IN THE ENVIRONMENT COURT
WELLINGTON REGISTRY

I TE KŌTI TAIAO O AOTEAROA
TE WHANGANUI-A-TARA ROHE

ENV-2024-WLG-001

UNDER	the Resource Management Act 1991
IN THE MATTER	the direct referral of applications for resource consents under section 87G of the Act for the Mt Munro Wind Farm
BY	**MERIDIAN ENERGY LIMITED**
	Applicant

STATEMENT OF EVIDENCE OF HARRIET FRASER

ON BEHALF OF TARARUA DISTRICT COUNCIL AND MASTERTON DISTRICT COUNCIL

TRANSPORT

Dated: 23 August 2024

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STATEMENT OF EVIDENCE OF HARRIET FRASER

A. INTRODUCTION

[1] My name is Harriet Barbara Fraser. I am an expert in the fields of traffic engineering and transportation planning.

[2] I prepared a report on the application required by s 87F of the Resource Management Act 1991 (**RMA**) on behalf of Manawatū-Whanganui Regional Council (**Horizons**) and Wellington Regional Council (**WRC**) Tararua District Council (**TDC**), and Masterton District Council (**MDC**) (the **Consent Authorities**) dated 15 March 2024 (**s 87F Report**).

[3] In my s 87F Report, I reviewed the application from Meridian Energy Limited (the **Applicant** or **Meridian**) for resource consent applications lodged with the District Councils for the Mt Munro Wind Farm (**Mt Munro Project** or **Project**) in relation to traffic matters. The s 87F Report provided recommendations to improve or further clarify aspects of the resource consent applications with respect to traffic matters, including with regard to conditions, should the Court be minded to grant resource consents.

[4] I confirm I have the qualifications and experience set out in paragraphs 5-9 of my s 87F Report.

[5] On 24 July 2024 I met with Merdian's traffic expert, Colin Shields, along with Andrew Desmond from the Tararua Alliance and we inspected the length of Old Coach Road together.

[6] On 7 August 2024, I participated in expert conferencing on transport, resulting in a joint witness statement dated 7 August 2024 (the **Transport JWS**). I confirm the contents of the Transport JWS.

[7] I participated in further expert conferencing on 14 August 2024 with Colin Shields, and the planning experts (Damien McGahan for the District Councils and Tom Anderson for Meridian). This addressed matters arising from the Transport JWS, and resulted in a joint witness statement dated 14 August

2024 (the **Traffic and Planning JWS**). I confirm the contents of the Traffic and Planning JWS.

B. CODE OF CONDUCT

[8] I repeat the confirmation provided in my s 87F Report that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This evidence has been prepared in accordance with that Code. Statements expressed in this evidence are within my areas of expertise, except where I state I am relying on the opinion or evidence of other witnesses.

C. SCOPE OF EVIDENCE

[9] My statement will cover the following:

(a) The extent to which issues identified in my s 87F Report have been resolved through mediation, Meridian evidence, and expert conferencing;

(b) A response to section 274 party evidence; and

(c) Conditions.

[10] In addition to the material that was reviewed for my s 87F Report, I have reviewed the following:

(a) Statements of Evidence of Nicholas Bowmar (Project Description and Consultation), Colin Shields (Traffic and Transportation), Christopher Jones (Mill Creek Ohariu Valley Road Upgrade), Maurice Mills (Civil Engineering Design) and Tom Anderson (Planning) dated 24 May 2024, on behalf of Meridian;

(b) The proposed changes to conditions filed with Mr Anderson's evidence (the **Meridian conditions**);

(c) The following further information provided to all parties by Meridian post-mediation:

(i) Letter dated 3 July 2024 including Meridian Draft Construction Traffic Management Plan (**Attachment A**);

(ii) Information provided by Meridian on 4 July 2024: TDC Option Full Two-Laning OCR and Traffic Assessment Partial Two-Laning OCR (**Attachment B**);

(iii) Letter dated 11 July 2024 including Appendix A Old Coach Road – Comparison of the Impact of Original TA and TDC Proposal V2 (**Attachment C**);

(iv) Letter dated 26 July 2024 (**Attachment D**) including:

(1) Appendix A – Mt Munro Alternative Access Review;

(2) Appendix B – SH2 Transmission Line Access Review;

(d) Evidence of Janet McIlraith (s 274 party) dated 10 July 2024;

(e) Evidence of Robin Olliver (s 274 party) dated 10 July 2024;

(f) Evidence of Hastwell/Mt Munro Protection Society Inc. (s 274 party) dated 10 July 2024;

(g) Evidence (Social Impact Report) of John Maxwell (s 274 party) dated 10 July 2024; and

(h) Draft conditions attached to the evidence of Damien McGahan on behalf of the Consent Authorities (the **August Proposed Conditions**).

D. OUTSTANDING ISSUES

[11] My s 87F Report identified several traffic and transportation issues associated with the construction, operation, and maintenance of the Project. In particular, I identified a range of matters relating to the CTMP, the design of the upgrade for Old Coach Road and its intersection with SH2, and the need for road pavement condition surveys.[1] These were also described in

[1] See Section 87F Report – Harriet Fraser (Traffic and Transportation), 15 March 2024 at [18] and [70]-[76].

the Transport JWS.[2] A number of these matters have been resolved, through the further information provided by Meridian since its evidence, and expert conferencing as discussed in the following paragraphs.

[12] Regarding the CTMP, a draft has been provided by Meridian and Condition CTM5 'Construction Traffic Management Plan', with a couple of refinements which I discuss later in this statement, addresses my concerns.

[13] I consider the upgrade design for Old Coach Road as detailed in the Tonkin + Taylor drawings included as Attachment A to the Traffic and Planning JWS will provide for the safe use of Old Coach Road. The sealed width of at least 6m will allow for trucks to pass pedestrians and cyclists with a safe clearance distance, thereby negating the need for a separate lime path. Condition CTM2 c) requires detailed design engineering plans of the Old Coach Road upgrade to be provided for TDC approval. My expectation is that these drawings will detail the drainage and pavement design for Old Coach Road.

[14] The need for road pavement surveys was agreed in the Transport JWS but the extent and methodology were not finalised during conferencing.[3] I include some suggestions for these matters later in this statement.

[15] Following mediation, expert conferencing and review of the Meridian evidence, and relevant JWSs,[4] I have identified the following matters that remain at issue following preparation of my s 87F Report:

(a) Confirmation that all required fill is coming from on-site cuts;

(b) Advice as to the position of Waka Kotahi in respect of the intersection of Old Coach Road and SH2 (including circulation of all relevant NZTA correspondence);[5]

(c) Provision for maintenance responsibilities for Old Coach Road (i.e. how they are set out as between the parties);

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2 Transport JWS, 7 August 2024, page 3, item 1.
3 Transport JWS, 7 August 2024, page 7, items 10-12.
4 Transport JWS,7 August 2024; Planning JWS, 8 and 9 August 2024.
5 It is understood NZTA wrote to Colin Shields on 5 August 2024.

(d) Monitoring and reporting of truck speeds and numbers on Old Coach Road; and

(e) Pre-construction road pavement strengthening.

[16] I address these issues in turn below, except the issues raised with regard to the conditions generally, which I address at section F below.

Fill

[17] The nature and extent of traffic movements are relevant to the assessment of traffic effects associated with the Project. Importing fill to the site could result in increased truck movements onto and off the Project site. Meridian has yet to confirm whether fill is to be imported. I remain of the view that this information is important to ensure that traffic flows, and particularly truck movements, on Old Coach Road can be efficiently accommodated and provide for the safety of all road users.

Position of NZTA

[18] During expert conferencing reference was made to correspondence from NZTA regarding the assessment of whether or when a right-turn bay is needed at the intersection of Old Coach Road and SH2.[6] At this stage, I understand that NZTA have provided comments to Meridian which support the inclusion of a right-turn bay from the start of construction. I anticipate Mr Shields will provide a more detailed update as part of his evidence.

Old Coach Road Upgrade Design

[19] There have been a number of iterations of the design for the upgrade of Old Coach Road. As included in the Transport JWS, my understanding is that Mr Shields considers that the original upgrade design provided as part of his evidence 'is a safe and deliverable option'.[7] I consider that the number and

6 Transport JWS, at page 5, item 5.

7 At page 7, item 13. For original upgrade design, see Appendix A to Statement of Evidence – Colin Shields (Traffic and Transportation), 24 May 2024.

length of any single-lane sections need to be minimised to locations where any constraints cannot be reasonably overcome, for the following reasons:

(a) To ensure adequate traffic carrying capacity. I note that NZS4404:2010 Land Development and Subdivision Infrastructure requires two-way widths for rural roads which provide access to more than six dwellings.

(b) To ensure safe interaction between oncoming vehicles during construction with no risk of vehicles and especially trucks needing to reverse back to passing locations, or to pull off the carriageway and damage the side drains.

(c) During construction there will be a temporary speed limit of 30km/h. Once construction is completed the 100km/h speed limit will be reintroduced. As such the road needs to perform safely in both speed environments.

(d) Construction activities are largely restricted to daylight hours, but in the long term, the upgraded road will also need to perform safely for night driving.

(e) The upgrade design included in the application includes sharp transitions from single-lane to two-lane carriageway which will result in an inconsistent driving experience with associated safety concerns with higher speeds and also night driving.

[20] As explained above at paragraph [13], the design in the most recent drawings prepared by Tonkin + Taylor attached to the Traffic and Planning JWS will provide for the safe use of Old Coach Road both during and post-construction.

Extent of Pavement Surveys

[21] The August Proposed Conditions provide for construction traffic, both heavy and light, to use Opaki-Kaiparoro Road between Mt Munro Road and the

Transmission Line access.[8] I therefore consider that this section of Opaki-Kaiparoro Road should be included in the pavement surveys. Mr Shields agreed to this during the traffic and planning conferencing.[9]

[22] In my opinion, the same pavement methodology should apply to Opaki-Kaiparoro Road between SH2 and Mt Munro Road as for Kaiparoro Road between SH2 and the terminal station access. This is appropriate given that both routes will be used by heavy vehicles. I recommend that visual inspections are carried out before and after construction and remedial actions implemented by the consent holder (Meridian).

Maintenance Responsibilities for Old Coach Road

[23] Unless a separate agreement between Meridian and TDC is in place ahead of the hearing, I consider that the maintenance responsibilities for Old Coach Road need to be included through a condition of consent. Otherwise, there is a risk, if unaddressed, of accelerated damage to the road pavement by heavy vehicle movements accessing the wind farm site.

Monitoring and Reporting of Truck Speeds/Numbers on Old Coach Road

[24] Rather than impose a maximum number of vehicle movements per day on Old Coach Road, I recommend that the vehicle movements are monitored by Meridian and reported to TDC on a monthly basis to ensure that the vehicle activity is in line with that anticipated in the resource consent application. I consider that this information is important to ensure that traffic flows, and particularly truck movements, on Old Coach Road can be efficiently accommodated and provide for the safety of all road users. Having data available will also assist with providing responses in the event that complaints are made about traffic activity on Old Coach Road.

[25] I also recommend that vehicle speeds are monitored and reported to TDC on a monthly basis to ensure that there is a good degree of compliance with the temporary speed limit.

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8 August Proposed Conditions – Condition CTM1.

9 Traffic and Planning JWS, at page 3, item 3.

Pre-Construction Road Pavement Strengthening

[26] As included in the Transport JWS, Mr Shields did not consider that it is Meridian's responsibility to undertake pre-construction pavement strengthening in the event that there is existing damage on the access routes from SH2 to the site entrances.[10] During the Traffic and Planning conferencing, Mr Shields agreed with the wording of Condition CTM2 b).[11] As such, if needed, Meridian, as the consent holder, will undertake remedial actions to strengthen the road pavements on Kaiparoro Road and Opaki-Kaiparoro Road where damage is identified during the pre-construction surveys.

E. RESPONSE TO SECTION 274 PARTY EVIDENCE

[27] I have reviewed the section 274 party evidence of Janet McIlraith, Robin Olliver, Hastwell/Mt Munro Protection Society Inc, and John Maxwell. The concerns raised in their evidence relate to:[12]

(a) Cumulative traffic effects due to other renewable energy projects in the region;

(b) Safety of road users (ie: pedestrians and cyclists);

(c) Consideration of alternative access methods (such as rail); and

(d) Effects of construction traffic (particularly on Old Coach Road).

[28] These matters were addressed and reported on in the Transport JWS. Specifically, as follows:

(a) Any potential cumulative traffic effects will be addressed in the CTMP.[13]

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10 Transport JWS, at page 12, item 30.

11 Traffic and Planning JWS, at page 3, item 3.

12 See Statement of Evidence – Janet McIlraith, 10 July 2024 from [25]. Statement of Evidence – Robin Olliver, 10 July 2024 from page 9. Statement of Evidence – Hastwell/Mt Munro Protection Society Inc, 10 July 2024 at pages 8-9, 12. Statement of Evidence – John Maxwell, 10 July 2024 from at pages 19-21.

13 Transport JWS, at page 6, item 7.

(b) The safety of road users has been addressed in Mr Shields' evidence, and the sealed width of Old Coach Road and temporary speed limits will allow for safer interaction between road users.[14]

(c) The option of using Coach Road South as an exit was rejected due to grades of 20% or more, and the need to replace the Opaki-Kaiparoro Bridge. Rail is also not an option due to no siding/station, triple handling of loads, the challenging of accessing the site from the rail, and that turbine components cannot be transported by rail.[15]

(d) The effects on adjoining properties to Old Coach Road have been recognised,[16] with the scope and content of the Construction Traffic Management Plan (**CTMP**) also discussed.[17] I have reviewed the Draft CTMP and the proposed conditions and consider that the CTMP will address adverse traffic effects on properties along Old Coach Road in meeting the requirements of Condition CTM5 d). These requirements include:

(i) Driver protocols to minimise adverse traffic effects for other road users and nearby properties;

(ii) Driver safety briefings to ensure the safety of all road users, including cyclists and pedestrians;

(iii) Provision for property access at all times;

(iv) Use of temporary traffic measures including for stock crossings and local accesses; and

(v) Procedures for consulting and communicating with local residents.

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14 At pages 3-4, items 1, 4.
15 At page 8, item 15.
16 Transport JWS at page 9, item 16.
17 Transport JWS, and Traffic and Planning JWS.

F. CONDITIONS

[29] The following points summarise the recommendations I have made in relation to the August Proposed Conditions:

(a) **CTM1 b)** – I note the use of the coordinates on Falkner Road included in this Condition, however, this should be checked as to whether they are necessary

(b) **CTM2 a) i)** - I consider 'Revision 2' should be added to the description of the drawing set for completeness.

(c) **CTM2 a) ii)** - I recommend adding 'from SH2 to the site entrance' following "*…sealing of Old Coach Road*" to define the start and end of the required length of seal.

(d) **CTM2 a) iii) -** 'upgrade of the SH2 intersection with Old Coach Road' is the correct reference in this Condition.

(e) **CTM2 b) v)** - I note the location has been confirmed as 85151 State Highway 2, Eketāhuna 5881 in this Condition.

(f) **CTM2 c)** - I consider that condition this is a duplication of CTM2 b) and can be deleted. This was discussed in the Transport JWS.[18]

(g) **CTM5 d) iv)** - I note Condition CM4 c)vii.c. refers to the dipping of headlights on Old Coach Road between dusk and dawn, so I recommend adding to CTM5 d)iv) … use of low beam headlights…..

(h) **CTM5 d) xv)** - As recorded in the Transport JWS,[19] I recommend that this Condition is amended to read 'Requirements for the monitoring of construction traffic volumes and speeds'.

(i) **CTM3** includes conditions regarding the pavement impact assessment and maintenance. It was agreed in expert conferencing that this condition should reflect a range of matters including the

[18] Transport JWS, page 12, item 30.
[19] Transport JWS, page 12, item 30.

geographic extent of the pavement surveys, the survey methodology and the timing of surveys and any ongoing maintenance.[20] I note that the need for this condition is confirmed in the JWS Traffic and Planning but the wording of the condition was not confirmed. I support the condition recommended by Mr McGahan and have also provided further detail below.

(j) Provision to be is included in **CTM3(c)(II.)** to allow for traffic management measures on haulage routes to be used to minimise the risk of pavement damage. This might include measures such as slower truck speeds, managing truck numbers, and managing locations where trucks pass.

[30] I have reviewed the August Proposed Conditions and am satisfied that they reflect the above recommendations.

[31] More generally, I recommend that consideration is given to the following as the August Proposed Conditions are further refined:

(a) The geographical extent for the pavement surveys to include:

(i) The length of Old Coach Road from SH2 to the site;

(ii) Opaki-Kaiparoro Road from SH2 to Mt Munro Road;

(iii) Kaiparoro Rd from SH2 to the site entry; and

(iv) Yet to be identified local roads (non-state highway) to be used as part of haulage routes.

(b) As agreed in the Transport JWS,[21] the methodology referred to in Condition CTM(3)(c) could include the following:

(i) For Old Coach Road, regular visual inspections during construction. Post construction of the wind farm, a structural pavement condition survey is to be completed,

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[20] Transport JWS, page 7, items 10-12.

[21] Transport JWS, page 7, item 11.

with remedial action taken by Meridian. Two years after construction of the wind farm is finished, a visual survey is to be completed and remedial action taken by Meridian.

(ii) For Opaki-Kaiparoro Road and Kaiparoro Road, visual inspections to be undertaken before wind farm construction and on completion of construction, with remedial action taken by Meridian.

(iii) For parts of haulage routes on local roads, visual inspections before wind farm construction and on completion of construction, any contribution to remedial action by Meridian to be calculated based on the proportion of heavy vehicle volumes attributable to wind farm construction.

(c) That CTM3d) be broadened to provide for traffic management measures being part of the solution and not just pavement works.

G. CONCLUSION

[32] Further information and engagement since my s 87F Report has resulted in a number of matters being addressed and issues being narrowed. Therefore, subject to resolution of the few matters I have identified above, and agreement on the recommended conditions, Meridian and its experts would have addressed all of the issues identified in my s 87F Report.

23 August 2024

Harriet Fraser

Attachment A

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3 July 2024

Tēnā koutou parties

ENV-WLG-2024-001- Meridian Energy Limited (Meridian) – Mt Munro Wind Farm – Further information supplied post-mediation

This letter contains the further information that Meridian agreed it would provide during court-assisted mediation, held in Palmerston North on 18 and 19 June 2024. This letter is limited to the information that the parties to mediation agreed would be provided by 3 July 2024, to assist the s 274 parties in the preparation of evidence.

Draft Construction Traffic Management Plan (Draft CTMP)

1. Meridian agreed to provide a draft CTMP (attached as **Appendix A** to this letter). The Draft CTMP deals with construction activity associated with:
    - The main construction site accessed from SH2/Old Coach Road;
    - The Old Coach Road upgrade;
    - The terminal substation site accessed from SH2/Kaiparoro Road; and
    - The transmission line accessed from SH2/Opaki-Kaiparoro Road (northern intersection), noting heavy and light construction traffic will not be permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road.

2. We emphasise that this is a draft document, and while prepared on the best information currently available, it will be subject to amendment and refinement through this resource consent process, and the Council certification process, and as a result of stakeholder engagement, detailed design, and contractor and traffic management company requirements.

3. As such, the methodology and management of effects described in the Draft CTMP are **indicative only**.

4. Given the location of the construction vehicle activity, two road controlling authorities (TDC and NZTA) will be consulted in relation to the preparation of the next version of the CTMP, should consent be granted. The Stakeholder Liaison Group appointed through consent conditions will also have the opportunity to provide feedback on the CTMP prior to it being lodged with the Councils for certification.

Stakeholder Liaison Group (SLG) matters

5. Meridian's response to each of the matters identified in the 'Other Matters' section is set out below, and we note that this condition will be discussed and refined at the conditions workshop to be held between Meridian's planning consultant, Mr Anderson, and Council planners. It will be open to parties to provide further feedback during the evidence exchange and hearing processes.

Establishment of the SLG

6. Meridian agreed to review the timing of establishment of SLG and opportunities for its input into the various management plans to be submitted to the Councils, including consideration of the functions of the SLG within condition SLG1 onwards.

7. Draft condition SLG1 in the condition set attached to the evidence of Mr Anderson states that the SLG would be established no less than forty (40) working days prior to the commencement of construction works.

8. However, Meridian recommends that the SLG should be formed at least thirty (30) working days prior to the Construction Environmental Management Plan (CEMP) being submitted to Councils for certification (which must occur at least 40 working days prior to the commencement of construction). This timing will allow the SLG to provide its views on the CEMP ahead of submission to the Councils, and would align with Condition CM4(e), which invites views from iwi and the Councils on the CEMP twenty (20) working days prior to the CEMP being submitted.

9. It is suggested that Condition SLG2 be amended to include the following sentence: *The specific roles of the Stakeholder Liaison Group must be determined by the Group and must be to the satisfaction of the Resource Consents Manager – Tararua and Masterton District Council. A document stating the Terms of Reference must be produced within three months of the first meeting.*

Duration of SLG

10. Meridian agreed to consider the duration of the SLG, and frequency of meetings as determined by the members of the group, as opposed to automatic dissolution.

11. Draft condition SLG1 provides that, once established, the SLG would be maintained for a period of no less than two (2) years after the completion of construction activities. This condition provides discretion for the SLG to operate beyond two years. Meridian would support an amendment to the condition so that the group exists for three years post construction.

12. SLG3 requires that, as a minimum, the SLG meets on a three monthly basis during the time in which it exists. This condition provides discretion for the SLG to meet on a more frequent basis.

13. SLG3 states that, at the close of the period specified in SLG1, the Consent Holder shall notify all members of the SLG of the dissolution of the SLG. Meridian considers that automatic dissolution following a three-year period post-construction is appropriate. Such a timeframe would allow any initial issues to be discussed and resolved. Any other issues would then become compliance matters to be dealt with as they arise in accordance with best practice. It is also noted that SLG3 requires Meridian to nominate a representative responsible for the ongoing operation of the wind farm, thereby ensuring an ability for ongoing communication between community members and Meridian following the dissolution of the SLG.

SLG Members

14. Meridian agreed to consider the list of potential members of the SLG and provide further specificity, and consider the facilitation aspect (e.g.: whether self-regulated or independently run).

15. Condition SLG6 sets out the list of potential members of the SLG. The list is not exhaustive, and other members, such as residents of Old Coach Road, can also be invited to participate in the SLG. Meridian will work with the community and affected parties to provide further specificity should consent be granted.

16. Meridian proposes that an independent facilitator would chair the SLG, at Meridian's cost.

SLG Feedback

17. Meridian agreed to consider the wording of SLG conditions, including a mechanism for how feedback from the SLG will be incorporated into management plans and other matters.

18. Condition SLG2 states that the "functions of the Stakeholder Liaison Group shall also include acting as a forum for the relaying of community concerns about the construction and initial operation of the Project to the Consent Holder and/or representative(s), discussing means of addressing concerns raised, and reviewing the implementation of measures to resolve and manage those concerns." Feedback into management plans has been addressed earlier in relation to timing of establishment of the SLG, the Terms of Reference for the SLG, and specifically in relation to the CTMP.

Effects on Stock

19. Meridian agreed to consider further the effects on stock during construction.

Stock Movements

20. As noted in Mr Shields's evidence, the management of stock movements will be a matter that is addressed in the CTMP.[1] The draft CTMP includes general management strategies for stock movements in the table at page 23.

21. A similar process was followed during the upgrade of Ohariu Valley Road at Mill Creek, and all stock movements occurred without incident, via standard traffic management controls.[2]

Construction Traffic on Old Coach Road

22. Any potential construction traffic effects on stock will be limited to stock in paddocks adjacent to Old Coach Road. As noted above, heavy and light construction traffic will not be permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road, and Falkner Road will not be used by construction traffic either.

23. Meridian's experience at its other windfarm sites is that stock adjust to higher volumes of construction traffic. An example of an additional measure implemented at Mill Creek was the installation of temporary screening/fencing (mesh cloth) along a section of property boundary to visually screen construction activities from horses in an adjacent commercial horse-riding facility. This could be included within the CTMP if required here, for instance during lambing or calving. No other provisions were implemented for any other farming operations along the length of Ohariu Valley Road, and no incidents in relation to stock or horses occurred because of the upgrade works.[3]

24. Mr Shields concludes in his evidence that the additional traffic resulting from the Project will not create any issues in relation to livestock, noting the following:[4]

> ...it is not uncommon in New Zealand for livestock to be grazing adjacent to rural roads and I am not aware of any evidence to demonstrate negative impacts on these animals. I consider that animals will become habituated/acclimatised to traffic noise and hence would not be startled or alarmed by car and truck traffic.

25. Furthermore, the Construction Noise Management Plan will include measures including restricting truck engine braking, forbidding the use of vehicle reversing squawkers, muffling of exhausts and ensuring all plant and equipment is well maintained to minimise any disturbance to local residents and livestock in the adjacent fields. This requirement was implemented for the upgrade of Ohariu Valley Road at Mill Creek.[5]

Dust effects on Stock

26. Mr Van De Munckhof has confirmed that dust effects from construction traffic on Old Coach Road will be significantly reduced by the sealing of the road so that effects will be negligible.

27. Dust during the upgrade of Old Coach Road will be managed via an Air Quality Management Plan, which will include dust suppression measures. As noted in the letter dated 27 June 2024, effects on stock near exposed areas were considered by the Construction Team at Harapaki as 'dust-sensitive' areas. For example, a neighbouring property had stock grazing immediately beside a wind farm access road, separated by a standard wire fence. The Construction Team applied dust suppression on the access road near this fence line and was able to effectively control dust at this location. A similar approach could be taken at Mt Munro.

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[1] Statement of Evidence of Colin Shields at [154(c)]
[2] Statement of Evidence of Chris Jones at [39]
[3] Statement of Evidence of Chris Jones at [40]
[4] Statement of Evidence of Colin Shields at [191]
[5] Statement of Evidence of Chris Jones at [42]

General Construction Activities

28. Meridian confirms that stock will be excluded from construction areas on the windfarm site during construction.

29. Mr Halstead has noted the following in his evidence:[6]

> My experience of observing animals around construction machinery is that they generally have little regard for such [construction] activity, especially when acclimatised by normal farm and road traffic activities. Construction activities are generally more steady-state in their noise production than road traffic noise, and so less surprising and more predictable to animals.
>
> An exception is blasting, where there is potential for significant surprise at high noise levels. I recommend in construction noise management plans where blasting is anticipated that a clear programme of communication and timing is followed, allowing ample time to relocate stock if necessary near blast sites.

Ngā Mihi |Kind regards,

Ellie Taffs
Senior Legal Counsel - RMA
Meridian Energy Limited

Enclosed:

- Appendix A: Draft CTPMP

[6] Statement of Evidence of Miklin Halstead at [63]

REPORT

Tonkin+Taylor

Draft Construction Traffic Management Plan

Mount Munro Windfarm

Prepared for
Merdian Energy Limited
Prepared by
Tonkin & Taylor Ltd
Date
July 2024
Job Number
1016884.1000 v2.0

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Document control

Title: Draft Construction Traffic Management Plan					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
25/6/24	1.0	Draft V1	C Shields	J Dyer	
02/7/24	2.0	Updated following internal T+T review and Meridian comments	C Shields	J Dyer	N Peters

Distribution:

Merdian Energy Limited	1 PDF copy
Tonkin & Taylor Ltd (FILE)	1 PDF copy

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Definitions

Abbreviation	Detail
CAR	Corridor Access Request
CEMP	Construction Environmental Plan
CMO	Compliance Monitoring Officer
CMO	Compliance Monitoring Officer (CMO)
CoPTTM	Code of Practice for Temporary Traffic Management[1]
CTM	Construction Traffic Manager
CTMP	Construction Traffic Management Plan
EED	Engineering Exception Decisions
GWRC	Greater Wellington Regional Council
HMWRC	Horizons Manawatu-Wanganui Regional Council
MDC	Masterton District Council
MOTSAM	Manual of Traffic Signs and Markings[2]
NZGTTM	New Zealand Guide To Traffic Management
NZTA	New Zealand Transport Agency - Waka Kotahi
PPE	Personal Protective Equipment
RCA	Road Controlling Authority
SH2	State Highway 2
SLG	Stakeholder Liaison Group
SSTMP	Site Specific Traffic Management Plan
STMS	Site Traffic Management Supervisor
TA	Transport Assessment
TCD	Traffic Control Devices manual
TDC	Tararua District Council
TMC	Traffic Management Coordinator
TMD	Traffic Management Diagram

[1] NZTA is developing a new approach to how temporary traffic management will be delivered on Aotearoa New Zealand's state highways and roads. The new guidance (NZGTTM) aligns with WorkSafe's Road Good Practice Guidelines (2022) and will be implemented from 2023 in stages to eventually replace CoPTTM.
[2] NZTA plan to archive the Manual of Traffic Signs and Road Marking (MOTSAM) after the publication of the Traffic Control Devices Manual Part 4 in 2024.

1 Background

1.1 Introduction

Meridian Energy Ltd (Meridian) will lead the contract for the Mount Munro Windfarm (the 'Project'). Meridian's application for the construction, operation and maintenance of the project was submitted to Horizons Manawatu-Wanganui Regional Council (HMWRC), Greater Wellington Regional Council (GWRC), Tararua District Council (TDC) and Masterton District Council (MDC), subsequently referred to as the 'Councils' in May and June 2023 and accepted as complete on 23 June 2023.

Tonkin & Taylor Ltd (T+T) have been engaged to provide a Draft Construction Traffic Management Plan (CTMP). Although a CTMP is not required to be submitted to support a resource consent application, Meridian have taken the initiative to prepare a Draft CTMP in the lead up to the Environment Court Hearing and to help inform emerging Draft Conditions CTM1 to 6.

This Draft CTMP outlines the standards and agreed approach and measures that will be taken to avoid, remedy, mitigate, minimise or manage the traffic effects associated with construction works for the duration of this Project.

The Draft CTMP has been based on the best available information from Meridian. It is noted however that resource consent has not yet been granted, a Contractor has not been appointed, construction methodology has not been finalised and a traffic management company has not yet been engaged. All traffic management measures included in the following CTMP have yet to be approved by the Council's or New Zealand Transport Agency (NZTA). As such, the methodology and management of effects described herein is indicative only and will be subject to amendment and refinement following detailed design and Contractor selection closer to the time of construction.

This draft CTMP deals with construction activity associated with:

- The main construction site accessed from SH2/Old Coach Road
- Construction activity associated with the Old Coach Road upgrade.
- The terminal substation site accessed from SH2/Kaiparoro Road.
- The transmission line accessed from SH2/Opaki-Kaiparoro Road (northern intersection) - noting heavy and light construction traffic will not be permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road.

Given the location of the construction vehicle activity, consultation and agreement of the Draft CTMP will be with the two road controlling authorities of TDC and NZTA. The Stakeholder Liaison Group appointed through consent conditions will also have the opportunity to provide feedback on this Draft CTMP prior to it being lodged with the Councils for certification.

1.2 Purpose

The purpose of this CTMP is to:

- Provide a fundamental structure and demonstrate the initial findings for the CTMP which will be developed prior to the commencement of any construction activities. The CTMP shall be implemented throughout the entire construction period and is intended to be the primary tool to inform the project's management of construction traffic effects.
- The CTMP will also establish a framework that can be used to support the development of any required future Site-Specific Traffic Management Plans (SSTMP's) and Corridor Access Requests (CAR), which would enable live physical works in the road corridor once approved by TDC/NZTA.

The Draft CTMP is informed and generally consistent with the following:

- Mount Munro Windfarm Port to Site Assessment Report - dated 8 July 2021.
- Traffic and Transportation Effects Assessment Report (TA) – dated 17 May 2023.
- S92 response and vehicle tracking drawings to transport-related Request for Information (RFI) – dated 31 August 2023.
- Update to Mount Munro Windfarm Port to Site Assessment Report – dated 7 September 2023.
- S92 response to transport-related RFI – dated 8 September 2023.
- S92 response to transport-related RFI – dated 16 February 2024.
- Statement of Evidence of Colin Shields - dated 24 May 2024.
- Statement of Evidence of Tom Anderson - dated 24 May 2024.
- Statement of Evidence of Nick Bowmar - dated 24 May 2024.

This Draft CTMP is consistent with the NZTA New Zealand Guide to Traffic Management (NZGTTM) and Code of Practice for Temporary Traffic Management (CoPTTM), noting that CoPTTM is proposed to be withdrawn in 2024.

The Draft CTMP describes the general measures required to reduce the impacts of construction traffic and maintain the safety of all road users and adjacent properties. This will entail the implementation of strategies to maintain, or minimise the impact on, traffic capacity and safety, while managing the effects on project delivery.

1.3 Philosophy

The following objectives have been set as a summary of the philosophy for the Draft CTMP:

- Maximise safety of the travelling public and site staff.
- Enable construction efficiencies.
- Minimise delays to the public and road users.
- Minimise disruption to property access.
- Ensure appropriate access for emergency vehicles.
- Inform the owners of neighbouring properties about potential impacts of the Project construction.
- Remediate and maintain the current condition of road assets where damage has been directly caused by construction activity.

This will be achieved by a high standard of:

- Planning construction traffic movement.
- Design of site access points and any required temporary traffic management (TTM).
- Maintenance of roads, signs and work sites.
- Effective communication between the Project team, neighbours/stakeholders and road users.

Monitoring will be an important aspect of the CTMP and will enable the evaluation of construction effects as the Project evolves. Given the duration of the project and the potential for changing conditions and environment, the CTMP will remain a live document to be updated when necessary. Updates will be made in future versions of the CTMP as the construction methodology is updated and/or where alternative measures have been identified.

1.4 Relationship to other plans

This Draft CTMP forms part of a comprehensive suite of environmental controls within the Construction Environmental Management Plan (CEMP) for the construction phase of the Project which is detailed in Draft Condition CM4 c) i. f.

The CTMP addresses the potential traffic effects associated with construction activities for the Project site.

1.5 Relevant Draft Consent Conditions

Draft Consent Conditions are attached in the Statement of Evidence of Mr Anderson. Of relevance and referred to in this Draft CTMP are:

- CTM1 (Construction Traffic Management) – site entrances.
- CTM2 Roading and Intersection Upgrades.
- CTM3 Pavement Impact Assessment and Maintenance.
- CTM5 Over-Dimension or Over-Weight loads.
- CTM6 CTMP.
- GA7 (General Accordance) Complaints Management.
- GA8 Incident Management and Reporting.
- SLG1 to 6 Stakeholder Liaison Group.
- CM4 c) i. f Construction Environmental Management Plan (CEMP).

1.6 Sequence of traffic management documents

Figure 1.1 below shows the typical relationship between the sequence of documents relating to temporary traffic management activities. It is important to note that the CTMP does not enable physical works to take place on the road corridor but rather sets the philosophy as to how temporary traffic management will be managed for the Project. Site Specific Traffic Management Plans (SSTMP's) and Corridor Access Requests (CAR) approved by TDC/NZTA would enable physical works to take place within the road corridor. These would be developed in accordance with the philosophy documented in this CTMP.

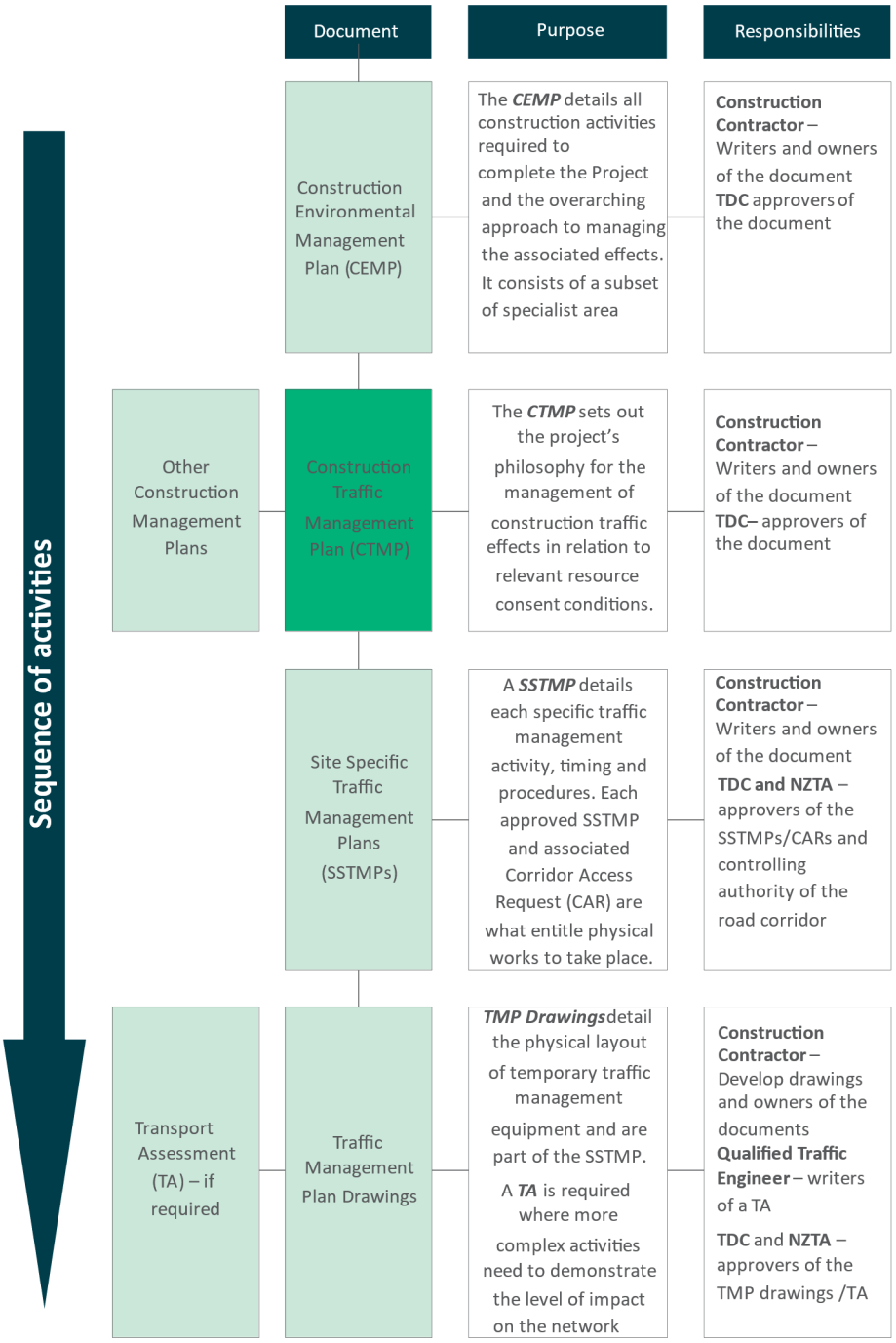

Figure 1.1: Sequence of activities for temporary traffic management related documents.

1.7 SSTMP planning

Traffic Management Plans (TMP) are required for all activities that vary the normal operating conditions of a road, irrespective of whether the activity is on a carriageway, on a footpath or on a road shoulder. A Site Specific Temporary Traffic Management Plan (SSTMP) is a document describing the nature and extent of Temporary Traffic Management (TTM) at a work site and how road users (including pedestrians and cyclists) will be managed by the use of TTM. These documents outline the TTM procedures to be implemented, to ensure the safety of both the public and Contractors is maintained throughout the duration of each construction activity.

Following programming of construction tasks, associated TTM requirements will be identified and SSTMPs prepared to ensure construction activity is conducted using an approved methodology, with agreed mitigation measures in place. There need not be a unique SSTMP for every construction activity, where appropriate generic SSTMPs can be used.

A Contractor undertaking work within the road corridor will need a Works Access Permit (WAP) by submitting a CAR application to TDC/NZTA. To obtain the WAP from TDC the Contractor will apply for a CAR through the 'Submitica ' website Sign in or sign up (b2clogin.com) with a SSTMP uploaded to this CAR application along with any supporting information required. TDC indicate that applications for a CAR should be made at least 20 days prior to works commencing at the site.

1.8 Performance standards

TDC indicate (in Corridor Access | Tararua District Council (tararuadc.govt.nz)) that all temporary traffic management must be completed in accordance with the Code of Practice for Temporary Traffic Management (CoPTTM). This document is due to be superseded by NZTA New Zealand Guide To Traffic Management (NZGTTM during 2024. In addition, the following standards and guidelines shall be adhered to in planning and implementing TTM during construction of the project:

- NZTA Traffic Controls Devices Manual (TCD).
- NZTA Manual of Traffic Signs and Markings (MOTSAM)[3].
- Austroads "Road Design" and "Traffic Management" guides.

The CTMP and any subsequent SSTMP's shall be consistent with the applicable version of the NZGTTM/CoPTTM. Where it is not possible to adhere to this standard, the CoPTTM prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with the Tararua Alliance Asset Manager/Traffic Management Controller who has authority to approve SSTMP and consider any associated EED. The EED will then be forwarded onto the NZTA National Office for approval.

TMP's must be prepared by a qualified Site Traffic Management Supervisor (STMS). The TMP is then included in a CAR application and submitted to TDC/NZTA by the STMS for approval. The Contractor should allow up to five working days for approval of a SSTMP.

1.9 Concurrent projects

There are no known interfacing roading projects in the vicinity of the proposed Project site at the time of developing the CTMP. This section will be reviewed and updated if any information emerges.

1.10 CTMP structure

The remainder of this document is structured as follows:

[3] NZTA plan to archive MOTSAM after the publication of the Traffic Control Devices Manual Part 4 in early 2024.

- Section 2 defines the roles and responsibilities that will apply for the project site.
- Section 3 outlines the project works and summary of construction activities.
- Section 4 summarises the existing conditions relevant to the project site.
- Section 5 details the CTMP management strategies required to mitigate the anticipated impacts of construction activity.
- Section 6 details the procedures that will apply for the operation and management, governance, development of SSTMPs, approvals and monitoring of the temporary traffic management throughout the life of the Project.
- Section 7 details key CTMP communications.
- Section 8 details the key review monitoring and update mechanisms of the Draft CTMP.

2 Roles and responsibilities

2.1 Defined roles and delegated level of responsibility

Specific roles and responsibilities relating to the implementation of this CTMP are detailed in Table 2.1 below:

Table 2.1: CTMP roles and responsibilities

Role	Responsibility
TDC	• Approval of SSTMP and CAR applications. • Auditing of temporary traffic management during site operations. • Advising network considerations on local roads administered by TDC, such as incidents, events, and other scheduled road works which could impact project works and TTM. • Certification of the CTMP. • Monitoring of compliance during site operations.
NZTA	• Approval of relevant Over Dimension permits. • Advising network considerations on State Highways, such as incidents, events, and other scheduled road works which could impact project works and TTM on routes used by construction traffic to the site. • Advising on State Highway network considerations such as other scheduled road works which could impact project works and TTM on routes used by construction traffic to the site. • Agreement of CTMP
Consent Holder	• Overall responsibility to ensure resource consent conditions and CTMP requirements are complied with.
Construction Manager	• Confirming site works are being undertaken in accordance with the construction methodologies and relevant management plans. • Responsible for delivering resources to ensure TTM is managed and maintained.
Construction Traffic Manager (CTM)/Traffic Management Coordinator (TMC)	• Responsible for establishing and maintaining safe processes for all temporary traffic management activities. • To ensure the Site is operated in accordance with the CTMP. • Responsible for coordinating all temporary traffic management activities for the Project. • Responsible for preparation, submission and coordination of all temporary traffic management plans for the Project. • Responsible for arranging any Transport Assessments (TA) that may be required for the SSTMP. • Responsible for the management of all temporary traffic site crew and operations. • Liaise with Road Controlling Authorities (RCA) throughout the process (in each of the preparation, submission and coordination phases) to ensure the best possible temporary traffic management result for each party (principals, RCA and Contractors). • Provide the approved SSTMP's to the site traffic management supervisor (STMS) to implement on site. • Arrange for pre-construction pavement surveys.

Role	Responsibility
	• Arrange regular meetings with the TDC Compliance Monitoring Officer (CMO) regarding upcoming works and permissions/approvals required. • Ensure that staff parking is appropriately managed. • To facilitate coordination meetings. • To respond to complaints and incidents. • To provide inductions and training for staff. • Ensure complaints and incidents register and write reports. • Manage the SSTMP process.
Site Traffic Management Supervisor (STMS)	• Responsible for onsite implementation, maintenance and removal of the approved SSTMPs in accordance with the requirements of NZGTTM/ CoPTTM. • Be onsite during attended periods and monitor traffic flows. • Provide feedback to the Construction Traffic Manager regarding how the SSTMP is operating and propose any amendments to improve traffic flow or safety. • Monitor the site at regular intervals (minimum of every 12 hours) to ensure that safety is maintained. • Prepare and submit SSTMP's and CAR's to road controlling authority for approval.
Traffic controllers (TC)	• Traffic Controllers are responsible for assisting the STMS with their responsibilities and in accordance with the requirements of NZGTTM/ CoPTTM.
Construction staff	• To create a safe working environment. • To operate the Site traffic and pedestrian management according to the CTMP.
Stakeholder Liaison Group (SLG) lead	• Lead and coordinate community and stakeholder engagement and communication processes. • Arrange pre-construction meetings with and notifications to stakeholders, as specified in Draft Condition SLG6.
External traffic engineers and planners	• The Project may draw on a wider group of experts to undertake TA's and assist with planning and review of SSTMP's and planned Temporary Traffic Management (TTM).

2.2 Contact details

The final CTMP will include contact details for key staff (role, name, phone number and email), along with the Project hotline, for general queries or complaints. Project contact details will be provided in the final CTMP and any further contact details will be provided in the Construction Environmental Management Plan.

2.3 Approvals

An internal approvals procedure will be implemented by the Contractor to address all relevant issues and provide necessary notice and consultation prior to application for the SSTMP.

The SSTMP shall be prepared and reviewed for compliance with NZGTTM/CoPTTM and issued to the approvals team of TDC. For TTM proposed on NZTA State Highways, the SSTMP will go to the NZTA Journey Manager for approval by the TMC (Traffic Management Co-ordinator). For TTM on local roads administered by TDC, the SSTMP will go to the relevant team at Tararua Alliance for approval.

All TTM applications will go to the following contact as appropriate (TBC in subsequent CTMP updates):

NZTA	TDC
Phone:	Phone:
Email:	Email:

3 Project Description

3.1 Summary of project

Full details of the site location, project description and proposed site access are provided in the TA and the statement of evidence of Colin Shields. In summary, Meridian proposes to develop, build and operate the Mount Munro wind farm, consisting of 20 turbines on an 8.9 km^2 site, approximately 4 kilometres south of Eketāhuna and 35 kilometres north of Masterton, as shown in Figure 3.1 below:

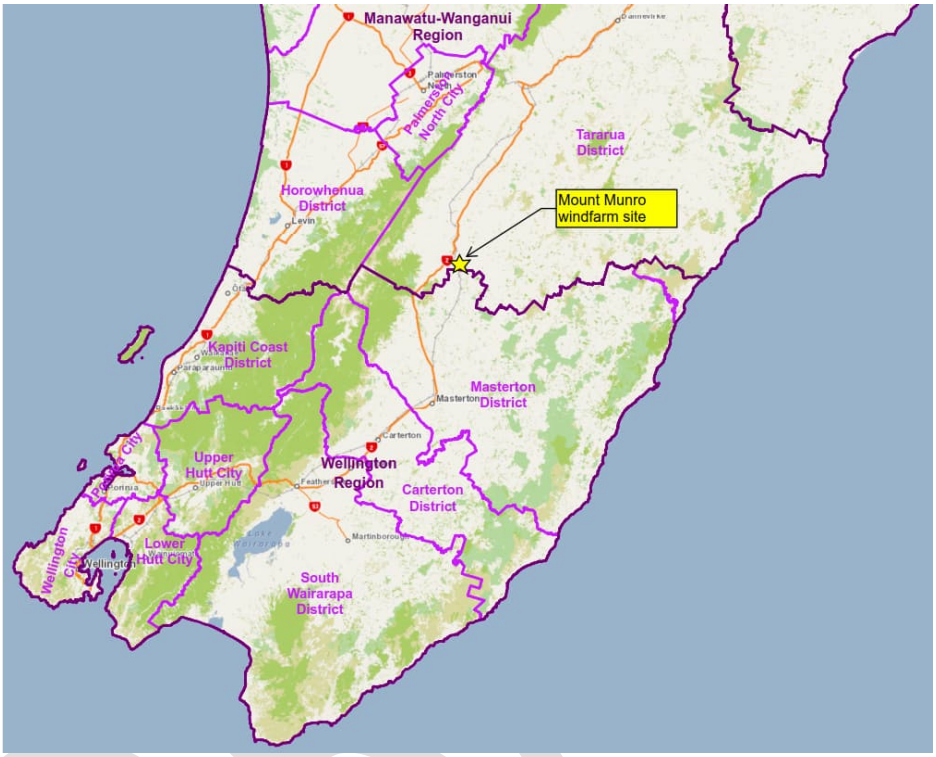

Figure 3.1: Project location.

The Site is located to the east of State Highway 2 (SH2) and is shown highlighted in pink in the site plan in Figure 3.2 below:

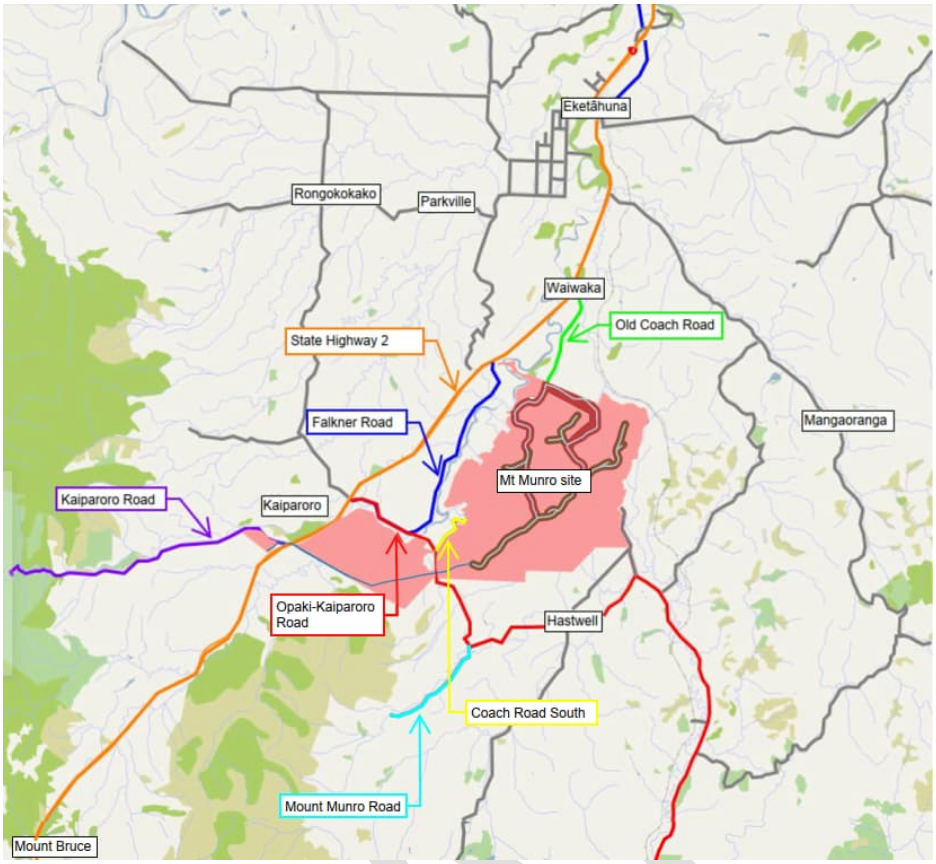

Figure 3.2: Mount Munro Site location.

The Site has road frontages to Opaki-Kaiparoro Road, Coach Road South, Falkner Road, Old Coach Road and SH2.

This Draft CTMP deals with construction activity associated with:

- The main construction site accessed from SH2/Old Coach Road and construction activity associated with upgrades to Old Coach Road.
- The terminal substation site accessed from SH2/Kaiparoro Road.
- The transmission line accessed from SH2/Opaki-Kaiparoro Road (northern intersection) - noting heavy and light construction traffic will not be permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road.

3.2 Construction programme

The statement of Evidence of Mr Bowmar includes a high-level/indicative timetable showing the anticipated sequencing and duration of the main construction activities for the project. The construction works will take less than three years to complete, with varying levels of intensity at different locations through that time. The final timetable could vary from the outline in Figure 3.3 below and will be confirmed as part of detailed design. However, the indicative programme represents the anticipated maximum overall construction period, barring unavoidable delays such as from a natural disaster or major supply chain interruptions.

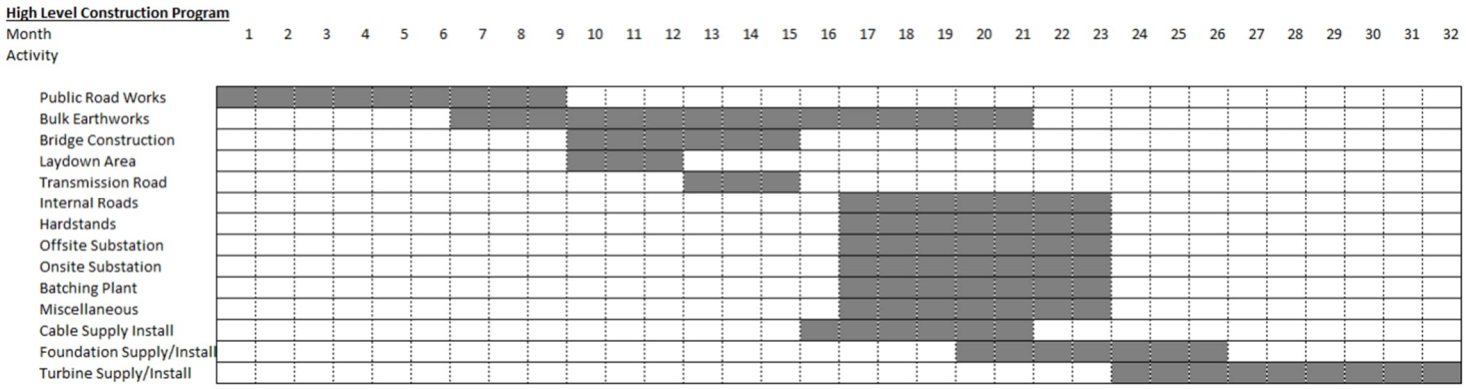

Figure 3.3: High level, indicative programme.

3.3 Construction traffic

There are two types of construction traffic generated. The first is traffic that is related to the delivery of materials or labour to the site and the second is related to constructability. The management of both forms of transport come under the control of the Contractor and are managed via briefings and training under the guidance of this CTMP and audited by Meridian. Activities that will generate traffic external to the Site can be broadly grouped into the following categories:

- Old Coach Road upgrade.
- Site establishment and bulk earthworks.
- Civils.
- Turbine installation.
- Electrical balance of plant including High Voltage cable deliveries and transmission related deliveries and Transformer.

The TA provides a detailed analysis of the traffic generation and timing of these activities. Figure 3.4 below replicates the profile of daily traffic generation that was derived from the preliminary work programme and traffic movements generated by each task (including the movement of Over-Dimension and Over-Weight loads):

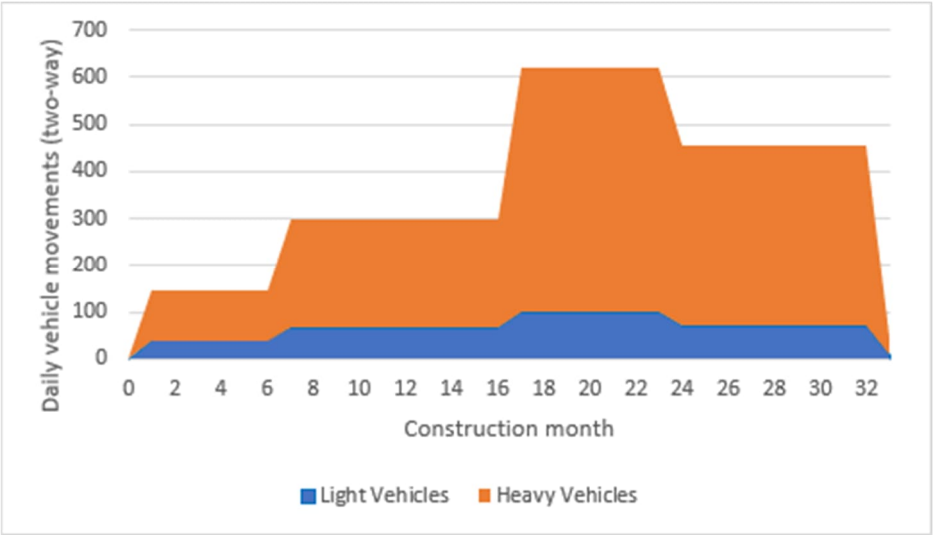

Figure 3.4: Profile of construction traffic flows generated by the Project.

This analysis indicates that the period of greatest activity is between months 17 and 23, when approximately 622 vehicle movements per day are anticipated. This period coincides when the transportation of material for the civils works is proposed. Daily construction traffic volumes will fluctuate depending on the number of activities and weather conditions e.g. a windy day could reduce numbers whereas a fine day could increase numbers.

As detailed in the TA, the construction traffic will consist of light vehicles (associated largely with construction workers) and heavy vehicles associated with road upgrade, earthworks and general civils work where the largest vehicle is anticipated to be a standard truck and trailer.

3.4 Over Dimension/Over Weight vehicles

There will also be infrequent transportation of turbine equipment (from either Napier or Wellington Ports, TBC in the final CTMP) which will likely require the use of an Over Weight/Dimension vehicle and a special vehicle permit. The Vehicle Dimensions and Mass Land Transport Rule (2016) establishes the guiding legislation regarding the movement of Over-Weight and Over-Dimension vehicles on New Zealand roads. Guidance and limitations are placed on vehicles transporting goods pertaining to their size and weight. Where any vehicle transporting goods exceeds any of the thresholds outlined in the document, a special vehicle permit application is required to be lodged.

Movement time restrictions may apply to any over-size or over-weight vehicles depending on the load type and its classification. Travel time restrictions may apply during public holiday periods and more generally during peak hours. These matters are assessed through the permit application which seeks to enable the legal movement of these vehicles, but usually restrictions for the route of travel are anticipated.

Any required bespoke SSTMPs and CARs will be developed once exact details of the vehicle and routing to be used is known, and (where relevant) Over-Dimension rules and associated permitting processes will need to be complied with. For overweight vehicles, a High Productivity Motor Vehicle (HPMV) mass permit is available through the NZTA Heavy Vehicle Permit Portal, outlining the conditions and restrictions for permitted vehicles greater than 44,000 kg mass (NZTA Heavy Vehicle Permit Portal).

Depending on the particular vehicle and trailer configuration selected by the Contractor, a number of particular controls are typically applied to the haulage of over-weight loads of this kind. These include details of:

- Arrangements for 'pilots' for the vehicle and signage to warn other drivers.
- Specification of the load and the route to be followed.
- The extent and duration of any necessary road closures.
- Imposition of maximum permissible travel speeds.
- Restrictions on some particular bridges, such as requiring other traffic to be stopped and the vehicle to travel at a crawl speed along the centre line of the bridge.
- Limitations on the hours of travel and regular stops to clear other traffic and minimise delays.
- Contingency plans for vehicle breakdown and emergencies.
- Arrangements for supervision to ensure compliance, and potentially pre/post inspections of the routes for damage.

It is expected that the exact nature of these controls will be developed and refined during the detailed design process, and this will include provision for co-ordination with stakeholders. All of the Over-Weight and Over-Dimension loads will be transported by experienced haulage firms using specialist vehicles.

3.5 Construction hours

As detailed in Draft Condition CN1, construction works associated with the upgrade of Old Coach Road, internal Project roads and the construction laydown and site administration area must only occur between the hours of 7.30am and 6.00pm, Monday to Saturday.

It should be noted though that there may be times when truck movements outside of these hours will be necessary (for example movement of Over Dimension vehicles). Any works outside the usual hours will be detailed in the final CTMP which will identify appropriate management and mitigation measures to be implemented and, if required, will be coordinated and programmed with TDC/NZTA.

4 Existing transport network conditions and proposed upgrades

Existing transport network conditions are detailed in the TA, Port To Site Assessments and Mr Shields's Evidence.

Proposed upgrades to Old Coach Road are currently being discussed with TDC.

5 Draft CTMP strategies

5.1 Background

This section sets out the general temporary traffic management strategies applicable to the construction including:

- Applied standards.
- Site specific CTMP management strategies

5.2 Applied standards

Temporary Traffic Management is governed by New Zealand legislation, in particular, the Land Transport Act 1998. Land Transport Rules made pursuant to that act, which relate to Temporary Traffic Management, include:

- Land Transport (Road User) Rule 2004.
- Land Transport Rule: Traffic Control Devices 2004.

The project shall adopt the following standards and guidelines insofar as they are relevant:

- NZGTTM/CoPTTM.
- NZTA Traffic Control Devices Manual.

This document and the SSTMP's shall be consistent with the applicable version of the NZGTTM/ CoPTTM. Where it is not possible to adhere to this standard, the CoPTTM's prescribed Engineering Exception Decision (EED) process will be followed. This will include appropriate mitigation measures that shall be agreed with the asset managers of TDC/NZTA.

Traffic and temporary warning signage shall conform to the standards specified in NZGTTM/ CoPTTM. All such specific signage will be clearly shown on plans to the approval of TDC/NZTA, as an integral part of the CTMP and any subsequent TMP.

5.3 Site Specific CTMP management strategies

This section summarises the CTMP management strategies that are applicable to mitigate the traffic effects of construction activities. The approach and measures will be discussed and agreed on and will be used to inform the construction site set-up, operations and development of any required SSTMP's.

The objectives of the CTMP are to:

- Ensure construction traffic movements on the transport network are appropriately managed.
- Provide for the safety of everyone at all times.
- Minimise disruption and maintain vehicle access to/from surrounding properties.
- Minimise disruption from construction traffic on the travelling public and road users along the identified sections of the construction routes.
- Seek to avoid full road closures and minimise any partial or managed closures.
- Manage integration with other construction projects.

Table 5.1 below, summarises the site specific CTMP management strategies that are applicable to the construction site to mitigate the traffic effects of construction activities:

Table 5.1: Site specific CTMP management strategies

Traffic management activity	General management strategies
General	• Construction driver education programmes will be implemented. • Any damage to the road corridor directly caused by heavy vehicles entering or exiting the construction site shall be repaired with a timeframe to be agreed with TDC/NZTA. This is addressed in Draft Condition CTM3. As indicated in Mr Shields evidence there are a number of issues that need to be resolved with TDC in the wording of this Condition including agreement on the type of surveys to be undertaken and the geographical extent of the surveys.
Construction vehicle movements, routes and hours of operation	• Truck routes and access locations are addressed in Draft Condition CTM1. • SH2 access to the internal transmission lines will be used by single unit trucks and not truck and trailer units. • Timing of construction movements is addressed in Draft Condition CN1. • At this stage it is not possible to indicate quarries to be used - this will be confirmed in the final CTMP and haulage routes will be identified. • Any works that may need to take place outside of the specified hours shall provide a report to TDC/NZTA, prior to the commencement of such work, detailing how the work will be carried out and why it is necessary. • Procedures shall be developed to ensure any potential spill of materials being transported to or from the site are contained. • Deliveries will be coordinated to minimise delivery trucks and large construction vehicles passing on Old Coach Road. • Any over dimension vehicle routes to be agreed with TDC and NZTA. • For overweight vehicles, a HPMV mass permit is available through the NZTA Heavy Vehicle Permit Portal, outlining the conditions and restrictions for permitted vehicles greater than 44,000 kg mass (NZTA Heavy Vehicle Permit Portal[4]). • During periods of unsafe wind speeds the Contractor will consider postponing truck movements.
TM signage	Signage helps with control of traffic. The following types of signage are proposed: • Road Controlling Authority regulatory standard signage and Information signage. • Health and Safety (H&S) signage. • Temporary traffic management (TTM) signage. All signs will be removed at the completion of construction of the wind farm. Regulatory signs As part of SSTMPs, regulatory signs will be installed including:

[4] https://hpmvpermits.nzta.govt.nz/

Traffic management activity	General management strategies
	• Signs warning of turning construction traffic to be placed on SH2 in advance of the Old Coach Road intersection for the duration of the construction period. • Temporary signs to be mounted warning of turning construction traffic on Old Coach Road and main construction accesses for the duration of the construction period. • Mounting of 'caution wide vehicles' supplementary plates to road narrowing signs between Eketāhuna and Masterton for the duration of the construction period. These signs will be agreed with TDC/NZTA in accordance with Part 4 of the Traffic Control Devices (TCD) manual, noting that TDC now replaces Manual of Traffic Signs and Markings (MOTSAM). The Contractor will position the signs in accordance with the detailed design drawings and TDC/NZTA traffic management requests. H&S signs Health and Safety Signage will be erected in accordance with the Health and Safety and Employment Act and associated New Zealand Standards in relation to the works. These signs are general warning signs in relation to work activities or hazards and will be used in various locations along the route. TTM signs As part of SSTMPs, temporary traffic management signs will comply with COPPTM/ NZGTTM. These will include temporary speed limit signs on SH2 approaches to the Old Coach Road intersection (70 Km/h) and on Old Coach Road (30 km/h). The signs and traffic control will be temporary in nature and will be managed by the contractor. Meridian's project engineer will undertake daily inspection and random audits of the signage to ensure it complies with the final approved CTMP. The SSTMP's will provide details of the STMS, contingency plans, time periods at each site, Engineering Exception Decisions eg where traffic management layouts that are more applicable to the site but do not completely comply with COPPTM/NZGTTM.
Driver induction and ongoing training	The STMS is responsible to undertake a site induction with all transport operators contracted to transport materials to the site. A 'Driver Awareness Plan' induction and any required ongoing training will cover (but not be limited to): • The routes of travel to and from site. • Permissible times of deliveries. • Requirement for and use of possible communication systems. • Requirements to abide by local speed restrictions for dust and detritus management. • Requirement for courteous driving. • Appropriate following distances. • Requirements to report hazards on the transport route. • Briefing to heavy vehicle drivers about the risks associated with high wind speeds.

Traffic management activity	General management strategies
	• Check rear view mirrors regularly and where safe to pull over, allow traffic behind to pass. • No overtaking on public roads unless this can be done safely. • Speed limit and strict adherence to 30km/h on Old Coach Road. The contractor will strictly monitor speeds of the construction workforce. • Priority to public traffic – On Old Coach Road, where road width allows, then construction traffic to safely pull over to allow the prioritisation of public/ local resident traffic to pass. • Protocols around other road users on Old Coach Road such as cyclists/pedestrians. This includes, all construction related activity to give way to pedestrian/cycle traffic, all traffic to reduce to 20km/h when passing pedestrian/cyclist and ensuring that at least 1.5 metres of separation between vehicles and cyclists/pedestrians. If this separation cannot be achieved, then the vehicle is to wait until a safe passing space is available or the rider signaled that it was safe to pass. Traffic Controllers to advise (via radio control) all contractor vehicles to advise of the presence of pedestrians/cyclists. • Safety briefings to truck drivers with regard to cyclists on adjacent roads on the Heartland Ride cycle route to ensure they are aware of an increased likelihood of cyclists along the roads and correct procedures for passing. • No unnecessary stopping and no idling outside private residences. • No stopping or parking in residents' driveways. • Reporting of any incidents/issues to the Contractor. • Drivers made aware to maintain clean public road surfaces throughout the construction period and report any dust/dirt tracking. • Headlights should be dipped (low beam) at all times if required. Signs will be installed within the site requiring that when vehicles headlights are used, they shall be dipped (low beam) at all times.
Safety and requirements of active mode users (pedestrians and cyclists)	There are no footpaths and no dedicated cycling infrastructure along the local roads around the Site. However, sections of Opaki-Kaiparoro Road and Falkner Road form part of the Tour Aotearoa 'Heartland Rides' on-road cycle network. If required a, SSTMP will be developed to provide measures for any active mode users through the site access to ensure they are escorted safely if needed. Driver education measures in relation to pedestrians and cyclists are described above.
Emergency vehicle access	• Emergency vehicle access will include provisions for Fire and Emergency Services New Zealand, NZ Police and St Johns. In the event access for an emergency vehicle was required, normal road prioritisation rules would prevail. • If requested by the emergency services, any vehicles within the site or blocking the construction access will be removed to provide for emergency vehicle access. Vehicles will not be moved unless load is secured and safe to move. • Emergency vehicles will have unrestricted access to the site for any emergencies that occur at ground level and when the site is attended. The emergency services will be notified of the appropriate contact for 24 hour site access prior to the works through the Construction Management Plan and SSTMP application processes.

Traffic management activity	General management strategies
Parking	Parking of construction staff and visitor private vehicles will occur within the designated site compound area. Temporary on road parking for light and heavy vehicles associated with the upgrade of Old Coach Road will be provided as required.
Site Security	A security gate/security hut will be established at the site access point to restrict any access outside of working hours or any unauthorised personnel from entering the site.
Buses	There are no scheduled buses or school buses on the roads surrounding the Site (except for a once a day, three days/week, bus service on SH2).
Refuse collection	Existing refuse collection for residents on Old Coach Road will be coordinated with the TTM team.
NZ Post	Liaison with NZ Post will be carried out to ensure access for deliveries is maintained.
Utility services eg PowerCo	Some limited disruption to utility services may occur but it is not foreseen that outside of these works there will be a need to restrict access to utility services. Planned maintenance access to be coordinated to avoid any planned access restrictions. Emergency access will be provided at all times.
Delay	• CoPTTM advises delays caused by the TTM are generally not permitted to be greater than 5 minutes in typical traffic conditions. All practical steps shall be undertaken to minimise traffic effects caused by construction activities or TTM measures. • The impact of TTM shall be considered in the SSTMP, including the calculation of the expected level of delay in order to satisfy that the impacts are understood. Where delays are deemed to be unacceptable, construction staging methodologies will be revised to reduce the duration or impact of the activity.
Vehicle Environmental Controls	Draft Condition AQM2 includes for dust controls within an Air Quality Management Plan. Specifically in relation to the CTMP, dust suppression and detritus control is to be provided by the Contractor. If earth worked materials are carried onto the surrounding road network (eg dropped from vehicles carting materials to and from site), the Contractor shall be responsible for cleaning and repairing the road back to its original condition. In doing this, the Contractor shall ensure that approved TTM measures are in place to undertake this work safely and that no materials are washed or swept into any stormwater drains or natural drainage systems. The Contractor shall take all practicable measures to minimise the discharge of dust and detritus from the site. These measures shall include, but not be limited to: • Training staff and Contractors on practices relating to minimising dust emissions, dust control and procedures for reporting and dealing with dust emissions if they arise. • Minimising the areas of exposed ground. • Mulching, re-grassing and/or planting of bare areas such as topsoil piles and completed batters as soon as reasonably practicable. • Using water and/or dust suppressants on all disturbed surfaces including roads when required.

Traffic management activity	General management strategies
	• Applying a speed restriction on all internal roads and not exceeding 30 Km/h at all times and erecting a sign at the entrance to the site advising of this. • Provision of wheel cleaning facilities including hoses, brooms and shovels or maintaining a contingency of sweeper equipment on call at all times to clean up material which may have been accidently spilt onto public roads. The Contractor is to adhere to any further guidance given by the Traffic Management Co-ordinator and/or TDC/NZTA in relation to dust suppression and removal of detritus material.
Private properties	Vehicle access will be maintained to private properties for residents at all times. Communications will be undertaken in accordance with the Stakeholder Liaison Group (SLG)Draft conditions. If changes to access are required, access plans for properties for residents will be developed and agreed upon. This process will be: • Sensitive receptor plan development – SLG lead to speak with all residents affected by upcoming works to determine if special access is required (e.g. frequent Ambulance visits, mobility access needs). • Plan developed to maintain access to properties. • Plan discussed with construction team and distributed to TTM team and emergency services. • Residents advised where and how to access site safely – this is during attended and unattended hours. Discussions with the occupants of affected properties will take place at least 48 hours in advance to identify: • Any times of day that are better than others for the work. • Any alternative routes that can be established. • Any need for shuttles etc. to or from transport on either side of the work area. These processes will avoid any unreasonable inconvenience to landowners and minimise disruption to private property access. Where work impacting on resident access has to occur over several days typically temporary metalled accesses will be provided to allow access overnight where there is a level difference between the access at the boundary and the road levels whilst Old Coach Road is being constructed.
Site Staff	All staff involved in the Project will attend a Project induction prior to the commencement of work to ensure a common basis for approaching their work. The induction will include environmental, health and safety and hazard management in relation to the Project area, along with temporary traffic control. Training will include the following: • Specific training will be provided to those involved in TTM as appropriate to their role and responsibilities. • Regular toolbox talks will provide a forum to reinforce and educate Project staff around specific temporary traffic control issues and actions during the Project.

Traffic management activity	General management strategies
	The STMS will also conduct briefings on-site prior to every TTM operation to identify hazards pertaining to the work site and controls to be implemented to protect the safety of Project staff and public.
Construction Traffic Speed enforcement	Monitoring of speeds of Construction staff during construction will be the responsibility of the STMS. The STMS will obtain feedback from the Traffic Controllers who are best to advise of any concerns in relation to speed. Should the STMS or Traffic Controllers suspect speed is an issue then there are two methods for monitoring and enforcement: • Floating car surveys (i.e. car following) or • Use of a radar gun. The STMS will record the registration plate of the offender and a formal warning process will occur. In the event that the same offence occurs twice for one person, that person will be expelled from the site unless the reason is based on an emergency situation.
Personal Protective Equipment (PPE)	As a minimum, all personnel working on site must wear a day or night compliant high visibility garment. Construction workers will therefore be clearly visible and will set a consistent high level of PPE and appearance across the site.
Other permits or approvals	• Over-Dimension and Over-Weight permits if applicable. • Approvals from road controlling authorities, such as approved CAR application.
Construction staff movements	• The Contractor will promote car-pooling amongst construction staff to minimise single vehicle staff movements.
Site access	• All temporary site accesses will be designed in accordance with relevant TDC/NZTA design standards (including sight lines, accessway widths and gradients). • Site Traffic Management Supervisor will safely manage the movements of construction traffic to and from the road network to ensure the safety of all road users is maintained. • Sites will be securely fenced to prevent public access. • Wheel wash facilities to be set up at each site exit point. • Site accesses will be formed and metalled, sealed for 20m from the legal road and fenced and gated.
Management of construction traffic	• Site Traffic Management Supervisor will safely manage the movements of construction traffic to and from the road network to ensure the safety of all road users is maintained and that construction vehicles can negotiate access and egress to avoid any queueing on the adjacent road network. • Site Traffic Management Supervisor will co-ordinate (for example via radio control) trucks accessing the sites to ensure that construction vehicles arriving and departing the sites can do safely. • The CTMP will implement a construction driver education programme given the close proximity to residential properties.

Traffic management activity	General management strategies
	• All final reinstatement and remedial works will be carried out at the completion of the project to ensure no damage to any of the reinstated works occurs. • Movements of specialised machinery or large turbine components will not occur on a day to day basis. Separate to the Resource Consent application, bespoke SSTMPs and CARs will be developed once exact details of the machinery and vehicles required is known. Agreement with TDC and NZTA will be required and Over-Dimension rules and associated permitting processes will need to be complied with.
Communications	• Communication campaigns should be undertaken in relation to traffic management activities throughout construction activities (including letter drops to affected residents, project signage, web based resources, etc.).
Management of stock movements	• For any movements of stock on Old Coach Road, the farmer/stock owner to advise of these movements to the Contractor with 24 hours' notice. This will be part of the Draft SLG conditions. • The Contractor will pause construction vehicle movements during pre-planned stock movements on Old Coach Road. • The Contractor will replace any fencing removed as part of the upgrade of Old Coach Road. • It is the responsibility of the land owner to ensure that suitable fencing to contain stock is in place on their land. • All drivers are to avoid the use of horns or rev engine when driving alongside stock.
Construction traffic noise measures	The Contractor will employ various measures to control construction noise including: • Observing any engine braking restrictions. • Forbidding the use of vehicle reversing squawkers. • Muffling of exhausts. • Ensuring all plant and equipment is well maintained to minimise any disturbance to local residents and livestock in the adjacent fields.
Clean Roads	Public roads will be maintained in a clean state to minimise any potential dirt tracking onto the road surfaces and subsequent effects such as sediment runoff, dust and loss of traction. The proposed management measures include: • Maintaining a contingency of implementing portable truck washes at all site access points • Twice daily formal monitoring and education of all construction staff/drivers to monitor for any material which may be accidently spilt onto public roads from construction traffic. • Maintaining a contingency of water carts and sweeper trucks on call at all times to clean up any material which may be accidently spilt onto public roads from construction traffic. • SLG lead to coordinate residents reporting to site staff of any tracked/spilt material for immediate clean up.

6 Temporary traffic management framework

6.1 Background

This section sets out the general operational procedures for temporary traffic management activities for the Project discussed in this CTMP.

6.2 Site specific traffic management plan development

SSTMP will be required for all work or physical controls that occur within the road corridor at the construction site. Where there is a need for a SSTMP, the following sections outline how a SSTMP can be developed.

A SSTMP would be prepared for discrete stages of work within the road corridor and will follow the format set out in NZGTTM/CoPTTM. The SSTMP will describe the measures to be implemented to manage the temporary traffic effects associated with the movement of construction traffic, or particular works.

The SSTMP will be submitted to and approved by TDC. The SSTMP's will be assessed by the Traffic Management Coordinator for compliance with NZGTTM/CoPTTM and the ability to avoid adverse effects on the travelling public.

During the development of each SSTMP, the Project personnel will liaise directly with TDC and NZTA to ensure that the overall concept of the TTM is acceptable to all parties. This will, in turn, assist with timely approvals of SSTMP's.

The general framework for the submission of a SSTMP is as follows:

- Initial liaison with internal Project personnel to determine scope of SSTMP.
- Depending on the projected disruption to traffic, consultation with road controlling authorities may be required immediately, otherwise the development of initial draft Traffic Management Diagrams (TMD) shall begin. Should a TA be required, the development of TA would start immediately.
- Liaison between internal Project personnel to confirm work areas shown on draft TMD's are correct and allow for the construction works to proceed.
- Consultation with road controlling authorities utilising the agreed draft TMD: This stage will allow TDC to determine if a TA is required, as well as notification from TDC of any other additional specific requirements. If a TA has been requested at this stage, this is when development of the TA would commence.
- Finalising of the SSTMP (and TA if required) as well as any other road controlling authorities' requirements and then submission to the respective road controlling authorities for official approval.
- Any further liaison with road controlling authorities as required.
- Receiving the approved SSTMP from road controlling authorities and dissemination to the wider Project team in preparation of implementation.

6.3 Site specific traffic management plan structure

The following four elements summarise the structure of a typical SSTMP:

- SSTMP Pro-forma - this is the text of the document, which outlines the requirements, methodologies and standards required in observing the SSTMP. Details included in each SSTMP Pro-forma will vary depending on the activity requiring traffic control.

- Engineering Exception Decisions (EED)- all applicable EED's will be appended to the SSTMP.
- CAD drawings - CAD drawings will be employed and will include all relevant road features that require consideration in managing the impacts of construction.
- Communications strategy - the communications strategy will outline the proposed strategy for informing the public of the works. This may include public notifications in local newspapers, advertisements, radio communications, flyer or posters, variable message signs strategies, or driver information signage installed.

A SSTMP template will be provided in the final CTMP.

6.4 Review and approvals

SSTMP once fully developed and ready for final approval, will be submitted to TDC. The 'Submitica ' website Sign in or sign up (b2clogin.com), will be used to submit and manage SSTMP's relevant to the Project.

Following submission of the SSTMP to TDC and NZTA, the Contractor will work with them to resolve any remaining issues prior to final approval. Most of these items should be covered off during the initial liaison period with TDC and NZTA while developing the SSTMP.

Any SSTMP or CAR obtained from TDC/NZTA will be forwarded to the compliance monitoring officer at TDC for record.

6.5 Monitoring and audits

The STMS will continuously monitor the site they are responsible for while works are ongoing. This will be recorded in the form of regular checks each day and will include any issues, and actions taken to rectify them.

The Contractor's Traffic Controller (TC) will conduct official audits, in compliance with NZGTTM/CoPTTM, specifically Section A8, on a weekly basis of the construction site. The TC will then discuss the results of these audits with the relevant STMS and ensure any issues are understood and rectified.

6.6 Training

Training in relation to temporary traffic management is outlined in Table 6.1 below:

Table 6.1: Temporary Traffic Management training

Qualification/Training	Description	Who
Project Induction	Initial induction.	All site staff.
Appropriate Site Safe accreditation	Demonstrate proficiency on site.	All site staff.
Toolbox talks	Regular meetings to highlight key messages or issues and receive feedback.	All site staff.
STMS Level 1	NZQA qualification to oversee site in live road environment.	Person responsible for temporary traffic management associated with the project.
Traffic Controller (TC)	NZQA qualification to assist with traffic management.	All staff undertaking temporary traffic management associated with the project.

7 Communications

7.1 Background

The following section outlines the key stakeholders affected by the traffic related activities for the proposed work. The Stakeholder Liaison Group Draft Conditions (SLG1 to 6) includes more details on the consultation and engagement process for key stakeholders where required.

7.2 Key stakeholders

This CTMP has been developed based on consultation carried out as part of the resource consent application with the following parties in relation to specific components of this CTMP.

Table 7.1 below identifies the key stakeholders (and specific issues) who will be engaged with prior to and during construction for traffic management related matters:

Table 7.1: Key stakeholders and issues to be discussed during the development of the Project

Key Stakeholder	Specific issues to be discussed
Tararua District Council	• CTMP, SSTMP, CAR and assessment of effects of construction activities.
NZTA	• CTMP, SSTMP, and assessment of effects of construction activities. • Over Dimension/Weight permitting
Owners and occupiers of neighbouring properties	• Keep residents informed of Project activities and progress and also to understand any specific access requirements and effects that residents they may be experiencing during the construction activity
Other stakeholders such as NZ Post Rural Delivery, utility service providers and emergency services	• Will be advised of the works, the period of construction and contact details in case of emergency

The CTMP will be updated based on any new information that emerges. Key themes and topics of relevance for the key stakeholders relating to traffic related construction activities include:

- Where construction related vehicle movements may impact normal operations of the key stakeholders.
- Any construction related activities that may impact upon the safety of key stakeholders at any time during the construction period of the Project.
- Communication of significant construction works and vehicle movements that may impact key stakeholders to ensure safety is maintained.

7.3 Special considerations

7.3.1 Special events

Special events are defined as construction activities that generate a major peak in construction traffic or a change in vehicle access that may require a further level of planning for traffic impacts. These are generally non-typical and occur very infrequently over the course of the construction programme. The CTMP will be updated to assess any special events to take into account for the duration of this Project.

7.3.2 Neighbour notifications – letter drop

Letter drops to residents along the construction areas will be undertaken to inform neighbours of information relating to the Project. This may include:

- Working hours.
- Estimated arrival/departure times of site personnel (separate to working hours).
- Periods of heavy vehicle activity.
- Night works if applicable.
- Significant changes in project activities.

As a minimum the letter will include:

- Project description and work programme and progress.
- Location of the changes.
- Reason for the changes.
- Expected duration (dates); and
- Project contact details and communication channel.

The Stakeholder Liaison Group lead shall arrange for letter drops to the neighbours as required throughout the project. In addition to the physical letter drop, an electronic copy of the letter should also be provided to the compliance monitoring officer for their reference and information.

As the works proceed along Old Coach Road regular contact will be maintained with the residents to ensure that they are aware of the nature and duration of the works occurring adjacent to their properties. Specifically, each resident will be given at least 1 weeks' notice by both letter drop and/or either visit to their property and/or phone call prior to any works prior to the road upgrading activities occurring in front of their properties.

Where the upgrade works will directly impact private entranceways, the property owners will be invited to attend a meeting at the entrance ways prior to works to discuss the nature and duration of the activities and methods to ensure that access to their properties is maintained throughout this period.

7.3.3 Incident response

In accordance with Draft Condition GA8 (Incident Management and Reporting), specific CTMP actions to be undertaken in the event of an incident are described below:

Scope

The Contractor will have necessary resources available to respond promptly in the event of a traffic incident or other emergency situation. The top priority will be the safety and wellbeing of everyone involved and then take any actions, working in conjunction with TDC, NZTA, NZ Police, FENZ and St Johns to minimise disruption or inconvenience, whilst keeping the incident or area isolated from members of the general public.

Extent

In the event of a traffic incident, the nominated site STMS and available crew will attend in the first instance and report to the Traffic Management Controller. The project will make available any mobile plant (e.g. water trucks, excavators etc) which can assist in the case of a serious incident. Any traffic management resource on site not immediately involved in critical works will be made available to assist as appropriate.

Emergencies and incident communications

An emergency action plan will be produced prior to implementation of any temporary traffic management activities. The Plan will outline procedures, requirements and responsibilities in the case of an emergency. In addition to this plan, each SSTMP will address specific requirements in the case of an emergency. Events that may require implementation of the emergency action plan include:

- Traffic accidents.
- Emergency services requiring access to or through the site.
- Natural disasters.
- Flooding.
- Unplanned construction events.
- Emergency works.
- Significant traffic congestion.
- Inclement weather.

In the event of a crash or significant incident, the Contractor will provide immediate assistance and where necessary, contact the emergency services. Full support to those organisations will be provided to manage traffic whilst the incident is being bought under control. An incident report will be completed for each incident or near-miss.

In an emergency event, the STMS must ensure the traffic management staff protect their personal safety, the safety for continuing public access through the site, then notify the necessary authority and then attend to the situation.

In the event that a representative of NZ Police requests a copy of the final CTMP for safety or emergency reasons, the Contractor will immediately comply with this request. In the event of an emergency or breakdown on site, the Contractor will endeavour to provide a clear passage for emergency vehicles or tow trucks to ensure that the disruption and delay to other motorists through the site is minimised.

Relevant teams at TDC/NZTA shall be advised of any incident at the worksite via email and/or phone call and then an incident report sent to TDC and any other appropriate parties within 48 hours of the incident. This will include:

- A description of the nature, timing and cause of the incident.
- An assessment of any adverse effects of the incident on the environment; and
- A description of any remedial and/or mitigation measures that have been, or will be, implemented as a result of the incident to prevent the incident reoccurring in the future.

Remedial action and/or mitigation measures described in the incident report must be implemented as soon as practicable of the incident report being provided to TDC/NZTA to ensure that they are not ongoing. This could also involve updates to the CTMP.

7.3.4 Complaints management

Any legitimate traffic complaints received will be taken seriously and matters raised shall be investigated and responded to as quickly as possible. The CTM will be responsible for complying with Draft Condition GA7 (Complaints Management). This will involve maintaining a register of any complaint received regarding the construction activities associated with this Project. The register will include:

- Contact details of the complainant.
- Nature and details of the complaint.
- Location, date and time of the complaint and the alleged event giving rise to the complaint.
- Weather conditions.
- Other activities in the area, unrelated to the Project, that may have contributed to the complaint.
- Description of any measures taken to respond to the complaint.

8 Review, monitoring and update

This Draft CTMP should be considered as a live document. It will be developed to become a final CTMP following review by the Contractor. The final CTMP will also be updated throughout the course of the project to reflect material changes to construction methods, site conditions or the natural environment and also to reflect Over Dimension and Over Weight vehicle movement traffic management. The Stakeholder Liaison Group (SLG) will also have an opportunity to provide feedback on the draft CTMP prior to it being finalised.

Table 8.1 outlines the temporary traffic monitoring to be undertaken during construction of this Project:

Table 8.1: CTMP monitoring programme

Monitoring activity	Frequency	Responsibility
Check method statement reflects requirements and requisite CTMP has been approved.	Prior to approving work packs	Construction Manager
Inspect temporary traffic management layout.	Every two hours when site is live	STMS
Documented check of all temporary traffic management.	Daily and as layouts change	STMS
Traffic management audit in accordance with NZGTTM/CoPTTM.	Monthly	Traffic Controller

TDC/NZTA may from time to time undertake random audits of the traffic management and the site condition rating form will be made available to the Project Team in accordance with NZGTTM/ COPTTM.

Approved CMTP and SSTMP's will be reviewed by the Contractor's Project Manager and STMS on a regular basis, to ensure that the documents remain relevant for use. Any changes to these plans will be recorded.

Monitoring of specific Construction traffic effects will also be undertaken including:

- Construction traffic movements (numbers /timing) –daily record summaries based on sign in records at the construction sites.
- Public Road Condition - Pavement Inspection Records as required under Draft Condition CTM3. . As indicated in Mr Shields evidence there are a number of issues that need to be resolved with TDC in the wording of this Condition including agreement on the type of surveys to be undertaken and the geographical extent of the surveys.
- Traffic delays - Traffic Controllers to audit and record any delays exceeding 5 minutes on Old Coach Road.
- Clean Roads -Contractor to undertake and record twice a day audits of road condition and any remedial action taken.
- Monitoring of construction traffic speeds by Traffic Controllers and any enforcement action taken.
- Review of incidents reported and remedial action undertaken.

Records of the above will be retained by the Contractor.

9 Applicability

This report has been prepared for the exclusive use of our client Merdian Energy Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report to inform its applications for resource consents for the Mount Munro windfarm, and that parties to that consenting process will use this report for the purpose of understanding indicative traffic management measures, which will be subject to refinement and amendment following detailed design and Contractor selection.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:

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Colin Shields
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Reviewed by:

.....

James Dyer
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Authorised for Tonkin & Taylor Ltd by:

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Nick Peters
Project Director
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Attachment B

MERIDIAN ENERGY

MT MUNRO WIND FARM

CONCEPT DESIGN

DRAWING	REV	TITLE
TA PROPOSAL		
1016884.100_C001	1	LEGEND
1016884.100_C002	1	OVERVIEW PLAN
1016884.100_C100	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 01
1016884.100_C101	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 02
1016884.100_C102	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 03
1016884.100_C103	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 04
1016884.100_C104	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 05
1016884.100_C105	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 06
1016884.100_C106	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 07
1016884.100_C107	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 08
1016884.100_C108	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 09
1016884.100_C109	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 10

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS
DRAWN	LC	JUN 24	PRELIMINARY DRAFT
DESIGN CHECKED			PROJECT PHASE
DRAWING CHECKED			CONCEPT DESIGN

NOT FOR CONSTRUCTION

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) DRAWING LIST

SCALE (A3) N/A DWG No. 1016884.1000-C000 REV 1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening May 2024\1016884.100_C100-109.dwg 2024-Jun-27 11:32:54 am Plotted By: LIVIA YEN SIANG CHEE

LEGEND

- PERMANENT ROAD WIDENING (NOT INCLUDING NEW DRAIN)
- CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- ROAD EXTENSION FOR TURBINE TRUCK TRACKING
- EXISTING WETLANDS
- PROPERTY BOUNDARY/ ROAD RESERVE
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT
- EXISTING OVERHEAD LINES
- EXISTING OVERHEAD LINES TO BE REMOVED
- NEW OVERHEAD LINES
- EXISTING FENCE LINE
- NEW FENCE LINE
- EXISTING MANHOLE
- EXISTING MANHOLE TO BE RELOCATED
- NEW MANHOLE
- EXISTING POWER POLE
- POWER POLE TO BE RELOCATED
- NEW POWER POLE
- EXISTING SIGN
- EXISTING SIGN TO BE REMOVED
- NEW SIGN
- NEW CONCRETE PIPE
- NEW 0.8m DRAIN (BOTTOM OF DRAIN)

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1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) LEGEND

SCALE (A3) N/A DWG No. 1016884.1000-C001 REV 1

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DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
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DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) OVERVIEW PLAN

SCALE (A3) 1:500 DWG No. 1016884.1000-C002 REV 1

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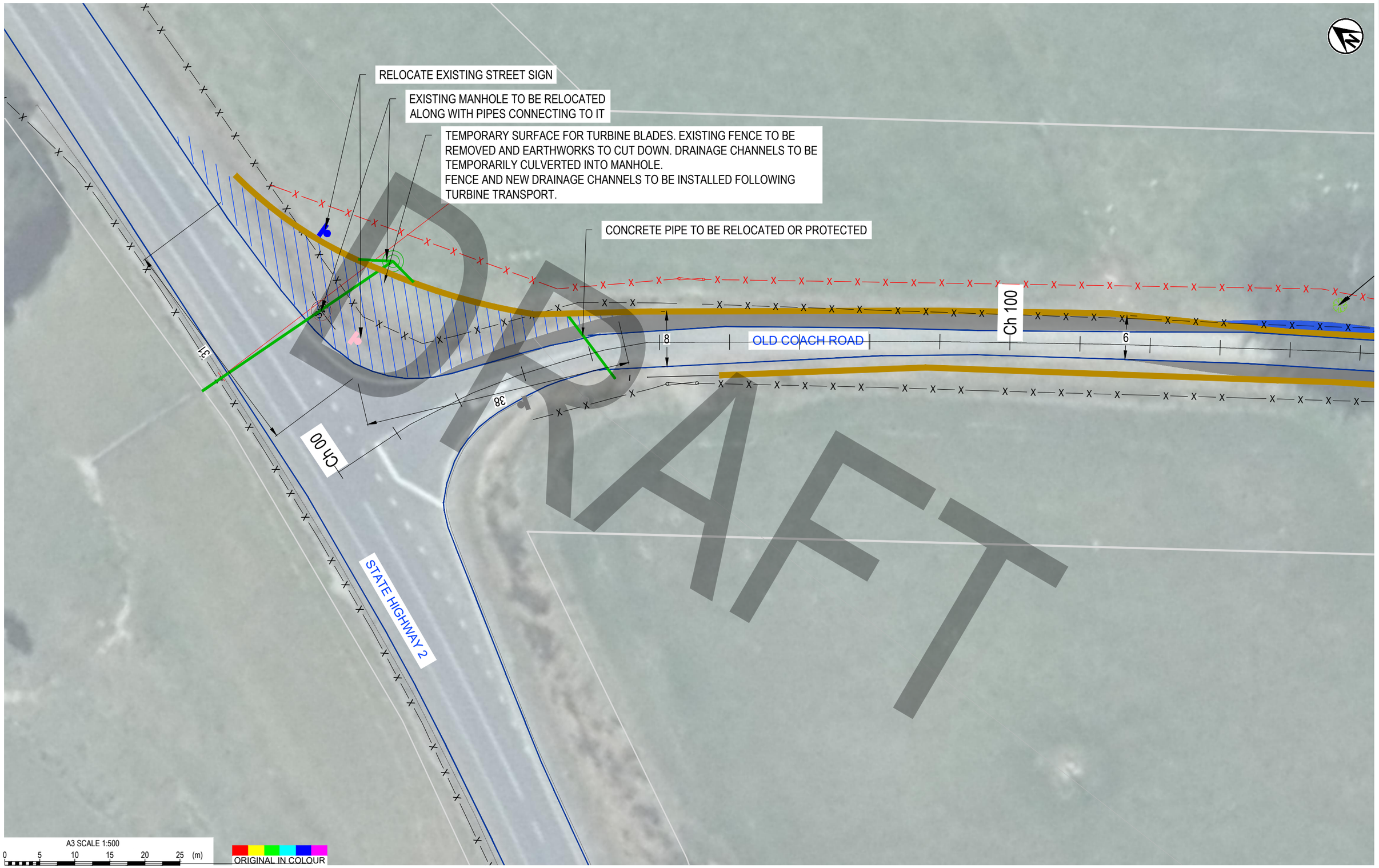

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DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C100 REV 1

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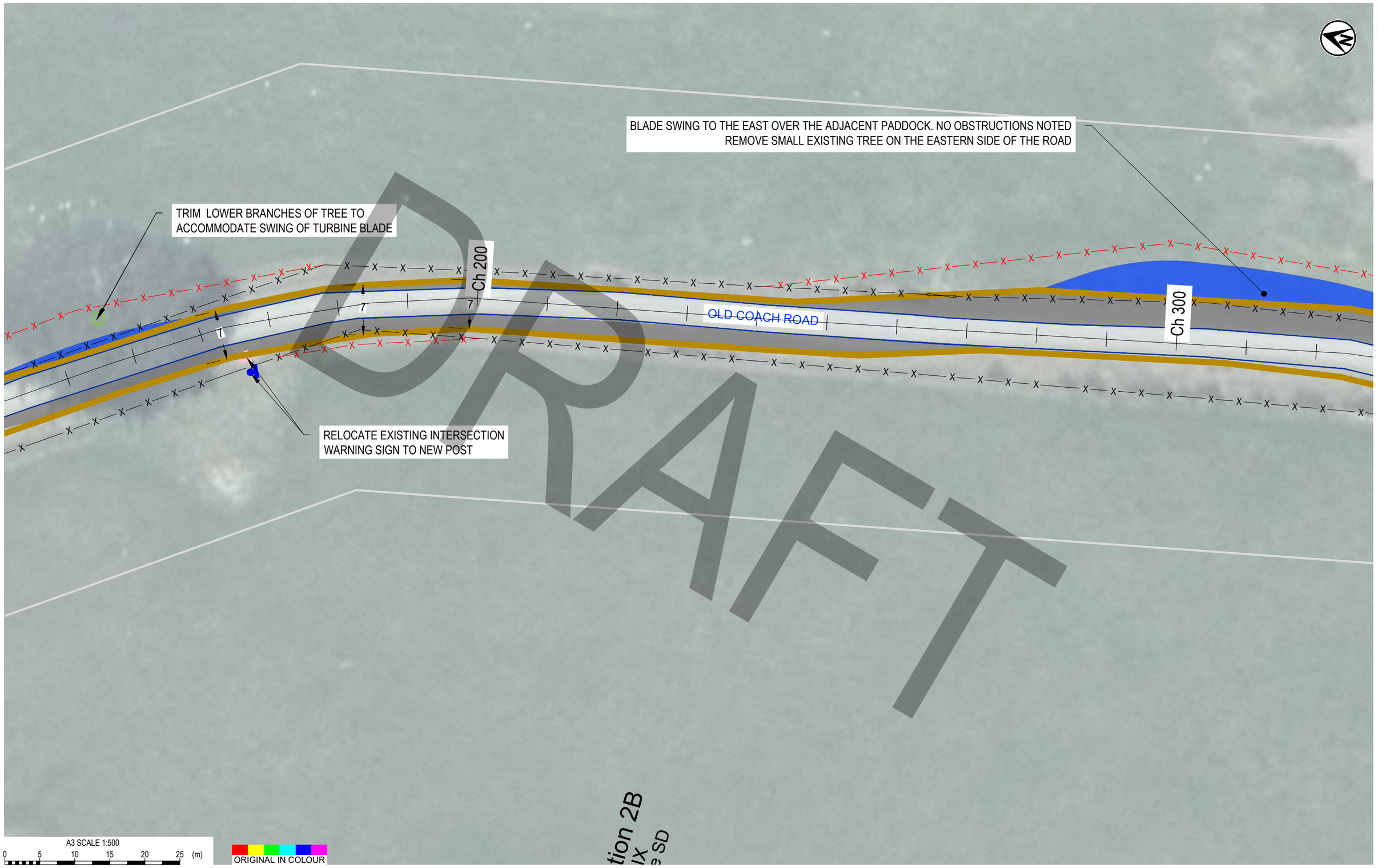

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1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

NOT FOR CONSTRUCTION

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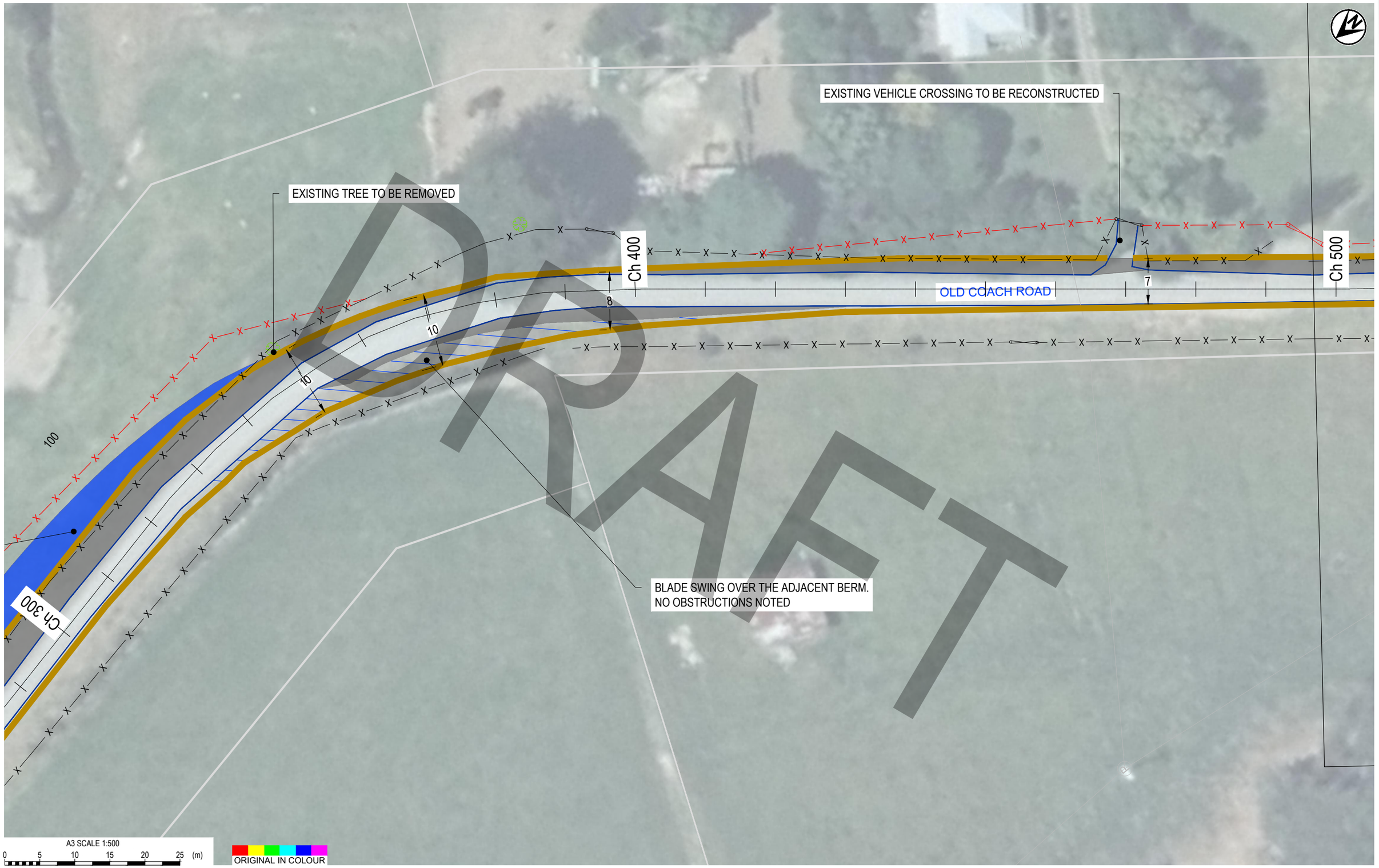
CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-C101 REV 1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening May 2024\1016884.100_C100-109.dwg 2024-Jun-27 11:33:21 am Plotted By: LIVIA YEN SIANG CHEE



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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-C102 REV 1

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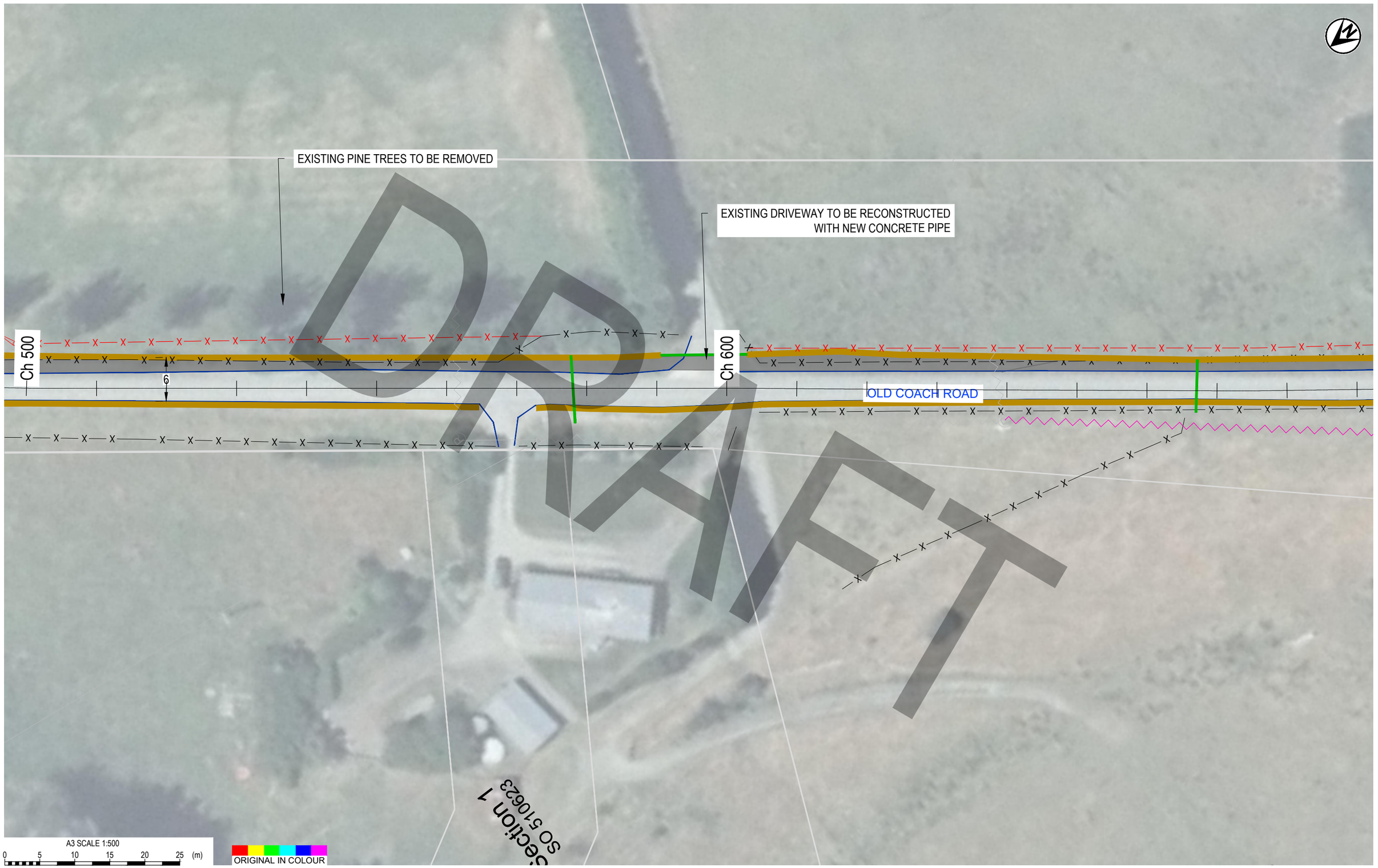

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE	CONCEPT DESIGN
DESIGN CHECKED				
DRAWING CHECKED				

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 4

SCALE (A3) 1:500 DWG No. 1016884.1000-C103 REV 1

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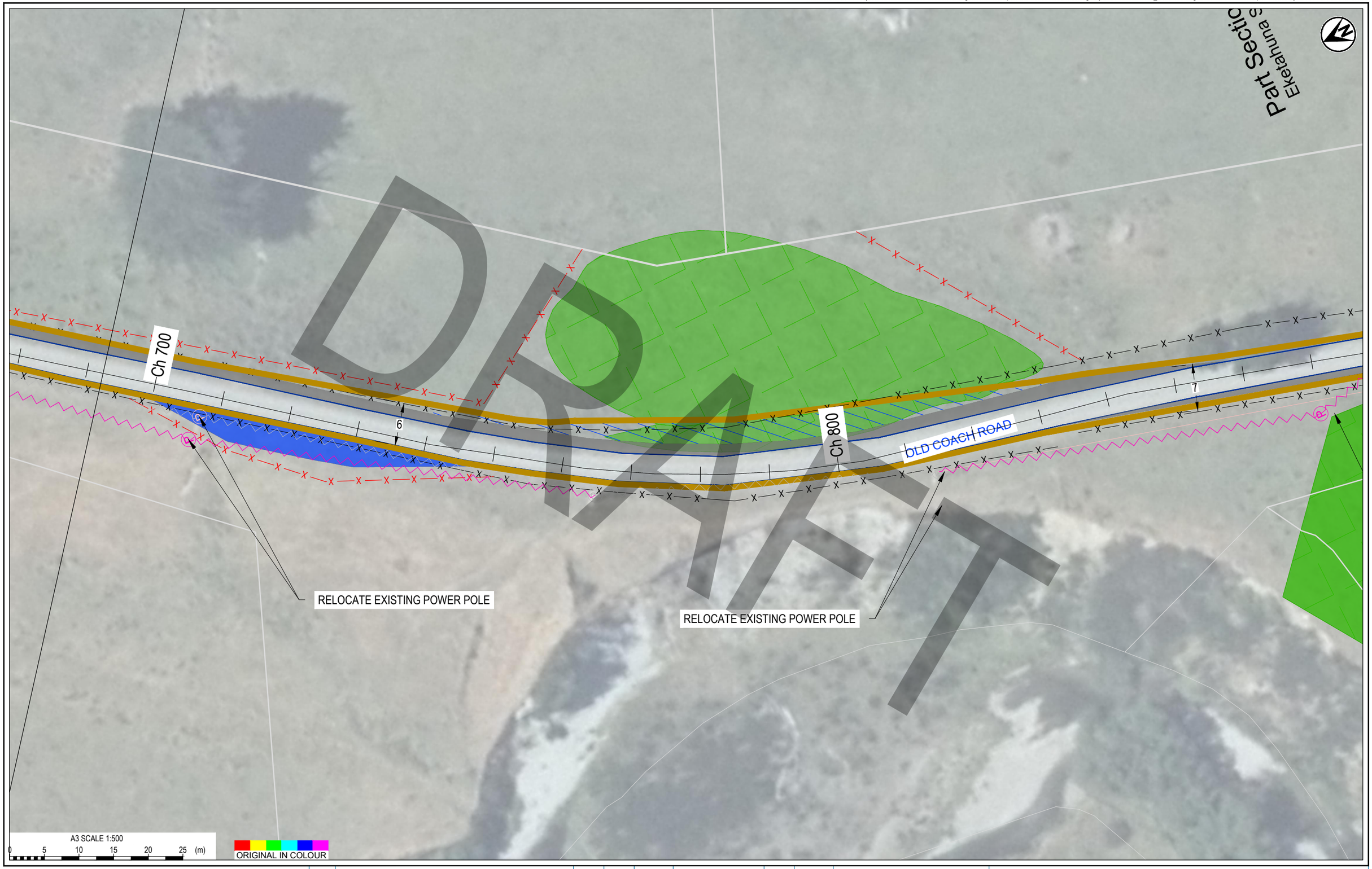

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE	CONCEPT DESIGN
DESIGN CHECKED				
DRAWING CHECKED				

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL)
SHEET 5

SCALE (A3) 1:500 DWG No. 1016884.1000-C104 REV 1

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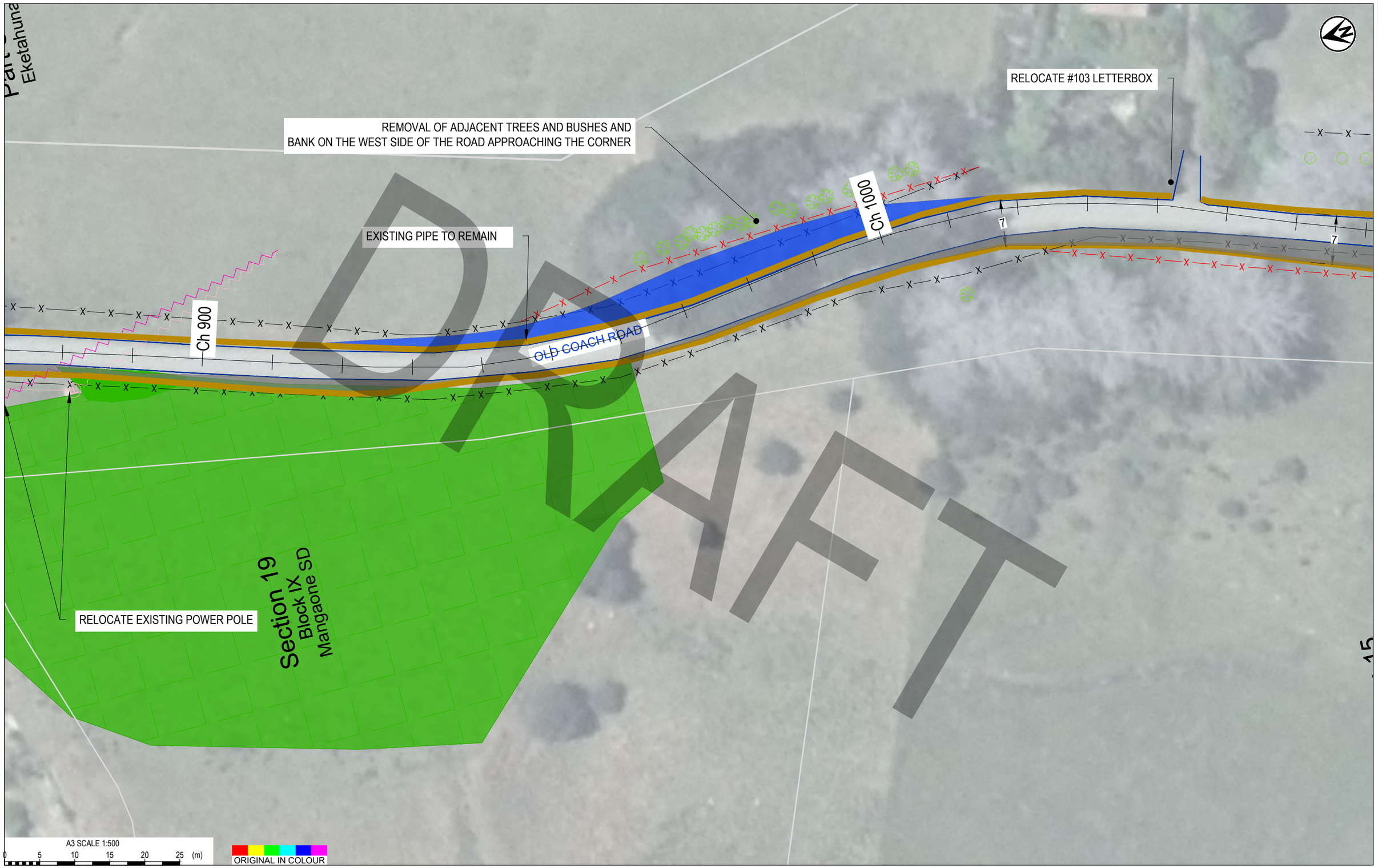

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE	CONCEPT DESIGN
DESIGN CHECKED				
DRAWING CHECKED				

NOT FOR CONSTRUCTION

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CLIENT	**MERIDIAN ENERGY**
PROJECT	**MT MUNRO WIND FARM**
TITLE	OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 6
SCALE (A3)	1:500
DWG No.	1016884.1000-C105
REV	1

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 7

SCALE (A3) 1:500 DWG No. 1016884.1000-C106 REV 1

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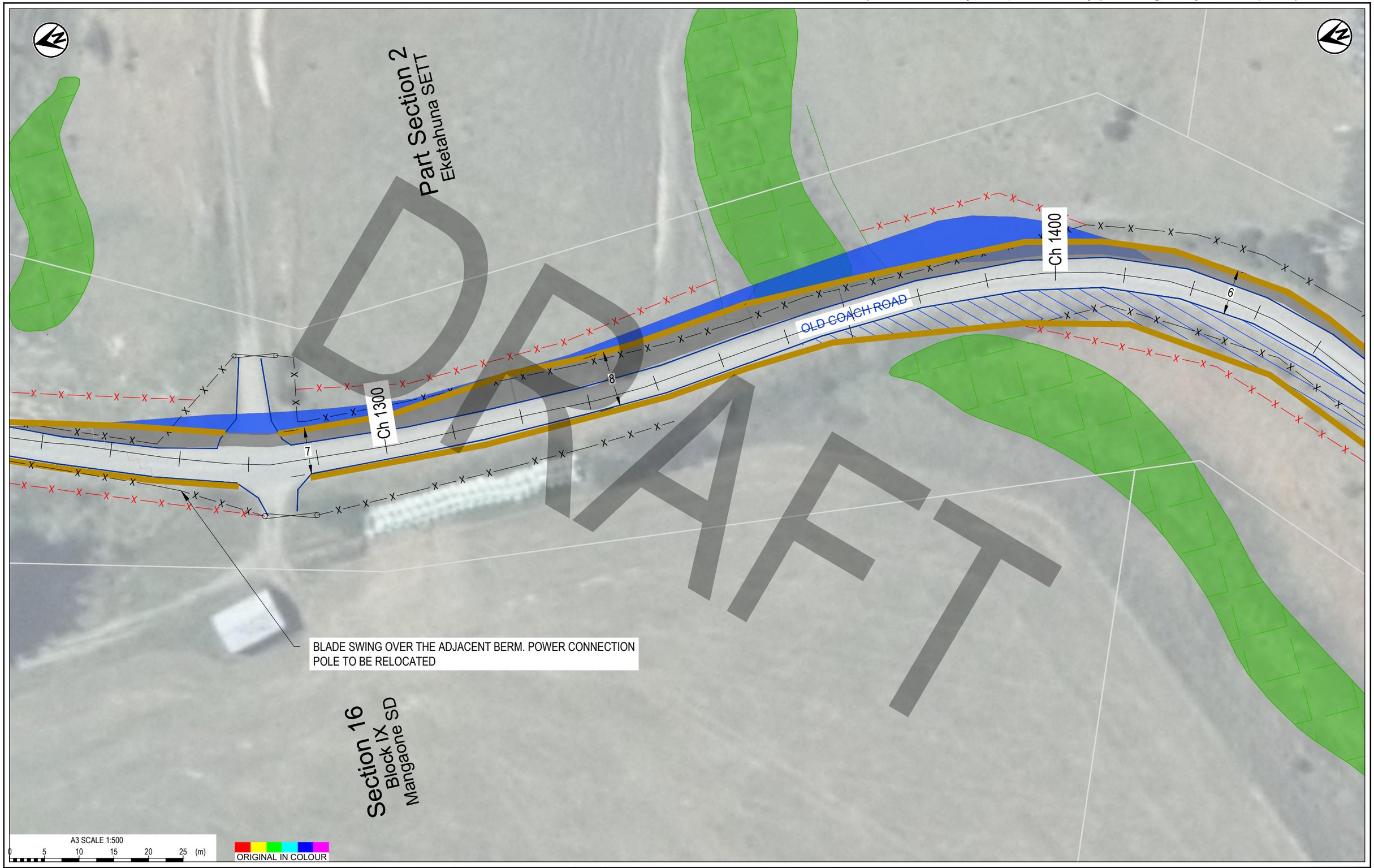

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

NOT FOR CONSTRUCTION

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 8

SCALE (A3) 1:500 DWG No. 1016884.1000-C107 REV 1

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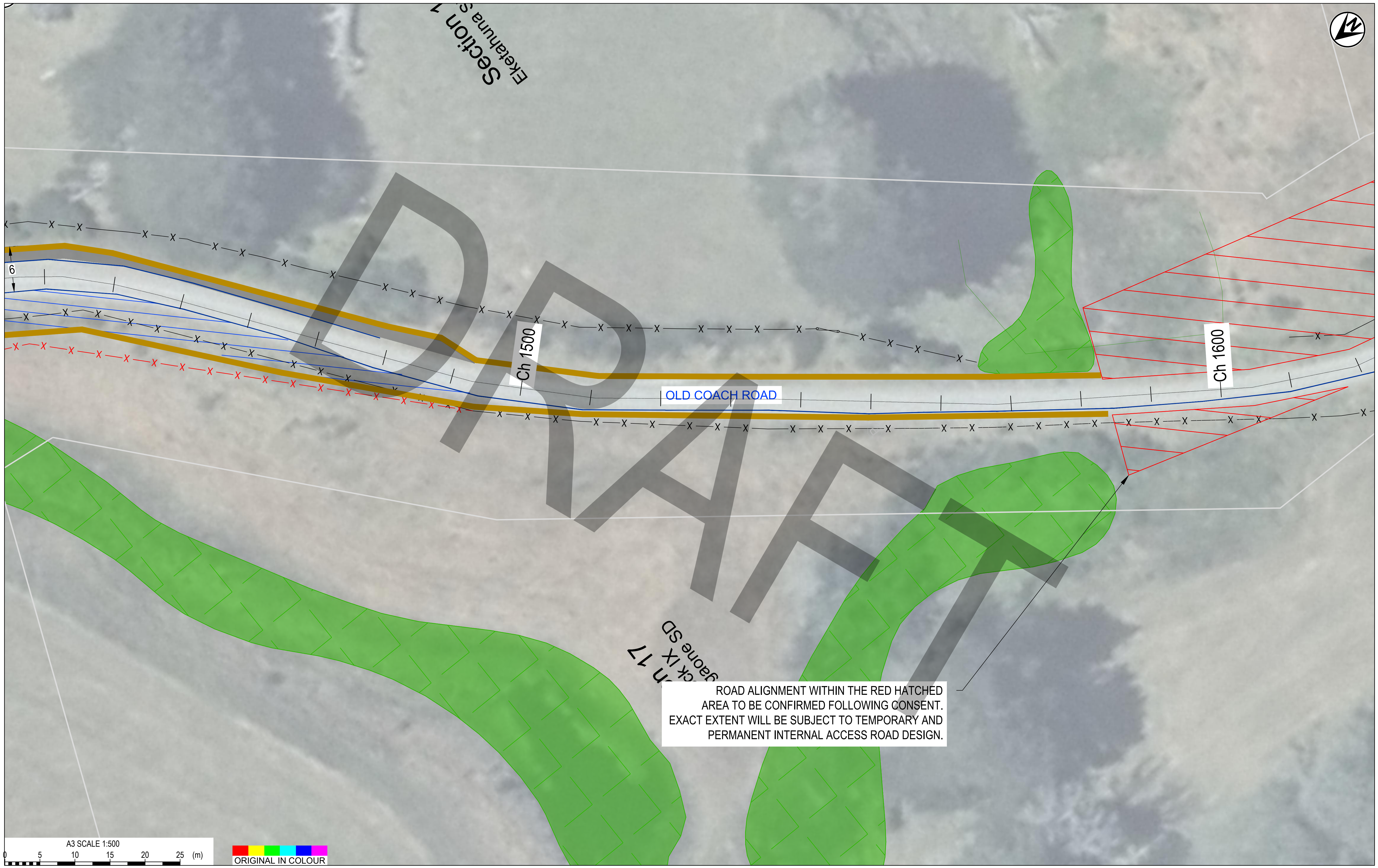

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24
DRAWN	LC	JUN 24
DESIGN CHECKED		
DRAWING CHECKED		

DRAWING STATUS: PRELIMINARY DRAFT
PROJECT PHASE: CONCEPT DESIGN

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CLIENT: **MERIDIAN ENERGY**
PROJECT: **MT MUNRO WIND FARM**
TITLE: OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 9

SCALE (A3) 1:500   DWG No. 1016884.1000-C108   REV 1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening July 2024\1016884.100_C100-109.dwg 2024-Jul-03 4:33:27 pm Plotted By: LIVIA YEN SIANG CHEE

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 10

SCALE (A3) 1:500 DWG No. 1016884.1000-C109 REV 1

MERIDIAN ENERGY

MT MUNRO WIND FARM

CONCEPT DESIGN

DRAWING	REV	TITLE
TDC 10.6m WIDTH		
1016884.100_C011	1	LEGEND
1016884.100_C012	1	OVERVIEW PLAN
1016884.100_C013	1	TYPICAL CROSS SECTION
1016884.100_C200	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 01
1016884.100_C201	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 02
1016884.100_C202	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 03
1016884.100_C203	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 04
1016884.100_C204	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 05
1016884.100_C205	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 06
1016884.100_C206	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 07
1016884.100_C207	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 08
1016884.100_C208	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 09
1016884.100_C209	1	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) - SHEET 10

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) DRAWING LIST

SCALE (A3) N/A DWG No. 1016884.1000-C010 REV 1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening May 2024\1016884.100_C200-209.dwg 2024-Jun-27 9:57:04 am Plotted By: LIVIA YEN SIANG CHEE

LEGEND

- PERMANENT WIDENED ROAD (10.6m)
- CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- ROAD EXTENSION FOR TURBINE TRUCK TRACKING
- EXISTING WETLANDS
- PROPERTY BOUNDARY/ ROAD RESERVE
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT
- EXISTING OVERHEAD LINES
- EXISTING OVERHEAD LINES TO BE REMOVED
- NEW OVERHEAD LINES
- EXISTING FENCE LINE
- NEW FENCE LINE
- EXISTING MANHOLE
- EXISTING MANHOLE TO BE RELOCATED
- NEW MANHOLE
- EXISTING POWER POLE
- POWER POLE TO BE RELOCATED
- NEW POWER POLE
- EXISTING SIGN
- EXISTING SIGN TO BE REMOVED
- NEW SIGN
- NEW CONCRETE PIPE
- NEW 0.8m DRAIN (BOTTOM OF DRAIN)

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) LEGEND

SCALE (A3) N/A DWG No. 1016884.1000-C011 REV 1

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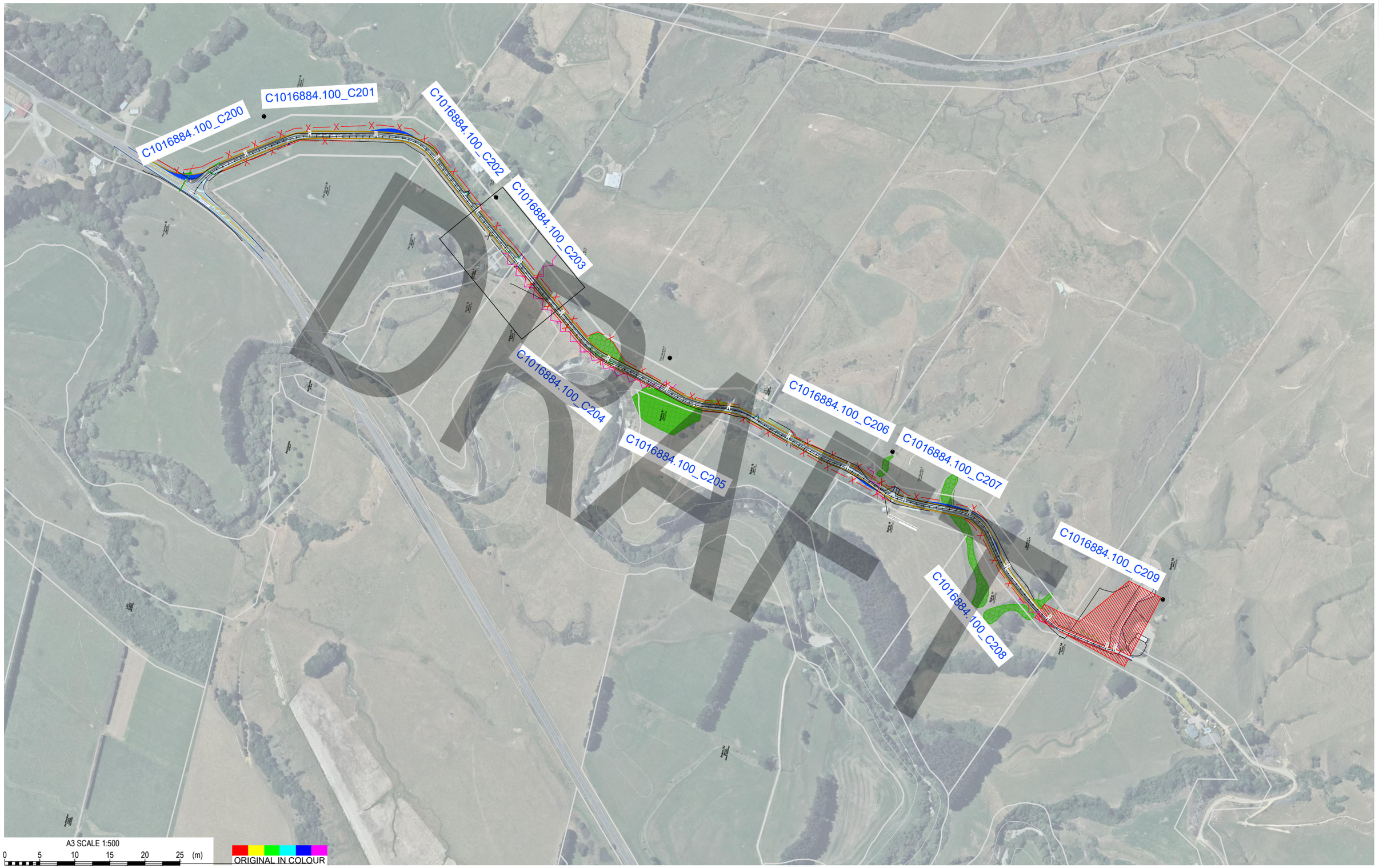

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) OVERVIEW PLAN

SCALE (A3) 1:500 DWG No. 1016884.1000-C012 REV 1

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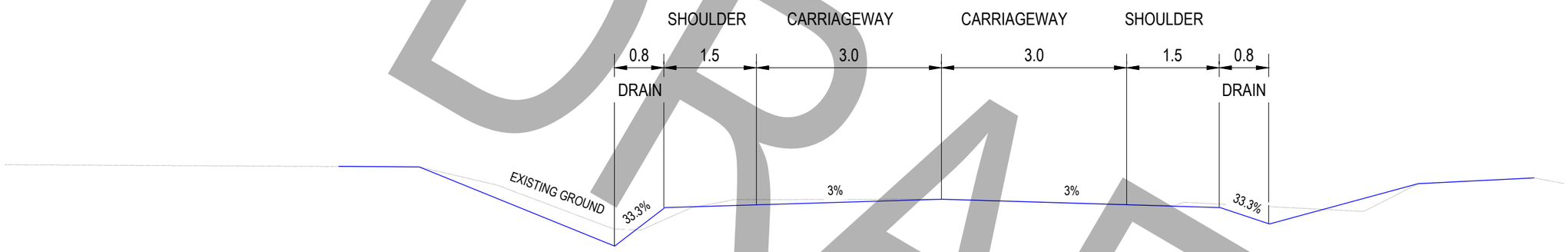

NOTES

IN ACCORDANCE WITH TARARUA ALLIANCE CROSS SECTION IN EMAIL 27/05/24. NOTE SHOULDER CROSS FALL IS 3% (3 IN 100) COMPARED TO COUNCIL 33.3% (1 IN 3) TO SAFELY ACCOMODATE LARGE LOADS

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS
DRAWN	LC	JUN 24	PRELIMINARY DRAFT
DESIGN CHECKED			PROJECT PHASE
DRAWING CHECKED			CONCEPT DESIGN

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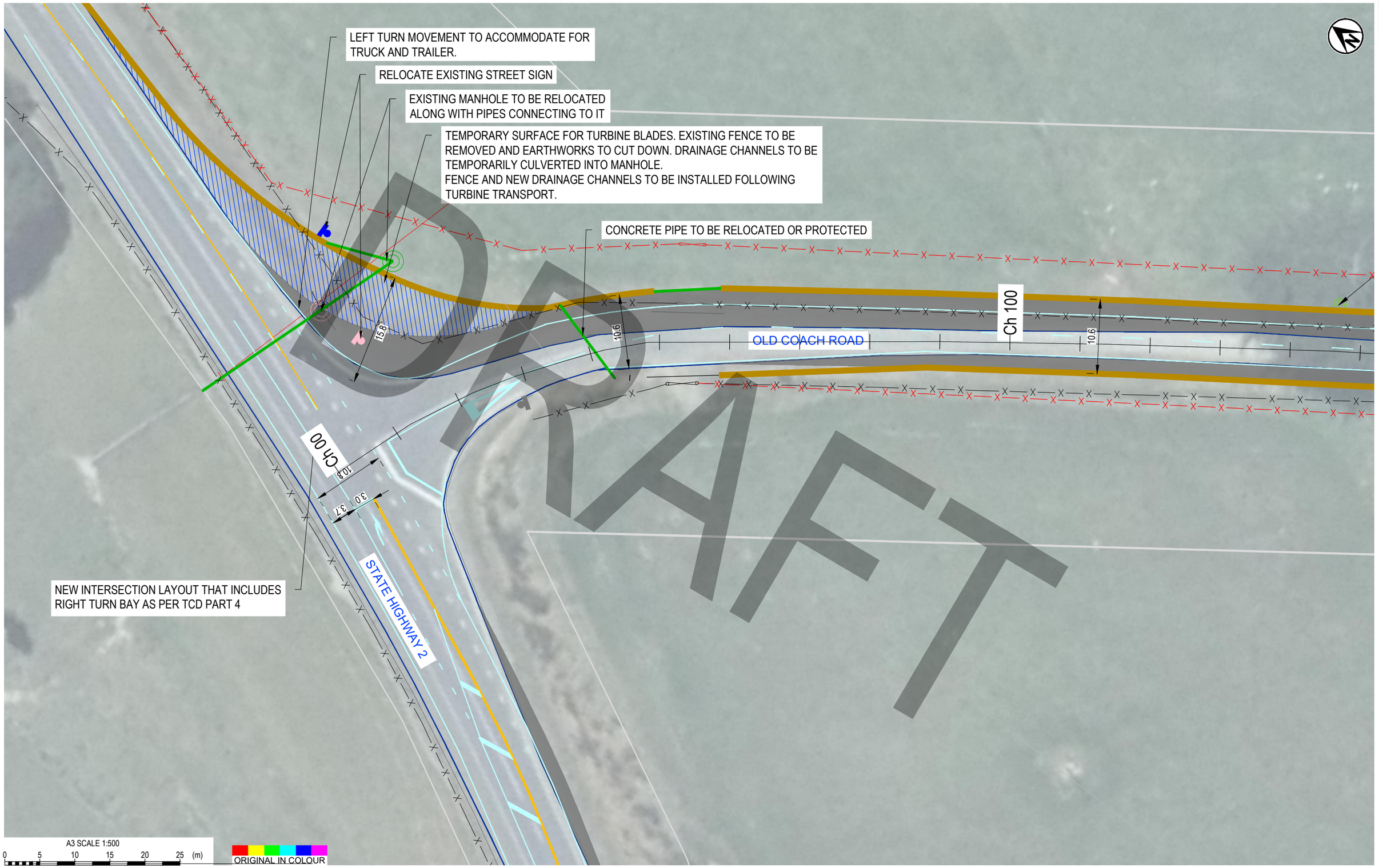
APPROVED DATE

CLIENT	**MERIDIAN ENERGY**
PROJECT	**MT MUNRO WIND FARM**
TITLE	OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) TYPICAL CROSS SECTION
SCALE (A3)	NTS
DWG No.	1016884.1000-C013
REV	1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening May 2024\1016884.100_C200-209.dwg 2024-Jun-27 9:57:20 am Plotted By: LIVIA YEN SIANG CHEE



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DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
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DESIGN CHECKED			
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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C200 REV 1

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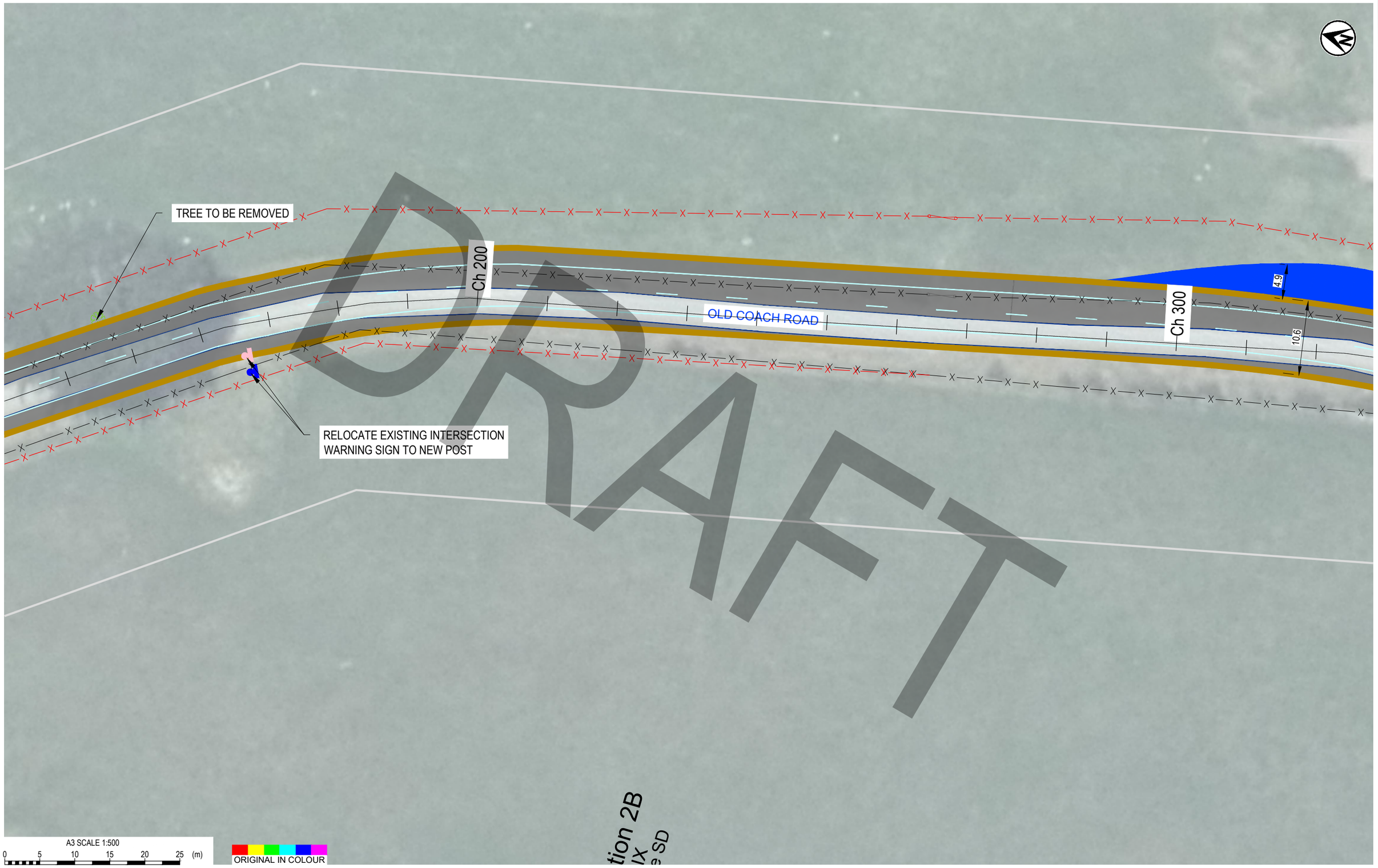

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1	PRELIMINARY DRAFT	LC				

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
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DRAWING CHECKED			

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-C201 REV 1

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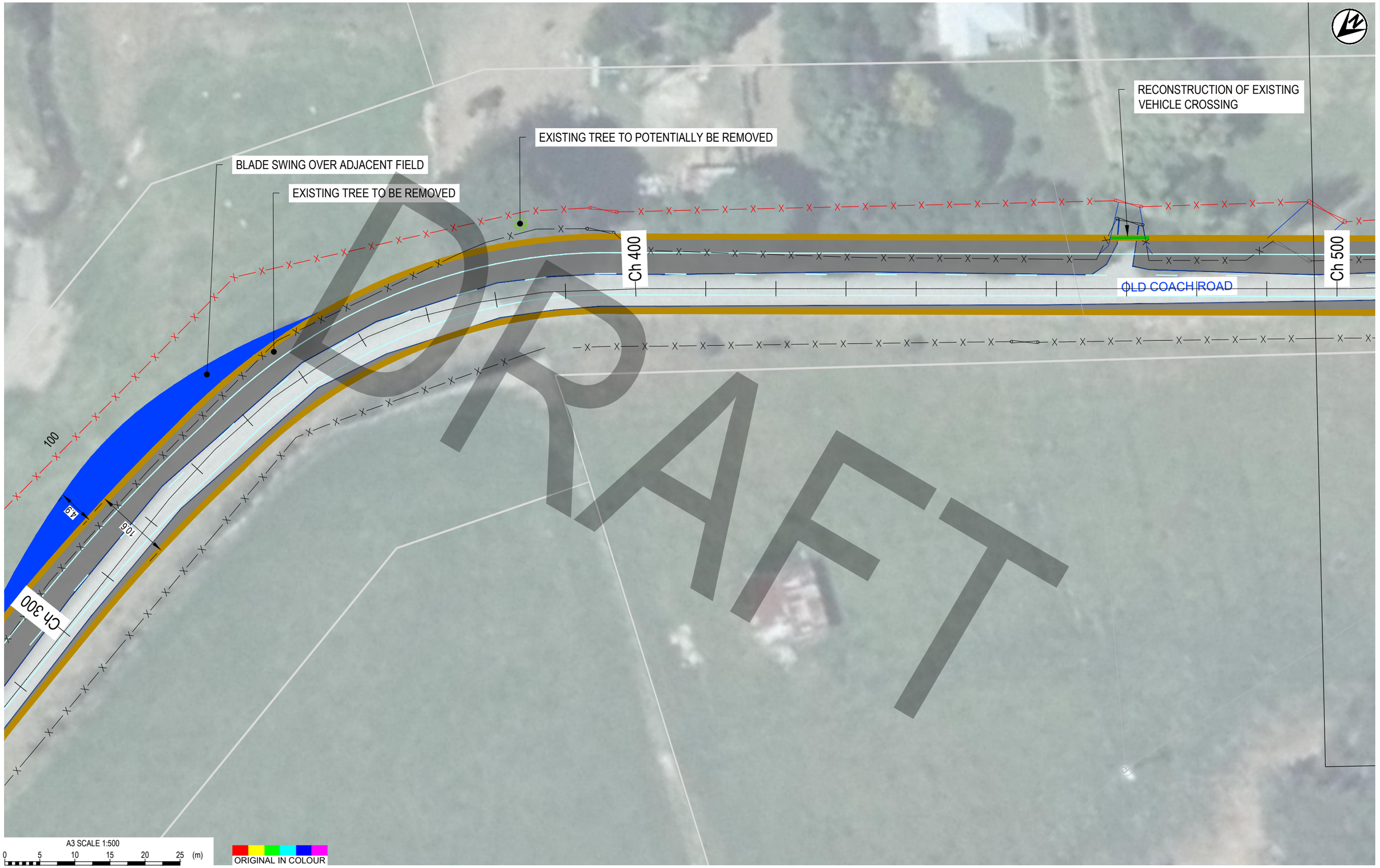

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DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-C202 REV 1

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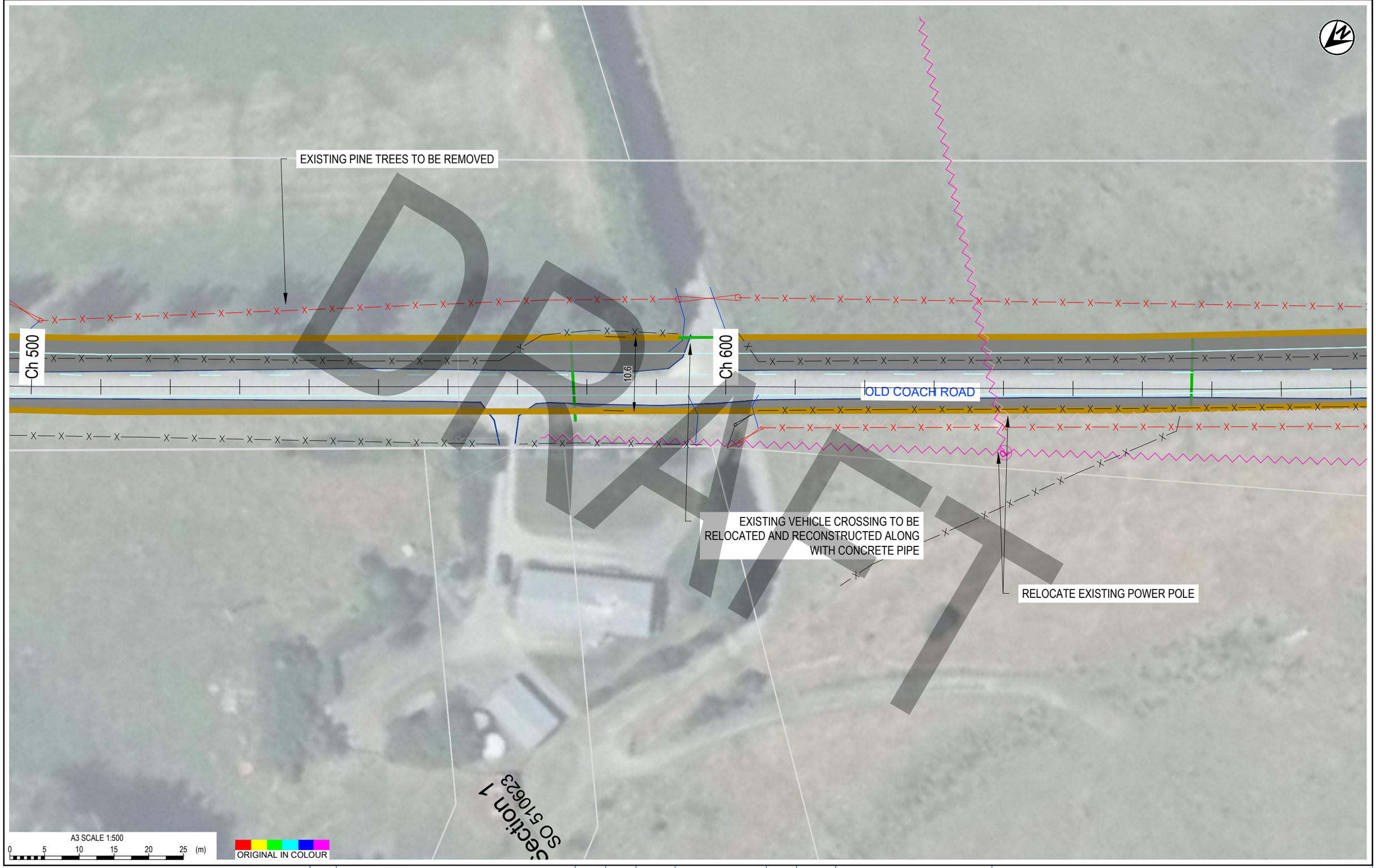

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24		
DESIGN CHECKED			PROJECT PHASE	CONCEPT DESIGN
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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 4

SCALE (A3) 1:500 DWG No. 1016884.1000-C203 REV 1

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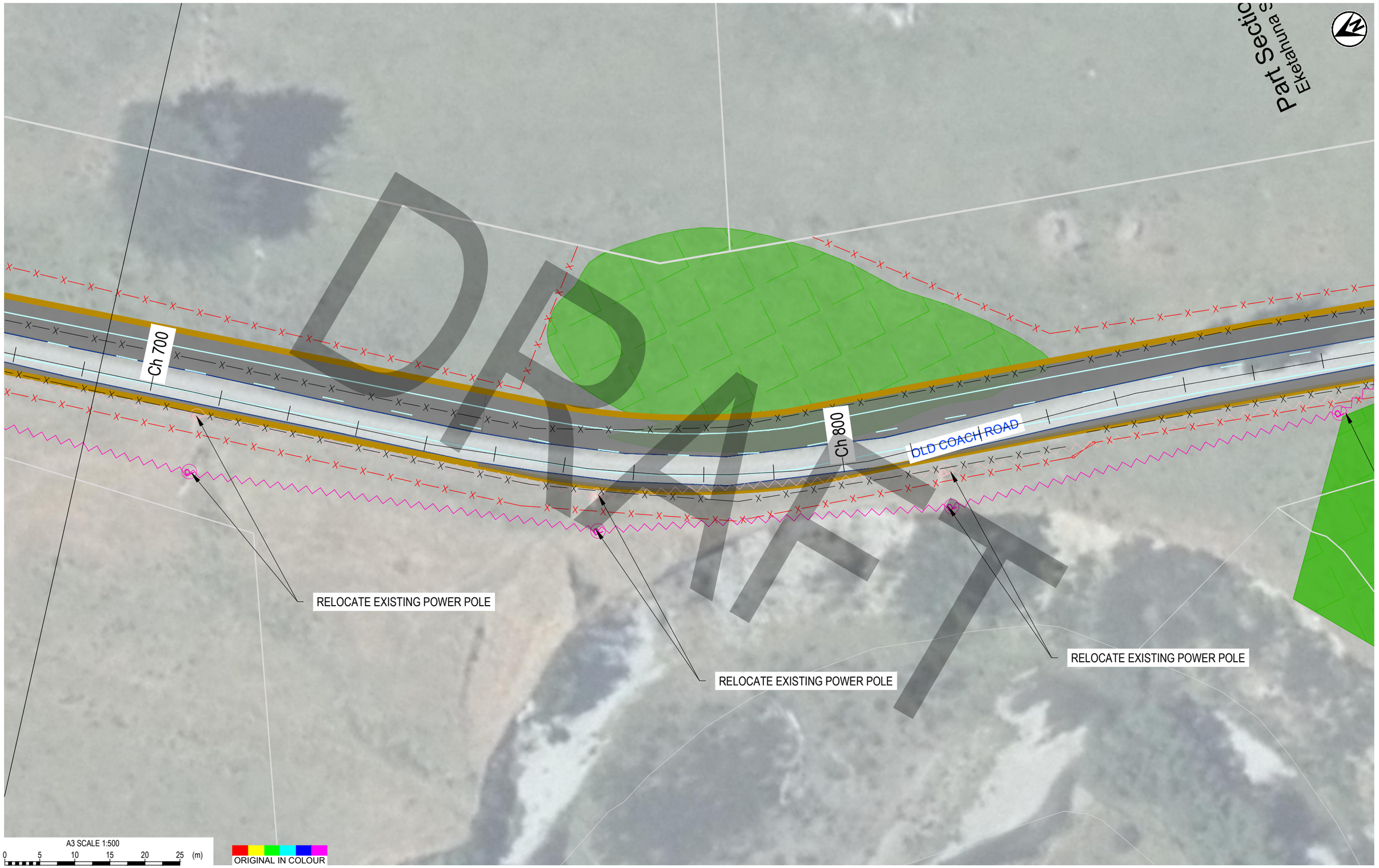
Part Section 3 Extent



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DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 5

SCALE (A3) 1:500 DWG No. 1016884.1000-C204 REV 1

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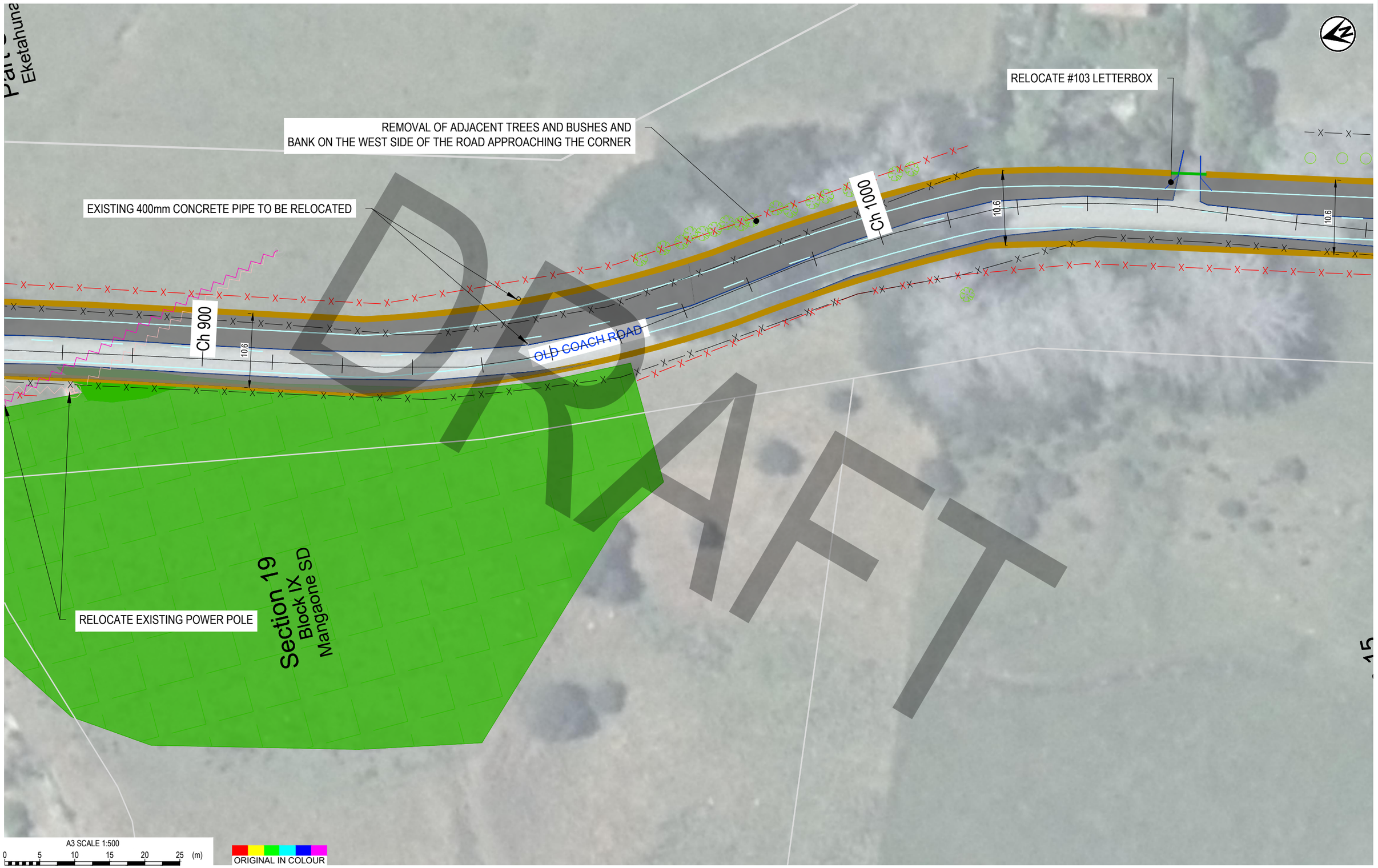

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1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE	CONCEPT DESIGN
DESIGN CHECKED				
DRAWING CHECKED				

NOT FOR CONSTRUCTION

APPROVED DATE

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 6

SCALE (A3) 1:500 DWG No. 1016884.1000-C205 REV 1

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 7

SCALE (A3) 1:500 DWG No. 1016884.1000-C206 REV 1

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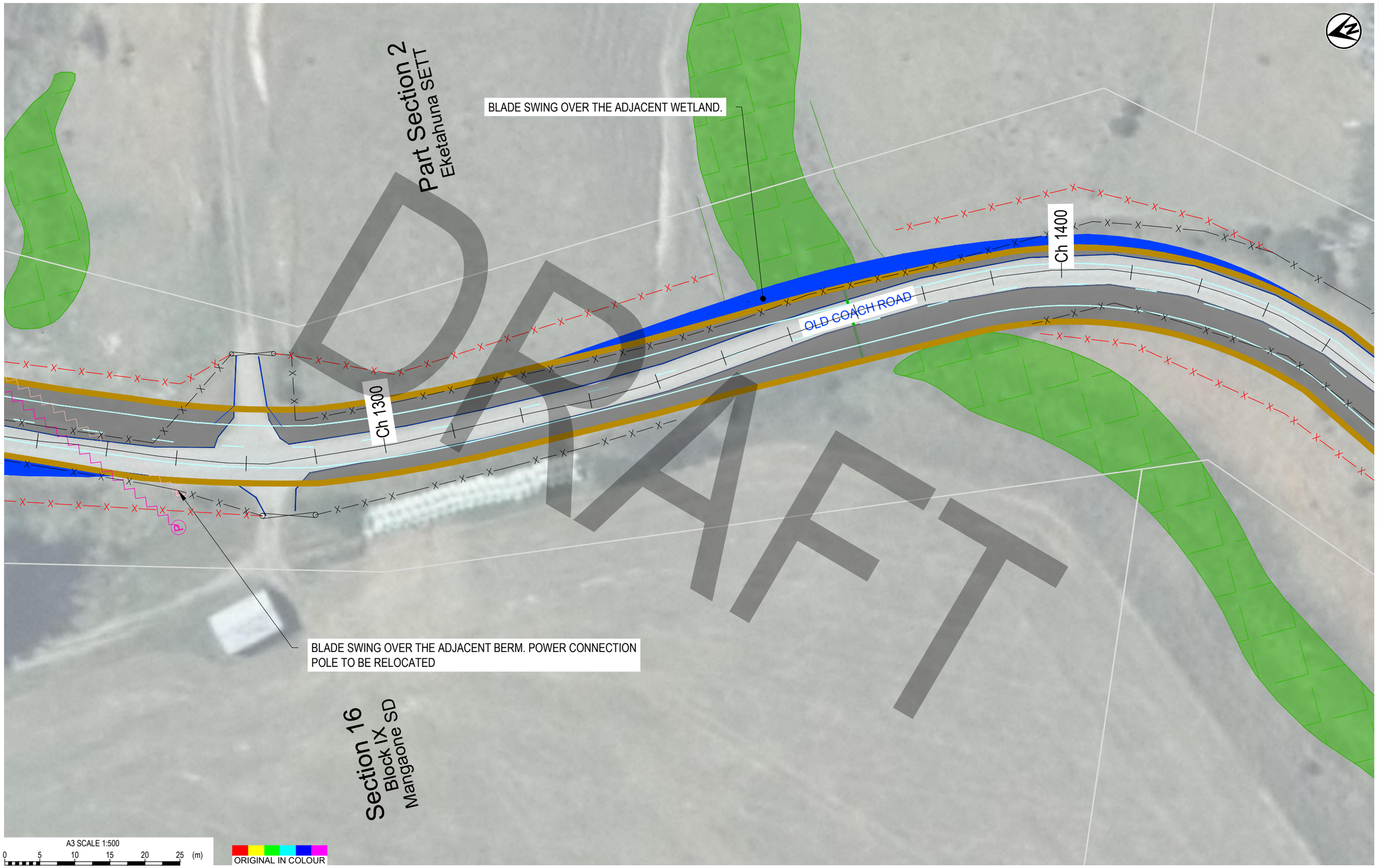

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DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 8

SCALE (A3) 1:500 DWG No. 1016884.1000-C207 REV 1

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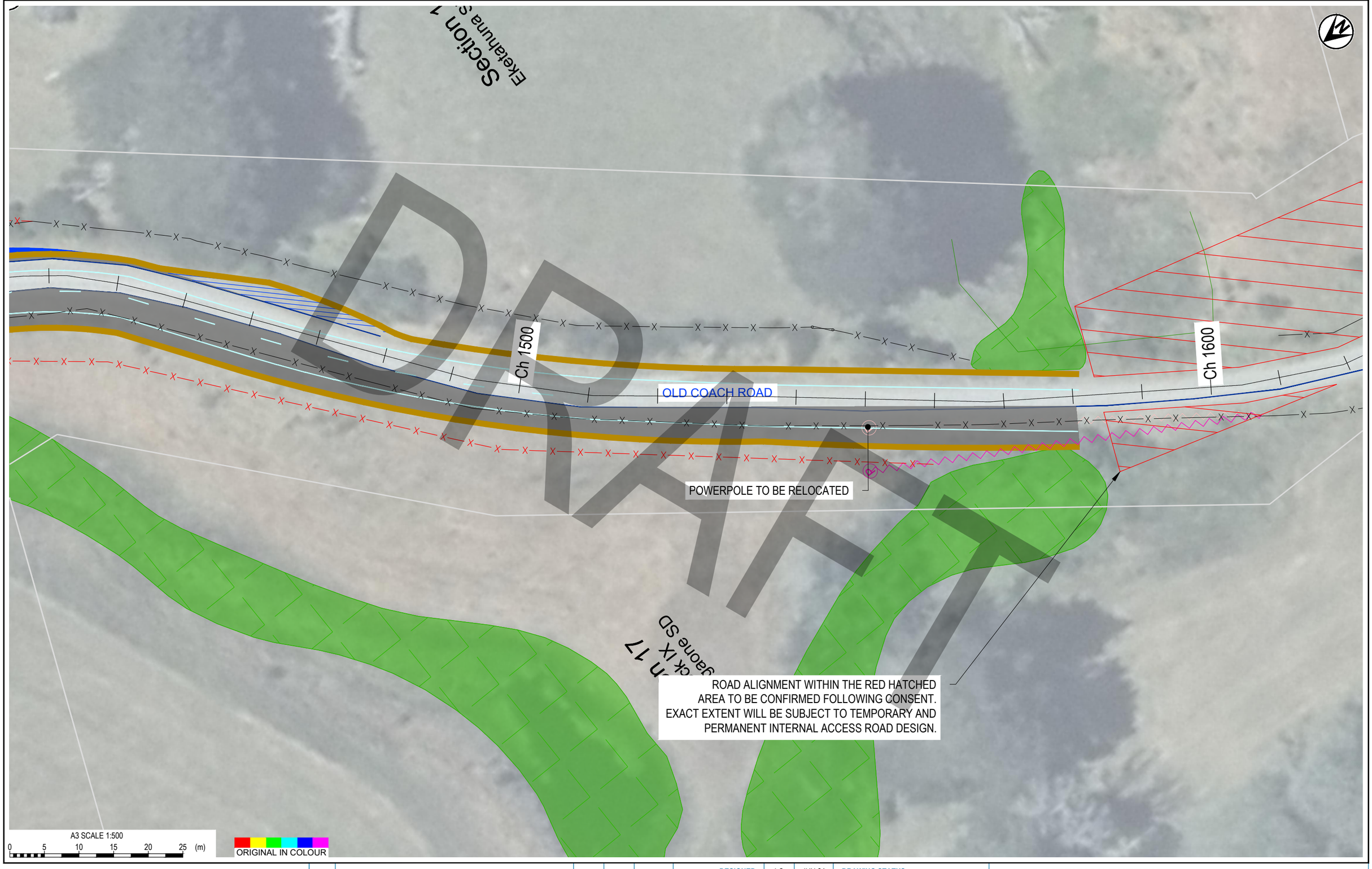

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DRAWN	LC	JUN 24	PRELIMINARY DRAFT
DESIGN CHECKED			PROJECT PHASE
DRAWING CHECKED			CONCEPT DESIGN

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 9

SCALE (A3) 1:500 DWG No. 1016884.1000-C208 REV 1

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DESIGNED	LC	JUN 24	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE	CONCEPT DESIGN
DESIGN CHECKED				
DRAWING CHECKED				

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TDC 10.6m WIDTH) SHEET 10

SCALE (A3) 1:500 DWG No. 1016884.1000-C209 REV 1

Attachment C

Meridian Energy Limited
P O Box 2128 Christchurch,
New Zealand
0800 496 496
Ellie.Taffs@meridianenergy.co.nz
meridian.co.nz

11 July 2024

Tēnā koutou parties

ENV-WLG-2024-001- Meridian Energy Limited (Meridian) – Mt Munro Wind Farm – Further information supplied post-mediation

This letter contains some of the further information that Meridian agreed it would provide during court-assisted mediation, held in Palmerston North on 18 and 19 June 2024. This letter is limited to two items that the parties to mediation agreed would be provided prior to expert conferencing.

Old Coach Road Upgrade

1. Meridian agreed to complete work on identified constraints and to undertake additional analysis to understand the extent of works and constraints associated with the potential two-laning of Old Coach Road. This updated analysis has been circulated by email to the parties, and prompted the Tararua District Council (TDC) traffic reviewer to request a memorandum comparing the impacts of the Meridian's original proposal in the Traffic Assessment (TA) and TDC's proposal to widen along the length of the road.

2. This memorandum is attached as **Appendix A** to this letter, and as requested also includes an additional passing bay between Ch 400-650 within the original TA/s92 proposal. The conclusion of this memorandum is that:

> *Given that the TA/s92 original proposal (when combined with the Draft CTMP measures) has been demonstrated to provide a safe route for both construction and local residential traffic, then it is considered that widening OCR to the TDC proposed 10.6m does not offer any safety benefit and results in not only additional construction work but has a greater negative impact on the local environment and will be an overprovision once construction work has finished.*
>
> *As requested, an additional passing bay between Ch 400-650 has been included within the original TA/s92 proposal and the impacts of this additional widening are largely the same as those for the original TA proposal.*

'Super Bin' Ground Contamination Assessment

3. Meridian agreed to provide results from 'super-bin' investigations (attached as **Appendix B** to this letter). The Super Bin Ground Contamination Assessment found that:

> *The sample results in the area surrounding the super-bin show that there are no significant constraints, relating to contamination, for the development of the roadway in the proposed alignment, shown in Figure 1.1.*
>
> *As the result of the samples collected from the area of the proposed roadway were found to be below the applicable background concentration for a rural scenario, the National Environmental Standards for Assessing and Managing Contamination in Soil to Protect Human Health11 (NESCS) will not apply to the development of the roadway in the proposed alignment.*

4. This Assessment provides an indication that no consent is required if the road is built in the location indicated in the report, which is the likely position. However, Meridian will assess the final alignment against this assessment and seek consent if necessary.

Ngā Mihi |Kind regards,

Ellie Taffs
Senior Legal Counsel - RMA
Meridian Energy Limited

Enclosed:

- Appendix A: Memo Old Coach Road Widening – Comparison of Impacts of TA original proposal and TDC 10.5m widening proposal by Tonkin + Taylor dated 9 July 2024
- Appendix B: Super Bin Ground Contamination Assessment by Tonkin + Taylor dated 8 July 2024

Tonkin+Taylor

Memo

To:	Harriet Fraser/Damien McGahan - Tararua District Council (TDC)	**Job No:**	106884.1000
From:	Colin Shields	**Date:**	11 July 2024
cc:	Nick Bowmar, Ellie Taffs, Lynley Fletcher, Andrew Beatson, Tom Anderson - Meridian		
Subject:	Old Coach Road (OCR) widening - Comparison of impacts of original Transport Assessment (TA) proposal and TDC 10.6 m widening proposal		

1 Introduction

Following a meeting on 5 July 2024 between Harriet Fraser and Damien McGahan (representing TDC) and Tom Anderson and Colin Shields (representing Meridian), a memo summarising the key differences in impact between the original TA/s92 widening proposal and the TDC proposed 10.6 m widening was requested.

The original Transport Assessment (TA) proposal is shown on Draft drawing numbers 1016884.1000.C021 to C022 and C300 to C309 and Draft drawing numbers 1016884.1000.C010 to C013 and C200 to C209 show the TDC proposed widening of OCR to 10.6m. These drawings have been issued to TDC.

Also at the meeting, a request was made to modify the original TA/s92 proposal to include an additional passing bay between Chainage (Ch) 400-650.

2 Comparison of impacts

The TDC 10.6 m option will require more construction materials and construction work than the original TA proposal, meaning the overall cost and construction period would be higher and longer for this option. The TDC 10.6 m option would also result in an additional 70 m^2 of wetland area being removed (primarily at the wetland at Ch 800). A comparison of the impacts of the two options is summarised below:

	Fence relocated (length m)	**Concrete pipes relocated (#)**	**Power poles relocated (#)**	**Trees removed (#)**	**Vehicle Crossings reconstructed (#)**
Original TA/s92 proposal	1,440	4	2	2	1
TDC 10.6m option	2,920	9	6	5	4
Difference between original proposal and TDC 10.6m proposal	1,480	5	4	3	3

As indicated by this assessment there is substantially greater impact from the TDC proposal compared to the original TA/s92 proposal on fences, concrete pipes, power poles, trees and vehicle crossings. In addition, as explained at the meeting, it is considered that in the post construction scenario, widening OCR to 10.6 m throughout will result in overprovision for the 6 residential properties and the existing 30 vehicles/day that this road services. This could have negative impacts including high vehicle speeds, providing an attractive road section for anti-social behaviour and will incur greater ongoing maintenance costs.

3 Updated TA/s92 proposal

As requested at the meeting, on sheets 3 and 4 of the updated drawings (attached as Appendix A) include an additional passing bay between Ch 400-650, which has been shown equi distance from the other proposed widened areas. The impacts of this additional widening are largely the same as those for the original TA proposal at this location.

4 Conclusion

Given that the TA/s92 original proposal (when combined with the Draft CTMP measures) demonstrated provision of a safe route for both construction and local residential traffic, it is considered that widening OCR to the TDC proposed 10.6m does not offer any safety benefit and results in not only additional construction work but has a greater negative impact on the local environment and will be an overprovision once construction work has finished.

As requested, an additional passing bay between Ch 400-650 has been included within the original TA/s92 proposal and the impacts of this additional widening are largely the same as those for the original TA proposal at this location.

5 Applicability

This report has been prepared for the exclusive use of our client Meridian, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd.

Report prepared by:

.....
Colin Shields
Senior Principal Transport Planner

Authorised for Tonkin & Taylor Ltd by:

.....
Nick Peters
Project Director

11-Jul-24
\\ttgroup.local\corporate\Christchurch\TT Projects\1016884\1016884.1000\IssuedDocuments\Old Coach Road - Comparison of Impact of the Original TA and TDC Proposal V2.docx

Appendix A Updated original TA/s92 proposal

MERIDIAN ENERGY

MT MUNRO WIND FARM

CONCEPT DESIGN

DRAWING	REV	TITLE
TA PROPOSAL		
1016884.100_C021	1	LEGEND
1016884.100_C022	1	OVERVIEW PLAN
1016884.100_C300	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 01
1016884.100_C301	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 02
1016884.100_C302	2	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 03
1016884.100_C303	2	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 04
1016884.100_C304	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 05
1016884.100_C305	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 06
1016884.100_C306	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 07
1016884.100_C307	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 08
1016884.100_C308	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 09
1016884.100_C309	1	OLD COACH ROAD WIDENING (TA PROPOSAL) - SHEET 10

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REV	DESCRIPTION	CAD	CHK	DATE
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DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) DRAWING LIST

SCALE (A3) N/A DWG No. 1016884.1000-C020 REV 1

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LEGEND

- PERMANENT ROAD WIDENING (NOT INCLUDING NEW DRAIN)
- CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- ROAD EXTENSION FOR TURBINE TRUCK TRACKING
- EXISTING WETLANDS
- PROPERTY BOUNDARY/ ROAD RESERVE
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT
- EXISTING OVERHEAD LINES
- EXISTING OVERHEAD LINES TO BE REMOVED
- NEW OVERHEAD LINES
- EXISTING FENCE LINE
- NEW FENCE LINE
- EXISTING MANHOLE
- EXISTING MANHOLE TO BE RELOCATED
- NEW MANHOLE
- EXISTING POWER POLE
- POWER POLE TO BE RELOCATED
- NEW POWER POLE
- EXISTING SIGN
- EXISTING SIGN TO BE REMOVED
- NEW SIGN
- NEW CONCRETE PIPE
- NEW 0.8m DRAIN (BOTTOM OF DRAIN)

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) LEGEND

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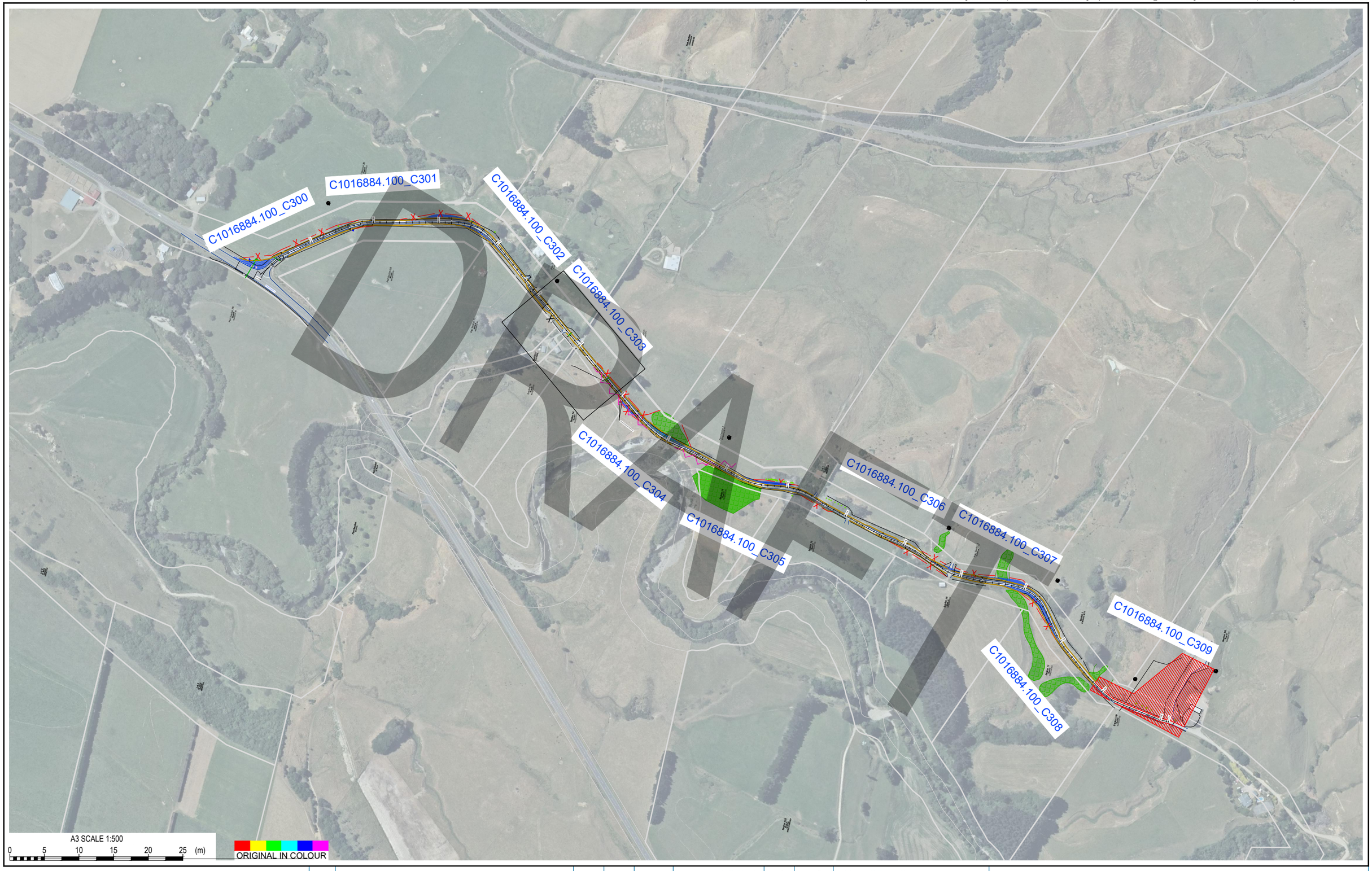

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) OVERVIEW PLAN

SCALE (A3) 1:500 DWG No. 1016884.1000-C022 REV 1

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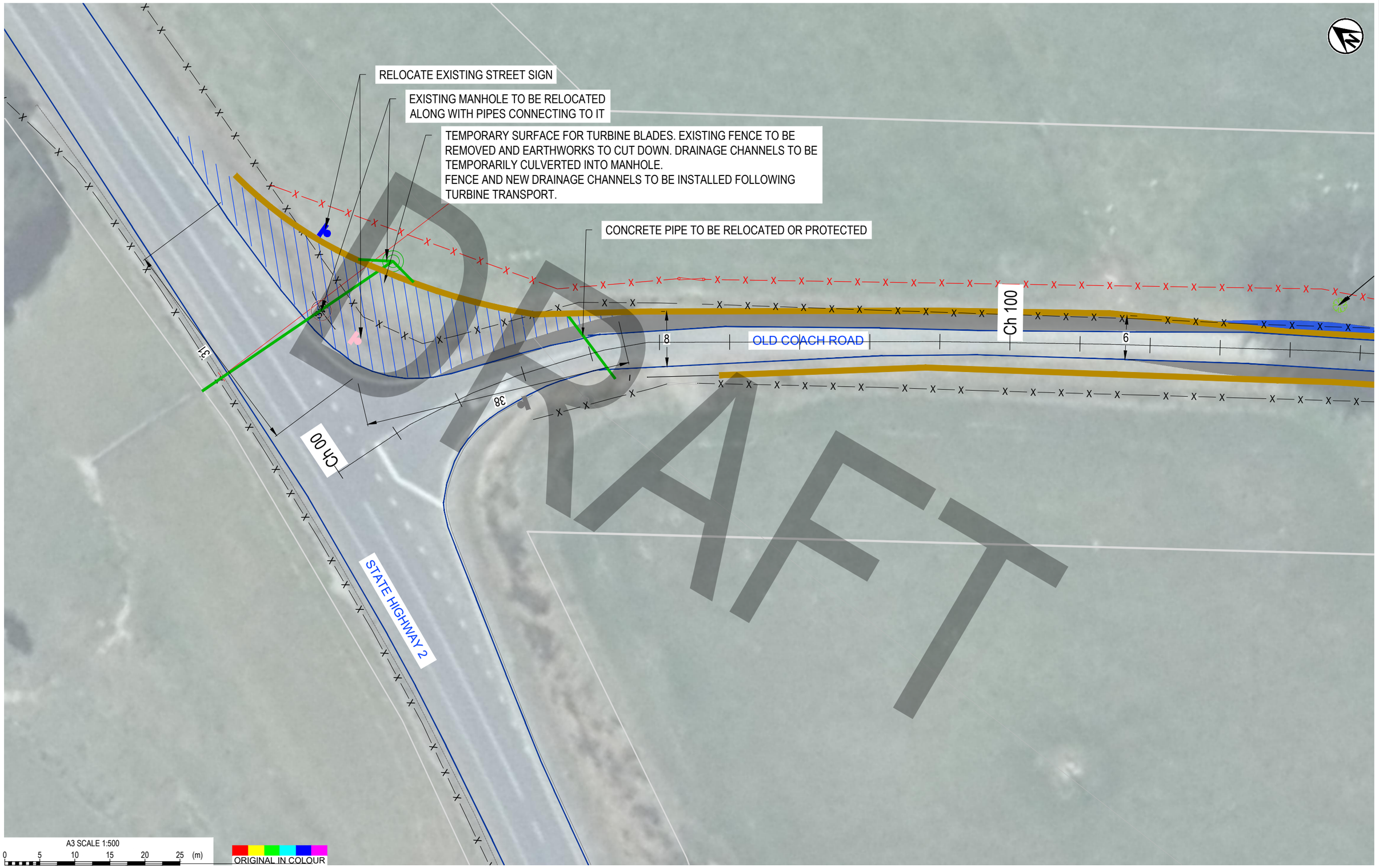

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C300 REV 1

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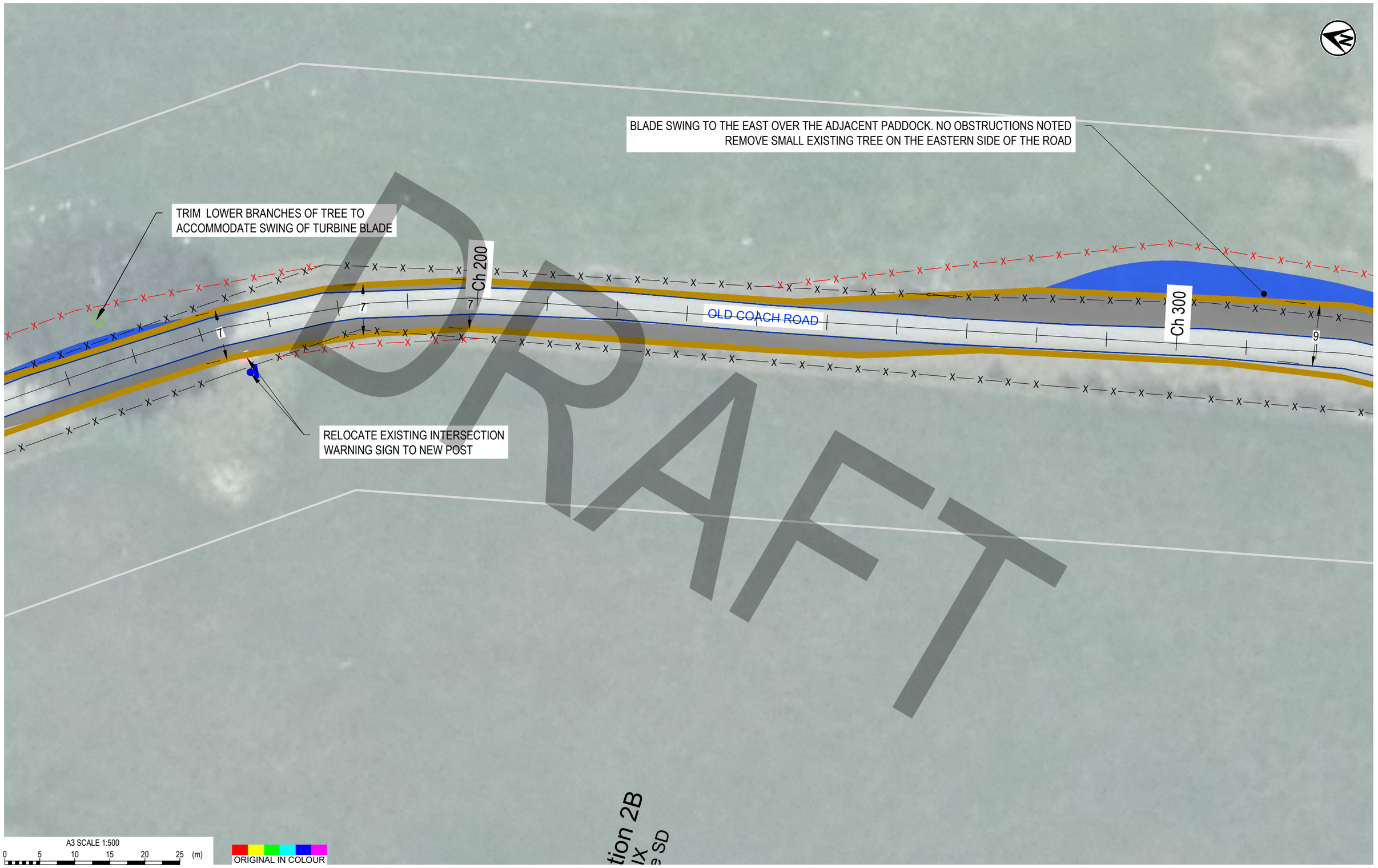

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 2

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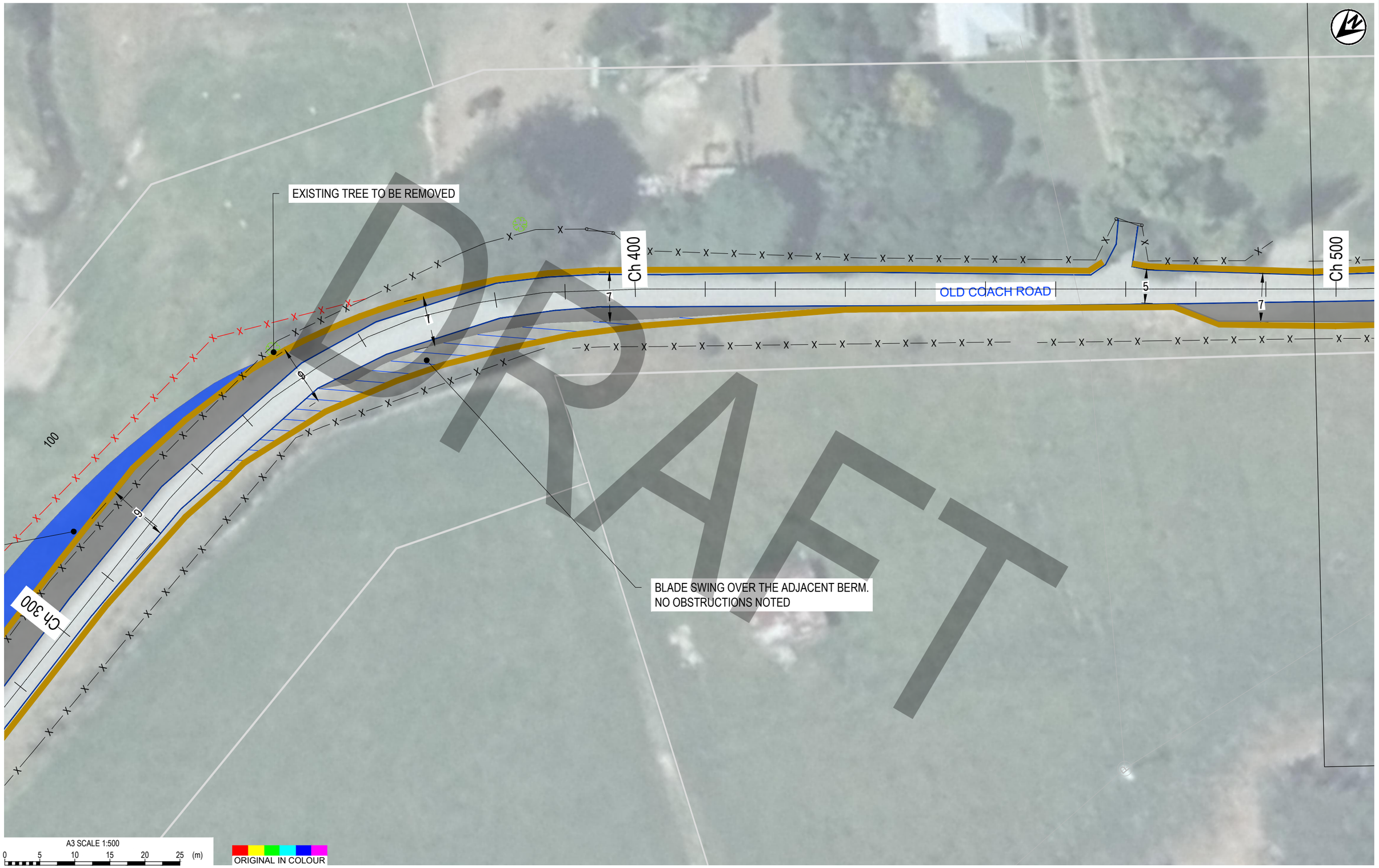

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL)
SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-C302 REV 2

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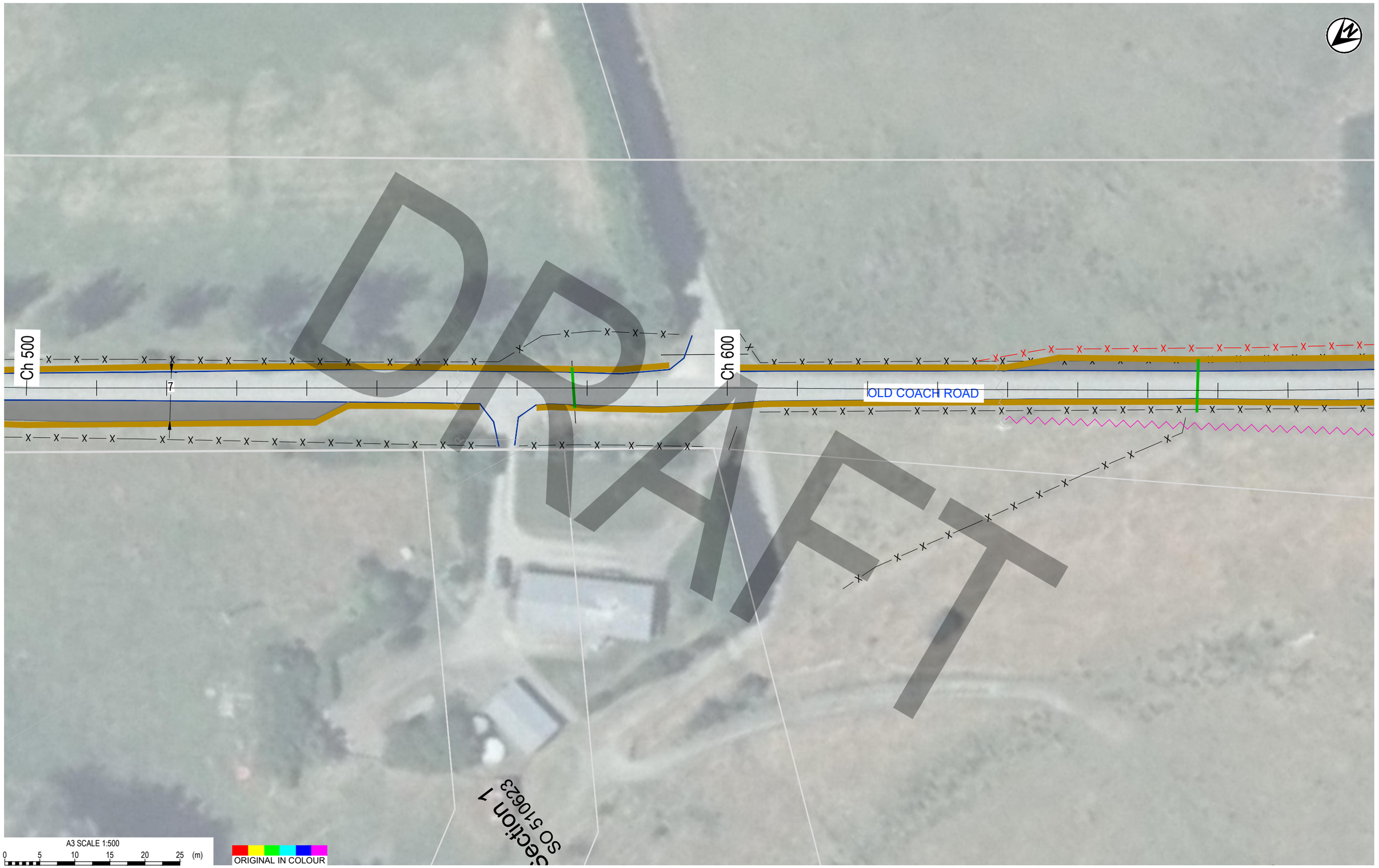

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL)
SHEET 4

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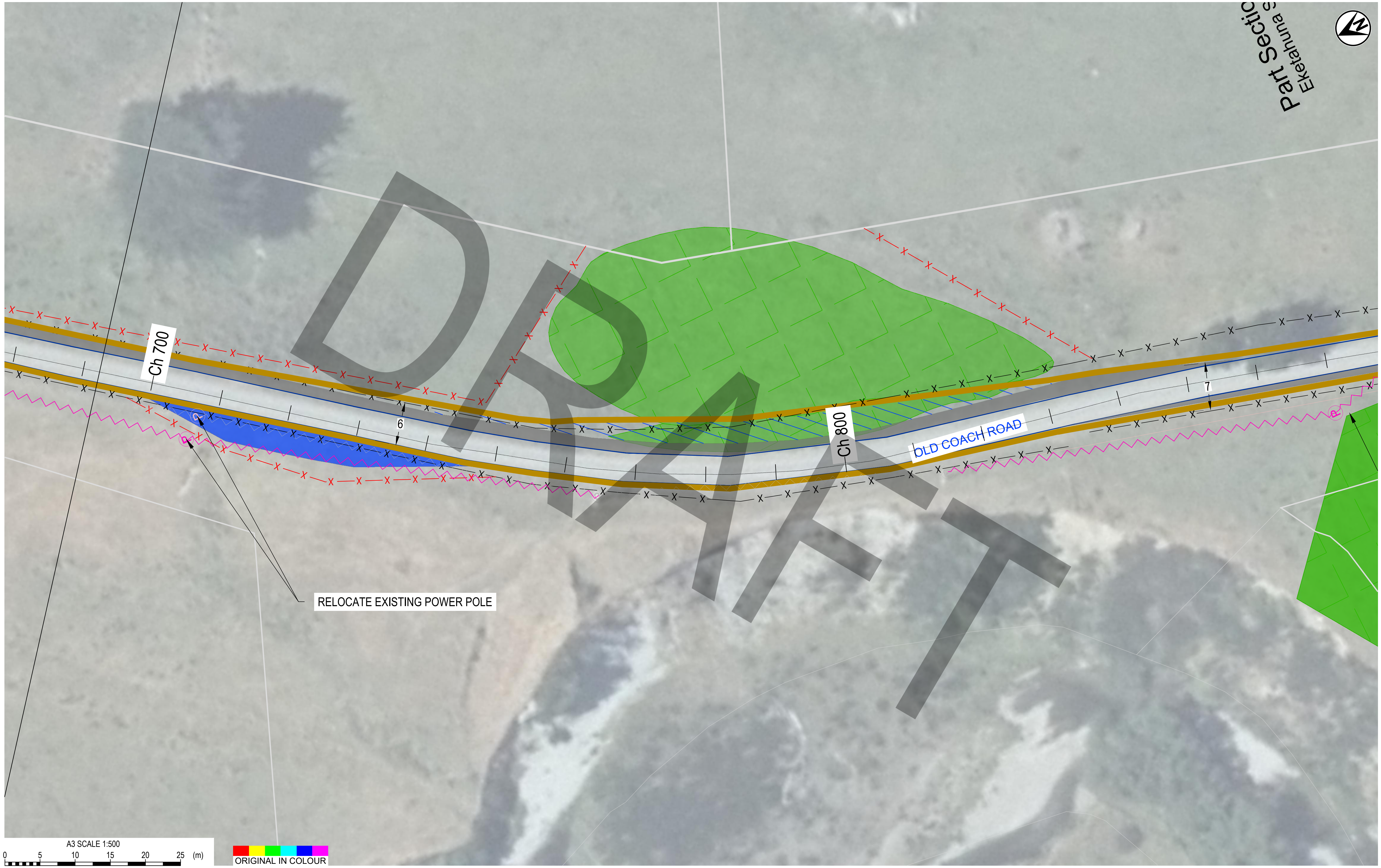

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PROJECT: **MT MUNRO WIND FARM**
TITLE: OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 5

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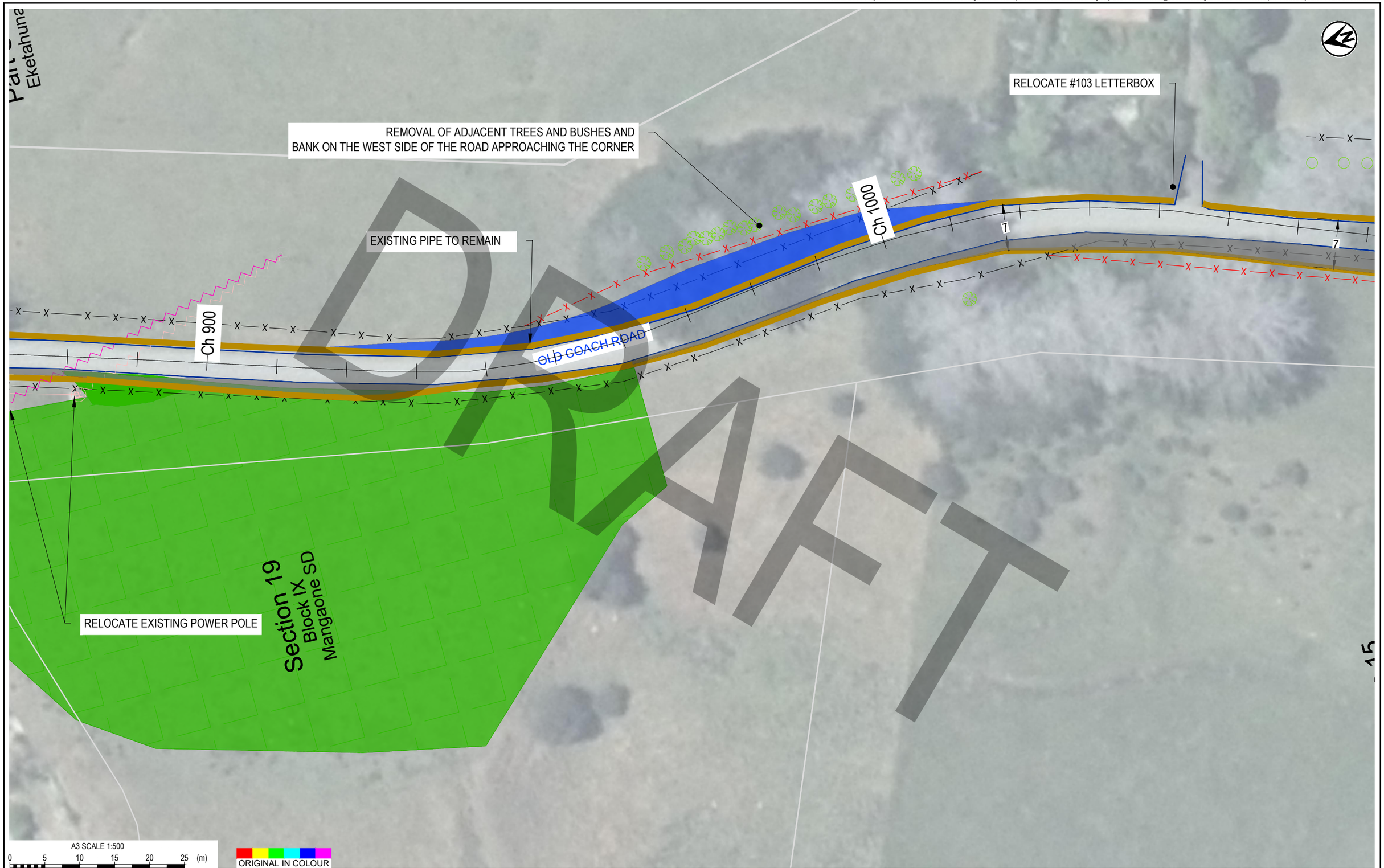

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PROJECT	**MT MUNRO WIND FARM**
TITLE	OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 6
SCALE (A3)	1:500
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REV	1

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 7

SCALE (A3) 1:500 DWG No. 1016884.1000-C306 REV 1

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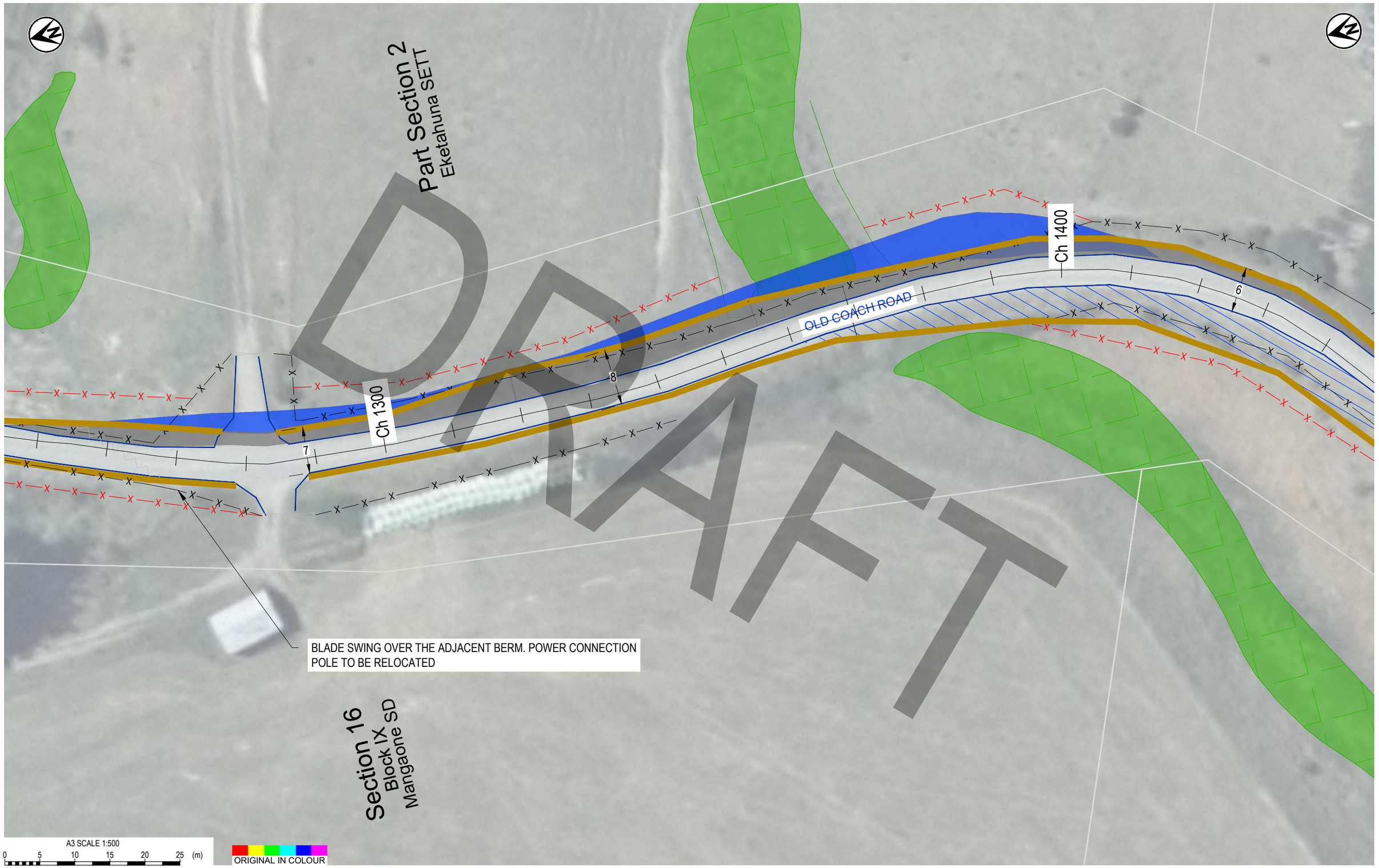

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PROJECT **MT MUNRO WIND FARM**

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SCALE (A3) 1:500 DWG No. 1016884.1000-C307 REV 1

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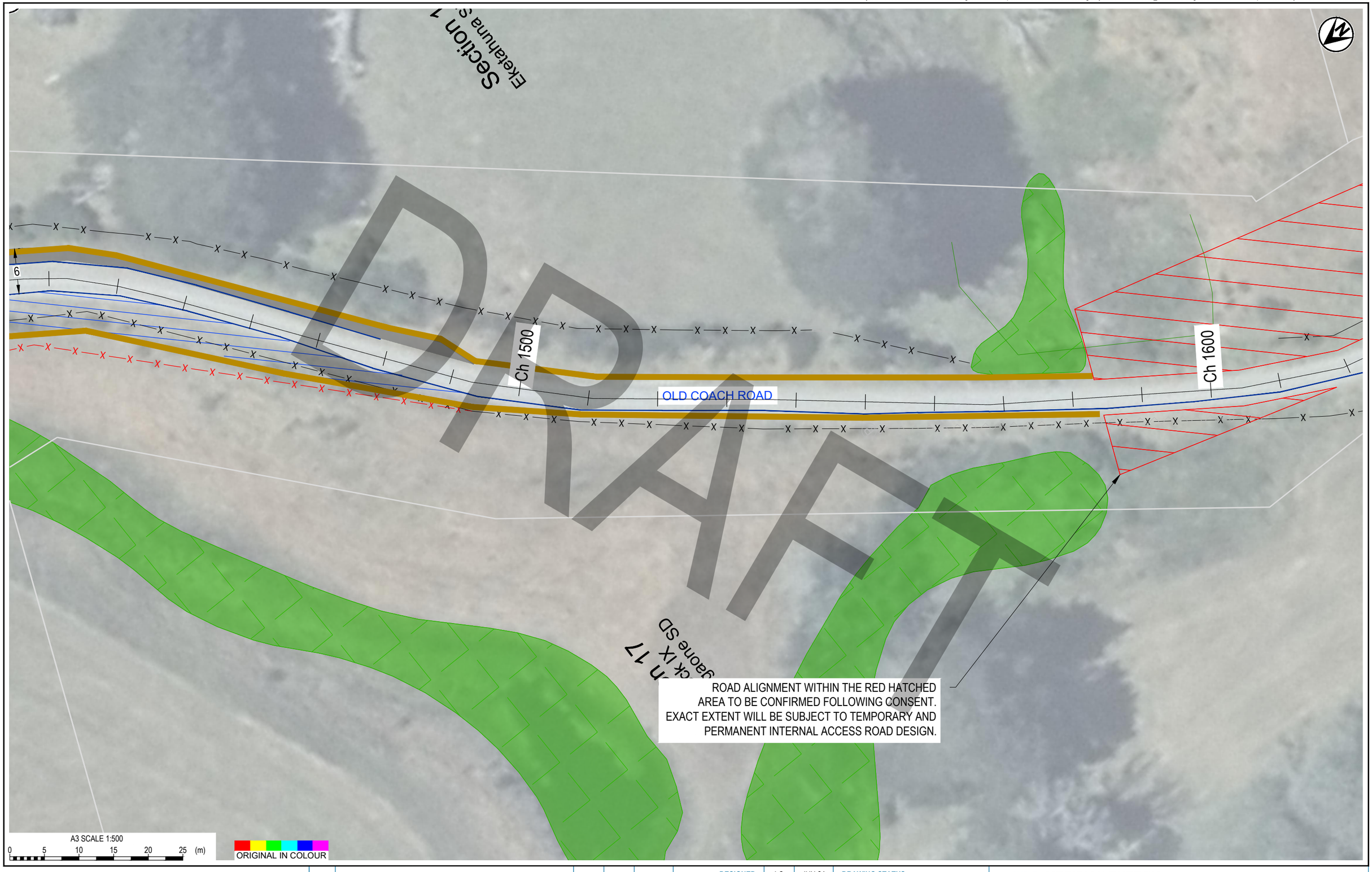

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	
DESIGN CHECKED			PROJECT PHASE: CONCEPT DESIGN
DRAWING CHECKED			

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 9

SCALE (A3) 1:500 DWG No. 1016884.1000-C308 REV 1

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening July 2024\1016884.100_C300-309.dwg 2024-Jul-08 7:19:32 pm Plotted By: LIVIA YEN SIANG CHEE

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	LC		

DESIGNED	LC	JUN 24	DRAWING STATUS: PRELIMINARY DRAFT
DRAWN	LC	JUN 24	PROJECT PHASE: CONCEPT DESIGN
DESIGN CHECKED			
DRAWING CHECKED			

NOT FOR CONSTRUCTION

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OLD COACH ROAD WIDENING (TA PROPOSAL) SHEET 10

SCALE (A3) 1:500 DWG No. 1016884.1000-C309 REV 1

26 July 2024

Meridian Energy Limited
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New Zealand
0800 496 496
Ellie.Taffs@meridianenergy.co.nz
meridian.co.nz

Tēnā koutou parties

ENV-WLG-2024-001- Meridian Energy Limited (Meridian) – Mt Munro Wind Farm – Further information supplied post-mediation

This letter contains the further information that Meridian agreed it would provide during court-assisted mediation, held in Palmerston North on 18 and 19 June 2024. This letter provides information that the parties to mediation agreed would be provided prior to expert conferencing, as well as information that has subsequently been requested by the Councils and s 274 parties.

Construction Traffic

Alternative Access Options

1. Meridian agreed to investigate the feasibility, benefits, and need for routing traffic in via OCR, and out via Coach Road South. Meridian engaged Tonkin + Taylor to undertake a further review of seven alternative access options, including using Coach Road South as suggested. This report is attached as **Appendix A** to this letter, and concludes that the alternative access routes considered are not viable or deliverable from a transport perspective.

    - Option 1: Access from Falkner Road - Falkner Road on the west side of the site is fronted by steep hills sides (in excess of a 50% gradient), which would make provision of access roads extremely difficult to provide. Furthermore, the Makakahi River is located along the whole of the west side of the site and would require a bridge crossing within the steep hill sides. It is considered that provision of access from Falkner Road would be exceptionally challenging, is considered to be fatally flawed and Option 1 is rejected.

    - Options 2 to 7: Access from Coach Road South and Opaki-Kaiparoro Road. These accesses would require all construction vehicles to use the Opaki-Kaiparoro Road bridge over the Makakahi River. There is insufficient width on the bridge to accommodate the turbine transporter and it is likely to be unable to carry the loads required. As such, the bridge would need to be replaced. This is a major constraint and considered a fatal flaw, meaning Options 2 to 7 are rejected. Furthermore, the access routes from Options 2 and 7 to the Windfarm turbine envelope zones all involve gradients of 20% to 23%, which exceeds the maximum feasible grade of 16% for transporting turbine components. This is another fatal flaw for Options 2 to 7.

Assessment of Delivering Components or Aggregates by Rail

2. Meridian agreed at mediation to investigate other alternative transport options, such as delivering turbine components and/or aggregate via rail.

3. The feasibility of delivery of construction materials by rail is addressed in Section 4 of the Tonkin + Taylor Alternative Access Option report contained in Appendix A of this letter. As noted in the report, KiwiRail has confirmed that wind turbine components are over-gauge for their network, and could not be transported via rail. Further, transportation of aggregate is unlikely to be feasible since this would involve triple handling of the aggregate relative to road transport (i.e. from source to truck, from truck to rail, and then from rail to truck again). Use of the rail line is therefore not possible.

SH 2 Access

4. During discussions with the Councils' traffic expert, the suitability of the proposed existing property access (#85151) on SH2 to the transmission line for construction vehicles was raised. Meridian agreed to commission and provide a report on this (provided as **Appendix B** to this letter), and to seek formal feedback from NZTA.

5. Tonkin + Taylor's conclusion, as expressed in the report, is that construction vehicle access to the transmission line from the existing property access on SH2 can be undertaken safely and without impacting the level of service for other road users, and can be supported from a transport perspective.

6. NZTA's views have been sought, and will be communicated back to traffic experts when received.

Pavement Quality and Durability

7. Meridian and Councils agreed to liaise as to pavement quality, durability and condition post-construction to inform the Council's position on this and on proposed condition CTM2(b). Discussions on this point are ongoing between the experts.

Landscape and visual effects

8. During the landscape experts' site visit that was arranged following mediation, Mr Girvan agreed he would prepare additional simulations to show the existing meteorological mast. This was in response to concerns raised by Mr Maxwell and Mr Olliver that the mast could not be made out in the simulations already provided, and that it would useful to use as a reference point for scale. These additional simulations are provided as **Appendix C** to this letter.

9. Mr Girvan has noted that the visibility of the mast has been enhanced in these photographs to ensure that it can be seen in these simulations (i.e. the mast has been 'modelled' into the photographs). Mr Girvan has also provided a single frame 'zoomed in' view to assist in judging the comparative scale of the mast against the modelled turbines.

Shadow Flicker

10. Meridian agreed to consider the timing of identification of relevant dwellings for the purpose of shadow flicker, including whether it should be earlier than the pre-instalment shadow flicker assessment.

11. As per the proffered conditions, Meridian proposes that a pre-instalment shadow flicker assessment will be undertaken based on the final turbine layout, and provided to the district councils at least 20 working days prior to construction. This assessment shall consider effects on receivers within 10 rotor diameters which were lawfully in existence as at the date of the grant of the consent. Whether and to what extent yet-to-be constructed dwellings should be included in this assessment is being considered in relation to the district planning rules, and by counsel in relation to the position in caselaw.

Ngā Mihi |Kind regards,

Ellie Taffs
Senior Legal Counsel - RMA
Meridian Energy Limited

Enclosed:

- Appendix A: Review of Alternative Access Options by Tonkin + Taylor dated 19 July 2024.
- Appendix B: Review of proposed SH2/Transmission line access by Tonkin + Taylor dated 22 July 2024.
- Appendix C: Additional photosimulations including existing metereological mast, modelled to increase visibility, Boffa Miskell Limited dated 24 July 2024.

19 July 2024
Job No: 1016884.0001

Meridian Energy Limited
PO BOX 2128
Christchurch
Christchurch 8140

Attention: Nick Bowmar

Dear Nick

Mount Munro Wind Farm
Review of alternative access options

1 Background

Tonkin & Taylor Ltd (T+T) have been engaged by Meridian to carry out a desktop review of alternative accesses to the Mount Munro windfarm site, based on issues and suggestions raised by Submitters at the Environment Court Mediation held on 18 and 19 June 2024.

2 Proposed main construction site access and internal layout

Meridian proposes to construct a windfarm of 20 wind turbines, 5 km south of Eketahuna in the Lower North Island (refer Figure 2.1 below):

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PO Box 2083, Wellington 6140 P +64-4-381 8560 F +64-9-307 0265 E wlg@tonkintaylor.co.nz

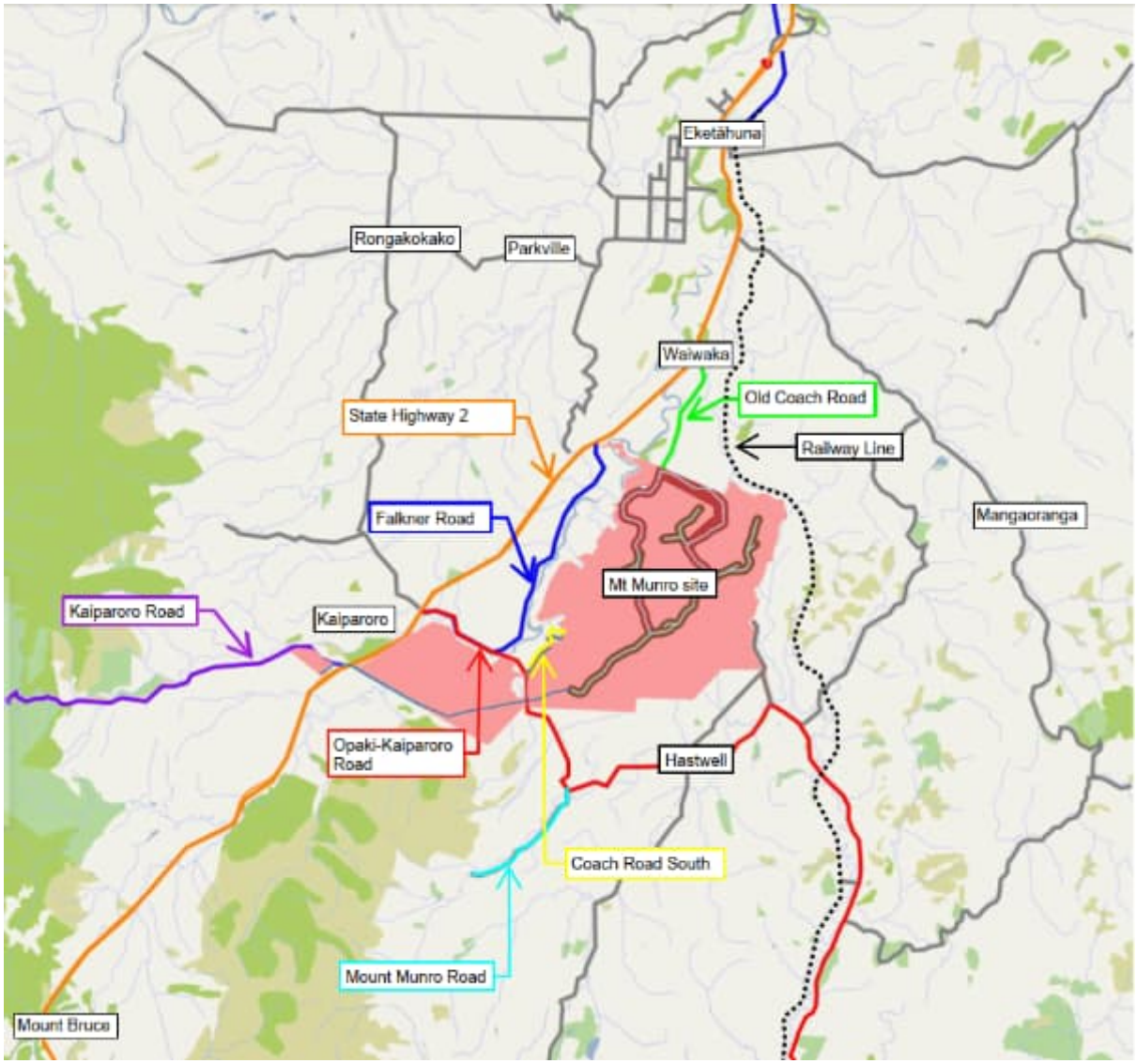

Figure 2.1: Mount Munro windfarm location.

Access to the main construction site is proposed from SH2/Old Coach Road, with the main construction site entrance located off Old Coach Road, approximately 1.7 km from its intersection with SH2. The proposed main site entrance and internal layout of both the turbine envelope zones and internal access roads is shown in Drawing Number 1016884.1000-012 Rev 2 of Appendix D Civil Engineering Report of the Mount Munro Resource Consent application (subsequently referred to as the Civil Engineering Report), and an extract of this drawing is provided in Figure 2.2 below:

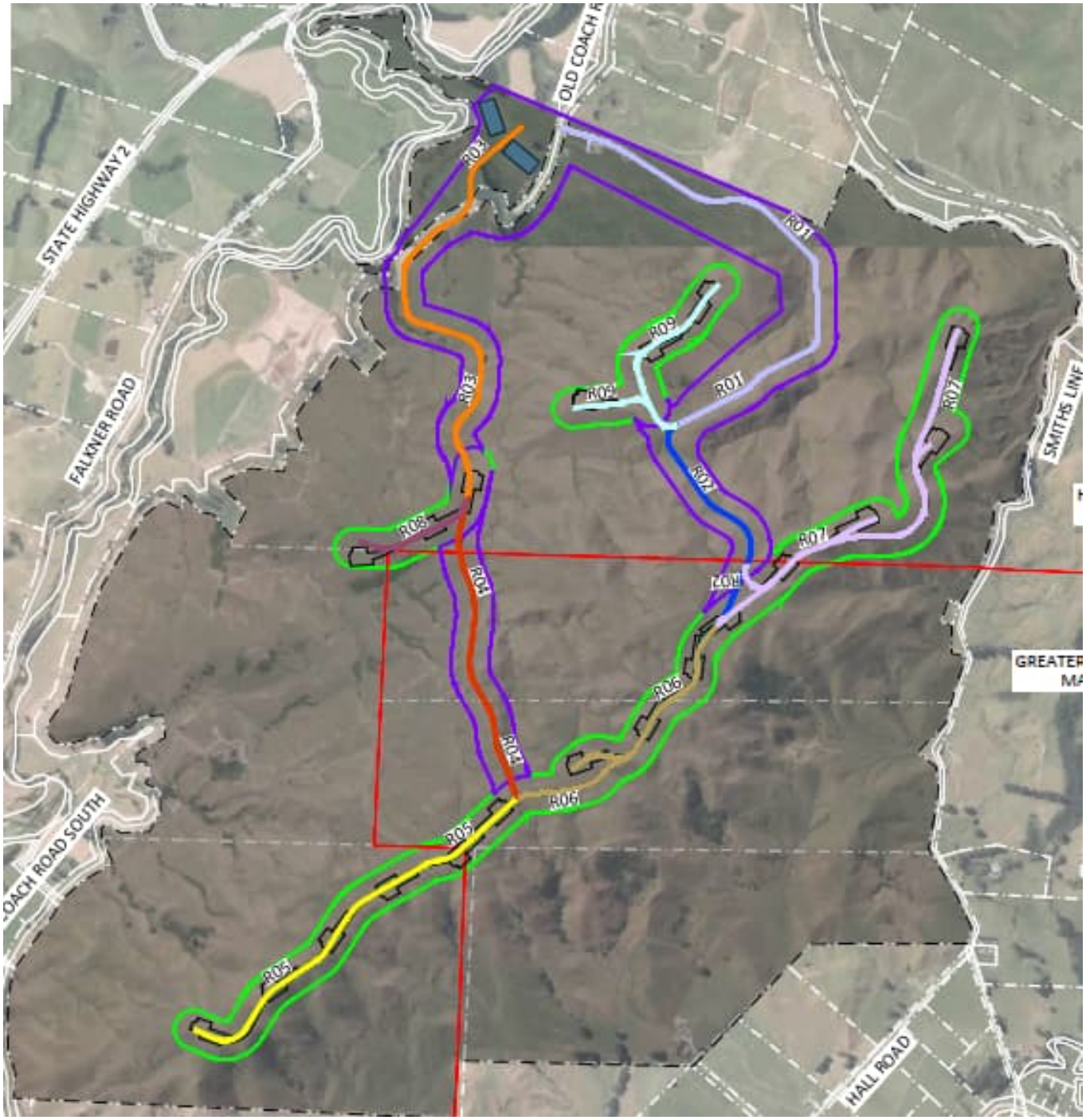

Figure 2.2: Proposed Old Coach Road Main site entrance (top of the Figure), internal road layout (shown in R0 numbers) and turbine envelope zones (shown in green).

Mount Munro topography can generally be described as farm pasture on relatively steep hillsides, with several deep valleys. Figure 2.3 below is an extract of Drawing Number 1016884.1000-004 Rev 2 of the Civil Engineering Report which shows the elevation and contours across the site indicating these level differences:

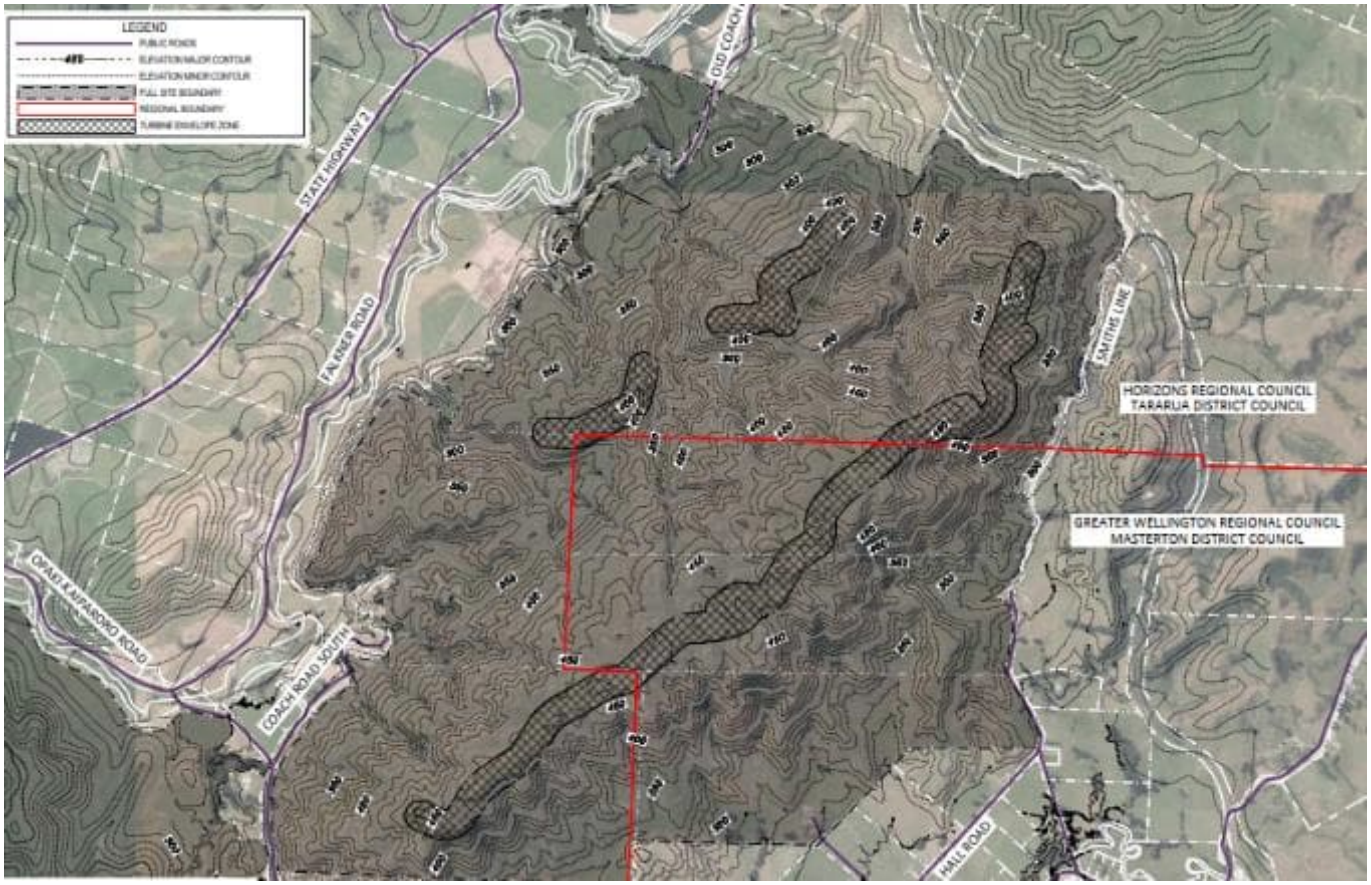

Figure 2.3: Site Contours.

Figure 2.4 below is an extract of Drawing Number 1016884.1000-005 Rev 2 of the Civil Engineering Report. This highlights the steep hillsides of 28 degrees (which equates to 53% or a 1:2: gradient) surrounding the site. The proposed turbine envelope zones and access roads have been designed to avoid, as far as possible, these steep hillsides:

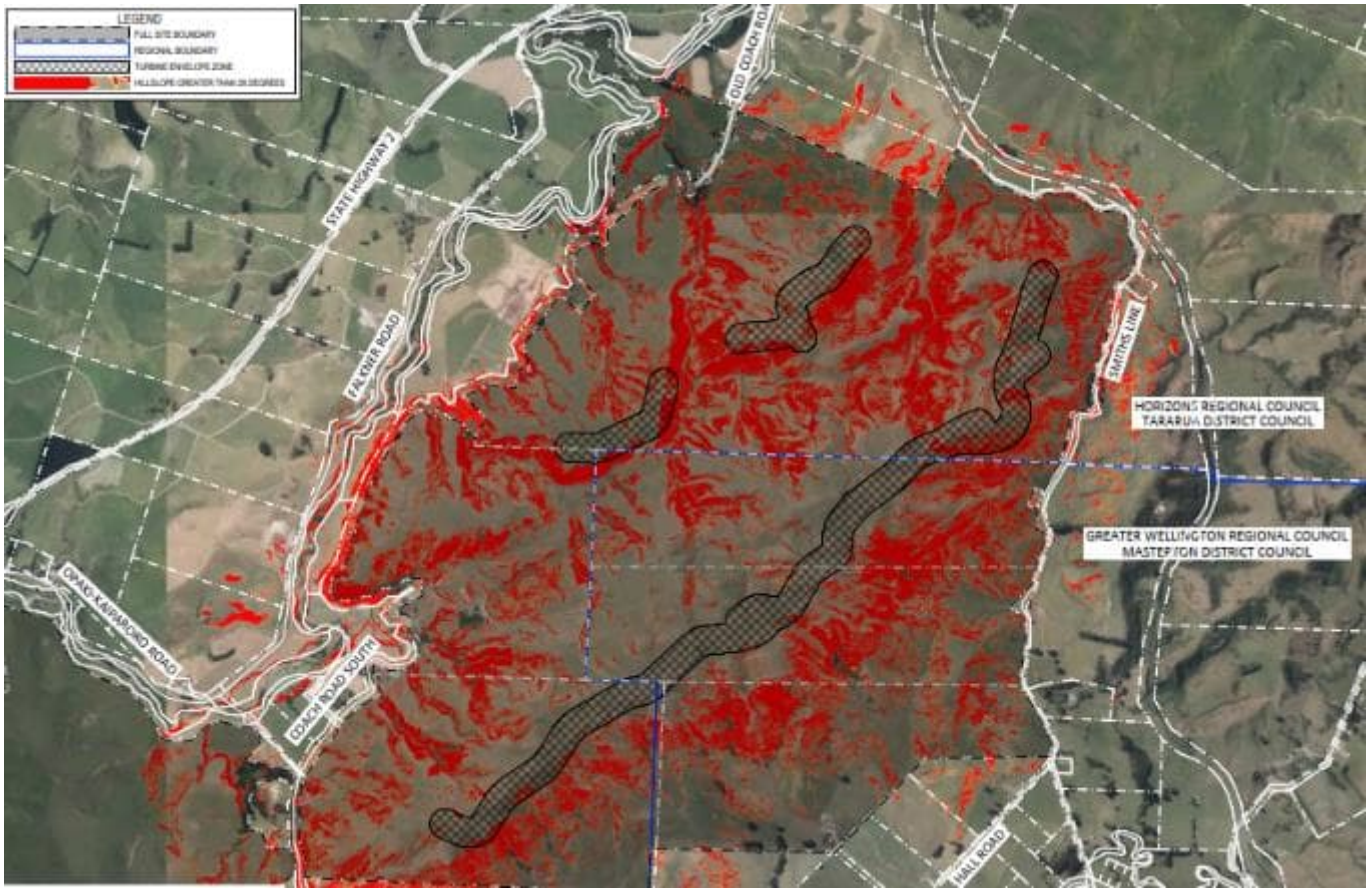

Figure 2.4: Steep hillsides shown in red.

3 Design Parameters for access roads

The overall design philosophy for the internal wind farm access roads has been to follow existing farm tracks and tops of ridges wherever possible. Locating roads along the ridgeline generally minimises the volume of excavation (and hence cost and extent of land disturbance), and extent of cut and fill (noting that the stability of cut slopes poses a significant engineering risk). It also means more favourable geotechnical conditions are likely, reduces the risk of erosion (due to these being the flatter areas) and generally avoids gullies, undisturbed watercourses and other unsuitable areas for earthworks.

As detailed in the Civil Engineering Report, key parameters used in the design of the proposed access routes to the turbines include a maximum gradient of 16%. Normally 12.5% is an assumed maximum grade beyond which haulage of the heavier turbine components (such as tower sections and nacelles), may require additional tractor units, bull dozers, or assistance by winching but only to a maximum grade of 16%.

A laydown area is required to service the wind farm site during construction and long-term operations. The proposed laydown area covers 1.4 hectares on the western side of Old Coach Road, opposite the wind farm site entrance (as shown in blue in Figure 2.2 above). During construction the main storage laydown area will be used to store turbine components transported in by road prior to being taken to the turbine pad. This area will also be used as a Meridian and contractor's establishment/ administration area. Post construction, some or all this storage laydown area will be retained for spare parts storage and workshop buildings will be established for the servicing of the turbines and as a base for the operations and maintenance teams.

4 Alternative access options assessed.

Alternative access options to the main construction site assessed include:

- Option 1 - Falkner Road.
- Options 2 to 5 starting from Opaki-Kaiparoro Road/Coach Road South intersection.
- Option 6 – Opaki-Kaiparoro Road, south of Coach Road South.
- Option 7 – One way route from Old Coach Road, Paper Road to Coach Road South.

The alternative access options considered are shown in Appendix A.

These options have been identified taking into account the available information from Figure 2.3 and Figure 2.4 above on levels and steep hill sides and hence they are considered to be the potentially viable alternative accesses to avoid the existing steep hill sides and grades.

At the Mediation, submitters queried whether the rail line to the east of the site (shown in Figure 2.1 above) could be used to transport construction materials. It should be noted that there is no existing station/rail sidings, which would need to be constructed. As shown in Figure 2.4, the north and east aspects of the site itself are characterised by steep topography and there are a series of streams and wetland features that run alongside the railway line and between it and the site. Transportation of aggregate is unlikely to be feasible since this would involve triple handling relative to road transport and also local quarries are proposed to be used which would negate against the use of rail. Furthermore, based on discussions with Meridian, KiwiRail have confirmed that wind turbine components are over-gauge for their network. On this basis the rail option is rejected and has not been considered any further.

5 Data sources and key assumptions

Data sources used for this high level assessment include:

- Appendix D of the Mount Munro Windfarm Resource Consent application - Civil Engineering Report dated May 2023 (as outlined in section 2 above).
- GIS mapping.
- Tararua District Council (TDC) District Plan and website.
- Google maps.

This report identifies whether any options are technically unfeasible or present a significant risk profile (for example where routes are unsuitable to be used to transport turbine transformers due to widths, gradients etc).

This report solely concentrates on a high-level feasibility of the alternative access options limited to transport parameters and doesn't take into account detailed engineering issues such as geotechnical conditions, earthworks required, surface water drainage options or environmental issues (e.g., ecology, heritage, noise, landscape, visual effects) or resource consent risks or potential cultural effects.

As set out in the proposed consent conditions attached to Mr Anderson's evidence, proffered in response to concerns raised by submitters, no construction access is assumed from Opaki-Kaiparoro Road south of Mount Munro Road.

Findings of the review of alternative access options 1 to 7 are outlined in the subsequent sections of this report.

6 Option 1 Falkner Road

As shown on Figure 2.4 above, Falkner Road on the western side of the site is fronted by steep hill slopes (in excess of a 50% gradient), which would make provision of access roads extremely difficult. Furthermore, the Makakahi River is located along the whole of the west side of the site and would require a new bridge crossing.

It is considered that provision of access from Falkner Road would be exceptionally challenging. Option 1 is therefore a rejected option.

Furthermore, Figure 6.1 below is an extract of Drawing Number 1016884.1000-002 Rev 2 of the Civil Engineering Report and shows Falkner Road in relation to the land ownership/agreements in place for the Mount Munro windfarm.

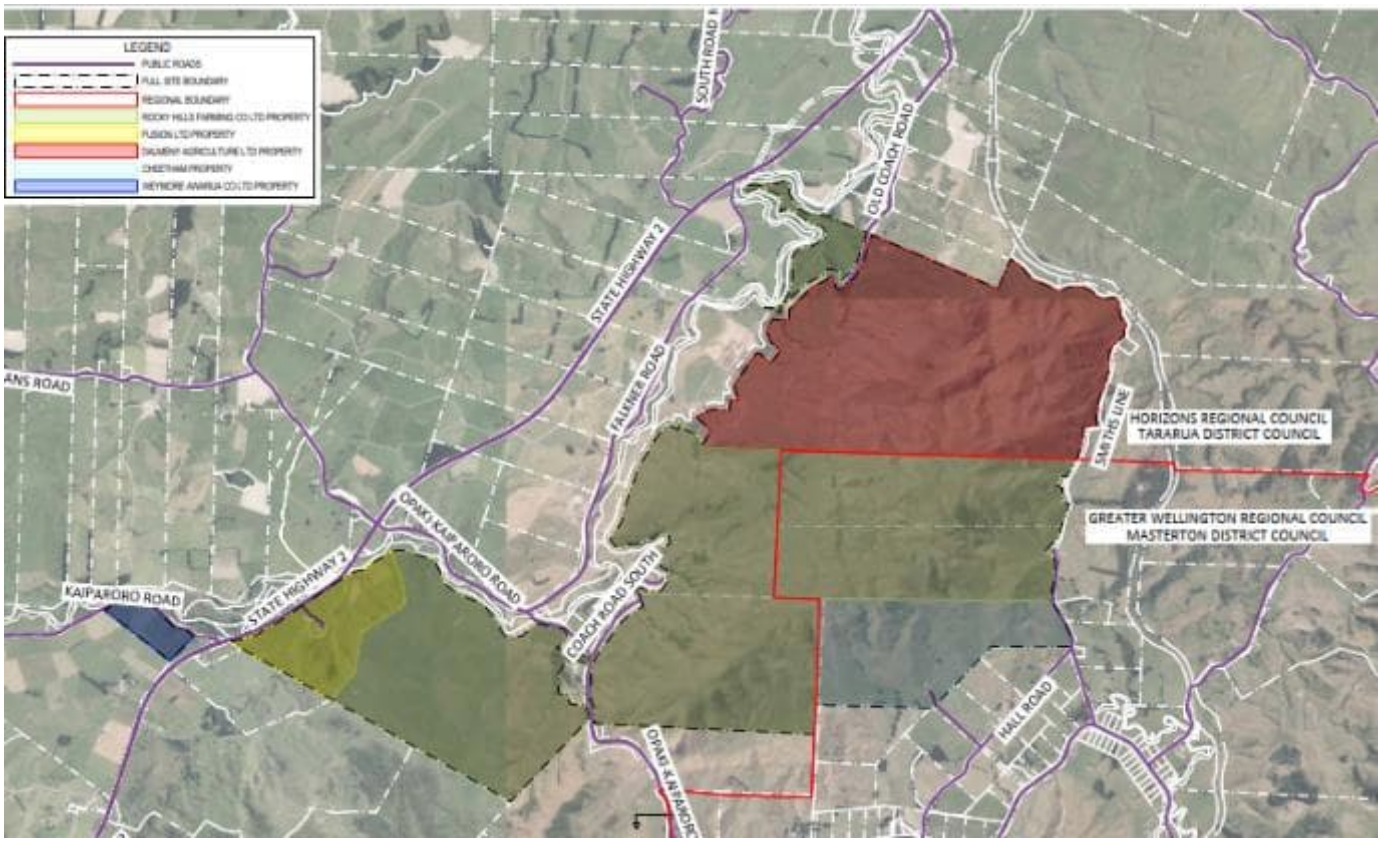

Figure 6.1: Property Plan.

This indicates that access from Falkner Road would be outside the Meridian land ownership/ agreements area and would require additional land purchase/ agreements with third parties which may not be forthcoming. Likewise, any lay down area would also require land purchase/agreements with third parties, which may not be forthcoming.

7 Access via SH2 and Opaki-Kaiparoro Road for Options 2 to 7

7.1 Background

In order to access Options 2 to 7 to the south, construction traffic is required to use the SH2/Opaki - Kaiparoro Road intersection and then travel south east on Opaki-Kaiparoro Road.

In considering the feasibility of alternative access from the south, we have firstly assessed the SH2/ Opaki-Kaiparoro Road intersection and then Opaki-Kaiparoro Road south eastwards to accommodate the proposed construction vehicles.

7.2 SH2/Opaki-Kaiparoro Road intersection

7.2.1 Sight distance checks

The sight distances at the SH2/Opaki-Kaiparoro Road intersection were reported within the Mount Munro Integrated Transport Assessment (ITA). SH2, viewed from the intersection with Opaki-Kaiparoro Road, looking north and south, is shown in Figure 7.1 and Figure 7.2 below.

Figure 7.1: Sight distance from Opaki-Kaiparoro Road, looking north.

Figure 7.2: Sight distance from Opaki-Kaiparoro Road, looking south.

The sight lines are shown in Figure 7.3 below, which indicates clear sightlines to the south. These exceed the required (248 m) Austroads Safe Intersection Sight Distance (SISD) requirement. However, the sight distances looking north are slightly obstructed by the curve of the road, vegetation and the cut slope. It is anticipated that some vegetation clearance could be required, and this can be completed within the road reserve. This clearance is included within the proposed consent conditions attached to Mr Anderson's evidence.

Figure 7.3: SH2/Opaki-Kaiparoro Road sight distances.

7.2.2 Vehicle tracking

Vehicle tracking at the SH2/Opaki-Kaiparoro Road intersection for the following vehicles has been carried out:

- Truck and trailer.
- Transporter for a 67 m wind turbine blade.

The vehicle tracking is shown in Drawing Numbers 1016884.1000-C500 to 503 in Appendix B. The vehicle tracking shows that a truck trailer can turn in and out of Opaki-Kaiparoro Road without the need for any intersection improvements.

A significant upgrade of the intersection would be required to enable the transporter to use the intersection. The changes required include:

- Large volume of fill required on the north eastern corner of the intersection due to large level difference.
- Relocation of an existing fence.
- Temporary widening of the intersection on the north western and north eastern corners of the intersection.

These changes can all be constructed within the existing road reserve. With these upgrades in place this intersection would be suitable for the use being assessed.

7.3 Opaki-Kaiparoro Road

7.3.1 Vehicle tracking

Vehicle tracking has been carried out on Opaki-Kaiparoro Road between the SH2 intersection and Coach Road South for both the truck and trailer and the turbine transporter. These are included in Appendix B specifically for the existing bridge over the Makakahi River, as shown in Figure 7.4 below:

Figure 7.4: Opaki-Kaiparoro Road bridge over the Makakahi River.

The bridge is located 30 m from the intersection of Opaki-Kaiparoro Road and Falkner Road, 1.2 km south east of the intersection with SH2.

Drawing Number 1016884.1000-C602 in Appendix B indicates that the truck and trailer unit can manoeuvre within the existing road and bridge.

The tracking does indicate that widening of Opaki-Kaiparoro Road would be required (within the road reserve) for approximately 400 m between SH2 and Coach Road South to accommodate the transporter movements.

Drawing Numbers 1016884.1000-C600 and 601 in Appendix B indicate that there is insufficient width on the bridge to accommodate the turbine transporter and, as such, the bridge would need to be replaced or widened to facilitate alternative access Options 2 to 7. No information on the weight loading of the bridge is publicly available. Given the age of the bridge, it is considered likely that the bridge would either require strengthening or replacement given the weight of the large wind turbine components. Taking these factors together, it is considered that bridge replacement would be required. Replacement of the bridge would have significant cost implications which are envisaged to be a greater cost than that to widen Old Coach Road which is the proposed construction vehicle access. Furthermore, construction of a new bridge is likely to require closure of this section of Opaki-Kaiparoro Road for a period of time which would result in a significant lengthening of trips for vehicles to re-route to the southern SH2/Opaki-Kaiparoro Road intersection which would also increase traffic through Mauriceville and the school. Other factors such as environmental impacts would also need to be considered.

This is considered to be a major constraint and a fatal flaw. Options 2 to 7 are therefore considered to be rejected options.

Notwithstanding this bridge constraint, further assessments have been carried out to determine whether access directly from Options 2 to 7 is feasible. This is summarised in the following sections.

8 Option 2 assessment

The proposed route of Option 2 is shown in red on the plan in Appendix A. Option 2 commences at the intersection of Coach Road South and Opaki-Kaiparoro Road approximately 1.8 km along Opaki-Kaiparoro Road from SH2. This route provides a short and relatively direct route access from the south.

As indicated in Appendix A, a potential site laydown area (a 1.4 Ha area of flat land) is shown (which is also applicable for Options 3, 4 and 5) as a red hatched area west of Coach Road South. It is understood that this area is within the ownership of one of the land owners for which Meridian has an agreement. However, as shown in Figure 6.1, this particular parcel of land is not currently secured and hence would require further land purchase/agreement.

The approximate topography of Option 2 access route is shown in Figure 8.1 below.

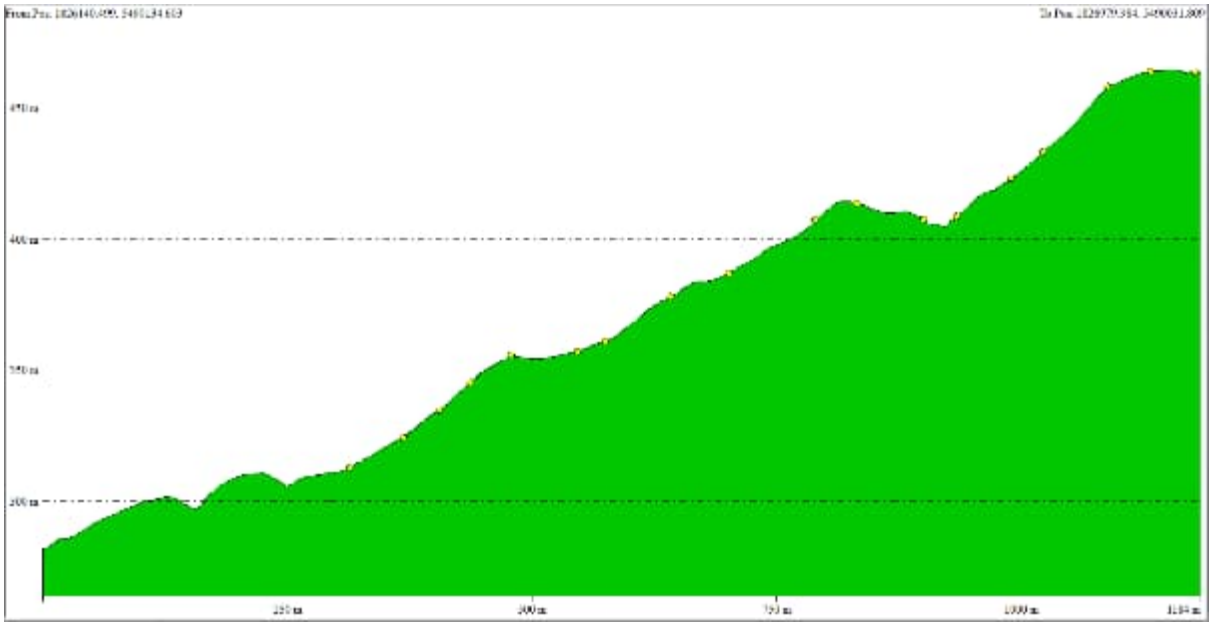

Figure 8.1: Option 2 access route approximate topography.

Most of the route will require large cuts, and at several points along the route, tight bends are required. It is anticipated that the access route option can be designed to run straight for approximately 380 m at a grade of between 8% to 10% before beginning a series of tight curves and straight sections to the summit. Over the curved sections the grade is anticipated to be 15% while on the straight sections the grade is anticipated to be 20%.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 20% on the access route are another fatal flaw and Option 2 is rejected.

9 Option 3 assessment

The proposed route of Option 3 is shown in orange on the plan in Appendix A Like Option 2, this option begins at the intersection of Coach Road South and Opaki-Kaiparoro Road, approximately 1.8 km along Opaki-Kaiparoro Road from SH2.

The approximate topography of Option 3 access route is shown in Figure 9.1 below.

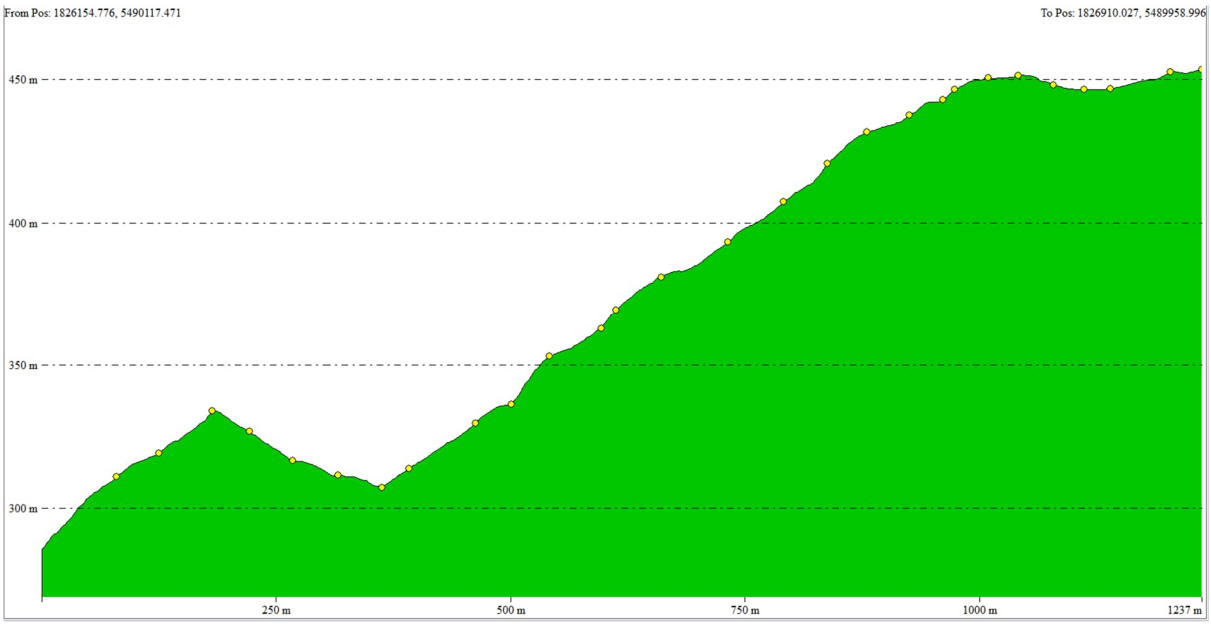

Figure 9.1: Option 3 access route approximate topography.

Most of the route is likely to require large cuts. Due to the tight bends at several locations, the road would have to be widened for tracking of the transporters and turbine components within the cuts. It is anticipated that the access route option can be designed for the first 450 m with a climb at 15% comprising two bends until a straight section at a 20% grade. The route then tracks into tight bends at a 15% grade.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 20% on the access route are another fatal flaw and Option 3 is rejected.

10 Option 4 assessment

The proposed route of Option 4 is shown in yellow dash on the plan in Appendix A. Option 4 utilises the existing southern section of Coach Road South, a metalled access road beginning approximately 1.8 km along Opaki-Kaiparoro Road from SH2. This route is essentially an upgrade of the existing farm track and also forms part of Option 7.

The approximate topography of Option 4 access route is shown in Figure 10.1 below.

Figure 10.1: Option 4 access route approximate topography.

Coach Road South would have to be upgraded and widened to allow for the size and weight of the construction traffic. This route is initially relatively flat along Coach Road South and then steeply rises. This access route option will require large cuts, involves several valley crossings and will involve long sections of gradients between 15% and 20%.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 20% on the access route are another fatal flaw and option 4 is rejected.

11 Option 5 assessment

The proposed route of Option 5 is shown in dark green on the plan in Appendix A.

The approximate topography of Option 5 access route is shown in Figure 11.1Figure 11.1: below.

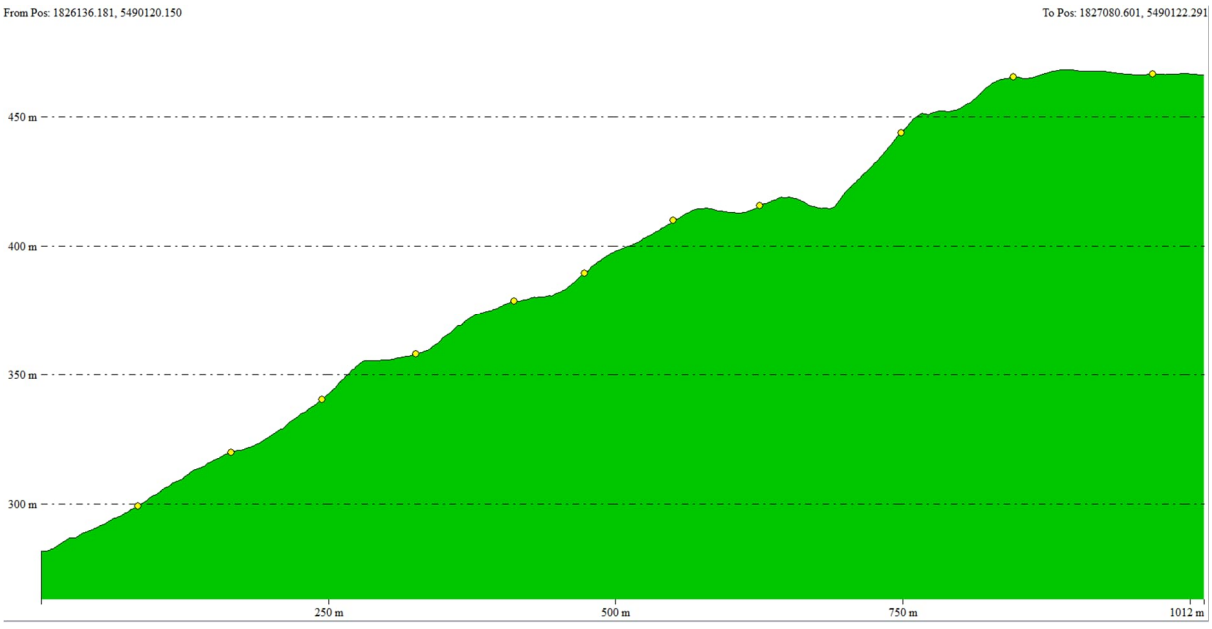

Figure 11.1: Option 5 access route approximate topography.

Option 5 access route follows a similar alignment to Option 2 for the first 380 m and would be at a grade of between 8% to 10%. From this point the access route deviates from Option 2 and continues in a northeast direction across three valley crossings in fill before climbing in a deep cut to the ridgeline resulting in a maximum gradient of up to 20%.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 20% on the access route are another fatal flaw and Option 5 is rejected.

12 Option 6 assessment

The proposed route of Option 6 is shown in light green on the plan in Appendix A. Option 6 commences from the existing quarry at Opaki-Kaiparoro Road approximately 2.5 km from the SH2/ Opaki-Kaiparoro Road intersection and 0.7 km from the Opaki-Kaiparoro Road/Coach Road South intersection. When compared to Figure 6.1 this option is outside of Meridian land ownership/ agreements and would require land purchase/agreements with third parties. Likewise, any lay down area would also require land purchase/agreements with third parties.

The approximate topography of Option 6 access route is shown in Figure 12.1 below.

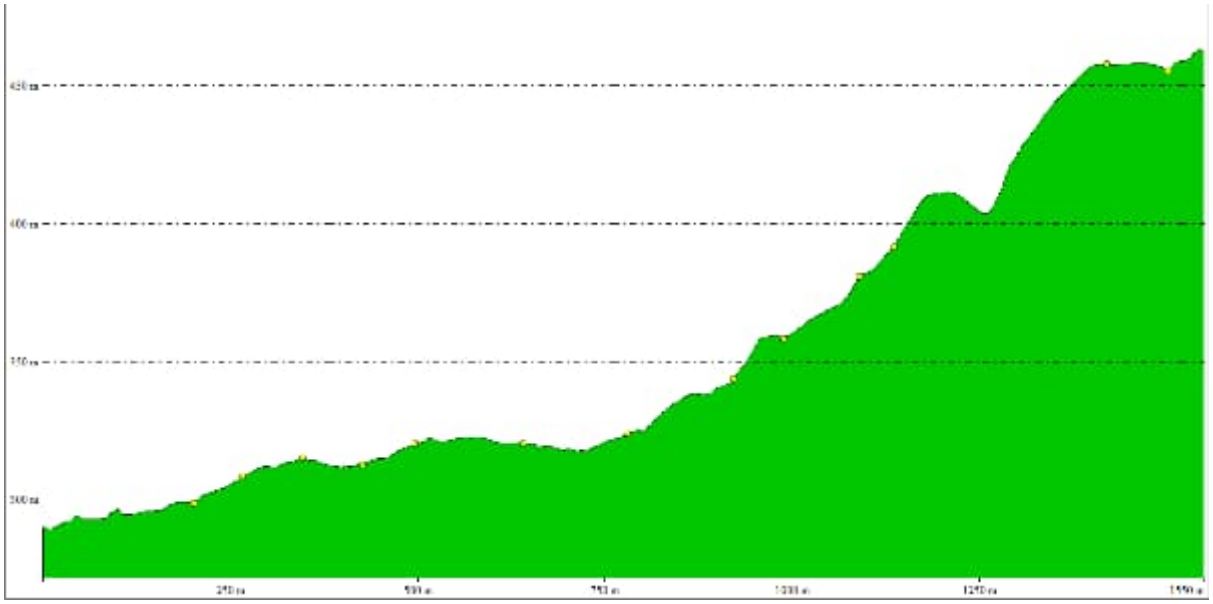

Figure 12.1: Option 6 access route approximate topography.

Option 6 access route starts an ascent from the lower valley flanks of a steep escarpment, climbing up to the escarpment ridge in several deep cuts including a climb of approximately 150 m across a steep escarpment face with gradients of up to 23%.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 23% are another fatal flaw and Option 6 is rejected.

13 Option 7 assessment

The proposed route of Option 7 is shown in pink on the plan in Appendix A.

Meridian was requested to consider a one way route in from Old Coach Road and out from Coach Road South. As such, Option 7 enters at the site access and lay down area on Old Coach Road, uses the proposed access roads R03 and R08 (shown on Figure 2.2) and then utilises the alignment of the existing Paper Road that connects Old Coach Road and Coach Road South (and also forms part of Option 4) to reach Coach Road South.

The approximate topography of Option 7 access route is shown in Figure 13.1 below.

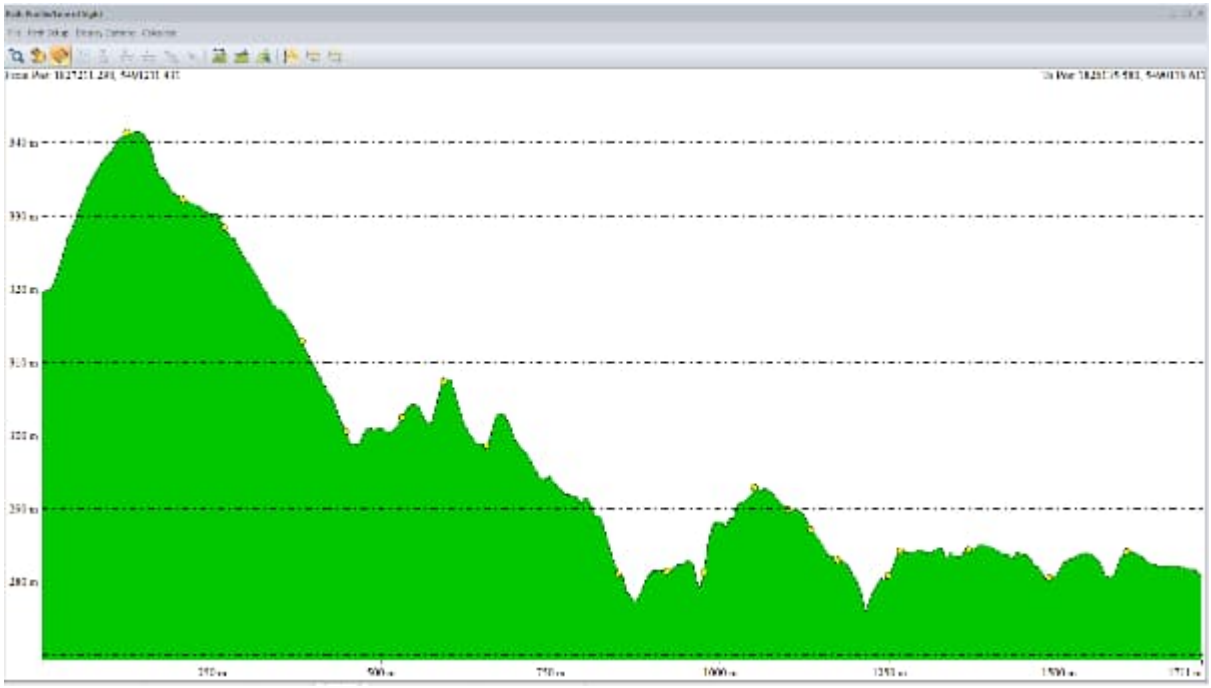

Figure 13.1: Option 7 access route approximate topography.

This option would involve improvement works on a long section of route covering both Old Coach Road, the internal access route/Paper Road and Coach Road South. The option does not appear to offer much benefit in effects terms once Old Coach Road has been upgraded (which upgrade will be required in any event).

This access route option will require large cuts, several valley crossings resulting in long sections of gradients between 14% and 20%. Coach Road South would have to be upgraded and widened to allow for the size and weight of the construction traffic.

In addition to the fatal flaw at the Opaki-Kaiparoro Road bridge, the gradients of up to 20% are another fatal flaw and option 7 is a rejected option.

14 Conclusions

Based on our assessment of seven potential alternative access route options from west and south of the Mount Munro windfarm site, the following is concluded from a transport perspective:

- Option 1 access from Falkner Road - Falkner Road on the west side of the site is fronted by steep hills sides (in excess of a 50% gradient), which would make provision of access roads extremely difficult to provide. Furthermore, the Makakahi River is located along the whole of the west side of the site and would require a bridge crossing within the steep hill sides. It is considered that provision of access from Falkner Road would be exceptionally challenging, is considered to be fatally flawed and Option 1 is rejected.
- Options 2 to 7 access from Coach Road South and Opaki-Kaiparoro Road. These accesses would require all construction vehicles to route using the Opaki-Kaiparoro Road bridge over the Makakahi River. There is insufficient width on the bridge to accommodate the turbine transporter and it is likely to be unable to carry the loads required. As such, the bridge would need to be replaced. This is a major constraint and considered a fatal flaw, meaning Options 2 to 7 are rejected. Furthermore, the access routes from Options 2 and 7 to the Windfarm turbine envelope zones all involve gradients of 20% to 23%, which exceeds the maximum feasible grade of 16% for transporting turbine components. This is another fatal flaw for Options 2 to 7.
- Alternative access routes to that proposed from Old Coach Road, have been assessed as not viable or deliverable options.
- Use of the rail line is not possible since KiwiRail have confirmed that wind turbine components are over-gauge for their network and transportation of aggregate is unlikely to be feasible since this would involve triple handling relative to road transport.

15 Applicability

This report has been prepared for the exclusive use of our client Meridian Energy Limited, with respect to the particular brief given to us. We also understand and agree that our client will submit this report as part of the application for resource consent and that Tararua District Council, Masterton District Council, Greater Wellington Regional Council and Greater Wellington Regional Council as the consenting authorities will use this report for the purpose of assessing that application. This report may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement

Tonkin & Taylor Ltd

Report prepared by:

.....

Colin Shields Senior Principal Transport Planner and
Tess Breitenmoser
Transport & Civil Engineer

Reviewed by:

.....

James Dyer
Senior Transport Planner

Authorised for Tonkin & Taylor Ltd by:

.....

Nick Peters
Project Director

19-Jul-24
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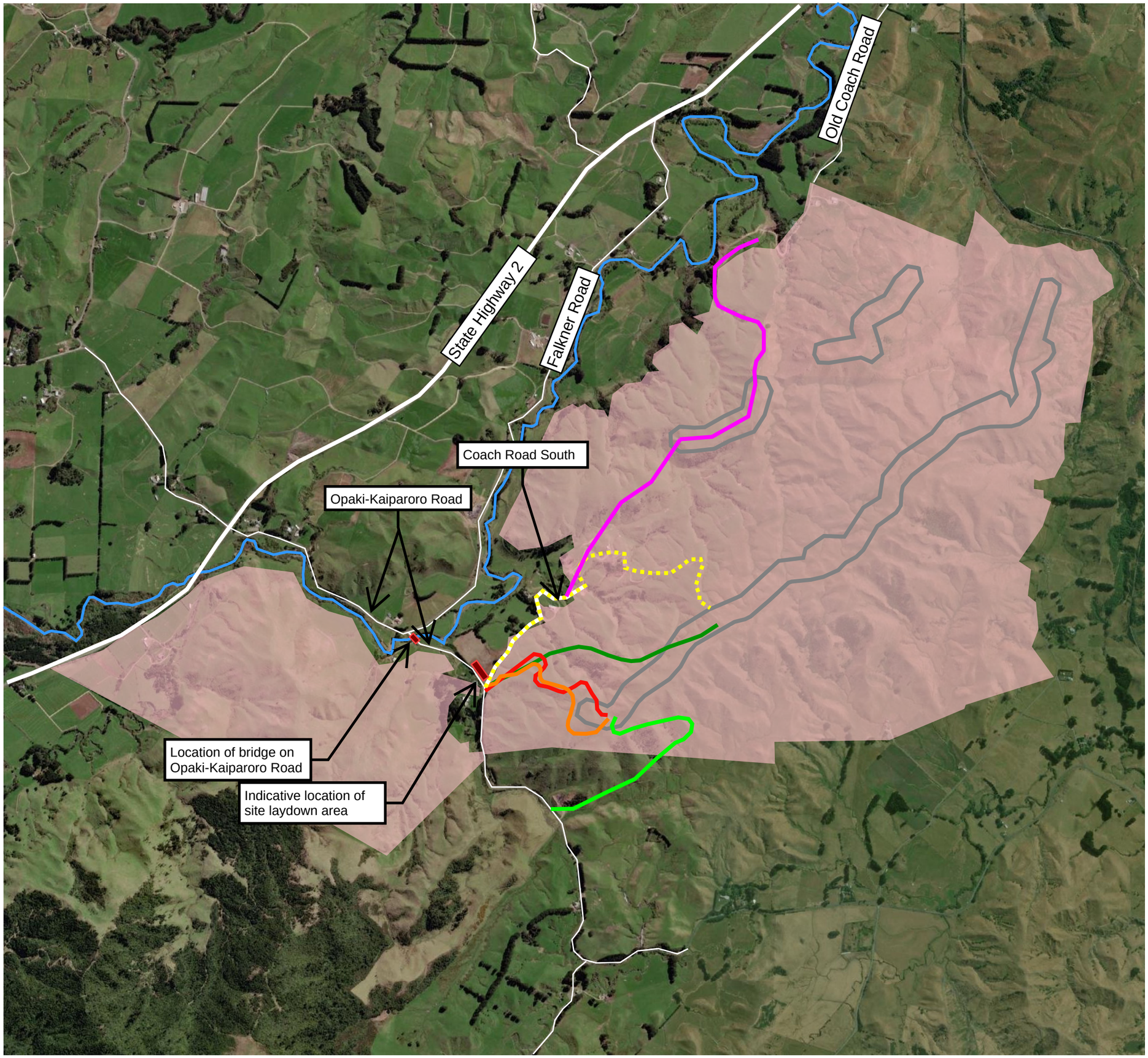
Appendix A Alternative Access Options Plan



LEGEND

- Falkner Road
- OPTION 1
- OPTION 2
- OPTION 3
- OPTION 4
- OPTION 5
- OPTION 6
- OPTION 7
- MOUNT MUNRO SITE
- TURBINE ENVELOPE ZONE
- MAKAKAHI RIVER

A3 SCALE: 1:20,000

0 210 420 630 840 1,050 (m)

N

1. World Imagery Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

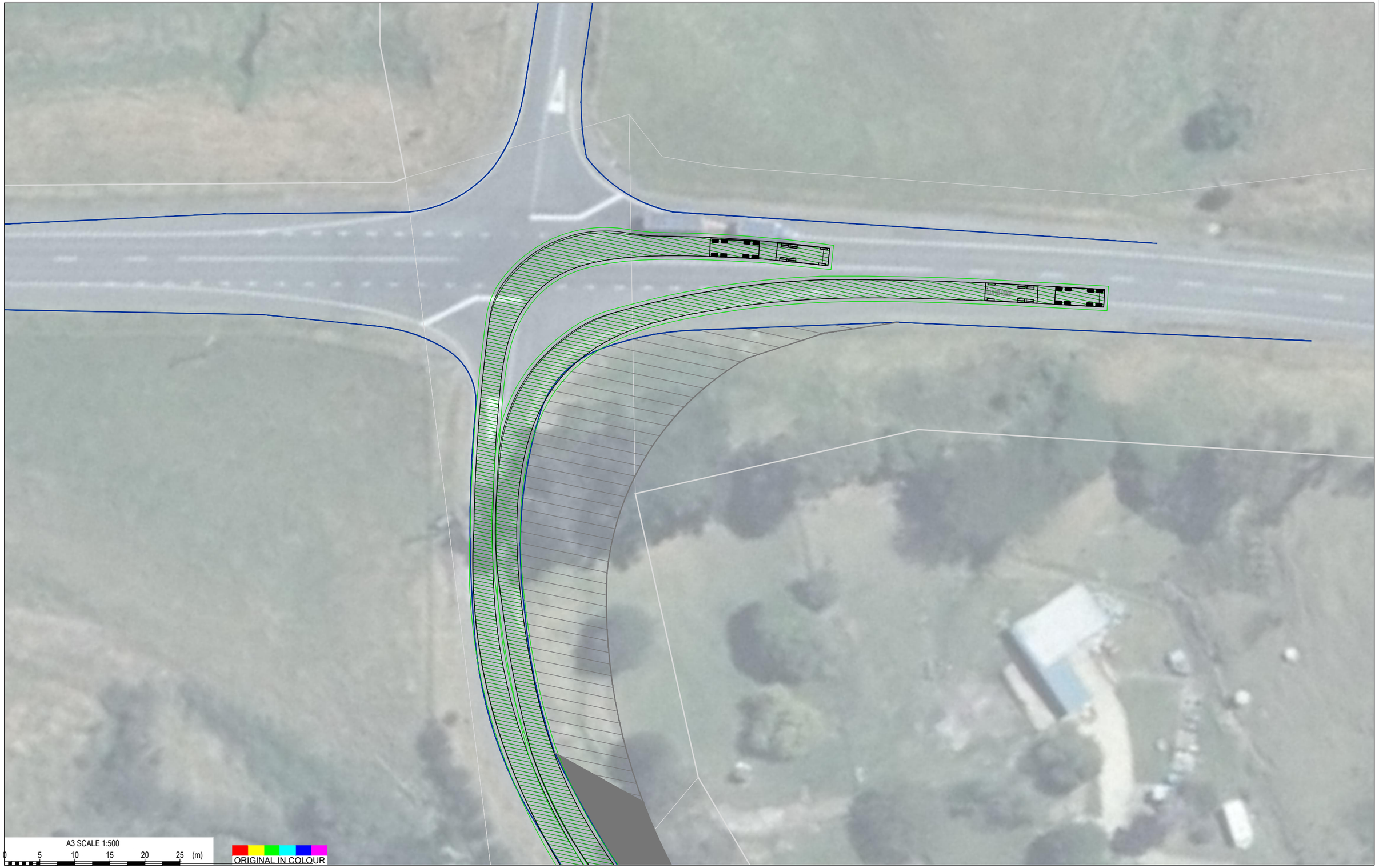
Created On:	08/12/2021
Created By:	HBarakat
Approved By:	
TT Proj Ref:	1016884
TT Map Ref:	TTMAPREF1433463001.902

Tonkin+Taylor
105 Carlton Gore Road, Newmarket, Auckland
www.tonkintaylor.co.nz

FIGURE No.

Appendix B Vehicle Tracking Opaki-Kaiparoro Road

T:\Christchurch\TT Projects\1016884\1016884.1000\WorkingMaterial\Transport\Old Coach Road widening July 2024\1016884.100_Opaki.dwg 2024-Jul-12 12:58:55 pm Plotted By: LIVIA YEN SIANG CHEE



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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD
VEHICLE TRACKING - SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C500 REV 1

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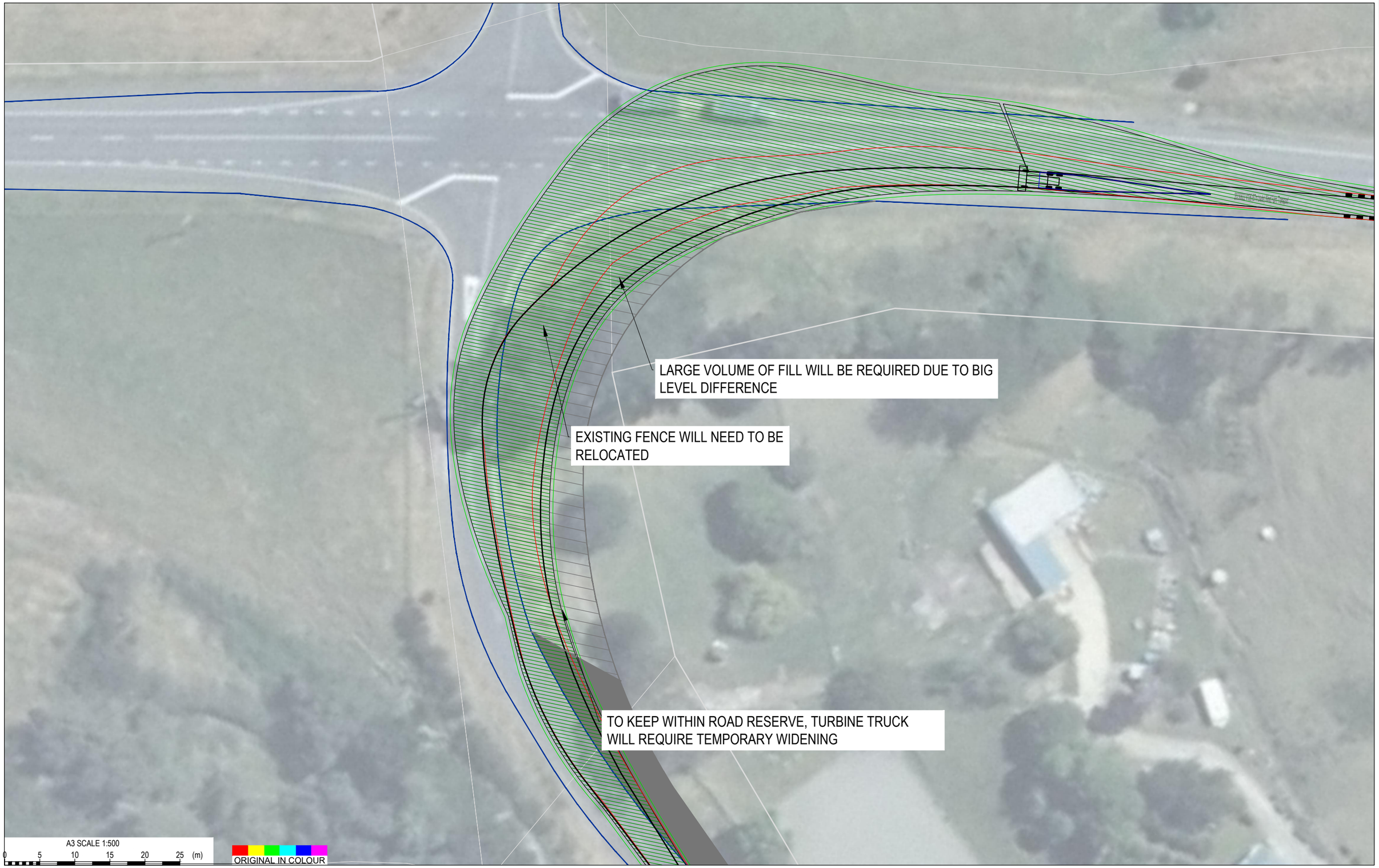

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD
VEHICLE TRACKING - SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-C501 REV 1

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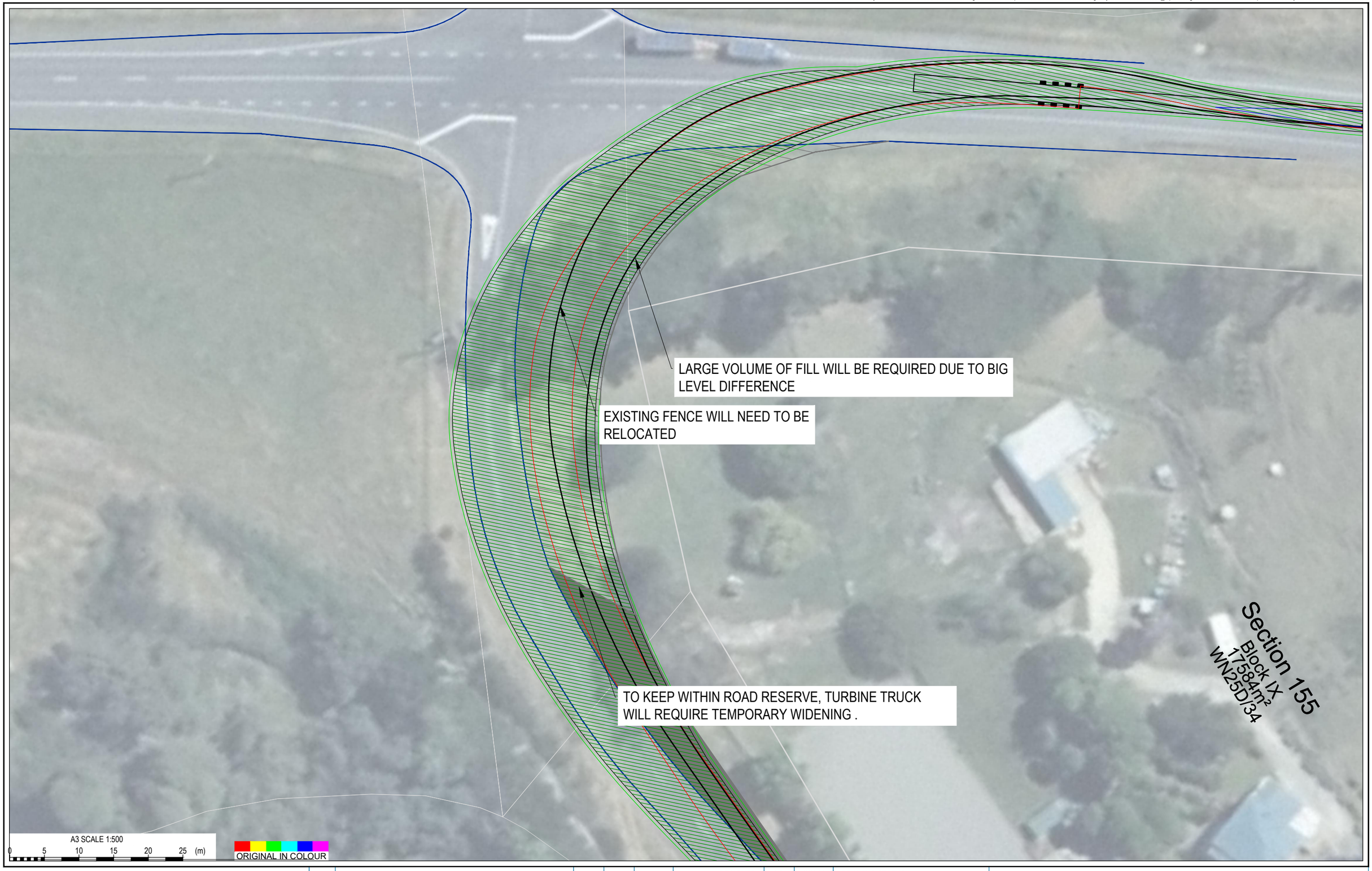

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD
VEHICLE TRACKING - SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-C502 REV 1

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD - BRIDGE
VEHICLE TRACKING - SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C600 REV 1

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD - BRIDGE
VEHICLE TRACKING - SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-C601 REV 1

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PROJECT **MT MUNRO WIND FARM**

TITLE OPAKI ROAD - BRIDGE
VEHICLE TRACKING - SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-C602 REV 1

22 July 2024
Job No: 1016884.0001

Meridian Energy Limited
PO BOX 2128
Christchurch
Christchurch 8140

Attention: Nick Bowmar

Dear Nick

Mount Munro Wind Farm
Review of proposed SH2/Transmission line access

1 Introduction

Tonkin & Taylor Ltd (T+T) have been engaged by Meridian to carry out a desktop transport review of the proposed temporary construction access to the transmission line from an existing property access on State Highway 2 (SH2).

2 Transport conditions at the proposed access

2.1 Location

Meridian proposes to construct a windfarm of 20 wind turbines, 5 km south of Eketahuna in the Lower North Island (refer Figure 2.1 below). To access the western most part of the internal transmission line, Meridian is proposing to utilise an existing property access from SH2, which is also shown in Figure 2.1 below:

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PO Box 2083, Wellington 6140 P +64-4-381 8560 F +64-9-307 0265 E wlg@tonkintaylor.co.nz

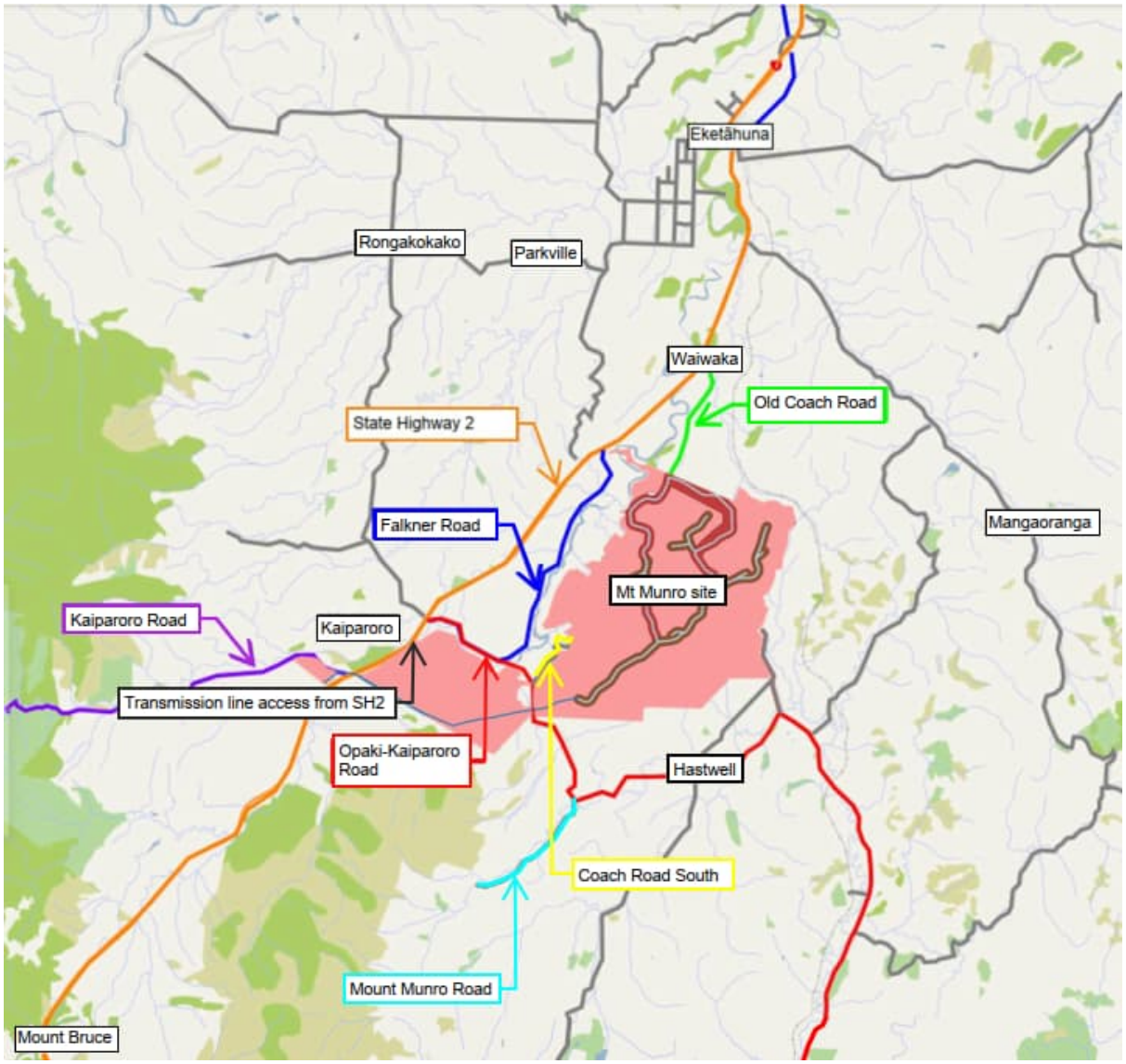

Figure 2.1: Mount Munro windfarm site, with the location of the proposed transmission line access from SH2.

The proposed site access is shown in 2.2 and Figure 2.3 below. It serves as the entrance to the property at #85151 SH2 and is approximately 580 m north of the SH2/Kaiparoro Road intersection.

Figure 2.2: Aerial of the existing property access to #85151 SH 2[1].

Figure 2.3: Street view of the existing property access to #85151 SH2[1] .

[1] Sourced from Google Maps, 17 July 2024

2.2 Existing traffic volumes

As detailed in Table 1 of Mr Shields evidence, traffic count data at SH2 Mount Bruce (which is the closest available count location to the access) indicates an Average Daily Traffic of 3,595 vehicles, with 13.5% of these being heavy vehicles.

2.3 Anticipated construction traffic volumes

Anticipated construction work includes excavation of pole holes, upgrade of tracks, delivery of components, installation of poles, concrete pouring and installation of cables and commissioning. Construction traffic will be a mixture of truck and trailer (largest vehicle anticipated), trucks and light vehicles for the construction workers. Work is anticipated to take four weeks up to the pole installation stage and then there will be a pause in the work, with installation of the cables and commissioning taking approximately two weeks (i.e. six week construction period in total). At this stage it is difficult to quantify the exact construction vehicle movements but, over this six week period, it is anticipated there could be 30 truck and 40 light vehicles over the six week period. For a six day working week, this would equate to approximately four vehicle movements/day over the six week period. It is acknowledged that for certain activities (eg concrete pour) the movements maybe more peaked but would still be anticipated to be below 10 vehicle movements/day. This low number of construction vehicles turning into and out of the access is not anticipated to create any capacity or operational issues on SH2 and is likely to be similar to what would be expected for a private vehicle access use.

2.4 Speed environment

From NZTA MegaMaps[2] the speed limit on SH2 at this location is 100 km/hr, with a mean operating speed of 97 km/h.

2.5 Road safety

Crash records were obtained from the NZTA Crash Analysis System (CAS) database for the full 5-year period 2019 to 2023, plus any crashes in 2024. The inclusion of 2024 data is for indicative purposes only and due to a delay between crashes and the upload of their data, 2024 data is likely incomplete at the time of preparing this report.

No crashes were reported within the study area (50m either side of the SH2/property access) within the five-year period.

3 Access sight distances

The available sight distance plays an important role in a driver determining whether it is safe for vehicles to enter or exit an access. The safe operation of an access is dependent on adequate sight distance in relation to both horizontal and vertical geometry.

The stopping sight distance and safe intersection sight distance at the access has been calculated and measured in accordance with Austroads Guide to Road Design Part 3: Geometric Design (2021) and Part 4A Unsignalised and Signalised Intersections (2017).

Stopping Sight Distance (SSD) is the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to stop before reaching a hazard on the road ahead. SISD is the minimum sight distance which should be provided on the major road at any intersection.

[2]MegaMaps Road to Zero Edition 2, retrieved from MegaMaps (nzta.govt.nz), accessed July 2024

To calculate both SSD and SISD the following values have been used:

- Operating speed = 100 km/h.
- Average gradient f = 0%.
- Reaction time = 2.5s.
- Coefficient of deceleration = 0.29.

The available sight distance for a vehicle approaching from the north to a vehicle setback 5 m from the access has been measured as 322 m, while for a vehicle approaching from the south the available sight distance has been measured as 323 m. These measurements are shown in Appendix A.

Table 3.1 below compares these measured values with the Austroads requirements:

Table 3.1: Sight Distance checks

Approach	Sight Distance	Distance (m)	Available Sight Distance (m) and whether satisfies Austroads guidance (✓ = yes)
North	SSD	205	322✓
	SISD	289	322✓
South	SSD	205	323✓
	SISD	289	323✓

As shown in Table 3.1 above, the site access complies with Austroads sight distance requirements and is therefore considered to be a safe form of access for construction vehicles to/from the transmission line construction site.

3.1 Access vehicle tracking

Vehicle tracking has been completed for vehicle movements into and out of the access. The vehicle used in this assessment was a Truck and Trailer unit, with a combined length of 17 m and width of 2.5 m which will be the largest vehicle which would use this access. The vehicle tracking is shown in Appendix B, which indicates minor widening of the radius of the access within the road reserve will be required to safely accommodate the tracking of a truck and trailer. Should the design vehicle be smaller than what has been indicated, the amount of widening shown in Appendix B could be reduced.

4 Conclusions

This desktop transport assessment assesses the suitability of the proposed SH2 access to the transmission line for construction vehicles.

A review of traffic flows, speed limits and historical crash data does not indicate any capacity, operational or safety issues with use of this access.

Visibility at the access complies with Austroads requirements and is therefore considered to be a safe form of access.

Vehicle tracking indicates that minor widening of the access within the road reserve will be required to provide safe access for a truck and trailer.

Accordingly, on the basis of this transport assessment, it is concluded that construction vehicle access to the transmission line from the existing #85151 property access on SH2 can be undertaken safely and without impacting the level of service for other road users and can be supported from a transport perspective.

5 Applicability

This report has been prepared for the exclusive use of our client Meridian Energy Limited, with respect to the particular brief given to us. We also understand and agree that our client will submit this report as part of the application for resource consent and that Tararua District Council, Masterton District Council, Greater Wellington Regional Council and Greater Wellington Regional Council as the consenting authorities will use this report for the purpose of assessing that application. This report may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report prepared by:

.....

Colin Shields
Senior Principal Transport Planner
and Tess Breitenmoser
Transport & Civil Engineer

Reviewed by:

.....

Jame Dyer
Senior Transport Planner

Authorised for Tonkin & Taylor Ltd by:

.....

Nick Peters
Project Director

22-Jul-24
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Appendix A Site Access Sight Distance

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Sight Distance

Reference	Pass or Fail	SSD Distance	SISD Distance	Friction Factor	Grade	Reaction Time	Design Speed
A1	PASS	209m	300m	0.360	0%	2.500	110
A2	PASS	209m	300m	0.360	0%	2.500	110

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO WIND FARM**

TITLE SITE ACCESS
SIGHT DISTANCE

SCALE (A3) 1:1000 DWG No. 1016884.1000-C402 REV 1

Appendix B Site Access Vehicle Tracking

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PROJECT **MT MUNRO WIND FARM**

TITLE SITE ACCESS
VEHICLE TRACKING - SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-C400 REV 1

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PROJECT **MT MUNRO WIND FARM**

TITLE SITE ACCESS
VEHICLE TRACKING - SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-C401 REV 1