

Appendix 2

ZTV Analysis





FIGURE A
Site & ZTV Test Locations



PROJECT
1156
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July 2020

Legend

- Site
 - Test Locations
A single point representing the location of a two storey building and a single storey building for the purposes of the ZTV analysis shown in **Figures B-N**.
- Test locations were selected using the 20m x 20m grid shown, avoiding existing vegetation.

Test Locations (X,Y Coordinates)

1	593384.9192700343,172504.58516556435
2	593380.5132326584,172518.21192674147
3	593397.8587840967,172538.48021657183
3a	593395.6966045334,172545.6280887581
4	593393.9143638865,172552.34515455246
5	593390.0280907393,172566.08574407414
6	593377.9906276825,172608.05113855883
7	593384.0173334258,172640.2772734369



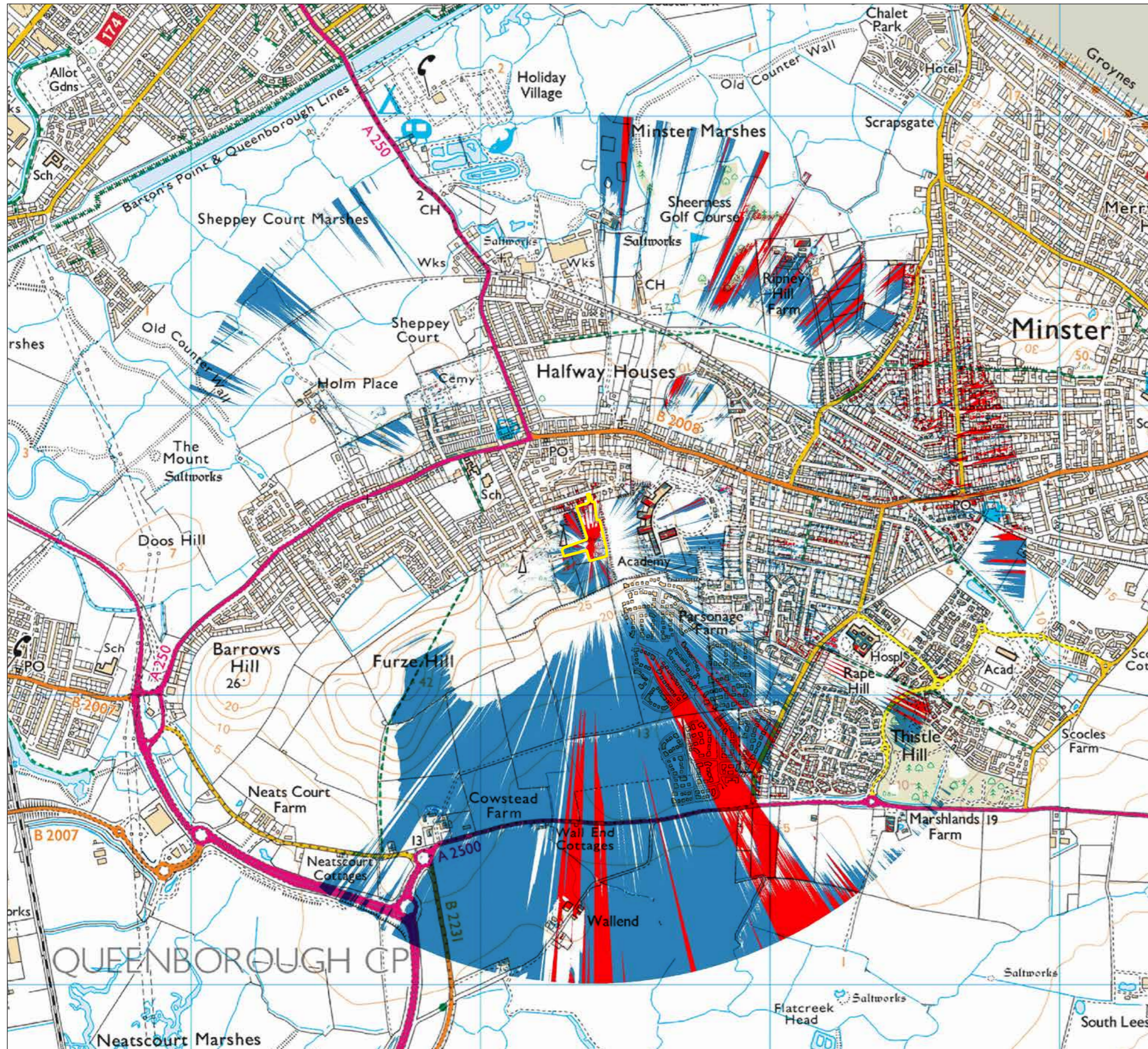


FIGURE B
ZTV (Test Location 1)



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- Site
- Visibility of a single storey (4.5m high) building
- Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

Indicative layout of Consented Development (18/503135/OUT) is shown but was not included in the DSM.



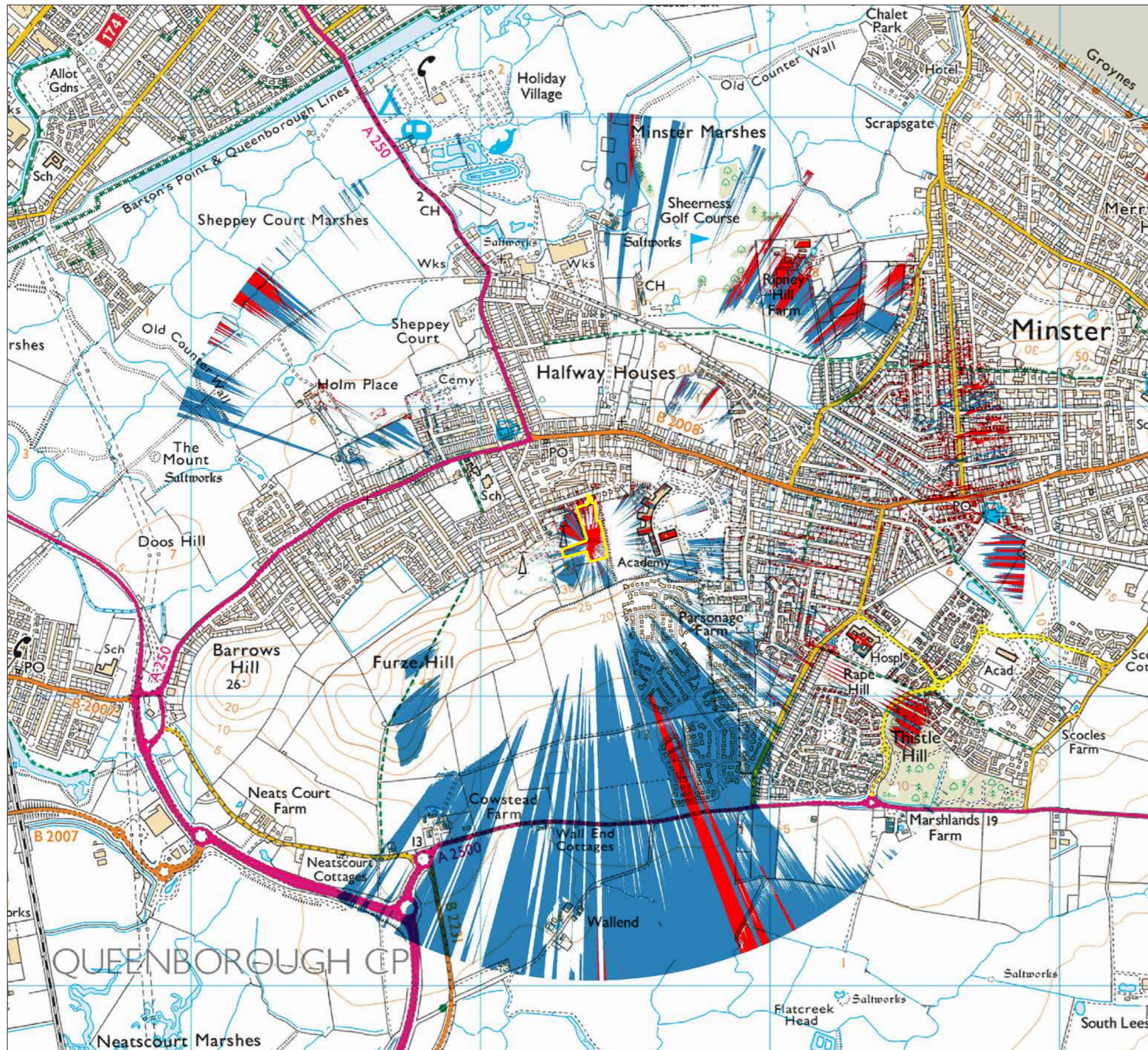


FIGURE C
ZTV (Test Location 2)



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- Site
- Visibility of a single storey (4.5m high) building
- Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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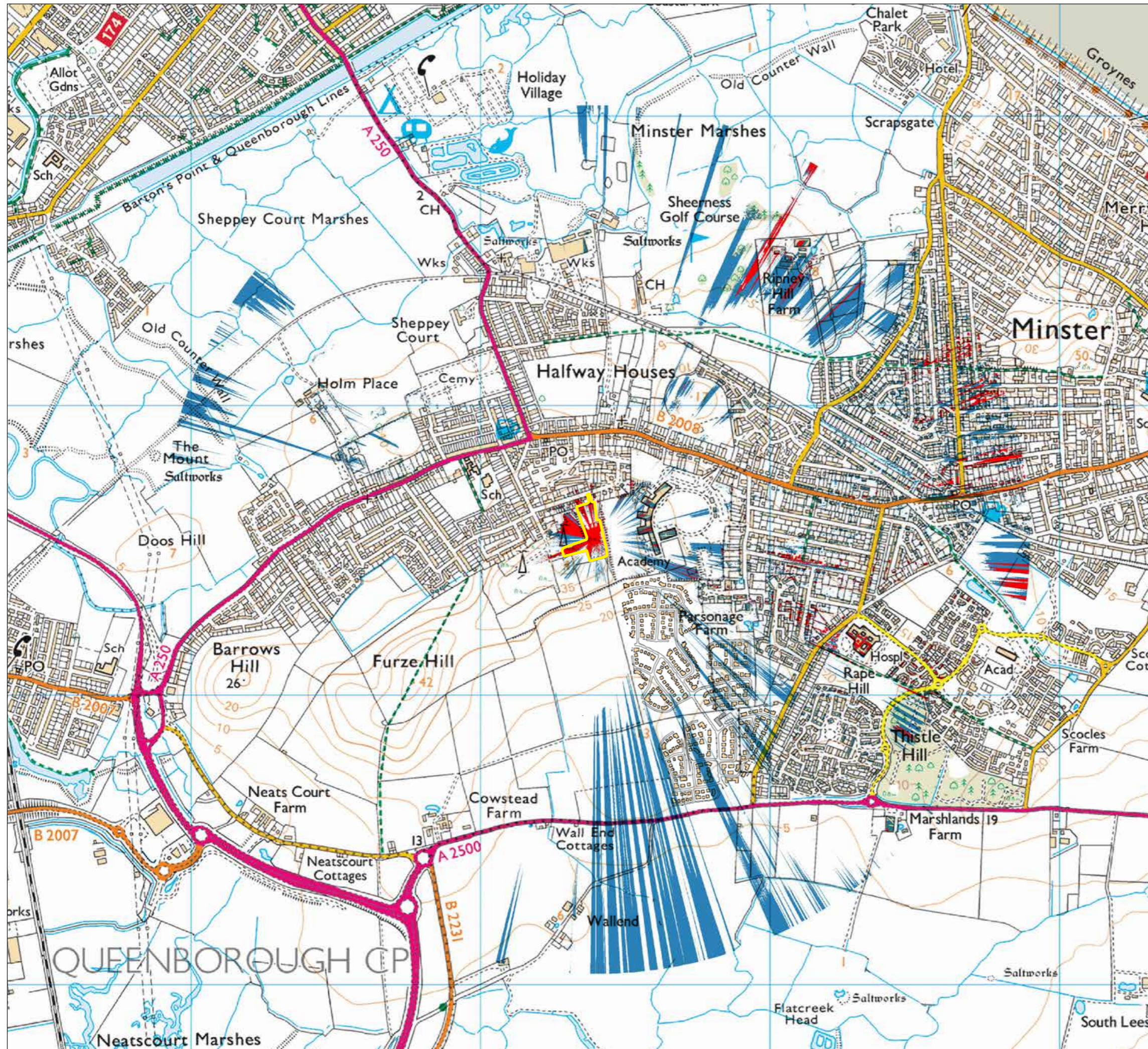


FIGURE D
ZTV (Test Location 3)



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Legend

- Site
- Visibility of a single storey (4.5m high) building
- Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

Indicative layout of Consented Development (18/503135/OUT) is shown but was not included in the DSM.

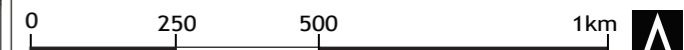




FIGURE E
ZTV (Test Location 3A)



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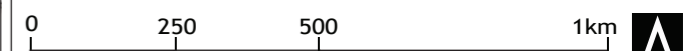
DATE
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Legend

- Site
- Visibility of a single storey (4.5m high) building
- Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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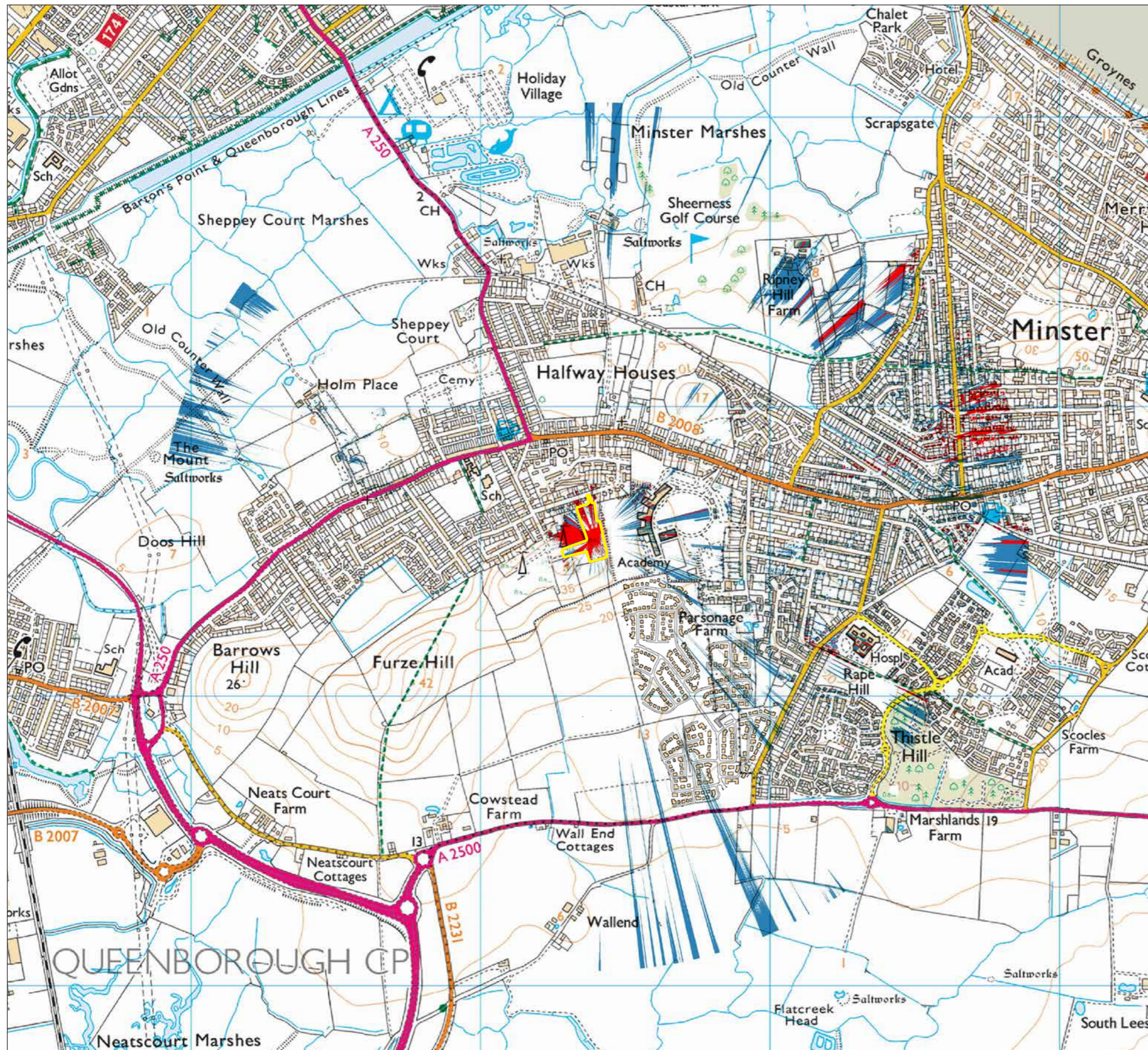


FIGURE F
ZTV (Test Location 4)






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-  Site
-  Visibility of a single storey (4.5m high) building
-  Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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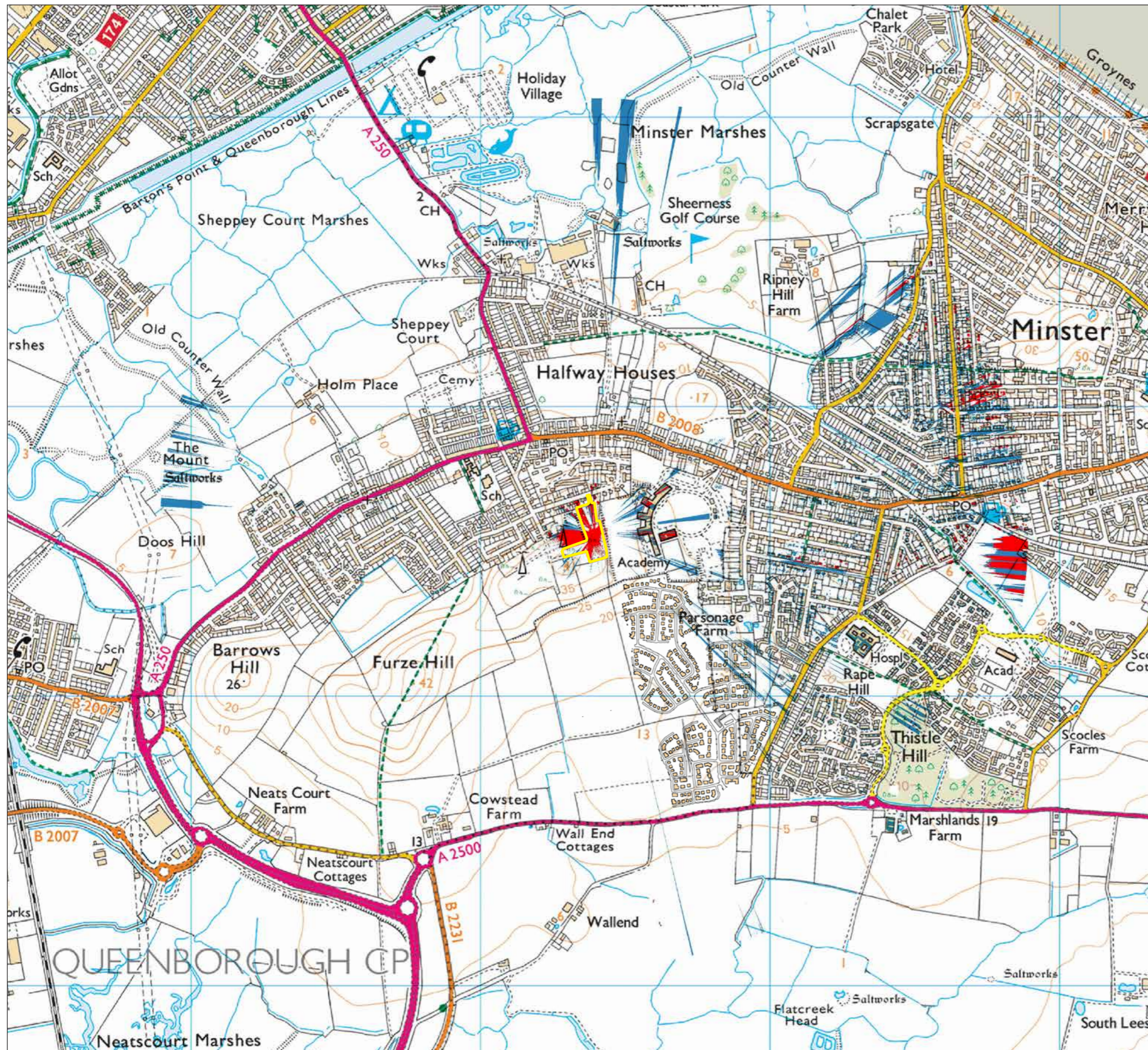


FIGURE G
ZTV (Test Location 5)






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Legend

-  Site
-  Visibility of a single storey (4.5m high) building
-  Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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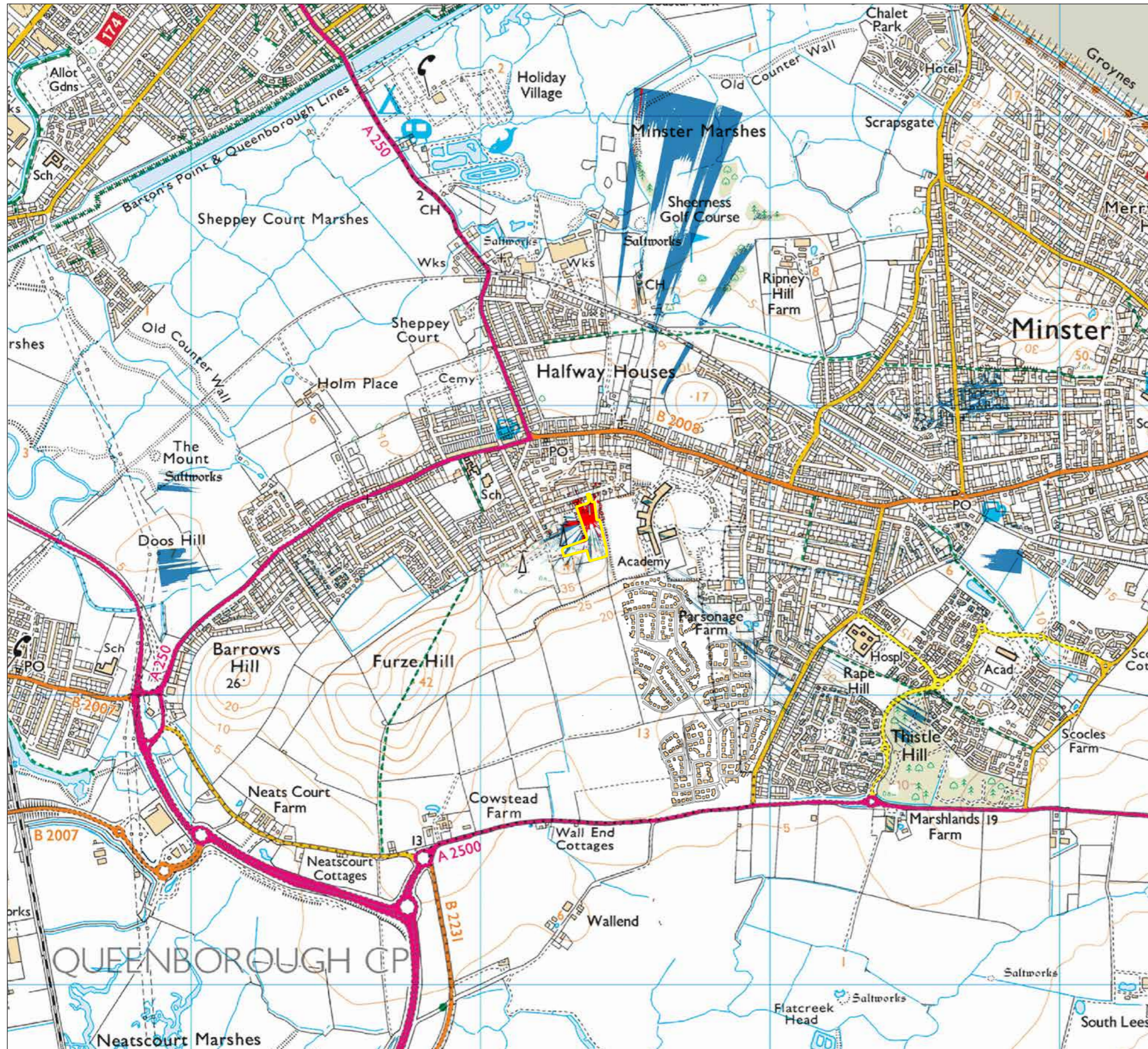


FIGURE H
ZTV (Test Location 6)



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Legend

- Site
- Visibility of a single storey (4.5m high) building
- Visibility of a two storey (7.5m high) building (includes area shaded red)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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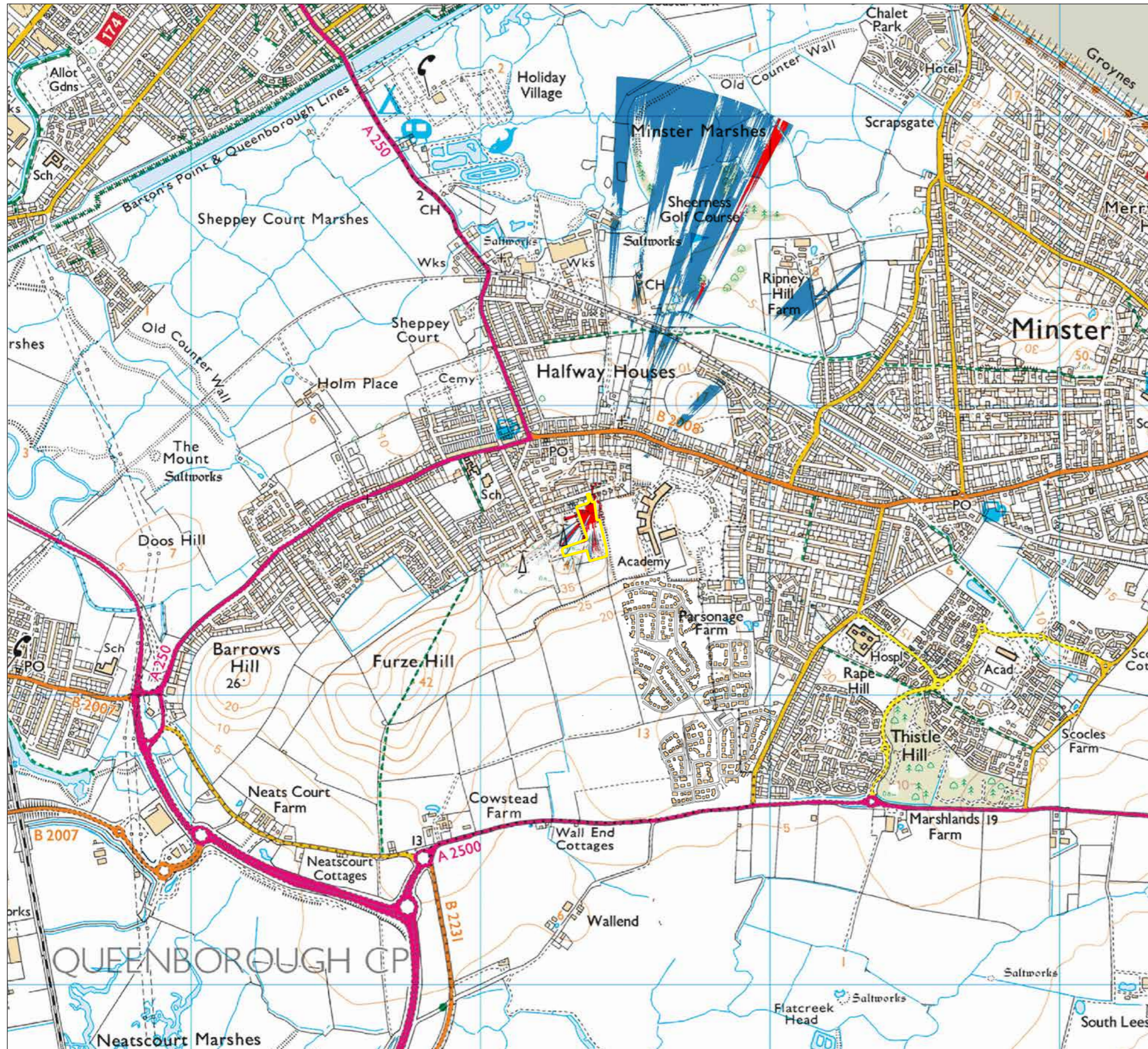


FIGURE I
ZTV (Test Location 7)



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- Site
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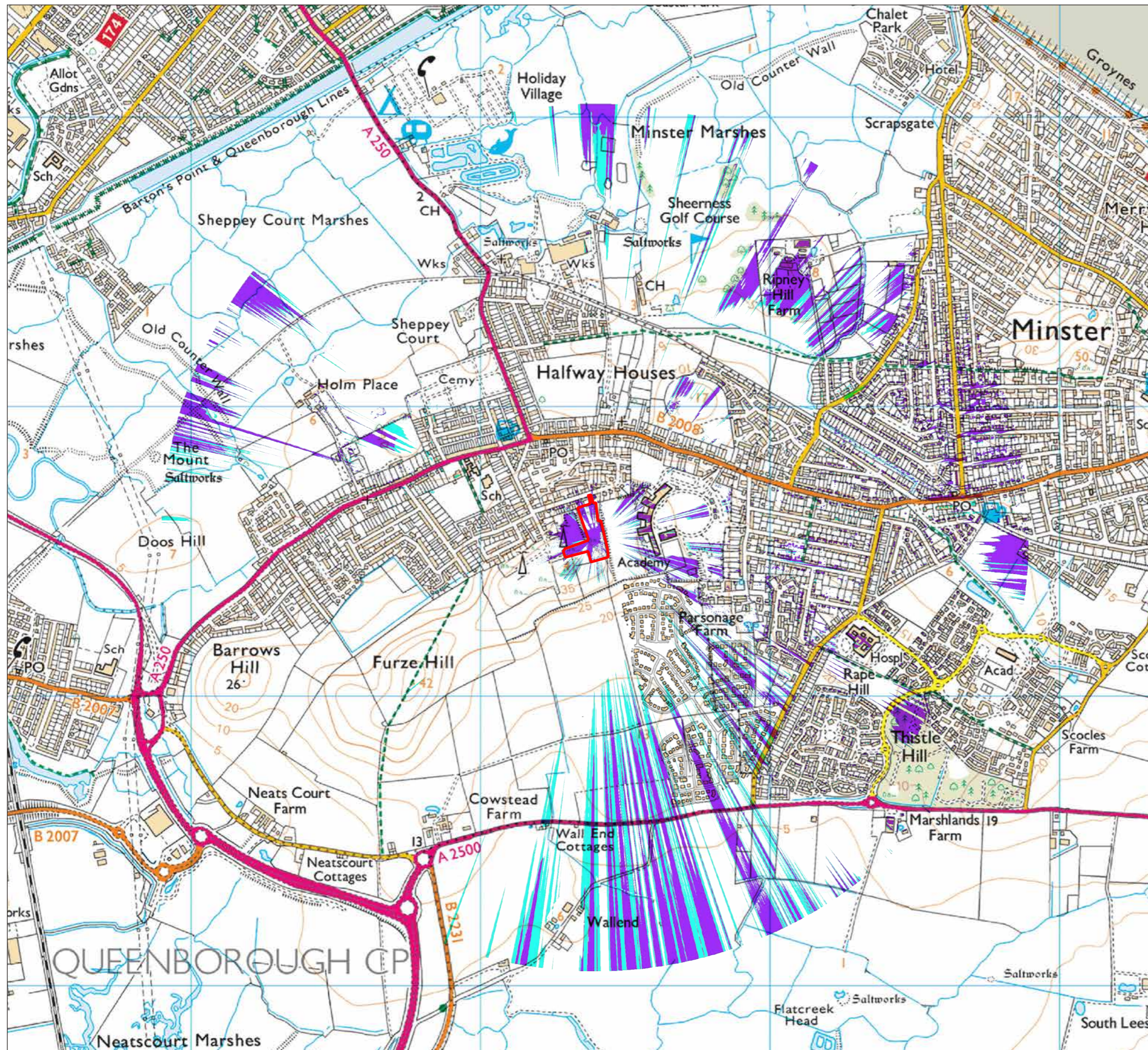


FIGURE J
ZTV (Test Location 3a)



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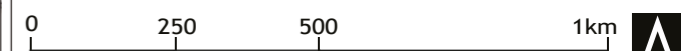
DATE
December 2020

Legend

- Site
- Visibility of a two storey (8m high) building
- Visibility of a two storey (9m high) building (includes area shaded purple)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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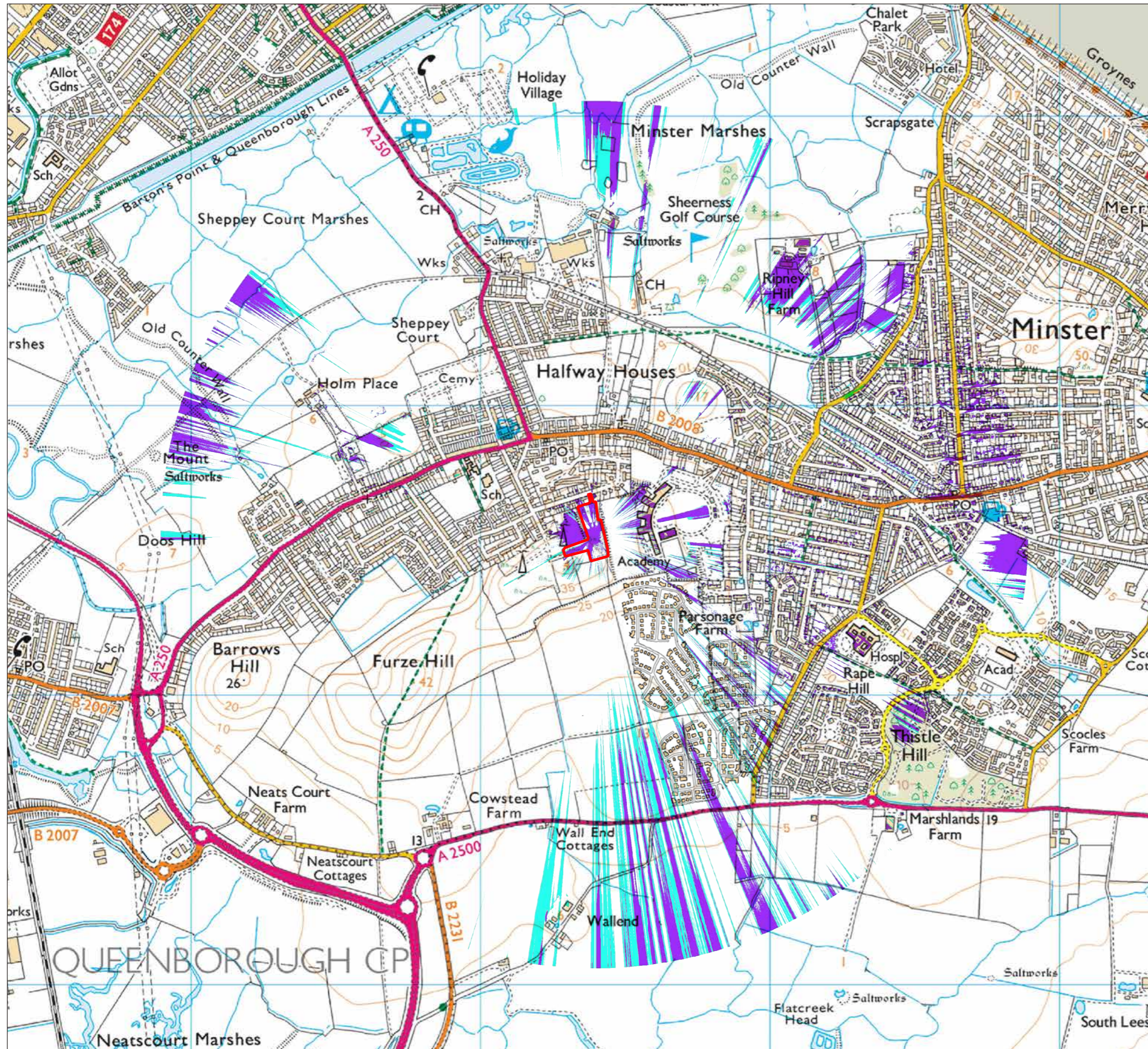


FIGURE K
ZTV (Test Location 4)



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Legend

- Site
- Visibility of a two storey (8m high) building
- Visibility of a two storey (9m high) building (includes area shaded purple)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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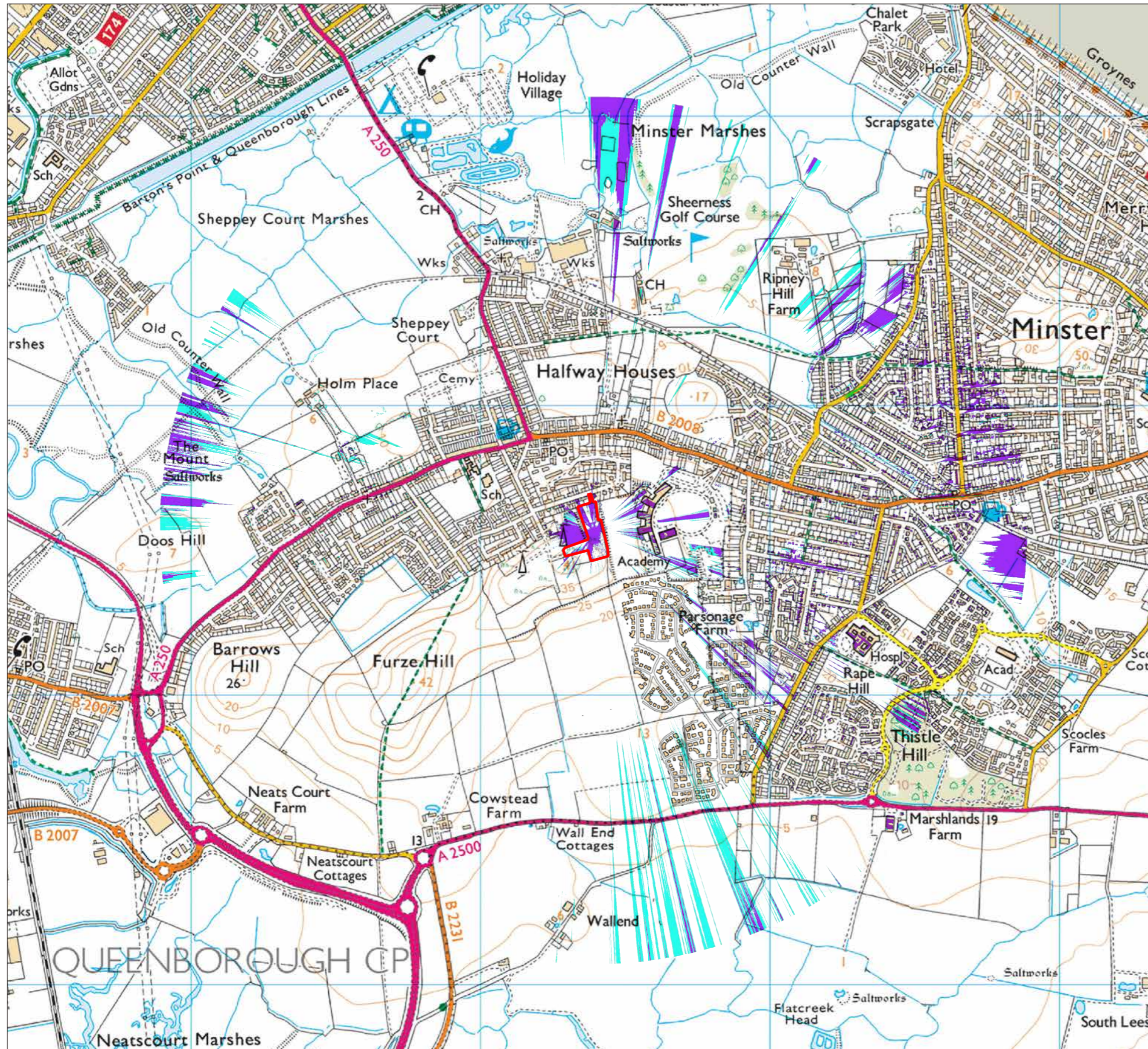


FIGURE L
ZTV (Test Location 5)



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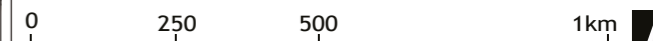
DATE
December 2020

Legend

- Site
- Visibility of a two storey (8m high) building
- Visibility of a two storey (9m high) building (includes area shaded purple)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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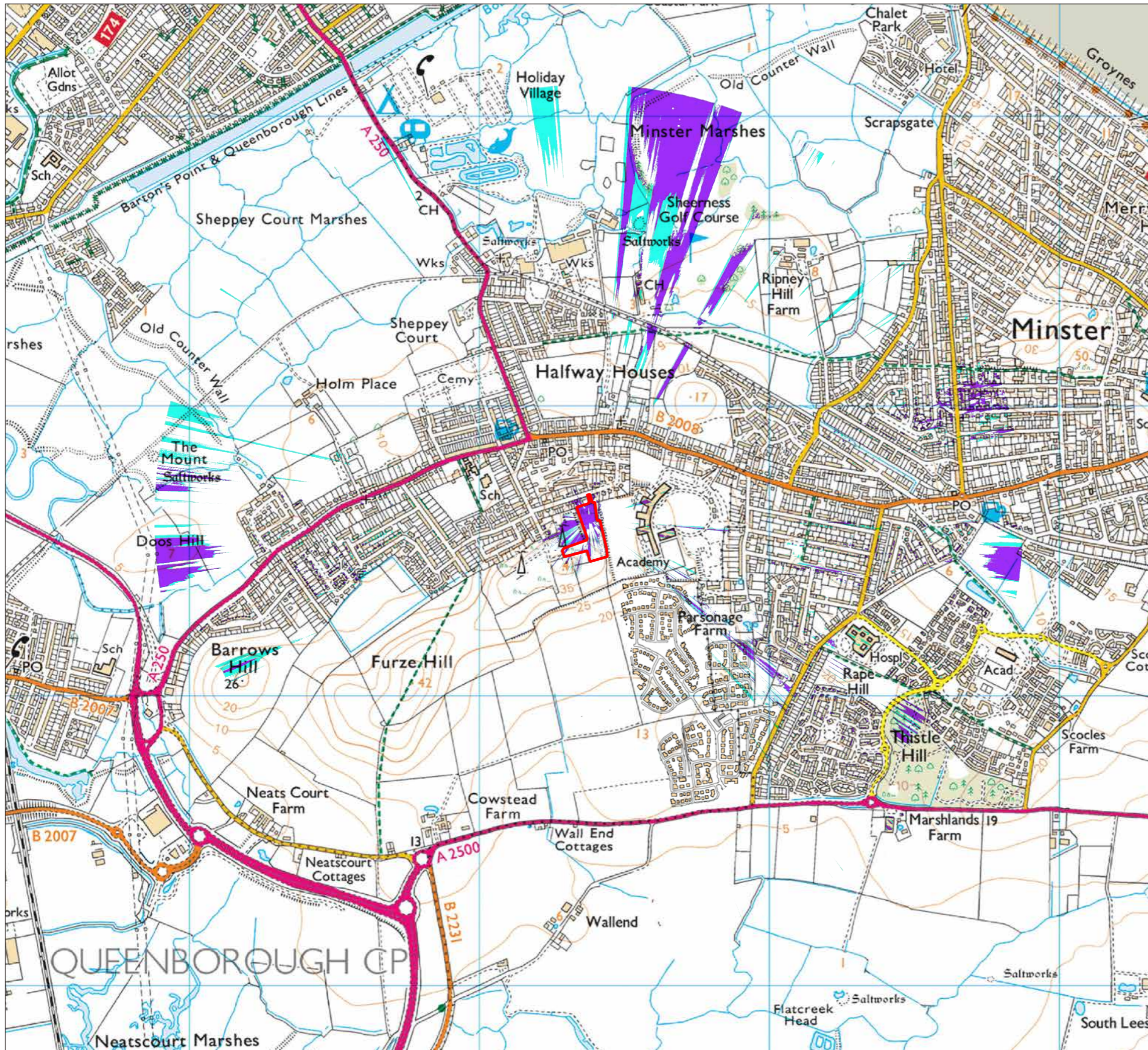


FIGURE M
ZTV (Test Location 6)



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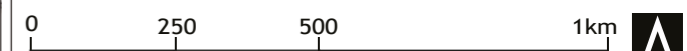
DATE
December 2020

Legend

- Site
- Visibility of a two storey (8m high) building
- Visibility of a two storey (9m high) building (includes area shaded purple)

NOTES: The zone of theoretical visibility (ZTV) assumes an observer eye height of 1.6m above ground level, within a 1500m radius of the test location. The analysis is based on a Digital Surface Model (DSM) created from 1m LiDAR data (2017). The analysis therefore accounts for the screening potential of above ground elements such as buildings and vegetation. In some locations visibility is shown on top of the above ground elements and therefore a greater overall area of visibility is presented than would actually occur for a person at ground level. The analysis does not indicate how much of the building would be visible.

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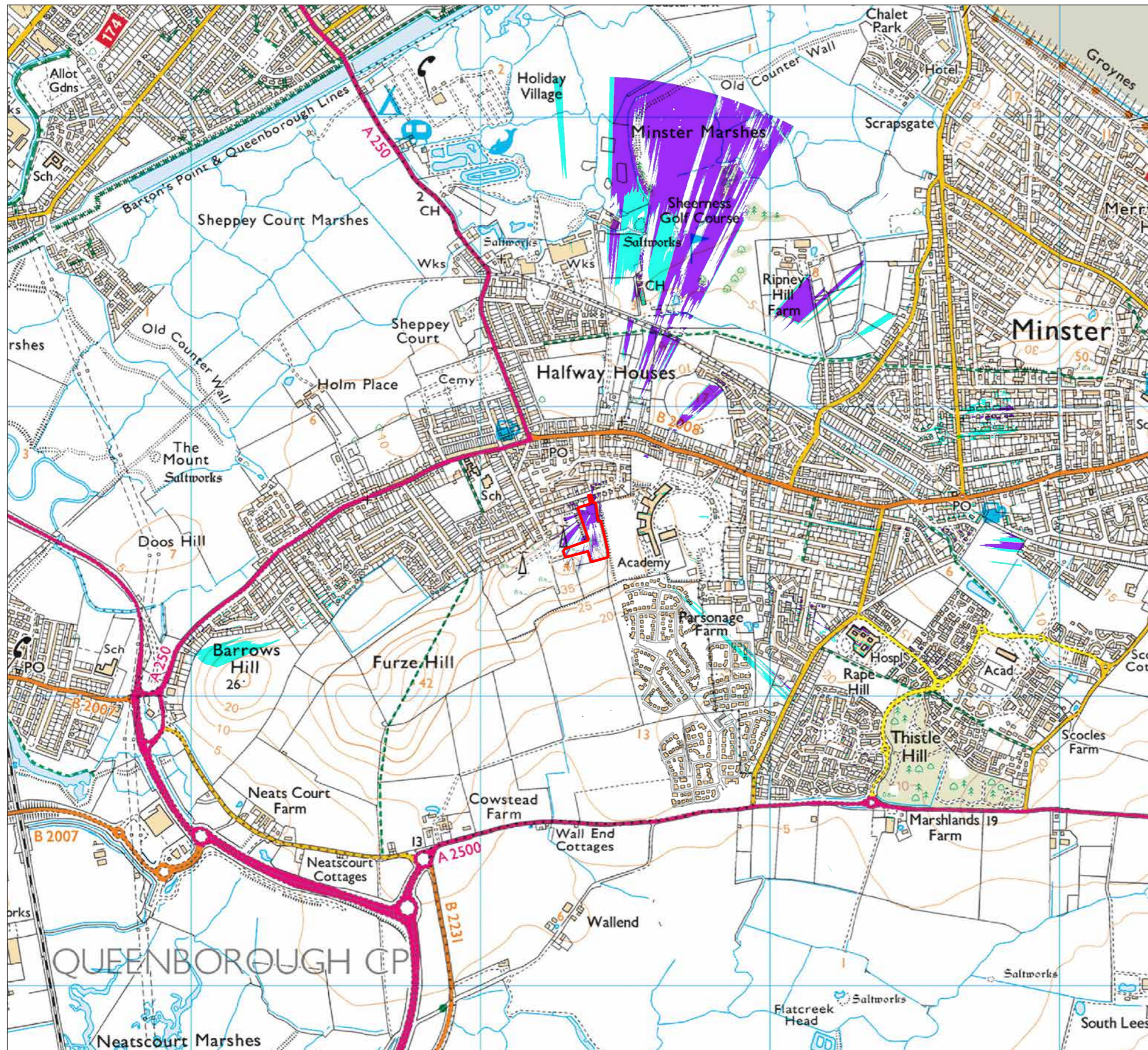


FIGURE N
ZTV (Test Location 7)



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- Site
- Visibility of a two storey (8m high) building
- Visibility of a two storey (9m high) building (includes area shaded purple)

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Appendix 3
Methodology



Methodological Approach for Landscape and Visual Assessment

Introduction

1. The methodology used by Michelle Bolger Expert Landscape Consultancy (MBELC) when preparing evidence on landscape and visual issues is based on *Guidelines for Landscape and Visual Impact Assessment*, Third Edition 2013 (GLVIA3) prepared by the Landscape Institute/Institute of Environmental Management and Assessment. The methodology also identifies where the approach adopted has been informed by the consideration of specific landscape or visual issues by the courts or by inspectors at public inquiry.
2. Landscape/ townscape effects are effects on the fabric and character of the landscape/ townscape. Visual effects are effects on people and are concerned with the impact of the proposals on the amenity of those people who will experience visual changes as a result of the proposals.
3. GLVIA3 sets out the processes that should be followed in the preparation of a Landscape and Visual Impact Assessment (LVIA), required for development that is the subject of an Environmental Impact Assessment (EIA), and for a Landscape and Visual Appraisal (LVA) required for development that is not the subject of an EIA. With regard to the differences between a LVIA and a LVA, GLVIA3 states that '*the overall principles and the core steps in the process are the same*'¹ and sets out the differences in defined procedures as follow:

'As a 'standalone' appraisal the process is informal and there is more flexibility, but the essence of the approach - specifying the nature of the proposed change or development; describing the existing landscape and the views and visual amenity in the area that may be affected; predicting the effects, although not their likely significance; and considering how those effects might be mitigated - still applies'.²

¹ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 26 Paragraph 3.2

² Guidelines for Landscape and Visual Impact Assessment, 2013 Page 26 Paragraph 3.2

Baseline Assessment

4. GLVIA3 sets out the factors that should be considered in establishing a study area and determining the baseline conditions. (GLVIA3 Page 32 Paragraphs 3.15-3.17) *‘For the landscape baseline the aim is to provide an understanding of the landscape in the area that may be affected - its constituent elements, its character and the way this varies spatially, its geographic extent, its history (which may require its own specialist study), its condition, the way the landscape is experienced, and the value attached to it.’*³
5. The **value** of a landscape is: *‘the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a variety of reasons...A review of existing landscape designations is usually the starting point in understanding landscape value but the value attached to undesignated landscapes also needs to be carefully considered’*.⁴
6. The NPPF in paragraph 170 states that:
‘Planning policies and decisions should contribute to and enhance the natural and local environment by: (inter alia)
a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
7. Valued landscapes include nationally and internationally designated landscapes. The statutory status of nationally designated landscapes is set out in the National Parks and Access to the Countryside Act 1949 and the CROW Act 2000. This status is reflected in NPPF Paragraph 172 and local planning policies.
8. NPPF 170 Valued Landscapes are not restricted to designated landscapes. GLVIA3 on page 84 in Box 5.1 provides a list of factors that are useful in indicating landscape value *‘in cases where there is not existing evidence to indicate landscape value’*. This list of factors has been considered useful by Inspectors in their appeal decisions.
9. Judgements about the value of a landscape are recorded on a verbal scale of high, medium and low with an overall conclusion that if the landscape in which a site is located has ‘high’ value this is likely to equate to a NPPF paragraph 170 ‘Valued Landscape’.

³ Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013, Page 32, Paragraph 3.15

⁴ Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013, Page 80, Paragraph 5.19

Landscape Effects

10. Landscape effects can be effects on the fabric of the landscape or on landscape character. Effects on landscape character often extend beyond the site itself and are a consequence of visual changes which affect the pattern and character of the landscape.
11. The assessment of the **sensitivity** of the landscape is directly related to the type of development proposed. Landscape Sensitivity is derived from: *‘combining judgements of their [the landscape receptors’] susceptibility to the type of change or development proposed and the value attached to the landscape’*⁵. As identified above, the value of the landscape is assessed as part of the baseline, whereas the assessment of the susceptibility to change of a landscape must be tailored to individual projects and *‘should not be recorded as part of the landscape baseline but should be considered as part of the assessment of effects’*.⁶
12. The **susceptibility to change** of a landscape is: *‘the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or areas, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies’*.⁷ Judgements about the **susceptibility** of the landscape are recorded on a verbal scale of high, medium and low and the basis for the judgements is made clear and linked back to evidence from the baseline study as required by GLVIA Para 5.43.
13. Judgements about **sensitivity** of the landscape are a result of combining judgments regarding value and susceptibility. This is recorded on a verbal scale of high, medium and low and the basis for the judgements is made clear.
14. Judgements about the **magnitude of change** for landscape effects are recorded on a verbal scale of high, medium, low and negligible, based on the principles set out in GLVIA3 paragraphs 5.48-5.52 which includes a consideration of scale, geographical extent and the duration and reversibility of the landscape effects.

⁵ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 88 Paragraph 5.39

⁶ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 89 Paragraph 5.42

⁷ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 88 Paragraph 5.40

15. Judgements about the overall significance/ importance of landscape effects, are recorded on a verbal scale of major, moderate and minor, based on the principles set out in GLVIA3 paragraphs 5.53-5.57.⁸
16. The underlying principles are summarised in GLVIA Figure 5.10 (Page 92) which has been adapted below.

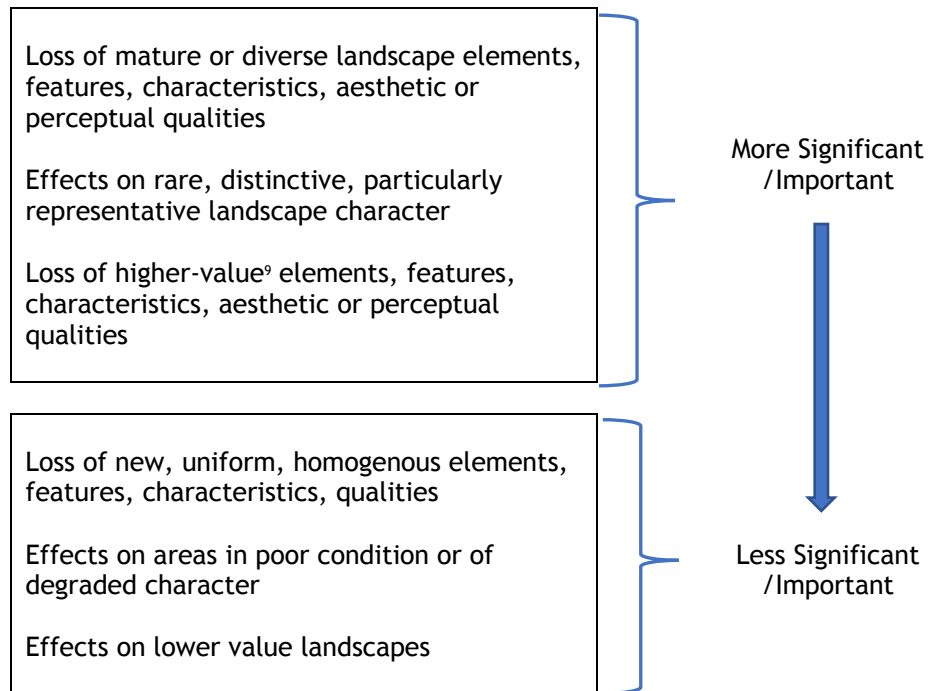


Figure 1 - Scale of Significance/Importance
(Derived from GLVIA3 Figure 5.10 Page 92 Scale of Significance)

⁸ Significance of effect is the term used when undertaking an LVIA as part of an EIA.

⁹ The Figure on Page 92 says '*loss of lower-value elements*', but this is an error in the text identified in GLVIA3 Statement of Clarification 2/13 8-07-13. It should read '*Loss of higher-value elements*'.

17. The reasons for reaching the final judgments on landscape effects are always made clear in the text. However, the following diagram in Figure 2 can assist in understanding the way in which the judgments regarding landscape sensitivity and magnitude of change are combined to reach a final judgment on the significance/importance of the landscape effects.

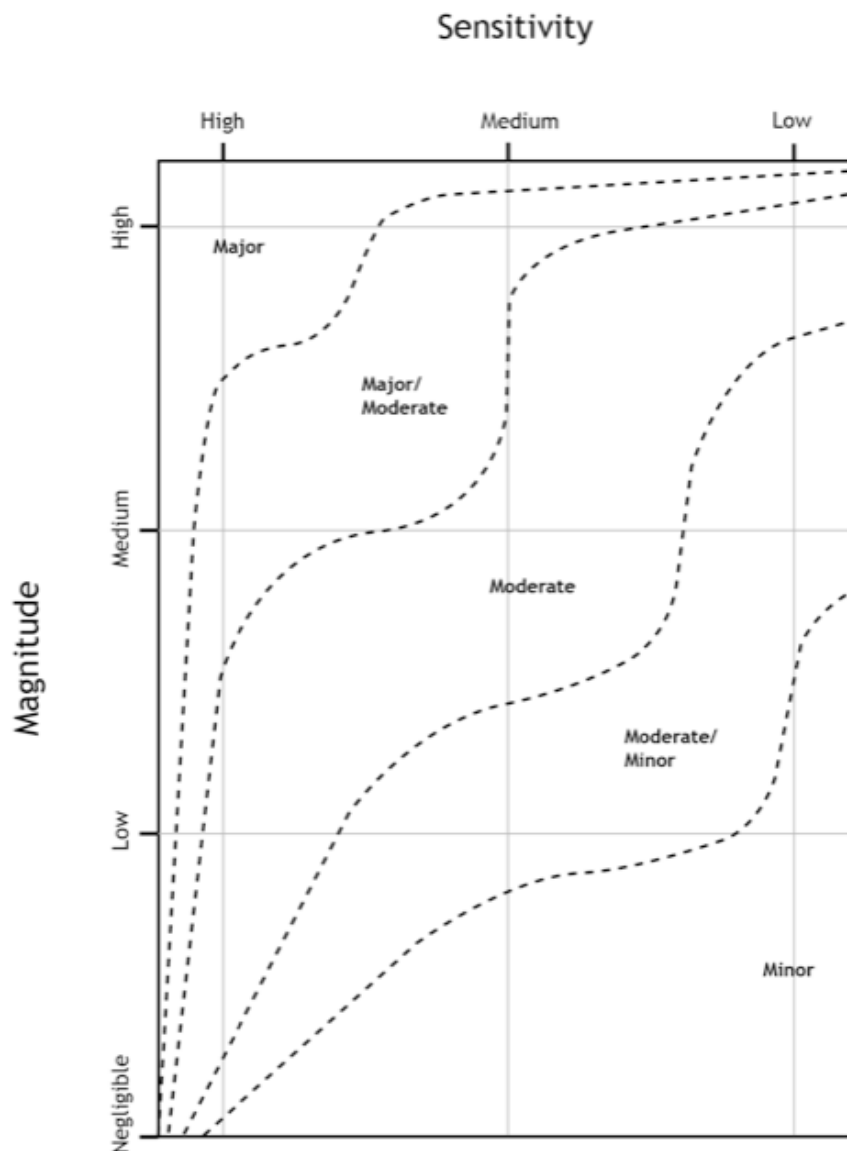


Figure 2 (MBELC) - Significance / Importance of Effects

Visual Effects

18. Judgments about visual effects are derived from a consideration of the sensitivity of visual receptors to the proposed development, and the magnitude of change to their existing visual amenity. Changes in landscape character may also be a result of visual changes but these are considered under landscape effects.
19. GLVIA3 provides guidance on the relative sensitivity of different visual receptors (GLVIA3 paragraphs 6.31-6.37). In summary, the most sensitive receptors are:
 - Residents at home;
 - People engaged in outdoor activities whose attention is focused on the landscape and view; and
 - Visitors to locations where views are an important part of the experience.
20. The least sensitive receptors are:
 - People engaged in outdoor sports or activities which do not depend on an appreciation of views; and
 - People at their place of work (although this can vary).
21. The sensitivity of road users varies. People on busy or main routes are considered to have medium or low sensitivity, whilst users of rural roads or scenic routes will have medium or even high sensitivity.
22. Judgments are recorded on a verbal scale of high, medium and low. Visual receptors who would be affected by the development are identified in groups and their sensitivity assessed combining issues relating to their susceptibility and the value attached to the views affected.
23. Judgments about the **magnitude of change** for visual effects are recorded on a verbal scale of high, medium, low and negligible based on the principles set out in GLVIA3 paragraphs 6.38-6.41 which includes a consideration of scale, geographical extent and the duration and reversibility of the visual effects.

24. *‘Significance of visual effects is not absolute and can only be defined in relation to each development and its specific location’¹⁰. Judgments about the overall importance of visual effects are recorded on a verbal scale of major, moderate and minor, based on the principles set out in GLVIA3 paragraphs 6.42-6.45. The underlying principles are summarised in Paragraph 6.44:*

‘There are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances varied the location and context and with the type of proposal. In making a judgement about significance of visual effects the following points should be noted:

- Effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant.*
- Effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant.*
- Large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes involving features already present within the view.’¹¹*

25. The reasons for reaching the final judgments on visual effects are always made clear in the text. However, Figure 2 above can assist in understanding the way in which the judgments regarding visual receptor sensitivity and magnitude of change are combined to reach a final judgment on the significance / importance of the visual effects.

Final Note

26. Intermediate judgements such as medium/high or minor/moderate are also used in the assessments where the judgment falls between two levels. Where such a judgement is reached there is no intended difference to be derived from which judgment comes first - so medium/high is the same as high/medium and moderate/major the same as major /moderate.

Last Updated September 2020

¹⁰ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 115 Paragraph 6.42

¹¹ Guidelines for Landscape and Visual Impact Assessment, 2013 Page 116 Paragraph 6.44

Appendix 4

Extracts from National Character Area 81