









KEY

-  Site Boundary
-  Indicative Turbine Location
-  Solar Development Area
-  Substation & Energy Storage Compound
-  Proposed Phase 2 Site Boundary

Breeding Bird Survey (BBS) areas

-  BBS Area 2021
-  BBS Area 2022
-  BBS Areas 2023

Breeding Raptor Survey areas

-  Breeding Raptor Area 2021
-  Breeding Raptor Area 2km 2022
-  Breeding Raptor Area 2km 2023

0 0.75 1.5 2.25 3 km

Scale 1:50,000 @ A3

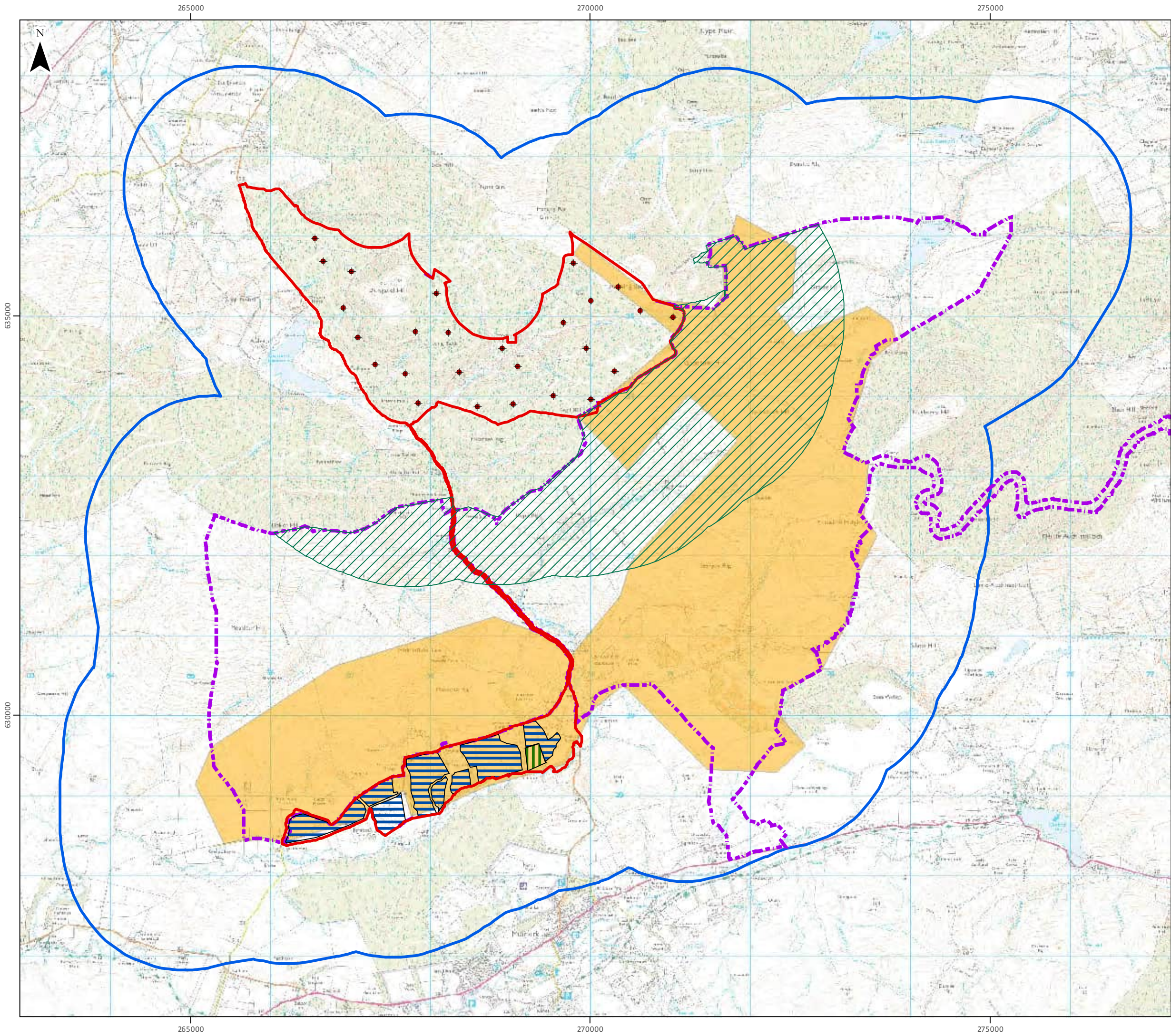
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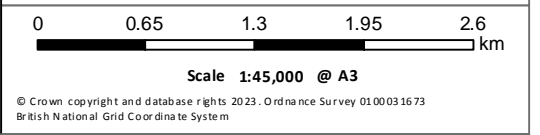
Hagshaw Energy Cluster - Western Expansion
Phase I
Scoping Update

Figure 7.1
Breeding Bird & Breeding Raptor Survey Areas

Project / Dwg Number: 4188			
Date: 08/02/2024	Drawn by: NH	Checked by: AH	Version: V1



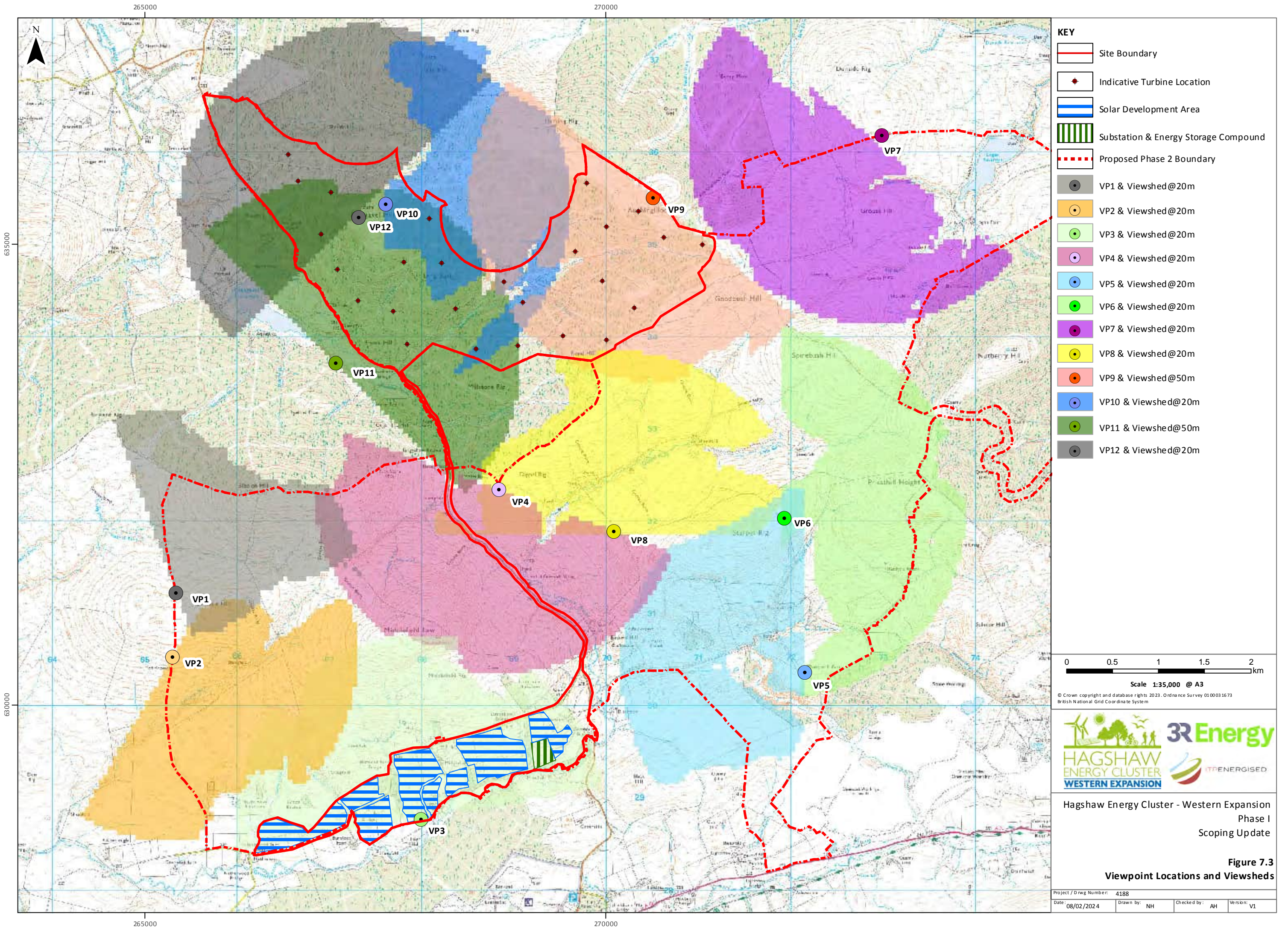
- KEY**
- Site Boundary
 - Indicative Turbine Location
 - Solar Development Area
 - Substation & Energy Storage Compound
 - Proposed Phase 2 Site Boundary
- Other Ornithology Survey Areas**
- Black Grouse Survey Area 1.5km (2022)
 - Winter Walkover Area (2022-2023)
 - Winter VP & Hen Harrier Winter Roost Survey Area (2022-2023, 2023-2024)



Hagshaw Energy Cluster - Western Expansion
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Figure 7.2
Other Ornithology Survey Areas

Project / Dwg Number: 4188	Date: 08/02/2024	Drawn by: NH	Checked by: AH	Version: V1
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- KEY**
- Site Boundary
 - Indicative Turbine Location
 - Solar Development Area
 - Substation & Energy Storage Compound
 - Proposed Phase 2 Boundary
 - VP1 & Viewshed@20m
 - VP2 & Viewshed@20m
 - VP3 & Viewshed@20m
 - VP4 & Viewshed@20m
 - VP5 & Viewshed@20m
 - VP6 & Viewshed@20m
 - VP7 & Viewshed@20m
 - VP8 & Viewshed@20m
 - VP9 & Viewshed@50m
 - VP10 & Viewshed@20m
 - VP11 & Viewshed@50m
 - VP12 & Viewshed@20m

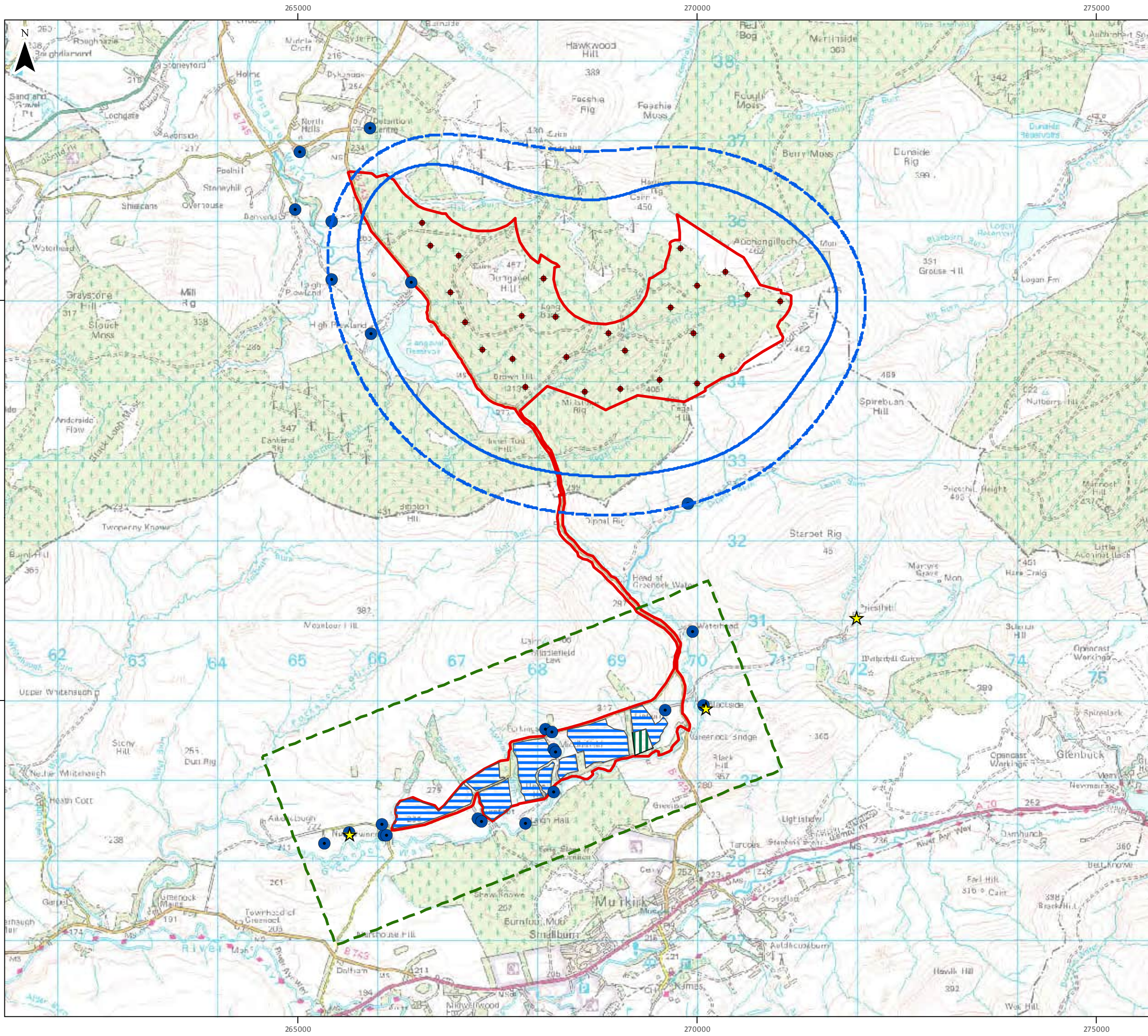
0 0.5 1 1.5 2 km
 Scale 1:35,000 @ A3
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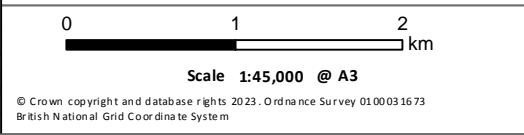
Hagshaw Energy Cluster - Western Expansion
 Phase I
 Scoping Update

Figure 7.3
Viewpoint Locations and Viewsheds

Project / Dwg Number: 4188	Drawn by: NH	Checked by: AH	Version: V1
Date: 08/02/2024			



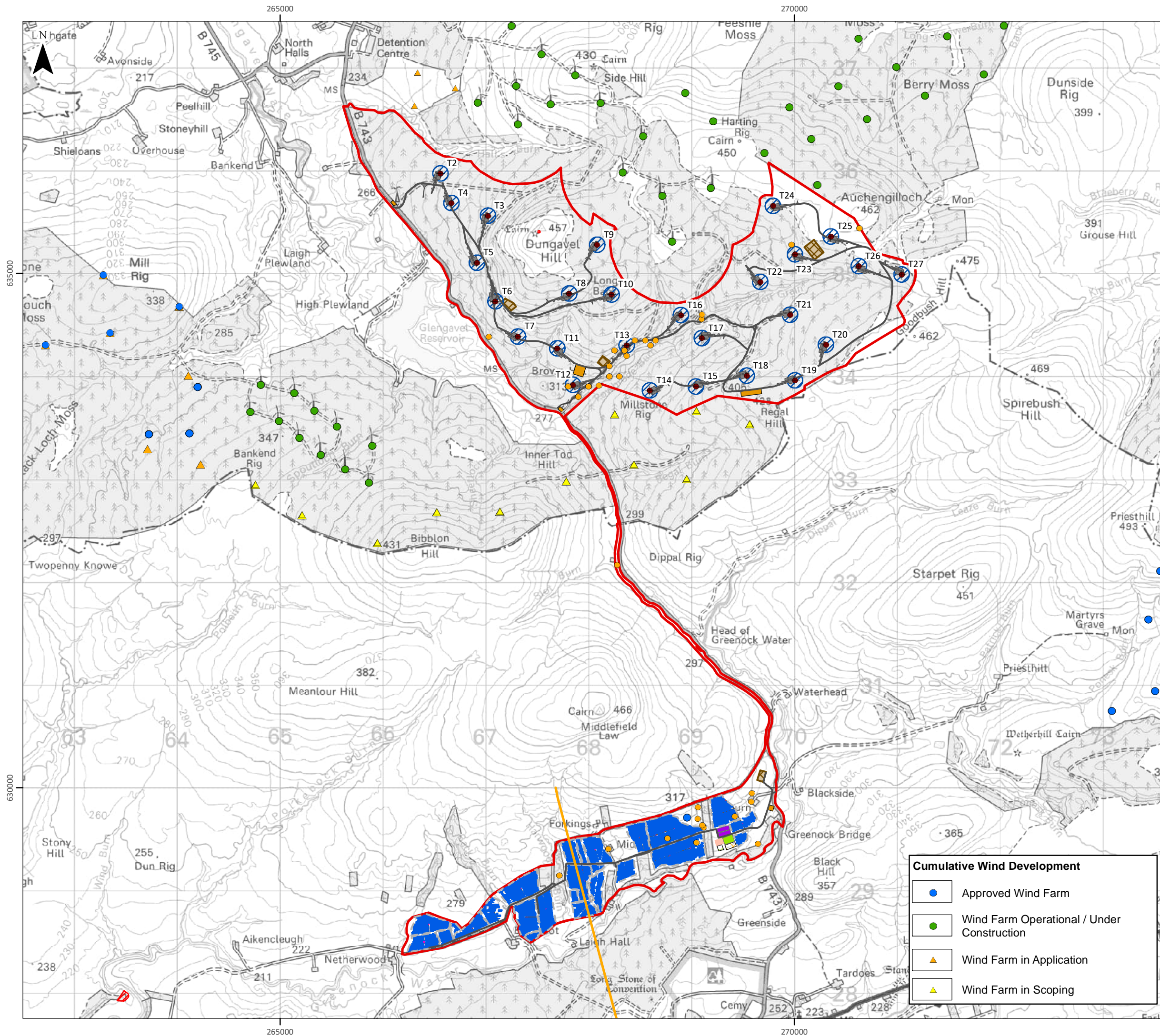
- KEY**
- Site Boundary
 - Indicative Turbine Location
 - Solar Development Search Area
 - Substation & Energy Storage Compound
 - Study Area 1 - 35 dBLA90 contour
 - Study Area 1 - 35 dBLA90 contour incl. correction for concave topography
 - Study Area 2 - for consideration of noise from non-turbine project components
 - Noise Sensitive Receptor
 - Noise Monitoring Location



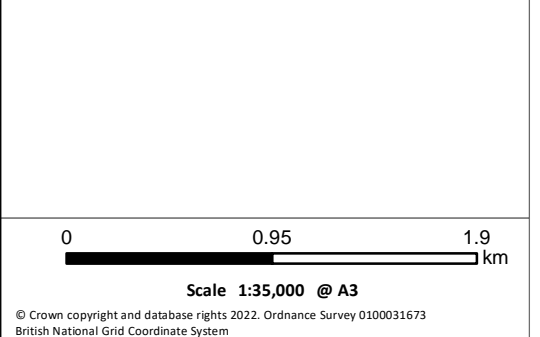
Hagshaw Energy Cluster - Western Expansion
Phase I
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Figure 8.1
35 dBLA90 Contour
& Noise Sensitive Receptors

Project / Dwg Number: 4188/993	Drawn by: NH	Checked by: AH	Version: V2
Date: 08/02/2024			



- KEY**
- Site Boundary
 - Proposed Turbines
 - Tracks
 - Hardstands
 - Forestry Keyholes
 - Borrow Pits
 - Compounds
 - Turning Heads
 - Solar Deer Fence
 - Solar Inverters
 - Solar PV Modules
 - SPEN SS
 - SPEN Temp compound
 - BESS
 - Substation
 - Temp Compound
 - Scheduled Monument
 - Cultural Heritage (point)
 - Cultural Heritage (linear)



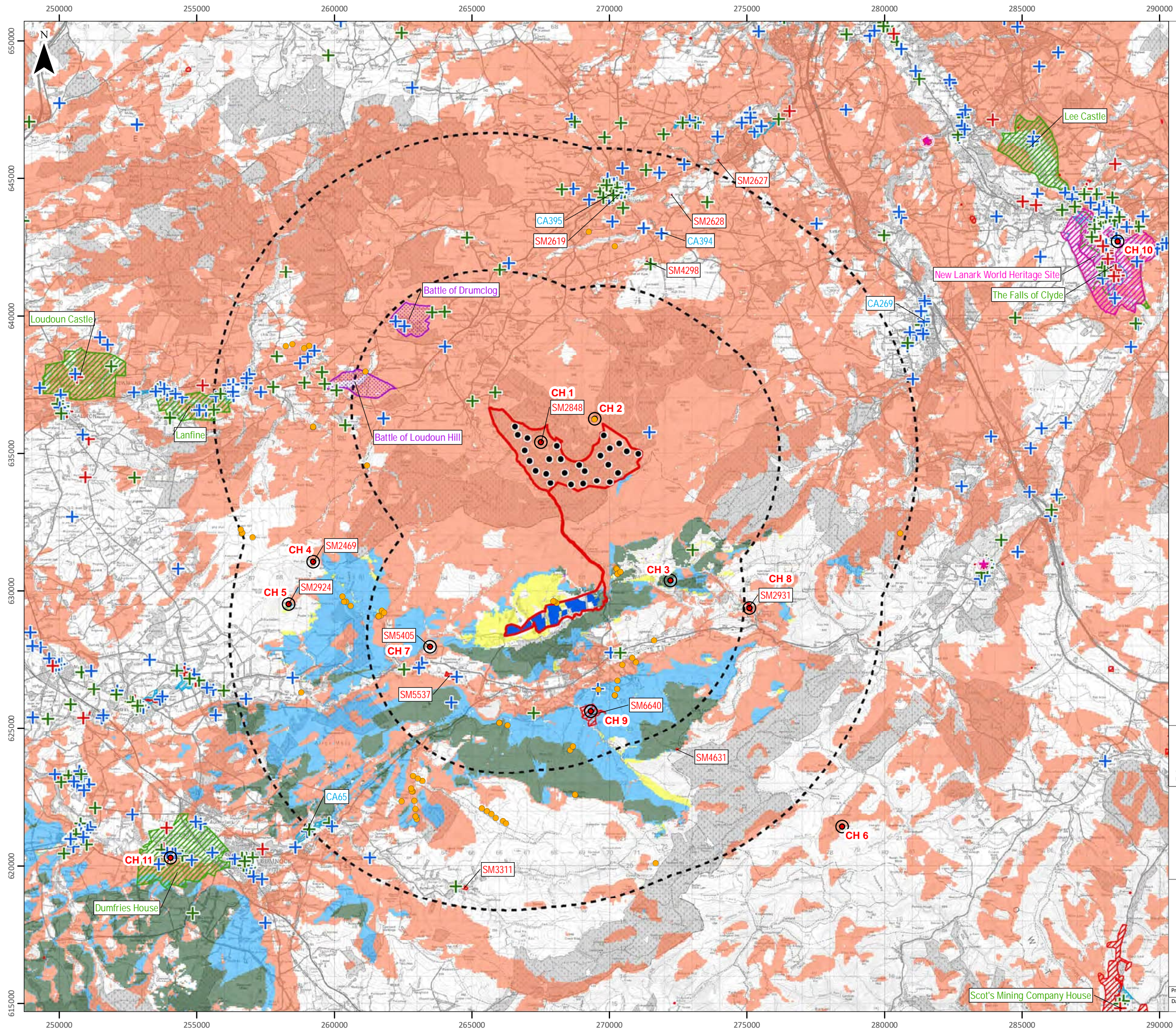
- Cumulative Wind Development**
- Approved Wind Farm
 - Wind Farm Operational / Under Construction
 - Wind Farm in Application
 - Wind Farm in Scoping



Hagshaw Energy Cluster - Western Expansion
Phase 1
Scoping Update
Figure 9.1

Cultural Heritage: Inner Study Area

Project / Dwg Number: 4188/993	Checked by: GM	Version: v3
Date: 15/12/2023	Drawn by: SG	



KEY

- Site Boundary
- Proposed Turbines
- Solar PV Modules
- Outer Study Area (5 km & 10 km buffers)
- Scheduled Monument
- + Listed Building Category A
- + Listed Building Category B
- + Listed Building Category C
- ★ Properties in Care
- World Heritage Site
- Garden and Designed Landscape
- Conservation Area
- Battlefields Inventory Boundary
- NSR Site Code C & V (point)
- Cultural Heritage Viewpoints

Cumulative Zone of Theoretical Visibility

- Wind turbine visibility only
- Solar visibility only
- Wind and solar visibility
- Solar and BESS/Substation visibility
- Combined visibility wind, solar and BESS/Substation

This ZTV has been run with all turbines at 230m to blade tip, solar panels at 3m and a maximum 7m height for the BESS/Substation to illustrate combined visibility. It has been run using OS Terrain 50 height data and does not account for the screening provided by intervening buildings and vegetation.

0 3.5 7
km

Scale 1:130,000 @ A3

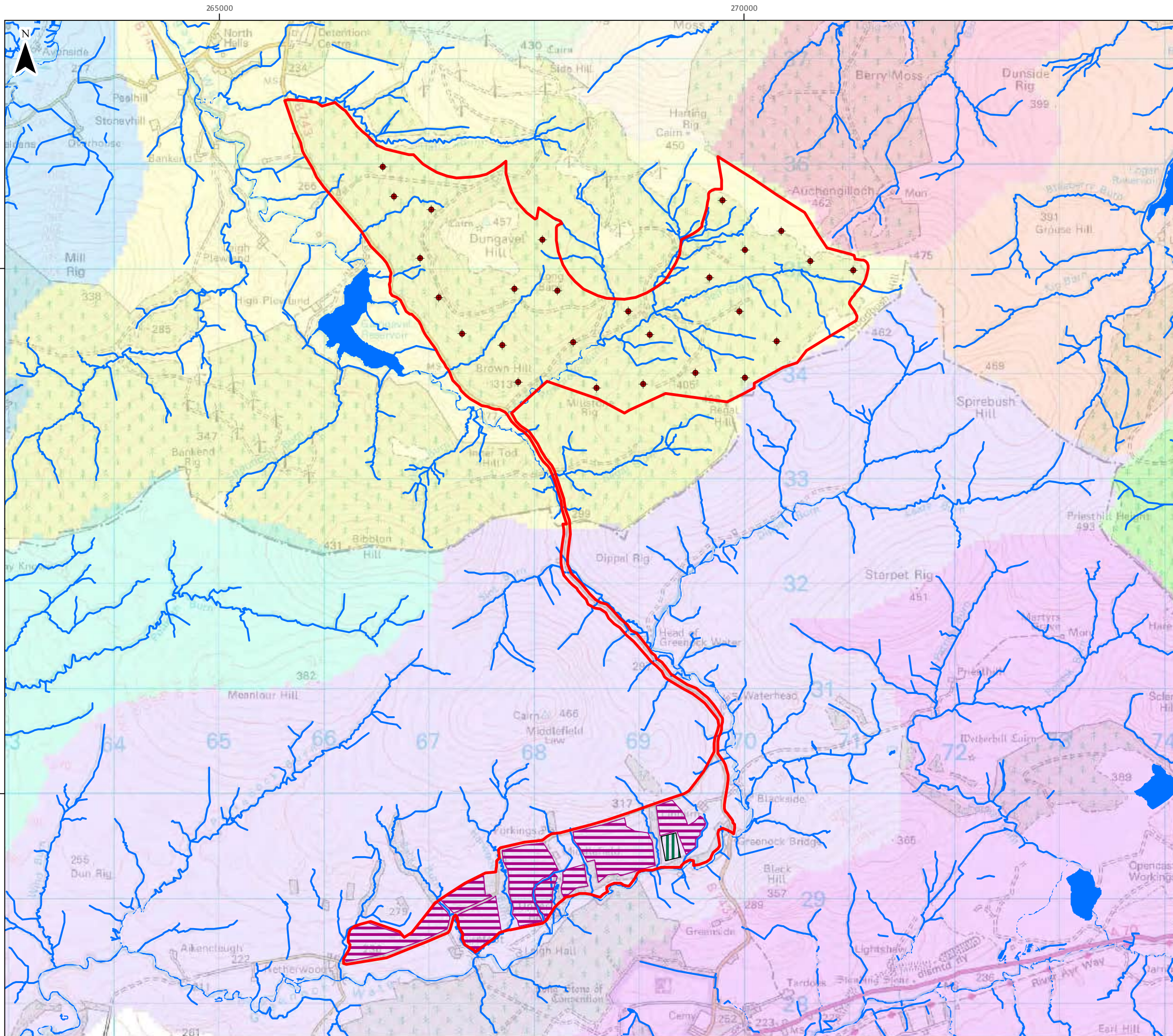
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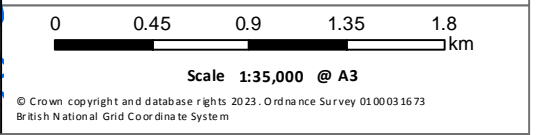
Hagshaw Energy Cluster - Western Expansion
Phase 1
Scoping Update
Figure 9.2

Cultural Heritage: Outer Study Area

Project / Drwg Number: 4188/993	Checked by: GM
Date: 13/12/2023	Version: v4



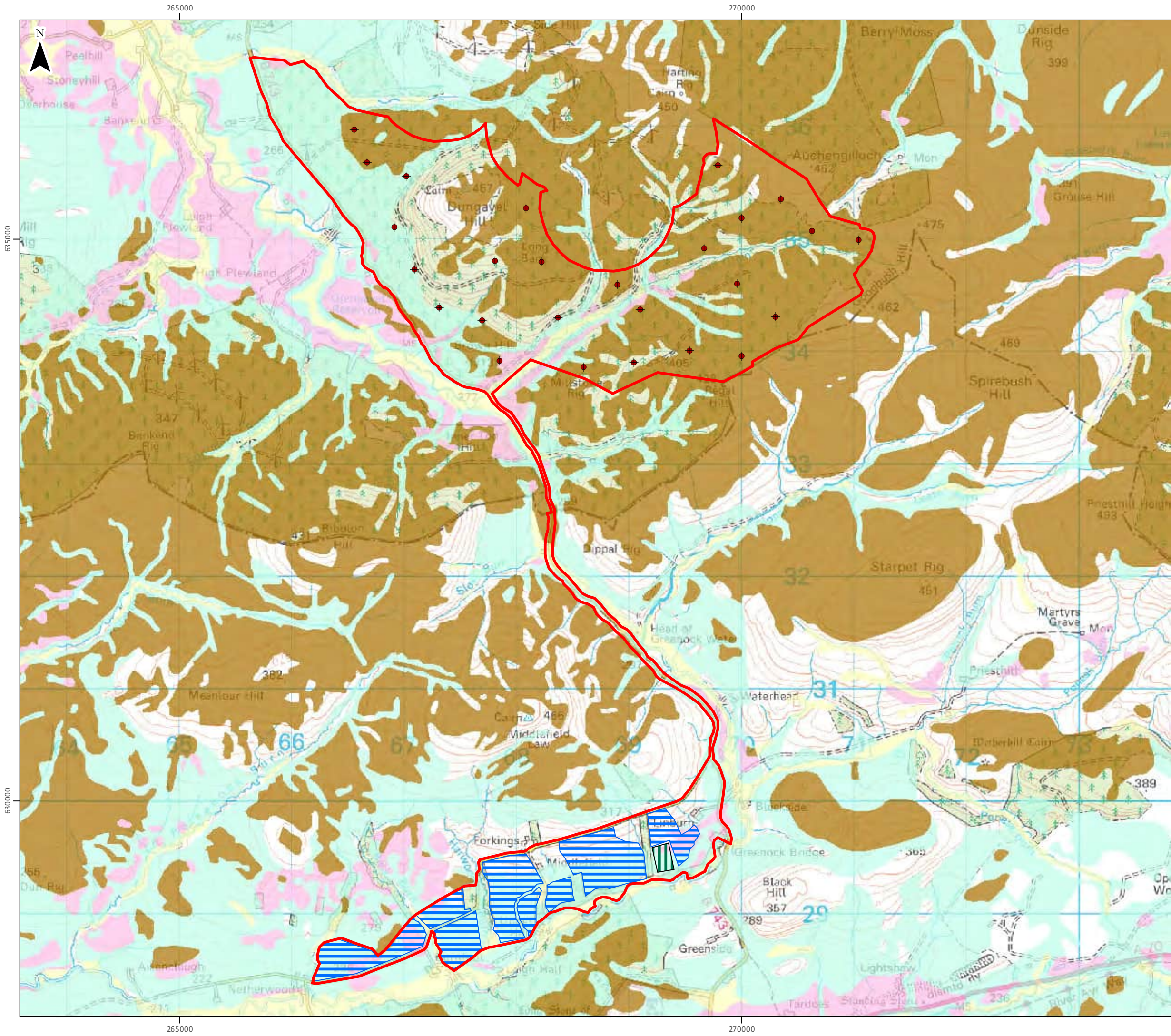
- KEY**
- Site Boundary
 - Indicative Turbine Location
 - Solar Development Area
 - Substation & Energy Storage Compound
 - Watercourses & Waterbodies
- SEPA Catchments**
- Avon Water @ confluence with Calder Water
 - Avon Water @ confluence with Glengavel Water
 - Glengavel Water @ confluence with Avon Water
 - Greenock Water @ confluence with River Ayr
 - Kype Water @ confluence with Avon Water
 - Lochar Water @ confluence with Avon Water
 - Logan Water @ confluence with Nethan Water
 - Nethan Water @ confluence with Logan Water
 - River Ayr @ confluence with Garpel Water
 - Spital Burn @ confluence with Water of Dye
 - Whitehaugh Water @ confluence with River Ayr



Hagshaw Energy Cluster - Western Expansion
Phase I
Scoping Update

Figure 10.1
Hydrological Features

Project / Dwg Number: 4188	Date: 08/02/2024	Drawn by: NH	Checked by: AH	Version: v1
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KEY

- Site Boundary
- Indicative Turbine Location
- Solar Development Area
- Substation & Energy Storage Compound

Superficial Geology

- Peat
- Alluvium - Silt, Sand and Gravel
- Glaciofluvial Deposits - Gravel, Sand and Silt
- Superficial Deposits - Sediment
- Till, Devension - Diamicton

0 0.6 1.2 1.8 km

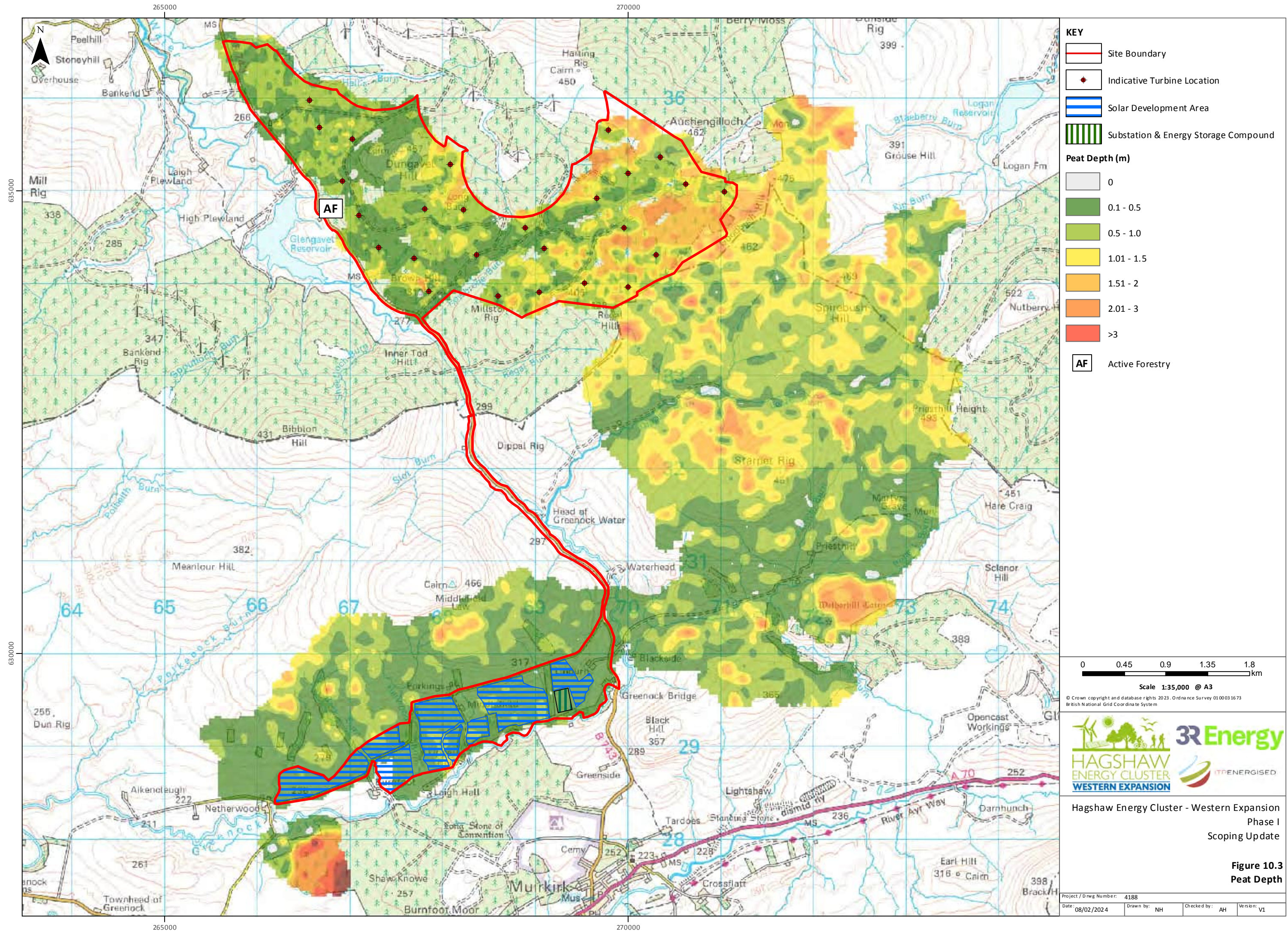
Scale 1:32,000 @ A3

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Hagshaw Energy Cluster - Western Expansion
Phase I
Scoping Update

Figure 10.2
Superficial Geology

Project / Dwg Number: 4188	Drawn by: NH	Checked by: AH	Version: V1
Date: 08/02/2024			



KEY

- Site Boundary
- Indicative Turbine Location
- Solar Development Area
- Substation & Energy Storage Compound

Peat Depth (m)

- 0
- 0.1 - 0.5
- 0.5 - 1.0
- 1.01 - 1.5
- 1.51 - 2
- 2.01 - 3
- >3

AF Active Forestry

0 0.45 0.9 1.35 1.8 km

Scale 1:35,000 @ A3

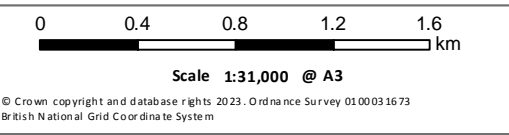
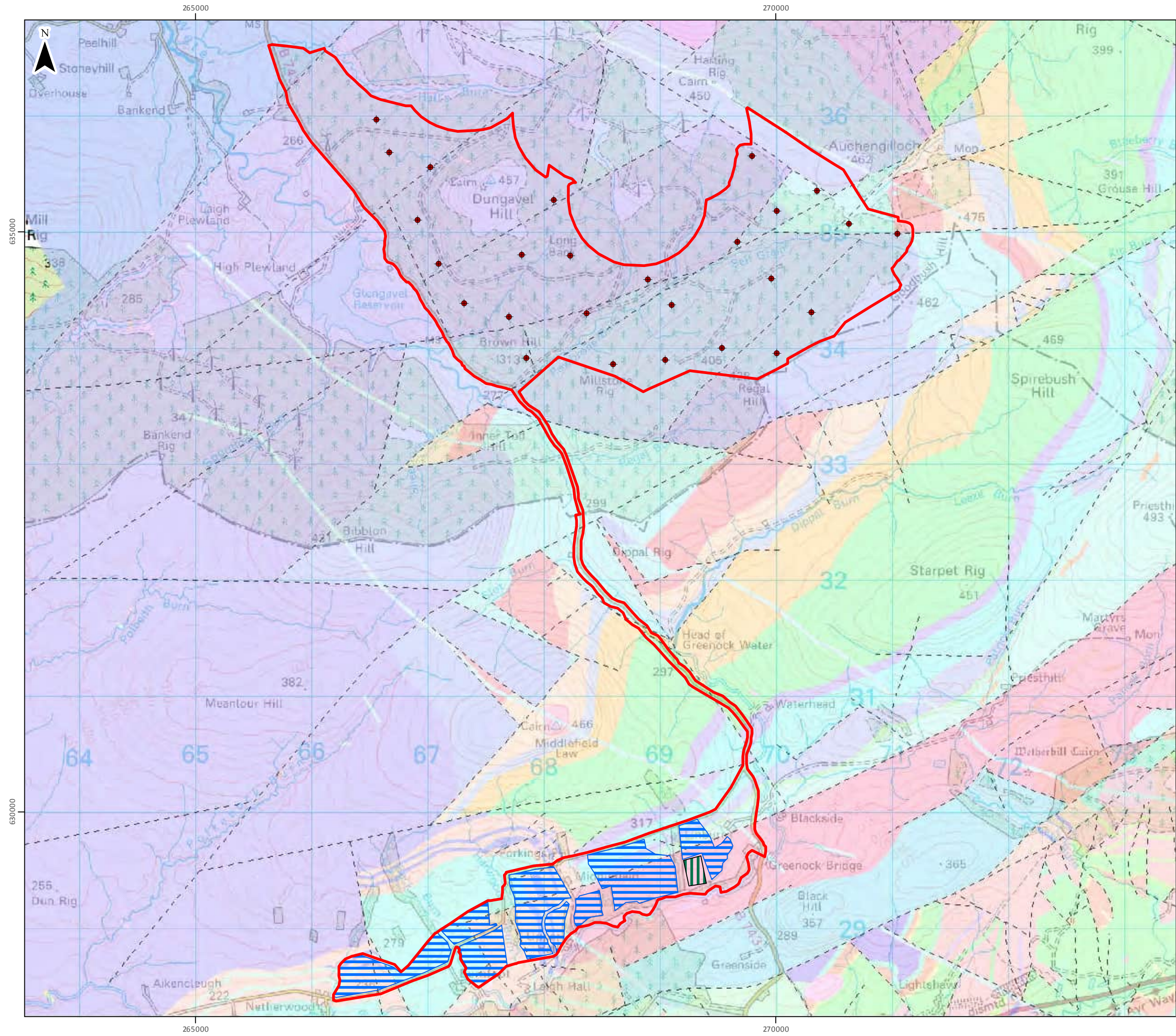
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Hagshaw Energy Cluster - Western Expansion
Phase I
Scoping Update

Figure 10.3
Peat Depth

Project / Dwg Number: 4188	Drawn by: NH	Checked by: AH	Version: v1
Date: 08/02/2024			








Hagshaw Energy Cluster - Western Expansion
Phase I
Scoping Update

Figure 10.4a
Bedrock Geology & Faults



Project / Dwg Number: 4188	Drawn by: NH	Checked by: AH	Version: V1
Date: 08/02/2024			

KEY:









-  Site Boundary
-  Indicative Turbine Location
-  Solar Development Area
-  Substation & Energy Storage Compound
-  FAULTS

Carboniferous - Paleogene

Igneous Bedrock









-  MULL DYKE-SWARM - MICROGABBRO
-  MIDLAND VALLEY CARBONIFEROUS TO EARLY PERMIAN ALKALINE BASIC SILL SUITE - MICROGABBRO

Silurian - Devonian



-  SOUTH OF SCOTLAND GRANITIC SUITE - FELSITE
-  SOUTH OF SCOTLAND GRANITIC SUITE - MICRODIORITIC-ROCK
-  SOUTH OF SCOTLAND GRANITIC SUITE - QUARTZ-PORPHYRY
-  SOUTHERN MIDLAND VALLEY FELSITE SILLS - FELSITE
-  UNNAMED IGNEOUS INTRUSION OF UNKNOWN AGE - AGGLOMERATE
-  UNNAMED IGNEOUS INTRUSION OF UNKNOWN AGE - FELSITE
-  UNNAMED IGNEOUS INTRUSION OF UNKNOWN AGE - MAFITE
-  DISTINKHORN PLUTON - DIORITE

Carboniferous












Sedimentary Bedrock




-  SCOTTISH LOWER COAL MEASURES FORMATION - SEDIMENTARY ROCK CYCLES, COAL MEASURE TYPE
-  PASSAGE FORMATION - SEDIMENTARY ROCK CYCLES, CLACKMANNAN GROUP TYPE
-  UPPER LIMESTONE FORMATION - SEDIMENTARY ROCK CYCLES, CLACKMANNAN GROUP TYPE
-  LAWMUIR FORMATION - SEDIMENTARY ROCK CYCLES, STRATHCLYDE GROUP TYPE
-  KINNESSWOOD FORMATION - LIMESTONE, NODULAR (CORNSTONE)
-  KINNESSWOOD FORMATION - SANDSTONE
-  KINNESSWOOD FORMATION - SILICATE-CONGLOMERATE, CALCITE-CEMENTED (CALCRETE)
-  BALLAGAN FORMATION - ARGILLACEOUS ROCK, DOLOSTONE AND SANDSTONE

Silurian - Devonian

-  SWANSHAW SANDSTONE FORMATION - SANDSTONE
-  GREYWACKE CONGLOMERATE FORMATION - CONGLOMERATE

Silurian

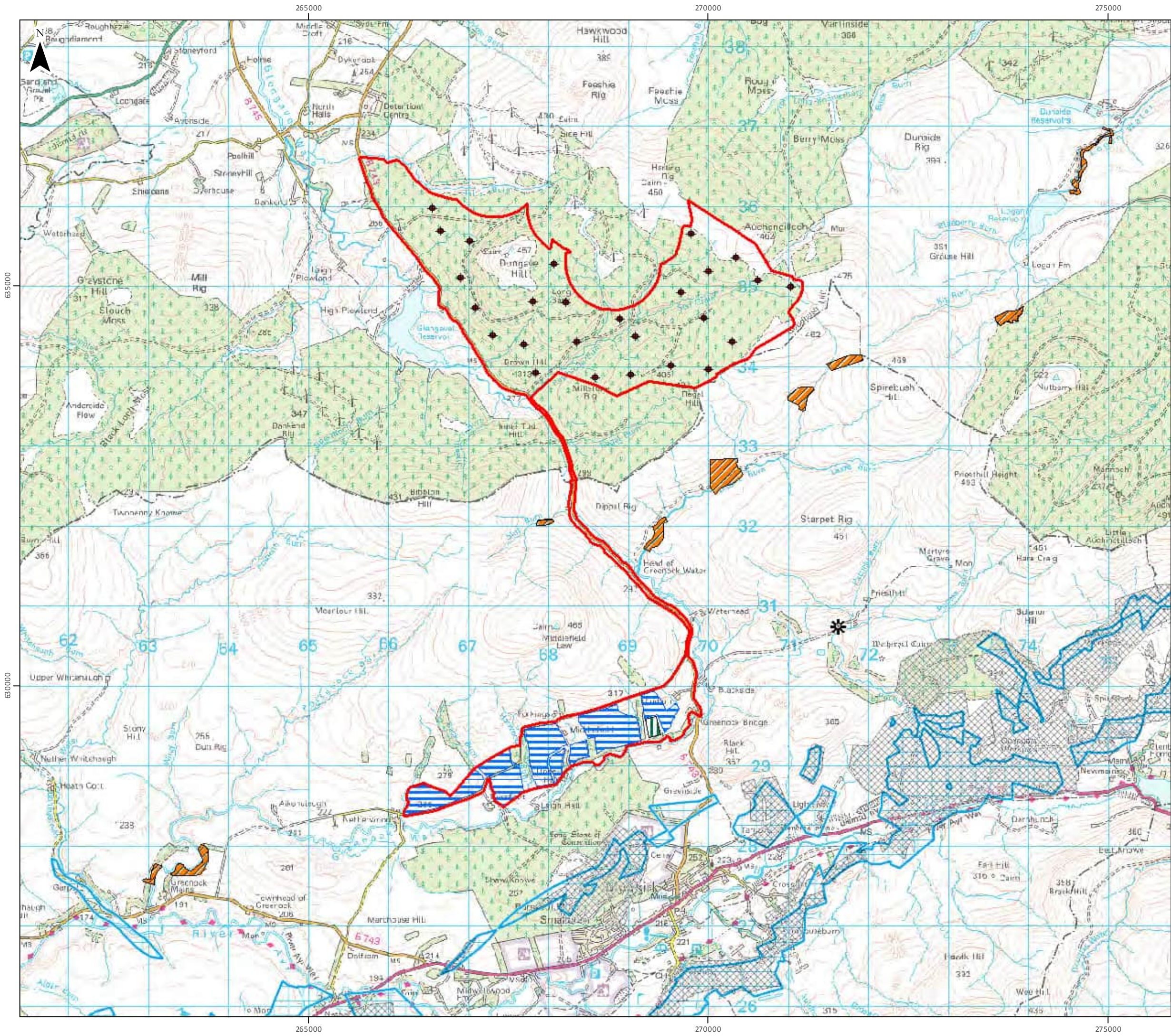
-  PLEWLAND SANDSTONE FORMATION - SANDSTONE
-  MIDDLEFIELD CONGLOMERATE FORMATION - CONGLOMERATE
-  GLENBUCK GROUP AND MONKS WATER GROUP (UNDIFFERENTIATED) SANDSTONE, CONGLOMERATE AND [SUBORDINATE] ARGILLACEOUS ROCKS
-  WATERHEAD GROUP (CF GLENBUCK GROUP) CONGLOMERATE, SANDSTONE AND SILTSTONE
-  LOGAN FORMATION - SANDSTONE, SILTSTONE AND MUDSTONE
-  SLOT BURN FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE
-  MONUMENT FORMATION - SANDSTONE
-  DIPPAL BURN FORMATION - SANDSTONE, SILTSTONE AND MUDSTONE
-  BIRKENHEAD SANDSTONE FORMATION - SANDSTONE
-  LEAZE FORMATION - SANDSTONE
-  DUNSIDE FORMATION - SANDSTONE
-  BLAEBERRY FORMATION - MUDSTONE
-  KIP BURN FORMATION - MUDSTONE
-  CASTLE FORMATION - SILTSTONE
-  PATRICK BURN FORMATION - MUDSTONE
-  PATRICK BURN FORMATION - WACKE
-  PONESK BURN FORMATION - WACKE













Hagshaw Energy Cluster - Western Expansion
Phase 1
Scoping Update

Figure 10.4b
KEY: Bedrock Geology and Faults

Date: 18/07/2023	Lead: GW	Review: NH	Version: 1.0
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- KEY**
-  Site Boundary
 -  Indicative Turbine Location
 -  Solar Development Area
 -  Substation & Energy Storage Compound
 -  Development High Risk Area
 -  Surface Coal Resource Areas
 -  Historic Mine Entry
 -  Geological Conservation Review (GCR)

0 0.6 1.2 1.8 2.4 km
 Scale 1:45,000 @ A3
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Hagshaw Energy Cluster - Western Expansion
 Phase I
 Scoping Update

Figure 10.5
Coal Development High Risk Area & GCR

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