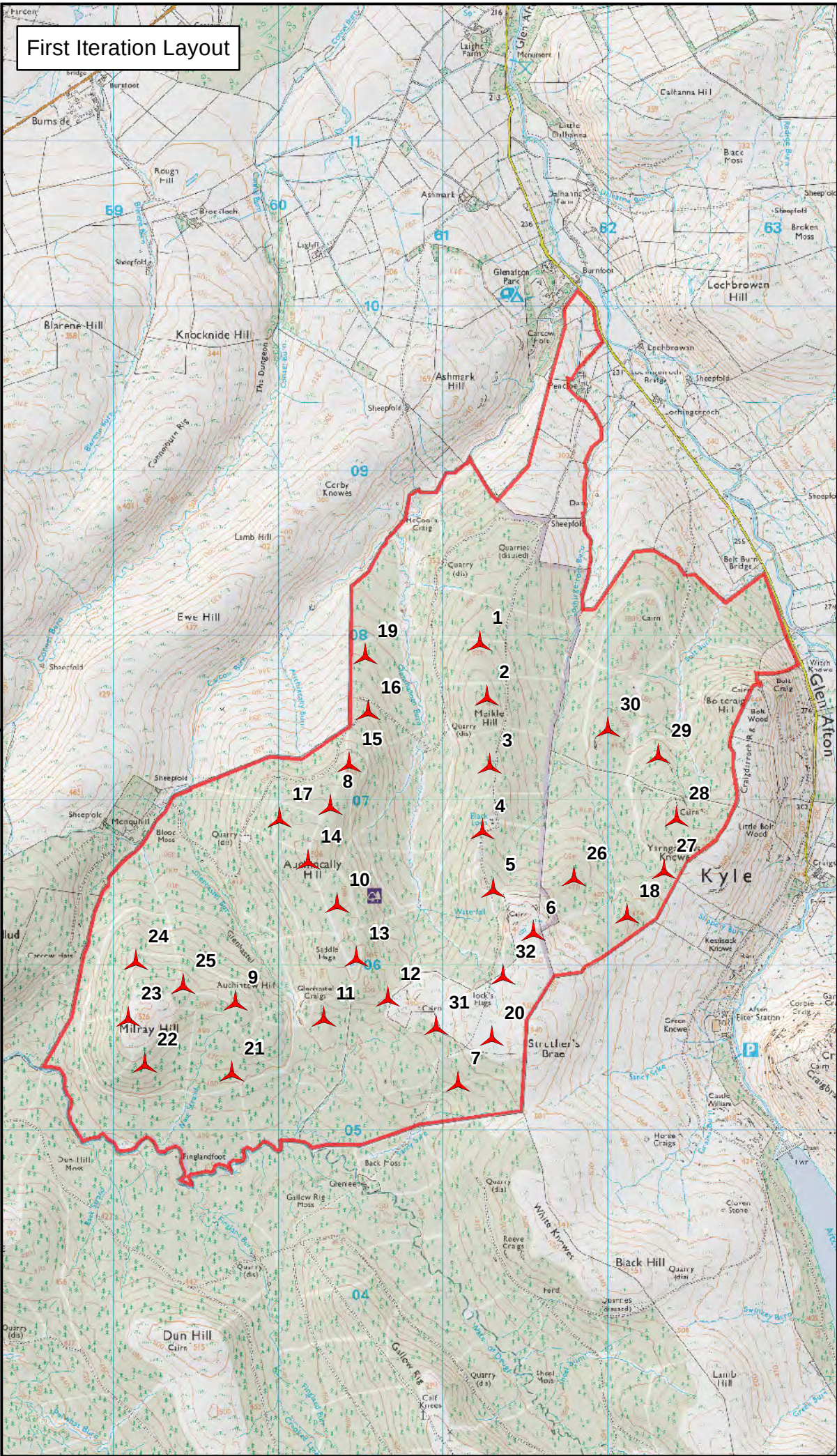
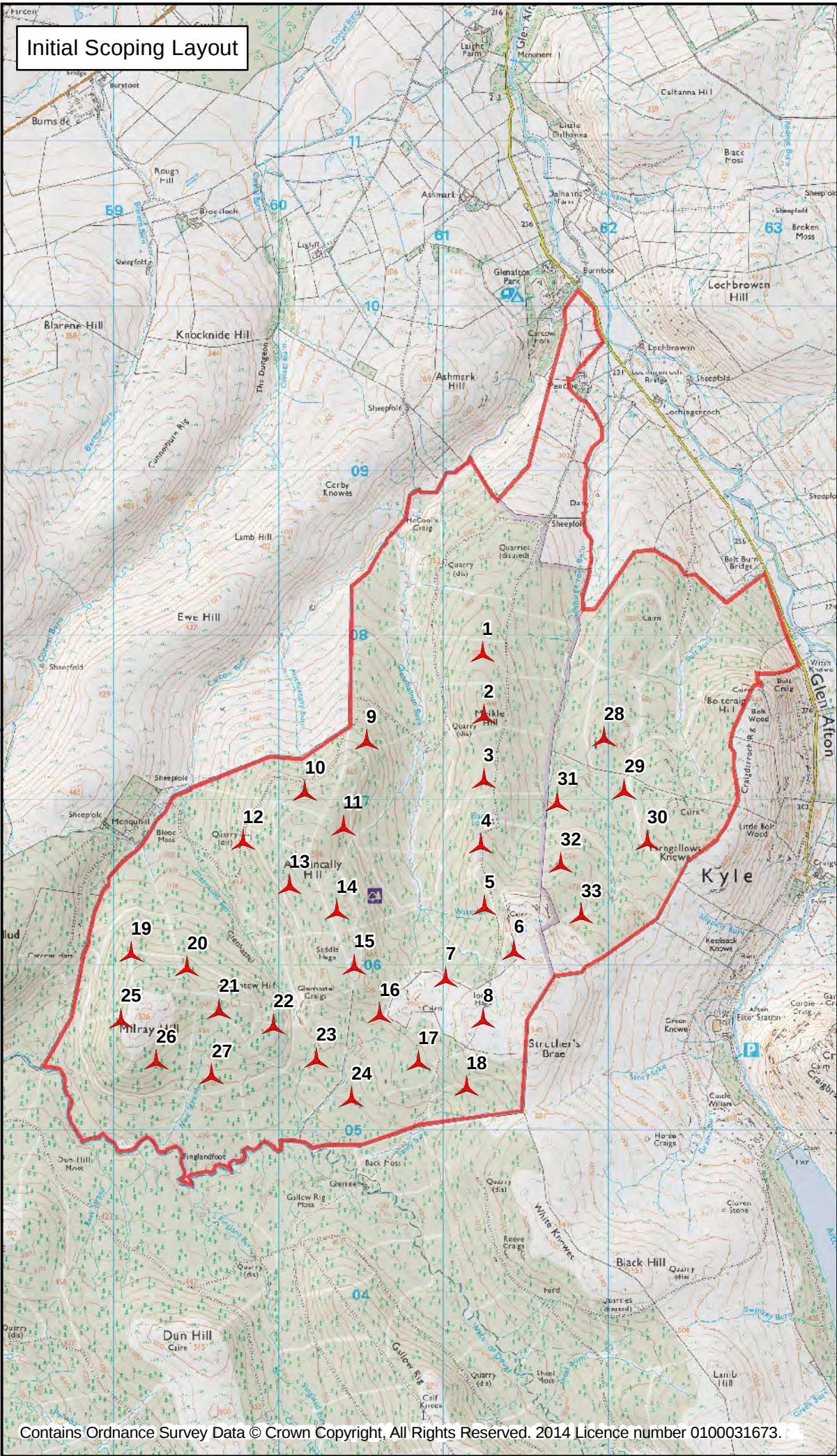




Key:

- Proposed Turbine Location
- Site Boundary

N

0 500 1,000 1,500 2,000 Metres

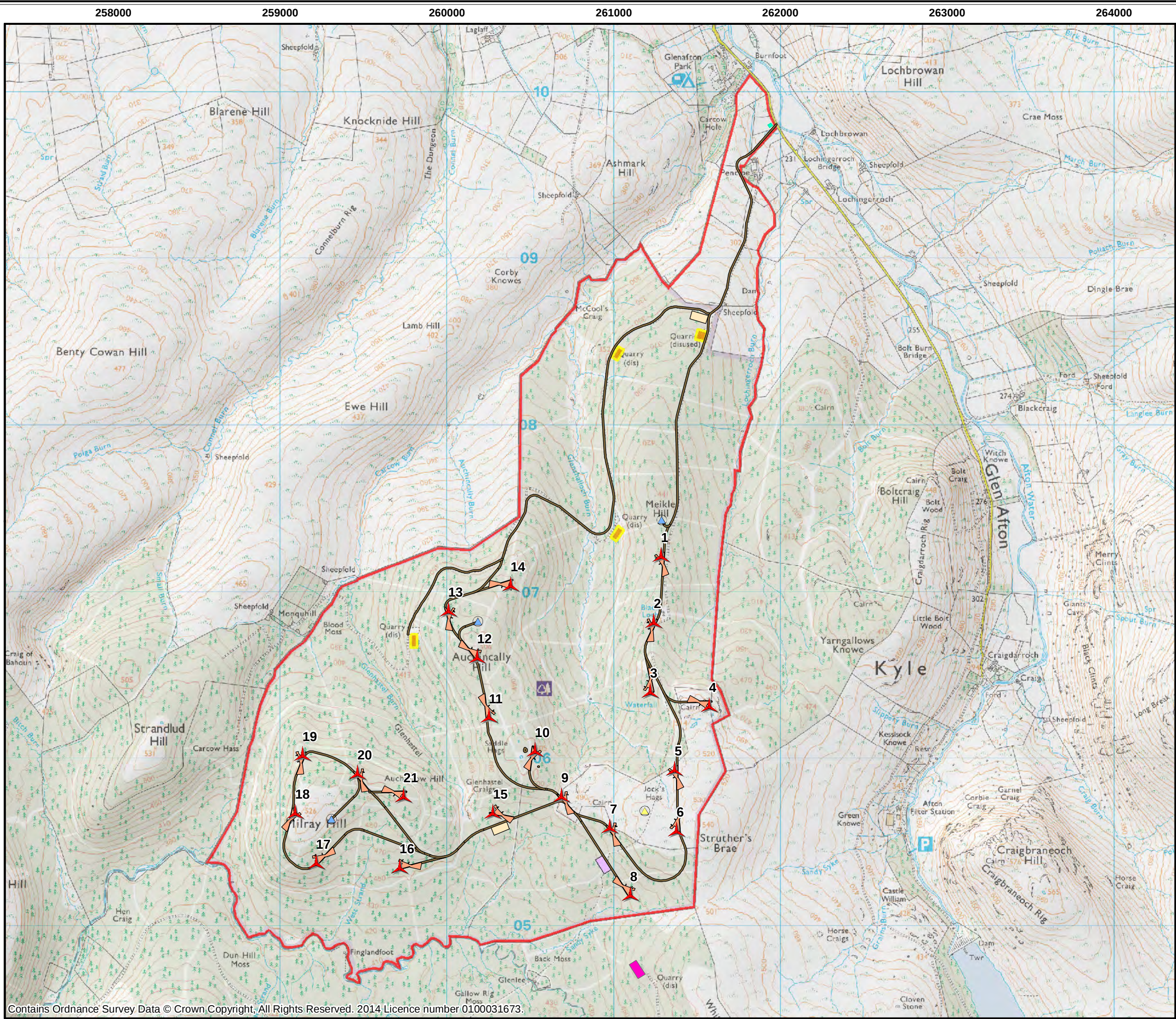
PENCLOE WINDFARM

Revision: C MXD: 001/040

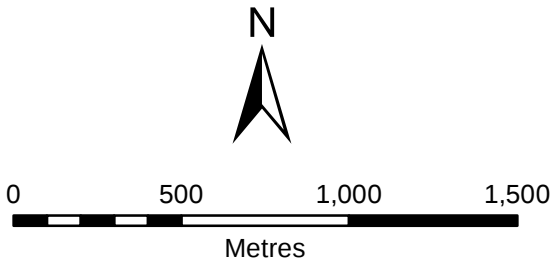
FIGURE 3.1
ALTERNATIVE LAYOUTS

SCALE	PROJECT CODE
1:32,000 @ A3	JE30643
CONTENT	DRAWN
KG	SP
CHECKED	DATE
KG	16/09/2014





- Key:**
- Turbine
 - Existing Anemometry Mast
 - Anemometry Mast
 - Track
 - Site Boundary
 - Site Security Office (Indicative only)
 - Crane Hardstanding
 - Substation
 - Construction Compound
 - Borrow Pit
 - Indicative location of the SPEN Offsite Substation



PENCLOE WINDFARM

REVISION: T MXD: 001/g017

FIGURE 4.1
SITE LAYOUT

SCALE		PROJECT CODE	
1:22,500 @ A3		JE30643	
CONTENT		DRAWN	
KG		SP	
CHECKED		DATE	
KG		23/09/2014	

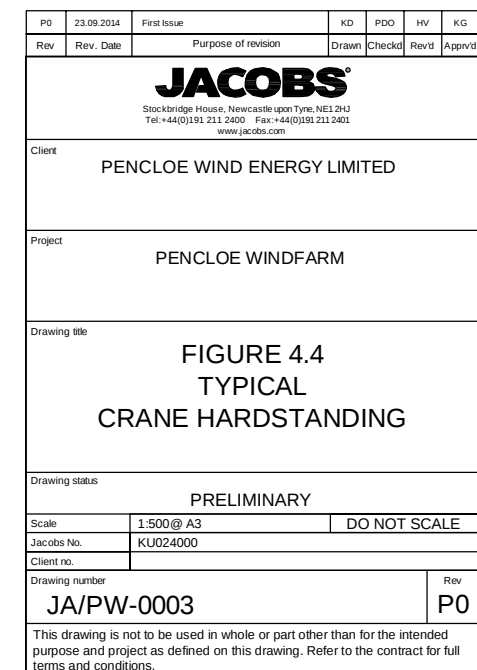


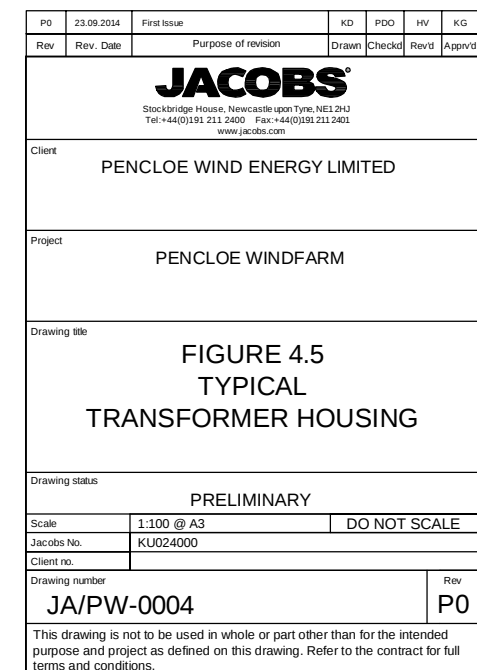


P/D	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Approved
 Stockbridge House, Newcastle-upon Tyne, NE1 2HJ Tel: +44(0)191 211 3400 Fax: +44(0)191 211 2401 www.jacobs.com						
Client						
PENCLOE WIND ENERGY LIMITED						
Project						
PENCLOE WINDFARM						
Drawing title						
FIGURE 4.2 TYPICAL TURBINE						
Drawing status						
PRELIMINARY						
Scale	1:500 @ A3			DO NOT SCALE		
Jacobs No.	KU024000					
Client no.						
Drawing number						Rev
JA/PW-0001						P0



P0	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Revd	Approved
JACOBS® Stockbridge House, Newcastle-upon Tyne, NE1 2HJ Tel: +44(0)191 211 3400 Fax: +44(0)191 211 2401 www.jacobs.com						
Client PENCLOE WIND ENERGY LIMITED						
Project PENCLOE WINDFARM						
Drawing title FIGURE 4.3 TYPICAL TURBINE FOUNDATIONS						
Drawing status PRELIMINARY						
Scale	1:100 @ A3			DO NOT SCALE		
Jacobs No.	KU024000					
Client no.						
Drawing number					Rev	
JA/PW-0002					P0	







P0	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
 Stocktonbridge House, Newcastle upon Tyne, NE1 2HJ Tel: +44(0)191 211 2400 Fax: +44(0)191 211 2401 www.jacobs.com						
Client PENCLOE WIND ENERGY LIMITED						
Project PENCLOE WINDFARM						
Drawing title FIGURE 4.6 TYPICAL ACCESS TRACK CONSTRUCTION						
Drawing status PRELIMINARY						
Scale	1:25 @ A3			DO NOT SCALE		
Jacobs No.	KU024000					
Client no.						
Drawing number						Rev
JA/PW-0005						P0
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.						

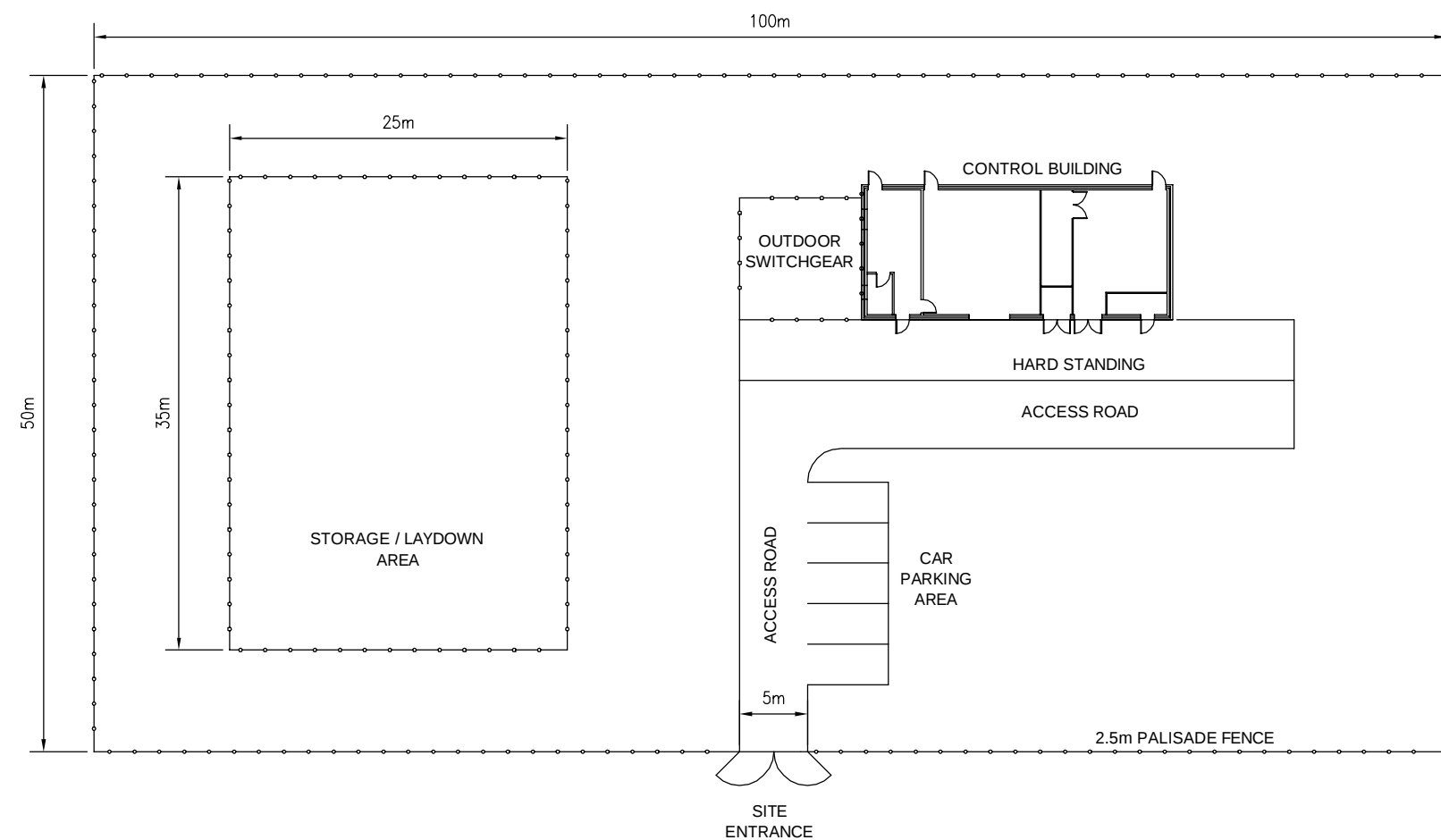
1. Crossing to be designed in accordance with engineering in the water environment good practice - river crossings (2010)
2. The original bed level culvert to be designed and constructed in accordance with SEPA and CIRIA good practice guide and design agreed with SEPA prior to construction



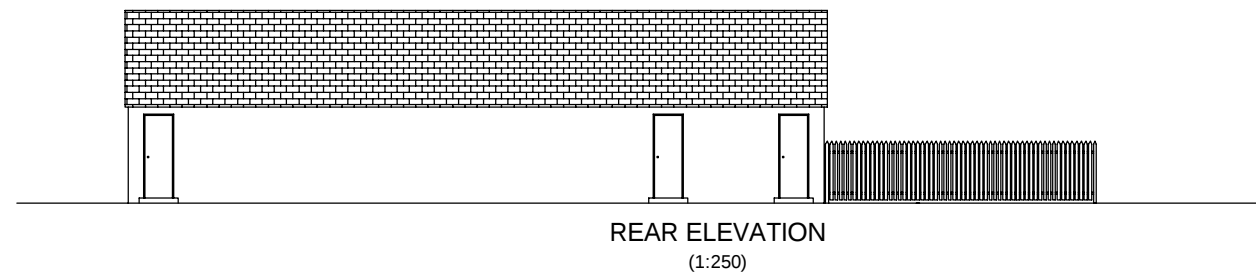
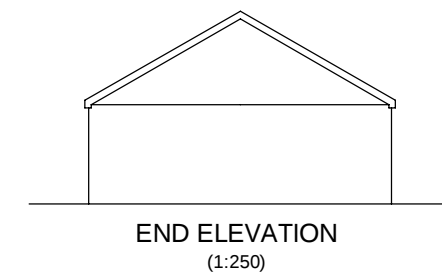
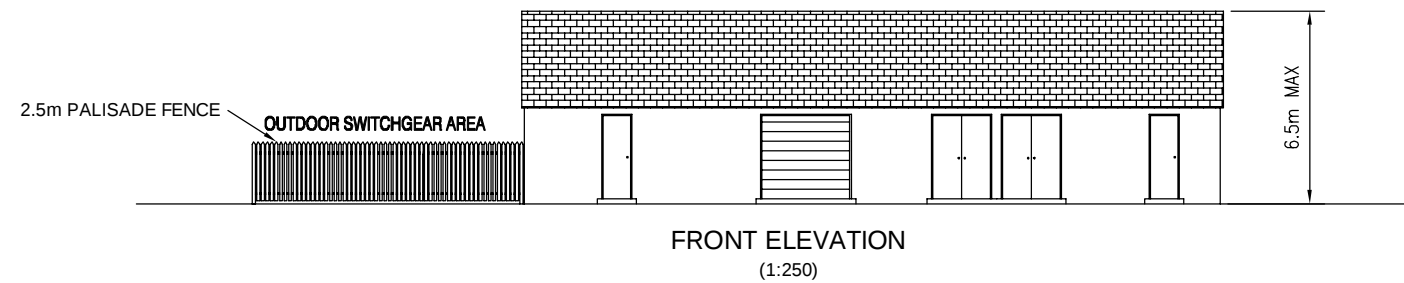
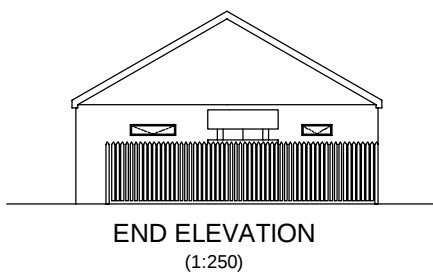
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.



P0	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
 Stockbridge House, Newcastle upon Tyne, NE1 2HJ Tel: +44(0)191 231 2400 Fax: +44(0)191 231 2401 www.jacobs.com						
Client PENCLOE WIND ENERGY LIMITED						
Project PENCLOE WINDFARM						
Drawing title FIGURE 4.8 TYPICAL ANEMOMETRY MAST						
Drawing status PRELIMINARY						
Scale	1:500 @ A3		DO NOT SCALE			
Jacobs No.	KU024000					
Client no.						
Drawing number						Rev
JA/PW-0007						P0
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.						



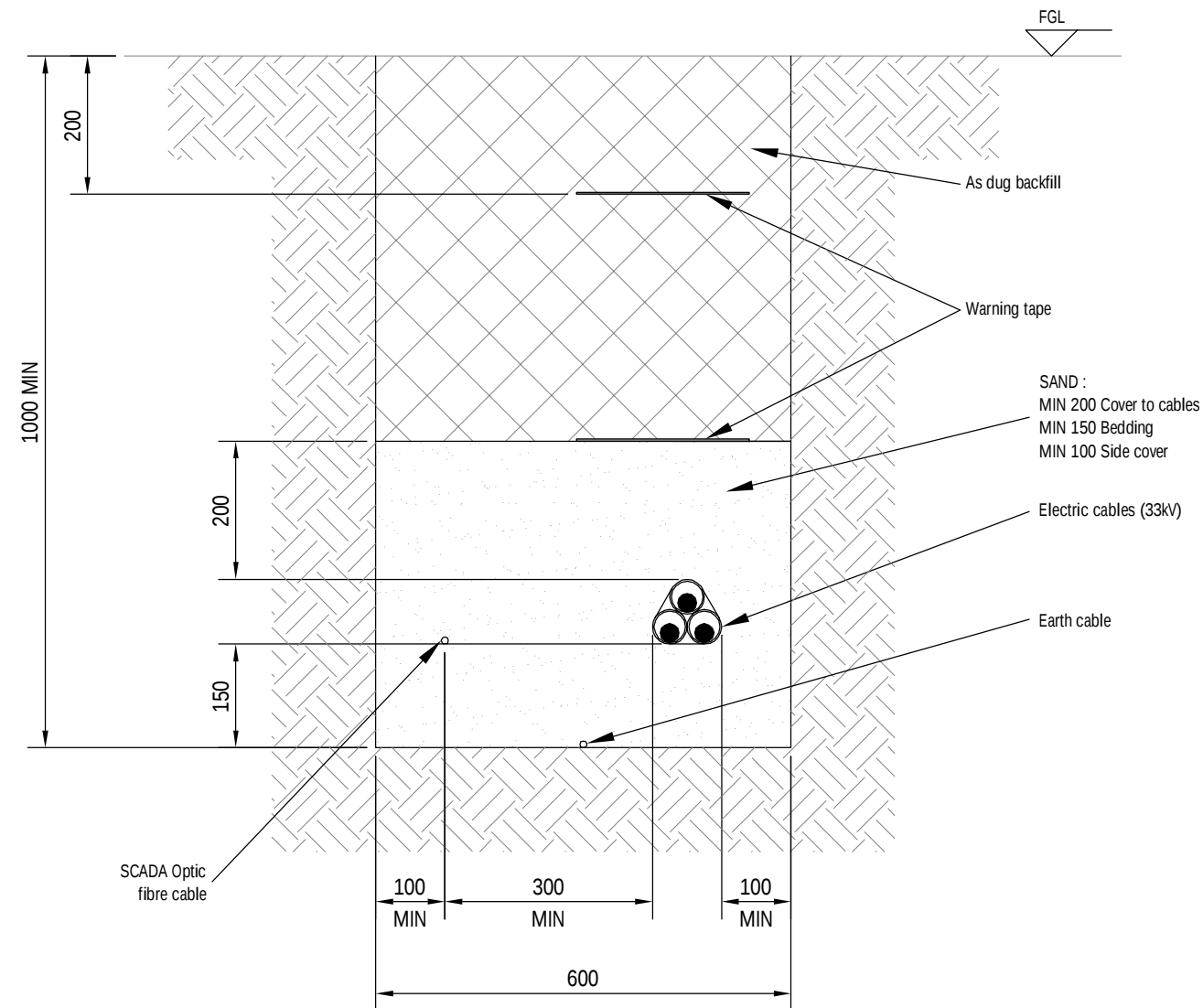
PJ	23.09.2014	First Issue	KD	PDO	HY	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Approved
 Stockbridge House, Newcastle upon Tyne, NE1 2HJ Tel: +44(0)191 231 2400 Fax: +44(0)191 231 2401 www.jacobs.com						
Client PENCLOE WIND ENERGY LIMITED						
Project PENCLOE WINDFARM						
Drawing title FIGURE 4.9 TYPICAL LAYOUT OF THE SUBSTATION COMPOUND						
Drawing status PRELIMINARY						
Scale	1:500 @ A3		DO NOT SCALE			
Jacobs No.	KU024000					
Client no.						
Drawing number JA/PW-0008					Rev P0	



P0	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
 Stockton House, Newcastle upon Tyne, NE1 2HJ Tel: +44(0)191 211 5400 Fax: +44(0)191 211 5401 www.jacobs.com						
Client						
PENCLOE WIND ENERGY LIMITED						
Project						
PENCLOE WINDFARM						
Drawing title						
FIGURE 4.10 TYPICAL CONTROL BUILDING PLAN & ELEVATIONS						
Drawing status						
PRELIMINARY						
Scale	1:250 @ A3			DO NOT SCALE		
Jacobs No.	KU024000					
Client no.						
Drawing number						Rev
JA/PW-0009						P0
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.						

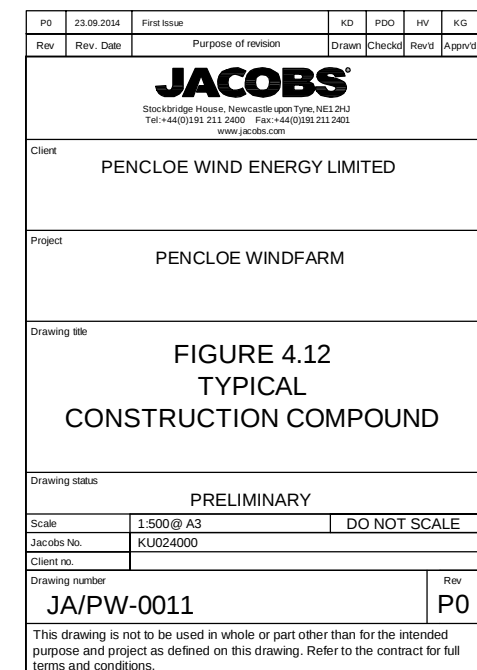
NOTE:

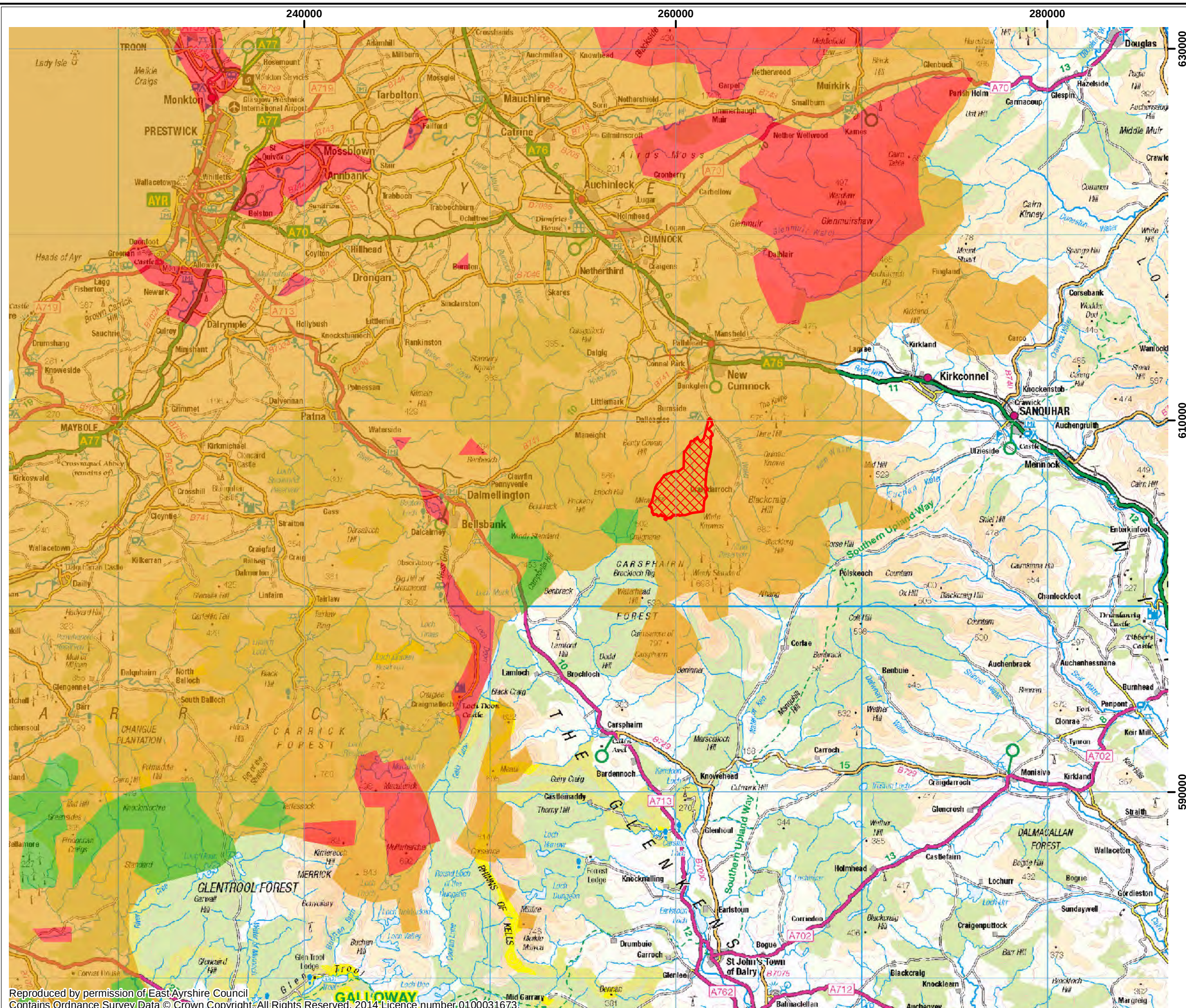
1. All cables in ducts with concrete bed and surround under roads



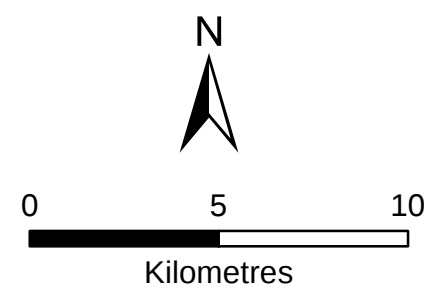
CABLE TRENCH DETAIL

PO	23.09.2014	First Issue	KD	PDO	HV	KG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
 Stockbridge House, Newcastle upon Tyne, NE1 2HJ Tel: +44(0)191 231 2400 Fax: +44(0)203 231 2403 www.jacobs.com						
Client PENCLOE WIND ENERGY LIMITED						
Project PENCLOE WINDFARM						
Drawing title FIGURE 4.11 TYPICAL CABLE TRENCH						
Drawing status PRELIMINARY						
Scale	1:500 @ A3		DO NOT SCALE			
Jacobs No.	KU024000					
Client no.						
Drawing number JA/PW-0010					Rev P0	
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.						





- Key:**
- Site Boundary
 - Areas of Significant Protection
 - Areas of Potential Constraint
 - Broad Areas of Search

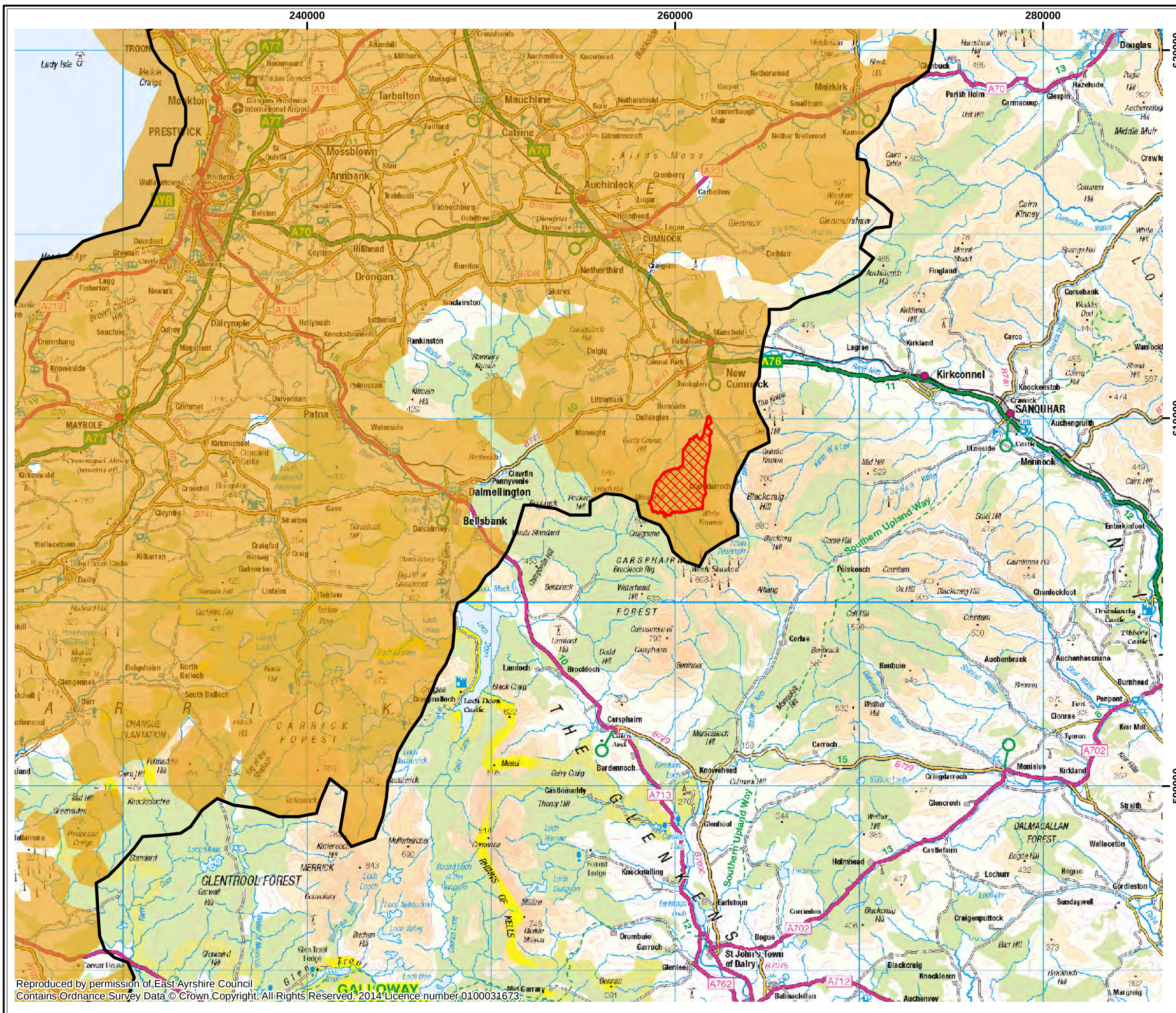


PENCLOE WINDFARM

FIGURE 6.1
AREAS OF POTENTIAL CONSTRAINT
MAP 4 OF THE ADVISORY
ADDENDUM TO THE AYRSHIRE
JOINT STRUCTURE PLAN 2007

SCALE	PROJECT CODE
1:200,000 @ A3	JE30643
CONTENT	DRAWN
EM	SP
CHECKED	DATE
KG	18/09/2014





Key:

-  Site Boundary
-  Ayrshire Area
-  Areas of Potential Constraint



0 5 10
Kilometres

PENCLOE WINDFARM

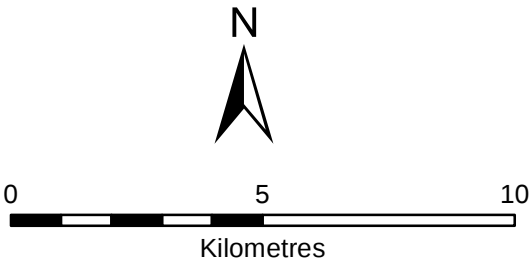
FIGURE 6.2
AREAS OF POTENTIAL CONSTRAINT
ADDENDUM TO AYRSHIRE JOINT
STRUCTURE PLAN TECHNICAL
REPORT TR03/2006

SCALE	PROJECT CODE
1:200,000 @ A3	JE30643
CONTENT	DRAWN
EM	SP
CHECKED	DATE
KG	23/09/2014

JACOBS



- Key:**
- Site Boundary
 - 10km Buffer
 - Special Protection Area
 - Site of Special Scientific Interest (SSSI)



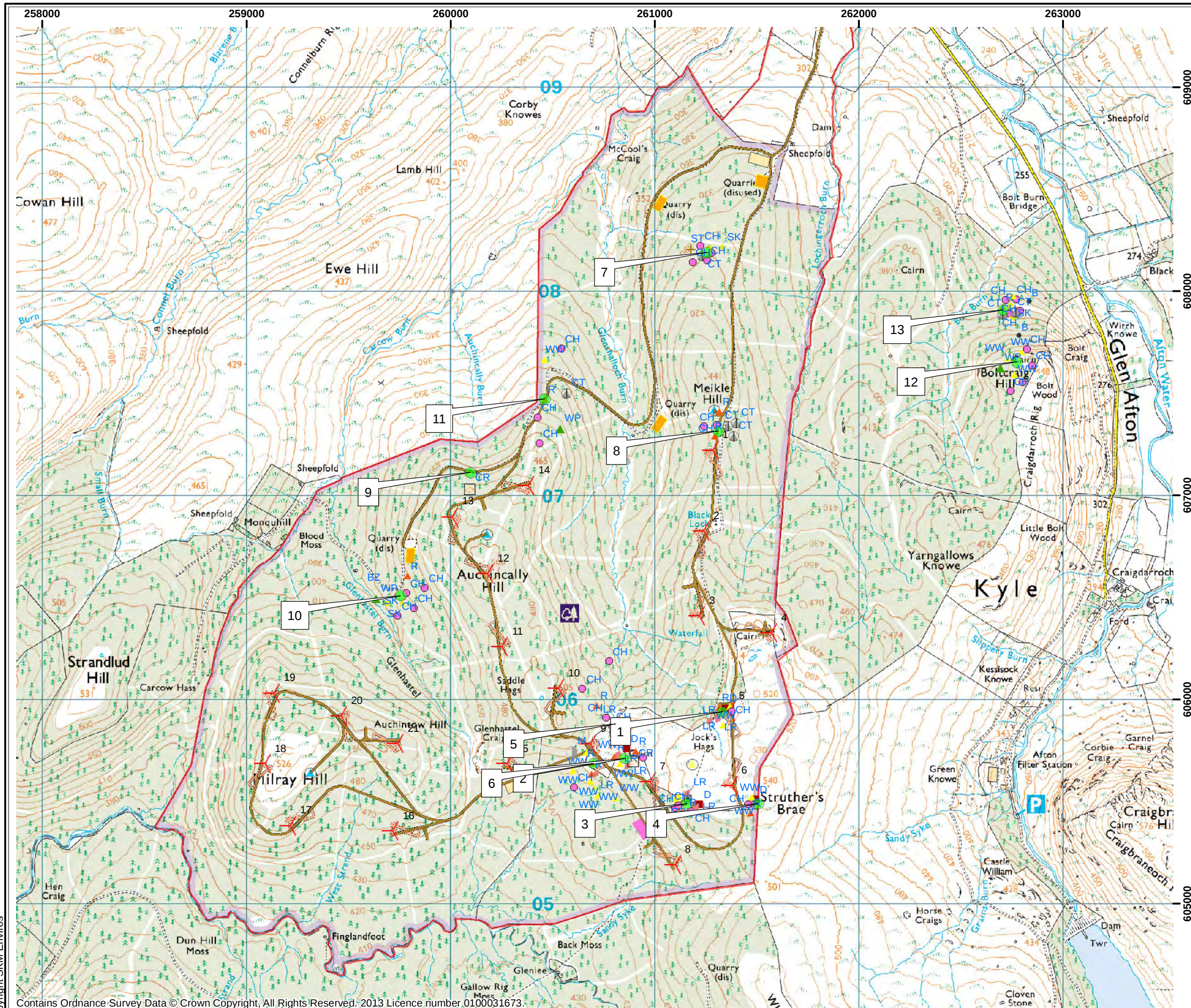
PENCLOE WINDFARM

Revision: A MXD: 011/g042

FIGURE 8.1
STATUTORY NATURE
DESIGNATIONS

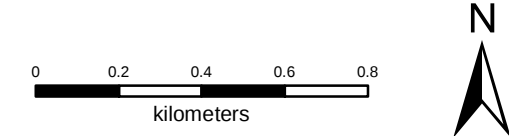
SCALE	PROJECT CODE
1:150,000 @ A3	JE30643
CONTENT	DRAWN
MF	SP
CHECKED	DATE
MF	22/09/2014





- Key: Indicative locations
- Point_Counts
- Species
- Jay
 - Robin
 - Dunnock
 - Coal tit
 - Woodpigeon
 - Swift
 - Mistle thrush
 - Songthrush
 - Blackbird
 - Skylark
 - Meadow pipit
 - Wheatear
 - Willow warbler
 - Wren
 - Chaffinch
 - Lesser redpoll
 - Siskin
 - Common crossbill
 - Point_Count_Locations

- Proposed infrastructure (indicative)
- Wind turbine
 - Met mast
 - New location
 - Existing
 - Site boundary 2014
 - Borrow pit
 - Pencloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

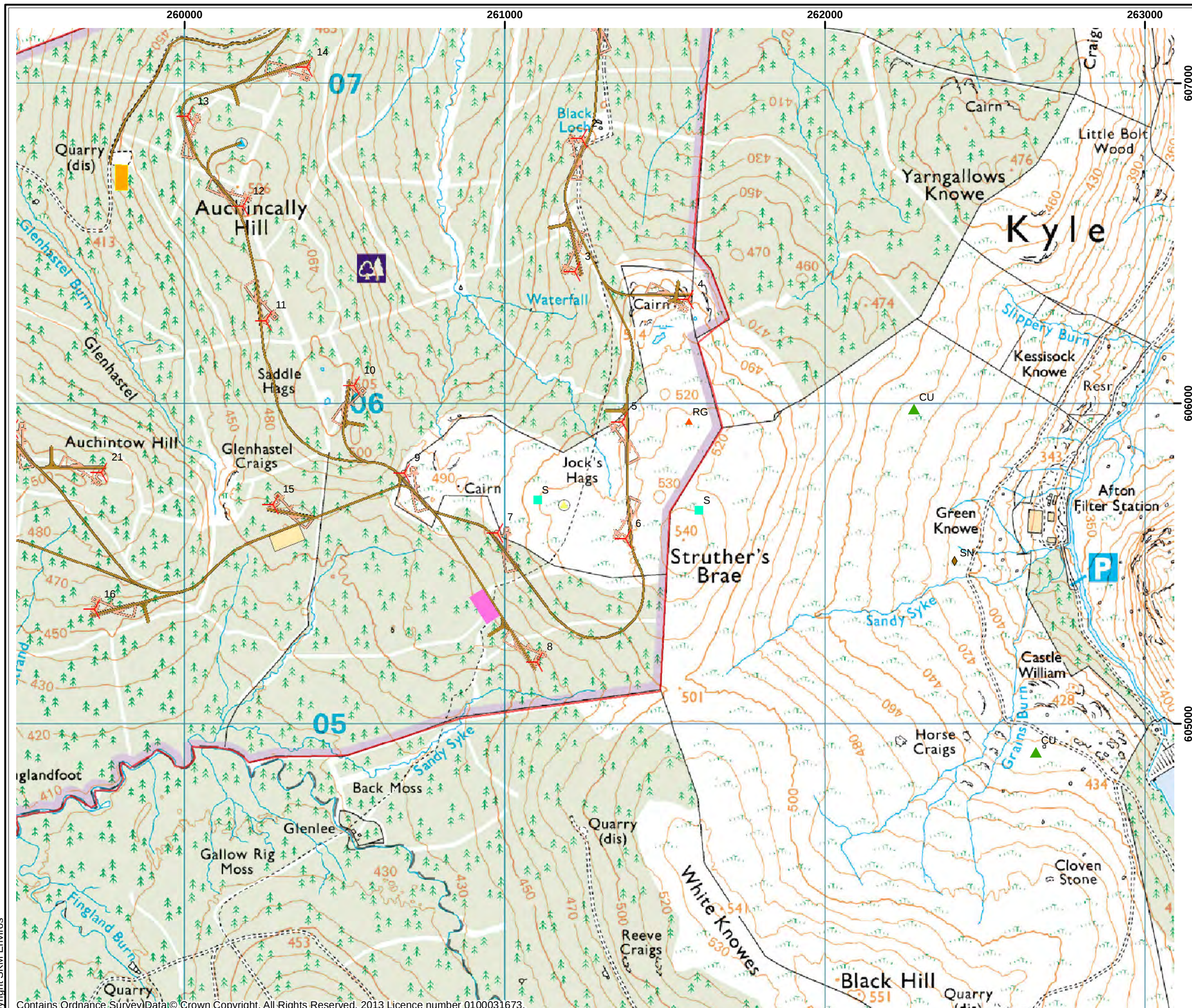


PENCLOE WINDFARM

FIGURE 9.1 BIRD POINT COUNT SURVEYS

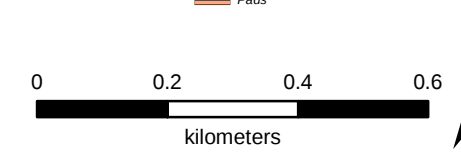
SCALE	1:18,194 @ A3	PROJECT CODE	JE30599
CONTENT	LEC	DRAWN	ESL Rev T
CHECKED	CAL	DATE	29/09/2014





- Key: Indicative locations
- | | |
|-----------------|--------------------|
| ◆ Snipe | ● Goldcrest |
| ▲ Curlew | ■ Skylark |
| ● Oystercatcher | ■ Songthrush |
| ▲ Mallard | ● Blackbird |
| ● Kestrel | ● Mistle thrush |
| ▲ Red grouse | ▲ Pied wagtail |
| ● Pheasant | ● Wren |
| ● Cuckoo | ■ Whitethroat |
| ● House martin | ● Wheatear |
| ● Barn swallow | ▲ Willow warbler |
| ● Dipper | ▲ Robin |
| ● Woodpigeon | ■ Redstart |
| ● Starling | ● Reed bunting |
| ● Carrion crow | ● Chaffinch |
| ● Magpie | ● Goldfinch |
| ▲ Jackdaw | ● Linnet |
| ● Jay | ● Bullfinch |
| ● Coal tit | ● Lesser redpoll |
| ● Blue tit | ★ Siskin |
| ■ Great tit | ● Common crossbill |

- Proposed infrastructure (indicative)
- | | |
|--------------------|----------------------------------|
| Wind turbine | ● Borrow pit |
| Met mast | ■ Pencloe_Construction_Compounds |
| New location | ■ Construction compound |
| Existing | ■ Security |
| Site boundary 2014 | ■ Substation |
| | Rev T |
| | ■ Tracks |
| | ■ MCL4 |
| | ■ MCL_ED_030614 |
| | ■ Turning areas |
| | ■ Pads |



PENCLOE WINDFARM

FIGURE 9.2 MOORLAND BIRD SURVEYS: STRUTHER'S BRAE

SCALE	1:11,593 @ A3	PROJECT CODE	JE30599
CONTENT	LEC	DRAWN	ESL Rev T
CHECKED	CAL	DATE	29/09/2014

JACOBS



- Key: Indicative locations
- | | |
|-----------------|--------------------|
| ◆ Snipe | ● Goldcrest |
| ▲ Curlew | ■ Skylark |
| ▲ Oystercatcher | ■ Songthrush |
| ▲ Mallard | ● Blackbird |
| ● Kestrel | ● Mistle thrush |
| ▲ Red grouse | ▲ Pied wagtail |
| ◆ Pheasant | ● Wren |
| ● Cuckoo | □ Whitethroat |
| ● House martin | ● Wheatear |
| ● Barn swallow | ▲ Willow warbler |
| ● Dipper | ▲ Robin |
| ● Woodpigeon | ▲ Redstart |
| ● Starling | ● Reed bunting |
| ● Carrion crow | ● Chaffinch |
| ● Magpie | ● Goldfinch |
| ▲ Jackdaw | ● Linnet |
| ● Jay | ● Bullfinch |
| ● Coal tit | ● Lesser redpoll |
| ● Blue tit | ● Siskin |
| ■ Great tit | ● Common crossbill |

- Proposed infrastructure (indicative)
- | | |
|----------------------|-----------------------------------|
| Wind turbine | ● Borrow pit |
| Met mast | ■ Penciloe_Construction_Compounds |
| ● New location | ■ Construction compound |
| ● Existing | ■ Security |
| ■ Site boundary 2014 | ■ Substation |
| | Rev T |
| | ■ Tracks |
| | ■ MCL4 |
| | ■ MCL_ED_030614 |
| | ■ Turning areas |
| | ■ Pads |

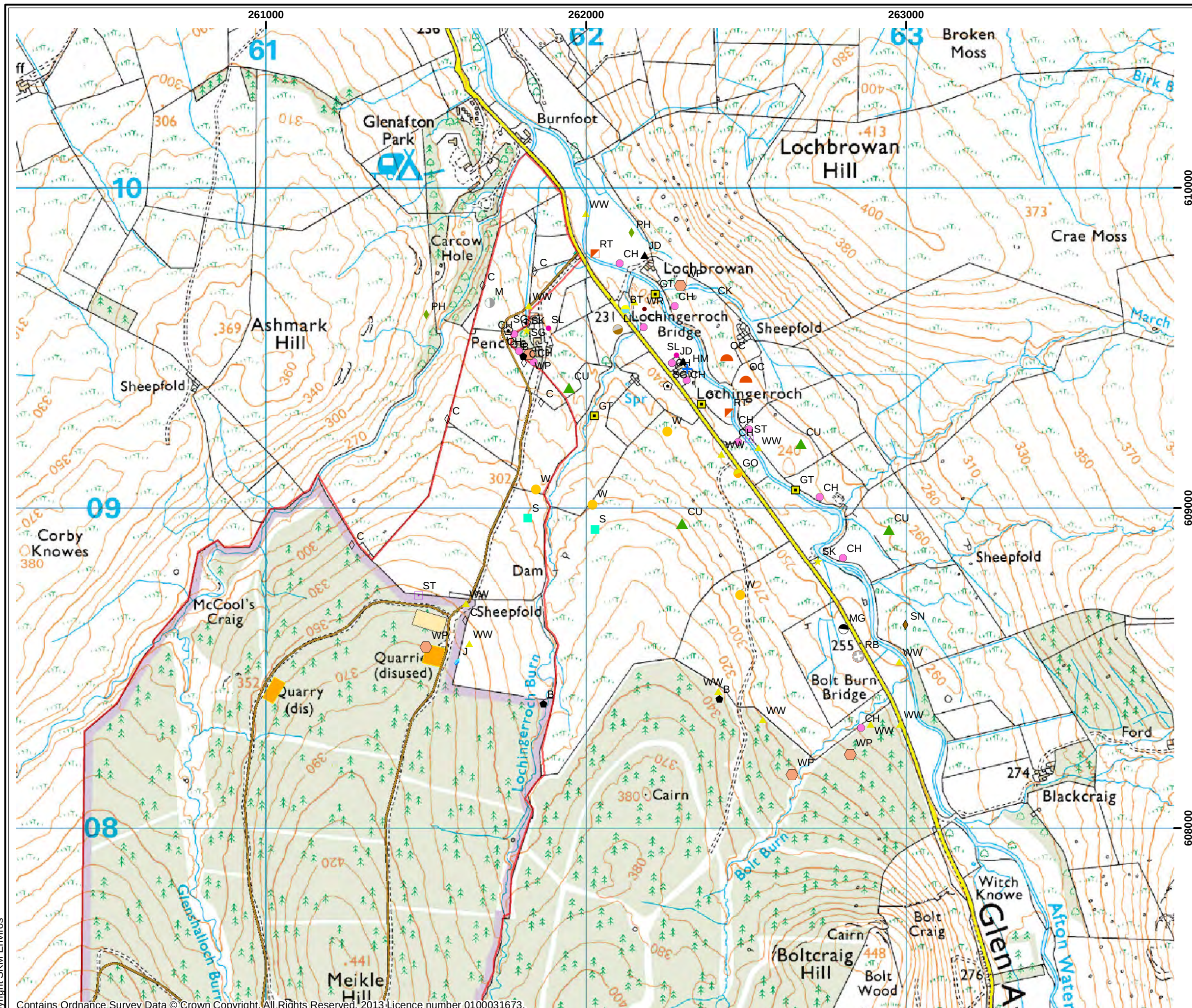


PENCLOE WINDFARM

FIGURE 9.3 MOORLAND BIRD SURVEYS 2011: ACCESS

SCALE	1:11,593 @ A3	PROJECT CODE	JE30599
CONTENT	LEC	DRAWN	ESL Rev T
CHECKED	CAL	DATE	29/09/2014

JACOBS



- Key: Indicative locations
- | | |
|-----------------|--------------------|
| ◆ Snipe | ● Goldcrest |
| ▲ Curlew | ■ Skylark |
| ▲ Oystercatcher | ■ Songthrush |
| ▲ Mallard | ● Blackbird |
| ▲ Kestrel | ● Mistle thrush |
| ▲ Red grouse | ▲ Pied wagtail |
| ▲ Pheasant | ● Wren |
| ▲ Cuckoo | ■ Whitethroat |
| ▲ House martin | ● Wheatear |
| ● Barn swallow | ▲ Willow warbler |
| ● Dipper | ▲ Robin |
| ● Woodpigeon | ■ Redstart |
| ● Starling | ● Reed bunting |
| ● Carrion crow | ● Chaffinch |
| ● Magpie | ● Goldfinch |
| ▲ Jackdaw | ● Linnet |
| ● Jay | ■ Bullfinch |
| ● Coal tit | ■ Lesser redpoll |
| ● Blue tit | ★ Siskin |
| ■ Great tit | ■ Common crossbill |

Proposed infrastructure (indicative)

Wind turbine	Borrow pit
Met mast	Pencloe_Construction_Compounds
New location	Construction compound
Existing	Security
Site boundary 2014	Substation
	Rev T
	Tracks
	MCL4
	MCL_ED_030614
	Turning areas
	Pads

0 0.2 0.4 0.6
kilometers

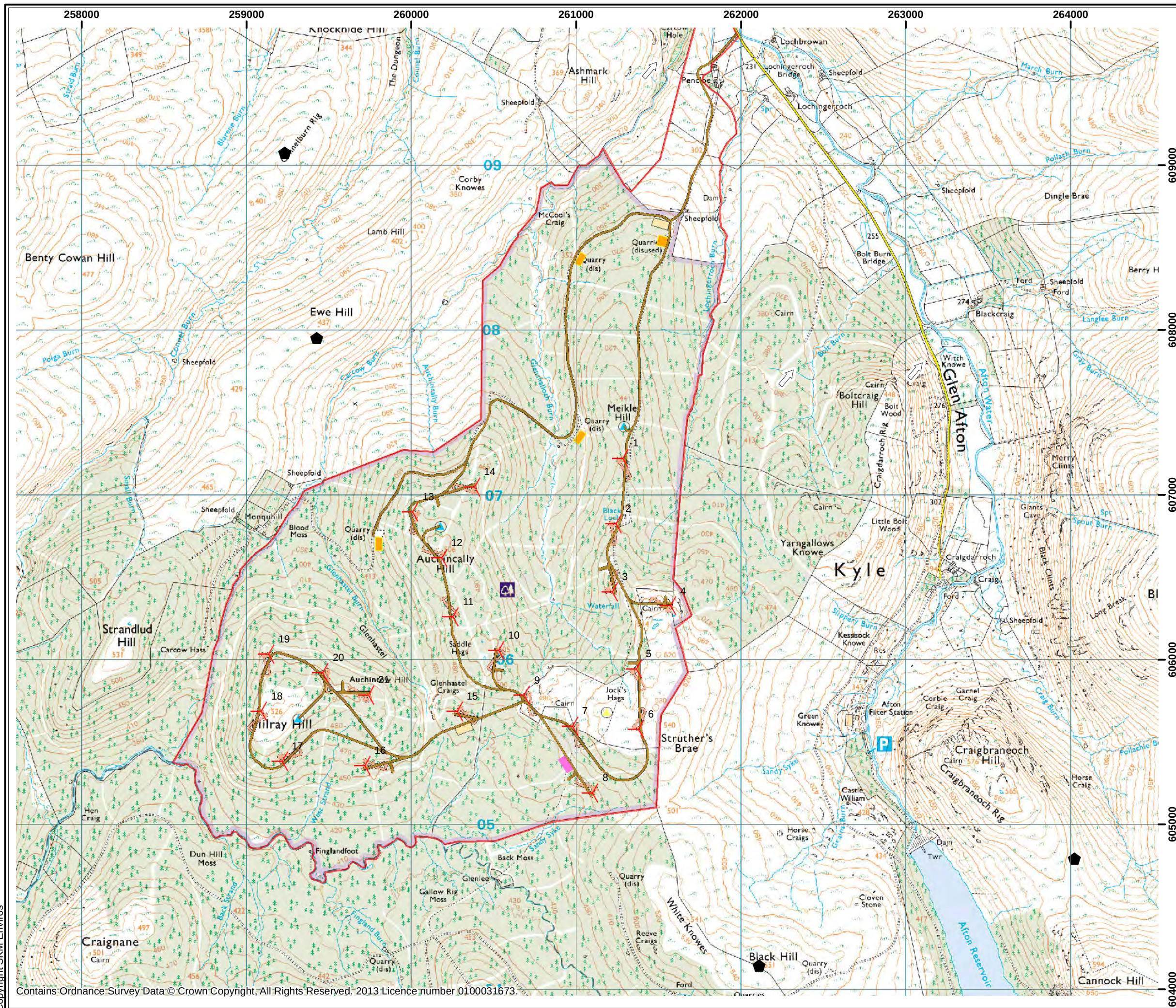
N

PENCLOE WINDFARM

FIGURE 9.4 MOORLAND BIRD SURVEYS 2013: ACCESS

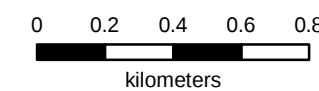
SCALE	1:11,593 @ A3	PROJECT CODE	JE30599
CONTENT	LEC	DRAWN	ESL Rev T
CHECKED	CAL	DATE	29/09/2014





Key: Indicative locations
Blackgrouse lek
and records
● Lek: single male
↗ Single black grouse flushed

- Proposed infrastructure (indicative)
- Wind turbine
 - Met mast
 - New location
 - Existing
 - Site boundary 2014
 - Borrow pit
 - Penciloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

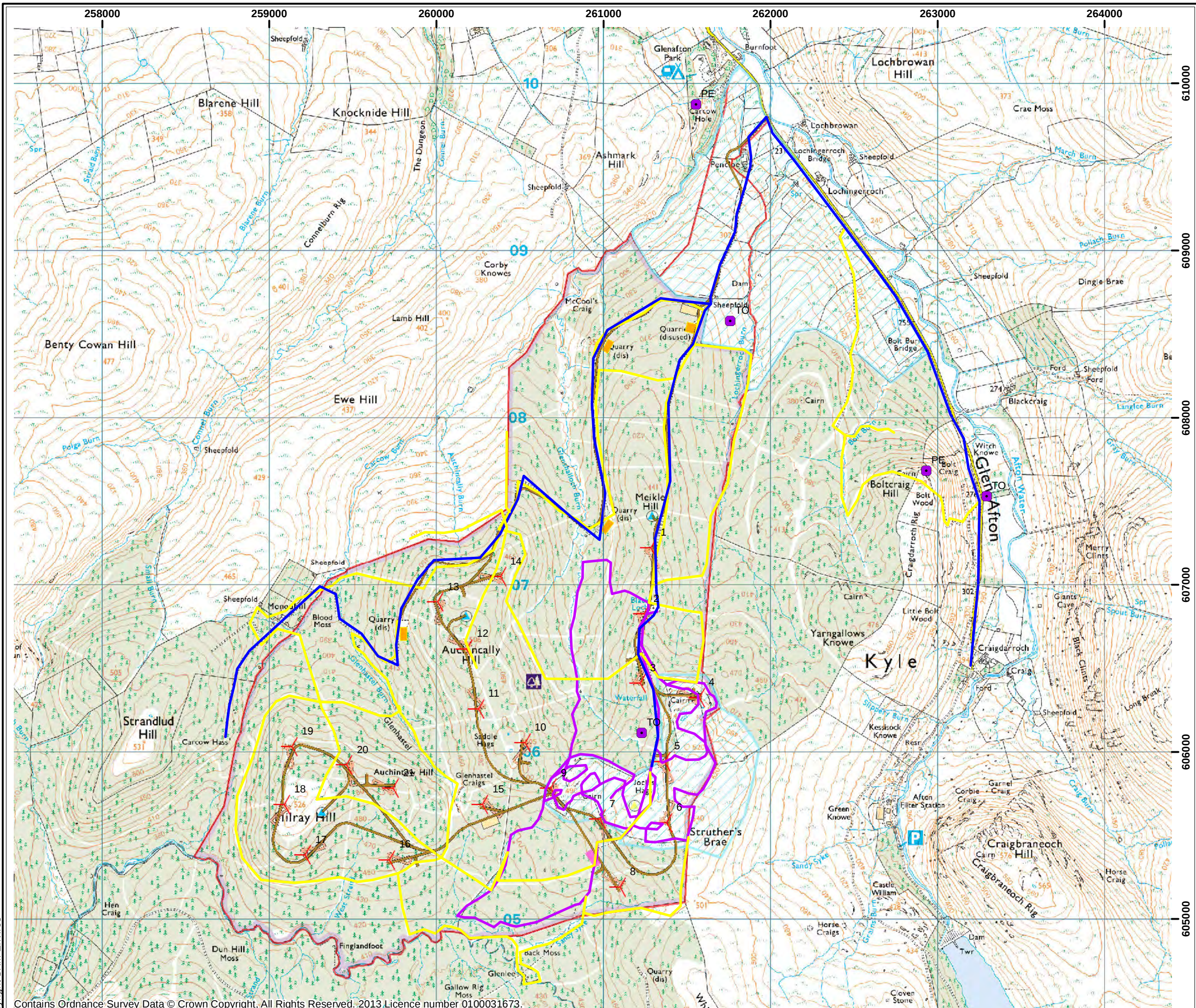


PENCLOE WINDFARM

FIGURE 9.5 BLACK GROUSE SURVEYS

SCALE		PROJECT CODE	
1:22,215 @ A3		JE30599	
CONTENT		DRAWN	
LEC		ESL Rev T	
CHECKED		DATE	
CAL		29/09/2014	





Key: Excludes black grouse survey areas

Survey route

Birds

- Raptors
- Raptors
- Nightjar & owls
- Owls Peregrine = day/night roosts
- Moorland bird survey
- Site boundary 2014

- Proposed infrastructure (indicative)
- Borrow pit
 - Penciloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.6 OWLS, NIGHTJAR & OTHER SURVEY ROUTES.

SCALE
1:22,215 @ A3

PROJECT CODE
JE30599

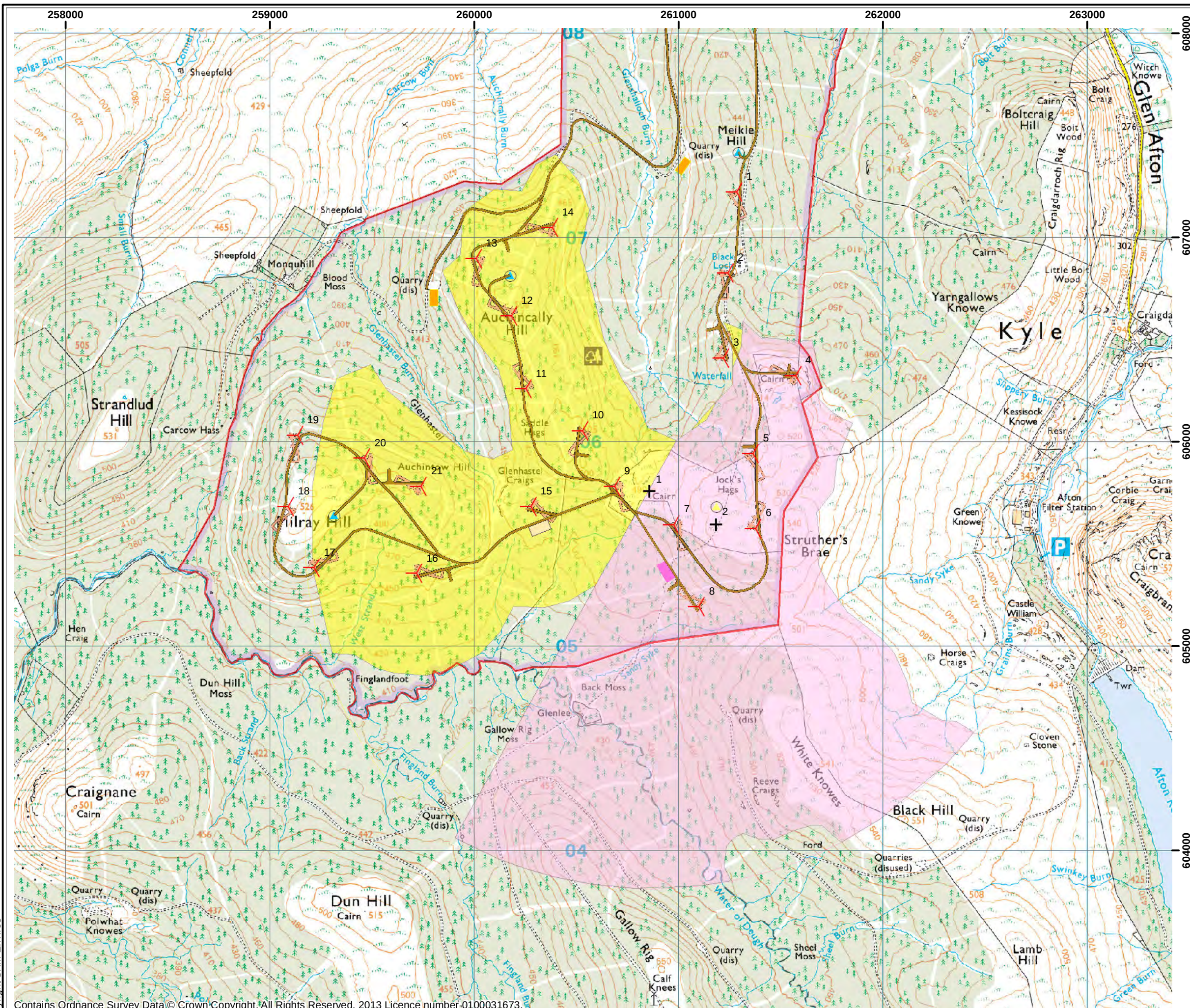
CONTENT
LEC

DRAWN
ESL Rev T

CHECKED
CAL

DATE
29/09/2014

JACOBS



Key: viewshed areas: 20m offset
within 2km radius arc

+ Vantage points 1 & 2

Viewsheds 1,2

Bird VP

VP1 2006/07

VP 2 2006/07 & 2010/11

2km arcs

Name

VP1

VP2

Proposed infrastructure (indicative)

- Wind turbine
- Met mast
- New location
- Existing
- Site boundary 2014
- Borrow pit
- Pencloe_Construction_Compounds
- Construction compound
- Security
- Substation
- Rev T
- Tracks
- MCL4
- MCL_ED_030614
- Turning areas
- Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.7 VANTAGE POINT
VIEWSHEDS 2006/07

SCALE
1:18,194 @ A3

PROJECT CODE
JE30599

CONTENT

LEC

DRAWN

ESL Rev T

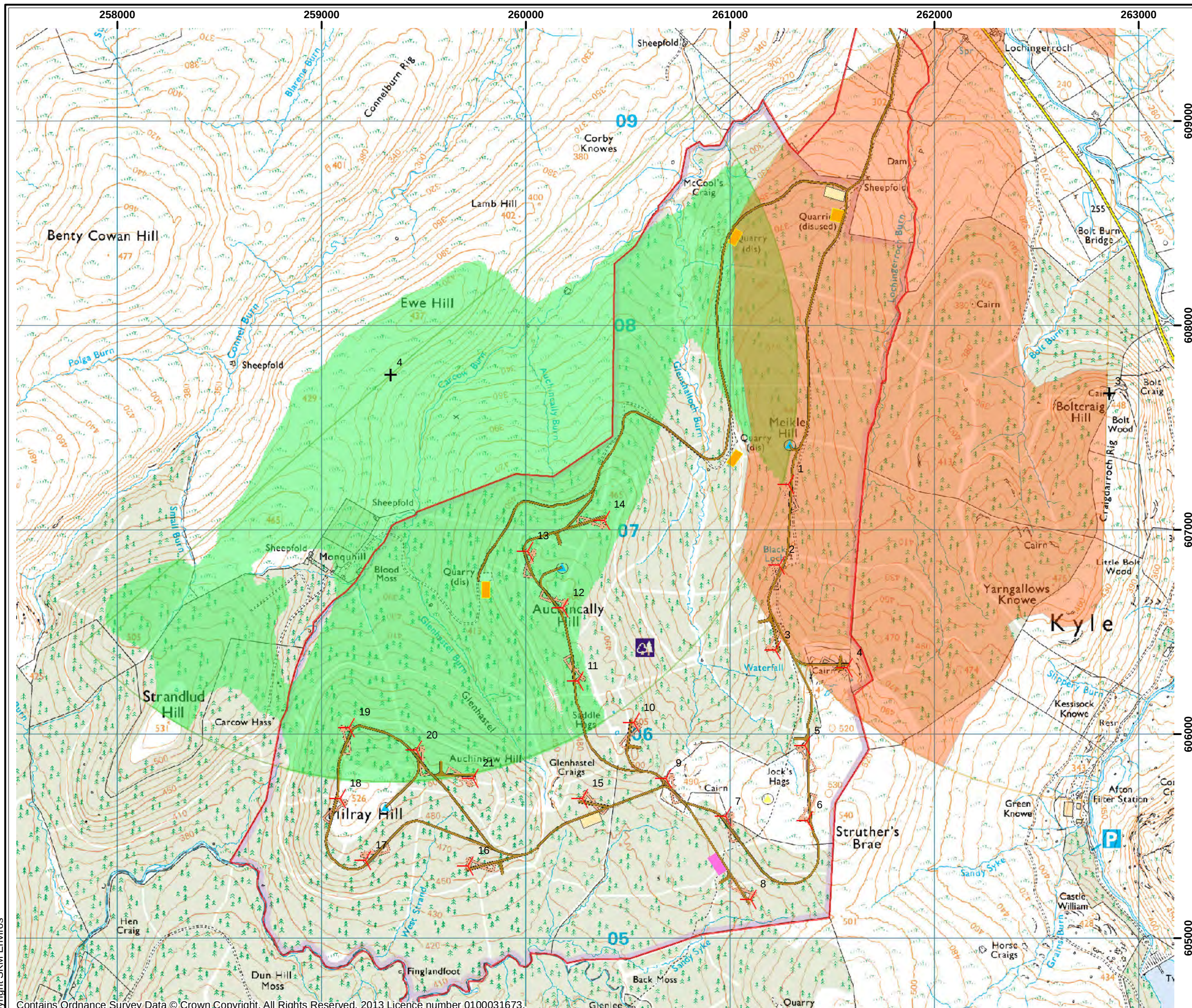
CHECKED

CAL

DATE

29/09/2014

JACOBS



Key: viewshed areas: 20m offset
within 2km radius arc

+ Vantage points 3 & 4

Name VP

Boltcraig

VP Ewe Hill

2km arcs

VP

4

3

Viewshed 2010/11 also from Struthers
Brae = Figure 9.7

Proposed infrastructure (indicative)

- Wind turbine
- Met mast
- New location
- Existing
- Site boundary 2014
- Borrow pit
- Pencloe_Construction_Compounds
- Construction compound
- Security
- Substation
- Rev T
- Tracks
- MCL4
- MCL_ED_030614
- Turning areas
- Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.8 VANTAGE POINT
VIEWSHEDS 2010/11

SCALE
1:18,194 @ A3

CONTENT

LEC

CHECKED

CAL

PROJECT CODE
JE30599

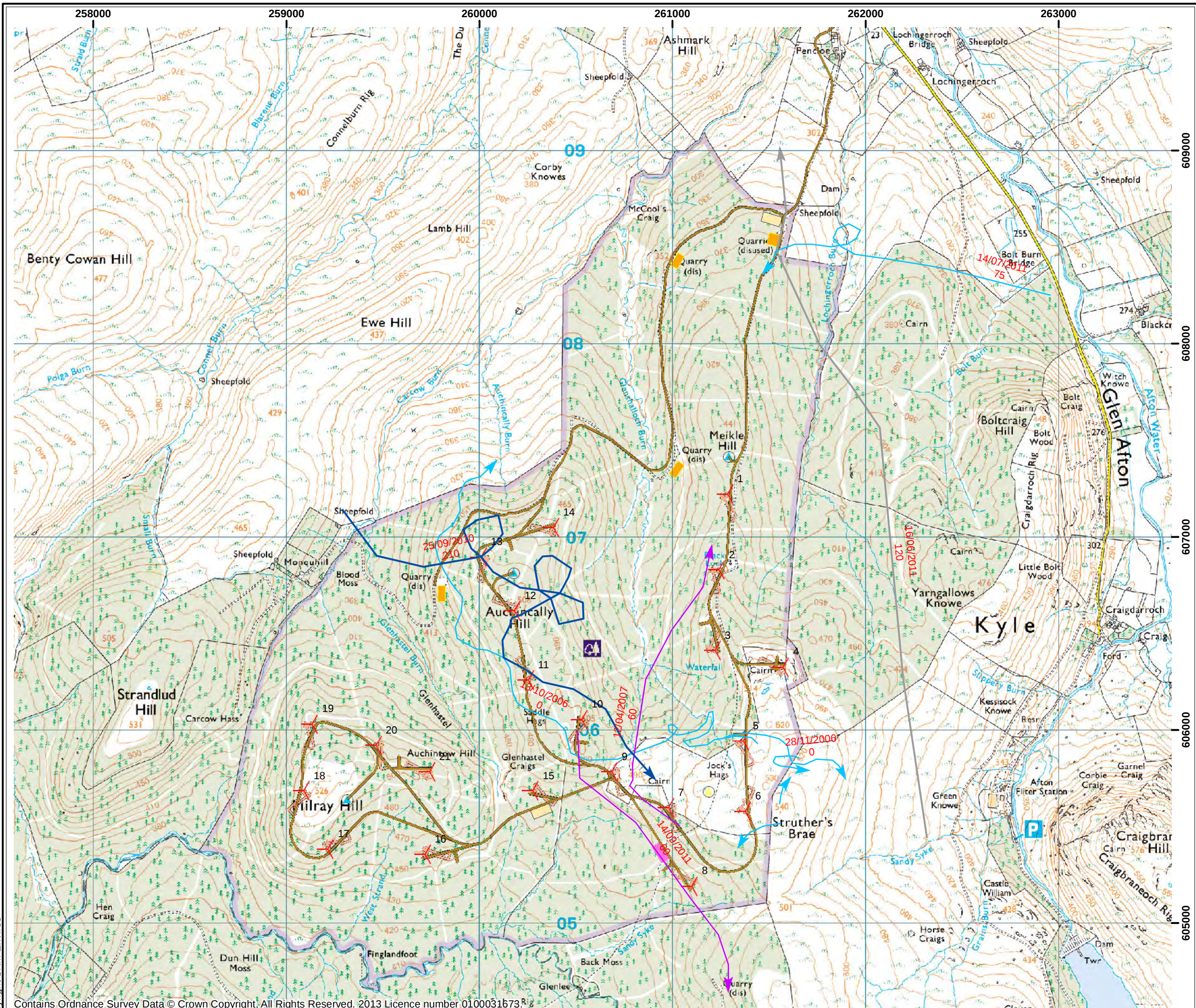
DRAWN

ESL Rev T

DATE

29/09/2014

JACOBS



Key: Dates & flight time (s) appended

Flights

Target Species

- Greylag goose
- Hen harrier
- Merlin
- Peregrine

- Proposed infrastructure (indicative)
- Borrow pit
 - Pencloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.9 BIRD FLIGHT ACTIVITY

SCALE
1:19,247 @ A3

PROJECT CODE
JE30599

CONTENT

LEC

DRAWN

ESL Rev T

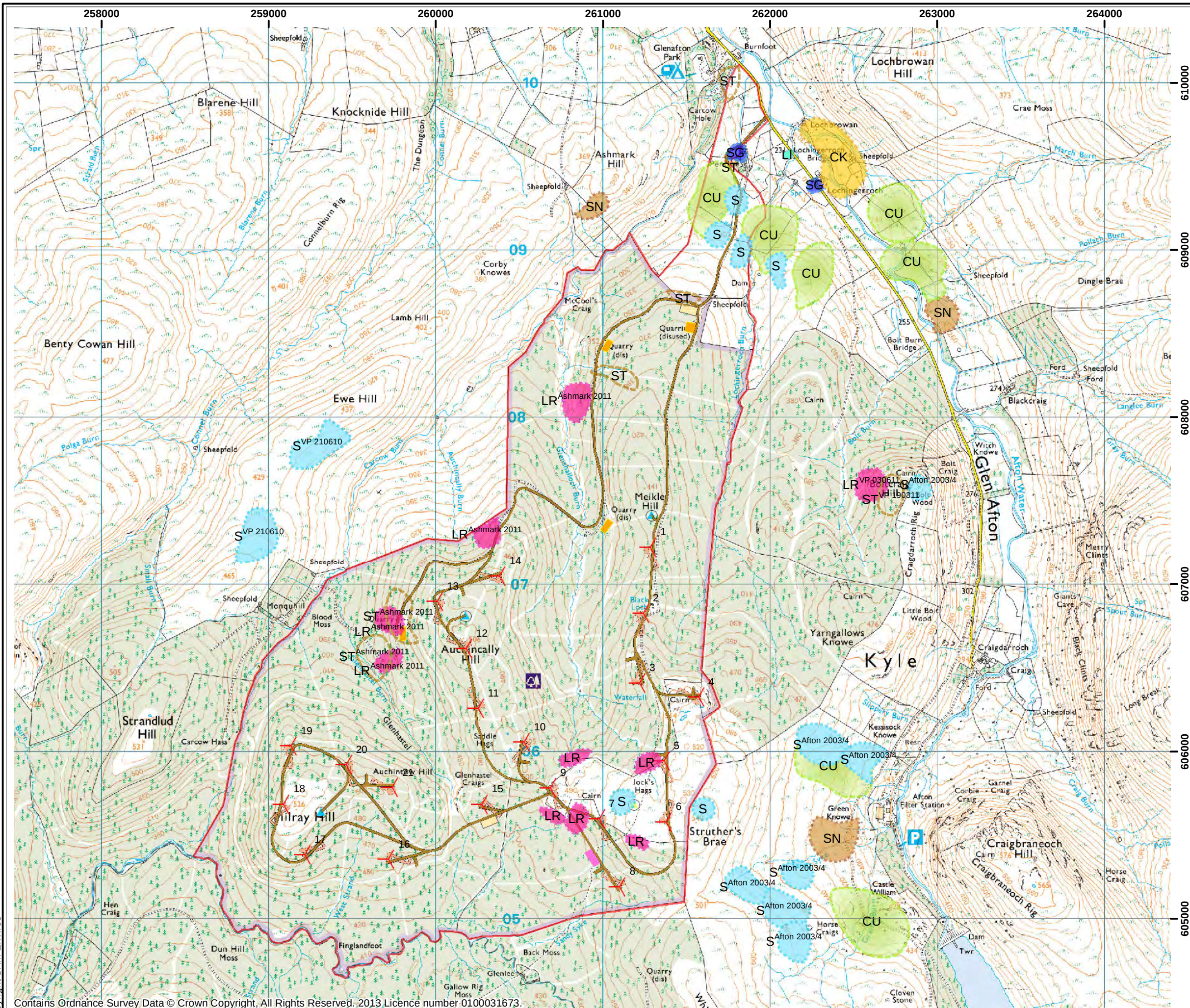
CHECKED

CAL

DATE

29/09/2014

JACOBS



Key: Indicative breeding territories
Conservation_birds Song thrush
SPP Linnets
Curlew Lesser redpoll
Cuckoo Common crossbill
Snipe Starling
Skylark

Red listed* RSPB Birds of Conservation Concern 2009.
Schedule 1 listed = Common crossbill & Peregrine falcon excluded
*waders = amber listed

Accumulated survey data 2003-2013:
Source acknowledged in superscript
Forest passerines based on point count & VP supplementary non-target data.

Coverage includes moorland bird survey area and within c. 300m of point count locations

Proposed infrastructure (indicative)
Wind turbine
Met mast
New location
Existing
Site boundary 2014
Borrow pit
Pencloe_Construction_Compounds
Construction compound
Security
Substation
Rev T
Tracks
MCL4
MCL_ED_030614
Turning areas
Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.10 INDICATIVE BREEDING AREAS CONSERVATION-SENSITIVE SPP.

SCALE
1:22,215 @ A3

PROJECT CODE
JE30599

CONTENT

LEC

DRAWN

ESL Rev T

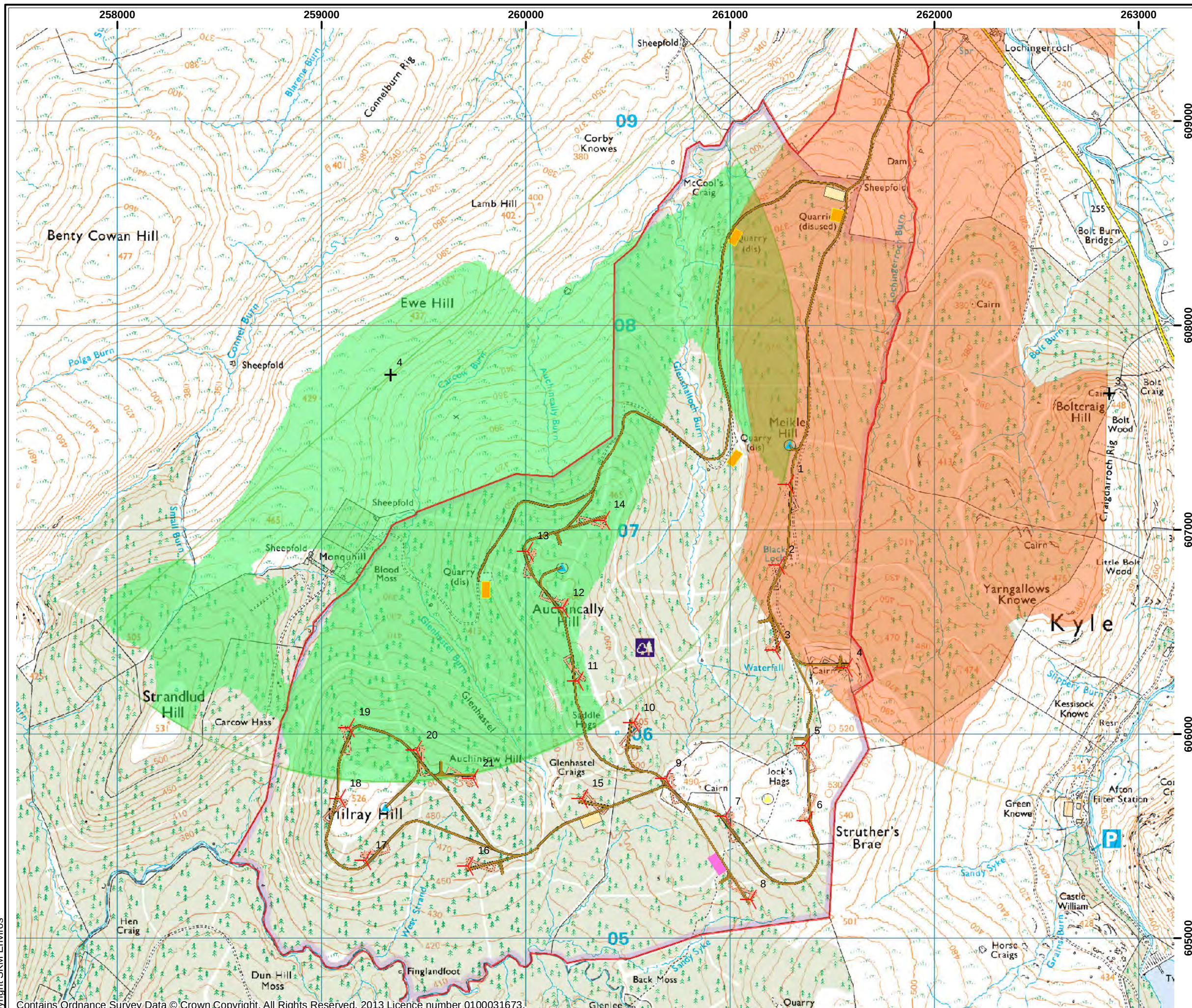
CHECKED

CAL

DATE

29/09/2014

JACOBS



Key: viewshed areas: 20m offset
within 2km radius arc

+ Vantage points 3 & 4

Name VP

Boltcraig

VP Ewe Hill

2km arcs

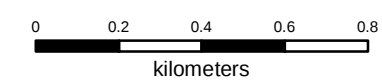
VP

4

3

Viewshed 2010/11 also from Struthers
Brae = Figure 9.7

- Proposed infrastructure (indicative)
- Wind turbine
 - Met mast
 - New location
 - Existing
 - Site boundary 2014
 - Borrow pit
 - Pencloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

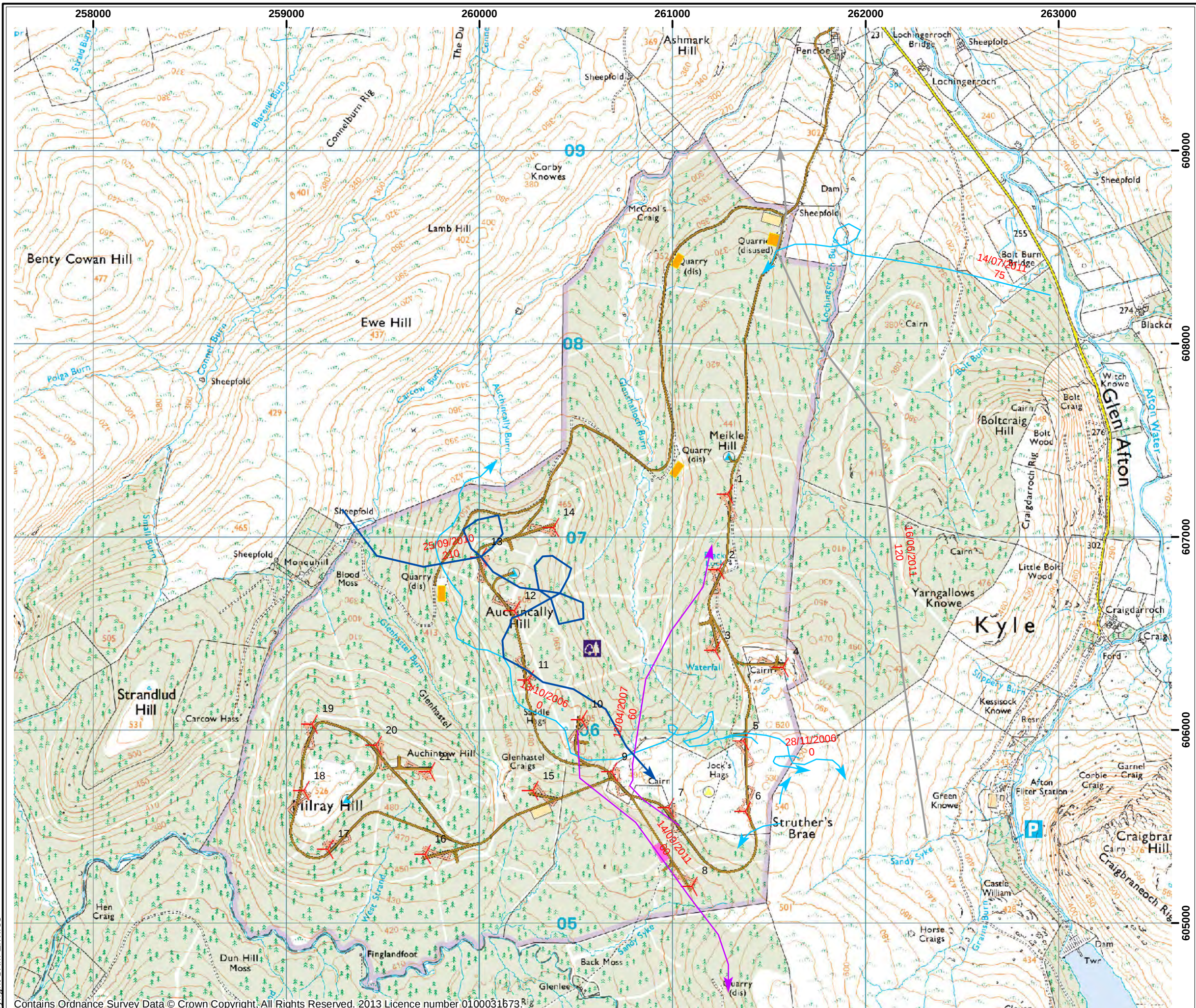


PENCLOE WINDFARM

FIGURE 9.8 VANTAGE POINT
VIEWSHEDS 2010/11

SCALE	1:18,194 @ A3	PROJECT CODE	JE30599
CONTENT	LEC	DRAWN	ESL Rev T
CHECKED	CAL	DATE	29/09/2014

JACOBS



Key: Dates & flight time (s) appended

Flights

Target Species

- Greylag goose
- Hen harrier
- Merlin
- Peregrine

- Proposed infrastructure (indicative)
- Wind turbine
 - Met mast
 - New location
 - Existing
 - Borrow pit
 - Pencloe_Construction_Compounds
 - Construction compound
 - Security
 - Substation
 - Rev T
 - Tracks
 - MCL4
 - MCL_ED_030614
 - Turning areas
 - Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.9 BIRD FLIGHT
ACTIVITY

SCALE
1:19,247 @ A3

PROJECT CODE
JE30599

CONTENT

LEC

DRAWN

ESL Rev T

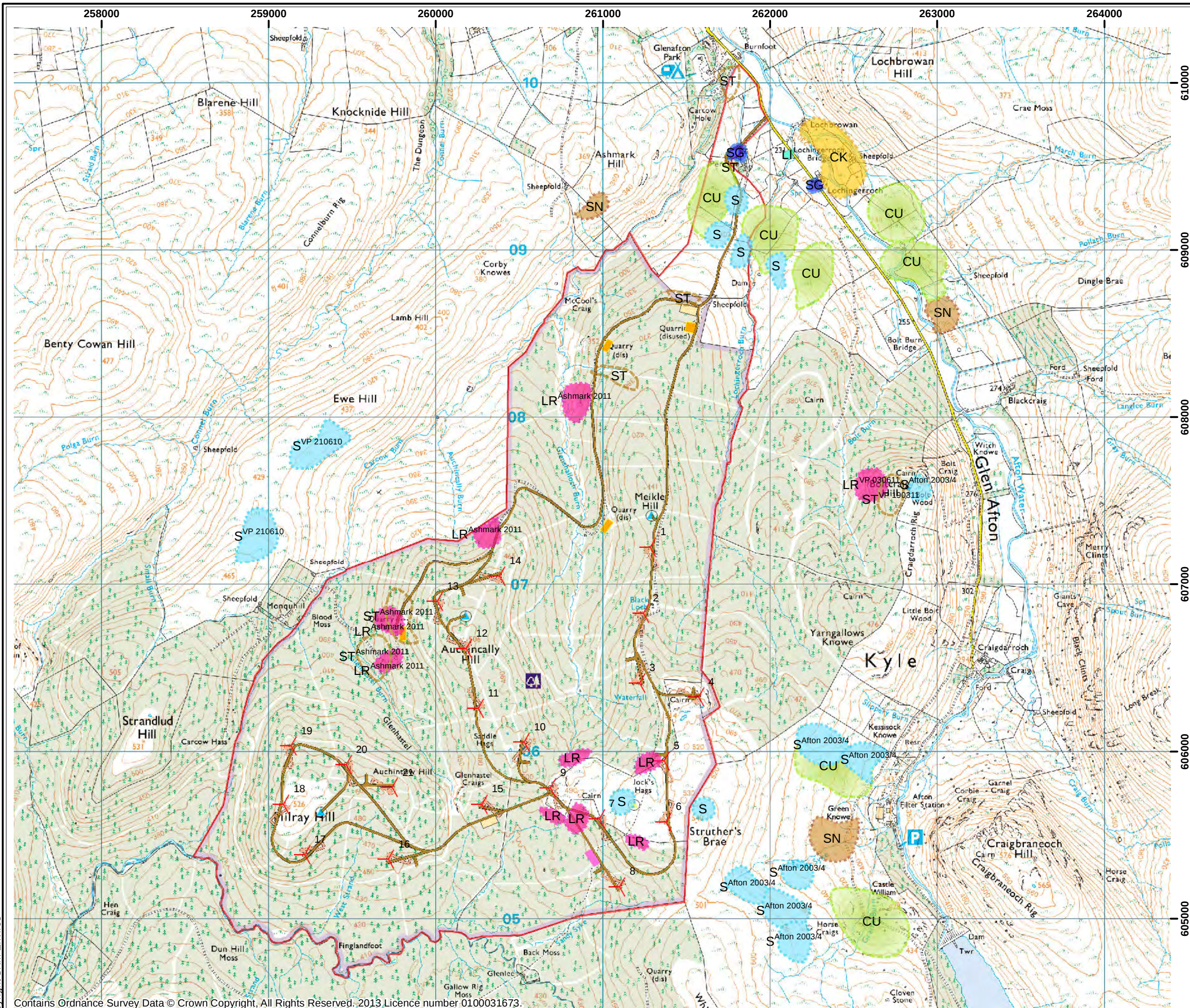
CHECKED

CAL

DATE

29/09/2014

JACOBS



Key: Indicative breeding territories
Conservation_birds Song thrush
SPP Linnets
Curlew Lesser redpoll
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Pencloe_Construction_Compounds
Construction compound
Security
Substation
Rev T
Tracks
MCL4
MCL_ED_030614
Turning areas
Pads

0 0.2 0.4 0.6 0.8
kilometers



PENCLOE WINDFARM

FIGURE 9.10 INDICATIVE BREEDING AREAS CONSERVATION-SENSITIVE SPP.

SCALE
1:22,215 @ A3

PROJECT CODE
JE30599

CONTENT

LEC

DRAWN

ESL Rev T

CHECKED

CAL

DATE

29/09/2014

JACOBS