

NCN 72 South: Drigg to Millom & Duddon Bridge

Feasibility Study Volume 2: Route Details



November 2016

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Head Office
Sustrans
2 Cathedral Square
College Green
Bristol
BS1 5DD

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Author:	Jenny MacDonald
Checked:	Will Haynes

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1. Introduction

- 1.1. Sustrans was commissioned by Copeland Borough Council to make recommendations regarding the development of a long distance cycle route linking the start point of Hadrian's Cycleway at Drigg and Ravenglass down to the town of Millom, with a further extension to Duddon Bridge. This route would link together the communities along the Cumbrian coastline and be an access point into the Western Lake District for cycle touring.
- 1.2. This route is referred to in this report as the 'NCN 72 South' route.

2. Route overview

- 2.1. The northern section of the proposed route from Drigg to the south side of the Esk estuary is typified by largely traffic-free paths close to the coastline which cross several river estuaries. This section of approximately 4.4 miles is the most challenging in terms of engineering and ecology, but provides a much more direct and safe cycle route compared to the current 9 mile detour inland via the busy A595.
- 2.2. South of the Esk Estuary the route runs on minor roads as far as the village of Bootle. The works proposed for this section are relatively minor, consisting mostly of signage.
- 2.3. At Bootle is the first of several sections that run adjacent to the A595. A segregated shared cycling and walking path is proposed, together with highway alterations to improve the safety and convenience of crossing the A595. The exact alignment and details of the path and crossing will be subject to discussions with landowners and the local highway authority.
- 2.4. The route climbs away from the A595 about a mile south of Bootle, skirting the foot of the fells along the line of existing

paths and tracks. This is the most direct route towards Duddon Bridge without climbing over Black Coombe Fell, though will require minor earthworks and drainage to create adequate width across the slope.

- 2.5. From Whicham to both Duddon Bridge and Millom the proposed route is largely on minor roads, apart from a short section through a wooded hillside on the approach to Duddon Bridge. Where the route crosses or runs alongside main roads, similar details to the section at Bootle are envisaged.

3. Route details

- 3.1. The following pages set out details of the proposed route section-by-section as follows:
 - Drigg to Ravenglass
 - Ravenglass to Eskmeals
 - Eskmeals to Hycemoor
 - Hycemoor to Bootle
 - Bootle to Whitbeck
 - Whicham Valley & Millom Park
 - Millom Park to Duddon Bridge & Green Road
 - Millom Park to Millom
- 3.2. For each section the following engineering details are described together with challenges and constraints.

Map 1: Drigg to Ravenglass

The northern section of the proposed route from Drigg to the south side of the Esk estuary is typified by largely traffic-free paths close to the coastline which cross several river estuaries. This section of approximately 4.4 miles is the most challenging in terms of engineering and ecology, but provides a much more direct and safe cycle route compared to the current 9 mile detour inland via the busy A595.

The current NCN72 route runs inland from Drigg to Ravenglass, crossing the River Irt and returning to Saltcoates on road. The preferred route includes a new crossing of the River Irt downstream of the existing railway viaduct, creating a more direct route. The River Irt has a wide flood plain relative to the river channel. The precise location of the bridge would be subject to further surveys, including ecology surveys, ground investigation and flood risk assessment. As the River Irt is designated as a “main river”, any work in the flood plain or river channel would need the approval of the Environment Agency. The location of the bridge will also have a bearing on the extent of approach embankments required in order for the path to remain passable when the water level is high.



River Irt looking inland towards railway bridge

The existing NCN72 route runs through Saltcoates and across the River Mite to Ravenglass. The section of the route between Saltcoates and the River Mite crossing currently runs around the shoreline and is affected by high tides. Ideally it would be relocated on slightly higher ground, subject to landowner agreement. As an interim measure, the route could remain on the existing alignment.



Ravenglass approach to River Mite crossing, with Saltcoates shoreline path beyond

The River Mite is currently crossed by an existing pedestrian walkway cantilevered off the side of the railway viaduct. The width is only approximately 900mm in places, which is substandard for a cycle route but may be acceptable as an interim measure. Ideally the crossing would be widened, but there are technical limitations so the priority for the overall route should be to create crossings where none currently exist in preference to widening the existing one. The River Mite crossing does however demonstrate the technical feasibility of adding a pedestrian walkway to a railway viaduct, as well as running the approach path around the railway embankment.



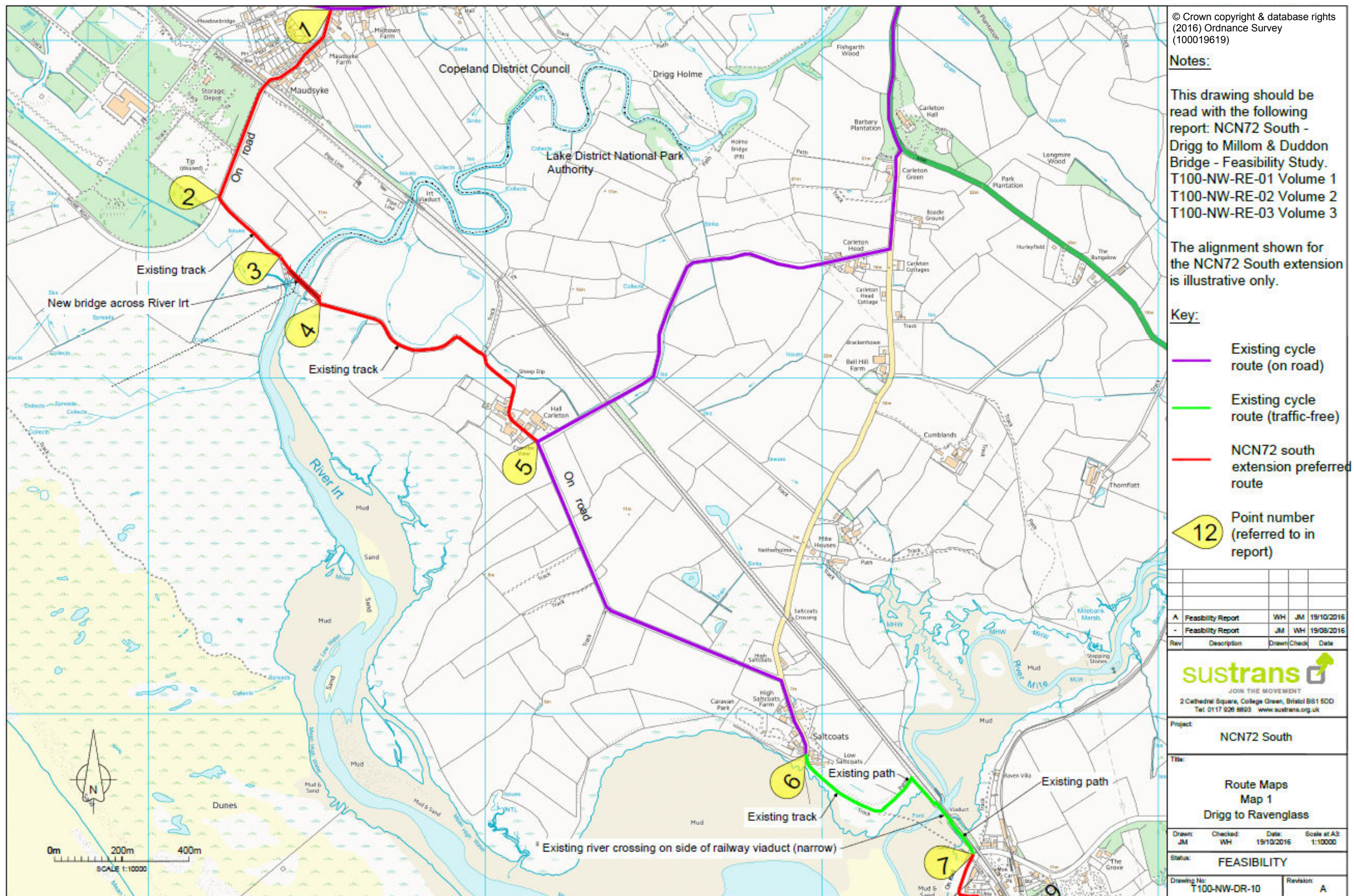
River Mite crossing – existing narrow walkway cantilevered off the railway viaduct

The existing NCN72 route skirts round Ravenglass and joins Wells Drive. The preferred route brings the NCN in towards the village centre, crossing the Cumbrian Coast railway on an existing footbridge beside Ravenglass railway station. Further benefit to the village may be brought about by upgrading short links such as the footpath from this bridge to Wells Drive. The preferred route includes a new section of traffic-free path around the margins of playing fields before joining Wells Drive. The NCN72 route currently runs out just south of Ravenglass.

It is recommended that further consideration be given to how the businesses within Ravenglass might be connected to the preferred route in order to maximise the benefits to these businesses of the route. Aligning the main route through the village centre is considered not to be feasible due to the lack of available width above the beach south of Main Street.

If the coastal access path includes an upgraded promenade in Ravenglass, there may be some benefit in continuing the route (or a

branch of it) along the main street and along a promenade before returning to Wells Drive under an existing railway over-bridge just south of the village.



Map 2: Ravenglass to Eskmeals

The existing NCN72 stops just south of Ravenglass, as there is no pedestrian or cycle crossing of the River Esk downstream of Muncaster Bridge and the detour to the bridge along the A595 is not conducive to leisurely cycling. There is therefore an argument for the benefits of a new crossing of the River Esk to provide a direct route across the estuary. The River Esk is also a “Main River” with a wide tidal floodplain. There are a few options:-

The most direct route across the river is adjacent to the railway viaduct.



Eskmeals Viaduct – existing public road under viaduct is close to high tide level

As the River Mite crossing demonstrates, it is possible to cantilever a walkway off an existing railway viaduct. A cantilevered structure off the existing viaduct would be more straightforward in terms of ecology, flood risk and ground conditions than a separate bridge. However, the width of such a walkway is limited and the River Esk crossing, at nearly 300m, is far longer than the River Mite crossing (70m). It may be possible to increase the width local to each pier to create viewing platforms / passing points. Modifying the existing railway viaduct would require the approval of Network Rail.



Eskmeals Viaduct plus approach embankment is approximately 600m long.



River Mite Viaduct with cantilevered crossing

The Network Rail ‘GRIP’ process that would need to be followed to obtain approval is a complex one likely to take a long time and incur significant costs.

A separate bridge may be technically feasible, subject to detailed ground investigations and ecology surveys. For comparison, the Adur Ferry Bridge, in Shoreham, West Sussex, was constructed across a tidal estuary for a cost of approximately £7million. It is approximately 250m long and 5m wide, with an opening span across the main river channel.



Shoreham Adur Ferry Bridge – a new traffic-free bridge across a tidal estuary

There may be other feasible crossing points. Downstream infringes on increasingly sensitive ecological areas and sand dunes. The river



Eskmeals estuary and Waberthwaithe Farm at high tide – public rights of way are not passable

channel upstream remains wide for another mile or so inland, and is flanked by low-lying flood-prone land on one side and a steep wooded bank on the other. Although there may be public rights of way across the river, these are not paths and are not passable at high tide.

Although a river crossing further upstream may be more straightforward the approaches would still present some challenges.

The preferred route therefore takes a direct line and makes a feature of the estuary crossing. The preferred approach to the River Esk crossing follows Wells Drive and remains on the east side of the railway past Brighthouse Farm, running around the field margin to cross to the west side of the railway via an existing underpass. However, this crosses private land, and would be subject to the agreement of the landowner.

This avoids a pinch point where there is no space between the railway embankment flood protection and the high tide line – to construct a path above high tide here would require extending the embankment towards the shore to create a new terrace.



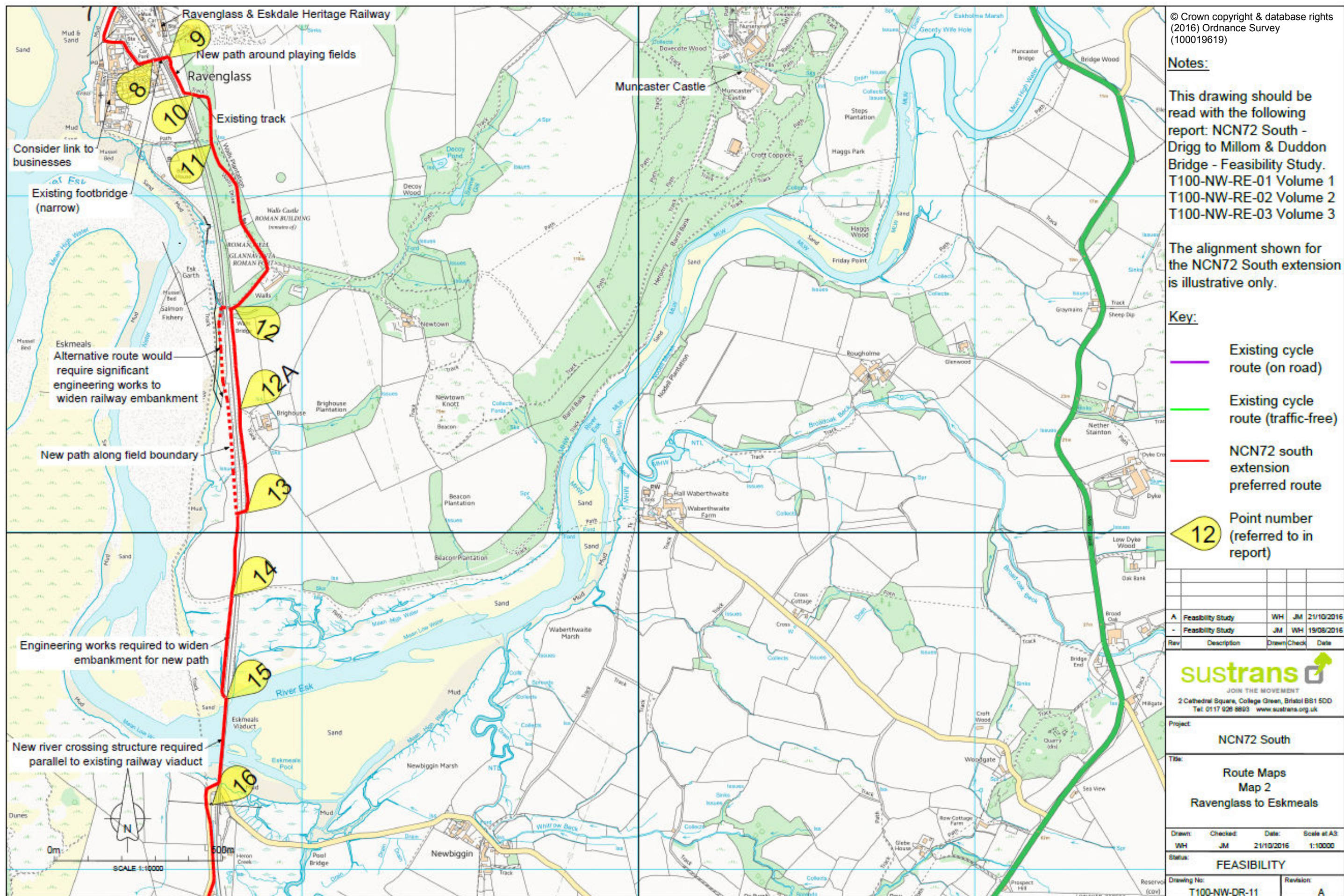
Access to Brighthouse Farm



Railway crossing point between Brighthouse Farm and Eskmeals Viaduct



Pinch point where railway embankment is on the shoreline close to Wells Bridge



Map 3: Eskmeals to Hycemoor (Bootle railway station)

On the south side of the Esk, the preferred route returns to the public road, and passes Eskmeals Range. It runs for approximately 5.5km on a minor road to the village of Hycemoor, where Bootle railway station is situated.

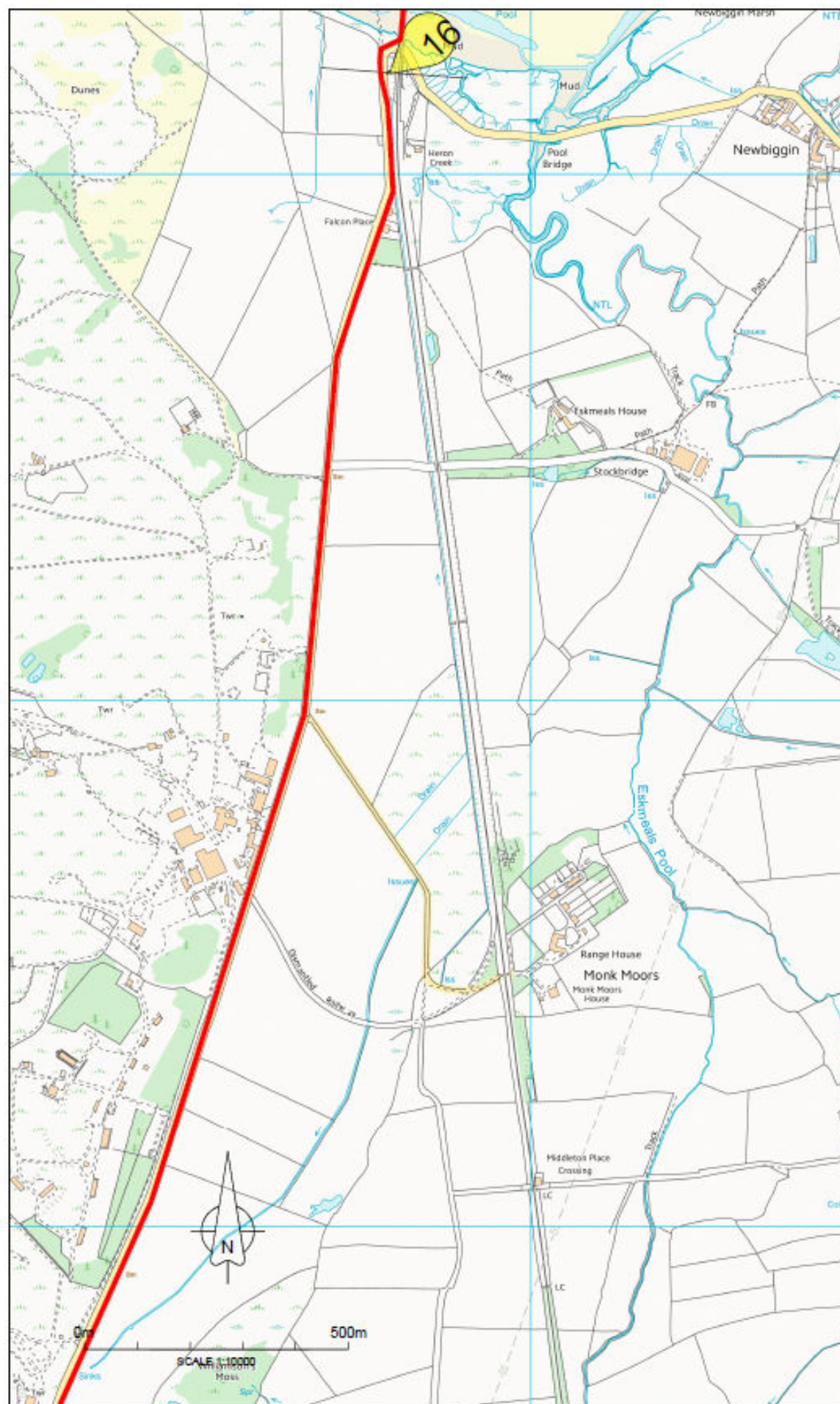


Public road at Marshside

Construction work would be minimal, mostly signage, although there may be the opportunity for improving a view point around Marshside, before the route turns inland.

At Hycemoor the public road crosses the railway on a level crossing. As at Drigg, the level crossing is on a public road and adjacent to a railway station so it is not expected to be an issue for a cycle route.

The railway stations at Bootle, Ravenglass and Drigg provide access to the coastal section of the preferred NCN72 route extension. The cycle route then continues inland towards Bootle village and across the peninsula towards Duddon Bridge, whilst the railway continues around the coast to Millom.



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Key:

- Existing cycle route (on road)
- Existing cycle route (traffic-free)
- NCN72 south extension preferred route
- 12 Point number (referred to in report)

A	Feasibility Study	WH	JM	21/10/2016
-	Feasibility Study	JM	WH	19/08/2016

Rev	Description	Drawn	Check	Date
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Project: NCN72 South

Title: Route Maps
Map 3
Eskmeals to Hycemoor

Drawn: WH Checked: JM Date: 21/10/2016 Scale at A3: 1:10000

Status: FEASIBILITY

Drawing No: T100-NW-DR-12 Revision: A

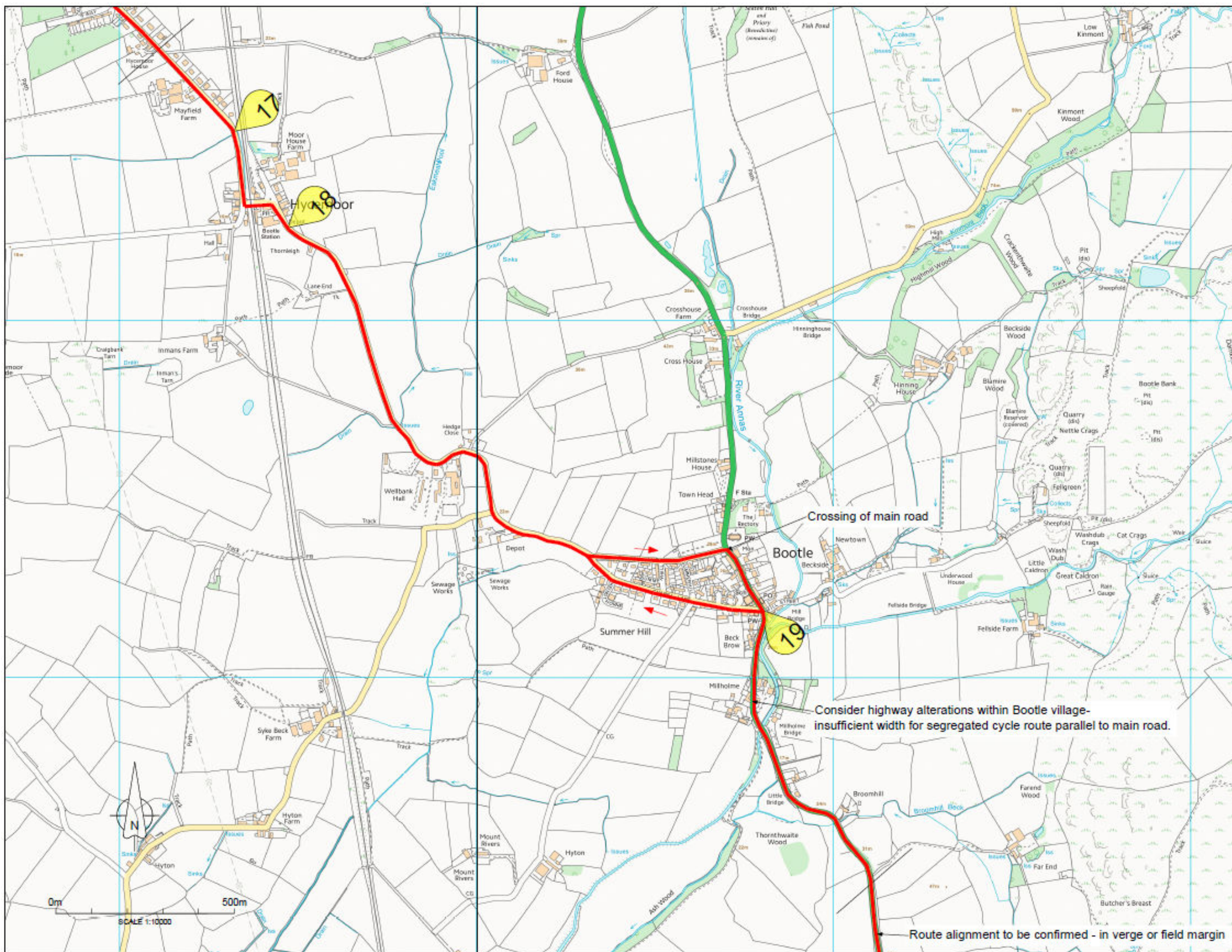
Map 4: Hycemoor (Bootle railway station) to Bootle

From Hycemoor to Bootle village the route continues along the public road. However, as well as being a potential link in the longer NCN72 route this section is already an important link between Bootle village and Bootle Station, particularly for school children traveling by train to and from high school. The road here has limited visibility with high hedges and minimal verges. It is understood that an alternative traffic-free pedestrian route may be sought, to link Bootle station and village. It may be desirable to design this as a shared cycling and walking route. However, in the meantime, the route has been shown as continuing on the public road through to Bootle village.

Again, in Bootle village, conditions for cycling and walking are less than ideal. In particular, the A595 passes through the middle of the village and, although the speed limit is reduced to 30mph it is still somewhat of a barrier due to narrow footways, poor visibility and high volumes of traffic. Highway alterations to address these issues may benefit the NCN72 route, and it is considered preferable that the cycle route runs through the centre of the village, with highway alterations if necessary, rather than skirting the edge of the settlement and crossing the A595 further from the centre (the most difficult junction, Chapel Lane / Main Street, could be bypassed by routing around the playing fields at Beck Brow, but re-joining the A595 at a suitable crossing point would involve crossing private land). The possibility of highway alterations, such as reduced speed limits, traffic calming and controlled crossings should be discussed and developed with the highway authority.

From the centre of Bootle village the cycle route continues south following the corridor of the A595. There are pinch points that make it unlikely that a segregated cycle route could be constructed in the highway verge the whole way, and there is no obvious convenient route through adjacent land. Instead, the possibility of highway alterations should be progressed to agree a location for a controlled crossing point

and to allow safer cycling within the highway as far as the playing fields at Millholme Bridge. Beyond that point further consultation and design development would be required in order to agree a safe and convenient cycle route either in the verge or around the margins of adjacent farmland.



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Title			
Route Maps Map 4 Hycemoor to Bootle			
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WH	JM	21/10/2016	1:10000
Status:			
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Map 5: Bootle to Whitbeck

About 1km south of Bootle, the preferred route leaves the corridor of the A595 and climbs towards the fells along the access track to Hall Foss.

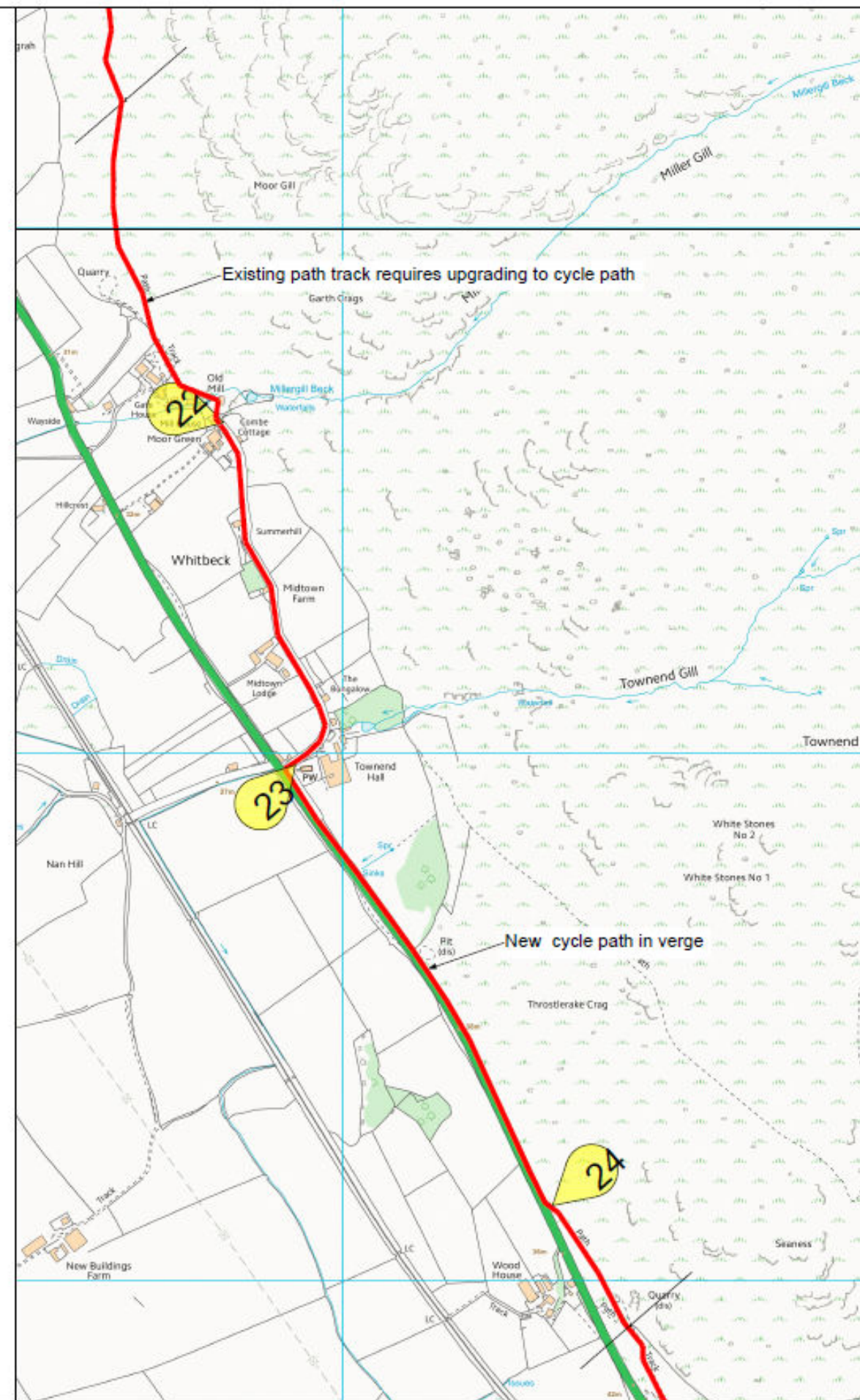
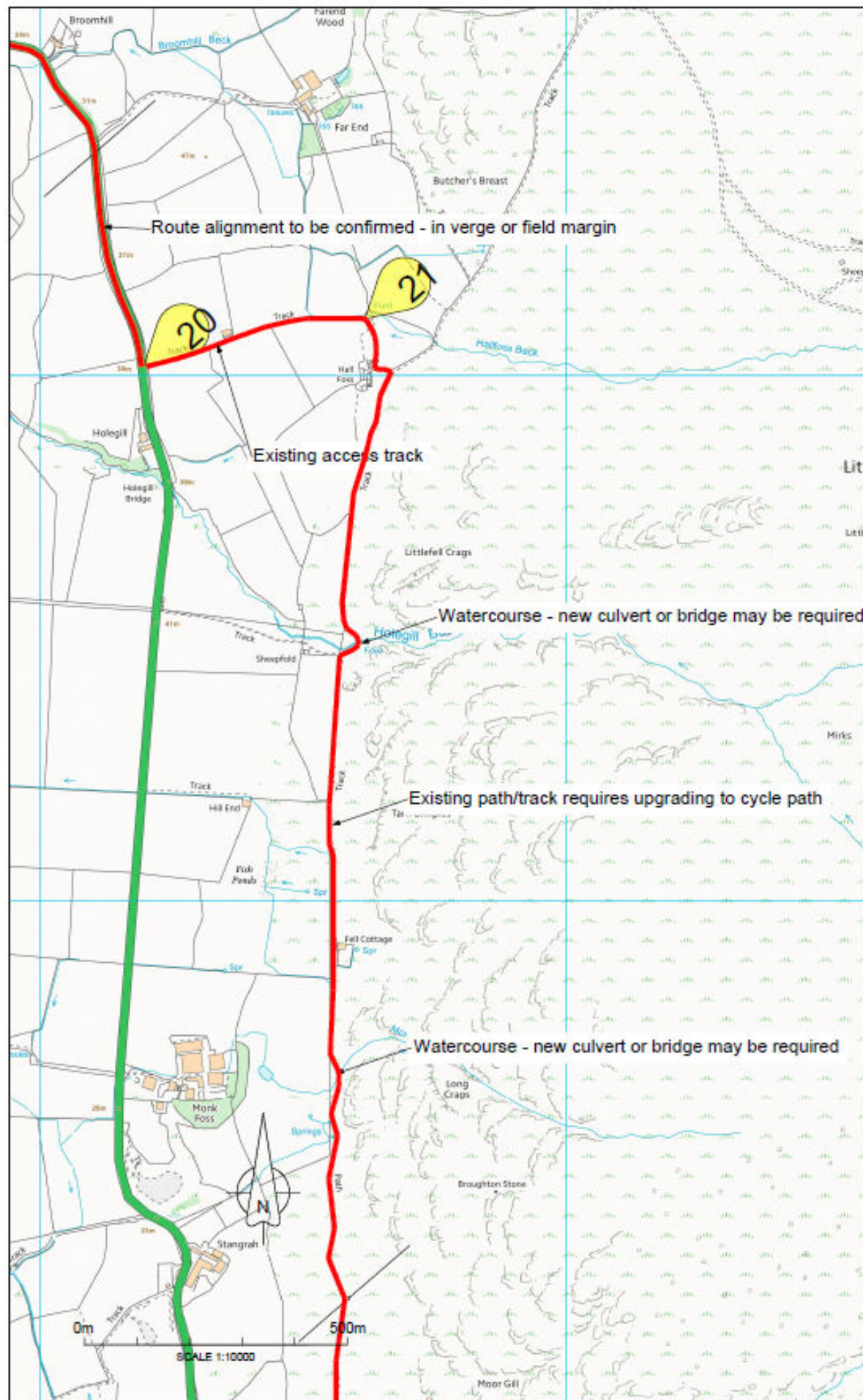
The route then picks up an existing footpath that skirts the foot of Black Coombe fell. It is assumed that this would require some construction work to widen and improve the surface and the drainage, but that an unsealed surface would be more appropriate for a rural link within the National Park boundary than a tarmac surface

There are a couple of small streams to be crossed, either by installing culverts or by constructing small bridges.

The route returns to vehicle track and then to public road through Whitbeck. This section brings the route away from the coast and towards the fells, improving access from nearby settlements. Signage on existing paths would enhance this.



Typical small timber bridge over a watercourse



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WH	JM	21/10/2016	1:10000
Status:	FEASIBILITY		
Drawing No:	T100-NW-DR-14		Revision:
			A

Map 6: Whicham Valley & Millom Park

From Whitbeck, after a short section along existing minor roads, the route again runs along the A595 corridor. However, in this location there is a wide verge which ought to be able to accommodate a separate traffic-free path.

The route then returns to the foot of the fells to follow an existing path around to Kirkbank. Similar construction details are envisaged for this section of path: some earthworks and drainage and an improved but unsealed surface.

At Kirkbank the route picks up the access track and then minor road back down to its junction with the A595. There is a car park and a church here close to point number 26. This car park is potentially of great significance to the use of the route as it offers a useful place for users of the cycle route to leave their cars.

The route again follows the line of the A595 for about 250m to reach the next minor road. Along this stretch there is insufficient verge with for segregated cycle facilities, so the possibility of creating a parallel traffic-free route through adjacent land should be discussed with the landowners.

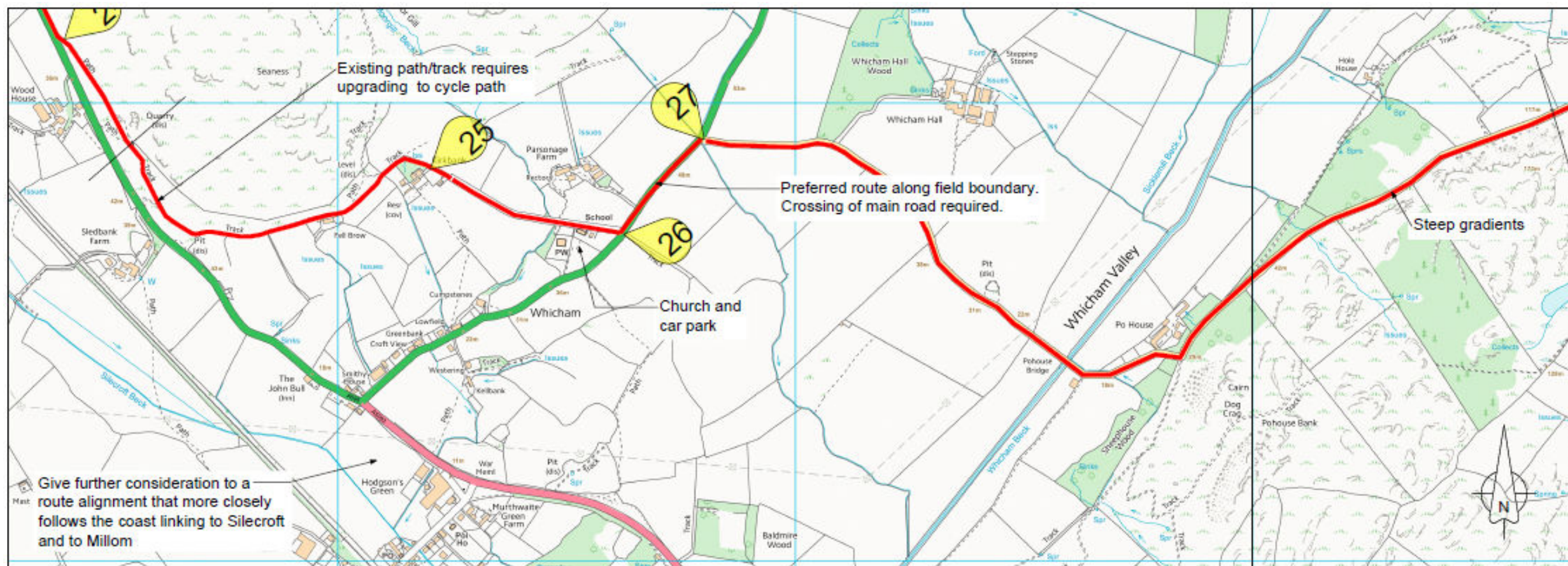
The route then descends via a minor road into the Whicham Valley before climbing up around Millom Park. This section includes the hilliest parts of the route, but it does bring the route close to the quarry visitor centre at Millom Rock Park, and offer contrasting scenery to the estuarial landscape around Ravenglass.

From Millom Park the route braids to serve destinations along the Duddon estuary: one route heads north taking a direct route via The Green to the first (non-railway) crossing point of the estuary at Duddon Bridge; another cuts back down through the Hill to the coast and Millom whilst a middle option takes a longer route to Millom via Green Road railway station.

Further consideration should be given to how the route might link to Silecroft, including the beach front, and more directly on into Millom,

on an alignment closer to the coast in order to link to the local businesses in these locations.

At this stage of the feasibility study, land ownership constraints have meant that the inland route, via Millom Park, is considered more feasible.



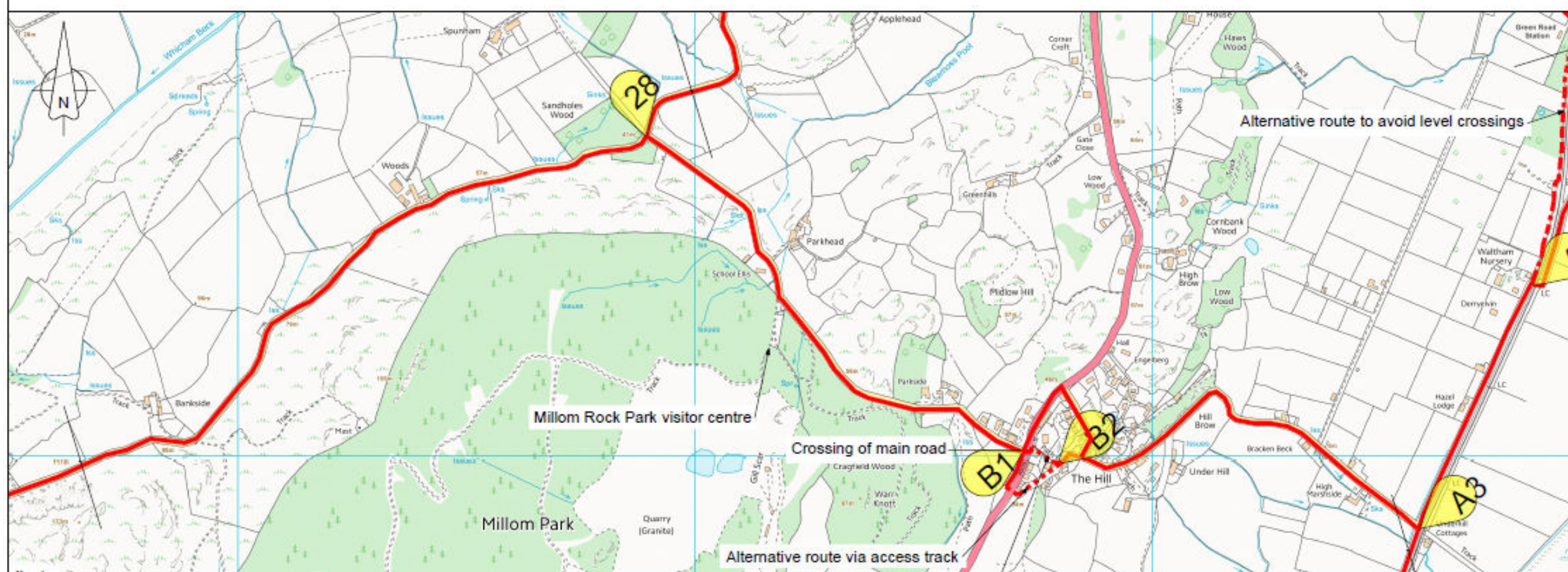
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Project: **NCN72 South**

Title: **Route Maps
Map 6
Whicham Valley & Millom Park**

Drawn: WH Checked: JM Date: 21/10/2016 Scale at A3: 1:10000

Status: **FEASIBILITY**

Drawing No: **T100-NW-DR-15** Revision: **A**

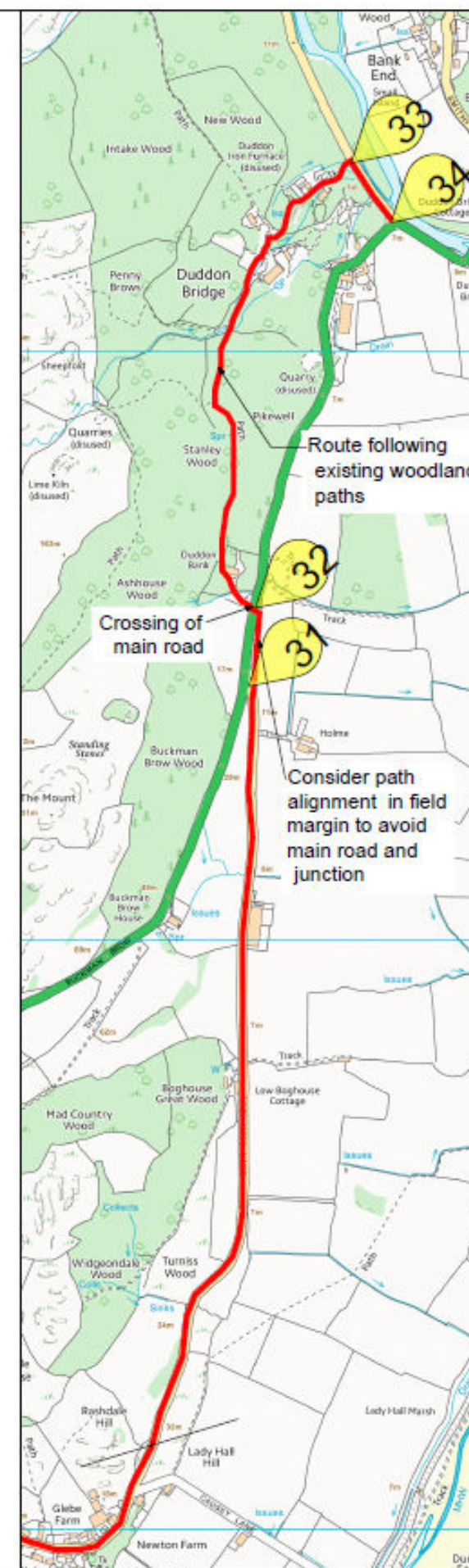
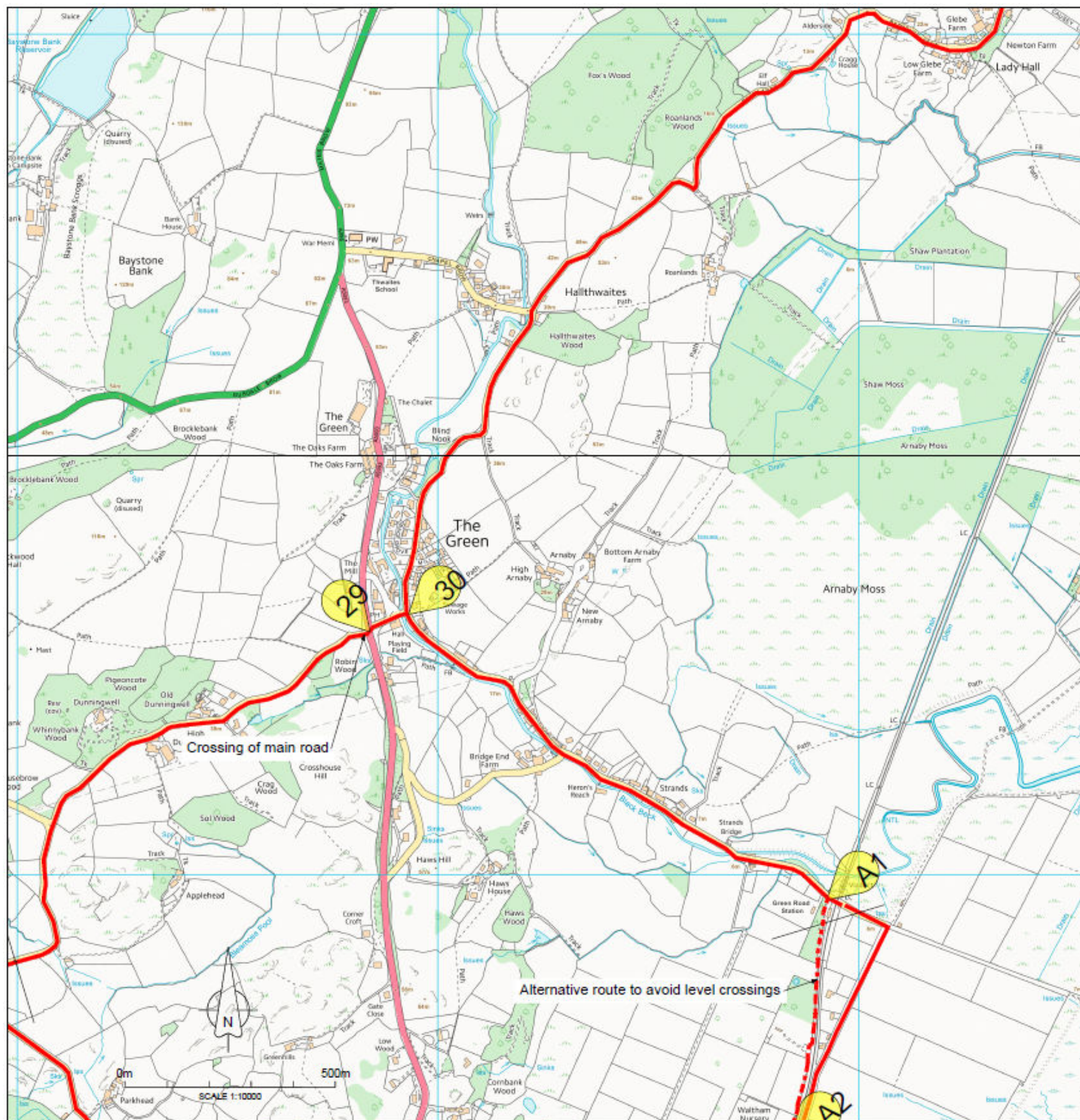
Map 7: Millom Park to Duddon Bridge & Green Road

From Millom Park to Duddon Bridge the route continues on minor roads. It crosses the A5093 at The Green, but there is reasonably good visibility here so a crossing point should be feasible. The road undulates, but avoids the low-lying flood-prone land beside the estuary. About 800 metres before Duddon Bridge the cycle route approaches the A595 again. It would be preferable to divert the cycle route off the minor road before it climbs up to the junction with the main road, as the junction is on a narrow stretch with poor visibility. However, no discussions have yet taken place with the landowners in this area.

The crossing of the A595 in the vicinity of Duddon Bank would benefit from some highway alterations and signage to alert drivers to crossing cyclists and pedestrians.

The preferred route then follows existing footpaths through a wooded hillside to Duddon Bridge. This section will need further site survey work to ascertain topographical constraints. An alternative may be to remain on the east side of the A595 and create a traffic-free path on land adjacent to the main road, crossing into Duddon Bridge close to the riverside. This may need to be on a raised embankment close to the river as the land is very low-lying. However, the views of the landowners should be sought on this alternative.

From Millom Park to Green Road, the route turns east in The Green instead of west /north, and returns via minor roads to the coast. At Green Road railway station the route crosses the railway line over a level crossing. Again, this is already open to the public and is located beside a station. The route then picks up an existing track along the edge of Millom Marsh, heading back down the estuary towards Millom.



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Title:	Route Maps Map 7 Millom Park to Duddon Bridge & to Green Lane Railway Station		
Drawn:	Checked:	Date:	Scale at A3
WH	JM	21/10/2016	1:10000
Status:	FEASIBILITY		
Drawing No:	Revision:		
T100-NW-DR-16	A		

Map 8: Millom Park to Millom

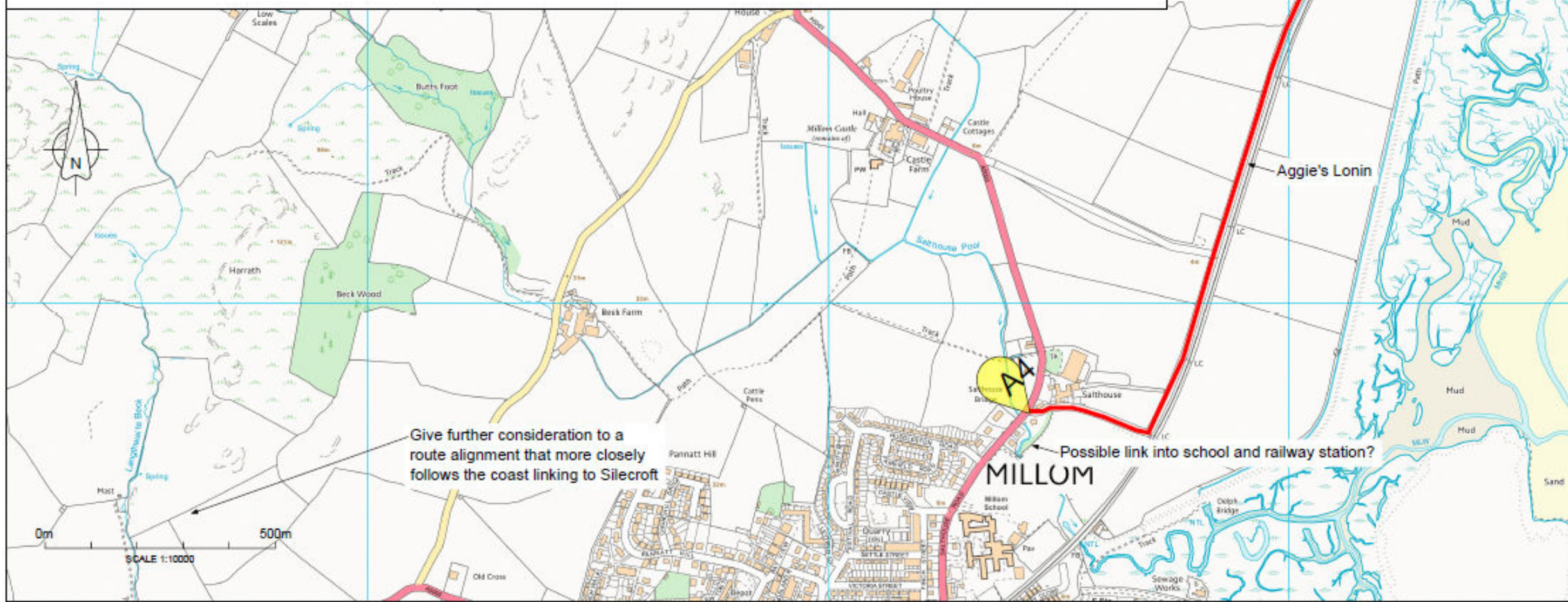
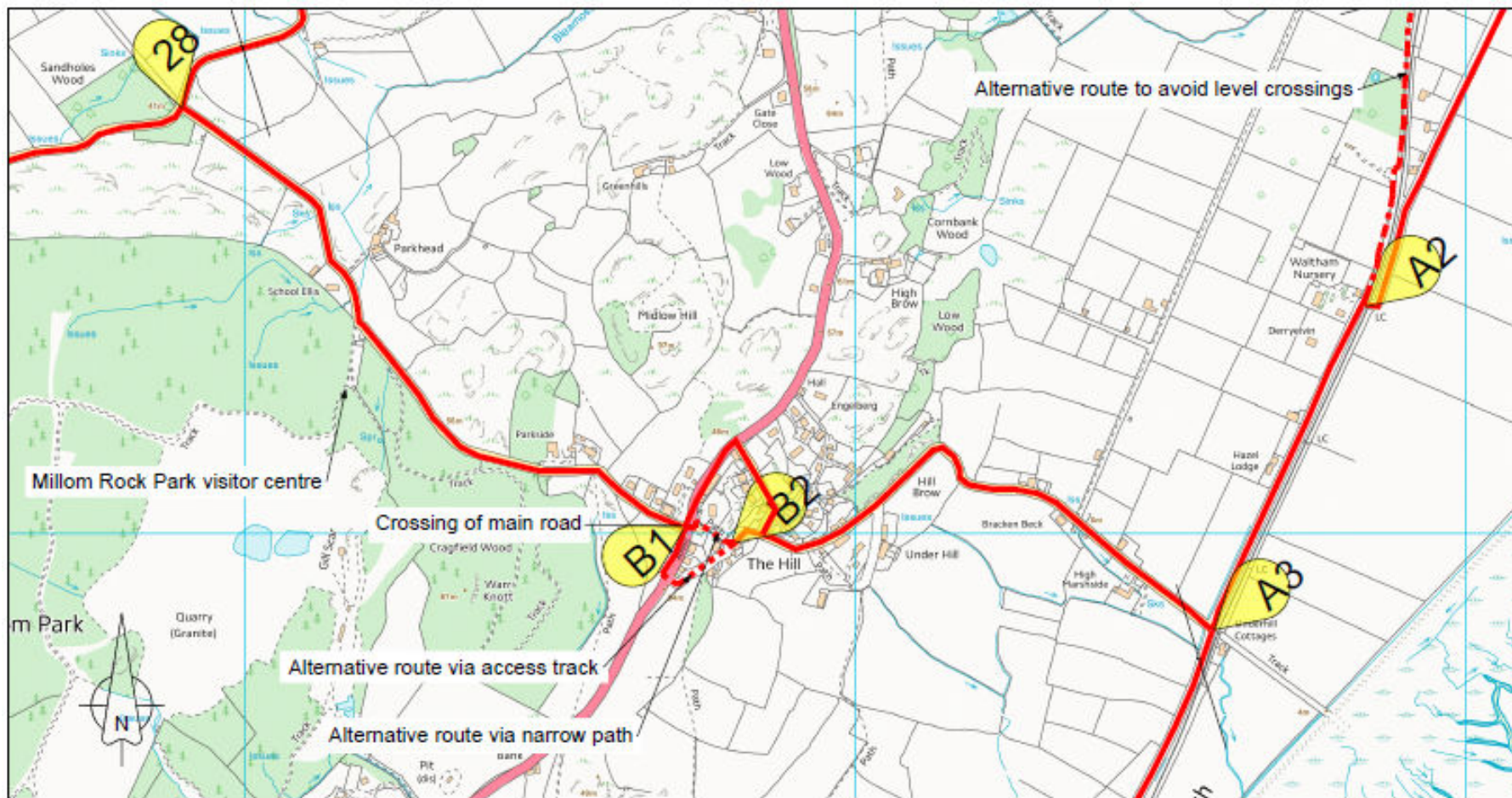
Two braids of the route link Millom Park with the town of Millom: one via The Hill, and the other via The Green and Green Road.

From Millom Park via the Hill, the route runs on minor roads, crossing the A5093 in The Hill. The route is shown following the public road, but there may be an alternative utilising an existing path directly opposite the junction from Millom Park, or a track slightly south of the path. However, land ownership has not been confirmed for the track, and the path is narrow.

The cycle route joins a track on the west side of the railway close to Underhill Cottages. This track, known locally as Aggie's Lonin, continues into Millom, coming out on the A5093 beside Millom High School. The legal status of Aggie's Lonin should be clarified, as it does not appear to be formally designated as a Public Right of Way, and agreement for a permissive right of way sought from the landowners. It is, however, already established as an informal but popular cycling and walking route from Millom.

In Millom itself, the route would be better connected to the town if a traffic-free connection could be made from the end of Aggie's Lonin to the railway station. There may be potential to create a route that includes the High School, thus avoiding the A5093. This should be progressed with the school.

From Millom Park via The Green and Green Road railway station, the route connects into Aggie's Lonin a little further north, crossing back from the east side of the railway to the west over a level crossing at Waltham Nursery. The increased use of this level crossing should be discussed with Network Rail. An alternative, if the use of the level crossing is not approved, would be to continue the route down the west side of the railway between Green Road railway station and Waltham Nursery. This follows the line of an existing track, and would need to be discussed with the landowner.



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Map 8
Millom Park to Millom

Drawn: WH Checked: JM Date: 21/10/2016 Scale at A3: 1:10000

Status: FEASIBILITY

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