Wellington Registry **ENV-WLG-2024-001**
Te Whanganui-a-Tara Rohe

In the Environment Court
I Mua I Te Kōti Taiao O Aotearoa

Under the Resource Management Act 1991

and in the matter of the direct referral of an application for resource consents by Meridian Energy Limited in respect of the proposed Mt Munro wind farm under section 87G of the Resource Management Act 1991 (**RMA**).

Meridian Energy Limited
Applicant

and

Tararua District Council, Masterton District Council, Manawatū-Whanganui Regional Council and Greater Wellington Regional Council (**Councils**)
Consent Authorities

and

s 274 Parties

Statement of Evidence of Colin Robert Shields on behalf of Meridian Energy Limited

24 May 2024

ANDREW BEATSON
BARRISTER
RICHMOND CHAMBERS
TEL 021 223 9170 EMAIL ANDREW@BEATSON.CO.NZ

SOLICITORS ACTING: E TAFFS AND H TAPPER, MERIDIAN ENERGY LIMITED
287-293 DURHAM STREET NORTH, CHRISTCHURCH, 8013, NEW ZEALAND
TEL 021 676797 EMAIL ELLIE.TAFFS@MERIDIANENERGY.CO.NZ

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INTRODUCTION

1. My full name is Colin Robert Shields.

2. I am a Senior Principal Transport Planner at Tonkin & Taylor Limited (**T+T**) and I have held this position since November 2021. Before this I was employed for three years working on infrastructure and land development projects throughout New Zealand. Prior to coming to New Zealand, I spent 30 years working on transport and infrastructure projects across UK, Europe, Africa, Central Asia and the Middle East.

3. I hold the qualification of Master of Science in Transport Engineering from the University of Newcastle Upon Tyne (UK). I am a Chartered Professional Engineer (CPEng) with Engineering NZ, a Chartered Member of Engineering NZ (CMEngNZ) and an International Professional Engineer (New Zealand section of the register).

4. I have over 35 years' transport planning and engineering experience, including in:

   (a) Managing the appraisal, design and delivery of a wide range of roading and infrastructure projects.

   (b) Providing transport planning inputs to master planning exercises, consenting processes (under the RMA) and the design and delivery of a wide range of energy, residential, commercial and education land development projects.

   (c) Preparing Port to Site assessments and Construction Traffic Management Plans (**CTMP**) within New Zealand for a wide range of energy, landfill and water infrastructure projects.

SCOPE OF EVIDENCE

5. T+T was engaged by Meridian Energy Limited (**Meridian**) to assess the transportation-related effects of the proposed Mount Munro Windfarm (the **Project** or **Mt Munro**), with a particular focus on the construction phase of the project. The effects that I have assessed include access from Port to the Mt Munro site (**Site**), safety on the public roads

surrounding the Site and effects of construction traffic on other road users and adjoining properties. The main focus of my evidence is on construction effects as opposed to operational traffic effects since there are significantly more traffic movements associated with the construction stage than the operational stage (for which I consider the traffic movements and effects are minimal).

6. My evidence describes my assessment of the proposed Project in detail. I will:

   (a) Outline my role in the project;

   (b) Describe the existing road environment;

   (c) Provide an assessment of the traffic effects during construction and once the wind farm is operational;

   (d) Comment on the proposed mitigation and management practices, which will be adopted through a CTMP and conditions of consent in the context of comments received in the Councils section 87F (**s87F**) Report.

   (e) Describe relevant planning requirements and give an overview of how the proposed development complies or otherwise; and

   (f) Address transportation related matters raised in submissions and in the Councils s87F Report.

7. I conclude my evidence with a brief summary of my findings and recommendations.

8. In preparing my evidence, I have relied on the following prepared by T+T:

   (a) Mount Munro Windfarm Port to Site Assessment Report - dated 8 July 2021.

   (b) Traffic and Transportation Effects Assessment Report (**TA**) – dated 17 May 2023.

(c) S92 response and vehicle tracking drawings to transport-related Request for Information **(RFI**) – dated 31 August 2023.

(d) Update to Mount Munro Windfarm Port to Site Assessment Report – dated 7 September 2023.

(e) S92 response to transport-related RFI – dated 8 September 2023.

(f) S92 response to transport-related RFI – dated 16 February 2024.

(g) Site visits, aerial photographs and other online resources/ websites.

9. In preparing this evidence, I have also read the draft statements prepared on behalf of Meridian by:

(a) Nicholas Bowmar;

(b) Chris Jones;

(c) Robert van de Munckhof; and

(d) Miklin Halstead.

EXECUTIVE SUMMARY

Existing Conditions

10. The Project Site has road frontages to Opaki-Kaiparoro Road, Coach Road South, Falkner Road, Old Coach Road and SH2. The proposed main construction access point is located on Old Coach Road which is classified as a Local Road within the Tararua District Plan and is approximately 1.7km in length between SH2 and the Site access.

11. Access to the terminal substation site will be provided off Kaiparoro Road which is a cul de sac and can only be accessed from SH2. The internal substation will be within the main Site. Access from Opaki-

Kaiparoro Road and its northern intersection with SH2 will be required for construction of the transmission line.

12. Old Coach Road operates as a one-way road, with vehicles pulling over onto the berm to pass. It is relatively flat and well graded and generally consists of a 3.5m wide unsealed carriageway, apart from the first 100m, which is sealed to a width of 3m. The area surrounding the Site is rural, classified by pastoral farmlands. We have not observed any pedestrians or cyclists on the surrounding roads on our various site visits and therefore I conclude the number of pedestrians and cyclists on roads surrounding the Site is minimal. 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.

13. Overall, I consider that traffic volumes on roads surrounding the Site are currently relatively low with, on the whole, relatively high proportions of heavy vehicles.

14. Based on an analysis of existing crash data, I conclude that no specific crash trend has been identified in the study area and that there is not a safety issue on Old Coach Road or at its intersection with SH2. I do not consider that the additional construction and operation/ maintenance traffic will change this situation. On the adjacent SH2, I do not consider that the additional construction and operation/ maintenance traffic will compound any existing safety issues.

Traffic Generation Assessment

15. The period of greatest activity is between months 17 and 23 of the construction programme, when approximately 622 vehicle movements per day are anticipated. I have assessed the impact of the additional construction traffic on the level of service on SH2 and Old Coach Road. My assessment indicates that both SH2 and Old Coach Road will be operating well within a Level of Service A (which is the best level of service) with the additional construction traffic. I have also carried out a capacity assessment of the SH2/Old Coach Road intersection which indicates that the intersection will work with within capacity with a Level

of Service of A on all approaches except the SH2 right turn into Old Coach Road which has a Level of Service of B.

16. Post construction, the operational traffic associated with the Project will be no more than 48 vehicle movements per day and, as such, I consider that the impact of operational traffic is minimal.

Assessment of Over Dimension and Overweight Vehicles

17. A number of the windfarm components will require transport as over dimension and overweight vehicles from Port to the Site. Detailed assessments of the route taken by these vehicles has been undertaken for the two preferred Port options and demonstrates that they can be safely delivered to the Site. Temporary works to accommodate these vehicles has been identified. I have outlined the process for the operational approvals for these loads and all of these loads will be transported by experienced haulage firms using specialist vehicles.

Site Access

18. As detailed in the TA and the s92 RFI responses, to enable construction traffic to safely use Old Coach Road, it is proposed that localised widening of Old Coach Road is undertaken to allow safe movements of construction vehicles, including the manoeuvres of the over dimension turbine deliveries. Following the Council's request in the s87F report, it is also proposed that Old Coach Road is sealed between SH2 and the Site access, which I consider although not specifically required for road safety reasons, would provide benefits to local residents in terms of reduced noise and dust from construction traffic. Coach Road South was considered as an alternative option for accesses to the Site but ruled out since the transport of oversize or heavy vehicles along this road is unlikely to be viable due to its existing steep gradient.

19. The layout of the Site access allows for vehicles to drive straight into the Site, with no turning required. This ensures a high standard of access that makes effective provision for general construction traffic. A layby area will be provided directly within the secure area which

provides temporary parking within the Site, such that no temporary queuing or parking is necessary on Old Coach Road.

20. Access to the terminal substation site will be provided off Kaiparoro Road from SH2. Access to the transmission line will be provided off Opaki-Kaiparoro Road and its northern intersection with SH2 (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) and hence the impact on the local road network is minimised. Construction traffic movements using these two accesses is anticipated to be very low and the accesses will meet the necessary design standards.

21. I therefore consider that the accesses to the Project for construction and operational/maintenance vehicles complies with necessary design standards and will be safe forms of access.

Construction Traffic Management Plan (CTMP)

22. It is proposed that a draft CTMP will be developed in the lead up to the Hearing and that this will be discussed with the Councils and NZTA and updated where required. The CTMP will be a living document and will evolve through the design of the Project and will be finalised as part of detailed design post consent.

Compliance with Tararua District Plan provisions

23. I am of the opinion that the long-term operational use of the Site is consistent with the District Plan rules and assessment matters. I consider that during the construction phase, specific mitigation measures will be implemented to control the transport related effects of construction traffic primarily associated with road safety. The process for implementation of these measures will be through the implementation of the CTMP and through the overweight and over dimension permit processes.

NZTA Agreement

24. NZTA provided their written approval of the resource consent application indicating that overall, they are "*satisfied with the findings of the Transportation Assessment*". The NZTA position overall aligns with my professional opinion in support of the Resource Consent application.

S87F Report

25. The s87F Report concludes "*that the transport effects of the proposal are able to be managed*" and I conclude that the Councils do not raise any objection to the Project in terms of transport matters. This position aligns with my professional opinion in support of the Resource Consent application. However, a number of queries and comments were raised in the s87F report and my response to these includes:

(a) **Widening of Old Coach Road to provide two lanes** – I have demonstrated that localised widening of Old Coach Road, along with proposed CTMP measures will provide for safe movements of construction traffic with the existing 30 vehicles day associated with the six residential properties. In my opinion this will minimise the likelihood of any conflicts occurring between construction vehicles and existing vehicles on Old Coach Road. As such, I do not consider it necessary to widen the whole length of Old Coach Road to two lanes. Notwithstanding this, in order to understand the implications of the Councils suggestion, I am currently undertaking further work on the viability of widening Old Coach Road to two lanes and identification of any resulting additional impacts.

(b) **Sealing of Old Coach Road** – agreed.

(c) **Reinstatement of a metal surface on Old Coach Road once the construction phase is complete** – this unusual request is not agreed for a number of design and practicality reasons.

(d) **Provision of a lime footpath on Old Coach Road** – not agreed. The proposed localised widening and sealing, along with

measures in the CTMP, will make conditions for any pedestrians safer. Aside from one resident who we understand walks along this road, there is no other evidence of pedestrians using Old Coach Road.

(e) **CTMP** – agreed and a draft CTMP will be developed in the lead up to the Hearing and this will be discussed with the Councils and NZTA.

(f) **Pavement surveys** – I agree but there are a number of issues that need to be resolved including agreement on the type of surveys undertaken and the geographical extent of the surveys.

(g) **Request for a trigger for when a right turn bay is required at SH2/Old Coach Road intersection** – agreed and I have suggested a trigger being when the number of right turn construction vehicles from SH2 to Old Coach Road exceeds 30 vehicles per hour.

Proposed Council Conditions

26. I have provided comments on the Councils' proposed Conditions which address the issues I have raised above in relation to the s 87F Report.

Submitters

27. Multiple submissions were received relating to transport matters and I have addressed each of these matters in my evidence. I consider there are no outstanding transport matters.

Conclusion

28. Overall, I consider that any transport effects arising from construction and operation of the Project will be acceptable and can be appropriately managed and mitigated through the implementation of the proposed conditions such that the safe, effective and efficient operation of the transport network can be maintained.

BACKGROUND

29. T+T has been involved with the Project since February 2021. Our initial investigations were focused on evaluating route options to consider for the transportation of the turbine components from port to the Site and options for accessing the Site from the available frontage roads. This was reported in the initial Port to Site Assessment report.

30. T+T then prepared the TA that was provided as Appendix E of the AEE. This report identifies and provides an evaluation of the specific implications of the various transport-related activities associated with the Project. It describes the existing transportation network, traffic volumes and patterns and road safety records. Because the wind farm will generate a minimal level of traffic once it is operational, the analysis focuses on the construction phase of the project. The report describes the assessed traffic generation patterns during construction, details how turbine components will be transported to the Site and recommends that measures to control construction traffic are specified and implemented through a Construction Traffic Management Plan (**CTMP**), as has been adopted with numerous other wind farms within New Zealand.

31. I note that a CTMP was required under Proffered Condition 23 to the District Council resource consent, as per the lodged Assessment of Environmental Effects (**Proffered Conditions - AEE**). A slightly differently worded condition is also included in the Councils' Condition CTM6 in Appendix 23 to the s87F report. Meridian has proposed an updated set of conditions based on the Councils' set, and this is provided as an appendix to the evidence of Mr Thomas Anderson (**Updated Conditions**).

32. The TA provides a summary of requirements for the CTMP. It is proposed that a draft CTMP will be developed in the lead up to the Hearing and that this will be discussed with the Councils and NZTA and updated where required. The CTMP will be a living document and will evolve through the design of the Project and will be finalised as part of detailed design post consent.

33. The transportation of turbine components on public roads is also subject to a separate approvals process from the relevant Road Controlling Authorities (**RCA**) including preparation of Site-Specific Traffic Management Plans (**SSTMP**) and Corridor Access Request (**CAR**) approvals.

34. Following submission of the Resource Consent application, T+T has responded to three transport related s92 RFI's.

35. I have reviewed the Port to Site Assessment, the TA and the three s92 RFI responses prepared by my T+T colleagues and I agree with and rely upon the Port Site Assessment, the TA and the three s92 RFI responses in the preparation of my evidence.

METHODOLOGY AND LIMITATIONS

36. In preparing my evidence I have also:

    (a) Visited the Site and surrounding network, with the most recent visit being in March 2024,

    (b) Evaluated traffic data sourced from the Mobile Road website and the New Zealand Transport Agency (**NZTA**)

    (c) Evaluated road safety records using the NZTA Crash Analysis System (**CAS**); and

    (d) Evaluated the received submissions where transportation issues were raised and the Council Officer's s87F Report.

CODE OF CONDUCT

37. I confirm that I have read the 'Code of Conduct for Expert Witnesses' contained in the Environment Court Practice Note 2023. I agree to comply with this Code of Conduct. My qualifications as an expert are set out above. I confirm that the issues addressed in this statement of evidence are within my area of expertise except where I state I am relying on what I have been told by another person. I have not omitted

to consider material facts known to me that might alter or detract from the opinions I express.

38. For the avoidance of doubt, I note that the scope of my evidence relates to the effects of vehicles on the external roading network from likely journey origins to the Site boundary. This is standard practice for a project like this. On site traffic movements do not affect the public or other road users and good management of on-site activities is in the interests of the contractors and other on-site construction personnel as well as the project owner.

SUMMARY OF EVIDENCE

39. Meridian proposes to develop, build and operate the Mt 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 1 below:

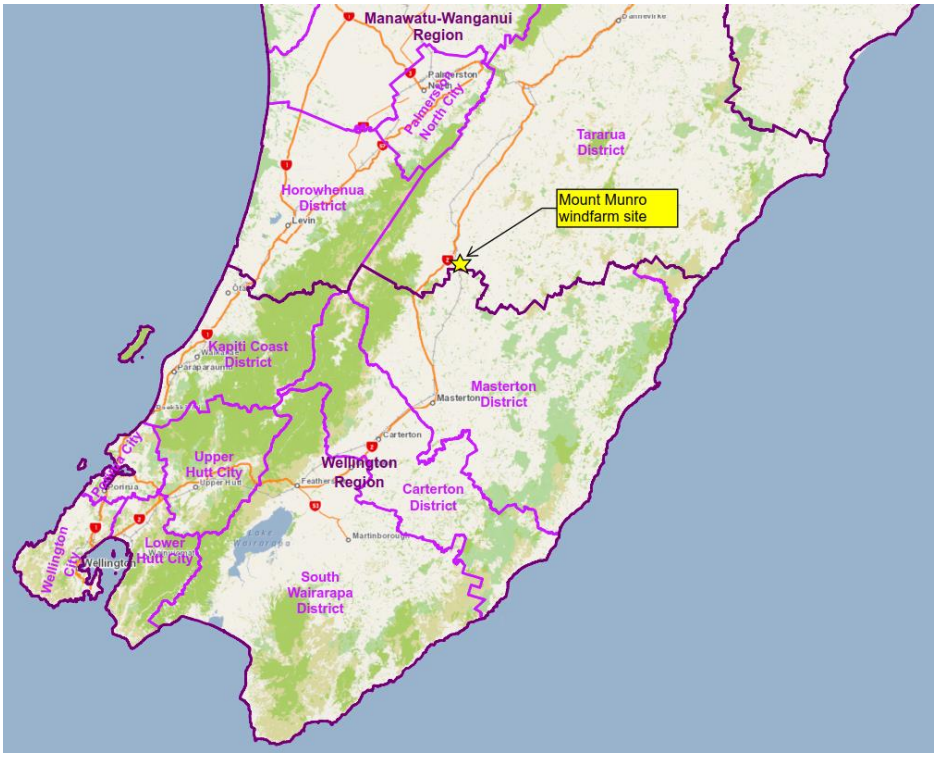

Figure 1: Project location

40. I have considered the transport effects associated with the construction of the Project on the surrounding roading network, including movements of the turbine components, construction materials and staff

and also the likely ongoing operation/maintenance traffic. Subject to acceptance and implementation of several recommendations I detail in my evidence, I conclude that the proposal can be safely integrated into the surrounding transport network. On this basis I fully support this proposal from a transport perspective.

EXISTING TRANSPORT NETWORKS AND INFRASTRUCTURE

Site Location

41. As shown in Figure 1 above, the Site is located across two district and two regional council borders. The jurisdiction of the Site is Horizons Manawatu-Wanganui and Greater Wellington Regional Councils, and Tararua and Masterton District Councils. The Site is located to the east of State Highway 2 (**SH2**) and is shown highlighted in pink in the site plan in Figure 2 below.

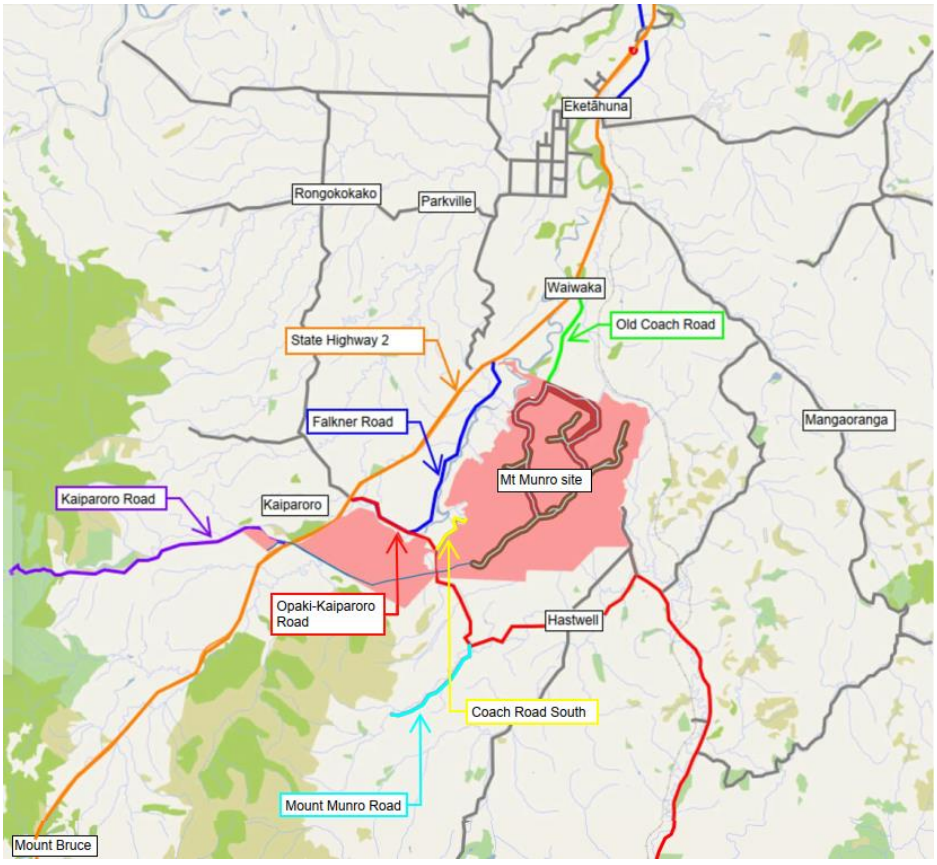

Figure 2: Mt Munro Site location

42. The Site has road frontages to Opaki-Kaiparoro Road, Coach Road South, Falkner Road, Old Coach Road and SH2. A single access point to the main construction site is proposed and will be retained for use during the operational stage.

43. The proposed main construction access point is located on Old Coach Road. Old Coach Road is classified as a Local Road within the Tararua District Plan and is approximately 1.7km in length between SH2 and the Site access.

44. Access to the terminal substation site will be provided off Kaiparoro Road which is a cul de sac and can only be accessed from SH2. The internal substation will be within the main Site.

45. Access to the transmission line will be provided off Opaki-Kaiparoro Road and its northern intersection with SH2 (noting heavy and light construction traffic is not permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road) and hence the impact on the local road network is minimised. This is specified in both Proffered Condition 27 and included by the Councils as Condition CTM1 b) in Appendix 23 to the s87F report.

Roading Infrastructure

46. SH2 is approximately 2km to the west of, and generally runs parallel to, the Site. SH2 is a primary national route that stretches from Auckland to Wellington and accommodates long distance travel as well as providing strategic linkages between many townships within eastern parts of the North Island. Development in townships along SH2 is generally centred around the highway, such that it also has a key role in providing local traffic movement within these settlements. Because of the strategic nature of the highway and linkage to key townships surrounding the Site, traffic associated with the Project is expected to mostly travel on SH2 and the local connection through Old Coach Road.

47. The relevant stretch of SH2 is classified as a Primary Arterial within the Tararua District Plan. The carriageway of SH2 through rural sections in the district has been estimated to typically consist of 3.5m wide traffic

lanes and 1.0m wide sealed shoulders, which overall provides a 9.0m wide sealed carriageway.

48. Old Coach Road is classified as a Local Road within the Tararua District Plan. Old Coach Road is generally a narrow, low-standard road and operates as a one-way road, with vehicles pulling over onto the berm to pass. Old Coach Road is relatively flat and well graded and generally consists of a 3.5m wide unsealed carriageway, apart from the first 100m, which is sealed to a width of 3m.

49. The SH2 / Old Coach Road intersection is located on a relatively straight section of SH2 which provides design standard compliant intersection sightlines. The SH2 / Old Coach Road intersection is a basic right-turn treatment (i.e. there is no right turn bay) and on Old Coach Road, there is a single lane in each direction, with a wide shoulder on the northbound side.

50. The area surrounding the Site is rural, classified by pastoral farmlands. We have not observed any pedestrians or cyclists on the surrounding roads on our various site visits and therefore I conclude the number of pedestrians and cyclists on roads surrounding the Site is minimal. 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. Based on the s92 RFI, NZTA indicated that during the peak cycle months of February and March there "*could be up to a few dozen cyclists each day"* using the route. In paragraph 17 (a) of Appendix 4 of the s87F report the Councils also refer to "*occasional cyclist movements".*

51. There are no scheduled buses on the roads surrounding the Site (except for a once a day, three days/week, bus service on SH2). There is one school bus service surrounding the Site which travels on SH2 and Falkner Road. There are no school bus services using the SH2/Old Coach Road intersection.

Existing Traffic Volumes

52. The Road Controlling Authority (**RCA**) of Old Coach Road is Tararua District Council, with NZTA being the RCA for SH2. Traffic volumes on the surrounding road network, were reported in the TA. I have updated the information reported in the TA, based on a search of the relevant traffic count databases carried out in February 2024 and the traffic flows are summarised in Table 1 below.

Table 1:Average daily traffic volumes surrounding the Project Site

Road	Average Daily Traffic (ADT)	% Heavy Vehicles
Old Coach Road	30	6%
Falkner Road	131	16%
Opaki-Kaiparoro Road	145	22%
Coach Road South	14	9%
Kaiparoro Road	12	13%
State Highway 2 (at Mount Bruce)	3,595	13.5%
State Highway 2 (at Eketāhuna)	3,477	13%

53. The traffic volumes on Tararua District Council local roads have been sourced from MobileRoads[1]. The traffic volumes on SH2 have been sourced from the NZTA Traffic Monitoring website[2].

54. Overall, I consider that traffic volumes on roads surrounding the Site are currently relatively low with, on the whole, relatively high proportions of heavy vehicles.

The Proposed Development

55. Details of the Project are in the AEE and the evidence of Mr Bowmar, and for the avoidance of repetition, I have not included them in my evidence. I note however that a 32-month construction period has been provided for. Due to the location of the Site, all materials will need to be delivered by road and minor works will be required on the roading network between the Port and the Site to accommodate over-

[1] Mobileroad.org

[2] Maphub.nzta.govt.nz

weight and over-dimension loads. I discuss these issues in more detail later in my evidence.

EXPECTED TRAFFIC GENERATION

Operational/Maintenance Phase

56. The TA identified that between four to eight full-time employees will be required for the operation and maintenance of the Project. I understand that it is common at other operational wind farms for staff to carpool and therefore it is assumed that this will be the equivalent of eight vehicle movements per day on the surrounding roading network. Even if the staff did not carpool, the number of vehicle movements/day would only be marginally greater at 16.

57. I understand that each turbine will undergo routine servicing every quarter in the first year of operation and twice yearly thereafter. It is difficult to be prescriptive as to the likely traffic generation of this activity, but due to the number of turbines, I consider it is likely that servicing will be carried out on a rolling programme and 20 vehicles a day (or 40 vehicle movements/day) is assumed as the trip generation in the TA.

58. In total, the operational traffic associated with the Project will be no more than 48 vehicle movements per day (and should car-pooling not take place, then would only be marginally greater at 56). In practice, I consider that the vehicle movements are likely to be less than this. I consider that the impacts of maintenance traffic are **minimal**.

Construction Phase

59. Traffic will be generated throughout the construction of the Project, from delivery of the Site offices at the outset, to final demobilisation. Most of the traffic generation associated with the Project will occur during construction and, as discussed above, only a minimal amount will be generated once construction work is complete.

60. An indicative 32-month work programme has been identified for construction of the Project and this was used in developing a profile of the anticipated traffic generation.

61. Not all of the construction tasks will occur simultaneously. Some tasks require others to be fully complete before they commence, and other tasks overlap. This was taken into account when determining the average daily trip generation for each month of construction.

62. Activities that will generate traffic external to the Site can be broadly grouped into the following categories:

(a) Public road upgrade.

(b) Site establishment and bulk earthworks.

(c) Civils.

(d) Turbine installation.

(e) Electrical balance of plant including High Voltage cable deliveries and transmission related deliveries and Transformer.

63. The TA provides a detailed analysis of the traffic generation and timing of these activities. Figure 3 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):

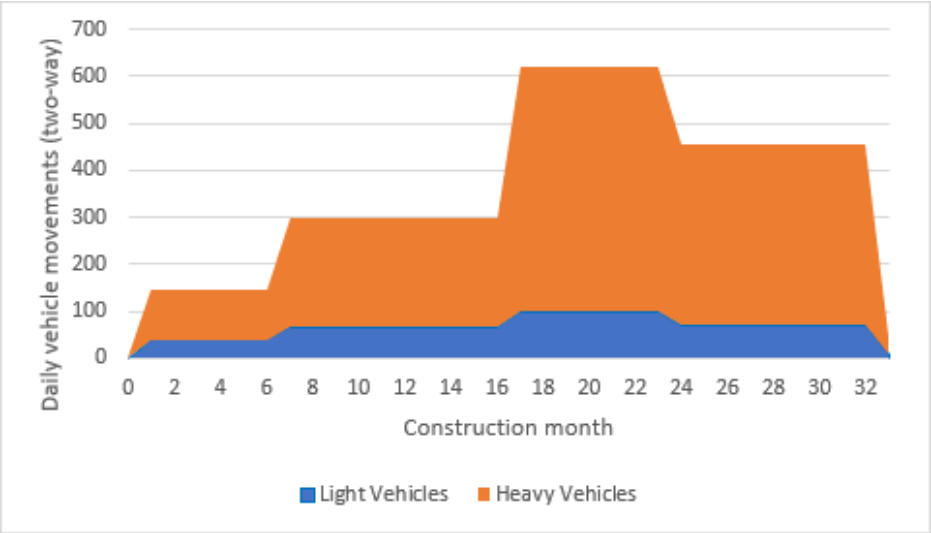

Figure 3: Profile of construction traffic flows generated by the Project.

64. 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.

65. Based on the proximity of the Site to surrounding urban areas and the potential sources of construction materials, I consider that an even split of vehicles from the north and south is most likely.

66. Based on the construction traffic volumes presented in Table 4.1 of the TA, and the existing layout, I have carried out a capacity assessment of the SH2/Old Coach Road intersection using the Sidra capacity assessment software (which is NZ industry software used to assess the capacity of intersections). Based on a 50/50 split of construction traffic (north and south of Old Coach Road), Sidra indicates that the intersection will work with within capacity with a Level of Service of A on all approaches except the SH2 right turn into Old Coach Road which has a Level of Service of B, with a short (6.1m) queue length on SH2 northbound.

67. Figure 2.26 of Austroads Part 6[3], indicates that with the existing peak hour flow on SH2 of approximately 330 vehicles, a right turning bay (**RTB**) is usually required when the right turn flow exceeds approximately 30 vehicles/hour, which the predicted peak construction traffic (on a 50/50 basis) does exceed. This potential requirement for a RTB is confirmed in section 4.4.2 of the TA. The exact level of construction traffic using the SH2/Old Coach Road intersection is uncertain at this stage and my assessments are based on a worst-case assessment. I consider that the level of trucks turning right in the peak hour is likely to be lower and hence a RTB may not actually be required.

TURBINE TRANSPORTATION

Turbine Dimensions and Weight

68. The above section identifies the maximum number of construction vehicles per day. This section looks at specific issues associated with the transport of the over dimension and overweight turbine components.

69. I have adopted a rotor diameter of 136m to assess the manoeuvring requirements of turbine component transporters, which I understand to be the physically maximum possible turbine dimension being used for the consent assessment. The proposal is based on 20 turbines and therefore the transportation of the over-dimension / over-weight components will include movements for:

(a) 60 blades (i.e. 3 blades per turbine).

(b) 20 nacelles.

(c) 60 tower components; and

[3] Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (austroads.com.au)

(d) 20 hubs.

70. Images of indicative transporter configurations were included as Figures 2, 3 and 4 of the s92 response to transport related RFI, dated 31 August 2023 and are replicated below:

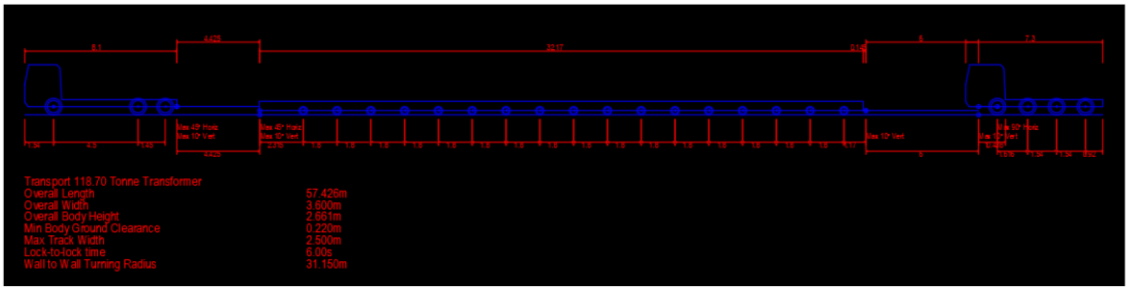

Figure 2 Transformer trailer vehicle template

Figure 3 Construction Truck and Trailer photo

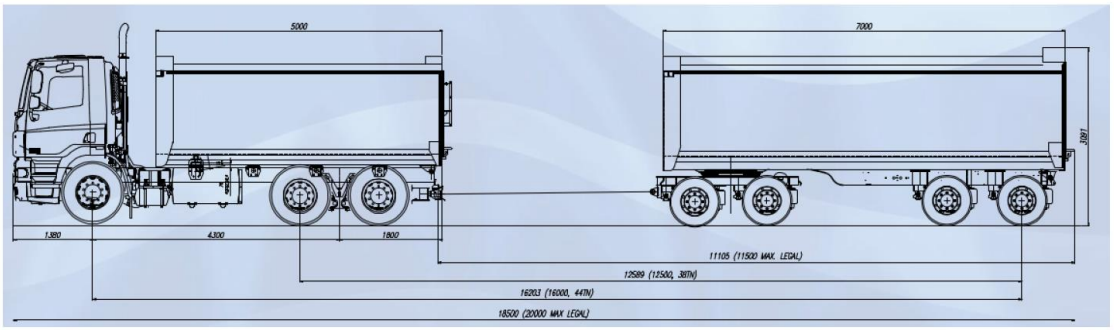

Figure 4 Construction Truck and Trailer, source https://www.transfleet.co.nz

71. Each blade is typically moulded from carbon fibre or fibreglass as a single piece and each blade will be up to 67m in length. For transportation, blades are commonly supported individually in frames with one support frame bolted to the root end of the blade, and the other supporting the blade around 10m to 20m from the blade tip. The

total height of the blade when housed in the transport frame is approximately 4m.

72. The nacelles contain all the wind turbine machinery and are generally assembled at the factory. The weight of each nacelle varies according to its potential power generation and, in this case, the total weight of the nacelle and its associated transport frame and transition piece will be in the order of 98 tonnes. The nacelle will be approximately 12.8m long by 4.2m wide by 3.4m high.

73. The towers will be transported to the Site in sections and assembled on site. The tower sections are generally tapered, having a lesser diameter at the top compared to the bottom, which results in the dimensions of the individual sections being different. Based on a nominal circa 80m tower transported in three sections, the length of the base and mid sections are likely to be 15.7m and 26.9m long respectively, with each section weighing in the order of 60 tonnes. The 36m high top section would taper from 4.2m at its base to 2.4m at the top. If the tower sections are transported on top of the trailer the total height of the transporter envelope from the ground to the highest point will be approximately 4.8m.

74. The dimensions of the hub are 5.5m long, 4.0m high and 3.8m wide. The weight, including the transport frame, is likely to be around 34 tonnes.

75. Each turbine also requires various cables, bolts, tools etc for assembly. These are transported in containers by standard trucks, and I have therefore disregarded them for the purposes of considering over-dimension / over-weight loads. Each turbine will also be connected to a transformer situated at the base of the tower.

76. The substation will house a large transformer and I understand that the weight of this transformer is about 120t.

Turbine Route Options

77. The turbine components will be manufactured offshore and transported to New Zealand by ship. As reported in the Port to Site Assessment, as

part of initial investigations, the ports at Auckland, Tauranga, Napier, Taranaki and CentrePort Wellington were considered. Initial assessments showed that the two most feasible port options for transport to the Site were Napier and CentrePort Wellington. As such, investigations focused on transporting all the components from either of these two ports.

78. The 200km route from Napier Port to the Site is predominantly along SH2, through Napier, Hastings, Waipukurau, Woodville and Eketāhuna. Local road diversions would be required at Norsewood, Ongaonga and Eketāhuna. On the local road diversion along Ongaonga Road, there is a 22m long bridge on Ongaonga Road, which could require strengthening.

79. The 240km route from CentrePort Wellington is along SH1 and SH2. The proposed route is through Wellington, Tawa, Transmission Gully, Paraparaumu, Levin, Foxton, Sanson, Palmerston North, Woodville and Eketāhuna. The feasibility of this route is dependent on the completion of Te Ahu a Turanga: Manawatū Tararua Highway Project, which I understand is due to open mid-2025.

Turbine Route Assessment

80. The Port to Site Assessment provides a full analysis of the transportation of the turbines. The assessment identified various roading improvements that would be required for the turbine transportation to occur, including:

(a) Temporary removal and replacement of street furniture including:

(i) Roadside signage, streetlights and overhead power cables.

(ii) Overhead signage (mounted on roadside poles).

(iii) Overhead traffic signals and gantries.

(iv) Traffic signal poles.

(v) Railway level-crossing signs and infrastructure.

(vi) Fencing.

(vii) Power poles.

(b) Vegetation trimming.

(c) Bank excavation.

(d) Road modification/ widening/including at intersections and amendments to drainage ditches/earthworks.

(e) Local road bridge improvements.

81. As reported in the Port to Site Assessments, overweight feasibility studies were completed by NZTA for the proposed routes to assess the feasibility of transporting the proposed vehicle loadings over the structures on the state highway. These studies indicated that structures along the routes from both Napier Port and CentrePort Wellington are capable of carrying the necessary vehicle loading. However, there are potential restrictions on the speed and position of vehicles, in that a number of structures will require heavier loads to be transported centrally across the structure (as opposed to being within the traffic lane) and at a crawl speed.

82. Such restrictions will temporarily affect other traffic on the structures and therefore I expect that this aspect will govern times for the transport of these components. I estimate delays at other bridges for transportation of the nacelle are likely to range from nil (if the transporter operates within its own lane and at normal travel speeds) to eight minutes, with an average delay of four minutes per bridge.

83. Structures along the local road diversion routes are operated by various Council's, not NZTA. The feasibility of transporting the proposed loads over these structures has not been assessed. Transport of overweight loads over these structures will be subject to Council approval.

84. Aside from crossing bridge structures, I understand that there are no operational requirements for any of these transporters to operate at very low speeds. Typically, vehicles will travel more slowly where there are adverse road alignments (horizontal or vertical), where the load has

to turn at intersections, or where the road conditions require lower speeds (such as in periods of inclement weather). The transporters carrying nacelles are typically the slowest of the vehicle types but can be operated at speeds of up to 60km/h under free-flow conditions (and where speed limits permit). Blades can be transported at speeds of up to 90km/h under free-flow conditions (and where speed limits permit).

85. I understand that it is proposed that components are transported from the port to a staging area and an overnight layby (noting a suitable location for the layby is yet to be determined). The components will then be transported from the layby to the Site by a separate transport team during the day. This approach creates flexibility in the timetabling of turbine transport and delivery and creates a number of benefits, in particular the ability to avoid nighttime transport through Eketāhuna and along Old Coach Road, whilst readily complying with any potential peak period time restrictions and daytime restrictions on temporary bridge closures/one lane restrictions.

Operational Approvals

86. Operational approvals for the haulage of the over-weight and over-dimension loads will be required and are administered by NZTA. 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:

(a) Arrangements for ‘pilots’ for the vehicle and signage to warn other drivers.

(b) Specification of the load and the route to be followed.

(c) The extent and duration of any necessary road closures.

(d) Imposition of maximum permissible travel speeds.

(e) 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.

(f) Limitations on the hours of travel and regular stops to clear other traffic and minimise delays.

(g) Contingency plans for vehicle breakdown and emergencies.

(h) Arrangements for supervision to ensure compliance, and potentially pre/post inspections of the routes for damage; and

(i) Requirements associated with level crossings near Wi Duncan Road in Dannevirke and Tay Street in Woodville.

87. I expect 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 other parties, including KiwiRail. All of the over-weight and over-dimension loads will be transported by experienced haulage firms using specialist vehicles.

ASSESSMENT AND MITIGATION OF TRAFFIC EFFECTS

Operations and Maintenance Traffic

88. As detailed in paragraph 56 above, I have assessed that up to 48 vehicle movements per day on the surrounding roading network may be generate by staff operating and maintaining the turbines. I expect this to be the maximum figure since use of carpooling (for example through the use of company vehicles) will reduce the number of vehicles used. As detailed in paragraph 56 above, should car-pooling not take place then the total number of vehicle movements/day could be marginally greater at 56.

89. In my view, there is considerable capacity available on the district and state road networks to accommodate this very low volume of traffic. These vehicles will enter and exit the Site via the construction access point on Old Coach Road via SH2. The design of the access point is governed by the higher traffic demands during construction, and hence can safely accommodate the operational and maintenance traffic. I therefore consider that the effects of operational and maintenance traffic will be **minimal**.

Roading Capacity

90. Based on my observations upon visiting the Site, there are currently no capacity issues on the road network surrounding the Site. While there are some constraints on the capacity of the northern approaches to Masterton during morning and evening peak hours that are associated with commuter traffic, traffic associated with the Project will largely be travelling in the opposite direction to the commuter flow and will therefore have minimal capacity-related effects on the road network.

91. The Austroads Guide to Traffic Management Part 3 (Traffic Studies and Analysis)[4] sets out equations by which the level of service of a road can be calculated. I have applied these to the roads surrounding the Site, which indicates that both SH2 and Old Coach Road presently provide a Level of Service (**LoS**) A in the morning and evening peak period times. By way of reference, LoS A is the best level of service (on a scale ranging from A to F). Figure 5.4 and Table 5.5 of Austroads Part 3 indicate the maximum service traffic flow rates to achieve a LoS A range between 290 and 660 cars/per hour/per lane for free flow speeds ranging from 70 to 100 km/h. This corresponds to between 580 and 1320 cars/hour across two lanes and would give a maximum theoretical capacity on the road network of between 5,800 to 13,200 vehicles/day to operate with a LoS A (assuming peak hour equates to 10% of the daily flow). As detailed in Table 1 above, existing flows on SH2 are in the order of 3,500 and hence SH2 is operating well within a LoS A, and this will still be the case with the additional construction traffic. Likewise existing traffic flows on Old Coach Road are 30 vehicles/day and hence the road is operating well within a LoS A, and this will still be the case with the additional construction traffic.

92. Both SH2 and Old Coach Road are therefore operating well within their maximum capacity and in my view, there is clearly ample capacity during the peak periods to accommodate construction traffic. Given the available capacity on these roads, any traffic growth arising from other sources will have a **minimal** effect on the ability of the network to accommodate the expected construction traffic volumes.

[4] AGTM03-20 | Austroads

Road Safety

Overview

93. The TA provided a review of reported crashes along the section of Old Coach Road between the main Site access and the SH2 intersection (inclusive) using the NZTA Crash Analysis System (**CAS**) for the ten-year period from January 2012 to December 2021. I have updated this review for the most current 10-year period between 2014 and 2023 (as well as any available data for 2024). My search covered all reported crashes, both injury and non-injury. There were no recorded crashes on Old Coach Road, or at the Old Coach Road/ SH2 intersection.

94. On the 6km stretch of SH2 spanning the length of the project Site, between Kaiparoro Road and Old Coach Road, there have been 23 reported crashes over the 10-year period. Of these crashes, there was one fatality, nine injury crashes (five serious, four minor) and thirteen non-injury crashes. The fatal crash occurred in 2017 at the Anzac Bridge, approximately 300m south of the SH2/Opaki-Kaiparoro Road intersection where a vehicle travelling north lost control and collided head on with a vehicle travelling south and a passenger in the northbound vehicle died at the scene.

95. 57% of these crashes were single vehicle crashes. It is notable that 74% of reported crashes were loss of control crashes, which is a common crash type on rural roads (both on district roads and state highways) and is therefore not unexpected in this area.

96. Three crashes involved trucks and all three were non-injury crashes as summarised below:

(a) One of the crashes occurred in 2013, 300m northeast of Opaki-Kaiparoro Road on SH2. This crash occurred when an empty truck and trailer was blown over by strong wind.

(b) Another crash occurred in 2016, 200m northeast of Falkner Road on SH2. This crash occurred due to a northbound car that veered off the road to avoid a head-to-tail crash with the front vehicle

which stopped to avoid a southbound truck that crossed the centreline to overtake a cyclist.

(c) The third crash occurred in 2022, 250m southwest of Kaiparoro Road on SH2 due to a northbound timber truck that drifted left at a moderate sweeping right-hand bend.

97. Based on the above and my own site observations, I conclude that no specific crash trend has been identified in the study area and that there is not a safety issue on Old Coach Road or at its intersection with SH2. I do not consider that the additional construction and operation/ maintenance traffic will change this situation and, as detailed in paragraph 67 above, a trigger has been identified for when improvements to the SH2/Old Coach Road intersection may be required. On the adjacent SH2, I do not consider that the additional construction and operation/maintenance traffic will compound any existing safety issues, which are predominantly loss of control type of crashes.

98. In response to two of the crashes involving trucks (see paragraph 96 a) and b above), I recommend that the following is included in the CTMP:

(a) During periods of unsafe wind speeds, provide driver safety briefings on driving in windy conditions and consider postponing truck movements Ride (included in Proffered Condition - AEE 23(d)(i), now CTM6(d)(ii) in the Updated Conditions); and

(b) Provide safety briefings to truck drivers to ensure the road safety of all road users including cyclists who may be on the route of the Heartland Ride (included in Proffered Condition - AEE 23(d)(ii), now CTM6(d)(iii) in the Updated Conditions).

Over Dimension Loads

99. I have undertaken a review of crashes involving vehicles transporting over-dimension loads throughout the whole of the Tararua District in the 10-year period 2014 and 2023 to assess the level of crashes associated with these types of vehicles. This search identified three crashes dispersed over the region, of which two are on the Project

potential port to Site routes. One of these crashes occurred on the route which would be used from both the Centrepoint Wellington and Napier Ports to the Site, on SH2 at the rail bridge north of Eketāhuna when a truck transporting a digger exceeded the height restriction (resulting in a non-injury crash). The other crash occurred on the Napier Port to Site route at the Tahoraiti railway crossing, when an over dimension vehicle swung wide at the tight corner, colliding with another vehicle resulting in a minor injury crash. Both of these locations are identified as constraints in the Port to Site Assessment report and with appropriate management along the Port to Site route, I consider that any crash risk associated with these locations can be mitigated. The crash data does not highlight any general concerns with the transportation of over-dimension loads, and I am therefore of the view that the risk of such collisions can be adequately managed within the CTMP and over dimension permits.

100. I have also undertaken a review of crashes involving overtaking a line of traffic or queue of vehicles for the Tararua District between 2014 and 2023 within a 100km/hr posted speed limit environment. The aim of this review was to identify any safety issues associated with driver frustration created by slow moving traffic (for example due to over dimension transportation). This search identified 19 crashes, of which two involved serious injuries, five involved minor injuries and 12 did not result in injury. Of these crashes, 15 involved two vehicles and four involved a driver losing control of the vehicle. 12 of these crashes occurred on the state highway network. Based on this District wide data, I do not consider that there is an existing safety problem with slow moving traffic caused by over dimension vehicle transportation.

101. There are a number of passing places along the Port to Site routes that are suitable for following vehicles to pass the transporter, which I consider will minimise any frustration arising from those vehicles being delayed by the transporters. These passing places primarily consist of passing lanes. Transporter drivers could also be instructed to pull over and allow other traffic to pass when it is safe to do so. Travel time restrictions are a further option to avoid delays to other motorists during the busiest periods.

102. I consider that using experienced specialist contractors operating under specific permits will ensure that the over-dimension and over-weight loads are moved in the safest possible manner. The CTMP and any associated improvement works to the existing roading / highway networks will also maintain and promote road safety.

Driver Distraction

103. I have undertaken an assessment of the potential for turbines (once operational) to be a distraction to drivers, in order to determine the safety risk on nearby roads, particularly SH2. In undertaking this assessment, I have reviewed both relevant research literature and undertaken a search for such crashes using the CAS database.

104. Research undertaken in 2017[5] found no evidence of serious traffic conflicts and no substantial negative effects for road safety with the presence of wind turbines.

105. Research undertaken by Wallace[6] provides relevant information of the potential for driver distraction caused by wind farms. This research identifies three factors that can contribute to distraction, being complexity, novelty and incongruity (i.e. perception that the turbine doesn't fit into its location).

106. In terms of distraction, complexity relates to how the physical form of the object (being a turbine) relates to its background. A wind turbine in a rural environment is a relatively simple form that people can readily perceive and identify. When compared to a detailed advertising sign in amongst others on a busy street, I do not consider wind turbines to be complex.

107. For both novelty and incongruity, a feature which is entirely new will cause more distraction than one which the driver has already seen. Ther Project will form a very small distant element within a wider

[5] De Ceunynck, T., De Pauw, E., Daniels, S., Polders, E., Brijs, T., Hermans, E. and Wets, G., 2017. The effect of wind turbines alongside motorways on drivers' behaviour. *European Journal of Transport and Infrastructure Research*,*17*(4).

[6] External-to-Vehicle Driver Distraction, Dr Brendan Wallace, Scottish Executive Social Research (2003)

panoramic view and is likely to be less novel to drivers, due to the existing wind farms in the region. Drivers will have ongoing views of different wind farm developments, including those developments on the Tararua Ranges, combined with the Mount Munro site.

108. Accordingly, based on the available research, I consider that the wind turbines will be a well-established feature of the environment by the time drivers reach the site. In my view, the turbines will not therefore be particularly novel or out of context with the environment or surprising for passing motorists. On this basis I conclude that that road safety risks associated with driver distraction are minimal.

109. I have undertaken a review of crashes involving drivers who have been distracted by a wind farm throughout the whole of the Tararua District and the surrounding rural districts of Manawatu and Palmerston North (where there are existing wind farms) for the period 2018 to 2023. Over this time there was only one crash (minor severity) which occurred due to a motorcyclist being distracted when looking at the Te Āpiti Wind Farm (located northwest of Woodville). Given the presence of wind farms in these areas for some time, the level of traffic volumes and only one minor crash reported due to driver distraction, this supports my view that the proposal will not adversely affect road safety.

Site Access

110. A single access point to the main construction Site is proposed and will be retained for use during the operational stage. The proposed main construction access point is located on Old Coach Road, 1.7km south of SH2. The proposed Site access is located at the end of Old Coach Road. I have confirmed on site that there are no issues with sight distance and in excess of a 300m sight distance is available back along SH2.

111. As detailed in the TA and the s92 RFI responses, to enable construction traffic to safely use Old Coach Road, it is proposed that localised widening of Old Coach Road is undertaken to allow safe movements of construction vehicles, including the manoeuvres of the over dimension turbine deliveries. The proposed widening is shown on

the plan set which was provided as Appendix 3b in the s92 Response dated 3 September 2023, and is attached as **Appendix A** to my evidence. The proposed works on Old Coach Road were included in Proffered Condition 24 to the District Council resource consent (now CTM2(a)(i) of the Updated Conditions).

112. The CTMP will include the following Workforce Driver Education measures to manage construction traffic movements and the existing 30 vehicles/day that currently use Old Coach Road (which Mr Jones evidence identifies were successfully employed on the Mill Creek project for the Ohariu Valley Road upgrade):

(a) Speed limit – Strict adherence to 30km/h with the contractor monitoring compliance.

(b) Priority to public traffic – where the road width allows construction traffic will pull over to allow the prioritisation of public/ local resident traffic to pass.

(c) No unnecessary stopping outside private residences.

(d) No stopping or parking in residences' driveways.

(e) Self-monitoring of any potential dust/dirt tracking effects.

(f) Reporting of any incidents/issues to Meridian.

(g) Co-ordination of deliveries to ensure that delivery trucks and large construction vehicles do not meet on narrower sections of Old Coach Road.

113. With measures like the above, and taking into account the anticipated traffic movements, I consider that with the localised widening of Old Coach Road, this will provide a safe construction traffic route between SH2 and the Site access. In addition, the proposed CTMP measures will manage safe movements of construction traffic with the existing 30 vehicles day associated with the six residential properties. In my opinion this will minimise the likelihood of any conflicts occurring

between construction vehicles and existing vehicles on Old Coach Road.

114. Following the Council's request in the s87F report (see paragraph 143 below), it is also proposed that Old Coach Road is sealed between SH2 and the Site access, which I consider although not specifically required for road safety reasons, would provide benefits to local residents in terms of reduced noise and dust from the construction traffic (which are addressed in the evidence of Mr Halstead and Mr Van de Munckhof respectively).

115. The layout of the Site access allows for vehicles to drive straight into the Site, with no turning required. This ensures a high standard of access that makes effective provision for general construction traffic. A layby area will be provided directly within the secure area which provides temporary parking within the Site, such that no temporary queuing or parking is necessary on Old Coach Road.

116. In addition to the main construction Site access from Old Coach Road, access to the terminal substation site will be provided off Kaiparoro Road from SH2. Access to the transmission line will be provided off Opaki-Kaiparoro Road and its northern intersection with SH2 (noting heavy and light construction traffic is not permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road) and hence the impact on the local road network is minimised.

117. I therefore consider that the accesses to the Project for construction and operational/maintenance vehicles complies with necessary design standards and will be safe forms of access.

118. Alternative accesses to the Site to Old Coach Road were considered by Meridian. One option considered was Coach Road South. Previous investigations of alternative accesses to the Project Site concluded that access from the north (along Old Coach Road), involved less transport related adverse effects, compared to transport from the south (Coach Road South). The 2011 assessment also concluded that Coach Road South involves a steep route for the movement of oversize turbine transporters.

119. As detailed in section 2.1.5 (and Figures 2.12 to 2.15) of the T+T TA, Coach Road South is steep, winding, poorly graded and narrow. Due to these constraints, the TA came to a similar conclusion to the 2011 studies that the transport of oversize or heavy vehicles along this road is unlikely to be viable. Mr Bowmar's evidence provides further discussion about alternative access considerations.

120. Therefore, Old Coach Road was selected as the preferred site access, and I agree with this conclusion.

Construction Traffic Management Plan (CTMP)

121. Because of the volume of heavy vehicle movements that will be generated during construction, a CTMP will be prepared to the satisfaction of Tararua District Council and NZTA, as the relevant RCAs. Section 5.3 of the TA sets out the purpose, objectives, scope and specific standards to be applied when a CTMP is prepared in full, and these are reflected in Proffered Condition 23. This requires that the CTMP includes the following specific management controls:

(a) Construction programme and associated traffic volumes.

(b) Overweight and over-dimension permit restrictions;

(c) Driver protocols aimed at ensuring safe driving practices and full compliance with the law, including speed limits, appropriate following distances, observing engine braking restrictions, and affording priority to other traffic;

(d) Briefing of Heavy Commercial Vehicle drivers of:

(i) School bus routes and times to ensure that they take additional care when there is an increased likelihood of children on or around the roads; and

(ii) The New Zealand Cycle Trail routes to ensure that they are aware of an increased likelihood of cyclists along the roads passing sites and correct procedures for passing.

(e) Site specific traffic management proposed, including:

(i) 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;

(ii) 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;

(iii) Mounting of 'caution wide vehicles' supplementary plates to road narrowing signs between Eketāhuna and Masterton for the duration of the construction period.

(f) Monitoring and communication requirements with stakeholders;

(g) Procedures to monitor sightseeing numbers (if any) once the wind farm is fully operational to assess the need for measures to mitigate visitor traffic;

(h) Ensure appropriate access is provided to accommodate any required turning circles of site vehicles and accommodate any required truck movements; and

(i) Ensure adequate sight distances are provided at each access point to ensure safety on the road network.

122. This condition has been included by the Councils, albeit with some minor differences (which are addressed in the evidence of Mr Anderson), as Condition CTM6 in Appendix 23 to the s87F report. In my opinion Condition CTM6 achieves the same outcomes as Proffered Condition 23, and I note that requirements from each have been included in CTM6 in Meridian's updated proffered condition set which is attached to Mr Anderson's evidence.

123. Based on my experience, it is not practical to prepare a detailed CTMP at this stage as many aspects are dependent on the detailed design of the Project, which will be completed post consent. The CTMP is also dependent on input from the contractors. However, as detailed in

paragraph 32 above, a draft CTMP will be developed in the lead up to the Hearing and this will be discussed with the Councils and NZTA and updated where required.

124. The CTMP will be subject to ongoing management by the RCAs throughout the construction phase, with provision for changes if and when justified, in consultation with identified stakeholders. I note that, while the CTMP will include aspects associated with the over-dimension and over-weight loads, the details of the movement of such loads will be addressed through the specific NZTA permits process. This is separate to the resource consent process.

Tararua District Plan Provisions

125. Section 6.1 of the TA accompanying the AEE provides a detailed assessment of the relevant transportation sections of the Tararua District Plan. I have reviewed and summarised this assessment in paragraphs 126 to 132 below.

126. The Tararua District Plan acknowledges the benefits of the generation of electricity from renewable sources and also acknowledges that wind farms have particular characteristics in terms of their potential adverse effects on the environment and amenity values. Policies 2.8.4.2 (a) and (b) recognise the local, regional and national benefits to be derived from the development of wind farms and the requirements to mitigate the actual and potential adverse effects on the environment of wind farms, by recognising that they have the potential to cause significant adverse effects, including on traffic.

127. The proposed Site access is at the end of Old Coach Road, at the end of a straight section of road with ample sight distance. I therefore consider that Site access location has been appropriately selected.

128. Appendix 12.1 of the District Plan indicates that the required configuration for a private access accommodating heavy vehicles is an access radius of 7m, connecting into a width of 5m. The proposed Site access on Old Coach Road will exceed these specified dimensions, to accommodate over-dimension vehicles. I am of a view that the proposed configuration of the site access on Old Coach Road is

appropriate for the volumes of traffic anticipated during construction. I note that an additional manoeuvring area is required to accommodate the turbine component transporters and a formed area should be allowed for this.

129. Any security gates will be recessed sufficiently within the Site to enable queuing of the largest turbine component transporters clear of Old Coach Road. All parking will be provided within the Site.

130. Given the rural nature of the Site, there are negligible numbers of pedestrians passing the Site and I note the Councils agree with this given that paragraph 17 (a) of Appendix 4 of the Councils s87F refers to "*occasional pedestrian movements".* I am of the view that the proposed access would have a minimal impact on the safety of any pedestrians should they walk pass the Site on Old Coach Road.

131. I am of the opinion that the long-term operational use of the Site is consistent with the District Plan rules and assessment matters.

132. I consider that during the construction phase, specific mitigation measures will be implemented to control the transport related effects of construction traffic primarily associated with road safety. The process for implementation of these controls will be through the implementation of the CTMP and through the overweight and over dimension permit processes.

NEW ZEALAND TRANSPORT AGENCY (NZTA) COMMENTS

133. NZTA provided their written approval of the resource consent application on 30 August 2023 indicating that overall, they are "*satisfied with the findings of the Transportation Assessment*". Their written approval also contained four proposed conditions which I agree with. I suggest a minor change to the NZTA first condition (which I have highlighted in italics and underline below) to distinguish that TDC are the road controlling authority for Old Coach Road and NZTA for the SH2/Old Coach Road intersection:

1. Prior to construction, the consent holder shall provide the NZ Transport Agency with the detailed designs for the upgrade of *SH2*/Old Coach Road *intersection*, to be reviewed and approved by the NZ Transport Agency Network Manager. This should be accompanied by an assessment of whether additional turn treatment at this intersection is required.

134. I address the final sentence of this proposed condition, regarding an assessment of additional turn treatment in paragraph 165 below.

135. The NZTA position overall aligns with my professional opinion in support of the Resource Consent application.

S87F REPORT

Background

136. Paragraphs 530 to 552 of the s87F report prepared by Manawatū-Whanganui Regional Council, Greater Wellington Regional Council, Tararua District Council and Masterton District Council (**Councils**) deal with the Councils' traffic and transportation response. The s87F report also includes in Appendix 4 an assessment of traffic and transportation effects carried out on behalf of the Councils by Ms Fraser of Harriet Fraser Traffic dated 15 March 2024 (**Appendix 4**).

137. The s87F report concludes "*that the transport effects of the proposal are able to be managed*" and I conclude that the Councils do not raise any objection to the Project in terms of transport matters. This position aligns with my professional opinion in support of the Resource Consent application.

138. A number of queries and comments were though raised in the s87F report and Appendix 4, which I respond to below using the paragraph numbering used in the s87F report. I also provide comments on what changes (if any) are necessary to the Councils proposed conditions in Appendix 23 to the s87F report.

Old Coach Road Widening

139. In Paragraphs 538 to 540, the Councils state that the "entire length" of Old Coach Road should *"be widened to provide for two-way widths".* Condition CTM2 a) i) indicates that as *"a minimum this will include a formed width of 6.5m on straight sections with widening on bends to accommodate the passing of truck and trailer units"*. At a subsequent meeting with TDC, it was requested that in addition to the 6.5m sealed width a 2m un-sealed shoulder/drainage area on both sides should also be provided, resulting in a total road width requested of 10.5m.

140. As detailed in paragraph 113 above, I consider that the localised widening of Old Coach Road proposed within the TA and the s92 RFI responses will provide a safe construction traffic route between SH2 and the Site access. In addition, as detailed in paragraph 121 above, the proposed CTMP measures will manage safe movements of construction traffic with the existing 30 vehicles day associated with the six residential properties. In my opinion this will minimise the likelihood of any conflicts occurring between construction vehicles and existing vehicles on Old Coach Road. As such, I do not consider it necessary to widen the whole length of Old Coach Road to two lanes.

141. Furthermore, based on my site observations and the current design work carried out, I am concerned that widening Old Coach Road to two lanes along the whole length between SH2 and the Site access could present issues relating to existing features including culverts, embankments, wetlands, ponds and surface water drainage. This additional work would also result in an increase of earthworks volumes, construction timescales and construction vehicles. I note the Councils express similar concerns with their suggestion as identified in paragraph 539 of the s87F report, including the impact of an extended work programme, increased construction traffic, noise etc.

142. Notwithstanding that I do not consider it necessary, in order to understand the implications of the Council's suggestion, I am currently undertaking further work on the viability of further widening of Old Coach Road beyond that proposed in the TA and s92 RFI responses to achieve two lanes along the length between SH2 and the Site access

with a total width of 10.5m. This design work, and identification of any resulting additional impacts, will be developed in the lead up to the Hearing and will be discussed with TDC.

Old Coach Road Sealing

143. In Paragraphs 538 to 540, the Councils state that the "*entire length"* of Old Coach Road should "*be sealed"*. Meridian accepts this recommendation, subject to resolution of concerns about its removal discussed further below. As detailed in paragraph 114 above, although I do not consider that this is specifically required for road safety reasons, I note it would provide benefits to local residents in terms of reduced noise and dust (and hence improved visibility) from the construction traffic (which are addressed in the evidence of Mr Halstead and Mr Van de Munckhof respectively) and an improved quality of ride. In terms of the Councils' request to seal the entire length of Old Coach Road, as indicated in paragraph 142 above, my further design work will also review any consequences (for example on surface water drainage) of this request and I will also discuss this with TDC in the lead up to the Hearing.

Old Coach Road Removal of Seal Post Construction

144. In paragraph 540, the Councils have requested "*the reinstatement of a metal surface once the construction phase is complete, due to ongoing maintenance requirements"*. I consider this to be both a very unusual and unnecessary request given:

(a) Surface water drainage would be designed for the with seal situation where the surface water does not seep through the road like it would in an unsealed situation and hence this may not be appropriate in the scenario should the seal be removed.

(b) Removal of the seal (be it asphalt or chip seal), would expose the road formation (designed for the with seal situation), to weathering that the seal provides protection against.

(c) As detailed in paragraph 158 below, as part of the Updated Condition CTM3, Meridian will be liable for the costs of any additional road maintenance and repairs required on roads (including Old Coach Road) as a result of construction traffic, meaning it will be returned in good condition.

(d) Post construction, the road will revert to carrying the existing 30 vehicle movements/day plus the 48 vehicle movements/day associated with the operation and maintenance of the Project. I do not consider that a daily loading of circa 80 vehicles would result in any significant ongoing maintenance implications for TDC.

(e) The removal of the seal and the resulting degradation of the underlying pavement construction could compromise Meridian's ongoing operational access for example for any required future Over Dimension vehicle access.

(f) There are ongoing benefits of a sealed road in terms of noise and dust.

145. In my opinion the proposed upgrade works will improve Old Coach Road for all users with driver visibility improvements, better road realignments, widening and the road sealing.

Old Coach Road Proposed 'Lime' Footpath

146. In paragraph 551 the Councils note that information is required "*on active transport along Old Coach Road*," and specifically in paragraph 542, the Councils request the provision of a new 'lime' footpath along Old Coach Road to increase pedestrian safety. Ms Fraser in Appendix 4 stated that her review of the submissions indicated that some residents currently walk on Old Coach Road. As detailed in paragraph 50 above, based on site observations, no pedestrians or cyclists have been observed on the roads surrounding the site and I consider the number of people walking and cycling surrounding the Site is minimal. I also note paragraph 17 (a) of Ms Frasers Appendix 4 refers to only "*occasional pedestrian movements".*

147. From my review of the submissions, there are no submitters who specifically state that they walk on Old Coach Road. There are two Submitters who refer to an "*elderly resident on Old Coach Road, who gets his daily exercise by walking up and down Old Coach Road with his cat"*. A further eight submitters made reference to walking and cycling safety concerns, but not specifically in relation to them walking on Old Coach Road. These eight submitters do not live on Old Coach Road but reside in either Masterton, Eketāhuna or Hastwell (Opaki-Kaiparoro Road) which are not within a walking distance of Old Coach Road.

148. I therefore do not consider that there is sufficient substantive evidence of people walking on Old Coach Road to warrant specific provision of a 'lime' footpath. Perhaps most importantly, with the proposed localised widening and sealing of Old Coach Road, should anyone want to walk or cycle on this road, then it will be safer to do so on the road without the specific need for a separate footpath. Furthermore, the CTMP will include workforce driver education measures to provide further protection for any pedestrians on Old Coach Road, which Mr Jones' evidence identifies were successfully employed on the Mill Creek project. This will include reducing construction traffic speeds to 20km/h when there is a pedestrian present and ensuring that at least 1.5m of separation is provided between vehicles and pedestrians and cyclists. If this separation cannot be achieved, then the construction vehicle will wait until a safe passing space is available or the pedestrian/cyclist signals that it is safe to pass.

149. Furthermore, as detailed in Mr Jones's evidence providing comparison with the Mill Creek project, no footpath provisions existed before construction on Ohariu Valley Road, nor was it required by the RCA during construction and no dedicated permanent footpath provision was incorporated into the new road construction. It should be noted that the northern section of Ohariu Valley Road serves a larger number of households (19) than Old Coach Road and there were no incidents during construction involving pedestrians, cyclists or horse riders.

CTMP

150. In paragraph 542, the Councils recommend "*that truck movements should be kept within 7am to 7pm, where practicable and this should be considered as part of the CTMP"*. I generally agree with this suggestion where practicable, noting though that there may be times when truck movements outside of these hours will be necessary (for example movement of over dimension vehicles). This will be included in the CTMP.

151. Paragraph 542 also states that the Councils agree with the Appendix 4 recommendation to reduce vehicle speeds through a CTMP. I agree with this, and details of temporary speed limits will be included in the CTMP.

152. Also in paragraph 542, the Councils indicate that stock fencing should be provided along Old Coach Road. Currently, along Old Coach Road all fields are fenced (although it is noted that some of the fences have been located within the road reserve and not at the respective property boundaries). Therefore, I do not consider that this recommendation is necessary, other than where widening of Old Coach Road requires the relocation of the existing fences within the road reserve.

153. It should also be noted that if there are any existing regular movements of stock, then these would need to be denoted by stock crossing warning signs or flashing lights and the person moving the animals is responsible for exercising due care towards other road users and must ensure that any disruption to traffic is minimised. I am not aware of any such signs/lights on Old Coach Road, and I therefore conclude that regular stock movements do not take place on Old Coach Road.

154. Furthermore, if there are occasional movements of stock or untethered animals, then the Land Transport (Road User) Rule 2004 part 11.4 clearly states that the person moving untethered animals from place to place along or across a road must exercise due care towards other road users and must ensure that any disruption to traffic is minimised. Notwithstanding this the following is proposed by Meridian in terms of stock control:

(a) Replace any fencing as part of the road widening works.

(b) In accordance with the Councils' recommendation, the CTMP will include communication procedures with residents/ adjacent landowners (and this was identified in section 4.3 of the TA).

(c) CTMP will include provisions that the Contractor will pause construction vehicle movements should there be stock movements on Old Coach Road (which would be agreed in advance as part of the communication procedures identified above).

155. In paragraph 544, the Councils request confirmation of the proposed Port to be used and the source of aggregates. As detailed in my evidence we have undertaken a substantial amount of work assessing several port to site options and the exact port to be used will be confirmed at a later stage. Meridian has commercial reasons to retain flexibility, and I can see no effects-based reasons to require specification of this now. Likewise, there are various options for the source of aggregates, which will be confirmed at a later stage.

156. In paragraph 545, the Councils recommend a condition requiring heavy vehicles to access the site via SH2 and Old Coach Road unless they are accessing the terminal substation (off Kaiparoro Road) or the transmission corridor site (off Opaki-Kaiparoro Road). I agree with this, and it should be noted that both proffered condition 27 and Condition CTM1 b) in Appendix 23 to the s87F report state that heavy and light construction traffic is not permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road.

157. In paragraph 546, the Councils recommend that heavy vehicle drivers are briefed on high wind speeds. I agree with this proposal, and this will be included in the CTMP.

158. In paragraph 547, the Councils recommend that haulage routes be confirmed within the CTMP, with associated conditions proposed to manage effects, so any necessary pavement/structure surveys can be undertaken well ahead of construction. I agree with this recommendation, noting that this was covered within Proffered

Conditions – AEE 26 to 28 and the CTMP will include reference to this requirement. Furthermore, the Councils' proposed condition CTM3 a) to f) includes these surveys. There are though a number of issues that need to be resolved including agreement on type of surveys undertaken and the geographical extent of the surveys. I also recommend that the wording of this condition takes into account the wording of proffered Conditions 26, 27 and 28. I have discussed this with TDC, and they agree the wording of this condition needs to be more specific.

159. In paragraph 549, the Councils recommend measures to minimise staff vehicle movements and consultation with specific parties in the CTMP. I agree with this recommendation and the CTMP will address this requirement, noting that car-pooling for workers post construction is proposed as outlined in paragraph 56 above.

160. In paragraph 551 the Councils note that it is unclear the effect the proposal will have on "*local school bus routes (which are not fixed and may need to use Old Coach Road in future)".* As indicated in paragraph 51 above no school buses use the SH2/Old Coach Road intersection and I do not consider that this position will change into the future. This has also been confirmed through our recent discussions undertaken with both the Ministry of Education Regional Transport Advisor and GoBus (who are responsible for the provision of school bus services in the Eketāhuna area).

161. In paragraph 551 the Councils note that it is unclear "the effect the proposal will have on NZ Post delivery service." I understand that Meridian have held discussions with a NZ Post representative who confirmed they are generally content with the proposal and will engage with Meridian on further details post consent. I understand that this will be confirmed in writing.

162. In paragraph 551 the Councils also note that consultation with local schools and NZ Post during the preparation of the CTMP should be undertaken in terms of understanding the implications of the Project on those services. Condition CTM6 in Appendix 23 to the s87F Report does not include any reference to consultation with schools. As detailed in paragraph 156 above, heavy and light construction traffic is not

permitted to utilise Opaki-Kaiparoro Road to the south and east, beyond its intersection with Mount Munro Road. This was specified in both Proffered Condition – AEE 27 and included by the Councils as Condition CTM1 b) in Appendix 23 to the s87F report (CTM1(b) in the Updated Conditions). Therefore, construction vehicles will not pass Mauriceville school and as such I do not consider that specific consultation with schools is required and has not been included in the Councils recommended conditions.

163. Condition CTM6 ix) and x) in Appendix 23 to the s87F report (now CTM6 xi and xii) include reference to consultation with NZ Post and I agree with this recommendation and that consultation with NZ Post will be included in the CTMP.

Road Improvements

164. In paragraph 550, the Councils recommend a condition to review and approve the detailed design of site accesses, parking areas, vehicle turning, vegetation removal and any temporary or permanent road upgrade, including of Old Coach Road, to ensure they meet relevant standards. In so far as the site access, parking areas, vehicle turning and vegetation removal, I agree with this recommendation and note that this is addressed in Condition CTM2 c) in Appendix 23 to the s87F report. With regard to temporary or permanent upgrade of Old Coach Road I have addressed this in paragraph 139.

165. In paragraph 551 the Councils note that NZTA *"will need to review and approve detailed designs of any road temporary or permanent upgrades, including the design of any right turn bay".* Specifically in terms of the need for a right turn bay, and the Councils' request for a trigger for when a RTB is needed (paragraph 74 of Appendix 4 of the Councils s87F report). Based on the assessment detailed in paragraph 67 above I recommend that this be determined (using the Austroads guidance) when the number of right turn construction vehicles from SH2 to Old Coach Road exceeds 30 vehicles per hour (based on the existing peak period flow of 330 vehicles on SH2). Furthermore, as noted in Paragraph 133 above, this requirement should be agreed with NZTA and not TDC.

166. In paragraph 551 the Councils note that information is required on "*the adequacy of forward sight lines".* The sightlines have been assessed at each of the SH2 intersections surrounding the Site (including the Old Coach Road intersection) and, as detailed in Table 4.3 of the TA, all comply with Austroads standards.

167. Paragraph 42 of Appendix 4 of the s87F Report requested an assessment of sightlines assuming a 10 second gap acceptance for trucks. Table 3 of Austroads Part 4A[7] indicates that for a gap acceptance time of 10 seconds for a speed of 110km/hr, a Minimum Gap Sight Distance of 305m is required. The existing sight distance at the Old Coach Road/SH2 intersection looking north, was measured on site to be in excess of 350m. I consider that this is more than sufficient to allow for a right turning truck to see approaching traffic.

Aggregate Crusher

168. I note that Paragraph 534 recommends *"conditioning the Applicant's confirmation that the Project's aggregate crusher will only crush materials sourced, rather than delivered, to the site".* Confirmation was also requested by the Councils *"that fill required for bulk earthworks will not be imported onto the site"* (although the s87F notes this *"could be managed through recommended conditions if no information is provided"*). Although this was not specifically addressed in the TA, it is my understanding that no fill will be imported to the site.

COMMENTS ON PROPOSED CONDITIONS

169. In the paragraphs above I have commented (and provided reasoning) on the Councils' conditions from Appendix 23 to the s87F report, which have been revised and attached to the evidence of Mr Anderson as an updated Meridian set. To assist the Hearing Panel, I summarise below where I agree or disagree with those conditions, using the Councils' numbering:

[7] AGRD04A-10 | Austroads

(a) CTM1 a) to d) – I agree.

(b) CTM2 a) i) – I do not agree to widening to two lanes for the entire length but I agree to localised widening as proposed in the TA and s92 RFI responses.

(c) CTM2 a) ii) I agree to sealing of Old Coach Road but not to its removal once construction works have completed.

(d) CTM2 a) iii) I agree.

(e) CTM2 a) iv) I do not agree this is required.

(f) CTM2 a) v) As per the Councils s87F report comments this should be provided once a trigger volume of construction traffic making the right turn is exceeded and this condition will need to be agreed with NZTA as the RCA. I have indicated that this trigger value should be 30 vehicles/hour.

(g) CTM2 b) to g) – I agree and I recommend that the condition wording is updated to specifically refer to drawings showing the extent of works.

(h) CTM3 a) to f) – in principle I agree with this condition but there are a number of issues that need to be resolved including agreement on the type of surveys undertaken and the geographical extent that the surveys are carried out. I would also recommend that the wording of this condition takes into account the wording of proffered Conditions 26, 27 and 28.

(i) CTM4 – as outlined in Mr Anderson's evidence, this is not agreed.

(j) CTM5 – I agree.

(k) CTM6 – I agree with the need for the CTMP and as explained in my evidence I have made a number of recommendations in terms of content of the CTMP. As detailed in my evidence it is proposed that a draft CTMP will be developed in the lead up to the Hearing and that this will be discussed with the Councils and

NZTA and updated where required. I would recommend that condition CTM6 is updated to reflect the Draft CTMP once developed. I would also recommend that the wording of this condition takes into account the wording of proffered Condition 23.

RESPONSES TO SUBMITTERS

Background

170. I have read and considered the submissions that relate to transport matters. Across the submissions, a number of similar transport themes were identified. To avoid repetition, I have provided my response to submissions in relation to themes raised (and any subsequent sub themes) and identify the submitters that the response applies to. In my discussion I indicate whether I agree or disagree with the various submissions, my reasons and I comment on the implications if any for the Project.

Adverse Impacts of Construction Traffic

171. Submissions relating to the theme of the adverse impact of construction traffic including the potential effects from increased traffic and impacts on safety were made within a number of submissions[8].

172. As detailed in paragraph 139 above, Old Coach Road will be widened in places to accommodate the transport of the large turbine components and sealed, which will assist opposing vehicles to easily pass. As part of the CTMP driver behaviour training measures and a temporary speed limit of 30km/h on Old Coach Road is proposed during construction. This will reduce vehicle speeds and improve safety on Old Coach Road.

[8] Rachel Taylor (submitter 1), Ian John Maxwell (submitter 11), the Hastwell/Mt Munro Protection Society Incorporated (submitter 13), Kristin Doering (submitter 14), John Murray (submitter 15), Marc Braddick (submitter 47), Mauriceville School Board of Trustees (submitter 51), Corrine Oliver (submitter 53), Janet McIlraith (submitter 56), Teresa Bardella (submitter 61), Amelia Boot (submitter 63), Andrea Sutherland (submitter 67), Deborah Gully (submitter 68).

173. The CTMP will include measures for liaising with and accommodating residents during construction. Overall, I consider that the proposed localised widening, sealing and CTMP measures will provide safe and efficient access for the construction traffic and the existing access to residential properties.

Impacts of Construction Traffic on Eketāhuna

174. Submissions relating to the theme of the adverse impact of construction traffic within Eketāhuna were made within a number of submissions[9].

175. I acknowledge that as a result of construction traffic there will be an increase in traffic on SH2, as stated in the TA. During the period of construction when construction traffic is highest, the forecast additional traffic is 311 vehicles/day equating to 622 vehicle movements/day. As detailed in Table 1 above, the recent traffic volume estimate on SH2 at this location is 3,477 vehicles per day. If 100% of all construction traffic is assumed to travel through Eketāhuna (noting though that there are more possible quarry sites to the south of the Site and therefore the most likely construction vehicles travelling through Eketāhuna will be the small number of turbine components)) the construction traffic represents a temporary 18% increase in traffic, with SH2 continuing to operate well within capacity, as detailed in paragraphs 91 and 92 above.

176. SH2 is an existing major freight route and hence truck activity through Eketāhuna is part of the existing and ongoing transport environment through the town. NZTA have not raised any concerns regarding adverse traffic effects on the SH2 through Eketāhuna.

177. I note that the Councils agree with my assessment in Paragraph 46 of Appendix 4 of the s87F report which states "*that the overall traffic volumes would remain within the expectations for a state highway"*.

[9] Chris Davies (submitter 6), Dave Berry (submitter 7), Chris Clarke (submitter 8), Shelley Pender (submitter 9), the Hastwell/Mt Munro Protection Society Incorporated (submitter 13), Soul Joyce Olliver (submitter 20), Rebecca Needham (submitter 36), Robin Remington Olliver (submitter 37), Josie Braddick (submitter 43), Brendan Braddick (submitter 44), EJ Hamilton (submitter 45), Corrine Oliver (submitter 53), Isaac Davies (submitter 62), Amelia Boot (submitter 63).

178. As such, I do not consider that there will be adverse effects of construction traffic within Eketāhuna.

The Effects of Construction Traffic on the Safety of Children, Including Students at Mauriceville School

179. A number of submissions raised concerns about the safety of children walking to and from Mauriceville School (located on Opaki-Kaiparoro Road, approximately 9km south of the Project Site).[10]

180. Meridian has proffered the following condition (27) *"Heavy Commercial Vehicles associated with the construction of the wind farm must not use Opaki-Kaiparoro Road between its intersection with Mt Munro Road and its southern most intersection with State Highway 2".* This is also included in the Councils condition CTM1 b). In my opinion these proposed conditions appropriately address this issue since no construction traffic will be permitted to pass by or near Mauriceville School.

Damage to Old Coach Road

181. A number of submissions raised the issue of damage being caused to the pavement of Old Coach Road[11].

182. As is common with large construction projects, the applicant (Meridian) will pay the costs of any additional road maintenance and repairs required on roads as a result of construction traffic. Meridian proffered conditions 26, 27 and 28 in section 8 of the AEE, as discussed above. An amended version of these has been carried through into the Updated Conditions (see CTM3). Although the final form of this proposed condition needs confirming, I anticipate that it will require (as is standard) that the condition of the existing Old Coach Road is inspected and recorded prior to construction, and once construction is

[10] Chris Clarke (submitter 8), Charmaine Jane Semmens (submitter 21), Rebecca Needham (submitter 36), Robin Remington Olliver (submitter 37), Carolyn and John Braddick (submitter 38), Mauriceville School Board of Trustees (submitter 51), Andrew and Brigitte Sims (submitter 70).

[11] Kylie-Rose Nelson (submitter 19), Charmaine Jane Semmens (submitter 21), Ian Robert Olliver (submitter 30), Rebecca Needham (submitter 36), Brendan Braddick (submitter 44), Anne Braddick (submitter 48), Corrine Oliver (submitter 53), Teresa Bardella (submitter 61), Jason Tyler (submitter 65), John and Susan Barber (submitter 72).

complete, is reinspected and any necessary remedial work is carried out.

183. In my opinion conditions can appropriately address this issue.

Impact of Increased Traffic on General Vehicle Access

184. The theme of the impact of increased traffic on the ability to access to and from surrounding locations (including access to family and friends and to businesses/health centre in Eketāhuna) was raised within a number of submissions[12].

185. I acknowledge that as a result of the Project construction there will be a temporary increase in traffic on both SH2 and Old Coach Road, as stated in the TA. However, as my evidence demonstrates, I do not consider that construction traffic will impact on the operational capacity of SH2 or Old Coach Road and therefore access will be maintained.

Emergency Vehicle Access

186. One submitter[13] raised an issue that the *"heavy machinery will make it difficult to send emergency services out"*.

187. I recommend that the CTMP specifically addresses the movement of emergency vehicles, to ensure safe access throughout construction. As detailed in Mr Jones's evidence regarding the Mill Creek project, in the event access for an emergency vehicle was required, normal road prioritisation rules would prevail, and I confirm that this will be included in the CTMP. I therefore consider that any possible impact of the Project on emergency services is suitably addressed.

[12] David and Mary Cook (submitter 3), Joyce Olliver (submitter 20), Jekhobi Semmens (submitter 22), Logan Kahu (submitter 25), Isobelle-Jean Annette Olliver (submitter 26), Leila Buchanan (submitter 27), Nevayah Bell-Semmens (submitter 28), Freedom Ward (submitter 29), Trinity Buchanan (submitter 31), Rebecca Needham (submitter 36), Rebecca Braddick-Tohiariki (submitter 46), Lee-Anne Tait/Eketāhuna Health Centre (submitter 57), Soul Isaac Davies (submitter 62), Amelia Boot (submitter 63).

[13] Dale Skuce (submitter 32).

Road Safety Impacts on Pedestrians and Cyclists

188. The impact on pedestrians and cyclists (including recreational use and ability to safely walk dogs) was a theme in a number of submissions[14].

189. As outlined in paragraph 50 above, we have not observed any pedestrians or cyclists on the surrounding roads on our various site visits and therefore I conclude the number of pedestrians and cyclists on roads surrounding the Site is minimal. I note the Councils agree with this given that paragraph 17 (a) of Appendix 4 of the Councils s87F report refers to "*occasional pedestrian and cyclist movements".* I do not consider that the increase in vehicles as result of the construction of the project will impact on the safety of any pedestrians and cyclists given that Old Coach Road will be locally widened and sealed and the CTMP will include Driver behaviour measures and a temporary speed limit of 30km/h on Old Coach Road during construction which will reduce vehicle speeds and improve safety on Old Coach Road. As detailed in Updated Condition CTM6(d)(iv), the CTMP will also include specific measures with regard to cyclists using the Heartland Ride cycle route including providing safety briefings for truck drivers. NZTA have confirmed agreement to the proposed CTMP mitigation for cyclists including driver safety briefings, lower speed limits and signage.

190. During the operation phase, the increase in vehicles is minimal and I consider will not impact on pedestrian or cycle safety.

Livestock

191. The impact on stock movements and on horses within 25m of the road was a theme in a number of submissions[15]. I have addressed the potential impact on stock movements in paragraphs 152 to 154 above and have made recommendations in terms of measures to incorporate in the design of the Old Coach Road upgrade and the CTMP.

[14] Glen Opel Ltd (submitter 34), Josie Braddick (submitter 43), Jesse Braddick (submitter 49), Amelia Boot (submitter 63), John and Susan Barber (submitter 72).

[1515] Rachel Taylor (submitter 1), Rebecca Needham (submitter 36), Robin Remington Olliver (submitter 37), Josie Braddick (submitter 43), Lee-Anne Tait/Eketāhuna Health Centre (submitter 57), John and Susan Barber (submitter 72).

192. In terms of the additional traffic on Old Coach Road potentially impacting negatively on livestock within 25m of Old Coach Road in the adjacent fields, 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. As detailed in Mr Jones's evidence, based on the experience from the Mill Creek windfarm project and the upgrade of Ohariu Valley Road, temporary screening fencing (mesh cloth) was deployed along a property boundary to visually screen construction activities from horses in adjacent commercial horse-riding area. This could be included within the CTMP if required.

193. Furthermore, as detailed by Mr Halstead, 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.

194. I therefore consider that the additional traffic resulting from the Project will not create any issues in relation to livestock.

Limited Visibility of SH2/Old Coach Road Intersection

195. One submitter[16] raised an issue that the SH2 intersection already has limited visibility and increased traffic will make this worse**.**

196. The sightlines have been assessed at each of the SH2 intersections surrounding the Site (including the Old Coach Road intersection) and as detailed in Table 4.3 of the TA, all comply with standards.

[16] E J Hamilton (submitter 45).

Discrepancy in Traffic Volumes

197. One submitter[17] identified a discrepancy in vehicle numbers reported in the TA and the noise assessments submitted with the AEE. At the time of preparing both the TA and the noise effects assessment, the database used to derive traffic flows indicated 60 vehicle movements/day on Old Coach Road. I have reviewed the traffic count database and more recent data indicates 30 vehicle movements/day on Old Coach Road (as reported in Table 1 of my evidence). This minor change does not impact the conclusions of my evidence.

CONCLUSIONS

198. During the construction phase, specific mitigation measures will be implemented to mitigate the transport related effects of construction traffic associated with the Project. These measures include localised widening and sealing of Old Coach Road and implementation of various control measures within a CTMP.

199. During the operation phase the transport impact of the Project is minimal.

200. The construction and long-term operational use of the Site is consistent with the District Plan rules and assessment matters.

201. I note both NZTA and the Councils raise no objections to the project on transport grounds. This aligns with my professional opinion that the resource consent application can be supported in transportation terms.

202. Multiple submissions were received relating to transport matters and I have addressed each of these matters in my evidence and I consider there are no outstanding transport matters.

203. In my opinion there are no transport engineering or transport planning reasons that would preclude construction works associated with the Project.

[17] Rachel Taylor (submitter 1).

204. I consider that any transport effects arising from construction and operation of the Project will be acceptable and can be appropriately managed and mitigated through the implementation of the proffered conditions such that the safe, effective and efficient operation of the transport network can be maintained.

Colin Robert Shields

24 May 2024

Appendix A:

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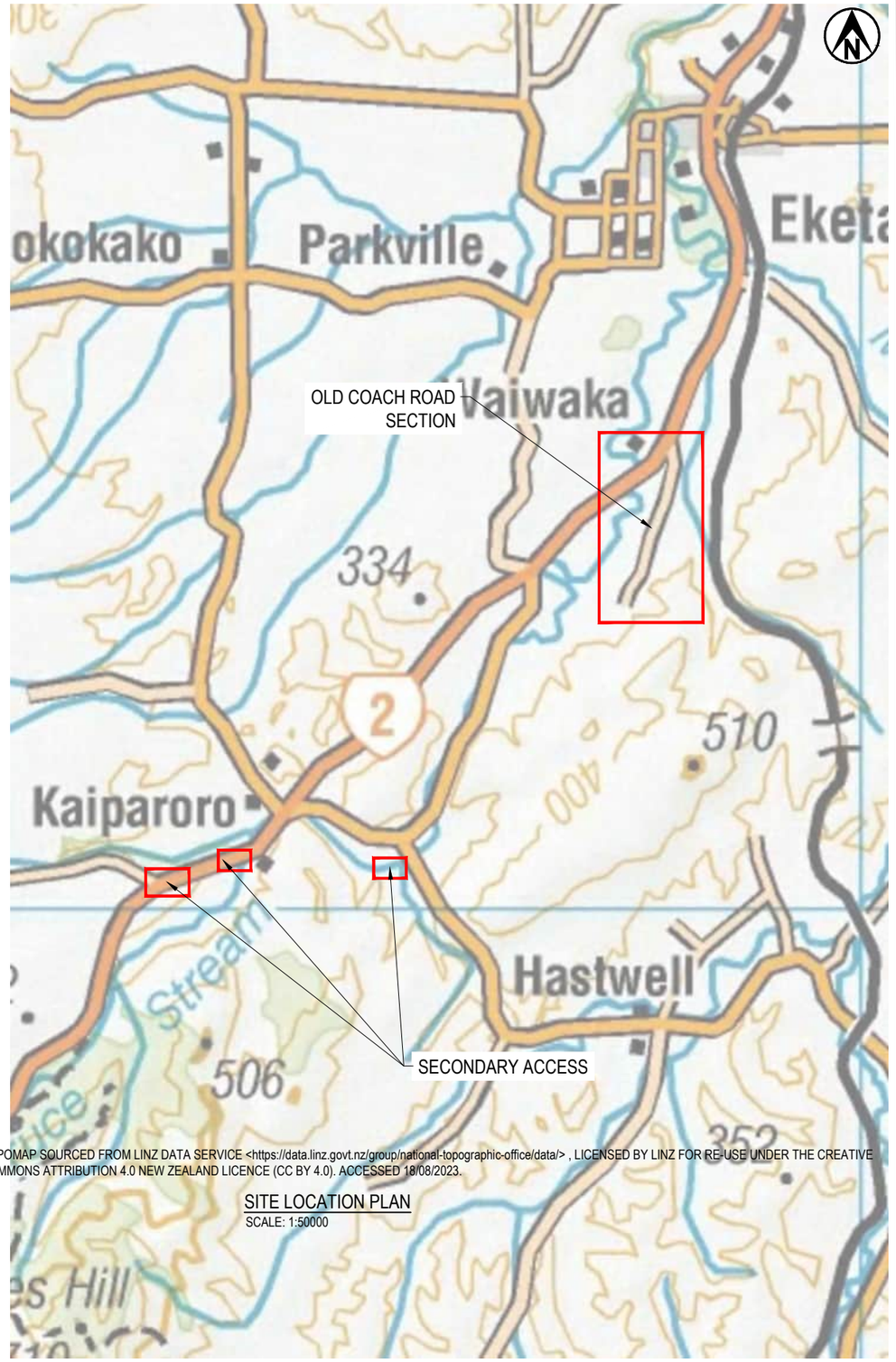
MERIDIAN ENERGY
MT MUNRO - MEL WAIRARAPA WIND FARM

CONCEPT DESIGN

DRAWING	Rev	Title
GENERAL INFORMATION		
● 1016884.1000-000	1	DRAWING LIST AND OVERALL SITE LOCATION
● 1016884.1000-001	1	SECTION COVERSHEET - OLD COACH ROAD
● 1016884.1000-002	1	SECTION COVERSHEET - SECONDARY ACCESS
OLD COACH ROAD		
● 1016884.1000-100	1	OLD COACH ROAD SHEET 1 OF10
● 1016884.1000-101	1	OLD COACH ROAD SHEET 2 OF10
● 1016884.1000-102	1	OLD COACH ROAD SHEET 3 OF10
● 1016884.1000-103	1	OLD COACH ROAD SHEET 4 OF10
● 1016884.1000-104	1	OLD COACH ROAD SHEET 5 OF10
● 1016884.1000-105	1	OLD COACH ROAD SHEET 6 OF10
● 1016884.1000-106	1	OLD COACH ROAD SHEET 7 OF10
● 1016884.1000-107	1	OLD COACH ROAD SHEET 8 OF10
● 1016884.1000-108	1	OLD COACH ROAD SHEET 9 OF10
● 1016884.1000-109	1	OLD COACH ROAD SHEET 10 OF10
SECONDARY ACCESS		
● 1016884.1000-200	1	TERMINAL SUBSTATION ACCESS SH2, KAIPARORO ROAD
● 1016884.1000-201	1	INTERNAL TRANSMISSION LINE ACCESS (SH2)
● 1016884.1000-202	1	INTERNAL TRANSMISSION LINE ACCESS OPAKI-KAIPARORO ROAD



TOPOMAP SOURCED FROM LINZ DATA SERVICE <https://data.linz.govt.nz/group/national-topographic-office/data/> , LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 18/08/2023.

SITE LOCATION PLAN
SCALE: 1:50000

A3 SCALE 1:50000
0 1.0 2.0 3.0 (km)

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	CHLI	BLR	30/08/2023

DESIGNED	BLR	Aug.23	DRAWING STATUS	PRELIMINARY DRAFT
DRAWN	CHLI	Aug.23		
DESIGN CHECKED	MGM	Aug.23	PROJECT PHASE	CONCEPT DESIGN
DRAWING CHECKED	MGM	Aug.23		

NOT FOR CONSTRUCTION

APPROVED DATE

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

CLIENT	MERIDIAN ENERGY
PROJECT	MT MUNRO - MEL WAIRARAPA WIND FARM
TITLE	DRAWING LIST AND SITE LOCATION PLAN GENERAL INFORMATION
SCALE (A3)	1:50,000
DWG No.	1016884.1000-000
REV	1

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	CHLI	BLR	30/08/2023

DESIGNED	BLR	Aug.23	DRAWING STATUS
DRAWN	CHLI	Aug.23	PRELIMINARY DRAFT
DESIGN CHECKED	MGM	Aug.23	PROJECT PHASE
DRAWING CHECKED	MGM	Aug.23	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 - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD SECTION COVERSHEET

SCALE (A3) 1:7500 DWG No. 1016884.1000-001 REV 1

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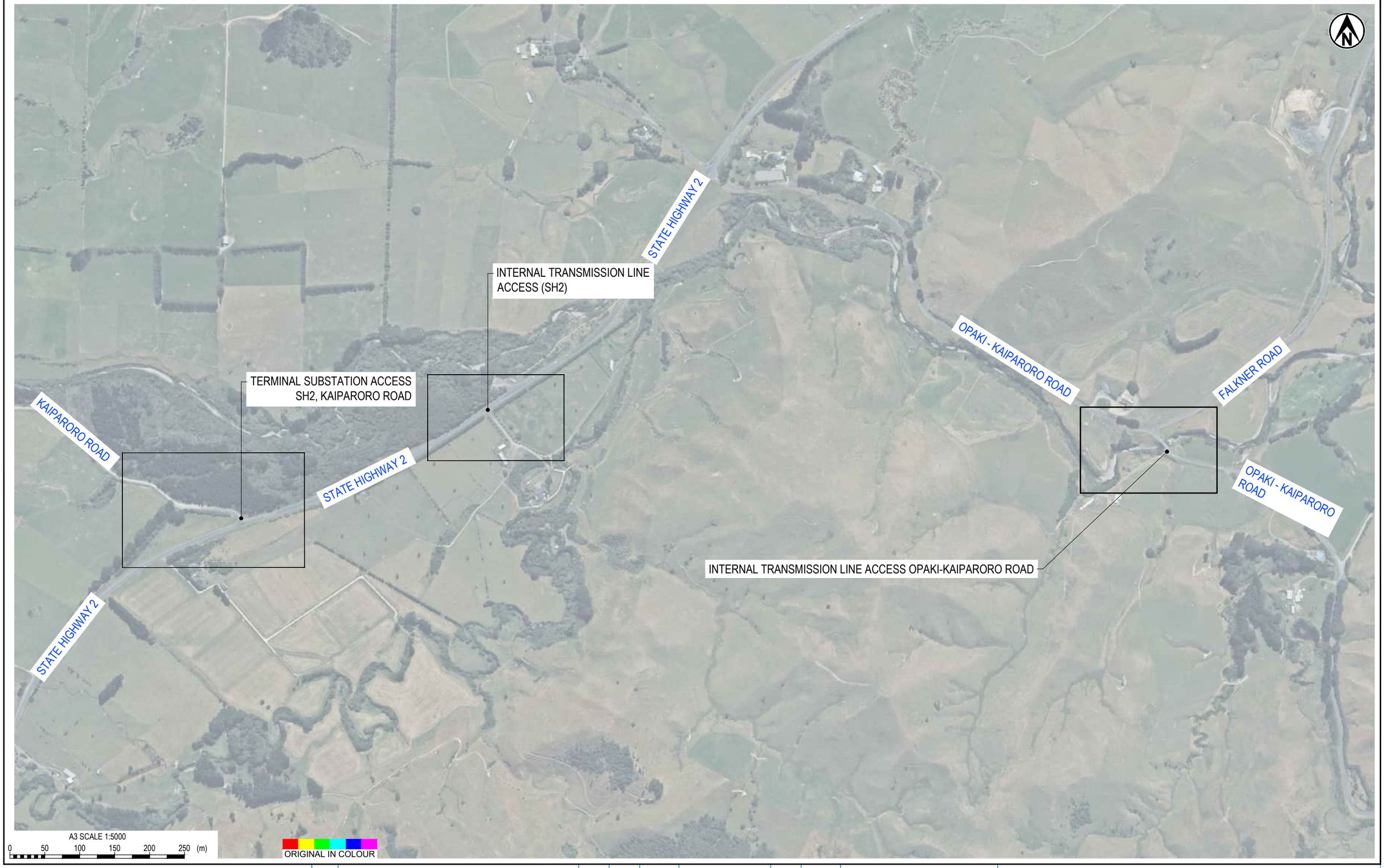

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REV	DESCRIPTION	CAD	CHK	DATE
1	PRELIMINARY DRAFT	CHLI	BLR	30/08/2023

DESIGNED	BLR	Aug.23	DRAWING STATUS
DRAWN	CHLI	Aug.23	PRELIMINARY DRAFT
DESIGN CHECKED	MGM	Aug.23	PROJECT PHASE
DRAWING CHECKED	MGM	Aug.23	CONCEPT DESIGN

NOT FOR CONSTRUCTION

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APPROVED DATE

CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE SECONDARY ACCESS SECTION COVERSHEET

SCALE (A3) 1:7500 DWG No. 1016884.1000-002 REV 1

C:\12dSynergy\data\ALBTCAD\MEL - Wairarapa WF_706\CAD\DWG\1016884.0000-100.dwg 2023-Aug-30 5:18:53 pm Plotted By: CHARLIE LI

EXISTING MANHOLE TO BE PROTECTED FROM TURBINE TRAILERS

TEMPORARY SURFACE FOR TURBINE BLADES. EXISTING FENCE TO BE REMOVED AND EARTHWORKS TO CUT DOWN THE CORNER OF THE FIELD EXCESS CUT MATERIAL REMOVED FROM SITE
EXISTING DRAINAGE CHANNELS TO BE TEMPORARILY CULVERTED INTO MANHOLE
FENCE AND EXISTING DRAINAGE CHANNELS TO BE REINSTATED FOLLOWING TURBINE TRANSPORT

CH0-CH400. WIDEN ROAD TO 7m. IN ADDITION FURTHER WIDENING TO 9M AROUND TWO CORNERS. THIS WILL REQUIRE;

- EARTHWORKS OF ADJACENT BANK
- SOME FENCE RELOCATION
- RELOCATION OF DRAINAGE DITCH AND FIELD ACCESS CULVERTS
- NEW UNSEALED PAVEMENT

OLD COACH ROAD

Ch 100

Ch 00

15

31

38

7

7

7

RELOCATE EXISTING GIVE WAY SIGN TO NEW REMOVABLE POLE IN CURRENT LOCATION.

THE EXISTING INTERSECTION ACCOMMODATES TRUCK AND TRAILER UNITS. TRACKING ENVELOPES WERE DEVELOPED TO IDENTIFY IF A CENTRAL ISLAND COULD BE ADDED IN THE CENTRE OF OLD COACH ROAD AT SH2 (AND REDUCE VEHICLES BEING ABLE TO CROSS THE OPPOSING LANE WHEN TURNING AND CONTROL INTERSECTION TURNING SPEEDS). HOWEVER THE TRACKING ENVELOPES OVERLAP MEANING THERE ISN'T A SPACE THAT WOULD BE CLEAR OF TURNING VEHICLES

STATE HIGHWAY 2

LEGEND

- PERMANENT ROAD WIDENING
- TEMPORARY CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- TEMPORARY PAVEMENT FOR TRANSPORT OF TURBINE COMPONENTS
- PROPERTY BOUNDARY
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT

A3 SCALE 1:500

0 5 10 15 20 25 (m)

ORIGINAL IN COLOUR

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 1

SCALE (A3) 1:500 DWG No. 1016884.1000-100 REV 1

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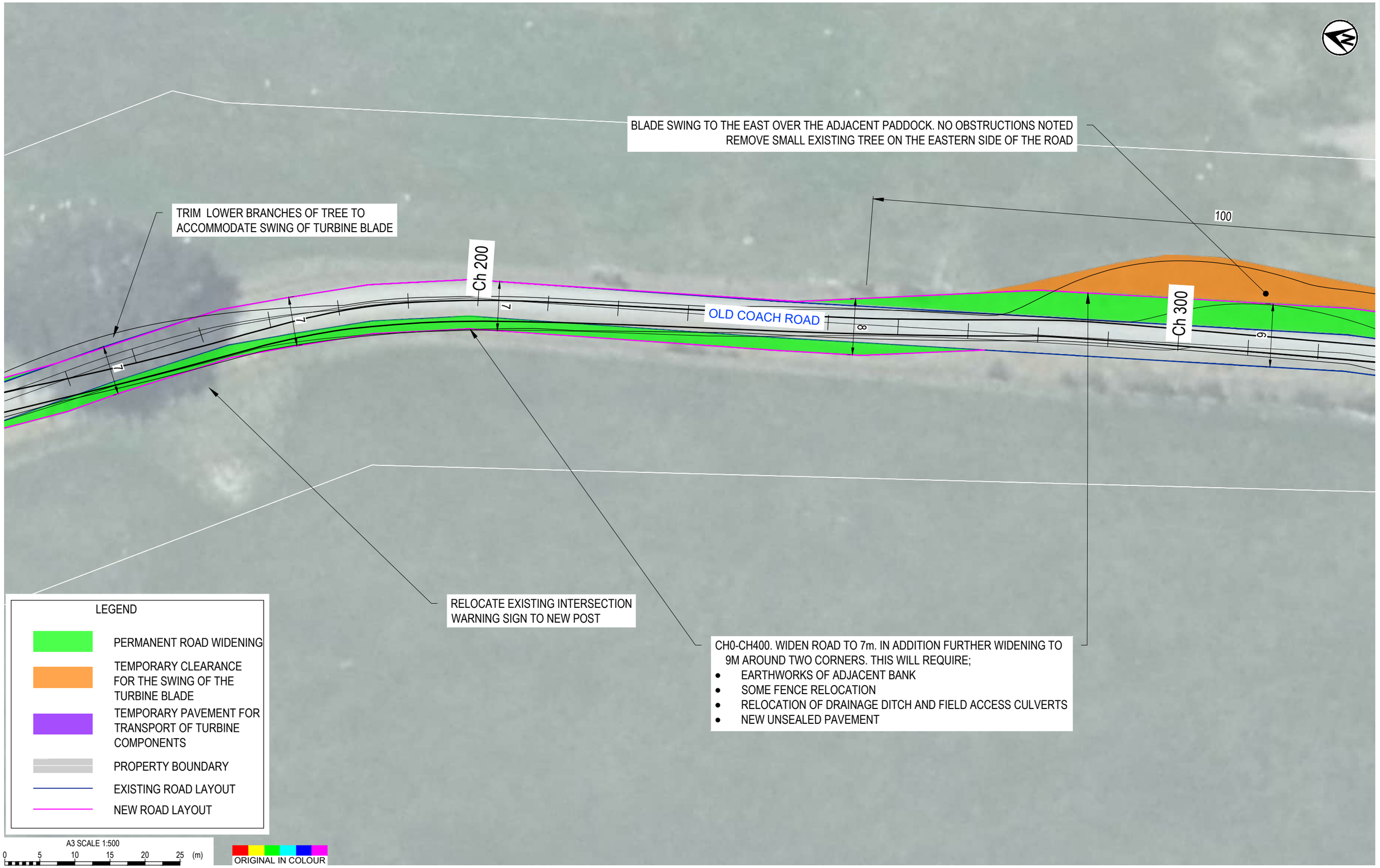

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 2

SCALE (A3) 1:500 DWG No. 1016884.1000-101 REV 1

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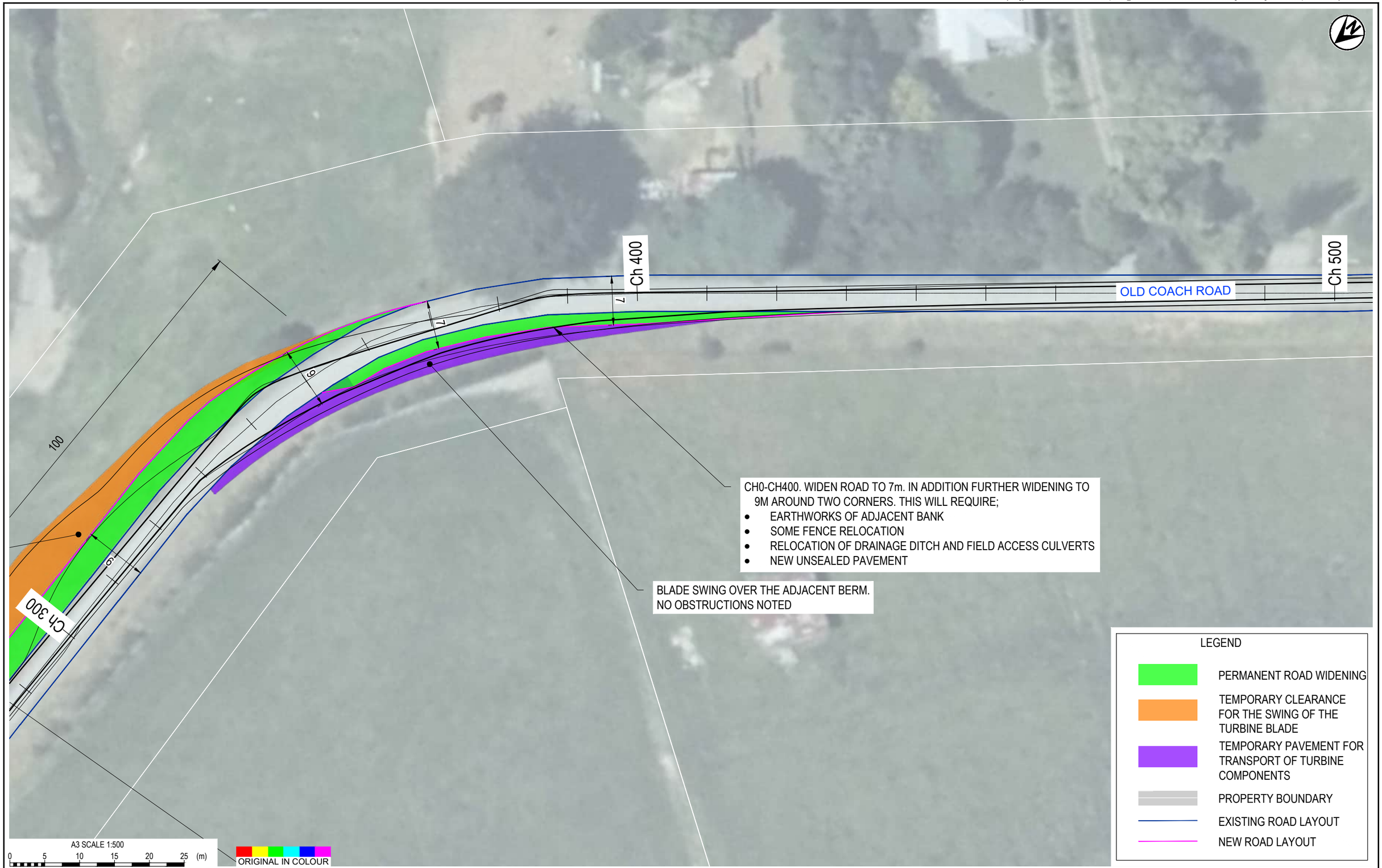

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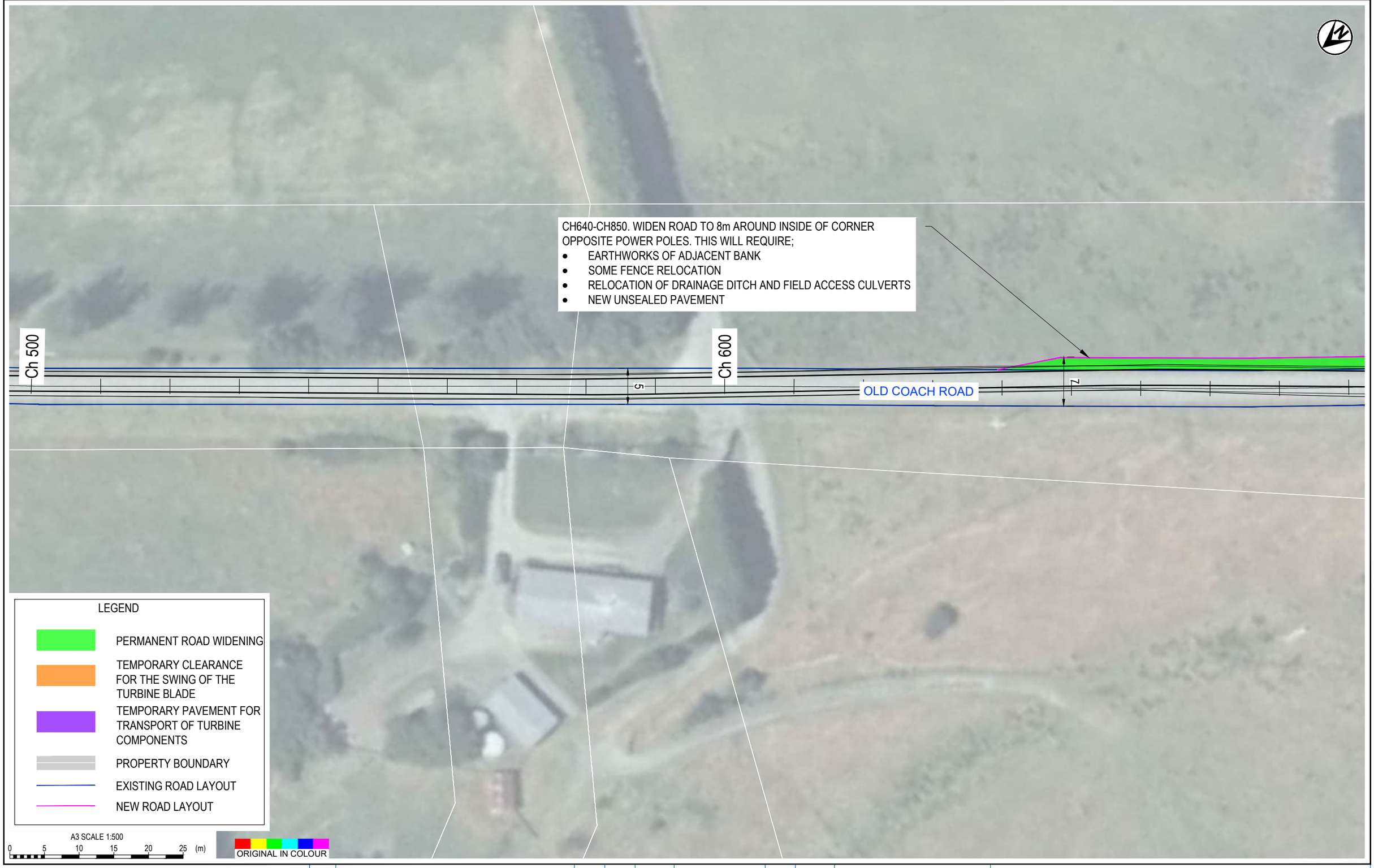
CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 3

SCALE (A3) 1:500 DWG No. 1016884.1000-102 REV 1

C:\12dSynergy\data\ALBTCAD\MEL - Wairarapa WF_706\CAD\DWG\1016884.0000-100.dwg 2023-Aug-30 5:19:07 pm Plotted By: CHARLIE LI



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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 4

SCALE (A3) 1:500 DWG No. 1016884.1000-103 REV 1

C:\12dSynergy\data\ALBTCAD\MEL - Wairarapa WF_706\CAD\DWG\1016884.0000-100.dwg 2023-Aug-30 5:19:12 pm Plotted By: CHARLIE LI

CH640-CH850. WIDEN ROAD TO 8m AROUND INSIDE OF CORNER OPPOSITE POWER POLES. THIS WILL REQUIRE;

- EARTHWORKS OF ADJACENT BANK
- SOME FENCE RELOCATION
- RELOCATION OF DRAINAGE DITCH AND FIELD ACCESS CULVERTS
- NEW UNSEALED PAVEMENT

BLADE SWING REQUIRING RELOCATION OF EXISTING FENCE. NO OTHER OBSTRUCTIONS NOTED

Ch 700

Ch 800

OLD COACH ROAD

7

7

BLADE SWING OVER THE ADJACENT PADDOCK. TRACKING AVOIDS EXISTING POWER POLES. NO OTHER OBSTRUCTIONS NOTED

CH850-CH1080. WIDEN ROAD TO 8m THROUGH CORNERS. THIS WILL REQUIRE; OPPOSITE POWER POLES. THIS WILL REQUIRE;

- REMOVAL OF ADJACENT TREES AND BUSHES AND EARTHWORKS TO FILL ADJACENT SLOPE ON THE EAST SIDE OF THE ROAD THROUGH THE CORNER OPPOSITE #103 OLD COACH ROAD
- RELOCATE #103 LETTERBOX
- SOME FENCE RELOCATION
- NEW UNSEALED PAVEMENT

NO IMPACT OF EXISTING POWER POLES

LEGEND

- PERMANENT ROAD WIDENING
- TEMPORARY CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- TEMPORARY PAVEMENT FOR TRANSPORT OF TURBINE COMPONENTS
- PROPERTY BOUNDARY
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT

A3 SCALE 1:500

0 5 10 15 20 25 (m)

ORIGINAL IN COLOUR

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 5

SCALE (A3) 1:500 DWG No. 1016884.1000-104 REV 1

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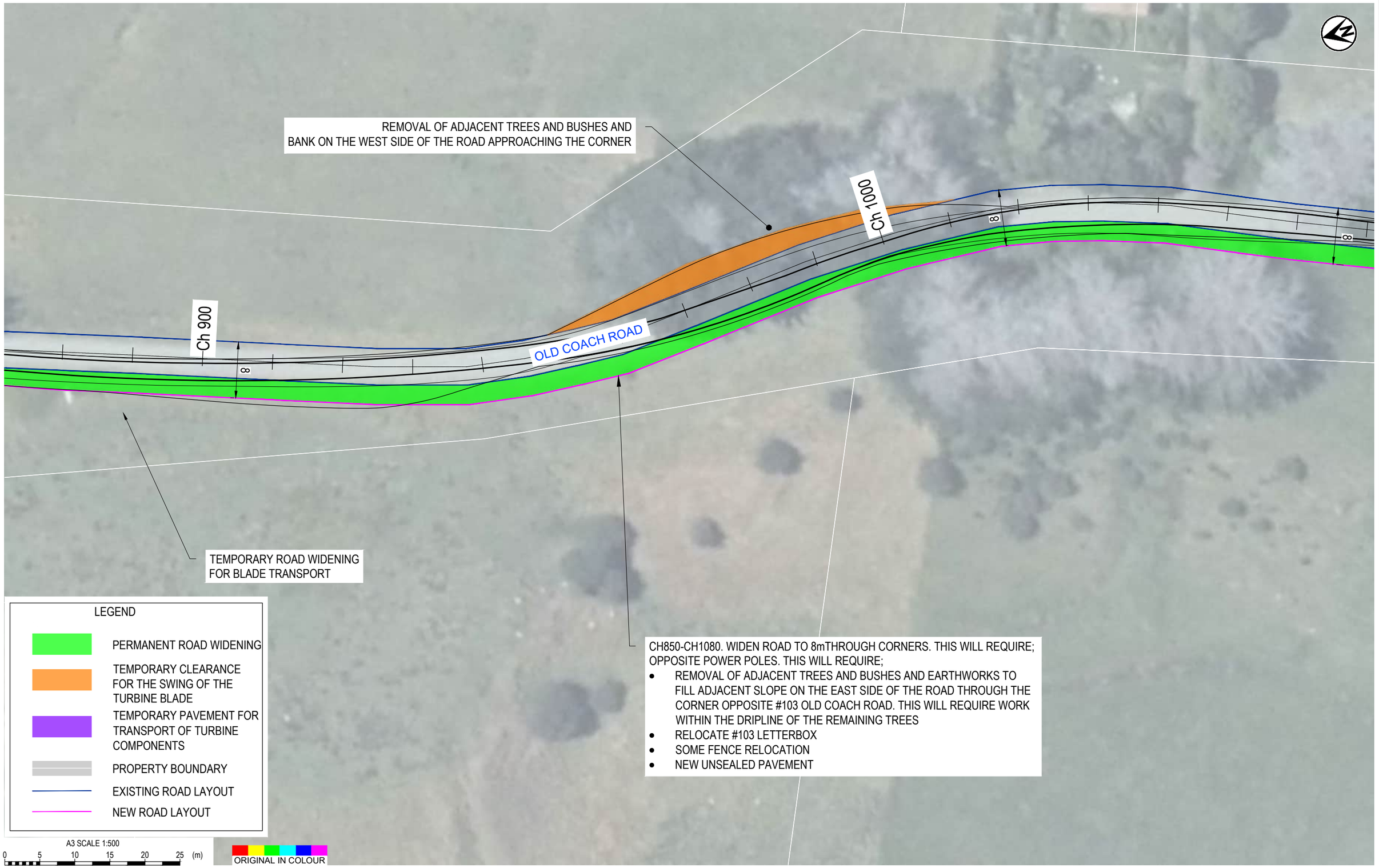

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PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 6

SCALE (A3) 1:500 DWG No. 1016884.1000-105 REV 1

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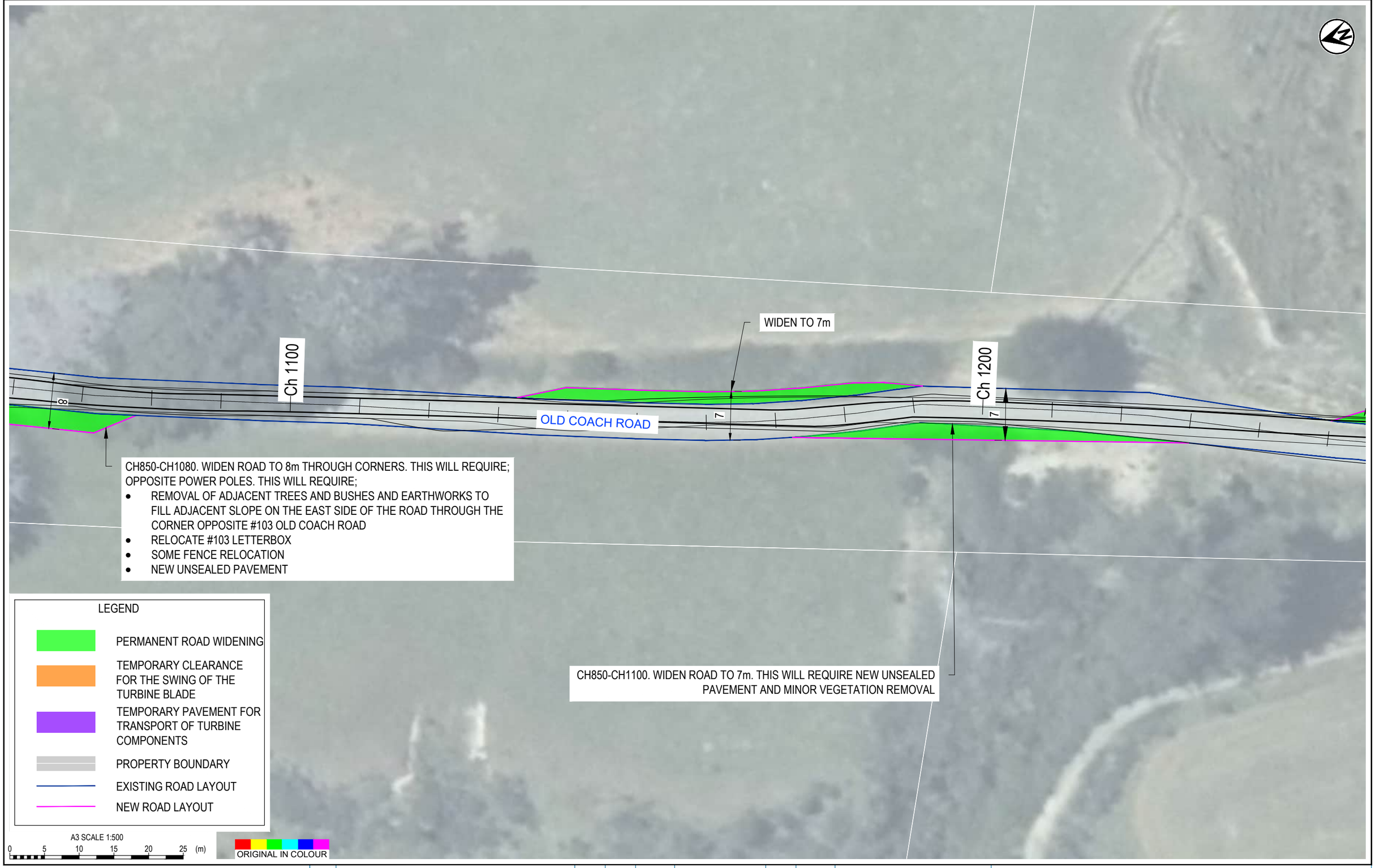

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PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 7

SCALE (A3) 1:500 DWG No. 1016884.1000-106 REV 1

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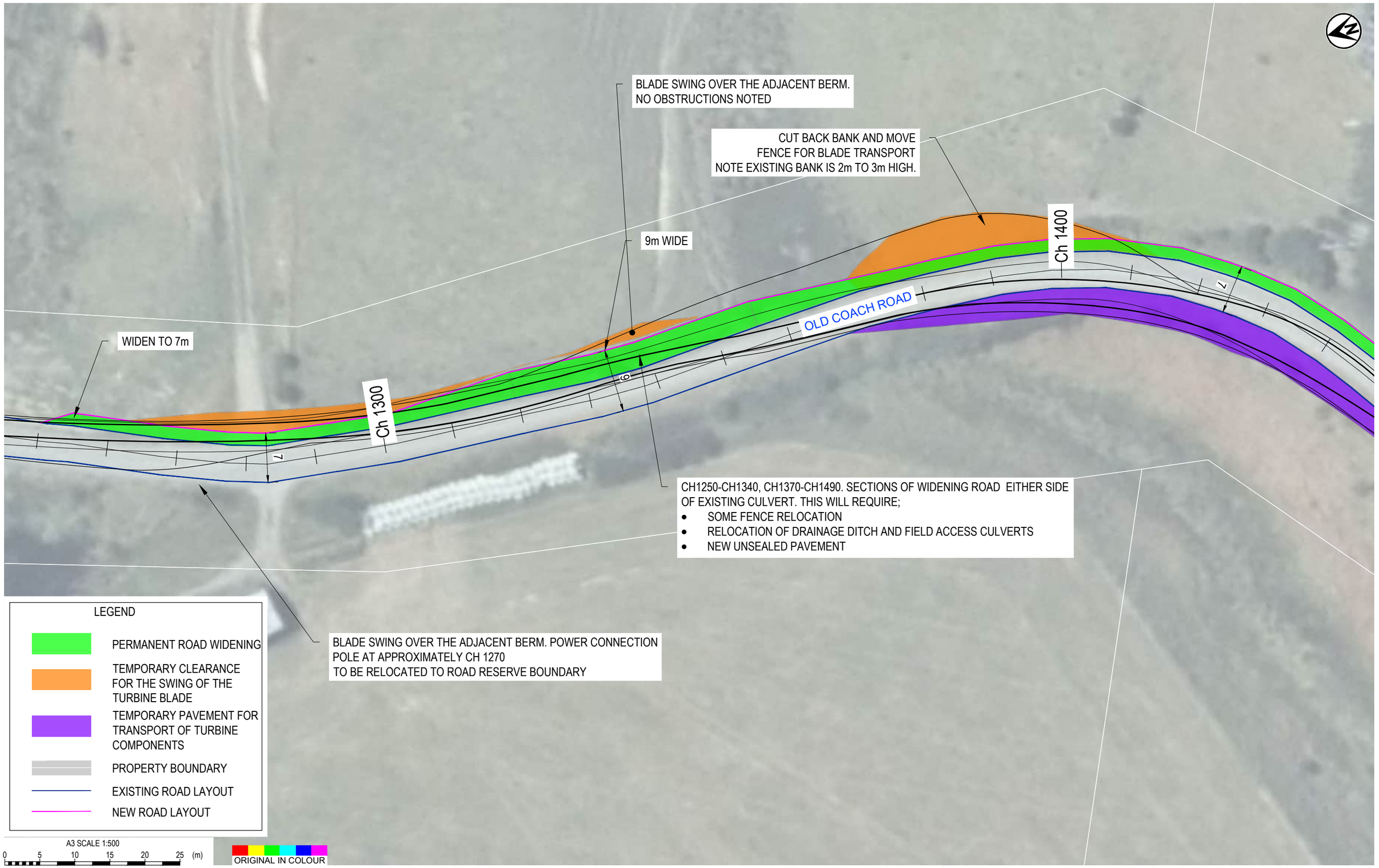

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PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 8

SCALE (A3) 1:500 DWG No. 1016884.1000-107 REV 1

C:\12dSynergy\data\ALBTCAD\MEL - Wairarapa WF_706\CAD\DWG\1016884.0000-100.dwg 2023-Aug-30 5:19:31 pm Plotted By: CHARLIE LI

CH1250-CH1340, CH1370-CH1490. SECTIONS OF WIDENING ROAD EITHER SIDE OF EXISTING CULVERT. THIS WILL REQUIRE;

- SOME FENCE RELOCATION
- RELOCATION OF DRAINAGE DITCH AND FIELD ACCESS CULVERTS
- NEW UNSEALED PAVEMENT

7

5

Ch 1500

OLD COACH ROAD

5

Ch 1600

BLADE SWING OVER ADJACENT BERM.
POWER POLE AT APPROXIMATELY CH1440 TO BE RELOCATED TO THE ROAD RESERVE BOUNDARY

ROAD ALIGNMENT WITHIN THE RED HATCHED AREA TO BE CONFIRMED FOLLOWING CONSENT. EXACT EXTENT WILL BE SUBJECT TO TEMPORARY AND PERMANENT INTERNAL ACCESS ROAD DESIGN.

LEGEND

- PERMANENT ROAD WIDENING
- TEMPORARY CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- TEMPORARY PAVEMENT FOR TRANSPORT OF TURBINE COMPONENTS
- PROPERTY BOUNDARY
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT

A3 SCALE 1:500

0 5 10 15 20 25 (m)

ORIGINAL IN COLOUR

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PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 9

SCALE (A3) 1:500 DWG No. 1016884.1000-108 REV 1

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LEGEND

- PERMANENT ROAD WIDENING
- TEMPORARY CLEARANCE FOR THE SWING OF THE TURBINE BLADE
- TEMPORARY PAVEMENT FOR TRANSPORT OF TURBINE COMPONENTS
- PROPERTY BOUNDARY
- EXISTING ROAD LAYOUT
- NEW ROAD LAYOUT

ROAD ALIGNMENT WITHIN THE RED HATCHED AREA TO BE CONFIRMED FOLLOWING CONSENT. EXACT EXTENT WILL BE SUBJECT TO TEMPORARY AND PERMANENT INTERNAL ACCESS ROAD DESIGN.

Ch 1600

Ch 1700

Ch 1713

OLD COACH ROAD

A3 SCALE 1:500

0 5 10 15 20 25 (m)

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PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE OLD COACH ROAD
SHEET 10

SCALE (A3) 1:500 DWG No. 1016884.1000-109 REV 1

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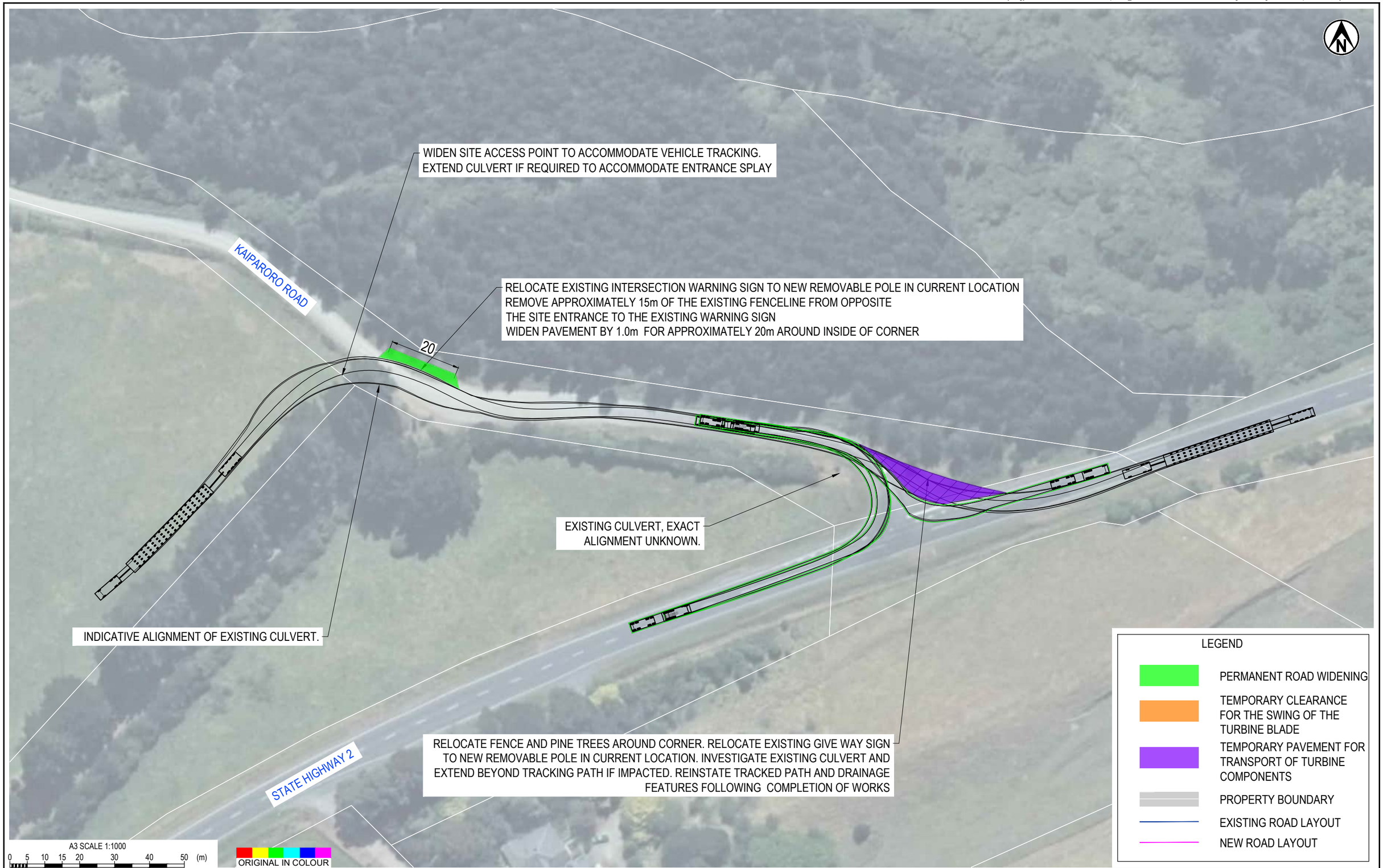

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE TERMINAL SUBSTATION ACCESS SH2
KAIPARORO ROAD

SCALE (A3) 1:750 DWG No. 1016884.1000-200 REV 1

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE INTERNAL TRANSMISSION LINE ACCESS (SH2)

SCALE (A3) 1:750 DWG No. 1016884.1000-201 REV 1

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CLIENT **MERIDIAN ENERGY**

PROJECT **MT MUNRO - MEL WAIRARAPA WIND FARM**

TITLE INTERNAL TRANSMISSION LINE ACCESS OPAKI-KAIPARORO ROAD

SCALE (A3) 1:750 DWG No. 1016884.1000-202 REV 1