

KNOWES WIND FARM

MUIRDEN ENERGY LLP

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Aberdeenshire,

AB53 4NH

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ENVIRONMENTAL
STATEMENT

VOLUME 3: FIGURES



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FIGURE 1.1

Site location

Scale: 1:100,000
Checked by: AF
Drawn by: DT
Date: 04/04/2014

Key:

- Knowes turbines



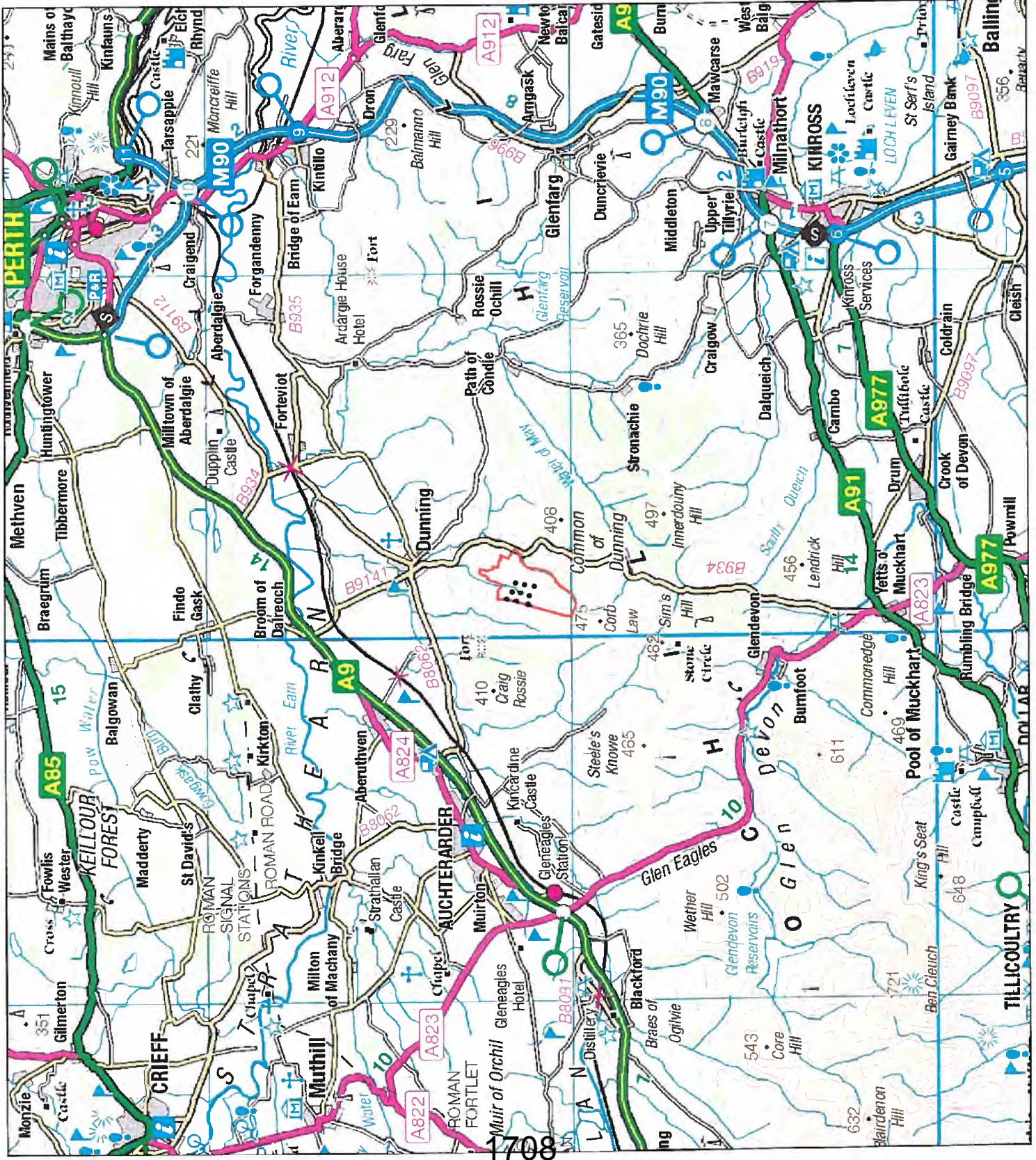
Land ownership boundary



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Site layout

Scale: 1:10,000
Checked by: AF
Drawn by: DT
Date: 04/04/2014

Key:

- Knowes turbines
-
- Access Track
- Turbine foundations
- Hardstanding
- Land ownership boundary

Meters

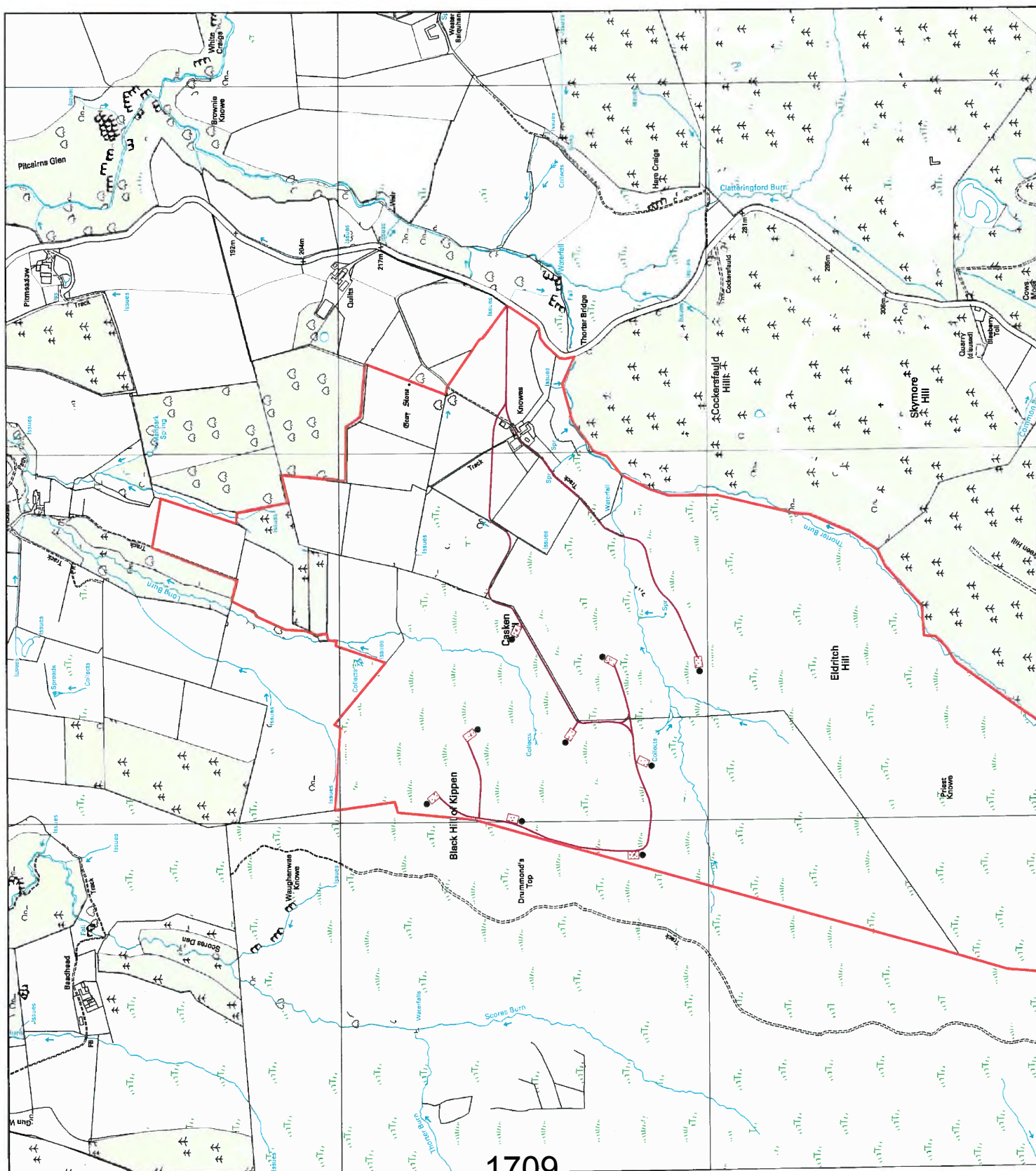
0 60 120 240 360 480 600



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FIGURE 1.3

Planning map

Scale: 1:6,000
Drawn by: DT
Checked by: AF
Date: 09/05/2014

Key:

- Knowes turbines
- Substation
- Planning boundary
- Turbine foundations
- Hardstanding
- Land ownership boundary
- Access track

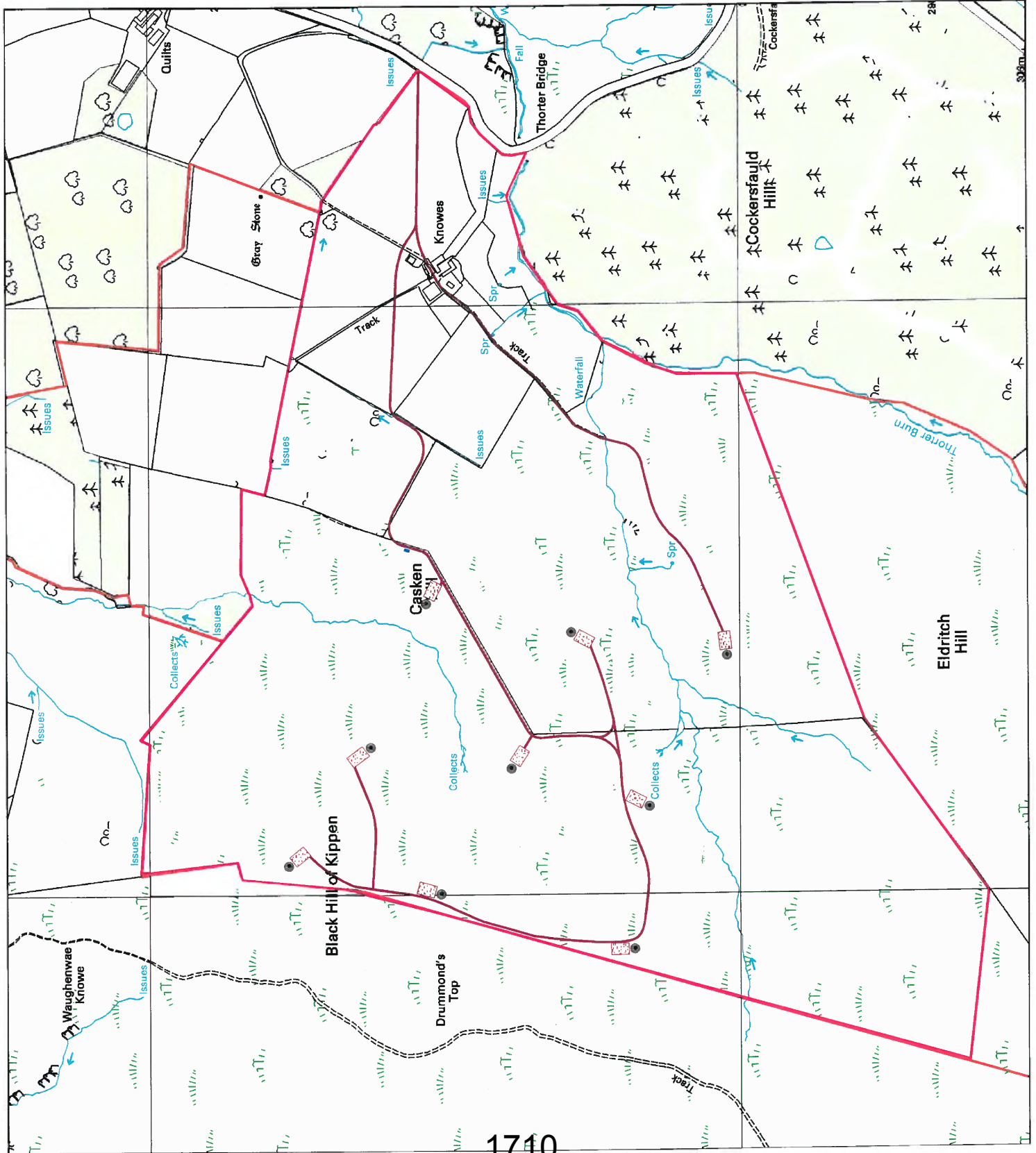
Meters
0 37.5 75 150 225 300 375



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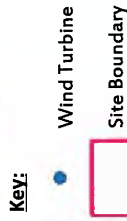
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FIGURE 1.4 Wind Farm Design Evolution

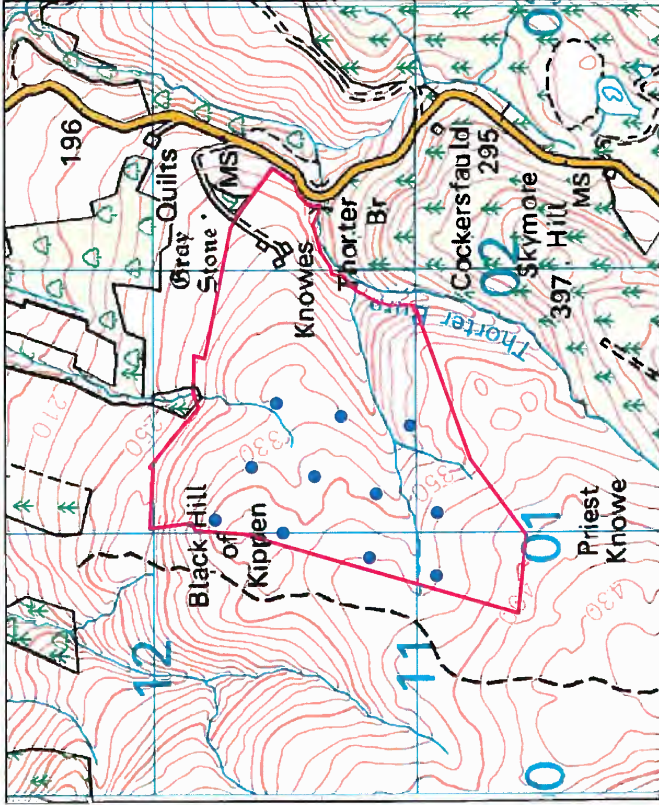
Scale: 1:20,000 Checked by: AF
Drawn by: AE Date: 07/04/2014



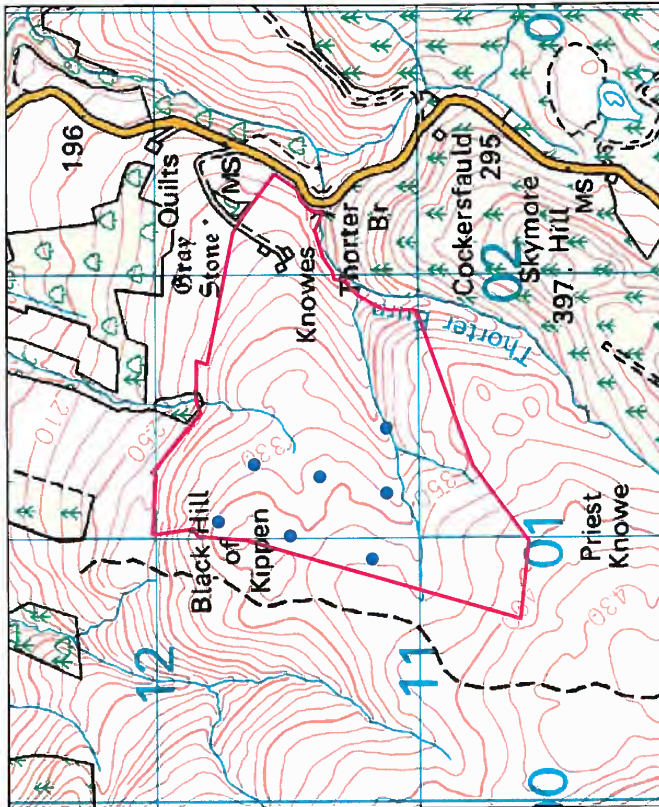
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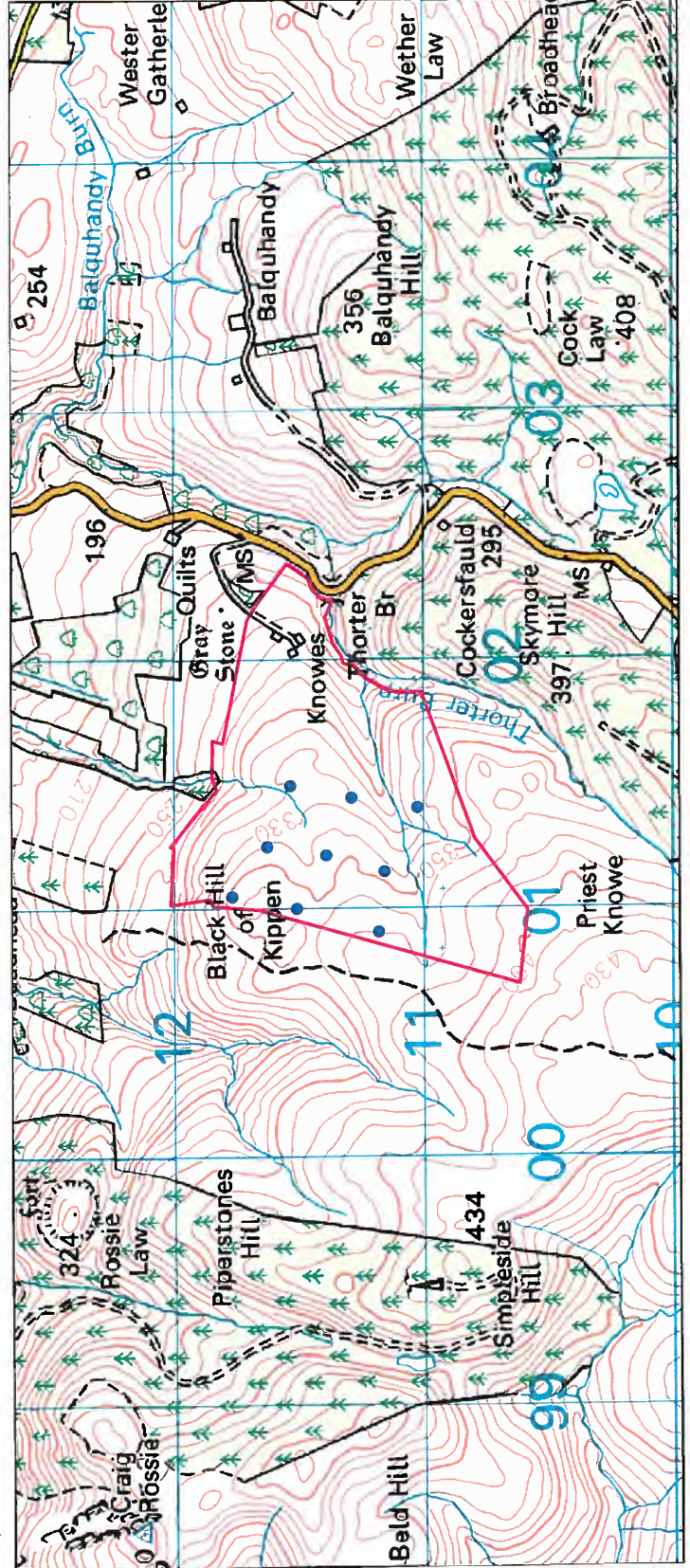


Map 2 - Revised 11 Turbine Layout



Map 1 - Initial 7 Turbine Scoping Layout

Map 3 - Latest 9 Turbine Layout



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FIGURE 1.5

National designations within
25km of Knowes

Scale: 1:180,000 Checked by: AF
Drawn by: DT Date: 07/04/2014

Key:

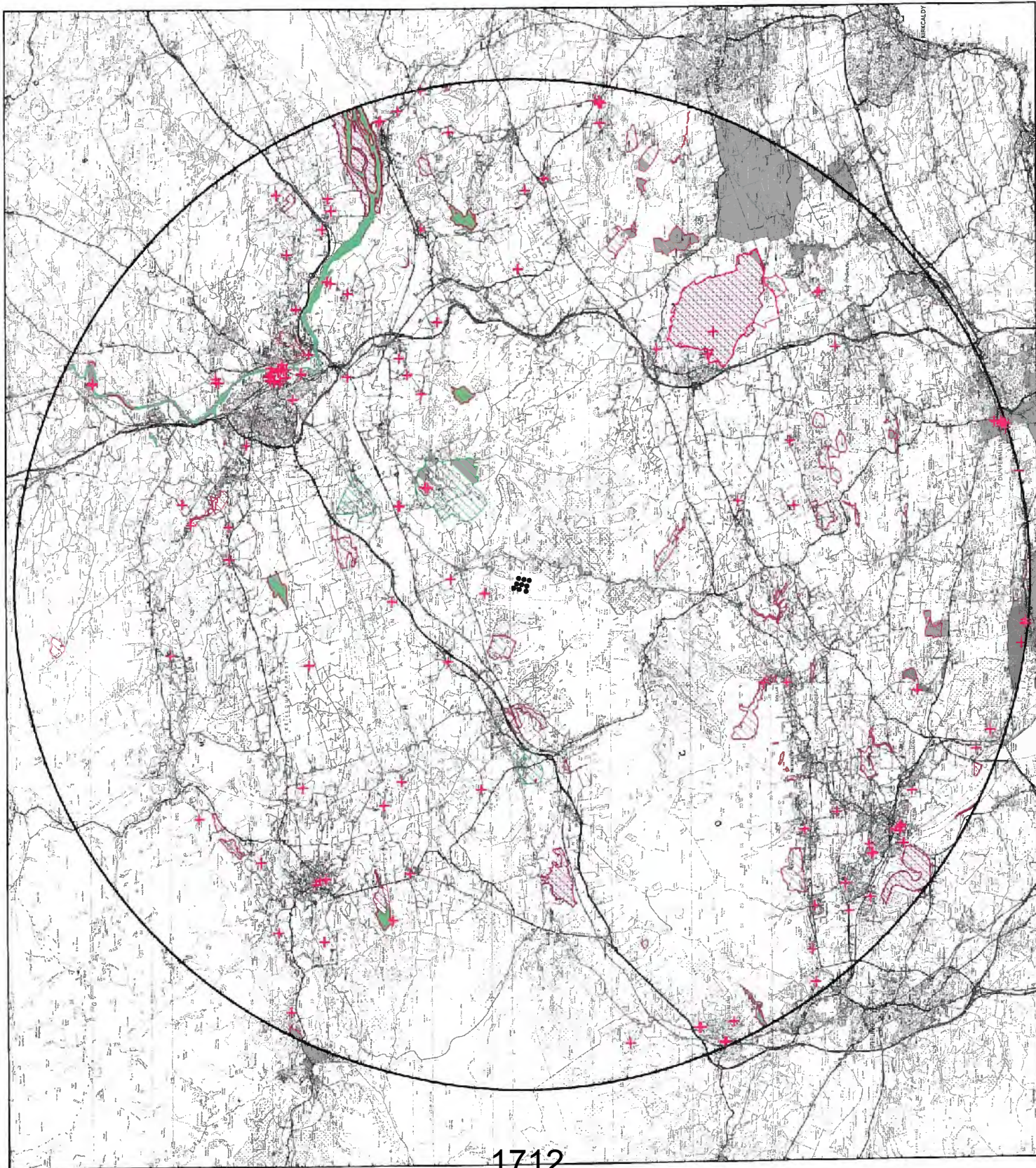
- Knowes Turbines
- Category A listed buildings
- 25km study area
- National Nature Reserve
- Site of Special Scientific Interest
- RAMSAR site
- Special Protection Area
- National Scenic Area
- Special Area of Conservation
- Gardens and Designed Landscapes
- Ancient and Long-established Woodland



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FIGURE 3.1

Scottish National Heritage map of
Natural Heritage Sensitivity

Scale: 1:2,100,000 Checked by: AF
Drawn by: DT Date: 04/04/2014

Key:

• Knowes Turbines

Low Sensitivity

Low-Medium Sensitivity

Medium Sensitivity

Medium-High Sensitivity

High Sensitivity

Kilometers
0 12.5 25 50 75 100 125

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NORTH

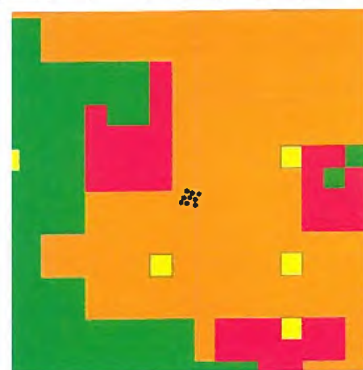
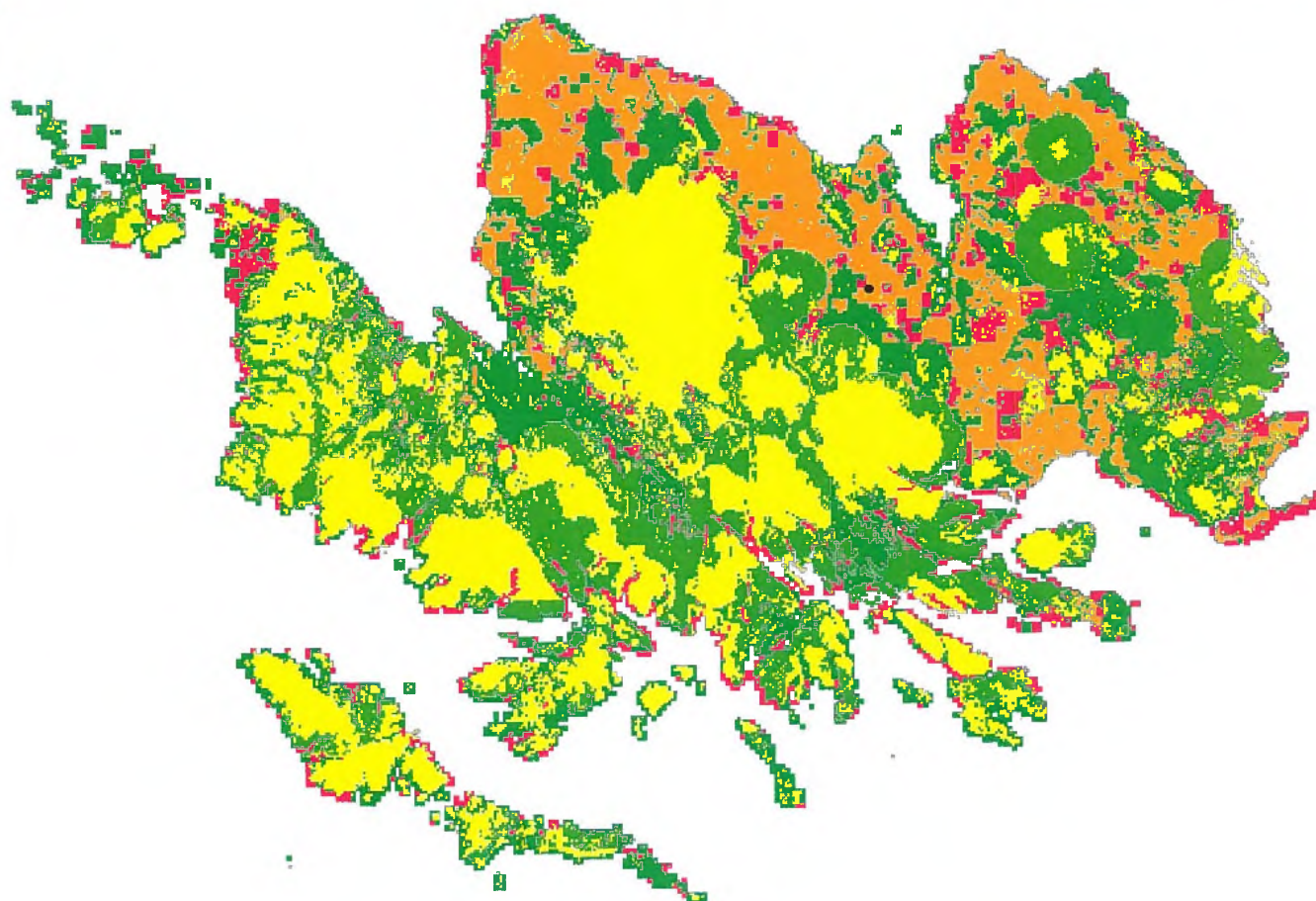
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FIGURE 3.2

Landscape character Areas (SNH)

Scale: 1:200,000

Drawn by: DT

Checked by: AF

Date: 05/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- Broad Valley Lowland
- Coastal Braes
- Coastal Flats
- Coastal Hills
- Coastal Terraces
- Dolerite Hills
- Firth Lowlands
- Forested Moorland Hills
- Highland Glens
- Highland Summits and Plateaux
- Igneous Hills
- Inland Loch
- Loch Island
- Lowland Glacial Meltwater Valleys
- Lowland Hill Fringes
- Lowland Hills
- Lowland Hills and Valleys
- Lowland Loch Basin
- Lowland River Basin
- Lowland River Corridors
- Lowland River Valleys
- Lowland Valley Fringes
- Open Moorland Hills
- Open Upland Hills
- Pronounced Volcanic Hills and Craigs
- The Uplands
- Upland Foothills
- Upland Slopes
- Urban

0 3 6 12 18
Kilometers

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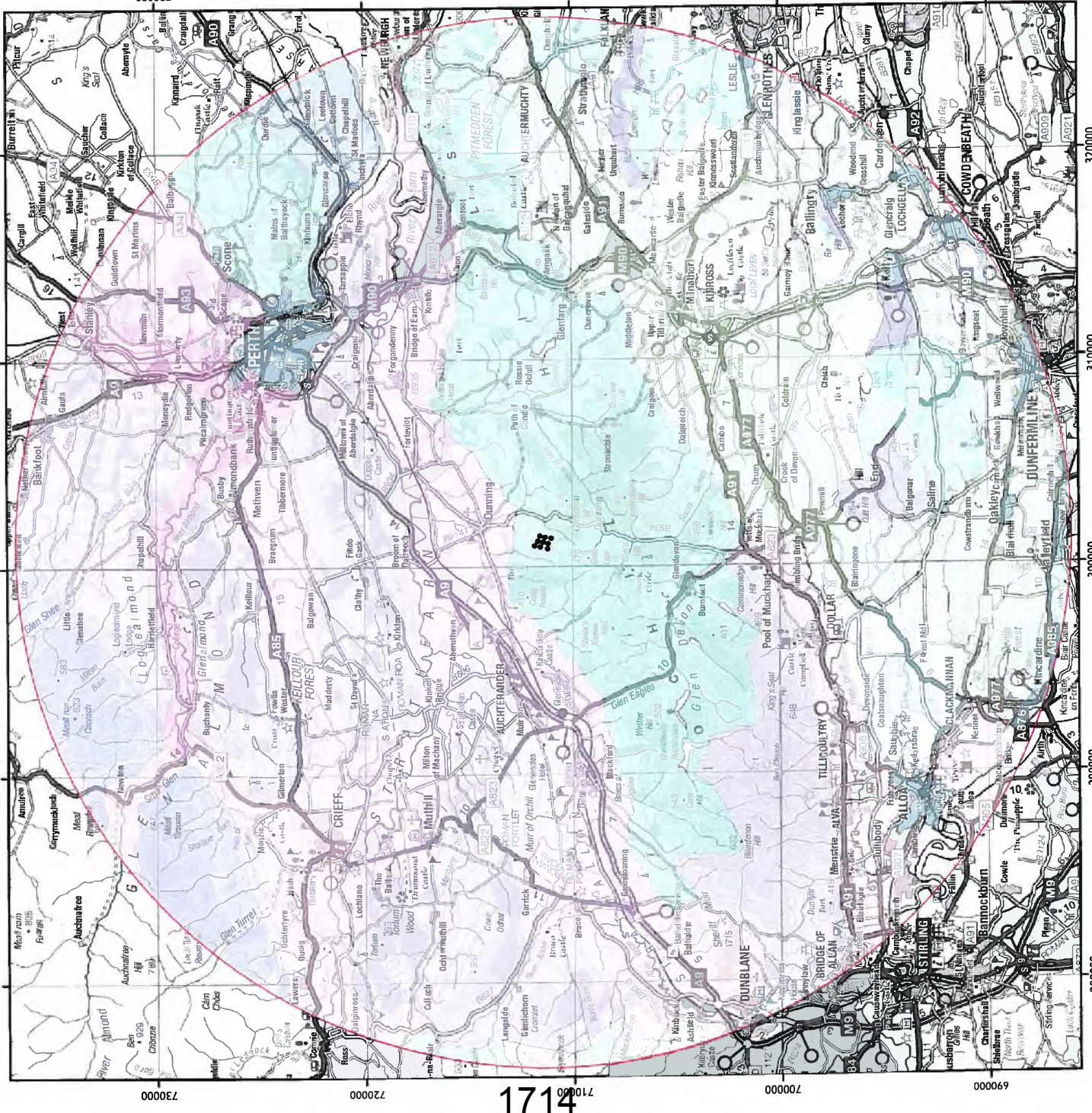
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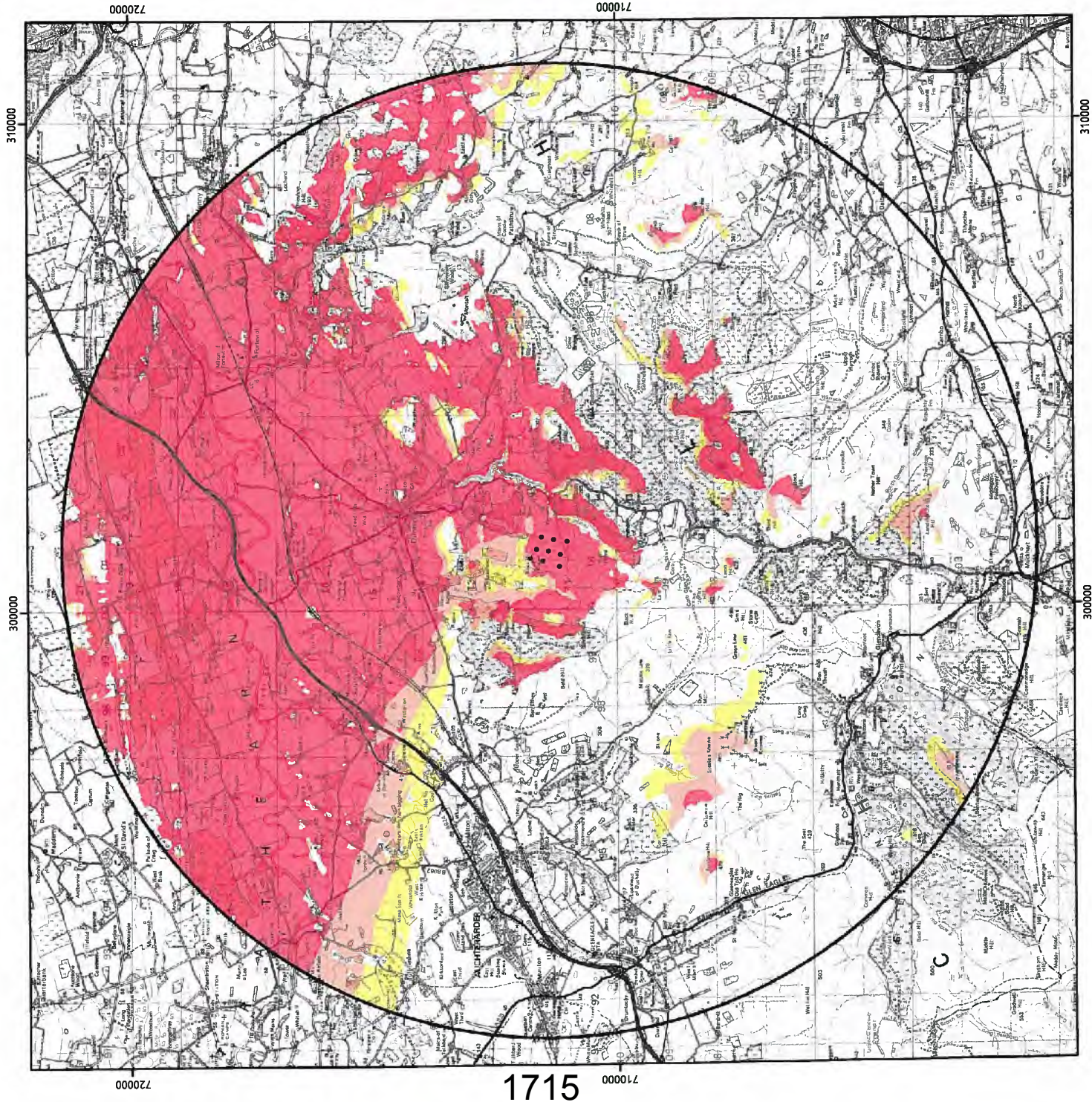
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FIGURE 3.3

10km blade tip height ZTV

Scale: 1:80,000

Drawn by: DT

Checked by: AF

Date: 06/03/2014

Key:

- Knowes Turbines
- 10km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

Kilometers
0 1.25 2.5 5 7.5

ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.

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FIGURE 3.4

10km blade tip height ZTV with significant woodland screening

Scale: 1:80,000

Drawn by: DT

Checked by: AF

Date: 06/03/2014

Key:

- Knowes Turbines
- 10km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

0 1.25 2.5 5 7.5
Kilometers

ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset with additional screening of Principal Woodland Areas derived from Ordnance Survey's Vector Map District data and have been given a height of 25m. The data does not take into account the screening effects of buildings or other vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.
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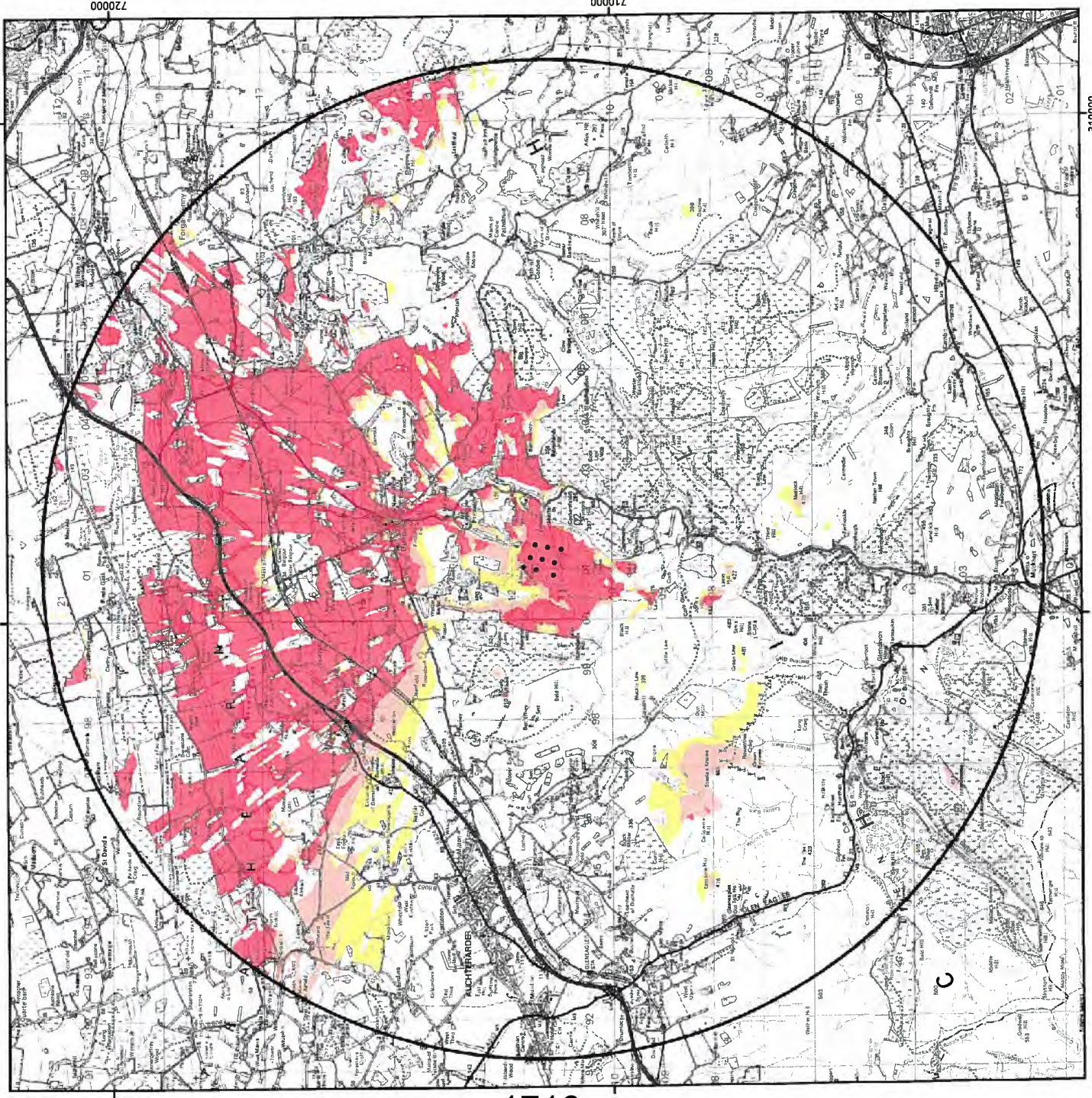
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FIGURE 3.5

Designations within 10km of Knowes

Scale: 1:80,000
 Drawn by: DT
 Checked by: AF
 Date: 08/04/2014

Key:

- Knowes turbines
- 10km Study area
- Conservation Areas
- Gardens and Designed Landscapes



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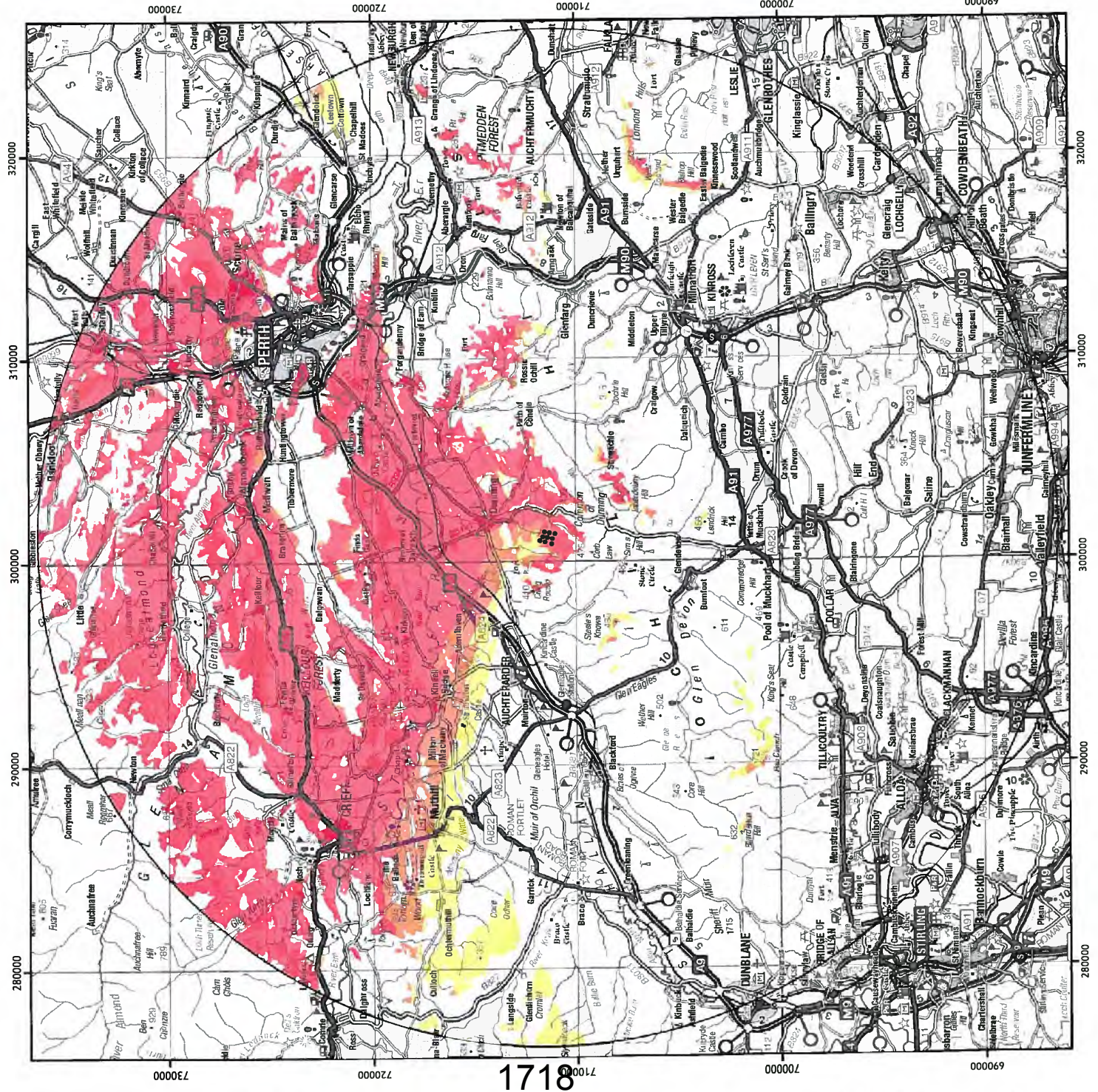
25km ZTV of Knowes to hub height



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FIGURE 3.7

25km ZTV of Knowes to tip height

Scale: 1:190,000

Drawn by: DT

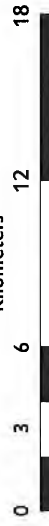
Checked by: AF

Date: 03/04/2014

Key:

- Knowes Turbines
- 25km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

Kilometers



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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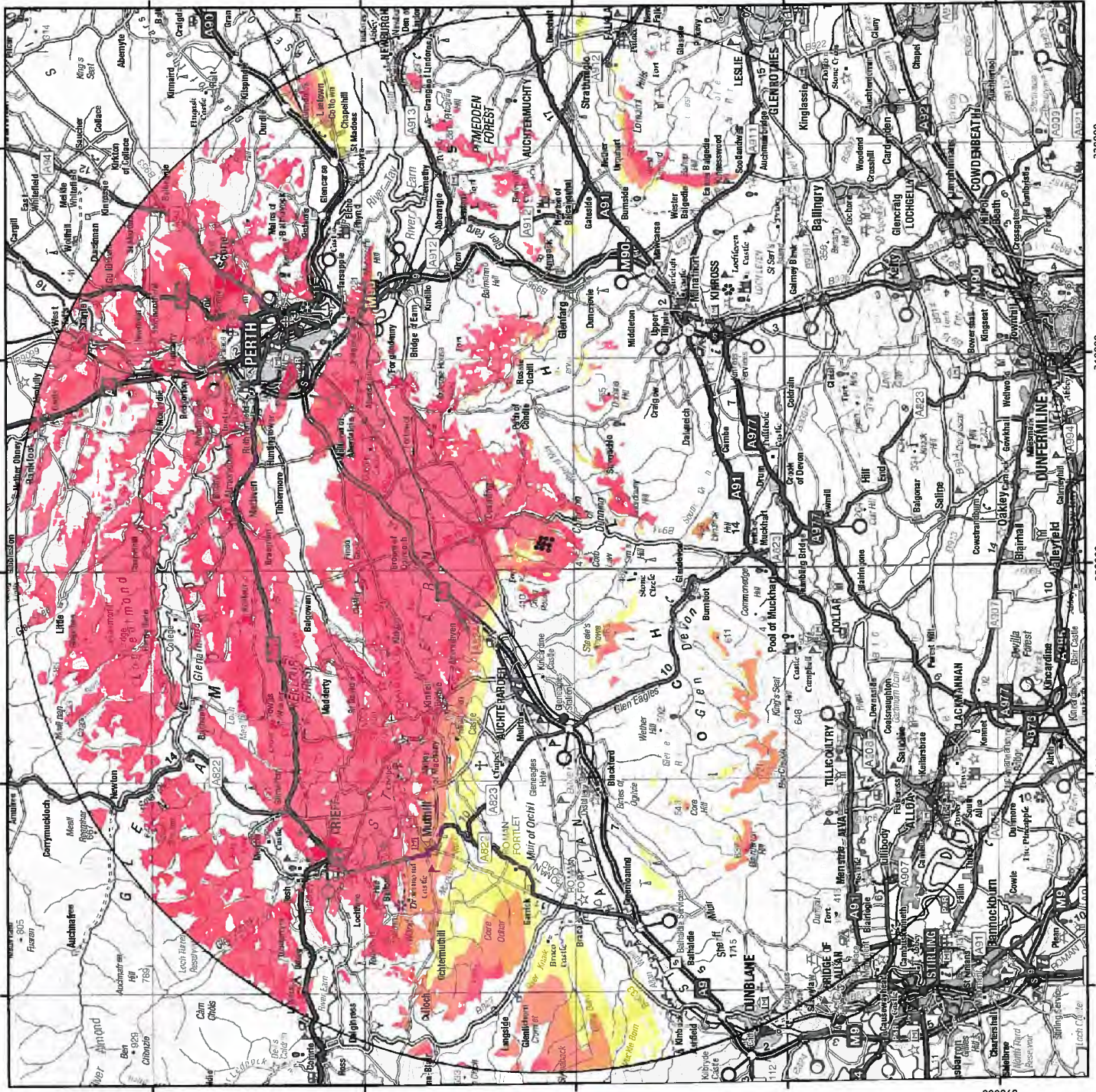
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FIGURE 3.8

ZTV of Knowes Wind Farm to tip height with
Landscape Character Area boundaries

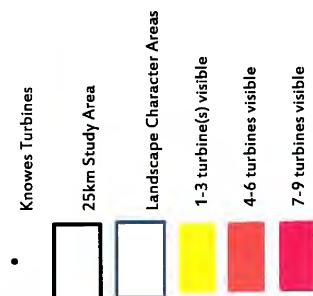
Scale: 1:190,000

Checked by: AF

Drawn by: DT

Date: 06/03/2014

Key:



Kilometers



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.

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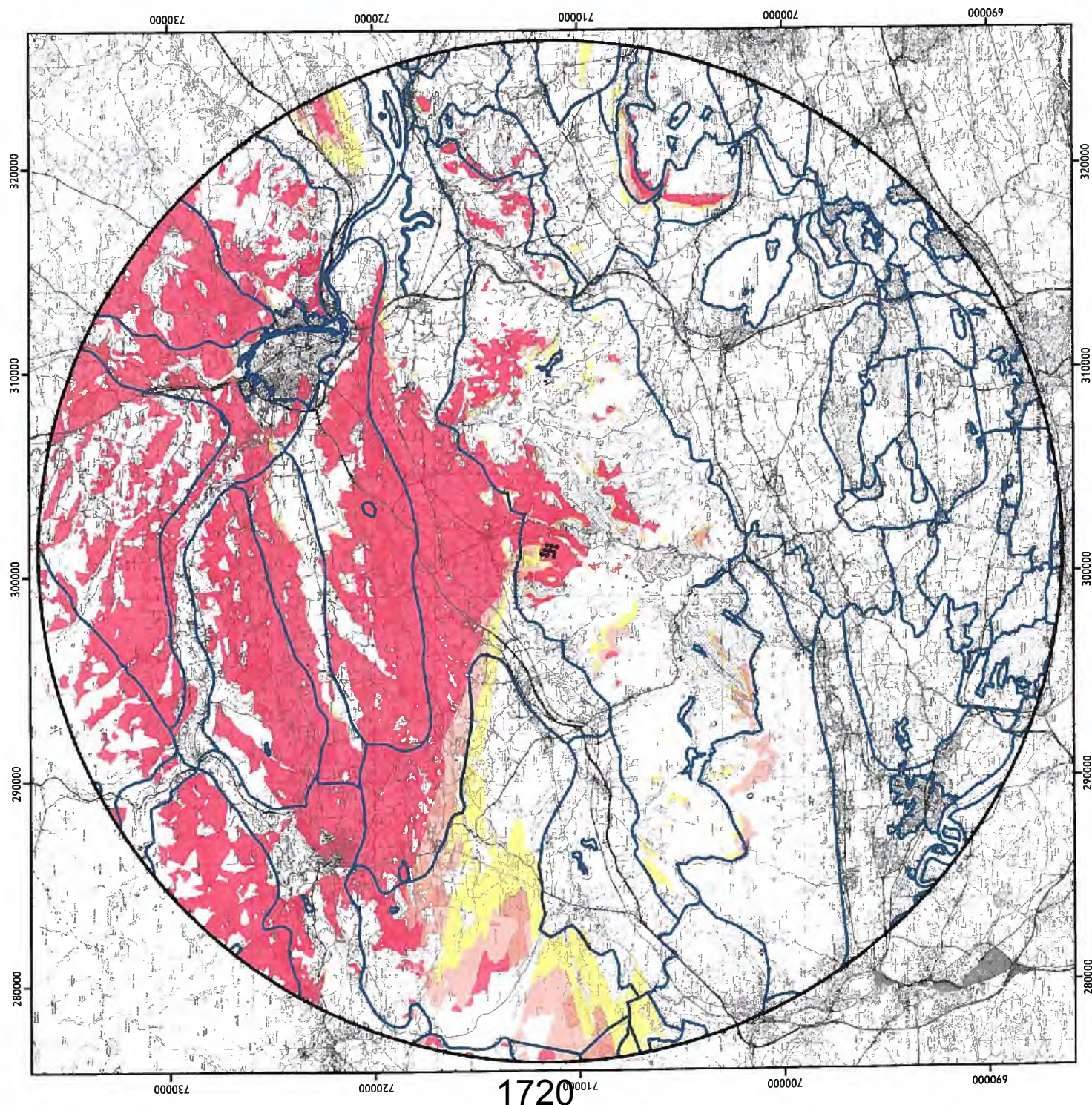
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FIGURE 3.9

25km ZTV of Knowes to tip height - North West

Scale: 1:100,000

Drawn by: DT

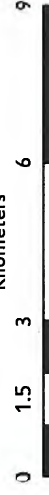
Checked by: AF

Date: 06/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

Kilometers



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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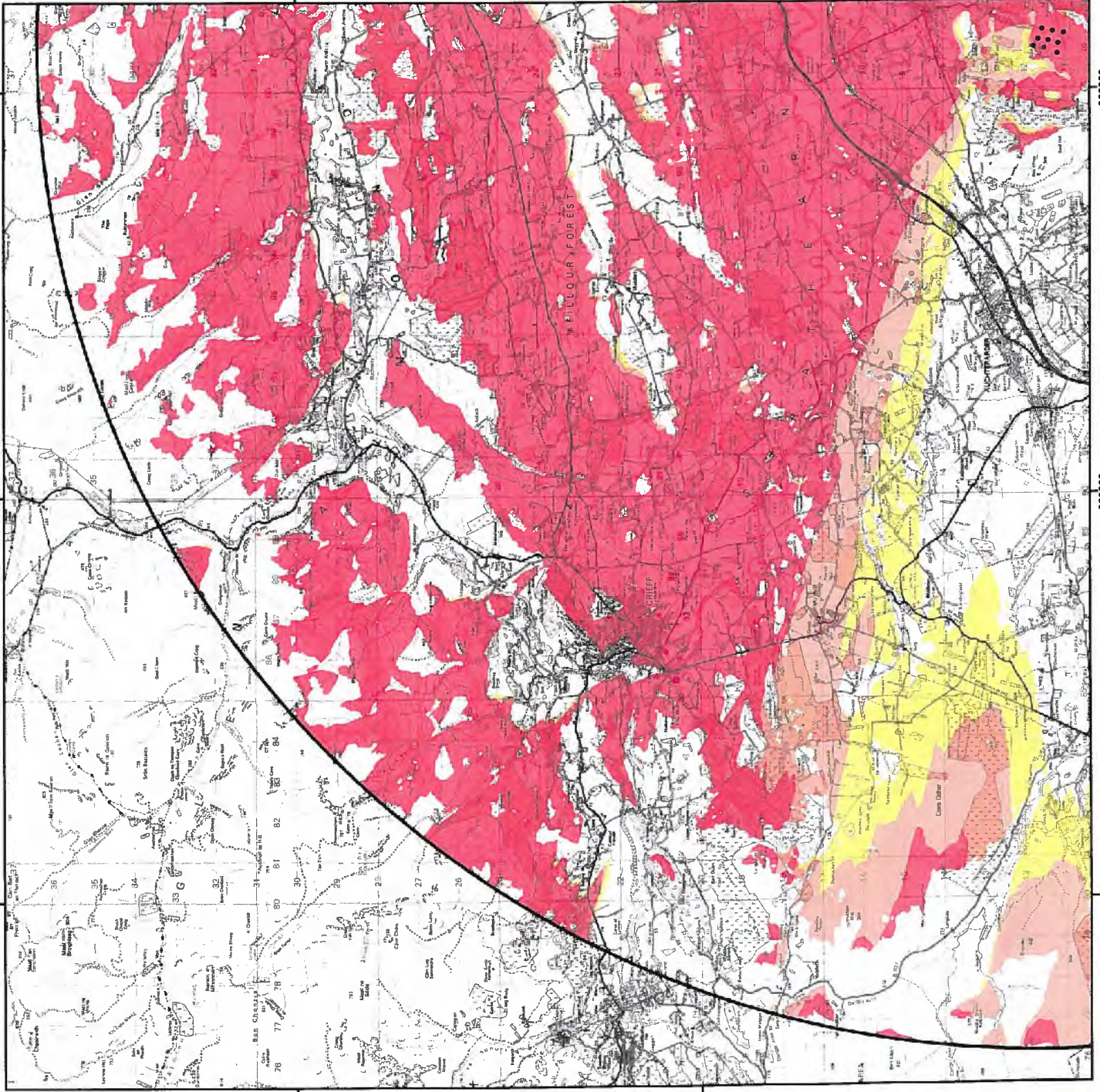
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FIGURE 3.10

25km ZTV of Knowes to tip height - North East

Scale: 1:100,000

Drawn by: DT

Checked by: AF

Date: 06/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.

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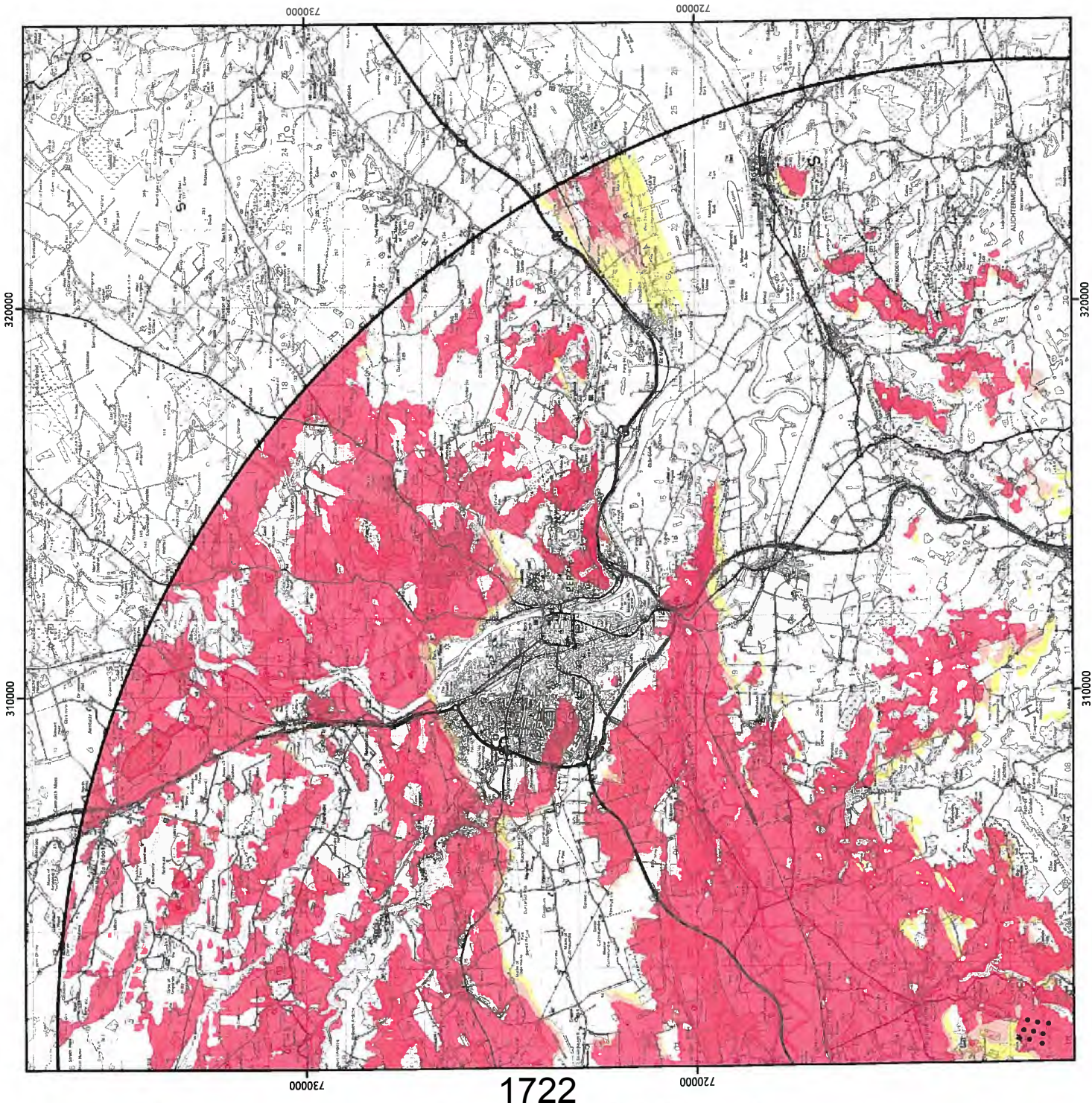
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FIGURE 3.11

25km ZTV of Knowes to tip height - South East

Scale: 1:100,000

Checked by: AF

Drawn by: DT

Date: 06/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

Kilometers



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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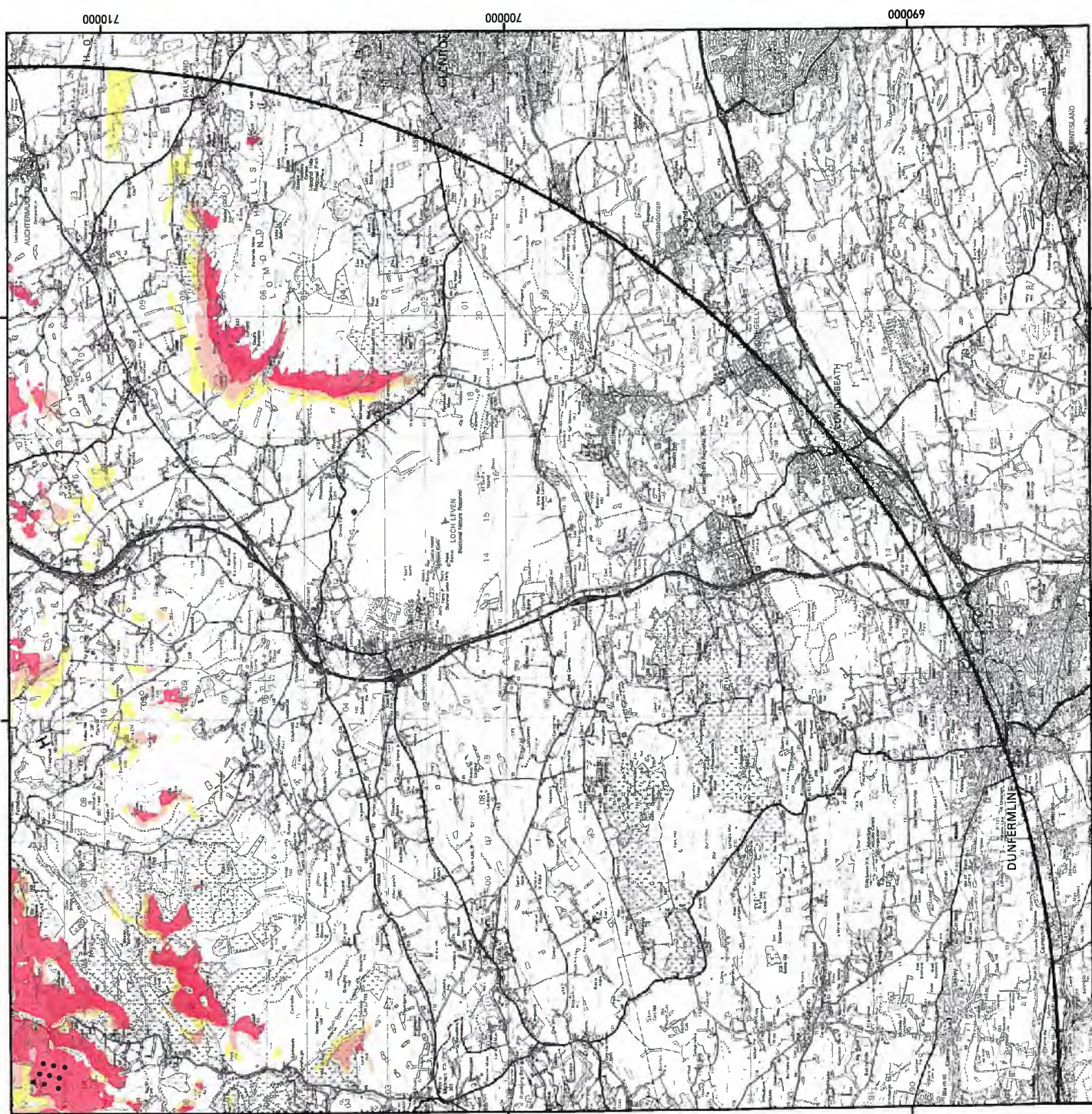
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FIGURE 3.12

25km ZTV of Knowes to tip height - South West

Scale: 1:100,000

Drawn by: DT

Checked by: AF

Date: 06/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- 1-3 turbine(s) visible
- 4-6 turbines visible
- 7-9 turbines visible

0 1.5 3 6 9
Kilometers

ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.

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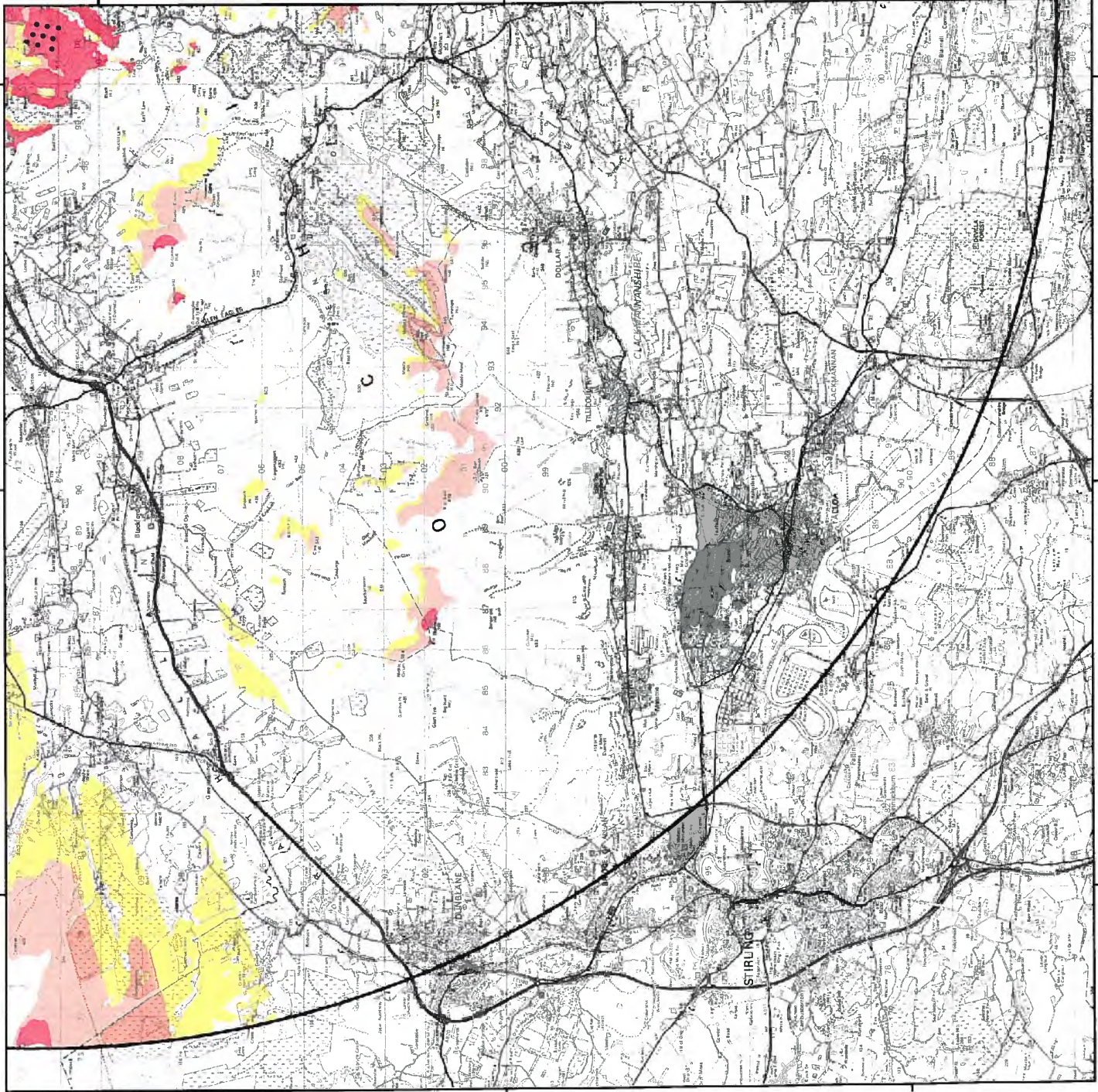
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FIGURE 3.14

Cumulative ZTV showing Knowes with the operational development of Green Knowes

Scale: 1:190,000

Checked by: AF

Drawn by: DT

Date: 11/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- Knowes
- Knowes + Green Knowes

Kilometers
0 3 6 12 18

ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earth's curvature and are based on a view height of 2.0m.

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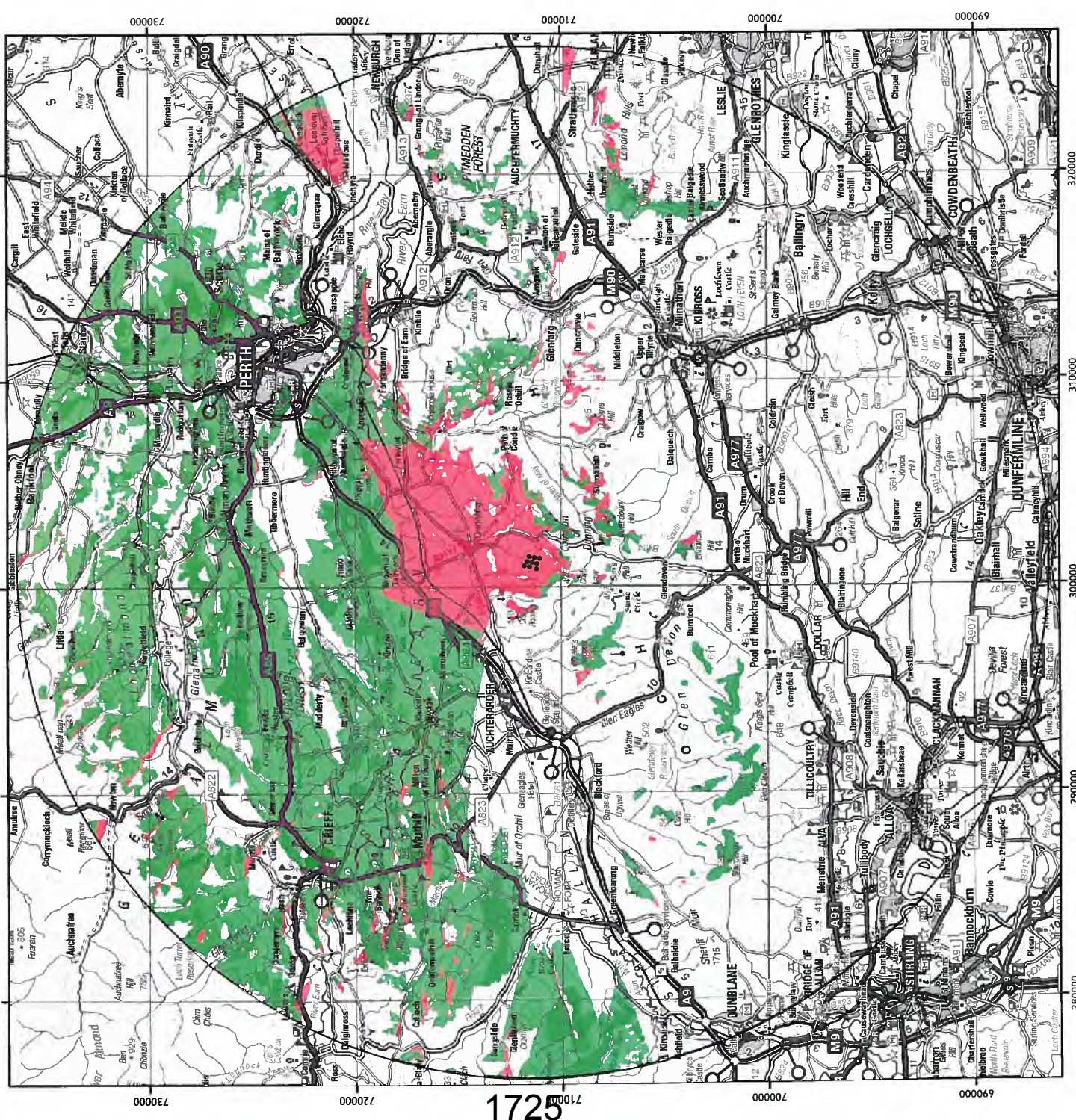
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FIGURE 3.15

Cumulative ZTV showing Knowes with the operational and consented developments of Lochelbank and Glenfarg

Scale: 1:190,000

Drawn by: DT

Checked by: AF

Date: 11/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- Knowes
- Knowes + Lochelbank
- Knowes + Glenfarg
- Knowes + Lochelbank + Glenfarg

Kilometers



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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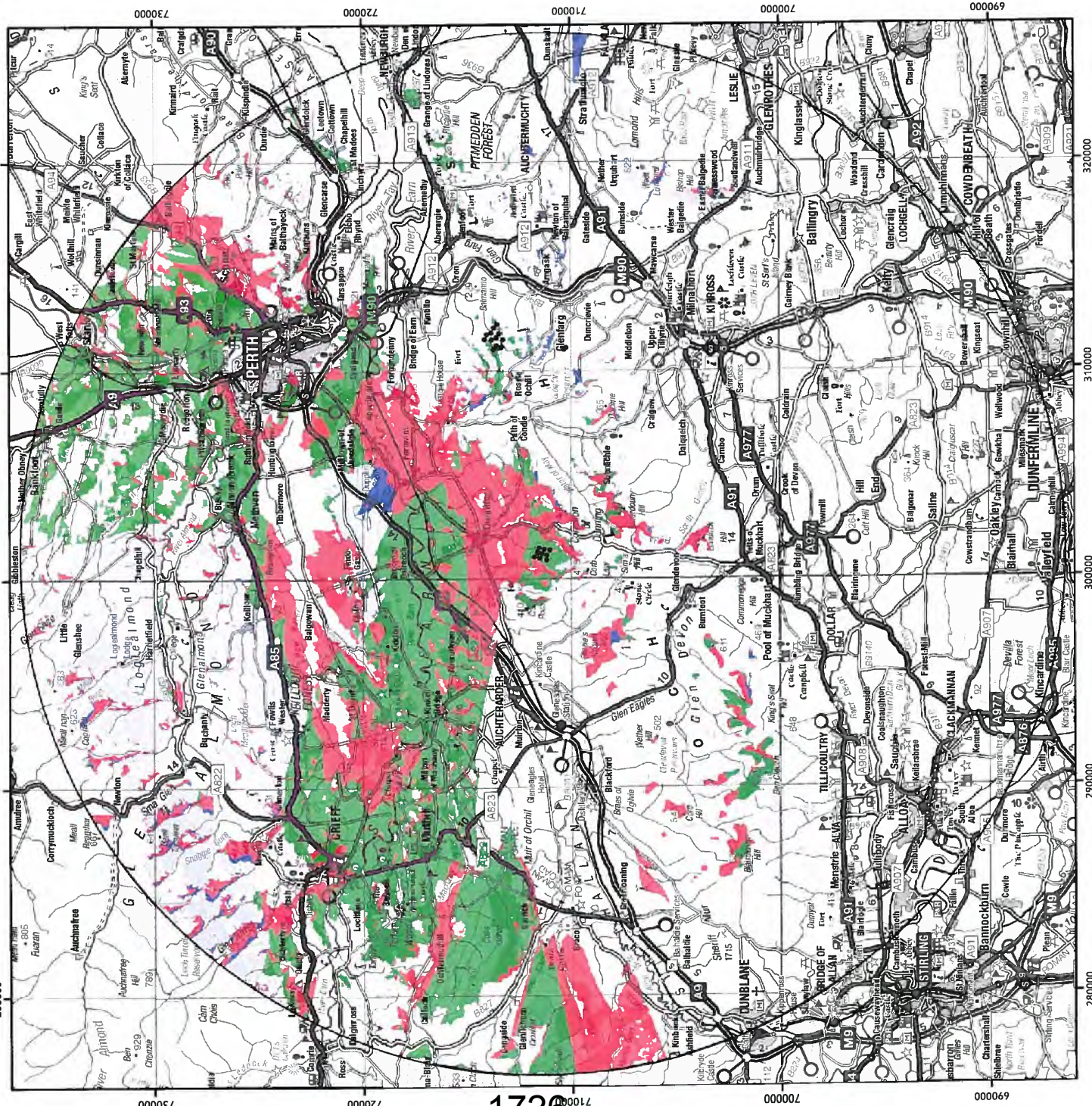
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FIGURE 3.16

Cumulative ZTV showing Knowes with operational and consented developments at Burnfoot Hill, Burnfoot Hill extension and Rhodders

Scale: 1:190,000

Drawn by: DT

Checked by: AF

Date: 27/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- Knowes
- Knowes + Burnfoot Hill
- Knowes + Burnfoot Hill Extension
- Knowes + Rhodders
- Knowes + Burnfoot Hill + Burnfoot Hill Extension
- Knowes + Burnfoot Hill + Rhodders
- Knowes + Burnfoot Hill + Rhodders
- Knowes + Burnfoot Hill + Burnfoot Hill Extension + Rhodders



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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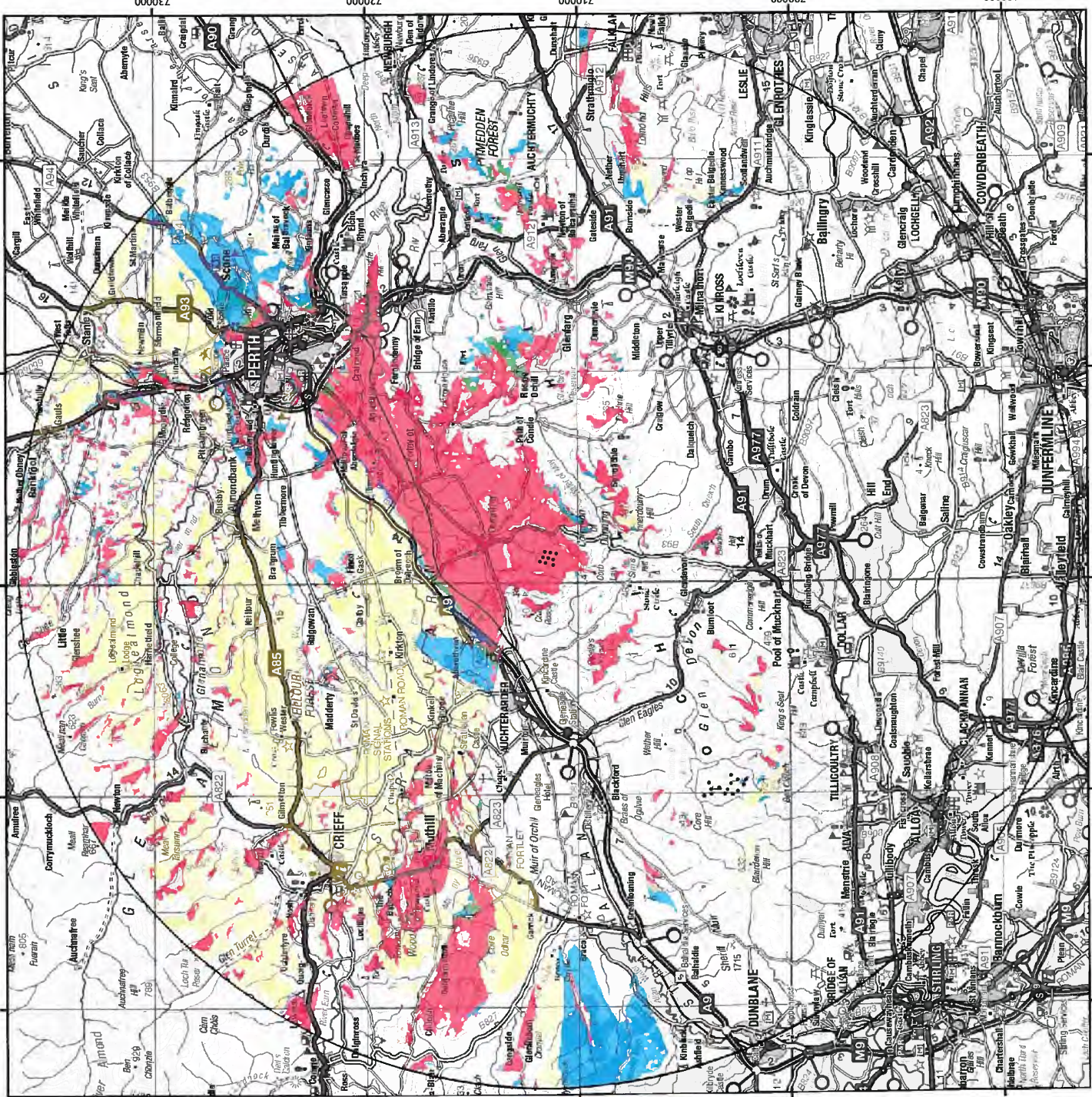
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FIGURE 3.17

Cumulative ZTV showing Knowes with the consented and operational developments at Feddel Farm and Wester Cambushinnie Farm

Scale: 1:190,000

Checked by: AF

Drawn by: DT

Date: 11/03/2014

Key:

- Knowes Turbines
- 25km Study Area
- Knowes
- Knowes + Feddel Farm
- Knowes + Wester Cambushinnie Farm
- Knowes + Feddel Farm + Wester Cambushinnie Farm



ZTV generated using Ordnance Survey's Land-Form Panorama height contour dataset. The data does not take into account the screening effects of buildings or vegetation. Calculations were undertaken taking into account the earths curvature and are based on a view height of 2.0m.

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