

Moray Offshore Renewables Ltd

KEY

Turbine Layout Scenarios

- Telford Layout
- Stevenson Layout
- MacColl Layout
- Telford Development Area
- Stevenson Development Area
- MacColl Development Area
- Eastern Development Area

- **Scenario 1c (339 Turbines):**
Telford (139 Turbines) - 3.6MW;
Stevenson (100 Turbines) - 5MW;
MacColl (100 Turbines) - 5MW.
5D x 7D spacing with diamond layout.
- **Scenario 2b (339 Turbines):**
Telford (139 Turbines) - 3.6MW;
Stevenson (100 Turbines) - 5MW;
MacColl (100 Turbines) - 5MW.
5D x 7D spacing with grid layout.
- **Scenario 3 (211 Turbines):**
Telford (72 Turbines) - 7MW;
Stevenson (67 Turbines) - 7MW;
MacColl (72 Turbines) - 7MW.
5D x 7D spacing with diamond layout.
- **Scenario 4b (145 Turbines):**
Telford (43 Turbines) - 7MW;
Stevenson (37 Turbines) - 7MW;
MacColl (65 Turbines) - 7MW.
6.5D x 10D spacing with grid layout.
- **Scenario 4c (216 Turbines):**
Telford (72 Turbines) - 7MW;
Stevenson (72 Turbines) - 7MW;
MacColl (72 Turbines) - 7MW.
5D x 7D spacing with grid layout.
- **Scenario 5 (259 Turbines):**
Telford (45 Turbines) - 7MW Array,
Stevenson (93 Turbines) - 5MW;
MacColl (121 Turbines) - 3.6MW.
6.5D x 10D spacing with diamond layout.
- **Scenario 5c (311 Turbines):**
Telford (72 Turbines) - 7MW Array,
Stevenson (100 Turbines) - 5MW;
MacColl (139 Turbines) - 3.6MW.
6.5D x 10D spacing with grid layout.

Horizontal Scale: 1:350,000
0 5,000 10,000 Meters
A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: TR
Reviewed: SM
Approved: SM

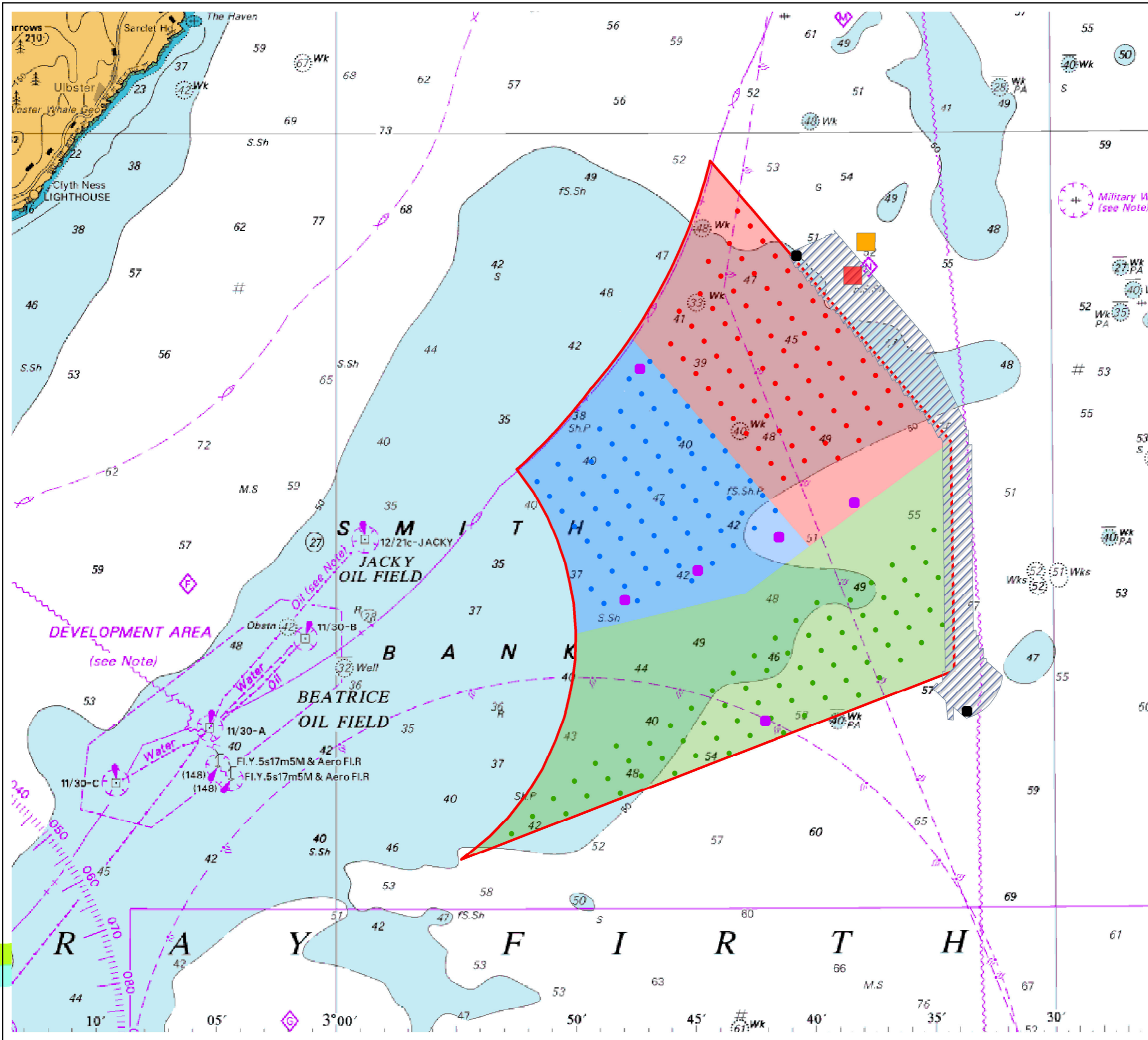
Date: 09/07/2012 Revision: B

REF: 8460001-PPW0201-OPE-MAP-021

Figure 8.4-1
Rochdale Envelope -
SLVIA Layouts

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KEY

- Turbine Layout Scenario 4c:
- Telford 7MW Turbines (204m)
 - Stevenson 7MW Turbines (204m)
 - MacColl 7MW Turbines (204m)
 - Telford Development Area
 - Stevenson Development Area
 - MacColl Development Area
 - Eastern Development Area
 - Hub 1 (Preferred)
 - Hub 2 (Back-up)
 - Fixed Offshore Substation Platform (OSP)
 - ▨ Potential AC/DC Converter Station Outwith the Development
 - AC/DC Converter Offshore Substation Platform (OSP)

Horizontal Scale: 1:150,000 A3 Chart
 0 2,500 5,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

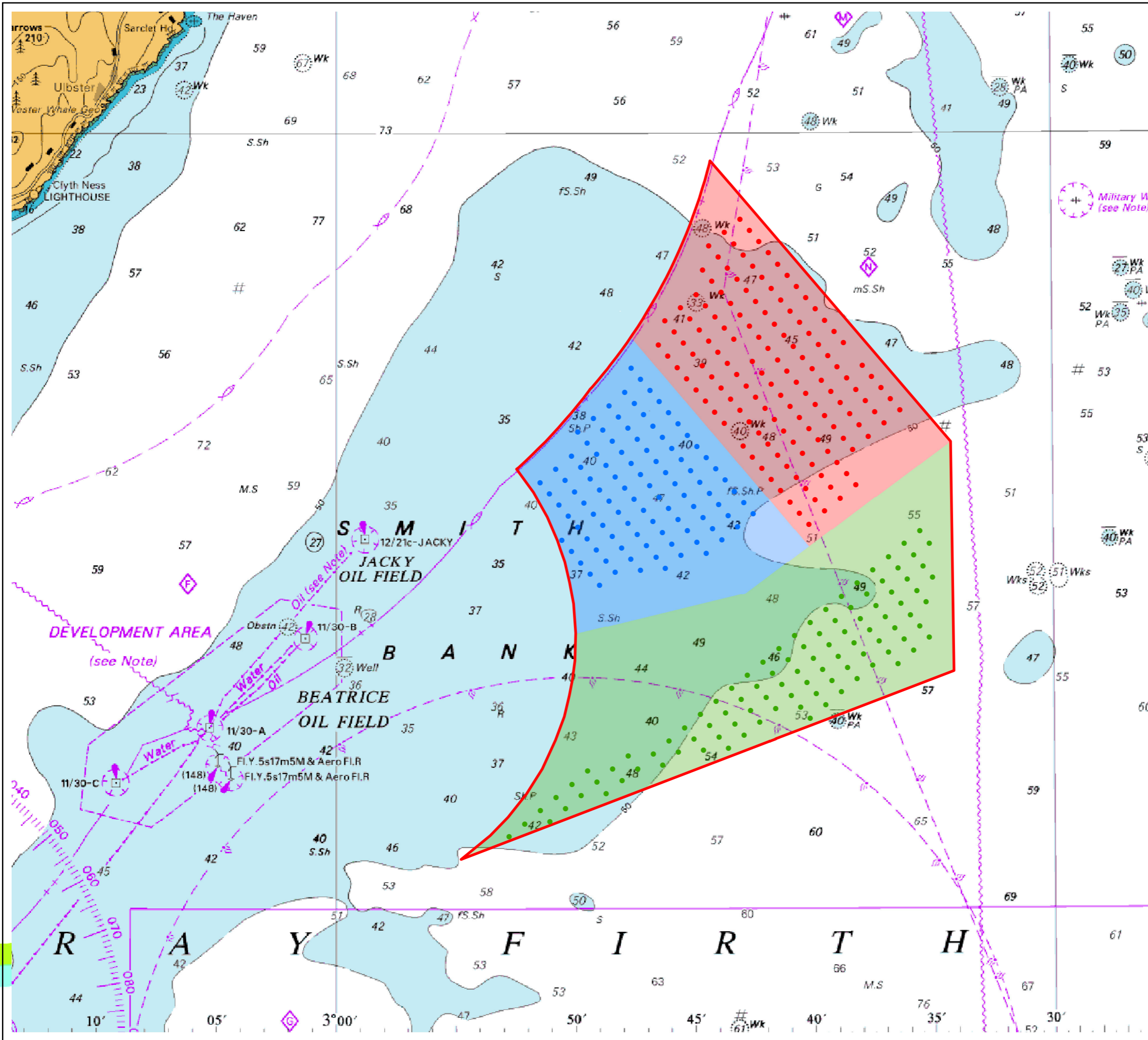
Produced: LA
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Date: 09/07/2012 Revision: B
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Figure 8.4-2
Rochdale Envelope -
Layout Scenario 4c

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KEY

- Turbine Layout Scenario 1c:
- Telford 3.6MW Turbines (152m)
 - Stevenson 5MW Turbines (148m)
 - MacColl 5MW Turbines (148m)
 - Telford Development Area
 - Stevenson Development Area
 - MacColl Development Area
 - Eastern Development Area

Horizontal Scale: 1:150,000
 0 2,500 5,000 Meters
 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

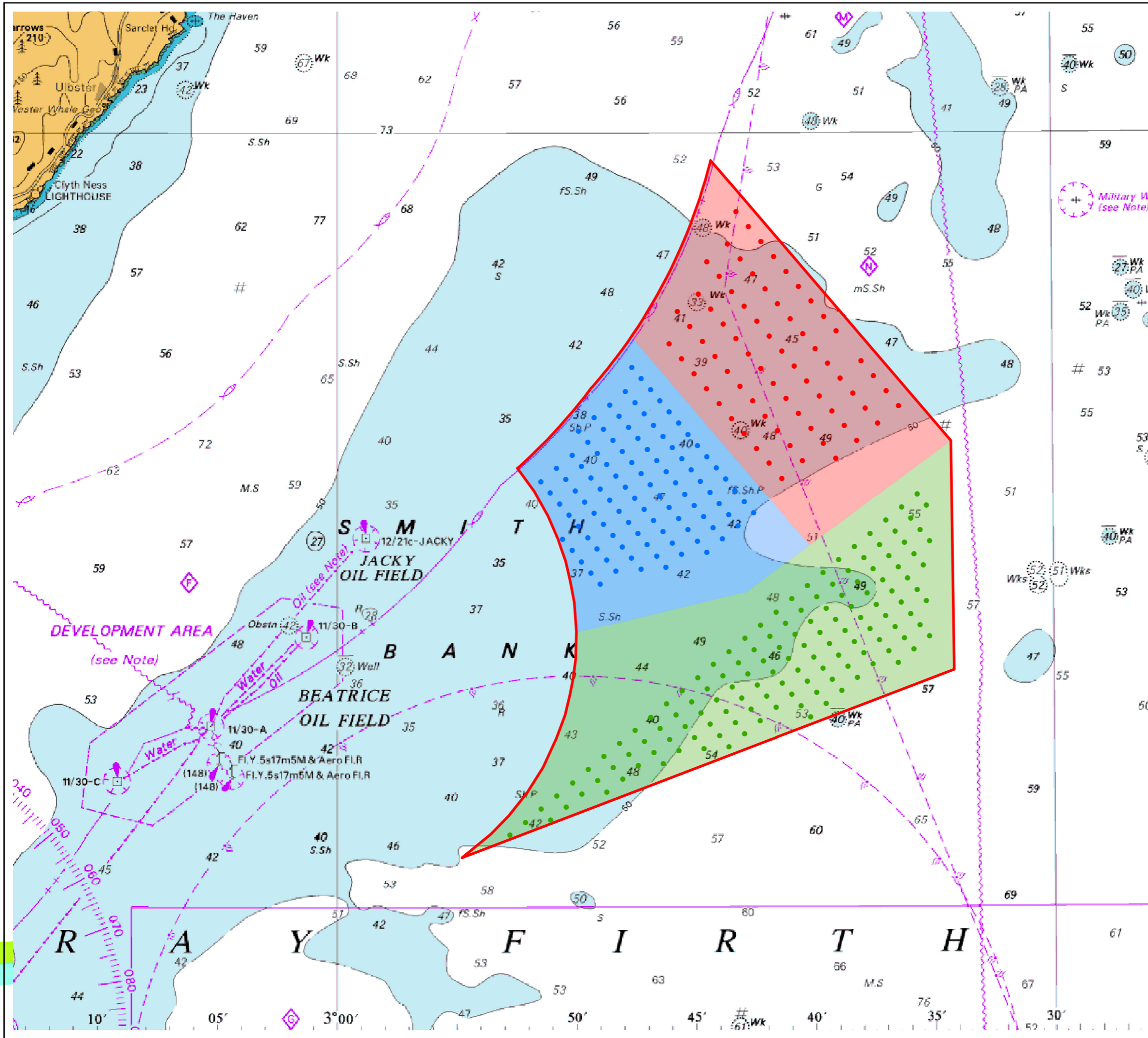
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 REF: 8460001-PPW0201-OPE-MAP-023

Figure 8.4-3
Rochdale Envelope -
Layout Scenario 1c

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KEY

Turbine Layout Scenario 5c:

- Telford 7MW Turbines (204m)
- Stevenson 5MW Turbines (148m)
- MacColl 3.6MW Turbines (152m)
- Telford Development Area
- Stevenson Development Area
- MacColl Development Area
- Eastern Development Area

Horizontal Scale: 1:150,000
 0 2,500 5,000 Meters
 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

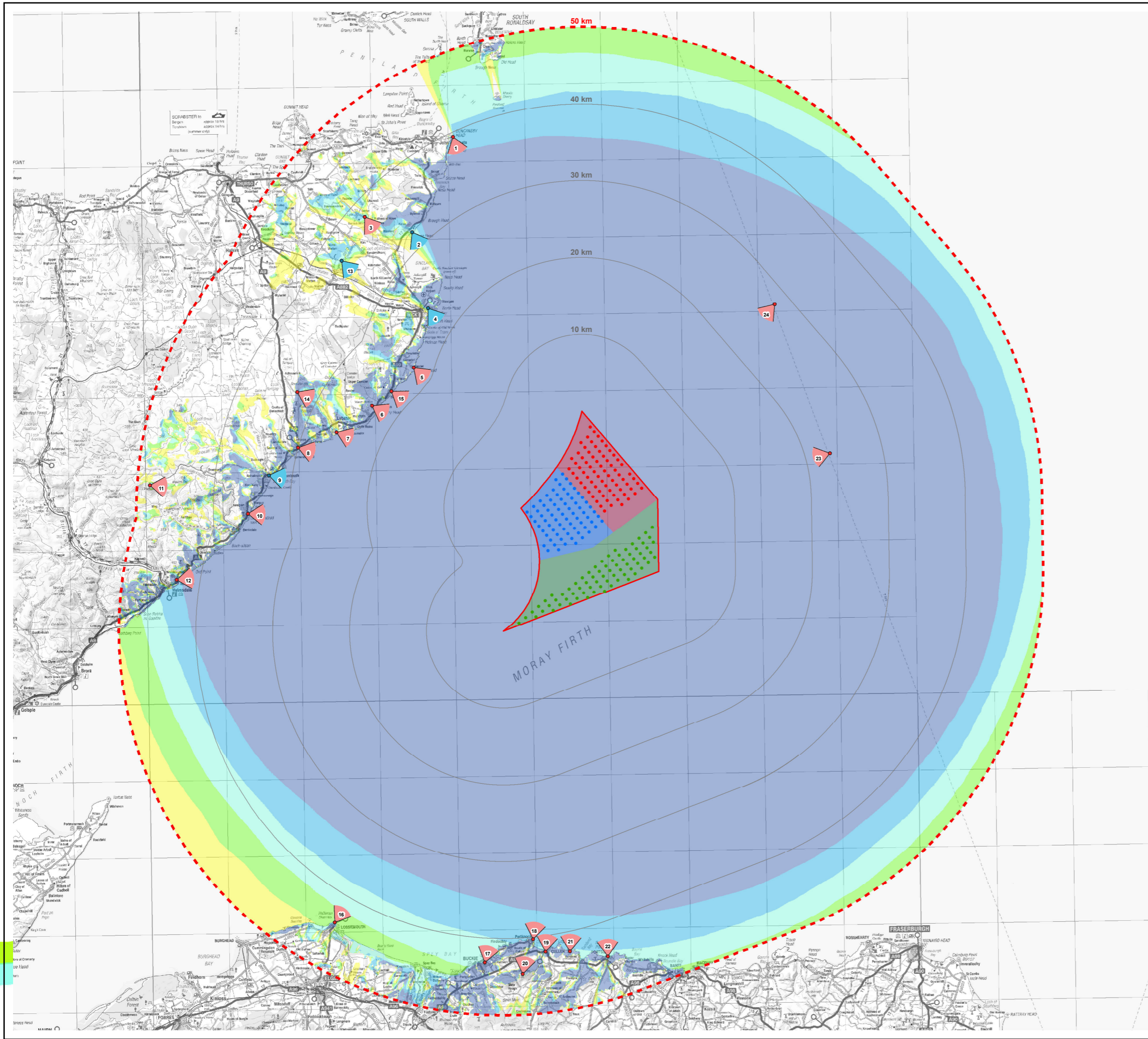
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Figure 8.4-4
Rochdale Envelope -
Layout Scenario 5c

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- KEY**
- Turbine Layout Scenario 4c:
- Telford 7MW Turbines (204m)
 - Stevenson 7MW Turbines (204m)
 - MacColl 7MW Turbines (204m)
 - Telford Development Area
 - Stevenson Development Area
 - MacColl Development Area
 - Eastern Development Area
 - 10km Distance Radii
 - ⋯ 50km Study Area Boundary

- Blade Tip ZTV (204m)
No. of Visible Turbines
- | | |
|------------|-------------|
| □ 0 | □ 101 - 150 |
| □ 1 - 50 | □ 151 - 200 |
| □ 51 - 100 | □ 201 - 216 |

- ▼ Viewpoint Location
 - ▼ Key Viewpoint Location
- 1 Duncansby Head
 - 2 Keiss Pier
 - 3 Sortat
 - 4 Wick Bay
 - 5 Sarlet (Sarlet Haven Info Board)
 - 6 Hill O' Many Stanes
 - 7 Lybster (end of Main Street)
 - 8 Latheron (A9)
 - 9 Dunbeath (nr Heritage Centre)
 - 10 Berriedale (A9)
 - 11 Morven
 - 12 Navidale
 - 13 Catchory
 - 14 Minor Rd
 - 15 Whalgie Steps
 - 16 Lossiemouth Harbour
 - 17 Buckie
 - 18 Portnockie - Bow Fiddle Rock Info Point
 - 19 Cullen
 - 20 Bin Hill
 - 21 Findlater Castle (Check height)
 - 22 Portsoy
 - 23 Ferry Route (Kirkwall to Aberdeen) 1
 - 24 Ferry Route (Kirkwall to Aberdeen) 2

Horizontal Scale: 1:475,000 A3 Chart

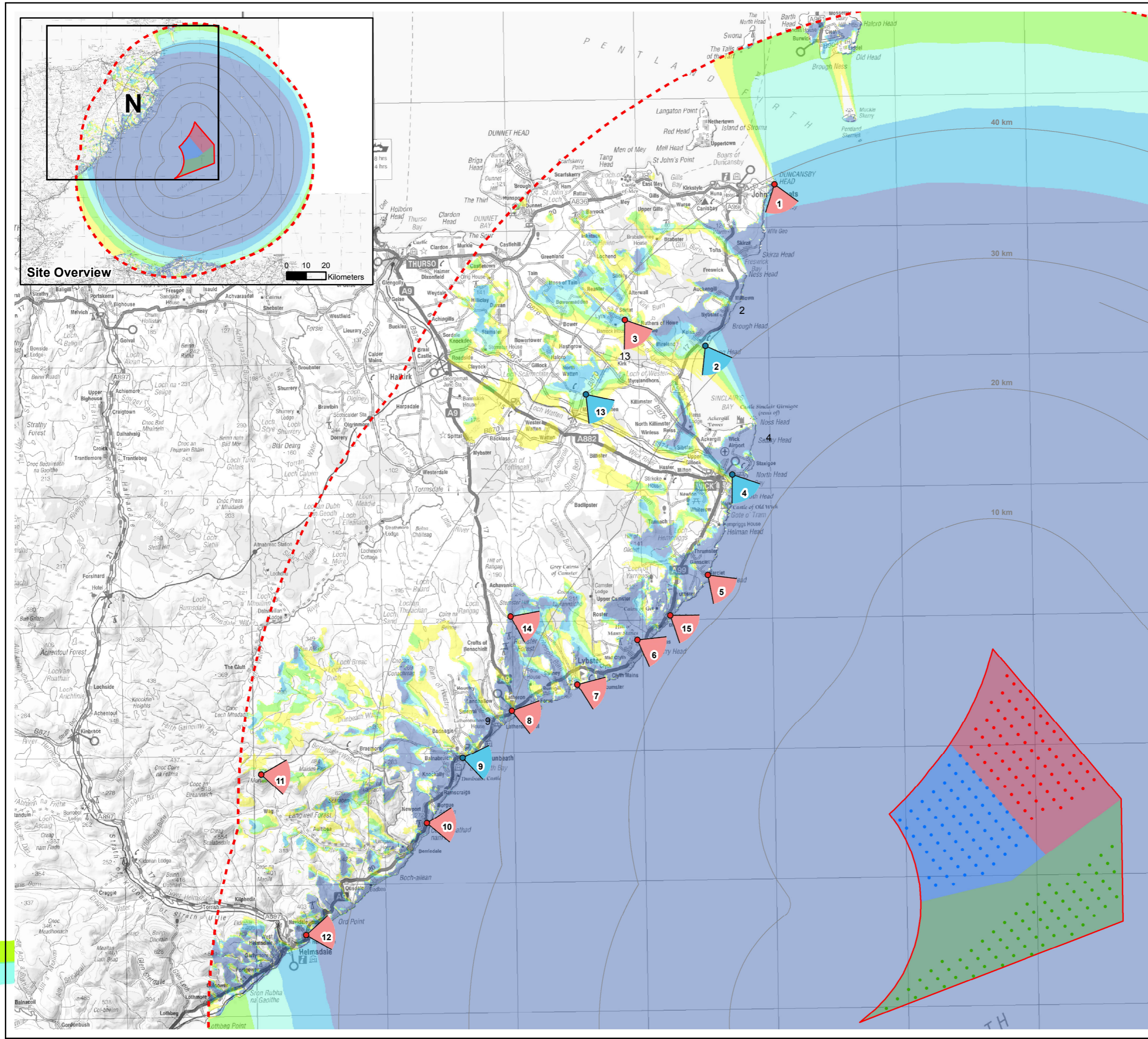
Geodetic Parameters: WGS84 UTM Zone 30N

Produced: LA
 Reviewed: SM
 Approved: SM

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 REF: 8460001-PPW0201-OPE-MAP-025

Figure 8.4-5
Blade Tip ZTV with Viewpoints
(Scenario 4c)
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Moray Offshore Renewables Ltd

- KEY**
- Turbine Layout Scenario 4c:
- Telford 7MW Turbines (204m)
 - Stevenson 7MW Turbines (204m)
 - MacColl 7MW Turbines (204m)
 - Telford Development Area
 - Stevenson Development Area
 - MacColl Development Area
 - Eastern Development Area
 - 10km Distance Radii
 - 50km Study Area Boundary

- Blade Tip ZTV (204m)
No. of Visible Turbines
- | | |
|------------|-------------|
| □ 0 | □ 101 - 150 |
| □ 1 - 50 | □ 151 - 200 |
| □ 51 - 100 | □ 201 - 216 |

- ▲ Viewpoint Location
 - ▲ Key Viewpoint Location
- 1 Duncansby Head
 - 2 Keiss Pier
 - 3 Sortat
 - 4 Wick Bay
 - 5 Sarclet (Sarclet Haven Info Board)
 - 6 Hill O' Many Stanes
 - 7 Lybster (end of Main Street)
 - 8 Latheron (A9)
 - 9 Dunbeath (nr Heritage Centre)
 - 10 Berriedale (A9)
 - 11 Morven
 - 12 Navidale
 - 13 Catchory
 - 14 Minor Rd
 - 15 Whalgie Steps
 - 16 Lossiemouth Harbour
 - 17 Buckie
 - 18 Portnockie - Bow Fiddle Rock Info Point
 - 19 Cullen
 - 20 Bin Hill
 - 21 Findlater Castle (Check height)
 - 22 Portsoy
 - 23 Ferry Route (Kirkwall to Aberdeen) 1
 - 24 Ferry Route (Kirkwall to Aberdeen) 2

Horizontal Scale: 1:280,000 A3 Chart
0 5,000 10,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: LA
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Approved: SM

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Figure 8.4-5a
Blade Tip ZTV with Viewpoints
(Scenario 4c) - North

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KEY

- Telford Development Area
- Stevenson Development Area
- MacColl Development Area
- Eastern Development Area
- 10km Distance Radii
- 50km Study Area Boundary

Blade Tip ZTV (204m)

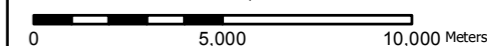
No. of Visible Turbines

- | | |
|--|---|
| 0 | 101 - 150 |
| 1 - 50 | 151 - 200 |
| 51 - 100 | 201 - 216 |

Viewpoint Location

- 1 Duncansby Head
- 2 Keiss Pier
- 3 Sortat
- 4 Wick Bay
- 5 Sarclat (Sarclat Haven Info Board)
- 6 Hill O' Many Stanes
- 7 Lybster (end of Main Street)
- 8 Latheron (A9)
- 9 Dunbeath (nr Heritage Centre)
- 10 Berriedale (A9)
- 11 Morven
- 12 Navidale
- 13 Catchory
- 14 Minor Rd
- 15 Whaligoe Steps
- 16 Lossiemouth Harbour
- 17 Buckie
- 18 Portnockie - Bow Fiddle Rock Info Point
- 19 Cullen
- 20 Bin Hill
- 21 Findlater Castle (Check height)
- 22 Portsoy
- 23 Ferry Route (Kirkwall to Aberdeen) 1
- 24 Ferry Route (Kirkwall to Aberdeen) 2

Horizontal Scale: 1:200,000 A3 Chart



Geodetic Parameters: WGS84 UTM Zone 30N

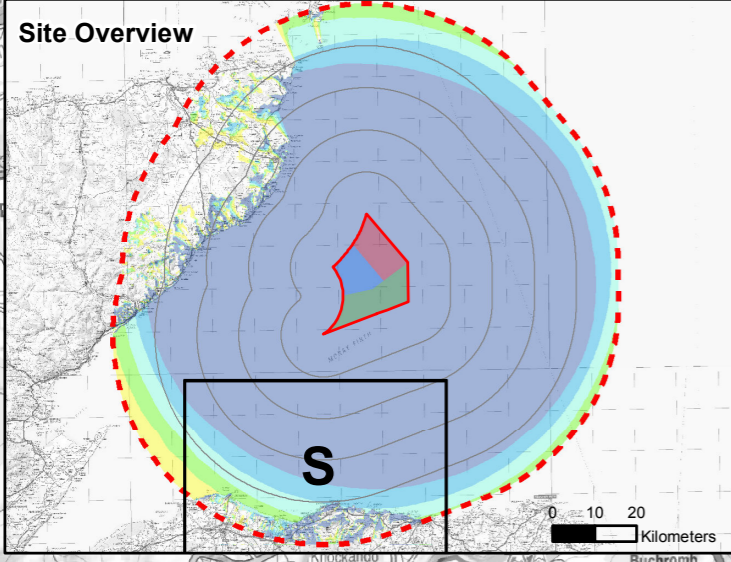
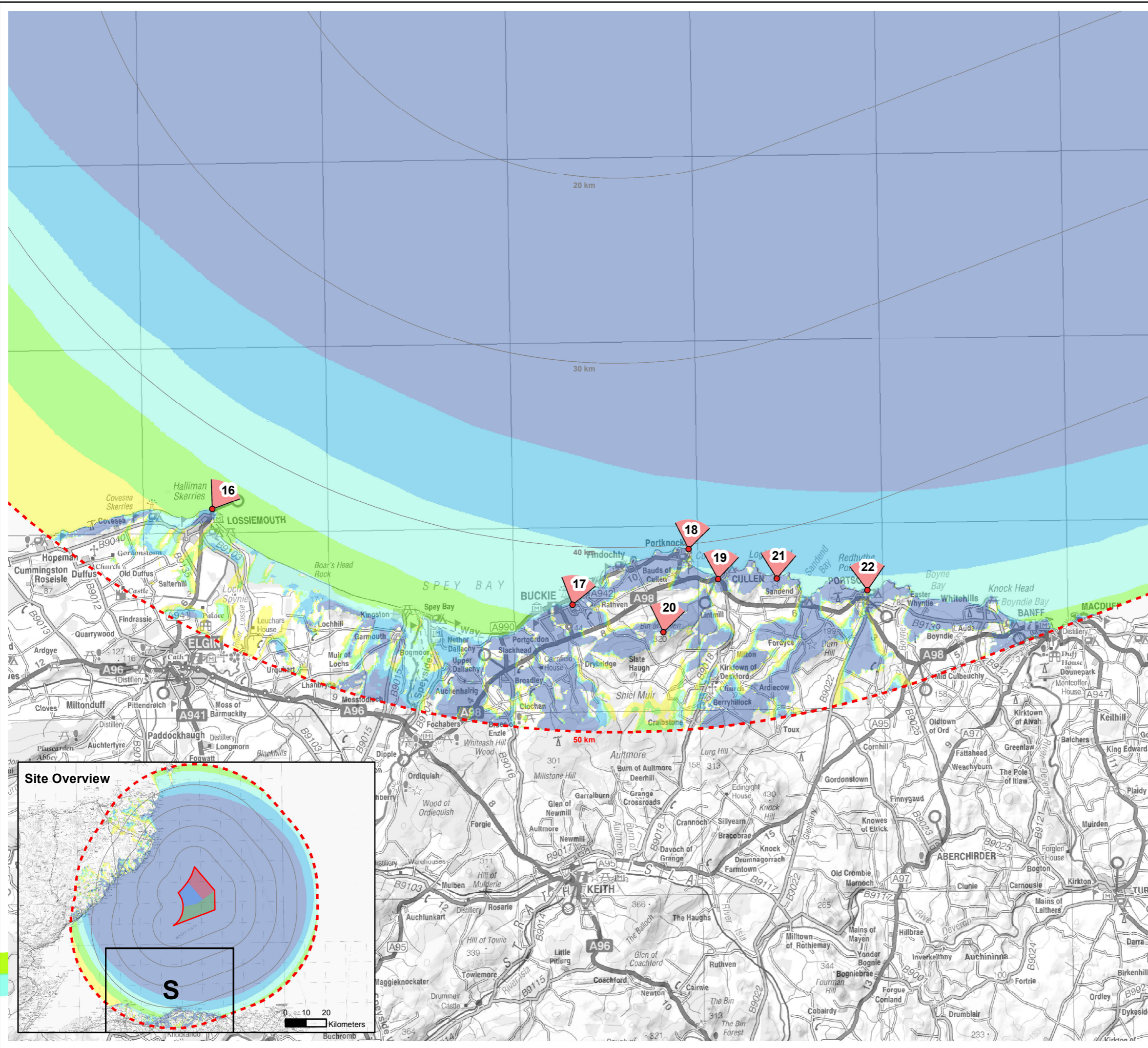
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REF: 8460001-PPW0201-OPE-MAP-027

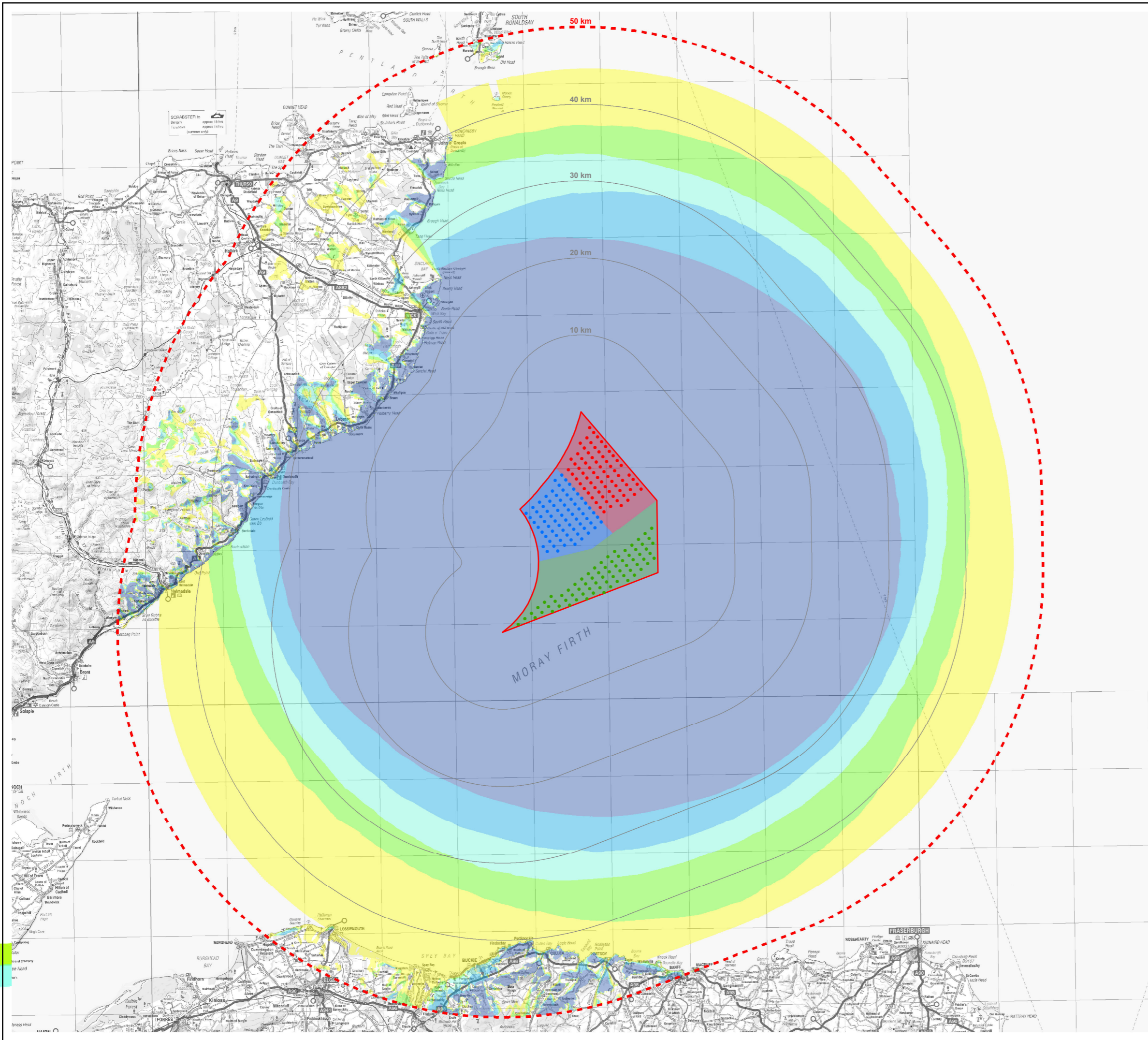
Figure 8.4-5b
Blade Tip ZTV with Viewpoints
(Scenario 4c) - South

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- Turbine Layout Scenario 4c:
- Telford 7MW Turbines (204m)
 - Stevenson 7MW Turbines (204m)
 - MacColl 7MW Turbines (204m)
 - Telford Development Area
 - Stevenson Development Area
 - MacColl Development Area
 - Eastern Development Area
 - 10km Distance Radii
 - 50km Study Area Boundary

Hub Height ZTV (118m)

No. of Visible Turbines

- 0
- 1 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 216

Horizontal Scale: 1:475,000 A3 Chart
 0 10,000 20,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

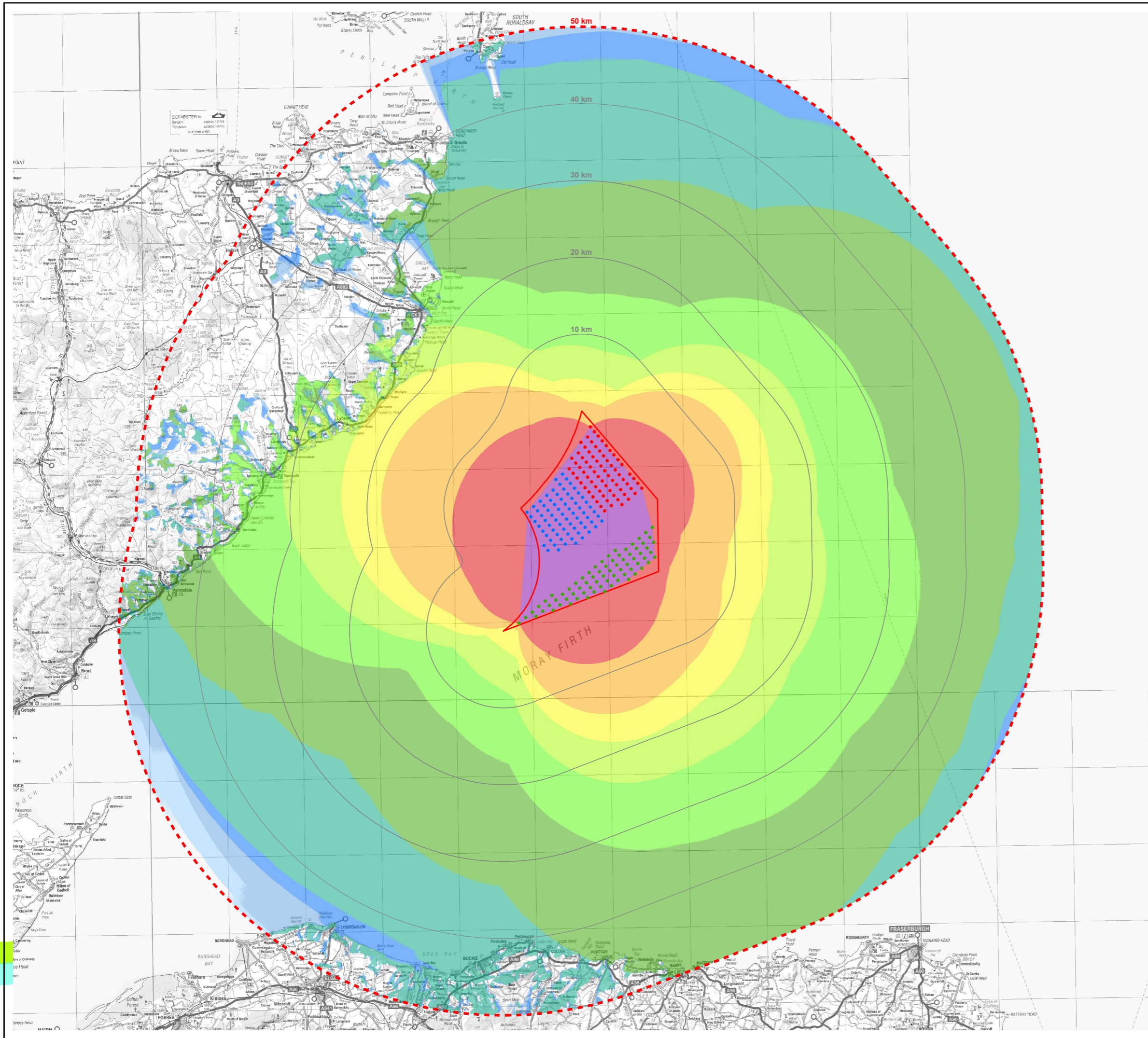
Produced: LA
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Figure 8.4-6
Hub Height ZTV
(Scenario 4c)

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Moray Offshore Renewables Ltd

KEY

Turbine Layout Scenario 4c:

- Telford 7MW Turbines (204m)
- Stevenson 7MW Turbines (204m)
- MacColl 7MW Turbines (204m)

- Eastern Development Area
- 10km Distance Radii
- 50km Study Area Boundary

Horizontal Angle ZTV *
Angle (Degrees)

- 0
- 0 - 1
- 1 - 5
- 5 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 90
- 90 - 180
- 180 - 360

* The horizontal angle ZTV measures how much of the horizontal field of view is occupied by the Development. It is calculated from a grid of receptors in the study area and measures the maximum angle from the furthest left to the furthest right extent of the Development

Horizontal Scale: 1:475,000 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

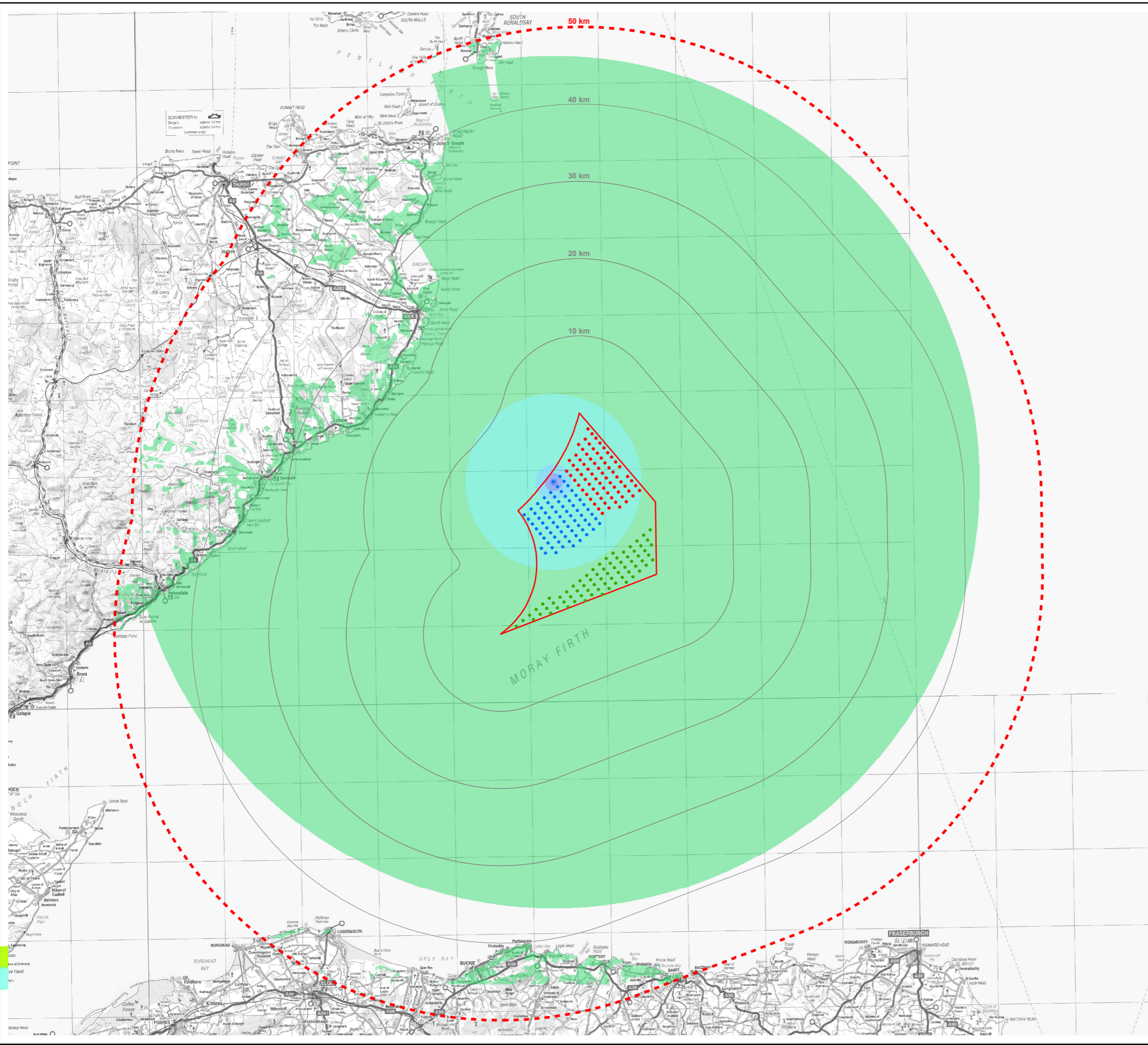
Produced: LA
 Reviewed: SM
 Approved: SM

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 REF: 8460001-PPW0201-OPE-MAP-029

Figure 8.4-7
Horizontal Angle ZTV
(Scenario 4c)

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KEY

- Turbine Layout Scenario 4c:
- Telford 7MW Turbines (204m)
 - Stevenson 7MW Turbines (204m)
 - MacColl 7MW Turbines (204m)
 - Eastern Development Area
 - 10km Distance Radii
 - 50km Study Area Boundary

Vertical Angle ZTV *
 Angle (Degrees)

- 0
- 0 - 1
- 1 - 5
- 5 - 10
- 10 - 25
- >25

* The vertical angle ZTV measures how much of the vertical field of view is occupied by the Development. It is calculated from a grid of receptors in the study area and measures the maximum angle between the lowest to the highest extent of the Development

Horizontal Scale: 1:475,000 A3 Chart
 0 10,000 20,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

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Figure 8.4-8
Vertical Angle ZTV
(Scenario 4c)

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