





Chapter 13 Drawing 13.1.1 LVIA Study Area





KEY

-  Site Boundaries
-  Environmental Zone of Influence (5km, 10km, 15km)



Scale 1:125,000 @ A3



Shetland Space Centre
Assessment of Environmental Effects

Drawing 13.1.1

Environmental Zone of Influence

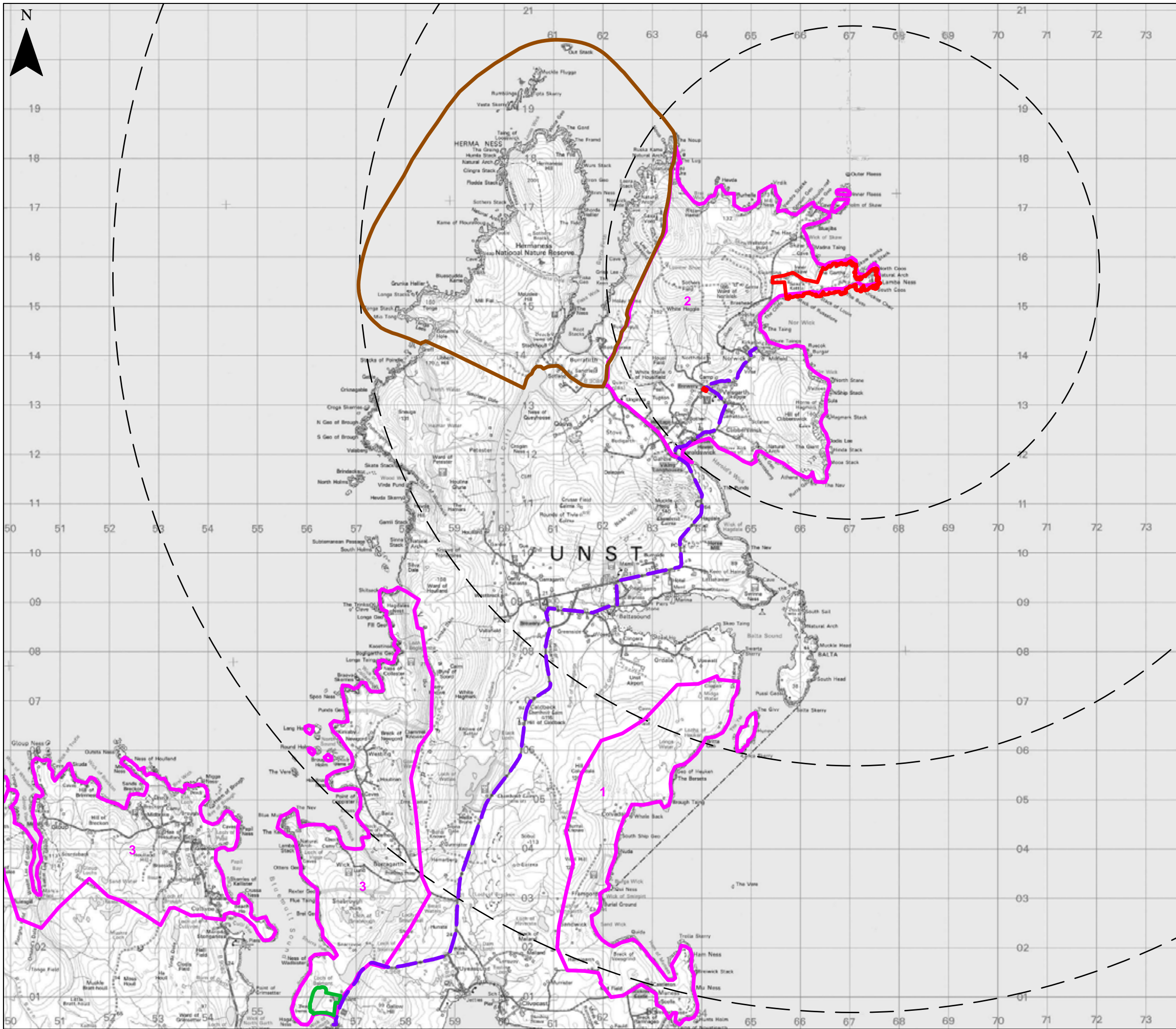
Date:	08/10/2021	Drawn by:	HEPLA	Checked by:	PD	Version:	V1
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Project Number: 3148









Chapter 13 Drawing 13.1.2 Landscape Designations

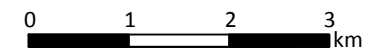




KEY

-  Site Boundaries
-  Environmental Zone of Influence (5km, 10km, 15km)
-  Gardens and Designed Landscapes (Belmont House)
-  National Scenic Areas (Herma Ness)
-  National Cycle Route 1
-  Local Landscape Areas

1. Colvadale and Munn, Unst
2. Haroldswick and Skaw
3. Gloop Voe and Bluemull Sound



Scale 1:75,000 @ A3



Shetland Space Centre
Assessment of Environmental Effects

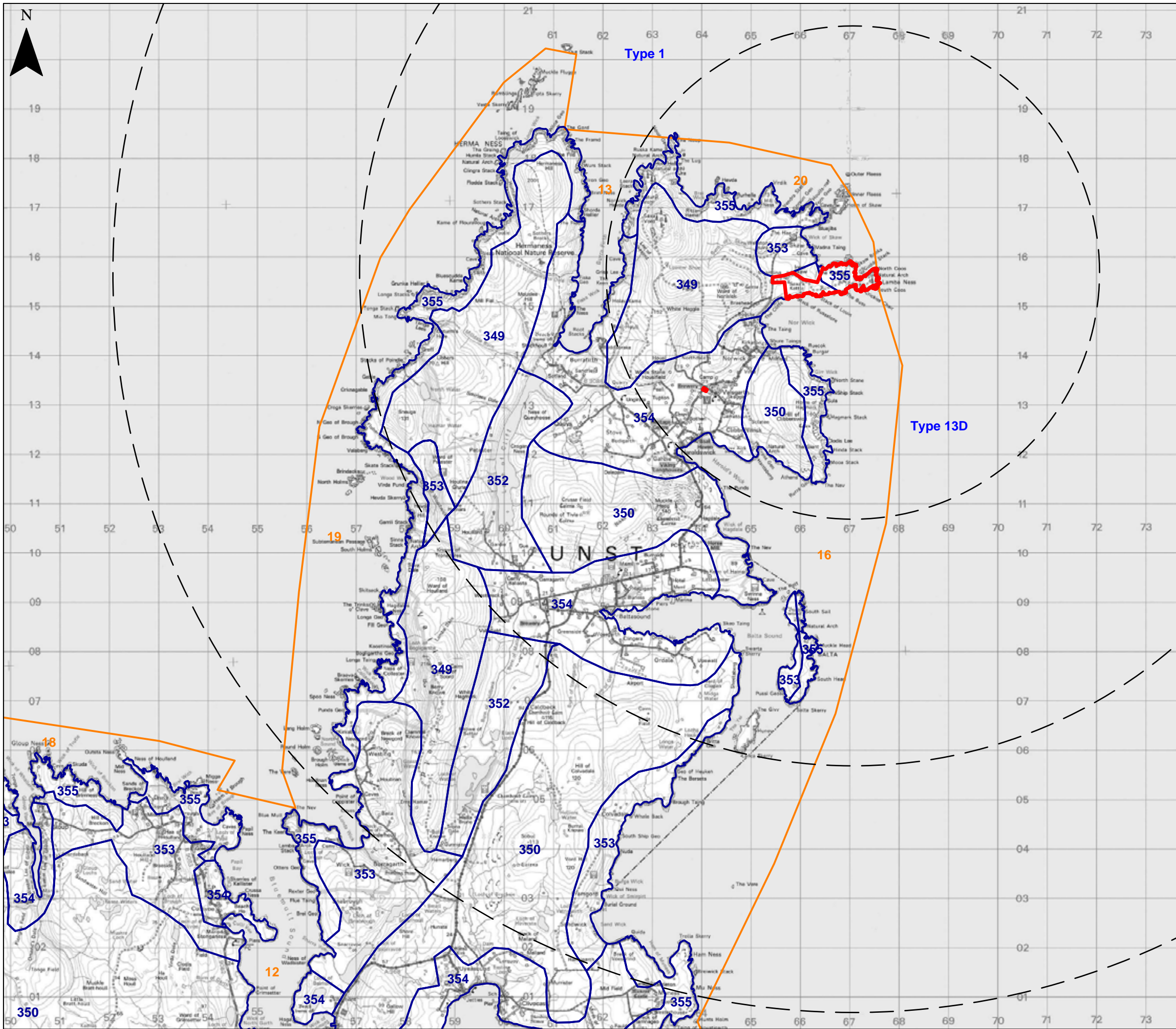
Drawing 13.1.2
Landscape Designations Plan
(and National Cycle Network Routes)

Date:	08/10/2021	Drawn by:	HEPLA	Checked by:	PD	Version:	V1
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





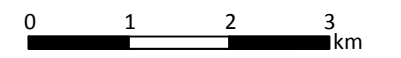
Chapter 13 Drawing 13.1.3 Landscape / Coastal / Seascape Character Areas





KEY

-  Site Boundaries
 -  Environmental Zone of Influence (5km, 10km, 15km)
 -  Landscape Character Areas
 -  Coastal Character Areas
 -  Seascape Character Areas
349. Major Uplands
 350. Peatland and Moorland
 352. Inland Valleys
 353. Farmed and Settled Lowlands and Coast
 354. Farmed and Settled Voes and Sounds
 355. Coastal Edge
12. Bluemull Sound
 13. Burrafirth
 16. East Unst
 18. Gloop-Breckon
 19. Hermaness
 20. Skaw
1. Remote High Cliffs
 13D. Islands, Sounds and Voes



Scale 1:75,000 @ A3



Shetland Space Centre
 Assessment of Environmental Effects

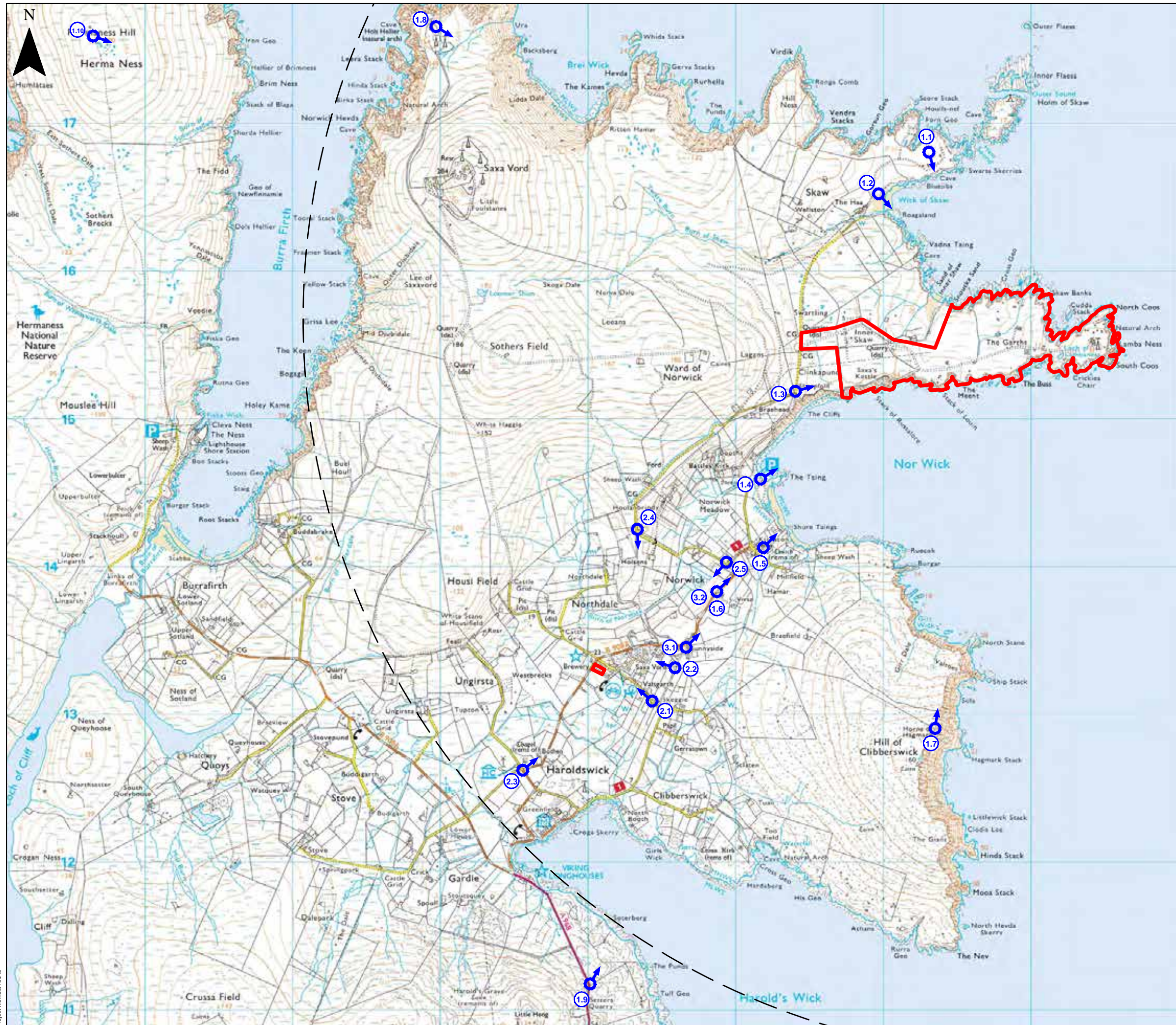
Drawing 13.1.3
**Landscape Character / Coastal /
 Seascape Character Areas**

Date:	08/10/2021	Drawn by:	HEPLA	Checked by:	PD	Version:	V1
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Chapter 13 Drawing 13.1.4 Viewpoint Location Plan





KEY

-  Site Boundaries
-  Viewpoint Locations

Launch facility at Lamba Ness

- 1.1 Bluejibs above the Wick of Skaw
- 1.2 The Haa, Wick of Skaw
- 1.3 The Garths, Lamba Ness
- 1.4 Car park at The Taing, Norwick
- 1.5 The cemetery, Norwick
- 1.6 B9087, Norwick
- 1.7 Hill of Clibberswick
- 1.8 Headland to the North of Saxa Vord Radar Station
- 1.9 Lay by on A968 above Harold's Wick
- 1.10 Hermaness Hill

Two-storey command and control building at Saxa Vord resort including replacement accommodation buildings


- 2.1 Minor road at Valsgarth
- 2.2 Methodist Church, Valsgard / Saxa Vord
- 2.3 B9087 adjacent to Unst Heritage Centre, Haroldswick
- 2.4 Minor road at Houlanbrindy
- 2.5 Minor road, Norwick

Night time lighting

- 3.1 Skulhus
- 3.2 Virse

0 0.5 1 km

Scale 1:25,000 @ A3



Shetland Space Centre
Assessment of Environmental Effects

Drawing 13.1.4

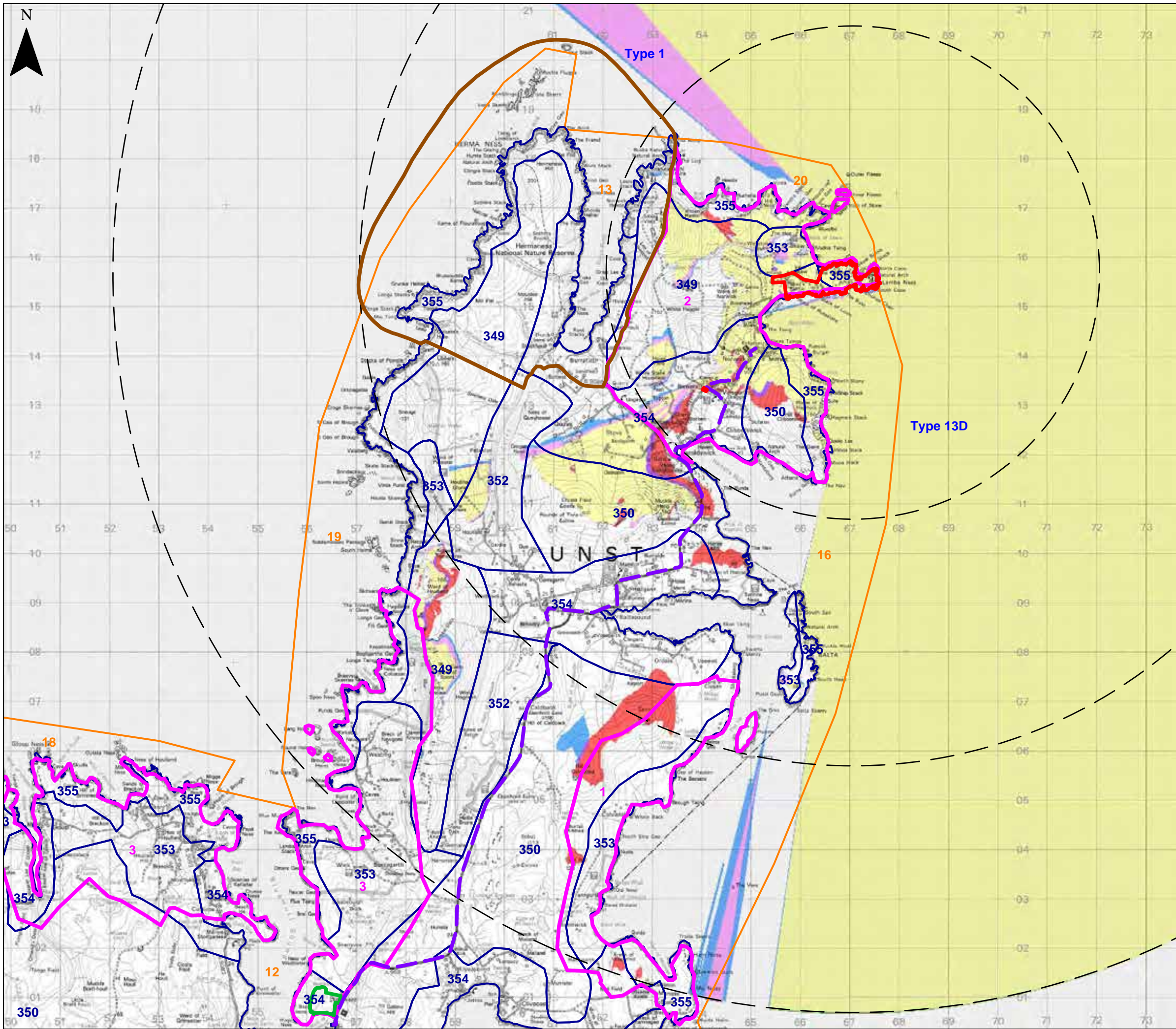
Viewpoint Location Plan

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1






Chapter 13 Drawing 13.2.1a ZTV: Launch Site Infrastructure - Erected







KEY






-  Site Boundaries
-  Environmental Zone of Influence (5km, 10km, 15km)
-  Landscape Character Areas

- 349. Major Uplands
- 350. Peatland and Moorland
- 352. Inland Valleys
- 353. Farmed and Settled Lowlands and Coast
- 354. Farmed and Settled Voes and Sounds
- 355. Coastal Edge

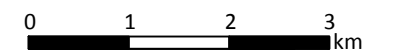
-  Coastal Character Areas
- 12. Bluemull Sound
- 13. Burrarfirth
- 16. East Unst
- 18. Gloop-Breckon
- 19. Hermaness
- 20. Skaw

-  Seascape Character Areas
- 1. Remote High Cliffs
- 13D. Islands, Sounds and Voes

- Landscape Designations**
-  Gardens and Designed Landscapes (Belmont House)
 -  National Scenic Areas (Herma Ness)
 -  National Cycle Route 1
 -  Local Landscape Areas
 - 1. Colvadale and Muness, Unst
 - 2. Haroldswick and Skaw
 - 3. Gloop Voe and Bluemull Sound

- Visibility of Site**
-  Visibility of baseline built form only
 -  Visibility of lightning masts only
 -  Combined visibility of baseline built form and lightning masts
 -  Combined visibility of lightning masts and rocket launch sites
 -  Combined visibility of baseline built form, lightning masts and rocket launch sites

NOTES: Calculated using Earth's curvature (radius 6360km) and atmospheric refraction coefficient of 0.075.
 Terrain data is derived from OS Terrain 5 gridded height data.
 ZTV calculation does not take into account any surface features such as trees and buildings.
 Lightning mast height - 46m / Rocket height - 36m
 ZTV view height - 2m
 ZTV calculation resolution - 20m



Scale 1:75,000 @ A3



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.2.1a

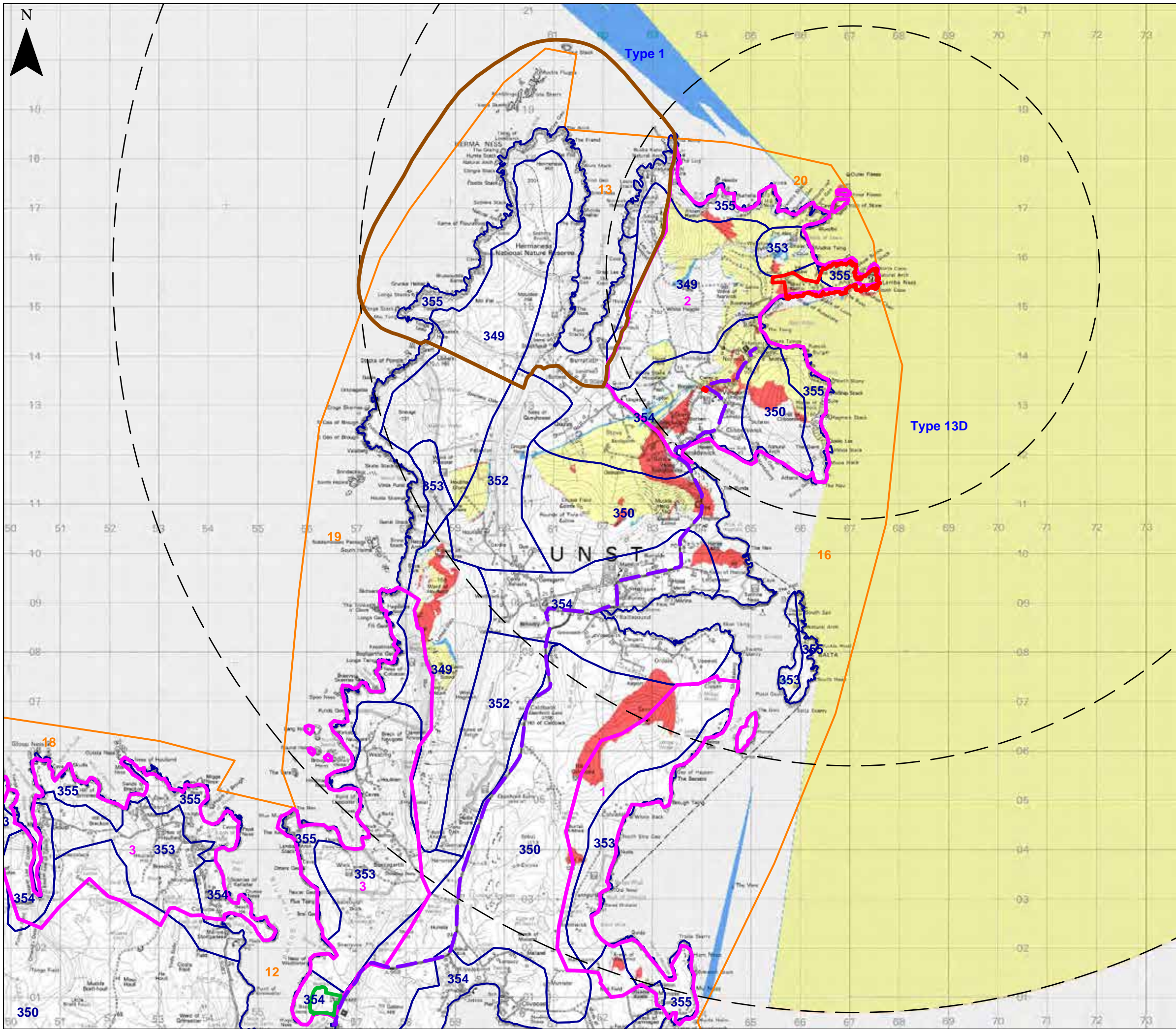
Zone of Theoretical Visibility: Launch Site Infrastructure including rockets and erected lightning masts

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.2.1b ZTV: Launch Site Infrastructure - Retracted





KEY

- Site Boundaries
- Environmental Zone of Influence (5km, 10km, 15km)
- Landscape Character Areas

- 349. Major Uplands
- 350. Peatland and Moorland
- 352. Inland Valleys
- 353. Farmed and Settled Lowlands and Coast
- 354. Farmed and Settled Voes and Sounds
- 355. Coastal Edge

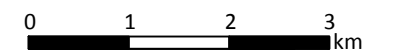
- Coastal Character Areas
- 12. Bluemull Sound
- 13. Burrafirth
- 16. East Unst
- 18. Gloop-Breckon
- 19. Hermaness
- 20. Skaw

- Seascape Character Areas
- 1. Remote High Cliffs
- 13D. Islands, Sounds and Voes

- Landscape Designations**
- Gardens and Designed Landscapes (Belmont House)
 - National Scenic Areas (Herma Ness)
 - National Cycle Route 1
 - Local Landscape Areas
 - 1. Colvadale and Muness, Unst
 - 2. Haroldswick and Skaw
 - 3. Gloop Voe and Bluemull Sound

- Visibility of Site**
- Visibility of baseline built form
 - Visibility of lightning masts (retracted)
 - Combined visibility of baseline built form and lightning masts (retracted)

NOTES: Calculated using Earth's curvature (radius 6360km) and atmospheric refraction coefficient of 0.075.
 Terrain data is derived from OS Terrain 5 gridded height data.
 ZTV calculation does not take into account any surface features such as trees and buildings.
 Lightning mast height (retracted) - 25m
 ZTV view height - 2m
 ZTV calculation resolution - 20m



Scale 1:75,000 @ A3



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.2.1b

Zone of Theoretical Visibility: Launch Site Infrastructure (without rockets / lightning masts retracted)

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.1 Viewpoint 1.1 – Bluejibs above the Wick of Skaw





Viewpoint 1.1 - Existing View (90°)



Viewpoint 1.1 - Predicted Photomontage View (90°)

Viewpoint 1.1 Information:
Bluejibs above the Wick of Skaw
 Grid Reference: 466309, 1216806
 Bearing to Site: 140°
 Distance to Site: 1.1km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 13:14

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.1
Viewpoint 1.1
Bluejibs above the Wick of Skaw

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.2 Viewpoint 1.2 – The Haa, Wick of Skaw





Viewpoint 1.2 - Existing View (90°)



Viewpoint 1.2 - Predicted Photomontage View (90°)

Viewpoint 1.2 Information:
The Haa, Wick of Skaw
 Grid Reference: 465968, 1216524
 Bearing to Site: 125°
 Distance to Site: 860m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 12:53

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects
Drawing 13.3.1.2
Viewpoint 1.2
The Haa, Wick of Skaw

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.3 Viewpoint 1.3 – The Garths, Lamba Ness





Viewpoint 1.3 - Existing View (90°)



Viewpoint 1.3 - Predicted Photomontage View (90°)

Viewpoint 1.3 Information:
The Garths, Lamba Ness
 Grid Reference: 465405, 1215187
 Bearing to Site: 80°
 Distance to Site: 320m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 11:45

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.3
Viewpoint 1.3
The Garths, Lamba Ness

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.4 Viewpoint 1.4 – Car Park at the Taing, Norwick





Viewpoint 1.4 - Existing View (90°)



Viewpoint 1.4 - Predicted Photomontage View (90°)

Viewpoint 1.4 Information:
Car Park at the Taing, Norwick
 Grid Reference: 465172, 121459
 Bearing to Site: 60°
 Distance to Site: 800m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 11:15

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.4
Viewpoint 1.4
Car Park at the Taing, Norwick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.5 Viewpoint 1.5 – The Cemetery, Norwick





Viewpoint 1.5 - Existing View (90°)



Viewpoint 1.5 - Predicted Photowireframe View (90°)

Viewpoint 1.5 Information:
The Cemetery, Norwick
 Grid Reference: 465188, 1214128
 Bearing to Site: 45°
 Distance to Site: 1.2km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 10:56

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects
Drawing 13.3.1.5
Viewpoint 1.5
The Cemetery, Norwick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1

Project Number: 3188



Chapter 13 Drawing 13.3.1.6 Viewpoint 1.6 – B9087 Norwick





Viewpoint 1.6 - Existing View (90°)



Viewpoint 1.6 - Predicted Photomontage View (90°)

Viewpoint 1.6 Information:
B9087 Norwick
 Grid Reference: 464872, 1213830
 Bearing to Site: 45°
 Distance to Site: 1.6km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 10:29

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects
Drawing 13.3.1.6
Viewpoint 1.6
B9087 Norwick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.7 Viewpoint 1.7 – Hill of Clibberswick





Viewpoint 1.7 - Existing View (90°)



Viewpoint 1.7 - Predicted Photomontage View (90°)

Viewpoint 1.7 Information:
Hill of Clibberswick
 Grid Reference: 466351, 1212904
 Bearing to Site: 10°
 Distance to Site: 2.4km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 15:22

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.7
Viewpoint 1.7
Hill of Clibberswick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.1.8 Viewpoint 1.8 – Headland North of Saxa Vord Radar Station





Viewpoint 1.8 - Existing View (90°)



Viewpoint 1.8 - Predicted Photomontage View (90°)

Viewpoint 1.8 Information:
Headland to the north of Saxa Vord radar station
 Grid Reference: 462970, 1217656
 Bearing to Site: 110°
 Distance to Site: 3.3km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 03/08/2020
 Time: 19:09

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.8
Viewpoint 1.8 - Headland to the north of Saxa Vord radar station

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1

Project Number: 3188



Chapter 13 Drawing 13.3.1.9 Viewpoint 1.9 – Lay by on A968 above Harold's Wick





Viewpoint 1.9 - Existing View (90°)



Viewpoint 1.9 - Predicted Photomontage View (90°)

Viewpoint 1.9 Information:
Lay by on A968 above Harold's Wick
 Grid Reference: 464014, 1211174
 Bearing to Site: 15°
 Distance to Site: 4.4km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 13/10/2020
 Time: 10:50

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects
Drawing 13.3.1.9
Viewpoint 1.9
Lay by on A968 above Harold's Wick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1

Project Number: 3188



Chapter 13 Drawing 13.3.1.10 Viewpoint 1.10 – Hermaness Hill





Viewpoint 1.10 - Existing View (90°)



Viewpoint 1.10 - Predicted Photowireframe View (90°)

Viewpoint 1.10 Information:
Hermaness Hill
 Grid Reference: 460648, 1217592
 Bearing to Site: 105°
 Distance to Site: 5.2km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 01/08/2020
 Time: 18:53

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.1.10
Viewpoint 1.10
Hermaness Hill

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.2.1 Viewpoint 2.1 – Minor Road at Valsgarth





Viewpoint 2.1 - Existing View (90°)



Viewpoint 2.1 - Predicted Photomontage View (90°)

Viewpoint 2.1 Information:
 Minor road at Valsgarth
 Grid Reference: 464434, 1213089
 Bearing to Site: 305°
 Distance to Site: 400m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 10:01

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.2.1
Viewpoint 2.1
Minor road at Valsgarth

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.2.2 Viewpoint 2.2 – Methodist Church, Valsgarth / Saxa Vord





Viewpoint 2.2 - Existing View (90°)



Viewpoint 2.2 - Predicted Photowireframe View (90°)

Viewpoint 2.2 Information:
Methodist Church, Valsgarth / Saxa Vord
 Grid Reference: 464589, 1213315
 Bearing to Site: 275°
 Distance to Site: 520m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 10:10

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.2.2
Viewpoint 2.2
Methodist Church, Valsgarth / Saxa Vord

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.2.3 Viewpoint 2.3 – B9087 near Heritage Centre, Haroldswick





Viewpoint 2.3 - Existing View (90°)



Viewpoint 2.3 - Predicted Photomontage View (90°)

Viewpoint 2.3 Information:
B9087 adjacent to Unst Heritage Centre, Haroldswick
 Grid Reference: 463558, 1212621
 Bearing to Site: 35°
 Distance to Site: 850m
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 31/07/2020
 Time: 19:54

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.2.3
Viewpoint 2.3 - B9087 adjacent to Unst Heritage Centre, Haroldswick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.3.2.4 Viewpoint 2.4 – Minor Road Houlanbrindy





Viewpoint 2.4 - Existing View (90°)



Viewpoint 2.4 - Predicted Photomontage View (90°)

Viewpoint 2.4 Information:
Minor road at Houlanbrindy
 Grid Reference: 464328, 1214266
 Bearing to Site: 195°
 Distance to Site: 1.0km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 12:23

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.2.4
Viewpoint 2.4
Minor road at Houlanbrindy

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1

Project Number: 3188

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Chapter 13 Drawing 13.3.2.5 Viewpoint 2.5 – Minor Road Norwick





Viewpoint 2.5 - Existing View (90°)



Viewpoint 2.5 - Predicted Photowireframe View (90°)

Viewpoint 2.5 Information:
Minor Road, Norwick
 Grid Reference: 464933, 1214028
 Bearing to Site: 230°
 Distance to Site: 1.1km
 Camera Make: Canon EOS 5D Mk II
 Camera Lens: 50mm
 Date: 27/07/2020
 Time: 10:38

Viewing Instructions:
 View flat at a comfortable arms length



Shetland Space Centre
 Assessment of Environmental Effects

Drawing 13.3.2.5
Viewpoint 2.5
Minor Road, Norwick

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1



Chapter 13 Drawing 13.4.1 Night time Viewpoint 3.1 – Skulhus Dusk





Viewpoint 3.1 - Existing View (90°)



Viewpoint 3.1 - Predicted Photomontage View (90°)

Viewpoint 3.1 Information:
Skulhus - Dusk
Grid Reference: 464664, 1213453
Bearing to Site: 25°
Distance to Site: 2.0km
Camera Make: Canon EOS 5D Mk II
Camera Lens: 50mm
Date: 03/08/2020
Time: 23:10

Viewing Instructions:
View flat at a comfortable arms length



Shetland Space Centre
Assessment of Environmental Effects

Drawing 13.4.1
Viewpoint 3.1
Skulhus - Dusk

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1

Project Number: 3188

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Chapter 13 Drawing 13.4.2 Night time Viewpoint 3.2 – Virse Dusk





Viewpoint 3.2 - Existing View (90°)



Viewpoint 3.2 - Predicted Photomontage View (90°)

Viewpoint 3.2 Information:
Virse - Dusk
Grid Reference: 464872, 1213830
Bearing to Site: 45°
Distance to Site: 1.6km
Camera Make: Canon EOS 5D Mk II
Camera Lens: 50mm
Date: 03/08/2020
Time: 22:40

Viewing Instructions:
View flat at a comfortable arms length



Shetland Space Centre
Assessment of Environmental Effects

Drawing 5.4.2
Viewpoint 3.2
Virse - Dusk

Date: 08/10/2021 Drawn by: HEPLA Checked by: PD Version: V1