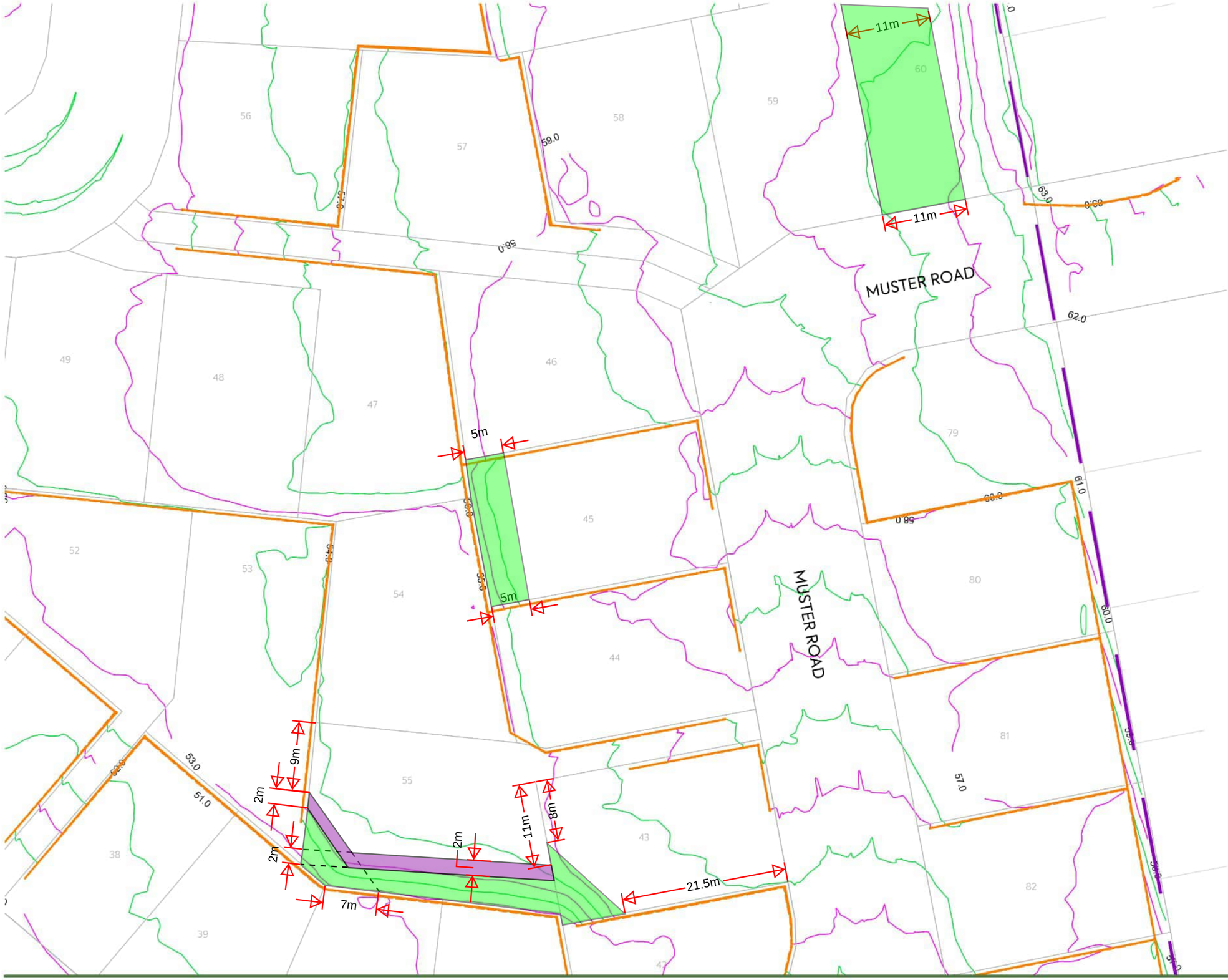
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 3

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-203 REV: B

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_11781\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-200.DWG



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

AKS2021-0009 Belgium Rd Stage 3 & 4
Dwg 102 Rev 2 AJL 03-11-2023

- Leading Edge Pile Zone
- Specific Design Zone - Slope

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- UDERFILL DRAINS
- RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:
Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

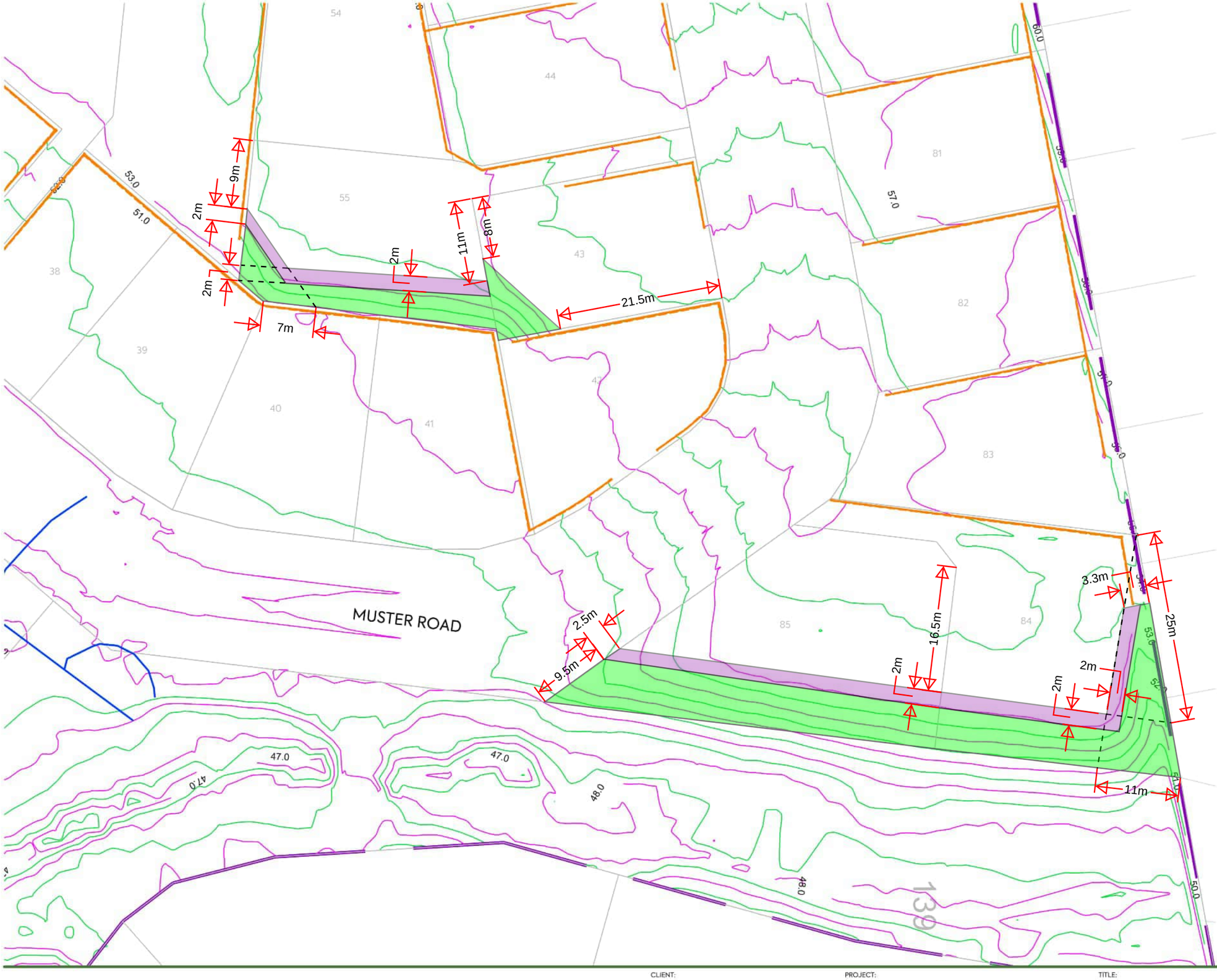
TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 4

PURPOSE OF ISSUE: AS BUILT

SCALE: 1:500m
DO NOT SCALE

DRAWING NO: 2398-3-AB-204 REV: B

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_11781\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-200.DWG



NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.

AKS2021-0009 Belgium Rd Stage 3 & 4
Dwg 102 Rev 2 AJL 03-11-2023

- Leading Edge Pile Zone
- Specific Design Zone - Slope

LEGEND:

- FINAL CONTOURS – MAJOR 1.0m INTERVALS
- FINAL CONTOURS – MINOR 0.5m INTERVALS
- UDERFILL DRAINS
- RETAINING WALLS

EPA NUMBER: 60385988

RESOURCE CONSENT NUMBER: BUN60326339

I certify that these As-built Plans are an accurate record of the works undertaken and that:

- The Coordinate (X, Y) are in terms of NZTM on NZGD (2000), and are within ±50mm.
- The level (Z) are in terms of the Auckland 1946 (MSL) LINZ datum (DOSLI datum), and are within the following tolerances:

  - For all pipe inverts & roadside channels to be within ±10mm (local circuit i.e. internal/relative consistency required only)
  - For all other assets ±20mm (e.g. Manhole covers, Earthworks)

Name: Peter Cottle

Signed:

Licensed Cadastral Surveyor

Registration Number: #1163883 Date:15/08/2023

Contact Number : 0212726722
Email : peter@mckenzieandco.co.nz

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
B	ADDED UNDERFILL DRAINS	NC	DW	DS	04/10/23
A	FIRST ISSUE	NC	DW	PC	21/08/23

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3&4 AS-BUILT DRAWINGS EARTHWORKS FINISH CONTOUR PLAN SHEET 5

PURPOSE OF ISSUE: AS BUILT

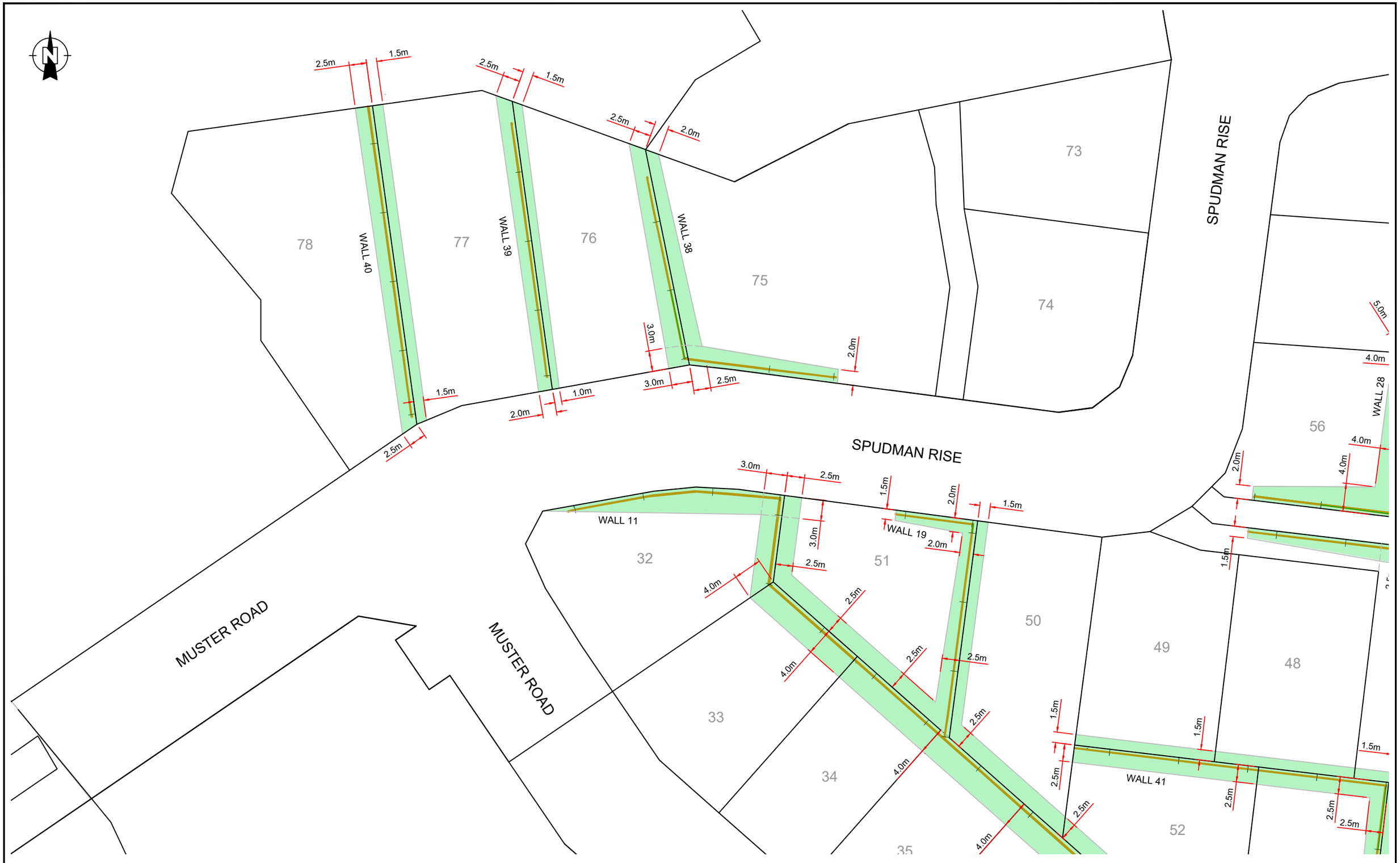
SCALE: 1:500m

DO NOT SCALE

DRAWING NO: 2398-3-AB-205

REV: B

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_11781\DRAWINGS\STAGE 3\STAGE 3 AS BUILT\2398-3-AB-200.DWG



CMW Geosciences — Great People | Practical Solutions	CLIENT: **CABRA PUKEKOHE JV**	DRAWN: GB	PROJECT: AKS2021-0009
	PROJECT: **3 BELGIUM ROAD STAGE 3 & 4 PUKEKOHE**	CHECKED: AL	DRAWING: 105
		REVISION: 1	SCALE: 1:500
	TITLE: **SID WALL PLANS (1 OF 5)**	DATE: 27/10/2023	SHEET: A3 L

\\CMWGEOSCIENCES.SHAREPOINT.COM@SSL\DAVWWWROOT\SITES\TICHSTEAM\SHARED DOCUMENTS\SOUTH AUCKLAND PROJECT DOCUMENTS\2021\AKS2021-0009 3 BELGIUM ROAD, PUKEKOHE\DRAWINGS\STAGE 3 & 4\AKL2021-0009 SID WALL PLANS.DWG

SPUDMAN RISE

MUSTER ROAD

WALL 11

WALL 19

WALL 41

WALL 18

WALL 16

WALL 17

WALL 14

WALL 12

WALL 13

32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 57 58

Specific Design Zone - Walls

CLIENT: CABRA PUKEKOHE JV		DRAWN: GB	PROJECT: AKS2021-0009
PROJECT: 3 BELGIUM ROAD STAGE 3 & 4 PUKEKOHE		CHECKED: AL	DRAWING: 106
		REVISION: 1	SCALE: 1:500
TITLE: SID WALL PLANS (2 OF 5)		DATE: 27/10/2023	SHEET: A3 L

CMW Geosciences
Great People | Practical Solutions

\\CMWGEOSCIENCES.SHAREPOINT.COM@SSL\DAVWWWROOT\SITES\TICHSTEAM\SHARED DOCUMENTS\SOUTH AUCKLAND PROJECT DOCUMENTS\2021\AKS2021-0009 3 BELGIUM ROAD, PUKEKOHE\DRAWINGS\STAGE 3 & 4\AKL2021-0009 SID WALL PLANS.DWG

CMW Geosciences Great People | Practical Solutions	CLIENT: **CABRA PUKEKOHE JV**	DRAWN: GB	PROJECT: AKS2021-0009
	PROJECT: **3 BELGIUM ROAD STAGE 3 & 4 PUKEKOHE**	CHECKED: AL	DRAWING: 107
		REVISION: 1	SCALE: 1:500
	TITLE: **SID WALL PLANS (3 OF 5)**	DATE: 27/10/2023	SHEET: A3 L

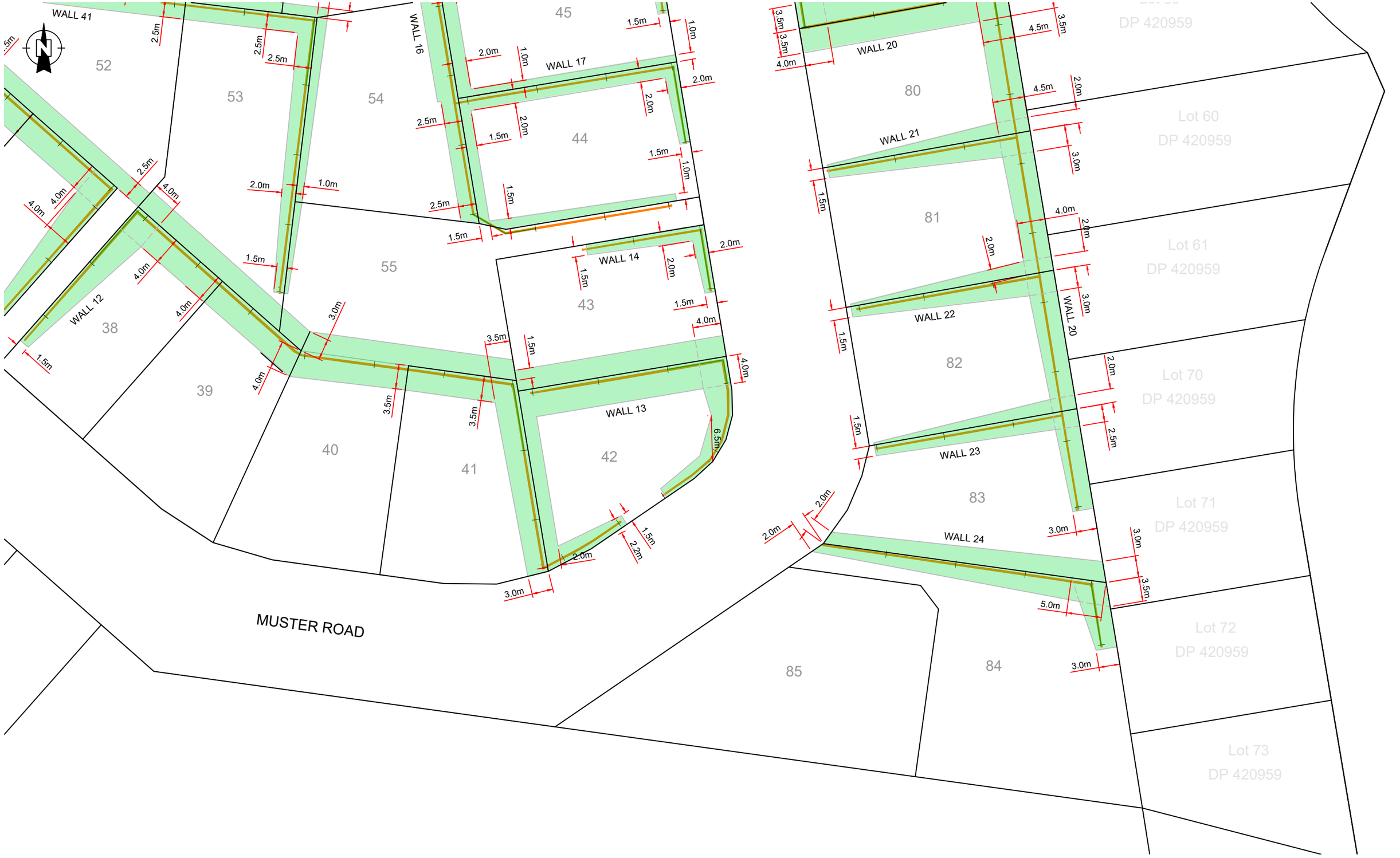
\\CMWGEOSCIENCES.SHAREPOINT.COM@SSL\DAVWWWROOT\SITES\TICHSTEAM\SHARED DOCUMENTS\SOUTH AUCKLAND PROJECT DOCUMENTS\2021\AKS2021-0009 3 BELGIUM ROAD, PUKEKOHE\DRAWINGS\STAGE 3 & 4\AKL2021-0009 SID WALL PLANS.DWG

Specific Design Zone - Walls

CMW Geosciences
Great People | Practical Solutions

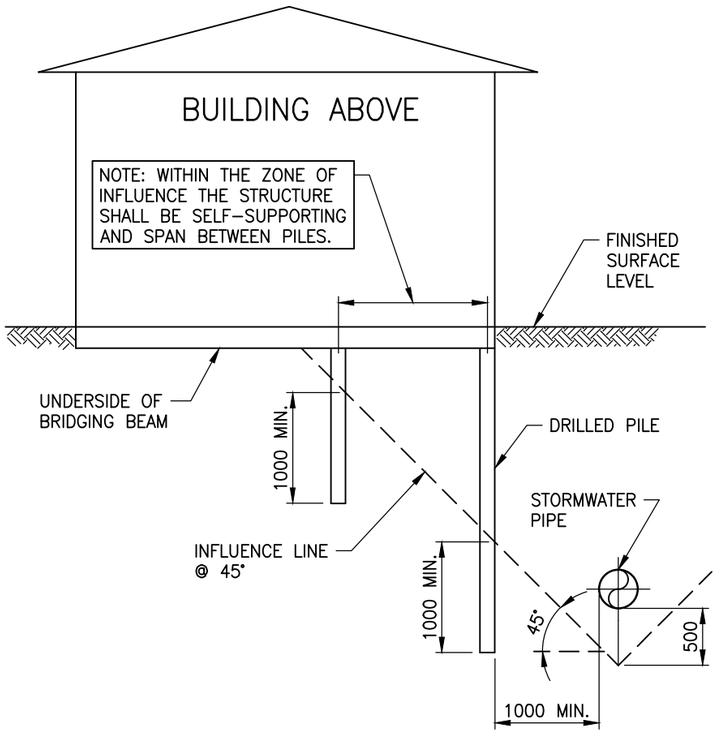
CLIENT: **CABRA PUKEKOHE JV**		DRAWN: GB	PROJECT: AKS2021-0009
PROJECT: **3 BELGIUM ROAD STAGE 3 & 4 PUKEKOHE**		CHECKED: AL	DRAWING: 108
		REVISION: 1	SCALE: 1:500
TITLE: **SID WALL PLANS (4 OF 5)**		DATE: 27/10/2023	SHEET: A3 L

\\CMWGEOSCIENCES.SHAREPOINT.COM@SSL\DAVWWWROOT\SITES\TICHSTEAM\SHARED DOCUMENTS\SOUTH AUCKLAND PROJECT DOCUMENTS\2021\AKS2021-0009 3 BELGIUM ROAD, PUKEKOHE\DRAWINGS\STAGE 3 & 4\AKL2021-0009 SID WALL PLANS.DWG



CMW Geosciences — Great People | Practical Solutions	CLIENT: **CABRA PUKEKOHE JV**	DRAWN: GB	PROJECT: AKS2021-0009
	PROJECT: **3 BELGIUM ROAD STAGE 3 & 4 PUKEKOHE**	CHECKED: AL	DRAWING: 109
		REVISION: 1	SCALE: 1:500
	TITLE: **SID WALL PLANS (5 OF 5)**	DATE: 27/10/2023	SHEET: A3 L

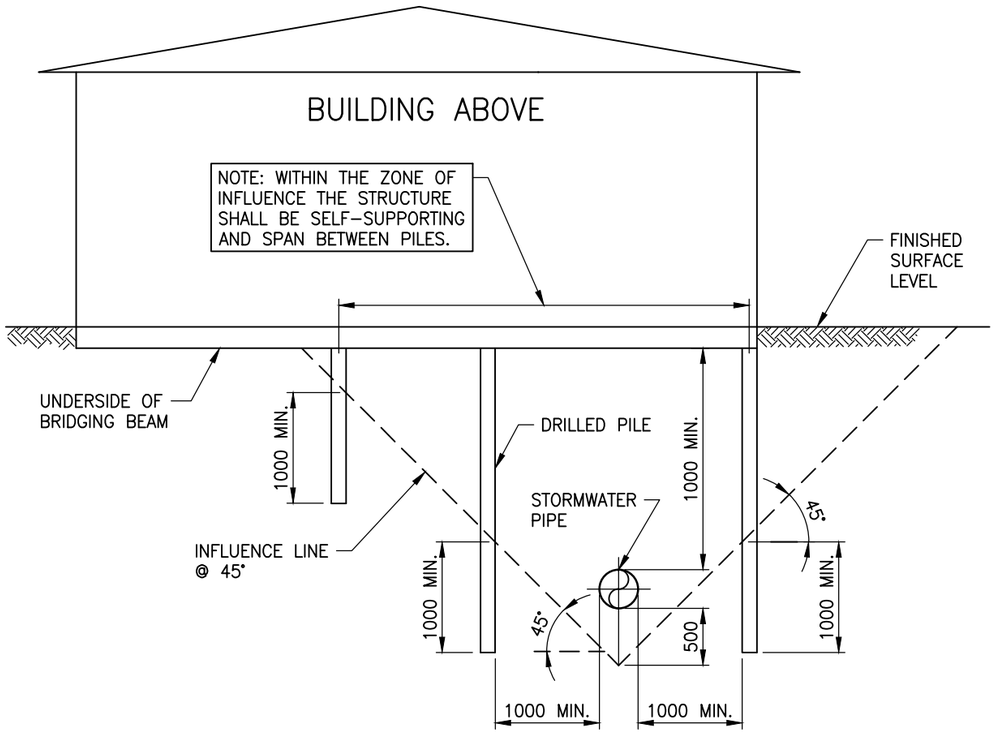
\\CMWGEOSCIENCES.SHAREPOINT.COM@SSL\DAVWWWROOT\SITES\TICHSTEAM\SHARED DOCUMENTS\SOUTH AUCKLAND PROJECT DOCUMENTS\2021\AKS2021-0009 3 BELGIUM ROAD, PUKEKOHE\DRAWINGS\STAGE 3 & 4\AKL2021-0009 SID WALL PLANS.DWG



BUILD CLOSE

"BUILD CLOSE" NOTES:

1. OUTSIDE ZONE OF INFLUENCE, NORMAL FOUNDATION REQUIREMENTS APPLY.
2. SPECIFIC APPROVAL IS REQUIRED FROM AUCKLAND COUNCIL IF BUILDING IS ADJACENT TO PIPES LARGER THAN 375mm INTERNAL DIAMETER, OR GREATER THAN 2.0m DEEP.
3. BUILDING SHALL GENERALLY BE OUTSIDE ALL OVERLAND FLOW PATHS AND FLOODPLAINS. SEE SECTION 4.3.5.6 AND 4.3.5.7 OF THE SWCoP FOR FURTHER DETAILS.
4. PILES SHALL BE CONSTRUCTED TO A DEPTH OF 1.0m BELOW INFLUENCE LINE.



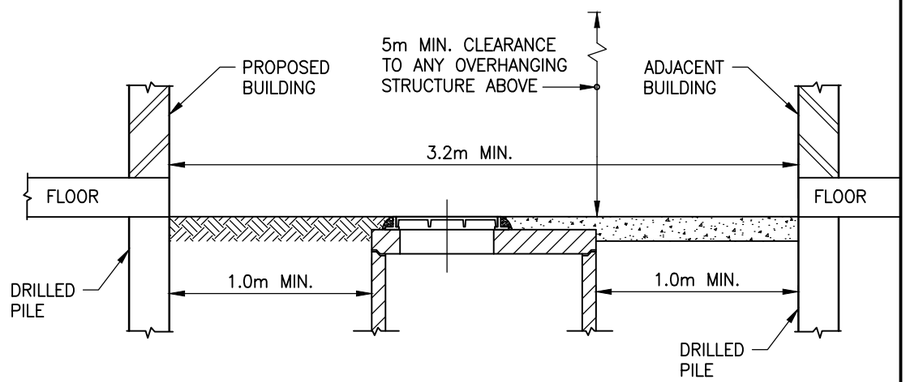
BUILD OVER

"BUILD OVER" NOTES:

1. OUTSIDE ZONE OF INFLUENCE, NORMAL FOUNDATION REQUIREMENTS APPLY.
2. THE DETAIL APPLIES TO STORMWATER PIPES 375mm NOMINAL DIAMETER OR LESS.
3. BRIDGING OVER PIPES LARGER THAN 375mm NOMINAL DIAMETER IS GENERALLY NOT ALLOWED.
4. PILES SHALL BE CONSTRUCTED TO A DEPTH OF 1.0m BELOW INFLUENCE LINE.
5. BRIDGING IS GENERALLY NOT ALLOWED OVER PIPES WHERE CLEAR VERTICAL SEPARATION DISTANCE FROM TOP OF PIPE TO UNDERSIDE OF BRIDGING BEAM IS LESS THAN 1.0m.

GENERAL NOTES:

1. THE INFORMATION ON THIS PAGE IS INTENDED TO SHOW EXAMPLES OF TYPICAL SCENARIOS AND SHALL BE USED FOR GENERAL GUIDANCE PURPOSES ONLY. SIGNIFICANT VARIATIONS ON A SITE-BY-SITE BASIS ARE TO BE EXPECTED AND IT IS IN NO WAY IMPLIED THAT MEETING ANY OF THESE REQUIREMENTS WILL GUARANTEE APPROVAL.
2. REQUIREMENTS FOR FOUNDATION DESIGN, ETC. APPLY TO BOTH SIDES OF THE PIPE.
3. NO DRIVEN PILES ARE PERMITTED WITHIN 10m OF BRICK STORMWATER STRUCTURES, OR WITHIN 5m OF ALL OTHER STORMWATER STRUCTURES.
4. SPECIFIC APPROVAL IS REQUIRED FROM AUCKLAND COUNCIL FOR DRIVEN PILES IN PARTIALLY DRILLED HOLES, WITHIN THE 5m-10m ZONE.
5. PILES THAT MAY BE REQUIRED TO RESIST HORIZONTAL FORCES WILL REQUIRE SPECIFIC DESIGN.
6. PILE/FOOTING LOCATION POINT MUST BE BELOW 45° "ZONE OF INFLUENCE".
7. ALL MANHOLES SHALL HAVE 24 HOURS UNOBSTRUCTED ACCESS.
8. MANHOLES IN BASEMENTS, OR IN LOCATIONS WHERE SUFFICIENT CLEARANCE IS UNAVAILABLE, ARE NOT PERMITTED.
9. ALL PIPE BUILDOVERS WILL REQUIRE APPROVAL BY AUCKLAND COUNCIL.
10. REFER TO SECTION 4.3.23 OF THE SWCoP FOR PIPE BUILDOVER REQUIREMENTS.
11. FOR MANHOLES GREATER THAN 4m DEEP OR LARGER THAN 1200mm DIA. SPECIFIC DESIGN (INCLUDING CLEARANCE REQUIREMENTS) IS REQUIRED.



MANHOLE CONSTRUCTION CLEARANCE

STORMWATER CODE OF PRACTICE
STANDARD DETAILS

REVISION: 2
REV DATE: 1 NOVEMBER 2015
CAD FILENAME: AC-STD-SW22.DWG

AUCKLAND COUNCIL

STORMWATER PIPE AND MANHOLE CONSTRUCTION CLEARANCE REQUIREMENTS

MANHOLES NEAR BUILDINGS AND BUILDING CLOSE OVER PIPES

ENVIRONMENTAL-SW

ORIGINAL SCALE A3
SCALE: N.T.S.
DRAWING SET SWCoP
SHEET 1 OF 1
DRAWING No. SW22
REV 2

PLOT DATE 12/8/2015 11:54 AM I:\AENW\Projects\AE04840 AC CoP Ch1\04 Deliverables\Drawings\AC-STD-SW22.dwg

APPENDIX D: FIELD TEST DATA

ROADTEST LTD

15B Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Approved Signatory - Zach Hooton

Job Name : **Belgium Road Stage 2**
Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754
Attention : Richard Tichborne

Project No. : 21 0055 00
Date of Order : 15.03.21

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Assumed	AIR VOIDS %	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
~~22~~	~~AAA~~	~~19.04.21~~	~~See Plan~~	~~150~~	~~1.69~~	~~53.9~~	~~1.10~~	~~2.7~~	~~0.5~~	~~163~~	~~163~~	~~180~~	~~188~~	~~-~~	
~~23~~	~~DW~~	~~23.04.21~~	~~See Plan~~	~~150~~	~~1.66~~	~~53.0~~	~~1.08~~	~~2.7~~	~~2.3~~	~~146~~	~~146~~	~~146~~	~~153~~	~~-~~	
~~24~~	~~DW~~	~~23.04.21~~	~~See Plan~~	~~150~~	~~1.69~~	~~55.5~~	~~1.09~~	~~2.7~~	~~0.0~~	~~163~~	~~156~~	~~167~~	~~180~~	~~-~~	
~~25~~	~~AAA~~	~~28.04.21~~	~~See Plan~~	~~150~~	~~1.63~~	~~58.5~~	~~1.03~~	~~2.7~~	~~1.7~~	~~146~~	~~163~~	~~193+~~	~~146~~	~~-~~	
~~26~~	~~AAA~~	~~28.04.21~~	~~See Plan~~	~~150~~	~~1.65~~	~~49.6~~	~~1.10~~	~~2.7~~	~~4.3~~	~~193+~~	~~193+~~	~~193+~~	~~193+~~	~~-~~	
~~27~~	~~AAA~~	~~03.05.21~~	~~See Plan~~	~~150~~	~~1.59~~	~~50.9~~	~~1.05~~	~~2.7~~	~~7.3~~	~~193+~~	~~193+~~	~~193+~~	~~193+~~	~~50.58~~	
~~28~~	~~AAA~~	~~03.05.21~~	~~See Plan~~	~~150~~	~~1.68~~	~~45.6~~	~~1.15~~	~~2.7~~	~~4.8~~	~~180~~	~~180~~	~~180~~	~~193+~~	~~51.50~~	
~~29~~	~~AAA~~	~~05.05.21~~	~~See Plan~~	~~150~~	~~1.68~~	~~55.6~~	~~1.08~~	~~2.7~~	~~0.0~~	~~193+~~	~~193+~~	~~193+~~	~~193+~~	~~-~~	
~~30~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.66~~	~~49.6~~	~~1.11~~	~~2.7~~	~~3.9~~	~~193+~~	~~193+~~	~~193+~~	~~193+~~	~~56.13~~	
~~31~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.70~~	~~50.5~~	~~1.13~~	~~2.7~~	~~1.3~~	~~180~~	~~193+~~	~~180~~	~~180~~	~~52.18~~	
~~32~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.70~~	~~49.2~~	~~1.14~~	~~2.7~~	~~1.6~~	~~193+~~	~~154~~	~~180~~	~~193+~~	~~52.51~~	
~~33~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.68~~	~~52.3~~	~~1.10~~	~~2.7~~	~~1.3~~	~~163~~	~~180~~	~~154~~	~~163~~	~~51.07~~	
~~34~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.70~~	~~53.2~~	~~1.11~~	~~2.7~~	~~0.0~~	~~163~~	~~180~~	~~154~~	~~163~~	~~51.04~~	
~~35~~	~~AAA~~	~~07.05.21~~	~~See Plan~~	~~150~~	~~1.63~~	~~51.8~~	~~1.07~~	~~2.7~~	~~4.7~~	~~146~~	~~146~~	~~146~~	~~193+~~	~~-~~	
~~36~~	~~AS~~	~~27.05.21~~	~~See Plan~~	~~150~~	~~1.66~~	~~53.4~~	~~1.08~~	~~2.7~~	~~2.1~~	~~156~~	~~140~~	~~159~~	~~162~~	~~-~~	
~~37~~	~~AS~~	~~27.05.21~~	~~See Plan~~	~~150~~	~~1.70~~	~~49.5~~	~~1.14~~	~~2.7~~	~~1.6~~	~~171~~	~~149~~	~~143~~	~~159~~	~~-~~	
~~38~~	~~AS~~	~~02.06.21~~	~~See Plan~~	~~150~~	~~1.59~~	~~49.2~~	~~1.06~~	~~2.7~~	~~8.4~~	~~146~~	~~171~~	~~175~~	~~222+~~	~~-~~	
~~39~~	~~AS~~	~~04.06.21~~	~~See Plan~~	~~150~~	~~1.66~~	~~54.0~~	~~1.08~~	~~2.7~~	~~1.8~~	~~200~~	~~222++~~	~~222++~~	~~222++~~	~~-~~	
40	AAA	05.11.21	See Plan	150	1.71	48.5	1.15	2.7	1.7	155	170	202	170	-	
41	AAA	05.11.21	See Plan	150	1.74	48.4	1.17	2.7	0.0	155	148	170	152	-	
42	AAA	05.11.21	See Plan	150	1.73	49.0	1.16	2.7	0.1	185	185	170	170	-	
43	AAA	18.11.21	See Plan	150	1.74	41.6	1.23	2.7	3.2	212+	212+	212+	212+	49.21	

Checked By: ZH
Date: 09.05.22

NT = Not Tested

ROADTEST LTD

15B Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Approved Signatory - Zach Hooton

Job Name : **Belgium Road Stage 2**
Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754
Attention : Richard Tichborne

Project No. : 21 0055 00
Date of Order : 15.03.21

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Assumed	AIR VOIDS %	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
44	AAA	18.11.21	See Plan	150	1.77	48.6	1.19	2.7	0.0	155	155	170	170	48.52	
45	AAA	18.11.21	See Plan	150	1.71	56.0	1.10	2.7	0.0	141	155	155	170	48.36	
46	AS	30.11.21	See Plan	150	1.72	49.0	1.15	2.7	0.9	222++	222++	222++	222++	49.10	
47	AS	30.11.21	See Plan	150	1.71	46.1	1.17	2.7	2.9	175	184	222++	222++	50.00	
48	AS	30.11.21	See Plan	150	1.77	44.7	1.23	2.7	0.0	168	190	222++	222++	50.40	
~~49~~	~~AAA~~	~~07.12.21~~	~~See Plan~~	~~150~~	~~1.70~~	~~44.2~~	~~1.18~~	~~2.7~~	~~4.4~~	~~141~~	~~152~~	~~163~~	~~155~~	~~48.50~~	
50	AS	09.12.21	See Plan	150	1.75	48.3	1.18	2.7	0.0	222++	222++	222++	222++	-	0.2m below FL
51	AS	09.12.21	See Plan	150	1.73	46.6	1.18	2.7	1.4	178	187	222+	222+	-	0.2m below FL
52	AS	09.12.21	See Plan	150	1.75	38.2	1.27	2.7	4.5	222++	222++	222++	222++	-	0.2m below FL
53	AAA	11.01.22	See Plan	150	1.77	41.8	1.25	2.7	1.6	212+	212+	212+	212+	-	
54	AS	19.01.22	See Plan	150	1.76	40.0	1.26	2.7	3.2	222++	222++	222++	222++	51.18	
55	AS	19.01.22	See Plan	150	1.80	38.6	1.29	2.7	2.0	222++	222++	222++	222++	49.70	
~~56~~	~~CL~~	~~26.01.22~~	~~See Plan~~	~~150~~	~~1.79~~	~~36.3~~	~~1.31~~	~~2.7~~	~~3.6~~	~~212+~~	~~212+~~	~~212+~~	~~212+~~	-	Lot 76 - Finished level
~~57~~	~~CL~~	~~26.01.22~~	~~See Plan~~	~~150~~	~~1.72~~	~~40.8~~	~~1.22~~	~~2.7~~	~~5.2~~	~~212+~~	~~212+~~	~~212+~~	~~212+~~	-	Lot 500 - Finished level
58	AS	28.01.22	See Plan	150	1.73	47.3	1.17	2.7	1.0	190	222++	222++	222++	-	
59	AS	28.01.22	See Plan	150	1.74	44.1	1.21	2.7	2.0	222++	222++	222++	222++	-	
~~60~~	~~AS~~	~~28.01.22~~	~~See Plan~~	~~150~~	~~1.79~~	~~36.5~~	~~1.31~~	~~2.7~~	~~3.5~~	~~222++~~	~~222++~~	~~222++~~	~~222++~~		
61	AAA	08.02.22	See Plan	150	1.74	47.4	1.18	2.7	0.5	212+	212+	212+	212+	-	Finished Level
~~62~~	~~AAA~~	~~10.02.22~~	~~See Plan~~	~~150~~	~~1.72~~	~~39.8~~	~~1.23~~	~~2.7~~	~~5.7~~	~~204~~	~~202~~	~~212+~~	~~212+~~	-	On grade
63	CL	15.02.22	See Plan	150	1.69	42.0	1.19	2.7	6.2	212++	212++	212++	212++	-	
64	CL	15.02.22	See Plan	150	1.66	46.3	1.14	2.7	5.3	212++	212++	212++	212++	-	
65	CL	16.02.22	See Plan	150	1.57	52.8	1.03	2.7	7.5	133	180	152	141	-	

Checked By: ZH
Date: 09.05.22

NT = Not Tested

ROADTEST LTD

15B Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Approved Signatory - Zach Hooton

Job Name : **Belgium Road Stage 2**
Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754
Attention : Richard Tichborne

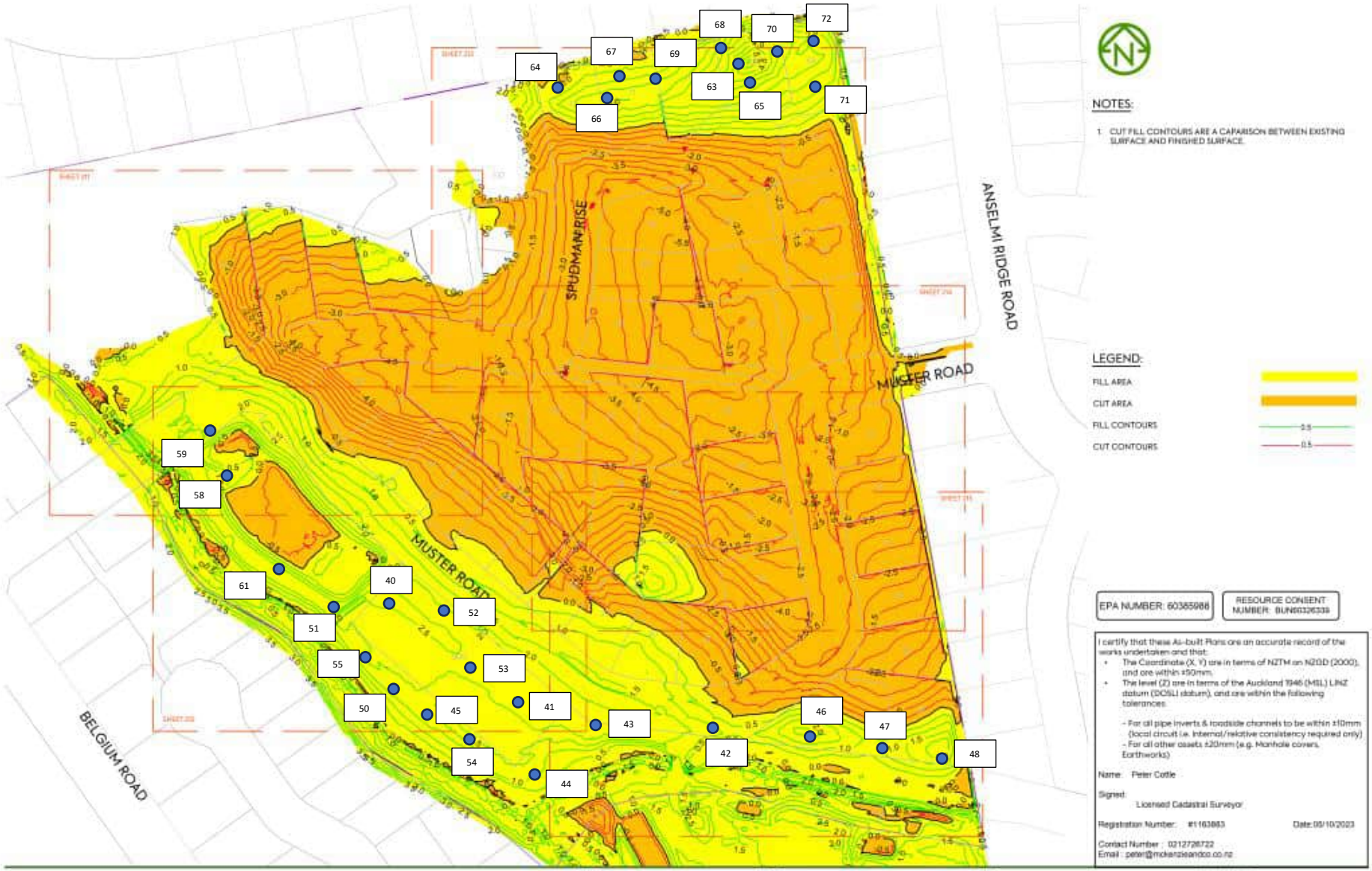
Project No. : 21 0055 00
Date of Order : 15.03.21

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Assumed	AIR VOIDS %	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
66	CL	16.02.22	See Plan	150	1.62	52.6	1.06	2.7	4.8	152	195	212+	170	-	
67	AS	18.02.22	See Plan	150	1.76	34.0	1.32	2.7	6.5	222++	222++	222++	222++	-	Lot 71 - 1.5m below finished level
68	AAA	21.02.22	See Plan	150	1.74	45.8	1.19	2.7	1.2	185	202	202	212+	-	Lot 69
69	AAA	21.02.22	See Plan	150	1.62	54.5	1.05	2.7	3.8	212+	212+	212+	212+	-	Lot 71 - 1.5m below finished level
70	AAA	23.02.22	See Plan	150	1.69	53.5	1.10	2.7	0.5	202	205	212+	202	57.72	Lot 69
71	AAA	25.02.22	See Plan	150	1.68	52.2	1.11	2.7	1.3	141	185	202	170	-	1.1m below finished level
72	AAA	02.03.22	See Plan	150	1.74	46.1	1.19	2.7	0.8	212+	212+	212+	212+	-	Lot 68
~~73~~	~~AAA~~	~~01.04.22~~	~~See Plan~~	~~150~~	~~1.66~~	~~51.1~~	~~1.10~~	~~2.7~~	~~3.5~~	~~212+~~	~~212+~~	~~212+~~	~~170~~	~~-~~	Lot 99
~~74~~	~~AS~~	~~05.04.22~~	~~See Plan~~	~~150~~	~~1.67~~	~~50.5~~	~~1.11~~	~~2.7~~	~~3.1~~	~~222++~~	~~222++~~	~~222++~~	~~222++~~	~~-~~	Lot 99
~~75~~	~~AS~~	~~05.04.22~~	~~See Plan~~	~~150~~	~~1.64~~	~~54.0~~	~~1.06~~	~~2.7~~	~~3.3~~	~~222++~~	~~222++~~	~~222++~~	~~222++~~	~~-~~	Lot 110
~~76~~	~~AS~~	~~11.04.22~~	~~See Plan~~	~~150~~	~~1.72~~	~~46.1~~	~~1.18~~	~~2.7~~	~~2.1~~	~~222++~~	~~222++~~	~~222++~~	~~222++~~	~~-~~	Lot 111
~~77~~	~~AS~~	~~11.04.22~~	~~See Plan~~	~~150~~	~~1.69~~	~~48.6~~	~~1.14~~	~~2.7~~	~~2.4~~	~~159~~	~~175~~	~~222+~~	~~222+~~	~~-~~	Lot 110

Checked By: ZH
Date: 09.05.22

NT = Not Tested

Belgium Road Stages 3 & 4
Earthworks Test Location Plan
05.11.21 – 02.03.22



152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

Job Name : **Belgium Road, Pukekohe**
Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754
Attention : Andrew Linton

Project No. : 22 0104 23
Date of Order : 24.03.23

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Assumed	AIR VOIDS %	FIELD SHEAR STRENGTH in kPa				RL (m)	EASTING	NORTHING	NOTES
1	KC	24.03.23	See Plan	150	1.72	43.3	1.20	2.7	3.3	197++	197++	183	184	47.263	413814.06	765236.64	
2	KC	24.03.23	See Plan	150	1.67	43.2	1.17	2.7	6.4	197++	197++	197++	197++	47.343	413806.74	765245.61	
3	KC	24.03.23	See Plan	150	1.82	39.3	1.31	2.7	0.2	197++	197++	197++	197++	47.897	413775.11	765240.45	
4	KC	24.03.23	See Plan	150	1.74	41.0	1.23	2.7	3.8	197++	197++	197++	197++	47.102	413761.51	765257.22	
5	JR	27.03.23	See Plan	150	1.95	31.3	1.49	2.7	0.0	177++	177++	177++	177++	48.497	413779.68	765237.96	Stage 3 & 4
6	JR	27.03.23	See Plan	150	1.76	40.8	1.25	2.7	2.9	177++	177++	177++	177++	48.119	413763.49	765256.00	Stage 3 & 4
7	JR	27.03.23	See Plan	150	1.68	48.0	1.14	2.7	3.3	153	167	150	136	46.935	413822.34	765224.60	Nerby Pond
8	JR	27.03.23	See Plan	150	1.69	44.7	1.17	2.7	4.5	170	177+	177+	177+	48.790	413812.57	765241.07	Nerby Pond
9	JR	30.03.23	See Plan	150	1.68	52.3	1.11	2.7	1.2	97	105	103	115	48.160	413762.40	765255.20	Stage 3 & 4
10	JR	30.03.23	See Plan	150	1.85	40.7	1.32	2.7	0.0	153	153	177+	177+	48.345	413776.09	765243.72	Stage 3 & 4
11	JR	30.03.23	See Plan	150	1.64	56.2	1.05	2.7	2.1	177++	177++	177++	177++	49.342	413830.38	765226.78	North side of pond - CH 180m
12	JR	30.03.23	See Plan	150	1.75	40.2	1.25	2.7	3.7	177++	177++	177++	177++	49.198	413849.05	765193.59	East side of pond - CH 215m
~~13~~	~~JR~~	~~06.04.23~~	~~See Plan~~	~~150~~	~~1.82~~	~~38.6~~	~~1.31~~	~~2.7~~	~~0.8~~	~~177+~~	~~177++~~	~~177++~~	~~177++~~	~~48.531~~	~~413975.51~~	~~765031.06~~	~~Stage 5~~
~~14~~	~~JR~~	~~06.04.23~~	~~See Plan~~	~~150~~	~~1.76~~	~~39.5~~	~~1.26~~	~~2.7~~	~~3.7~~	~~177++~~	~~177++~~	~~177++~~	~~177++~~	~~47.846~~	~~413965.65~~	~~765021.43~~	~~Stage 6~~
~~15~~	~~JR~~	~~06.04.23~~	~~See Plan~~	~~150~~	~~1.72~~	~~44.3~~	~~1.19~~	~~2.7~~	~~2.9~~	~~114~~	~~125~~	~~136~~	~~150~~	~~47.021~~	~~413950.10~~	~~765021.20~~	~~Stage 7~~
~~16~~	~~JR~~	~~06.04.23~~	~~See Plan~~	~~150~~	~~1.62~~	~~38.6~~	~~1.17~~	~~2.7~~	~~11.9~~	~~170++~~	~~170++~~	~~170++~~	~~170++~~	~~47.172~~	~~413961.54~~	~~765015.67~~	~~Stage 8~~
~~17~~	~~KC~~	~~13.04.23~~	~~See Plan~~	~~150~~	~~1.74~~	~~43.0~~	~~1.22~~	~~2.7~~	~~2.7~~	~~140~~	~~153~~	~~152~~	~~177++~~	-			~~Stage 9~~
~~18~~	~~KC~~	~~17.04.23~~	~~See Plan~~	~~150~~	~~1.79~~	~~48.9~~	~~1.20~~	~~2.7~~	~~0.0~~	~~122~~	~~122~~	~~124~~	~~128~~	-	-	-	-
~~19~~	~~KC~~	~~17.04.23~~	~~See Plan~~	~~150~~	~~1.79~~	~~38.4~~	~~1.29~~	~~2.7~~	~~2.5~~	~~138~~	~~153~~	~~131~~	~~134~~	-	-	-	
~~20~~	~~KC~~	~~19.04.23~~	~~See Plan~~	~~150~~	~~1.77~~	~~36.2~~	~~1.30~~	~~2.7~~	~~4.9~~	~~177++~~	~~177++~~	~~177++~~	~~177++~~				~~Waste Water~~ Fill - Stage 5
~~21~~	~~KC~~	~~19.04.23~~	~~See Plan~~	~~150~~	~~1.81~~	~~35.1~~	~~1.34~~	~~2.7~~	~~3.2~~	~~177++~~	~~177++~~	~~177++~~	~~177++~~	-	-	-	~~Lot - 128~~
~~22~~	~~KC~~	~~20.04.23~~	~~See Plan~~	~~150~~	~~1.79~~	~~40.5~~	~~1.27~~	~~2.7~~	~~1.4~~	~~146~~	~~155~~	~~153~~	~~167~~	-	-	-	~~Waste water MH finish level - Stage 5~~
~~23~~	~~KC~~	~~20.04.23~~	~~See Plan~~	~~150~~	~~1.87~~	~~37.0~~	~~1.37~~	~~2.7~~	~~0.0~~	~~177++~~	~~177++~~	~~167~~	~~153~~	-	-	-	~~Lot 128~~
~~24~~	~~JR~~	~~21.04.23~~	~~See Plan~~	~~150~~	~~1.69~~	~~53.1~~	~~1.11~~	~~2.7~~	~~0.2~~	~~128~~	~~115~~	~~125~~	~~138~~	-	-	-	
~~25~~	~~JR~~	~~26.04.23~~	~~See Plan~~	~~150~~	~~1.77~~	~~47.2~~	~~1.20~~	~~2.7~~	~~0.0~~	~~128~~	~~98~~	~~91~~	~~101~~	-	-	-	
~~26~~	~~JR~~	~~26.04.23~~	~~See Plan~~	~~150~~	~~1.68~~	~~55.8~~	~~1.08~~	~~2.7~~	~~0.0~~	~~132~~	~~136~~	~~136~~	~~193~~	-			

Checked By: ZH
Date: 02.09.23

NT = Not Tested

Belgium Road Stages 3 & 4
Earthworks Test Location Plan
24.03.23 – 30.03.23

APPENDIX E: LABORATORY TEST DATA

ROADTEST LTD

Revision: 1

DETERMINATION OF THE WATER CONTENT, CONE PENETRATION LIMIT, PLASTIC LIMIT, PLASTICITY INDEX & LINEAR SHRINKAGE

TEST METHOD NZS 4402 : 1986 TEST 2.1, 2.3, 2.4, 2.5 & 2.6

Project Name :	**3 Belgium Road, Pukekohe**		
		Project No :	23 0001 48
Client :	CMW Geosciences	Page :	1 of 1
Address :	PO Box 300206 Albany, Auckland	Date of Order :	16.08.23
		Sample Method :	Hand auger
Attention :	Andrew Linton	Sample Date :	16.08.23
		Sampled By :	CMW Geosciences Ltd

Test Details :

Test performed on : Whole Sample
History : Natural

Sample No.	Location	Depth (m)	Cone Penetration (CPL)	Plastic Limit (PL)	Plasticity Index (PI)	Linear Shrinkage (LS)	Natural Water Content (%)
114R	Lot 32	0.4 to 0.8	104	63	41	23	82.0
115R	Lot 36	0.4 to 0.9	109	56	53	25	61.4
116R	Lot 41	0.4 to 0.10	133	47	86	27	63.4
117R	Lot 46	0.4 to 0.11	114	58	56	26	62.4
118R	Lot 500	0.4 to 0.12	102	52	50	22	41.8
119R	Lot 60	0.4 to 0.13	107	48	59	26	51.9
120R	Lot 66	0.4 to 0.14	103	51	52	25	55.2
121R	Lot 68	0.4 to 0.15	106	48	58	26	44.0
122R	Lot 72	0.4 to 0.16	123	52	71	29	54.1
123R	Lot 56	0.4 to 0.17	108	73	35	25	70.6
124R	Lot 75	0.4 to 0.18	99	55	44	24	44.8
125R	Lot 78	0.4 to 0.19	126	61	65	29	62.4
126R	Lot 81	0.4 to 0.20	90	68	22	24	43.7
127R	Lot 85	0.4 to 0.21	118	46	72	25	63.8
128R	Lot 50	0.4 to 0.22	136	55	81	29	59.0
129R	Lot 53	0.4 to 0.23	113	53	60	27	56.0

Tested By:	DT & ZH	Date :	17 to 29.08.23
Calculated By :	ZH	Date :	29.08.23
Checked By :	ZH	Date :	30.08.23

APPENDIX F: SETTLEMENT MONITORING DATA

NOTES :

1. CUT / FILL BETWEEN ESTIMATED SUBGRADE SURFACE POST REMOVAL OF UNSUITABLES AND FINISHED GROUND SURFACE.

2. VOLUME OF EARTHWORKS IS SOLID MEASURE:
   CUT: 76,532m³
   FILL: 24,455 m³

AREA: 5.8126 ha

LEGEND:

PROPOSED FILL

PROPOSED CUT

PROPOSED FILL (MAJOR CONTOUR) 1

PROPOSED CUT (MAJOR CONTOUR) -1

CUT/FILL (ZERO CONTOUR)

STAGE BOUNDARY

MCK10
Settlement Monitoring Plate Location

AKS2021-0009 STAGE 3 & 4 BELGIUM ROAD SETTLEMENT MONITORING LOCATION PLAN

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
I	FOR STRUCTURAL DESIGN	TDW	MFT	MFT	15/09/21
H	REVISED AS CLOUDED	NC	MFT	MFT	18/08/21

MCKENZIE & CO.

CLIENT: CABRA PUKEKOHE JV

PROJECT: 3 BELGIUM ROAD PUKEKOHE

TITLE: STAGE 3 & 4 EARTHWORKS CUT TO FILL PLAN

PURPOSE OF ISSUE: FOR INFORMATION

SCALE: 1:1250 @ A3

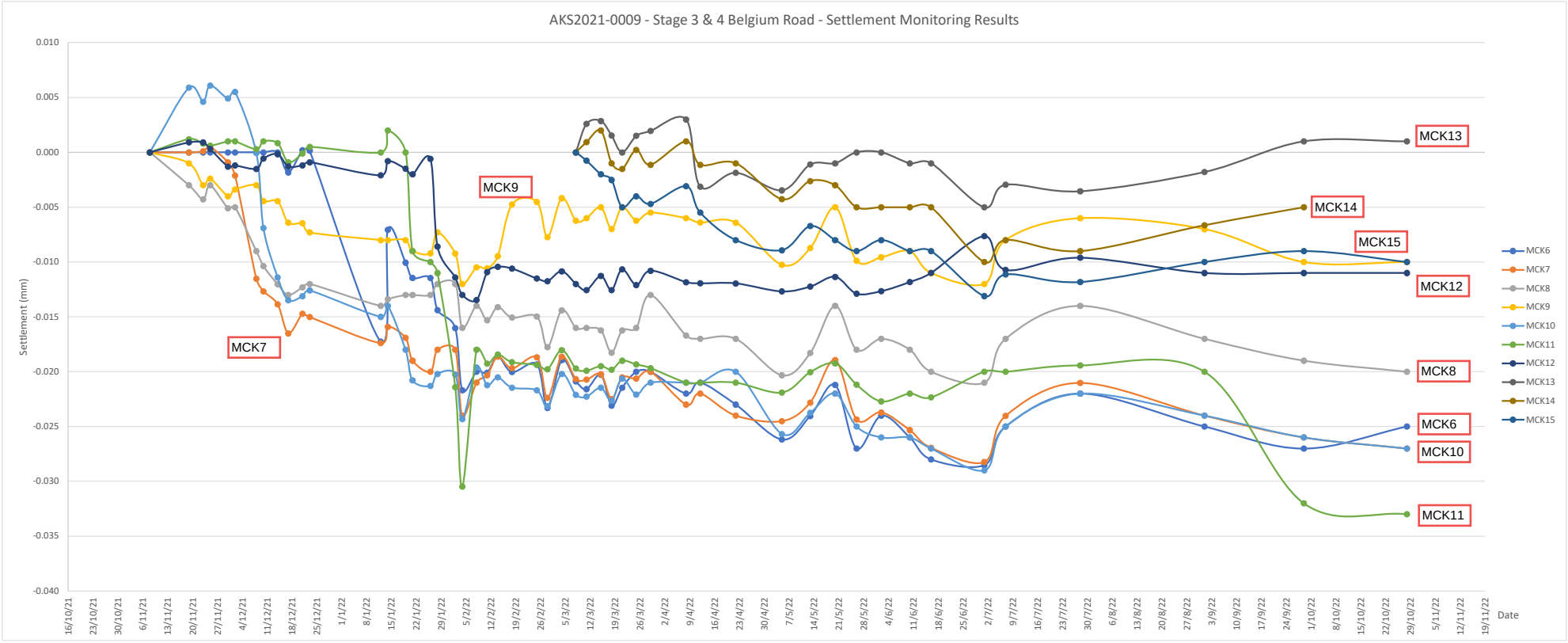
DO NOT SCALE

DRAWING NO: 2398-3-210

REV: I

PLOT DATE 2021-09-15 11:55:54 WWW.MCKENZIEANDCO.CO.NZ

C:\12DS\DATA\MCKFS01\2398 3 BELGIUM ROAD_1178\DRAWINGS\STAGE 3\2398-3-210.DWG


AKS2021-0009 - Stage 3 & 4 Belgium Road - Settlement Monitoring Results
Settlement (mm)
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
16/10/21
23/10/21
30/10/21
6/11/21
13/11/21
20/11/21
27/11/21
4/12/21
11/12/21
18/12/21
25/12/21
1/1/22
8/1/22
15/1/22
22/1/22
29/1/22
5/2/22
12/2/22
19/2/22
26/2/22
5/3/22
12/3/22
19/3/22
26/3/22
2/4/22
9/4/22
16/4/22
23/4/22
30/4/22
7/5/22
14/5/22
21/5/22
28/5/22
4/6/22
11/6/22
18/6/22
25/6/22
2/7/22
9/7/22
16/7/22
23/7/22
30/7/22
6/8/22
13/8/22
20/8/22
27/8/22
3/9/22
10/9/22
17/9/22
24/9/22
1/10/22
8/10/22
15/10/22
22/10/22
29/10/22
5/11/22
12/11/22
19/11/22
Date
MCK6
MCK7
MCK8
MCK9
MCK10
MCK11
MCK12
MCK13
MCK14
MCK15
MCK13
MCK14
MCK15
MCK9
MCK12
MCK7
MCK8
MCK6
MCK10
MCK11