

KEY

- SITE BOUNDARY
- + CENTRE OF POINTS USED FOR ZTV ANALYSIS
- 1km OFFSETS FROM SITE BOUNDARY
- NORTH YORK MOORS NATIONAL PARK
- ZONE OF THEORETICAL VISIBILITY

- Notes:
- ZTV envelope prepared using 3nr 45m high analysis points at proposed winding tower locations. Digital terrain modelling is based on Ordnance Survey Terrain 50 data (ASCII 50m grid files). The ZTV takes no account of built forms. Larger woodland areas have been included in the ZTV model at an assumed height of 10m above ground level.
 - Observers eye level assumed to be 1.7m

Revision 02, 2014/07/17.
 ZTV revised to arrangement shown on indicative site layout drawing 2312.SK01
 Revision 01, Drawing renumbered

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YORKPOTASH
 A Sinus Minerals Project

Project:
**York Potash Project
 Review of Alternative Minehead Sites**

Drawing Title:
**Site 3 (Whitby Enclave)
 Zone of Theoretical Visibility -
 Construction Stage**

Drawing Number:	Revision:
2312.07	02

Scale:	Date:
1:25,000 @ A1	July 2014

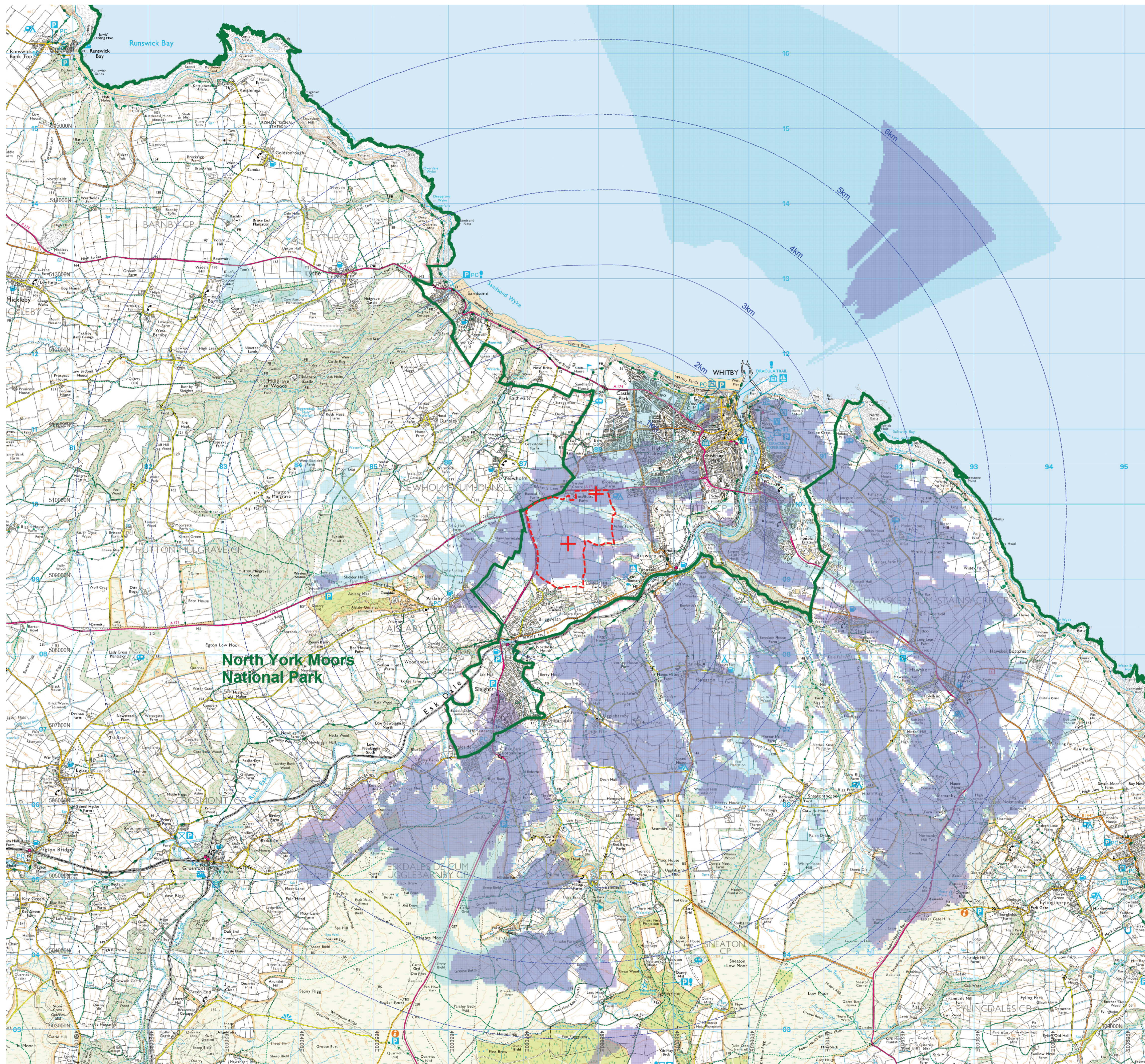
Drawn:	Checked:
ME	SW

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- 1km OFFSETS FROM SITE BOUNDARY
- NORTH YORK MOORS NATIONAL PARK
- ZONES OF THEORETICAL VISIBILITY:
- MINEHEAD BUILDINGS
- WELFARE BUILDING
- MINEHEAD BUILDINGS / WELFARE BUILDING ZTV OVERLAP



- Notes:
- ZTV envelope prepared using 12.8m high analysis points located at ridge levels of proposed minehead buildings and 13.1m high analysis points located at ridge levels of proposed welfare buildings. Digital terrain modelling is based on Ordnance Survey Terrain 50 data (ASCII 50m grid files). The ZTV takes no account of built forms. Larger woodland areas have been included in the ZTV model at an assumed height of 10m above ground level.
 - Observers eye level assumed to be 1.7m

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 ZTV revised to arrangement shown on indicative site layout drawing 2312.SK01
 Revision 01, Drawing renumbered

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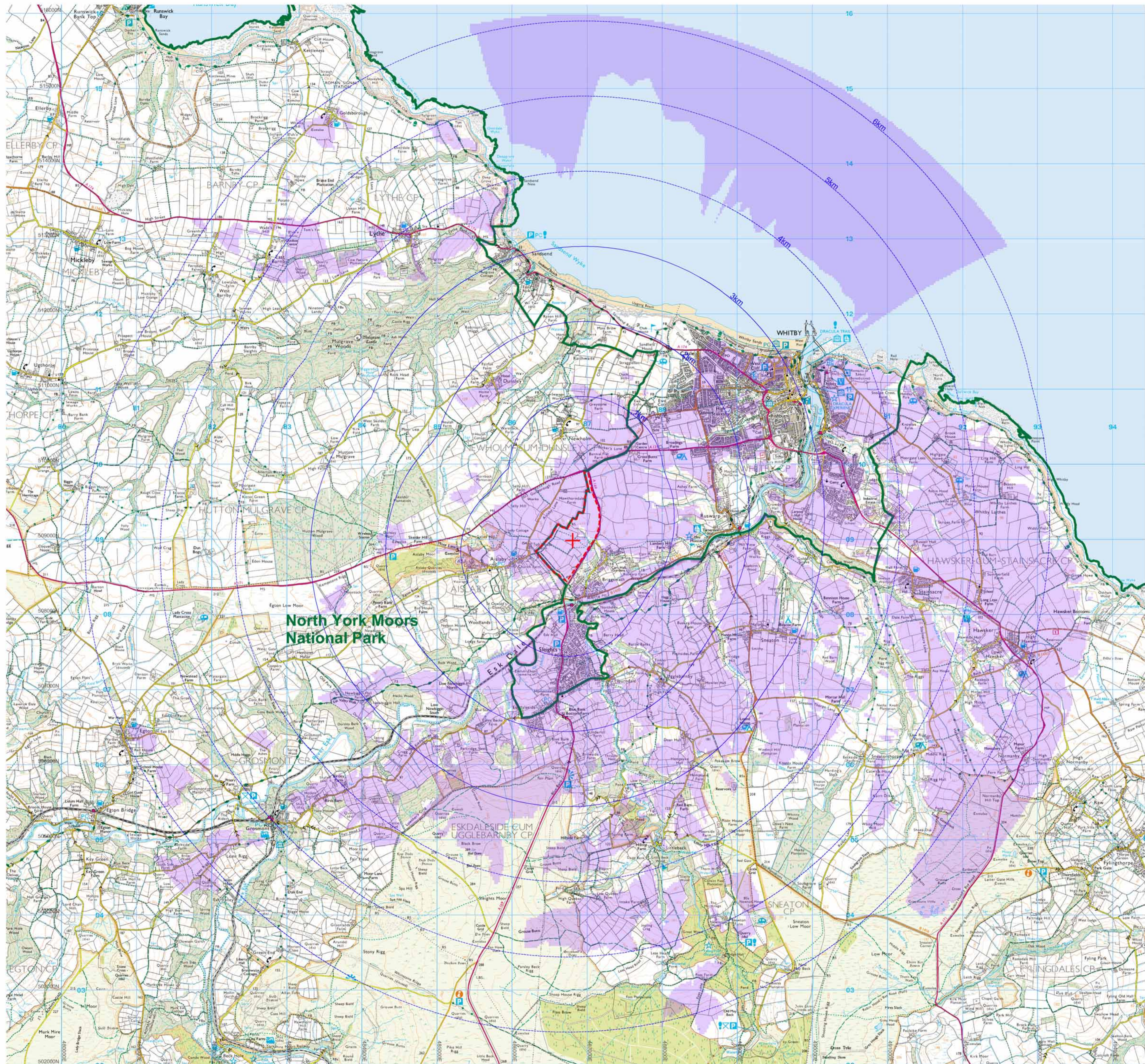
Drawing Title:
**Site 3 (Whitley Enclave)
 Zone of Theoretical Visibility -
 Operational Stage**

Drawing Number: **2312.08** Revision: **02**

Scale: **1:25,000 @ A1** Date: **July 2014**

Drawn: **ME** Checked: **SW**

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Notes:

- ZTV envelope prepared using 45m high single point source located at centre of site. Digital terrain modelling is based on Ordnance Survey Terrain 50 data (ASCII 50m grid files). The ZTV takes no account of built forms. Larger woodland areas have been included in the ZTV model at an assumed height of 10m above ground level.
- Observers eye level assumed to be 1.7m

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YORKPOTASH

A Sinus Minerals Project

Project:

**York Potash Project
Review of Alternative Minehead Sites**

Drawing Title:

**Site 5 (Whitby Enclave)
Zone of Theoretical Visibility -
Construction Stage**

Drawing Number: **2312.09**

Revision:

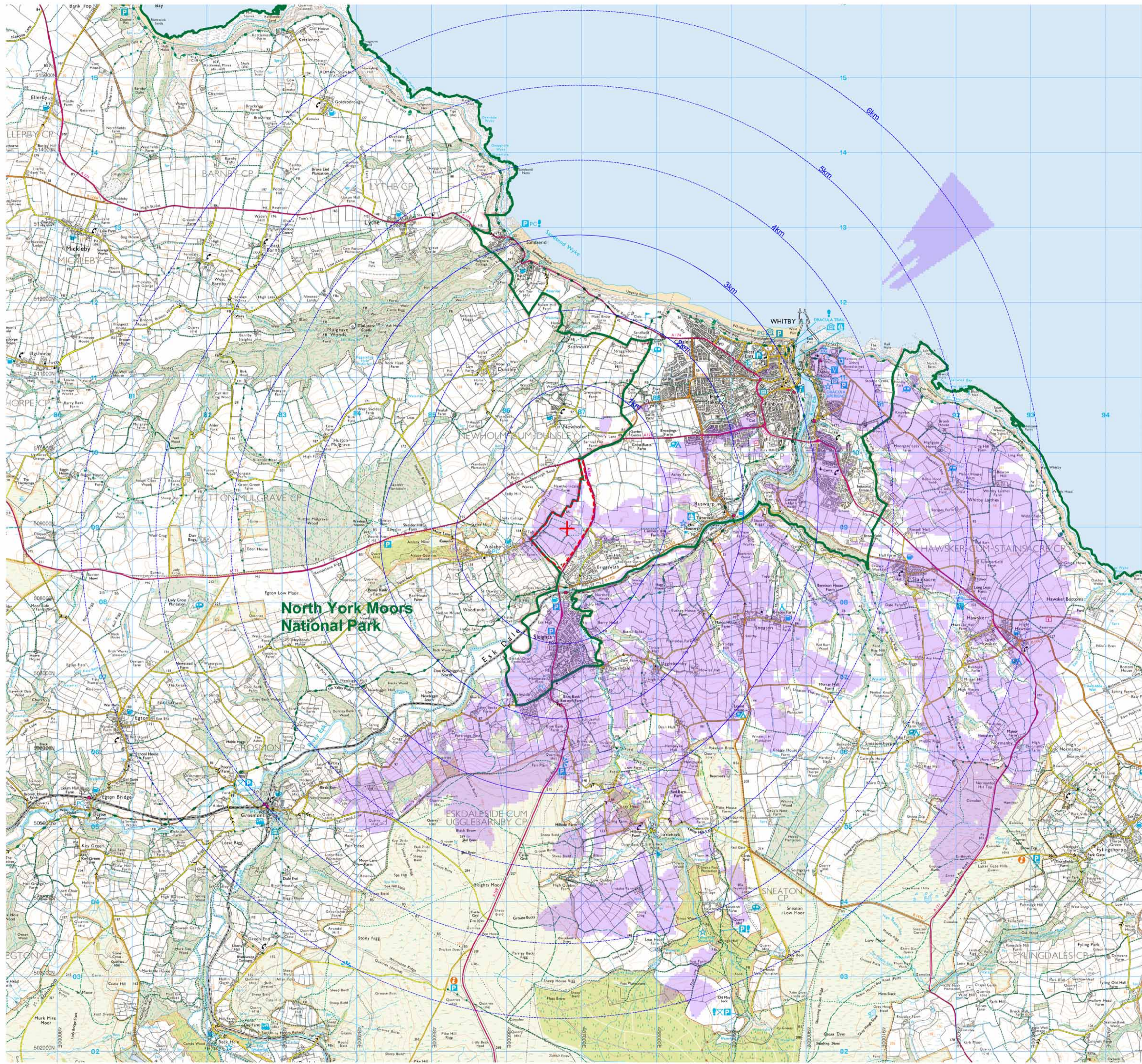
Scale: **1:25,000 @ A1**

Date: **December 2013**

Drawn: **ME**

Checked: **SW**

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- Observers eye level assumed to be 1.7m

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YORKPOTASH
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Project:
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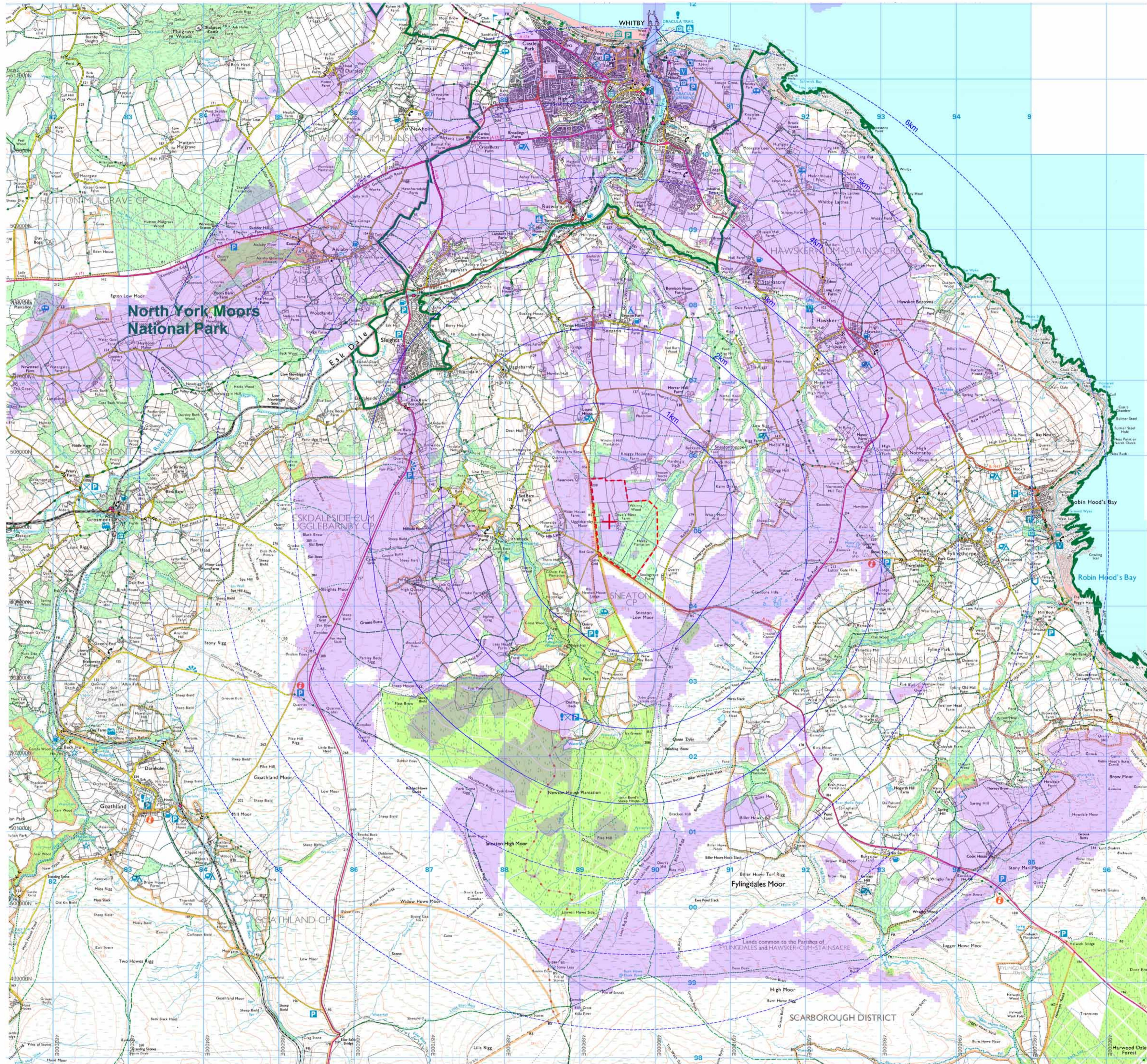
Drawing Title:
**Site 5 (Whitby Enclave)
Zone of Theoretical Visibility -
Operational Stage**

Drawing Number: **2312.10** Revision:






Scale: **1:25,000 @ A1** Date: **December 2013**

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Notes:

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- Observers eye level assumed to be 1.7m

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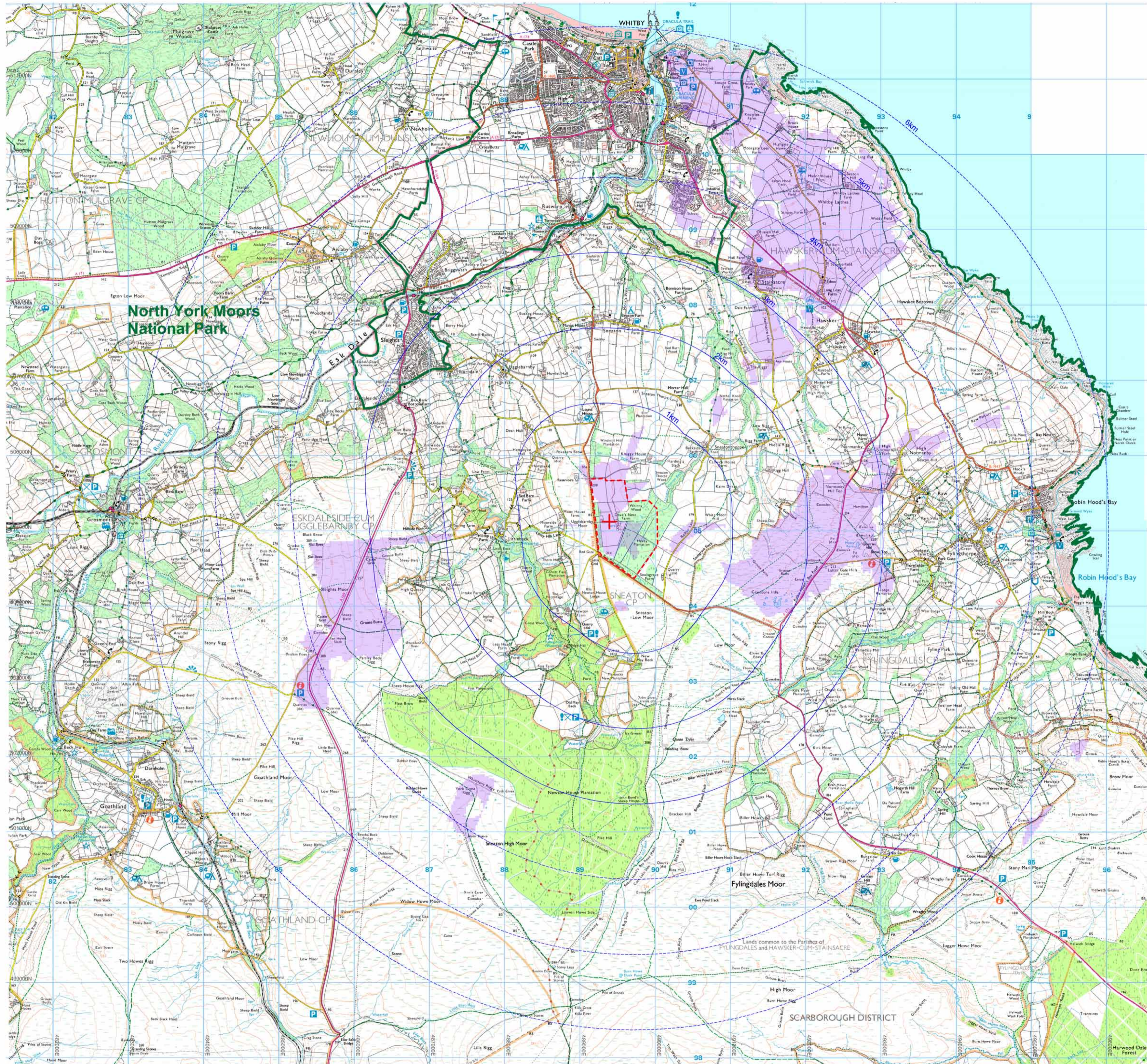
Drawing Title:
**Site 6 (Doves Nest Farm)
Zone of Theoretical Visibility -
Construction Stage**

Drawing Number: **2312.11** Revision:

Scale: **1:25,000 @ A1** Date: **December 2013**

Drawn: **ME** Checked: **SW**

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- Observers eye level assumed to be 1.7m

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Drawing Title:
**Site 6 (Doves Nest Farm)
Zone of Theoretical Visibility -
Operational Stage**

Drawing Number: **2312.12** Revision:

Scale: **1:25,000 @ A1** Date: **December 2013**

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Appendix B: Review of Alternative Minehead Sites: Landscape and Visual Effects

Project No. 2312

YORK POTASH LTD

**Minehead - Alternative
Sites Assessment**

**Landscape & Visual
Effects**

Version: rev 06

Date: 15 August 2014

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1. Introduction

Estell Warren Ltd was commissioned by York Potash Ltd in November 2013 to undertake a high level review of potential landscape and visual effects associated with alternative minehead sites for the York Potash Project. The purpose of the exercise was to identify significant factors which might influence site selection rather than to explore detailed issues.

An update of the study was undertaken in April 2014, to take into account scheme changes associated with the use of a tunnel for the mineral transport system (MTS).

A further update of the study was undertaken in July 2014 in response to comments made by the North York Moors National Park Authority on the draft Alternative Sites Assessment report. This update included preparation of an indicative minehead site design for Site 3 (Whitby Enclave) to provide a basis for testing the high level assumptions and findings identified for the site in the April 2014 LVIA study.

Five alternative sites have been reviewed:

- Site 1 (Cloughton Surrounds)
- Site 2 (Cloughton Surrounds)
- Site 3 (Whitby Enclave)
- Site 4 (Whitby Enclave)
- Site 5 (Doves Nest Farm)

2. Methodology

The methodology adopted for assessing landscape and visual issues is set out below:

- Undertake desk top study to identify prevailing landscape character within and around each site alternative (using existing published landscape character assessment¹);
- Identify key landscape and visual receptors on general constraints mapping (as undertaken by RHDHV) including North York Moors National Park boundary, Heritage Coast, Scheduled Monuments, Listed Buildings, Conservation Areas and public rights of way. General visual receptors including residential property and roads were identified from Ordnance Survey maps and have not been included on the constraints mapping;
- Locate site alternatives on 1:25,000 scale Ordnance Survey base maps and plot 1km standoffs to a distance of 6km from site boundaries;
- Prepare digital terrain models using Ordnance Survey Terrain 50 data (ASCII 50m grid files) and plot zones of theoretical visibility (ZTV) for each site alternative, based

¹ Scarborough Borough Landscape Study: Volume 1 – Borough wide Landscape Character Assessment, LUC, February 2013; North York Moors National Park Landscape Character Assessment, WYG, 2003

on a single, centrally located, 45m and 10m* high point respectively for construction and operational stages (*see further note below in respect of Site 3);

- Undertake a site visit to briefly assess each site alternative in the field (based on prevailing landscape character and scale, openness and enclosure, topography, pattern and complexity, vegetation structure and woodland cover, experiential character and availability of open views);
- Identify broad potential for effects on landscape receptors including key characteristics and designated landscapes;
- Identify broad potential for effects on visual receptors including views from designated features, residential property, public rights of way and roads;
- Identify the potential for effective mitigation including fit with existing landscape character and relationship with key landscape and visual receptors;
- Assess site alternatives against high level criteria and rank in order of preference.

The digital terrain model used for the preparation of ZTV includes major blocks of woodland and forest cover, plotted from freely available aerial photography. Woodland height was set to 10m above ground levels except for woodland within the Dove's Nest Farm site, where surveyed woodland heights have been used. The zones of theoretical visibility shown on the drawings should be treated as an indicative tool, they are based on analysis of a single development point only and the ZTV methodology does not take account of real world features including minor topographical changes, buildings, hedgerows and other lower vegetation, all of which combine to influence real views.

An indicative minehead site design (see drawing 2312.SK01) was prepared at 1:2500 scale including a proposed landform that could accommodate spoil generated by the minehead development and MTS and outline restoration proposals to test how the site could be restored to mitigate and identified landscape and visual effects. ZTV mapping for Site 3 was re-run using a 45m high spot point at the centre of the proposed mine and MTS shafts and at 12.8m height at the minehead buildings and 13.1m height at the welfare facility, to test operational phase effects based on actual mine buildings being proposed at the Dove's Nest Farm site.

The results of the above exercise are reported in Table 1 supported by the following drawings:

- 2312.01 - Site 1 (Cloughton Surrounds) Construction Stage ZTV
- 2312.02 - Site 1 (Cloughton Surrounds) Operational Stage ZTV
- 2312.03 - Site 2 (Cloughton Surrounds) Construction Stage ZTV
- 2312.04 - Site 2 (Cloughton Surrounds) Operational Stage ZTV
- 2312.07 - Site 3 (Whitby Enclave) Construction Stage ZTV
- 2312.08 - Site 3 (Whitby Enclave) Operational Stage ZTV
- 2312.09 - Site 4 (Whitby Enclave) Construction Stage ZTV

- 2312.10 - Site 4 (Whitby Enclave) Operational Stage ZTV
- 2312.11 - Site 5 (Doves Nest Farm) Construction Stage ZTV
- 2312.12 - Site 5 (Doves Nest Farm) Operational Stage ZTV

In addition to considering potential effects associated with minehead development the study also takes account of potential in-combination effects that could arise from development associated with the MTS. For the purposes of this exercise broad co-ordinates were provided by the tunnel design engineer and used to estimate how many intermediate access shafts would be needed within the National Park for the Cloughton Surrounds alternatives. The intermediate shaft locations for Doves Nest Farm and the Whitby Enclave alternatives would be at the same locations (Lady Cross Plantation within the National Park and Lockwood Beck/ Tocketts Lythe outside the Park).

Effects associated with potential MTS intermediate shaft sites have not been assessed in detail. It may be assumed, however, that each MTS intermediate shaft site would require a 45m high temporary winding tower during the construction period, would need to accommodate approximately 250,000m³ of spoil and would require a permanent 20 x 20 x 8m high shaft top building during the operational stage.

The following table summarises the potential MTS implications of the minehead site alternatives:

Minehead alternative/ group of alternatives	Number of MTS shafts within National Park	Number of MTS shafts on edge of National Park
Cloughton Surrounds	6	1 close to edge 1 intervisible with edge
Whitby Enclave	1	1 close to edge 1 intervisible with edge
Doves Nest Farm	1	1 close to edge 1 intervisible with edge

The Whitby Enclave and Doves Nest Farm alternatives would require an MTS shaft within the minehead site. The Cloughton Surrounds alternatives would require an MTS portal within the minehead site.

3. Summary of Potential Landscape and Visual Effects

The commentary below represents an overview of the key landscape and visual effects identified for each site alternative in Table 1.

Site 1 (Cloughton Surrounds)

The site is located on an open, elevated, south facing hillside flank, with distant views to the south and partial containment of views to the north and east. Land use comprises arable farmland with fields bounded by drystone walls. The wider area of open, lower lying, farmed landscape between Cloughton in the north and Scarborough in the south east forms a strong contrast with the elevated, afforested edges of the National Park to the south, west and north.

The site does not lie within an area of designated landscape but is located immediately adjacent to the boundary of the North York Moors National Park, along Ripley Road on the northern site boundary, and is intervisible with parts of the National Park in coastal areas to the east and along the edge of the Tabular Hills (Pickering to Lockton) in the west. The site is also intervisible with higher ground within the North Yorkshire and Cleveland Heritage Coast, extending between Tindall Point in the north and Scalby Mills in the south.

Construction stage landscape effects would include loss of existing landscape features (dry stone walls, farmland, limited areas of scrub and hedgerows across the southern part of the site) and adverse visual influence across the open coastal landscape to the east, the bowl of gently rolling farmland to the south, the eastern edge of the Tabular Hills to the west and along Harwood Dale valley to the north west. Of these affected areas parts of the coastal landscape, the area immediately north of Ripley's Road, the Tabular Hills edge and Harwood Dale valley lie within the National Park boundary. Adverse effects would also occur in views from higher ground within the North Yorkshire and Cleveland Heritage Coast between Tindall Point and Scalby Mills.

Construction stage visual effects would include adverse influence in close to mid-range views from surrounding public rights of way, roads and residential properties including effects on local settlements at Burniston in the south and parts of Cloughton in the east. Adverse effects would occur in distant views from the Cleveland Way National Trail, which follows the coastline in the east, the northern fringes of the Scarborough urban area and from the Scarborough Castle Scheduled Monument and tourist feature. A public right of way passes through the site and would require diversion.

A range of similar effects would occur during the operational stage although views from Cloughton would be screened by intervening woodland cover.

Mitigation opportunities during the construction stage would be very limited, due to the open, elevated position of the site, a lack of inherent enclosure and intervisibility with surrounding higher or lower ground. Large scale mounding and woodland planting could be considered to provide mitigation for the operational stage but this would adversely affect the presently open character of the hillside and would compromise its role as a foil to the elevated and afforested edges of the National Park.

Site 2 (Cloughton Surrounds)

The site forms part of a series of smoothly rolling ridges and valleys, falling from higher ground along the edge of the National Park in the west and south west towards the coast in the east. Land use comprises arable farmland with hedgerow boundaries. Field pattern comprises large to medium scale linear fields running perpendicular to landform ridges and decreasing to a small scale field size at the eastern edge of the site adjacent to Burniston. The wider area of open, lower lying, farmed landscape between Cloughton in the north and Scarborough in the south east forms a strong contrast with the elevated, afforested edges of the National park to the south, west and north.

The site does not lie within an area of designated landscape and is located, at its closest point, approximately 400 metres from the North York Moors National Park boundary in the west. The site is intervisible with parts of the National Park on higher ground to the west and north, along the edge of the Tabular Hills (Pickering to Lockton), and on higher ground across the open coastal landscape north east of Burniston. The site is also intervisible with higher ground within the North Yorkshire and Cleveland Heritage Coast, extending between Tindall Point in the north and Scalby Mills in the south.

Construction stage landscape effects would include loss of existing landscape features (linear field pattern, hedgerows, arable farmland, undulating topography) and adverse visual influence within the bowl of lower lying farmland contained between Cloughton in the north, the Tabular Hills in the west and higher ground south of Scarborough. Of these affected areas parts of the open coastal landscape in the east, the Tabular Hills edge in the west, Harwood Dale Valley in the north and rising ground west of Newby in the south lie within the National Park boundary. Adverse effects would also occur in views from higher ground within the North Yorkshire and Cleveland Heritage Coast between Tindall Point and Scalby Mills.

Construction stage visual effects would include adverse influence in close to mid-range range views from surrounding public rights of way, roads and residential properties including close range effects in views from the settlement of Burniston, which lies to the immediate east and north of the site. Adverse effects would occur in distant views from parts of the Cleveland Way National Trail, which follows the coastline in the east, the northern fringes of the Scarborough urban area and from the Scarborough Castle Scheduled Monument and tourist feature. Two public rights of way pass through the site and would require diversion.

Operational stage effects would follow a similar pattern to the above but with a reduced extent across the open coastal landscape and within the National Park. Close range effects in views from Burniston and surrounding public rights of way and roads would remain, together with overlooking from nearby higher ground.

Mitigation opportunities during the construction stage would be limited, due to the open character of the site and lack of significant containing features within the surrounding landscape. Large scale mounding, designed to reflect the existing rolling landform, could potentially be employed to screen operational stage buildings and low level activities. Woodland planting could also be considered to provide mitigation for the operational stage but this would adversely affect the presently open characteristic of the farmland bowl extending between Cloughton and Scarborough and its role as part of the setting to the National Park.

Site 3 (Whitby Enclave)

Refer to drawing 2312.SK02 for photographic views of the existing site.

The site is located within elevated, open farmland on the northern flank of the River Esk valley to the south west of Whitby. The landform falls gently south and eastwards and is bisected by three small incised valleys, associated with minor watercourses. Land use comprises arable fields bounded by hedgerows. Tree cover follows the incised valleys.

The site does not lie within any area of designated landscape but adjoins the North York Moors National Park in the north. The site is intervisible with parts of the National Park on higher ground to the north and west and an arc of higher ground extending from Saltwick in the east to Sleights Moor in the south west, across the southern flank of the Esk valley. Intervisibility with the North Yorkshire and Cleveland Heritage Coast also occurs to the east and south east of Whitby.

Construction stage landscape effects would include loss of existing landscape features (field pattern, hedgerows, arable farmland), changes to the existing undulating topography, partial interruption of incised valley features and adverse visual influence across the northern flank of the lower Esk valley and areas of coastal hinterland and moorland landscape south of the

Esk valley. Of these affected areas parts of the valley side and hinterland landscape to the west and north of the site, and the arc of valley side, hinterland and moorland landscape extending from east to south west, south of the Esk valley, lie within the National Park boundary. Large parts of these areas lie at higher elevations than the site and overlook it. Adverse influence would also occur across parts of the Heritage Coast designated area east and south east of Whitby, including the area around Whitby Abbey.

Construction stage visual effects would include adverse influence in close to mid-range range views from surrounding public rights of way, roads and residential properties, including effects in views from properties extending across the western edge of Whitby, including Holmstead Avenue and Ruswarp Lane to the east of the site, Cross Butts Stable Restaurant and Broadings Farm (with associated holiday chalets and caravan park) on the northern site boundary. Winding towers would be visible in available views from Aislaby and the northern edge of Briggswath. Adverse effects would also occur in distant overlooking and horizon views from public rights of way, roads and residential properties across the southern flank of the Esk valley, including settlements at Sleights, Sneaton and Ugglebarnby, and from Whitby Abbey Scheduled Monument in the north east.

Operational stage effects would follow a similar pattern to the above but with a reduced extent of influence on the coastal hinterland landscape to the north. Adverse effects in views from within the National Park and from receptors in general across the southern flank of the Esk valley would remain, due to the site lying at similar or lower elevations. Adverse effects in views from parts of Whitby, including residential property to the east and north and from Whitby Abbey would also remain.

Mitigation opportunities during the construction stage would be limited, due to the open and outward facing nature of the site and lack of significant containing features within the surrounding landscape. The large footprint of the site would allow spoil and mine buildings/platforms to be accommodated whilst retaining rolling topography and incised valley features. Existing field patterns and hedgerows would require removal and replacement to allow landform reshaping to take place. Landform changes would partially screen operational buildings and activities, requiring woodland planting to provide additional screening. Woodland planting would alter the presently open character of the site but would reflect heavier woodland cover across upper valley flanks to the west of the site (around Aislaby). A precedent for increasing woodland cover has also been set in the local area by the approved mitigation measures for the A171 park and ride scheme located immediately north of the site. Planting measures would be expected to mitigate views of the minehead buildings within the medium term and views of the welfare facility in the long term. Lighting effects associated with the welfare facility and car park and, to a lesser degree, the internal access road to the minehead, have the potential to increase the perceived extent of the Whitby urban area westwards along the crest of the northern flank of the Esk valley.

Site 4 (Whitby Enclave)

The site is located within elevated, open farmland on the northern flank of the River Esk valley to the south west of Whitby. The landform falls gently eastwards across the northern part of the site and steeply south eastwards across the southern part of the site. Small incised valleys, associated with minor watercourses and tree cover, cut into the lower eastern edge of the site. Land use is primarily arable farmland with pasture to the south eastern edge, with hedgerow field boundaries.

The site does not lie within any area of designated landscape but adjoins the North York Moors National Park along its northern and western edges. The site is intervisible with parts

of the National Park on higher ground to the north and west and an arc of higher ground extending from Saltwick in the east to Sleights Moor in the south west, across the southern flank of the Esk valley. Intervisibility with the North Yorkshire and Cleveland Heritage Coast also occurs to the east and south east of Whitby.

Construction stage landscape effects would include loss of existing landscape features (field pattern, hedgerows, farmland, undulating topography, incised valley features and woodland) and adverse visual influence across the northern flank of the lower Esk valley and areas of coastal hinterland and moorland landscape south of the Esk valley. Of these affected areas parts of the valley side and hinterland landscape to the west and north of the site, and the arc of valley side, hinterland and moorland landscape extending from east to south west, south of the Esk valley, lie within the National Park boundary. Adverse influence would also occur across parts of the Heritage Coast designated area east and south east of Whitby.

Construction stage visual effects would include adverse influence in close to mid-range range views from residential property within nearby settlements at Aislaby and Briggswath, from outlying residential properties and from surrounding public rights of way and roads. Adverse effects would also occur in distant views from the western edge of Whitby, from Whitby Abbey Scheduled Monument in the north east and from rights of way, roads and residential properties across the southern flank of the Esk valley, including settlements at Sleights and Sneaton. Several public rights of way cross the site and would require diverting.

Operational stage effects would follow a similar pattern to the above but with a reduced extent of influence on the coastal hinterland landscape to the north and reduced effects on Aislaby and Briggswath. Adverse effects in views from within the National Park and from receptors in general across the southern flank of the Esk valley would remain, due to the site lying at similar or lower elevations. Adverse effects in distant views from Whitby Abbey and areas of Heritage Coast would also remain.

Mitigation opportunities during the construction stage would be very limited, due to the steep, open and outward facing nature of the site. Existing nearby woodland cover to the west and south of the site would provide some containment within local views. The steep nature of the main body of the site indicates that significant cut and fill operations would be needed to create suitable development platforms. When combined with the relatively small size of the site, compared to alternative sites, this suggests that effective mitigation mounding may be difficult to accommodate or could remain an intrusive and prominent valley side feature in its own right. Large scale woodland planting could be considered to provide mitigation for the operational stage. This would be in keeping with increasing woodland cover on the lower valley side west of the site but would be contrary to the open character of northern parts of the site on the upper valley side. The effectiveness of mounding and planting in views from ground at higher elevations south of the Esk valley may be limited in the short and medium term, requiring long term growth to attain suitable height for full screening to be achieved.

Site 5 (Doves Nest Farm)

The site is located within an elevated area of farmland and plantation south of Sneaton and to the south west of Whitby. Mixed plantation woodland provides partial visual enclosure along western, southern and eastern boundaries. Topography within the site slopes gently from west to east, with surface water draining to Sneaton Thorpe Beck on the eastern boundary. The site lies on a broad north-south trending ridge associated with Ugglebarnby Moor, beyond which landform drops away sharply to Little Beck valley in the west and more

gradually to the Esk valley in the north and the coast in the east. Land use comprises arable fields and plantation woodland.

The site lies entirely within the North York Moors National Park. The site is intervisible with open, elevated moorland ridges at Sleights Moor in the west and Graystone Hills/ Latter Gate Hills in the east, both of which are Open Access land. More distant intervisibility is also possible from the North Yorkshire and Cleveland Heritage Coast to the east and south of Whitby and from the northern flank of the Esk valley between Aislaby and Whitby. Mid-range views to the site are possible from local roads and public rights of way including the Coast to Coast Walk to the east of site. Distant views of the site are possible from Whitby Abbey Scheduled Monument and tourist feature in the north.

Construction stage landscape effects would include some loss of existing features (hedgerows, hedgerow trees, arable/ pastoral farmland and coniferous plantation) and adverse visual influence in views from areas of open and elevated landscape to the west and across areas to the east and north east of the site generally, including within distant views from the western edge of the North Yorkshire and Cleveland Heritage Coast. In views from the west existing woodland cover would be expected to screen most ground level activity with temporary winding towers remaining visible. In views from the east and north east ground level activities, including earthworks and construction of buildings would be visible to some degree, above and between existing woodland cover depending on viewpoint. Potential exists for increased adverse effects on perceptual landscape character at Ugglebarnby Moor and within the environs of Raikes Lane, over and above existing road noise influences.

Construction stage visual effects would include adverse influence in close to mid-range views from outlying residential properties, the adjoining B1416 road, surrounding public rights of way, including the Coast to Coast Walk, and Open Access land at Ugglebarnby Moor in the west, Sneaton Low Moor in the south and Graystone Hills in the east. Mid-range to distant views would be possible in views from villages at Hawsker, Stainsacre, Sneaton and the southern edges of Whitby and from the wider public rights of way and road network, including the A171 in the east and A169 in the west. Ground level activity would be visible within the view corridor extending east and north east from the site with temporary winding towers being visible to a greater or lesser degree within views in general.

A range of similar effects would occur during the operational stage although the overall envelope and extent of visible development would be reduced due to containment by existing mature woodland cover around the site.

Existing mature woodland belts to the western, southern and eastern edges of the site would provide a degree of inherent mitigation during both construction and operational stages of the scheme, although location of the site on a ridge would reduce effectiveness in screening views of the temporary winding towers. Setting of minehead buildings east and downslope of the landform ridge would improve natural screening of operational stage activities in views from the west. Sensitively designed screen mounding and woodland planting could be used to contain operational stage views from the east. The existing heavily wooded character of the Ugglebarnby Ridge could provide an armature for large scale mitigation planting, enabling effective screening to be achieved whilst remaining in keeping with prevailing landscape character.

4. Comparison of Site Alternatives

Site alternatives are assessed below against a series of high level criteria and then ranked in order of preference. Weight is given to the presence of natural site mitigation and the potential for new mitigation measures that could fit with prevailing landscape character over the long term.

1. Potential for existing landscape character to accommodate minehead development

The Cloughton surrounds sites (1 and 2) are located within a relatively open coastal and coastal hinterland landscape, with limited woodland cover or other enclosing features. Site 1 lies on an open hillside and site 2 is located within an area of slightly lower lying, undulating ground. Significant landform alteration would be required to accommodate the minehead at sites 1 and 2 with subsequent loss of existing landscape features. Of the Cloughton alternatives, site 2 is considered to present the best opportunity to accommodate minehead scale development, although influence would remain in views from surrounding higher areas of landscape.

The Whitby enclave sites (3 and 4) are located within open, elevated positions on the northern side of the Esk valley, with limited surrounding woodland or tree cover or topographical enclosure and exposure in views from high ground on the opposing valley side. The gentler topography and larger field pattern of site 3 indicates that it has better potential to accommodate minehead scale development than site 4 although both sites could require significant change to existing incised valley landforms. The Doves Nest Farm site (6) is located on a broad, evenly graded ridge and benefits from a degree of existing enclosure by woodland within and close to the site, which could accommodate minehead scale development and visually anchor topographic changes and built form into existing landscape character.

Site 5 would be preferred in terms of the ability of the existing landscape to accommodate minehead scale change, with site 2 being second preferred. Site 3 presents benefits over sites 4 and 1.

2. Physical impact on distinctive landscape features

Sites 1 and 2 would affect areas of rolling or elevated farmland. The open, hillside aspect of site 1, although not containing specific distinctive features other than drystone walls, does form a prominent feature in wider views. The broad ridge and valley landform of site 2 forms a locally distinctive characteristic.

Site 4 would affect the existing distinctive wooded incised valley landform and valley side field pattern in a location where it forms a readily understood part of Esk valley landform and landscape character. Site 3 could accommodate minehead development (as shown on drawings 2312.SK01) but would require extensive remodelling of the existing rolling ridge and incised valley landform. Whilst mitigation measures would reflect the characteristics of existing topography some of the original form and context of these features would be lost. Site 5 does not contain any particularly distinctive landscape features, affecting gently falling farmland, plantation woodland and relatively degraded field boundaries.

Site 5 would be preferred on the basis that no distinctive landscape features would be affected by minehead scale development. Sites 1 and 2 would be second preferred, with sites 3 and 4 being least preferred.

3. Landscape character and visual effects during the construction period

Construction stage effects for sites 1 and 2 would affect the surrounding area of coastal hinterland farmland, edges of the North York Moors National Park and parts of the North Yorkshire and Cleveland Heritage Coast. A number of visual receptors would be affected at relatively close range including public rights of way, roads, outlying residences and settlements at Cloughton and Burniston. Effects could also occur in distant views from the northern edge of Scarborough. The landscape around sites 1 and 2 is generally quiet and rural, with some adverse influence from the A171. Both sites are intervisible with Scarborough Castle Scheduled Monument in the south. Due to a lack of enclosing features, ground level operations and temporary winding towers would be expected to be visible at both sites from surrounding areas.

Sites 3 and 4 construction stage effects would affect adjoining areas of Esk valley landscape and surrounding coastal hinterland landscape, include elevated open areas along the upper sides of the Esk valley to the north and south. Affected areas of landscape would include parts of the North York Moors National Park to the north, west and south and the North Yorkshire and Cleveland Heritage Coast in the east and south east. Potential affected visual receptors would include adjoining roads, public rights of way and parts of nearby settlements at Aislabby, Briggswath, Sleights and the western edge of Whitby. More distant views would also be possible from Sneaton, Ugglebarnby, Stainsacre and Hawsker. Both sites are intervisible with Whitby Abbey Scheduled Monument. The landscape near sites 3 and 4 is adversely influenced by the presence of the A169 and A171 roads and views of the built up edge of Whitby, reducing the perception of rural character and tranquillity. Due to a general lack of enclosing features ground level operations and temporary winding towers would be expected to be visible from surrounding areas, with greatest visibility expected in views from the south and east.

Site 5 construction stage works would affect surrounding areas of coastal hinterland, moorland and Esk valley landscape, all located within the North York Moors National Park. Effects would also occur in distant views from the North Yorkshire and Cleveland Heritage Coast in the east. Potential affected visual receptors would include the adjoining B1416, public rights of way and occasional residential properties. Potential effects would occur in distant views from surrounding public rights of way, including the Coast to Coast Walk in the east, from roads, outlying residential properties and settlements at Stainsacre, Hawsker, Sneaton and Sleights. Enclosing woodland cover would result in a broad differentiation of temporary effects depending on viewpoint location, with visibility of ground level activities generally being contained within a view corridor east and north east of the site. Within other views upper sections of the temporary winding towers would be visible above woodland cover but ground level activity would be obscured. Site 5 and the surrounding area is, generally, rural and tranquil, with local adverse influence from the B1416 and more distant adverse influence from the A171 in the east.

It is difficult to identify clear differences between the sites in terms of construction stage effects. In general, the Cloughton sites (1 and 2) have the smallest potential visual envelopes, followed by sites 3 and 4. Site 5 has the largest potential visual envelope. In balance to the envelope size, however, sites 1, 2, 3, and 4 have the potential to affect landscape character and a larger number of visual receptors at a higher intensity, with greater parts of construction activities expected to be visible, including ground level operations, due to a lack of inherent enclosure at the sites. Following review of the indicative site layout for site 3 (Whitby Enclave) it is considered that site 3 would be likely to result in more intense landscape character and visual effects, due to the general degree of openness of the site location, and site 5 likely to result in some intense effects and more

widespread, lesser, effects (comprising views of upper sections of winding towers) due to its location close to a ridge top. The wider influence of site 5 construction activities is likely to comprise distant views of upper parts of temporary winding towers rather than construction activities as a whole, although ground level effects in views to the east and north east should be noted.

On this basis it is considered that no site offers clear benefits or disbenefits in relation to construction stage effects.

4. Landscape character and visual effects during the operational period (no mitigation)

Sites 1, 2, 3 and 4 would result in a similar range of operational stage effects as described above for the construction stage, with all sites having the potential for close range landscape and visual effects. Sites 1 and 2, however, would be expected to have slightly less extent of influence than sites 3 and 4. Site 5, during the operational stage, would be expected to result in a considerably smaller extent of visual influence than during construction, due to containment of lower operational buildings by surrounding tree cover. Without mitigation, close range effects would still arise within views from the B1416. It should also be noted that the zone of theoretical visibility for site 5 would enlarge considerably if the development point source were to be moved further north, where the benefits of enclosing tree cover would be reduced.

Notwithstanding the above comments, site 5 would remain the preferred site based on operational stage effects, due to the landscape setting and partial visual containment provided by existing woodland cover when compared to the other, more open, sites. Site 2 would be second preferred, followed by site 1. Site 3, whilst affecting a similar area of National Park landscape on the opposing valley flank as site 4 would be next preferred on the basis of being located on lower, more gently falling ground, when compared to the steep valley side location of site 4.

5. Effect on areas of designated landscape (excluding MTS effects)

Sites 1, 2, 3 and 4 are located outside the North York Moors National Park boundary but are intervisible with edges of the National Park and would potentially influence landscape character within the National Park. Sites 3 and 4, exposed on the northern flank of the Esk valley are intervisible with broad swathes of landscape within the National Park on the upper northern and southern sides of the Esk valley, which overlook the sites. Site 5 is located within the National Park.

Site 5 would result in direct physical landscape effects on the National Park landscape in addition to indirect visual and character effects. All other options would result in indirect visual and character effects on National Park landscapes, with sites 3 and 4 expected to have a greater influence than sites 1 and 2. Site 5, however, would not physically affect any distinctive or special landscape qualities within the National Park.

Site 5 is predicted to have the most extensive construction stage visual envelope within the National Park, although previous commentary on the differentiation in construction stage effects should be noted. Sites 3 and 4 would have a smaller construction stage visual envelope within the National Park. Adverse effects associated with site 3 within views from the National Park across the southern flank of the Esk valley would be similar to those resulting from site 5 in views from moorland areas to the east of that alternative. In addition, site 5 would have more widespread effects on the Park due to views of the upper parts of temporary winding towers being available across a wider area. Site 1, being located at a

higher elevation, has potential for more extensive temporary effects on National Park landscape than site 2.

In terms of potential operational stage effects site 2 would be expected to have the least extensive effect on National Park character, followed by site 1. Site 5 could potentially have a similar, or lesser, extent of visual envelope within the National Park as sites 1 and 2 but would be ranked lower due to physical effect on the National Park landscape, albeit with no effect on distinctive features. Sites 3 and 4, although not located within the National Park, would be subject to overlooking at relatively close range from parts of the National Park with operational features (buildings and vehicles using the site) being visible until mitigation planting becomes well developed.

In terms of temporary and permanent effects on the North Yorkshire and Cleveland Heritage Coast sites 3, 4 and 5 would be expected to have lesser effects on Heritage Coast character than sites 1 and 2, due to greater distance from the Heritage Coast boundary.

Following review of the indicative site layout for site 3 (Whitby Enclave) it is considered that site 5 would be better integrated into the landscape within views from the National Park than site 3 during the early operational phase but this difference would be marginal (comprising a slightly longer time period for mitigation planting to become effective at site 3 than site 5). This marginal difference would be outweighed by the direct physical effect of site 5 on the National Park and the increased temporary effects of site 5 on the National Park during the construction phase.

Overall, site 2 is preferred in terms of potential effects on areas of designated landscape, followed by site 1. Site 3 is preferred over site 4 and site 5 is least preferred. *6. Potential for effective mitigation measures to fit with prevailing landscape character and achieve long term assimilation*

Site 1 lies on an open hillside that is backed and flanked by woodland cover. Landform modelling and extensive woodland planting could be utilised to assimilate a minehead at this location but this would require a change from the presently open landscape character and could require a long timescale to become effective, given the open, elevated aspect.

Site 2 lies within an area of open rolling farmland where woodland and tree cover is presently very limited. Landform modelling and woodland planting could be used to screen the minehead site but this would entail a change from existing open character to one of a more enclosed nature.

Sites 3 and 4 lie within areas of elevated valley side farmland and are overlooked from higher ground on the northern and southern flanks of the Esk valley. A minehead at site 3 could be integrated into its landscape setting using landform modelling and woodland planting (as shown on drawing 2312.SK01), although this would require adaptation of the existing landform and an increase in woodland cover, resulting in some loss of existing distinctive features and a change to existing open character. Existing topography across site 4 is considerably steeper than that of site 3, indicating that extensive earthworks would be required to create a minehead platform. Site 4 does, however, lie closer to areas of existing woodland and tree cover on the northern valley flank. Landform modelling and woodland planting could be used to assimilate site 4 but, overall, it is considered that this would be more difficult to achieve successfully than at site 3 due to landform gradients. For both sites, assimilation could occur over the medium to long term, due to expected timescales for planting to reach effective heights within views from surrounding and opposing higher

ground, with site 3 expected to perform better than site 4 due to lower elevation and better initial landform fit.

Site 5 is located within an area of extensive woodland and plantation cover close to the top of a broad ridge. The existing combination of woodland cover and landform provides a degree of immediate screening for construction and operational stages. Existing woodland cover could be extended or combined with landform modelling to fully enclose and assimilate the operational minehead in a relatively short period of time. Location of the minehead downslope from the ridge top would further mitigate temporary and operational effects.

On the basis of the above, site 5 is preferred in terms of its better potential for early and effective mitigation and assimilation into the landscape. Site 3 would be second preferred followed by site 2, with site 2 requiring a more significant change from existing landscape character than site 3. Sites 1 and 4 would both be difficult to assimilate, due to steeper topography and open aspect, although any increase in woodland cover would reflect adjoining landscape characteristics at both sites.

7. Potential effect of associated MTS development on the North York Moors National Park

The Cloughton Surrounds alternatives would require approximately 6 MTS intermediate shaft sites within the National Park, with consequent construction stage visual effects associated with 45m high temporary winding towers and permanent operational stage effects associated with accommodation of spoil and provision of shaft head buildings at each site.

The Whitby Enclave and Doves Nest Farm alternatives would require 1 MTS intermediate shaft site within the National Park (proposed to be at Lady Cross Plantation), with associated construction and permanent stage effects as described above.

All alternatives would require further MTS shafts close to the northern edge of the National Park, with one shaft expected to be clearly intervisible from the edge of the National Park and a further site expected to be slightly more distant but intervisible.

On the above basis sites 1 and 2 would be least preferred due to widespread construction stage effects and the need to permanently alter larger tracts of the National Park to accommodate spoil. Sites 3, 4 and 5 would be equal preferred, with no clear difference between them.

The following table summarises the commentary above.

Criteria		◀Least preferred		Most preferred▶			
1	Potential for existing landscape character to accommodate minehead development.	1 4		3		2	5
2	Physical impact on distinctive landscape features.	4		3		1 2	5
3	Landscape character and visual effects during the construction period.	-	-	-	-	-	-
4	Landscape character and visual effects during the operational period (no mitigation).		4	3	1	2	5
5	Effect on areas of designated landscape (excluding MTS effects).	5	4	3		1	2
6	Potential for effective mitigation measures that fit with prevailing landscape character.	1 4			3 2		5
7	Potential effect of associated MTS development on the National Park	1 2					3 4 5

The potential construction stage and permanent stage effects of MTS related development for the Cloughton Surrounds minehead alternatives on the National Park are considered sufficient to outweigh any other benefits provided by these alternatives.

Based on the above high level assessment the alternative sites, in terms of their effects on landscape and visual resources and the potential to assimilate them into the landscape in the long term, can be ranked as set out below:

Site 5 ▲ Most preferred

Site 3

Site 4

Site 2

Site 1 ▼ Least preferred

5. Conclusion

In terms of potential effects on the National Park site 3 (Whitby Enclave) is the preferred alternative. This is a marginal preference, however, and it should be noted that this alternative would not avoid visual and character effects on areas within the National Park during the construction and operational phases, due to the inherently open nature of the site and strong intervisibility with the Park.

In terms of overall alternative preference, considering effects on both designated landscape and other visual and landscape receptors, and notwithstanding its location within the

National Park and potential for more widespread construction stage effects, Site 5 is considered to offer the best landscape setting for the minehead development. This preference is made on the basis of the inherent wooded structure of the site and its potential for complimentary mitigation measures, which could achieve early visual containment of the minehead and could be designed to be in keeping with prevailing landscape character.

Of the other alternatives Sites 3 and 4 would be second and third preferred based on overall effects on landscape and visual receptors. Mitigation for these alternatives would take considerably longer to become effective than for Site 5. Site 3 would involve the loss of and adaptation of existing distinctive landscape features within an area of open landscape and would result in a change to existing landscape character. Site 4 would require more extensive adaptation of existing distinctive landform features and would be more difficult to mitigate than site 3. Options 1 and 2 would be least preferred due to associated MTS effects on the National Park. Of these, however, Site 2 would be preferred over Site 1.

Tables

Site	Landscape character area affected by site & key characteristics ¹	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.01)	Potential effects during operation (refer to ZTV drawing 2312.02)	Potential for mitigation
1 (Cloughton Surrounds)	<p>Character area A1: Cloughton & Burniston</p> <p>Varied geology resulting in highly undulating, complex terrain. Small scale fields dominated by pasture, dense network of hedgerows and trees. Intricate winding becks with dense riparian vegetation. Cloughton village has a strong identity with a historic core. Intimate and tranquil landscape. Settlement and the A171 are well integrated, reducing adverse effects on the tranquil landscape. Varying degree of enclosure, typically short range views with occasional longer views to the south and to the surrounding National Park.</p> <p><i>Landscape strategy:</i></p> <p><i>Conserve and enhance the rural and peaceful character.</i></p> <p><i>Conserve the landscape's role as part of the setting to the National Park.</i></p> <p><i>Maintain the intimate, intact and tranquil nature of the landscape.</i></p>	<p>Description</p> <p>Elevated, open hillside, facing south towards a landform bowl formed by higher ground associated with the National Park in the west and the southern edge of Scarborough in the south. Site levels vary between 50-130m AOD.</p> <p>Open, arable fields of medium to large scale with drystone wall boundaries across northern parts of the site changing to pasture with hedgerows and scrub across the southern site edge.</p> <p>Backs on to coniferous plantation in the north beyond Ripley's Farm and enclosed by mixed woodland along the eastern boundary.</p> <p>Close range and open views available from edge of National Park in the north, west and south west. The Tabular Hills (Pickering to Lockton) form a distinctive edge to the National Park in the west and south west.</p> <p>Close range views available from roads, PROW and outlying farmsteads (including Ripley's Farm and PROW to the immediate north of site). Medium range views over Burniston to south. Long distance views to Scarborough in the south, including intervisibility with Scarborough Castle and headland and Oliver's Mount.</p> <p>Tranquil site, no significant detractors, urban edge of Scarborough is softened by mature tree cover, occasional views of traffic on A171.</p> <p>Summary</p> <p>Open, elevated hillside location, highly visible in local area, locally enclosed by woodland to north and east with distant views to south.</p> <p>No inherently complex/ valued landscape features but simple, open hillside aspect contributes to surrounding landscape character.</p>	<p>Landscape receptors</p> <p>Potential adverse effects on tract of landscape south of site (SBC character area A1) and in close range views from edge of National Park to north, west and south west, with longer view corridor extending north west along Harwood Dale and mid-range views from open coastal landscape to east and north east.</p> <p>Potential adverse effect in mid-range and distant views from open landscape of Heritage Coast between Scalby Mills in the south and Tindall Point in the north.</p> <p>Visual receptors</p> <p>Potential adverse effects in distant views from sections of Cleveland Way National Trail from Scarborough Castle in the south to Tindall Point in the north.</p> <p>Potential adverse effects in close range, mid-range and distant views from outlying residential properties, roads and PROW in all directions. Cloughton lies beyond a landform ridge with woodland cover and would be partially screened, potential adverse effect in views from northern part of village. Burniston, to the south, is overlooked by the site, with potential for adverse effects in close and mid-range views.</p> <p>Potential adverse effects on setting and effects in views from eastern section of Cloughton conservation area and from Burniston conservation area.</p> <p>Potential minor adverse effects in very distant views from Scarborough Castle tourist destination and Scheduled Monument.</p> <p>PROW runs through centre of site and would require diversion.</p>	<p>Landscape receptors</p> <p>Potential adverse effects on tract of landscape south of site (SBC character area A1) and in close range views from edge of National Park to north, west and south west, with longer view corridor extending north west along Harwood Dale and distant views from open coastal landscape to east.</p> <p>Potential adverse effect in mid-range and distant views from open landscape of Heritage Coast between Scalby Mills in the south and high ground at Westfield Farm in the north.</p> <p>Visual receptors</p> <p>Potential adverse effects in distant views from limited sections of Cleveland Way National Trail at Scalby Ness and Cromer Point.</p> <p>Potential adverse effects in close range, mid-range and distant views from outlying residential properties, roads and PROW in all directions. Cloughton lies beyond a landform ridge with woodland cover and would be screened. Burniston, to the south, is overlooked by the site, with potential for adverse effects in close and mid-range views.</p> <p>Potential adverse effects on setting and effects in views from Burniston conservation area.</p> <p>Potential minor adverse effects in very distant views from Scarborough Castle tourist destination and Scheduled Monument.</p> <p>PROW runs through centre of site and would require diversion.</p>	<p>Construction stage</p> <p>Mature woodland cover to the north and east of site provides some lower level inherent screening, reinforced by rising topography north of site. Note however that northern woodland is set back from site boundary, exposing intervening edge of National Park in close range views.</p> <p>No inherent screening on open southern flank of site, with full exposure of construction stage operations to landform bowl to south.</p> <p>Effective mitigation of construction works in views from south would be very difficult. Mounding could be used to screen lower level operations but winding towers would remain clearly visible. Mounding would be difficult to integrate with existing landscape character, on falling, regularly graded open ground.</p> <p>Operational stage</p> <p>As noted above, mounding would be difficult to integrate into existing open hillside character and could appear alien.</p> <p>Woodland planting is not characteristic of the currently open hillside flank but is present in the local area. Effective mitigation in open southern views could be achieved in the long term with large scale woodland planting but this would permanently alter local landscape character.</p> <p>The elevated and exposed site location could adversely affect planting growth rates, increasing the timescale for mitigation planting to become effective.</p> <p>Summary</p> <p>Effective mitigation would be difficult to achieve and would alter existing landscape characteristics as a contrast and setting to the adjoining National Park.</p>

¹ Summarised information based on Scarborough Borough Landscape Study: Volume 1 – Borough wide Landscape Character Assessment, LUC, February 2013

Site	Landscape character area affected by site & key characteristics	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.03)	Potential effects during operation (refer to ZTV drawing 2312.04)	Potential for mitigation
<p>2 (Cloughton Surrounds)</p>	<p>Character area D3: Scalby</p> <p>Smoothly rolling farmed hinterland rising inland from the coastal edge. Agricultural landscape dominated by medium scale fields of open arable farmland, with low hedgerows and limited tree cover. Simple and uniform landscape created by rolling landform and repetition of arable fields, with occasional detractors including settlement edges, major roads, caravan sites and sewage works. Peaceful and rural character with strong visual connection to the sea, visually influenced by the wooded scarps of the National Park to the west. Sense of openness allowing for long views across the rolling landscape, particularly eastwards from elevated land in the National park to the west. Strong intervisibility with prominent historic landmarks including Scarborough Castle.</p> <p><i>Landscape strategy:</i></p> <p><i>Conserve and enhance the open, simple and rhythmic landscape pattern.</i></p> <p><i>To preserve open views to the National Park and the coast.</i></p> <p>Character area G3: Long Nab to North Bay</p> <p>Coastline of cliffs with sheltered coves and bays. Much of the area has a wild, remote and unsettled character. Extensive intervisibility with prominent coastal landmarks and Scarborough Castle, expansive views out to sea. Recreational interest and experience is provided by the Cleveland Way.</p> <p><i>Landscape strategy:</i></p> <p><i>Conserve and enhance (the sense of remoteness, wild character and uninterrupted visual relationships with the coastline and significant historic monuments).</i></p>	<p>Description</p> <p>The site forms part of a series of smoothly rolling ridges and valleys, falling overall from south west to north east and lying within a bowl of lower lying ground enclosed by higher ground near Cloughton in the north, the Tabular Hills (Pickering to Lockton) in the west and beyond Scarborough in the south. Site levels vary between 44-85m AOD.</p> <p>Open, arable linear fields of medium to large scale reducing to linear small scale at the eastern edge of site adjacent to Burniston, with clipped hedgerow boundaries and no significant tree cover.</p> <p>Site is overlooked in close range and open views from higher ground within edge of National Park in the west and north east, beyond Burniston. The Tabular Hills (Pickering to Lockton) form a distinctive edge to the National Park in the west and south west.</p> <p>Close range views available from roads, PROW, outlying farmsteads and village of Burniston, which adjoins the northern and eastern site boundaries. Long distance views to Scarborough in the south, including intervisibility with Scarborough Castle and headland and Oliver's Mount.</p> <p>Tranquil site, no significant detractors, urban edge of Scarborough is softened by mature tree cover, occasional views of traffic on A171.</p> <p>Summary</p> <p>Open location on rolling topography adjoined by higher ground to the west and north. Open views in all directions including close range views form Burniston.</p> <p>No inherently complex/ valued landscape features but simple, open, rolling hillside farmland is strongly characteristic of the local area.</p>	<p>Landscape receptors</p> <p>Potential adverse effects on tract of landscape between Scarborough and Cloughton (SBC character area D3), in close to mid-range views from higher ground on edge of National Park to west and north, with intermittent view corridor extending north west along Harwood Dale and distant views from open coastal landscape to north east.</p> <p>Loss of characteristic field pattern and topography and small scale historic landscape adjoining Burniston.</p> <p>Potential adverse effect in mid-range and distant views from open landscape of Heritage Coast between Scalby Mills in the south and Tindall Point in the north.</p> <p>Visual receptors</p> <p>Potential adverse effects in distant views from sections of Cleveland Way National Trail from Scarborough Castle in the south to Tindall Point in the north.</p> <p>Potential adverse effects in close range, mid-range and distant views from outlying residential properties, roads and PROW in all directions. Potential adverse effects in close range views from residential properties at Burniston adjoining the site in the north and east and in mid-range and distant views from Cloughton in the north and Scarborough in the south.</p> <p>Potential adverse effects on setting and effects in views from Cloughton conservation area and from Burniston conservation area.</p> <p>Potential adverse effects in distant views from Scarborough Castle tourist destination and Scheduled Monument.</p> <p>Two PROW run through the site and would require diversion. These routes are likely to be well used as rural access from Burniston to the National Park in the west.</p>	<p>Landscape receptors</p> <p>Potential adverse effects on core of tract of landscape between Scarborough and Cloughton (SBC character area D3) and in limited close to mid-range views from higher ground on edge of National Park to west and north and from open coastal landscape to north east.</p> <p>Loss of characteristic field pattern and topography and small scale historic landscape adjoining Burniston.</p> <p>Potential adverse effect in mid-range and distant views from sections of open landscape within Heritage Coast designation between Scalby Mills in the south and Tindall Point in the north.</p> <p>Visual receptors</p> <p>Potential adverse effects in distant views from sections of Cleveland Way National Trail at Cromer Point in the east and Tindall Point in the north.</p> <p>Potential adverse effects in close range, and mid-range views from outlying residential properties, roads and PROW in all directions. Potential adverse effects in close range views from residential properties at Burniston adjoining the site in the north and east and in mid-range and distant views from Cloughton in the north and Scarborough in the south.</p> <p>Potential adverse effects on setting and effects in views from Cloughton conservation area and from Burniston conservation area.</p> <p>Potential adverse effects in distant views from Scarborough Castle tourist destination and Scheduled Monument.</p> <p>Two PROW run through the site and would require diversion. These routes are likely to be well used as rural access from Burniston to the National Park in the west.</p>	<p>Construction stage</p> <p>The site lies within an open area of rolling landscape which is overlooked from surrounding higher ground and with no inherent visual mitigation or containment.</p> <p>Effective mitigation of construction works in available views from higher ground would be very difficult. Mounding could be used to screen lower level operations in local views from Burniston but winding towers are likely to remain clearly visible. Mounding would be difficult to integrate with existing landscape character, and may be perceived as an alien addition unless very gentle gradients are used.</p> <p>Operational stage</p> <p>Mounding would be difficult to integrate into the existing smoothly rolling landform character unless gentle gradients are used.</p> <p>Woodland planting is not characteristic of the currently open landscape. Large scale woodland planting would permanently alter local landscape character, would be an alien addition and would interfere with existing intervisibility and contrast to the distinctive edge of the National Park (raised Tabular Hills landform). Dense hedgerows with intermittent trees could soften local views but would not be effective in screening the site in views from surrounding higher ground.</p> <p>The loss or diversion of potentially important local rural access PROW from Burniston to the west would be unavoidable.</p> <p>Summary</p> <p>Effective mitigation could potentially be achieved but would alter existing open landscape characteristics as a contrast and setting to the adjoining National Park.</p>

Site	Landscape character area affected by site & key characteristics	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.07)	Potential effects during operation (refer to ZTV drawing 2312.08)	Potential for mitigation
<p>3 (Whitby Enclave)</p>	<p>Character area H1: Esk</p> <p>Distinctive rolling landscape which forms the upper slopes of the River Esk valley, topography descends from 140m to 50m AOD.</p> <p>Landcover defined by farmland with a mosaic of pasture and arable, delineated by hedgerows.</p> <p>Small incised wooded valleys associated with tributary streams.</p> <p>A uniform and simple character, created by the rolling topography and simplicity of farmland cover.</p> <p>Some long extensive views south towards the River Esk valley, landform and field boundary vegetation provide a degree of enclosure.</p> <p>Localised audible and visual impact caused by the busy A169, A171 and B1229 corridors.</p> <p><i>Landscape strategy:</i></p> <p><i>Conserve the simple land cover, rolling landform and the uniform pattern of the landscape, which contribute to a strong sense of identity and relationship to the adjoining National Park.</i></p>	<p>Description</p> <p>Refer to drawing 2312.SK02 for photographs of the existing site.</p> <p>Elevated, open valley side falling gently south and eastwards towards the River Esk valley and Whitby respectively. Bisected by three eastwards falling, small, incised valleys associated with minor watercourses. Site levels vary between 50-100m AOD.</p> <p>Small to large scale arable fields with a range of intact, gappy or removed hedgerow boundaries. Thin strips of woodland and scrub cover extend along minor east-west valleys.</p> <p>Site is overlooked by higher ground to the north and east and by higher ground on the opposing valley side. The site itself overlooks the lower Esk valley and Whitby, with panoramic views extending in an arc west to Sleights Moor.</p> <p>Close and mid-range views are available from adjoining and surrounding roads, occasional elevated outlying properties to the north and east, from the built up north western edge of Whitby and from ribbon residential development along Ruswarp Lane to the east of site. Distant views are available from roads, PROW and residential properties on the opposing valley side (within the National Park) and from Whitby Abbey and sections of Heritage Coast to the east. Overall the site has a strong visual relationship with the Esk valley and Whitby.</p> <p>The site has an urban edge character with strong visual influence provided by settlement at Whitby and audible influence from the A171 and A169 roads which adjoin the northern and western boundaries respectively.</p> <p>Summary</p> <p>An elevated, open valley side with very limited enclosure and a strong visual relationship with the opposing side of the Esk valley and the town of Whitby.</p>	<p>Refer to drawing 2312.SK01 which shows an indicative mine site layout for assessment purposes.</p> <p>The indicative mine site design shows that construction stage effects would include large scale alteration of existing topography, removal of hedgerow field boundaries, removal of arable fields and some loss of incised valley woodland/ tree cover.</p> <p>Large scale earthworks and general construction operations would take place across the majority of the site within a visually exposed landscape. The existing landform would be adapted to accommodate spoil and construction platforms on farmland ridges, allowing the majority of incised valleys to be retained. Winding towers, cranes and ground level activity at the minehead would be visible within views from the north, east and south, with minimal natural visual enclosure. As construction progresses some enclosure by new landforms would be provided around the minehead, with the welfare facility remaining open to views. Lorry and plant movements along site access and haulage roads would be visible.</p> <p>Landscape receptors</p> <p>Potential adverse character effects would occur within the remaining tract of Esk valley landscape lying outside the National Park (SBC character area H1) and within a swathe of the opposing southern Esk valley side located within the National Park (NYMNP character areas 1b Central and Eastern Moors, 4b Coast and Coastal Hinterland and 8b Lower Esk Valley), from where winding towers and the majority of ground level construction activity would be visible.</p> <p>Potential adverse effects would also occur across higher ground inside the National Park to the north and north east of the site (NYMNP character areas 4a Coast and Coastal Hinterland and 8b Lower Esk Valley), with winding towers being visible.</p>	<p>Refer to drawing 2312.SK01 which shows an indicative mine site layout for assessment purposes.</p> <p>The indicative restoration scheme would retain existing ridge and valley topography in an adapted form, would increase woodland cover along the incised valleys and would retain intervening fields in agricultural use.</p> <p>Broadly, it is considered that the site could accommodate the mine site whilst reflecting topography and vegetation cover key characteristics. The distinctive incised wooded valley and intervening open farmed ridge pattern would be adapted and the degree of contrast between the elements would be reduced. New buildings would be noticeable within the site however at the minehead and at the welfare facility, the latter being seen on the skyline in views from the National Park.</p> <p>Proposed landform design would provide partial initial enclosure of minehead buildings with tree and shrub planting achieving full enclosure or heavy filtering by Year 15 after completion. The welfare building would be wholly reliant on new tree and shrub planting for visual enclosure. Given coastal microclimate significant enclosure or filtering of views to the welfare facility could only be achieved over the long term (20-30 years).</p> <p>Landscape receptors</p> <p>The restored site would reflect the existing incised valley and farmed ridge pattern but some of the original openness of the site and contrast between these features would be lost.</p> <p>Potential adverse character effects on the remaining tract of Esk valley landscape lying outside the National Park (SBC character area H1) and on open ridges along the opposing southern Esk valley side located within the National Park (NYMNP character areas 1b Central and Eastern Moors, 4b Coast and Coastal Hinterland and 8b Lower Esk Valley).</p>	<p>Refer to drawing 2312.SK01 which shows an indicative mine site layout for assessment purposes.</p> <p>Construction stage</p> <p>The site occupies an exposed valley side position and is open to panoramic views from higher ground on the opposing valley side.</p> <p>The site offers limited inherent visual mitigation, with hedgerows screening some local views (eg from the A169) and the steeply falling toe of the northern flank mostly containing the settlements of Ruswarp and Briggswath from views to the site.</p> <p>Effective mitigation of construction activities within important open views from the southern valley flanks (within the National Park) and from adjoining roads and residential areas to the north and east would be difficult, with earthworks and general construction operations remaining clearly visible. Progressive restoration of south facing landform flanks would help to reduce adverse effects within views from the National Park in the south.</p> <p>Operational stage</p> <p>Spoil disposal areas could be integrated into the existing rolling landform but would require extensive adaptation of original topography. The new landform would only partially enclose minehead buildings in views from the south and would not achieve enclosure of minehead buildings in views from the east. The new landform would not provide any visual enclosure of the welfare facility within either local or distant views. The operational scheme would be dependent on woodland cover to achieve screening within views from the east and south (including from within the National Park).</p> <p>Vehicles using site access roads would be visible during the early operational stages, until hedgerow and woodland cover develops.</p> <p>(continued below)</p>

Site	Landscape character area affected by site & key characteristics	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.07)	Potential effects during operation (refer to ZTV drawing 2312.08)	Potential for mitigation
3 (Whitby Enclave) continued			<p>Visual receptors</p> <p>Potential adverse effects in close and mid-range views from surrounding PROW, roads and residential property across the northern valley flank including the north western edge of the Whitby built up area (Holmstead Avenue) and properties along Ruswarp Lane.</p> <p>Significant adverse effects would occur within close range views from the Cross Butts Stable Restaurant and grounds and from Broadings Farm (including holiday cottages and caravan park) located at the northern edge of the site.</p> <p>Winding towers would be visible from Aislaby, Sleights, Sneaton and Ugglebarnby parts of Briggswath and, more distantly, from Stainsacre and Hawsker. Ground level activity would be visible from Sneaton and Ugglebarnby.</p> <p>The site forms an important part of the western approaches to Whitby and setting of the town in views from the west and south west. The construction site would be clearly visible from the A171 road corridors and partially visible (due to enclosure by hedgerows) from the A169 road corridor.</p> <p>Potential adverse effects in distant views from PROW, roads and residential property on the opposing southern valley side and elevated coastal areas east of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and surrounding Heritage Coast to the east of Whitby.</p>	<p>Potential adverse effects would also be possible across the southern edge of higher ground within the National Park to the north of site (NYMNP character area 4a Coast and Coastal Hinterland).</p> <p>Changes to the existing landform and field pattern and the presence of minehead and welfare facility buildings and activities would be evident in sensitive views from higher ground within the National Park on the opposing southern valley flank. In the longer term developing woodland cover would screen these features and the area would take on a more heavily wooded valley side character, as seen on the north Esk valley flank near Aislaby in the west.</p> <p>Lighting effects associated with the welfare facility, car park and access road would be noticeable on the skyline in views from the southern flank of the valley. The effects would occur in the context of existing lighting features but could potentially increase the perceived extent of the Whitby urban area at night.</p> <p>Visual receptors</p> <p>Potential adverse effects in close and mid-range views from surrounding PROW, roads and residential property across the northern valley flank including the north western edge of the Whitby built up area, Cross Butts Stable Restaurant, A171 gateway approach to Whitby and properties along Ruswarp Lane.</p> <p>Potential adverse effects in distant views from PROW, roads, settlements and residential property on the opposing southern valley side and elevated coastal areas east of Whitby, due to presence of buildings and potential views on vehicles using internal roads.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and surrounding Heritage Coast to the east of Whitby, due to views of buildings.</p>	<p>Proposed woodland planting generally follows the incised valley pattern. The proposed increase in woodland cover is less characteristic of the existing landscape but does reflect the more heavily wooded valley side character seen across the Esk valley northern flank around Aislaby</p> <p>Summary</p> <p>The existing distinctive topographical and land cover arrangement of incised wooded valleys and open farmed ridges could be reflected in the restored site in an adapted manner. Effective mitigation of the operational site could potentially be achieved although this would be reliant on establishment of woodland cover rather than immediate enclosure by landform. An increase in woodland cover would alter the open character of the existing site although it would reflect heavier woodland cover seen on the upper northern valley flank to the west of the site. An extended timescale would be needed for woodland to reach adequate mitigation height to screen buildings within sensitive views from higher ground within the National Park on the opposing southern valley flank.</p>

Site	Landscape character area affected by site & key characteristics	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.09)	Potential effects during operation (refer to ZTV drawing 2312.10)	Potential for mitigation
<p>4 (Whitby Enclave)</p>	<p>Character area H1: Esk</p> <p>Distinctive rolling landscape which forms the upper slopes of the River Esk valley, topography descends from 140m to 50m AOD. Landcover defined by farmland with a mosaic of pasture and arable, delineated by hedgerows. Small incised wooded valleys associated with tributary streams. A uniform and simple character, created by the rolling topography and simplicity of farmland cover. Some long extensive views south towards the River Esk valley, landform and field boundary vegetation provide a degree of enclosure. Localised audible and visual impact caused by the busy A169, A171 and B1229 corridors.</p> <p><i>Landscape strategy:</i></p> <p><i>Conserve the simple land cover, rolling landform and the uniform pattern of the landscape, which contribute to a strong sense of identity and relationship to the adjoining National Park</i></p>	<p>Description</p> <p>Elevated, open valley side falling steeply south eastwards to the River Esk valley. Bisected by small incised valleys associated with a minor watercourses. The site has a tapering footprint, opening up from a narrow northern tip to a broad southern edge. Site levels range between 45-130m AOD.</p> <p>Field size decreases from large to small from north to south, with gappy or removed hedgerow boundaries in the north giving way to largely intact hedgerows in the south. Mature tree cover follows incised valleys along the south eastern edge of the site.</p> <p>Site is overlooked by higher ground to the north and east and by higher ground on the opposing valley side. The site itself overlooks the lower Esk valley and Whitby, with panoramic views extending in an arc west to Sleights Moor.</p> <p>Close and mid-range views are available from surrounding roads, occasional elevated outlying properties and from the built up western edge of Whitby. Distant views are available from roads, PROW and residential properties on the opposing valley side in the south and from Whitby Abbey and sections of Heritage Coast to the east. Overall the site has a strong visual relationship with the Esk valley and Whitby.</p> <p>The site has a rural character with noise and vehicle movement associated with the adjoining A169 forming a detractor.</p> <p>Summary</p> <p>An elevated, open valley side with limited enclosure and a strong visual relationship with the opposing side of the Esk valley and the town of Whitby.</p> <p>The small scale, intimate mix of topography, field size and vegetation cover at the southern tip of the site is highly sensitive to change and forms part of the more detailed landscape pattern associated with the lower sections of the Esk valley.</p>	<p>Landscape receptors</p> <p>Potential adverse character effects on the remaining tract of Esk valley landscape lying outside the National Park (SBC character area H1) and on a swathe of the opposing southern Esk valley side located within the National Park (NYMNP character areas 1b Central and Eastern Moors, 4b Coast and Coastal Hinterland and 8b Lower Esk Valley). Potential adverse effects would also be possible from sections of higher ground within the National Park to the north of site (NYMNP character area 4a Coast and Coastal Hinterland). The loss of characteristic field pattern, open valley side and minor tributaries and open visibility to construction activities on steeply rising ground would be very evident in sensitive views from higher ground within the National Park on the opposing southern valley flank.</p> <p>Loss of small scale field pattern, boundaries and incised valleys with associated watercourses and tree/ scrub cover at southern end of site.</p> <p>Visual receptors</p> <p>Potential adverse effects in close and mid-range views from surrounding PROW, roads and residential property across the northern valley flank including parts of Aislaby, Briggswath and the north western edge of the Whitby.</p> <p>Potential adverse effects in distant views from PROW, roads and residential property on the opposing southern valley side, including Sleights, and elevated coastal areas east of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and surrounding Heritage Coast to the east of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and surrounding Heritage Coast to the east of Whitby.</p> <p>Several PROW run through the site and would require diversion.</p>	<p>Landscape receptors</p> <p>Potential adverse character effects on parts of the remaining tract of Esk valley landscape lying outside the National Park (SBC character area H1) and on a swathe of the opposing southern Esk valley side located within the National Park (NYMNP character areas 1b Central and Eastern Moors, 4b Coast and Coastal Hinterland and 8b Lower Esk Valley). Potential adverse effects would also be possible from limited sections of higher ground within the National Park to the north of site (NYMNP character area 4a Coast and Coastal Hinterland). The loss of characteristic field pattern, open valley side and minor tributaries and presence of permanent minehead buildings would be very evident in sensitive views from higher ground within the National Park on the opposing southern valley flank.</p> <p>Visual receptors</p> <p>Potential adverse effects in close and mid-range views from surrounding PROW, roads and residential property across the northern valley flank including limited parts of Aislaby, Briggswath and the north western edge of the Whitby.</p> <p>Potential adverse effects in distant views from PROW, roads and residential property on the opposing southern valley side, including Sleights, and elevated coastal areas east of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and surrounding Heritage Coast to the east of Whitby.</p> <p>Several PROW run through the site and would require diversion.</p>	<p>Construction stage</p> <p>The site occupies an exposed valley side position on steeply falling ground and is open to panoramic views from higher ground on the opposing valley side.</p> <p>The steeply falling nature of the site indicates that large scale cut and fill activity would be needed to create development platforms.</p> <p>The site offers limited inherent visual mitigation, with hedgerows and mature trees screening some local views.</p> <p>Effective mitigation of construction activities within important open views from the southern valley flanks (within the National Park) would not be practical, given the nature of the steeply falling ground and limited site size.</p> <p>Operational stage</p> <p>Mounding would be difficult to achieve across the steeply falling southern part of the site and would be unlikely to be completely effective in screening views from higher ground on the southern side of the Esk valley.</p> <p>Large scale woodland planting would be uncharacteristic across the presently open northern section of the site but would fit better across the southern part of the site, reflecting increasing woodland cover towards the western reaches of the Esk valley.</p> <p>Summary</p> <p>Large scale cut and fill earthworks would be difficult to assimilate within a relatively tight and steeply sloping site.</p> <p>An extended timescale would be needed for woodland to reach adequate mitigation height within sensitive views from higher ground within the National Park on the opposing southern valley flank.</p>

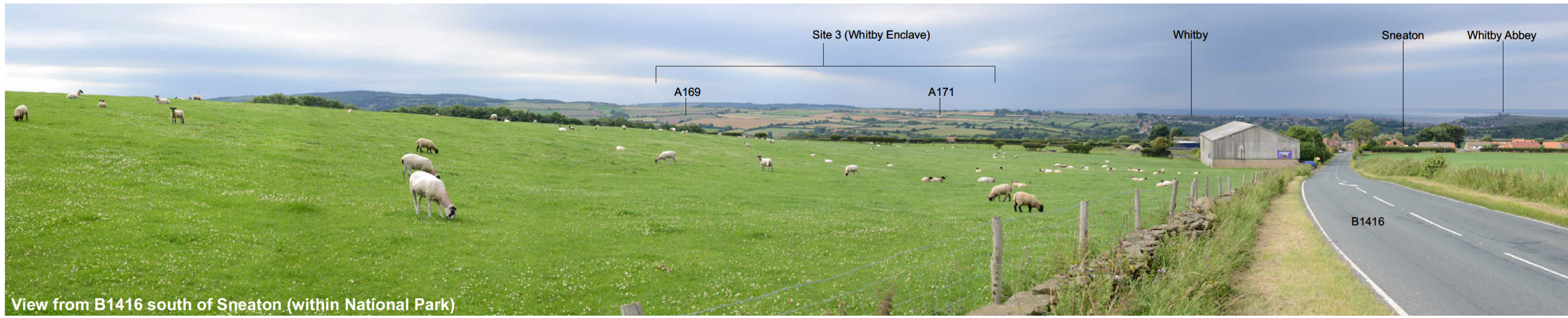
Site	Landscape character area affected by site & key characteristics ²	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.11)	Potential effects during operation (refer to ZTV drawing 2312.12)	Potential for mitigation
5 (Doves Nest Farm)	<p>Coast and Coastal Hinterland Whitby – Cloughton (3a)</p> <p>Rolling coastal and coastal hinterland area rising to 233m AOD on Howdale Moor; Coastal areas designated as part of the North Yorkshire and Cleveland Heritage Coast. Drained by steeply incised and winding minor becks which flow to the coast or the River Esk in the north. Steep valley sides frequently lined with deciduous woodland. Inland from the coast mixed arable and pasture is interspersed by plantations and shelterbelts, including Haxby Plantation. Regular fields of recent enclosure with hedgerows, drystone walls and occasional trees. The busy A171 crosses part of the area and has a significant intrusive effect. Elsewhere a network of B roads and minor lanes link settlements. Ancient remains include Bronze Age barrows and cairns and Iron Age cross ridge dykes.</p> <p><i>Landscape strategy:</i></p> <p><i>No specific character area strategy is contained in the LCA report. The North York Moors National Park Management Plan contains overarching policy to maintain and enhance the landscape.</i></p>	<p>Description</p> <p>Located on the upper east facing slope of a broad north-south ridge lying between valleys formed by Long Mill Beck/ Rigg Mill Beck in the east and Little Beck in the west. The broad crest of the ridge extends beyond the site across Ugglebarnby Moor in the west before falling steeply to Little Beck valley. To the east, gradients fall gently east and northwards towards the coast and River Esk valley, with incised valleys associated with minor watercourses forming locally steeper topography.</p> <p>A spring line emerges across the eastern edge of the site and feeds into Sneaton Thorpe Beck which runs north eastwards from the eastern edge of the site.</p> <p>Land use comprises arable/pastoral farmland set within a strong framework of broadleaved and coniferous plantations, including shelterbelts running parallel to the B1416 along the western boundary and the large block of Haxby Plantation in the south. Field size is small to medium scale with internal gappy and grown out hedgerow boundaries and external drystone wall boundaries.</p> <p>Doves Nest Farm buildings within the site include a farmhouse, located downslope adjoining woodland, and a more prominent series of modern outbuildings at the upper western of the site.</p> <p>The site and wider Ugglebarnby ridge is intervisible with high ground in the west at Sleights Moor and in the east at Graystone Hills/ Latter gate Hill, with main visibility occurring from open areas to the east and north east. Within these views the ridge has a strongly wooded appearance.</p> <p>Close and mid-range views are available from surrounding roads, occasional elevated outlying properties and from the Coast to Coast Walk in the east. Distant views are available from Whitby Abbey and sections of Heritage Coast to the north and east.</p> <p>(continued below)</p>	<p>Landscape receptors</p> <p>Located within National Park with potential for direct physical impact on landscape fabric and adverse character effects on surrounding National Park landscape.</p> <p>Upper sections of winding towers would rise above enclosing woodland influencing views from the north, west and south. Winding towers and ground level activities would be visible from the east and north east, including open moorland areas at Graystone Hills/ Latter Gate Hills parts of the Heritage Coast in the north and east.</p> <p>Potential for increased adverse perceptual character effects at Ugglebarnby Moor in the west and Raikes Lane and environs in the east.</p> <p>Loss of field pattern with hedgerow boundaries and mature trees, potential loss of planted broadleaved woodland and conifer plantation. These features are relatively commonplace, in poor condition (hedgerows), are recreatable and do not contribute significantly to the distinctive quality of the National Park landscape.</p> <p>Visual receptors</p> <p>Potential adverse effects in close range views from the B1416 and nearby farmhouse. Potential adverse effects in mid-range and distant views from surrounding PROW, including the Coast to Coast Walk, roads, outlying residential property and settlements at Hawsker, Stainsacre, Sneaton and the southern edge of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and from round barrow Scheduled Monuments at Sleights Moor and Latter Gate Hills.</p>	<p>Landscape receptors</p> <p>Potential adverse character effects in limited close to mid-range views east and north east of site and in distant views from open moorland areas at Sleights Moor in the west and Graystone Hills/ Latter Gate Hills in the east.</p> <p>Potential adverse influence in distant views from Heritage Coast east and south east of Whitby.</p> <p>Potential for increased adverse perceptual character effects at Ugglebarnby Moor in the west and Raikes Lane and environs in the east.</p> <p>Visual receptors</p> <p>Potential adverse effects in close range views from the B1416 and nearby farmhouse. Potential adverse effects in limited mid-range and distant views from surrounding PROW, including the Coast to Coast Walk, roads, outlying residential property and settlements at, Stainsacre, and limited parts of the southern edge of Whitby.</p> <p>Potential adverse effects in distant views from Whitby Abbey tourist destination and Scheduled Monument and from round barrow Scheduled Monuments at Sleights Moor and Latter Gate Hills.</p>	<p>Construction stage</p> <p>The site lies on a ridge which is intervisible with high ground to the west, north and east and, to a lesser extent, the south.</p> <p>Shelterbelts along the western edge of the site and large woodland blocks at Haxby Plantation and Whinny Wood in the south and east providing significant screening potential within local and distant views. Further offsite woodland blocks at Windmill Hill Plantation to the north and a strip plantation south of Knaggy House Farm offer additional visual enclosure.</p> <p>The ridge top position of the site indicates that potential for screening the upper sections of temporary winding towers in wider views would be limited. Ground level activities, however, could be well contained by existing woodland cover in views from the west, north and south. The use of screen mounding and careful phasing of earthworks could reinforce existing partial containment of views to the east and north east.</p> <p>Operational stage</p> <p>Retention of existing mature woodland cover would provide a degree of immediate and mature visual mitigation. Existing woodland could be reinforced with new screen mounding and woodland planting to fully contain the operational site from external view whilst reflecting the existing wooded character of the Ugglebarnby Moor ridge top and eastern flank.</p> <p>Large scale woodland planting is already a key characteristic of the site and its immediate locale.</p> <p>Summary</p> <p>Existing mature woodland cover within and around the site would provide a degree of inherent visual mitigation during construction and operational stages.</p> <p>(continued below)</p>

² Summarised information based on North York Moors National Park, Landscape Character Assessment, White Young Green, December 2003 (revised December 2004)

Site	Landscape character area affected by site & key characteristics ³	Commentary on existing site characteristics	Potential effects during construction (refer to ZTV drawing 2312.11)	Potential effects during operation (refer to ZTV drawing 2312.12)	Potential for mitigation
5 (Doves Nest Farm) continued		<p>The site has a rural character with noise and vehicle movement associated with the adjoining B1416 forming a close range detractor. The A171 in the east forms a distant detractor.</p> <p>Summary</p> <p>An elevated, ridge top location with partial enclosure provided by existing plantation cover to the west, east and south and more open visibility to the east and north.</p> <p>Within wider views the site forms part of a wider, wooded ridge associated with Ugglebarnby Moor.</p>			<p>New mounding and woodland planting could be used to provide complete visual containment of the operational site within a short period of time, whilst remaining in keeping with prevailing landscape character.</p>

³ Summarised information based on North York Moors National Park, Landscape Character Assessment, White Young Green, December 2003 (revised December 2004)

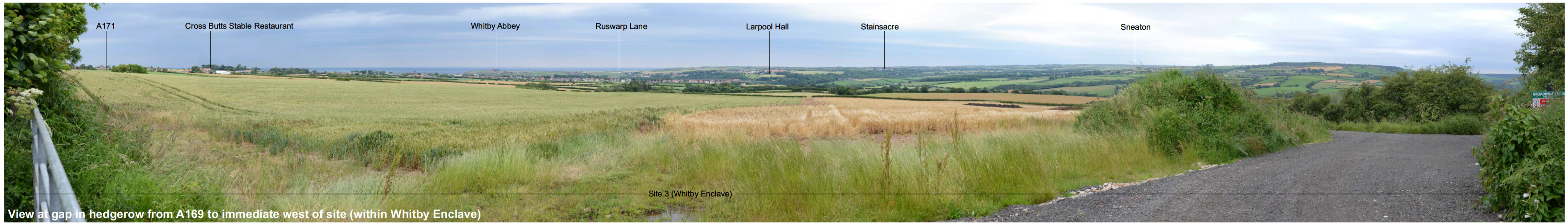
Drawings



View from B1416 south of Sneaton (within National Park)



View from road between Sneaton and Ugglebarnby (within National Park)



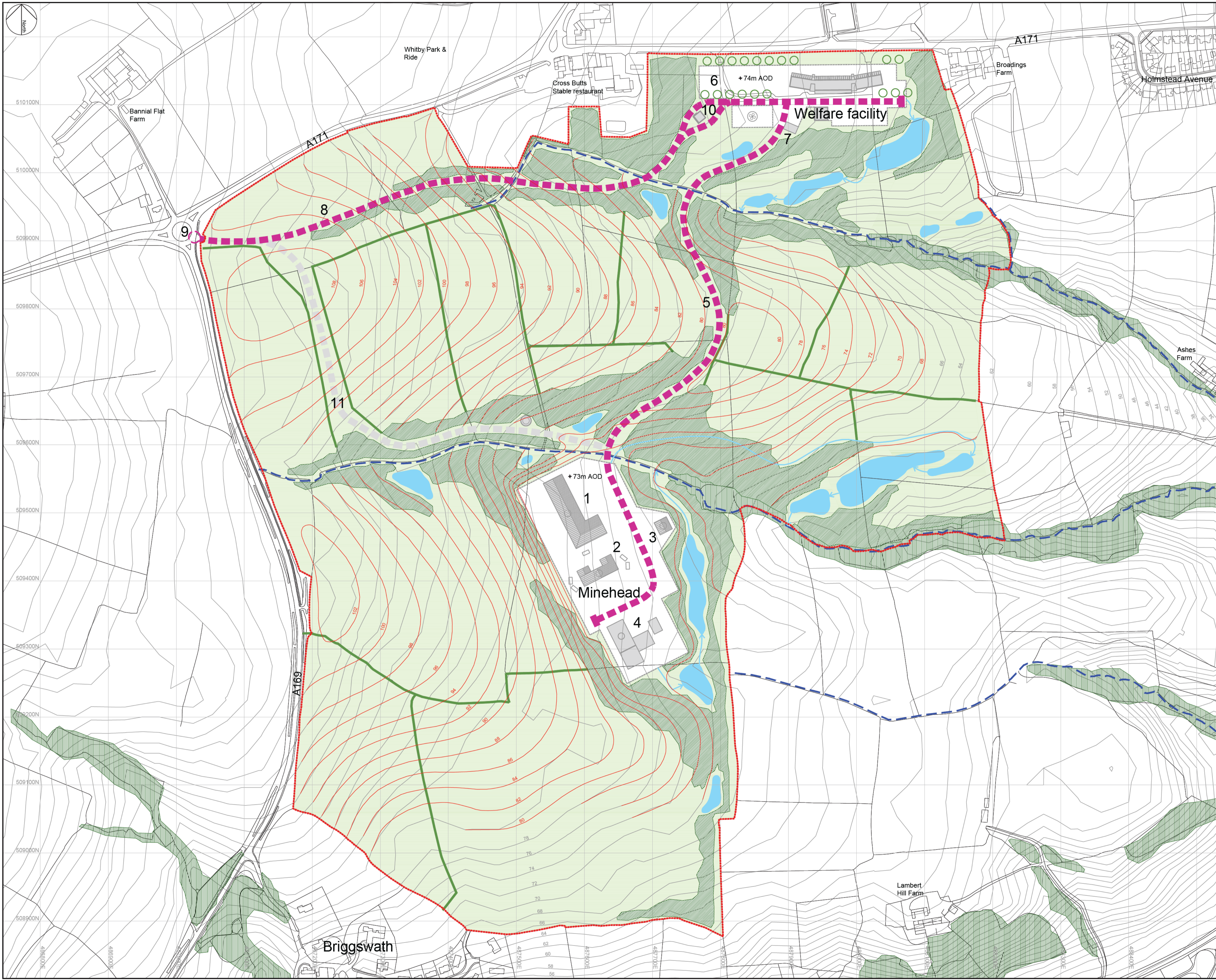
View at gap in hedgerow from A169 to immediate west of site (within Whitby Enclave)



View from Ruswarp Lane (within Whitby Enclave)



View from Blue Bank car park (off A169) (within National Park)



KEY

- Site boundary
- Existing contours (at 2m intervals)
- Proposed contours (at 2m intervals, unless otherwise indicated)
- Existing woodland
- Existing watercourses
- Proposed buildings
- Proposed woodland
- Proposed hedgerows
- Proposed trees
- Proposed agriculture
- Proposed SuDS system

- 1 Men and materials shaft
- 2 Production shaft
- 3 MTS shaft
- 4 Intake ventilation shaft
- 5 Internal access road
- 6 Car park
- 7 Drift portal
- 8 Entrance road
- 9 Site entrance
- 10 Gatehouse
- 11 Construction and emergency access

Rev. 01 30/07/2014 Text amendments

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YORKPOTASH
A Sirius Minerals Project

Client / Project:
**YORK POTASH PROJECT
ALTERNATIVE SITES ASSESSMENT**

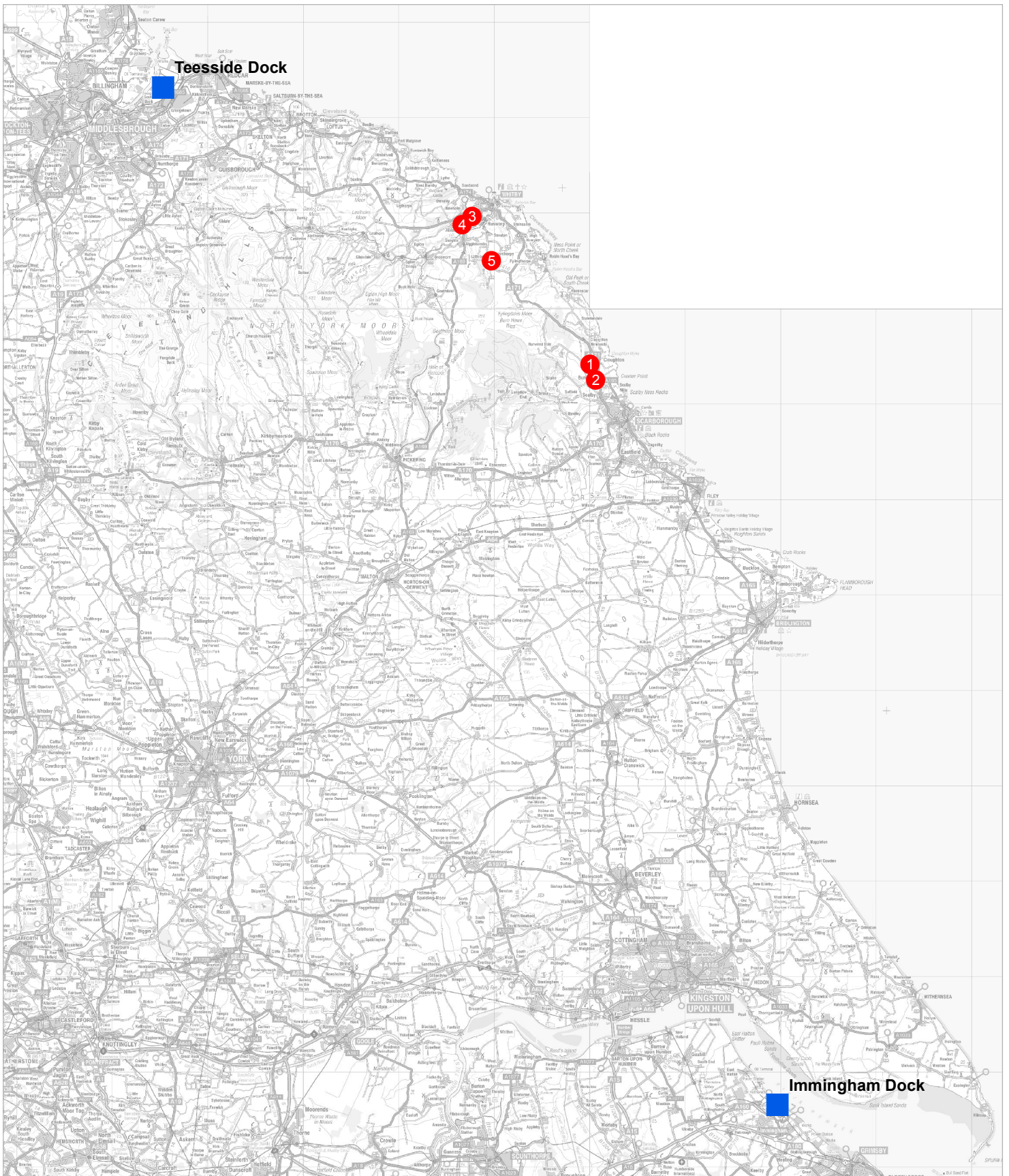
Drawing Title:
**WHITBY ENCLAVE
INDICATIVE DESIGN**

Drawing Number: 2312.SK01	Revision: 01
Scale: 1:2500 @ A1	Date: JULY 2014
Drawn: BB	Checked: SW

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Appendix 20

Harbour Options for End-Point Destination



Key

 Dock

 Alternative Sites

- 1. Land at Lindhead Gorse
- 2. Land at Burniston
- 3. Land at Ruswarp
- 4. Land at Briggswath
- 5. Land at Dove's Nest Farm

 **Nathaniel Lichfield & Partners**
Planning, Design, Economics.

Project Minehead Alternative Site Assessment
Title Harbour Options for End-Point Destination

Client York Potash Limited

Date 15.09.2014

Scale -

Drawn by CS

Dwg No GIS50303/04-23

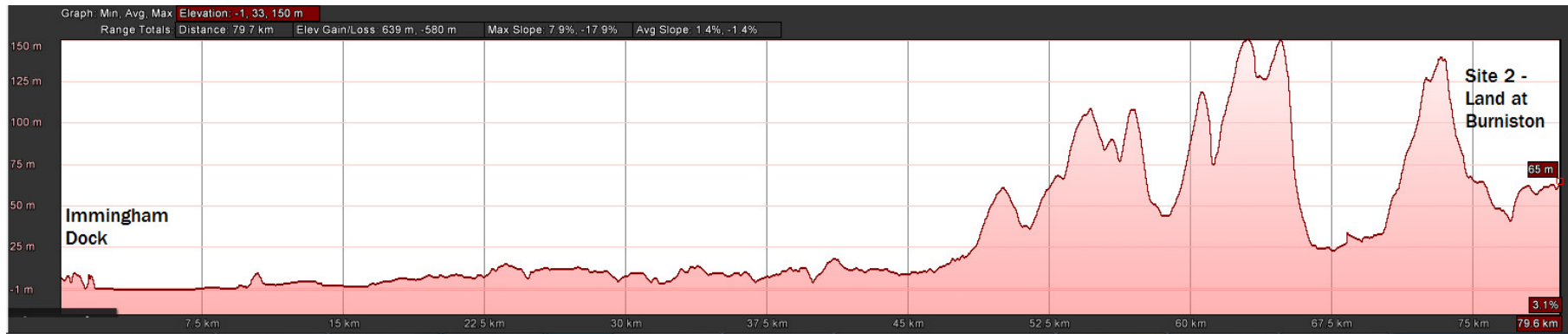
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GIS Reference: 43LE5027 - York Potash Minehead - Alternative Sites and Local Docks - 15.09.2014 .mxd



Appendix 21

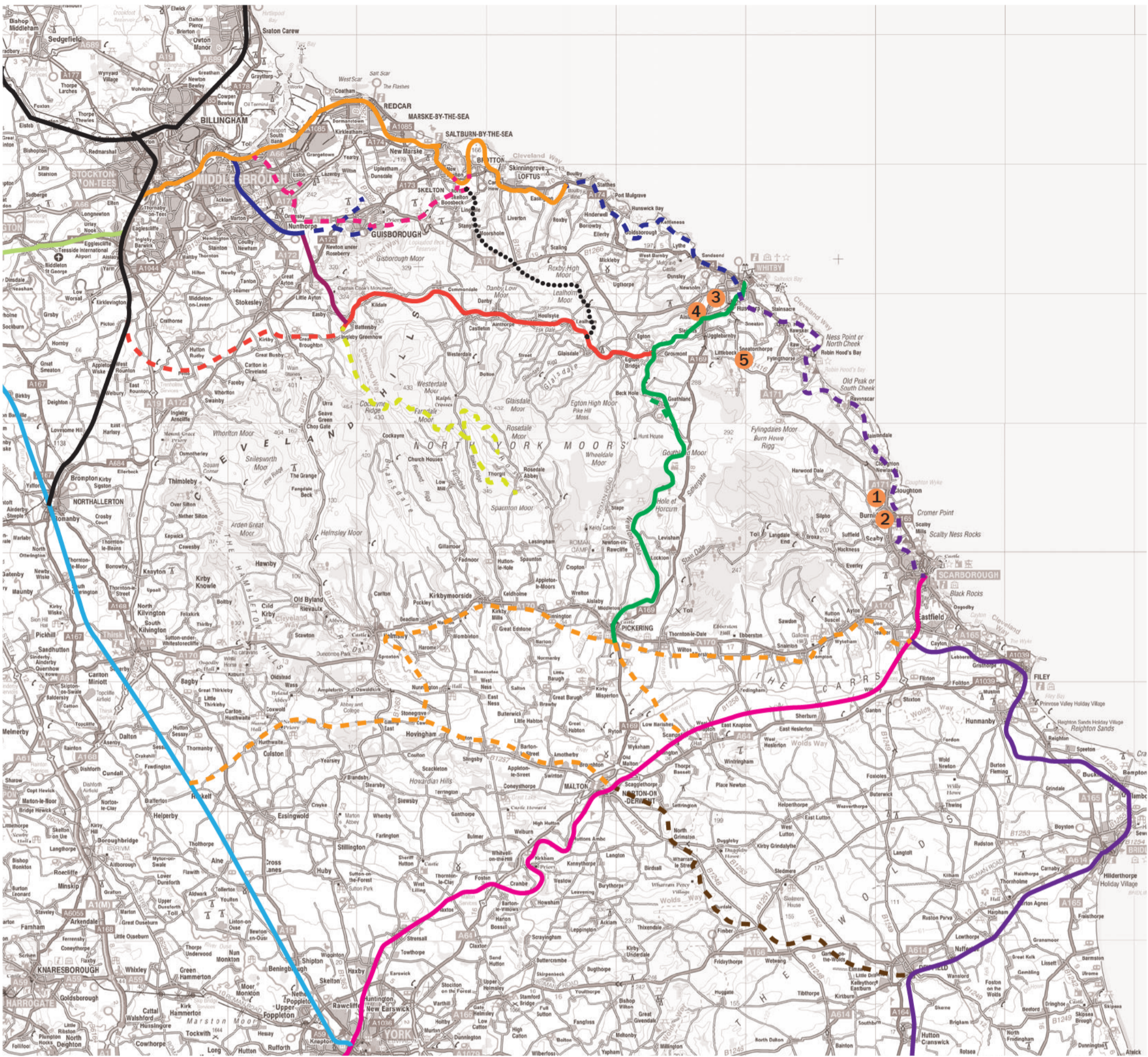
Topography Between Site 2 – Land at Burniston and Immingham Dock

Topography Between Site 2 – Land at Burniston and Immingham Dock













Appendix 22

North Yorkshire Moors Railway and Surrounding Lines











KEY

Existing

- Esk Valley Line 
- Saltburn Extension 
- Middlesbrough - Guisborough 
- Whitby - Pickering 
- Nunthorpe - Battersby Link 
- York - Scarborough 
- East Coast Main Line 
- Tees Valley 
- Northallerton - Hartlepool 
- Driffield - Seamer 

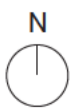
Historic

- Picton - Battersby 
- Whitby - Scarborough 
- Middlesbrough - Whitby Town 
- Cleveland Extension Mineral Railway 
- Cleveland Railway 
- Rosedale Mines Railway 
- Malton and Driffield 
- Gilling and Pickering 

- Site 1: Land at Lindhead Gorse 
- Site 2: Land at Burniston 
- Site 3: Land at Ruswarp 
- Site 4: Land at Briggswath 
- Site 5: Dove's Nest Farm 



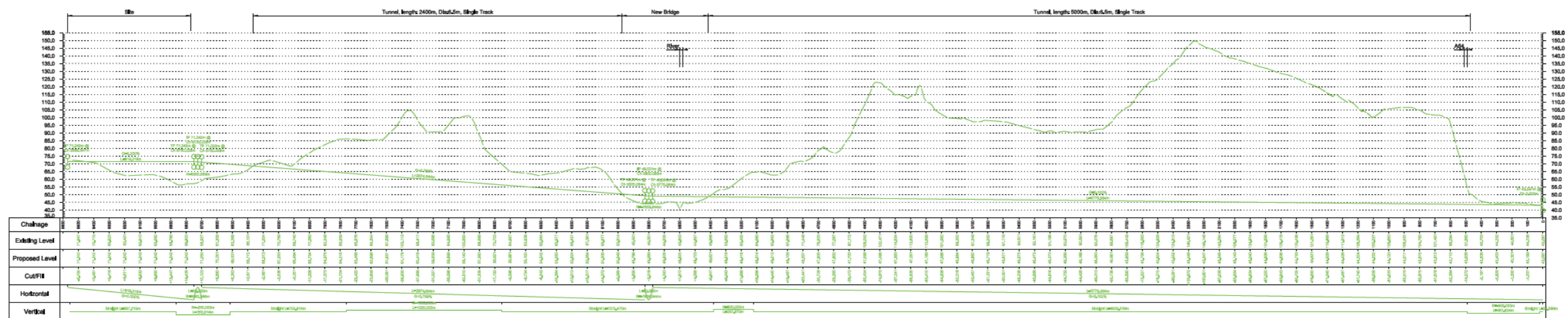
Project	York Potash
Title	North Yorkshire Moors Railway and Surrounding Lines
Client	York Potash
Date	August 2014
Scale	
Drawn by	SV
Drg. No	IL50303_005



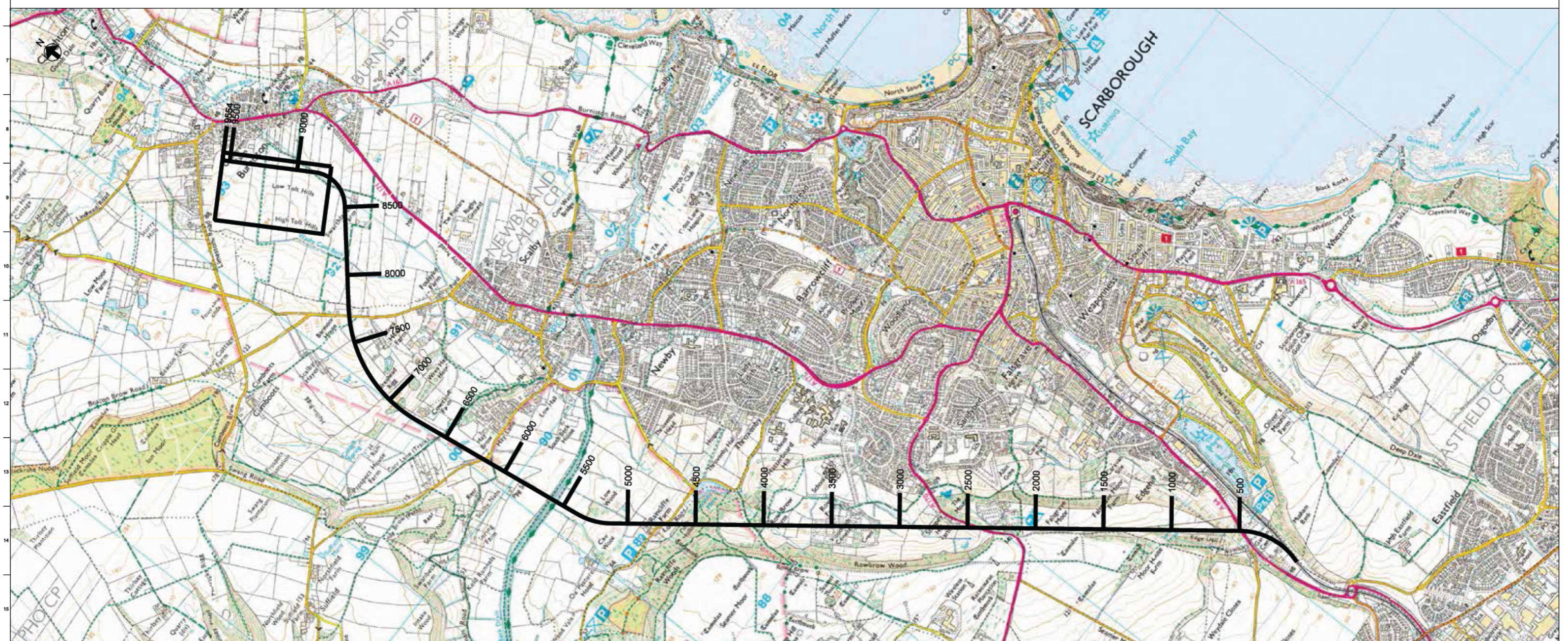
Appendix 23

Rail Link Route from the Shortlisted Cloughton Sites

A B C D E F G H I J K L M N O P Q R S T U V W



Section C-C
Scale: H=1:10000, V=1:100000



01	28/11/13	SA		
Opportunity				
Issue	Date	By	Check	Appr

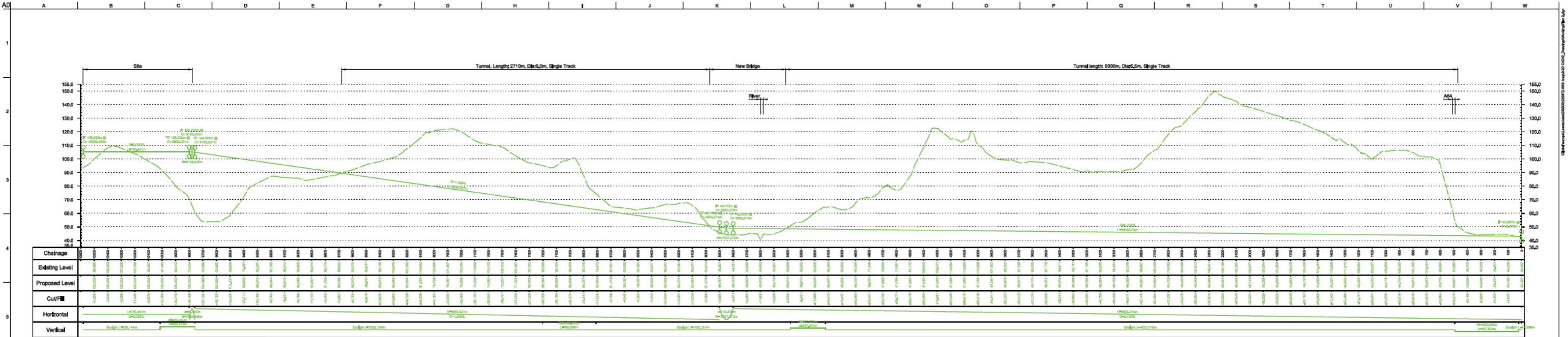
ARUP
 Address: House, Rose Way,
 75 West Street, Leeds, LS2 8BQ
 Tel: +44(0)113 242 2000 Fax: +44(0)113 242 2010
 www.arup.com

Client: York Potash Ltd

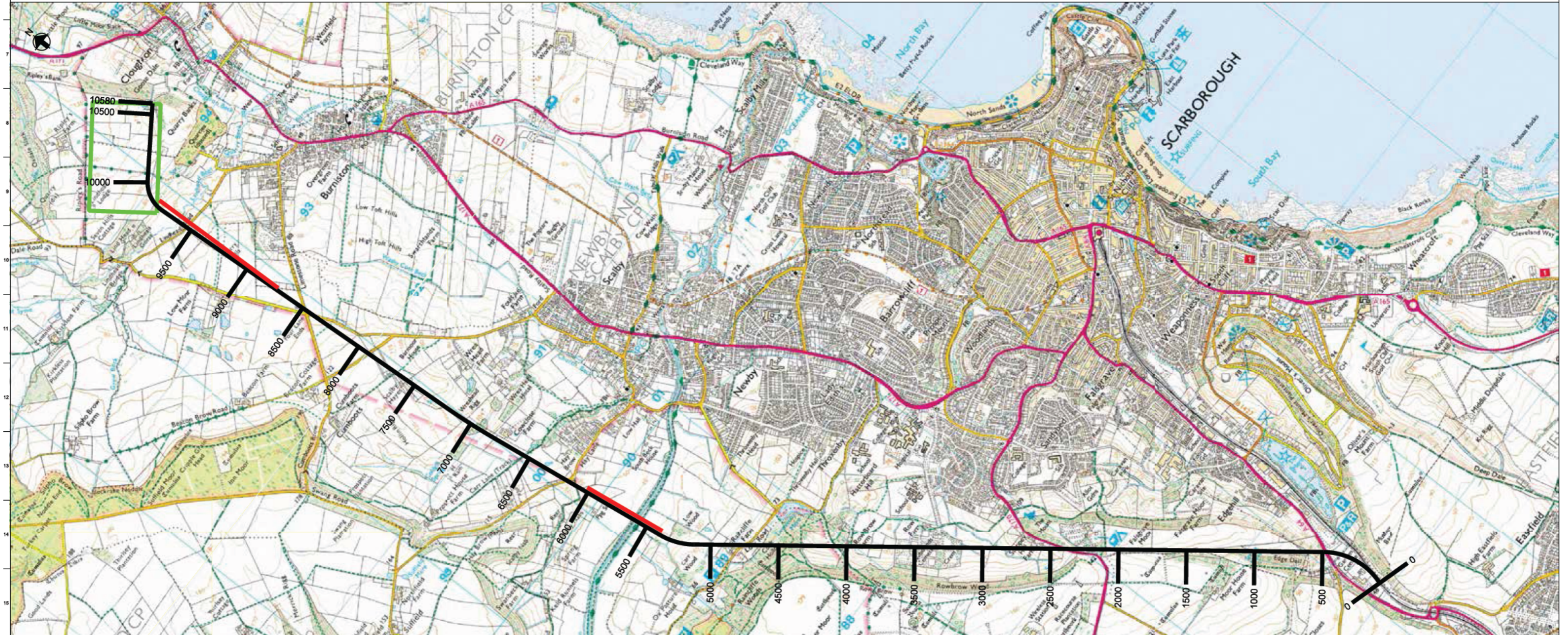
Job Title: Alternative Mine Sites.

Rail Alignment to Site 2

Scale: H=1:10000	Drawn: CH
Job No: 230972-00	Drawn Status: Draft
Drawn by: YP-P2-CX-202	Issue: 01



Section B-B
Scale: H=1:10000, V=1:100000



01 28/11/13 SA Op/Planning Issue Date By Chk Appr	ARUP 11th Floor, Rose Water 75 Broad Street, Leeds LS1 6BB Tel: +44(0)113 242 2000 Fax: +44(0)113 242 2075 www.arup.com	Client York Polish Ltd	Job Title Alternative Mine Sites.	Drawing Title Rail Alignment to Site 1	Scale 1:10000 Job No 230972-00 Drawing Status Draft Drawing No YP-P2-CX-200	Sheet 01
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Appendix 24

Landowners Letters for Shortlisted ASA Sites

15 January 2014

Mr William Woods
York Potash Project
7-10 Manor Court
Manor Garth
Scarborough
YO11 3TU



Our Ref ACD/AW/DL/G/165
Your Ref

Dear William

Duchy of Lancaster – Yorkshire Survey – Cloughton Estate

We have now been able to consider in more detail your proposal that there is a possibility of a site on the Cloughton Estate for the proposed new potash mine head.

From your briefing of the potential available sites, we have assumed that the most likely one, from your point of view, is situated to the south east of Cloughton Village, and approximately mid way between a site known as Cloughton Fields, and Scalby Lodge Farm, however the general principles outlined below would also apply to the other identified sites.

Cloughton Fields has planning consent, for a brand new farmhouse and steading to service this part of the Estate. You may also be aware that Scalby Lodge was redeveloped by the Duchy last year, at a cost of over £3million, to provide a complex of fifteen high quality holiday cottages.

The likely affect of a 100 acre mine head situated midway between these two properties and also close to Cloughton Village, where there are significant existing and latent residential property interests, makes the Duchy very apprehensive about your proposal.

In the event that the mine head were to be developed in this location, we regard the likely diminution in value of the Duchy's surrounding assets and the considerable level of property blight during the application process to be of enough significance to question the economic sense of establishing a minehead on Duchy owned land in this area.

You also indicated that a new rail link would possibly be needed from the proposed site to existing rail facilities near Scarborough. Whilst you have not been able to provide any details for this rail link, it would undoubtedly cause greater diminution in value to the surrounding Duchy properties and further disruption to development prospects.



Whilst the Duchy are in principal keen to support the York Potash initiative, the siting of a mine head at Cloughton would be extremely unattractive.

Yours sincerely

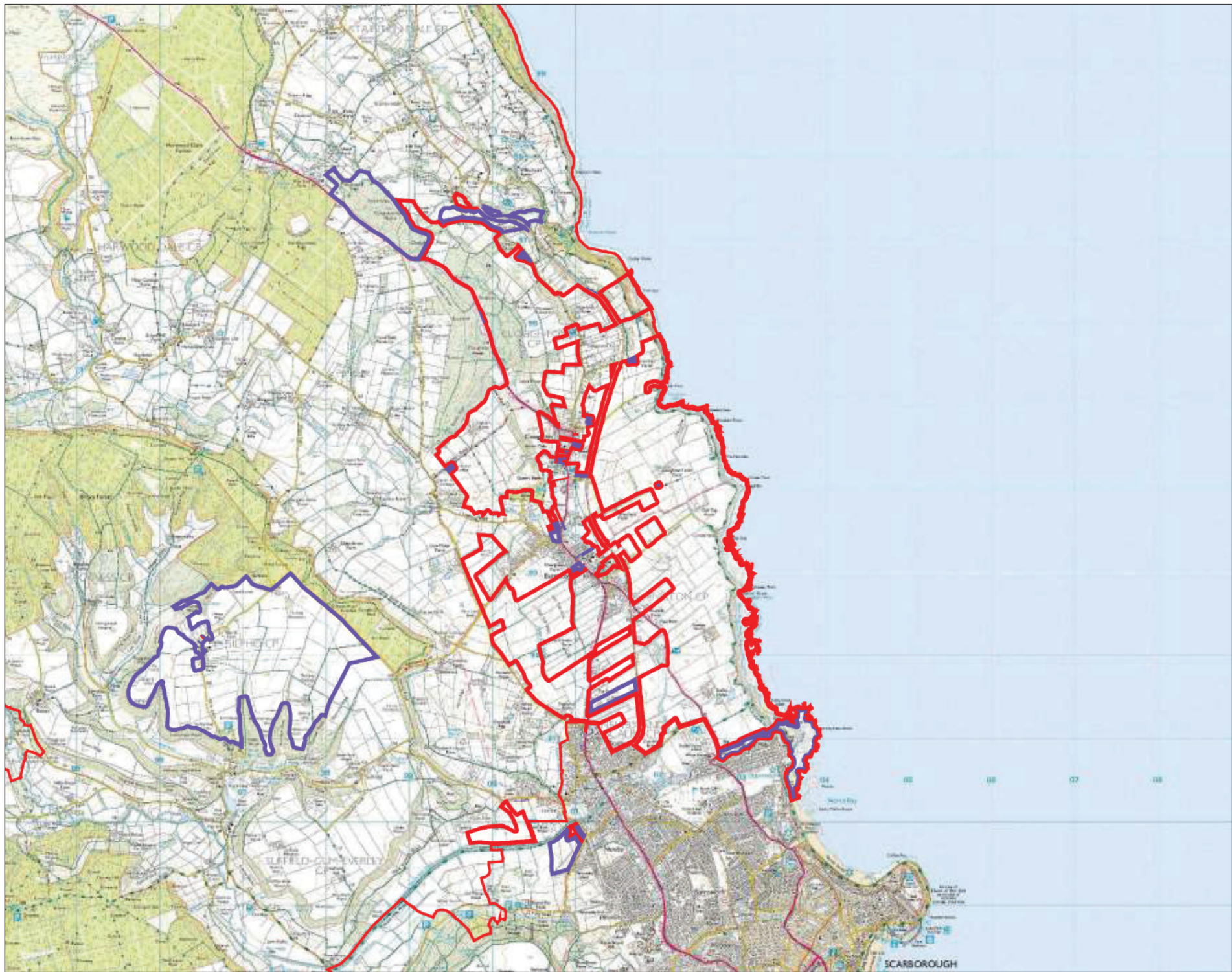


Alec Dickson • MRICS

Partner

e alec.dickson@smithsgore.co.uk • t (0)1904 756306

cc : Philip Coles, Duchy of Lancaster Office, 1 Lancaster Place, Strand, London, WC2E 7ED.



Drawn by CJD Last Amended: project date

Ref:


Plan Centre OS Ref TA 0153 9400



Scale:

1:41,653

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Plan Presented to:



Tel: 01738 621121
www.bellingram.co.uk
enquiries@bellingram.co.uk

Mr W Woods
York Potash Ltd
7-10 Manor Court
Manor Garth
Scarborough
YO11 3TU

Dear William

The York Potash
Land at Cross Butts Farm, Aislaby, Whitby including Whitby Showfield

I attach a plan showing the land at Cross Butts Farm that I own.

I have considered your proposal and can advise that due to the impact on my business at The Stables and the uncertainty that building a minehead will have on the future of my 40 or so employees, I am not interested in offering York Potash an option on my land.

I wish you the best of luck with your application.

Yours sincerely



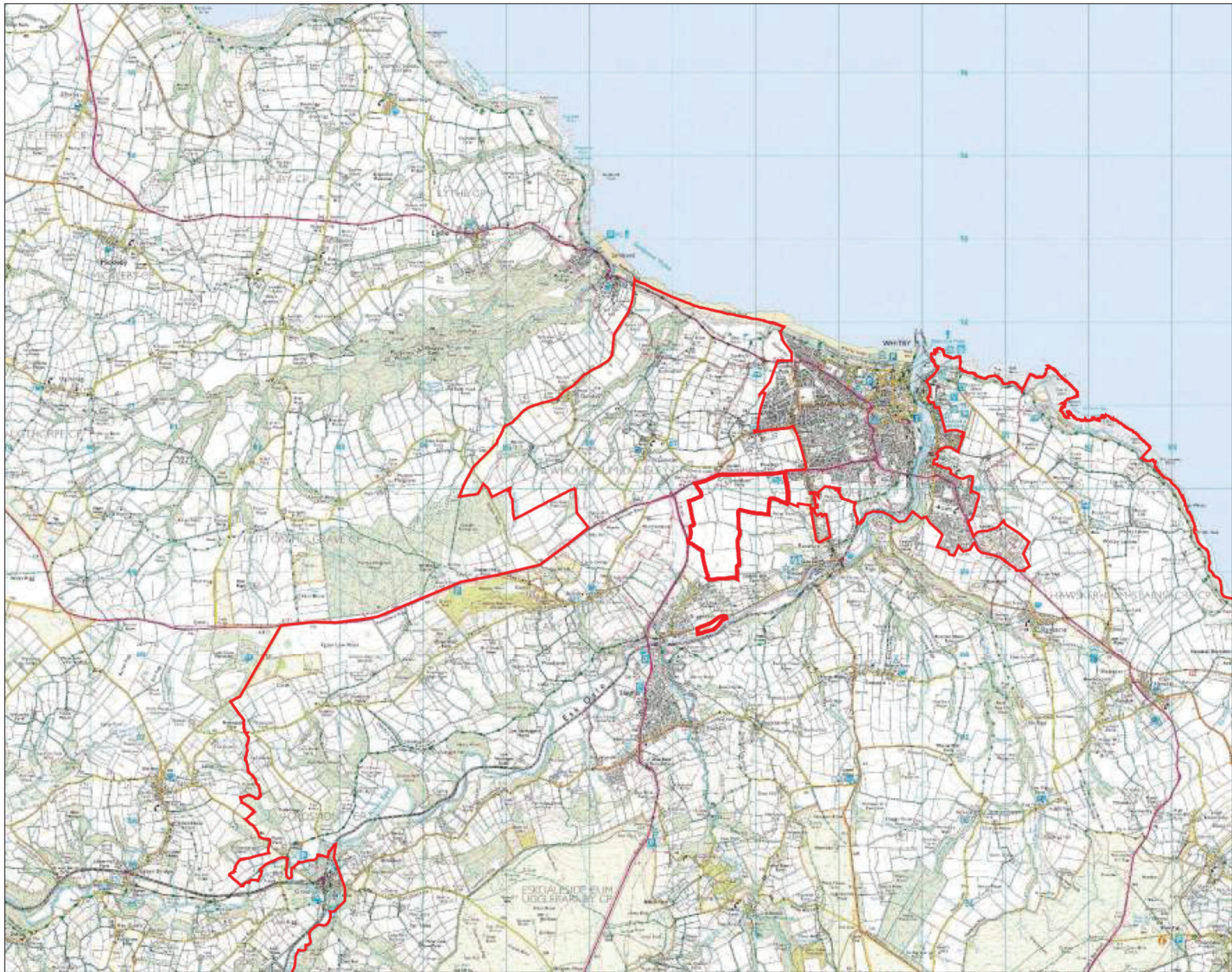
John Morley

Title number: NYK323355

OS Map Ref: NZ 8709NE

Title 1.

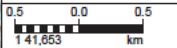




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G.M.V. WINN & CO.
CHARTERED SURVEYORS
AND LAND AGENTS

ALDBY PARK
BUTTERCRAMBE
YORK
YO41 1XU

G.G. WINN-DARLEY MRICS FAAV

Telephone 01759 371983
Fax 01759 371365
E-mail george@winndarley.net

7th October 2013

Mr W Woods
York Potash Ltd
7-10 Manor Court
Manor Garth
Scarborough
YO11 3TU

Dear William

The York Potash
Land at Toft House Farm, Aislaby, Whitby including Whitby Showfield

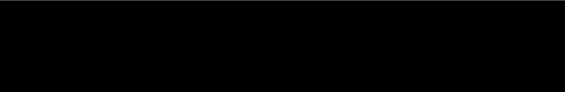
I understand that the North York Moors National Park Authority are inviting you to consider an application for a minehead outside the National Park adjacent to Whitby.

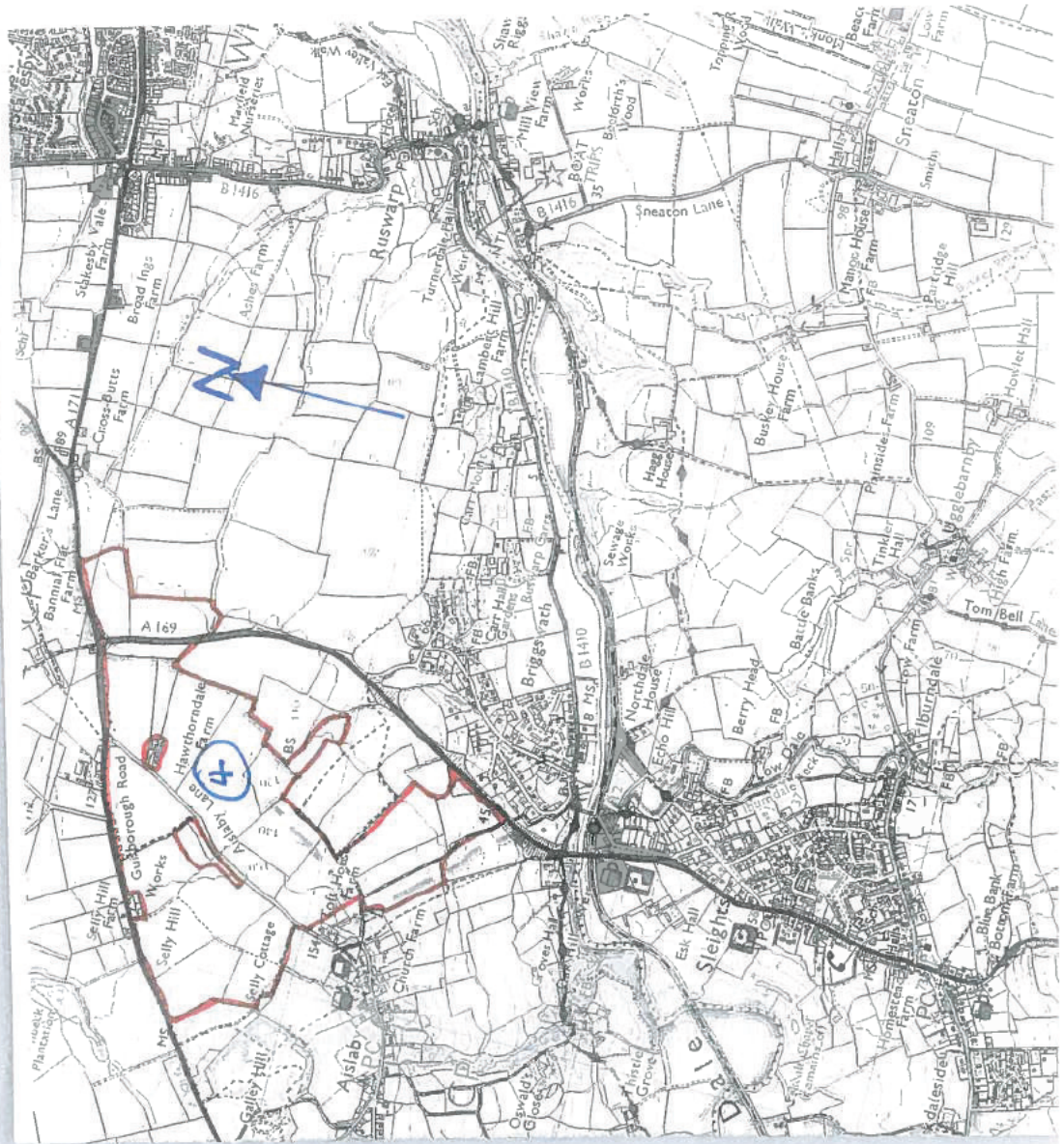
I attach a plan showing the extent of the Grosmont Estate land in the vicinity of the roundabout between the A169/A171 and land towards Whitby. I have discussed the idea that some or all of this may be utilised for all or part of a mine head site with my client.

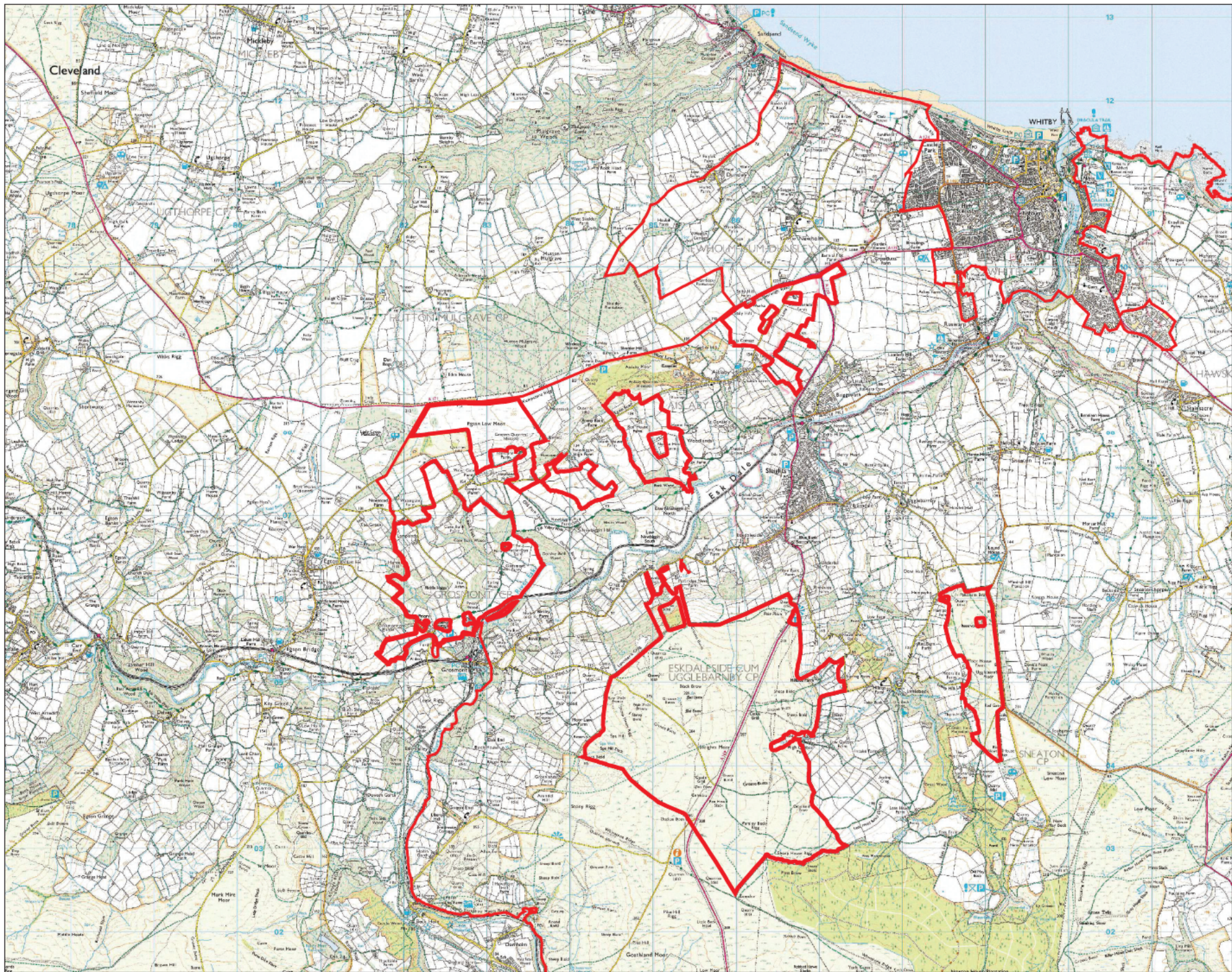
Whilst he is very supportive of the potash mining proposal he does not feel that this land would be suitable for a minehead use. Uses such as car parking, retail, light industrial etc would be more compatible with the past uses of some of the land and of the neighbouring land which is used for hotel, restaurant, functions, car boot sales, garden centre etc.

My client is not prepared to consider making any of the land on the attached plan available for a minehead development. I am sorry this is not the answer you were hoping for but reiterate he remains very supportive of the proposal and of the minehead elsewhere which is immediately adjacent to another part of the Grosmont Estate. He feels there are much more appropriate sites for a minehead for all sorts of environmental and landscape reasons.

Yours sincerely


George Winn-Darley
Duly authorised agent for Grosmont Estate

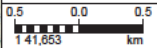




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Appendix 25

HM Principal Inspector of Mines Correspondence

Mr JR Leeming - HMI Inspector of Mines
Health and Safety Executive
Foundry House
3 Millsands
Riverside Exchange
Sheffield,
S3 8NH

13 Fitzroy Street
London
W1T 4BQ
United Kingdom
t +44 20 7636 1531
d +44 20 7755 3976
matt.sykes@arup.com
www.arup.com

25th July 2014

Dear Mr Leeming

York Potash Mineral Transport System – Request for Formal Opinion

Arup are assisting York Potash Limited with the design and planning approvals for a new Mineral Transport System (MTS) tunnel to service their proposed mine development at Doves Nest Farm near Whitby.

We understand that there are on-going discussions between Graham Clarke (Operations Director) at York Potash and the Mines Inspectorate. We recognise that comprehensive consultation and subsequent approval will be required from the Mines Inspectorate for both the proposed mine and MTS in terms of the detailed design and operational procedures. At this stage we are not therefore seeking any form of approval for the proposed approach; however Arup are now at a point where we have to finalise the scheme layout ahead of the tendering process for the MTS works. We therefore request a formal opinion on the absolute need for intermediate shaft sites; the spacing of shafts along the tunnel route and how they potentially affect operational risk management.

To develop the MTS design and operational risk management strategy, we have been working within a number of project constraints. To put the current strategy into perspective it is necessary to understand these constraints. The following provides a short summary of the project development to date:

Horizontal Alignment: A horizontal alignment corridor was developed between the mine at Doves Nest Farm and the processing plant at Wilton within which a tunnel alignment would be defined. This corridor broadly followed the route of the previous pipeline design and took into account:

- The National Park boundary
- The desire to minimise the length of the MTS
- The adjacent Boulby Mine mineral rights and planning consent
- Location of communities

From this corridor a series of alignment studies took place to balance the various requirements and aspirations for the MTS, these included:

- The desire to avoid the tunnel alignment going directly under any residential properties
- Minimising the tunnel length beneath the National Park
- Curvature and geometry restrictions for the mineral conveyor

This corridor is presented in Figure 1 below.

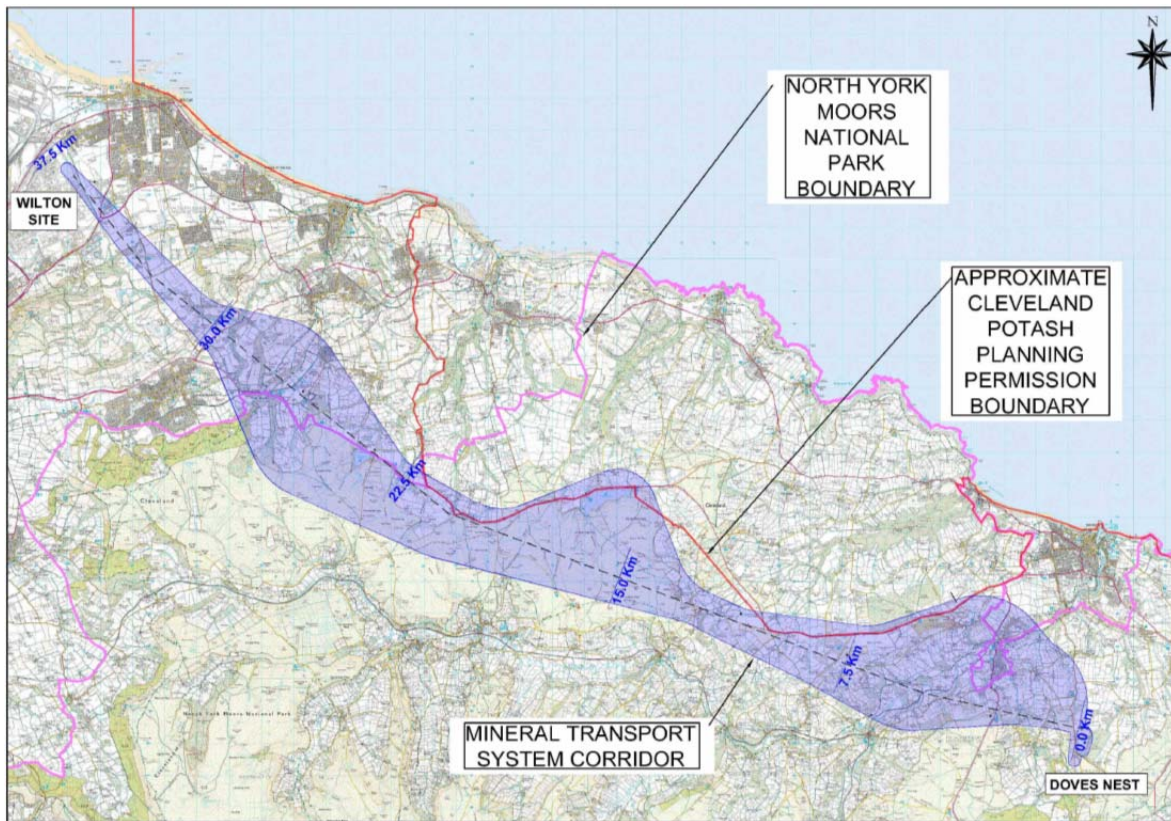


Figure 1 – MTS alignment corridor

Construction Strategy and Shaft Location Selection – From the draft alignment a series of construction scenarios were developed to establish a construction strategy and zones where candidate construction sites could be investigated. The MTS construction programme is designed to be coincident with the Doves Nest Farm mine shafts reaching Polyhalite, allowing mineral production and transportation, and therefore to:

- Deliver an economically robust project that would attract investors
- To provide a balance between the number of construction sites and limiting the construction period and associated project impact at those sites

This initial study identified construction scenarios with up to 6 Tunnelling machines with four intermediate shafts between the mine site and a portal at Wilton to deliver the MTS in three years. This placed two construction shafts in the National Park, in addition to the MTS construction shaft at the Doves Nest Farm site.

At this point a further study commenced, assessing candidate sites to deliver this construction strategy. Site selection was a compromise between often conflicting requirements, in this case key requirements included:

- Sites on or close to the alignment
- As many sites outside the National Park Boundary and, for those within the National Park, as far from European designated sites as possible
- Sites that limited the distance between shafts for emergency egress during operation
- Sites where on-site spoil disposal could take place (avoiding the need to transport shaft and tunnel spoil through and adjacent to the National Park)
- Sites where natural screening would reduce impact
- Sites where land acquisition was considered a reasonable prospect

- Areas where historical mining risk was considered low
- Areas that limited impact on watercourses and the local environment

From this assessment, three intermediate shaft sites were identified:

- Lady Cross Plantation, within the National Park
- Lockwood Beck, outside the National Park
- Tocketts Lythe, outside the National Park

This removed a potential shaft within the National Park as the location would have required a construction site on Danby Moor. This led to a reduction in the number of shafts and tunnelling drives. A revised construction strategy was developed to account for this change, as summarised below:

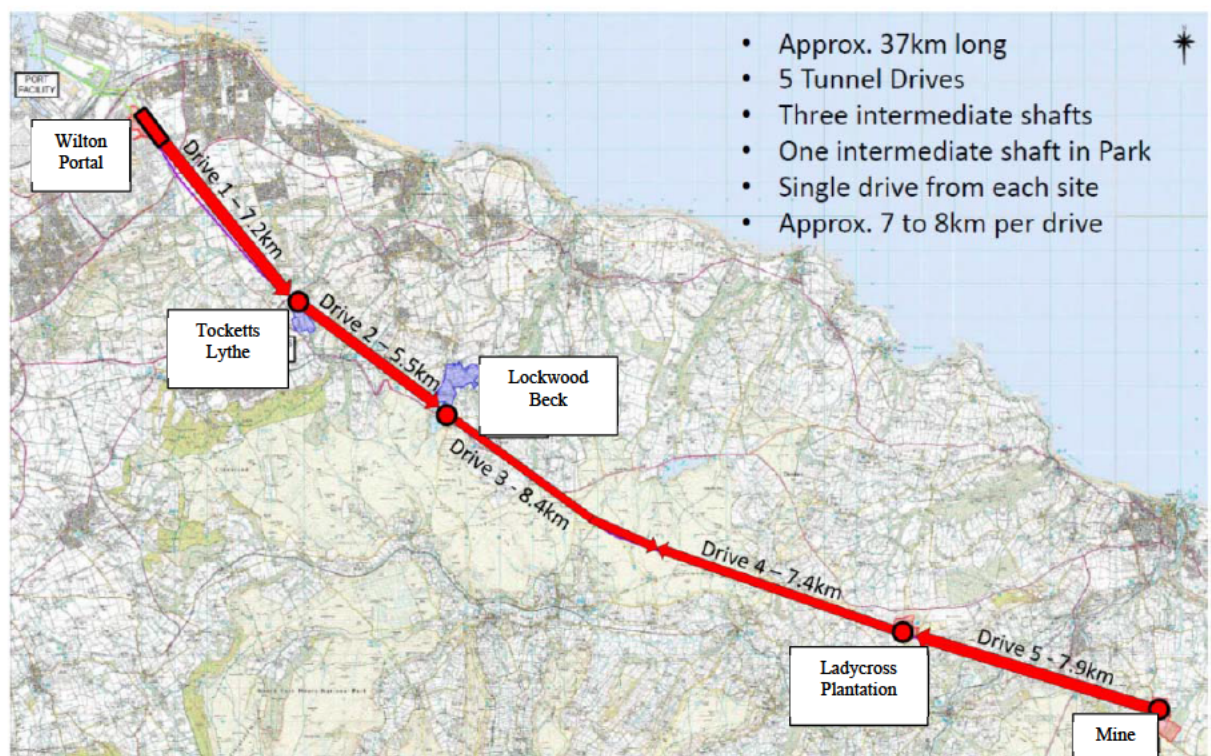


Figure 2 – Current MTS construction strategy

Operational Safety Management Concept - Operational safety is a key requirement for the project and the governing requirement for this is to manage risk to “As Low As Reasonably Practicable” (ALARP). We feel that we have established shaft locations that balance the desire to deliver the project economically, provide emergency egress points and minimise impact on the National Park. The project therefore regards the current layout as providing the minimum practicable distance between shafts given these constraints.

The operational safety management strategy for the MTS will be developed in consultation with yourselves; however the basis for the strategy is likely to include the following:

- Provide at least two means of egress from any point in the MTS
- Allow escape into forced (fresh) air supply from any single incident location by providing reversible emergency fans at shaft locations
- Escape via maintenance train to either Wilton portal or the mine as the primary method of evacuation
- If train is incapacitated then await rescue in situ if safe to do so

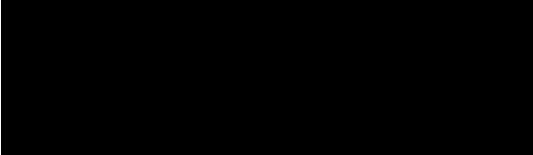
- If this is not possible, self-rescue by foot, using intermediate safety refuges at nominal 2000m centres. Refuges equipped with replacement re-breathers, short term air supply, first aid points and track mounted trolley for casualty evacuation
- On reaching shaft location, use main refuges as a place of safety and mustering point to await rescue train
- If incident involves blockage of both means of egress via the tunnel, then wait in the refuge for escape via the shaft using the mine's emergency mobile winder and manrider system.

Under this system, a self-rescue situation with egress from the shaft refuge requires walking a maximum of 15.8km (between Lockwood Beck and Ladycross shaft). While we would prefer this distance to be less, we believe that this is an ALARP approach given the constraints on shaft locations discussed above.

We request your formal opinion on the following:

- The need or otherwise for intermediate shaft sites to be provided along the route of the MTS;
- The spacing of the MTS shafts and if it is likely to provide an acceptable ALARP approach to you as the Regulator given the escape strategy outlined above, subject to further consultation with the Mines Inspectorate;
- Any concerns that you would have from a Health and Safety perspective regarding the effects of increasing the distance between shafts, particularly the effect of removal of any of the intermediate shafts.

Yours sincerely



Matt Sykes
Director – Ove Arup and Partners

Mr M Sykes
Director
Ove Arup and Partners
13 Fitzroy Street
London
W1T 4BQ

Reference 4301420
MS/vj/236611/250714

Hazardous Installations
Directorate

JR Leeming

Energy Division
Foundry House
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S3 8NH

Tel: 0114 291 2390
Fax: 0114 291 2399
bob.leeming@hse.gsi.gov.uk

<http://www.hse.gov.uk/>

HM Chief Inspector of Mines
Mr S Denton

Date 11 August 2014

Dear Sir

York Potash Mineral Transport System – Request for Formal Opinion

Thank you for your request for opinion, which I will address below, aligned with your three specific points (but out of order):

2. Spacing of MTS shafts with regard to escape risks controlled to ALARP.

From a safety point of view the line of the tunnel is of little relevance: convenient / safe access to the surface is paramount, particularly in emergency situations.

In an ideal world there would be many accesses, very close together. I recognise that there are other constraints, not least financial, that limit the number of accesses. Further constraints limit their potential locations, and provision of accesses has to mesh with these other, sometimes conflicting, requirements with compromises having to be made. Ultimately the system has to be safe to construct and operate, with risks controlled to as low as reasonably practicable (ALARP).

You propose accesses at 7.5 km from the mine site, then at a further interval of 15.8 km. The others are more or less equidistant so I will concentrate my comments on these two accesses. These sites, and thus the spacing are dictated by other constraints.

During construction escape distances will be a maximum of 8.4 km and will be roughly equal for all drives. Significantly, only one drive is to be performed from each access, so removing the conflict of two drives from one access. The escape and rescue scenarios can be managed to ALARP.

During operation, the maximum escape distance will increase to 15.8 km - that is if an incident blocking escape to the first or second accesses was to occur right next to that access, requiring evacuation the whole distance to the other. By any account this is a long way and far exceeds anything comparable in

the UK, to my knowledge. Having said that, in my view risks can still be managed to ALARP by provision of suitable and sufficient self rescuers, safety refuges, back-up transport systems, controllable ventilation, and Mines Rescue support. HSE would have to be assured that these measures were in place.

If these two accesses have to be situated as described, and are as close as they can possibly be to fit in with other constraints, then it can be shown that the risks can be controlled to ALARP.

3. Concerns over increased separation or removing any of the accesses.

If the accesses were planned to be further apart than stated, then travel distances to the egress point would necessarily increase, so increasing time of travel, exposure to the hazard and difficulty in travel and access for Mines Rescue. Any increase in distance increases the risk, and thus the resultant risk could no longer be described as ALARP.

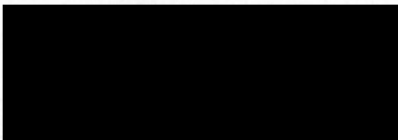
1. The need for intermediate access points. This is extending the situation in question 3 to its extreme, i.e. removal of all intermediate accesses.

If the MTS were to be constructed without intermediate access points, assuming driving from both ends, during construction the maximum escape distances would be 18 km or so, but during operation would be up to 36 km - i.e. the full length of the MTS.

Following the points made in 2 and 3 above, I cannot foresee this position being successfully argued to be controlling risks to ALARP. Any rational argument would say that provision of intermediate accesses is reasonably practical.

I hope that this addresses the points you asked for opinion on, please contact me again if you have any other queries.

Yours faithfully



JR Leeming
HM Principal Inspector of Mines
HM Inspectorate of Mines

Appendix 26

MTS Route Constraints Plan
