

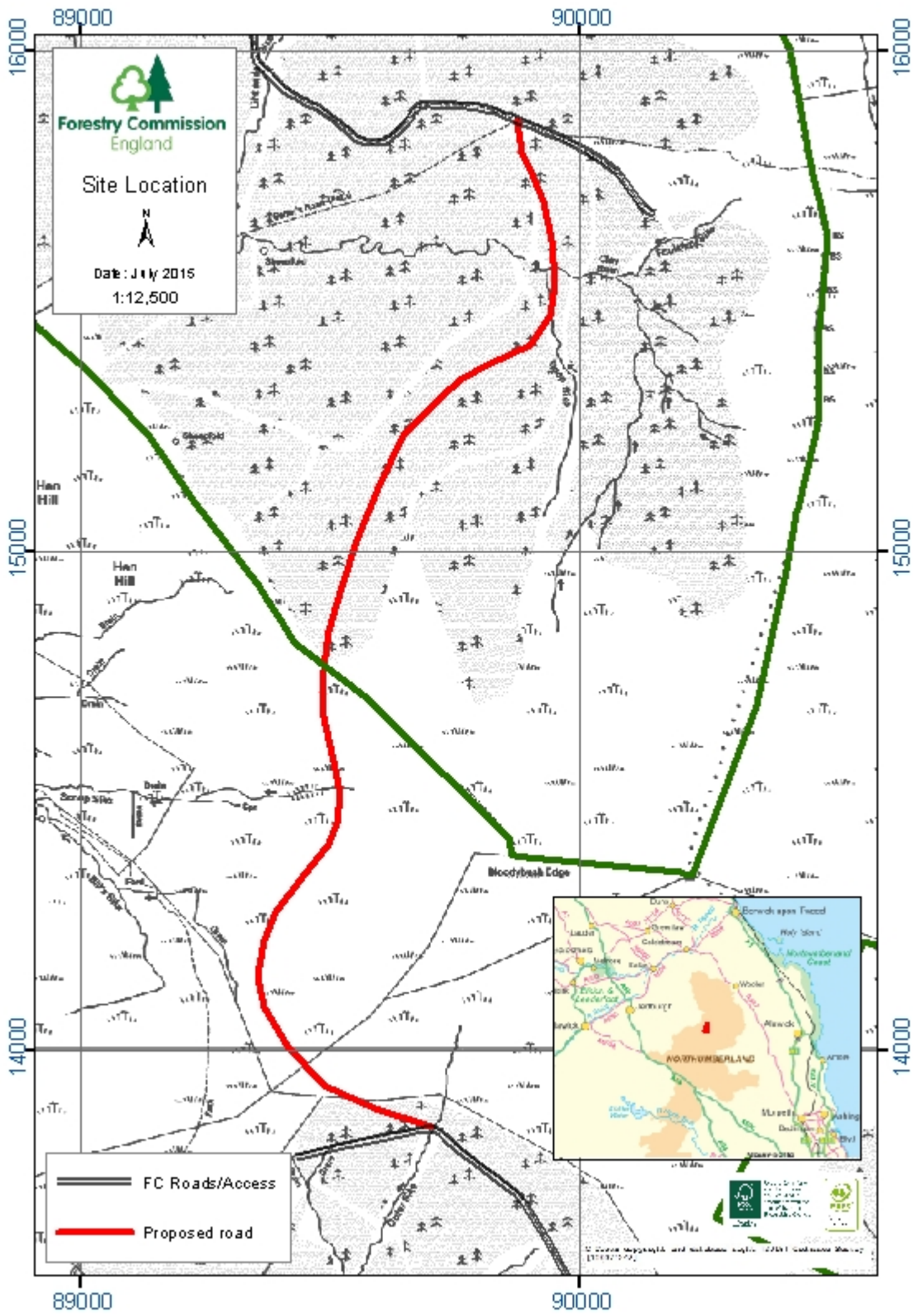
Initial Design and Access Statement relating to
proposed new forest road linking Uswayford Forest to
Kidland Forest



Contents

- 1) Site Location Plan
- 2) Draft/sketch plans (height and scale) - route chosen, means of construction and materials
- 3) Initial Design and Access Statement (analysis for the route chosen)
- 4) List of Appendices and photographs

1 Site Location Plan



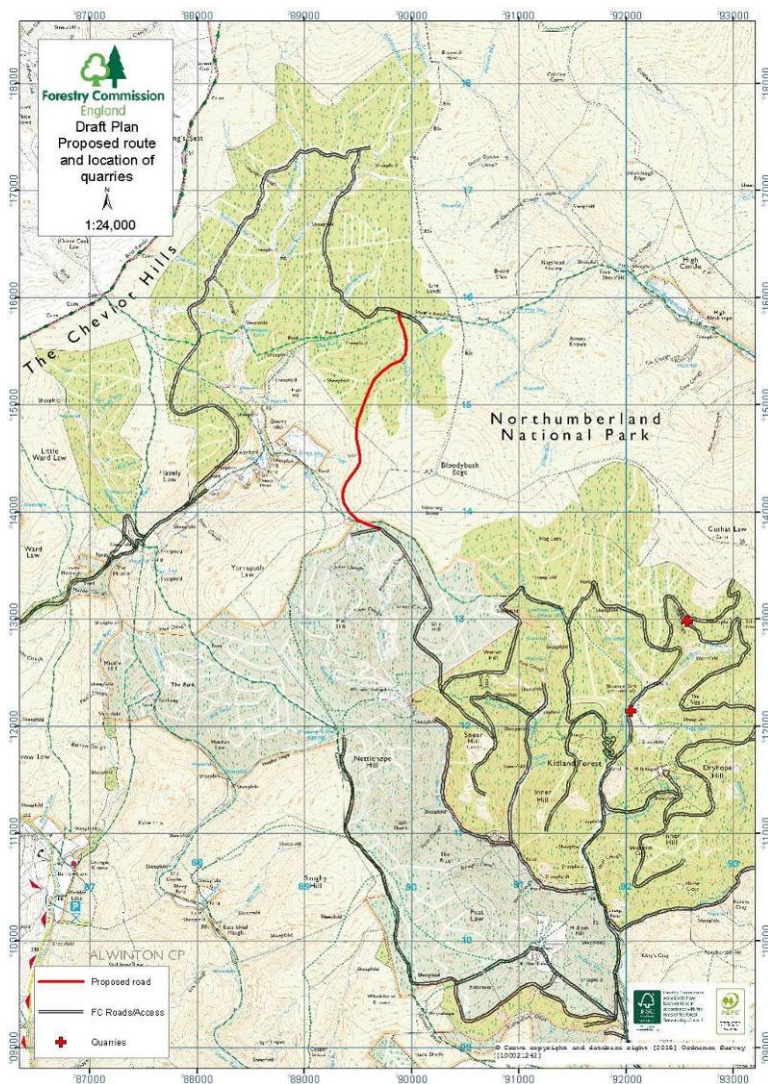
2 Draft/sketch plans

Project outline

The construction of a new private way for forestry purposes linking existing forest road networks between Uswayford forest and Kidland forest. Suitable for haulage of timber using timber lorries with a running width of 3.4 metres with an average weight of timber extracted of approximately 17,500 m³/Annum.

Route chosen

The route chosen links Uswayford to the existing haulage networks within Kidland, total length 2446m including 990 metres of new road across the agricultural grazing land to the west of Bloodybush Edge. The rationale for this route is given in the Design and Access Statement in Part 3.



(Note: Not to scale)

Means of Construction and Material to be used

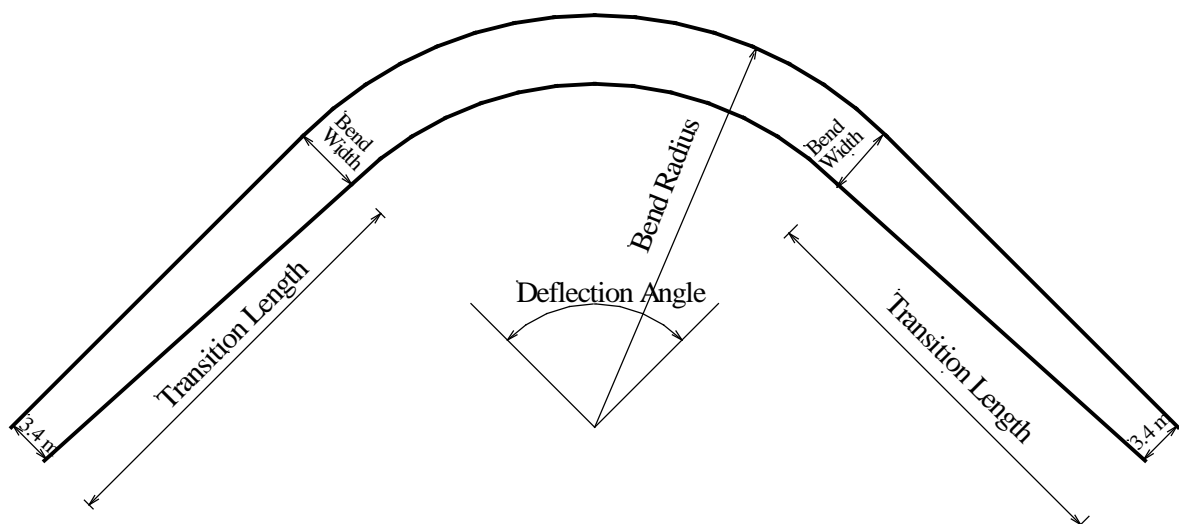
Means of construction will be cutting and formation to the following specification with example cross sections as detailed in the Forestry Commission Civil Engineering Handbook (2nd edition 2014):

Design speed	25 km/h.
Design Loading	Full C&U (currently 44 tonnes)
Road Width	3.4 m (+/- 200mm) - Widened on inside of bends to suit radius.
Max gradient	10% with small lengths (<200m) up to 12.5% allowable with caution.
Min gradient	2% recommended.
Facilities	Passing places, turning places, harvesting facilities supplied as required.
Road construction depth	Chosen by relation to CBR of sub-grade. Varies from 150mm to >850mm.
Construction	Waterbound. Material as available.
Surfacing	As required. Good quality material.
Cross slope (camber or cross fall)	4.5% recommended minimum. Above 8% only to be used with care.
Geosynthetic	Used occasionally for particular reason
Culverts	Minimum size 300mm although 450mm preferred. Spacing as required.

HORIZONTAL BEND RECOMMENDED WIDTHS AND GRADIENTS

Outside Radius	Minimum Widths For Maximum Angle of Deflection (°)				Transition Straight Length	Maximum Desirable gradient on outside radius
	15	45	90	180		
	Running surface width					
m	m	m	m	m	m	%
90	3.8	3.8	3.8	3.8	-	10
60	4.0	4.0	4.0	4.1	20	8
45	4.0	4.2	4.5	4.5	20	7
30*	4.0	4.7	5.0	5.1	25	6.5
25		4.8	5.1	5.3	30	5
20		5.0	5.6	5.9	30	4.5
15			6.3	7.0	40	4
10***				10.0	40	3

- * Preferred minimum radius
- ** Figures based on experience
- *** Absolute minimum hairpin



Bend Widening

Example cross sections

Figure 1 No cross-fall

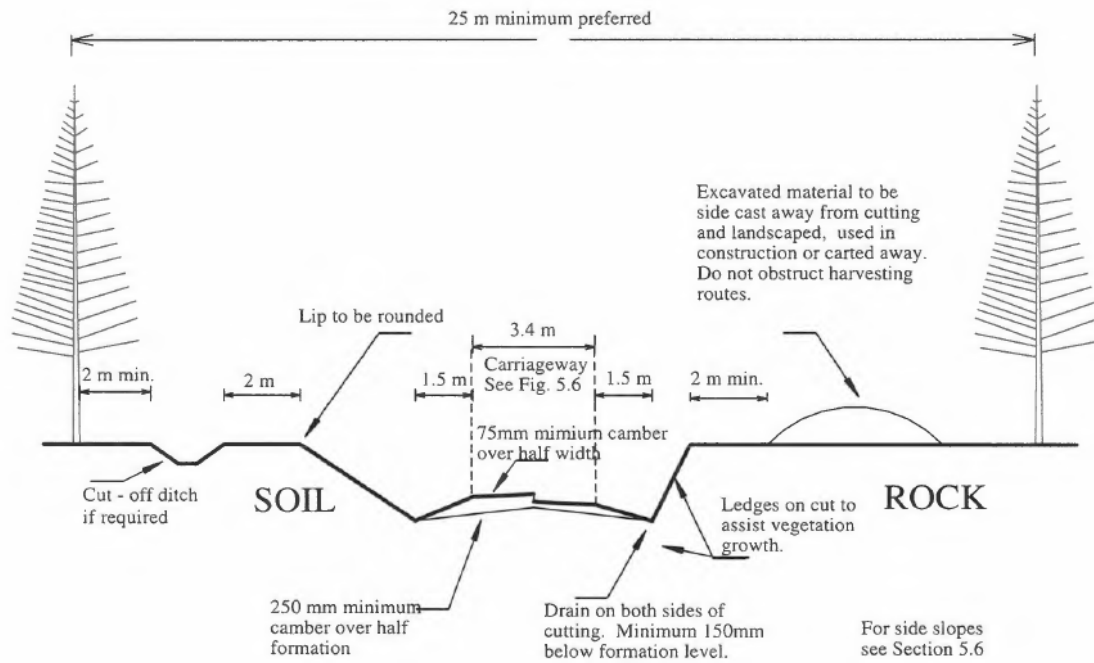


Figure 2 10° cross-falls

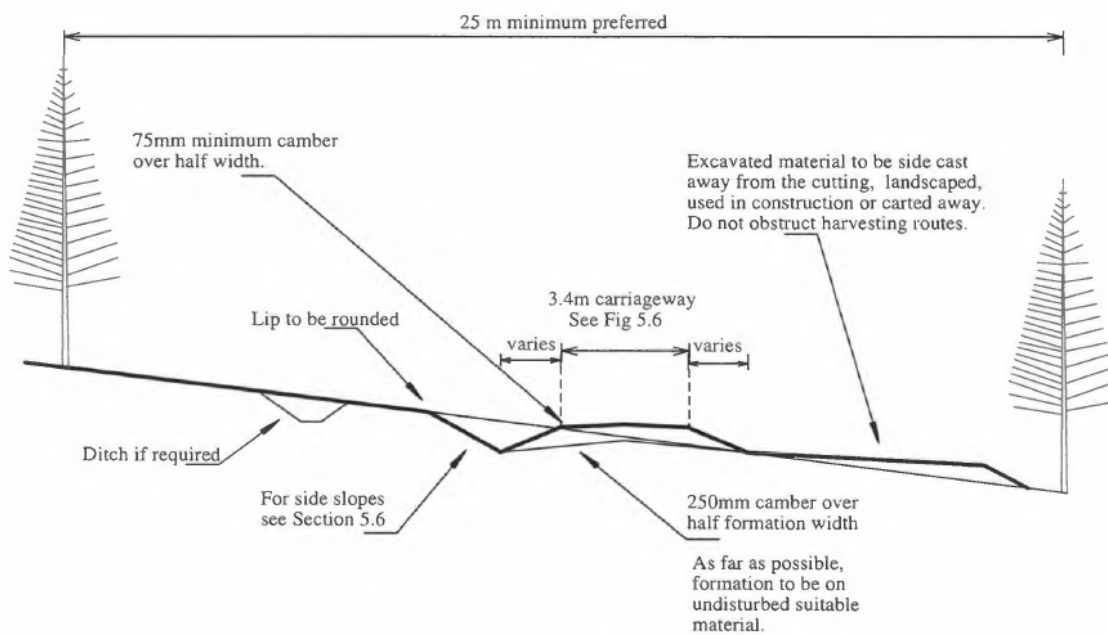
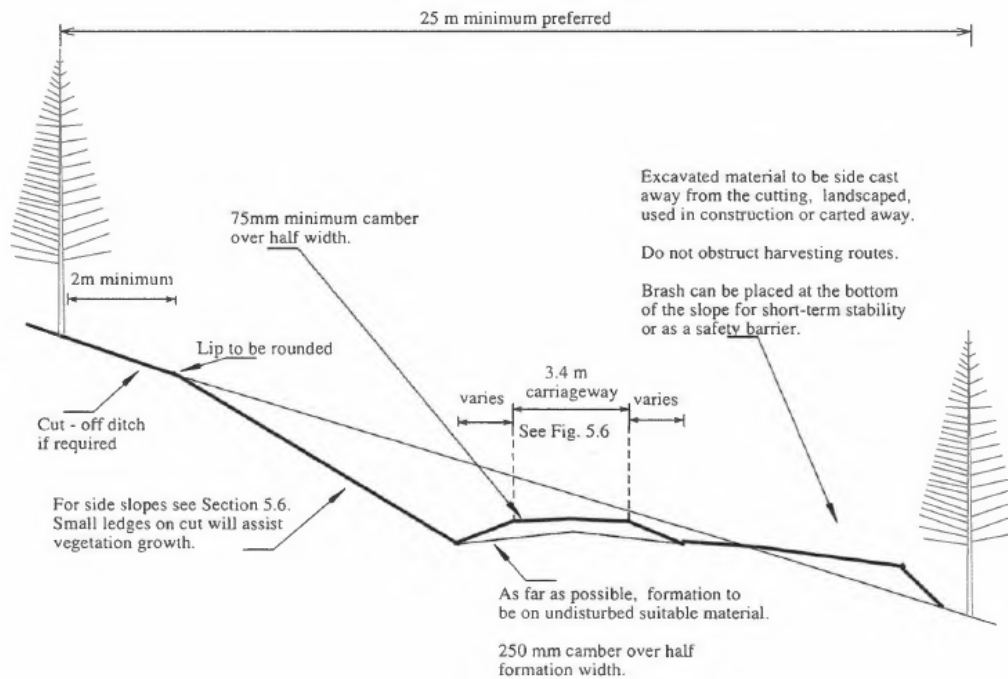


Figure 3 20° cross-falls



Excavated material will be used either to create a bund below the road at sensitive locations to help hide any exposed excavation above the road or it will be removed to another location within the project area.

The road will be constructed from locally won Andesite from existing quarries within Kidland forest (shown on previous map) to a depth of 750mm compacted to 700mm with a 100mm running layer of type 1 or other suitable running surface.

3 Initial Design and Access Statement (analysis for the route chosen)

Summary

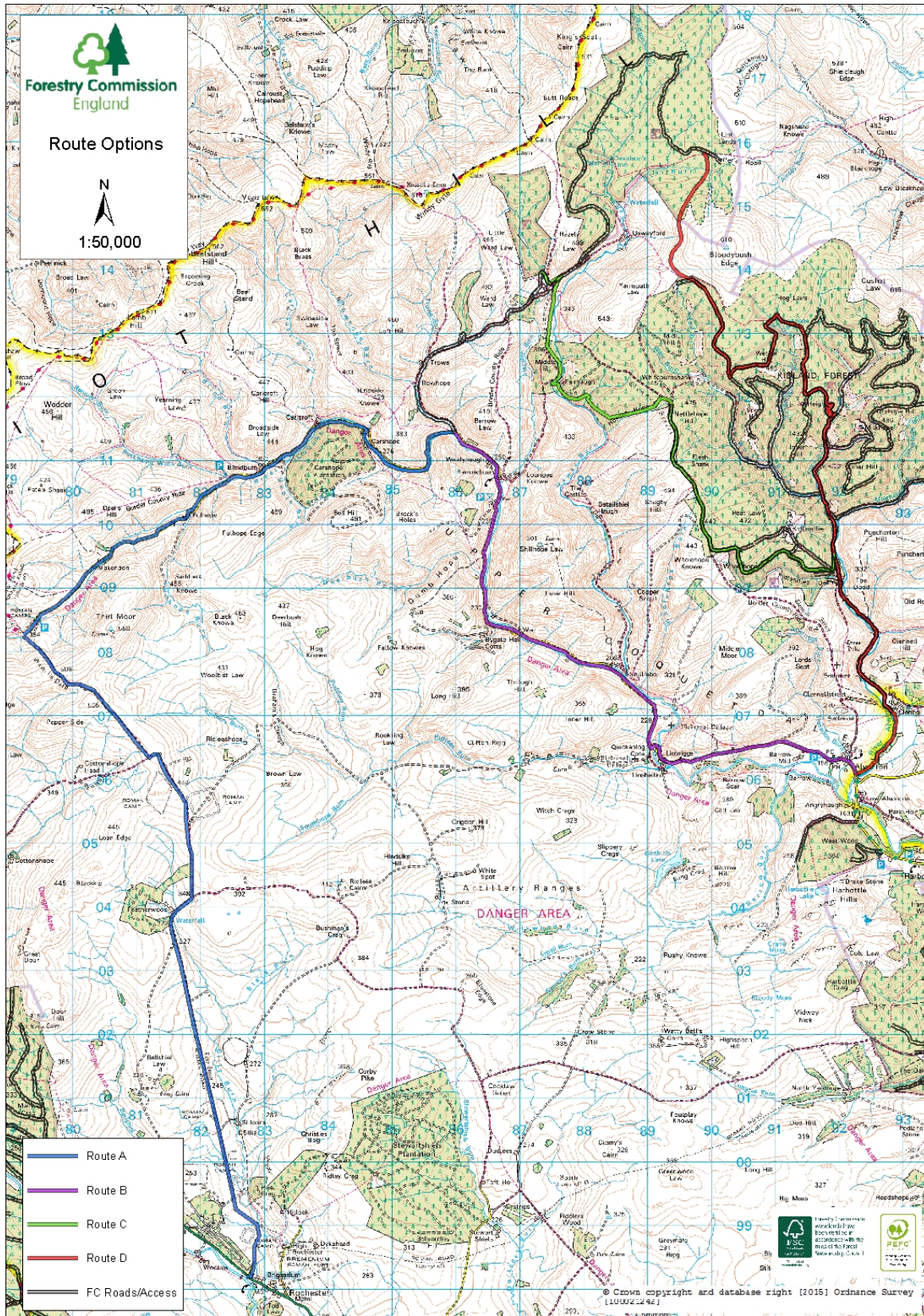
Uswayford extends to 862ha of which 611ha is managed as productive conifer plantation. The predominant species is Sitka spruce planted mostly through the 1970's now approaching economic maturity. The forest is first rotation with high wind hazard classification and there has been no previous felling since initial establishment. The timber reserve is estimated at 340,000m³ and present vehicular access is unsuitable for timber haulage.

Future forest management of Uswayford is dependent on the provision of suitable access to the forest. Our proposal is to create a new private way for forestry purposes linking Uswayford to Kidland forest across the agricultural grazing land west of Bloodybush Edge (see map 1).

This initial Design and Access Statement provides analysis of the different routes available, with consideration to civil engineering, conservation and heritage, other traffic and landscape and visual impact. The proposal represents our preferred option for transporting timber from the forest to enable long term sustainable management of the forest.

Route Options

Map 1



Description of Routes

Route A – Otterburn Range - Unmetalled road south from Uswayford to join minor public highway (U2043) west for 9km to Chew Green. Then south along Dere Street for a further 12km through the MOD Otterburn range.

Route B – Public highway to Alwinton - Unmetalled road south from Uswayford to join minor public highway (U2043) south for 10km to Alwinton.

Route C – Lower route from Hebden Burn - Construction of approximately 1050m new road from Hebden Burn linking Uswayford with Kidland. Route travels south eastwards through private woodland to link with FC access south past Kidland Lee to Clennell.

Route D – Upper route from Uswayford - Construction of approximately 2450m new road from eastern end of forest road in Uswayford to join with FC access in Kidland, linking to the public road by the FC road network south to Clennell. This includes 990 metres of new road across the agricultural grazing land to the west of Bloodybush Edge and east of Uswayford farm.

Conclusion

The table below summarises the outcome of the route analysis.

	Civil Engineering	Conservation and Heritage	Other traffic	Landscape and Visual impact
Route A	x	x	x	x
Route B	x	✓	x	✓ x
Route C	✓ x	x	✓ x	✓ x
Route D	✓	✓	✓	✓ x

- ✓ = No negative impacts
- x = Negative impacts
- ✓ x = Possible to reduce/mitigate impact

Route D is the preferred option for the following reasons:

- 1) It is the most feasible engineering solution. The gentler gradient means there will be more opportunity to minimise the height of the exposed excavated upper edge and formation of a bund on the lower side of the road at key points will lessen the view of the road.
- 2) There are no significant ecological or archaeological impacts.
- 3) There are low levels of other traffic and no formal rights of way along the route.
- 4) There is opportunity to mitigate the landscape impact through careful road design and route choice across the area. The convex slope makes the route less visible from above. Views of the route from the Pennine Way are distant in nature.
- 5) The route enters Uswayford at an elevation to coincide with the first harvesting coupe scheduled for 2017 so mitigation of the impact is possible at an early stage in the forest restructuring plan (See Draft Forest Design Plan Felling Proposals Map).
- 6) The timber will exit to the public highway east of the village of Alwinton avoiding disturbance to the local community, using a haulage route currently taking timber, and agreed with the "North East England Timber Transport Forum".

Analysis of routes

Route A – Otterburn Range

Civil Engineering

The unmetalled section from Uswayford to the public road requires upgrade to support the volume of timber to be harvested. There is restricted access at Trows where the route crosses the ford.

The public road to Chew Green has width, strength and geometry issues with limited passing places along the route and would require carriageway upgrading. The distance to the A68 from Trows car park is 21km.

Northumberland County Council's liaison officer to the North England Timber Transport forum is not in favour of using the route – (Appendix email correspondence).

Conservation and Heritage

The route passes several scheduled ancient monuments at Chew Green and south along Dere Street (Map 4). Carriageway improvements would fall within the designated impact zone for these features.

Other traffic

The road through Otterburn follows popular cycling routes promoted by the MOD including the 50K challenge and Dere Street Circuit. (NNP leaflet 2006). The area is used regularly by the public with car parks at Buckham's Bridge and Chew Green. (Map 5)

Landscape Character

Otterburn is categorised in the 'Rolling Uplands' LCA (Northumberland National Park). Guidelines for development include:

- New development should not be visually prominent and should not detract from the landscape quality of the area.
- Encourage the sensitive management of areas used for military training and avoid or minimise any widening of existing tracks and roads.

Other factors

MOD operational restrictions re: access through Otterburn.
Not an approved timber haulage route

Route A is discounted due to the civil engineering constraints and negative impact to heritage features, public access and landscape character.

Route B – Public highway to Alwinton

Civil Engineering

As with Route A the unmetalled section requires upgrade. The public road to Alwinton (U2043) would require carriageway upgrading with a 100mm overlay costing around £200k per km. Additional to this would be passing places, widening and strengthening of river banks and bridges. Distance from Trows car park to Alwinton is approximately 10km.

Northumberland County Council's liaison officer to the North England Timber Transport forum has stated that they would not be in a position to allow timber extraction along the U2043 in its current state without significant upgrade. The Highway Authority would expect the Forestry Commission to cover these costs.

Conservation and Heritage

The public highway is adjacent to the river Coquet SSSI which poses potential pollution risks associated with road improvement works.

Low impact on heritage features although the route passes through the impact zone of a scheduled medieval settlement (Map 4).

Other traffic

The unmetalled section shares access with a public bridleway to Trows End car park where it joins the public highway. The route from this point to Alwinton is used regularly by walkers, cyclists and horse riders and passes through the village of Alwinton (Map 5).

Although a provisional (but not formally approved) timber haulage route the North England Timber Transport forum liaison officer has stated that as well as the current suitability issues with the U2043, there would also be conflict with communities and those taking part in recreational activities and indicated that a weight limit may then be imposed on the road.

Landscape Character

The upper Coquet valley from Trows End to Alwinton is within the 'Upland Burns' LCA. Guidelines for development state:

- Recreation and tourism infrastructure such as improved road access, passing places, car parks, signage, litter bins and interpretation should be sensitively designed, low key and should not exert a urbanising influence on this landscape type.

Route B is discounted due to the civil engineering constraints and negative impact to public access and the local community.

Route C – Lower route from Hebden Burn

Civil Engineering

Although a feasible engineering solution there would be a significant amount of earthworks required due to the cross-fall of the slope and localised steepness along sections through private woodland in Kidland present as yet unknown engineering challenges.

Conservation and Heritage

The route crosses a Scheduled Ancient Monument 'Three Cross Dykes on Middle Hill' (NY 38746129) on the forest edge at the southern end of the lower route. There is also a cluster of unscheduled heritage features on private land at the northern end toward Hebden Burn (Map 4).

An ecological survey 2013 (see Appendix) identified no plants or habitats of special interest. A small area of botanical interest was noted below the road line at the southern end. This steep bank of slightly enriched/neutral sward contains a variety of flora characteristic of the Cheviots including thyme, eyebright, bush vetch, harebell, tormentil, selfheal, wavy hair grass, sweet vernal grass, common bent, foxglove and heath speedell. Although the road and cut would be above this area there is potential risk from spoil slipping down the steep slope.

Other traffic

The route is across Open Access land (CROW) and follows and dissects a number of footpaths and bridleways. The footpaths below Hebden Burn are regularly used to access the Pennine Way (Map 5).

Landscape Character

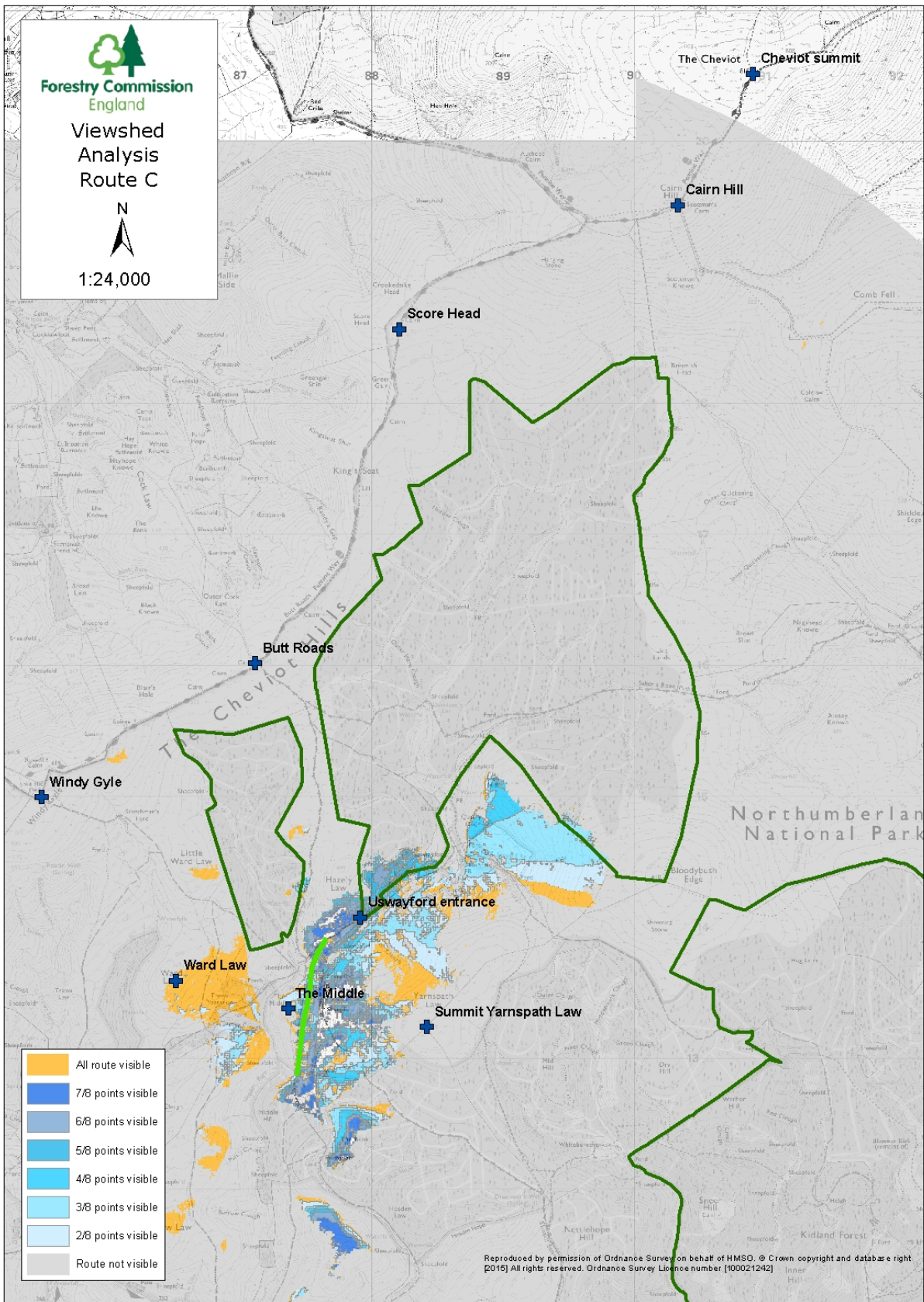
The area is within the 'Cheviot Rounded Hills' LCA. Stated characteristics and management objectives include:

- Strong sense of wilderness derived from simplicity, openness, little to no settlement and little access except on foot.
- Timber extraction operations and extraction routes should be sympathetic to the landscape.
- Conservation of historic sites and structures, which act as local focal points and reinforce local distinctiveness in each of the valleys, is important.

Visibility

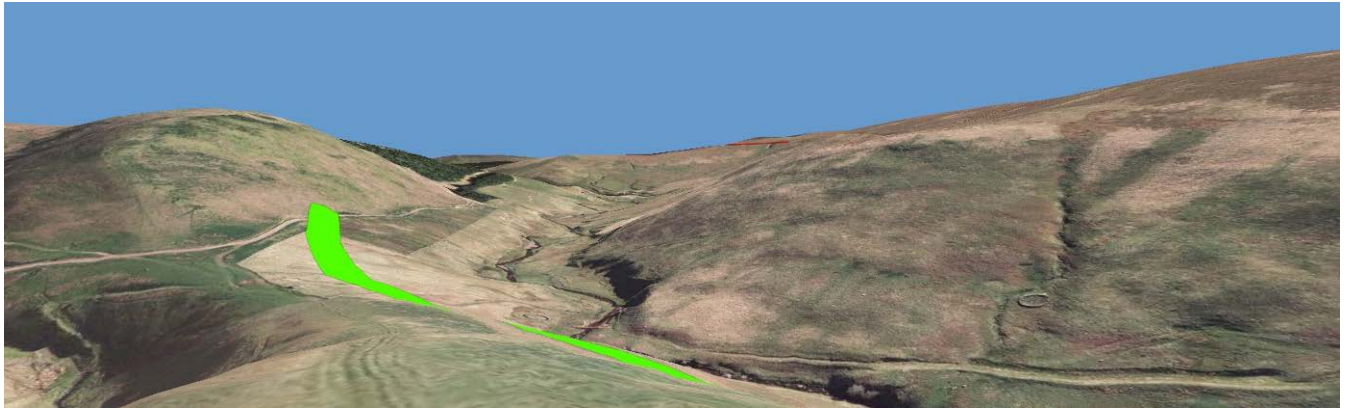
Viewshed analysis of the route (Map 2) indicates that the route is most prominent from locations within the valley. Key viewpoints are identified at The Middle and Uswayford entrance.

Map 2 Viewshed Analysis



Note: Viewshed analysis excludes the impact of tree height

3D visualisation from The Middle and entrance into Uswayford are shown below. The line is scaled to a 20m width to represent the road and area of excavation which becomes extended as the gradient of the cross-fall increases.



View north from 'The Middle'



View south from the entrance into Uswayford

Other factors

North England Timber Transport Forum supports the option to extract timber from Uswayford to Kidland Forest then onwards on the Public Highway on an agreed timber haulage route. (Appendix email correspondence - Timber Transport Liaison Officer).

Route C is discounted due to the negative impact to heritage features and high visibility of the route due to the steep cross-fall.

Route D – Upper route from Uswayford

Civil Engineering

Cross fall along the slope is typically in the range 0-10 degrees making this route the most feasible engineering solution which presents opportunities to mitigate negative landscape impacts through road design.

Conservation and Heritage

The ecological surveys of the route in 2013 and 2015 did not indicate any plants or habitat of special interest (see Appendix). Species associated with blanket peat (heather, bilberry, narrow leaved cotton grass, sphagnum moss, wavy hair grass, black/common sedge and cloudberry) and acid grassland (sweet vernal grass, common bent, bilberry, common woodrush, purple moor grass and tormentil) were noted. The area between Uswayford and Kidland is listed as a Local Wildlife Site comprising upland habitat characteristic of the area.

There are no recorded heritage features.

An overburden survey (July 2015) indicates the depth of peat along the route is within the range 11-116cm. Appendix – Overburden Survey.

Other traffic

The section of new forest road crosses Open Access Land but there are no formal PROW's. The route uses existing forest roads through Kidland with some shared public access along sections of public footpath and along the metalled road from Kidland Lee to Clennell. The route exits Kidland forest at Clennell, avoiding travelling through the village of Alwinton and other hamlets to the north along the Coquet valley, accessing on to a public highway agreed as a timber haulage route which has accommodated timber haulage of circa. 20,000 tonnes/annum for 15 years with shared public access plus private timber haulage (Map 5).

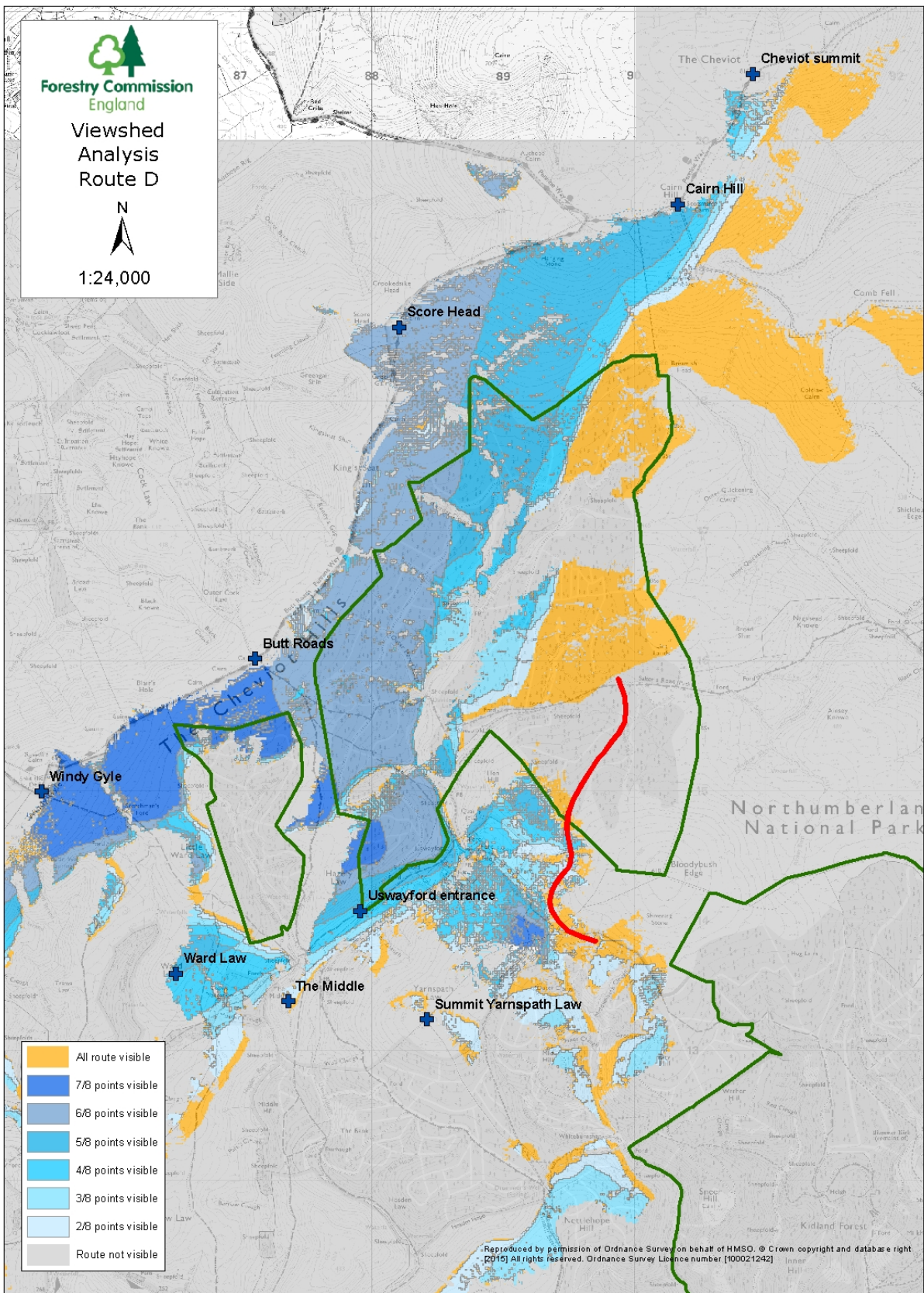
Landscape Character

The area is within the 'Cheviot Rounded Hills' LCA with stated aims/objectives as for route C.

Visibility

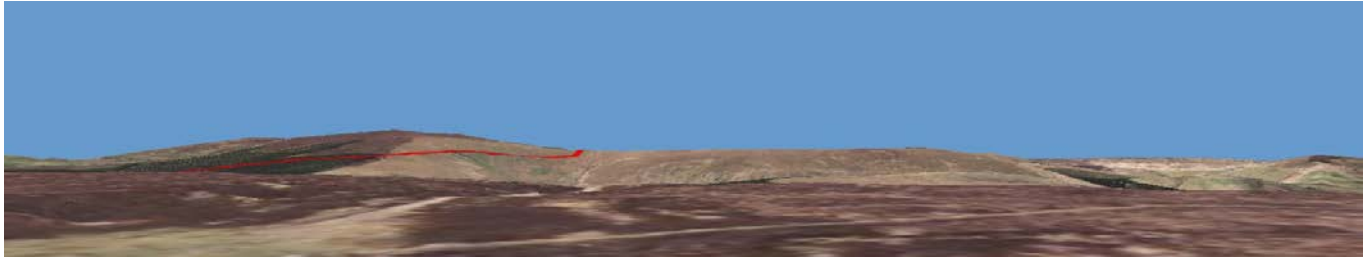
Viewshed analysis of the route (Map 3) indicates that the route is most prominent from locations along the Pennine Way. Key viewpoints are identified at Butt Roads, Windy Gyle, Score Head and Cairn Hill and from within the valley at the entrance to Uswayford.

Map 3 Viewshed Analysis

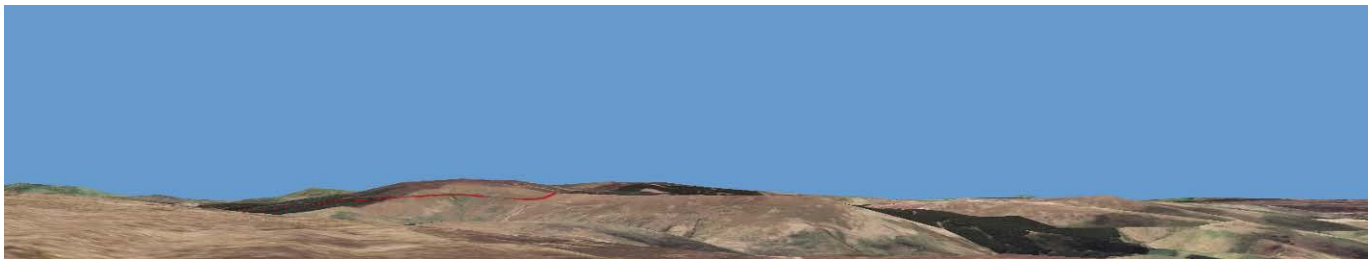


Note: Viewshed analysis excludes the impact of tree height

3D visualisations from Butt Roads, Windy Gyle, Score Head and Cairn Hill and from the entrance into Uswayford within the valley are shown below. The line is scaled to a 20m width to represent the road and area of excavation. The line becomes wider depending on the angle viewed or as the gradient of the cross-fall increases. Felling and restocking in the period 2017-2021 will reduce the visibility of the route through the forest at an early stage.



View from Butt Roads



View from Windy Gyle



View from Score Head



View from Cairn Hill



View north from the entrance into Uswayford

The visual representations indicate that views from the Pennine Way are all distant. The closest viewpoint at Butt Roads is 2.7km away from the route. The image below shows the distant nature of the view.

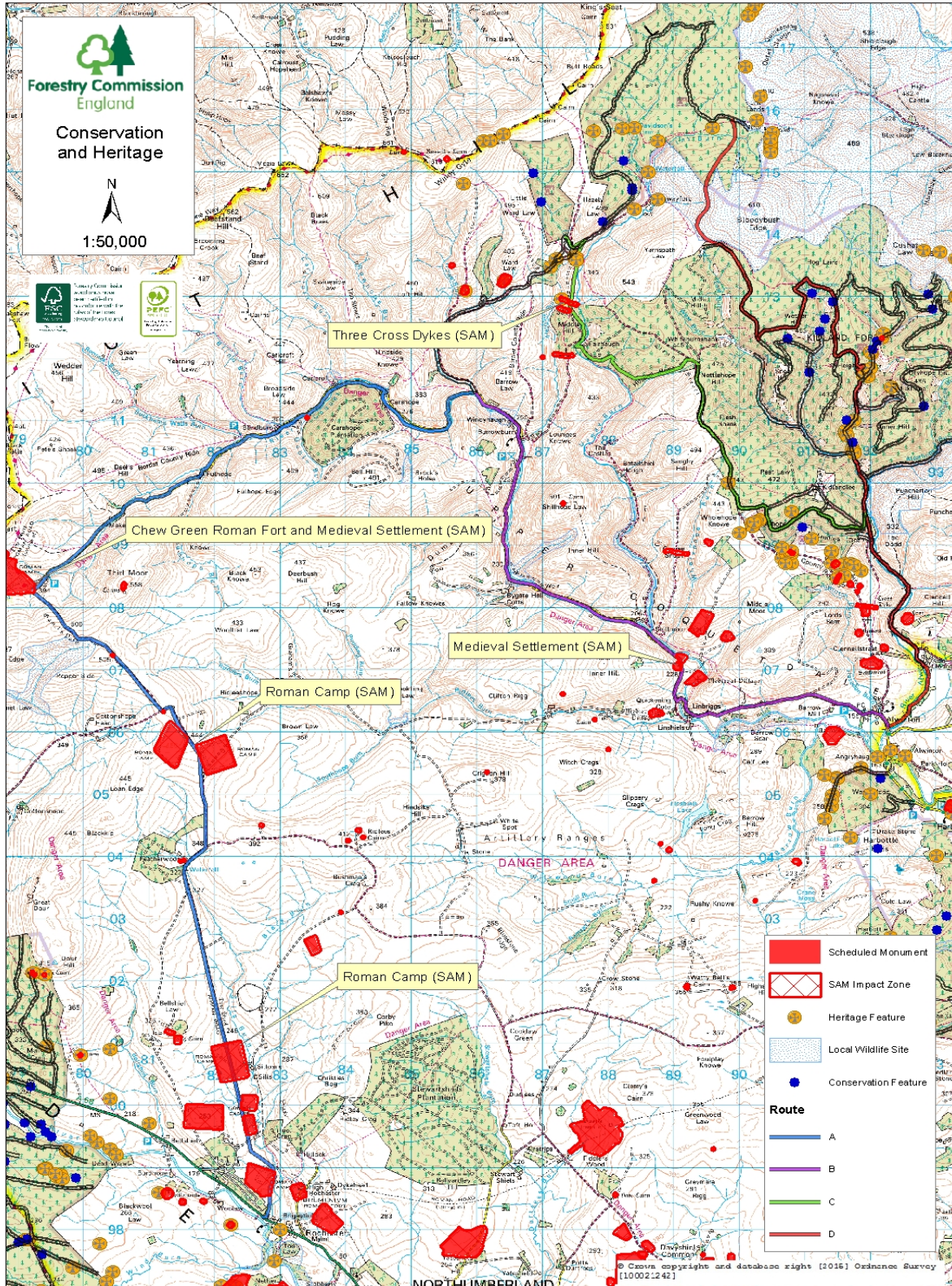


Formation of a bund along sensitive sections on the lower side of the road will reduce the visibility of any exposed excavated upper edge and help reduce visibility of the road from within the valley.

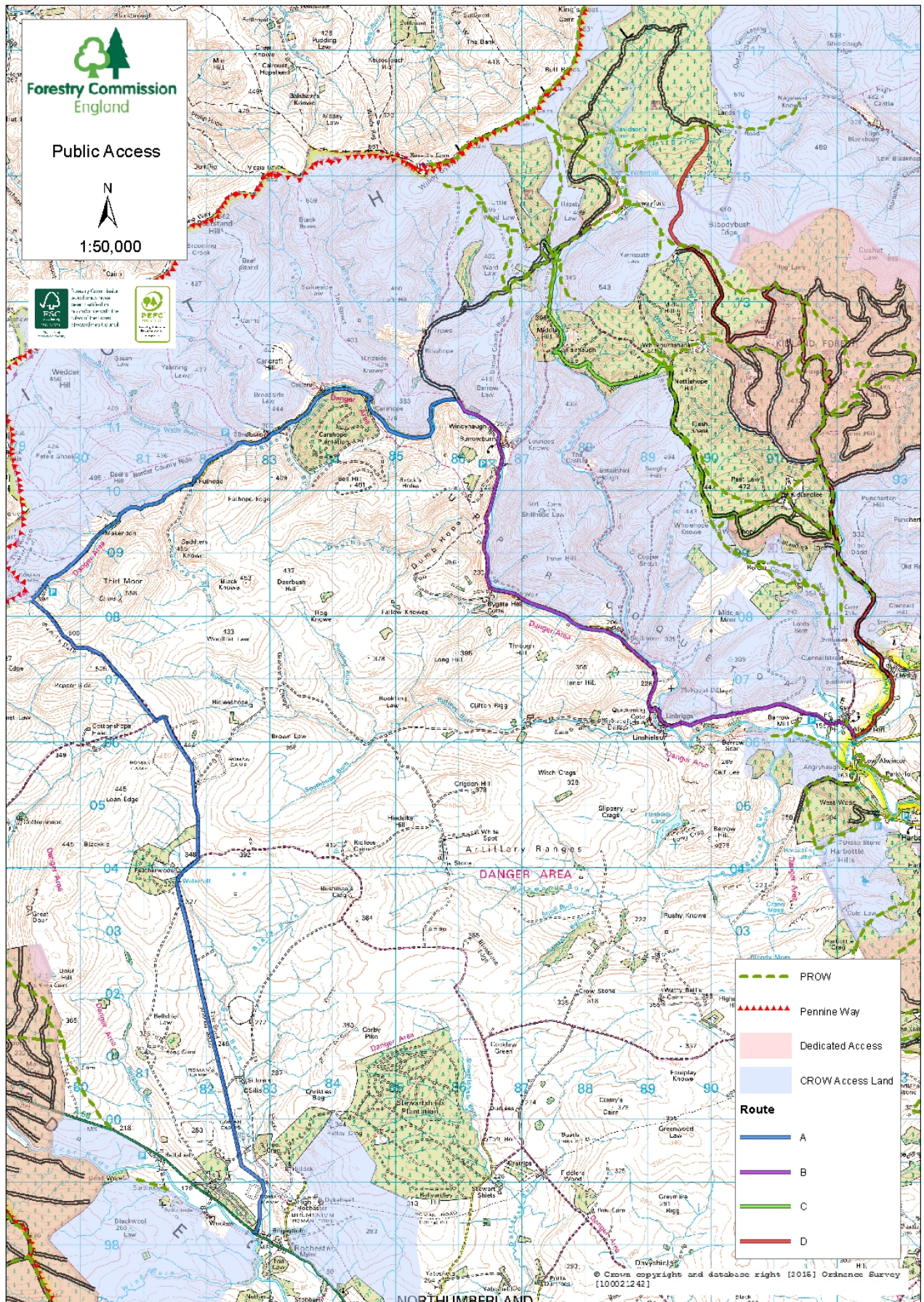
Other factors

North England Timber Transport Forum supports the proposal to extract timber from Uswayford into Kidland Forest then onwards on the Public Highway. (Appendix email correspondence)

Map 4



Map 5



Route D Preferred Option – Summary of main advantages

Civil Engineering

- Most feasible and cost effective solution
- Terrain provides opportunity to reduce impact through road design

Conservation and Heritage

- No negative ecological impacts of the proposal.
- No impact on archaeological features.
- Supports the future long term sustainable management of Uswayford which will deliver wider landscape, environmental and economic benefits and will enable future management of the Cheviot forest as a more robust red squirrel reserve. ¹
- Cheviots Draft Forest Design Plan complies with UK Forest Standard and UK Woodland Assurance Standard (UKWAS).

Access

- Offers good access to the public road network along an established haulage route which is supported by the “North East England Timber Transport Forum”
- Avoids public rights of way. Although the route crosses ‘Open Access’ the likelihood of encountering other users is minimal.
- Avoids settlements, including the village of Alwinton, reducing potential impact on local community and visitors.

Landscape

- Provides the least impact demonstrated through proposed road design and landscape analysis.

¹ [Heriot Watt University Red squirrel population modelling 2014](#)

4) List of Appendices and photographs

- 1) Timber Transport Forum response
- 2) Ecological Survey 2013
- 3) Ecological Survey Upper Route D 2015
- 4) Overburden Survey
- 5) Additional photographs

1) North England Timber Transport Forum Liaison officer response.

Copy of email correspondence 4/6/2015:

Thank you again for taking the time last week to go over the proposal to use the U2043 to extract timber from the Uswayford forest.

Just to recap:

- *NCC would not be in a position to allow timber extraction along the U2043 in its current state without upgrading the carriageway with a 100mm overlay costing around £200k per KM. Additional to this cost would be passing places, widening, strengthening of river banks and bridges. We (Highway Authority) would expect the Forestry Commission to cover these costs to upgrade the U2043.*
- *As well as the current suitability issues with the U2043, there would also be conflict with communities and those taking part in recreational activities.*

We support your plans to extract timber across from Uswayford into Kidland Forest then onwards on the Public Highway.

2) Ecological Survey 2013

Uswayford Access – Potential roadline check – 3 August 2013

1. Low Route (map 1)

Line checked – points A-B on attached map 1.

Overall no plants or habitats of special interest on the proposed roadline and no obvious archeological remains noted. Small area of botanical interest below the roadline at the southern end.

Information recorded(Frequency of plants recorded using DAFOR scale):

Section 1 Upland tall herb community with the following plants-

Marsh thistle O, Soft rush O, Marsh bedstraw O, Yorkshire fog A, Self heal O, Common sorrel R, Meadow buttercup O, Common chickweed R, Green ribbed sedge O, Star sedge O, Jointed rush O, Lesser stitchwort R.

Section 2 Enclosed land – semi improved grassland with the following plants –

Yorkshire fog F, Meadow buttercup O, Pignut R, Common sorrel O, Yarrow R, Germander speedwell R, White clover O, Tormentil R, Sharp flowered rush R, Bracken O, Heath bedstraw R, Oval sedge R, Black/common sedge O, Sticky mouse ear R.

Section 3 Acid grassland – with the following plants –

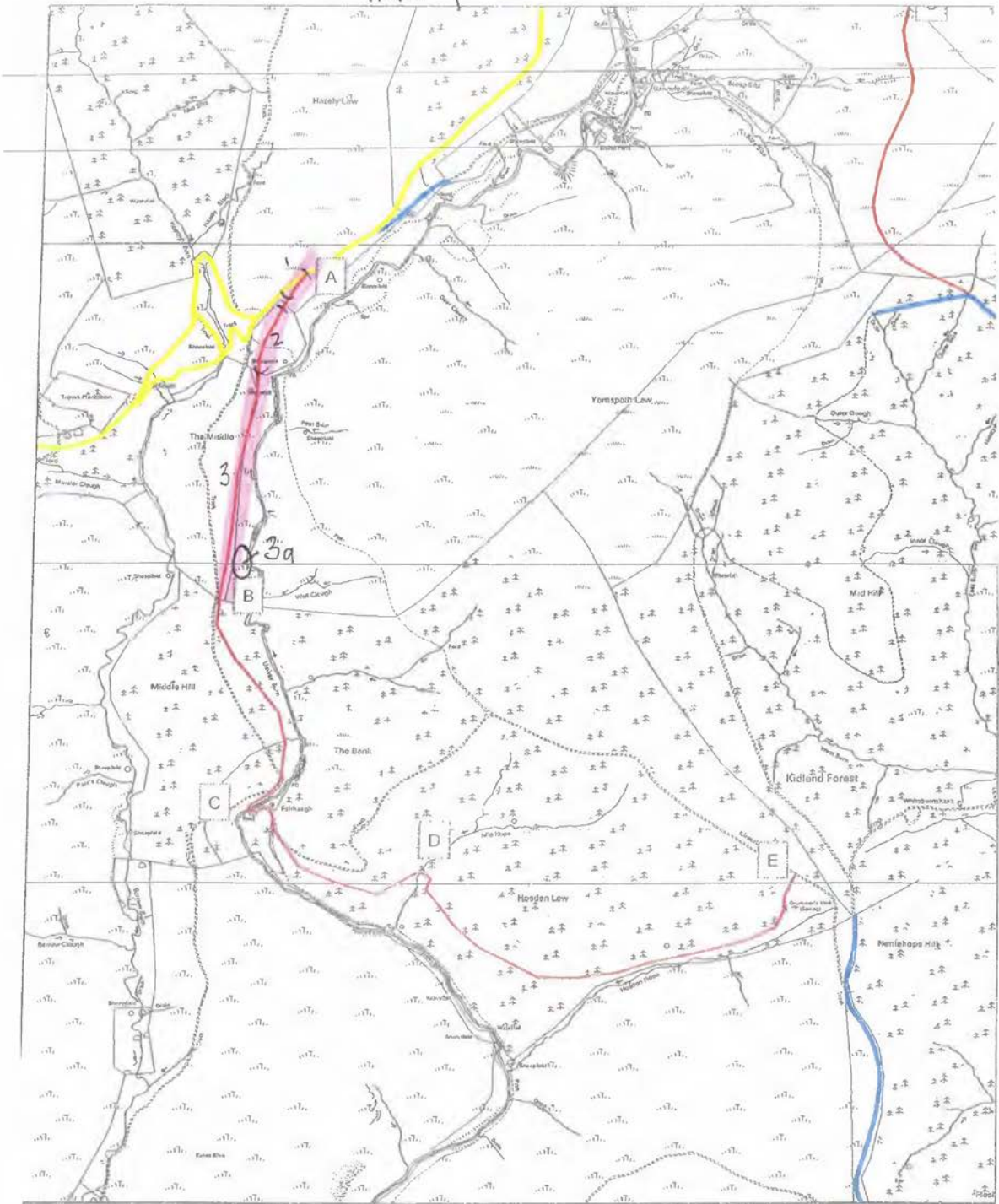
Bracken A, harebell O, Annual meadow grass O, Common bent F, Common sorrel O, Sweet vernal grass A, Yarrow R, Bog stitchwort R, marsh thistle R, Yorkshire fog F, Tormentil O, Matt grass R, Foxglove R, Tufted hair grass O, Heath bedstraw R, Eyebright R, Jointed rush R, Lesser spearwort R, toad rush R.

3a steep bank above Usway Burn – Typical steep, dry, slightly enriched/ neutral sward found in the Cheviots with –

Thyme F, large population of Eyebright A, Bush vetch R, Harebell O, Tormentil O, Self heal R, Wavy hair grass O, Sweet vernal grass F, Common bent F, Foxglove R, Heath speedwell R.

Road will be cut and fill above this bank – it would be a good idea to avoid pushing spoil onto it.

MAP 1



North East England Forest District
Title: Uswayford Low Level Proposed Access
Scale: 1:15,000
Date: 25th June 2013



Low Route looking south from point A



Low Route looking north from point B



2. High Route – (Map 2)

Line Checked points B to C on attached map 2

Overall no plants or habitats of special interest or any obvious archeological remains noted on the proposed roadline.

Information recorded (frequency of plants recorded using DAFOR scale)

Section 1 Conifer woodland

Jumble of windblown south coastal LP

Section 2 Blanket peat <2m with reasonable blanket bog vegetation with strips of acid grassland. The following plants were noted –

Heather D, Bilberry F, narrow leaved cotton grass A, Sphagnum moss O, Wavy hair grass F, Black/common sedge F.

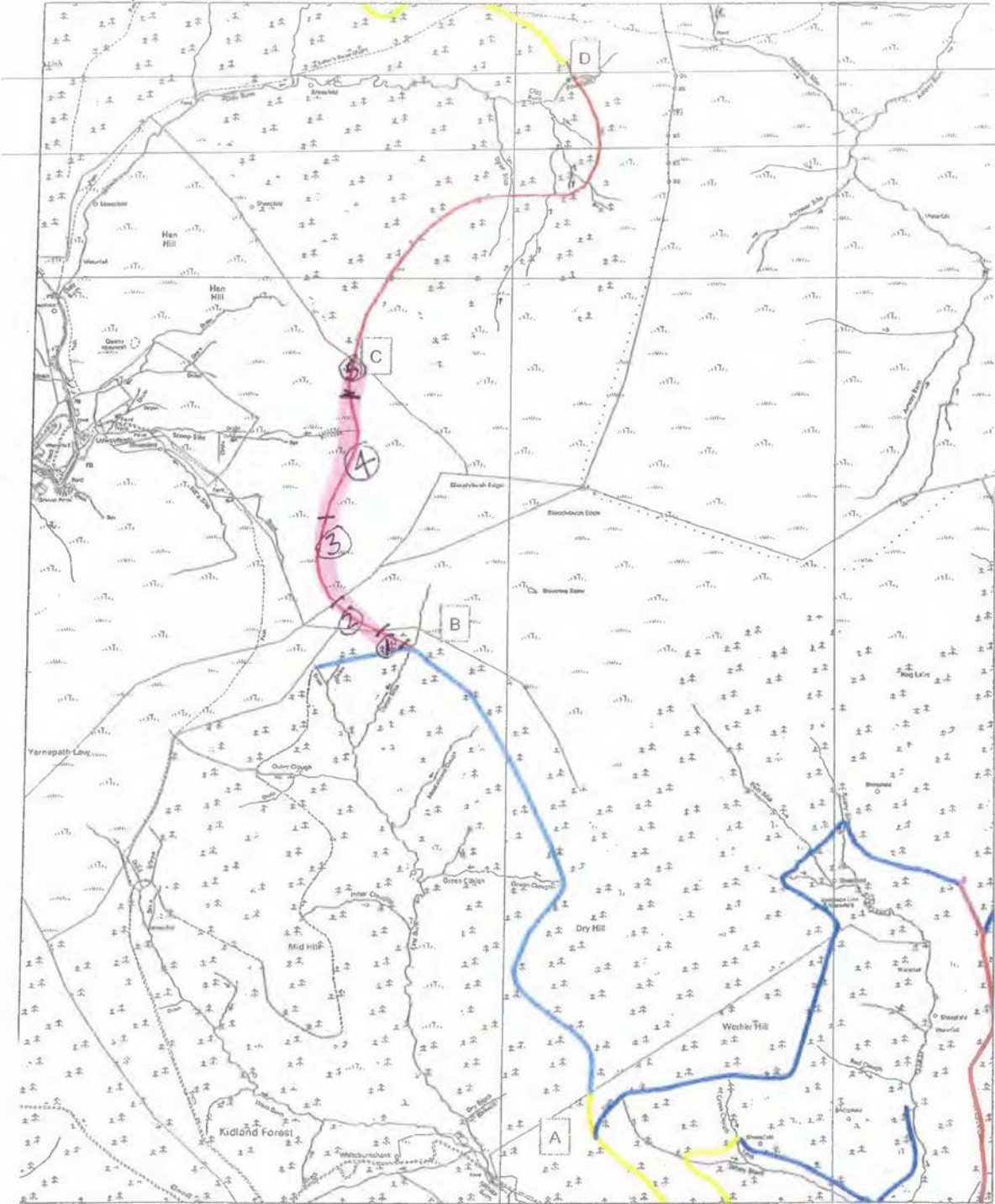
Sections 3 + 5 degraded blanket bog peat <2m. The following plants were noted –

Narrow leaved cotton grass D, Bilberry F, Deer grass O, Heather R, Sphagnum moss F, Politrichum moss O, Cloudberry R.

Section 4 Acid grassland The following plants were noted -

Sweet vernal grass D, Common bent, F, Bilberry O, Common woodrush O, Purple moor grass R, Tormentil R.

MAP 2



North East England Forest District

Title: Uswayford High Level Proposed Access

Scale: 1:15,000

Date: 25th June 2013



Forestry Commission

High route starting point at B



High Route Looking south in section 2



High Route looking north from section 4



High route looking south from section 5

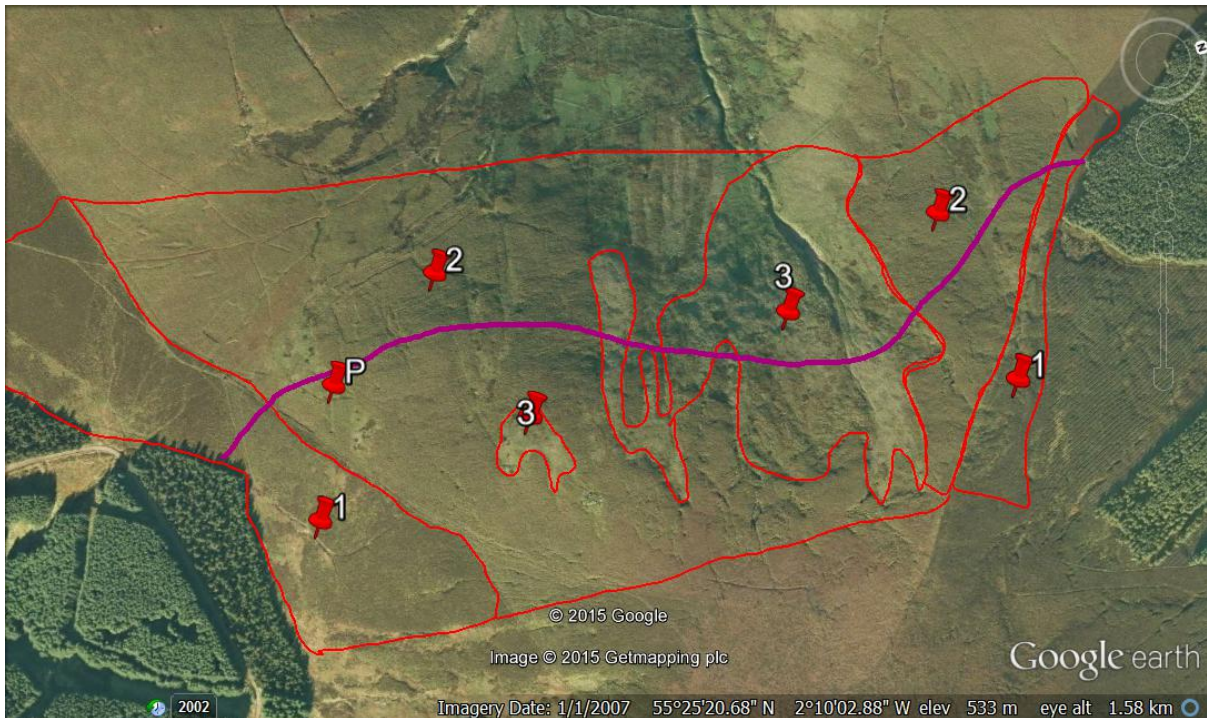


3) Ecological Survey July 2015

Forestry Commission North England Forest District

Ecological survey of proposed roadline from Kidland to Uswayford

The line of the proposed road linking Kidland forest with Uswayford plantation was walked on 15 07 2015 and vegetation communities mapped and plants present recorded on a strip approximately 50metres either side of the roadline. Relative abundance of each species was noted using the DAFOR system.



Map 1 – purple line shows approximate line of proposed road. 1, 2, +3 are the vegetation communities that were mapped. P = old peat workings.

The information gathered is as follows:

Community 1

These are strips of land inside the forest fences. Here the underlying soil is peat predominantly < 1m (measured by the FC engineers at 50m intervals along the roadline) and the plant community is good quality blanket bog vegetation a result of no grazing for well over 30 years.

Plants recorded:-

Calluna vulgaris	Ling heather	A
Deschampsia flexuosa	Wavy hair grass	F
Erica tetralix	Cross leaved heath	R
Eriophorum vaginatum	Hares tail cotton grass	A
Vaccinium myrtillus	Bilberry	F
Sphagnum Spp.		O
Pleurocarpus mosses		O



Fig 1 – showing good quality blanket bog vegetation inside the forestry plantations

Community 2

Degraded blanket bog. The underlying soil is peat predominantly < 1m (measured by the FC engineers at 50m intervals along the roadline). An abundance of cotton grass and wavy hair grass but very few dwarf shrubs which will be reflection of past management involving both burning and grazing. The eastern end of this area appeared to have old peat workings.

Plants recorded:-

Carex nigra	Common sedge	R
Deschampsia flexuosa	Wavy hair grass	F
Erica tetralix	Cross leaved heath	R
Eriophorum vaginatum	Hares tail cotton grass	A (LD)
Galium saxatile	Heath bedstraw	O
Sphagnum Spp.		O
Trichophorum cespitosum	Deer Grass	O
Vaccinium myrtillus	Bilberry	F



Fig 2 – showing degraded blanket bog vegetation

Community 3.

Acid Grassland. Underlying soil shallow peat and gley.

Plants recorded:-

<i>Agrostis canina</i>	Velvet bent	LF
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	O
<i>Carex nigra</i>	Common sedge	R
<i>Deschampsia flexuosa</i>	Wavy hair grass	A
<i>Festuca rubra</i>	Red fescue	O
<i>Galium saxatile</i>	Heath bedstraw	O(LF)
<i>Juncus effusus</i>	Soft rush	LD
<i>Luzulu sylvatica</i>	Great wood-rush	LD
<i>Nardus stricta</i>	Matt grass	F
<i>Potentilla erecta</i>	Tormentil	O
<i>Rumex acetosa</i>	Common sorrel	R
<i>Vaccinium myrtillus</i>	Bilberry	R

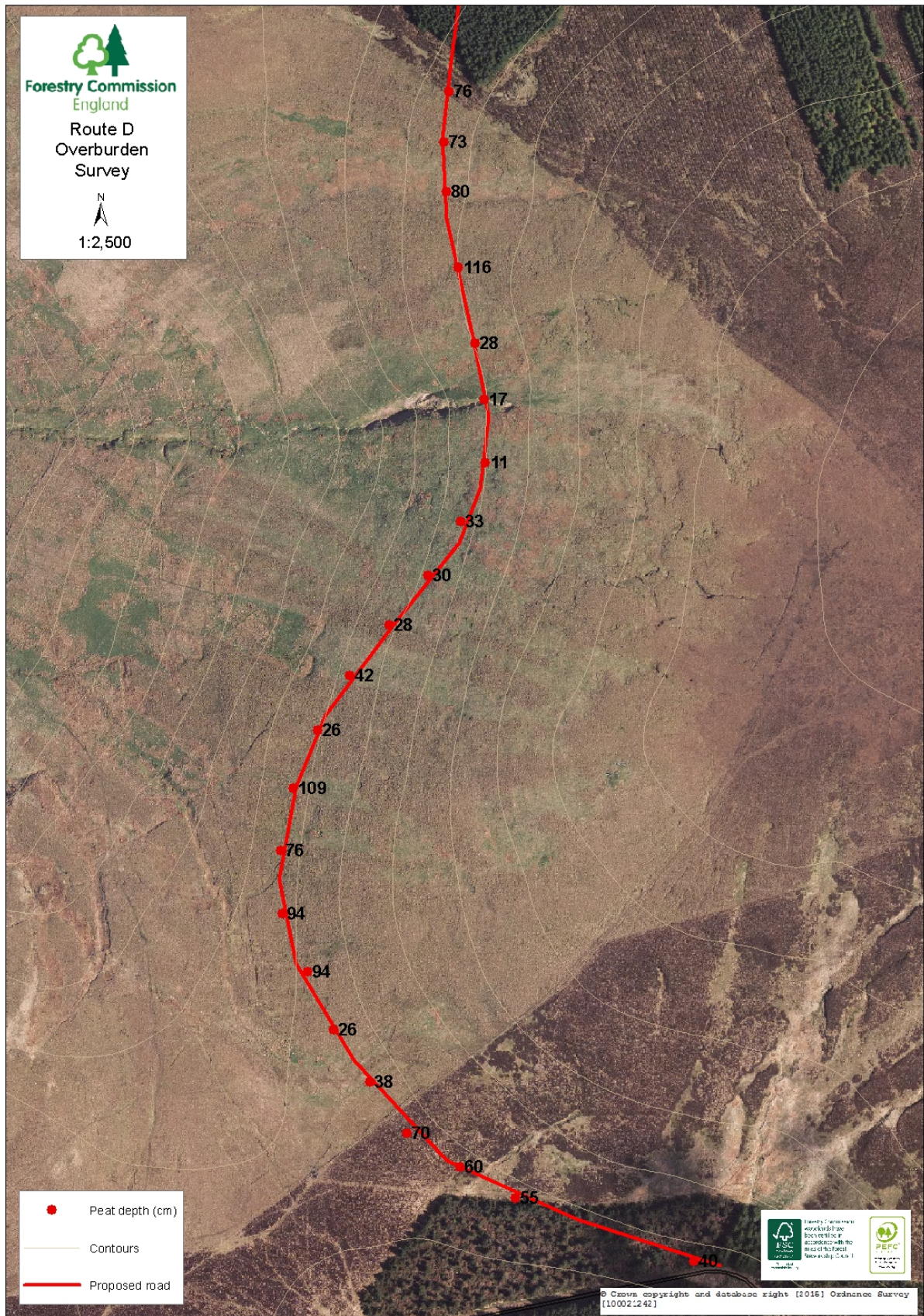


Fig 3 – showing the acid grassland community

Conclusion

The vegetation communities were of generally low quality and no plant species of particular interest was found either on the roadline or within 50metres either side. No birds, butterflies or insects of particular note were recorded.

4) Overburden Survey July 2015



5) Additional Photographs

Looking north toward Uswayford along line of proposed route



Looking south toward Kidland along line of proposed route



Example of typical colour of road stone used in Kidland



Soil profile (northern end of proposed route adjacent to forest boundary).



Lower route C crossing Three Cross Dykes SAM

