

25 October 2023



Horizons Regional Council

Greater Wellington Regional Council

Tararua District Council

Masterton District Council

c/- Lauren Edwards, Senior Consents Planner, Horizons Regional Council

By Email Lauren.Edwards@horizons.govt.nz

Tena Koutou

Clarification of Meridian's Response to the Mt Munro Proposed Wind Farm Resource Consent Application Section 92 Additional Information Request

On 7 September 2023, Meridian provided a response to the Council's s92 Request of 6 July 2023. On 20 September 2023, Council provided an email seeking clarification on nine matters as a result of the responses which Meridian had provided. The purpose of this letter is to provide that clarification. For ease of reference, I have outlined each of the nine matters raised in the aforementioned email, and subsequently respond to them.

1. *The provision of the Fill Disposal Areas Plan (Drawing 1016884.1000-016) has raised a number of questions from a few of our technical assessors. The calculation of the volume of excess fill requiring disposal may not include all contributions, which may have flow on effects including:*
 - a. *Additional excess fill volume would increase one or more of the number/area/volume of excess fill disposal sites within the provided Indicative Fill Disposal Areas plan. This has potential implications for the landscape and visual assessment, to ensure excess fill volume does not result in a series of highly visible, engineered/geometric fill edges/faces, or is significantly higher than anticipated (noting that the s92 response suggests that a significant quantity of fill (approximately 1.2M m³) may be disposed of in relatively visible locations and at up to depths of around 5m). This is critical given the envelope approach being proposed.*
 - b. *Adequate representation of the most likely fill disposal areas across the site is also required to inform potential submitters.*
 - c. *Changes to the fill disposal site would require an updated review of the geotechnical effects as well as assessment by other technical disciplines to adequately assess the effects of the works (and may result in other consent requirements being triggered).*
2. *Further information is required to confirm the above.*

Meridian's consultant civil engineer has revised the earthworks calculations for the proposal, in consultation with Councils technical assessor. As a result of this, the maximum fill disposal volume has increased to approximately 1,410,820m³ (up from 1,217,400m³). The increase is primarily due to a bulking factor being applied to fill disposal volume and an allowance for disposal of cut material from the proposed Old Coach Road works.

The envelope approach that the applicant has chosen to take means that a 'worst case scenario' is being presented for consideration at resource consent stage. In terms of earthworks this equates to a maximum fill disposal volume of approximately 1,410,820m³. However, once decisions are made as to final turbine locations and level, and the final road layouts, one of the aims of detailed design will be to reduce overall earthworks volumes, meaning that in reality the 'constructed' fill disposal volume will be significantly lower than the potential maximum.

Attached as Appendix 1 are two drawings provided by Tonkin + Taylor, confirming the fill disposal areas and a typical cross section of fill. The location and size of the fill disposal areas has increased from what was reported in the original s92 response, due to the bulking factor being applied and a minor allowance for cut material from the Old Coach Road works, and discussions with Councils technical assessor. Meridian's consultant civil engineer has confirmed that the revised maximum fill disposal volume can still be accommodated within these areas.

In terms of visibility, it is understood that the independent landscape architect engaged by Meridian has consulted with the Council's appointed landscape architect, and that there is comfort, noting that the maximum finished gradient of the fill disposal areas is 1(v):3(h). Note, this does not apply to engineered fill required to provide for roads. This fill will have a gradient of 1:2, as shown on the typical cross section in Appendix 1. Given this, a new condition of consent is proffered, for both the district and regional conditions sets (earthworks section), being:

X Earthworks fill areas (aside from the proposed access roads) must be finished with a maximum gradient of 1(vertical):3(horizontal). Engineered fill providing for roads can be finished with a gradient of 1:2.

With this condition, the fill disposal areas can accommodate up to approximately 1,464,850m³ of fill material, exceeding the maximum fill disposal volume of approximately 1,410,820m³.

As there are no changes to the geotechnical requirements for the revised fill sites, and those identified within the lodged application and the s92 response, there is no requirement for an updated geotechnical review. It is also noted that proffered district council condition 9 and regional council condition 3 in the as lodged resource consent application require that a slope stability assessment of all cut and fill is to be undertaken and verified by a suitably qualified and experienced geotechnical engineer.

- 3. Given the Fill Disposal Areas take up a large area of the envelope, please confirm how erosion and sediment control measures will be incorporated into the envelope. For example, is there room for SRP's to be used?*

The attached technical memorandum from Ridley Dunphy (Appendix 2) confirms that there is sufficient space within the proposed envelopes to incorporate the proposed erosion and sediment control measures.

4. *In regards to the methodology to be used for the construction of the proposed culverts, you have proposed to wait for detailed design and SEMP for specific methodology. In our view, this is the highest risk earthworks on site and we need to see a more detailed methodology or example SEMP for these works to assess practicality.*

Whilst Meridian wish to continue to have each culvert's specific methodologies confirmed through detailed design and SEMPs as proposed, its technical advisors have undertaken further work on the proposed culverts to detail the preliminary construction methodology and environmental and ecological risk associated with each. These matters are explained in the technical memorandum from Ridley Dunphy in Appendix 2. This memorandum includes a table which specifies each proposed culvert's likely characteristics, including classification of the stream it is proposed to be located in, culvert size and length, construction timeframe and construction methodology to be used. It also contains construction methodologies for the different culvert and stream classification types.

5. *You have mentioned in the s92 response (Question 90 Response) that in addition to the culverts identified in the lodged application, a further nine culverts are identified as necessary. Please advise whether these will meet the Permitted Activity standards in the NESF and the Regional Council Plan's or whether additional consents are required for these culverts. If they require resource consents, we will need this confirmed and further information provided in relation to these (location, design etc).*
6. *We also note that you have set out that the three proposed culverts will meet all of the Permitted Activity standards in the NESF, with much of the details being left to detailed design, please confirm that consent for the culverts is not required under the NESF.*

In response to Matters 5 and 6, and as is stated in the as lodged resource consent application and s92 response, the final design of each of the twelve culverts will be determined through the detailed design phase, with proffered condition 8 of the regional resource consent conditions requiring certification of the culverts prior to construction. In any instance, the table included in the technical memorandum attached as Appendix 2 provides the preliminary parameters of each culvert (subject to change through detailed design and the SEMP process).

While the applicant and their consultants are confident that permitted regulation 70(2) in the *Resource Management (National Environmental Standards for Freshwater) 2020* (NESF) can be met, in order to avoid risk at the detailed design stage of a particular culvert not meeting the relevant standard, resource consent is now sought for culverts under as a **discretionary activity** under Regulation 71 of the NESF.

The same approach applies to the Horizons One Plan and the Greater Wellington Natural Resources Plan, noting that resource consent was already sought for culverts under Rule 17-22 of the Horizons One Plan and Rule R142 of the Greater Wellington Natural Resources Plan.

In terms of resultant actual and potential environmental effects, we consider that, regardless of whether or not a culvert is a permitted activity or requires resource consent, the conditions proffered in the as lodged resource consent, being Regional Resource Consent Conditions 3 (which requires hydraulic assessment of culvert inlet and outlet structures) and 9 (requiring a Specific Environmental Management Plan with ecologist input, and regional council certification prior to implementation) provide an appropriate method to avoid, remedy or mitigate the actual and potential environmental effects of all culverts.

7. *In regards to stormwater, we note that the assessment undertaken in Section 4.3.2 and 4.4.3 relate to short term construction run off and management measures to mitigate these short term effects. No assessment of long term run off of stormwater discharges from the access road and substation areas has been undertaken. With the current level of detail, we cannot confirm whether or not the diversion and discharge of stormwater will meet the Permitted Activity standards in the One Plan and the GWRC Natural Resources Plan.*

The stormwater responses to Request 87 and 89 of the original S92 further information requests covers this as outlined in the Tonkin + Taylor memo (T+T ref: 1016884.1000 dated 7 September 2023), included as Appendix 13 to the s92 response. Methodologies and design interventions regarding the long-term run-off of stormwater discharges were provided in the memo, including identification of methods that can be adopted to achieve compliance with the relevant Permitted Activity Standards in the Horizons One Plan and the GWRC NRP.

8. *Please confirm whether you consider the following resource consent requirements are triggered:*
 - a. ***Tararua District Plan Standard 4.1.6.1*** - *An activity specifically listed in Part 5 (such as a renewable electricity generation facility) of the Plan as a “discretionary activity” also requires consent as a “discretionary activity” under rule 4.1.6.1 in the rural management area;*

It is agreed that resource consent as a Discretionary Activity is also required under Standard 4.1.6.1 of the Tararua District Plan. This rule appears to be a general catch all rule, essentially cross referencing Standard 5.3.7.2(b) that provides for the construction, operation and maintenance of renewable electricity generation facilities as a Discretionary Activity (which subsequently has Standard 5.7.3.4 providing Assessment Criteria). Given this, we consider that there are no additional actual and potential environmental effects arising from the need to seek resource consent under Standard 4.1.6.1 over and above those already assessed in the as lodged resource consent application and subsequent s92 response.

- b. ***Tararua District Plan Standard 5.4.1.2*** - *For activities that cannot meet the permitted activity standard (and do not meet the definition of a temporary activity) for noise in a rural management area*

The Marshall Day Acoustics response to the s92 request notes that the roading improvements will have short term noise effects (several days) when work occurs directly in front of the dwellings along Old Coach Road.

The upper limit of this noise effect is estimated to be 78 dB LAeq which, given the short term nature of the effect, is within NZS6803:1999 Construction Noise, and therefore would be compliant with Standard 5.4.1.2(f).

However, whilst generally speaking the traffic that then uses the upgraded road would be exempt from NZS6803:1999 Construction Noise, the fact that the trucks using it will be for construction of the wind farm, the construction noise effects on the identified Old Coach Road properties will continue for longer than just the roading improvement works.

This means that the long term provisions of NZS6803:1999 would more appropriately apply, and the more stringent noise limits applicable to long-term projects would not be met. Therefore Standard

5.4.1.2(f) is not complied with, and resource consent would be required for the construction would be a discretionary activity under Standard 5.4.1.3.

The resultant noise effects are mitigated through implementation of the proposed Construction Noise Management Plan proffered in the s92 response.

- c. ***Wairarapa Combined District Plan (WCDP) Rule 4.5.6.(a)*** - For any activity listed in Schedule of primary Industry (specifically for stone and mineral crushing and concrete batching) not captured by temporary activity standard of Rule 21.1.16(a)

Section 4.6.2 of the as lodged resource consent application seeks resource consent for aggregate crushing under Rule 4.5.6(a) of the WCDP.

- d. ***WCDP Rule 21.2.2*** - For hazardous facilities that includes hazardous substances with a quantity falling within controlled activity standards in Appendix 2 (specifically for the diesel fuel tank, likely HSNO subclass 3.1D)

The as lodged resource consent sought resource consent under Rule 21.6(n) for the transformer oil and cement material to be stored on site. The proposed 30,000L diesel tank was overlooked, as was the likely 3,000L diesel tank for the concrete batching plant. It is agreed that at these volumes, diesel falls within HSNO subclass 3.1D and resource consent as a Controlled Activity is needed under WCDP Rule 21.2.2.

- e. ***WCDP Rule 21.6(n)*** - For hazardous facilities that includes hazardous substances with a quantity falling within discretionary activity standards in Appendix 2 (specifically for the transformer fuel) please confirm likely quantities and HSNO subclass)

As stated above, the as lodged resource consent sought resource consent under Rule 21.6(n) for the transformer oil. Transformer Oil is provided for under HSNO subclasses 3.1D, 6.3B, 6.7B and 9.1C, and the quantity of oil would be approximately 32,000 litres.

- f. ***WCDP Rule 4.5.2(a)(f)*** - Rural zone noise limits for activity/activities not captured by temporary activity standard of Rule 21.1.16(a). Consent required if not met.

WCDP Rule 4.5.2(f) permits noise of up to 55dBA_{L10} between 7am and 7pm, 45dBA_{L10} between 7pm and 7am and 75dBA_{Lmax} between 9pm and 7am. The measurement point for the noise levels is the notional boundary of a dwelling on any site within the Rural Zone (being a line 20 metres from the external wall of the dwelling).

Appendix H of the as lodged resource consent includes noise contour maps prepared by Marshall Day Acoustics. There are no dwellings in the Masterton District Council which fall within the 45dBA contour. All dwellings in the Masterton District are outside of the 40dBA contour.

NZS6803:1999 applies to wind farm construction, and will be met at the distances involved between the dwellings in the Masterton District and the construction works on site.

- g. ***National Environmental Standards for as Assessing and Managing Contaminants in Soil to Protect Human Health 2011 Regulation 11*** - on the basis that there will disturbance of soil on a relevant piece of land, for a duration longer than allowed for within the Regulation 8 Permitted Activity standard, and without a DSI provided (to meet Regulation 9 or 10) – noting that earthworks will occur in locations identified as

HAIL sites (e.g., by the 'super bin' that contained fertiliser) in the submitted PSI. The PSI says no earthworks will occur, but the submitted Fill Disposal Area Plan & other proposal documents suggest otherwise.

While the 'super bin' is located within the Turbine Envelope Zone, the earthworks are proposed to be managed within this zone so that this area is avoided. The fill plan included in Appendix 1 has been updated to show no earthworks in the 'super bin' area.

9. *We also note that you may wish to comment on the draft NPS Natural Hazards (noting this was released this week and may come into force prior to the decision).*

The consultation draft Proposed National Policy Statement for Natural Hazard Decision Making (released 18 September with submissions closing 20 November 2023) has been reviewed at a high level.

Utilising existing publicly available natural hazard data, the site is not mapped on the GWRC GIS or Horizons GIS as being at risk of earthquake, fault, landslide, coastal elevation or tsunami hazards. The site generally has a low rural wildfire risk (noting some bushclad gullies, away from the proposed Turbine Envelope Zone have a high wildfire risk profile). The site is not within a potential flood area identified within the Tararua District Plan Flood Maps, or the Wairarapa Maps Flood Zones. Likewise, the site is not within a liquefaction risk area under the Wairarapa Maps.

Given this, the site is considered to be an area of *low natural hazard risk*. Under Policy 5(c), planning decisions must ensure that new development is enabled in such as area.

Written Approval

The applicant has also received a written approval from Pūkaha National Wildlife Centre. This is attached as Appendix 3.

Conclusion

I note that in a subsequent email (26 September) it has been confirmed that no further clarification of the Meridian s92 response is required. As such, based on the above and attached, I trust that this clarification is sufficient for your purposes and that the application can now proceed to public notification.

Yours sincerely

Incite

A handwritten signature in blue ink, appearing to read "Tom Anderson".

Tom Anderson

Director/Principal Planner

tom@incite.co.nz

04 801 6862 or 027 231 0246



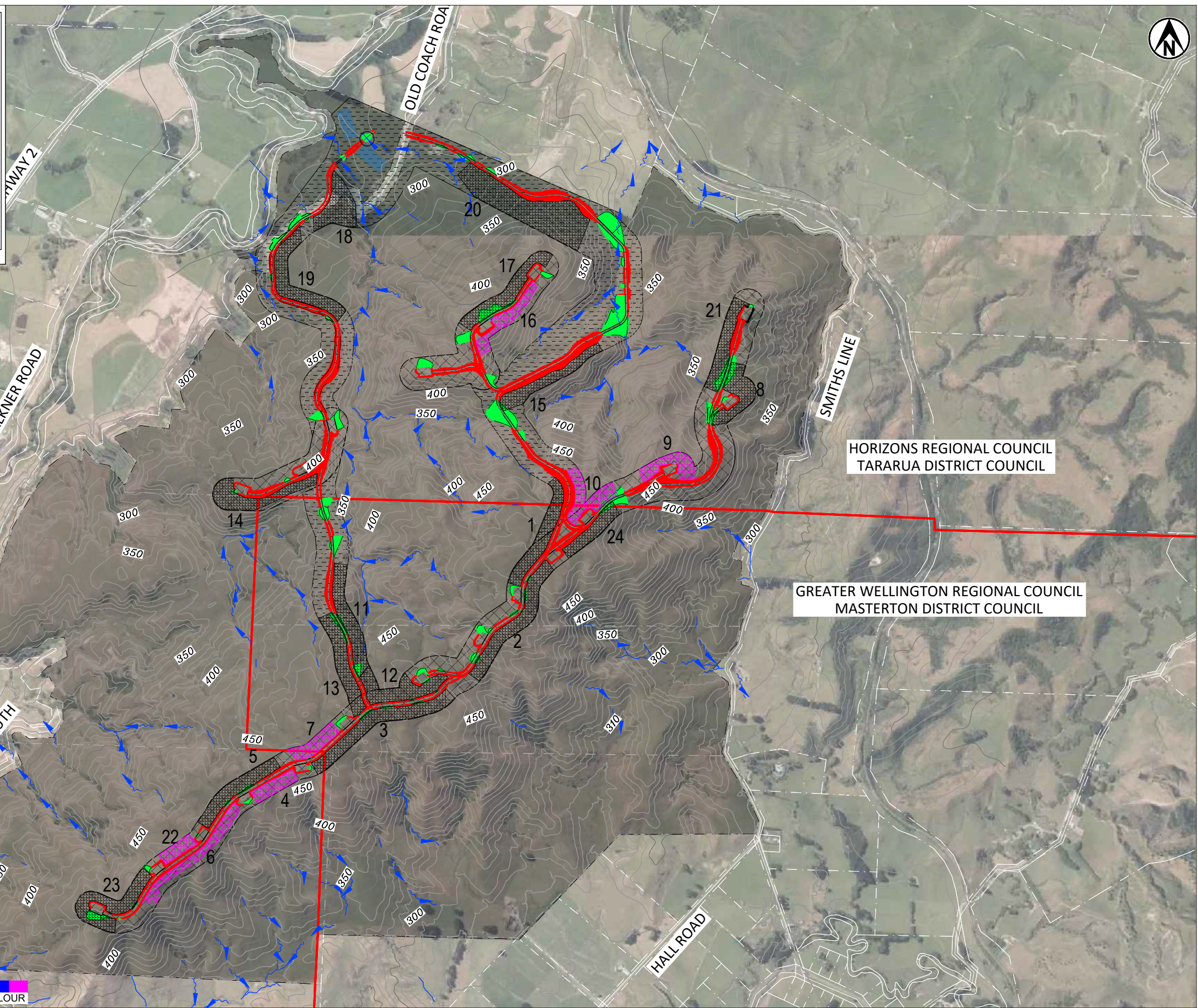
APPENDIX 1

DRAWINGS – FILL LOCATIONS AND TYPICAL FILL CROSS SECTION

LEGEND

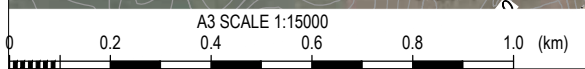
- ELEVATION MAJOR CONTOUR
- ELEVATION MINOR CONTOUR
- FULL SITE BOUNDARY
- REGIONAL BOUNDARY
- TURBINE ENVELOPE ZONE
- TURBINE EXCLUSION ZONE
- FILL BATTER SLOPE
- CUT BATTER SLOPE
- FILL DISPOSAL AREAS FOR MINIMUM EARTHWORKS VOLUME
- ADDITIONAL FILL DISPOSAL AREAS FOR MAXIMUM EARTHWORKS VOLUME
- EXISTING FLOW PATHS

FIL SITE ID	AREA (m2)	MIN VOLUME (m3)	MAX VOLUME (m3)
1	19,500	68,250	68,250
2	23,000	80,500	80,500
3	28,200	98,700	98,700
4	7,900		27,650
5	17,300	60,550	60,550
6	14,700		29,400
7	9,000		31,500
8	15,800	47,400	47,400
9	10,900		27,250
10	14,000		35,000
11	19,900	59,700	59,700
12	19,200	57,600	57,600
13	19,100	57,300	57,300
14	19,200	48,000	48,000
15	16,200	56,700	56,700
16	10,700		26,750
17	19,500	48,750	48,750
18	18,300	82,350	82,350
19	22,200	66,600	66,600
20	52,200	261,000	261,000
21	16,000	56,000	56,000
22	6,100		21,350
23	21,700	75,950	75,950
24	11,600		40,600
TOTAL	1,228,880	1,484,880	1,484,880



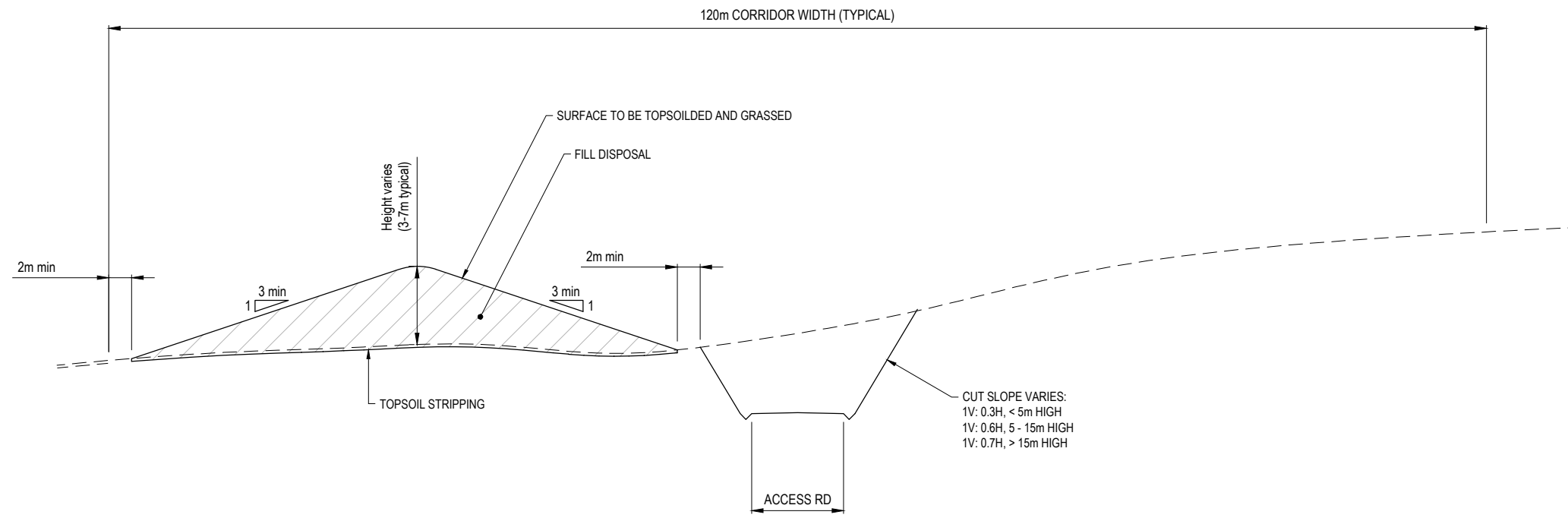
HORIZONS REGIONAL COUNCIL
TARARUA DISTRICT COUNCIL

GREATER WELLINGTON REGIONAL COUNCIL
MASTERTON DISTRICT COUNCIL

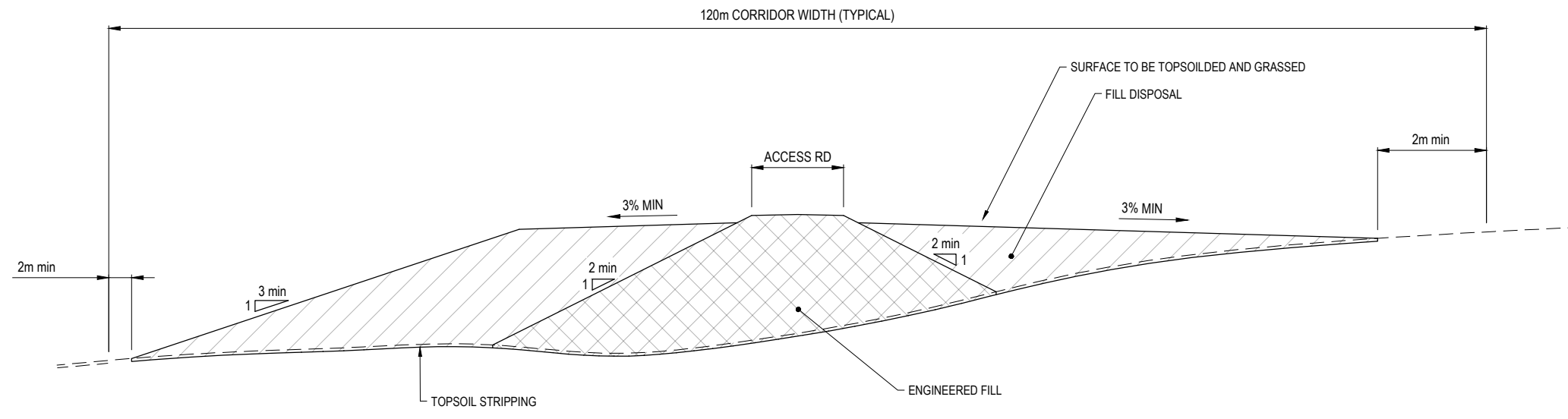


3	REVISED DRAFT RESOURCE CONSENT ISSUE	MGM	Oct 23	DESIGNED	MGM	AUG.23	DRAWING STATUS RESOURCE CONSENT
2	DRAFT RESOURCE CONSENT ISSUE	MGM	Oct 23	DRAWN	JOAB	AUG.22	
1	DRAFT RESOURCE CONSENT ISSUE	JOAB		DESIGN CHECKED			
				DRAWING CHECKED			
				NOT FOR CONSTRUCTION		THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED	
REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE	

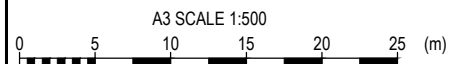
CLIENT	MERIDIAN ENERGY LIMITED
PROJECT	MOUNT MUNRO WIND FARM
TITLE	INDICATIVE FILL DISPOSAL AREAS PLAN
SCALE (A3)	1:15000
DWG No.	1016884.1000-016
REV	3



TYPICAL SECTION IN CUT



TYPICAL SECTION IN FILL



1	RESOURCE CONSENT ISSUE	JOAB	CHK	DATE	DESIGNED	MGM	AUG.23	DRAWING STATUS	RESOURCE CONSENT	CLIENT	MERIDIAN ENERGY LIMITED
					DRAWN	JOAB	AUG.22			PROJECT	MOUNT MUNRO WIND FARM
NOT FOR CONSTRUCTION									THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED		
REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE	SCALE (A3) 1:500		DWG No.	1016884.1000-017	REV 1



APPENDIX 2
RIDLEY DUNPHY TECHNICAL MEMORANDUM

Technical Memorandum

From: Graeme Ridley, Ridley Dunphy Environmental Limited.
Date: 24th October 2023.
Re: Meridian Mt Munro Wind Farm – Culvert Methodology and Fill Sites

1.0 ASSESSMENT

In response to the request for further information from Councils related to the above I confirm as set out below and as attached.

2.0 CULVERT METHODOLOGIES

The attached documentation confirms the location of the 12 proposed culverts and the associated design and construction period. In addition this confirms the methodologies that will apply.

While this process has confirmed that the installation of the culverts can occur and the methodologies and controls can be effectively implemented on site during construction, it is important to recognise that the final methodology and specific design details will be confirmed through a SEMP process.

3.0 FILL SITE ESCP

Council has requested *“Given the Fill Disposal Areas take up a large area of the envelope, please confirm how erosion and sediment control measures will be incorporated into the envelope. For example, is there room for SRP’s to be used”*.

The location of the potential fill sites has been documented and illustrated within the further information provided by Meridian. I have further assessed the ability to install ESC measures as part of the fill process. This includes the provision of SRPs but also allows for other ESC measures such as super silt fences where applicable.

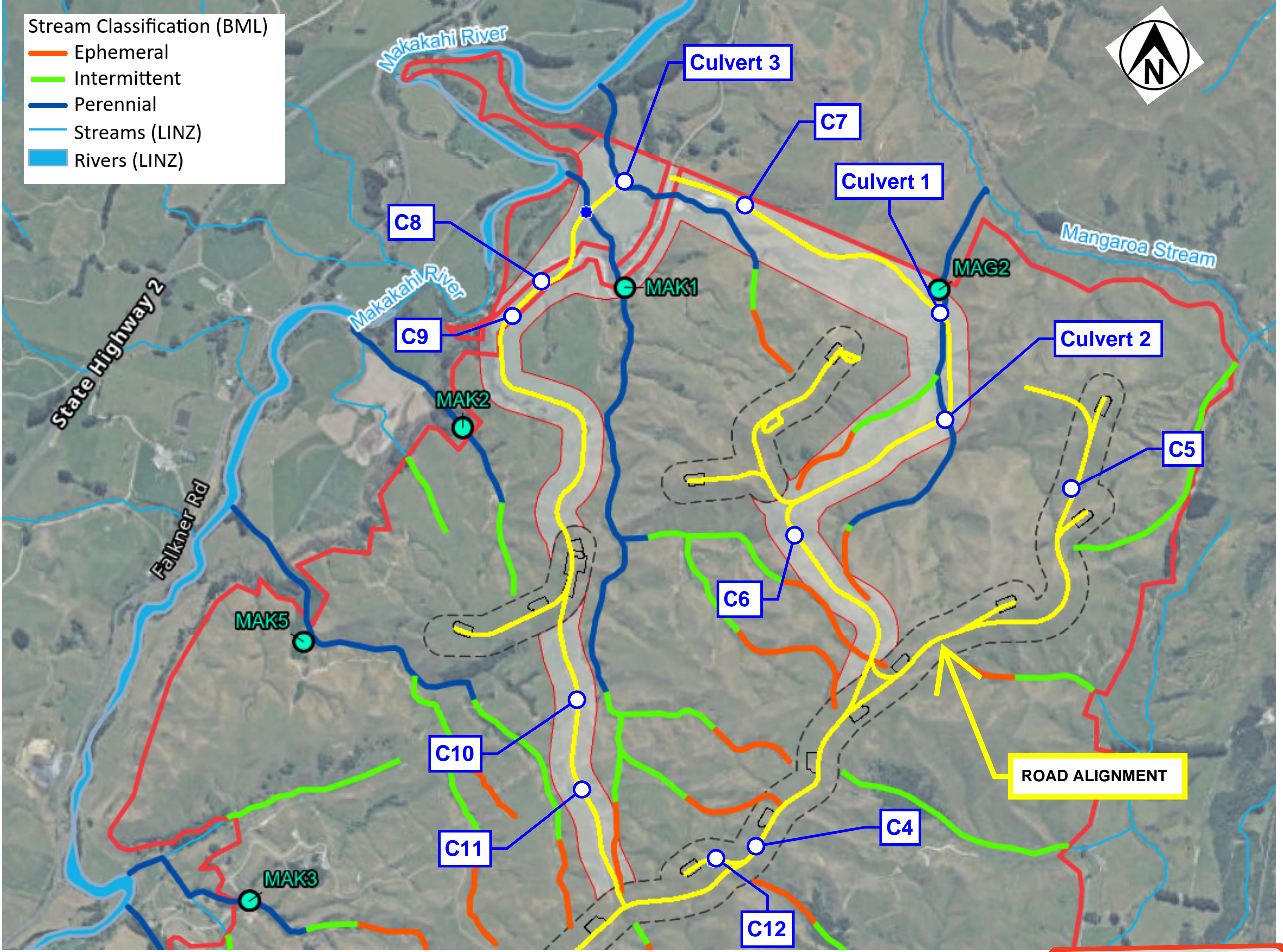
An important element of the fill volume calculations is that the calculated fill capacity is larger than that anticipated fill volume and in addition to this value engineering through the process will further reduce this fill volume. With these aspects in mind I assess that there is adequate room to establish ESC measures either within the same footprint as the fill or alongside the fill areas within an area of no activity.

As with all earthworks the SEMP process will document the specific locations and ESC measures to be implemented.



Graeme Ridley
Ridley Dunphy Environmental Limited

MOUNT MUNRO CONCEPT DESIGN CULVERT STREAM CLASSIFICATION



DRAFT

Culvert ID	Stream Classification ¹	Culvert size (dia, mm)	Culvert length (m)	Anticipated duration of construction ² (days)	Risk ³	Construction methodology
1	Perennial	1200	110	11 days	High Risk - Duration over 5 days and Perennial	Perennial Long Duration
2	Perennial	1050	100	10 days	High Risk - Duration over 5 days and Perennial	Perennial Long Duration
3	Perennial	900	30	3 days	Medium Risk - Duration less than 5 days but Perennial	Perennial Short Duration or Ephemeral Long Duration
4	Ephemeral*	300	30	3 days	Low Risk - Ephemeral and less than 5 days duration	Ephemeral Short Duration Method
5	Ephemeral*	600	80	8 days	Medium Risk - Longer than 5 days duration but Ephemeral	Perennial Short Duration or Ephemeral Long Duration
6	Ephemeral*	300	90	9 days	Medium Risk - Longer than 5 days duration but Ephemeral	Perennial Short Duration or Ephemeral Long Duration
7	Perennial	900	40	4 days	Medium Risk - Duration less than 5 days but Perennial	Perennial Short Duration or Ephemeral Long Duration
8	Ephemeral*	600	25	3 days	Low Risk - Ephemeral and less than 5 days duration	Ephemeral Short Duration Method
9	Ephemeral*	600	20	2 days	Low Risk - Ephemeral and less than 5 days duration	Ephemeral Short Duration Method
10	N/A - Overland Flow Path	600	30	3 days	Very Low Risk - Short Duration and OFP	Overland Flow Path Method
11	Ephemeral*	300	30	3 days	Low Risk - Ephemeral and less than 5 days duration	Ephemeral Short Duration Method
12	N/A - Overland Flow Path	300	20	2 days	Very Low Risk - Short Duration and OFP	Overland Flow Path Method

Notes:

1. Stream classification of culvert is based on the Boffa Miskell Limited "Mt Munro Wind Farm Ecology Assessment" Map 15 Revision 2, 30 August 2023.

* In some instances, a stream classification could not be found on the map for the culvert, but there appeared to be a defined channel based on existing ground survey and aerial photography.

In these cases, it has been assumed that all streams except for Culvert 1, 2, 3, and 7 are ephemeral, as per e-mail from Vaughan Keesing dated 23/10/2023.

2. Based on a construction rate of 10m/day

3. Based on risks relating to environmental and ecological impacts to the existing stream where relevant.

A. Overland Flow Path Method - Very Low Risk – Culverts 10 and 12

Methodology for these is based on working within a fine weather window and establishing the culvert and associated inlet and outlet structures during a fine period of weather. A maximum of 3 days is estimated to complete these works. Key elements are:

1. Ensure that all necessary materials are on site and available.
2. Ensure a fine weather window of 3 days is forecast.
3. Complete the works over the fine period of weather with zero flows through the culvert location.
4. If un-forecast and unexpected rain, and flow, eventuates within the location during works then ensure sediment control measure (likely to be a silt fence) is placed below area of works on turbine exclusion or turbine envelope zone boundary. In addition a bund above the works can be established as a clean water diversion to divert flows around the location.
5. On completion of culvert works ensure all exposed surfaces are stabilised including associated inlet and outlet rip rap if required.
6. General conditions as set out below apply.

B. Ephemeral Short Duration - Low Risk – Culverts 4, 8, 9 and 11

Methodology is the same as for the Overland Flow Path Method (very low risk culverts) with the key differences as below:

1. Ensure a fine weather window of 5 days is forecast.
2. Where the works are in a defined channel sandbags and a pump will be on standby for the duration of the works to dam and pump flows around the culvert location if necessary.

General conditions as set out below apply.

C. Perennial Short Duration or Ephemeral Long Duration - Medium Risk – Culverts 3, 5, 6 and 7

These culverts are either of a duration where it is difficult to guarantee a dry period of weather or are of a short duration however are within a perennial stream system. Culvert 3 and 7 are the only culverts in this risk category where a perennial stream exists.

Methodology is based around the expectation of flow through the culvert location at some stage during the works activity. Through detailed design there will be the assessment of the ability to construct these culverts offline (outside the main channel as a separate works package). Where this can be achieved it will be detailed within a SSESCP and will include the provision of a sediment control measure (likely to be in the form of a super silt fence) between the culvert works and the identified channel. Once the culvert construction is completed then the “tie ins” will occur at either end over a fine period of weather and with stabilisation of the full area surround the location.

Culverts 5 and 6 are assessed as likely to be able to be constructed using this methodology.

Culvert 3 and 7 may also be able to utilise this methodology however are located in a more incised channel and as such a dam and divert method will apply. This includes:

- Place a temporary non-erodible dam within the existing stream channel upstream of the work area and install a pump approximately 5m upstream of the dam. The pump will pump flows upstream of the works around the work area and discharge them back into the existing watercourse downstream of the culvert works;
- Sand bags or similar will be used to impound flows for the pump. The inlet of the pump will be supported above the base of the stream and will contain a fish grill, to prevent fish from entering the pump intake structure;
- The pump flow rate will be equal to the expected dry weather flow for the particular stream;
- Sandbags, as a coffer dam, will also be installed downstream from the culvert works to effectively create a works area where any runoff and water captured can be treated prior to discharge;
- Any fish observed in any of the pools within the work area will be recovered and released downstream;
- Works can commence and will involve the culvert installation as required. Any excavated material will be removed from the work area and disposed of within one of the identified fill sites;
- Once all unsuitable and soft material has been removed from the extent of the culvert to be constructed, the area will be backfilled with the required amount of structural fill and the culvert along with any associated wingwalls and backfill will be constructed;

- Any other construction activity associated with the culvert construction, such as the placement of fill, will only be carried out once ESC measures such as super silt fences have been put in place;
- When the works have been completed, any disturbed and exposed areas of bare earth will be fully stabilised through mulching or vegetation establishment; and
- The pump and coffer dams will be removed and the stream flows can then be passed through the new culvert structure.

General conditions as set out below apply.

D. Perennial Long Duration - High Risk – Culverts 1 and 2

These culverts will have detailed design and final methodology determined based on the provision of a SSESCP. The location of culverts 1 and 2 are within a location where there may be adequate room to construct the culverts offline as per the Medium Risk locations. This may be able to occur for part of the culvert construction with a dam and divert (via pumping) methodology (as for the Medium Risk culverts) for those sections where room availability is limited.

Due to the lengths of these culverts being approx. 100m each, emphasis will be placed on constructing these culverts in stages, completing a stage over a fine period of weather (approx. 30 to 40m) and then assessment and moving to the next stage of construction.

For culverts 1 and 2 ecological input into the methodology and also the implementation phase will apply with a particular emphasis on fish recovery within the location of the culvert placement.

While it is currently assessed as unlikely to be required there is the potential for a formal stream diversion to be installed. If this does occur it will follow the methodology as below:

- Excavation of the diversion channel will be carried out offline from the existing stream, so that excavation works can be carried out in a dry environment. A clay plug will be left in place at each end of the diversion channel to ensure that the existing stream cannot breach and flow through the new channel prior to it being stabilised;
- The dimensions of the diversion will be such that it will have sufficient capacity to cater for the 20 year 1 hour duration flow;
- Stabilisation of the newly constructed diversion channel will be carried out to ensure it does not become a source of sediment. This will be achieved using geotextile fabrics, rip rap material or rock armour;
- Once the diversion channel is fully stabilised, the downstream clay plug will be removed to allow stream flows to enter the diversion channel. The upstream clay plug can then be removed allowing stream flows through the diversion channel;

- Removing the downstream clay plug first helps to reduce scour in the diversion channel by keeping some water within it when the upstream plug is removed;
- A non-erodible dam will then be placed within the original channel immediately downstream of the inlet to the diversion channel in order to divert flows into it. A non-erodible dam will also be immediately placed at the downstream end of the original channel, upstream of the diversion channel outlet to prevent backflow into the construction area. Once the flows have been diverted and the dams placed, fish removal from the original channel can be completed. Construction activity can then take place within the original channel as required;
- The non-erodible dam will comprise the formation of a sand bag barrier with an impermeable lining to avoid seepage through the sand-bags. Clay will then be placed immediately behind the sand-bags to prevent water flowing through the sand-bag barrier and into the construction area;
- Any water remaining within the original stream channel and works area will be pumped to a sediment control device. Pumped volumes will be minor and the pumping process will allow for settlement of sediment and chemical treatment with flocculant if necessary;
- Once the original channel has been de-watered, construction activity – including the removal of weak and unsuitable material, filling, culvert construction, etc. – within the original channel can then occur;
- While it is considered unlikely to be required, if necessary, CWDs will then be installed above the area of work to ensure that stormwater runoff from the existing catchment outside of the works is excluded from the area during the construction period;
- Material excavated from the diversion channel will be placed in stockpiles away from the stream diversion and outside of the identified flood plain area;
- Although the works will only occur during a fine weather window, geotextile material will be available onsite to cover any exposed areas and stockpiles;
- The works will be staged such that if flood conditions result the area can be fully stabilised in a few hours. Any sediment deposited within the newly formed channel will then be pumped to a sediment control device;
- Once the works within the original channel have been completed, other appropriate controls, such as silt fences, will be installed below the area of works; and
- Once the new culvert has been constructed and the surrounding area stabilised then flows from the existing to the new channel and culvert can be transferred.

E. General Conditions for all Culverts

The following will be required for the construction of all culverts:

- Prior to any works commencing on the construction of a particular culvert a period forecast of dry weather sufficient to construct the culvert will be confirmed through appropriate weather monitoring systems;
- Culverts are expected to be installed in stages and each stage will be fully constructed and the immediate area stabilised at the end of each working day;
- Any water present within the work area will be pumped to a turkeys nest (or an approved sediment control device) and then to an existing grass environment which will be located a minimum distance of 20m from, and discharge away from, the stream environment; and
- On completion of the culvert works, all plant, materials and labour will be demobilised and the site will be permanently stabilised in accordance with the SEMP for that work area.

In the event of high rainfall during the course of construction of the culverts, or prior to leaving the site for more than a 24-hour period, the following will occur:

- Any loose material that could enter a watercourse is to be removed from the flood plain of the stream;
- Any downstream sandbag barriers will be checked and, if required, removed;
- All existing sediment control measures will be inspected and secured and maintained where required should a significant rain event be forecast. The streambed in the location of the culvert will be fully stabilised to ensure no flows overtopping the upstream dams or bunds can create scour issues. It is expected that this will be achieved through geotextile being appropriately trenched in at the head and toe of the work area; and,
- Extend the working hours, subject to compliance with relevant consent conditions, if it is believed to have significant benefit with regard to programme, forecast weather events and environmental impacts.

It is assessed that the above processes, methodologies and controls can be effectively implemented on site during construction.



APPENDIX 3

PŪKAHA NATIONAL WILDLIFE CENTRE WRITTEN APPROVAL

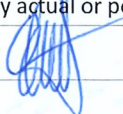


Meridian.

WRITTEN APPROVAL OF AFFECTED PERSON(S)

Application	
Applicant	Meridian Energy Limited
Proposed Activity	The construction, operation and maintenance of a wind farm comprised of up to 20 wind turbines, each up to 160m tall (comprised of a hub height of 92m and a blade diameter of 136m) and ancillary works including facilitatory earthworks, underground internal cable network and new access roads (including crossings of waterbodies) between the turbines and from the site entrance, new overhead transmission to connect the wind farm to the national grid. The proposal also includes temporary concrete batching, temporary fuel storage, use of contaminants, temporary aggregate crushing, substations, meteorological mast, operation and maintenance/services building and construction laydown areas.
Type of Resource Consent	All necessary land use consents, water permits and discharge permits to undertake the activities described above and more fully described in the Meridian Mt Munro Wind Farm – summary of application for wind farm and Assessment of Environmental Effects.
Location where the Activity is to occur	The Mt Munro Wind Farm is proposed to be located approximately 5km south of Eketāhuna, on land approximately bound by Falkner Road to the west, Kaipororo Road and State Highway 2 to the southwest, Old Coach Road to the north, Hall Road and Smiths line to the east, and Opaki-Kaipororo Road and Coach Road South to the south.
Proposed Application Information	Meridian Energy Mt Munro Wind Farm – summary of application for resource consents to Horizons Regional Council, Greater Wellington Regional Council, Tararua Regional Council and Masterton District Council dated 29 June 2023, Form 9 Application and Assessment of Environmental Effects.

Affected Person(s) Declaration

Name:	Pūkaha National Wildlife Centre	Name:	Emily Court General Manager	I am the land owner (tick)	I am the occupier (tick)	I have authority to sign on behalf of all other occupiers (tick)
Phone:	06 375 8004	Email:	info@pukaha.org.nz	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Affected Party Activity to which this affected party relates:	Pūkaha National Wildlife Centre					
Property Address(es):	85379 State Highway 2, Mount Bruce 5881					
Legal Description(s):	Various					
	<ul style="list-style-type: none"> I/We have been given the Proposed Application Information which describes the proposal to which I/we are giving written approval and give full support and consent to the application. I/We understand that by giving my/our written approval, the Council when considering the Resource Consent application cannot take account of any actual or potential effects of the Proposed Activity on the Affected Party Activity. 					
Signature:						
Date:	26. 9. 23					