

**IN THE MATTER OF** the Resource Management Act 1991  
**AND**

**IN THE MATTER OF** an application by Mainland Poultry Limited to Waikato District Council under section 88 of the Resource Management Act 1991 to undertake intensive farming, including egg laying and chicken rearing facilities in a Rural Zone, at 64 Old Road, Orini (being Pt Lot 1 DP 12365, CFR SA15/B102 and Pt Allot 450A, CFR SA190/189).

**Decision following the hearing of an application by Mainland Poultry Limited to Waikato District Council for a discretionary activity land use (Rural Zone) resource consent under the Resource Management Act 1991.**

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**Proposal (as amended pre-hearing)**

To undertake intensive farming, including egg laying and chicken rearing facilities (i.e. 6 layer and 2 rearing sheds plus a packing shed) in a Rural Zone, at 64 Old Road, Orini (being Pt Lot 1 DP 12365, CFR SA15/B102 and Pt Allot 450A, CFR SA190/189) with associated infrastructure, earthworks and landscape / screen planting - Council reference LUC0441/17. The application was heard at Ngaruawahia on 17 December 2018.

The resource consent sought is **GRANTED**. The reasons are set out below.

<b>Hearing Commissioners:</b>	Mr David Hill (Chair) and Councillor Dynes Fulton
<b>Application numbers:</b>	LUC0441/17
<b>Applicant:</b>	Mainland Poultry Limited
<b>Site addresses:</b>	64 Old Road, Orini
<b>Legal descriptions:</b>	Pt Lot 1 DP 12365, CFR SA15/B102 and Pt Allot 450A, CFR SA190/189
<b>Site area:</b>	99.209 ha <sup>1</sup>
<b>Zoning:</b>	Rural Zone within Waikato River Catchment Policy Area and Designations B16 and B 18 – Scenic Reserve, and Landscape Policy Area

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<sup>1</sup> I note that Counsel for the applicant noted that Mainland Poultry actually owns 5 sites totaling 118.1138 ha, which could be amalgamated for the purpose of any density calculation – but such is not actually proposed.

<b>Lodgement:</b>	20 March 2017
<b>Application returned:</b>	28 March 2017
<b>Revised application:</b>	15 June 2017
<b>On Hold:</b>	3 July 2017
<b>S92 Request:</b>	8 September 2017
<b>S92 information:</b>	26 July 2018
<b>Limited notification:</b>	11 September 2018
<b>Submissions closed:</b>	19 October 2018
<b>Further S92 request</b>	30 October 2018
<b>S92 information:</b>	16 November 2018
<b>Hearing commenced:</b>	17 December 2018
<b>Hearing closed:</b>	23 December 2018
<b>Appearances:</b>	<p><u>The Applicant:</u></p> <p>Mr Phil Page - Counsel  Mr Michael Guthrie – Managing Director, Mainland Poultry  Mr Jeffrey Winmill – General Manager, Agricultural, Mainland Poultry  Mr Christian McDean - Planning  Mr Donovan van Kekem – Air Quality / Odour  Ms Judith Makinson – Transport engineering  Mr Barry Knight – Civil engineering  Ms Bronwyn Rhynd – Stormwater engineering  Ms Claire Drewery – Acoustics  Ms Cora Lawton – Landscape and Visual</p> <p><u>Submitter:</u></p> <p>Mr Lachlan Muldowney – Counsel for Ferris / Aughton / van Tiel  Dr Terry Brady - Air Quality / Odour</p> <p><u>Council:</u></p> <p>Ms Bridget Parham - Counsel  Ms Christina Walker - Consultant - Reporting Planner  Ms Ella Makin - Consents Team Leader – East  Mr Jason Pene – Air Quality consultant  Mr David Bastion - Land Development Engineering Team Leader  Mr Alastair Gray – Transportation consultant  Mr Michael Graham – Landscape Architect  Ms Lynette Wainwright - Committee Secretary</p>

## Summary Decision:

1. Pursuant to section 104 and 104B of the Resource Management Act 1991, the discretionary activity land use consent application is granted.

## Introduction

2. This decision is made on behalf of the Waikato District Council (Council) by Independent Hearing Commissioner Mr David Hill (Chair) and Council RMA Commissioner Dynes Fulton, appointed and acting under delegated authority under sections 34 and 34A of the Resource Management Act 1991 (the RMA).
3. This decision contains the findings from our deliberation on the application for resource consent and has been prepared in accordance with section 113 of the RMA.
4. The application was limited notified to 7 identified owners/occupiers of adjacent properties on 11 September 2018, with submissions closing on 19 October 2018. Six submissions were received in time – 4 in opposition, 1 in support, and 1 neutral seeking further information – and 5 submitters wished to be heard. A detailed summary is provided in section 4 of the s42A report. That summary was not disputed and is adopted by us for present purposes.
5. No late submissions were received.
6. Four “submissions” were received from persons not notified and were deemed invalid by Council. No further consideration has been given to those.
7. No s104(3)(a)(ii) RMA written approvals were received.
8. The s42A RMA hearing report was prepared for Council by Ms Christina Walker, consultant planner, and made available to parties on or about 1 August 2018. Ms Walker’s overall recommendation was to grant the land use consent sought as she considered<sup>2</sup> that:

*Having considered these competing factors in the round, it is my opinion that the potential future development restrictions on two property owners is not sufficient on its own to justify a decline of consent when all other considerations support the proposal. Overall, the purpose of the RMA will best be served by granting consent.*
9. Ms Walker’s report was informed by technical reviews from Mr Dave Mansergh (landscape and visual effects), Mr Mathew Cottle (acoustic effects), Mr Jason Pene (odour effects), Mr Alastair Gray (transportation), Mr Malcolm Brown and Mr David Bastion (land development engineers), and Mr Peter Mourot (flood hazard).
10. The matter was heard in Ngaruawahia on 17 December 2018, and closed on 23 December 2018 following receipt of a final set of proposed conditions (largely agreed between the applicant and Council – but not by submitters who remained opposed).
11. Commissioners undertook a site visit on 17 December 2018, which included the properties owned by the submitters who appeared.

## Site description

12. The subject site comprises five titles (two of which are relevant to this proposal) and is located primarily on the north-western side of Old Road, with a small area located on the south side of Old Road. The site is largely flat with some undulating topography

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<sup>2</sup> Walker, s42A Report, para 11.0.8

around the perimeter of the site. Where the site borders the Mangawara Stream, there is a flood protection bund which is approximately 2 metres high.

13. The site currently functions as a dairy farm and is developed with a residential dwelling, milking shed and various farm sheds. The applicant advised that the dairy farm activity will continue in parallel with the intensive chicken rearing and egg laying activity.
14. Surrounding land uses are predominantly rural in nature with a number of lifestyle sized blocks and pastoral farming operations in the immediate vicinity. Of significance is the Taupiri Ranges to the north-west of the site, which includes native vegetation and the Mangawara Stream to the south-east of the site.

## Summary of proposal and activity status

15. As described in the s42A report<sup>3</sup>:

Under the current revised proposal, the applicant wishes to establish and operate an egg laying and chicken rearing facility comprising a total of 9 sheds with a combined foot print of 22,963.2m<sup>2</sup>. This will include:

- a) Six Layer sheds of 3,043m<sup>2</sup> each (24.35m x 125m). The sheds will be located near the north-west of the site and will be grouped into two sets of three, with the Packing shed in the middle. These sheds will each house approximately 50,000 hens aged from approximately 16 weeks to 40 weeks of age. The sheds will utilise a cage free, tiered aviary system. The sheds will be 8.485m high and constructed of 'reed green' coloursteel with non-reflective roofing. Ventilation design will be a combination of ten roof mounted chimneys and ten high stacks at the end of the sheds with a maximum height of 10m (from ground level) with roof and end wall fans. The hens will have no outdoor access.
- b) One Packing shed of 1,380m<sup>2</sup> (irregular dimensions) will be located in the middle of the six Layer sheds. The shed will be 5.1m high and will include storage areas, packing areas, staff ablutions and break areas, offices, storage and a workshop.
- c) Two Rearing sheds of 1,712m<sup>2</sup> each (107m x 16m). These sheds will be located to the south-east of the property and each shed will house approximately 50,000 birds up to 16 weeks of age. The sheds will be 5.145m high at the apex, 5.756m at the top of the ventilated ridge capping and will include six roof mounted chimneys on either side of the ridge line, and seven chimneys at the end of the building. The chimney heights will be 10.2m. The sheds will be constructed in the same materials as the six Layer sheds.

This will involve the following earthworks:

- The stripping of top soil – approximately 21,800m<sup>3</sup> (based on a 0.2m depth);
- Cut to fill = 27,000m<sup>3</sup>;
- Imported Fill = 5700m<sup>3</sup>.

Also included on the site will be:

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<sup>3</sup> S42A report, section 1.1

- a) Ten 30,000 litre water tanks located between Layer sheds 3 and 4, to the rear of the Packing shed;
  - b) Two silos with a maximum height of 8m at the end of each Layer and Packing shed (16 silos in total);
  - c) Four stormwater ponds (two at the Laying sheds and two at the Rearing sheds);
  - d) One continuous earth bund running along the length of the Laying sheds, on the eastern side (up to 6m in height);
  - e) Additional access tracks around and to the sheds; and
  - f) Native revegetation within wetland and gully systems to the north and east of the site.
16. That description was not contested and is accepted as a sufficient description for present purposes.
17. For the record we asked the applicant whether there was any current intention to pursue the original application, perhaps as a later stage 2 development if the present application is granted. Mr Guthrie responded that Mainland Poultry had no such intention. We accept that present assurance and have determined the application on that basis.
18. The site is zoned Rural in the Waikato District Plan: Waikato Section (District Plan) and is subject to the following policy overlays:
- Waikato River Catchment;
  - Designation B16 and B18 (Scenic Reserve Soil Conservation and River Control);
  - Landscape Policy Area.
19. Resource consent is required under the operative Waikato District Plan – Waikato Section 2013 as follows:
- (a) Rule 25.11B – a discretionary activity as an intensive farming activity;
  - (b) Rule 25.75 – a restricted discretionary activity as there are two dwellings (on adjoining sites) located within 300m of the boundaries of the site;
  - (c) Rule A11.1(b) - a discretionary activity as 3 bicycle spaces are required under this provision and none are provided;
  - (d) Rule A14.1(b) - a restricted discretionary activity as vehicle access, separation and sight distances are less than required; and
  - (e) Rule A14.A.1(c) - a restricted discretionary activity as it generates additional traffic movements and is not a controlled activity.
20. Overall the application has been considered as a discretionary activity. That activity status was accepted by all parties.
21. The Waikato Proposed District Plan (PDP), Stage 1 of which was notified in July 2018, has no relevant, operative rules or rules that have legal effect. As such, we

have not considered the rules of the PDP. Under that Plan the site is zoned Rural and is subject to the following overlays:

- Hamilton Basin Ecological Management Area;
- Significant Natural Area; and
- Waikato River Catchment.

22. No concurrent Regional Council consents have been applied for or are required.
23. The application has been reviewed for compliance with Regulation 5(6) of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES). Council has accepted that the NES is not applicable. We agree.

### Permitted Baseline

24. With respect to any “permitted baseline”, Ms Walker concluded that the only elements that applied related to the 2% site coverage rule (rule 25.51) - which means that 2.4% of the proposed coverage exceeds the permitted standard - and the associated visual effects of complying buildings, along with earthworks, and construction noise (rule 25.17).
25. There were two matters of disagreement:
  - (a) traffic effects; and
  - (b) the calculus for the site coverage rule.
26. With respect to traffic Ms Walker concluded<sup>4</sup> that the nature of the traffic was sufficiently dissimilar to that of normal farming / rural activity as to have different amenity effects, and therefore the 200 vpd permitted activity rule 25.16 did not apply.
27. With respect to site coverage, Mr Page submitted<sup>5</sup> that if all 5 titles held by Mainland Poultry are taken into consideration then the site coverage falls within the permitted 2% with no remainder. We note that Mr McDean<sup>6</sup> accepted Ms Walker’s assessment.
28. On the matter of the traffic effect rule 25.16, we note that this was not contested by the applicant and therefore we have no need to make a finding on the matter.
29. With respect to the site coverage matter, we agree with Ms Walker (and Mr McDean) and while Mr Page’s submission is not mathematically incorrect, the fact is that not all 5 titles are proposed to be amalgamated such that the calculus can or should take that into account. Nevertheless, we accept that Mr Page’s submission is relevant when considering the question of the *effects* of the density of development.
30. We agreed with Ms Walker that those elements can be disregarded per s104(2) of the RMA – while also noting that little actually turned on the question.

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<sup>4</sup> S42A report, paras 6.1.3 – 6.1.6

<sup>5</sup> Page, Legal submissions, paras 4 - 6

<sup>6</sup> McDean, Statement of evidence, para 3.2

## **Procedural and other matters**

31. No procedural matters were raised for our consideration.
32. We required expert conferencing between the three air quality specialists on the odour modelling undertaken – the receipt of which joint witness statement assisted us in our final determination to grant the consent sought. The particular matters at issue were:
  - (a) The configuration of the meteorological and dispersion model; and
  - (b) Odour emission rates used in the dispersion model.
33. We record our appreciation to those experts engaged in that exercise.

## **Relevant statutory provisions considered**

34. In accordance with section 104 of the RMA we have had regard to the relevant statutory provisions, including the relevant sections of Part 2, sections 104 and 104B, and s108 and s108AA with respect to conditions.

## **Relevant standards, policy statements and plan provisions considered**

35. In accordance with section 104(1)(b)(i)-(vi) of the RMA, we have had regard to the relevant policy statement and plan provisions of the documents noted below – the relevant provisions of which are assessed, variously, in Appendix 12 of the application AEE, and comprehensively in section 8.0 of Ms Walker's s42A hearing report (partly accepted by Mr McDean at paragraph 3.5 of his evidence - with two exceptions: (a) a disagreement over the interpretation as to what constitutes a "productive rural activity", and (b) the extent to which the activity can be said to use the soil resource.
36. Having reviewed those provisions, and particularly the objectives and policies, we confirm and adopt them – noting that we discuss the relatively minor interpretative differences of opinion later in this decision. No other party disputed these matters and therefore, in the interest of brevity, we do not specifically discuss those provisions further or repeat the details in this decision. Those provisions are contained in the following statutory documents:
  - Waikato Regional Policy Statement 2016;
  - Waikato District Plan – Waikato Section 2013.
37. While the Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River and the Waikato-Tainui Environmental Plan were referred to, those documents have little material relevance to this consent application.
38. We do not consider any other matter to be relevant and reasonably necessary to determine the application in accordance with section 104(1)(c) of the RMA.

## **Summary of evidence / representations / submissions heard**

### **Council**

39. The s42A RMA Hearing report by Council's reporting officer, **Ms Christina Walker** (a consultant planner), was circulated prior to the hearing and taken as read. Ms Walker

produced an Addendum to that report by way of supplementary evidence in response to the applicant's pre-circulated evidence and matters arising during the hearing – and in relation to the evidence of Mr McDean and Ms Rhynd in particular. Ms Walker confirmed that her fundamental position - i.e. to grant consent - was unchanged. In her response prior to counsel's reply, Ms Walker noted that Council accepted the conditions proposed by the applicant with the continued exception of a traffic condition relating to road seal widening on the approach to the Old Road bridge – which condition Mr Bastion, Council's Land Development Engineer, and Mr Gray (Council's traffic reviewer) continued to seek.

40. **Ms Bridget Parham**, counsel for Council, made legal submissions in response addressing three matters raised in evidence and during the hearing:
- (a) The incorrect assertion that alternative sites should have been considered – because the evidence accepted by Council concluded that there were no significant adverse effects, which is the Schedule 4 RMA threshold trigger for such a consideration;
  - (b) The weight to be placed on the reverse sensitivity restriction on activities within 300m of the boundary of a site used for an intensive farming activity; and
  - (c) The unacceptability to Council, as a third party, of a covenant condition in its favour providing written approval in respect of any application for resource consent to establish a sensitive activity on 497 Orini Road or 40 Old Road within 300m of its boundary, that would otherwise be a permitted activity.
41. **Mr Jason Pene**, air quality consultant to Council, provided a statement noting that he was broadly in agreement with Dr Brady in his methodological criticisms of Mr van Kekem's assessment - particularly as to the latter's use of odour emission rates leading to disputed predicted odour concentrations – and concluded that offensive and objectionable odours in the receiving environment were likely but were not sufficient to warrant a decline of consent. Mr Pene participated in the odour quality expert conferencing, which is discussed in more detail below.

#### **Mainland Poultry Limited**

42. Mr Philip Page, counsel, submitted that the only relevant effect arising from the buildings was the breach of the 300m separation / setback rule – and that was really an odour issue relating to the use of the buildings rather than the buildings per se; that the odour evidence was that any adverse effect was able to be managed based on Mr van Kekem's maximum Odour Unit/m<sup>3</sup> (OU) predictions at the site boundary of 3.29 OU and at the nearest sensitive receiver of 1.35 OU (both well below the apparently widely-accepted MfE *guideline* threshold for adverse odour effect of 5 OU for moderately sensitive receiving environments based on a FIDOL<sup>7</sup> factors assessment – regardless of disagreements over the modelling methodology used); and that the weight placed on the *Craddock Farms* decision<sup>8</sup> in the s42A report was misplaced because the relevant rule and associated policies are designed to protect intensive farming from reverse sensitivity effects not the other way around – which is not the point of the *Craddock*

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<sup>7</sup> That is: Frequency, Intensity, Duration, Offensiveness / Character and Location

<sup>8</sup> *Craddock Farms Limited v Auckland Council* [2016] NZEnvC 051



*Farms* decision, being in respect of notification to "...people whose property would become affected by the reverse sensitivity rule<sup>9</sup>". Regardless, Mr Page noted that the applicant offered a condition providing its written approval to residences that might otherwise be "caught" by the 300m rule. Finally, Mr Page noted the applicant's disagreement with respect to Council's proposed conditions relating to aspects of road widening and sealing.

43. In passing we note that, having had the *Craddock Farms* decision referred to us, and having read the same, we are not persuaded by Mr Page's submission that, effectively, the decision has limited relevance to the present hearing. We find there is much in that decision that is instructive for us – not the least of which is the Court's discussion about the statutory limitation of the MfE odour guideline, reliance upon theoretical odour dispersion modelling, and its concern over the mis-construction of covenants as mitigation for adverse effects (among other matters).
44. **Mr Michael Guthrie**, founding shareholder and Managing director of Mainland Poultry Limited, outlined the current regulatory context for egg production and the need to be able to meet the regulatory timeline imposed on the industry by the Animal Welfare (Care and Procedures) Regulations 2018 and the Code of Welfare: Layer Hens (2018) – copies of which were provided. That requires upgrades to any conventional cage systems by 1 January 2021 (for systems installed between 1 January 2000 and 31 December 2001 we note) and which we were told affects some 560,000 hens of production in the North Island, and for which the present application only makes up for 53% of lost production. Mr Guthrie noted that Mainland Poultry supplies approximately one third of NZ's egg supply – intensive eggs (as opposed to Barn or Organic eggs) being what he referred to as "affordable eggs".
45. **Mr Jeffrey Winmill**, shareholder and director, and General Manager of the Agricultural division of Mainland Poultry Limited, confirmed the details of the revised application and explained day-to-day operational matters relating to chick rearing and egg laying – including noise and dust control, feed management, and fly and vermin control – noting particularly the management of manure and bird carcasses as the principal sources of odour. Mr Winmill attached a number of industry management plans / protocols as evidence of industry standard requirements / best practice. In his rebuttal evidence, in response to Dr Brady, Mr Winmill elaborated on the importance of dry litter management, the differences between laying and broiler systems, and bird density.
46. **Mr Donovan van Kekem**, air quality consultant and Managing Director of NZ Air Limited, described his assessment air dispersion modelling and criteria, the existing air environment, potential for discharges to air, potential off-site effects and proposed mitigation, and response to the s42A report and submissions. Mr van Kekem concluded (as discussed in greater detail below) that the low intensity odours likely to arise would be consistent with typical rural-type odours; would be well below the MfE guideline one hour average of 5 OU/m<sup>3</sup> at the 99.5 percentile as experienced at the closest sensitive receivers (some 400m distant). Mr van Kekem had re-run the CALPUFF modelling with Mr Pene's suggested alternate configuration and reported even more conservative results to those obtained by his original modelling. Mr van

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<sup>9</sup> Page, Legal submissions, para 19

Kekem agreed with Mr Pene that regardless of their methodological differences, the overall adverse effect on receivers and the environment (both in terms of amenity and on health) was not significant. Mr van Kekem provided rebuttal evidence in response to Dr Brady's evidence – terrain effects in the AERMOD view model and odour emission rates, discussed further below – and participated in the expert air quality conference.

47. **Ms Cora Lawton**, Principal Landscape Architect at Lawton Landscape Architects, gave evidence on the site context, associated landscape values, mitigation measures proposed, visual effects, and her assessment with respect to the relevant statutory planning provisions. She noted that Council's peer reviewer, Mr David Mansergh, agreed with her overall assessment. Ms Lawton was satisfied that the enhanced wetland planting proposed, along with the up to 6m high earth bund and screen planting (1m minimum height at planting) between the layer sheds and the Mangawara Stream, would appropriately mitigate any adverse landscape or visual effects. She provided a detailed assessment from surrounding residential properties on Old, Orini, Moss and Uapoto Roads based on 10 identified viewshafts – which included the principal submitters' properties. Ms Lawton accepted that the proposed development would differ from that of the surrounding landscape but was not persuaded that this was out of place in a rural zone adjoining the Taupiri Ranges landscape policy area.
48. **Ms Claire Drewery**, an acoustic consultant and Associate-Director at AECOM NZ Limited, gave evidence on the acoustic assessment and analysis undertaken and responded to submissions and the s42A report. Ms Drewery concluded that operational noise at the closest sensitive receivers (40 Old Road and 497 Orini Road) would comply with the relevant daytime and night time noise limits and that the construction work noise would be appropriately managed through an approved management plan once final design details etc are known.
49. **Ms Judith Makinson**, Transportation Manager with CKL Ltd, gave evidence about traffic and network capacity effects, road safety and visibility, and responded to the s42A report and submissions. She concluded that given the limited nature of usage on Old Road the likelihood of two vehicles meeting is very low, and that while there is a dip in Orini Road eastward of the intersection with Old Road, this does not affect safety as there is sufficient visibility of the downhill section leading up to the dip (and there is no significant issue westward of the intersection – it was accepted by Council at the hearing that the small shrub on the road boundary west of the intersection could be removed to improve visibility). Ms Makinson did not consider the effects of construction traffic – being some 470 heavy commercial vehicle movements equating to some 47 days of normal predicted operational traffic – significant. She did not consider the seal widening to 6m on the north side of the one lane bridge, sought by Council, necessary from a traffic safety perspective. Overall Ms Makinson assessed the adverse traffic effects as less than minor. Relevant draft conditions were generally agreed with Council.
50. **Mr Barry Knight**, Civil Engineering Manager with CKL Ltd, gave evidence on earthworks and the performance and condition of Old Road. Mr Knight concluded from his inspections that there will be no accelerated deterioration of the Old Road unsealed pavement due to the proposed activity (either from construction or operation); the bridge is capable of carrying the expected increase in traffic; and that the earthworks

can and should be carried out appropriately as is proposed. Mr Knight accepted that dust mitigation should be considered with respect to 40 Old Road (noting that the proposed 50m road sealing either side of the dwelling would satisfy this) and that more regular road maintenance is likely to be necessary with the increased traffic. He was not persuaded that the 6m road widening sought by Council was practicable due to adjacent road facilities such as drainage channels, and therefore did not support that council-proposed requirement.

51. **Ms Bronwyn Rhynd**, an Environmental Engineer and Director of CKL Ltd gave evidence on stormwater and flood management, the proposed use of wetland ponds for the dual purpose of stormwater treatment and attenuation, and the stormwater management strategy proposed. Ms Rhynd was satisfied that the quality of stormwater discharged from the site would meet the industry best practice standard required by the Waikato Region's Regional Infrastructure Technical Specifications. She was also satisfied that, having modelled various 100yr and 10yr flood scenarios for the Waikato River and Mangawara Stream, governed by the tailwater condition of the Waikato River, any flows into the site in such conditions would be low energy events of less than 1m/sec, which could be mitigated during final design by means such as raising the ground surface at the location of the sheds and providing safe egress/accessways. Ms Rhynd also noted that at these low flood velocities the wetlands would be unlikely to be compromised. Finally she noted that a cascade of processes including natural die off, sedimentation, filtration, predation, UV degeneration and adsorption would remove any pathogens. Ms Rhynd included a full copy of the final Stormwater Management Plan and Flood Risk Assessment (dated 3 December 2018).
52. **Mr Christian McDean**, Principal Planner and Director at Kinetic Environmental Consulting Limited, gave evidence responding, among other things, to the s42A report and submissions. Mr McDean noted that his involvement with the application only commenced in September 2018. He generally agreed with the overall conclusions drawn in the s42A report while disputing a couple of district plan interpretation matters as noted above. He provided a set of draft proposed conditions.

### **Submitters**

53. **Mr Lachlan Muldowney**, appeared as counsel for submitters Cara Ferris and Tim Aughton, and Martin and Debbie van Tiel. In his legal submissions Mr Muldowney advised that the submitters' position was that without sufficient certainty that there would be no objectionable odour beyond the boundary, the only option open to Commissioners is to decline the application. Mr Muldowney submitted that the evidence presented by the submitters created sufficient uncertainty on that point – particularly the evidence of Dr Brady which, he reminded us, recognised that even odour below the 5 OU/m<sup>3</sup> threshold could be objectionable or offensive in certain circumstances. Furthermore, he submitted that in light of that uncertainty, and consequential evidential failure, it would not be appropriate to allocate the risk to the neighbours and that applying the precautionary approach of the RMA was therefore appropriate in this instance.
54. Mr Muldowney called one expert witness, Dr Brady, noting that the submitters he represented would also present their own material.

55. **Dr Terence Brady**, air quality consultant and Director of Terry Brady Consulting Ltd., was engaged by submitter Cara Ferris to review the technical aspects of the odour assessment prepared for Mainland Poultry by NZ Air, and whether or not the assessment was a reasonable representation of what is likely to occur in reality. Dr Brady was critical of Mr van Kekem's assessment on three grounds: the choice of meteorological data; the choice of the model; and the rate of odour emissions from the activity. Dr Brady included a peer review by Cathy Nieuwenhuijsen of Golder Associates on the appropriateness of the air quality approach taken by Mr van Kekem, commissioned by Ms Ferris and dated 8 November 2017. Dr Brady participated in the expert air quality conference. Following that conferencing, Dr Brady and Mr Pene accepted that the modifications submitted by Mr van Kekem with his rebuttal evidence meant that the CALMET and CALPUFF configurations were now "appropriate". The only air quality matter on which there remained disagreement, and which is discussed specifically below, being the emission rate comparison with the Waikouaiti Farm and the proposed development, evidence on which did not persuade Dr Brady and Mr Pene that they were sufficiently similar.
56. **Dr Martin van Tiel**, a submitter and resident of 37 Moss Road and joint owner of 40 Old Road, elaborated on his submission and provided further details about the pyrotechnic business, van Tiel Pyrotechnics Limited, he operated from his property. Dr van Tiel explained that part of the property is used as a "proving ground" for his work, which he summarised is "*highly specialised, is technical and involves organised public fireworks displays, special effects for television and film productions and is contracted to ... the New Zealand Defence Force.*"<sup>10</sup>
57. On this latter point Dr van Tiel suggested that reverse noise sensitivity exists (or should exist) with respect to the proposal. We were told that this business activity had been conducted for some 21 years on the site, that relationships with neighbours was on-going and generally positive, and Dr van Tiel provided a letter report from Mr Ben Lawrence, consultant of Marshall Day Acoustics Ltd, dated 16 December 2018, which concluded (in part summary):
- *The test site at the Van Tiel Pyrotechnics property provides necessary distance attenuation and topographical screening to minimise noise at the surrounding dwellings and to generally meet the AS2187-2 guidelines<sup>11</sup>....*
  - *Noise from large pyrotechnic charges ... will be clearly noticeable at the poultry farm. Although the levels are below the AS2187-2 guidelines for commercial and industrial receivers, they are above the limits for sensitive receivers ...*
  - *Pyrotechnic activities would be noticeable inside the poultry sheds. The potential effects on the poultry are unknown as there is little available literature on this topic.*
58. Dr van Tiel also tabled a confidential exhibit from the New Zealand Defence Force confirming his company's exclusive supplier status.
59. Dr van Tiel's evidence also covered the more routine concerns about rural character and amenity, odour (including an exhibit from Dr Elizabeth Somervell of NIWA

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<sup>10</sup> Van Tiel, Statement of evidence, para 4

<sup>11</sup> Australian Standard AS2187.2-2006: Explosives – Storage and Use, Part 2 – Use of Explosives

regarding the meteorology of the area and the likelihood of fog conditions at the site), traffic, stormwater and roof collected potable water, noise, and recreation. A number of related exhibits were also provided.

60. Neither Mr Lawrence nor Dr Somervell were called or appeared as witnesses.
61. **Ms Cara Ferris**, resident owner of 497 Orini Road, elaborated on her submission, relating her experience with the applicant, concerns over traffic, rural character, land use pressure, and consequences on her outlook and general amenity provided by the existing countryside and Taupiri Ranges backdrop.
62. **Mr Laurie Weakes**, resident of 64 Old Road and previous estate trustee of the property sold to and now owned by the applicant. Mr Weakes gave his opinion about the appropriateness of the proposed activity on the land, noting the longer-term potential risk of flooding because of silting up of the lower reaches of the Waikato River. He also advised that between 1984 and 2000 he used to regularly fly from a paddock on the property and that the turbulent air was minimal beyond 200m from the bushline. Mr Weakes noted that he had not been asked to appear and did so of his own volition.

### **Principal issues in contention**

63. In terms of section 104(1)(a) of the RMA regarding the actual and potential effects of allowing the activity on the environment, we note that all identified adverse effects except for one aspect relating to traffic were accepted by the reporting officer and Council's technical reviewers as not significant and able to be managed.
64. Submitters maintained their concerns on the additional matters of visual and landscape effects, odour management, and traffic – but the only matter on which expert evidence was produced was odour, being that from Dr Brady.
65. By itself the lack of expert evidence on a matter is not fatal. However, in circumstances where two or more experts assess a matter within their expert competence and agree, it would be very unusual for a lay opinion to be preferred. In this case that applies to landscape and visual effect matters; to traffic matters with the one exception (discussed further below); and to stormwater / flooding effects.
66. Having heard and considered those matters, we therefore adopt the summary analysis provided by Ms Walker, and the evidence of Ms Lawton, Ms Makinson and Mr Knight (with the exception mentioned), and Ms Rhynd on those matters for our purpose and have no need to review those matters further. We are satisfied that the analyses and assessments undertaken, and with the mitigation measures proposed, adequately demonstrate that the various potential and actual adverse effects can be managed so that they are consistent with what the operative District Plan anticipates for the rural zone and the RMA expects.
67. With respect to odour we note that the expert conference narrowed the issue of difference to the question of odour emission rate used in the modelling and whether the Waikouaiti Farm was an appropriate comparator for the rate. We accept the view of the experts, recorded in the joint witness statement, that the methodological question that was previously at issue had been resolved and was no longer in contention.

68. The principal issues in contention remaining (and clearly the key determinative issues) were:
- (a) Whether the odour emission rate adopted by Mr van Kekem provides sufficient certainty with respect to any adverse effects at or beyond the site boundary; and
  - (b) Whether the level of traffic activity anticipated justified requiring further roading mitigation by way of road seal widening to 6m, including on the northern side of the one-lane bridge on Old Road;
  - (c) Whether the plan interpretation difference is material; and
  - (d) Whether a covenant or condition guaranteeing the applicant's written approval is acceptable mitigation for the effect of the reverse sensitivity rule on private property.
69. These issues are discussed in the following section.

### **Odour emission rate**

70. As noted above, Mr van Kekem had determined the maximum Odour Unit/m<sup>3</sup> (OU) at the site boundary of 3.29 OU and at the nearest sensitive receiver of 1.35 OU (both well below the MfE *guideline* threshold for adverse odour effect of 5 OU for moderately sensitive receiving environments based on a FIDOL factors assessment).
71. A key input to that prediction was the odour emission rate used – which Mr van Kekem based on the highest emission rates measured at the applicant's Waikouaiti Farm<sup>12</sup>.
72. The applicant's position with respect to odour emission rates (provided in the evidence of Mr Winmill and Mr van Kekem) was that the style of laying system, being a "*mixture of enriched colony and aviary systems*"<sup>13</sup>, and not being comparable to a broiler system (the comparator preferred by Mr Pene and Dr Brady), meant that the use of a comparable, measured emission rate, such as had been obtained for a sister farm at Waikouaiti, is appropriate. That latter rate is the rate used by Mr van Kekem in his calculations.
73. That matter was at issue during the expert conferencing and, as recorded by Mr Pene and Dr Brady, they were not satisfied that sufficient information had been provided such they could accept the Waikouaiti Farm comparison rate.
74. However, and despite that conclusion, we understood Mr Pene to maintain his previously stated opinion<sup>14</sup> that even if that rate was incorrect, he found it unlikely that the concentration at the boundary would reach the 5 OU/m<sup>3</sup> threshold or that the concentration at the nearest sensitive receiver (some 400m distant) would constitute an objectional or offensive odour as assessed through expert use of the FIDOL factors.
75. As noted, Mr Muldowney submitted that we needed to be certain that the generated adverse odour effect would not be objectional or offensive at any other site (i.e. rule

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<sup>12</sup> van Kekem, Statement of evidence, paras 7.8 – 7.9

<sup>13</sup> Application summary, para 4.3.4

<sup>14</sup> Pene, Statement of evidence, para 26

25.23.1 of the District Plan, derived from odour containment Policy 13.2.3) in order to be able to grant consent. We disagree.

76. There appears to be no prohibited activity rule to that effect. If there were then we might agree. The fact is that the activity is a discretionary activity and it is settled caselaw that such carries with it a risk of standard exceedance – the general remedy for which is consent condition review and/or enforcement action and, we were told, available remediation in that circumstance might involve any or all of such contingencies as reducing the density of birds /m<sup>3</sup> of shed space, increasing the velocity of ventilation fan exhaust to promote further and higher mixing; and technology additions such as exhaust scrubbers. In other words, this is not a situation where no remedy short of closure is available should standards be exceeded. We think the requirement on us as decision makers in this instance is more akin to the oft-used phrase “more likely than not” than the stricter burden of proof of “beyond reasonable doubt”.
77. Mr Winmill in his rebuttal statement took us through the reasons why he maintains that the colony cage system in operation at the Waikouaiti Farm is a more appropriate and realistic comparator as opposed to the free range aviary system at Waianakarua (as proposed by Dr Brady). He noted:
- Mainland Poultry sells whole, unwashed eggs, uncontaminated by bird manure;
  - This requires clean eggshells which depends on bird manure being dry;
  - Dry manure means dry litter in the sheds;
  - Manure is removed from the belts on a weekly basis – which is comparable with colony cage systems;
  - Broiler floor litter is a lot deeper than the target 4-6 cms – because birds are on the floor for their entire growing cycle - and is usually more moist;
  - Broiler birds don't scratch or work the litter like laying hens, and are a different breed and a lot heavier;
  - Odour potential is directly related to bird stocking density per m<sup>3</sup> of shed space;
  - The Waikouaiti bird density is 4.51 birds/m<sup>3</sup>;
  - The Waianakarua bird density is 2.21 birds/m<sup>3</sup>;
  - The proposed Orini bird density is 2.22 birds/m<sup>3</sup>; and
  - Waianakarua birds are free range, which introduces a different ventilation pattern within the sheds, and is therefore not appropriate as a comparator.
78. Mr Winmill expressed confidence that odour emissions at Orini would be less than predicted because of the conservativeness of the emission rate adopted.
79. However, because the proposed Orini Farm and the Waikouaiti Farm are not strictly analogous we invited parties to draft a monitoring-type condition that we might impose to test the accuracy of that comparison. We subsequently received a set of such conditions.

## **Finding**

80. We are satisfied that the use of the Waikouaiti Farm emission rate is a reasonable proxy, albeit with necessary limitations, for this application. Furthermore, we accept and impose the proposed draft conditions relating to this matter and are satisfied that implementing such will provide an appropriate “backstop” in the event that reality differs adversely from prediction.
81. In passing we note that several persons, including Mr van Kekem, Mr McDean and Mr Muldowney, made reference to the Waikato Regional Plan permitted activity rule for intensive indoor farming (rule 6.1.15.1), among others. As this is an application for land use consent to the District Council, the question as to whether the application might require a regional council consent under its regulatory provisions is a matter for it, not for us, and we were told that Waikato Regional Council has not required a consent application for that discharge activity. Consequently we are not required to consider the application of specific regional plan provisions to this application.

## **Road seal widening**

82. As noted above there was a difference of opinion between the applicant’s transportation engineers (Ms Makinson and Mr Knight) and Council (Mr Brown, Mr Bastion and Mr Gray) with respect to localised road sealing and, particularly, whether seal widening to 6m on the northern side of the one-lane bridge on Old Road was necessary. All other matters were agreed as now proposed – including sealing the road adjacent to 40 Old Road to minimise dust nuisance.
83. In the Hearing Agenda Ms Walker included a copy of her s95 RMA notification report which summarised<sup>15</sup> Mr Gray’s peer review recommendations on the point as follows:
- *It would be appropriate to require sealing of the road frontage of the eastern entrance (Laying shed) to avoid loss of shape and safety issues. At this location the road should be widened to 6m and seal should extend to the one-lane bridge to the east....*
  - *There are signs of pavement and verge damage at the approaches to the one-way bridge and this is likely to worsen as a result of the increase in traffic. As such it is recommended that the sealed carriageway on the western side of the bridge be widened to 6m over approximately 40m to allow for manoeuvring.*
84. No further justification for that recommendation was provided and no evidence was presented in support of it at the hearing.
85. That difference remained unresolved at the hearing.
86. As noted above, the applicant’s traffic witnesses disputed the need for and the practicality of the widening proposed.

## **Finding**

87. Based on the evidence before us we are not persuaded that the localised road widening to 6m is necessary and therefore decline to impose the conditions sought. While we accept that the reality may be different, we note that the remedy for that

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<sup>15</sup> Hearing Agenda, Appendix D – Notification Report, Traffic (not paginated)



remains in the hands of the road controlling authority and, if necessary, a s128 RMA review of consent can be instigated either on the basis of s128(1)(a)(i) – being more appropriate to deal with the matter at a later stage – or s128(1)(c) – being of a material inaccuracy of information provided.

88. A review condition to that effect is therefore imposed.

### **Plan interpretation**

89. Mr McDean disagreed with Ms Walker on two matters:

(a) Whether the proposal constitutes a “productive rural activity” in line with Objective 1A.2.9; and

(b) Whether the proposal is a “productive use of the soil” in line with Objective 4.2.1.

90. Ms Walker had concluded that the proposal does not rely upon the rural land resource, nor does it use the soil resource – although nothing actually turned on those conclusions since she recommended granting consent.

91. Mr McDean quoted the Plan’s definition of *productive rural activity*, noting that this simply requires the activity to be for economic gain *and* unable to be conducted in an urban setting, both of which conditions are, in his opinion, satisfied.

92. On the second matter Mr McDean noted that the existing dairy farm activity would continue with only 4.2% of the site (or less as submitted by Mr Page) used for the proposed activity – therefore the productive potential of the site remains largely intact.

### **Finding**

93. We agree with Mr McDean that the proposal can be shoe-horned into the stated objectives by dint of the fact that the definitions are quite loose. On the other hand it is not inconceivable that, land pricing aside, this type of activity could take place in a heavy industry zone of an urban setting with appropriate air quality scrubbers. However, nothing of moment turns on the matter – which Ms Walker also concludes in her response statement<sup>16</sup> (while also pointing out that the District Plan specifically provides that specific provisions override general provisions and that the definition of “*intensive farming*” is therefore moot).

### **Covenant or condition**

94. Mr McDean had proposed a covenant condition in favour of Council by which Mainland Poultry effectively guaranteed its written approval with respect to any application for a dwelling on adjacent private land that would otherwise be caught by the 300m reverse sensitivity separation rule.

95. That proposal was rejected by Council. Ms Parham told us<sup>17</sup> that:

*The proposed condition is not acceptable to Council. As a matter of principle, Council does not wish to be a party to a covenant that is for the benefit of private land owners. Further, if Mainland was to refuse to give written approval, Council would be required to enforce the*

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<sup>16</sup> Walker, Supplementary evidence, para 20

<sup>17</sup> Parham, Legal submissions, para 23

*covenant as a party to the deed of covenant. That is not the role of Council and it simply cannot spend limited ratepayers' money enforcing private property rights between land owners.*

96. Furthermore, Ms Parham submitted that a covenant cannot be imposed unilaterally – and therefore cannot be imposed. We accept that submission.
97. In the alternate the applicant proposed a condition of consent deeming its written approval with a requirement to offer a covenant to and in favour of identified property owners securing the deemed condition. We understand that option to be acceptable to Council.

### **Finding**

98. We find that the new condition proposed, while not fettering Council's discretion to consider and determine any relevant application made, satisfactorily secures the applicant's written approval to a "breach" of the reverse sensitivity rule and removes that matter from consideration in that context. We impose that condition accordingly.

### **Section 104 and Part 2 RMA**

99. We confirm that we have considered the matters required under s104 of the RMA. As discussed above we have concluded that the actual and potential effects on the environment of allowing the activity can be managed appropriately and the activity is appropriate in the rural zone. We acknowledge that odour may be noticeable on occasion but have concluded that this is unlikely to reach concentrations that are offensive or objectionable, either for health or amenity, at sensitive receivers.
100. No s6 RMA matters of national importance or s8 (Treaty of Waitangi principles) were identified as being directly engaged by this application.
101. Of the s7 RMA other matters to which particular regard is to be had, we consider the following relevant:
  - (b) the efficient use and development of natural and physical resources;
  - (c) the maintenance and enhancement of amenity values; and
  - (f) maintenance and enhancement of the quality of the environment.
102. Those matters were rehearsed in the respective documentation and evidence and regard to them has been had in this decision.
103. When put into the wider context of the Part 2 sustainable management purpose of the RMA and the function of territorial authorities, we are satisfied that the application will promote the sustainable management purpose of the RMA and will not adversely affect the health and safety and/or wellbeing of residential neighbours and road users, as all relevant residual adverse effects can be managed and will be mitigated.

### **Conditions**

104. We have generally accepted the final set of draft proposed conditions agreed between the applicant and Council, with the exception of the traffic matter noted above.

## Decision

105. In exercising delegated authority under sections 34 and 34A of the RMA and having regard to the foregoing matters, sections 104, 104B and Part 2 of the RMA, the land use application by Mainland Poultry Limited to undertake intensive farming, including egg laying and chicken rearing facilities (i.e. 6 layer and 2 rearing sheds plus a packing shed) in a Rural Zone, at 64 Old Road, Orini (being Pt Lot 1 DP 12365, CFR SA15/B102 and Pt Allot 450A, CFR SA190/189) with associated infrastructure, earthworks and landscape / screen planting - Council reference LUC0441/17 – is granted for the reasons discussed in this Decision (and as summarised below) and subject to the conditions attached as Schedule 1.

## Summary reasons for the decision

106. After having regard to the actual and potential effects on the environment of allowing the proposed activity and taking into account the relevant statutory and statutory plan provisions, we find that consent for the proposed activity should be granted for the reasons discussed throughout this decision and, in summary, because:

- (a) The adverse landscape and visual and rural amenity effects of the proposed activity on residential neighbours and the general public will be negligible with the measures to be implemented;
- (b) The traffic safety and road condition concerns have been sufficiently resolved, and are subject to additional conditions, such that we are satisfied that they can be appropriately managed;
- (c) Any odour concentration on sensitive receivers beyond the site will be below a level likely to cause offensive or objectionable effects;
- (d) Granting consent is consistent with promoting the sustainable management purpose and principles of Part 2 of the RMA, and the relevant provisions of the statutory plans;
- (e) Granting consent will enable a further appropriate use of the land resource and provide economic benefit at both local and wider level.



**David Hill**  
**Chair**  
**For Independent Hearing Panel**

**Date:** 30 January 2019

## Schedule 1

### Conditions of Consent

#### Resource Consent No: LUC0441/17

#### Definition

- 1 In this consent, "Farm Commissioning" shall be deemed to have occurred on the initial population of any layer shed.

#### General Conditions

- 2 The proposal shall proceed in general accordance with the plans and information submitted in support of the application. In the case of inconsistency between the application and the conditions of this consent, the conditions of consent shall prevail.
- 3 The maximum number of chickens housed at the site shall not exceed the following:
  - a. A maximum of 300,000 birds total in the laying sheds; and
  - b. A maximum of 100,000 birds total in the rearing sheds.
- 4 The design, configuration and layout of the laying and rearing sheds shall be in general accordance with the following:
  - a. Layer Shed Plans, prepared by Big Dutchman, Revision 01, dated 13/11/2017;
  - b. Packing Shed Plans, prepared by Big Dutchman, Revision A, dated 28/11/2017;
  - c. Rearing Shed Layout, prepared by Big Dutchman (undated);
  - d. The site and layout plans prepared by CKL Surveying referenced U1175, revision EO and dated 31/01/2018; and
  - e. The Earthworks Plans, prepared by CKL Surveying, referenced U1175, revision E3 and dated 12/12/2017.

Copies of the plans referred to in this condition are attached to this decision.

#### Engineering

##### Prior to Construction

- 5 Prior to the commencement of any construction the consent holder shall appoint an appropriately qualified and competent Developers Representative/s acceptable to Waikato District Council for the duration of the construction works.

It shall be the responsibility of the Developers Representative/s to:

  - a. Supervise construction of the works;
  - b. Arrange for the necessary testing and inspections;
  - c. Complete each appropriate checklist as the works progress and submit to the Waikato District Council's Team Leader-Monitoring for assessment/approval; and
  - d. Identify any non-compliant work and arrange for correction.
- 6 The consent holder shall notify the Waikato District Council's Team Leader Monitoring in writing two weeks prior to the commencement of activities associated with this consent.

- 7 A Construction Traffic Management Plan (CTMP) shall be submitted to the Planning Manager, WDC for authorisation at least 20 working days prior to commencing construction. The construction management plan is to be prepared following consultation with Waikato DC Roading staff. Construction works on site shall not commence until Waikato DC has approved the CTMP. The CTMP shall be in accordance with the Council's requirements and New Zealand Transport Agency's Code Of Practice For Temporary Traffic Management (COPTTM). The CTMP shall address, but not be limited to:

Objectives and purpose of the construction traffic management plan;

- a. Construction staging and proposed activities;
- b. Hours of work;
- c. Points of site access;
- d. Roles, responsibilities and contact details, including for public queries;
- e. Expected number of vehicle movements, particularly heavy vehicle numbers during the earthworks and construction phases;
- f. Nature and duration of temporary traffic management proposed for Old Road and Orini Road intersection;
- g. Road condition assessments completed jointly with Waikato DC roading staff before and after construction for Old Road from Orini Road to the western site entrance;
- h. Arrangements to deal with road damage relating to construction traffic;
- i. Parking for construction staff and loading areas for deliveries; and
- j. Measures to prevent, monitor and remedy tracking of debris onto public roads, and dust onto sealed sections.

*Advice Note: This consent does not constitute authorisation to work on the road. Works affecting the road will require approval for access to the corridor. A separate Corridor Access Request will need to be made to Waikato District Council.*

- 8 Prior to commencing any construction works the consent holder shall submit for the approval of Waikato District Council, a Stormwater Management Plan, prepared by a suitably qualified and experienced Engineer, including but not limited to:
- a. The detailed calculations and investigations in the Stormwater Consent Report for Mainland Poultry Ltd, 64 Old Road, Orini, Waikato, from CKL Ltd - Ref U1175 - Rev 1 - Dated 13.12.17;
  - b. Provision of minimum shed floor levels to account for localised flooding; and
  - c. Design measures to ensure wastewater (including shed wash down) does not to enter the stormwater system.

*Advice Note:*

- i. *The Stormwater Management Plan will be reviewed by Council's stormwater consultant.*
- ii. *All levels should be in terms of the Moturiki Datum.*

- 9 Prior to undertaking any earth disturbing activities on site, the consent holder shall provide an erosion and sediment control plan, generally in accordance with the Waikato Regional Council's Erosion and Sediment Control Guidelines for Soil Disturbing Activities: January 2009, for approval by the Waikato District Council's Team Leader Monitoring.
- 10 Prior to undertaking any earth disturbing activities on-site the consent holder shall put erosion and sediment control measures in place in accordance with the approved erosion and sediment control plan, to the satisfaction of the Waikato District Council's Team Leader Monitoring.
- 11 At least 10 working days prior to undertaking any earth-disturbing activities on site, the consent holder shall contact Waikato District Council's Team Leader Monitoring and arrange a pre-construction meeting.

### **Earthworks**

- 12 The consent holder shall carry out earthworks, including landscaping bunds and internal road construction, generally in accordance with the requirements and recommendations and constraints of the Geotechnical Investigation Report - Mainland Poultry Limited - From CMW Geosciences (NZ) Ltd - Ref. HAM2017\_0003AB Rev. 0 Dated 26 May 2017, and the Earthwork Plans from CKL Engineering Ref U1175 Drawing No's 200 to 205, 210 to 215, 220 to 225, 231 to 235 - Rev E3 - Revised Layout dated 12/12/2017.
- 13 Any cut material exported from the site shall be disposed of to either a permitted site/s or as otherwise permitted under the District Plan.

### **Stormwater**

- 14 The consent holder shall provide the infrastructure and manage stormwater generally in accordance with the Stormwater Management Plan approved by Waikato District Council in accordance with this resource consent, to the satisfaction of Waikato District Council.

### **Entrance and Access Improvements**

- 15 Prior to commencing operations, the consent-holder shall have both entranceways upgraded to meet the requirements of District Plan Appendix A Figure 7: Heavy Commercial entrance, and including:
  - a. The eastern entrance near the one lane bridge shall be sealed;
  - b. The western entrance can be unsealed; and
  - c. Visibility to and from both entranceways shall be optimised, including trimming vegetation within the road reserve that restricts sight distance.
- 16 Prior to commencing operations, the consent-holder shall have the carriageway at 40 Old Road, Orini, sealed with a two coat seal and extend over a minimum of 50m to the west of the closest point on the Old Road carriageway to the dwelling at 40 Old Road and be sealed to meet the existing edge of seal for the single lane bridge on the western side of 40 Old Road, forming a continuous sealed carriageway.

- 17 A detailed design for entranceway works and sealing shall be submitted to the Planning Manager, Waikato District Council for authorisation at least 20 working days prior to commencing construction. The detailed design is to be prepared following consultation with Waikato District Council Roading staff and optimise visibility as far as practicable taking into account approach alignment, levels and vegetation limiting sight distance that should be cut back if desirable. Design and implementation is to be in accordance with the Waikato Regional Infrastructure Technical Specification. The detailed design shall be presented with a design statement setting out how the requirements of Waikato District Council Roading staff have been met and what requirements were not met, if any, with reasons.

### **Post Construction**

- 18 Upon completion of the earthworks and prior to undertaking any building works, the consent holder shall provide a geotechnical completion report prepared by a suitably qualified geotechnical engineer in accordance with the Hamilton City Infrastructure Technical Specifications for approval by the Waikato District Council's Team Leader Monitoring.
- 19 Upon completion of the earthworks, the consent holder shall ensure that, as soon as possible, and within a maximum of six months, the areas where soil-disturbing activities were undertaken are revegetated (either by sowing grass or other approved means such as the planting of groundcover) to achieve a minimum 80% coverage.
- 20 Erosion and sediment controls shall be maintained and remain in place until (at least) the minimum required cover is achieved and may only be removed once the Waikato District Council's Team Leader Monitoring is satisfied that the risk from erosion and instability has been reduced to less than minor, and the consent holder is advised of this in writing.
- 21 The consent holder shall provide a 'Producer Statement – construction' for each separate work undertaken by each individual contractor for the earthworks, waste and stormwater systems, to the satisfaction of Waikato District Council.

*Advice Note: An acceptable format for certification upon completion of works can be found in the Hamilton City Development Manual, Volume 4: Part 9 Appendix 4(ii).*

- 22 The consent holder shall provide to Waikato DC a 'Certificate of Completion of Development Works' prepared and signed by the Developers Representative, to confirm that all works have been carried out in accordance with the approved plans and appropriate standards.

*Advice Note: An acceptable format for a 'Certificate of Completion of Development Works' can be found from the Hamilton City Development Manual, Volume 4: Part 9 Appendix 4(i).*

### **Landscaping and Visual Amenity**

- 23 The Consent Holder shall prepare and submit a Landscape Plan prepared by a suitably qualified and experienced professional to Waikato District Council's Team Leader Monitoring for review and technical certification within three months of commencement of the consent (as per 116 of the Resource Management Act 1991). The Landscape Plan shall detail the nature and extent of works to be undertaken to mitigate the visual and landscape effects of the consented poultry farm and shall implement the landscape design concept and recommendations contained within the Landscape and Visual Assessment Report dated 18/12/2017, the Additional information Report dated 2/08/2018 and Landscape Concept Plans (Revision 13) dated 8 November 2017 and 2 July 2018, prepared by Lawton LA Ltd. The Landscape Plan shall comprise:

- a. An implementation strategy that clearly identifies the timing of all mitigation and restoration works within the consented site (including the construction and planting of the earth bunds for screening purposes).
  - b. A plan that shows the location of all mitigation/restoration planting to occur within the site, including a schedule of plants containing the following information:
    - i. botanical name;
    - ii. common name;
    - iii. numbers;
    - iv. spacing (not to be more than 1m centres);
    - v. size at planting; and
    - vi. mature height of any mitigation and restoration planting.
  - c. Identification of methods to be employed to ensure slope stability and erosion control during plant establishment on the bund and within gully areas;
  - d. Identification of management and restoration procedures to be adopted in the handling and storage of topsoil and subsoil materials to ensure their continued viability for a growing medium for mitigation and restoration planting;
  - e. Details regarding a vegetation establishment and maintenance program within the site. These details should include the strategy to replace any plants that may die or do not grow sufficiently to meet the conditions of this consent within three years of its commencement. It should be noted that as a minimum plants and planting areas shall be maintained for three years following initial planting, with plants watered in the first two summers as necessary to facilitate their establishment and with planting areas kept weed free. Any plant that dies, is removed, or otherwise fails to establish shall be replaced the following planting season and maintained for a further two years.
  - f. The bund shall be located and shaped to integrate with the surrounding natural landform and be in general accordance with the plan entitle Bund Contours, Revision 13 Stage 1 Sheet A2 03. The bund shall achieve a minimum height of 6m (above the finished level of the consent building) over 60% of its overall length. The lowest part of the crest (saddle) shall be located adjacent to the packing shed and shall be a minimum height of 3m (above the finished level of the consent building). All plants within a 5m wide strip running the length of the bund, along its crest, shall be a minimum height of 1m at time of planting.
  - g. A stock-proof exclusion fence shall be erected at a 1m offset around all mitigation planting.
- 24 The consent holder shall begin implementation of the Landscape Plan in the first planting season following the completion of bunds and stormwater wetlands.
  - 25 The colour of all exterior cladding on the consented buildings (excluding doors and window frames but including ventilation chimneys and roofs) shall be RAL 6013 – Reed Green. Non-reflective glass shall be used in the glazing of any windows visible from existing dwellings located within 500m.
  - 26 The security lighting to be erected on the buildings shall be placed no higher than 3.5m above the finished floor level of the buildings and be directed to ground, so as to meet the standard for lighting, required by condition 27 below.



- 27 Except for emergency and incident lighting, all exterior lighting located within consented site shall be designed and constructed to comply with the obtrusive light limitations in the Table below. The performance standards contained in the table below shall also apply to light spill from interior lighting through any windows or doors. Light levels shall be measured at a height of 1.5m above ground level at or beyond the boundary of the consented site.

Luminous Intensity	Threshold Increment	Sky Glow	Light Spillage	Glare Source Intensity	Building Luminance
1 (cd)	TI (%)	UWLR (Max %)	EV (Lus)	I (kcd)	L (cd/m <sup>2</sup> )
500	20	5	5	50	5
<p>a) Luminous Intensity (I) limits are proposed to limit potential impacts to neighbouring residents.</p> <p>b) Threshold Increment (TI) is based on adaptation luminance (L) of 0.1cd /m2. Threshold Increment (TI) is defined as: "the measure of disability glare expressed as the percentage increase in contrast required between an object and its background for it to be seen equally well with a source of glare present. Note: Higher values of TI correspond to greater disability glare."</p> <p>c) UWLR (Upward Waste Light Ratio) = Maximum permitted percentage of luminaire flux that goes directly into the sky.</p> <p>d) Ev = Maximum vertical illuminance at the boundary in Lux</p> <p>e) I = Light intensity in Candelas</p> <p>f) L= Luminance in Candelas per square metre</p> <p>g) Building Luminance – This should be limited to avoid overlighting, relative to the general district brightness.</p> <p><i>Advice Note: Emergency and incident lighting shall not be used for general facility or task illumination.</i></p>					

### **Odour**

- 28 The land use shall not result in odour, dust or other airborne contaminants that are offensive or objectionable beyond the boundary of the property.

*Advice Note: When undertaking an assessment of odour to determine whether it is offensive or objectionable the FIDOL factors described within the 'Good Practice Guide for Assessing and Managing Odour' prepared by the Ministry for the Environment shall be used in the first instance.*

- 29 Testing to determine the actual odour emission rates from the consented poultry sheds shall be conducted within 12 months of Farm Commissioning and the results of testing shall be provided to the Waikato District Council (the "testing report") within one month of sampling for certification that the results comply with condition 29(e) below. The odour sampling and testing shall be conducted in accordance with the following:
- A minimum of four samples of odour emissions from layer sheds and four samples of odour emissions from rearer sheds shall be collected.
  - Where practicable, the odour sampling shall be conducted to represent worst - case odour emission rates from each type of shed. At a minimum:

- i. Layer shed odour samples shall be collected from a shed or sheds a minimum of 26 weeks into the laying cycle of the shed and a minimum of five days following removal of manure collected on belts in the shed; and
  - ii. Rearer shed odour samples shall be collected from a shed or sheds a minimum of 12 weeks into the rearing cycle of the shed and a minimum of five days following removal of manure collected on belts in the shed.
- c. Odour emission concentrations shall be determined via Dynamic Dilution Olfactometry in accordance with AS/NZS 4323.3:2001 or an equivalent method agreed with Waikato District Council.
  - d. Determination of exhaust velocity for the calculation of exhaust flowrates and odour emission rates shall be conducted in accordance with US EPA Methods 1, 2 or equivalent methods agreed with Waikato District Council.
  - e. The geometric mean of odour emission rates measured for each shed type in accordance with this condition shall be compared with the following limits:
    - 1) Layer Shed: 444 ou/s/1,000 birds; and
    - 2) Rearing Shed: 251 ou/s/1,000 birds.
- 30 In the event that the geometric mean of odour emission rates measured from either shed type exceeds the corresponding limit stated in 29(e) above, the consent holder shall as soon as practicable and no later than three months of providing its Testing Report to the Waikato District Council, implement measures to reduce odour emissions and/or mitigate their impact on off-site odour levels (the "mitigation measures").
- 31 Within three months of implementing mitigation measures the consent holder shall test the efficacy of those mitigation measures by producing a report to the Waikato District Council showing one of the following:
- a. **Either:** The results of further testing of the odour emission rates from the consented poultry sheds conducted with the mitigation measures in place confirm that measured odour emission rates no longer exceed the specified limits in condition 29(e). The odour sampling and testing shall be conducted in accordance with conditions 29(a to (d) above;
  - b. **Or:** The results of a dispersion modelling assessment conducted incorporating the mitigation measures in condition 30 confirm that the odour emission rates are not predicted to cause odour concentrations to exceed 5 odour units per cubic metre expressed as a 99.5th percentile one hour average, at the specified off-site neighbouring dwellings (R1 – R7 identified in Appendix A) with the measures in place. The dispersion modelling assessment shall be conducted using the CALPUFF model suite (CALPUFF v 7.2, CALMET version 6.5) in accordance with CALMET and CALPUFF configuration files attached as Appendix B to this consent, except where the CALPUFF configuration is modified to reflect the mitigation measures.
- 32 In the event that the report required by condition 31 shows that either of the limits in conditions 31(a) or 31(b) cannot be met then the Council may at any time within 6 months of receiving such report commence a review under section 128(1)(a)(iii) RMA for the purpose of imposing new or amended conditions to ensure that predicted odour concentrations are less than 5 odour units per cubic metre expressed as a 99.5th percentile one hour average, at the specified off-site neighbouring dwellings (R1 – R7 identified in Appendix A) using the modelling method specified in condition 31(b).
- 33 Manure deposited on manure belts shall be removed from the site within no more than seven days. Manure removed from any shed shall not be stored at the site overnight.

- 34 Used litter material shall be removed from the site on the same day that it is removed from any shed. Used litter material removed from any shed shall not be stored at the site overnight.
- 35 An Air Quality Management Plan shall be prepared in accordance with Condition 36 below and shall be submitted to the Waikato District Council, at least twenty working days prior to the initial housing of chickens at the site.
- 36 The Air Quality Management Plan shall include measures that will be taken to ensure compliance with the conditions of this consent, including but not limited to:
- a. A description of the poultry operation;
  - b. A description of the measures to be undertaken to achieve compliance with the conditions of this consent;
  - c. Identifying emission sources with the potential to generate odour, and the measures in place to avoid, remedy, or mitigate those discharges, including details of regular boundary inspections during each cycle;
  - d. Operation and maintenance procedures for the ventilation systems;
  - e. Complaints and response procedures;
  - f. Details of routine and contingency inspections of the sheds and chickens;
  - g. Details of cleaning of the inside of the sheds and removal of manure and litter material off-site;
  - h. Details of removal of bird mortalities from the site; and
  - i. Details of contingency measures that will be taken in the event that odour or other airborne contaminants becomes offensive or objectionable beyond the boundary of the property.

*Advice note: The Air Quality Management Plan prepared in accordance with Condition 36 may form part of an overall Management Plan for the operation.*

- 37 The Air Quality Management Plan prepared in accordance with Condition 36 shall be reviewed by the consent holder once every three years, at a minimum, and updated as required. The outcome of each review and any update shall be provided in writing to the Waikato District Council within three months of the commencement of the review.

#### **Pest and Vermin Control Management Plan**

- 38 At least two months prior to operation of the consented activity, the consent holder shall provide the Waikato District Council with a Pest and Vermin Control Management Plan ("PVCMP") detailing the operational methods to be implemented to discourage pests and vermin (including the use of bait stations, sticky fly-paper and use of insecticides) and information regarding record keeping including records of pest control activities, dates, chemicals used, quantities, evidence of pest activity and action taken.
- 39 As a minimum the PVCMP shall be reviewed by the consent holder every four years and shall provide the Waikato District Council with written notice of any subsequent revisions or amendments to the Plan.
- 40 The chicken farm shall at all times be operated in general accordance with the current version of the PVCMP. In the event of any conflict or inconsistency between the conditions of this consent and the provisions of the Plan, then the conditions of this consent shall prevail.

## **Noise**

- 41 All activities shall be conducted, and buildings located, designed and used to ensure that noise from the activity measured at any other site in different ownership does not exceed the following noise limits:
- a. 50dBA (L10), 7am to 7 pm any day;
  - b. 45dBA (L10), 7pm to 10pm any day; and
  - c. 40dBA (L10), and 65dBA (Lmax) at all other times.

## **Written Approval Covenant**

- 42 The consent holder is hereby deemed to have provided its written approval for the purposes of the Resource Management Act 1991 (including sections 95D(e), 95E(3)(a), and 104(3)(a)(ii)) to any application for resource consents for any activities on land identified within Records of Title SA599/323 and 689494 located within the 300m setback distance as required by Rule 25.57.1 of the Operative Waikato District Plan – (Waikato Section) 2013, or any equivalent succeeding provision, where the resource consent application(s) is for any sensitive activity that would otherwise be a permitted activity but for the activity authorised by this resource consent.
- 43 For the purpose of Condition 42, it is not necessary for the consent holder to give actual approval to the current or future owners of land contained within Records of Title SA599/323 and 689494 and it is not necessary for any of the owners of those Records of Title to request written approval. The owners of those Records of Title shall be entitled to provide a copy of conditions 42 & 43 of this consent to the Waikato District Council (or successor Council) as evidence that such written approval is hereby given.
- 44 Prior to Farm Commissioning (per Condition 29), the consent holder shall offer to register a covenant in favour of the owners of the land contained within Records of Title SA599/323 and 689494 to secure the performance of condition (42) above. The covenant shall be drafted:
- a. To make clear that all those parcels of land identified within the Records of Title SA599/323 and 689494, being within 300m of the boundary of the site authorised by this consent, shall have the benefit of the covenant; and
  - b. So that it will expire in the event Rule 25.57.1 or any equivalent succeeding provision ceases to have legal effect.
- 45 The consent holder shall provide written evidence to Council that it has made an offer to landowners as required by condition 44, if the landowners choose not to take up the offer, the consent holder has discharged its obligation under condition 44.

## **Review**

- 46 In accordance with section 128 of the Resource Management Act 1991, the Waikato District Council may within 2 years of the Farm Commissioning, review the conditions of this consent so as to mitigate any unforeseen wear and tear on Old Road.

## **Advice Notes**

### **1 Lapse Date**

This consent lapses five years after the commencement of the consent in accordance with section 125 of the Resource Management Act 1991.

2 Other consents/permits may be required

To avoid doubt: except as otherwise allowed by this resource consent, all land uses must comply with all remaining standards and terms of the relevant Waikato District Plan. The activities must also comply with the Building Act 2004, Hamilton City Council Infrastructure Technical Specifications and Waikato Regional Plans. All necessary consents and permits should be obtained prior to development.

3 Debris Tracking/Spillage

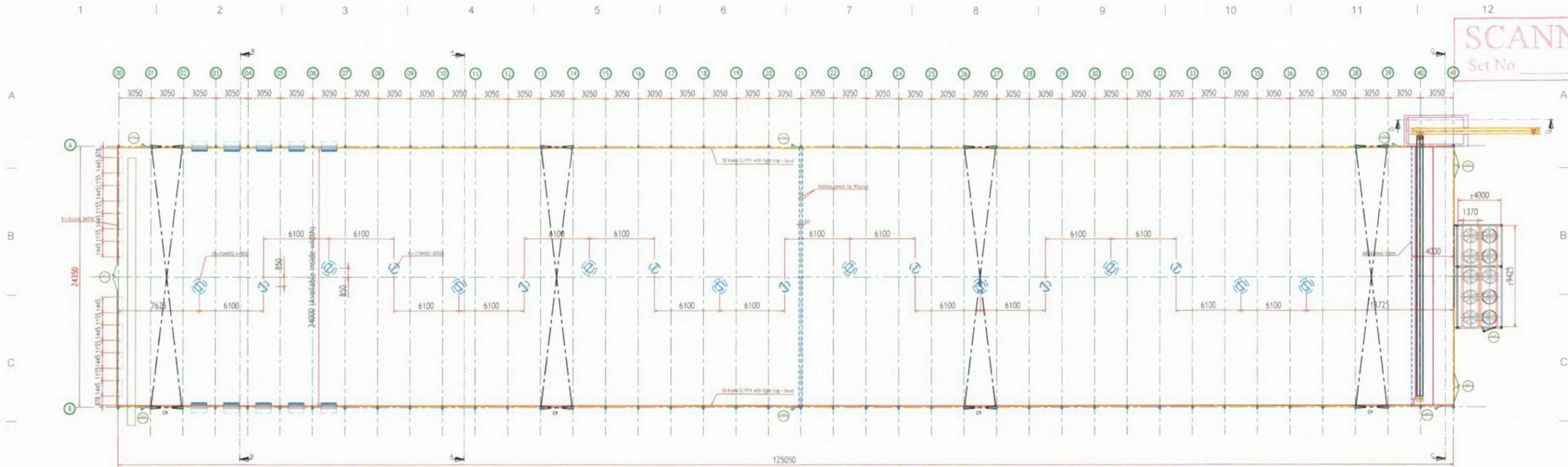
The consent holder is advised that any debris tracking/ spillage onto any public roads as a result of the exercise of this consent should be removed as soon as practical, and within a maximum of 24 hours after the occurrence, or as otherwise directed by the Waikato District Council's Roading Operations Engineer, to the satisfaction of the Waikato District Council.

The consent holder, upon becoming aware of the need to clean up the roadway, shall advise Waikato District Council's Roading Operations Engineer of the need for the road to be cleaned up, and what actions are being taken to do so.

The cost of the clean-up of the roadway and associated drainage facilities, together with all temporary traffic control, is the responsibility of the consent holder.

4 Enforcement Action

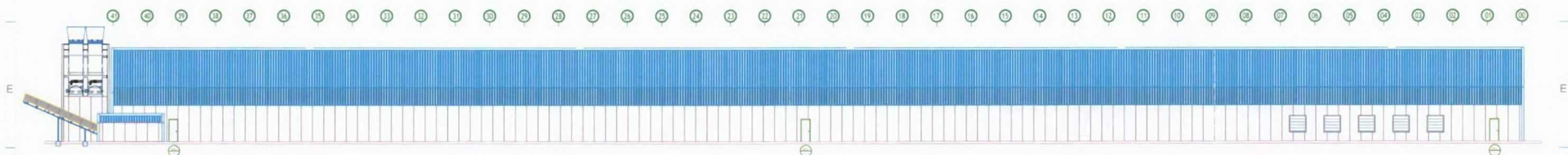
Failure to comply with the conditions of consent may result in Council taking legal action under the provisions of Part 12 of the Resource Management Act (1991).



**LAYOUT PLAN**  
N.T.S

Legend:

--	--	--



**LEFT ELEVATION**  
N.T.S



**RIGHT ELEVATION**  
N.T.S

**PRELIMINARY DRAWING**

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ATTENTION!  
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BUILDING OWNER / SITE SUPERVISION RESPONSIBLE

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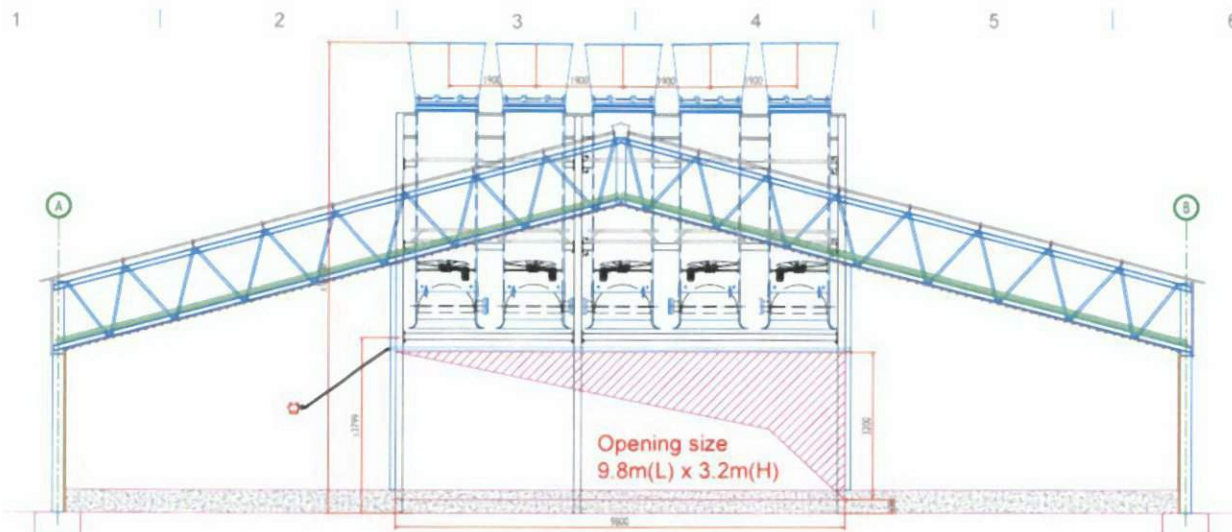
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		SHA	DANI	-	13/11/17



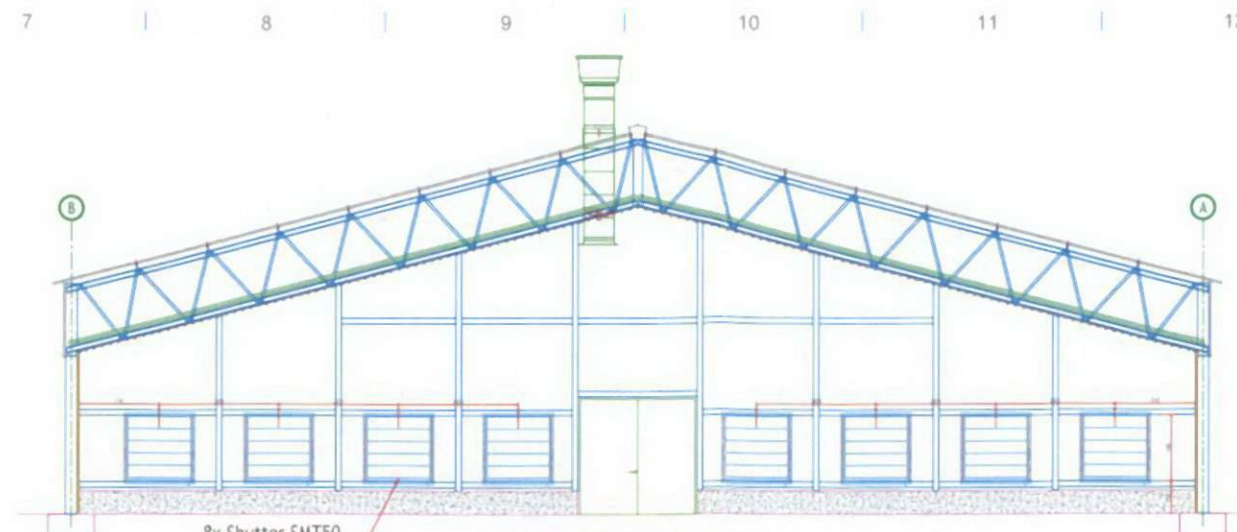
**PROJECT DETAILS:**

Customer Name	MAINLAND
Project Name	ORINI LAYER
Location	ORINI, NEW ZEALAND
Building System	LAYER HOUSE
Building Dimension	125m(L) x 24m(W) x 3.5m(H)

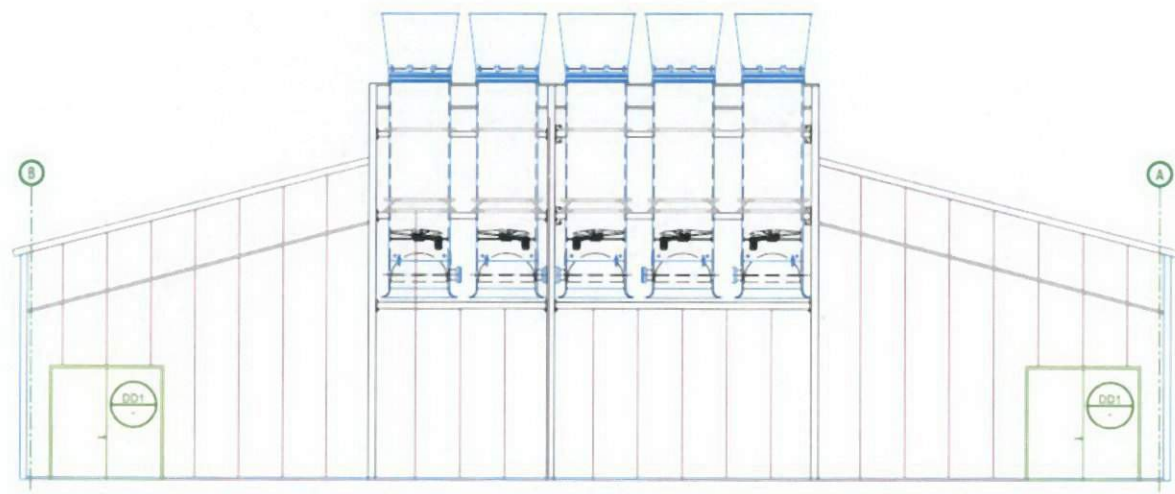
DWG. NO./PROJ. NO.	DRAWING TITLE
P-100 / M.Orini	PLAN LAYOUT LEFT & RIGHT ELEVATION



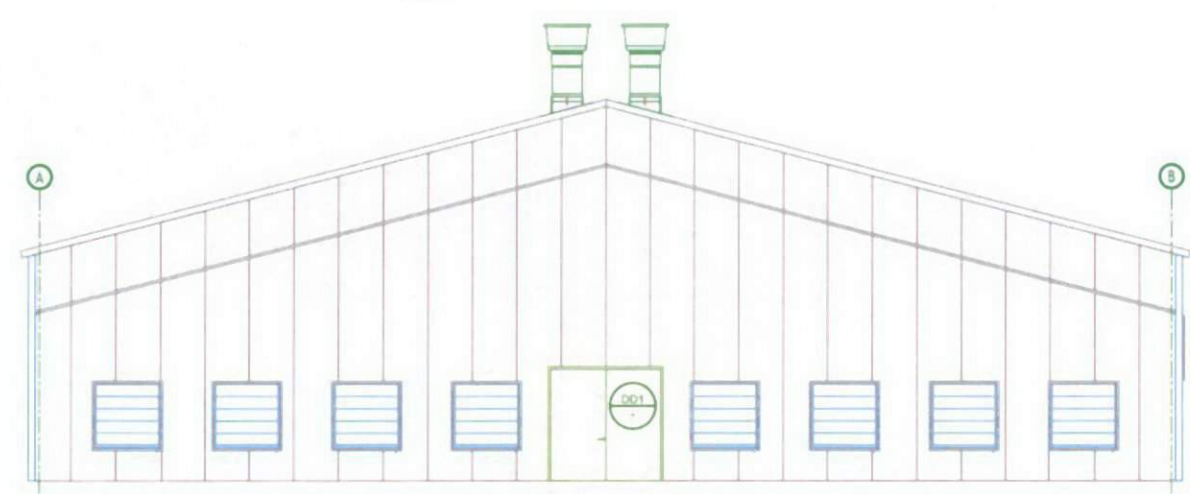
**SECTION C-C**  
N.T.S.



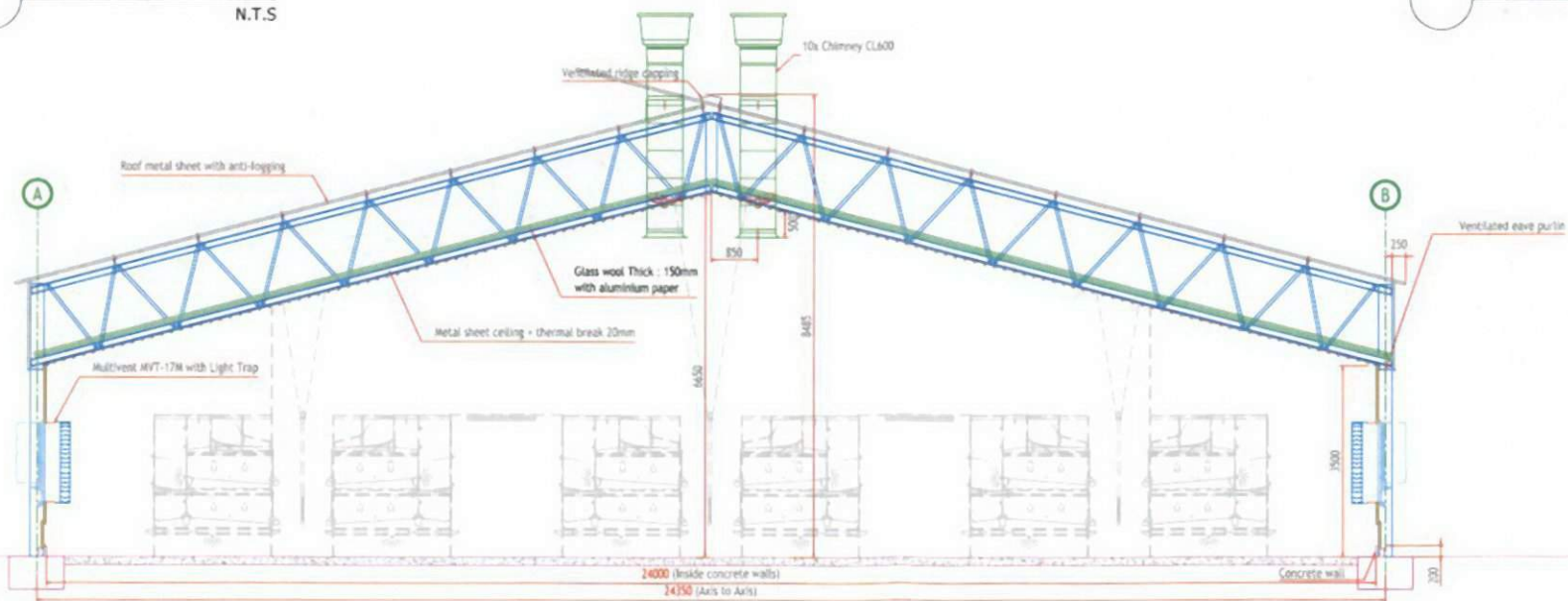
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N.T.S.



**BACK GABLE**  
N.T.S.



**FRONT GABLE**  
N.T.S.



**SECTION A-A**  
N.T.S.

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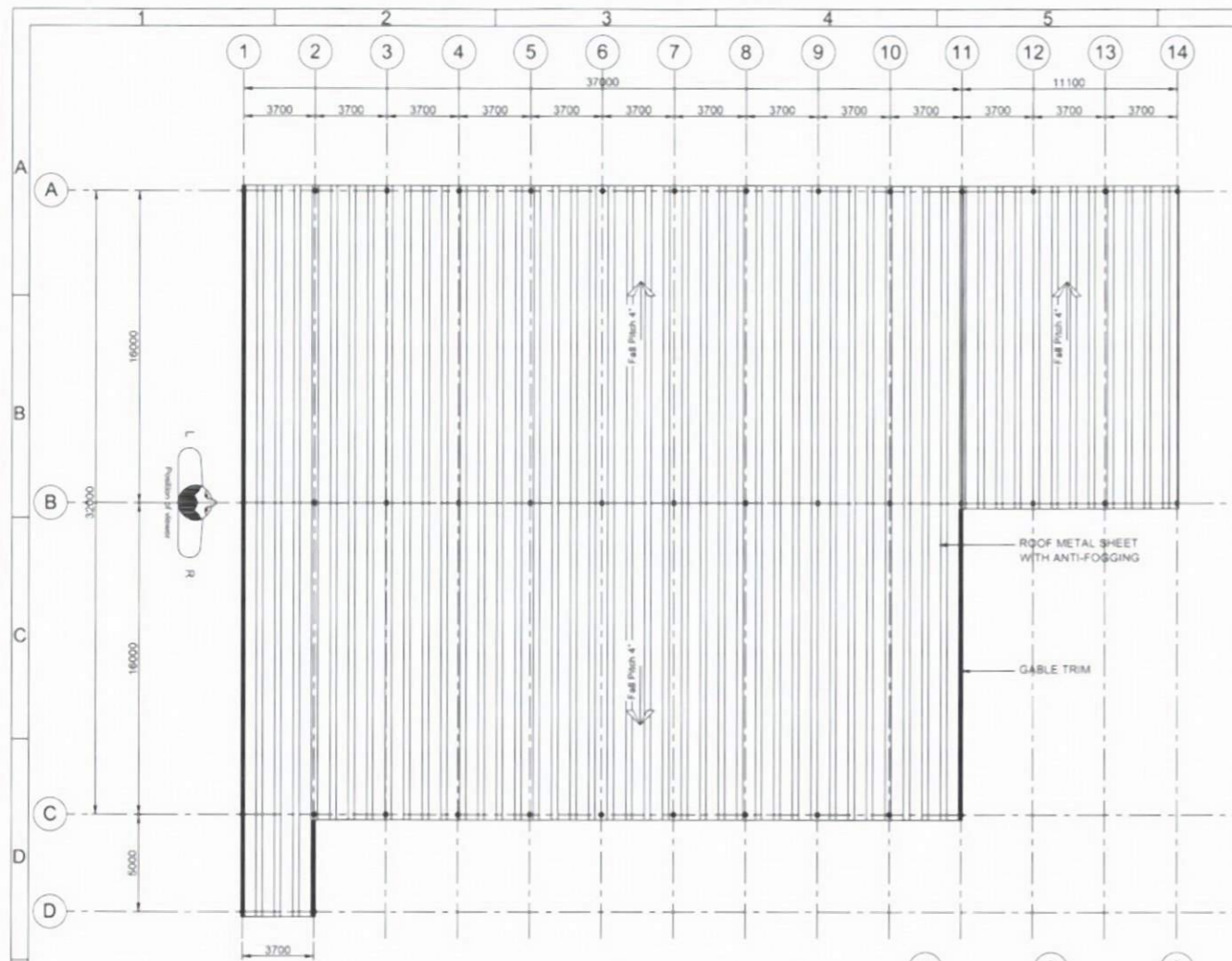
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REV	DESCRIPTION	DRWN	CHK	APPROVED	DATE
01	Removed Winter Garden	LIZA M SHA	DANI DANI	- -	9/10/17 13/11/17

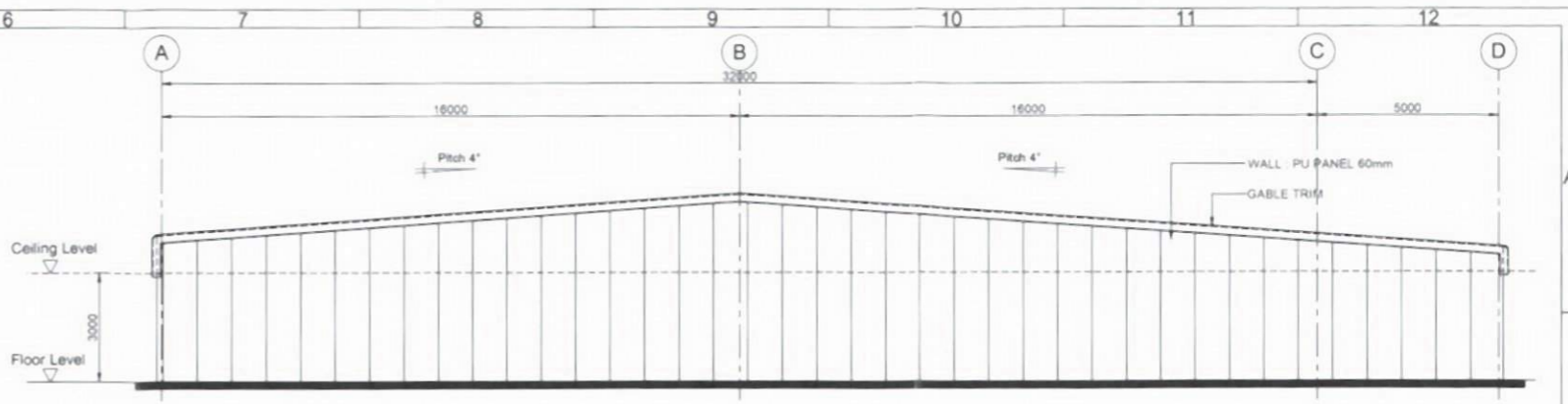


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Customer Name	MAINLAND
Project Name	ORINI LAYER
Location	ORINI, NEW ZEALAND
Building System	LAYER HOUSE
Building Dimension	125m(L) x 24m(W) x 3.5m(H)

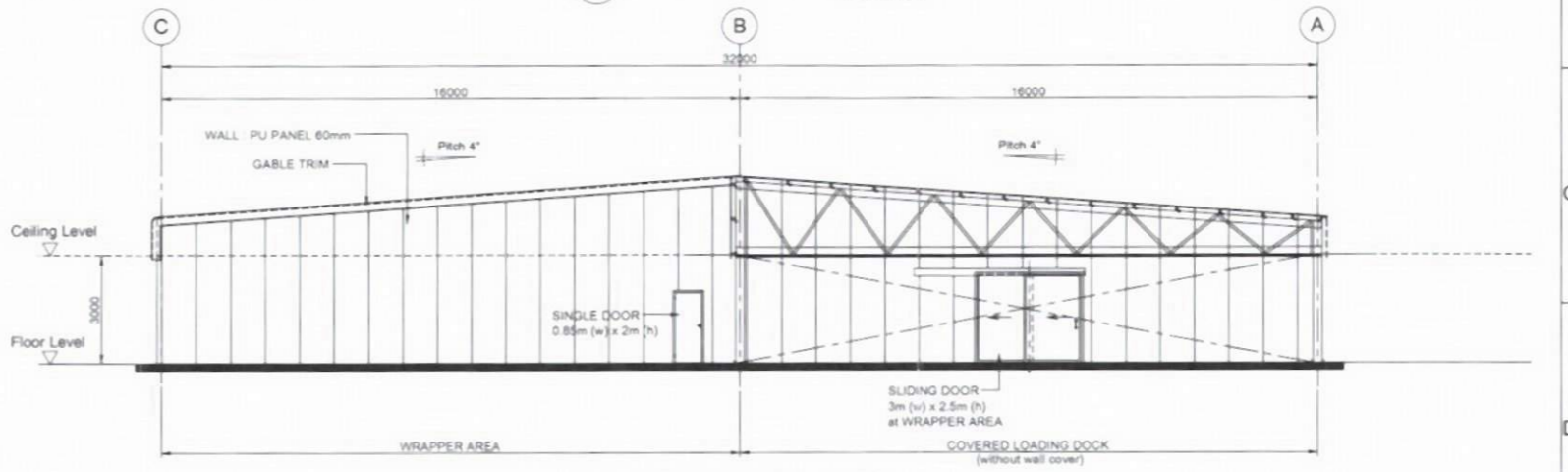
DWG. NO./PROJ. NO.	DRAWING TITLE
P-101 / M.Orini	SECTION & ELEVATION



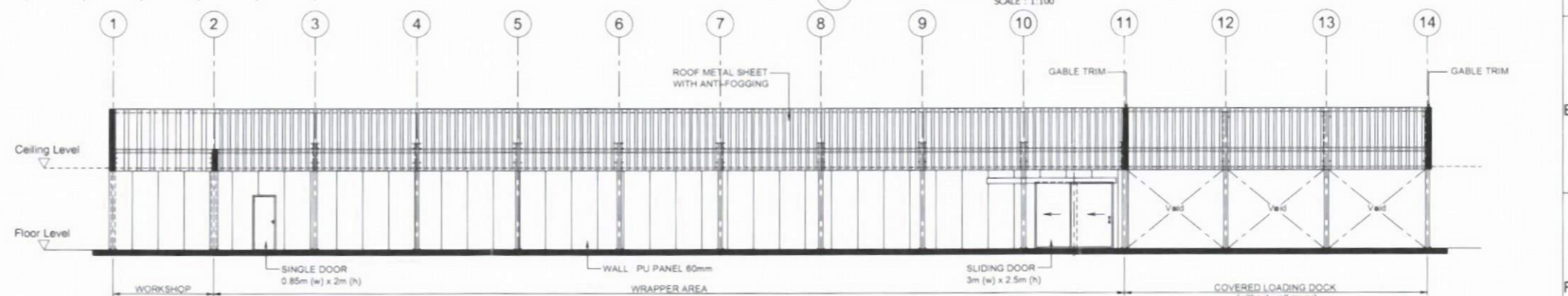
**ROOF LAYOUT PLAN**  
SCALE : 1:175



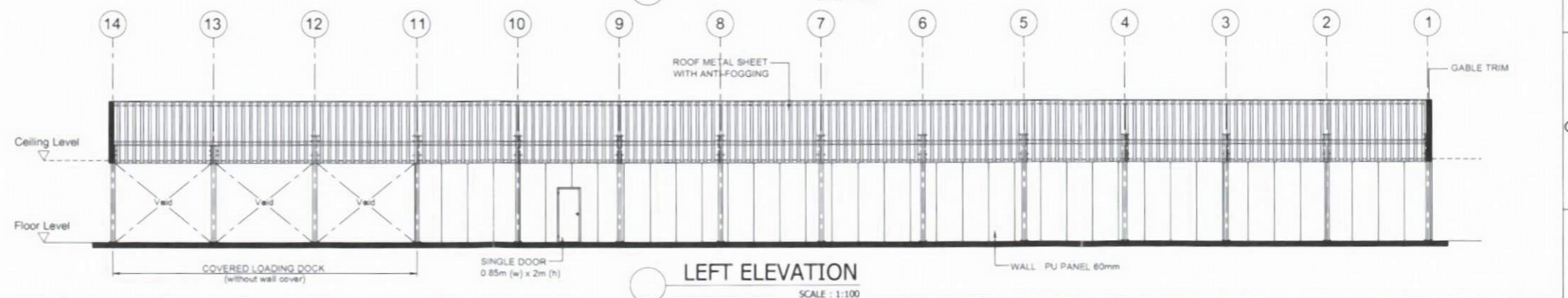
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SCALE : 1:100



**REAR ELEVATION**  
SCALE : 1:100



**RIGHT ELEVATION**  
SCALE : 1:100



**LEFT ELEVATION**  
SCALE : 1:100

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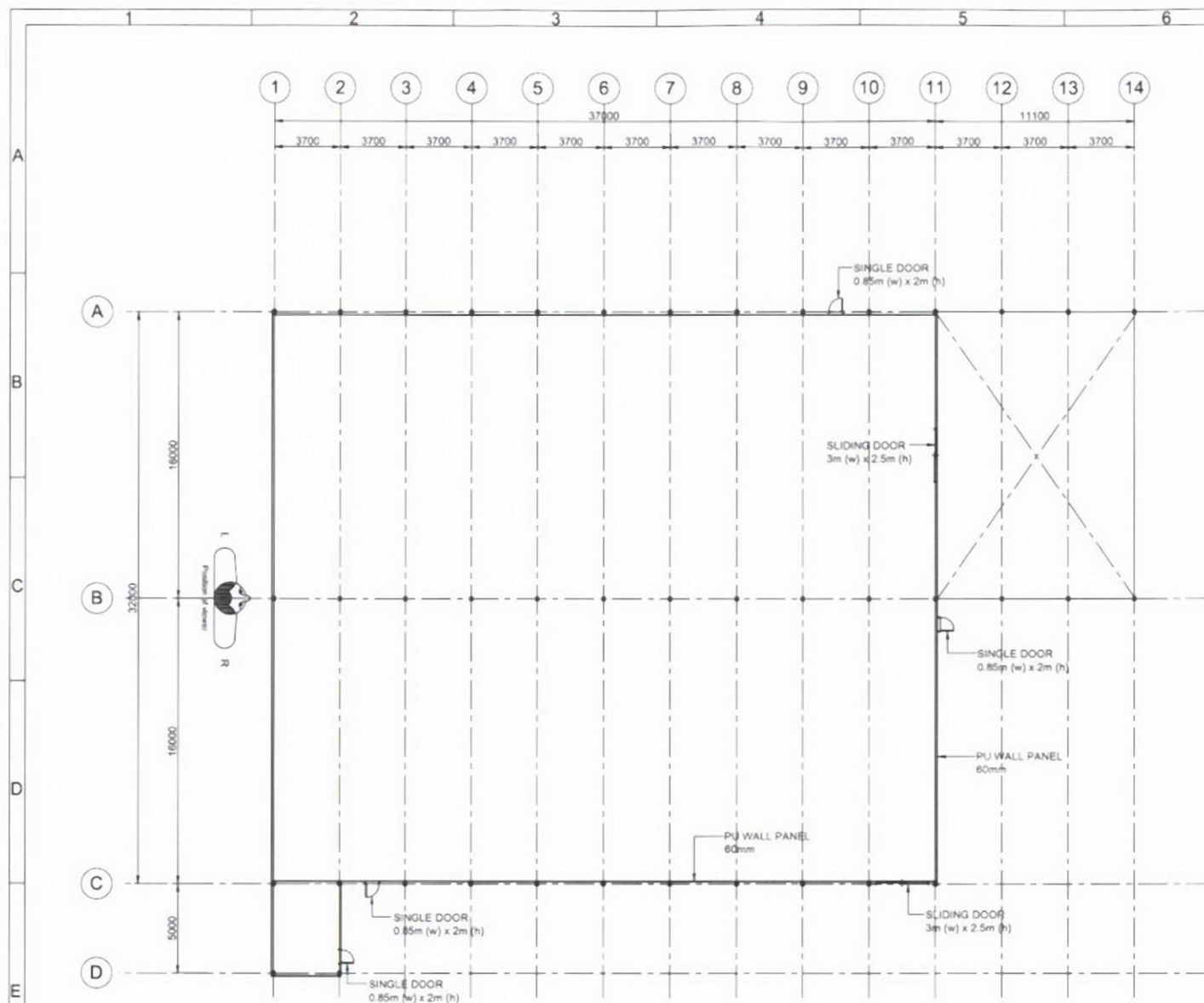
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A	First Issue	AZRI	DANI		28/11/2017



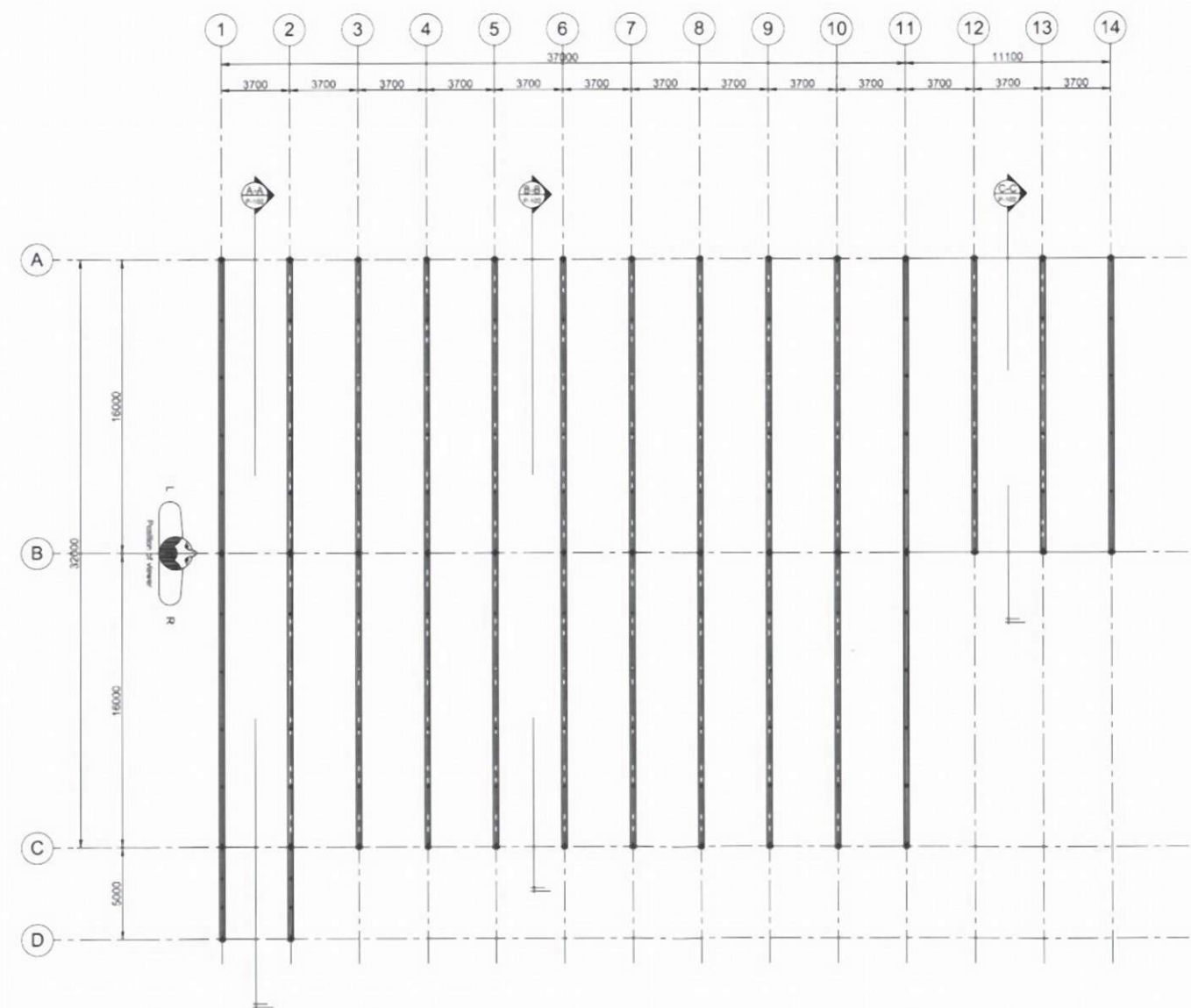
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Project Name	ORINI PACKING STATION
Location	ORINI, NEW ZEALAND
Bldg. System	PACKING STATION
Bldg. Dimension	48.1m (L) x 32m (W) x 3m (H)

DWG. NO./PROJ. NO.	DRAWING TITLE
P-100 / M.Orini	- ROOF LAYOUT PLAN - FRONT ELEVATION - REAR ELEVATION - RIGHT ELEVATION - LEFT ELEVATION





PU WALL LAYOUT PLAN  
SCALE: 1:175



TRUSS LAYOUT PLAN  
SCALE: 1:175

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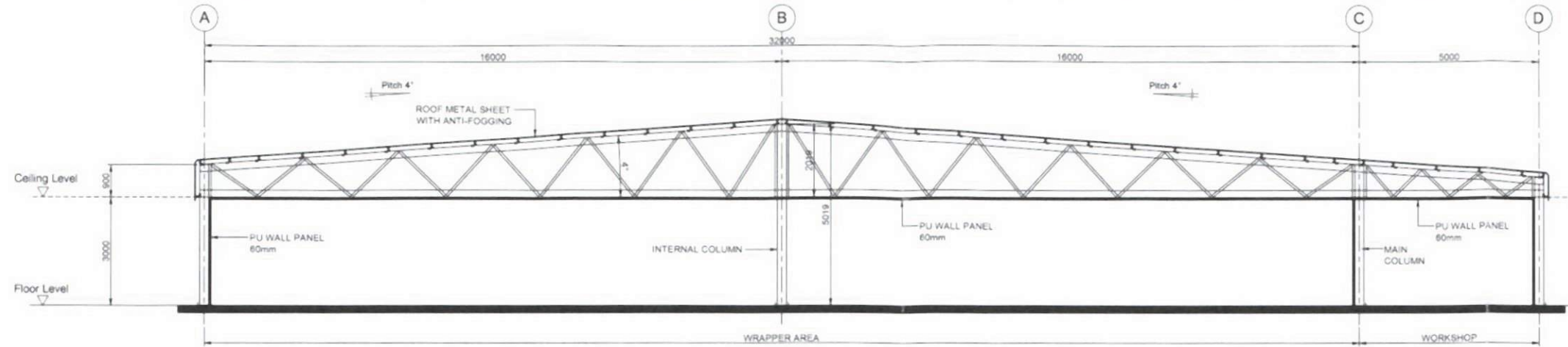
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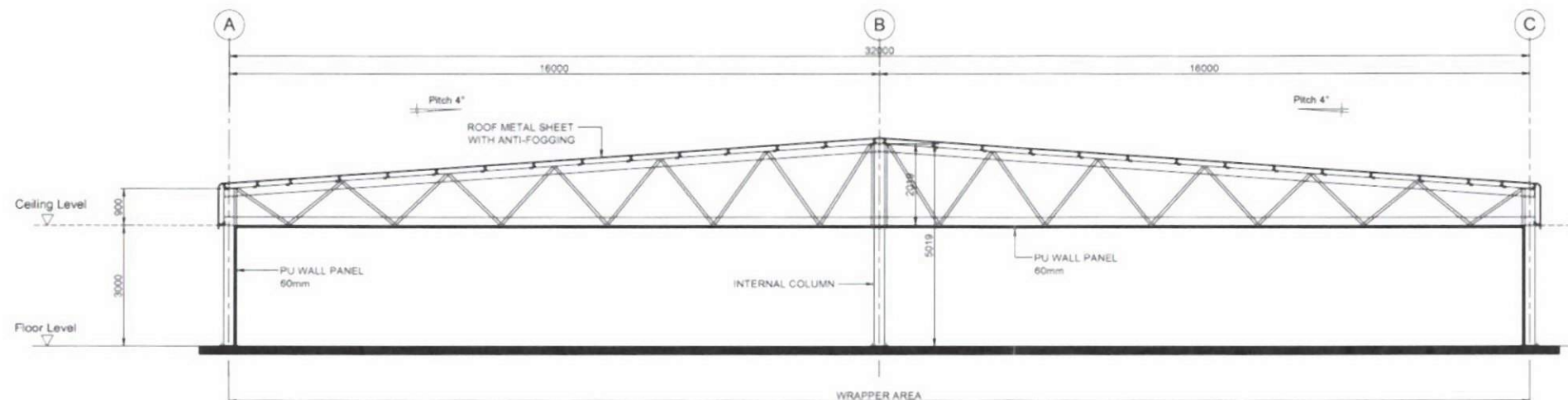
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A	First Issue	AZRI	DANI		28/11/2017

04 July 2017  
  
**Big Dutchman**  
 BD Agriculture (Malaysia) Sdn Bhd  
 No 9 Persiaran Astana/KU2,  
 Bandar Bukit Raja, 41050 Klang,  
 Selangor Darul Ehsan, Malaysia

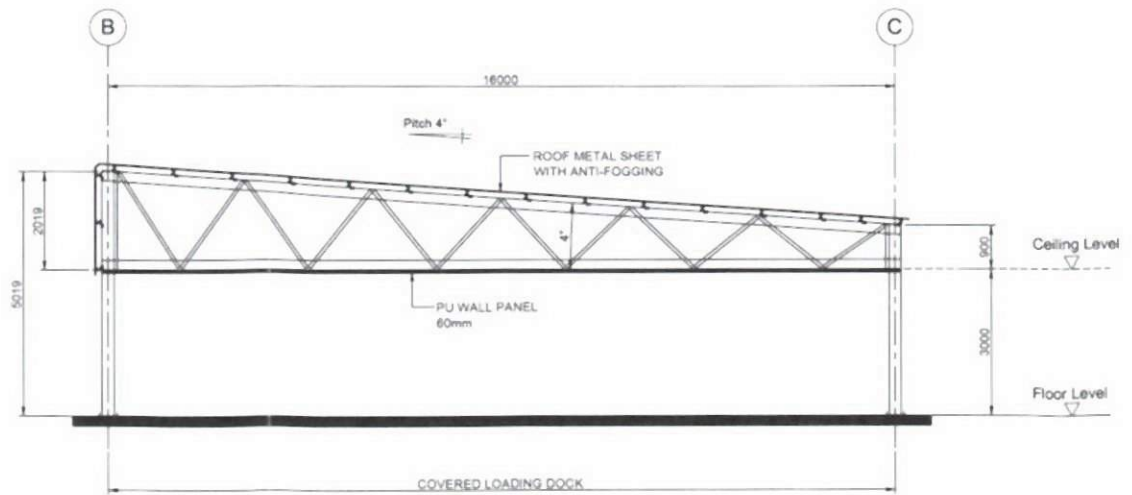
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Customer Name	MAINLAND	P-101 / M.Orini	- PU WALL LAYOUT PLAN - TRUSS LAYOUT PLAN
Project Name	ORINI PACKING STATION		
Location	ORINI, NEW ZEALAND		
Bldg. System	PACKING STATION		
Bldg. Dimension	48.1m (L) x 32m (W) x 3m (H)		



Section A-A  
SCALE : 1:75



Section B-B  
SCALE : 1:75



Section C-C  
SCALE : 1:75

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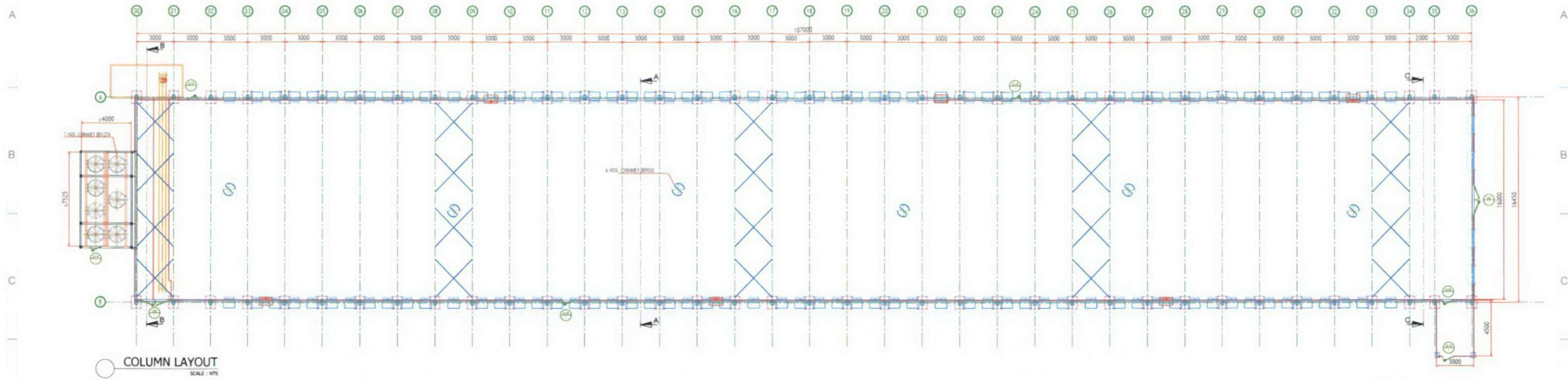
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A	First Issue	AZRI	DANI		28/11/2017

04 July 2017  
**Big Dutchman**  
 BD Agriculture (Malaysia) Sdn Bhd  
 No 9 Persiaran Astana-KU2,  
 Bandar Bukit Raja, 41050 Klang,  
 Selangor Darul Ehsan, Malaysia

PROJECT DETAILS:	
Customer Name	MAINLAND
Project Name	ORINI PACKING STATION
Location	ORINI, NEW ZEALAND
Bldg. System	PACKING STATION
Bldg. Dimension	48.1m (L) x 32m (W) x 3m (H)

DWG NO / PROJ. NO	DRAWING TITLE
P-102 / M.Orini	- Section A-A - Section B-B - Section C-C

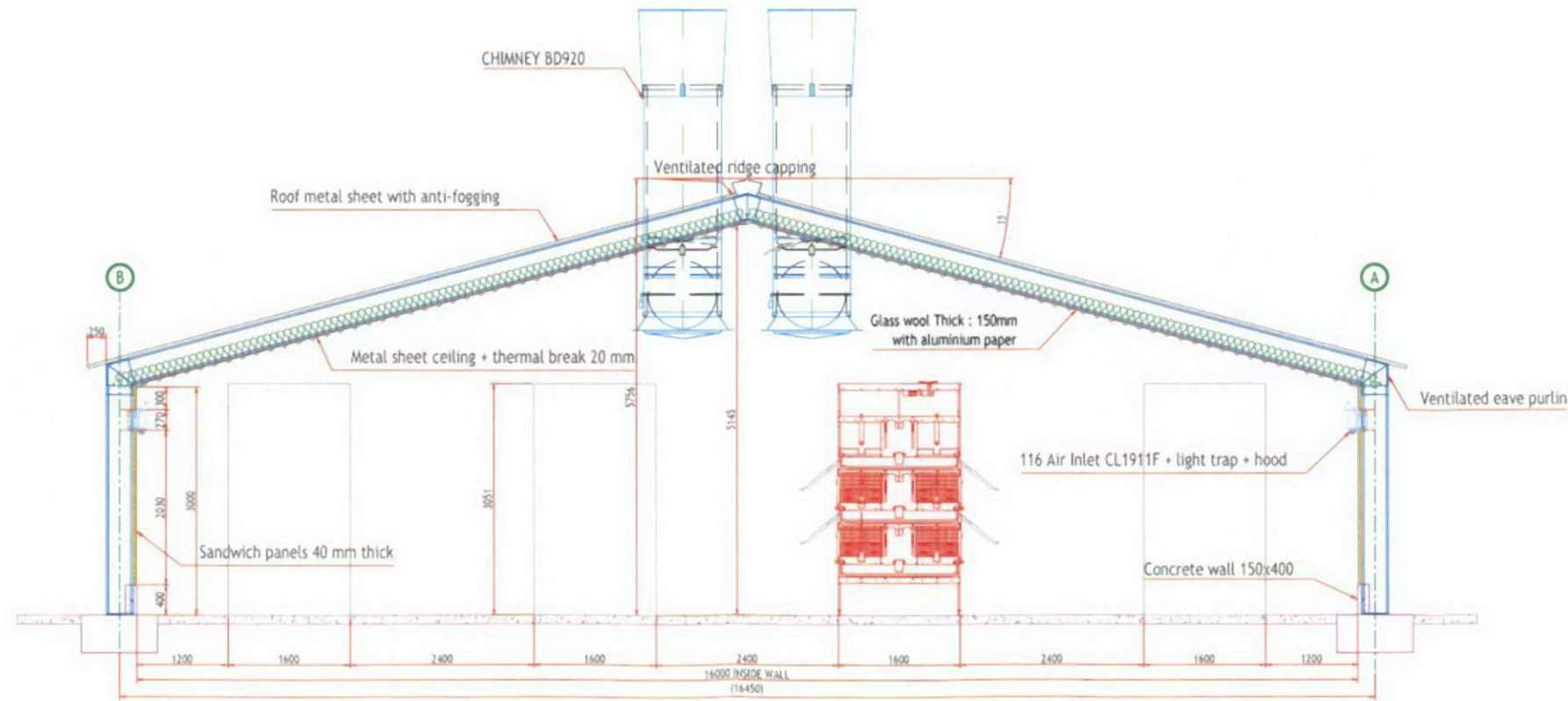
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COLUMN LAYOUT  
SCALE: NTS

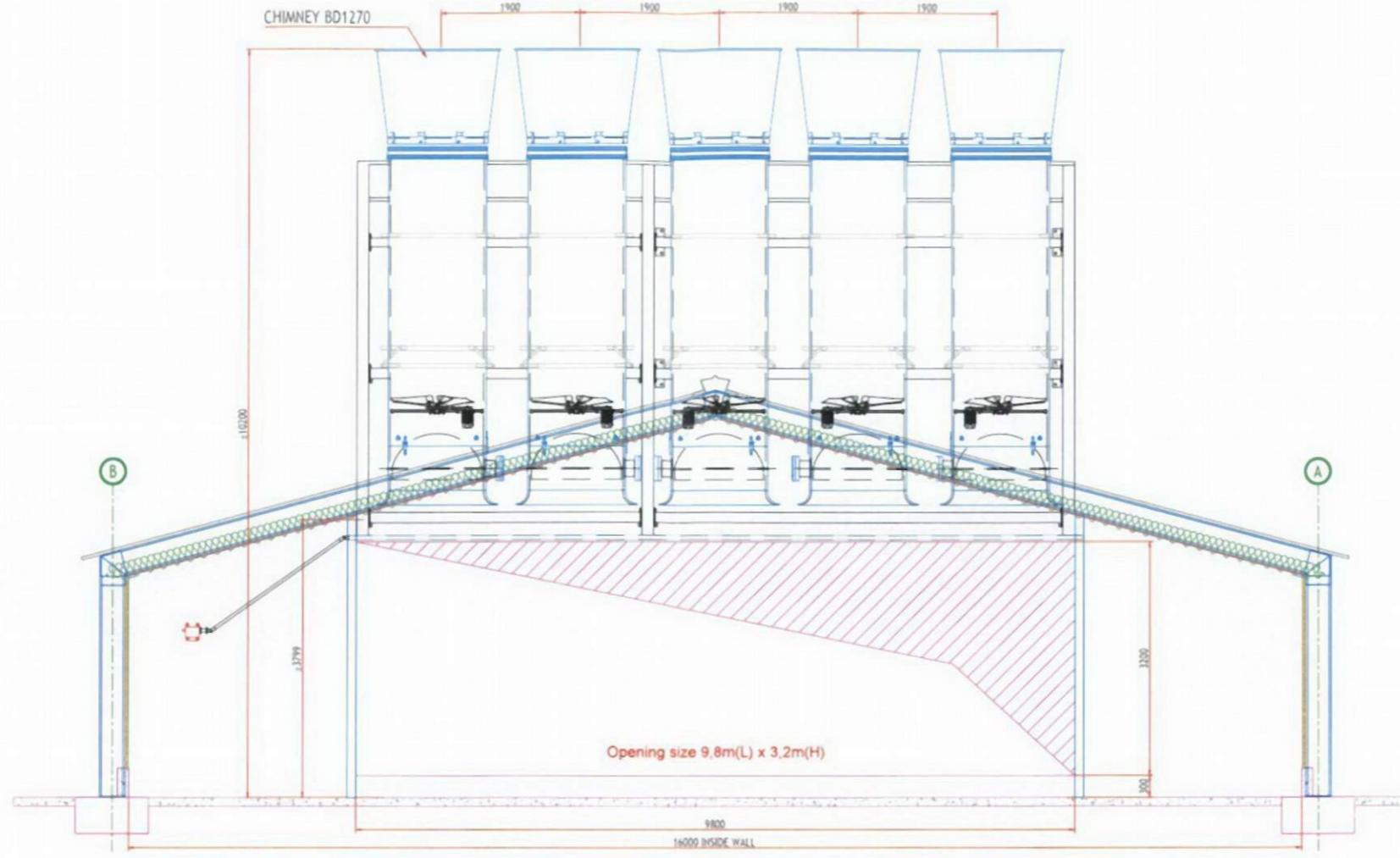
Legend:

	Right door 0.85m (w) x 2.00m (h) x 6 nos
	Double door 2.5m (w) x 2.00m (h) x 2 nos



SECTION A-A  
SCALE: NTS

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				YUSRA.MJ	DANI				Customer Name			MAINLAND
									Project Name			ORINI REARING
									Location			ORINI, NEW ZEALAND
							Bldg. System	REARING	P100	- COLUMN LAYOUT - SECTION A-A		
							Bldg. Dimension	107m (L) x 16m (W) x 3m (H)				



SECTION B-B  
SCALE: NTS



SECTION C-C  
SCALE: NTS

4x Shutter MVT-17M

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REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
		YUSRA.MJ	DANI		



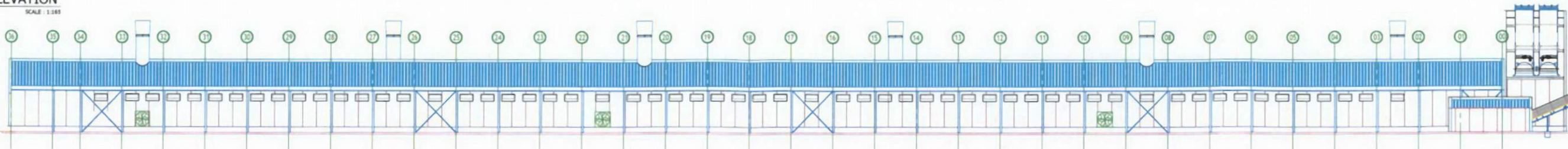
PROJECT DETAILS:	
Customer Name	MAINLAND
Project Name	ORINI REARING
Location	ORINI, NEW ZEALAND
Bldg. System	REARING
Bldg. Dimension	107m (L) x 16m (W) x 3m (H)

DWG. NO./PROJ. NO.	DRAWING TITLE
P101	- SECTION B-B - SECTION C-C

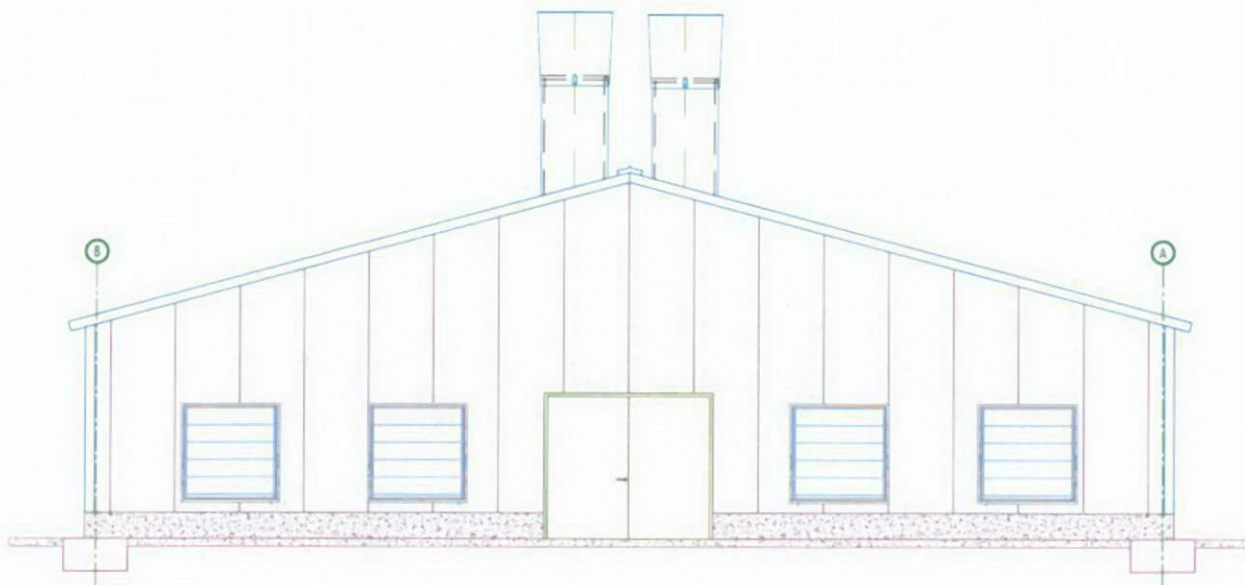
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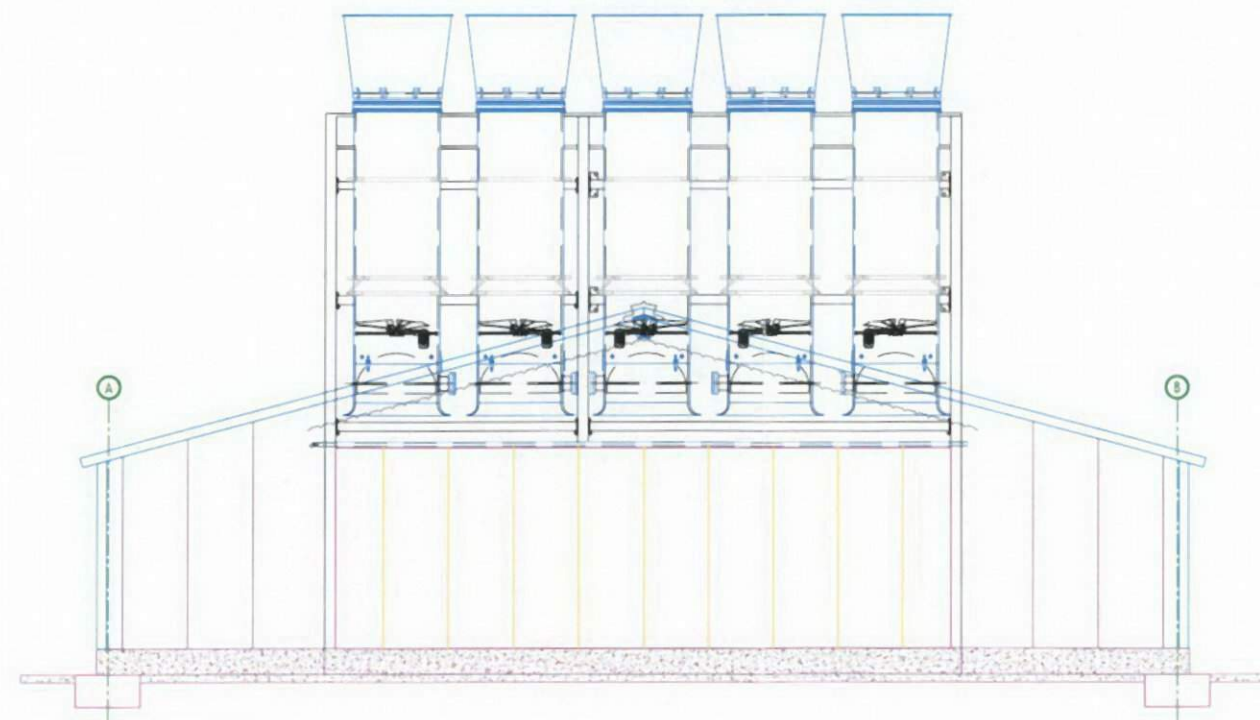
LEFT ELEVATION  
SCALE: 1:100



RIGHT ELEVATION  
SCALE: 1:100



FRONT ELEVATION  
SCALE: NTS



REAR ELEVATION  
SCALE: NTS

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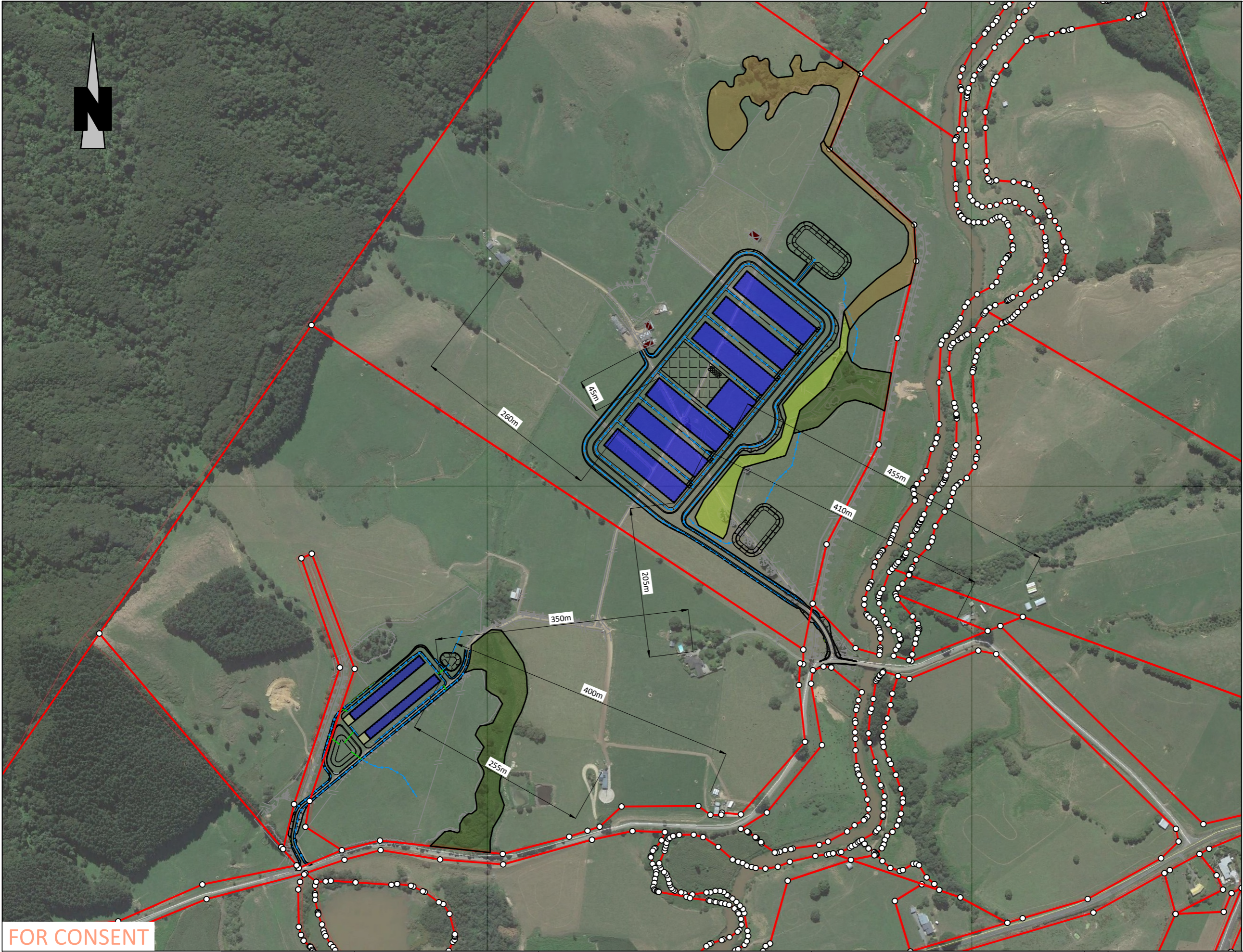
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
		YUSRA.MJ	DANI		



PROJECT DETAILS:	
Customer Name	MAINLAND
Project Name	ORINI REARING
Location	ORINI, NEW ZEALAND
Bldg. System	REARING
Bldg. Dimension	107m (L) x 16m (W) x 3m (H)

DWG. NO./PROJ. NO.	DRAWING TITLE
P102	- ELEVATIONS

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12



- NOTES:**  
**General**
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
 Vertical Datum = Moturiki 1953 (NZVD2016)  
 Bench mark = BEIV UAPOTO Road  
 Reduced level = 30.560m
  - G-2. Major contour interval = N/A  
 Minor contour interval = N/A
  - G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5. For any work located in a designated road reserve, a street opening permit will be required.  
 All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

FOR CONSENT

**Auckland Office:**  
 A: 25 Broadway, Newmarket  
 P: 09 524 7029  
**Hamilton Office:**  
 A: 58 Church Road, Hamilton  
 P: 07 849 9921  
**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
 P: 07 871 6144

**SITE LAYOUT  
 EXISTING BUILDING  
 OFFSET PLAN**

**PROPOSED SITE LAYOUT  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed:	SMcD	Date	Scale :
E0	FOR CONSENT	VB	31/01/18	Drawn:	SMcD	31/01/18	<b>1:5000</b>
				Checked:	VB	31/01/18	( A3 Original )
				Job No:	U1175	Dwg No:	700
						Rev:	E0



**NOTES:**

**General**

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
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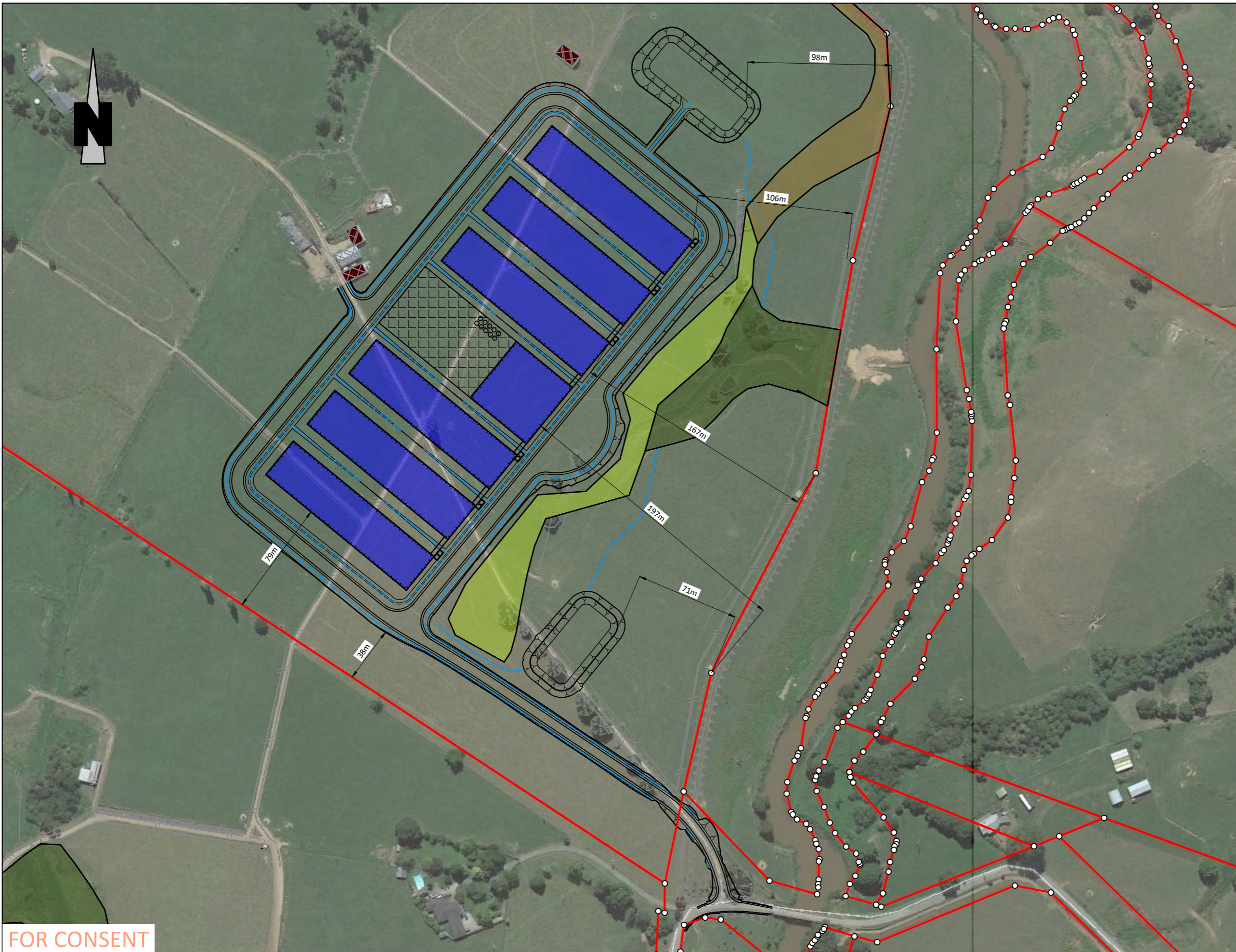
**FOR CONSENT**

**Auckland Office:**  
A: 25 Broadway, Newmarket  
P: 09 524 7029  
**Hamilton Office:**  
A: 58 Church Road, Hamilton  
P: 07 849 9921  
**Te Awamutu Office:**  
A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**RAISING SHEDS LAYOUT  
EXISTING BOUNDARY  
OFFSET PLAN**

**PROPOSED SITE LAYOUT  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed:	SMcD	Date	Scale :
E0	FOR CONSENT	VB	31/01/18	Drawn:	SMcD	31/01/18	<b>1:2000</b>
				Checked:	VB	31/01/18	( A3 Original )
				Job No:	U1175	Dwg No:	701
				Rev:			<b>E0</b>



**NOTES:**

**General**

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
- G-2. Major contour interval = N/A  
Minor contour interval = N/A
- G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
- G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
- G-5. For any work located in a designated road reserve, a street opening permit will be required.  
All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

**FOR CONSENT**



Planning | Surveying | Engineering | Environmental

**Auckland Office:**

A: 25 Broadway, Newmarket  
P: 09 524 7029

**Hamilton Office:**

A: 58 Church Road, Hamilton  
P: 07 849 9921

**Te Awamutu Office:**

A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**LAYING SHEDS LAYOUT  
EXISTING BOUNDARY  
OFFSET PLAN**

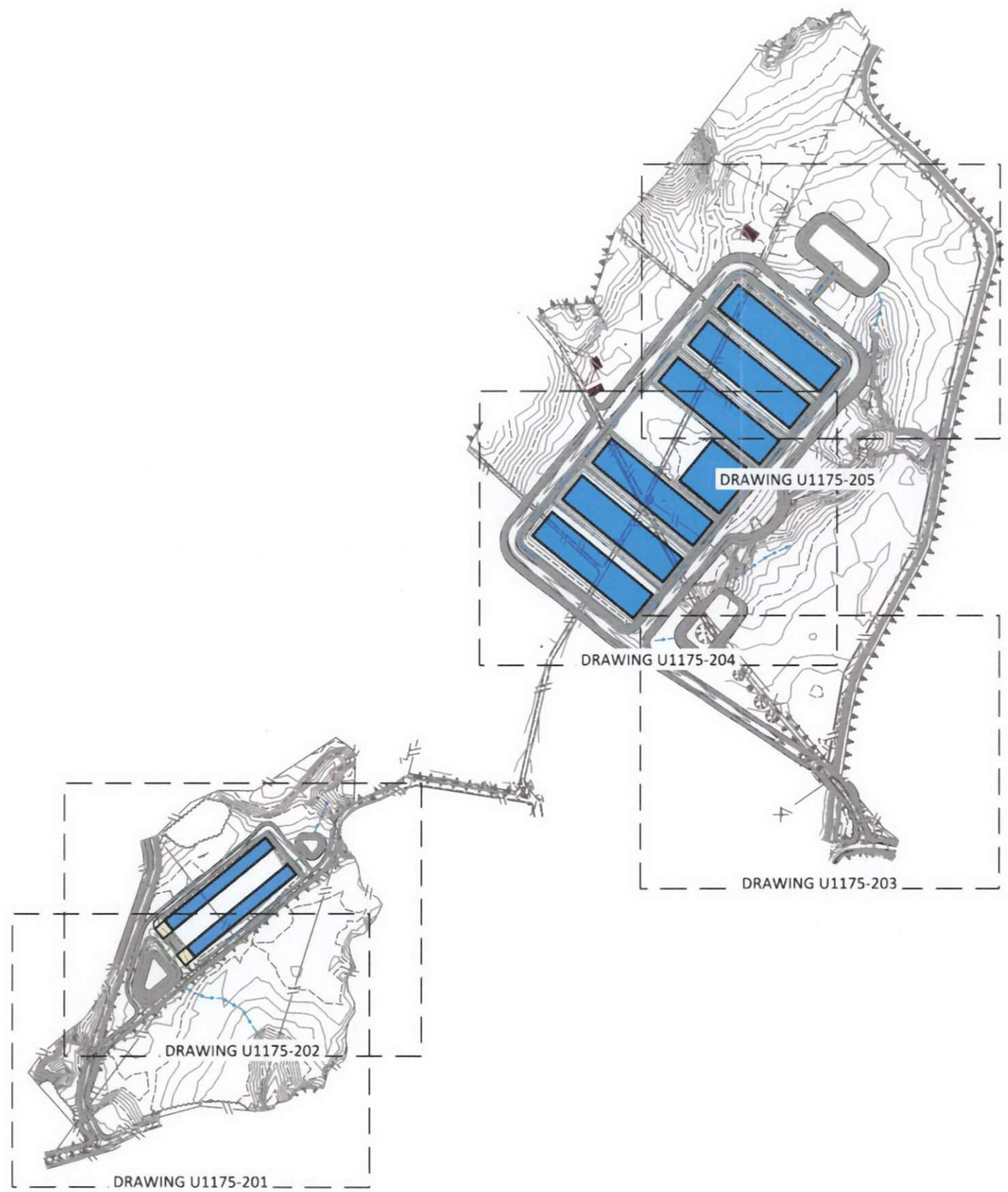
**PROPOSED SITE LAYOUT  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date			Date	Scale :
E0	FOR CONSENT	VB	31/01/18	Designed:	SMcD	31/01/18	<b>1:2500</b>
				Drawn:	SMcD	31/01/18	( A3 Original )
				Checked:	VB	31/01/18	
				Job No:	Dwg No:	Rev:	
				<b>U1175</b>	<b>702</b>	<b>E0</b>	









- NOTES:**  
**General**
- G-1 Horizontal Datum = Mt Eden Circuit 2000  
 Vertical Datum = Moturiki 1953 (NZVD2016)  
 Bench mark = BEIV UAPOTO Road  
 Reduced level = 30.560m
  - G-2 Major contour interval = 1.0m  
 Minor contour interval = 0.2m
  - G-3 All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4 Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5 For any work located in a designated road reserve, a street opening permit will be required.  
 All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

SCANNED  
 Set No: \_\_\_\_\_

FOR CONSENT



**Auckland Office:**  
 A: 25 Broadway, Newmarket  
 P: 09 524 7029  
**Hamilton Office:**  
 A: 58 Church Road, Hamilton  
 P: 07 849 9921  
**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
 P: 07 871 6144

**EARTHWORKS  
 LOCATION AND LAYOUT  
 PLAN**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:5000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>200</b>	<b>E3</b>

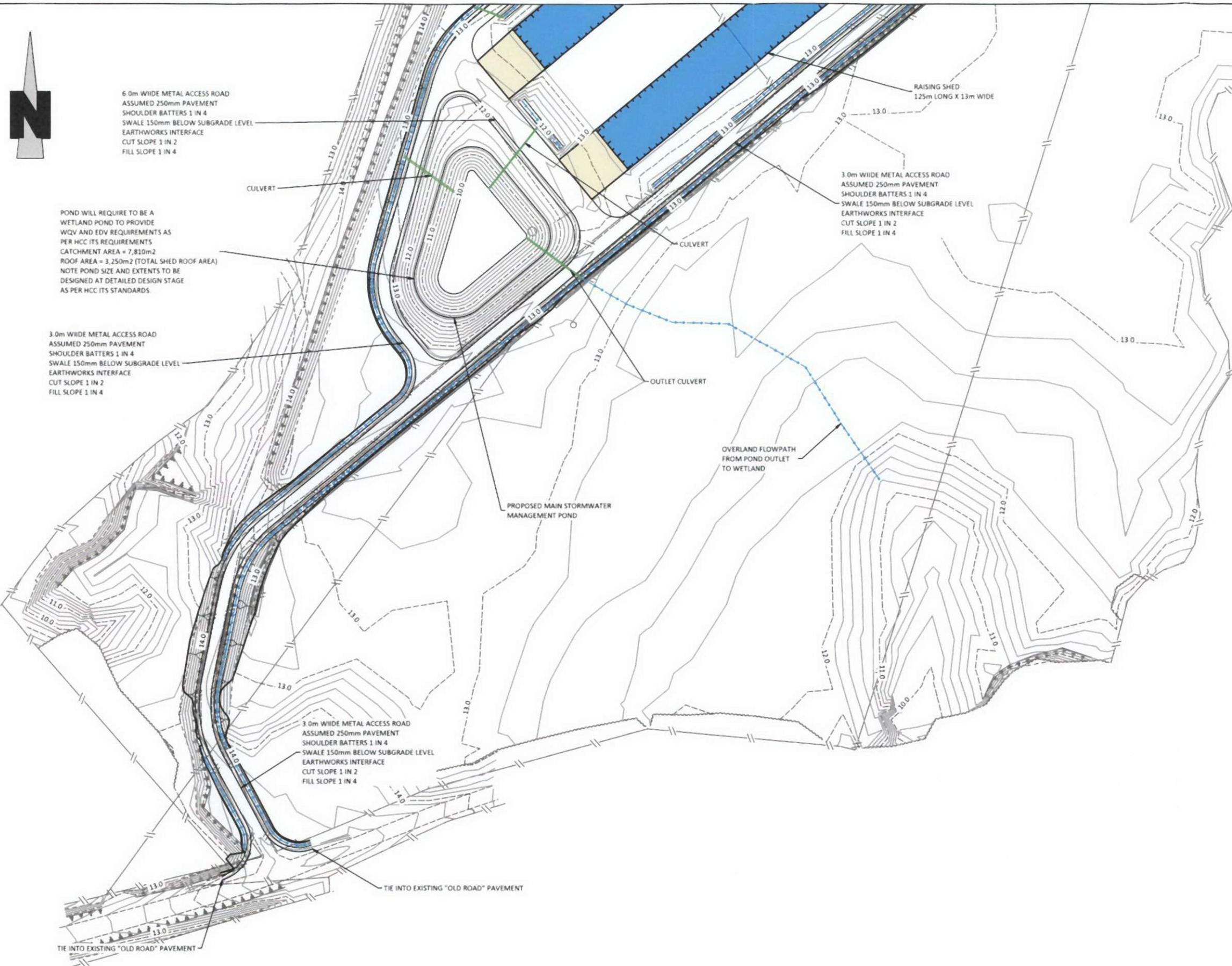


6.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4

POND WILL REQUIRE TO BE A  
WETLAND POND TO PROVIDE  
WQV AND EDV REQUIREMENTS AS  
PER HCC ITS REQUIREMENTS  
CATCHMENT AREA = 7,810m<sup>2</sup>  
ROOF AREA = 3,250m<sup>2</sup> (TOTAL SHED ROOF AREA)  
NOTE POND SIZE AND EXTENTS TO BE  
DESIGNED AT DETAILED DESIGN STAGE  
AS PER HCC ITS STANDARDS.

3.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4

3.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4



**NOTES:**  
General

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
- G-2. Major contour interval = 1.0m  
Minor contour interval = 0.2m
- G-3. All earthworks to be carried out in accordance with the  
Waikato Regional Council technical publication  
"Erosion & Sediment Control Guidelines for Land  
Disturbing Activities (January 2009)".
- G-4. Contractor to liaise with relevant authorities, locate  
and flag all existing services on or adjacent to the site  
prior to commencement of works.
- G-5. For any work located in a designated road reserve, a street  
opening permit will be required.  
All excavations in road reserves shall comply with the  
National Code of Practice for Utilities' Access to the  
Transport Corridors

FOR CONSENT

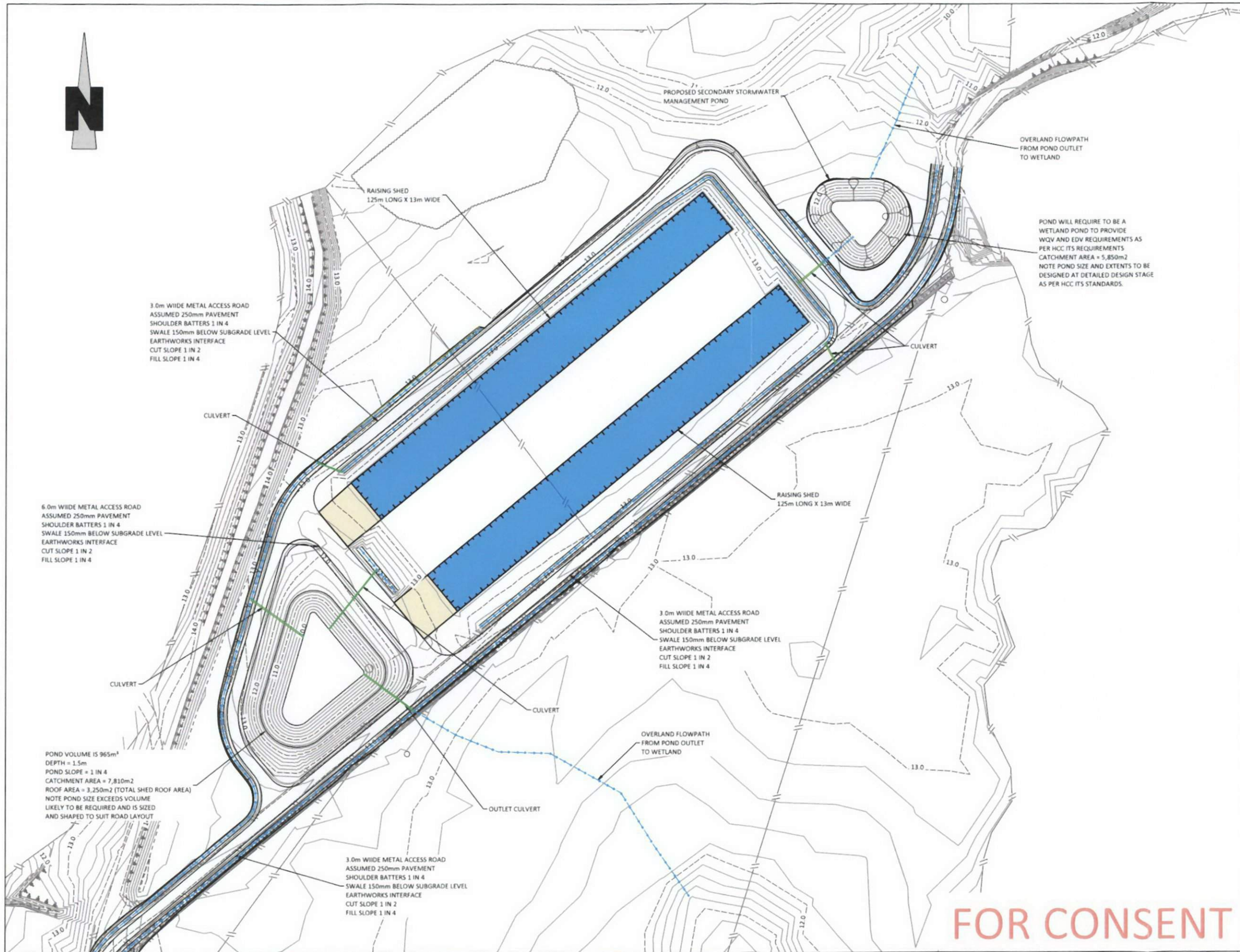


**Auckland Office:**  
A: 25 Broadway, Newmarket  
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**Te Awamutu Office:**  
A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**EARTHWORKS  
LAYOUT PLAN  
SHEET 1 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>201</b>	<b>E3</b>



- NOTES:**  
General
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
  - G-2. Major contour interval = 1.0m  
Minor contour interval = 0.2m
  - G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5. For any work located in a designated road reserve, a street opening permit will be required.  
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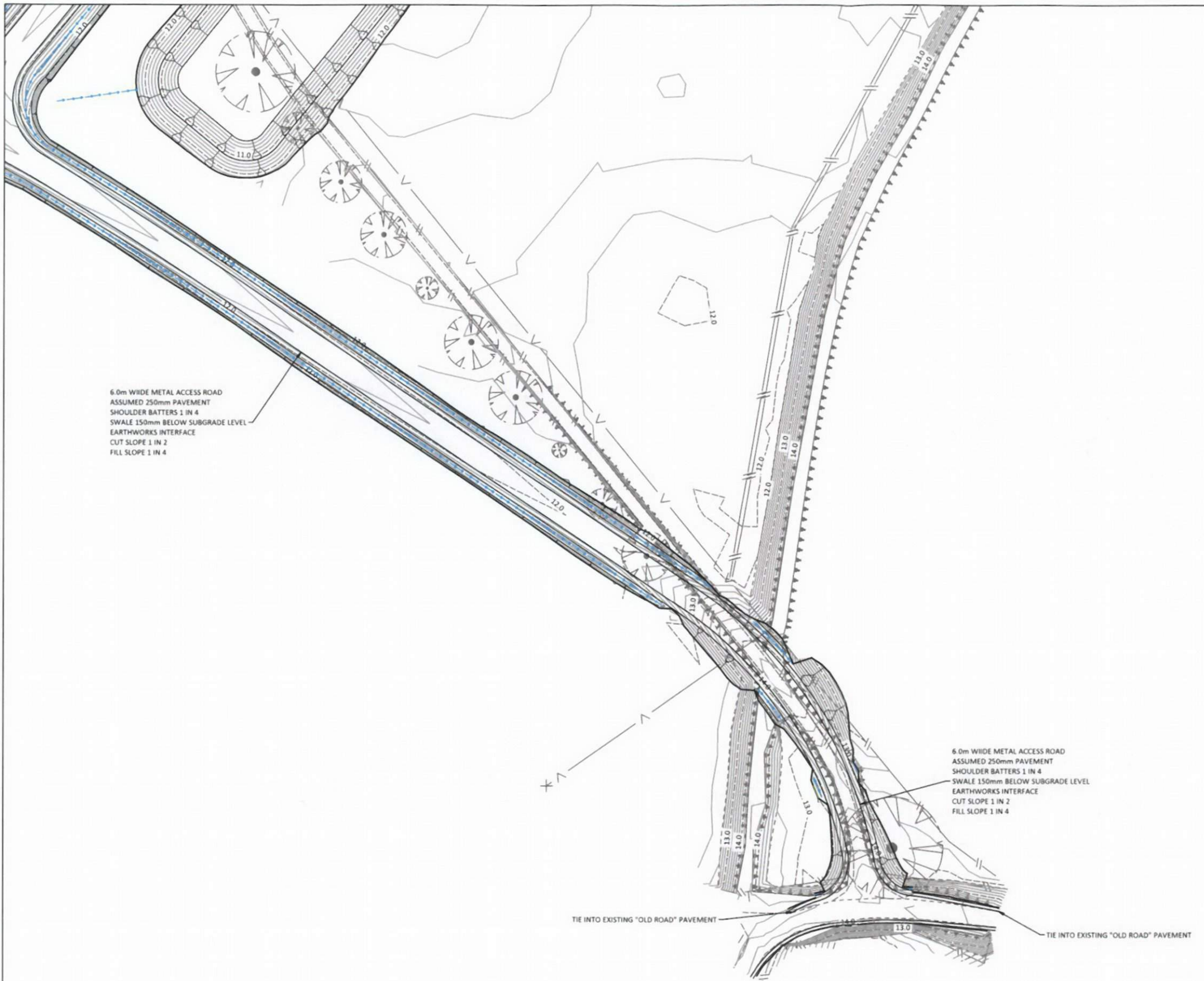


**Auckland Office:**  
A: 25 Broadway, Newmarket  
P: 09 534 7029  
**Hamilton Office:**  
A: 58 Church Road, Hamilton  
P: 07 849 9921  
**Te Awamutu Office:**  
A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**EARTHWORKS  
LAYOUT PLAN  
SHEET 2 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	1:1000 (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				U1175	202	E3



- NOTES:**  
**General**
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
 Vertical Datum = Moturiki 1953 (NZVD2016)  
 Bench mark = BEIV UAPOTO Road  
 Reduced level = 30.560m
  - G-2. Major contour interval = 1.0m  
 Minor contour interval = 0.2m
  - G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5. For any work located in a designated road reserve, a street opening permit will be required.  
 All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

6.0m WIDE METAL ACCESS ROAD  
 ASSUMED 250mm PAVEMENT  
 SHOULDER BATTERS 1 IN 4  
 SWALE 150mm BELOW SUBGRADE LEVEL  
 EARTHWORKS INTERFACE  
 CUT SLOPE 1 IN 2  
 FILL SLOPE 1 IN 4

6.0m WIDE METAL ACCESS ROAD  
 ASSUMED 250mm PAVEMENT  
 SHOULDER BATTERS 1 IN 4  
 SWALE 150mm BELOW SUBGRADE LEVEL  
 EARTHWORKS INTERFACE  
 CUT SLOPE 1 IN 2  
 FILL SLOPE 1 IN 4

TIE INTO EXISTING "OLD ROAD" PAVEMENT

TIE INTO EXISTING "OLD ROAD" PAVEMENT

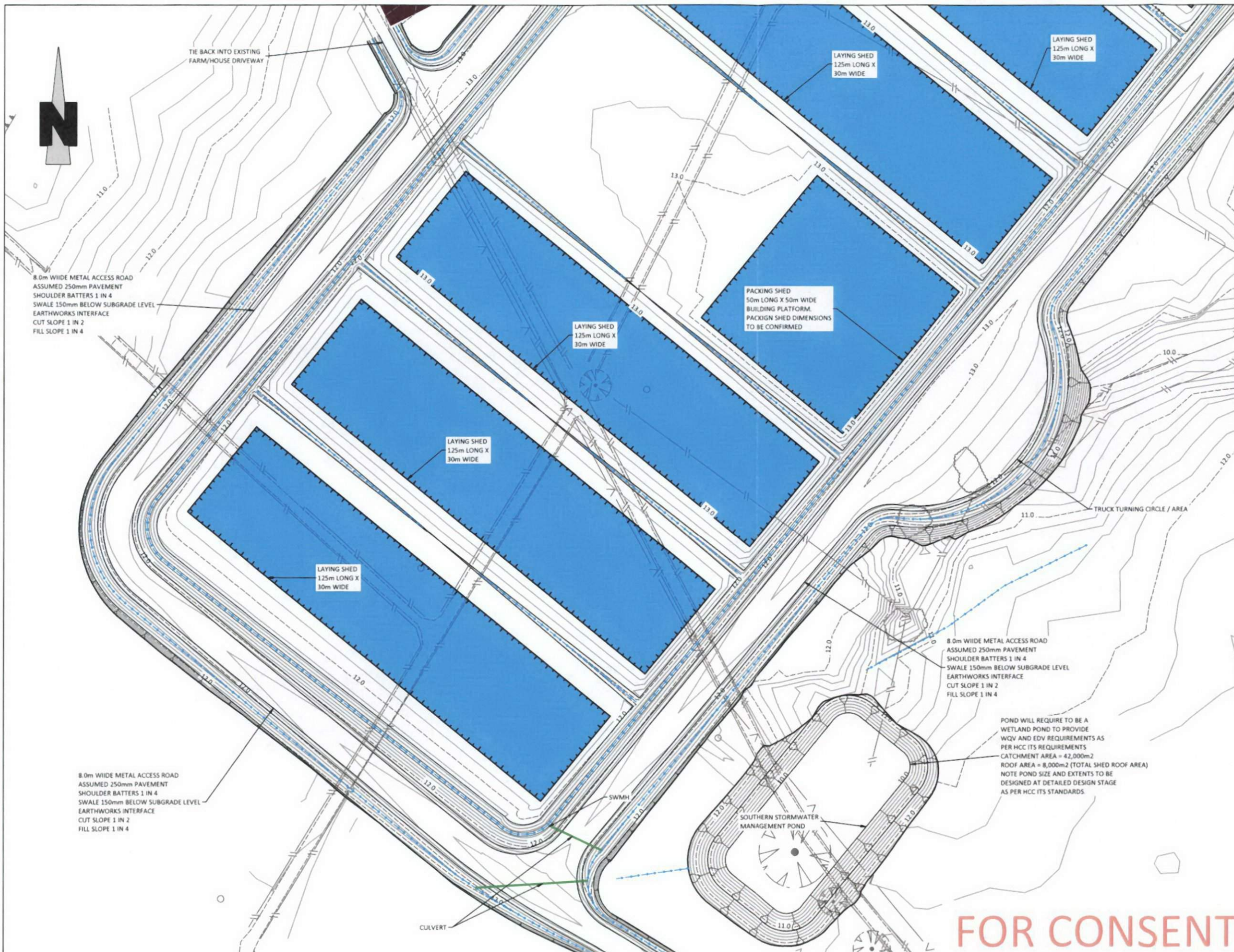
**FOR CONSENT**

**Auckland Office:**  
 A: 25 Broadway, Newmarket  
 P: 09 524 7029  
**Hamilton Office:**  
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 P: 07 849 9921  
**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
 P: 07 871 6144

**EARTHWORKS  
 LAYOUT PLAN  
 SHEET 3 OF 5**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
		Job No:		Dwg No:		Rev:
		<b>U1175</b>		<b>203</b>		<b>E3</b>



- NOTES:**  
General
- G-1 Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
  - G-2 Major contour interval = 1.0m  
Minor contour interval = 0.2m
  - G-3 All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4 Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5 For any work located in a designated road reserve, a street opening permit will be required.  
All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors



8.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4

8.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4

8.0m WIDE METAL ACCESS ROAD  
ASSUMED 250mm PAVEMENT  
SHOULDER BATTERS 1 IN 4  
SWALE 150mm BELOW SUBGRADE LEVEL  
EARTHWORKS INTERFACE  
CUT SLOPE 1 IN 2  
FILL SLOPE 1 IN 4

POND WILL REQUIRE TO BE A  
WETLAND POND TO PROVIDE  
WQV AND EDV REQUIREMENTS AS  
PER HCC ITS REQUIREMENTS  
CATCHMENT AREA = 42,000m<sup>2</sup>  
ROOF AREA = 8,000m<sup>2</sup> (TOTAL SHED ROOF AREA)  
NOTE POND SIZE AND EXTENTS TO BE  
DESIGNED AT DETAILED DESIGN STAGE  
AS PER HCC ITS STANDARDS

**FOR CONSENT**

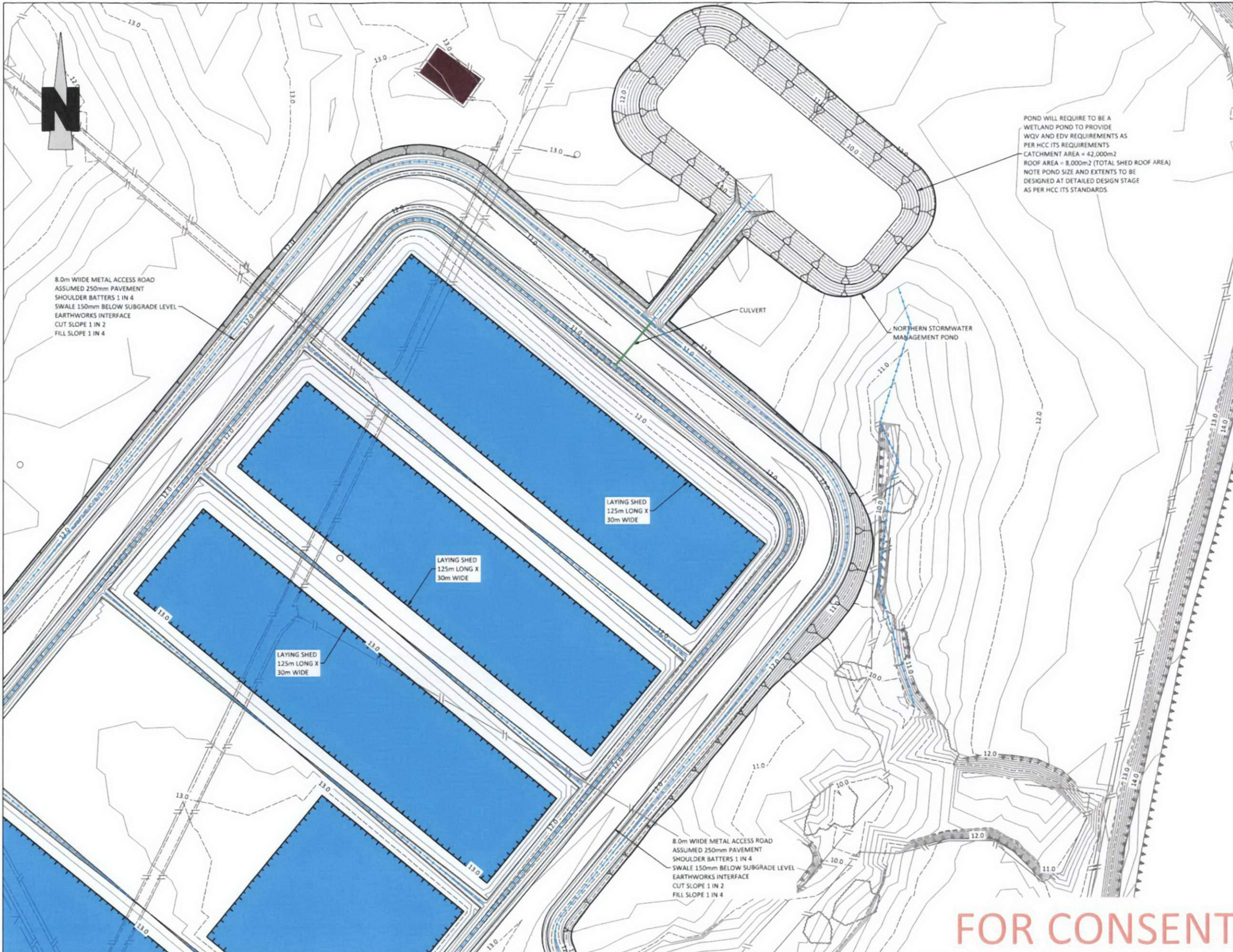


**Auckland Office:**  
A: 25 Broadway, Newmarket  
P: 09 524 7029  
**Hamilton Office:**  
A: 58 Church Road, Hamilton  
P: 07 849 9921  
**Te Awamutu Office:**  
A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**EARTHWORKS  
LAYOUT PLAN  
SHEET 4 OF 5**

**PROPOSED CIVIL WORKS**  
**Mainland Poultry Ltd**  
64 Old Road, Orini

Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	1:1000 (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>204</b>	<b>E3</b>



POND WILL REQUIRE TO BE A WETLAND POND TO PROVIDE WQV AND EDV REQUIREMENTS AS PER HCC ITS REQUIREMENTS  
 CATCHMENT AREA = 42,000m<sup>2</sup>  
 ROOF AREA = 8,000m<sup>2</sup> (TOTAL SHED ROOF AREA)  
 NOTE POND SIZE AND EXTENTS TO BE DESIGNED AT DETAILED DESIGN STAGE AS PER HCC ITS STANDARDS.

8.0m WIDE METAL ACCESS ROAD  
 ASSUMED 250mm PAVEMENT  
 SHOULDER BATTERS 1 IN 4  
 SWALE 150mm BELOW SUBGRADE LEVEL  
 EARTHWORKS INTERFACE  
 CUT SLOPE 1 IN 2  
 FILL SLOPE 1 IN 4

8.0m WIDE METAL ACCESS ROAD  
 ASSUMED 250mm PAVEMENT  
 SHOULDER BATTERS 1 IN 4  
 SWALE 150mm BELOW SUBGRADE LEVEL  
 EARTHWORKS INTERFACE  
 CUT SLOPE 1 IN 2  
 FILL SLOPE 1 IN 4

- NOTES:**  
 General
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
 Vertical Datum = Moturiki 1953 (NZVD2016)  
 Bench mark = BEIV UAPOTO Road  
 Reduced level = 30.560m
  - G-2. Major contour interval = 1.0m  
 Minor contour interval = 0.2m
  - G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5. For any work located in a designated road reserve, a street opening permit will be required.  
 All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

**FOR CONSENT**



**Auckland Office:**  
 A: 25 Broadway, Newmarket  
 P: 09 524 7029  
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 A: 58 Church Road, Hamilton  
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**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
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**EARTHWORKS  
 LAYOUT PLAN  
 SHEET 5 OF 5**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

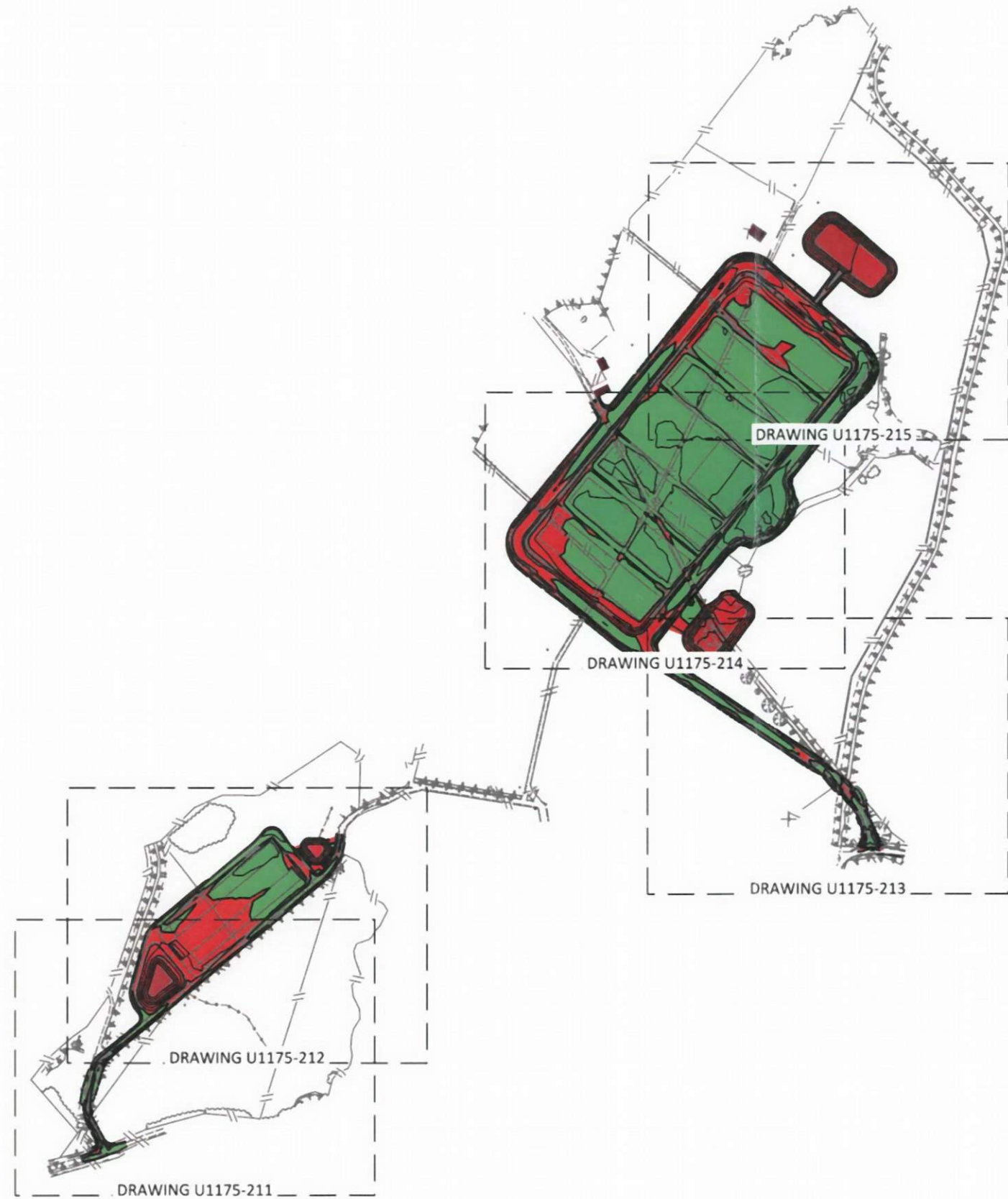
Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	1:1000 (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>205</b>	<b>E3</b>



**NOTE:**

DESIGN BASED ON BULK EARTHWORKS ONLY DUE TO GEOTECHNICAL INVESTIGATION NOT AVAILABLE AT TIME OF EARTHWORKS DESIGN. ROAD PAVEMENT AND SUBGRADE IMPROVEMENTS NOT TAKEN INTO ACCOUNT, ALSO BUILDING FOUNDATIONS NOT TAKEN INTO ACCOUNT. ANY EXCESS MATERIAL CAN BE UTILISED ONSITE TO CREATE PLANTING BUNDS AND OR LANDSCAPE AREAS.

STORMWATER TREATMENT PONDS ARE INDICATIVE SIZES ONLY BASED ON SIMILAR PONDS FOR SIMILAR CATCHMENT AREAS ON OTHER PROJECTS. SPECIFIC POND DESIGN REQUIRED AND SPECIFIC DESIGN CAN BE REFINED AT DETAILED DESIGN STAGE OF THE DEVELOPMENT.



**NOTES:**

**General**

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
- G-2. Major contour interval = 0.5m  
Minor contour interval = 0.3m
- G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
- G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
- G-5. For any work located in a designated road reserve, a street opening permit will be required.  
All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

TOTAL EARTHWORKS VOLUMES	
Description	Volume m <sup>3</sup> (Solid Measure)
Topsoil Strip	21,800m <sup>3</sup>
Cut Available Earthworks	27,200m <sup>3</sup>
Cut Available Roading	NA
Drainage & Services Surplus	NA
Total Cut Volume	27,200m <sup>3</sup>
Fill Volume	26,300m <sup>3</sup>
Unsuitable Material	NA
Compaction Factor	0.8 Assumed
Fill Material Required	32,900m <sup>3</sup>
Earthworks Balance	5,700m <sup>3</sup> Fill Shortfall

**EARTHWORKS NOTE :**  
 EW 1. Volumes are between design surface and natural ground.  
 EW 2. Topsoil volume assumed average of 200mm topsoil over the site.

**LEGEND :**

- CUT
- FILL

FOR CONSENT

SCALE @ A3 = 1:5000

**CKL**  
 Planning | Surveying | Engineering | Environmental

**Auckland Office:**  
 A: 25 Broadway, Newmarket  
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**Hamilton Office:**  
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 P: 07 849 9921

**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
 P: 07 871 6144

**EARTHWORKS  
 CUT FILL  
 OVERVIEW PLAN**

**PROPOSED CIVIL WORKS**  
**Mainland Poultry Ltd**  
**64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>210</b>	<b>E3</b>



**NOTES:**  
General

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
- G-2. Major contour interval = 0.5m  
Minor contour interval = 0.5m
- G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
- G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
- G-5. For any work located in a designated road reserve, a street opening permit will be required.  
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AREA 1 EARTHWORKS VOLUMES	
Description	Volume m <sup>3</sup> (Solid Measure)
Topsoil Strip	5,800m <sup>3</sup>
Cut Available Earthworks	6,200m <sup>3</sup>
Cut Available Roading	NA
Drainage & Services Surplus	NA
Total Cut Volume	6,200m <sup>3</sup>
Fill Volume	1,500m <sup>3</sup>
Unsuitable Material	NA
Compaction Factor	0.8 Assumed
Fill Material Required	1,900m <sup>3</sup>
Earthworks Balance	4,300m <sup>3</sup> Excess Cut

**EARTHWORKS NOTE :**  
EW 1. Volumes are between design surface and natural ground.  
EW 2. Topsoil volume assumed average of 200mm topsoil over the site.

**LEGEND :**

- CUT
- FILL

FOR CONSENT



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**EARTHWORKS  
CUT FILL  
SHEET 1 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>211</b>	<b>E3</b>



- NOTES:**
- General**
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
  - G-2. Major contour interval = 0.5m  
Minor contour interval = 0.5m
  - G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
  - G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
  - G-5. For any work located in a designated road reserve, a street opening permit will be required.  
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AREA 1 EARTHWORKS VOLUMES	
Description	Volume m <sup>3</sup> (Solid Measure)
Topsoil Strip	5,800m <sup>3</sup>
Cut Available Earthworks	6,200m <sup>3</sup>
Cut Available Roading	NA
Drainage & Services Surplus	NA
Total Cut Volume	6,200m <sup>3</sup>
Fill Volume	1,500m <sup>3</sup>
Unsuitable Material	NA
Compaction Factor	0.8 Assumed
Fill Material Required	1,900m <sup>3</sup>
Earthworks Balance	4,300m <sup>3</sup> Excess Cut

**EARTHWORKS NOTE :**  
 EW 1. Volumes are between design surface and natural ground.  
 EW 2. Topsoil volume assumed average of 200mm topsoil over the site.

**LEGEND :**

CUT

FILL

FOR CONSENT

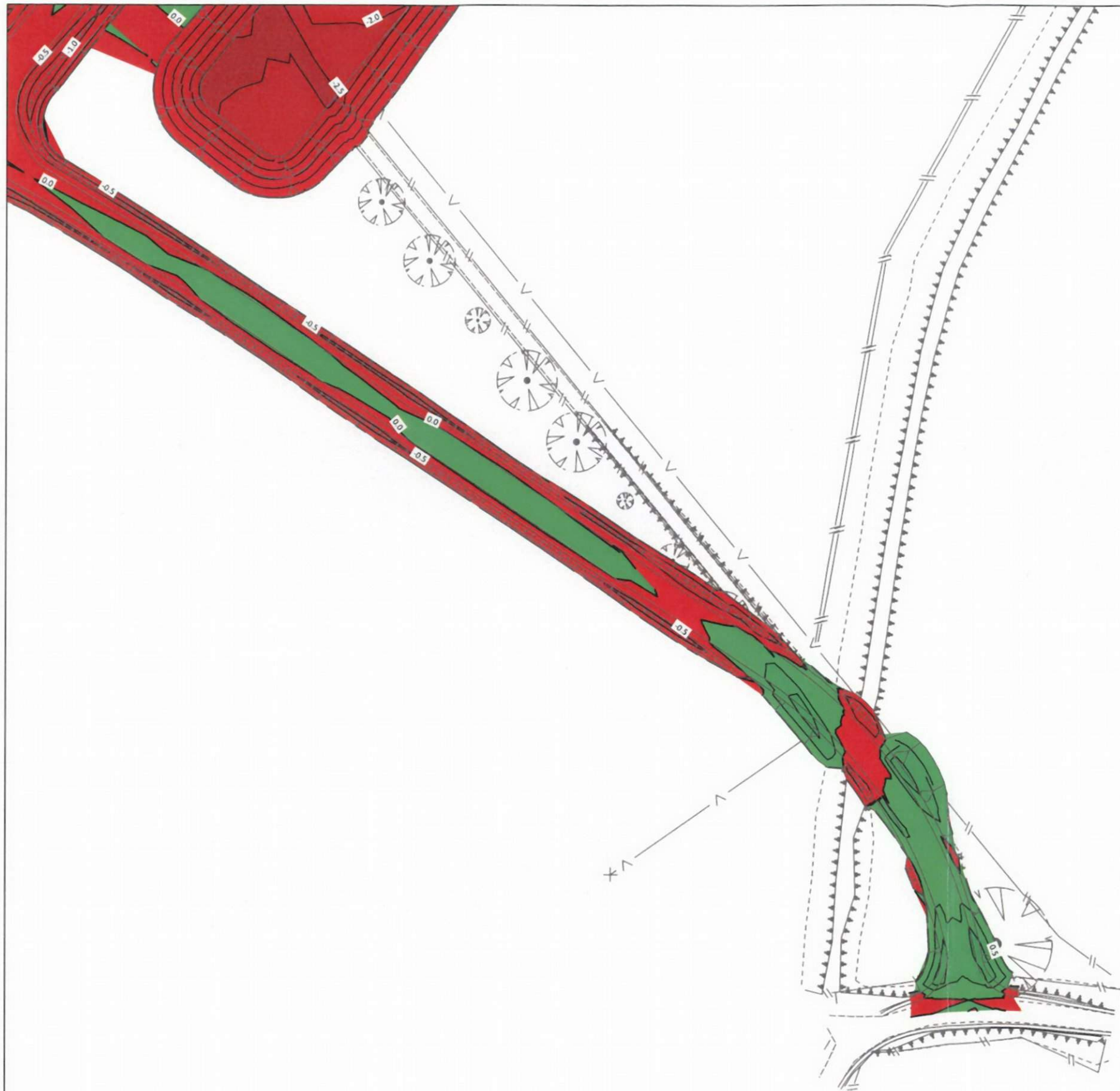


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 A: 25 Broadway, Newmarket  
 P: 09 524 7029  
**Hamilton Office:**  
 A: 58 Church Road, Hamilton  
 P: 07 849 9921  
**Te Awamutu Office:**  
 A: 103 Market Street, Te Awamutu  
 P: 07 871 6144

**EARTHWORKS  
 CUT FILL  
 SHEET 2 OF 5**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>212</b>	<b>E3</b>



**NOTES:**  
General

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
Reduced level = 30.560m
- G-2. Major contour interval = 0.5m  
Minor contour interval = 0.5m
- G-3. All earthworks to be carried out in accordance with the Waikato Regional Council technical publication "Erosion & Sediment Control Guidelines for Land Disturbing Activities (January 2009)".
- G-4. Contractor to liaise with relevant authorities, locate and flag all existing services on or adjacent to the site prior to commencement of works.
- G-5. For any work located in a designated road reserve, a street opening permit will be required.  
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AREA 2 EARTHWORKS VOLUMES	
Description	Volume m <sup>3</sup> (Solid Measure)
Topsoil Strip	16,000m <sup>3</sup>
Cut Available Earthworks	21,000m <sup>3</sup>
Cut Available Roading	NA
Drainage & Services Surplus	NA
Total Cut Volume	21,000m <sup>3</sup>
Fill Volume	25,000m <sup>3</sup>
Unsuitable Material	NA
Compaction Factor	0.8 Assumed
Fill Material Required	31,000m <sup>3</sup>
Earthworks Balance	10,000m <sup>3</sup> Fill Shortfall

**EARTHWORKS NOTE :**  
 EW 1. Volumes are between design surface and natural ground.  
 EW 2. Topsoil volume assumed average of 200mm topsoil over the site.

**LEGEND :**  
 CUT  
 FILL

FOR CONSENT

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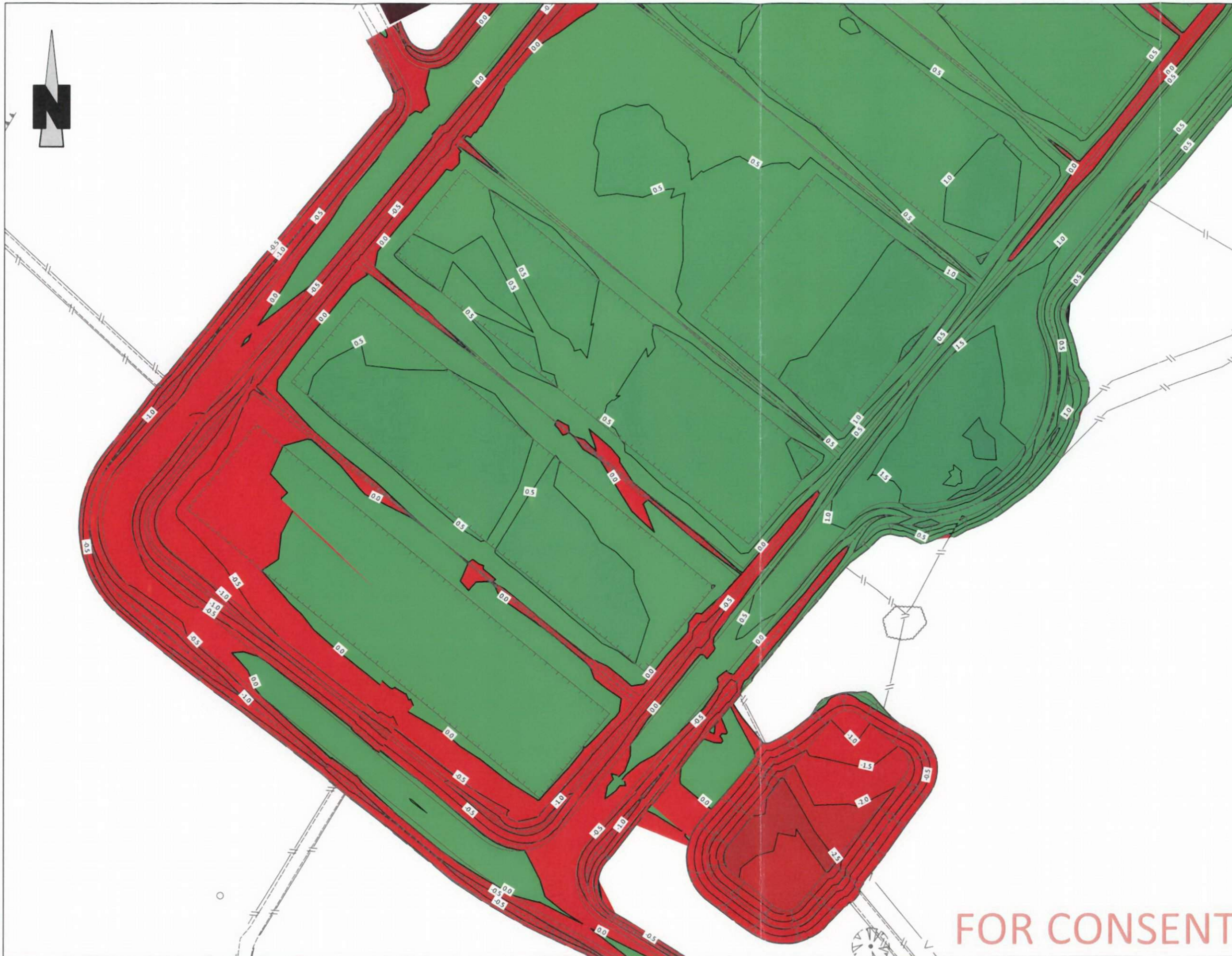
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**EARTHWORKS  
 CUT FILL  
 SHEET 3 OF 5**

**PROPOSED CIVIL WORKS**  
**Mainland Poultry Ltd**  
 64 Old Road, Orini

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
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E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>213</b>	<b>E3</b>



- NOTES:**  
**General**
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 Vertical Datum = Moturiki 1953 (NZVD2016)  
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**LEGEND :**

CUT

FILL

FOR CONSENT

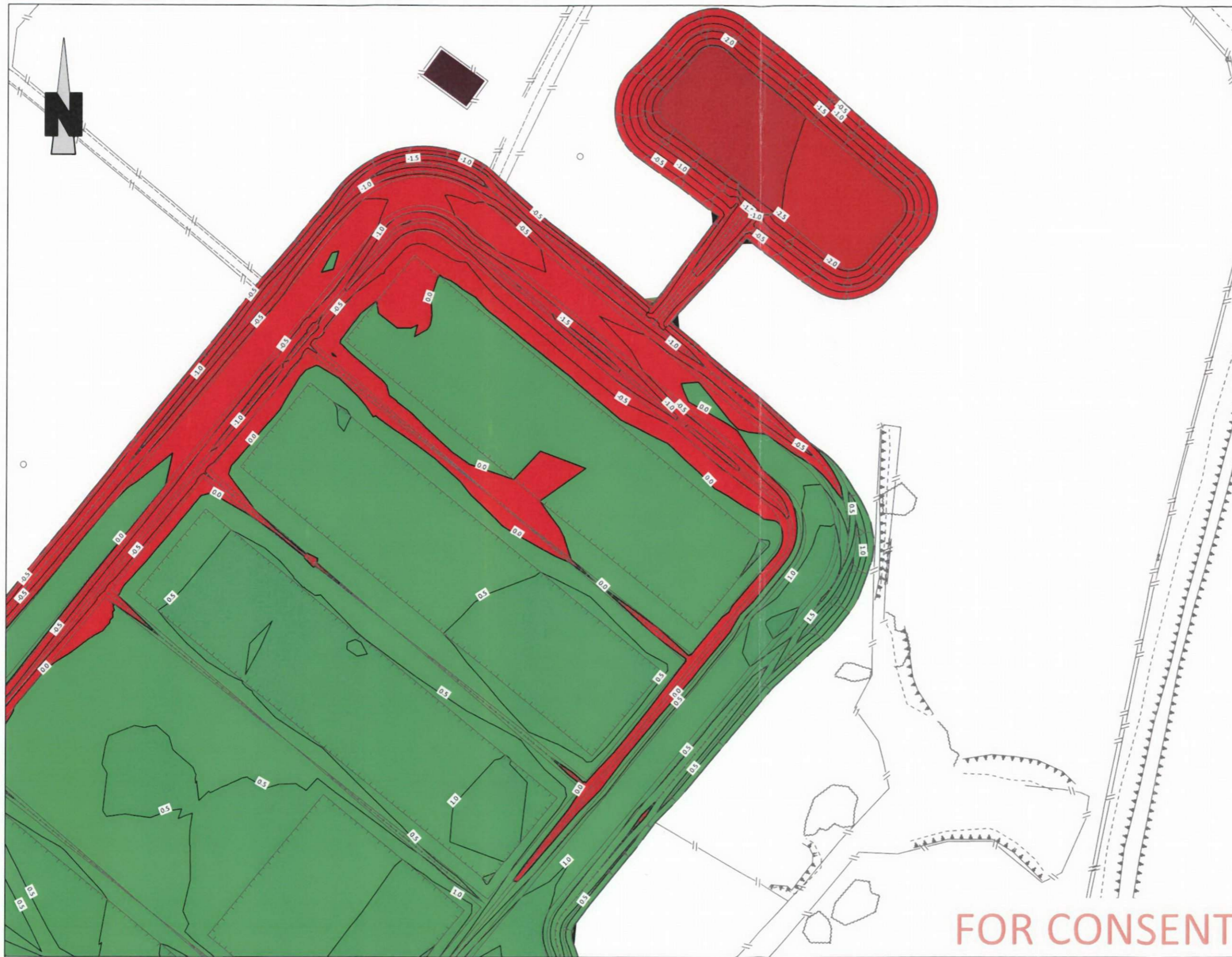


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**EARTHWORKS  
 CUT FILL  
 SHEET 4 OF 5**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>214</b>	<b>E3</b>



- NOTES:**  
**General**
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
 Vertical Datum = Moturiki 1953 (NZVD2016)  
 Bench mark = BEW UAPOTO Road  
 Reduced level = 30.560m
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**EARTHWORKS NOTE :**  
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**LEGEND :**

CUT

FILL

FOR CONSENT

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**EARTHWORKS  
 CUT FILL PLAN  
 SHEET 5 OF 5**

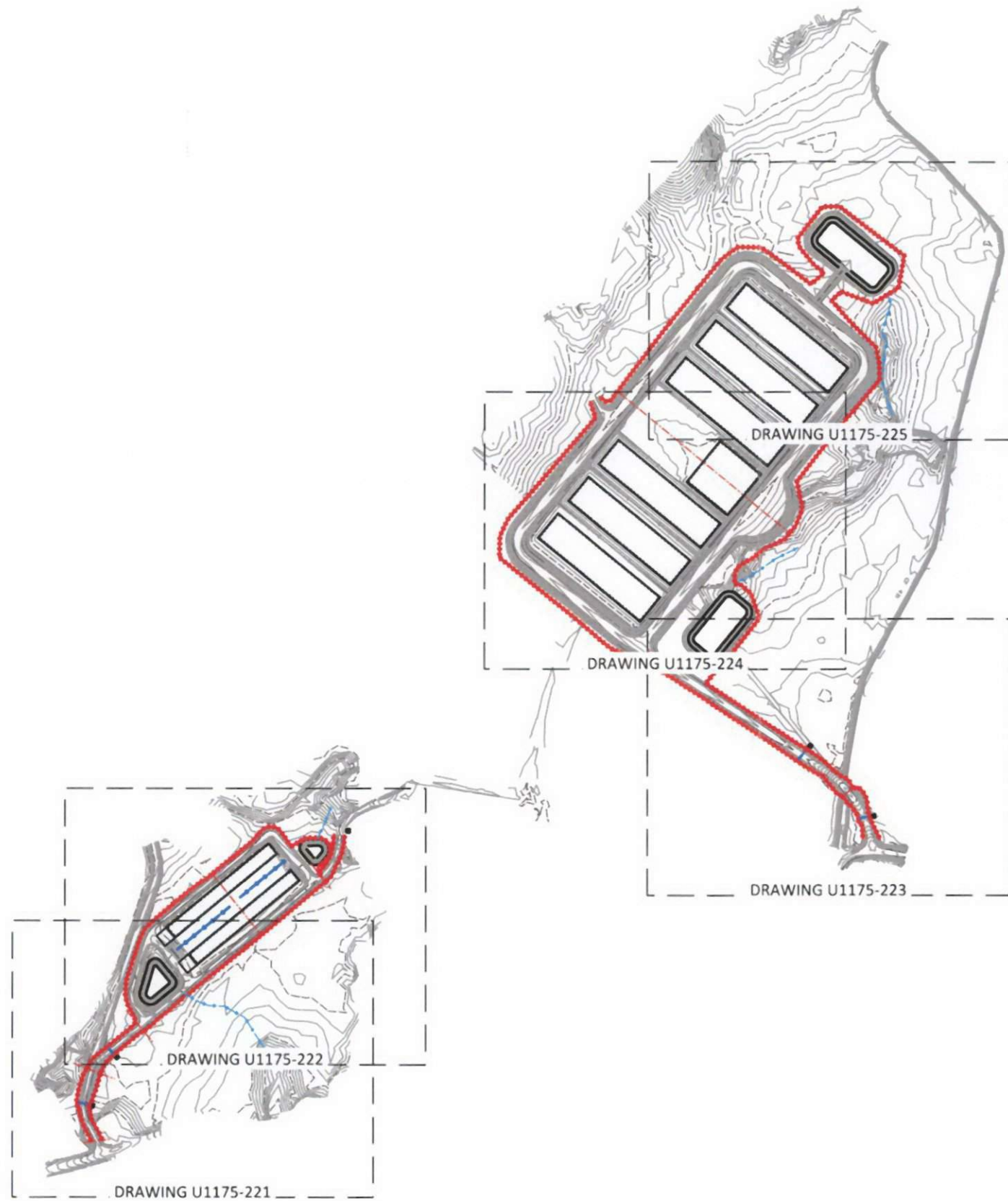
**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	16/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	16/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	16/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>215</b>	<b>E3</b>

**NOTE:**

DESIGN BASED ON BULK EARTHWORKS ONLY DUE TO GEOTECHNICAL INVESTIGATION NOT AVAILABLE AT TIME OF EARTHWORKS DESIGN. ROAD PAVEMENT AND SUBGRADE IMPROVEMENT NOT TAKEN INTO ACCOUNT. ALSO BUILDING FOUNDATIONS NOT TAKEN INTO ACCOUNT. ANY EXCESS MATERIAL CAN BE UTILISED ONSITE TO CREATE PLANTING BUNDS AND OR LANDSCAPE AREAS.

STORMWATER TREATMENT PONDS ARE INDICATIVE SIZES ONLY BASED ON SIMILAR PONDS FOR SIMILAR CATCHMENT AREAS ON OTHER PROJECTS. SPECIFIC POND DESIGN REQUIRED AND SPECIFIC DESIGN CAN BE REFINED AT DETAILED DESIGN STAGE OF THE DEVELOPMENT.



**NOTES:**

**General**

- G-1. Horizontal Datum = Mt Eden Circuit 2000  
Vertical Datum = Moturiki 1953 (NZVD2016)  
Bench mark = BEIV UAPOTO Road  
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All excavations in road reserves shall comply with the National Code of Practice for Utilities' Access to the Transport Corridors

**FOR CONSENT**



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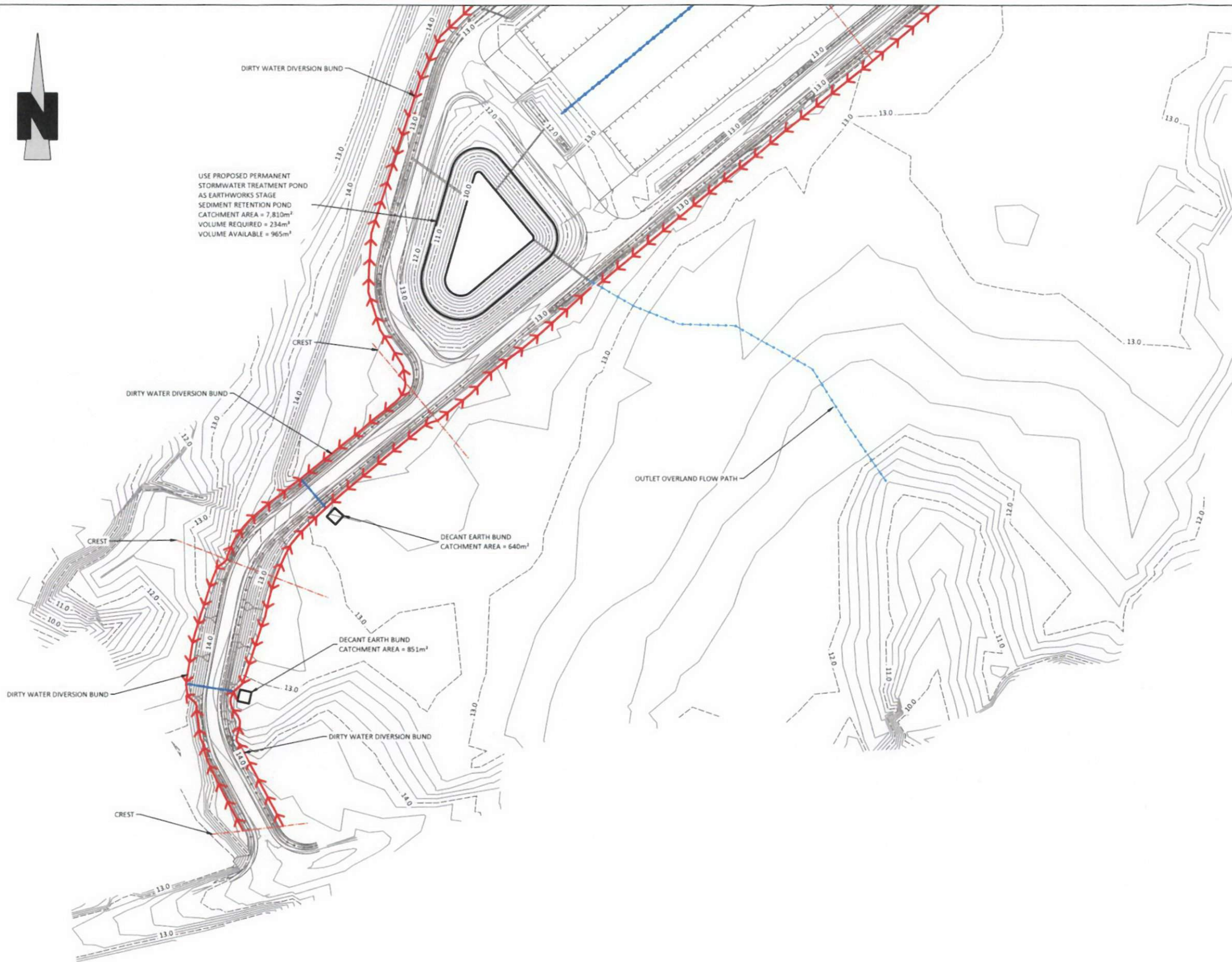
**Te Awamutu Office:**

A: 103 Market Street, Te Awamutu  
P: 07 871 6144

**EARTHWORKS  
SEDIMENT & EROSION  
OVERVIEW PLAN**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	15/02/17	SMcD	06/02/17	<b>1:5000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	15/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	15/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>220</b>	<b>E3</b>



- NOTES:**  
General
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
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FOR CONSENT



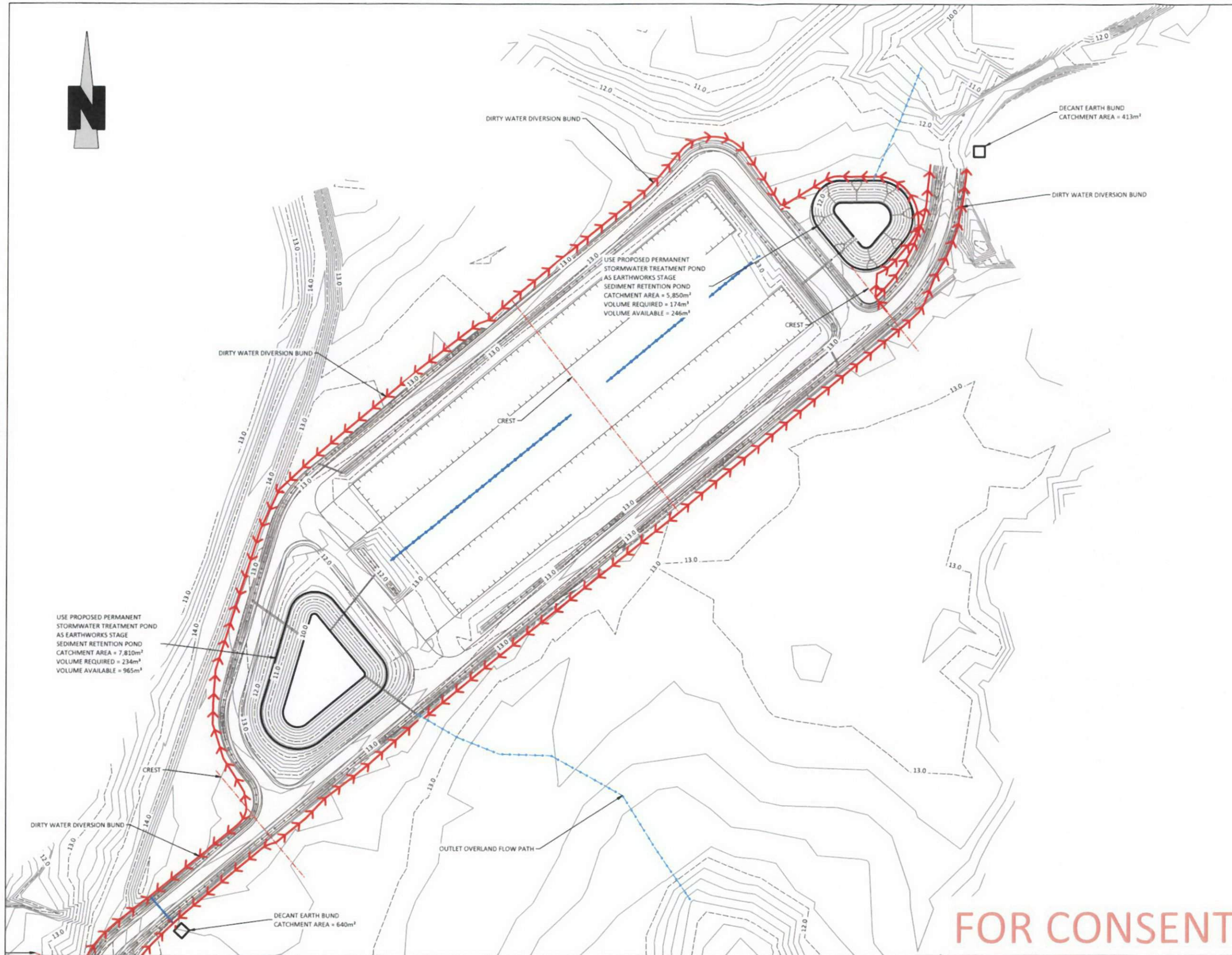
**Auckland Office:**  
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**Te Awamutu Office:**  
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**EARTHWORKS  
SEDIMENT & EROSION  
SHEET 1 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	15/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	15/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	15/02/17	
E3	FOR CONSENT	WL	12/12/17			
		<b>Job No: U1175</b>		<b>Dwg No: 221</b>		<b>Rev: E3</b>





- NOTES:**  
General
- G-1 Horizontal Datum = Mt Eden Circuit 2000  
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**EARTHWORKS  
SEDIMENT & EROSION  
SHEET 2 OF 5**

**PROPOSED CIVIL WORKS**  
**Mainland Poultry Ltd**  
64 Old Road, Orini

Issue	Description	Checked	Date	Designed	Date	Scale :
E0	FOR CONSENT	WL	15/02/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	15/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WL	15/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>222</b>	<b>E3</b>



- NOTES:**
- General**
- G-1. Horizontal Datum = Mt Eden Circuit 2000  
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FOR CONSENT



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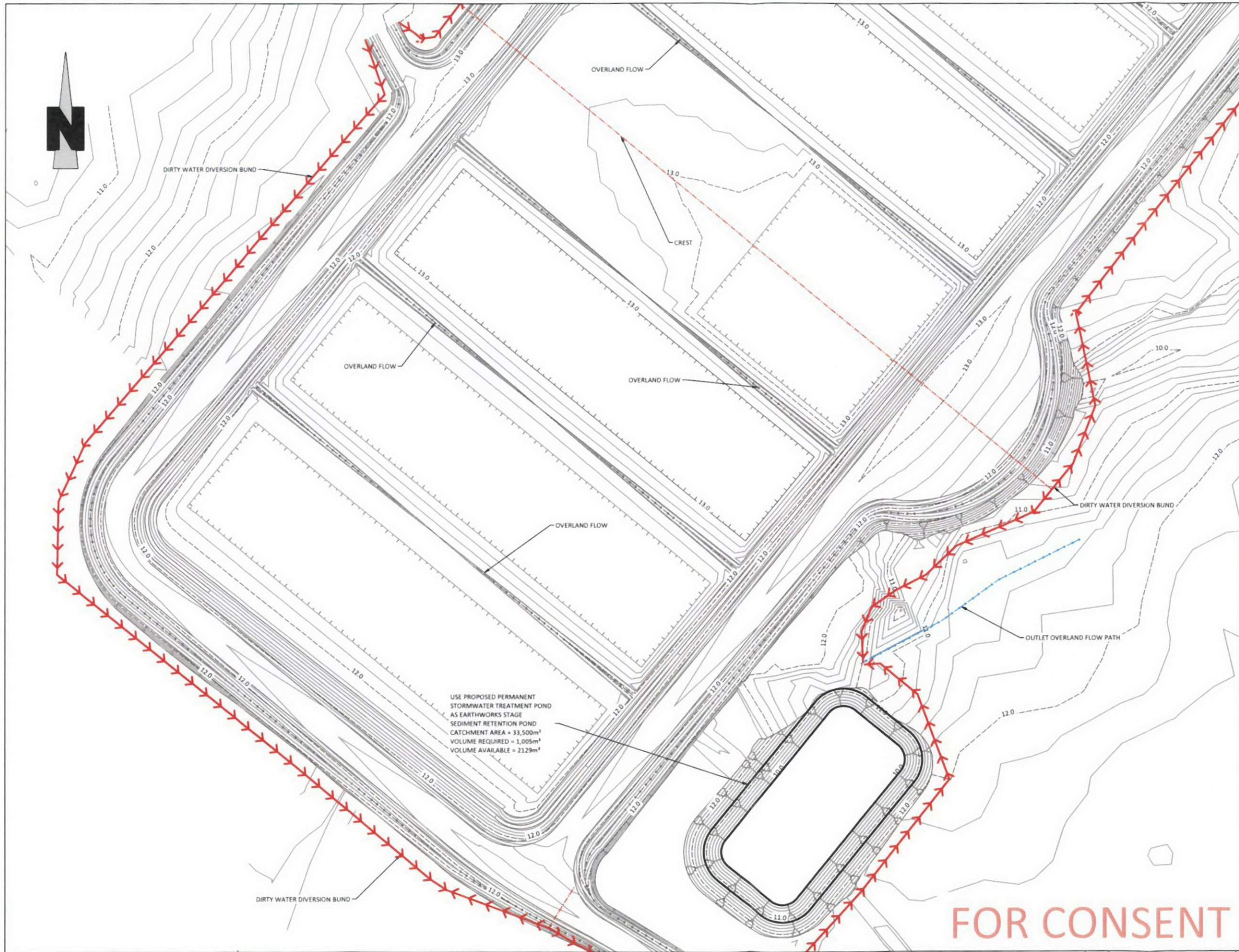
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**EARTHWORKS  
SEDIMENT & EROSION  
SHEET 3 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale
E1	REVISED LAYOUT	VB	13/04/17	SMcD	06/02/17	<b>1:1000</b> (A3 Original)
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E3	FOR CONSENT	WL	12/12/17	WL	15/02/17	
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>223</b>	<b>E3</b>



- NOTES:**  
General
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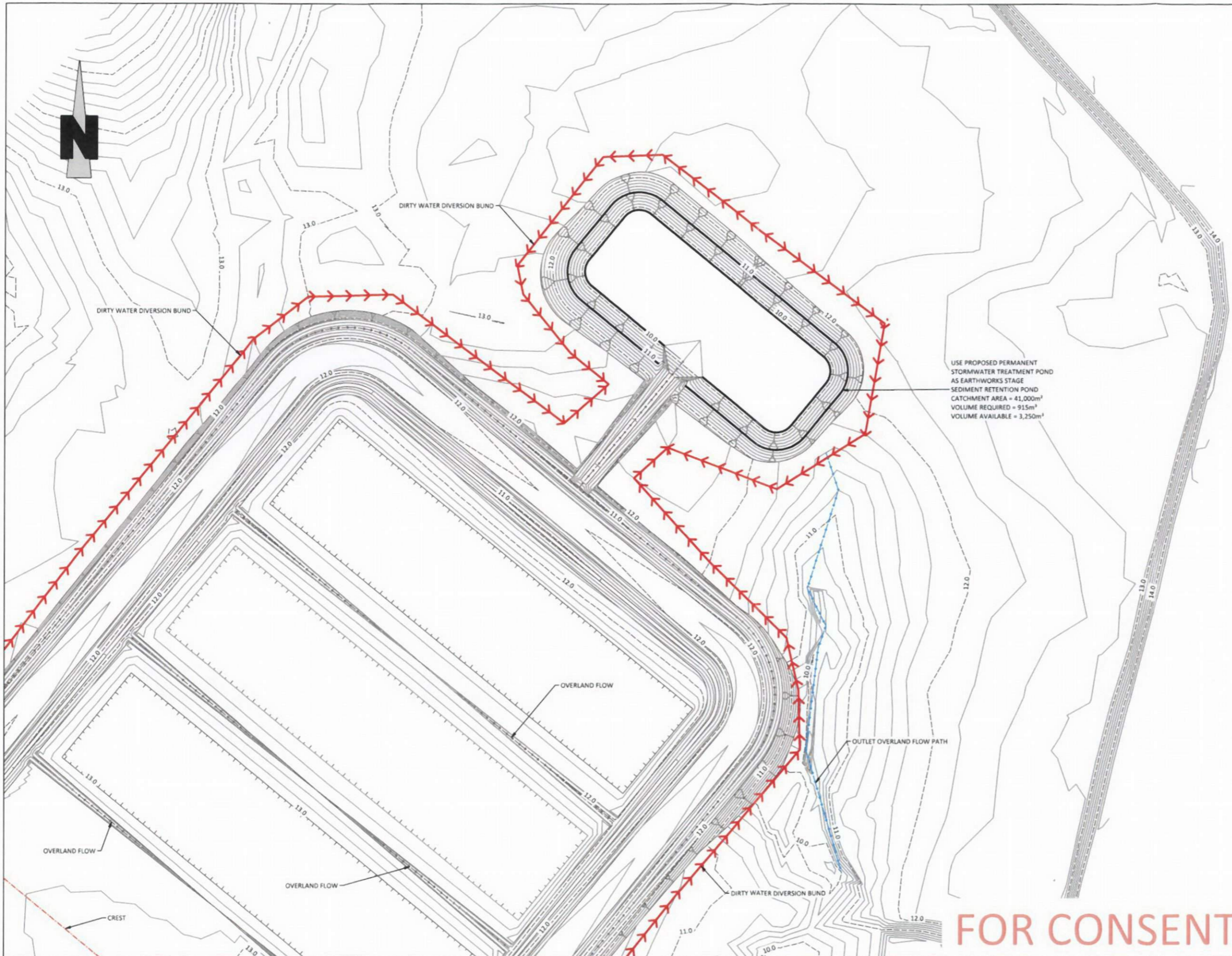


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**EARTHWORKS  
SEDIMENT & EROSION  
SHEET 4 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

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E0	FOR CONSENT	WL	15/02/17	SMcD	06/02/17	<b>1:1000</b>
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E3	FOR CONSENT	WL	12/12/17			
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**EARTHWORKS  
 SEDIMENT & EROSION  
 SHEET 5 OF 5**

**PROPOSED CIVIL WORKS  
 Mainland Poultry Ltd  
 64 Old Road, Orini**

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E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>225</b>	<b>E3</b>

**STABILISED CONSTRUCTION ENTRANCE SPECIFICATIONS:**

**APPLICATION**

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

**DESIGN:**

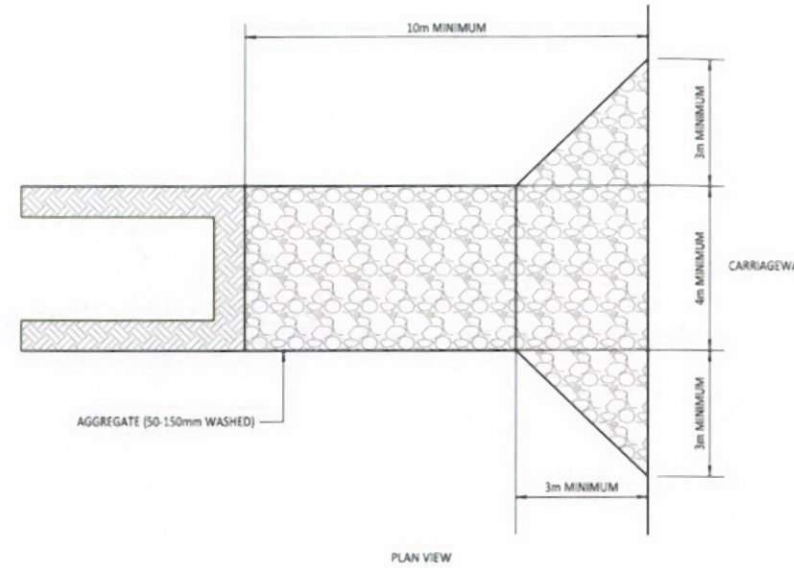
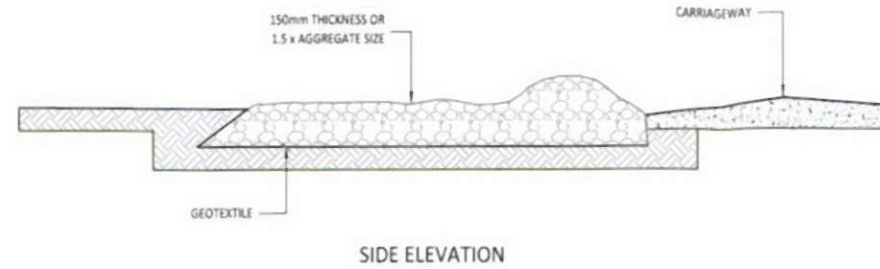
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER UNSUITABLE MATERIAL AND PROPERLY GRADE IT.
2. LAY WOVEN GEOTEXTILE, PIN DOWN EDGES AND OVERLAP JOINTS.
3. PROVIDE DRAINAGE TO CARRY RUNOFF FROM THE STABILISED CONSTRUCTION ENTRANCE TO A SEDIMENT CONTROL MEASURE.
4. PLACE AGGREGATE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

**STABILISED CONSTRUCTION ENTRANCE AGGREGATE SPECIFICATIONS:**

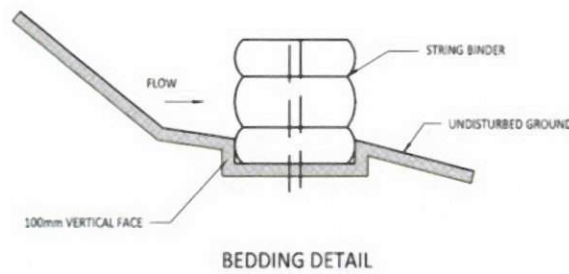
AGGREGATE SIZE	5-150mm WASHED AGGREGATE
THICKNESS	150mm MINIMUM OR 1.5 X AGGREGATE SIZE
LENGTH	10m MINIMUM LENGTH RECOMMENDED
WIDTH	4m MINIMUM

**MAINTENANCE**

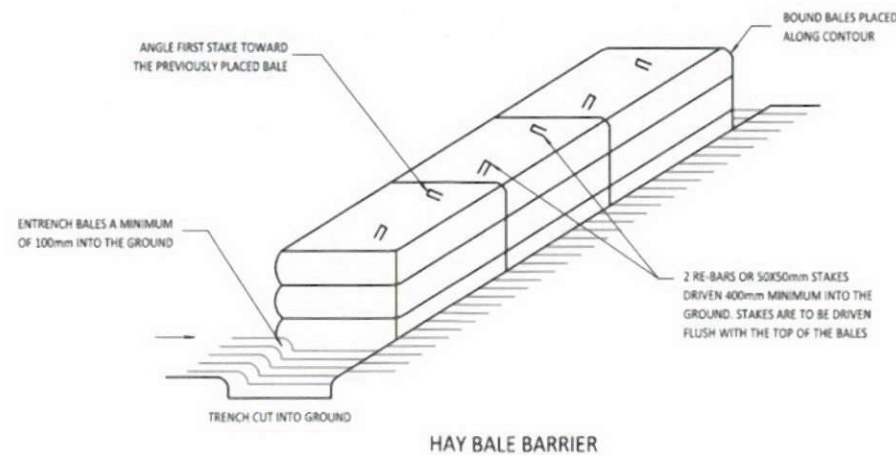
1. MAINTAIN THE STABILISED CONSTRUCTION ENTRANCE IN A CONDITION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. AFTER EACH RAINFALL INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT FROM THE STABILISED CONSTRUCTION ENTRANCE AND CLEAN OUT AS NECESSARY.
2. WHEN WHEEL WASHING IS ALSO REQUIRED, ENSURE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



**STABILISED CONSTRUCTION ENTRANCE**



**BEDDING DETAIL**



**HAY BALE BARRIER**

**GENERAL NOTES:**

1. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE OPERATIONAL PRIOR TO ANY OTHER WORKS COMMENCING ON SITE. THE CONTRACTOR SHALL ARRANGE FOR AND ATTEND A PRELIMINARY SEDIMENT CONTROL MEETING ON-SITE WITH THE ENGINEER AND COUNCILS REPRESENTATIVE.
2. A COPY OF THE EROSION MANAGEMENT PLAN SHALL BE AVAILABLE ON THE SITE DURING WORK HOURS AND ALL PERSONNEL INVOLVED IN EARTHWORK ACTIVITIES ON THE SITE (INCLUDING OF SUB-CONTRACTORS) SHALL BE FAMILIAR WITH THE CONSENT AND PLAN REQUIREMENTS AS THEY RELATE TO EROSION AND SEDIMENT CONTROL.
3. THAT ALL "CLEANWATER" RUNOFF FROM STABILISED SURFACES INCLUDING CATCHMENT AREAS ABOVE THE SITE SHALL BE DIVERTED AWAY FROM EARTHWORK AREAS VIA STABILISED SYSTEM, SO AS TO PREVENT SURFACE EROSION.
4. ALL EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH THE "EROSION AND SEDIMENT CONTROL GUIDELINES FOR LAND DISTURBING ACTIVITIES" WRC TECHNICAL PUBLICATION DATED JANUARY 2009 AND ANY AMENDMENTS TO THIS DOCUMENT.
  - (i) DIVERSION OF "CLEAN WATER" FROM THE ABOVE CATCHMENTS AROUND THE EARTHWORKS AREA BY MEANS OF DIVERSION DRAINS, AND/OR OTHER APPROVED METHOD.
  - (ii) CONSTRUCTION OF CUT OFF DRAINS, CONTOUR DRAINS AND EARTH BUNDS TO INTERCEPT SILT LADEN WATERS AND DIRECT INTO RETENTION PONDS AND OTHER SEDIMENT CONTROL FACILITIES. CONTOUR DRAINS ARE TO BE SPREAD AT 100m INTERVALS WITH THE SLOPE LIMITED TO 2%.
  - (iii) CONSTRUCTION OF SEDIMENT RETENTION POND TO COLLECT SILT FROM (ii) ABOVE WITH THE ADDITIONAL TEMPORARY CONSTRUCTION OF HAY BALE BARRIER/SILT FENCES AS REQUIRED.
  - (iv) THAT THE SITE BE STABILISED AGAINST EROSION AS SOON AS PRACTICABLE. REVEGETATION IS TO BE COMPLETED BY 30 APRIL IN THE YEAR OF EARTHWORKS CONSTRUCTION, UNLESS A LATER DATE IS APPROVED IN WRITING BY THE WAIKATO REGIONAL COUNCIL.
  - (v) MAINTENANCE OF ALL SEDIMENT CONTROL FACILITIES AS REQUIRED.
  - (vi) A CERTIFICATE INDICATING THAT ALL THE APPROPRIATE SEDIMENT CONTROL MEASURES ARE INSTALLED WILL BE SUBMITTED TO THE WAIKATO REGIONAL COUNCIL WITHIN 7 DAYS FOLLOWING THE CONSTRUCTION OF THE CONTROLS.
6. FURTHER SEDIMENT CONTROL WORKS MAY BE REQUIRED BY THE ENGINEER AS THE PROJECT ADVANCES. THESE WILL BE INSTALLED AS AND WHERE DIRECTED BY THE ENGINEER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE SITE HAS EFFECTIVE SILT DETENTION FACILITIES OPERATING AT ALL TIMES.

**NOTES:**

**General**

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**FOR CONSENT**

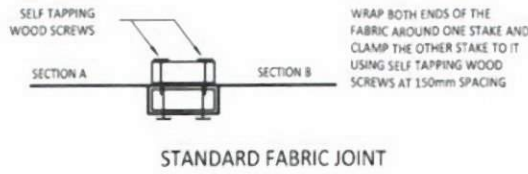
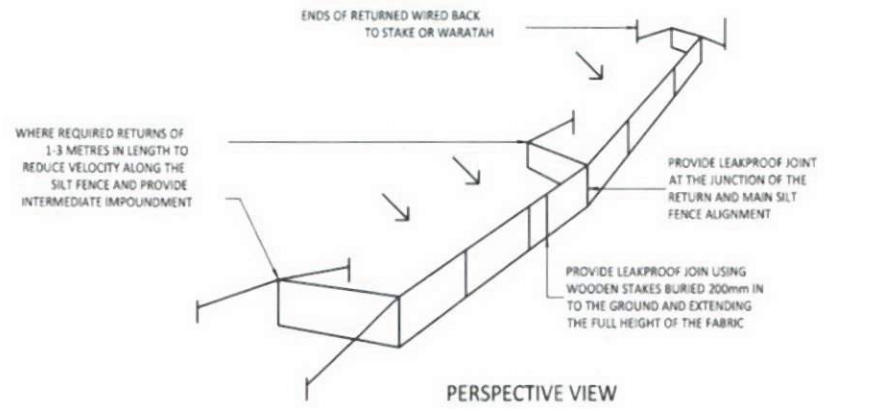


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**SEDIMENT & EROSION  
TYPICAL DETAILS  
SHEET 1 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

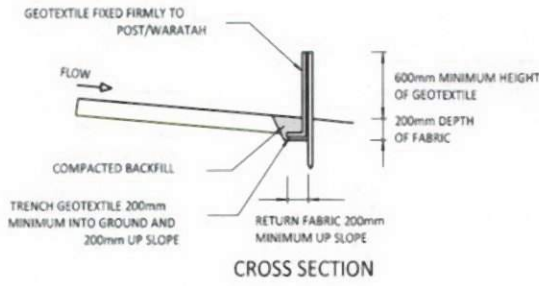
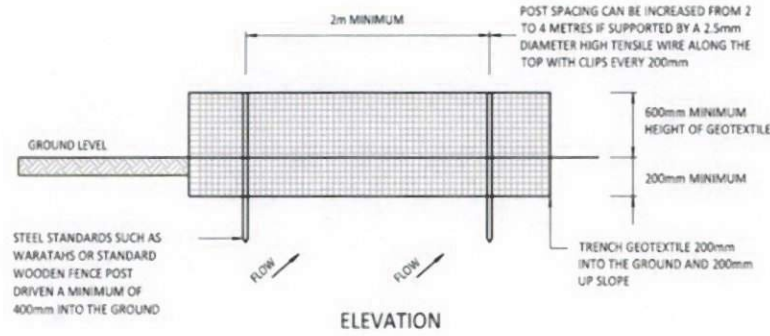
Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	07/02/17	SMcD	06/02/17	NTS (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	06/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	07/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>231</b>	<b>E3</b>



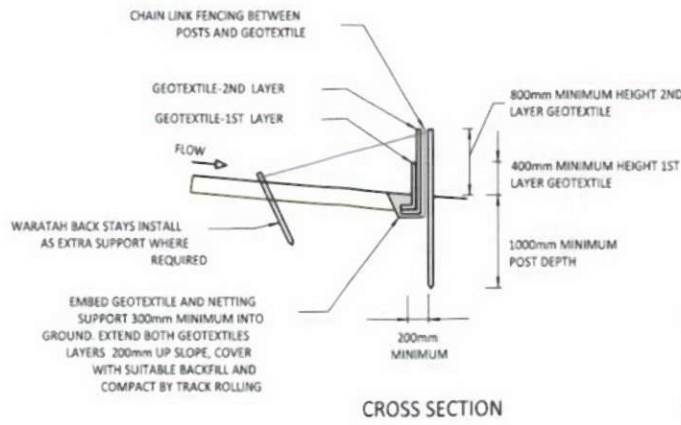
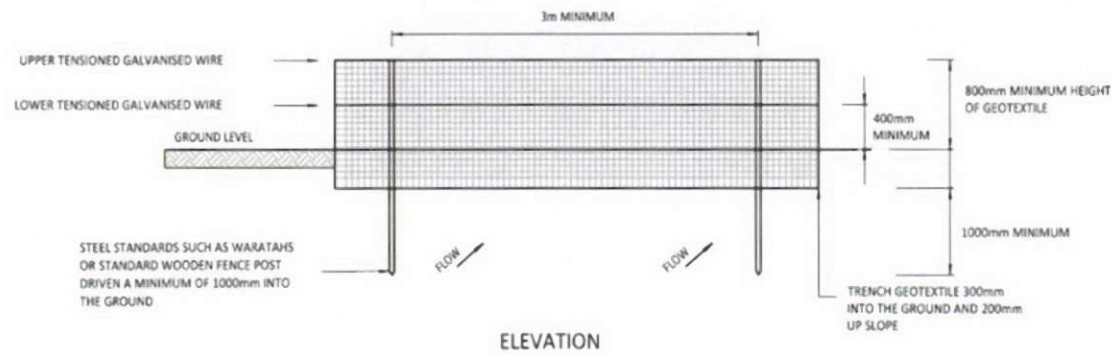
**SILT FENCE DESIGN CRITERIA:**

SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAXIMUM)	SPACING OF RETURNS (m)
< 2%	N/A	UNLIMITED
2-10%	40	60
10-20%	30	50
20-33%	20	40
33-50%	15	30
>50%	6	20

GRAB TENSILE STRENGTH: >440N (ASTM D4632)  
 TENSILE MODULUS: 0.140 pa (MINIMUM)  
 APPARENT OPENING SIZE: 0.1-0.5mm (ASTM D4751)



**SILT FENCE CONSTRUCTION**



**SUPER SILT FENCE DESIGN CRITERIA:**

SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAXIMUM)	SPACING OF RETURNS (m)
0-10%	UNLIMITED	60
10-20%	60	50
20-33%	30	40
33-50%	30	30
>50%	15	20

**SUPER SILT FENCE CONSTRUCTION**

**FOR CONSENT**

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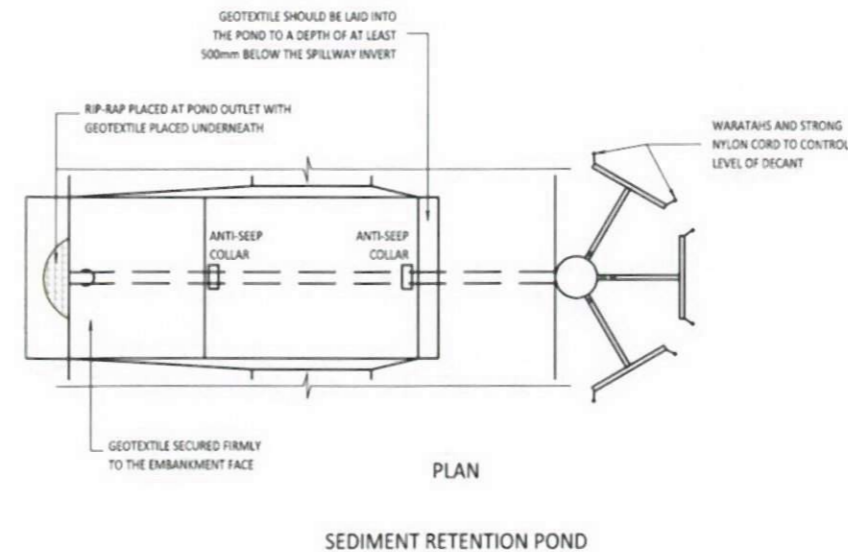
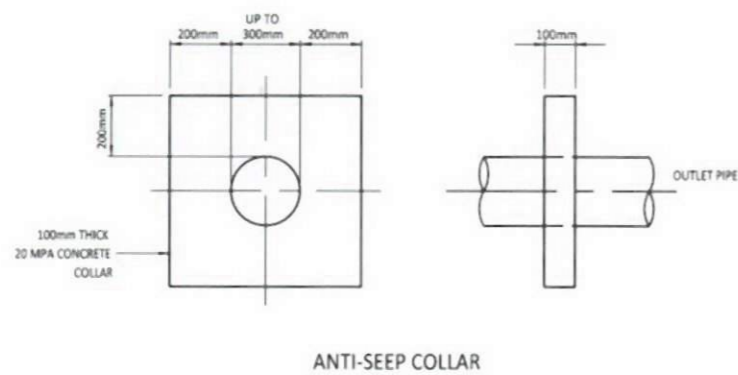
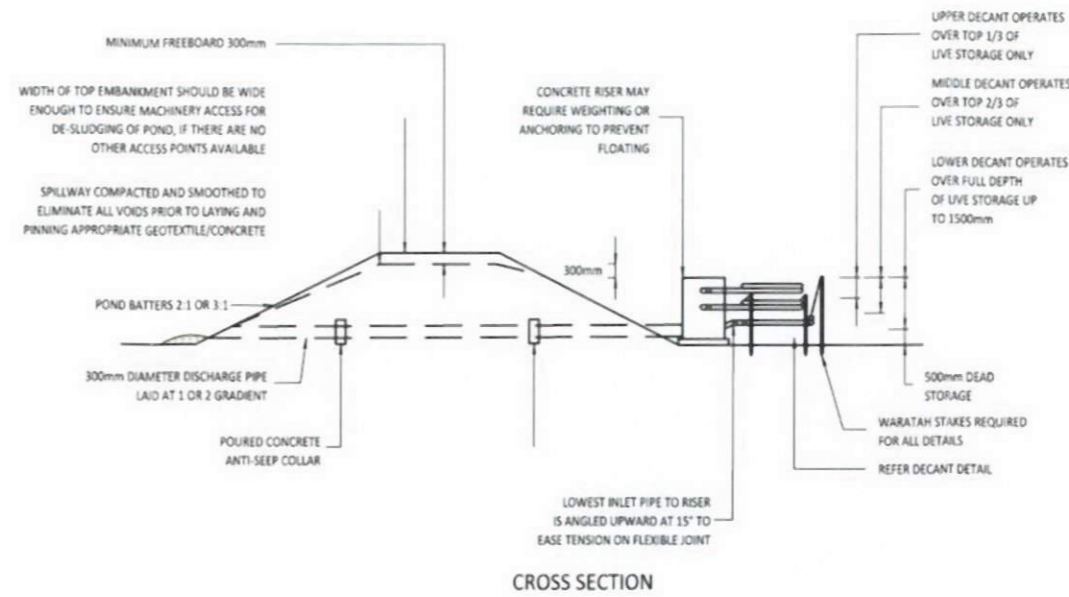
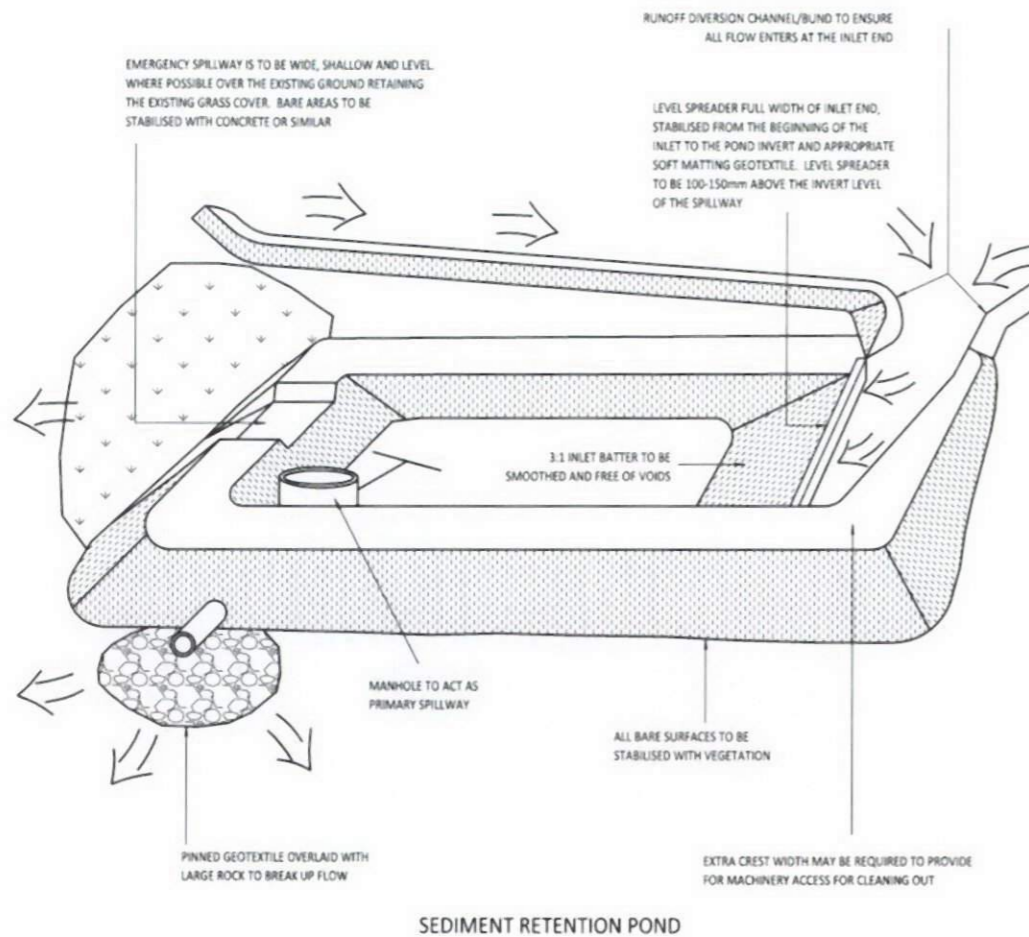


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**SEDIMENT & EROSION  
TYPICAL DETAILS  
SHEET 2 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Date	Scale :
E0	FOR CONSENT	WL	07/02/17	Designed: SMcD	06/02/17
E1	REVISED LAYOUT	VB	13/04/17	Drawn: SMcD	06/02/17
E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	07/02/17
E3	FOR CONSENT	WL	12/12/17		
				Job No: U1175	Dwg No: 232
					Rev: E3



NUMBER OF DECANTS FOR EACH POND SHALL BE AS FOLLOWS:

- i) UP TO 1.5HA CATCHMENT - 1 DECANT
- ii) 1.5-3.0HA CATCHMENT - 2 DECANTS
- iii) 3 TO 5 HA CATCHMENT - 3 DECANTS

**FOR CONSENT**

**NOTES:**  
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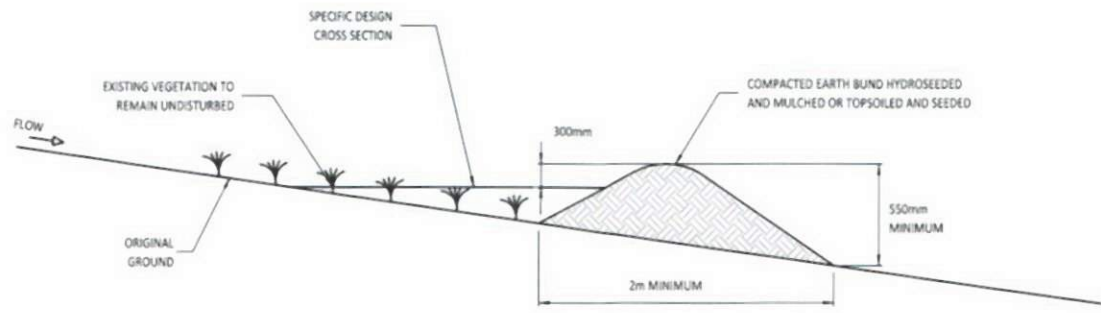
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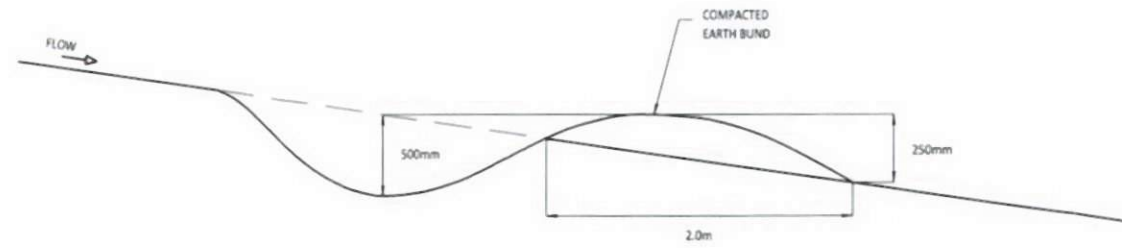
**SEDIMENT & EROSION  
TYPICAL DETAILS  
SHEET 3 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

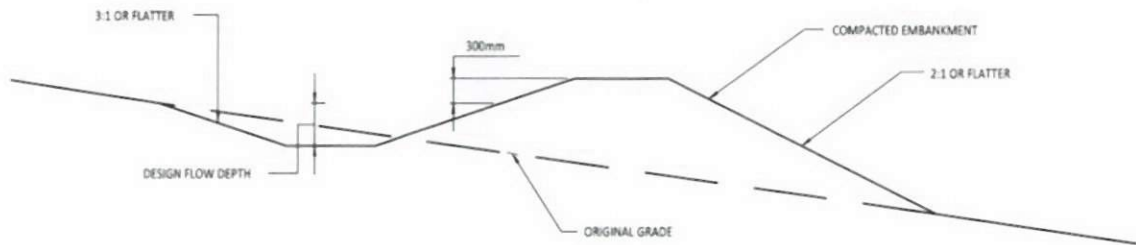
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E2	AMENDED LAYOUT	VB	30/05/17	Checked: WL	07/02/17	
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				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>233</b>	<b>E3</b>



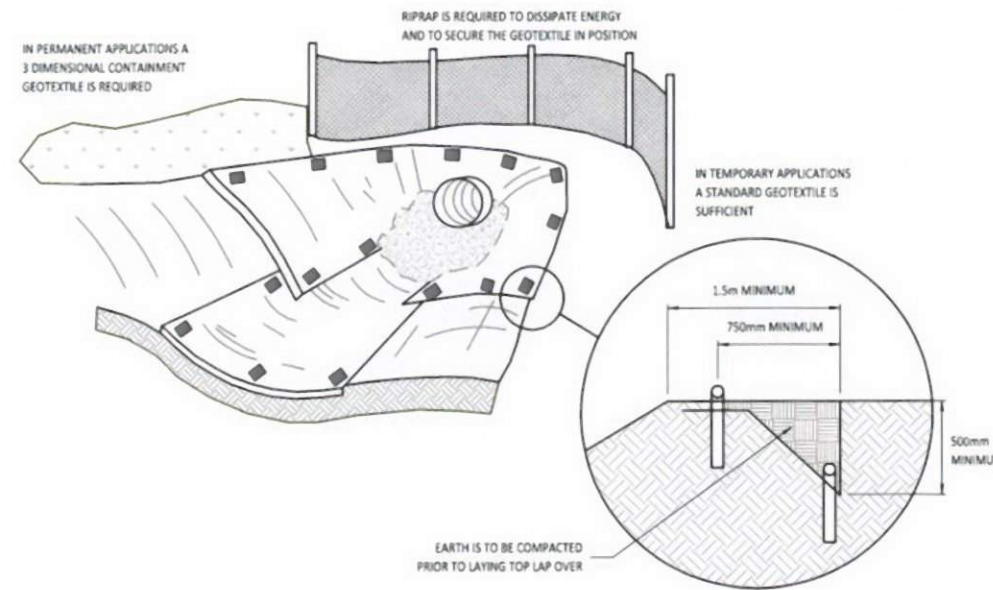
CLEANWATER RUNOFF DIVERSION BUND - CROSS SECTION



CONTOUR DRAIN



RUNOFF DIVERSION BUND - CROSS SECTION



GEOTEXTILE AT CULVERT OUTLET

**FOR CONSENT**

**NOTES:**  
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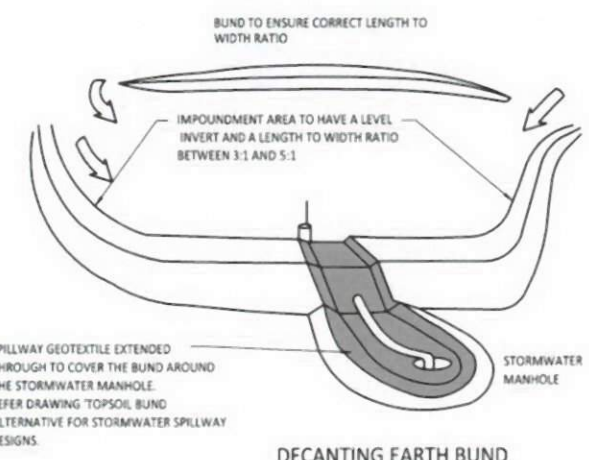
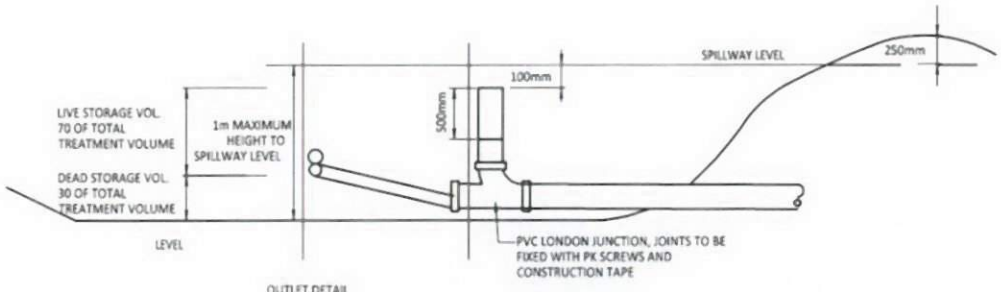
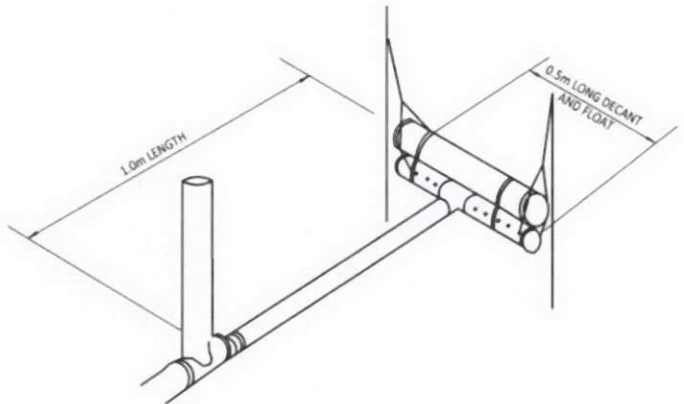
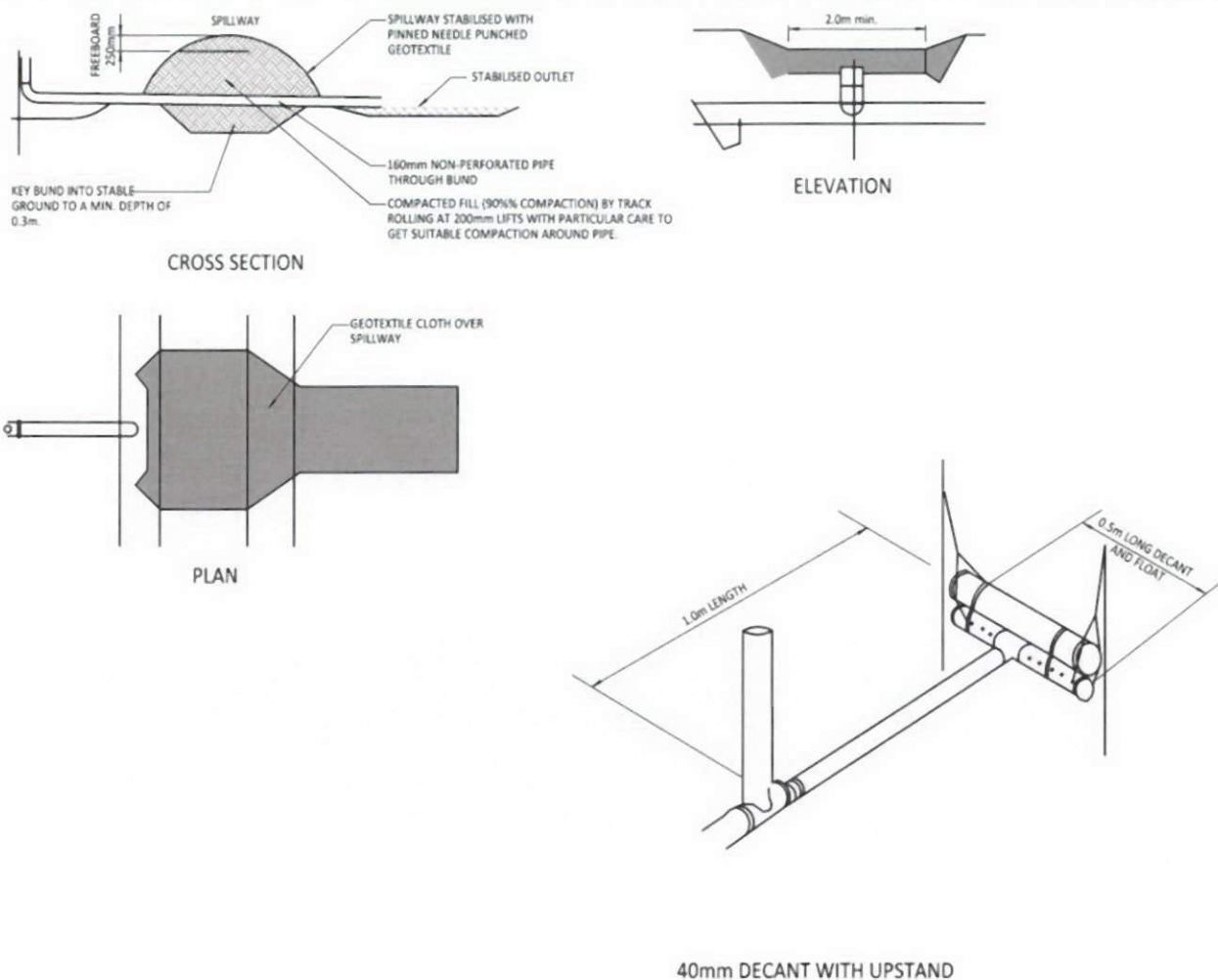
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**SEDIMENT & EROSION  
TYPICAL DETAILS  
SHEET 4 OF 5**

**PROPOSED CIVIL WORKS  
Mainland Poultry Ltd  
64 Old Road, Orini**

Issue	Description	Checked	Date	Designed	Date	Scale
E0	FOR CONSENT	WL	07/02/17	SMcD	06/02/17	NTS (A3 Original)
E1	REVISED LAYOUT	VB	13/04/17	SMcD	06/02/17	
E2	AMENDED LAYOUT	VB	30/05/17	WJ	07/02/17	
E3	FOR CONSENT	WL	12/12/17			
				Job No:	Dwg No:	Rev:
				<b>U1175</b>	<b>234</b>	<b>E3</b>





**DECANTING EARTH BUND**  
 MAXIMUM CATCHMENT 0.3ha 2%  
 VOLUME (60m(3) PER 0.3ha  
 CATCHMENT)

**NOTE:**  
 THE DECANT HAS A 40mm DIAMETER PVC PIPE WITH A  
 1.0m LONG ARM (INCLUDING FLEXIBLE JOINT), A 0.5m  
 LONG DECANT AND 20 x 10mm DIAMETER EQUALLY  
 SPACED HOLES POSITIONED HORIZONTALLY AT 10 AND 2  
 O'CLOCK

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**SEDIMENT & EROSION  
 TYPICAL DETAILS  
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				Job No:	Dwg No:	Rev:
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