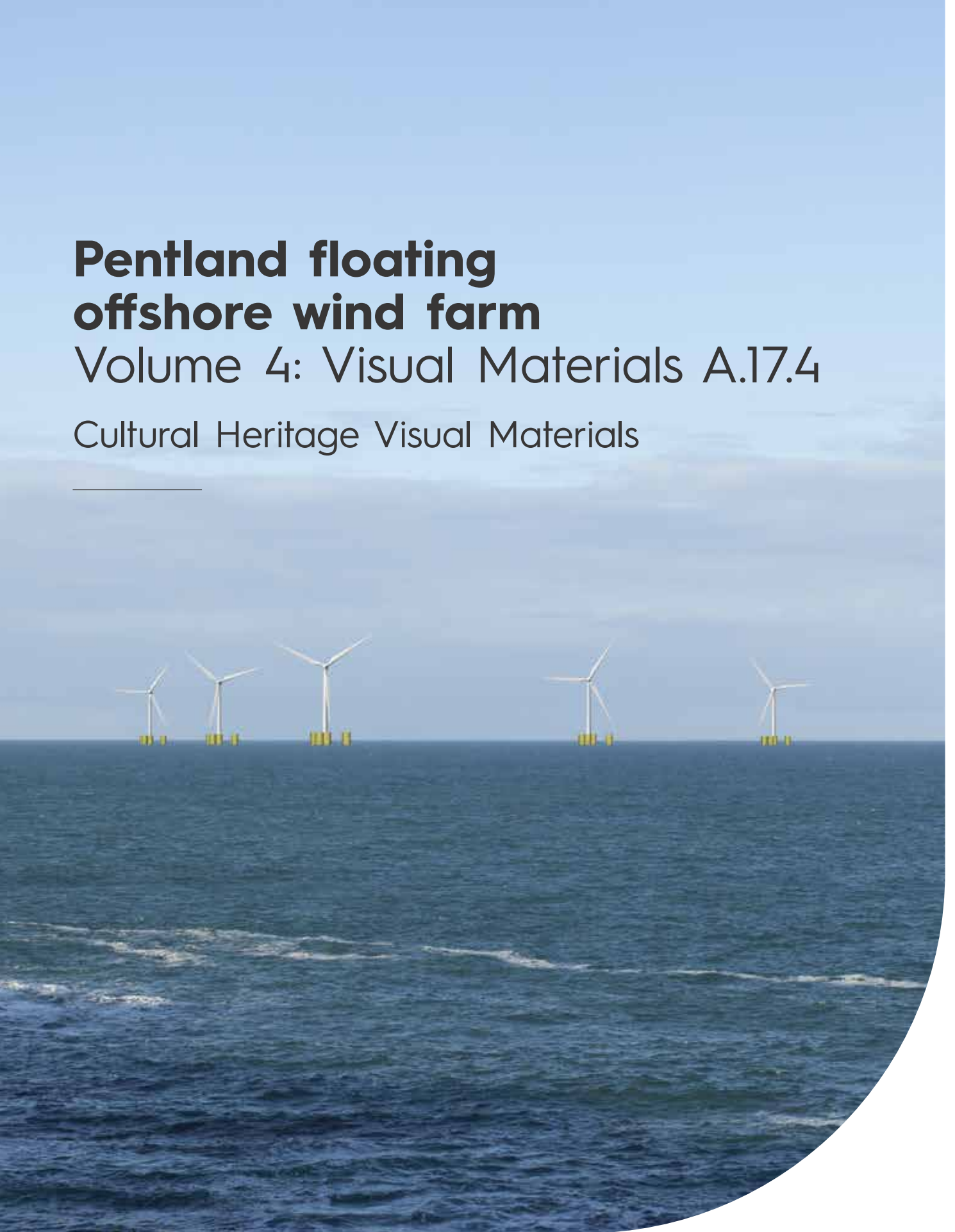


# **Pentland floating offshore wind farm**

## **Volume 4: Visual Materials A.17.4**

### **Cultural Heritage Visual Materials**

---



## OFFSHORE EIAR (VOLUME 4): VISUAL MATERIALS

### APPENDIX 17.4: CULTURAL HERITAGE VISUAL MATERIALS

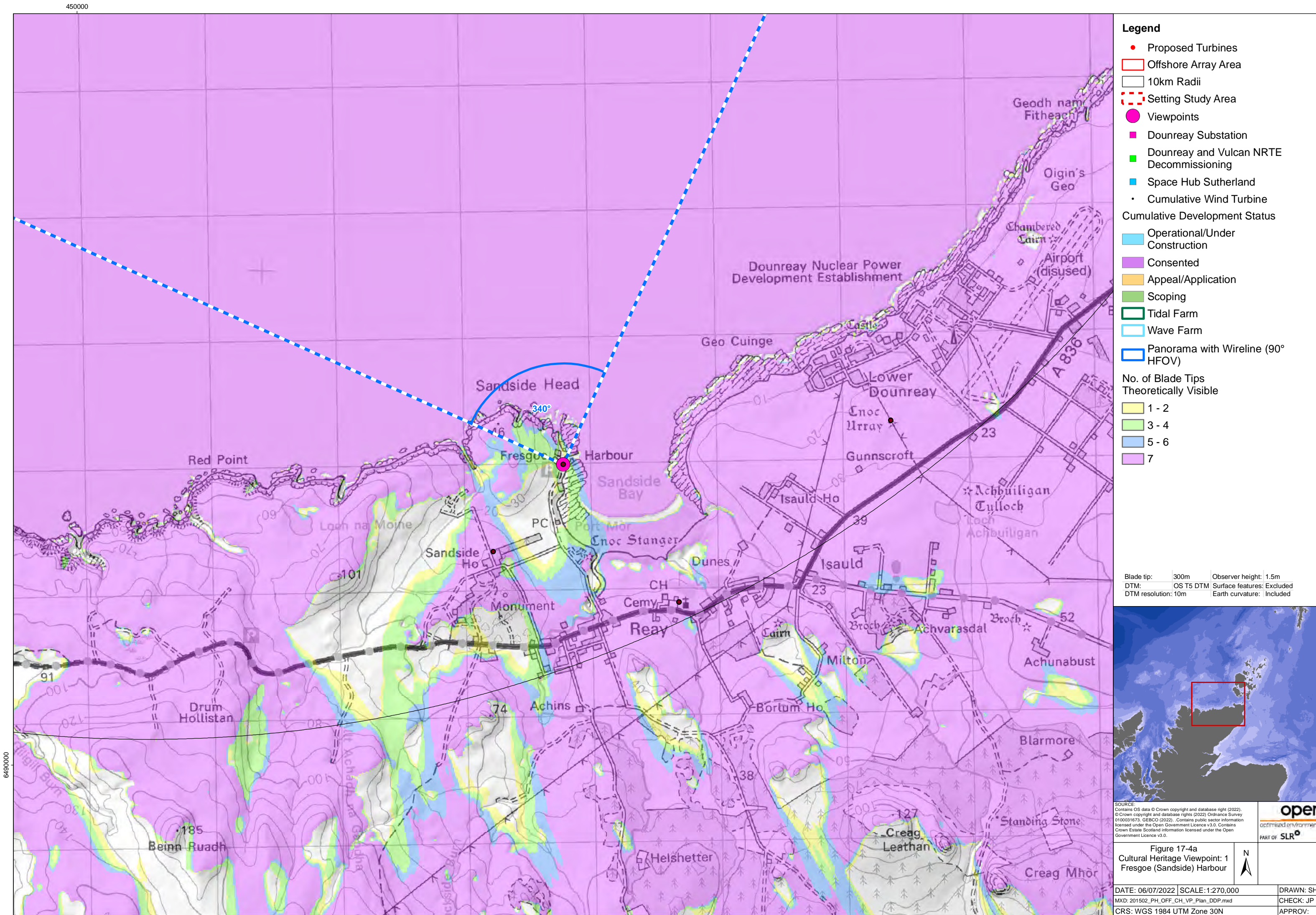
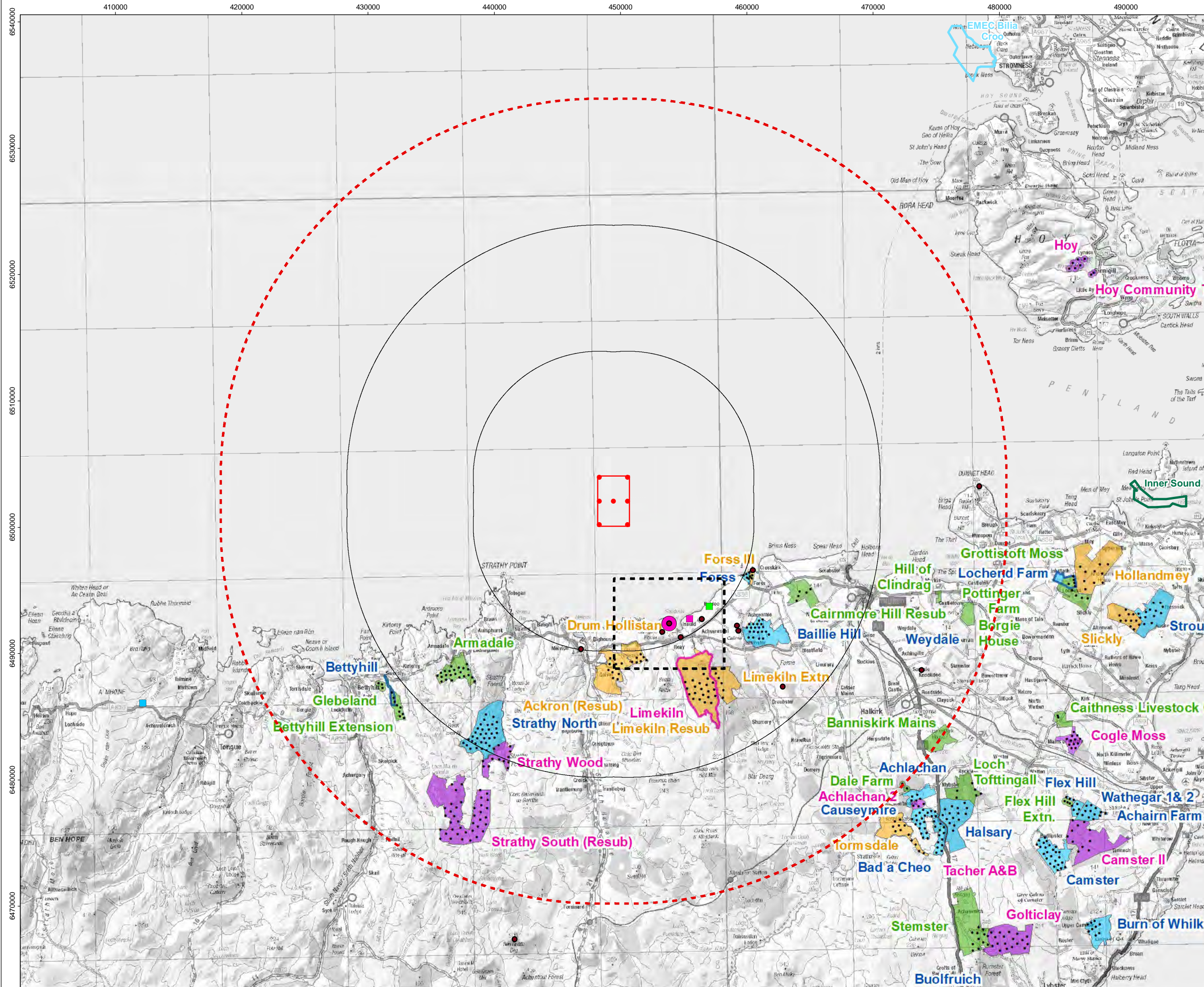
Document Title:	Pentland Floating Offshore Wind Farm Offshore EIAR
Document no.	GBPNTD-ENV-ORA-PR-00002
Project:	Pentland Floating Offshore Wind Farm
Originator Company	Optimised Environments (OPEN) on behalf of Orkney Research Centre for Archaeology (ORCA)
Revision	01
Originator	Jo Phillips
Date	21.07.2022

#### Revision History:

Revision	Date	Status	Originator	Reviewed	Approved
01	21.07.2022	Final	JP	TW/PM	PM







**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan N RTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

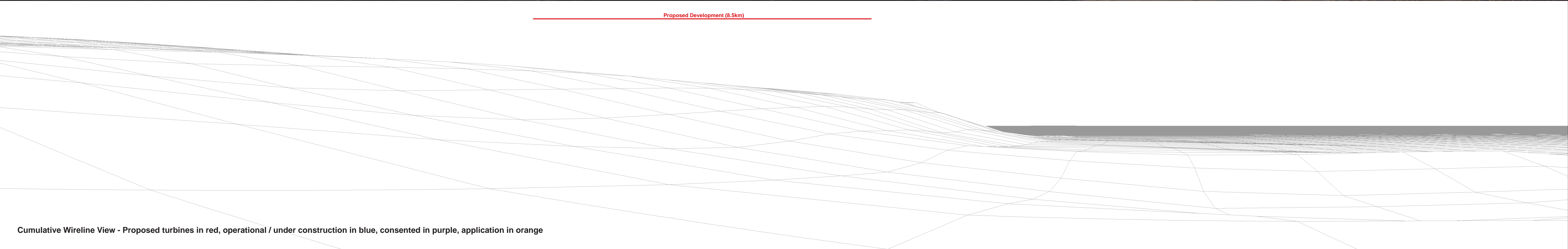
**Figure 17-4a**  
Cultural Heritage Viewpoint: 1  
Fresgoe (Sandside) Harbour

DATE: 06/07/2022 SCALE: 1:270,000  
MDX: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

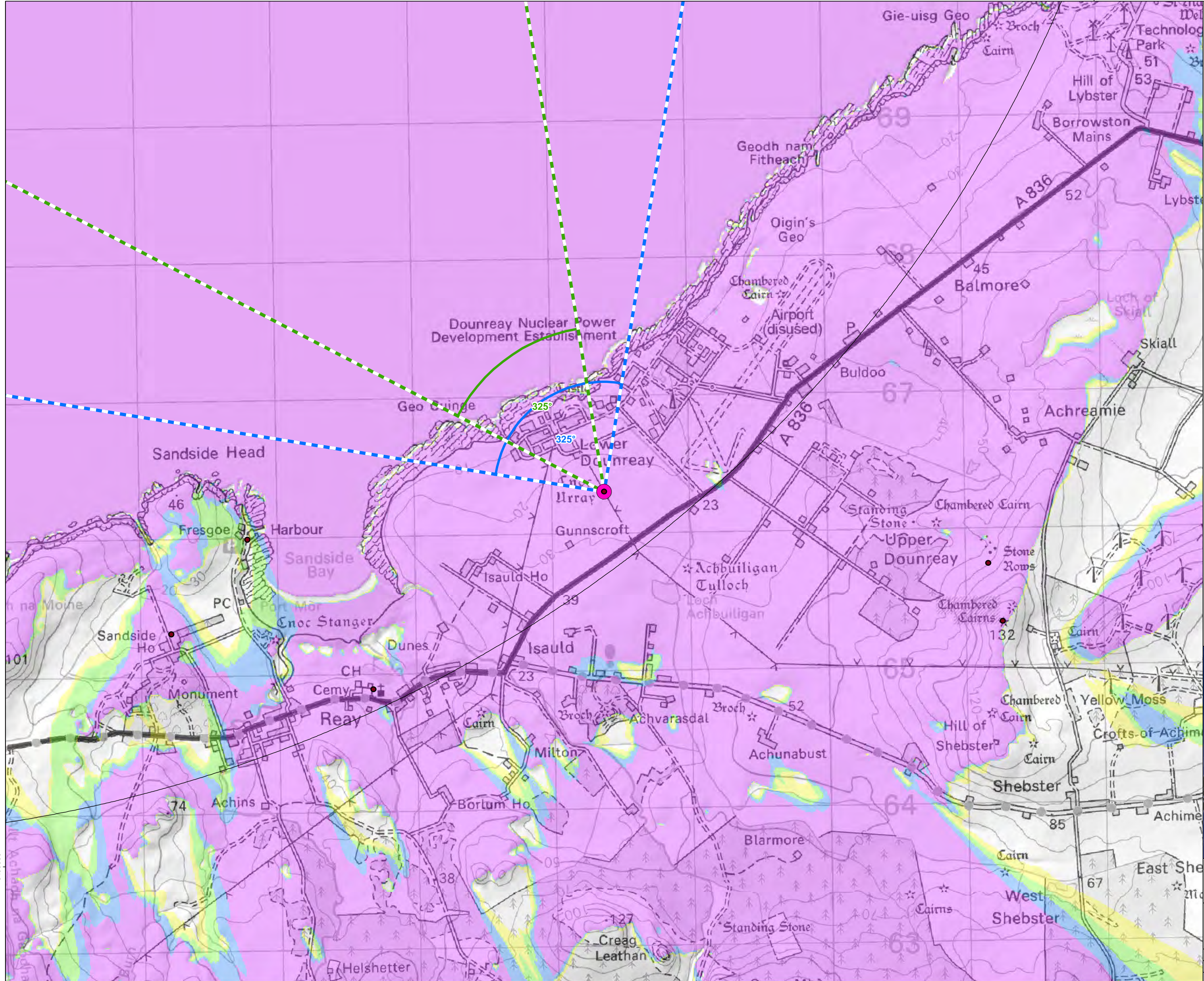
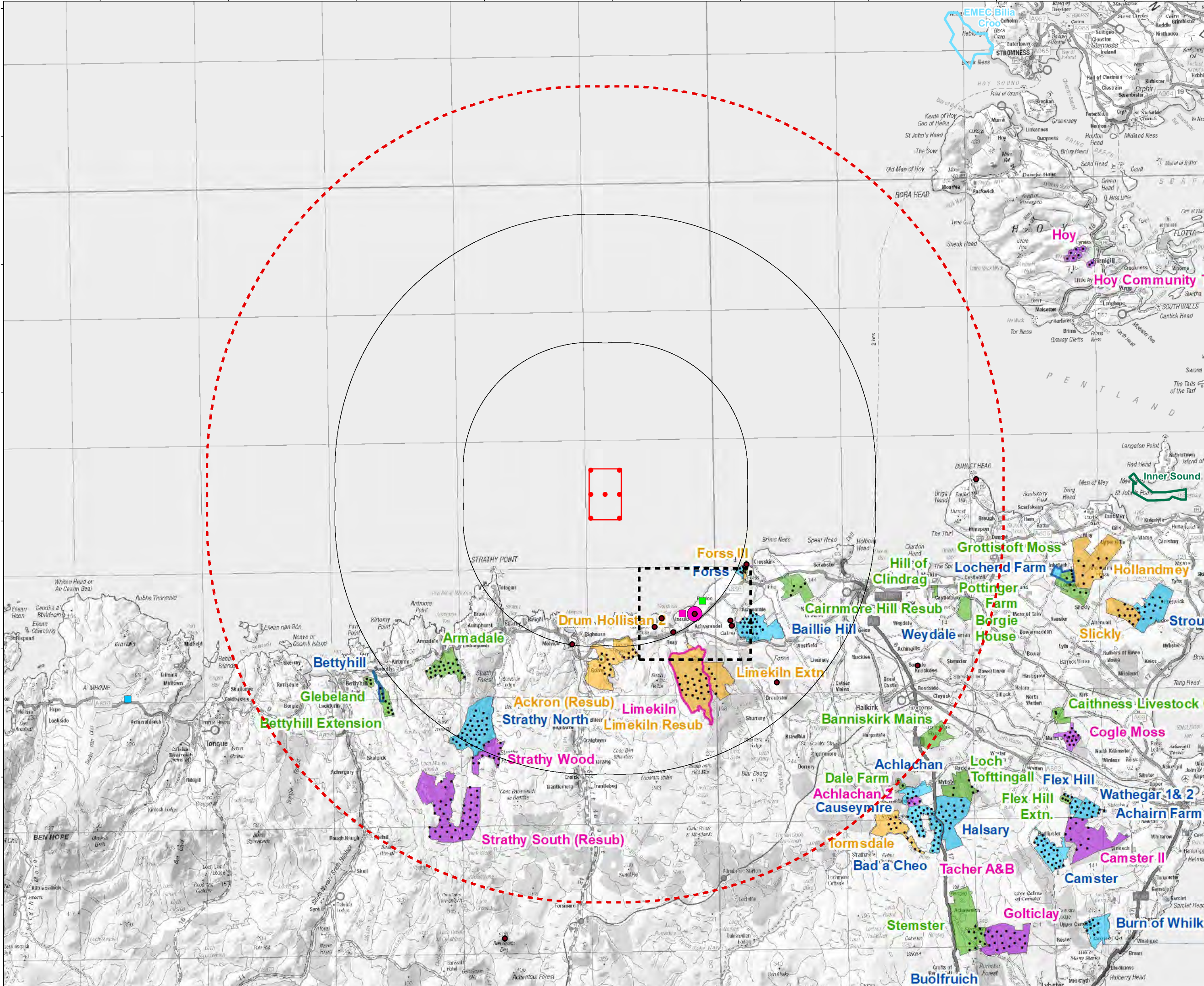
DRAWN: SH  
CHECK: JP  
APPROV:

**open**  
SUPPORTED ENVIRONMENTS  
PART OF SLR









**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan N RTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

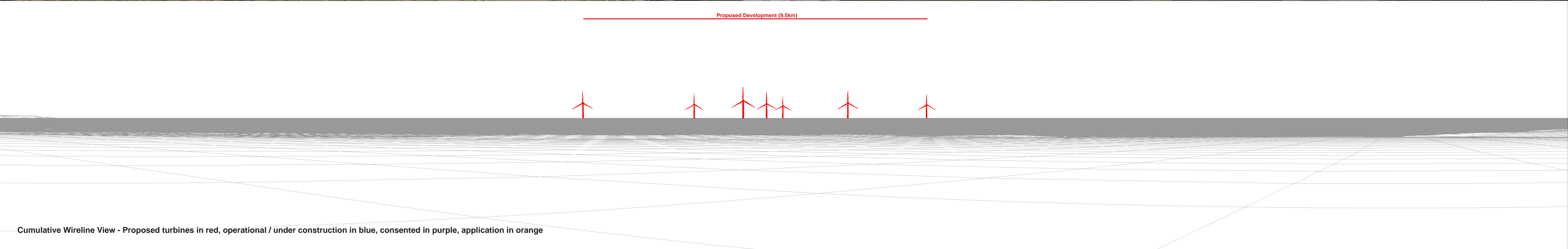
**Figure 17-5a**  
Cultural Heritage Viewpoint: 2  
Cnoc Urray broch

DATE: 06/07/2022 SCALE: 1:270,000  
MDX: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

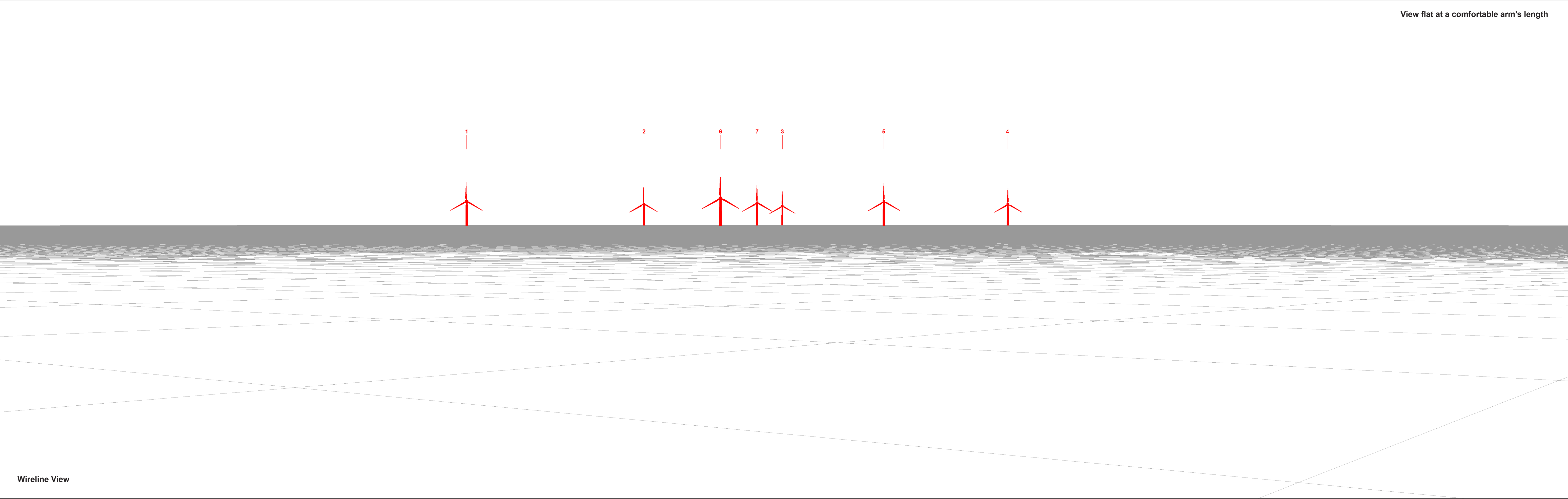
DRAWN: SH  
CHECK: JP  
APPROV:

**open**  
SUPPORTED ENVIRONMENTS  
PART OF SLR









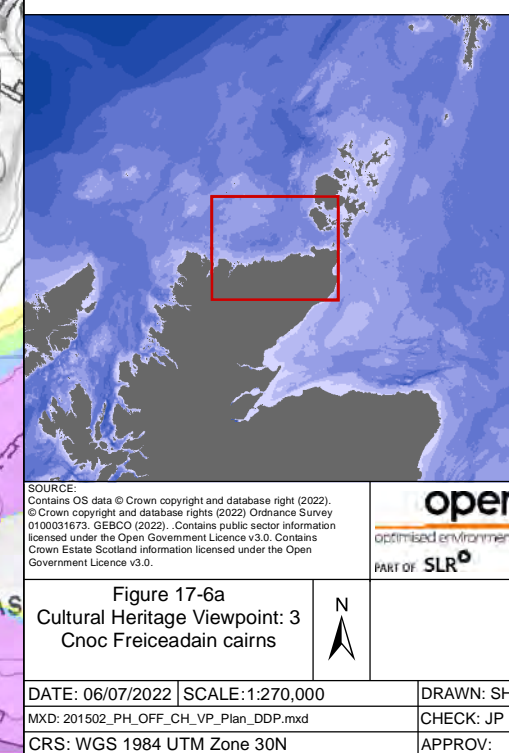
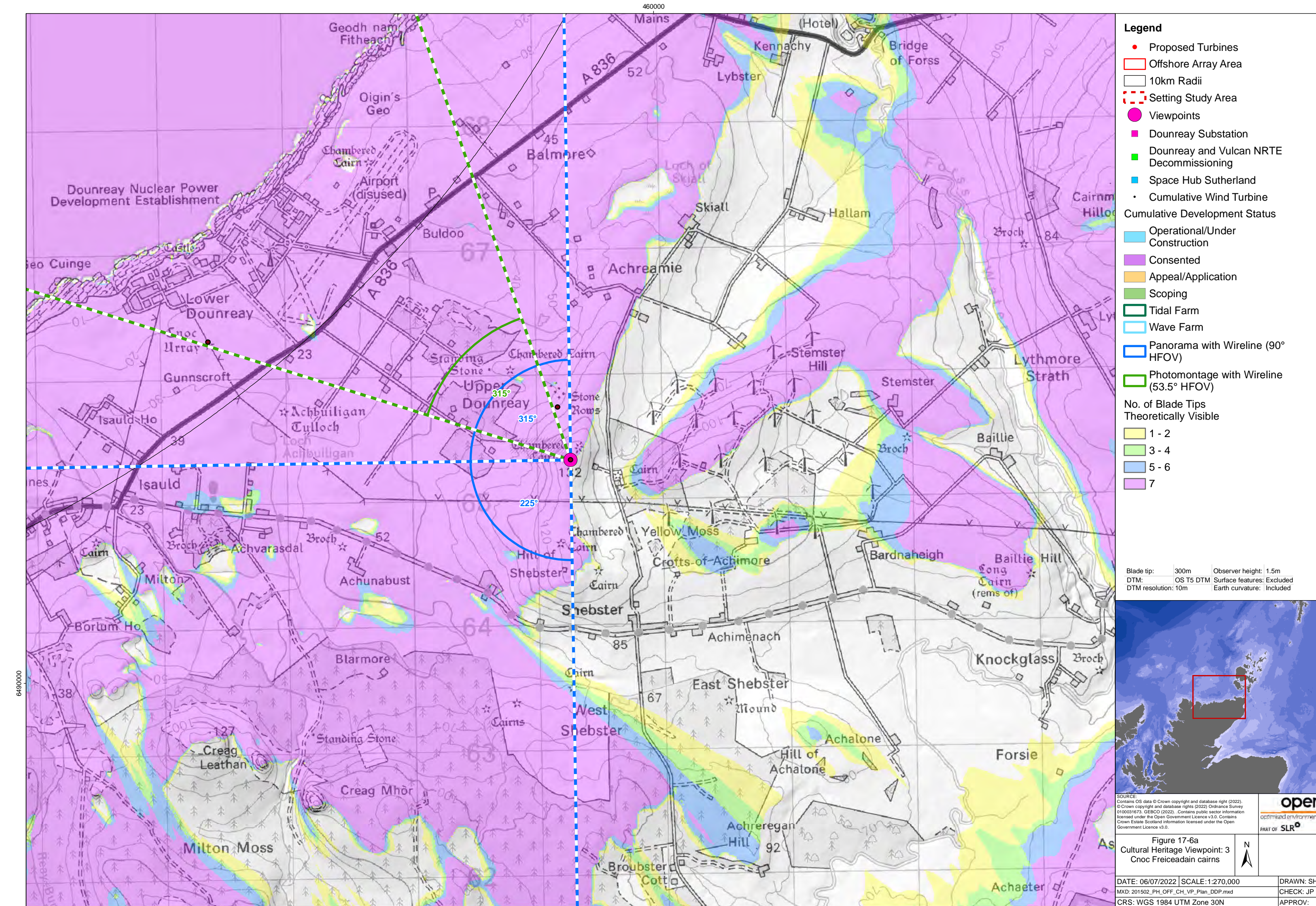
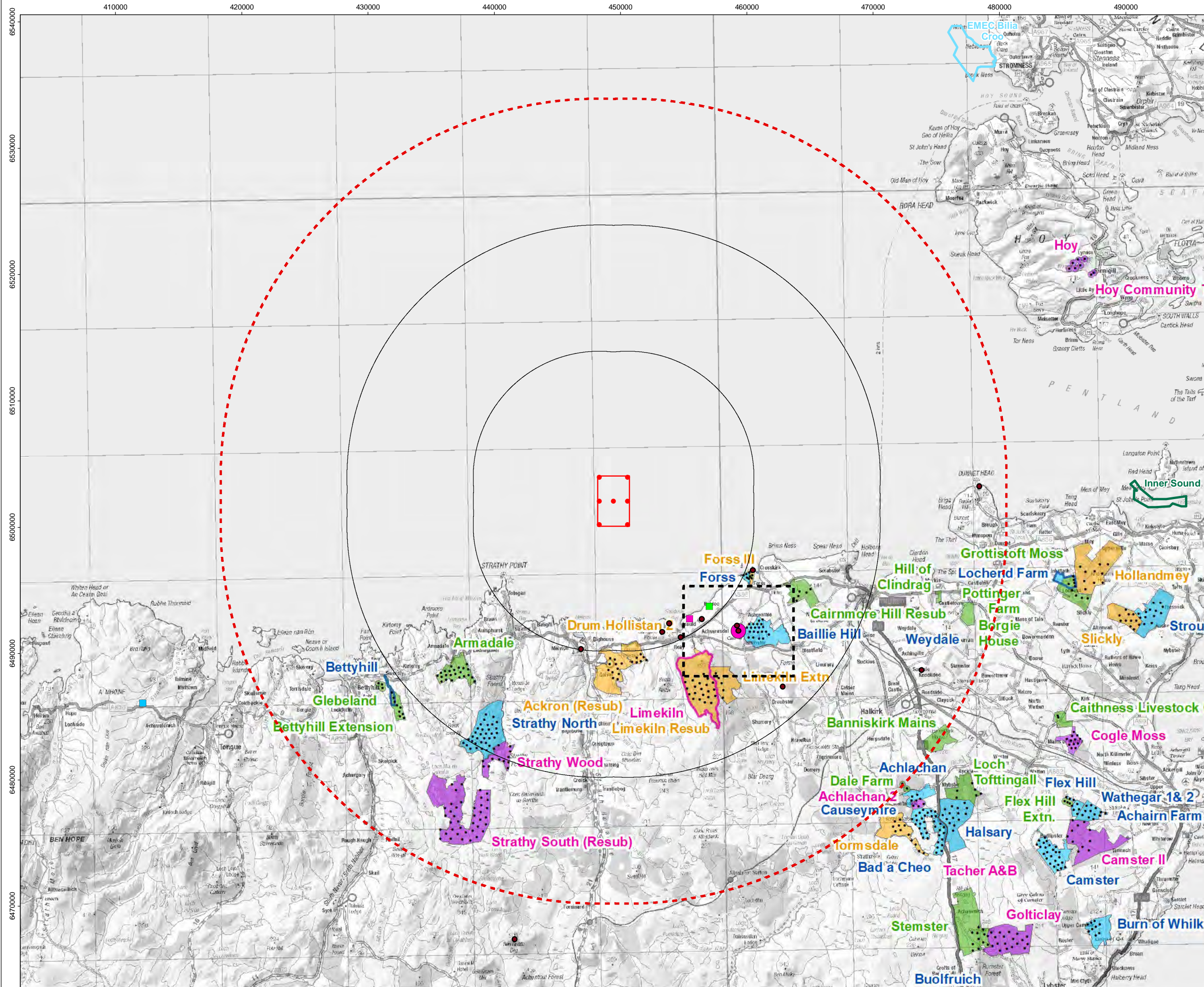




View flat at a comfortable arm's length

Photomontage

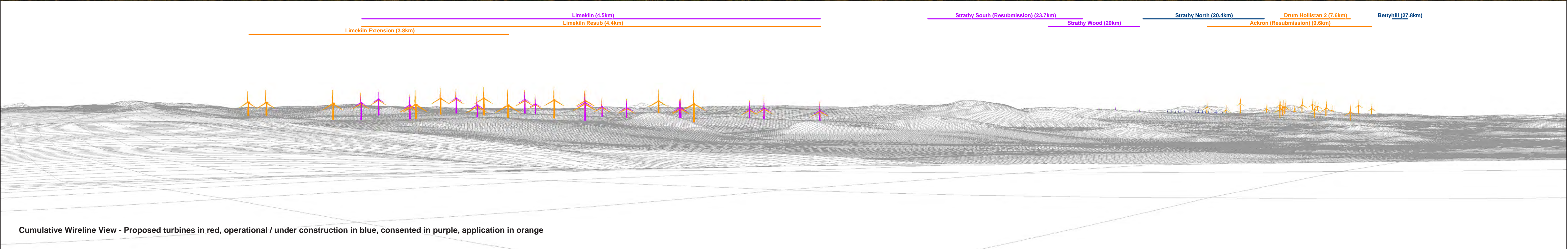








Existing View



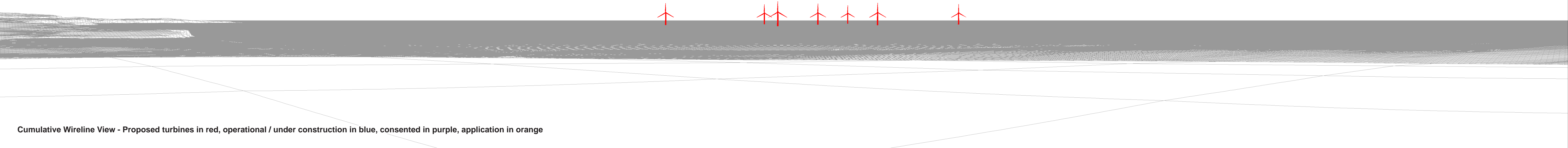




Existing View

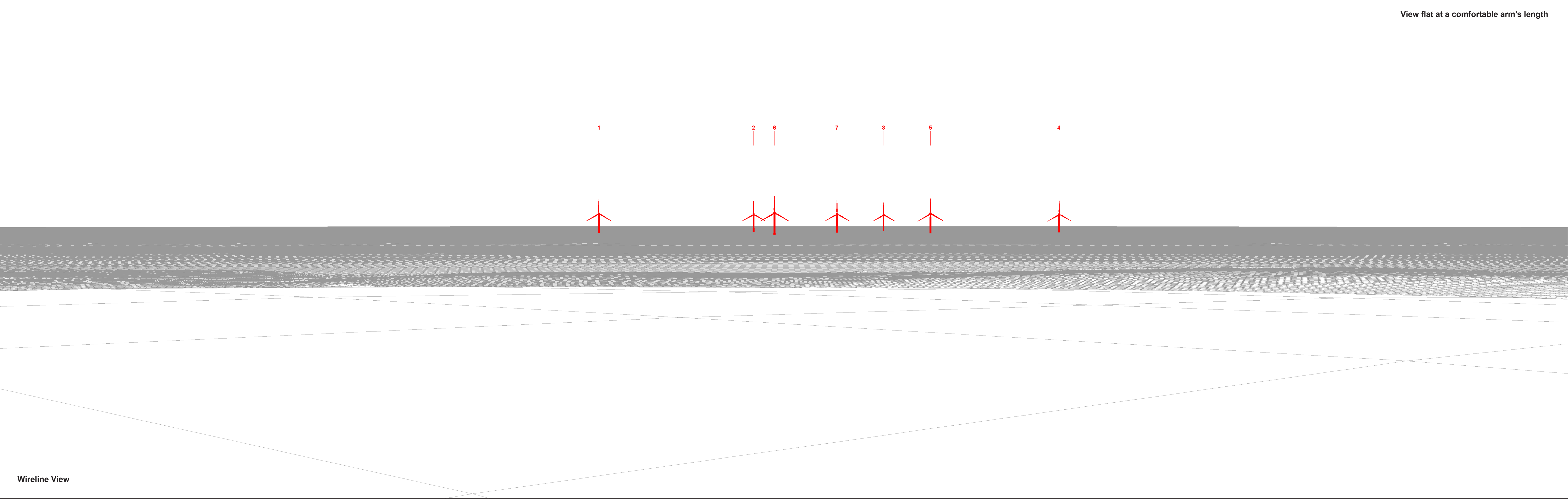
Extent of 53.5° planar panorama

Proposed Development (12.2km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

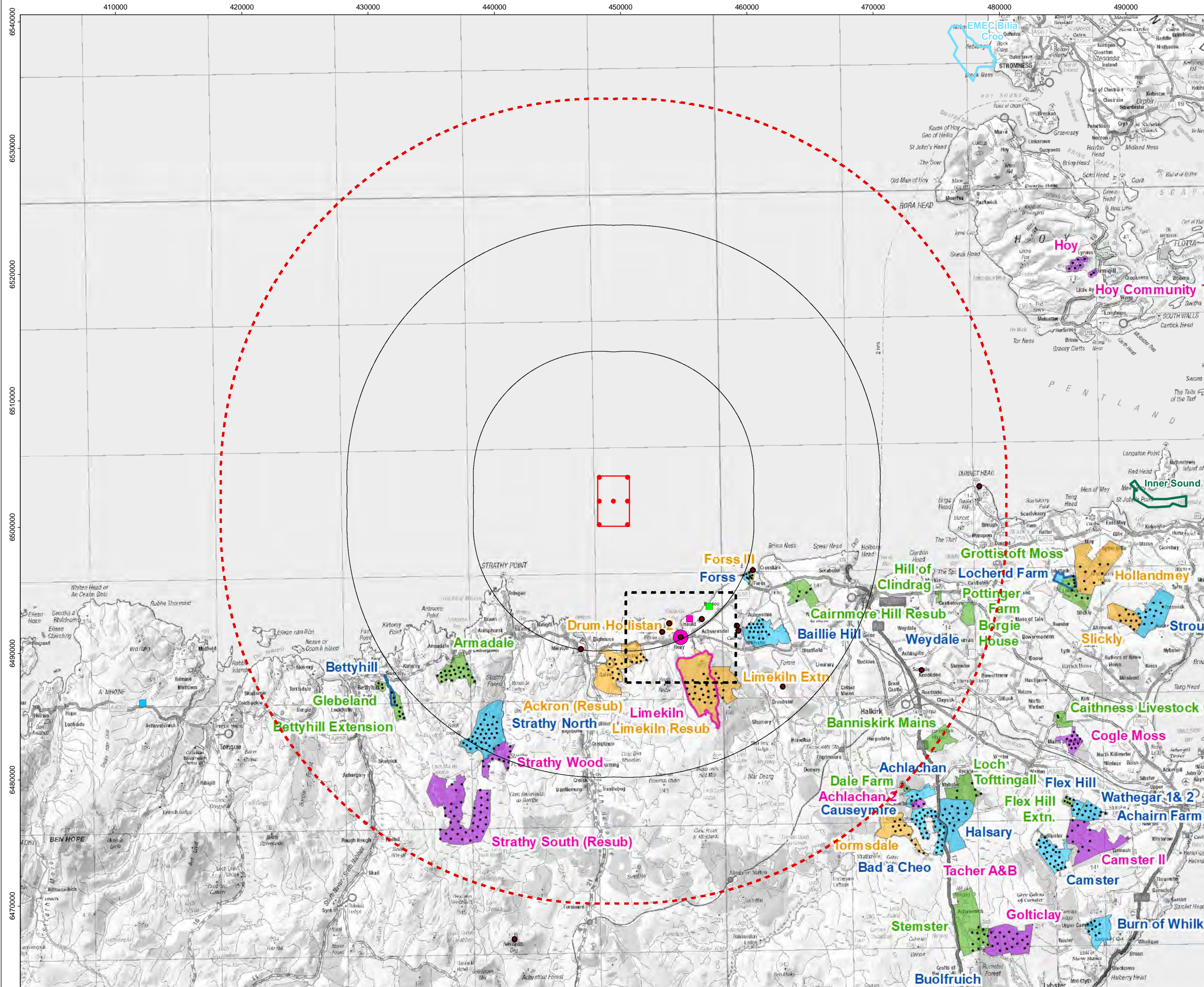




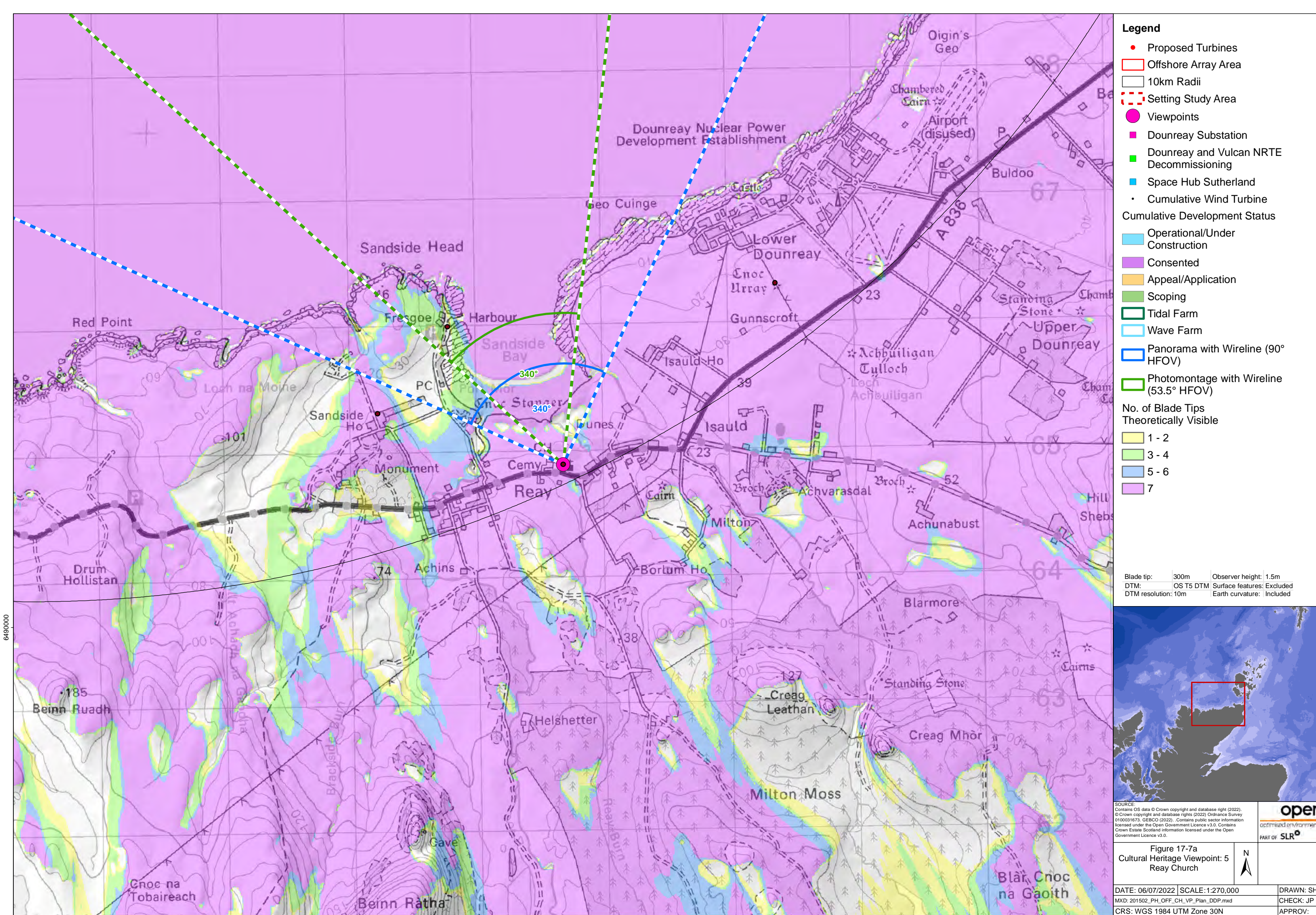








Scale: 1:270,000



Scale: 1:25,000

**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTD Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

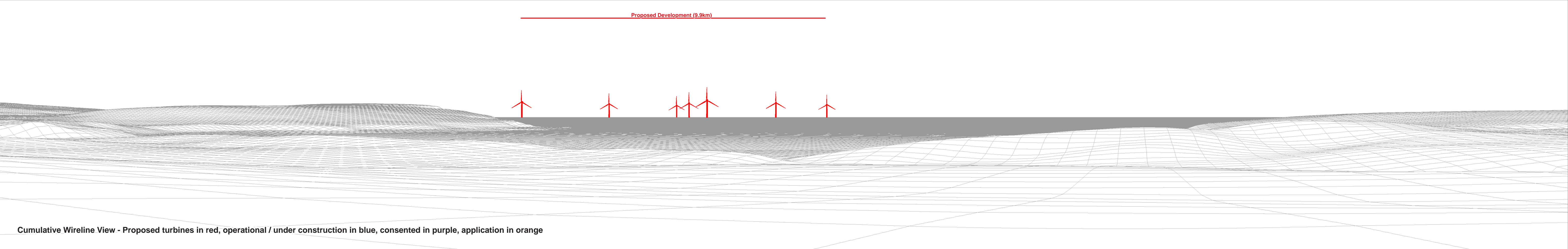
Figure 17-7a  
Cultural Heritage Viewpoint: 5  
Reay Church

DATE: 06/07/2022 SCALE: 1:270,000  
MXD: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

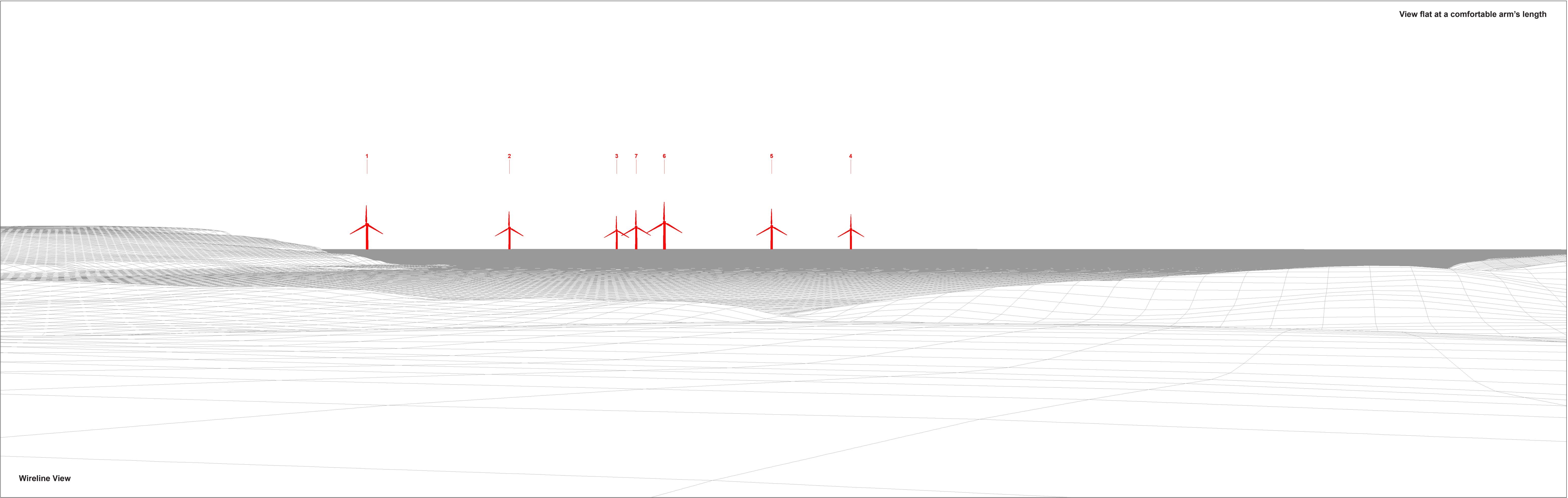
DRAWN: SH  
CHECK: JP  
APPROV:

open  
SLR











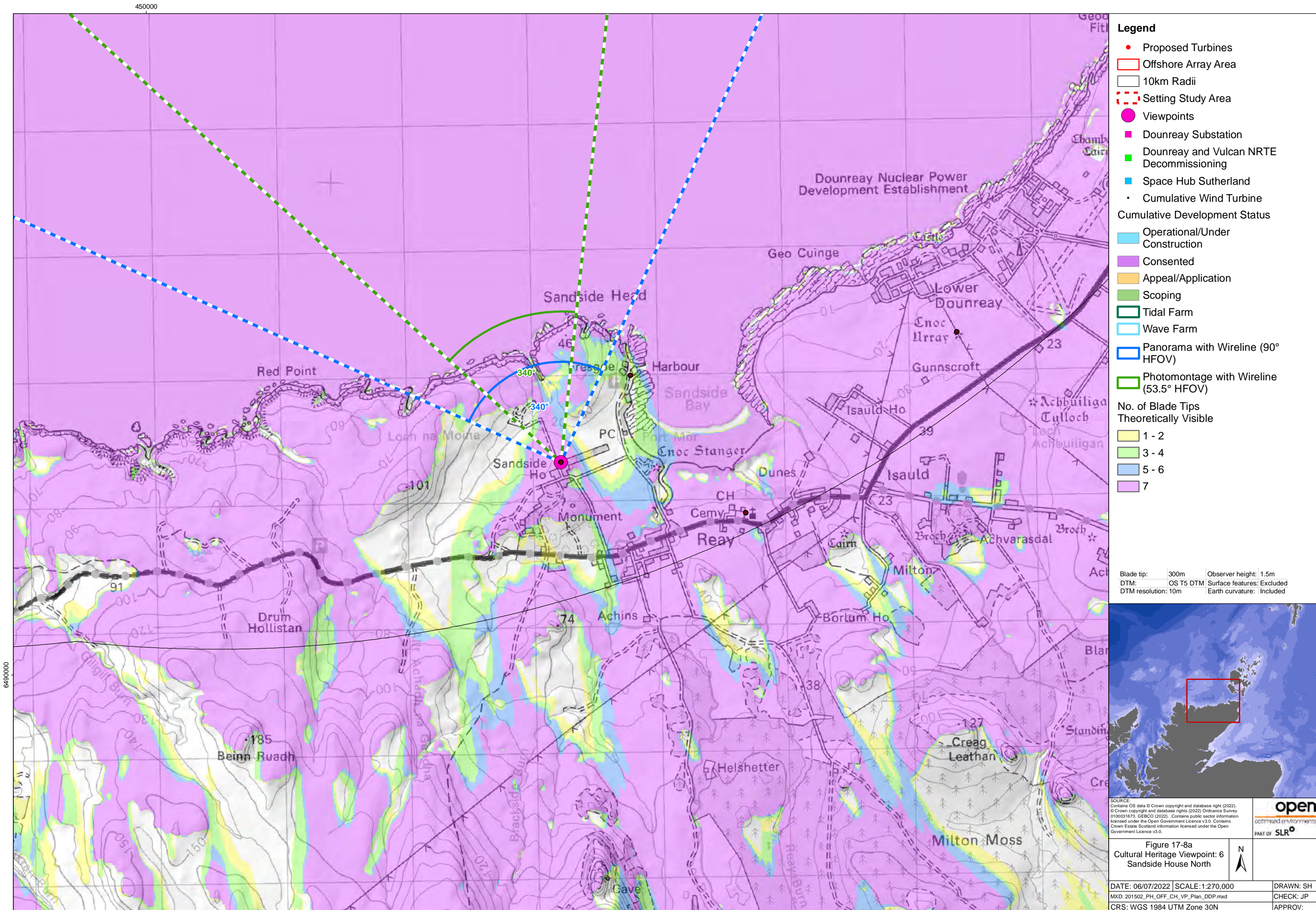
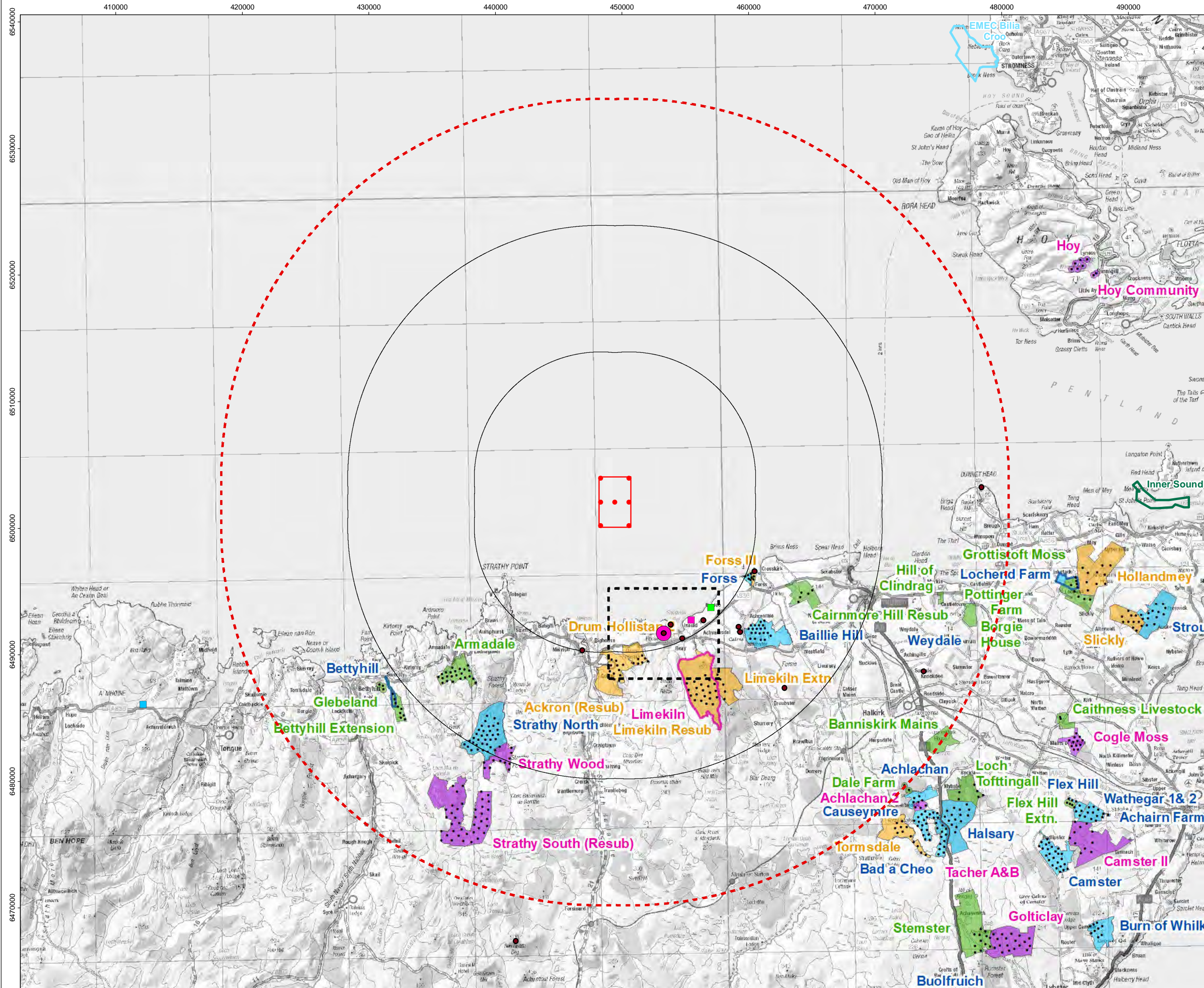


View flat at a comfortable arm's length

Photomontage

Figure 17.7d  
Viewpoint 5: Reay Church Photomontage





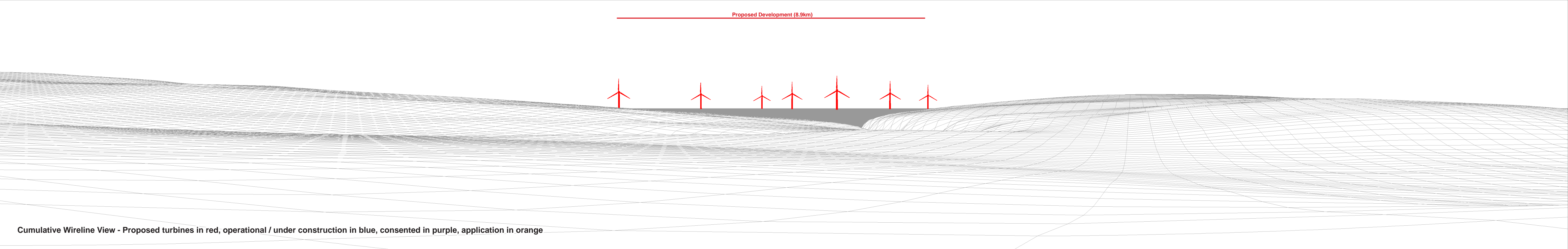




Existing View

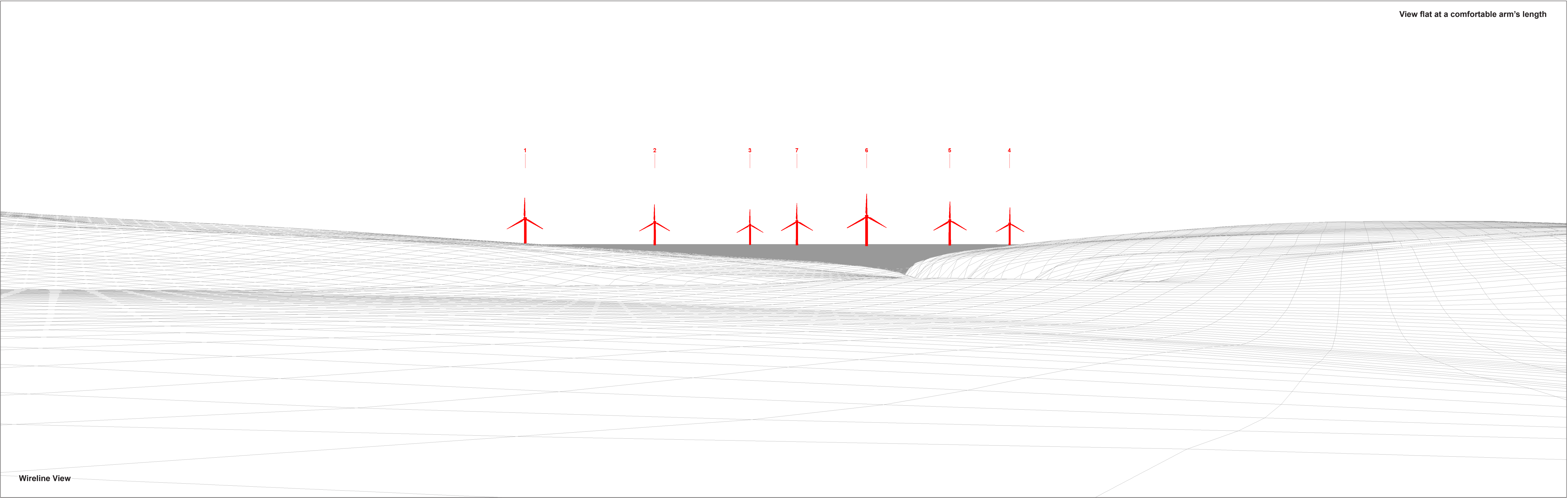
Extent of 53.5° planar panorama

Proposed Development (8.9km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

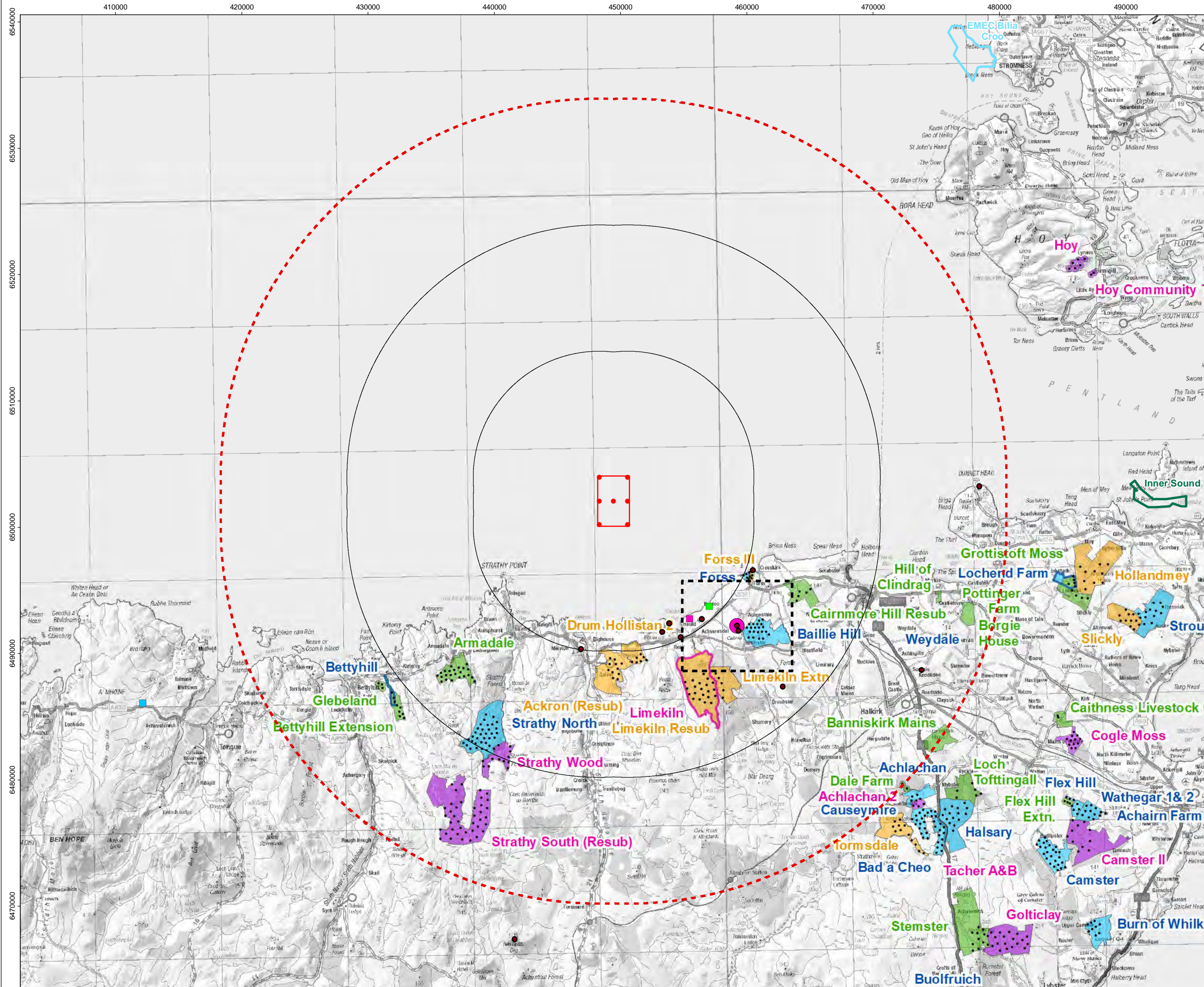




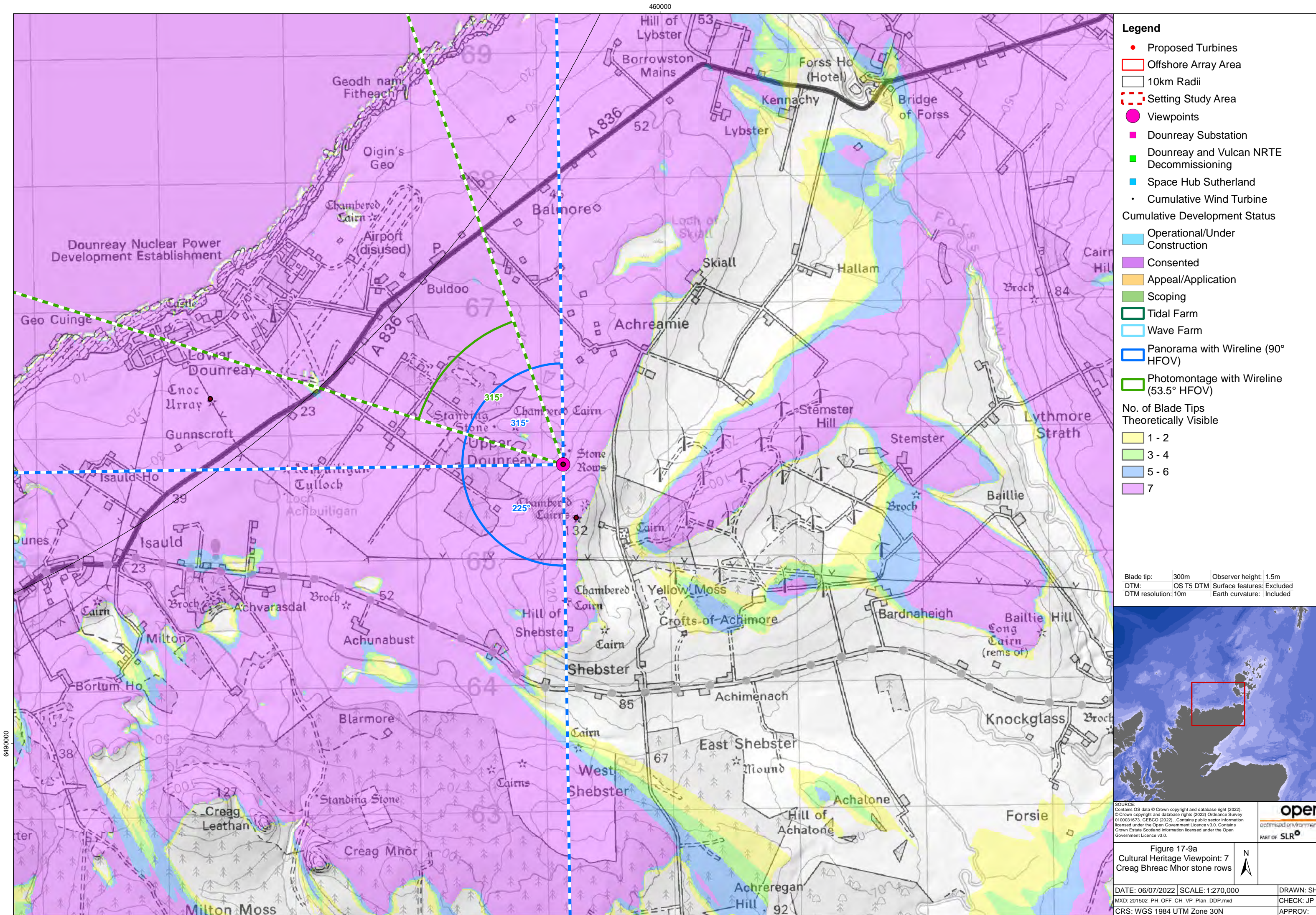








Scale: 1:270,000



Scale: 1:25,000

**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTD Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

**Figure 17-9a**  
Cultural Heritage Viewpoint: 7  
Creag Bhreac Mhor stone rows

DATE: 06/07/2022 SCALE: 1:270,000  
MDX: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

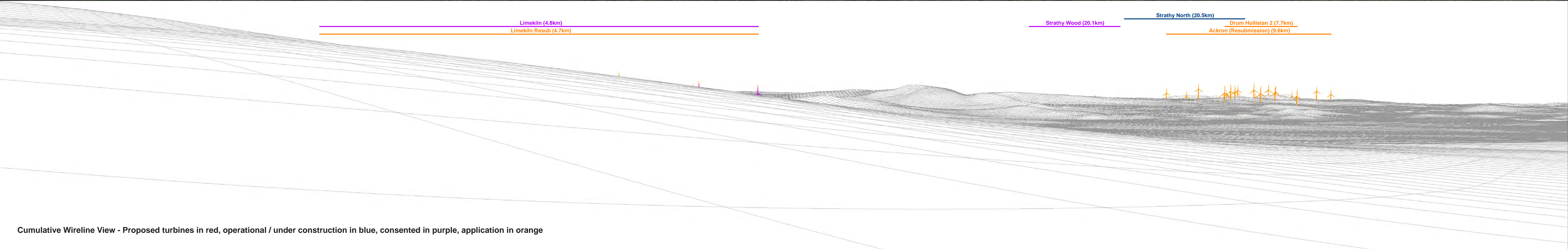
DRAWN: SH  
CHECK: JP  
APPROV:

**open**  
SUPPORTED ENVIRONMENTS  
PART OF SLR

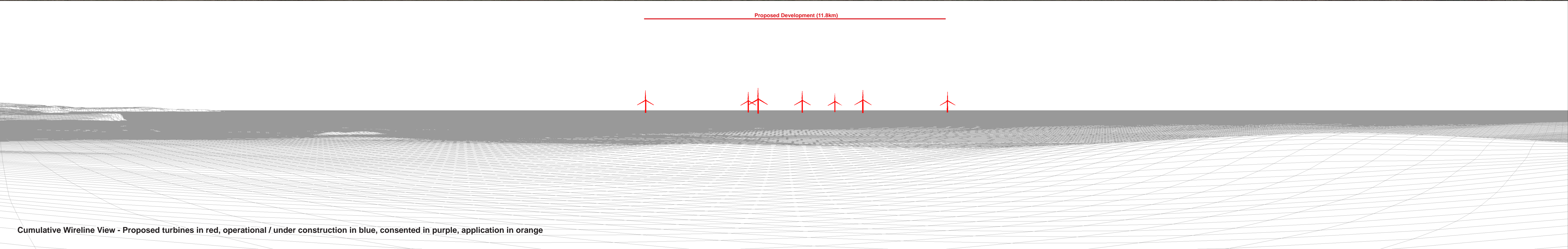




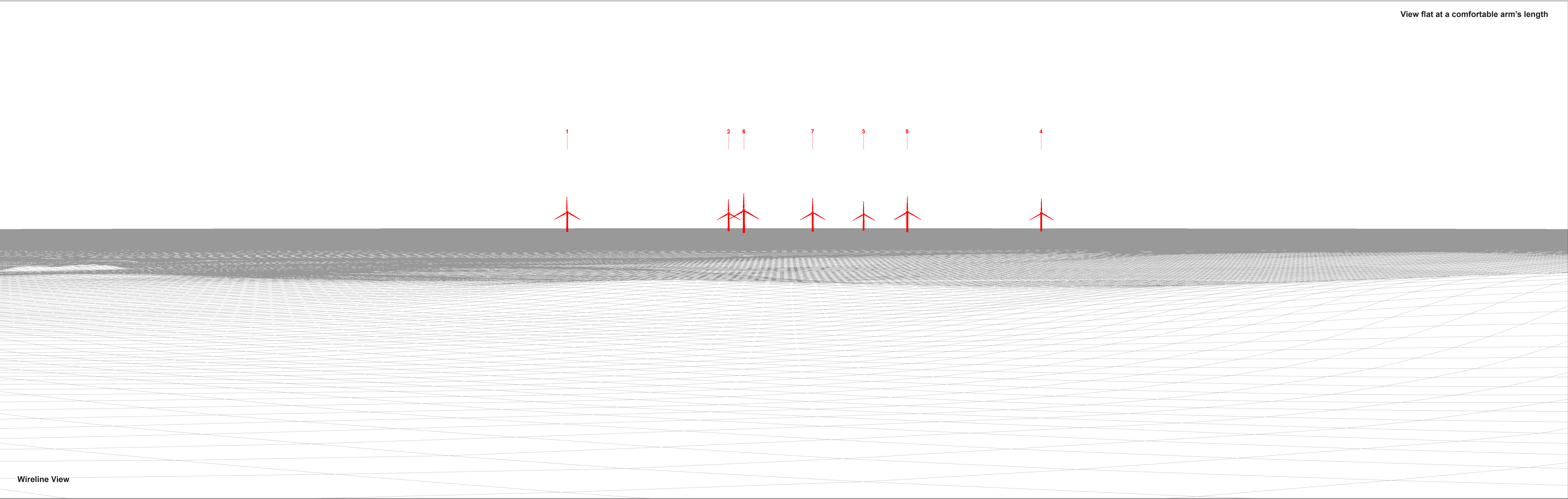
Existing View















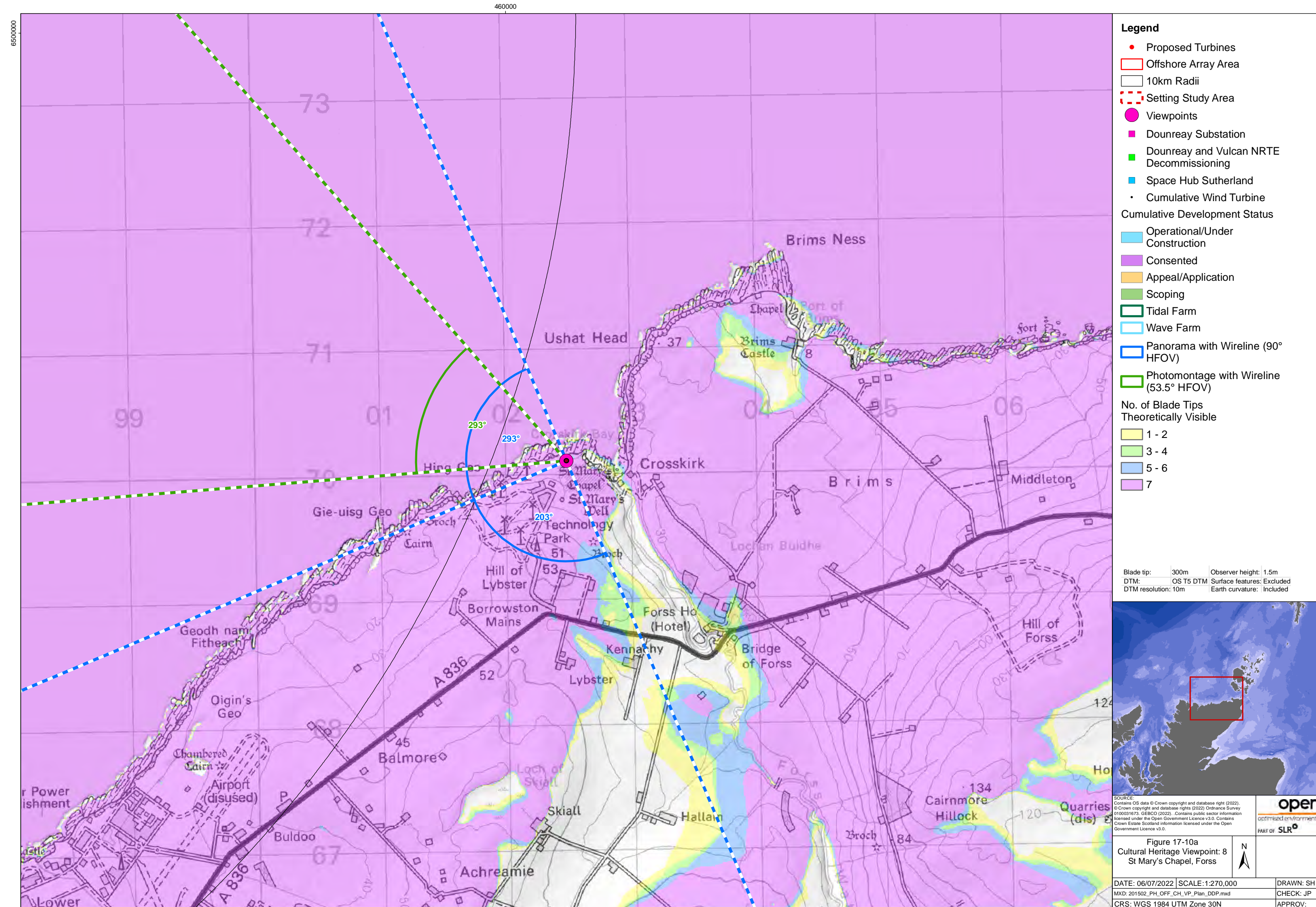
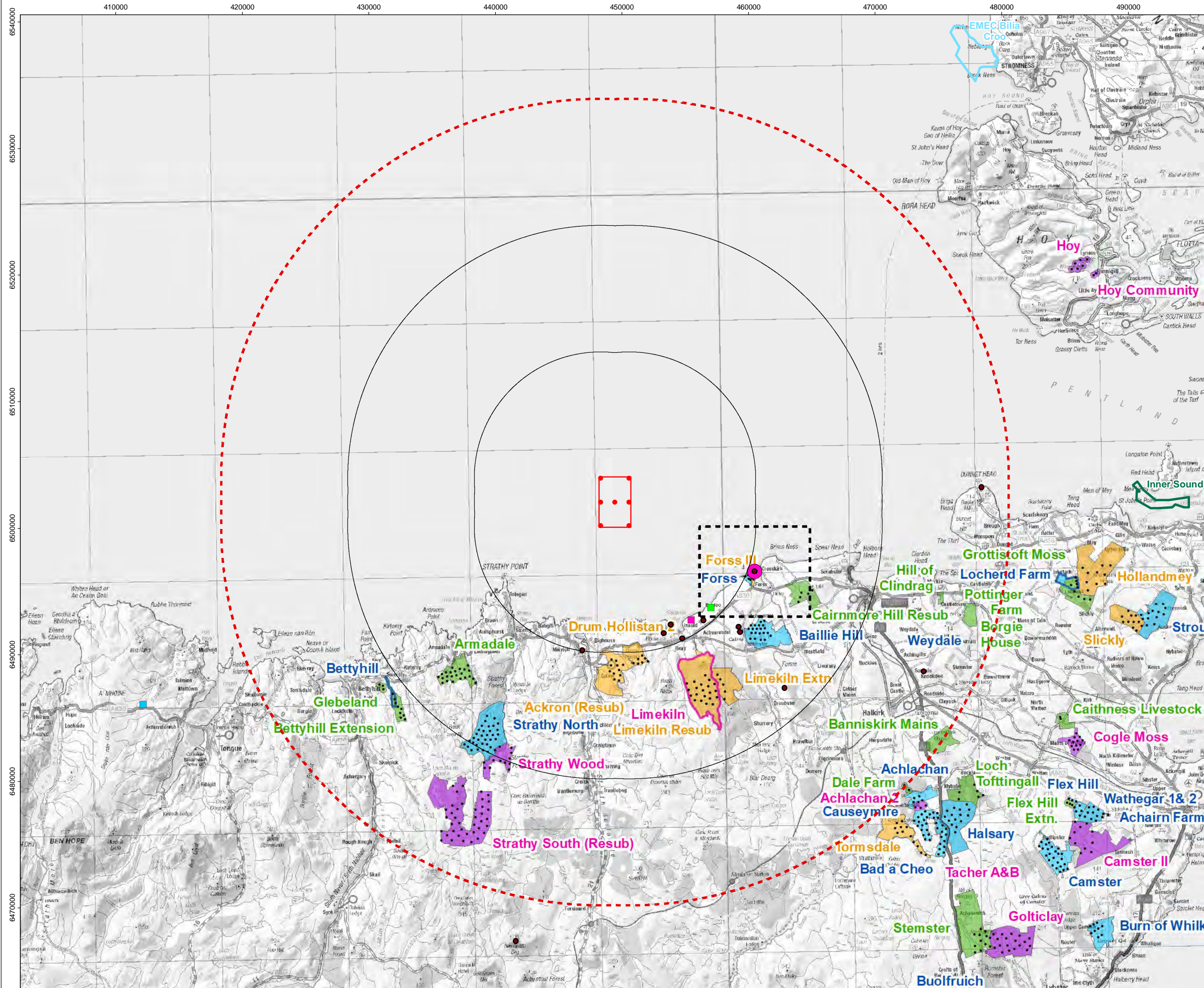
View flat at a comfortable arm's length

Photomontage

OS reference	301168 E 965739 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	82.2 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	11,798 m	Correct printed image size	820 x 260 mm	Date & time taken	13/04/2021 14:25

Figure 17.9e  
Viewpoint 7: Creag Bhreac Mhor stone rows Photomontage

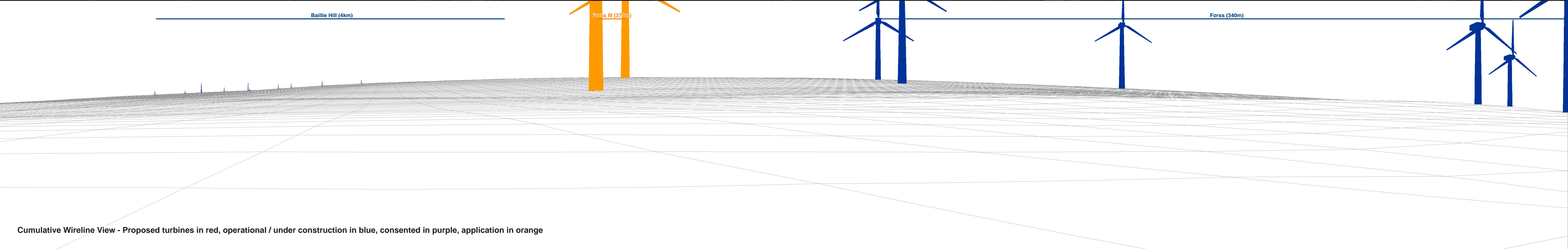




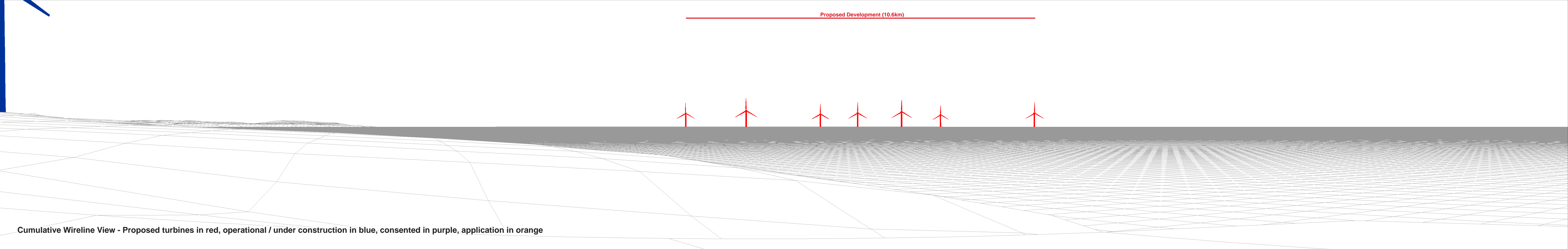




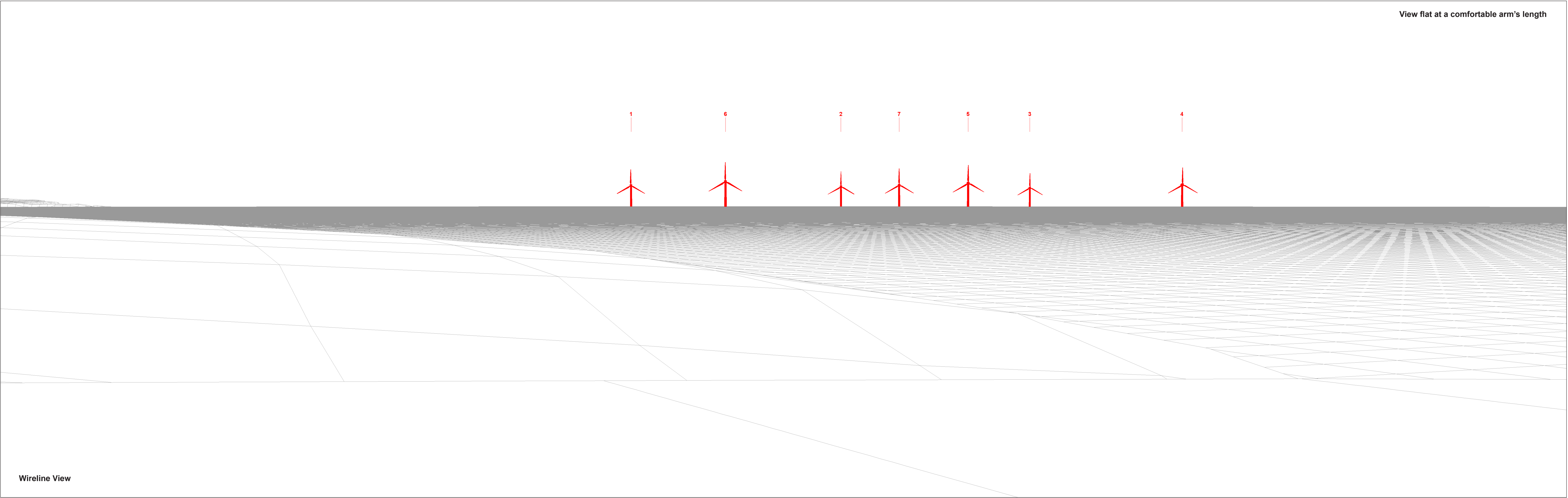
Existing View







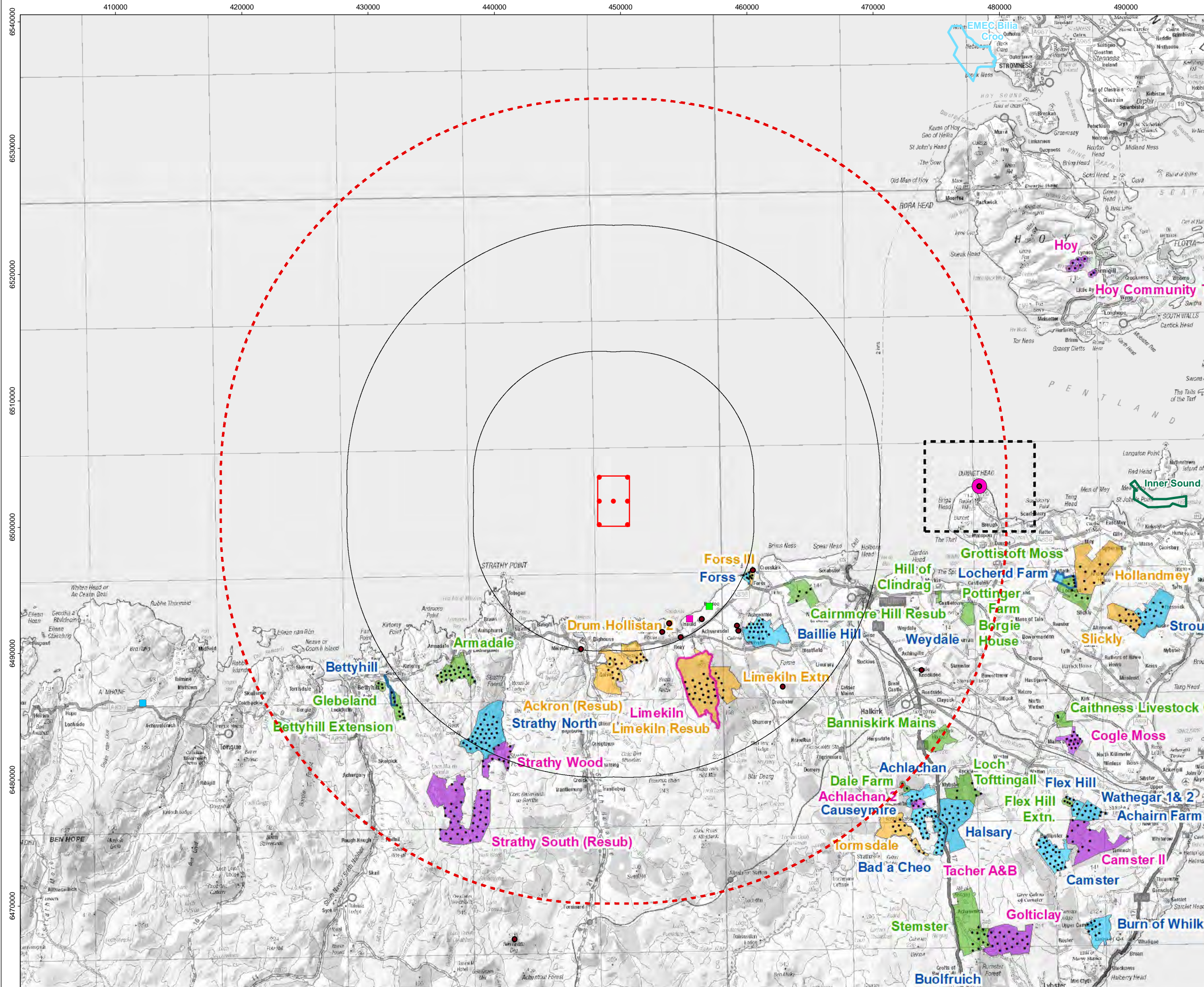




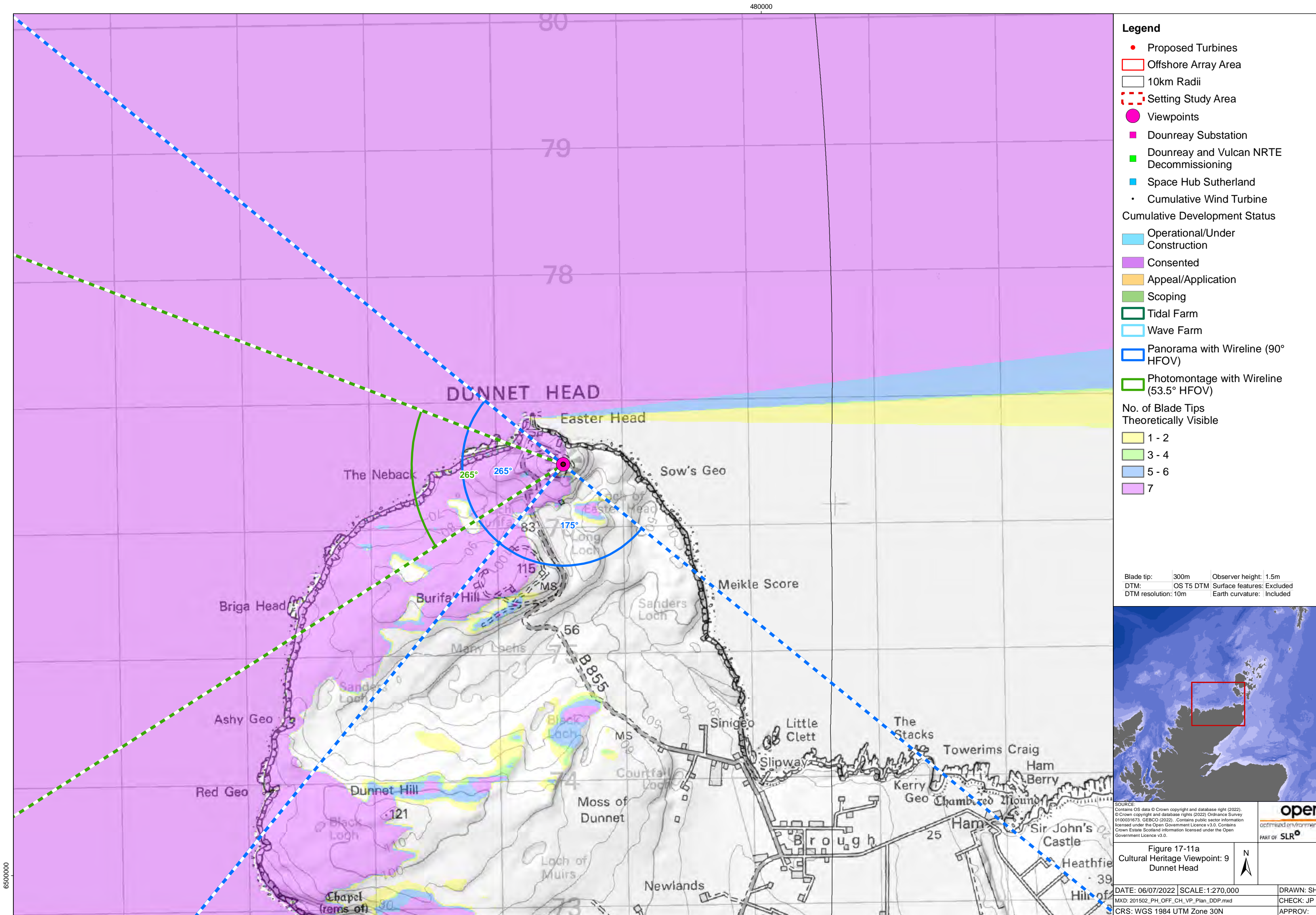








Scale: 1:270,000



Scale: 1:25,000





Stroupster (16.1km)    Lochend Farm (10.3km)

    Slickly (15.1km)

    Hollandmey (10.2km)

    Wathegar 2 (26.6km)    Burn of Whilk (35.6km)    Camster (28.3km)

Achairn Farm (27.5km)    Wathegar (26.3km)

    Cogle Moss (20.8km)    Flex Hill (25.5km)

    Golticlay (35.3km)

    Hill of Lychrobbie (44.4km)

    Buolfreich (40.8km)

    Bad a Cheo (26.8km)

    Halsary (25.1km)

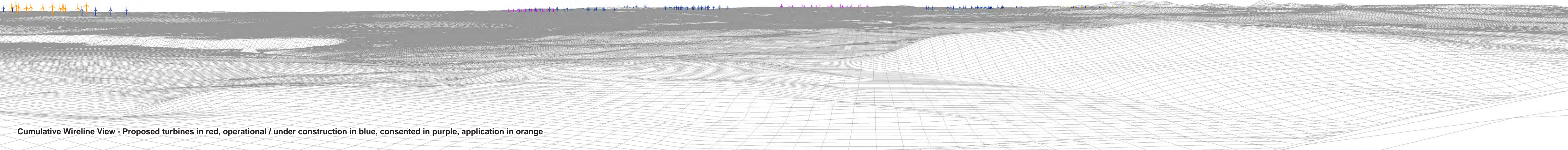
    Bad Fearn (44.9km)

    Tormsdale (27.1km)

    Achlachan 2 (25.5km)

    Causeymire (26km)

    Achlachan (24.9km)



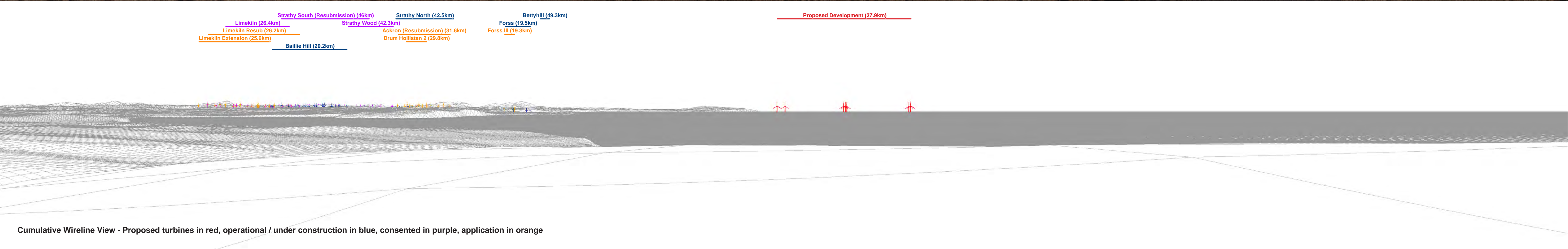
Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange



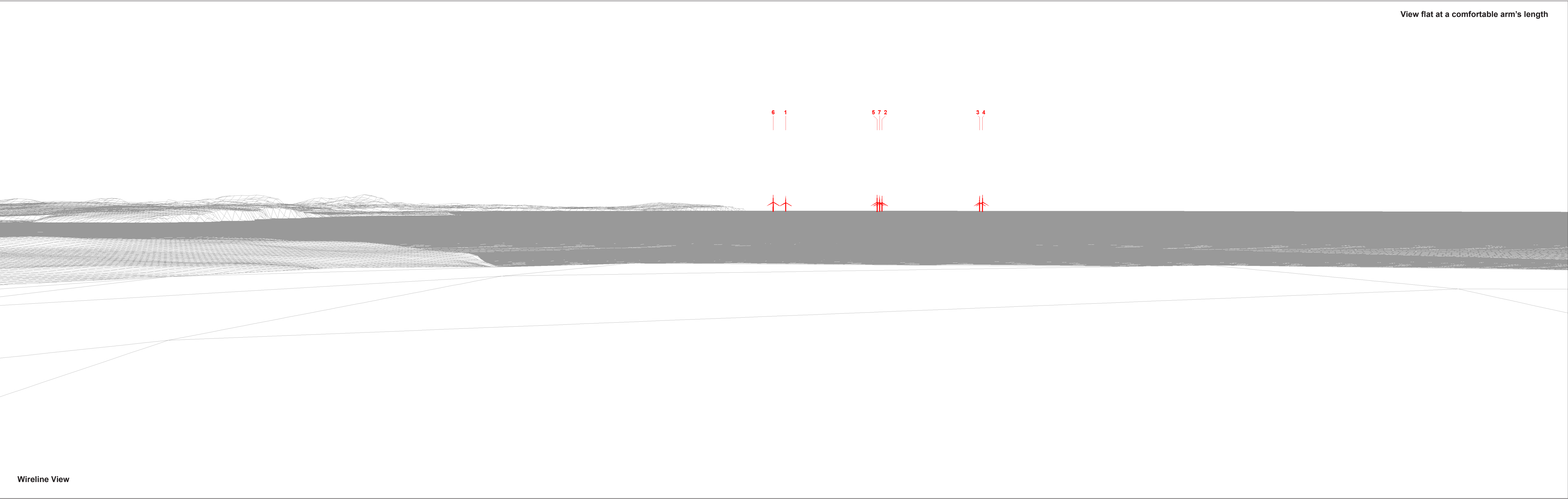


Existing View

Extent of 53.5° planar panorama











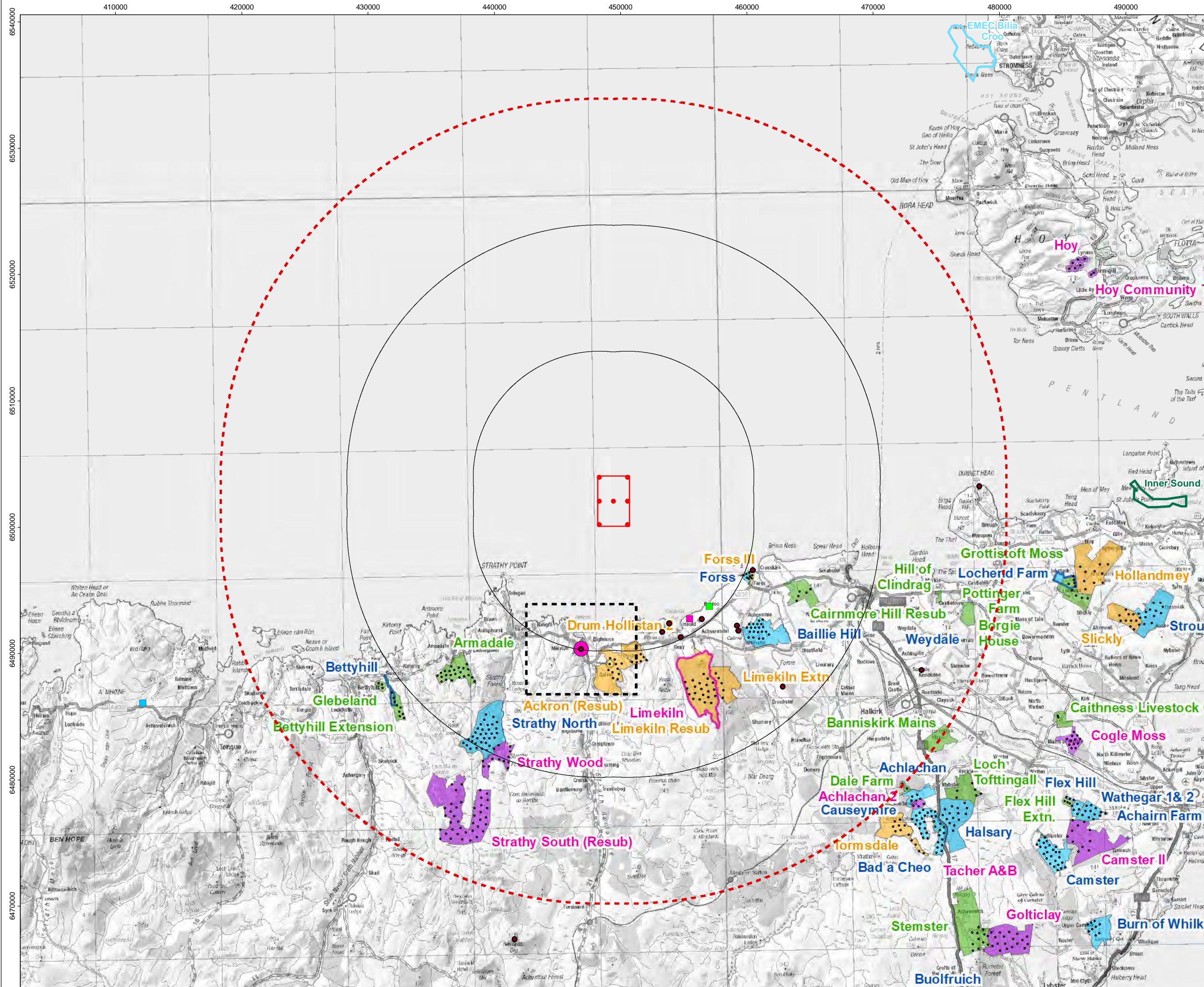
View flat at a comfortable arm's length

Photomontage

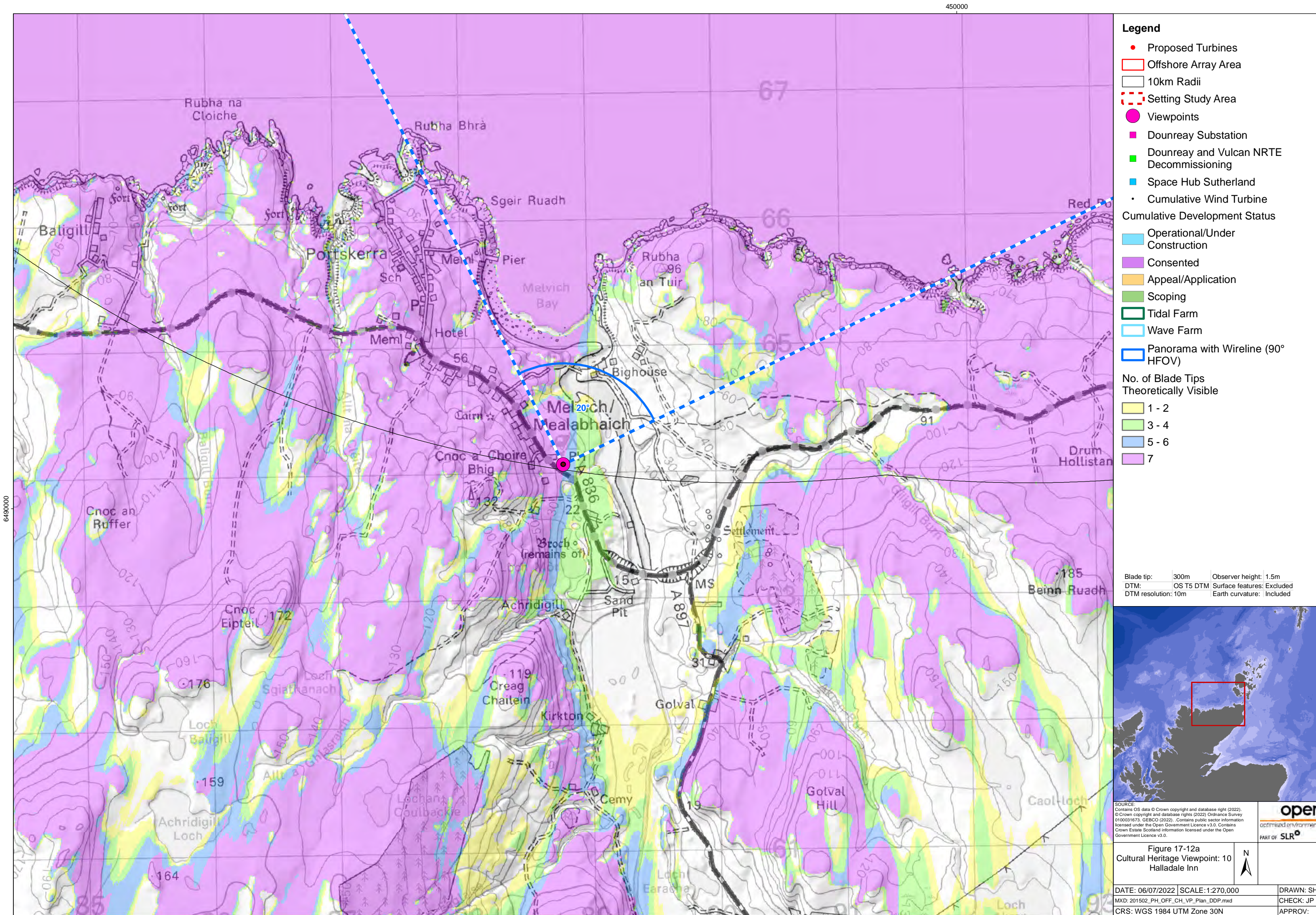
OS reference	320532 E 976496 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	125.6 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	265°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	27,884 m	Correct printed image size	820 x 260 mm	Date & time taken	12/04/2021 14:55

Figure 17.11e  
Viewpoint 9: Dunnet Head Photomontage





Scale: 1:270,000



Scale: 1:25,000

**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan N RTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

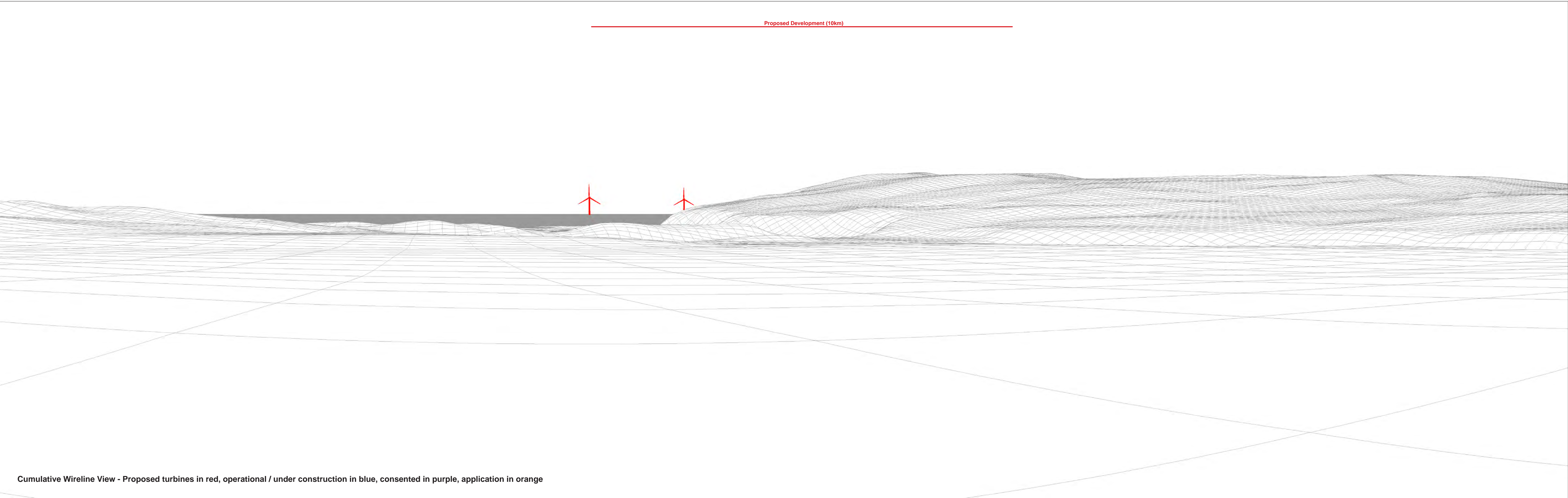
Figure 17-12a  
Cultural Heritage Viewpoint: 10  
Halladale Inn

DATE: 06/07/2022 SCALE: 1:270,000  
MDX: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

DRAWN: SH  
CHECK: JP  
APPROV:

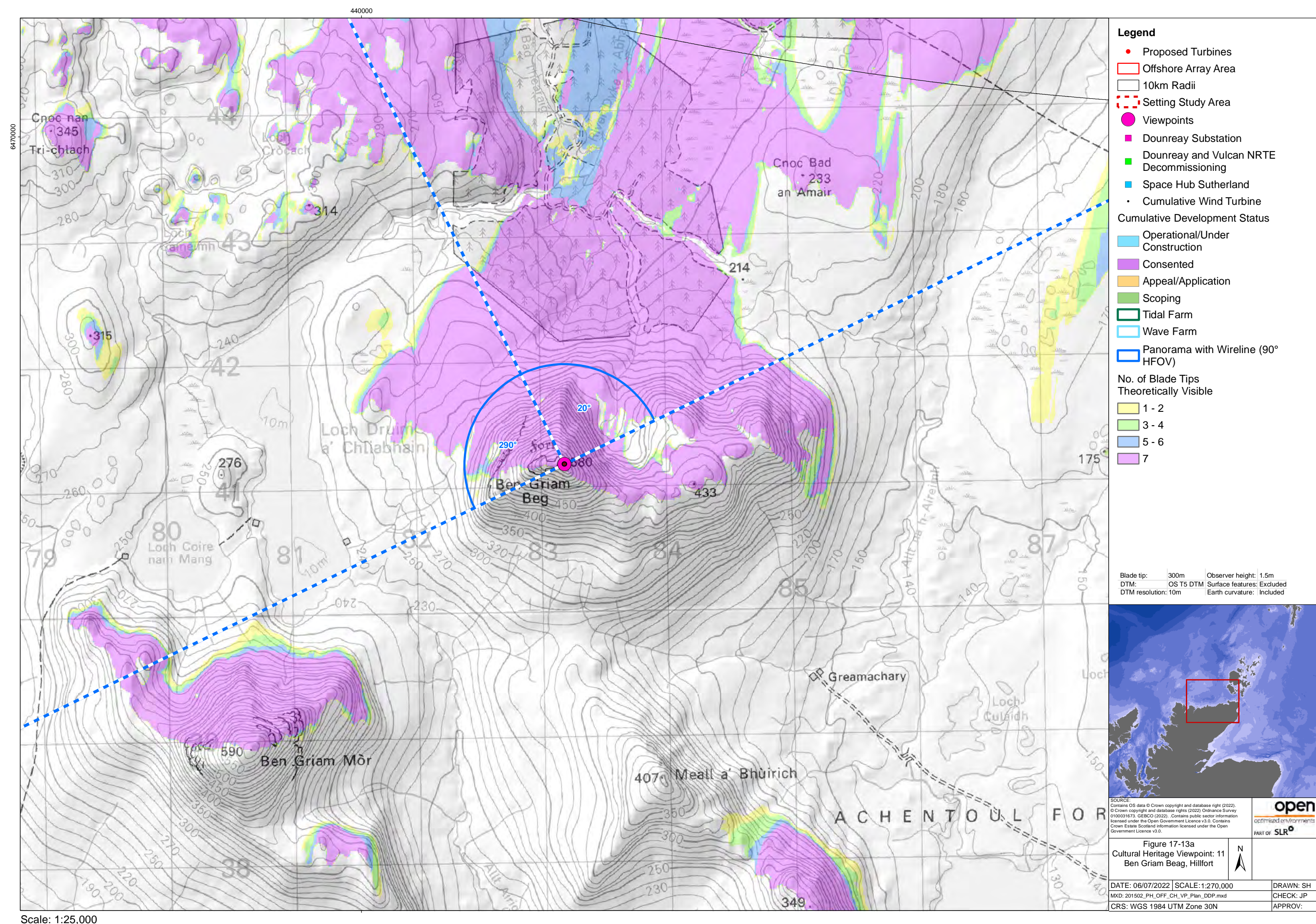
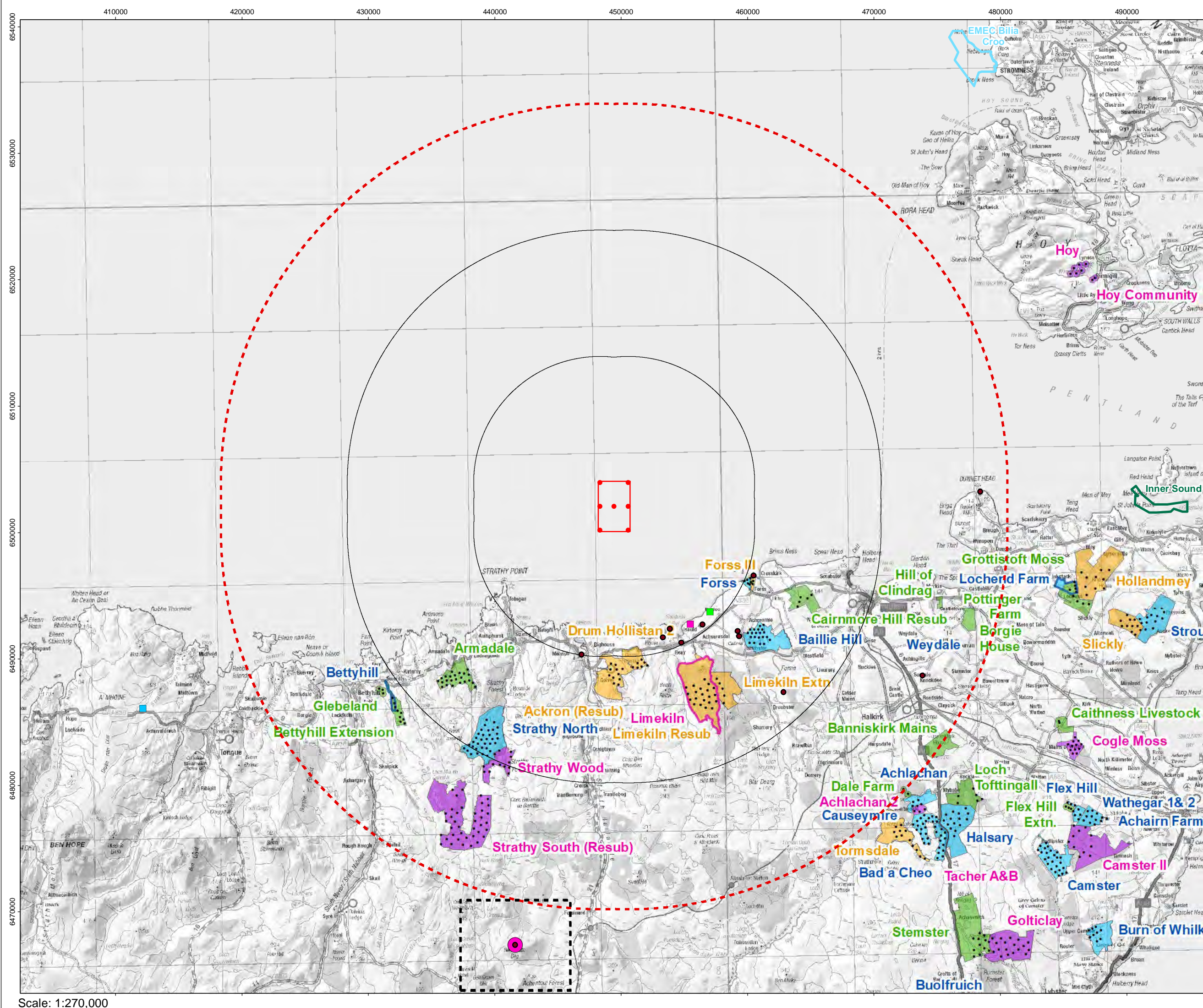
open  
PART OF SLR





Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange





**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTS Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

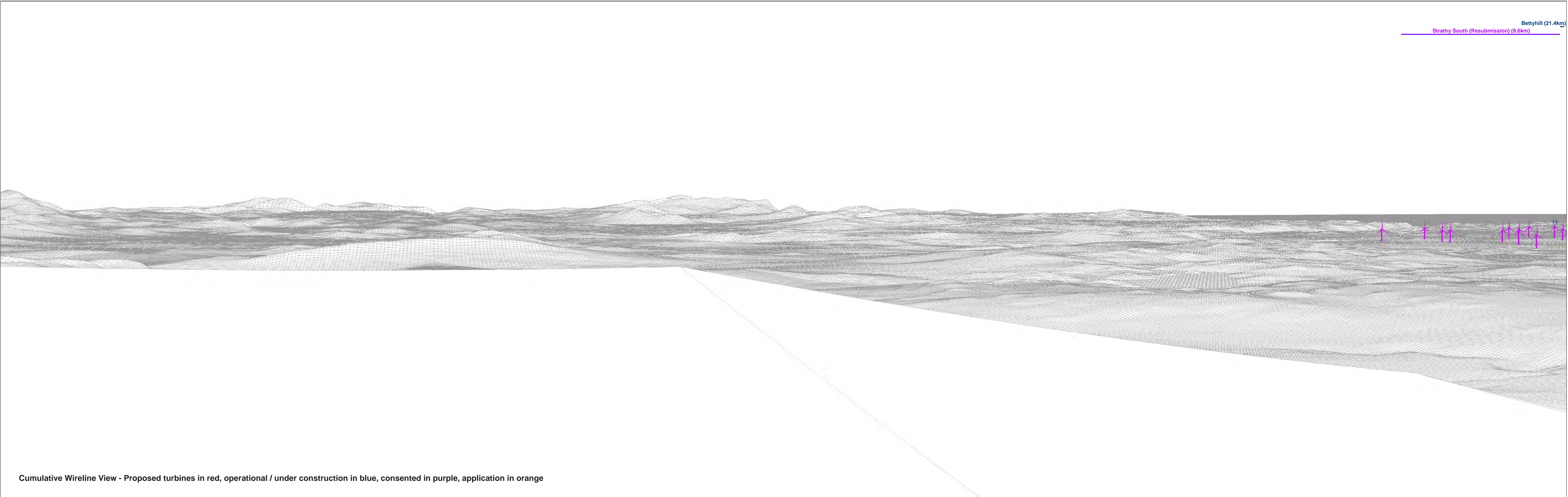
Blade tip: 300m  
DTM: OS 15 DTM  
DTM resolution: 10m  
Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

Figure 17-13a  
Cultural Heritage Viewpoint: 11  
Ben Grian Beag, Hillfort

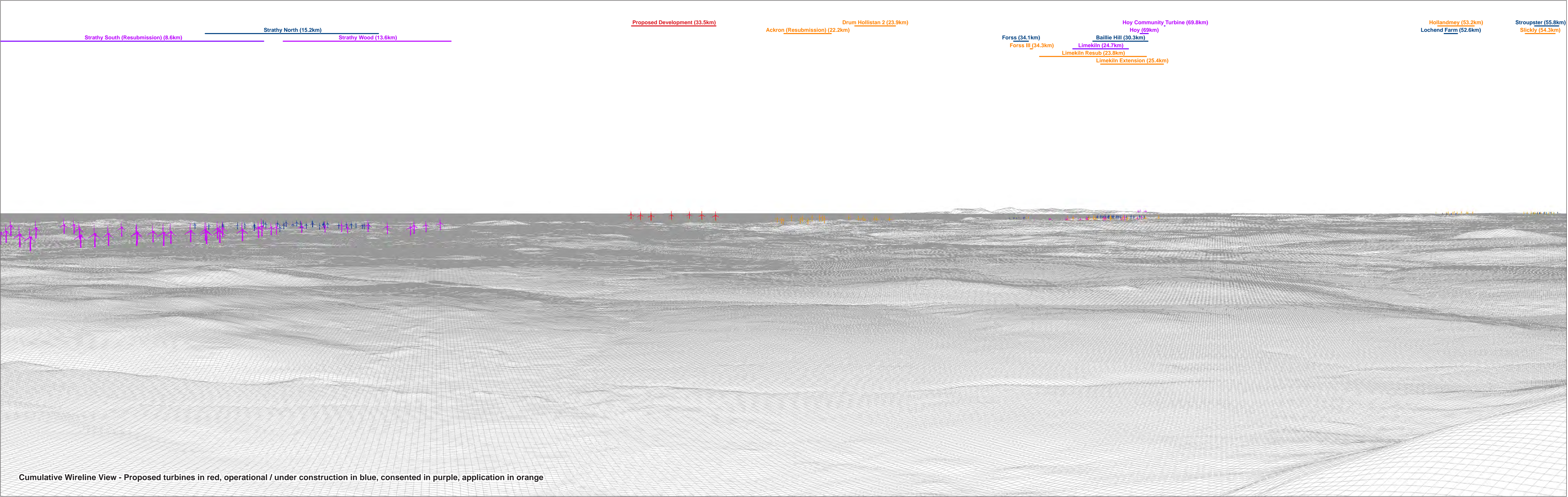
DATE: 06/07/2022 | SCALE: 1:270,000  
MXD: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

DRAWN: SH  
CHECK: JP  
APPROV:

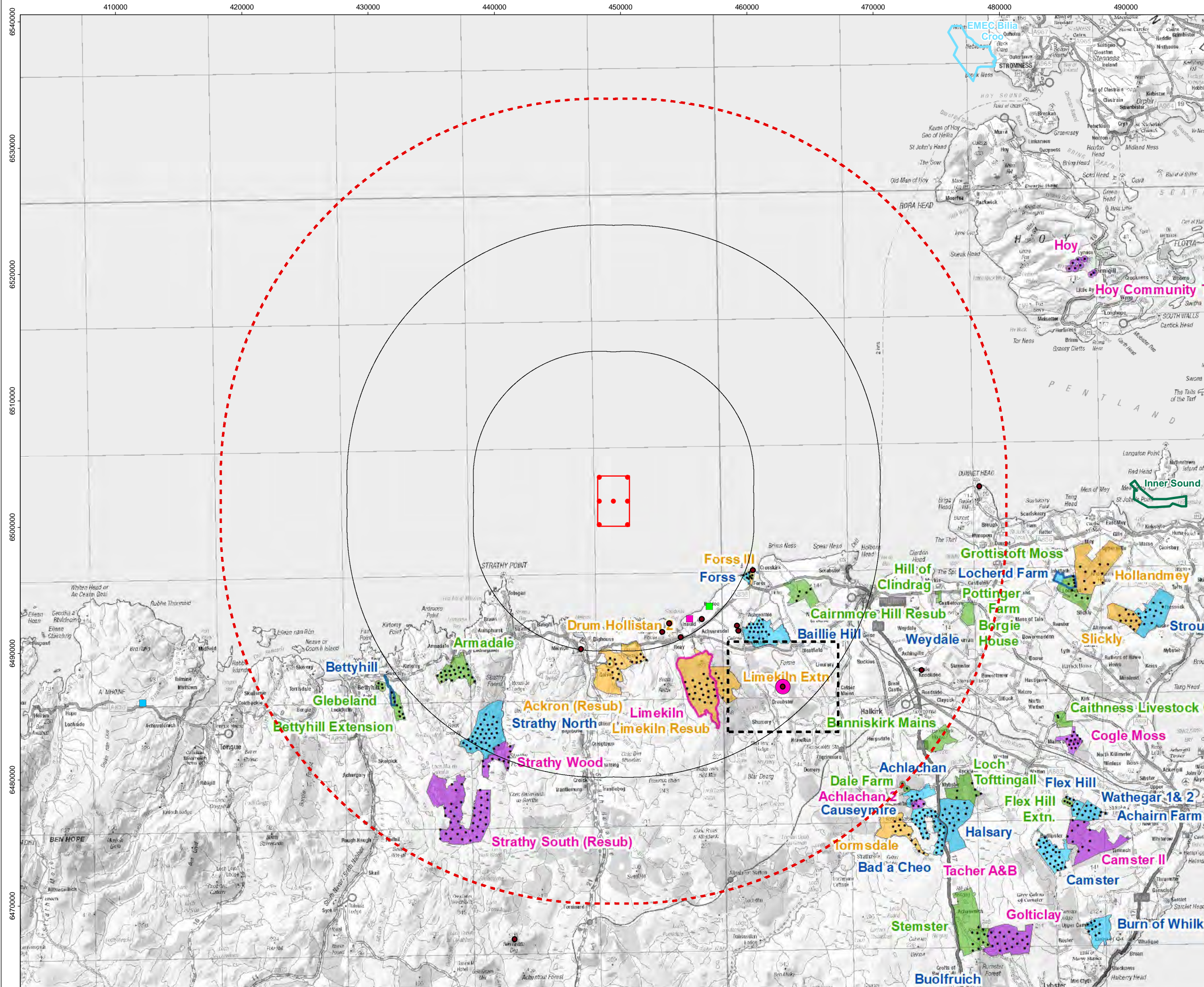




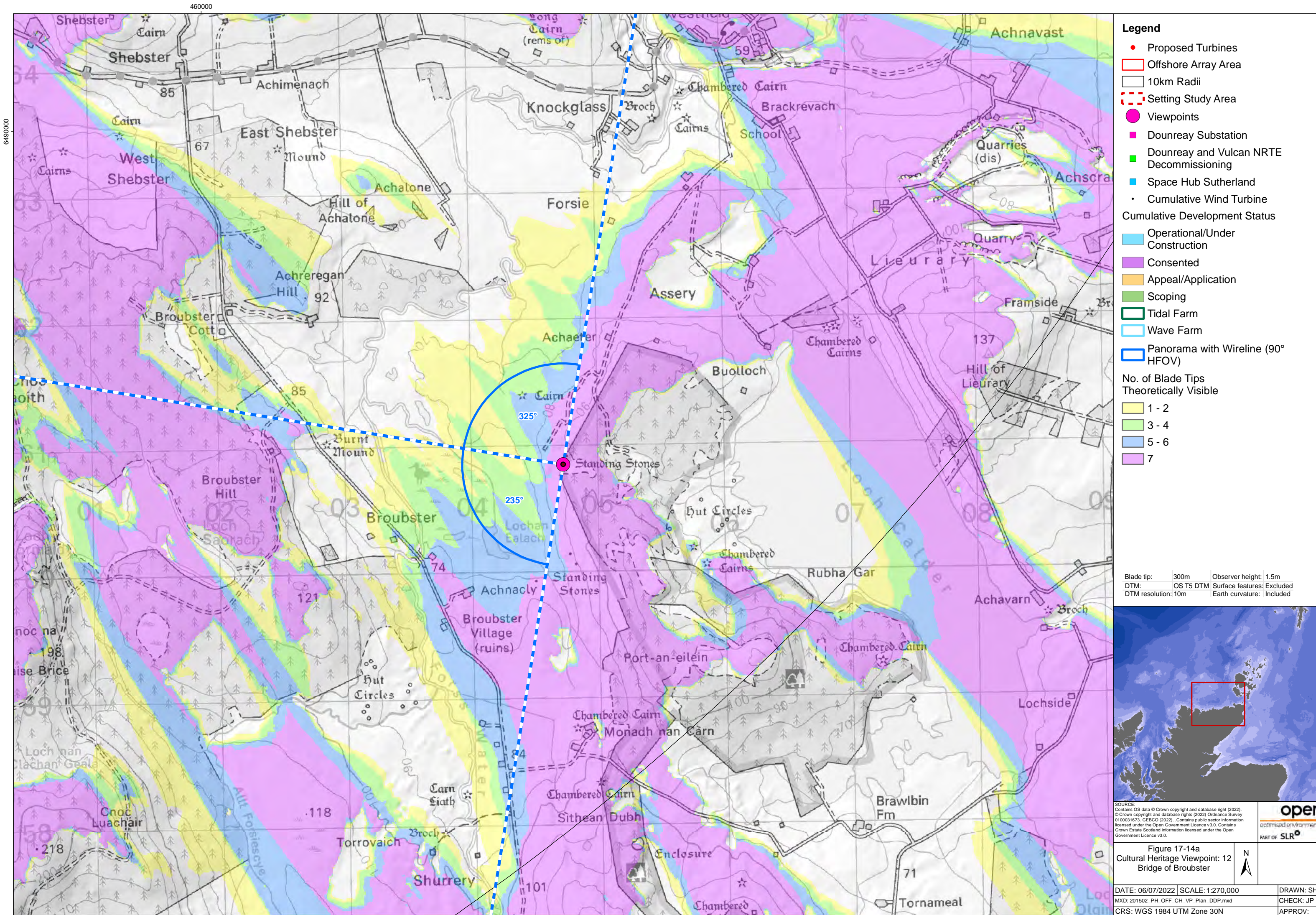








Scale: 1:270,000



Scale: 1:25,000

**Legend**

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan N RTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

**Cumulative Development Status**

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

**No. of Blade Tips Theoretically Visible**

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m  
DTM: OS T5 DTM  
DTM resolution: 10m

Observer height: 1.5m  
Surface features: Excluded  
Earth curvature: Included

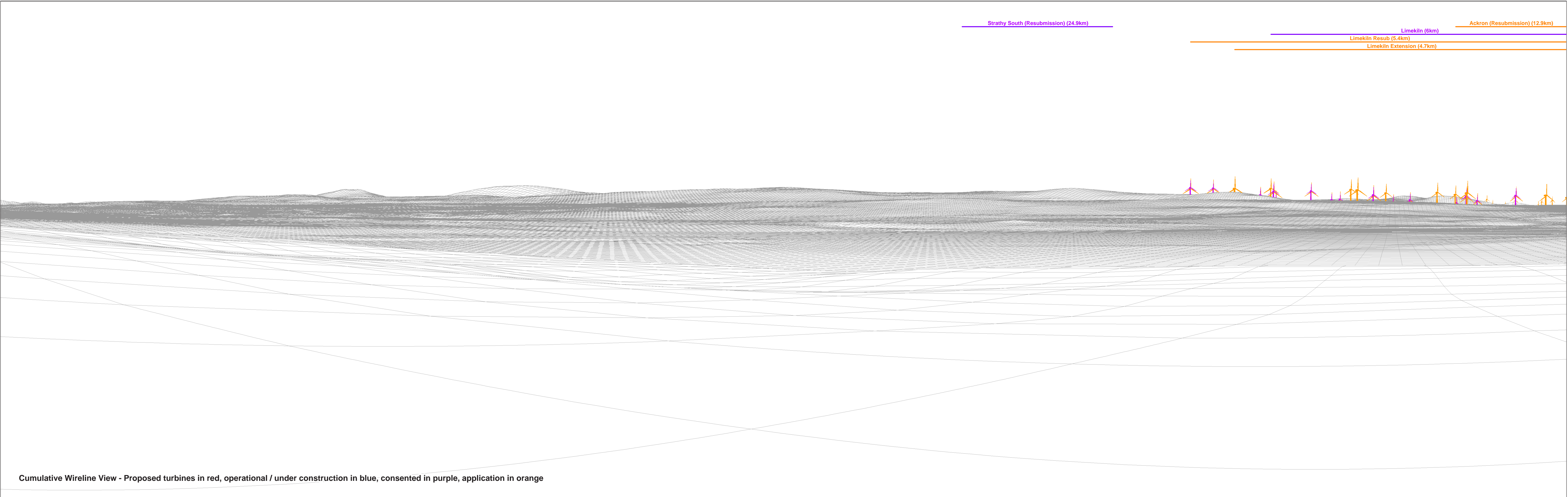
**Figure 17-14a**  
Cultural Heritage Viewpoint: 12  
Bridge of Brouster

DATE: 06/07/2022 SCALE: 1:270,000  
MIXD: 201502\_PH\_OFF\_CH\_VP\_Plan\_DDP.mxd  
CRS: WGS 1984 UTM Zone 30N

DRAWN: SH  
CHECK: JP  
APPROV:

**open**  
PART OF SLR



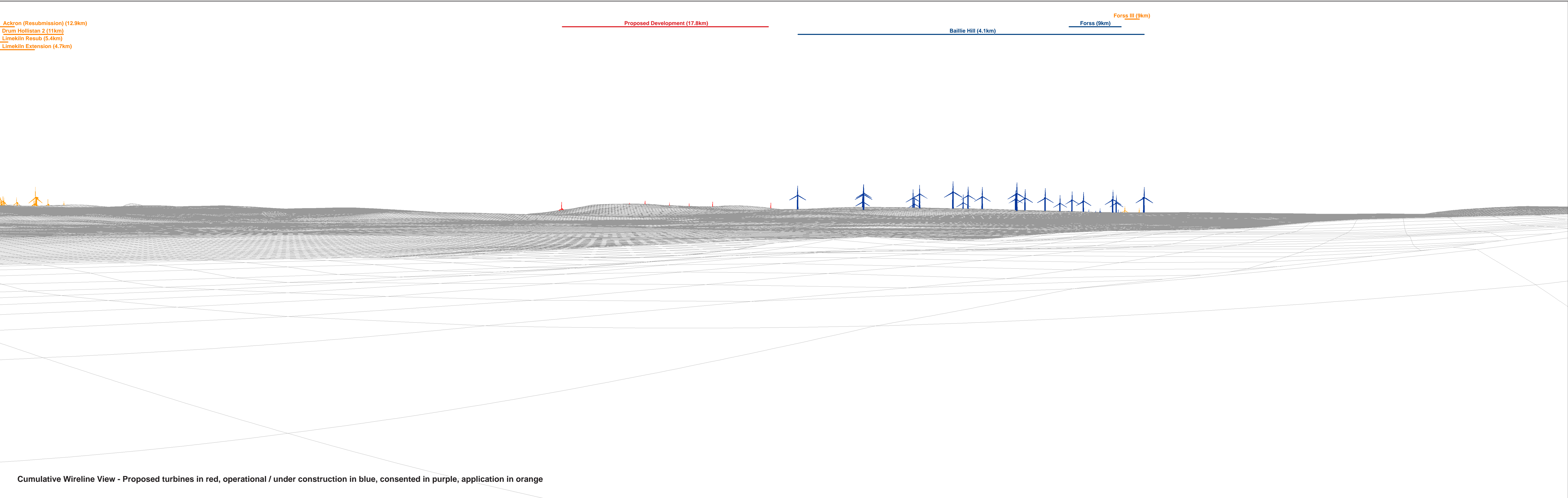


Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

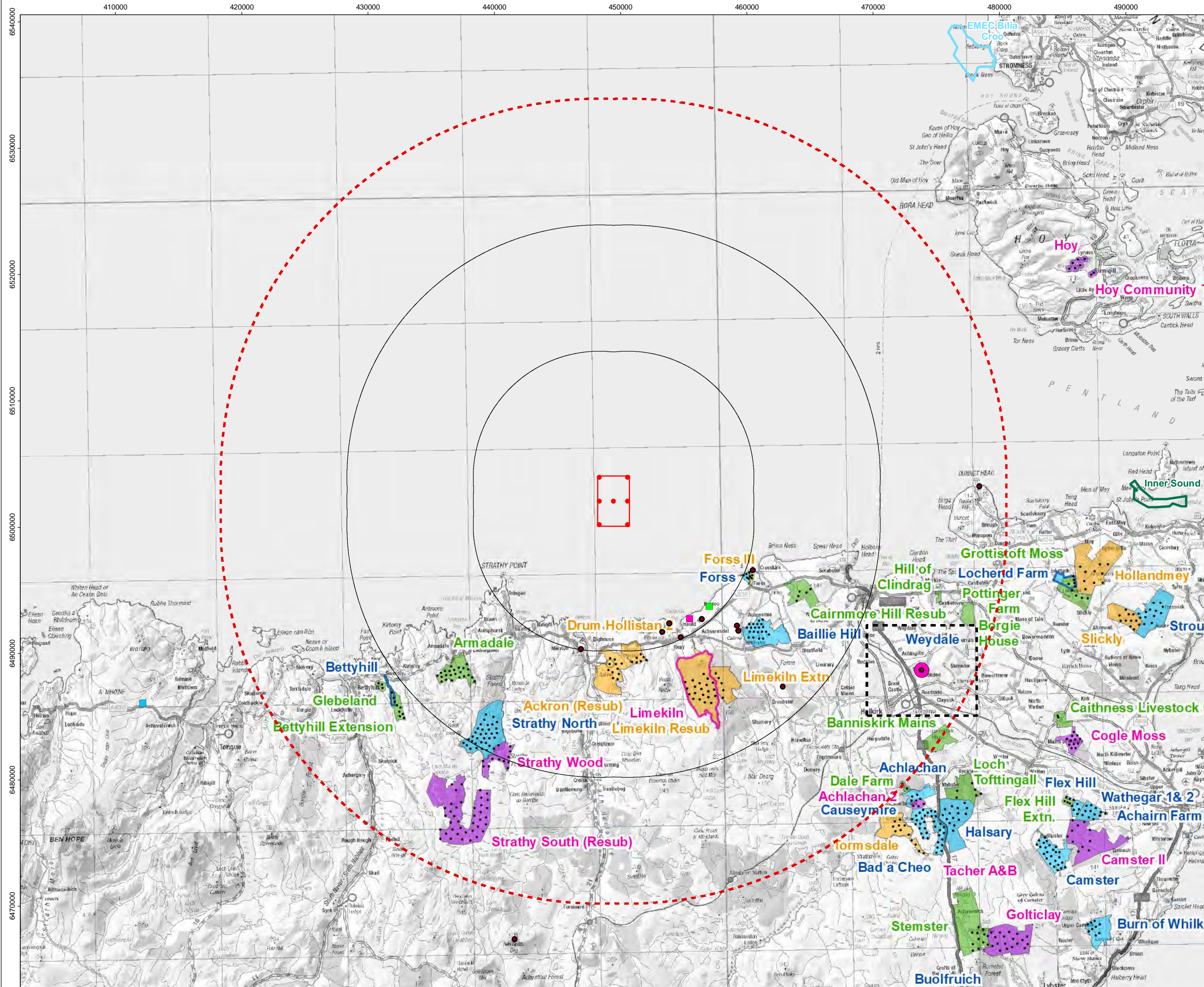
OS reference	304728 E 960846 N	Horizontal field of view	90° (cylindrical projection)
Elevation	89.6 m AOD	Principal distance	522 mm
Direction of view	235°	Paper size	841 x 297 mm (half A1)
Nearest turbine	17,783 m	Correct printed image size	820 x 260 mm

Figure 17.14b  
Viewpoint 12: Bridge of Broubster Cumulative Wireline (view 1 of 2)

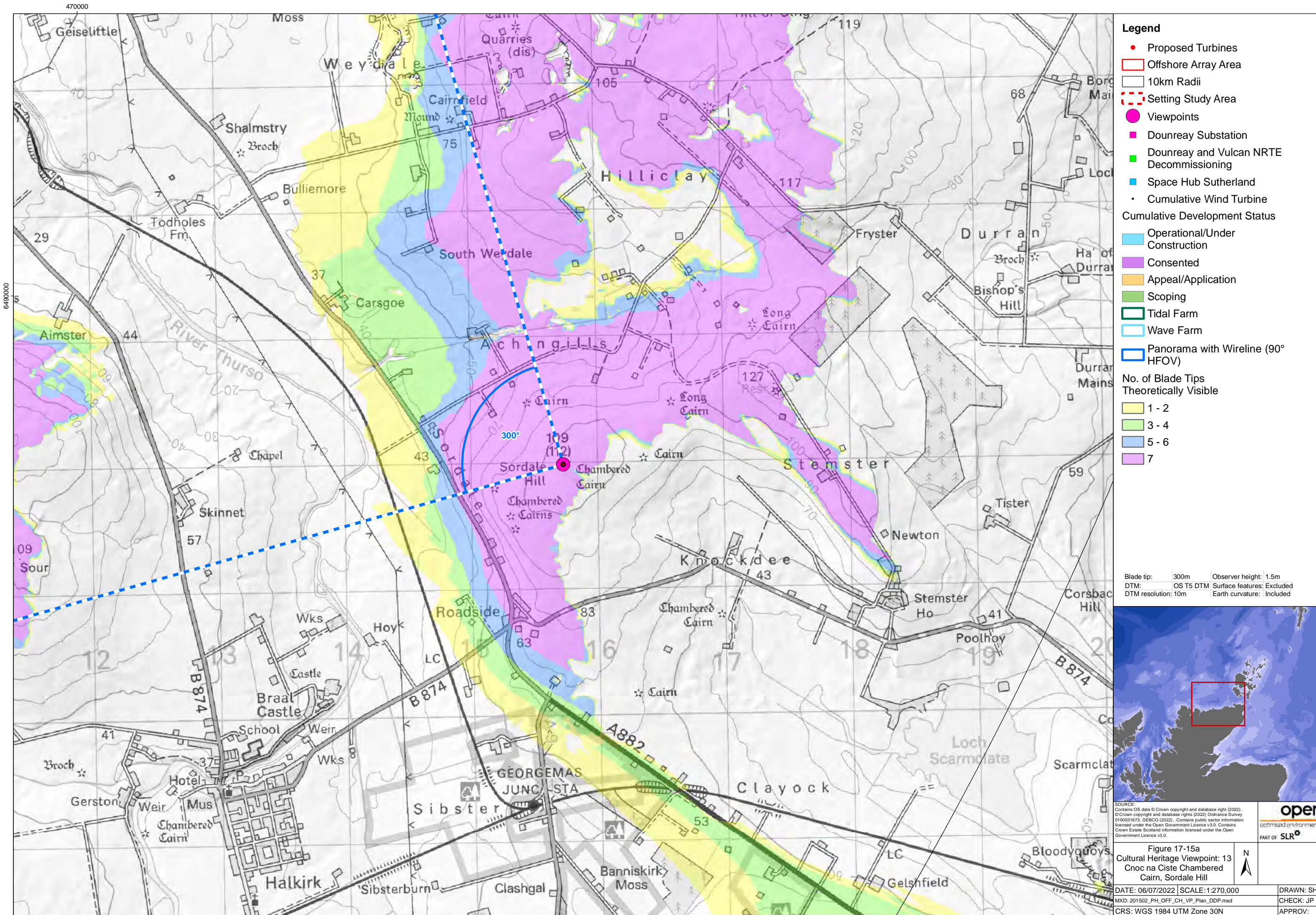






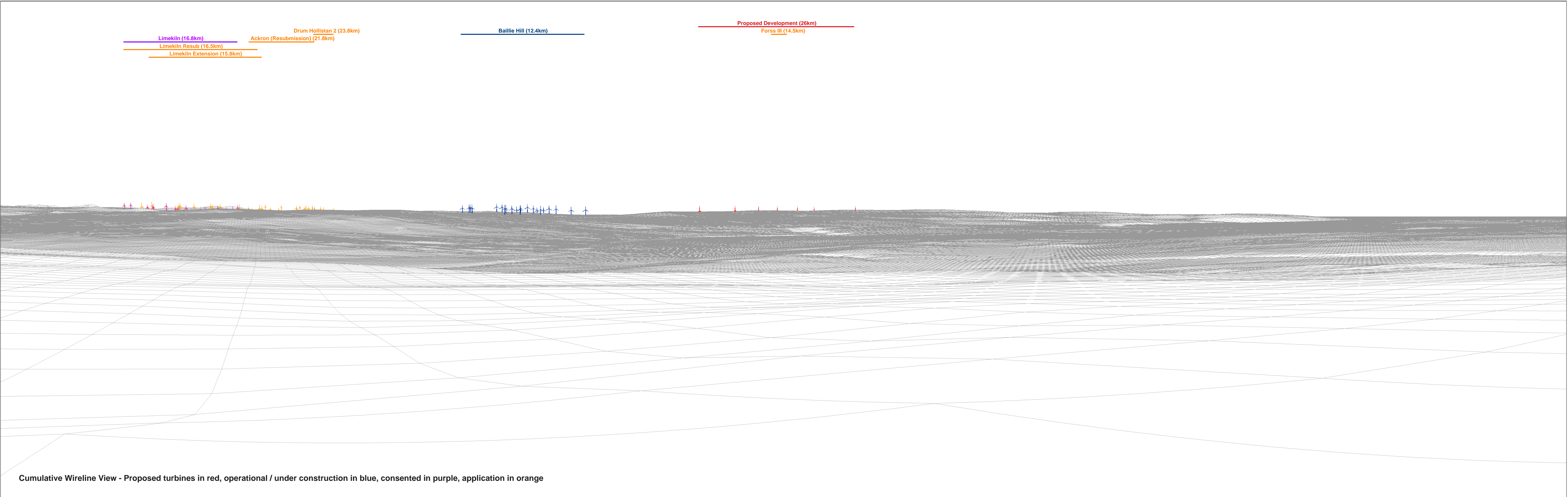


Scale: 1:270,000



Scale: 1:25,000





Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	315730 E 961982 N	Horizontal field of view	90° (cylindrical projection)
Elevation	110.2 m AOD	Principal distance	522 mm
Direction of view	300°	Paper size	841 x 297 mm (half A1)
Nearest turbine	25,991 m	Correct printed image size	820 x 260 mm

Figure 17.15b  
Viewpoint 13: Cnoc na Ciste Chambered Cairn, Sordale Hill Cumulative Wireline