Appendix I: Novo Group Visual Effects Assessment

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Visual Effects Assessment

prepared for

SOLAR PANEL FARM

80 STRUIE ROAD

Hororata

August 2024

Visual Effects Assessment

Solar Panel Farm, 80 Struie Road, Hororata

Document Date:	27/08/2024
Document Version/Status:	Final
Project Reference:	1087001
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Reviewed by	Rebecca Beattie, Planner

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Appendices

Introduction

1. The purpose of this report is to assess the landscape and visual (LVA) effects resulting from the proposal to establish a commercial solar energy facility at 80 Struie Road, Hororata to inform the AEE.

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2. The following LVA methodology is based on the ***Te Tangi a Te Manu Aotearoa New Zealand*** Landscape Assessment Guidelines (May 2021) which encourages a tailored methodology specific to the project situation avoiding a prescriptive approach. A preference for character description and effects on landscape is the Guideline's preferred method for establishing effects. The rating scale utilised in the following LVA is summarised in **Figure One** below.

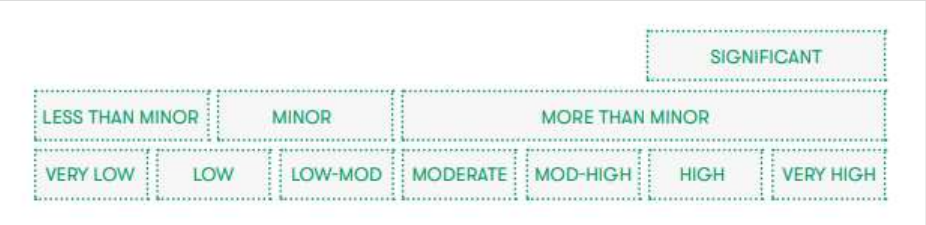

Figure 1: Visual Effects Ratings and Categorisation as per *Te Tangi a te Manu*

3. Landscape effects have been considered, in relation to character, amenity, perception and biophysical values of the landscape. Visibility does not pertain to a visual effect. It is a subset of the landscape effects, and relates to suitability, absorption, appropriateness, and an adaptation of character. This has been considered in relation to key viewing audiences particular to the Struie Road environment.

4. Several site visits have been undertaken to view the site and surrounds. Photos were taken during the visit at key locations for reference and assessment. Additionally, a desktop analysis of site surrounds including GIS, Google Earth and LINZ Maps has been undertaken.

5. A Graphic Attachment (**Appendix A**) has been organised to outline the site plan, mitigation planting, and viewpoints from the site to assist in the assessment of effects.

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6. The resource consent application is to establish a commercial solar energy facility located at 80 Struie Road, Hororata.

7. The proposal, as outlined in Site Plan **Appendix A**, pertains to:

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- Open space areas for access and maintenance strips around solar panels, which will be a mixture of grassed paddock land, and hardscape areas in key areas for access etc.
- A large area of mitigation planting i.e. boundary planting of approximately 3014m² to be included along north, west and south of site.

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Site Component / Feature	Details
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Zone	Outer Plains (ODP) and General Rural (PDP)
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9. Mitigation measures have been included in the following assessment of the landscape and visual effects. These measures include:

i) A 3m wide landscaping strip as boundary screening for adjacent rural-residential properties to the west / northwest / southeast.

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10. The landscape is a rural environment located in Hororata, Selwyn. The site is currently a rural property situated behind 90 Struie Road approximately 400m off Struie Road. The site is accessed by a long gravel driveway between 66 and 90 Struie Road. The site is largely unproductive i.e., not grazed exotic grassland, having previously been used for forestry.

11. The receiving environment to the east is zoned outer plains with large rural properties situated on the other side of the Selwyn River.

12. The receiving environment immediately north and south to the site is predominantly rural-residential with properties around 10 hectares in size. To the east is a wide strip of exotic vegetation / forestry which immediately borders the Selwyn River. The west is predominantly made up of rural land as well as the electrical substation located on 3.7ha of land approximately 1.5km from site. Rural properties are evident throughout the area and are defined by dwellings of various sizes, agricultural irrigation systems and paddocks, associated fences and shelter belts.

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Resource Management Act

13. The Resource Management Act 1991 Part II that are relevant to the assessment of landscape and amenity effects of development are found in **Section 5** (purpose), **Section 6** (matters of national importance), and **Section 7** (other matters).

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General Rural Zone. The key policies and objectives seek to maintain and enhance rural character and amenity values in rural areas.

16. The following assessment in **Figure Three** below addresses the matters in the Selwyn District Plan of relevance to landscape matters.

Policy / Matter	Description
B3.4.3 ***(ODP)***	*Avoid, remedy or mitigate significant adverse effects of activities on the amenity values of the rural area.*
Assessment	Significant planting (up to 3014m²) is proposed as part of the works to mitigate any potential adverse effects arising from the proposal.
GRUZ-01 ***(PDP)***	*Subdivision, use and development in rural areas that:* *1. supports, maintains, or enhances the function and form, character, and amenity value of rural areas;* *2. prioritises primary production, over other activities to recognise its importance to the economy and wellbeing of the district;* *3. allows primary production to operate without being compromised by reverse sensitivity; and* *4. retains a contrast in character to urban areas.*
Assessment	The proposal is within a site is pocketed between other larger rural sites, maintains areas of open space (for access and maintenance) which will be grassed areas that uphold a rural appearance, and will include the establishment of extensive landscaping.
GRUZ-P1 ***(PDP)***	*Maintain or enhance rural character and amenity values of rural areas by:* *1. retaining a low overall building density, and predominance of vegetation cover;* *2. enabling primary production while managing adverse effects of intensive primary production, and mineral extractive industries;* *3. managing the density and location of residential development; and* *4. retaining a clear delineation and contrast between the district's rural areas and urban areas, including Christchurch City.*
Assessment	A large portion of landscaping is proposed to border the site along all boundaries significantly improving vegetation cover to the site, which is currently non-productive rural grassland.

Figure 3: Statutory Assessment

Landscape Effects

17. The broader landscape is characterised by the agricultural patterns which create a distinctive pattern on the land, including agricultural shelterbelts, fenced paddocks, and pivot irrigational machinery. The landcover over this character area includes a mosaic of pasture which is predominantly modified by its original form, linear roads, and small plantation of exotic planting species. Small areas of indigenous planting are being re-established throughout the Waikirirkiri / Selwyn River catchment area with ongoing work by landowners to identify and protect existing remnant native plant communities.

18. The area has a low sensitivity to change as the receiving environment is exotic grassland with limited amenity value. As the site is already a rural working environment, this increases the sites capacity to absorb any change, given the area is already a highly modified landscape, without any highly aesthetic features or outstanding natural environments.

19. The sites biophysical value is low, given the area is not high in biodiversity, and does not contain any areas of significant vegetation or native planting. There are limited / no plantings onsite currently as the previous forestry area has been removed. The site is currently being utilised as low productivity rural grazing. Positively, the proposal will include significantly large areas of landscaping resulting in an increase in biodiversity. Overall, the proposal includes significant reinstatement planting to assist in improving the overall physical health of the environment.

20. The proposed site is located within the Low Altitude Plains landscape character area (3) as stated in the Selwyn District Landscape Study (2018). The Low Altitude Plains form a portion of the Ka Pakihi Whakatekateka o Waitaha / the wider Canterbury Plains. The Low Altitude Plains are bound by the Rakaia and Waimakariri rivers, which formed the outwash plains. This character area is defined by the open, flat/gently undulating and expansive plains, which have been highly modified and possess a linearity to accommodate broad scale agricultural land use. It also outlines a number of small townships of varying intensity which service the rural community.

21. The addition of the solar panels will alter the landscape from rural to energy infrastructure. Rural characteristics will be retained using open space and grassed areas for maintenance strips and access to maintain areas of open space. Additionally, the use of landscaping, via shelter belts and/or trees, and vegetative plantings, around the border of the site, will screen views to the area and will, over time, appear as a planted boundary. Furthermore, the context of the site, being bordered in the west by Struie Road and the east Selwyn River which entirely cuts the site off to the east, is offset from any key views.

22. Given the landscape context, having a low sensitivity to change, and the mitigation of any adverse on landscape values via landscape planting. Overall, the landscape effects will be **low-moderate** at worst, with this diminishing to low over time post-mitigation growth. A summary of effects is shown in **Figure Four** below.

Effect	LVA Category	Review
Landscape Context	*Magnitude of change*	*Low sensitivity to change.*
Landscape Values	*Character and amenity*	*Low-moderate effects, with the reduction to low post planting mitigation growth.*

Figure 4: Landscape Effects Scale Summary

Visual Effects

23. Viewing audiences[3] (refer to **Appendix A** viewpoints) can be defined to:

    i) Transient viewers traversing along Struie Road, and potentially indirect views from Bealey Road, or the intersection of Derretts Road (partial).

    ii) Fixed audiences from the rural-residential dwellings to the north, south and west.

24. Viewing parties with limited / impartial / no views to the site:

    iii) There are no known recreational tracks, parks, or areas in the vicinity of the proposal. The Ballooning Canterbury site is located approximately 1km to the south of the site off Bealey Road.

    iv) Large areas to the northeast and east, and some areas to the south, are non-habituated, working rural land, without a permanent viewing audience.

    v) Fixed views from west of Struie Road are upwards of 1 km away with indirect or screened views, and distance acting as a mitigating factor.

    vi) The area to the east is large area of vegetation adjacent to the river corridor of Selwyn River, which effectively screens views from northeast through to the southeast / eastern side of the site.

[3] Refer to methodology.

vii) The area to the south is largely screened. There are also numerous other plantings and shelterbelts along Derretts Road as well as the proposed site planting that will be established, if views from this area are ever opened out.

25. Generally, road users tend to be a less sensitive viewing group in this context. Road users are transient, and the views will be experienced at higher speeds, and in the context of the wider, expansive open spaces, while traversing through rural landscapes. Boundary landscaping will also eventually screen the area from view when in passing.

26. Views from public roads are largely limited to those from areas of Struie Road. The site is setback from Struie Road by approximately 420 metres at the nearest point (adjacent to the access road to the site). A long row of evergreen shelterbelts runs along the eastern side of Struie Road, beginning at the intersection with Bealey Road / Derretts Road. There are breaks in the shelter belts where views through to the site may be evident. Very fleeting views may be evident from western portions of Bealey Road, but these would be upwards of 1 km from the site, viewed across paddocks and other vegetation in the foreground.

27. The road users are, in this context, a lower sensitivity audience, and the views will be experienced at speed and in transient. These factors, combined with the sites offset from the road, and the lower height of the proposal will result in visual effects of **low-moderate**. Post-mitigation planting establishment, this will reduce to **low**, as planting screens most of the site (landscape strips being up to 4 metres wide in part).

28. Open space either side of the site, as well as the large areas of forestry as the backdrop to the site will mean open spaces views will not be compromised. Surrounding the site is either forestry blocks or large paddocks used for pasture, grazing, rural production or with rural residential dwellings. There are also areas within the site that will maintain open space through the maintenance and access strips around the solar panels. Once the landscaping is established, the views through to the site will be fleeting at most.

29. There are several rural-residential properties in the vicinity of the proposal (as shown by **Appendix A**) situated off Struie Road. The closest of these properties are the six rural-residential dwellings that border Struie Road, located to the north / northwest and west / southwest immediately adjacent to the proposal site. Otherwise, a large portion of rural-residential viewpoints will be from significant distances away (over 1 km), and indirect, across rural paddocks with existing vegetation acting as screening which will act as key mitigating factors for many rural-residential surrounding fixed views.

30. 44, 66, 90 106, 132 and 134 Struie Road may have direct views to the site prior to plant growth. These dwellings are all located approximately 100 – 300 metres from the site's

western boundary. The solar panels sit relatively low within the landscape, will be black in colour and appear as a recessive infrastructure element (see exemplar images in **Appendix A**). Nevertheless, prior to landscape growth and establishment, the views from these properties may be relatively direct. Post-mitigation planting establishment, the effects are likely to reduce to **low**, as planting screens the boundary of most of the site (being up to 3 metres wide strips). Shading effects from planting to the surrounding rural-residential properties are not likely, as the adjacent dwellings are offset from the boundaries by significant distances. In any case, shading would be no more so than vegetation that could be established for rural activities i.e. shelter belts or otherwise.

31. A summary of the visual effects on potential / actual viewing audiences is summarised in **Figure Five** below.

Type	Visual Effects	Sensitivity / Audience	Review Findings (see above)
ROAD	*Struie Road / Struie Road intersection*	*Transient nature.* *Experienced in passing.* *Lower magnitude of sensitivity.*	*Low-moderate reducing to low post-mitigation.*
	Struie Road intersection & Bealey Road / Derretts Road		*Low-very low.*
RECREATIONAL	*Ballooning Canterbury 2126 Bealey Road*	*Semi-transient.* *Limited values associated with viewshed.* *Lower magnitude of sensitivity.*	*Very low.*
RESIDENTIAL	*90 Struie Road*	*Fixed nature.* *Permanent views.* *Higher sensitivity.* *Higher magnitude of sensitivity as change more evident.*	*Low-moderate reducing to low post-mitigation.*
	66 Struie Road		
	106 Struie Road		
	132 and 134 Struie Road		
	44 Struie Road		
	Wider rural-residential dwellings outside of the area (1 km or beyond).		*Very low.*

Figure 5: Visual Effects Scale Summary

Recommendations

32. Overall, the landscape and visual effects can be evaluated at a low-moderate rating with the implementation of the following recommendations, which may be established via appropriate consent conditions:

    i. Minimise disturbance of areas within the site not affected by solar panel installation (i.e. the areas surrounding the solar panels where possible) to ensure the overall landscape fabric is visually maintained and retain the row of new pine trees along the boundary to the south, and any other boundary planting where possible.

    ii. The mitigation planting will act to screen the proposal, and therefore the implementation of the correct species and vegetation will be important. Fast-growing, tolerant plantings are recommended that do not require large amounts of maintenance, and that create a screening effect that is suitable for the landscape character type.

    iii. A Landscape Plan be prepared and issued prior to implementation that outlines:

        - Size, grade, quantities and species type (i.e. Plant Schedule).
        - Species that are suitable for the landscape character.

    iv. The implementation of the landscape plans as soon as practicable to screen and integrate the panels into the environment.

    v. Allow for potential areas of grass to retain the rural character of the site during the establishment of planting where possible.

    vi. Ensure the access road to the site, and any maintenance tracks are in shingle or gravel, and not heavily engineered.

Summary

33. The proposal has pre-emptively considered landscaping to lessen any potential effects, which will ensure that screening mitigation is maximised across the site. The area has a low sensitivity to change, as it sits within a flat, rural character area. I find that, with the implementation of the planting mitigation, and in consideration of the environmental benefits of the proposal adding biodiversity to the site, that the solar panels arrangement can be successfully integrated into the landscape and visual environment.

Appendix 1

Graphic Attachment

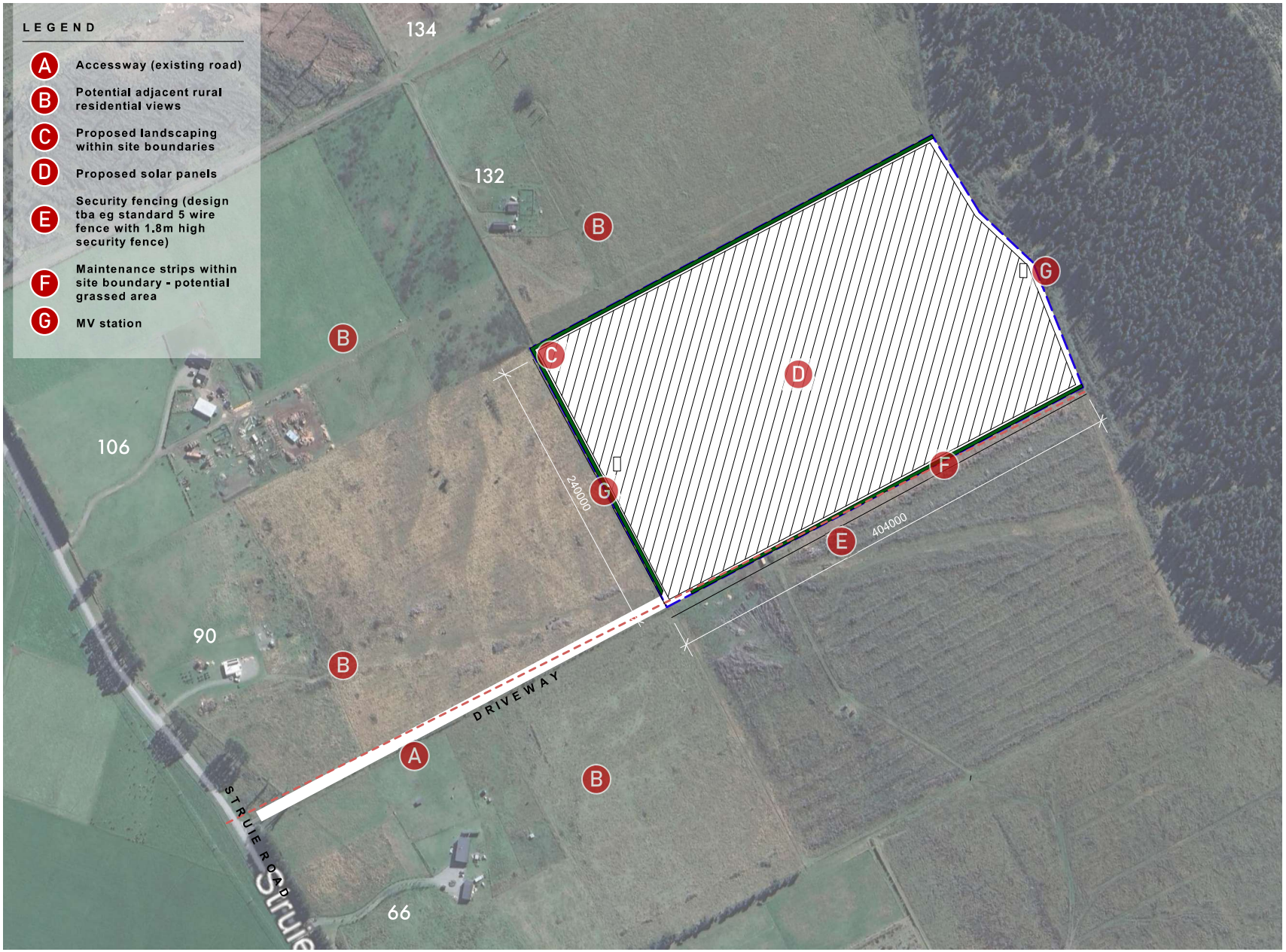
CONTENTS

Graphic Attachment

80 Struie Road
Commercial Solar Energy Facility

AUGUST 2024
1087001
AW

01. SITE PLAN



KEY:

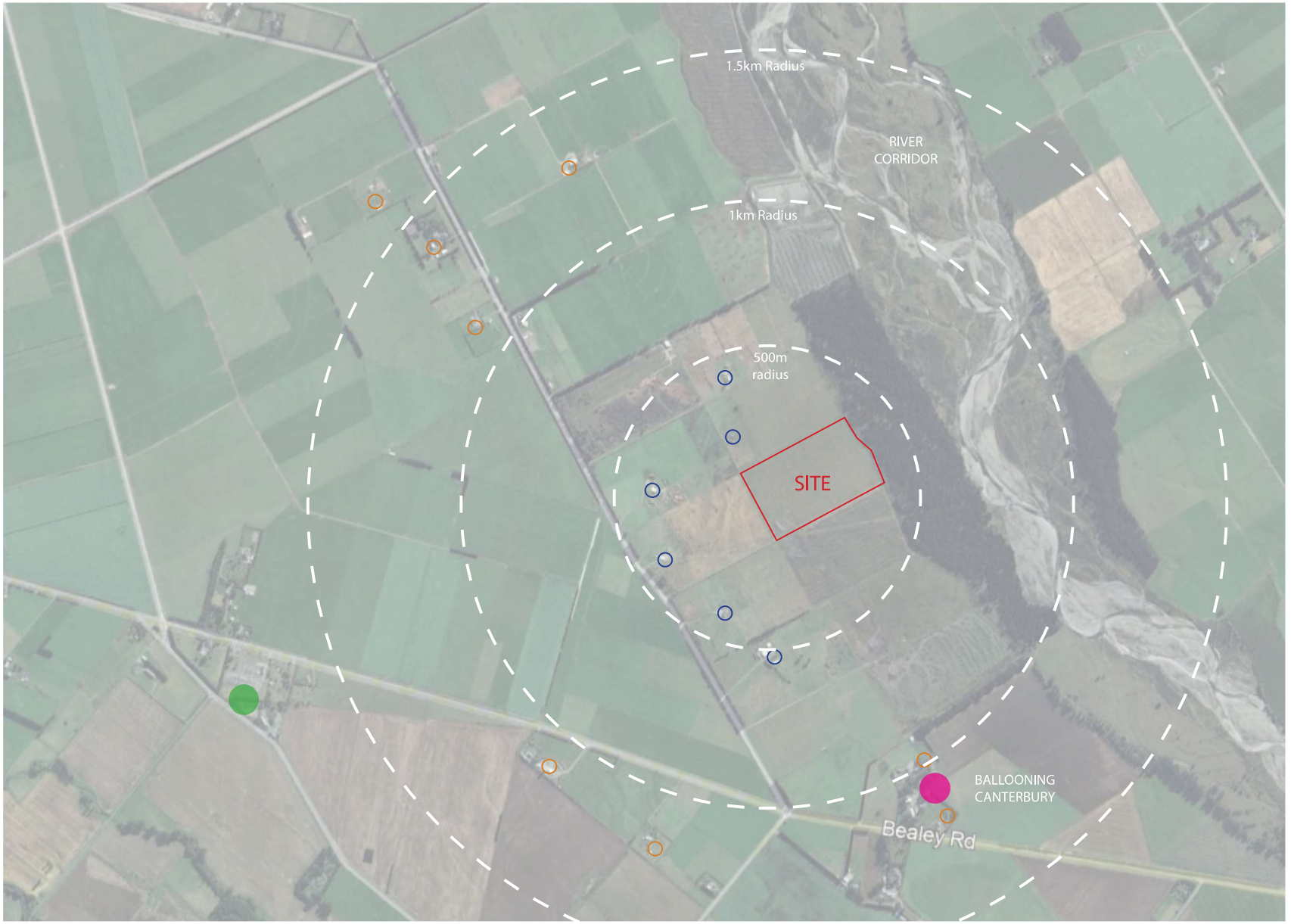
- Indicative location of solar panels (12MWp)
- 3m wide proposed boundary planting - 3014 m² (approx)
- 1800mm high security fence
- MV trench

SITE PLAN

RA TUATAHI - HORORATA SOLAR - 80 STRUIE RD

REVISION

02. SITE ANALYSIS



Key

- Site
- Adjacent properties (indirect view to site)
- Nearby properties (in proximity)
- Ballooning Canterbury
- Hororata Zone Electrical Substation

Aerial data is retrieved from Google Earth

03. EXEMPLAR IMAGES OF SOLAR PANELS

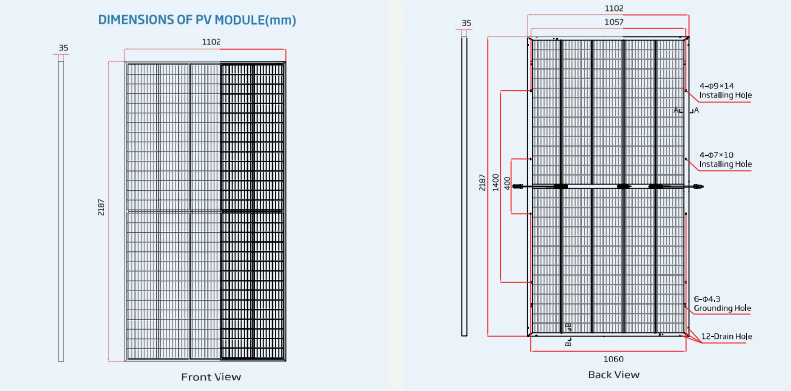
The proposed solar array will be comprised of approximately 12,012 single axis tracking solar modules capable of generating a Megawatt peak (MWp) of approximately 8.53 Megawatt (MW).

Solar Array Specifications

The approximate dimensions of each solar module are 2.384 m (length) x 1.303 m (width) and 30 – 35 mm (depth). Therefore, the approximate surface area of each module is <3.11 m^2. The total number of modules, subject to final design (which depends on availability and suitability of the product prior to construction) is estimated to be 12,012.

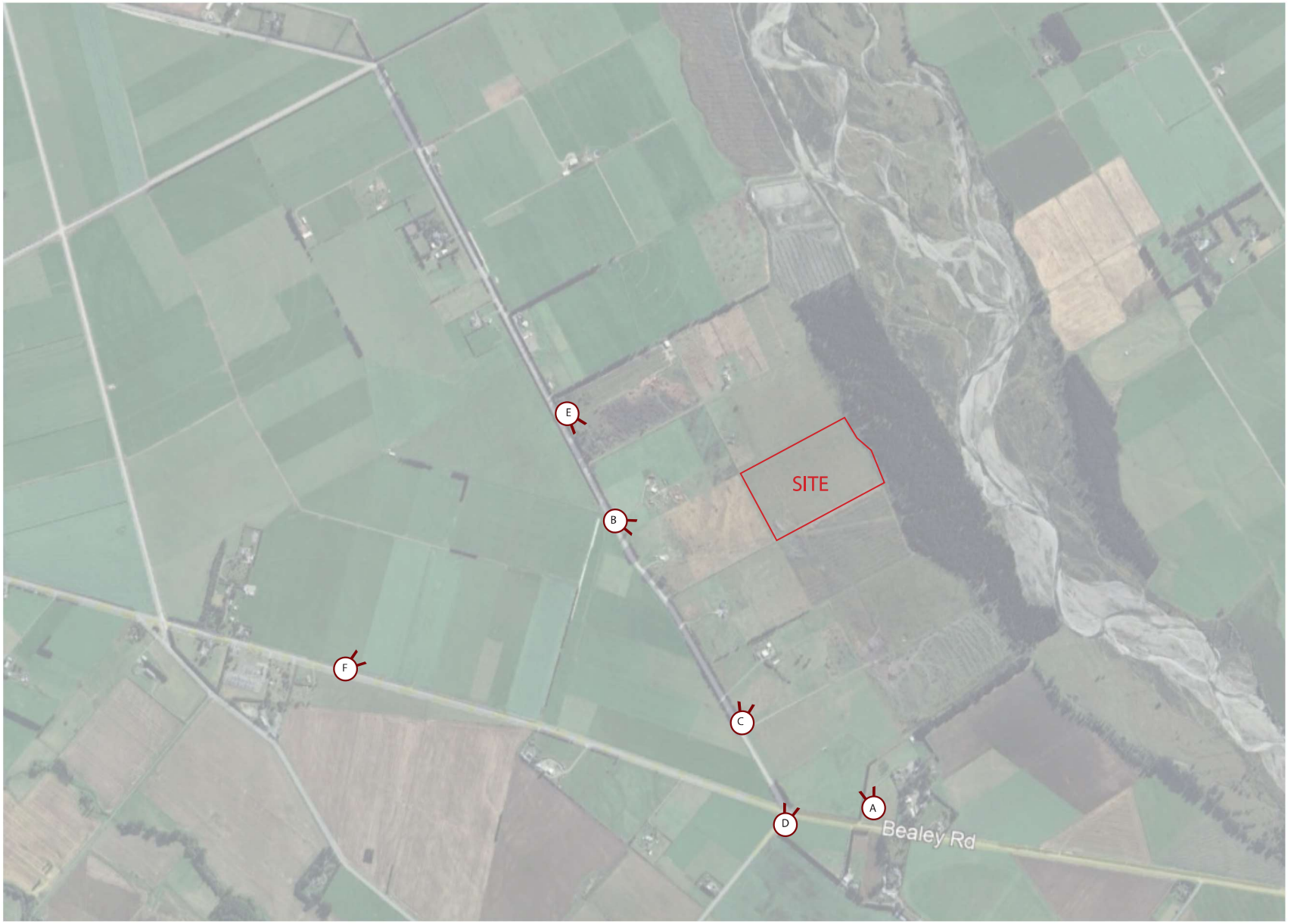
The estimated generation of DC from the proposed solar array measured as MWp is 8.53 MWp. The expected yield per annum will be approximately 14,700,000 kWh/Yr.

Indicative solar panel dimensions



Indicative solar panel appearance

04. CONTEXT- CHARACTER VIEWPOINT PLAN



Key

Site

Site and Character Viewpoint Locations

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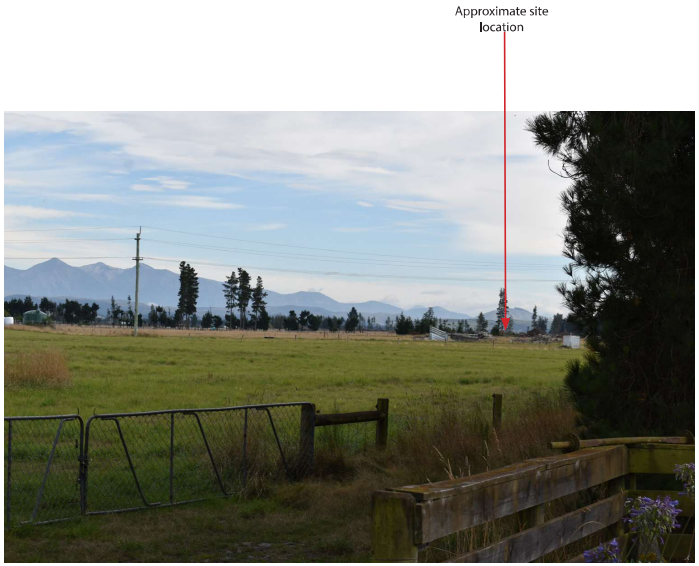
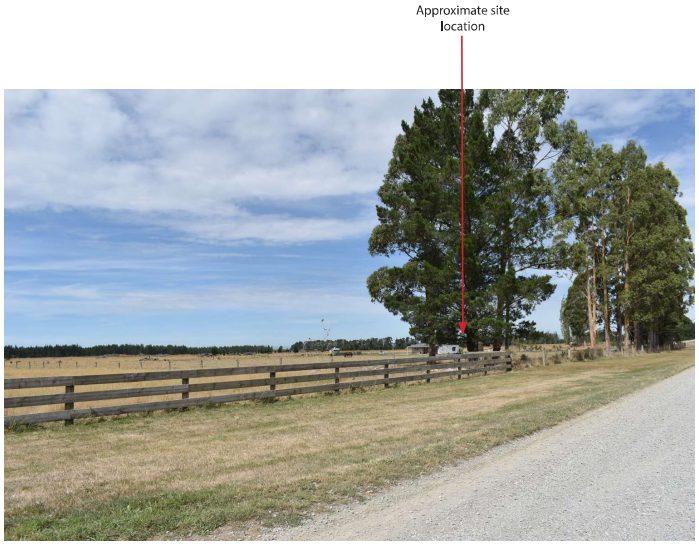
05. CONTEXT - CHARACTER IMAGERY + VIEWPOINTS



A. View from driveway entrance of 2152 Bealey Road



B. View from Struie Road

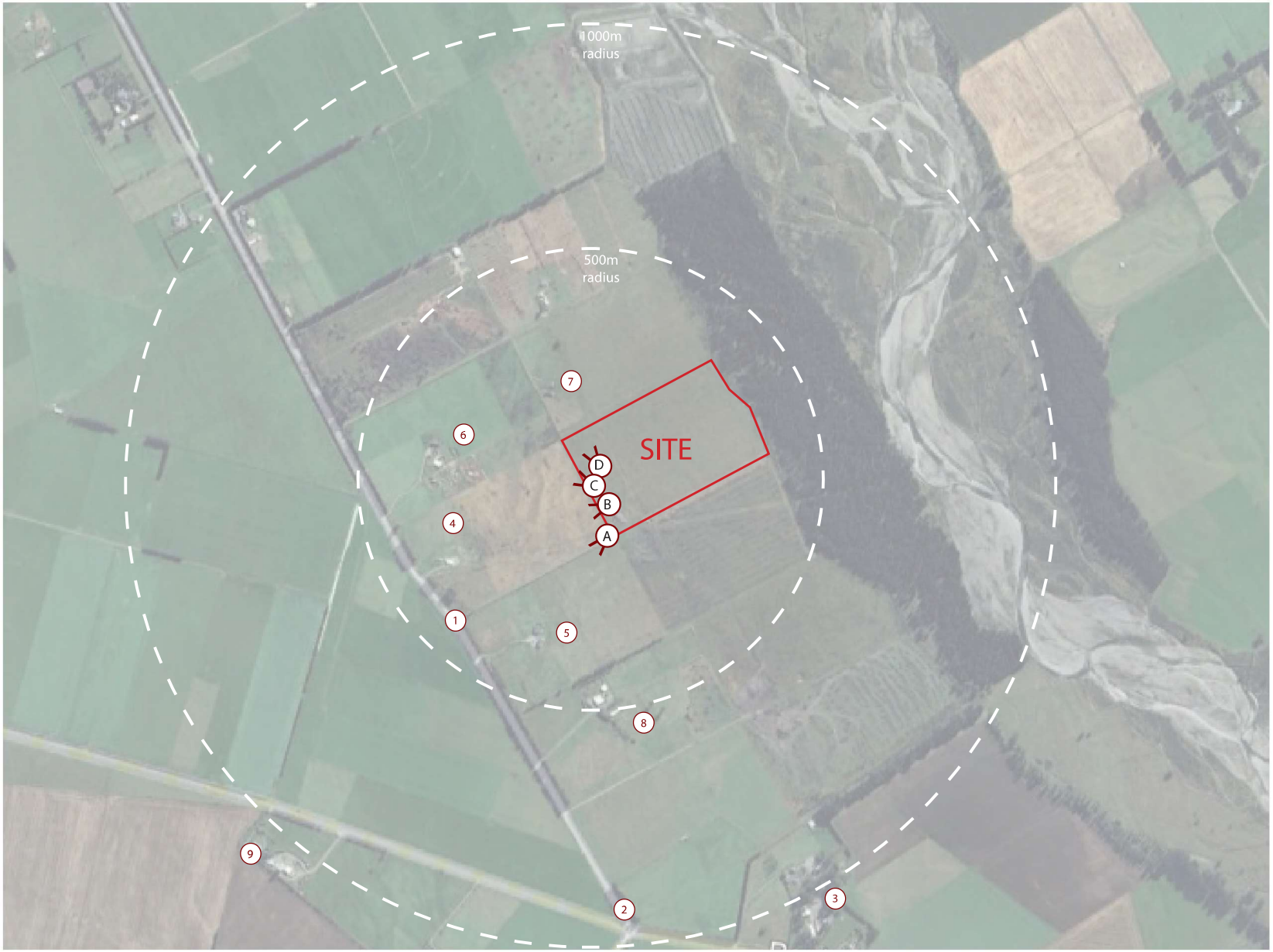
C. View from entrance of 134 Struie Road

D. View from intersection of Bealey and Derretts Road

E. View along Struie Road

F. View from Bealey Road

06. VIEWPOINT PLAN



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Key

- Site Boundary - 80 Struie Road
- Viewpoint Locations (See Viewpoint A/B/C/D for further details)

See table reference below for viewing audiences and sensitivity / type. Refer to the LVA document for full assessment details.

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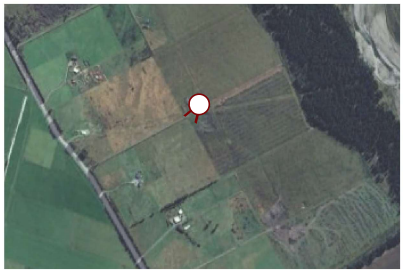
12. VIEWPOINT A

Location map.



09. VIEWPOINT B

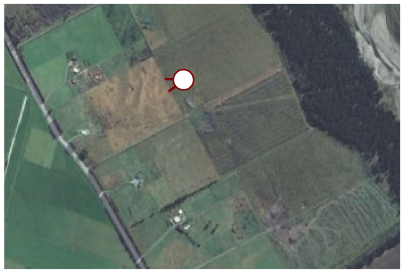
Location map.

11. VIEWPOINT C

Location map.

10. VIEWPOINT D

Location map.



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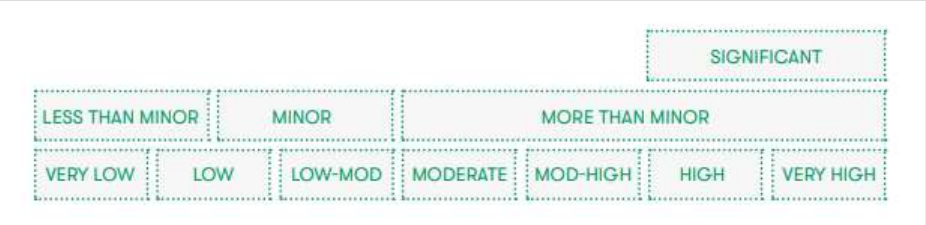

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B3.4.3 ***(ODP)***	*Avoid, remedy or mitigate significant adverse effects of activities on the amenity values of the rural area.*
Assessment	Significant planting (up to 3014m²) is proposed as part of the works to mitigate any potential adverse effects arising from the proposal.
GRUZ-01 ***(PDP)***	*Subdivision, use and development in rural areas that:* *1. supports, maintains, or enhances the function and form, character, and amenity value of rural areas;* *2. prioritises primary production, over other activities to recognise its importance to the economy and wellbeing of the district;* *3. allows primary production to operate without being compromised by reverse sensitivity; and* *4. retains a contrast in character to urban areas.*
Assessment	The proposal is within a site is pocketed between other larger rural sites, maintains areas of open space (for access and maintenance) which will be grassed areas that uphold a rural appearance, and will include the establishment of extensive landscaping.
GRUZ-P1 ***(PDP)***	*Maintain or enhance rural character and amenity values of rural areas by:* *1. retaining a low overall building density, and predominance of vegetation cover;* *2. enabling primary production while managing adverse effects of intensive primary production, and mineral extractive industries;* *3. managing the density and location of residential development; and* *4. retaining a clear delineation and contrast between the district's rural areas and urban areas, including Christchurch City.*
Assessment	A large portion of landscaping is proposed to border the site along all boundaries significantly improving vegetation cover to the site, which is currently non-productive rural grassland.

Figure 3: Statutory Assessment

Landscape Effects

17. The broader landscape is characterised by the agricultural patterns which create a distinctive pattern on the land, including agricultural shelterbelts, fenced paddocks, and pivot irrigational machinery. The landcover over this character area includes a mosaic of pasture which is predominantly modified by its original form, linear roads, and small plantation of exotic planting species. Small areas of indigenous planting are being re-established throughout the Waikirirkiri / Selwyn River catchment area with ongoing work by landowners to identify and protect existing remnant native plant communities.

18. The area has a low sensitivity to change as the receiving environment is exotic grassland with limited amenity value. As the site is already a rural working environment, this increases the sites capacity to absorb any change, given the area is already a highly modified landscape, without any highly aesthetic features or outstanding natural environments.

19. The sites biophysical value is low, given the area is not high in biodiversity, and does not contain any areas of significant vegetation or native planting. There are limited / no plantings onsite currently as the previous forestry area has been removed. The site is currently being utilised as low productivity rural grazing. Positively, the proposal will include significantly large areas of landscaping resulting in an increase in biodiversity. Overall, the proposal includes significant reinstatement planting to assist in improving the overall physical health of the environment.

20. The proposed site is located within the Low Altitude Plains landscape character area (3) as stated in the Selwyn District Landscape Study (2018). The Low Altitude Plains form a portion of the Ka Pakihi Whakatekateka o Waitaha / the wider Canterbury Plains. The Low Altitude Plains are bound by the Rakaia and Waimakariri rivers, which formed the outwash plains. This character area is defined by the open, flat/gently undulating and expansive plains, which have been highly modified and possess a linearity to accommodate broad scale agricultural land use. It also outlines a number of small townships of varying intensity which service the rural community.

21. The addition of the solar panels will alter the landscape from rural to energy infrastructure. Rural characteristics will be retained using open space and grassed areas for maintenance strips and access to maintain areas of open space. Additionally, the use of landscaping, via shelter belts and/or trees, and vegetative plantings, around the border of the site, will screen views to the area and will, over time, appear as a planted boundary. Furthermore, the context of the site, being bordered in the west by Struie Road and the east Selwyn River which entirely cuts the site off to the east, is offset from any key views.

22. Given the landscape context, having a low sensitivity to change, and the mitigation of any adverse on landscape values via landscape planting. Overall, the landscape effects will be **low-moderate** at worst, with this diminishing to low over time post-mitigation growth. A summary of effects is shown in **Figure Four** below.

Effect	LVA Category	Review
Landscape Context	*Magnitude of change*	*Low sensitivity to change.*
Landscape Values	*Character and amenity*	*Low-moderate effects, with the reduction to low post planting mitigation growth.*

Figure 4: Landscape Effects Scale Summary

Visual Effects

23. Viewing audiences[3] (refer to **Appendix A** viewpoints) can be defined to:

    i) Transient viewers traversing along Struie Road, and potentially indirect views from Bealey Road, or the intersection of Derretts Road (partial).

    ii) Fixed audiences from the rural-residential dwellings to the north, south and west.

24. Viewing parties with limited / impartial / no views to the site:

    iii) There are no known recreational tracks, parks, or areas in the vicinity of the proposal. The Ballooning Canterbury site is located approximately 1km to the south of the site off Bealey Road.

    iv) Large areas to the northeast and east, and some areas to the south, are non-habituated, working rural land, without a permanent viewing audience.

    v) Fixed views from west of Struie Road are upwards of 1 km away with indirect or screened views, and distance acting as a mitigating factor.

    vi) The area to the east is large area of vegetation adjacent to the river corridor of Selwyn River, which effectively screens views from northeast through to the southeast / eastern side of the site.

[3] Refer to methodology.

vii) The area to the south is largely screened. There are also numerous other plantings and shelterbelts along Derretts Road as well as the proposed site planting that will be established, if views from this area are ever opened out.

25. Generally, road users tend to be a less sensitive viewing group in this context. Road users are transient, and the views will be experienced at higher speeds, and in the context of the wider, expansive open spaces, while traversing through rural landscapes. Boundary landscaping will also eventually screen the area from view when in passing.

26. Views from public roads are largely limited to those from areas of Struie Road. The site is setback from Struie Road by approximately 420 metres at the nearest point (adjacent to the access road to the site). A long row of evergreen shelterbelts runs along the eastern side of Struie Road, beginning at the intersection with Bealey Road / Derretts Road. There are breaks in the shelter belts where views through to the site may be evident. Very fleeting views may be evident from western portions of Bealey Road, but these would be upwards of 1 km from the site, viewed across paddocks and other vegetation in the foreground.

27. The road users are, in this context, a lower sensitivity audience, and the views will be experienced at speed and in transient. These factors, combined with the sites offset from the road, and the lower height of the proposal will result in visual effects of **low-moderate**. Post-mitigation planting establishment, this will reduce to **low**, as planting screens most of the site (landscape strips being up to 4 metres wide in part).

28. Open space either side of the site, as well as the large areas of forestry as the backdrop to the site will mean open spaces views will not be compromised. Surrounding the site is either forestry blocks or large paddocks used for pasture, grazing, rural production or with rural residential dwellings. There are also areas within the site that will maintain open space through the maintenance and access strips around the solar panels. Once the landscaping is established, the views through to the site will be fleeting at most.

29. There are several rural-residential properties in the vicinity of the proposal (as shown by **Appendix A**) situated off Struie Road. The closest of these properties are the six rural-residential dwellings that border Struie Road, located to the north / northwest and west / southwest immediately adjacent to the proposal site. Otherwise, a large portion of rural-residential viewpoints will be from significant distances away (over 1 km), and indirect, across rural paddocks with existing vegetation acting as screening which will act as key mitigating factors for many rural-residential surrounding fixed views.

30. 44, 66, 90 106, 132 and 134 Struie Road may have direct views to the site prior to plant growth. These dwellings are all located approximately 100 – 300 metres from the site's

western boundary. The solar panels sit relatively low within the landscape, will be black in colour and appear as a recessive infrastructure element (see exemplar images in **Appendix A**). Nevertheless, prior to landscape growth and establishment, the views from these properties may be relatively direct. Post-mitigation planting establishment, the effects are likely to reduce to **low**, as planting screens the boundary of most of the site (being up to 3 metres wide strips). Shading effects from planting to the surrounding rural-residential properties are not likely, as the adjacent dwellings are offset from the boundaries by significant distances. In any case, shading would be no more so than vegetation that could be established for rural activities i.e. shelter belts or otherwise.

31. A summary of the visual effects on potential / actual viewing audiences is summarised in **Figure Five** below.

Type	Visual Effects	Sensitivity / Audience	Review Findings (see above)
ROAD	*Struie Road / Struie Road intersection*	*Transient nature.* *Experienced in passing.* *Lower magnitude of sensitivity.*	*Low-moderate reducing to low post-mitigation.*
	Struie Road intersection & Bealey Road / Derretts Road		*Low-very low.*
RECREATIONAL	*Ballooning Canterbury 2126 Bealey Road*	*Semi-transient.* *Limited values associated with viewshed.* *Lower magnitude of sensitivity.*	*Very low.*
RESIDENTIAL	*90 Struie Road*	*Fixed nature.* *Permanent views.* *Higher sensitivity.* *Higher magnitude of sensitivity as change more evident.*	*Low-moderate reducing to low post-mitigation.*
	66 Struie Road		
	106 Struie Road		
	132 and 134 Struie Road		
	44 Struie Road		
	Wider rural-residential dwellings outside of the area (1 km or beyond).		*Very low.*

Figure 5: Visual Effects Scale Summary

Recommendations

32. Overall, the landscape and visual effects can be evaluated at a low-moderate rating with the implementation of the following recommendations, which may be established via appropriate consent conditions:

    i. Minimise disturbance of areas within the site not affected by solar panel installation (i.e. the areas surrounding the solar panels where possible) to ensure the overall landscape fabric is visually maintained and retain the row of new pine trees along the boundary to the south, and any other boundary planting where possible.

    ii. The mitigation planting will act to screen the proposal, and therefore the implementation of the correct species and vegetation will be important. Fast-growing, tolerant plantings are recommended that do not require large amounts of maintenance, and that create a screening effect that is suitable for the landscape character type.

    iii. A Landscape Plan be prepared and issued prior to implementation that outlines:

        - Size, grade, quantities and species type (i.e. Plant Schedule).
        - Species that are suitable for the landscape character.

    iv. The implementation of the landscape plans as soon as practicable to screen and integrate the panels into the environment.

    v. Allow for potential areas of grass to retain the rural character of the site during the establishment of planting where possible.

    vi. Ensure the access road to the site, and any maintenance tracks are in shingle or gravel, and not heavily engineered.

Summary

33. The proposal has pre-emptively considered landscaping to lessen any potential effects, which will ensure that screening mitigation is maximised across the site. The area has a low sensitivity to change, as it sits within a flat, rural character area. I find that, with the implementation of the planting mitigation, and in consideration of the environmental benefits of the proposal adding biodiversity to the site, that the solar panels arrangement can be successfully integrated into the landscape and visual environment.

Appendix 1

Graphic Attachment

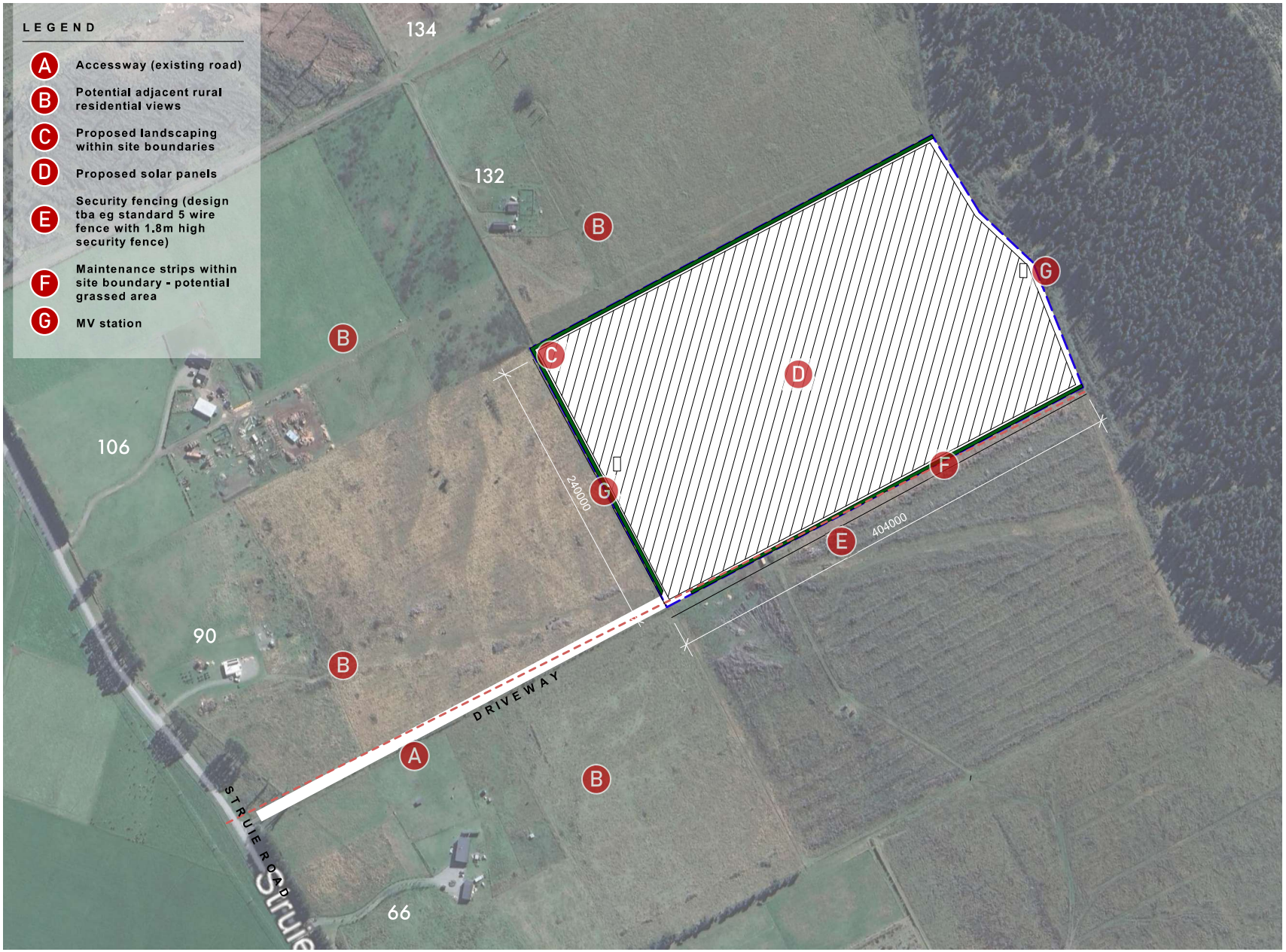
CONTENTS

Graphic Attachment

80 Struie Road
Commercial Solar Energy Facility

AUGUST 2024
1087001
AW

01. SITE PLAN



KEY:

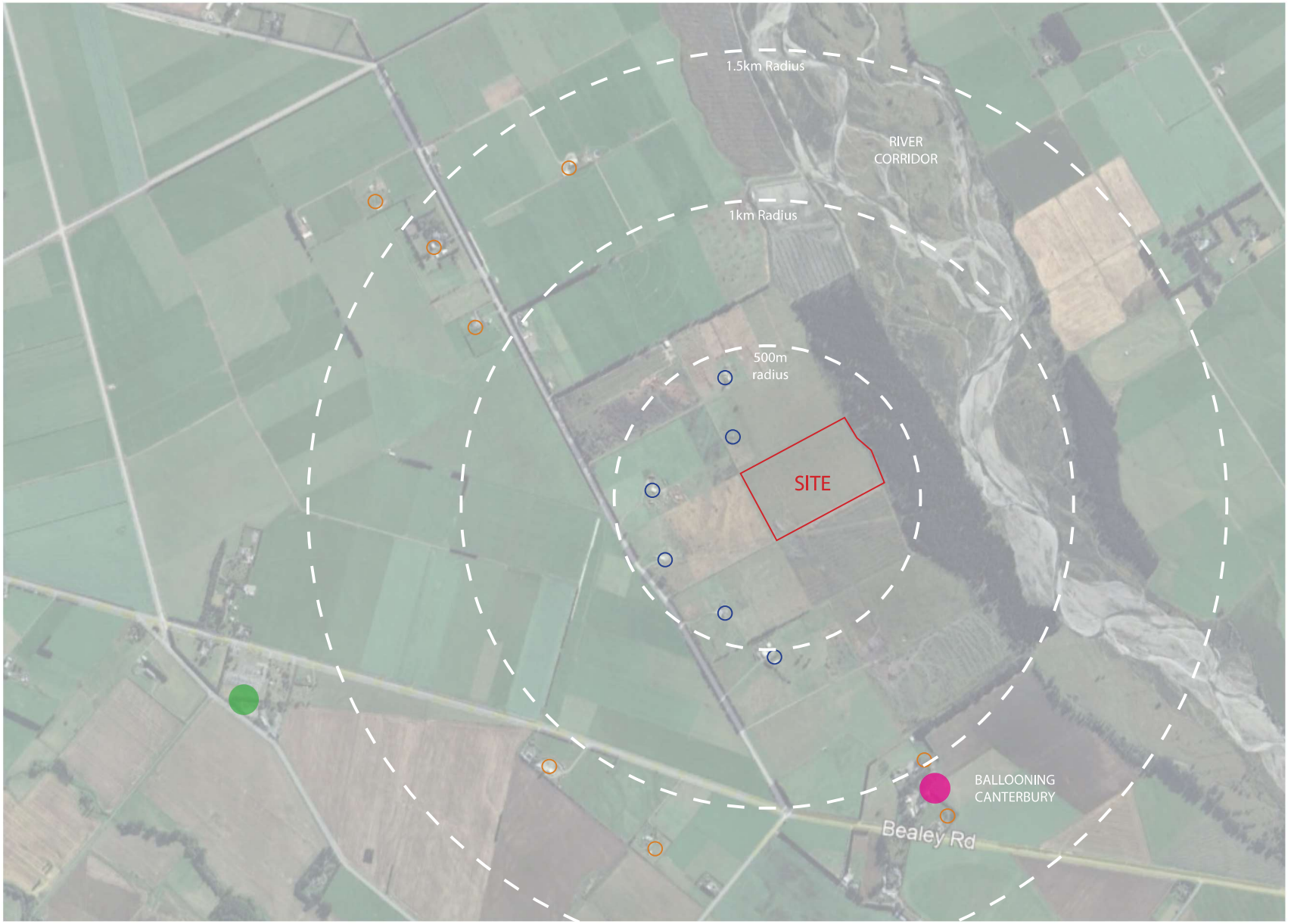
- Indicative location of solar panels (12MWp)
- 3m wide proposed boundary planting - 3014 m² (approx)
- 1800mm high security fence
- MV trench

SITE PLAN

RA TUATAHI - HORORATA SOLAR - 80 STRUIE RD

REVISION

02. SITE ANALYSIS



Key

- Site
- Adjacent properties (indirect view to site)
- Nearby properties (in proximity)
- Ballooning Canterbury
- Hororata Zone Electrical Substation

Aerial data is retrieved from Google Earth

03. EXEMPLAR IMAGES OF SOLAR PANELS

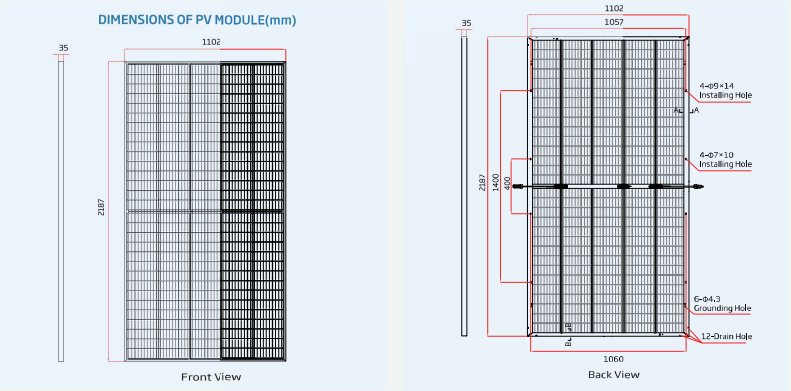
The proposed solar array will be comprised of approximately 12,012 single axis tracking solar modules capable of generating a Megawatt peak (MWp) of approximately 8.53 Megawatt (MW).

Solar Array Specifications

The approximate dimensions of each solar module are 2.384 m (length) x 1.303 m (width) and 30 – 35 mm (depth). Therefore, the approximate surface area of each module is <3.11 m^2. The total number of modules, subject to final design (which depends on availability and suitability of the product prior to construction) is estimated to be 12,012.

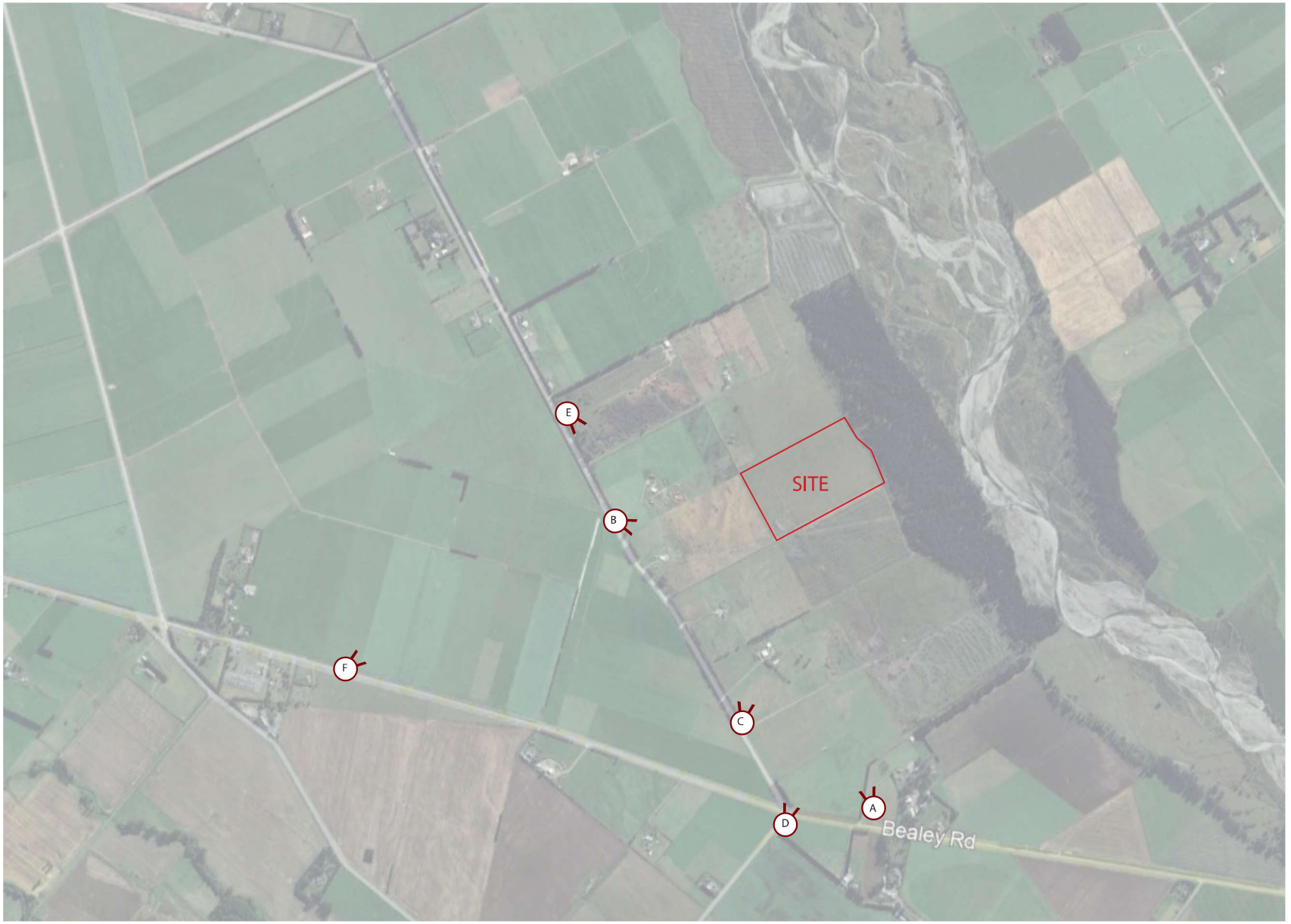
The estimated generation of DC from the proposed solar array measured as MWp is 8.53 MWp. The expected yield per annum will be approximately 14,700,000 kWh/Yr.

Indicative solar panel dimensions



Indicative solar panel appearance

04. CONTEXT- CHARACTER VIEWPOINT PLAN



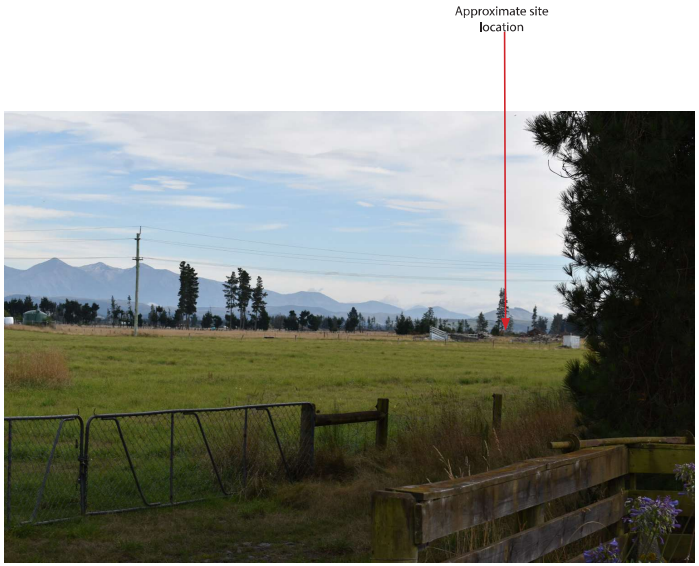
Key

Site

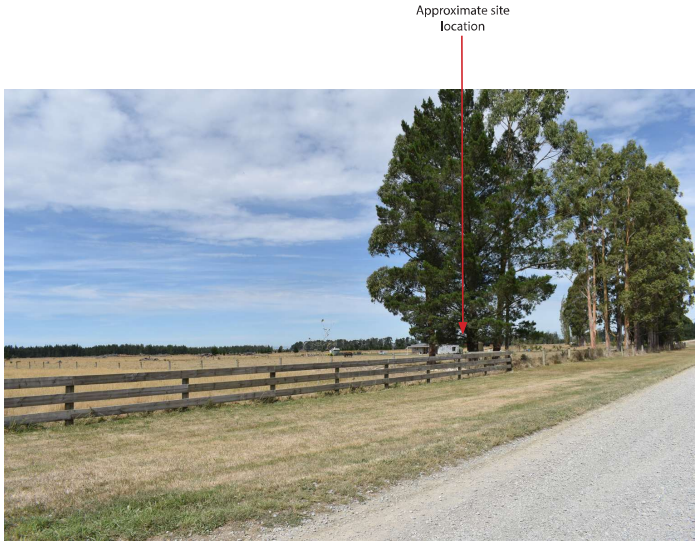
Site and Character Viewpoint Locations

Aerial data is retrieved from Google Earth

05. CONTEXT - CHARACTER IMAGERY + VIEWPOINTS



A. View from driveway entrance of 2152 Bealey Road



B. View from Struie Road

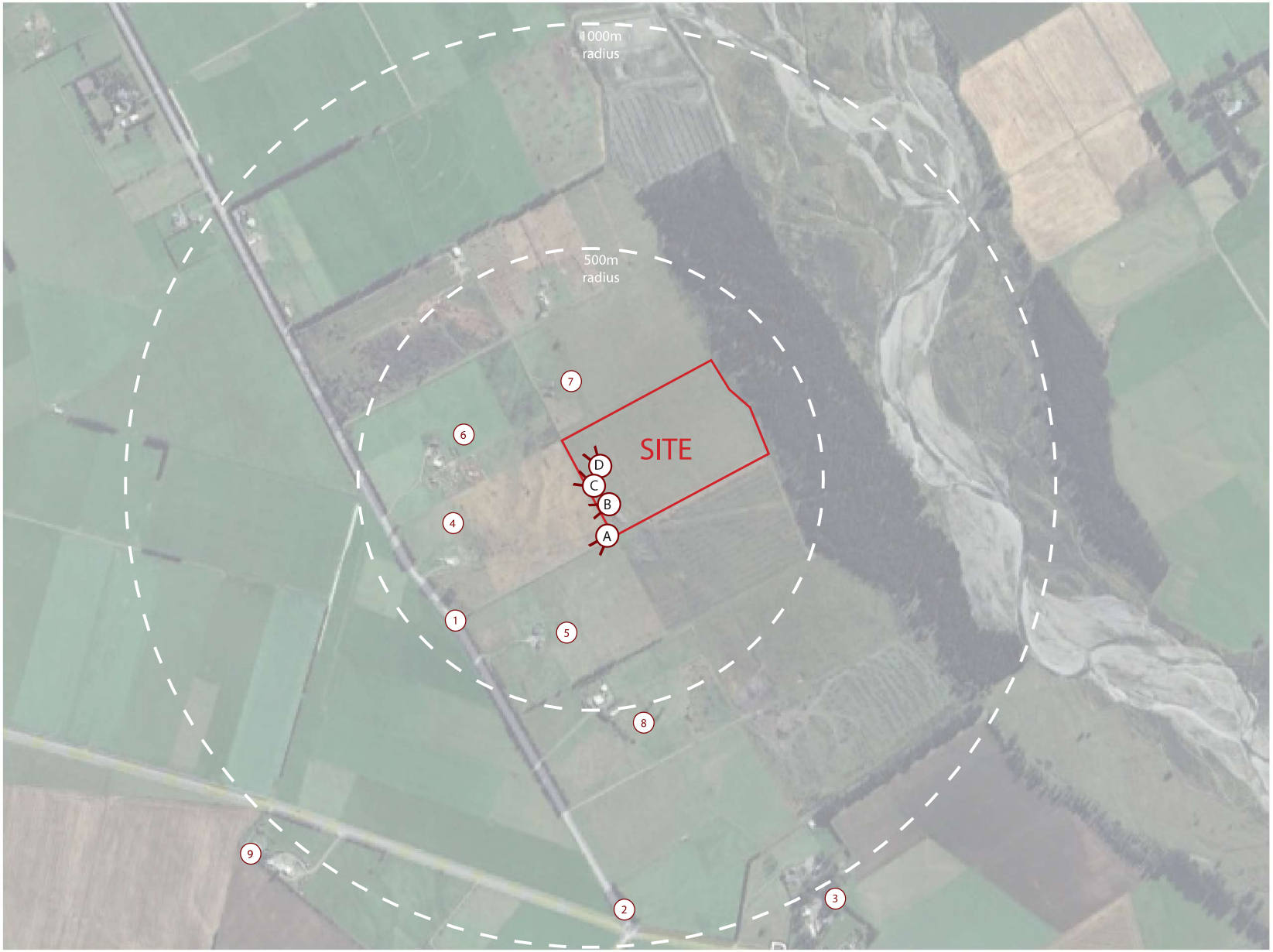
C. View from entrance of 134 Struie Road

D. View from intersection of Bealey and Derretts Road

E. View along Struie Road

F. View from Bealey Road

06. VIEWPOINT PLAN



Aerial data is retrieved from Google Earth

Key

Site Boundary - 80 Struie Road

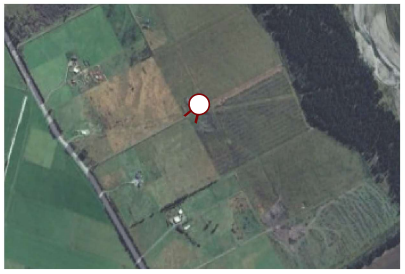
Viewpoint Locations (See Viewpoint A/B/C/D for further details)

See table reference below for viewing audiences and sensitivity / type. Refer to the LVA document for full assessment details.

	Type	Visual Effects	Sensitivity / Audience
1	ROAD	*Struie Road / Struie Road intersection*	*Transient nature.* *Experienced in passing.* *Lower magnitude of sensitivity.*
2		*Struie Road intersection & Bealey Road / Derretts Road*	
3	RECREATIONAL	*Ballooning Canterbury 2126 Bealey Road*	*Semi-transient.* *Limited values associated with viewshed.* *Lower magnitude of sensitivity.*
4	RESIDENTIAL	*90 Struie Road*	*Fixed nature.* *Permanent views.* *Higher sensitivity.* *Higher magnitude of sensitivity as change more evident.*
5		*66 Struie Road*	
6		*106 Struie Road*	
7		*134 Struie Road*	
8		*44 Struie Road*	
9		*Wider rural-residential dwellings outside of the area (1 km or beyond).*	

12. VIEWPOINT A

Location map.



09. VIEWPOINT B

Location map.

11. VIEWPOINT C

Location map.

10. VIEWPOINT D

Location map.