



**A417 NORTH OF STRATTON TO
NETTLETON IMPROVEMENT**

ENVIRONMENTAL STATEMENT

DECEMBER 1991



Ref: CSW 243/2/9/1

From: M A Wilkinson
SWCPD

Date: 7 October 1993

To: Mr.B.Lewis
SWCPD

cc:

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
PROPOSED LANDSCAPE BUND AT ITLAY

1. Further to my minute of 21 September 1993 please find enclosed the final brief for the above works and a copy of the letter sent to ADAS by FGCE, for your records.



M.A. WILKINSON
Room 319
Tollgate House

GTN 1374 8088



5 October 1993

ADAS Worcester
Whittington Road
Worcester
WR5 2LQ

Your reference

Our reference

DTW/LH/CWH/091049/081

For the attention of Mr W Little

Please reply to
Mr D T Woodward

Dear Sir

A419/A417 Cirencester and Stratton Bypass
A417 North of Stratton to Nettleton Improvement

We refer to the telephone conversation Little/Woodward on 5 October 1993 and as discussed enclose a copy of the Brief of Requirements for the advice required from ADAS on the implications of returning an area of a proposed landscape bund to agriculture.

The Brief is self explanatory and provides a background to the current proposals for the provision of a bund and also provides specific details of the specialist advice required from ADAS.

In the first instance we would be grateful if you would provide an estimate of the cost for undertaking this work. Approval of the cost will be necessary prior to the issue of an instruction and official order to commence work.

Should you wish to discuss any aspects of this assessment, please do not hesitate to contact the writer.

Yours faithfully

D T Woodward, Principal Engineer
Frank Graham Consulting Engineers Limited

Encs

cc: Mr M A Wilkinson, DOT - SWCPD

**Head office**

Shinfield House
School Green
Shinfield
Reading
Berkshire RG2 9FW
Telephone 0734 882222
Fax 0734 885274
Telex 848830 Grampa G

UK regional offices**Exeter**

22 Waterbeer Street
Guildhall Centre
Exeter
Devon EX4 3EH
Telephone 0392 432748
Fax 0392 412846

Hertford

Graham House
Yeoman's Court
Ware Road
Hertford SG13 7NJ
Telephone 0992 587848
Fax 0992 551872

Maidstone

65 College Road
Maidstone
Kent ME15 6SX
Telephone 0622 692442
Fax 0622 692443

Reading

Shinfield House
School Green
Shinfield
Reading
Berkshire RG2 9EW
Telephone 0734 882222
Fax 0734 885274
Telex 848830 Grampa G

Wakefield

6 South Park Way
Wakefield 41 Business Park
Wakefield
West Yorkshire WF2 0XJ
Telephone 0924 290484
Fax 0924 368468

Worcester

Elgar House
Shrub Hill
Worcester WR4 9FN
Telephone 0905 613910
Fax 0905 613907

Department of Transport**A417 North of Stratton to Nettleton Improvement****Environmental Statement****December 1991****Office of Origin
Worcester****MLJ/DMT/9104/28**

Department of Transport
South West Construction Programme Division
Tollgate House
Houlton Street
Bristol

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1.0 **INTRODUCTION (SEE FIGURE 1)**

- 1.1 The A417 North of Stratton to Nettleton Improvement forms part of the A419/A417 Trunk Road between Swindon and Gloucester providing an important link between the M4 and M5 Motorways; the National Roads Programme includes a number of improvement schemes on this route of which the A417 North of Stratton to Nettleton Improvement is an essential component.
- 1.2 Subject to satisfactory progress through the statutory procedures, construction of the Improvement is due to begin in 1994, opening to traffic approximately 18 months later.
- 1.3 This Environmental Statement summarises an assessment of the environmental effects of the proposed scheme in accordance with sub-section 105A(2) of the Highways Act 1980 as amended by the Highways (Assessment of Environmental Effects) Regulations 1988. This legislation implements, in respect of Trunk Roads, the provision of the EC Directive on environmental assessment (85/337/EEC).

2.0 SITE DESCRIPTION

2.1 SETTLEMENTS

- 2.1.1 The A417(T) forms a link between the town of Cirencester and the village of Stratton in the south east and Gloucester & Cheltenham in the north west. The Trunk Road, which closely follows the line of the former Roman Road Ermin Way, is virtually straight and does not pass through any significant settlements between these main urban areas. There are, however a number of small villages adjacent to the A417(T) which are linked to each other and the trunk road by low standard local roads. Most of these villages have populations of 500 or less.
- 2.1.2 To the east of the Trunk Road are the villages of Cowley, Elkstone, Woodmancote and Bagendon whilst to the west are the villages of Brimpsfield, Syde, Caudle Green, Winstone, Duntisbourne Abbots, Duntisbourne Leer, Middle Duntisbourne, Duntisbourne Rouse, Daglingworth and Itlay. These villages and many of the associated farms are in the typical Cotswold style and are constructed of locally quarried stone.
- 2.1.3 With the exception of the village churches, local facilities are very limited. There is a post office at Winstone and a Youth Hostel at Duntisbourne Abbots. The village of Cowley has a Conference Centre and associated Girl Guides Camp and adventure centre. A public house is also located at Cowley. There are no shops in any of the villages.
- 2.1.4 The village of Birdlip which lies on the edge of the Cotswold escarpment to the north of the study area, was bypassed in 1988 and is one of the largest villages in the area, containing a public house, a garage, some shops and a primary school.

2.1.5 In addition to the villages, there are a number of residential properties, two public houses and a garage/services area that front the existing Trunk Road; these are mainly centred in two locations. At Beechpike there are five residential properties and a public house whilst further south there is another public house, a garage/services area and a small number of residential properties. There are also a small number of residential properties and a public house at Nettleton which lies south of the village of Birdlip.

2.2 ROAD NETWORK (SEE FIGURE 2)

2.2.1 The A417(T) forms part of the trunk road link between the M4 at Swindon and the M5 at Gloucester. The A417(T) within the study area follows the line of the former Roman Road Ermin Way and as would be expected, is generally straight. The carriageway is not lit, is subject to the national speed limit of 60mph and is generally 7.3m wide.

2.2.2 The section of trunk road between Highgate Farm and the Highwayman PH was improved in 1972. Under this improvement, part of the old carriageway was superseded and now forms a layby approximately 800m long to the west of the Trunk Road. The Highwayman crossroads junction with the roads to Winstone and Elkstone has been widened to provide a staggered 'ghost refuge' for turning traffic.

2.2.3 Although the horizontal alignment is generally good, the vertical alignment is substandard at a number of locations and consequently overtaking opportunities are extremely limited.

2.2.4 Between the Highwayman and Five Mile Public Houses there are a number of residential properties and a garage, all of which have direct access onto the Trunk Road.

2.2.5 The minor road network in the area consists of many classified and unclassified roads, the majority of which are less than 3m wide. There are a large number of junctions with the Trunk Road which provide access to local communities from the major road network and also between the communities on opposite sides of the Trunk Road.

- 2.2.6 The existing A417(T) carries an Annual Average Daily Traffic (AADT) flow of approximately 12,000 vehicles of which some 14% are heavy goods vehicles. This is approximately double the national average proportion.

2.3 LAND USE

- 2.3.1 The majority of land within the study area is in agricultural use, the open upland being used mainly for intensive cereal production whilst pasture tends to be concentrated within the more sheltered valleys. The majority of land is in large, owner-occupied or tenanted holdings, the main holdings being the Combend Estate, Cotswold Farm and Manor Farm (Daglingworth) the latter being owned by the Duchy of Cornwall.

- 2.3.2 Woodland in the area is generally concentrated in managed blocks. On the steep valley sides there are deciduous copses whilst on the flatter uplands there are plantations of deciduous and coniferous species which are generally associated with field boundaries. The woodland blocks create shelterbelts and serve as a screen to the existing Trunk Road as well as forming a distinctive local vegetation pattern. Two areas of woodland are covered by Tree Preservation Orders (TPO's) and are known as Gloucester Beeches and 'The Clump'.

- 2.3.3 There is a clay-pigeon shooting ground situated in a disused quarry at Nettleton whilst Daglingworth Quarry, at the extreme south of the study area is currently used for the commercial extraction of limestone and contains within its boundaries a brickworks and an explosives factory. It has reserves for approximately 20 years further production.

- 2.3.4 There are numerous public footpaths and bridleways in the area, which is popular for informal recreation and is readily accessible from both the Cheltenham and Gloucester urban centres.

2.4 LANDSCAPE CHARACTER

- 2.4.1 The study area is located on the Cotswold dipslope south east of the village of Birdlip and lies wholly within the Cotswold Area of Outstanding Natural Beauty (AONB).

- 2.4.2 The landform of the area is gently undulating and rises gradually from the south east to the north west, reaching a maximum height of approximately 300m above sea level at Birdlip before the scarp slope falls away to the Vale of Gloucester.
- 2.4.3 To the east of the area lie the Perrott's Brook valley and the deeply incised valley of the River Churn which contrasts with the more gentle valley which contains the villages of Daglingworth and the Duntisbournes which is located to the south west. The steep sided valley of the River Frome commences to the west of Nettleton in the north of the study area. The existing A417 follows the ridge line between the valleys and at several locations, the ridge line is breached by smaller valleys or 'combes' which lead to the major valleys.
- 2.4.4 Tree belts and copses on the steeper valley sides typify the local vegetation pattern. Fields are generally large and many are bounded by traditional dry stone walls. In the valley bottoms, and on the steeper valley sides the field sizes are generally smaller and more usually defined by hedgerows. This vegetation pattern limits views to and from the existing trunk road in an otherwise exposed and open landscape.

2.5 HERITAGE

- 2.5.1 The villages of Brimpsfield, Cowley, Syde, Caudle Green, Elkstone, Winstone, Duntisbourne Abbots, Duntisbourne Leer, Middle Duntisbourne, Duntisbourne Rouse, Daglingworth and Bagendon have all been designated as Conservation Areas. This designation places strict controls on any development, in order to preserve and enhance the historic character of the area.

There are also several Grade II listed buildings adjacent to the existing trunk road; these comprise 2 properties and 3 milestones. These are shown on Figure 3.

- 2.5.2 The area contains two Scheduled Ancient Monuments (SAMs) both of which are located at Brimpsfield and are sites of earthworks known as ringworks which are associated with medieval castles. In addition, there are several sites of archaeological interest which are recorded in the Sites and Monuments Records (SMR's) of Gloucestershire County Council.

- 2.5.3 An archaeological survey of the study area, which included the excavation and assessment of some of these sites of potential interest has been undertaken; the sites investigated include a late Iron Age square-ditch barrow which exhibits possible funerary cremation and a late Iron Age/early Roman settlement linked to the Dobunnic 'tribal capital' or Oppidum at Bagendon. Full details of the archaeological survey undertaken are available for reference at Council office inspection points.

2.6 ECOLOGY

- 2.6.1 A Site of Special Scientific Interest (SSSI) known as Bushley Muzzard is located 300m south west of the existing Trunk Road at Nettleton and contains unimproved grassland and marsh habitat of botanical diversity.
- 2.6.2 There are two Sites of Nature Conservation Importance (SNCI) within the study area; these are the headwaters of the River Frome which are of note for their bankside and emergent vegetation and Hawcote Hill Wood which is an ancient semi-natural beech woodland on the northern edge of the study area, to the south east of Birdlip.
- 2.6.3 A detailed ecological survey which included the monitoring of seasonal effects has been undertaken within the study area. This has identified other non-designated sites which are of ecological importance. An unimproved grassland area examined at Dartley Farm is considered to be of County/Regional importance. Many of the woodland belts within the study area exhibit signs of ancient woodland and possess typical calcareous woodland floras. The most notable of these are the woodland belts located alongside the western periphery of the existing trunk road between Burcombe Lane and the side road to Duntisbourne Leer, and between Dowers Lane and Dartley Bottom; these are considered to be of 'high local' importance.

- 2.6.4 An active badger sett exists in in the south of the study area and a small colony of Pyramidal Orchids was found on an unexcavated section of the now disused Birdlip Quarry. In general, woodland belts, hedgerows and hedges are considered to be of local ecological importance as wildlife corridors whilst in contrast, areas of intensive arable farming are considered to be of low ecological value as they contain limited wildlife habitats.
- 2.6.5 Full details of the ecological survey undertaken for the scheme are available for reference at Council Office inspection points.

3.0 DESCRIPTION OF THE PUBLISHED SCHEME (SEE FIGURE 3)

- 3.1 The published route, which would be an all purpose dual two lane 7.3m wide carriageway with 1m hardstrips, commences at a proposed temporary roundabout junction which would be located slightly to the north of the existing Cowley/Brimpsfield crossroads. It is proposed that the dual carriageway will eventually extend north west on an alignment yet to be decided, and therefore the termination at this roundabout will eventually be superseded. The roundabout would be removed and replaced by short connections between each carriageway and the side road network, allowance for which has been made within the present design. This will perpetuate the presence of a junction at this location with minimal additional roadworks.

The side road to High Cross/Elkstone would be closed east of its present junction with the Trunk Road and diverted to a new junction with the road to Cowley. The diversion would follow the eastern boundary of the proposed Trunk Road and would approximately follow the existing ground level. An underpass is proposed at this location to allow the slightly realigned road to Cowley to pass beneath the Trunk Road in slight cutting to join the road to Brimpsfield. A link from this road to the temporary roundabout would be provided.

- 3.2 From the temporary roundabout, the route runs south on the same alignment as the existing trunk road as far as the Gloucester Beeches. The route would cross the existing road to Cowley, which is contained in a small valley, on an embankment which would be approximately 6m high. Further south, opposite Highgate Farm, the route would cut through a small hillside, the cutting reaching a maximum depth of 5m. The route would then continue south and cross the heads of two combes which spur from the much larger Frome Valley located to the west. Whilst the new dual carriageway would be at the same level as the existing trunk road, it would be aligned further to the west; the resulting embankment would intrude some 20m into one of the combes.

- 3.3 Adjacent to the Gloucester Beeches, the northbound and southbound carriageways would separate, accommodating a central reserve of up to 15m width; the northbound carriageway reuses the existing Trunk Road as far as the Highwayman Public House at which point the central reserve would be of standard width. Through this section the widening necessary to accommodate the additional carriageway is proposed to the east of the existing trunk road, thereby leaving the existing slope between the trunk road and the Gloucester Beeches layby unaffected. The minor road referenced 40865 which links the Trunk Road to Elkstone would be closed as a highway; a bridleway underpass would connect the public rights of way on either side of the trunk road at this location.

The existing crossroads adjacent to the Highwayman PH would be replaced by a grade separated junction providing full turning movements with the local side road network. The junction would be located in a natural depression thus allowing the provision of an underpass without raising the level of the trunk road carriageway. The roads to Elkstone, Winstone and Syde would be connected to A417(T) at this junction; an access to the Highwayman PH would be provided from the realigned Winstone road. The redundant length of the road to Elkstone, to the east of the trunk road, would become an access road to the property known as 'Box Cottage' and the 'Pick Your Own' fruit farm. A combined bus bay and layby would be provided immediately north of the junction on the southbound carriageway; a bus bay only would be provided on the northbound carriageway.

- 3.4 South of the Highwayman Junction the route departs from the line of the existing Trunk Road for a distance of approximately 2.2km until the Five Mile Public House. Adjacent to the five properties at Beechpike which currently front the trunk road, the route would be approximately 25m to the east of the existing road and generally in slight cutting. The redundant Trunk Road would be retained as an access road to these properties; its junction with the minor road to Cot Abbey would be retained.

3.5 Further south, the route crosses the minor road referenced 40960 which is known locally as 'The Notch'. The Notch would be diverted to a new grade separated junction which would incorporate the road to Duntisbourne Abbots and which would also allow access to the Centurion Garage/Service area. South of the Centurion Garage/Service area, a connection between the redundant Trunk Road and diverted side roads via an underpass would be located in a natural dip in the topography, and would form part of the grade separated junction proposed at this location. The existing trunk road would be retained as an access to the Five Mile PH, Centurion Garage/Services, Cotswold Farm and would continue to provide access to the minor road referenced 50947.

3.6 South of the Five Mile PH the existing Trunk Road would be re-used as the southbound carriageway and a new northbound carriageway would be provided west of the existing tree belts which would be retained in a wide central reservation.

3.7 Burcombe Lane would be diverted to an underpass approximately 250m north of its present junction with the trunk road; this would allow agricultural vehicles access to areas of Field's Farm severed by the trunk road and would also provide a safe crossing point for equestrians and pedestrians. The road to Duntisbourne Leer would be closed west of the trunk road at its junction with the road to Duntisbourne Abbots; the redundant section of the road to Duntisbourne Leer would be retained for equestrian/pedestrian use and in order to provide access to adjacent fields.

An access road would be provided from the redundant trunk road at the Five Mile House Junction to Fields Farm and Duntisbourne Abbots playing field. The access road would closely follow the eastern boundary of the trunk road and would be constructed mainly at existing ground level.

3.8 In Dartley Bottom, a deeply incised combe, the new carriageways would be about 3m above the level of the existing trunk road; an underpass would connect the realigned 'Welsh Way' with the road to Middle Duntisbourne.

Further south, an underpass would be provided to connect the minor road to Itlay with the bridleway adjacent to Milestone Plantation. This would provide access between severed areas of Manor Farm (Daglingworth) as well as accommodating equestrians/pedestrians.

- 3.9 The Daglingworth Quarry Junction would form the connection point between the North of Stratton to Nettleton Improvement and the continued improvement of the trunk road southwards towards Cirencester. A part of the junction would be provided under each of the schemes depending on which scheme is built first. It is proposed that the north facing slip roads and two roundabouts, which would eventually form a dumbbell junction arrangement, be constructed as part of the North of Stratton to Nettleton scheme in order to provide a safe interim termination. Dowers Lane would be realigned to connect with the roundabouts, and an access to Daglingworth Quarry would be provided from the eastern roundabout. A link would be provided from the western roundabout to the existing trunk road.

- 3.10 For road safety reasons, there will be no private accesses onto the dual carriageway. Access to the Improvement will be available via the local road network and the new junctions proposed at Cowley/Brimpsfield, Highwayman PH, Five Mile PH and Daglingworth Quarry.

In order to maintain access for all vehicles to Itlay and the Welsh Way, minor improvements to the junctions between Dowers Lane and the minor road referenced 50877 to Itlay and between Dowers Lane and the Welsh Way are proposed. These are shown on Figure 3c.

- 3.11 All existing footpath and bridleway routes across the Improvement will be retained via underpasses, by diversion if appropriate.
- 3.12 Consideration has been given to the need for lighting on the new roads. At both the Cowley/Brimpsfield temporary roundabout junction and Daglingworth Quarry Junction it is intended that the roundabouts and their approaches will be lit using 10m high columns. The lanterns would be of a high pressure sodium type and would minimise light spillage. It is not intended that the Highwayman or Five Mile Junctions are lit.

- 3.13 Surface water run off from the new roads will be discharged into existing watercourses or soakaways. All discharges will be via oil interceptors, or trapped gullies, and where necessary balancing ponds.
- 3.14 During winter months, the area in which the scheme lies is susceptible to heavy snowfall which frequently causes the minor road network to become impassable and on occasion also blocks the trunk road prior to snow clearance operations commencing. Consequently, the design has taken due regard of the need to keep the Trunk Road carriageways clear and embankment and cutting profiles have been 'softened' to enhance snow shedding away from the carriageway.
- 3.15 Figure 5 shows traffic figures on those roads where the existing Annual Average Daily Traffic (AADT) is predicted to change by 30% or more by the scheme opening year (1996). All current flows and side road (1996) predictions are derived from available count data, whilst the A417(T) do-something flow is obtained from the traffic model and assumes the completion of both Cirencester and Stratton Bypass and the North of Stratton to Nettleton Improvement.

4.0 MITIGATION MEASURES

4.1 HIGHWAY LAYOUT

- 4.1.1 Route selection and the design of the horizontal and vertical alignments are fundamental mitigation measures for minimising any adverse effects of proposed road development and traffic intrusion. This scheme has been designed to accord with and retain the character of the local landscape; mitigation measures have been included in the scheme proposals to minimise any adverse impact of the road and to assist in incorporating the Improvement into the local landscape setting whilst reflecting the prevailing landscape character of the area.
- 4.1.2 The alignment of the dual carriageway has retained the character of the existing road, which broadly follows the historic line of the Roman Road, Ermin Way.
- 4.1.3 The route selection and subsequent design have been undertaken with consideration that the entire scheme lies in the Cotswold Area of Outstanding Natural Beauty and the following likely environmental effect:
- re-use of the existing trunk road wherever possible.
 - visual intrusion of the new route where it passes through open countryside.
 - visual obstruction of the embankments and structures associated with the improvement.
 - loss of vegetation. The existing vegetation pattern is of great importance in containing views and assimilating the route into the existing landscape.

- 4.1.4 The Cowley/Brimpsfield temporary roundabout termination would be designed such that it blends into a hillside which forms a backdrop when viewed from the valleys to the south and the west. The side roads would be designed to keep the loss of existing vegetation to a minimum, particularly the semi-mature trees adjacent to the road to Brimpsfield. The height of the embankment across the combe which lies adjacent to the road to Cowley has been kept as low as possible in order to minimise visual intrusion. The junction has been located in a localised dip in the topography to avoid the high intrusion which would otherwise occur against the ridgeline to the east.
- 4.1.5 Adjacent to the Gloucester Beeches and the Highwayman Public House the existing Trunk Road would be reused as the northbound carriageway with the new southbound carriageway constructed alongside. This will minimise landtake, severance and the loss of established vegetation belts.

At the proposed Highwayman Junction, the level of the existing Trunk Road is closely followed. The underpass is located in a natural depression in the topography in order that it is not necessary to raise the level of the Trunk Road; this will minimise visual intrusion.

- 4.1.6 The section of route between the Highwayman PH and the Five Mile PH would be constructed off-line; this would generally be constructed at existing ground level in order to reduce visual intrusion in views from the existing A417(T). Much of the route adjacent to the five properties at Beechpike would be in cutting up to 3m deep which together with the movement of the route further to the east should greatly reduce the environmental effects of the Trunk Road upon these properties.
- 4.1.7 South of the Five Mile PH the southbound carriageway would reuse the existing Trunk Road, thus retaining much of the existing vegetation, particularly the belts of mature trees which lie to the west of the road. The northbound carriageway would be constructed to the west of these linear treebelts which would be retained in a wide central reserve thus creating a backdrop to the route when viewed from either direction.

- 4.1.8 The Daglingworth Quarry Junction would be located in a natural depression in the topography south of Daglingworth Quarry which assists in locating the junction more favourably in the landscape and precludes distant views from the west, particularly from the village of Daglingworth.

4.2 LANDSCAPE PROPOSALS (SEE FIGURE 4)

4.2.1 General

- 4.2.1.1 The landscape proposals have been designed to complement the route selection and to reduce the impact of the scheme both within the broad context of the existing landscape character and with respect to local views, particularly from properties.

- 4.2.1.2 This will be achieved primarily with tree and shrub planting which will screen the route and integrate the scheme into the existing landscape and ecological character of the area. In addition, ground modelling will modify the more angular profiles of embankments relating the new road more closely to the existing landform.

4.2.2 Planting

- 4.2.2.1 New planting has been designed to reflect the existing vegetation pattern of tree belts, clumps and hedgerows. The majority of the proposed planting would consist of locally occurring native species, thus extending the potential habitat for much of the wildlife to be found along the corridor.

- 4.2.2.2 Five principal types of planting are proposed:

1. Tall screen planting incorporating massed trees and shrubs to provide a dense screen, whilst at the same time reflecting the character of the existing shelterbelts associated with the road.

2. Low screen planting incorporating shrub species to provide local screening whilst still maintaining more distant open views. This form of planting would be used mainly where the effect on properties can be mitigated by localised screening.
 3. Group planting of trees to provide intermittent screening of the route in areas where this reflects the local vegetation patterns.
 4. Hedgerow planting incorporating tall shrub and small tree species to provide a significant screen in areas where this reflects the local vegetation pattern whilst at the same time minimising landtake.
 5. Hedge planting to the highway boundary to reflect vegetation patterns and tie-in the boundary of the route with the local field boundary pattern. This would also create local low level screening.
- 4.2.2.3 Where certain views require further screening which it would not be possible to provide within the proposed highway boundary and the proposed area of planting is considered essential for landscape reasons, the land will be purchased by the Department of Transport under a Compulsory Purchase Order. Ownership of the land will be retained by the Department of Transport.
- 4.2.3 **Earthworks**
- 4.2.3.1 Some minor earthworks are proposed to further integrate the road into the local landscape and to increase the visual effect and screening value of proposed planting. Earthworks for screening purposes are generally not appropriate except to soften the more rigid profiles of roadside embankments/cuttings in sensitive locations and where they will not lead to significant vegetation loss.

4.2.4 Principal Landscape Proposals

- 4.2.4.1 The northern termination of the scheme at the Cowley/Brimpsfield junction will be visible in views from Brimpsfield across the Frome Valley. Traffic on the Trunk Road will be seen against the open fields which rise to the ridgeline beyond. Gentle recontouring of the embankments to the adjacent bridge will provide an elevated land form on which screen planting will have an early effect. Planting to the embankments and redundant areas between the main carriageway and realigned side roads will tie in with Nettleton Plantation and the overall pattern of copses and field boundaries. The northern side of the avenue of trees adjacent to Brimpsfield side road will be preserved and the southern side would be replanted adjacent to the trunk road to replace lost trees. The redundant length of existing A417(T) would be removed and planted in order to form a substantial screen to views from the direction of Brimpsfield.
- 4.2.4.2 To the south and west of Highgate Farm, the landscape has a parkland character, with copses and tree clumps on the undulating slopes which fall towards the Frome Valley. This is reflected in the proposed group planting through this section in order to avoid accentuating the linearity of the road within the landscape. Tall screen planting is proposed around the western entrance to the underpass to screen the embankments and the underpass. On the cut slope to the east, low screen planting is proposed.
- 4.2.4.3 Gloucester Beeches, a distinctive linear shelter-belt to the west of the existing Trunk Road which is protected by a Tree Preservation Order, is retained as a visually important screen and landscape feature. Opposite this, to the east, group planting will reflect the nature of the vegetation which is presently regenerating in places along this side of the route. This will break up views of the road from easterly viewpoints.

- 4.2.4.4 Adjacent to the Highwayman Junction a small section of Gloucester Beeches would be lost in order to accommodate the connection of the realigned side roads. The losses would be replaced by substantial areas of planting on the cutting slopes adjacent to the proposed bridge, and also on the cutting slopes to the west to screen views through the gap created by the lost trees and maintain the visual continuity of the tree belt. Adjacent to The Highwayman PH planting to create a tall screen and a strong termination clump is proposed at the southern end of the Gloucester Beeches. The areas of land between the side roads would be gently mounded and planted to screen the junction from Box Cottage and Combend Farm. The existing poplar trees opposite The Highwayman PH would be replaced by a belt of trees on the new embankment.
- 4.2.4.5 South of the Highwayman PH the route swings off-line to the west. The land between the existing and proposed carriageways would be planted with low screen varieties which will significantly reduce the visual intrusion of the route. Groups of trees at this location will provide additional screening whilst retaining the relatively open aspect. Tall screen planting would extend south to create a visual link to the established trees at Limekiln Plantation. The clump of beech trees adjacent to the 'Notch' crossroads will be retained. Through this section, the route is on relatively open, elevated land in which vehicles will continue to be visible; Limekiln Plantation will continue to form a dense back-drop to distant views from the west and south west.
- 4.2.4.6 Opposite the Five Mile Public House the route will not be visible to views from the west and south west and low screen planting is proposed to separate the diverted side roads and the main carriageway north of the Centurion Garage. This will link to tall screen planting on the cutting slopes adjacent to the proposed underpass to screen the route and the Centurion Garage from westerly viewpoints. To minimise visual intrusion in more distant views, which are limited by a plantation and rising ground to the south west, the hedgerow and trees north of the existing road to Duntisbourne Abbots will be retained and reinforced. Opposite the Five Mile Public House, the field severed by the route will only be planted adjacent to the Improvement in order to maintain the setting of this Listed Building.

- 4.2.4.7 South of the Five Mile Public House, the carriageways run either side of an existing tree belt, which will be retained and will act as both a screen and back-drop to views from the west. The northern end of the tree belt will be extended within the proposed central reserve to link with planting at the Five Mile House Junction; the southern section would be extended to link with Sly's Wall Plantation. East of the route, the existing hedgerow which screens views from the direction of Woodmancote and the Perrott's Brook Valley will be removed to allow for widening of the carriageway. Planting is proposed to replace this lost vegetation in land between the southbound carriageway and the proposed access to Field's Farm. The proposed underpass at the realigned Burcombe Lane is located at the position of an existing side road junction in order to minimise tree loss from the ecologically important tree belt located to the south. No planting is proposed to the west and south west of the proposed northbound carriageway as views to the route from this direction are limited by the gently rising ground. Where views are available, the route will be viewed against the back-drop of the retained and extended tree belt in the central reserve.
- 4.2.4.8 South of Sly's Wall Plantation, the existing Trunk Road is open to the east and west with wide views of the elevated Cotswold landscape being available. Through this section, the proposed route closely follows the level of the existing Trunk Road to retain this open aspect. A wide belt of recent planting by the landowner to the east side will eventually screen these views; however, open views will be retained to the west. Group planting is proposed to provide a visual link between Sly's Wall Plantation and planting at Dartley Bottom, whilst retaining the open character of the local landscape.
- 4.2.4.9 At Dartley Bottom the realignment of the road to Middle Duntisbourne and the 'Welsh Way' require the removal of the existing plantations on the east side of the existing A417(T). The lost vegetation will be replaced with tall screen planting which will act as a back-drop and screen and will link with the existing tree belt to the south. The redundant side road will be broken up and planted. Further planting south of the 'Welsh Way' would replace sections of lost plantation and enhance screening.

4.2.4.10 South of Dartley Bottom the route continues to run either side of the existing tree belt which will be extended by further planting. A hedgerow on the west side is proposed to screen views from High Tun Farm and Itlay.

4.2.4.11 Tall screen planting at the south west corner of Daglingworth Quarry and to the west of the proposed junction would replace and enhance the existing screen provided by the existing landscape bund and planting. Ground modelling to the west of the junction would also assist the screening of the roundabouts to views from Itlay and also the more distant views from the Daglingworth and Duntisbourne valleys. At the underpass provided on the line of the road to Itlay, tall screen planting is proposed on the west of the trunk road to rationalise field boundaries and limit views from Itlay and High Tun Farm.

4.3 HERITAGE

4.3.1 A number of sites of archaeological interest have been identified along the route of the Improvement. Discussions are being held with English Heritage to ensure that important sites are investigated and recorded before road construction begins.

4.4 ECOLOGY

4.4.1 The ecological survey recommended several general mitigation measures, as well as more specific items in relation to several sensitive areas identified during the survey. The following measures would be adopted to reduce and mitigate the ecological impact of the scheme.

4.4.2 It is essential to maintain the high water quality of the River Churn and the River Frome to protect their diverse botanical communities. Measures will therefore be taken to prevent the pollution of watercourses, both during construction and as part of the final drainage system for the scheme.

4.4.3 Particular care will be taken during construction to site temporary accommodation, fuel and plant storage areas away from ecologically sensitive locations such as woodland and marshy grasslands. Fencing would be one of the first site works in order to define the site and also limit encroachment by mechanical plant or stored materials onto ecologically sensitive areas.

4.4.4 Measures would be taken to attempt to recreate or enhance those habitats lost or damaged by the scheme, such as the planting of new hedgerows and tree belts. Native tree and shrub species and wildflower grassland mixes will be used.

4.4.5 Provision would be made for the badgers to cross the Improvement through an underpass.

4.5 ROAD LIGHTING

4.5.1 Where new lighting is proposed, account will be taken of the environmental consequences of light spillage in the design. High pressure sodium lanterns with full cut off will be used, where appropriate, to minimise light spillage and intrusion.

4.6 DRAINAGE

4.6.1 To safeguard against the risk of polluting watercourses and aquifers, the proposed highway drainage system will include oil interceptors and pollution control where necessary.

4.7 NOISE

4.7.1 A number of individual properties will be eligible for insulation against traffic noise. Such insulation could be installed prior to road construction so the benefits would be available during the construction period itself.

4.8 PUBLIC RIGHTS OF WAY

4.8.1 A number of bridleways and footpaths are affected by the Improvement. In addition to the four proposed highway underpasses, bridleway routes across the Improvement will be provided via the underpasses at Gloucester Beeches, Burcombe Lane and Itlay. Where necessary, some of the existing bridleways and footpaths are diverted to these underpass locations. Detailed proposals for all affected bridleways and footpaths are shown on Figure 3.

4.9 AGRICULTURE

- 4.9.1 The effects of the proposals on agricultural operations will be minimised by reducing land-take as far as possible. This is principally achieved by the Improvement closely following the line of the existing trunk road and by utilising the steepest practicable slopes for embankments and cuttings. Where extensive severance is unavoidable, disruption of farming operations will be minimised by the provision of alternative accesses where these are considered feasible and can be justified. These will be subject to joint use by the public and/or other landowners where appropriate. Existing severance will be reduced by the provision of highway underpasses at the Highwayman and Five Mile House junctions and also by granting private rights for certain farmers to use the bridleway underpasses proposed at Burcombe Lane and Itlay.
- 4.9.2 Prior to construction of the bypass, negotiations will be held with individual landowners to agree accommodation works necessary to mitigate further the effects of the new road on agricultural operations.

5.0 DATA ON ENVIRONMENTAL EFFECTS (APPRAISAL FRAMEWORK)

- 5.1 A summary of the environmental effects of the preferred scheme is provided in tabular form in this section. The format and the methods of assessment follow that of the appraisal framework specified in the Department of Transport's Manual of Environmental Appraisal. The frameworks summarise the overall effects of construction and operation of the preferred scheme. The frameworks also describe the implications of not constructing the scheme within columns headed 'do-minimum'.
- 5.2 The summary of the environmental effects of the preferred scheme, as presented within the frameworks, has been derived from more detailed work comprising consultations with Statutory Authorities and other bodies, desk studies, fieldwork and computer modelling.
- 5.3 The frameworks are sub-divided into six groups which consider the effects on (1) travellers; (2) occupiers of property; (3) users of facilities; (4) policies for conserving and enhancing the area; (5) policies for transport and development and (6) financial effects.
- 5.4 The effects on travellers are considered in Group 1 which comprises an economic appraisal of the savings associated with the scheme, an estimate of the reduction in road traffic casualties as a result of the scheme, estimates of driver stress and the quality of views from the road, the effects of new severance and relief from existing severance and the effects of traffic delays during construction. The effects on pedestrians, cyclists and equestrians are separately identified.
- 5.5 Within Group 2 the effects of the scheme on occupiers are assessed including residential, industrial, commercial, farming and other interests. The effects considered include changes in the noise and visual environment, new severance and relief from existing severance and the loss of land or buildings.

- 5.6 The implications of the scheme for users of facilities which will be affected are addressed in Group 3, followed, in Group 4, by a description of the effects of the scheme on policies for conserving and enhancing the area. This group is concerned with the change in the general environmental quality of the area, rather than the direct effect on individuals.
- 5.7 The degree to which the scheme complies with transport policies and with central and local government's policies relating to land use and economic development is outlined in Group 5.
- 5.8 Group 6 considers the Net Present Value (NPV) of the scheme by balancing the scheme costs against the benefits derived within Group 1. Groups 1 and 6 are considered only within the overall framework for the scheme, as financial benefits are dependent on the scheme in its entirety. The effects of the scheme on transport and development policies are also considered within the overall framework but not within the sub-frameworks.
- 5.9 Certain issues listed within Annex III of the European Community Directive on environmental assessment (85/337/EEC) have not been considered within the framework (such as effects of the scheme on climatic factors) as they are not relevant. The effects of consequential development have not been considered either as these will be subject to the policies of the relevant Planning Authorities.

**A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 1 : TRAVELLERS**

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE		DO MINIMUM		COMMENTS
			High Growth	Low Growth	High Growth	Low Growth	
Car Users	Time Savings	£m (PVB)	15.672	9.402	0	0	A. Each column shows the improvements of the Published Route over the 'Do-Minimum'. Hence the 'Do-Minimum' entries are zero B. Present value of benefits (PVB) are for a 30 year period from the expected date of opening and discounted to 1988 prices at 8% pa. C. It is assumed that national average figures for vehicle occupancy and for accident rates and costs will apply
	Vehicle Operating Cost Savings	£m (PVB)	-2.562	-1.818	0	0	
Users of Light Goods Vehicles	Time Savings	£m (PVB)	2.849	1.483	0	0	
	Vehicle Operating Cost Savings	£m (PVB)	-0.426	-0.378	0	0	
Users of Other Goods Vehicles	Time Savings	£m (PVB)	0.755	0.372	0	0	
	Vehicle Operating Cost Savings	£m (PVB)	-0.620	-0.454	0	0	
Bus Operators and Passengers	Time Savings	£m (PVB)	0.108	0.069	0	0	
	Vehicle Operating Cost Savings	£m (PVB)	-0.016	-0.012	0	0	
All Vehicle Travellers	Value of Accident Cost Saving	£m (PVB)	12.957	8.449	0	0	The figures indicate the probable total reduction in casualties over the whole of the 30 year assessment period if the national average rates and distribution between groups apply. They take no account of the safety implications of the detailed design of the new route.
	Reduction in Casualties:						
	Fatal	Number	45	36	0	0	
	Serious	Number	352	283	0	0	
	Slight	Number	1006	807	0	0	
	View from the road	-	Scenic/Agricultural. View partially restricted by existing tree belts between carriageways at southern end		Mainly agricultural. Scenic south of Burcombe Lane. View partially restricted by tree belts south of the Five Mile Public House		Existing Trunk Road and new route lie entirely within the Cotswold AONB
	Driver Stress	-	Opening year: Low 15 years after opening: Low		High on Trunk Road at present in peak periods 15 years after opening: High on Trunk Road throughout working day		Although much of the existing road is straight, there are few overtaking opportunities

**A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 1 : TRAVELLERS (CONTD)**

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
All Vehicle Travellers (Continued)	New Severance	-	At intersection with new trunk road, 40865 and 40895 will be closed resulting in slight severance. All other public highways will be maintained or diverted	Continued traffic growth will worsen existing severance of settlements currently separated by the trunk road	
	Relief from existing severance	-	Slight to moderate relief for east-west journeys across trunk road due to proposed grade separated junctions and underpasses	Traffic growth on existing roads will cause the existing situation to deteriorate	
	Traffic delays during construction	-	Generally slight except on A417 in vicinity of Highgate Farm where moderate	Significant delays throughout the day will occur during ongoing future maintenance of single carriageway Trunk Road. No suitable local diversion routes are available	An 18 month construction period is envisaged
Pedestrians	Change in amenity	-	Amenity on certain cross country footpaths will be slightly reduced due to presence of new roads and traffic. General improvement in amenity between Beechpike and the Five Mile Public House due to the diversion of trunk road traffic from the existing A417	Pedestrian amenity along trunk road will continue to deteriorate due to increasing traffic congestion along A417 corridor	
	Safety	-	Diversion of trunk road traffic from properties at Beechpike and Five Mile Public House together with the provision of grade separated junctions and underpasses will improve pedestrian safety	Traffic growth on existing trunk road will lead to increased risk of vehicle pedestrian conflict	

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 1 : TRAVELLERS (CONTD)

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Pedestrians (Continued)	New Severance	-	Slight to moderate. Whilst footpath diversions or facilities for pedestrians to cross the new road will be provided, certain footpath routes will be lengthened	Traffic growth on existing trunk road will worsen existing severance of villages located either side of the A417(T)	
	Relief from existing severance	-	Moderate to substantial relief at Beechpike as diversion of trunk road traffic will reduce existing community severance	Existing community severance caused by the trunk road will worsen as the growth of traffic continues	
Cyclists	Amenity & Safety	-	Increase in amenity and safety on existing section of A417 between Beechpike and Five Mile PH. Cyclists will be encouraged by signing to use the existing and proposed side road network rather than the Trunk road	Cyclist amenity and safety is likely to worsen as traffic growth continues	
Equestrians	Amenity & Safety	-	Increase in amenity and safety due to provision of 7 underpasses beneath the Improvement	Equestrian amenity and safety is likely to worsen as traffic growth continues	

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 2 : OCCUPIERS

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Residential	Noise	<p>Number of houses experiencing an increase of:</p> <p>>15dB(A) 2</p> <p>10-15dB(A) 0</p> <p>5-10dB(A) 16</p> <p>3-5dB(A) 5</p> <p>Number of houses experiencing a decrease of:</p> <p>>15dB(A) 0</p> <p>10-15dB(A) 0</p> <p>5-10dB(A) 0</p> <p>3-5dB(A) 1</p> <p>No. of properties likely to be eligible for insulation 6</p>		<p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>Nil</p>	<p>The changes in noise are the difference between the forecast for 2011 (high growth) and the existing (1990) levels. The units are dB(A)L10 18 hour, 8am to midnight.</p> <p>Properties experiencing an increase >15dB(A) are 'The Gables' (western property) and residential property above workshops at the Centurion Garage. The latter property also experiences a decrease of equal magnitude at its north-east facade</p> <p>The figures include properties along A417 between the scheme tie-ins. There will also be an increase in noise of 3-5dB(A) for properties fronting A417 between Cowley/Brimsfield crossroads and the Air Balloon roundabout.</p> <p>Substantial noise reductions are also likely for properties fronting the A435 Cheltenham Road between Seven Springs and Stratton. The calculations assume that the adjacent A419/A417 Cirencester & Stratton Bypass is also constructed.</p>
	Visual Obstruction	<p>Number of properties subject to:</p> <p>High 0</p> <p>Moderate 3</p> <p>Slight 0</p>		No change	<p>An allowance for the height of vehicles on the new trunk road in the Published Route has been made</p> <p>Only those properties experiencing an increase in obstruction have been included</p>

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 2 : OCCUPIERS (CONTD)

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Residential (Continued)	Visual Intrusion	High	The construction of the Highwayman Junction will cause high intrusion to one property	No change	Proposals include tree and shrub planting adjacent to the junction to gradually reduce visual impact
		Moderate	0	No change	
		Slight	Construction of the improved trunk road will cause slight intrusion to 16 properties	No change	Landscaping proposals which include extensive planting are designed to gradually ameliorate visual intrusion
	New Severance	-	<p>Closure of access from Highgate Farm onto A417(T) will result in slight severance</p> <p>Diversion of 40886 will result in slight severance to Ermin Farm</p> <p>Closure of access from the Highwayman PH onto A417(T) will result in slight severance</p> <p>Closure of existing A417(T) at Fosse Farm will result in slight severance to five properties at Beechpike</p> <p>Closure of access from the Five Mile PH onto A417(T) will result in slight severance</p> <p>Diversion of 40960 and 40893 will result in slight severance for journeys from Duntisbourne Leer, Duntisbourne Abbots and some properties in Winstone to the south.</p>	Continued traffic growth will worsen the existing severance of settlements currently separated by the trunk road	

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 2 : OCCUPIERS (CONTD)

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Residential (Continued)	Severance (Continued)		<p>Closure of 40894/40895 will result in slight severance to Duntisbourne Abbots and Duntisbourne Leer</p> <p>Closure of access from Fields Farm onto A417(T) will result in moderate severance</p> <p>Closure of access from Dartley Farm onto A417(T) will result in moderate severance</p> <p>Closure of access from High Tun Farm onto A417(T) will result in slight severance</p>	Continued traffic growth will worsen the existing severance of settlements currently separated by the trunk road	
	Access and Safety		<p>Access to the Trunk Road for local residents will be available via the local road network and the new junctions at Cowley/Brimpsfield, Highwayman, Five Mile House and Daglingworth Quarry</p> <p>Access directly onto trunk road no longer available, enhancing road safety</p>	No change	
	Disruption during construction	-	There are 15 properties within 100m of the site which will be affected by disruption during the contract period	No effect	An 18 month construction period is envisaged
	Land Take	Area (hectares)	0.007	Nil	Residential land at No. 2 Winstone Road required
Industrial Premises	New Severance	-	Quarry access is diverted to new junction which provides for both northbound and southbound movements	No change	Premises includes Daglingworth Quarry, Corinium Brickworks and Explosive Developments
	Disruption during construction	-	Quarry lies adjacent to existing trunk road and will experience slight disruption during the contract period	No effect	

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 2 : OCCUPIERS (CONTD)

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Industrial Premises (Continued)	Land Take	Area (hectares)	0.6	Nil	Premises is Daglingworth Quarry
Commercial Premises a) Public Houses, Guest Houses, Restaurants, Cafes and Hotels	Noise	Number subject to an increase of more than 3dB(A)	1	No change	Premises is the Highwayman PH
		Number subject to a decrease of more than 3dB(A)	1	No change	Premises is Five Mile PH
	Visual intrusion		Slight at the Highwayman and the Five Mile Public Houses	No change	Landscape proposals will gradually ameliorate intrusion at Five Mile PH
	New Severance		Existing accesses onto trunk road closed resulting in slight severance to the Highwayman PH and the Five Mile PH	No change	
	Disruption during construction	-	Slight disruption to Highwayman PH	No change	Access will be maintained throughout construction period
	Access and safety	-	Access to/from the Highwayman PH and the Five Mile PH no longer directly onto trunk road, enhancing road safety	No change	
	Land Take	Area (hectares)	0.06	Nil	Area is paddock adjacent to Highwayman PH
Commercial Premises b) Garages & Service Stations	Noise	Number subject to an increase of more than 3dB(A)	1	No change	Premises is 'Little Chef' (south west facade) at Centurion Garage/Services This premises also experiences a decrease of equal magnitude at its north east facade

**A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 2 : OCCUPIERS (CONTD)**

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Commercial Premises b) Garages & Service Stations (Continued)	Visual Obstruction		Moderate obstruction at the Centurion Garage/Services	No change	
	Visual Intrusion		Slight intrusion at Centurion Garage/Services	No change	
	New Severance		Slight severance at the Centurion Garage/Services	No change	
	Disruption during construction		Premises lies adjacent to existing trunk road and will be affected by disruption during the contract period	No change	Access will be maintained throughout the construction period
	Access and safety		Access to/from the Centurion Garage/Services no longer directly onto trunk road, enhancing road safety	No change	
Agricultural Land	Land Take	Number of units affected	15	Nil	
		Area (hectares)			Based on MAFF Land classification. Cost of land acquisition and compensation included in Group 6. Areas include land to be acquired for landscaping purposes
		Grade 1	0	Nil	
		Grade 2	0	Nil	
		Grade 3	50.0	Nil	
		Land predominantly in non-agricultural use	4.0	Nil	
		Total	54.0		
	Severance	Number of units affected	1 unit will be subject to slightly increased severance. 4 units will experience a decrease in severance due to the provision of underpasses or junctions	No change	5 units are currently severed by the existing trunk road
	Disruption during construction	-	Slight to moderate generally	Nil	Access will be maintained throughout the construction period

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 3 : USERS OF FACILITIES

SUB GROUP	EFFECT	UNITS	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
Duntisbourne Abbots Playing Field	Access/severance	-	Diversion of access will create slight severance. Access into/out of field no longer directly onto trunk road, enhancing road safety	No change	Access to playing field will be available via the proposed Five Mile House Junction

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 4 : POLICIES FOR CONSERVING AND ENHANCING THE AREA

SUB GROUP	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To protect the landscape in the Cotswold Area of Outstanding Natural Beauty	Cotswold District Council Department of Environment Gloucestershire County Council Countryside Commission	Length of route within AONB	All of route lies within AONB	All of existing route lies within AONB	
		View of route from AONB	New route closely follows alignment of existing Trunk Road. Route has been aligned to minimise visual effects in the wider scale landscape and to relate to existing vegetation belts adjacent to the existing trunk road	Traffic growth will lead to increased visual intrusion in the AONB	The detailed landscaping proposals include extensive tree and shrub planting to tie into the existing landscape and reduce the visual impact of the new road works. South of the Five Mile PH the northbound and southbound carriageways separate in order to retain an existing linear tree belt
To protect areas of importance for nature conservation	English Nature Department of Environment Gloucestershire County Council Gloucestershire Trust for Nature Conservation	Bushley Muzzard SSSI - Site of National Importance	SSSI lies to north of corridor of interest and is not affected by the route	No effect	An area of damp unimproved grassland and marsh containing regionally uncommon species
		Hawcote Copse SNCI - Site of County Importance	Lies to north of corridor of interest and is not affected by the route	No effect	A series of damp flushes and wet woodland identified as an ancient woodland
		River Frome Headwaters - Site of County Importance	Lies on the edge of the corridor of interest and is not directly affected by the route	No effect	Although unexceptional for the ecological interest in its upper reaches, the site is integral to more important habitats downstream
		Dartley Farm - Site of Regional/County Importance	Area lies to the east of existing trunk road. No direct effect due to proposed improvement	No change	An area of wet unimproved grassland similar to Bushley Muzzard SSSI, exhibiting a diverse range of flora
		Linear tree belt adjacent to existing trunk road at Itlay - Site of High Local Interest	Site crossed by route although only 0.3 hectares of ecologically valuable woodland is taken	No effect	Ancient woodland having great diversity of locally uncommon species. Majority of tree belt will be preserved and strengthened within the wide central reserve

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 4 : POLICIES FOR CONSERVING AND ENHANCING THE AREA (CONTD)

SUB GROUP	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To protect areas of importance for nature conservation (Continued)		Linear tree belt adjacent to existing trunk road at Duntisbourne Leer - Site of High Local Interest	Realignment of 50948 takes 0.02 hectares of ecologically valuable woodland	No effect	Ancient woodland having great diversity of locally uncommon species. Majority of tree belt will be preserved and strengthened within the wide central reserve
		Badger Sett - Site of High Local Interest	Badger sett unaffected by improvement Provision will be made for the badgers to cross the improvement through an underpass	No effect	Badgers are protected under Schedule 6 of the Wildlife & Countryside Act as amended 1985 and the Badger Act 1973 as amended October 1991
In conservation areas, only development and advertisement which enhance or maintain their existing character will normally be permitted	Gloucestershire County Council Cotswold District Council	Brimpsfield	750m from Improvement	No change	
		Cowley	1500m from Improvement	No change	
		Caudle Green	1800m from Improvement	No change	
		Syde	1300m from Improvement	No change	
		Elkstone	750m from Improvement	No change	
		Winstone	800m from Improvement	No change	
		Duntisbourne Abbots	900m from Improvement	No change	
		Duntisbourne Leer	900m from Improvement	No change	
		Middle Duntisbourne	600m from Improvement	No change	
		Duntisbourne Rouse	600m from Improvement	No change	
		Daglingworth	550m from Improvement	No change	
		Bagendon	1000m from Improvement	No change	

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 4 : POLICIES FOR CONSERVING AND ENHANCING THE AREA (CONTD)

SUB GROUP	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To protect listed buildings	Department of Environment Cotswold District Council English Heritage	All listed buildings within Conservation Areas	At least 500m from Trunk Road	No change	
		Old Bakehouse, Beechpike (Grade III)	25m from trunk road	Property fronts existing A417(T)	Improvement moves trunk road to the west; landscaping proposals will further ameliorate the effects of the road
		Milestone, Beechpike (Grade II)	25m from trunk road	Milestone on existing A417(T)	Improvement moves trunk road to the west; landscaping proposals will further ameliorate the effects of the road
		Cotswold Farmhouse (Grade II)	450m from trunk road	370m from existing A417(T)	
		Barn at Cotswold Farm to west of house (Grade II)	500m from trunk road	420m from existing A417(T)	
		Milestone adjacent to Duntisbourne Abbots playing field (Grade II)	Milestone repositioned on new trunk road verge	Milestone on existing A417(T) verge	Milestone will be relocated
		Five Mile Public House (Grade II)	65m from trunk road	Property fronts existing A417(T)	Improvement moves trunk road to the west; landscaping proposals will further ameliorate the effects of the road
		Milestone adjacent to Milestone Plantation (Grade II)	Milestone repositioned on new trunk road verge	Milestone on existing A417(T) verge	Milestone will be relocated
		High Tun Farmhouse, Itlay (Grade II)	350m from trunk road	320m from existing A417(T)	Landscaping proposals will further ameliorate the effects of the road

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 4 : POLICIES FOR CONSERVING AND ENHANCING THE AREA (CONTD)

SUB GROUP	EFFECT	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To protect sites of archaeological and historic interest	Department of Environment English Heritage Gloucestershire County Council	OS Parcel No. 9345 Romano-British farmstead, possible fulling plant GCC SMR 11200	Site crossed by improvement	No change	The site, which is considered to be of regional importance indicates a Romano-British farmstead with possible use as a fulling plant. Mitigation measures to be agreed with English Heritage
		OS Parcel No. 2800 Partly enclosed middle to late Iron Age Settlement GCC SMR 4698/9868	Some of site crossed by improvement and associated side road diversions	No change	The site, which is considered to be of regional importance, shows evidence of a small Iron Age settlement/farm. Mitigation measures to be agreed with English Heritage
		OS Parcel No. 3346 Romano-British trackway ditch and Romano quarry cutting a late Iron Age boundary ditch GCC SMR 4682/4683	Site crossed by improvement	No change	A Romano-British trackway ditch and Roman roadside quarry together with a possible square ditched barrow considered to be of regional/national importance. Mitigation measures to be agreed with English Heritage
		OS Parcel No. 0050 Linear cropmark interpreted as Romano-British minor road GCC SMR 4677/11203	Site crossed by improvement	No change	This site, which is considered to be of regional importance shows evidence of a Romano-British minor road possibly related to SMR 9432. Mitigation measures to be agreed with English Heritage
		OS Parcel No. 5156 A single trackway of unknown date showing remnants of cobbling GCC SMR 9432	Section of site crossed by improvement	No change	The cobbling of this trackway suggests a Romano-British date and has the potential to contribute to the understanding of communication patterns within the landscape. This site is considered to be of regional importance. Mitigation measures to be agreed with English Heritage

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT

ASSESSMENT FRAMEWORK

GROUP 4 : POLICIES FOR CONSERVING AND ENHANCING THE AREA (CONTD)

SUB GROUP	EFFECT	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To protect sites of archaeological and historic interest (Continued)	Department of Environment English Heritage Gloucestershire County Council	OS Parcel No. 7834 Late Iron Age – early Roman settlement contemporary with the Dobunnic tribal capital at Bagendon GCC SMR 4678	Site crossed by Improvement	No change	The site, which is considered to be of national importance has a stratigraphic relationship with Ermin Street as well as Bagendon, an Iron Age Dobunnic 'tribal capital'. Mitigation measures to be agreed with English Heritage
		OS Parcel 6500 A middle – late Iron Age enclosure GCC SMR 4680	Section of site crossed by Improvement	No change	A middle – late Iron Age enclosure showing evidence of quarrying to provide roadstone for Ermin Street during the Roman period. This site is considered to be of regional importance. Mitigation measures to be agreed with English Heritage
		General: GCC SMR's 4677, 4678, 4682, 4683, 4688, 4688 7542, 9432, 11200 and 11203	All sites affected to some extent by the improvement	No change	The combination of these sites has an additional importance over and above the value of the individual sites and are considered of national importance in their potential to contribute to an understanding of the inter-relationship between, and changes within, the pattern of settlement, land use and communications during the middle Iron Age to Romano-British periods
To protect trees subject to Tree Preservation Orders	Cotswold District Council	Gloucester Beeches	Tree belt affected by realignment of side roads and proposed Highwayman Junction although only 0.15 hectares of woodland taken	No change	A linear woodland belt of varying ecological importance containing some ancient woodland indicator species. Area required for scheme exhibits lowest ecological value of the wooded area

**A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
ASSESSMENT FRAMEWORK
GROUP 5 : TRANSPORT DEVELOPMENT AND ECONOMIC POLICIES**

POLICY	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO MINIMUM	COMMENTS
To improve the A417 trunk road between Nettleton and Daglingworth	Department of Transport Gloucestershire County Council Cotswold District Council	To facilitate the movement of people and goods	Significant improvement in journey times	Increasing delays to trunk road traffic can be expected	Roads for Prosperity and Trunk Roads, England into the 1990's by DTp refer
		To improve road safety	The provision of grade separated junctions will improve safety for journeys both along the trunk road and between the numerous small communities on either side of the trunk road. Direct access onto trunk road no longer available, enhancing road safety	Traffic growth on existing roads will worsen existing situation	GCC policy T2B refers
To concentrate HGV's on suitable routes	Gloucestershire County Council	To reduce lorry flows on A435 between Cirencester and Cheltenham	Construction of the improvement and the adjacent Cirencester and Stratton Bypass will lead to a significant traffic flow reduction on A435 Cheltenham Road	No relief to A435	GCC document 'Lorries in the Cotswolds' refers
To improve facilities for the safety and convenience of cyclists and pedestrians	Gloucestershire County Council		Provision of suitable alternatives and diversions utilising the new underpasses and side road network will improve conditions for pedestrians and cyclists	Increasing traffic growth will lead to worsening conditions for pedestrians and cyclists	GCC policies T14 and T15 refer
To maintain and improve public transport facilities	Gloucestershire County Council	To make improvements to the public transport service	Easier access between communities either side of the trunk road will ease the passage of local buses through the area	Difficulties likely to be experienced due to increasing traffic congestion	GCC policy T3 refers

A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT
 ASSESSMENT FRAMEWORK
 GROUP 6 : FINANCIAL EFFECTS

SUB GROUP	INTEREST	UNITS	PUBLISHED ROUTE		DO MINIMUM	COMMENTS
Department of Transport	Construction Costs	£m (PVC)	7.824			Costs are discounted from years of expected expenditure to 1988 at 1988 prices (PVC = Present Value of Costs, PVB = Present Value of Benefits, NPV = Net Present Value)
	Land costs	£m (PVC)	0.361			
	Compensation costs	£m (PVC)	-			
	Maintenance costs	£m (PVC)	0.173			Excess maintenance cost due to additional length of road
	Total costs	£m (PVC)	8.358			
Total quantified monetary benefits		£m (PVB)	High 28.519	Low 17.113		Includes savings in time, vehicle operating costs and accidents taken from Group 1
Net Present Value compared to Do-Minimum		£m (NPV)	High 20.161	Low 8.755		

6.0 **ALTERNATIVES CONSIDERED (SEE FIGURE 6)**

6.1 Only one scheme was presented at the Public Consultation which was held in December 1988 and January 1989.

6.1.1 The scheme was generally an on-line improvement to dual carriageway standard of the existing trunk road between the terminations of Birdlip Bypass in the north and Daglingworth Crossroads in the south. The scheme, which incorporated at-grade priority junctions, included two off-line sections. At Beechpike the proposed alignment was to the west of the existing Trunk Road onto which five properties have frontage access. At Nettleton Bottom, where the existing trunk road includes sub-standard horizontal and vertical alignments, the proposals to bypass this section to the east were such that a minimal amount of Birdlip Bypass (opened to traffic in 1988) was superseded; it did however, pass through a belt of mature trees known as Nettleton Plantation.

6.1.2 The scheme taken to Public Consultation included an on-line improvement of the Trunk Road adjacent to the Centurion Garage; this was marginally the preferred option as the additional landtake and severance required for an off-line improvement at this location could not be justified.

6.2 The route and junction proposals offered at Public Consultation were based on traffic predictions current at that time. Since 1987 traffic growth has been higher than was predicted and this, together with the current estimate of future traffic growth, has superseded much of the information on which the Public Consultation routes were designed, to the extent that none of the junction forms envisaged at the time of the consultation would now be operationally adequate.

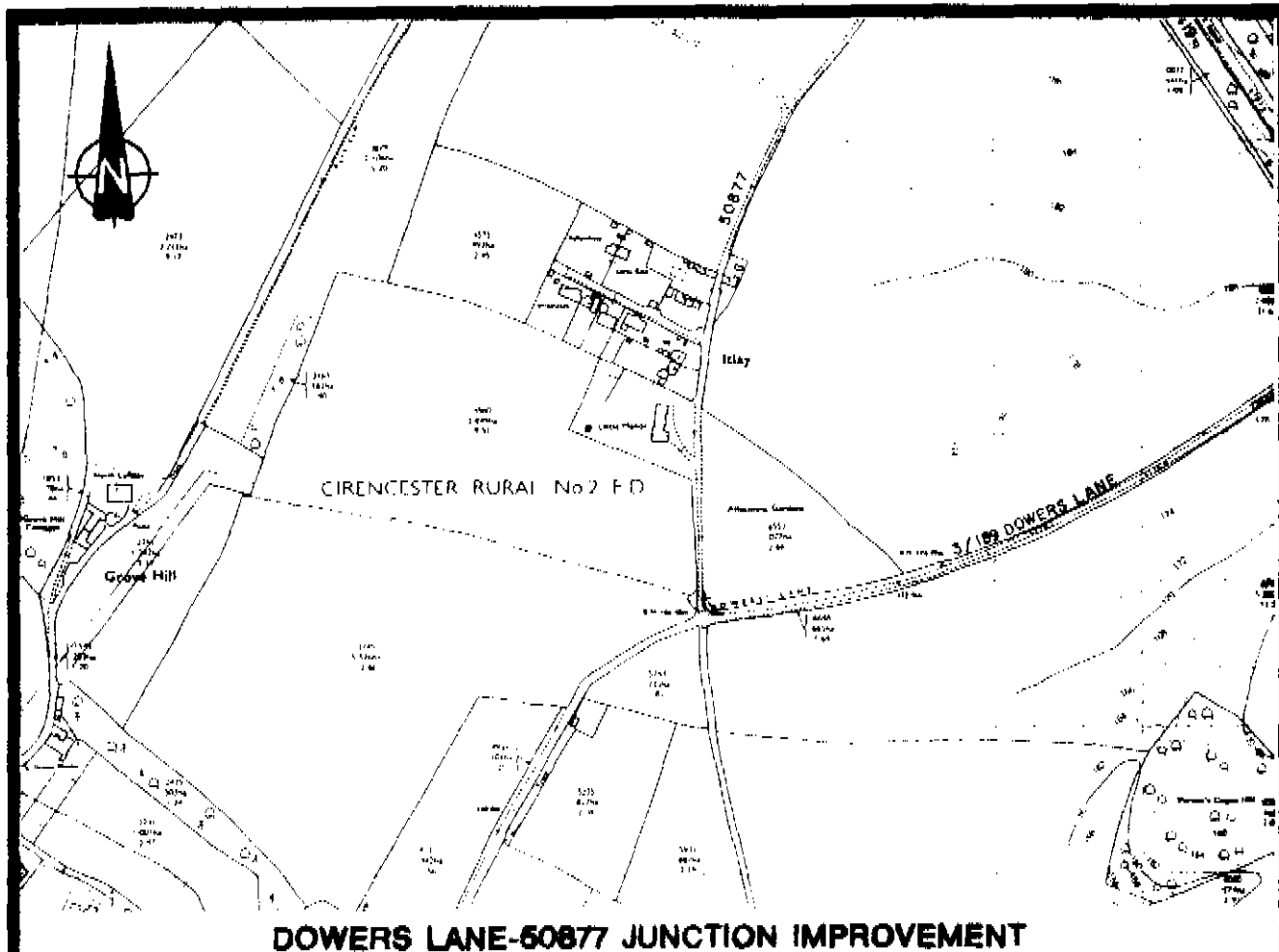
6.3 A number of alignment modifications were suggested by members of the public during the Public Consultation which were not considered to provide a cost effective and environmentally acceptable route for the improvement.

7.0 CHOICE OF PUBLISHED SCHEME

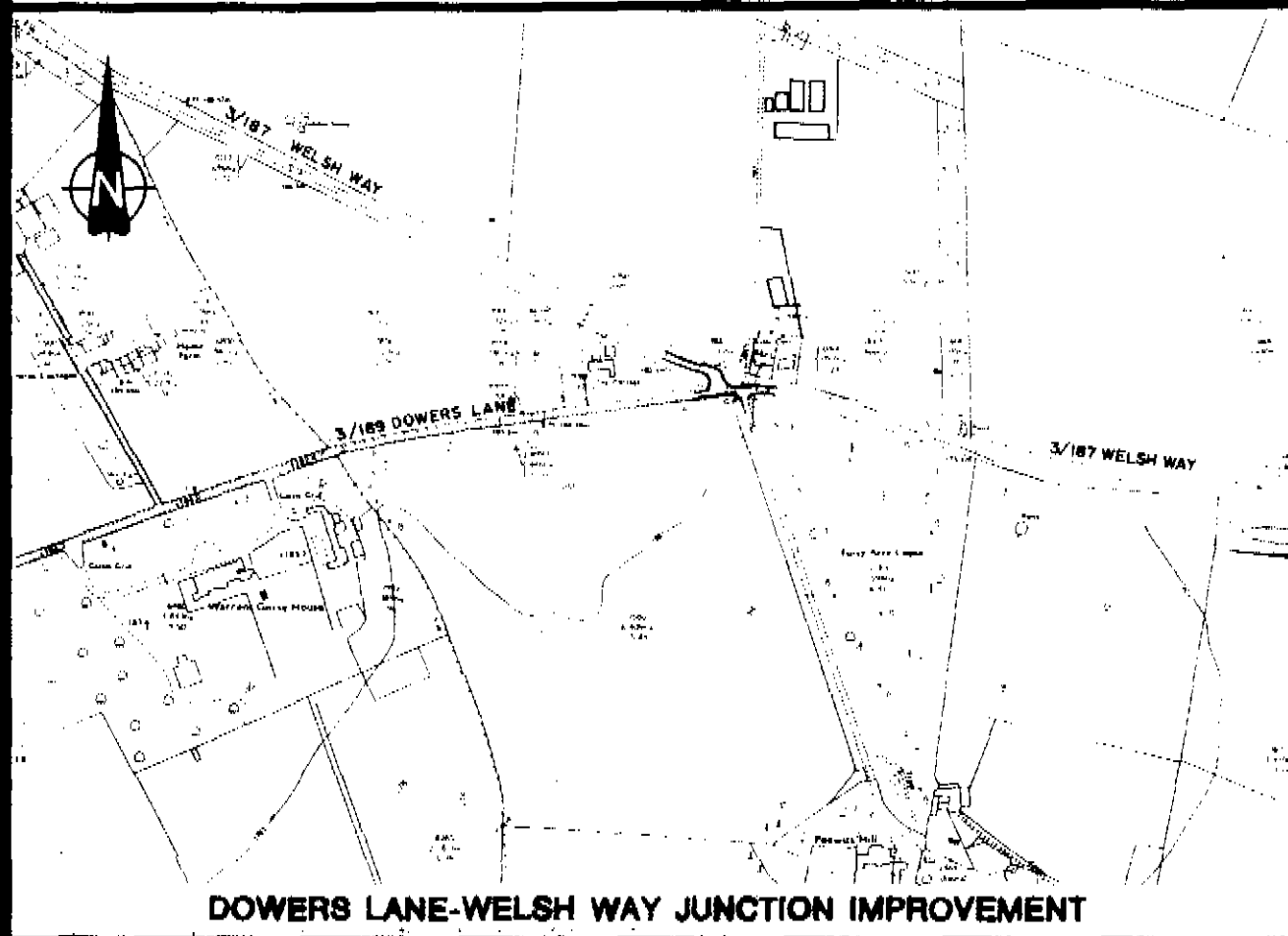
- 7.1 The Preferred Route, announced in August 1989, included two changes to the scheme which had been presented at Public Consultation.
- 7.2 An alternative suggested at Public Consultation was that the off-line section to bypass Nettleton Bottom be moved farther to the east in order to avoid the mature trees in Nettleton Plantation and locate the route in the head of a combe above Nettleton. Following analysis of this suggestion, this was incorporated in the Preferred Route.
- 7.3 At Public Consultation an off-line improvement to the west of the Centurion Garage was suggested by several members of the public, and more notably, by the landowner upon whose holding the off-line scheme would run. Following further consideration of this off-line route, this suggestion was incorporated into the Preferred Route.
- 7.4 REVISED NATIONAL ROAD TRAFFIC FORECASTS (NRTF)
- 7.4.1 In May 1989, the Secretary of State for Transport announced an upward revision in the Government's National Road Traffic Forecasts. The 2009, 24 hour (AADT) 2-way forecast flows on the Trunk Road at Public Consultation were 25,400 (high growth) and 22,500 (low growth). The revised forecasts, using 1990 traffic data, for a design year of 2011 are 35,400 (high growth) and 29,200 (low growth).
- 7.4.2 At such forecast levels of traffic, the 'at grade' priority junctions with the Trunk Road proposed at Public Consultation stage, would be inadequate for road safety reasons. Consequently, grade separation at all junctions with the Trunk Road is considered appropriate.

- 7.5 A need to improve the Trunk Road between Birdlip and Crickley Hill was identified in May 1989 in the Government's White Paper entitled 'Roads for Prosperity'. As the alignment of the section of the North of Stratton to Nettleton Improvement to the north of Nettleton would prejudice the possible alternative routes for this scheme, the Published Route now terminates slightly north of the Cowley/Brimpsfield crossroads with an at-grade roundabout. This will provide a safe transition from dual to single carriageway in the interim period. Construction of the Birdlip to Crickley Hill scheme will supersede this roundabout which will be replaced by short connections between each carriageway and the side road network, allowance for which has been made within the present design.
- 7.6 The Preferred Route for the A419/A417 Cirencester & Stratton Bypass was announced in April 1990; it commences at the termination point of the North of Stratton to Nettleton Improvement scheme at the Daglingworth Crossroads.

It is currently envisaged that following progress through the statutory procedures construction of the North of Stratton to Nettleton Improvement will precede that for the Cirencester & Stratton Bypass scheme. Consequently, a suitable termination which would allow the scheme to be constructed independently of the adjacent scheme was necessary. As a result, the North of Stratton to Nettleton Improvement scheme has been extended to the Daglingworth Quarry Junction in order to provide a safe termination for the dual carriageway prior to the construction of Cirencester & Stratton Bypass. The eventual slip roads will be constructed and will connect the roundabout to the dual carriageway to the north. By utilising the roundabout and slip roads in this way, it will be possible to minimise the abortive costs necessary to provide a safe temporary termination.



DOWERS LANE-50877 JUNCTION IMPROVEMENT



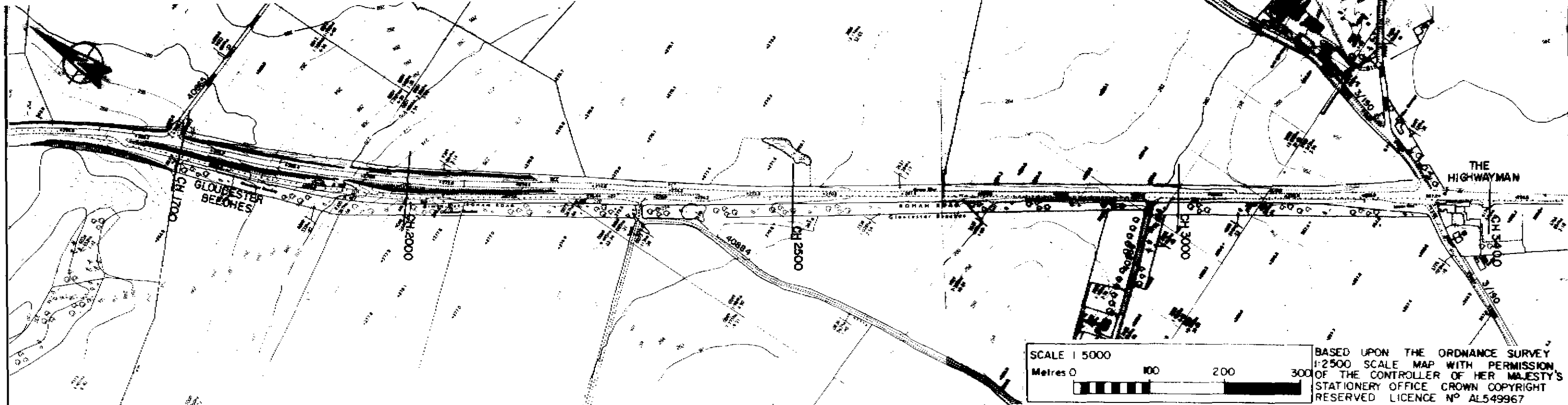
DOWERS LANE-WELSH WAY JUNCTION IMPROVEMENT

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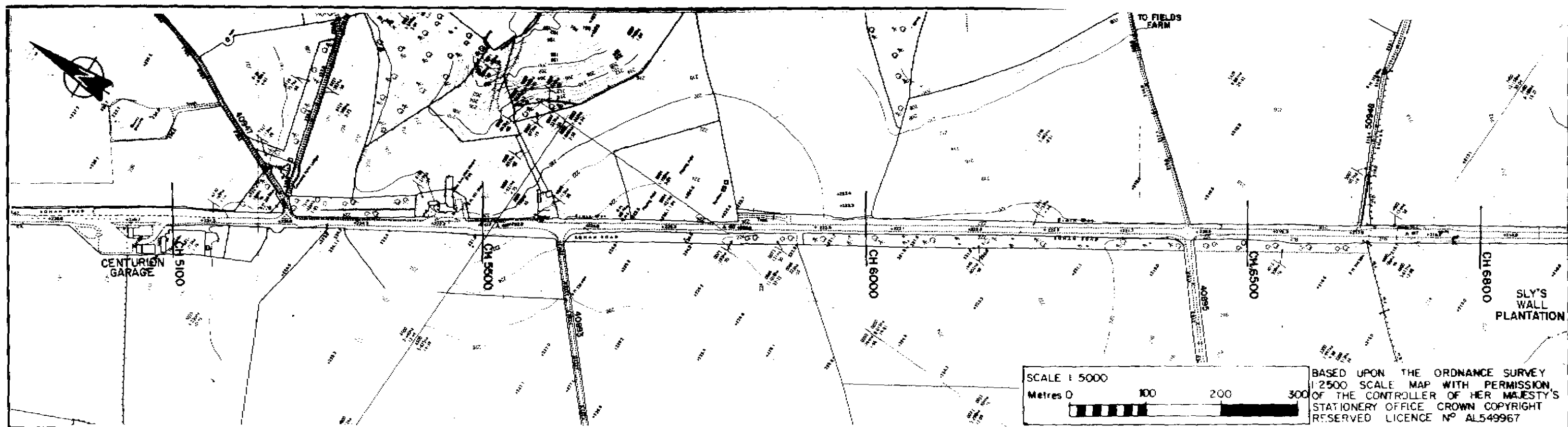


**A417 NORTH OF STRATTON TO NETTLETON
IMPROVEMENT - PUBLISHED ROUTE**

FIGURE 3e



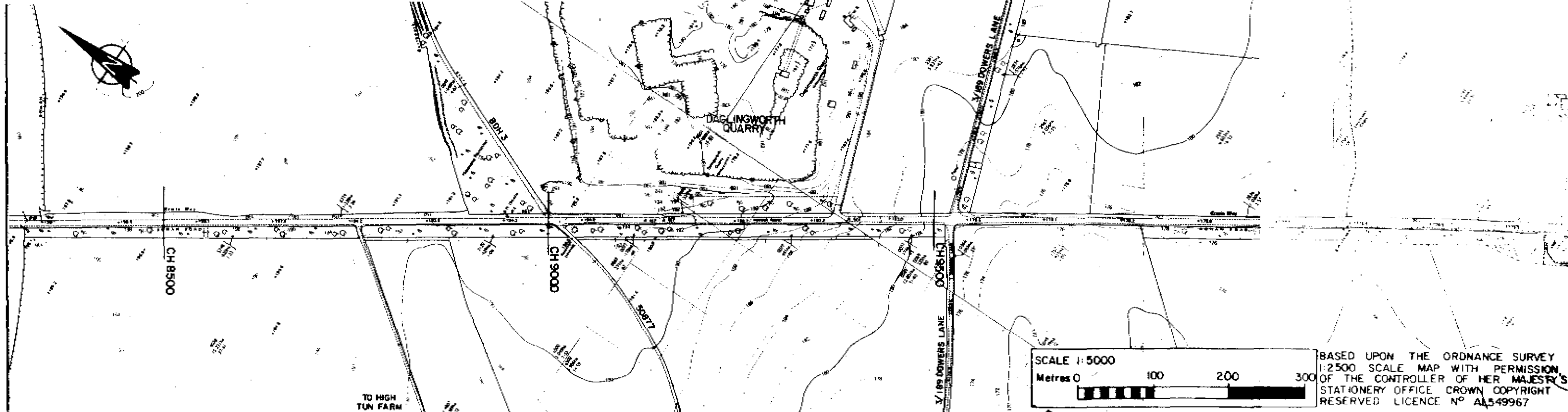
Carriageway width	7.3m CARRIAGEWAY																		TAPER		10.2m		TAPER	
To North East	NONE PRESENT																							
Footways																			FOOTWAY					
To South West	NONE PRESENT																				NONE			
Carriageway markings																								
Street lighting	NONE PRESENT																							
Access direct onto the trunk road (North East)											* FIELD ACCESS		* FIELD ACCESS						* FIELD ACCESS		* UNCLASSIFIED ROAD 3/190			
Access direct onto the trunk road (South West.)											* GLOUCESTER BEECHES LAYBY								* UNCLASSIFIED ROAD 40866		* UNCLASSIFIED ROAD 3/190		* HIGHWAYMAN P.H.	
Personal Injury Accidents 1986-1990																								
Chainage (metres)	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400						
	A 417 EXISTING TRUNK ROAD STANDARDS. - GLOUCESTER BEECHES TO THE HIGHWAYMAN P.H.																			FIGURE 2b				



Carriageway width	TAPER 7.3m CARRIAGEWAY																	
To North East	NONE PRESENT 1.5m WIDE NONE PRESENT																	
Footways	NONE PRESENT																	
To South West																		
Carriageway width																		
Street lighting	NONE PRESENT																	
Access direct onto the trunk road (North East)	x UNCLASSIFIED ROAD 50947/ COTSWOLD FARM x FIVE MILE HOUSE PH. x FIELD ACCESS x FIELD ACCESS x FIELDS FARM x BURCOMBE LANE 50948																	
Access direct onto the trunk road (South West.)	x FIELD ACCESS x FIELD ACCESS x UNCLASSIFIED ROAD 40893 x FIELD ACCESS x UNCLASSIFIED ROAD 40895 x FIELD ACCESS																	
Personal Injury Accidents 1986-1990	△ Fatal □ Serious ○ Slight																	
Chainage (metres)	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800

A 417 EXISTING TRUNK ROAD STANDARDS. CENTURION GARAGE TO SLY'S WALL PLANTATION

FIGURE 2d



Carriageway width	7.3m CARRIAGEWAY														
To North East	NONE PRESENT														
Footways	NONE PRESENT														
To South West	NONE PRESENT														
Carriageway width															
Street lighting	NONE PRESENT														
Access direct onto the trunk road (North East)	* FIELD ACCESS * BRIDLEWAY BDH3 * DAGLINGWORTH QUARRY * DOWERS LANE 3/189														
Access direct onto the trunk road (South West.)	* FIELD ACCESS * HIGH TUN FARM * UNCLASSIFIED ROAD 50877 * DOWERS LANE 3/189														
Personal Injury Accidents 1986-1990	<div>△ Fatal □ Serious ○ Slight</div> <div></div>														
Chainage (metres)	8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900														
<div></div> <div>A 417 EXISTING TRUNK ROAD STANDARDS. HIGH TUN FARM TO DAGLINGWORTH QUARRY</div>															
FIGURE 2f															



UNCLASSIFIED

TOLLGATE HOUSE

HA 044/027/000570 1

ENVIRONMENT & LANDSCAPE
Environmental Statement

08/04/2001 15:01:28

**A417 NORTH OF STRATTON TO NETTLETON
IMPROVEMENT – ENVIRONMENTAL
STATEMENT 12/91**



HA 44/27/570\$ 1W

FURTHER INFORMATION

The updated Environmental Statement may be inspected at the addresses shown below:

Department of Transport
South West Construction Programme Division
Room 402
Tollgate House
Houlton Street
Bristol BS2 9DJ

Gloucestershire County Council
Shire Hall
Bearland
Gloucester

Stratton Post Office
5 Cheltenham Road
Cirencester
Gloucestershire

Cotswold District Council
Trinity Road
Cirencester
Gloucestershire

Birdlip Post Office
Birdlip
Gloucestershire

Cirencester Bingham Library
Waterloo
Cirencester
Gloucestershire

The Centurion Garage
Gloucester Road
Duntisbourne Abbots
Cirencester
Gloucestershire



This project is being designed for the Department of Transport
by Frank Graham Consulting Engineers Limited.



THE DEPARTMENT
OF TRANSPORT

**A417 NORTH OF STRATTON TO
NETTLETON IMPROVEMENT**

ENVIRONMENTAL STATEMENT

Non-Technical Summary

The Department of Transport has published revised draft Orders for the
A417 North of Stratton to Nettleton Improvement.
This leaflet describes the scheme now proposed and summarises its environmental effects.

JULY 1992 UPDATE

1. INTRODUCTION

The Secretary of State for Transport published proposals, accompanied by an Environmental Statement, for the North of Stratton to Nettleton Improvement in December 1991. Following consideration of comments received since then, modifications have been made and revised proposals were published in July 1992 with an Addendum to the Environmental Statement. This document supersedes the earlier Non-Technical Summary and summarises the updated Environmental Statement which has been prepared in accordance with E.C. Directive 85/337 as applied by Section 105A of the Highways Act 1980 and as added to by the Highways (Assessment of Environmental Effects) Regulations 1988. The full updated Statement can be inspected at the addresses shown overleaf.

The North of Stratton to Nettleton Improvement is one of a number of proposed road improvement schemes on the A419/A417 Trunk Road between Swindon and Gloucester. Subject to satisfactory progress through the statutory procedures, construction of the Improvement is planned to begin in 1994, opening to traffic some 18 months later.

2. EXISTING CONDITIONS

The existing A417 Trunk Road between Stratton and Nettleton is a single carriageway which is virtually straight and follows the line of the Roman Road known as Ermin Way. There are a number of small villages to the east and west which are linked to each other and the trunk road by low standard local roads. The large number of junctions with these minor roads and private accesses, coupled with the considerable volume of heavy lorries and poor visibility make overtaking difficult and driving hazardous; traffic growth will make conditions worse.

The majority of the land alongside the trunk road is in agricultural use, the open upland being used mainly for cereal production whilst pasture lies within the more sheltered valleys. Daglingworth Quarry, used for the commercial extraction of limestone, is at the southern end of the Improvement.

The entire Improvement is located within the Cotswold Area of Outstanding Natural Beauty. The existing trunk road follows the ridge line between the Frome and Dunt valleys to the west and the Perrott's Brook valley to the east. Tree belts alongside the trunk road, notably the Gloucester Beeches which are protected by a Tree Preservation Order, and copses on the steeper valley sides typify the local vegetation pattern.

Two Scheduled Ancient Monuments, both of which are earthworks associated with medieval castles, and a Site of Special Scientific Interest known as Bushley Muzzard lie within the study area near Brimpsfield.

3. THE PUBLISHED SCHEME

The published scheme, which would be a dual carriageway, would start at a new roundabout on the A417(T) near Nettleton and run south east, generally following the line of the existing trunk road. The road from Cowley to Brimpsfield would pass beneath the Improvement, which would be on an embankment about 6m high at that point. The road to Elkstone would connect with the road to Cowley; the superseded trunk road would connect the roundabout with the road to Brimpsfield.

Continuing south, the Improvement would enter a short cutting of maximum depth 5m adjacent to Highgate Farm. Between Gloucester Beeches and the Highwayman Public House, the existing trunk road would be re-used as the northbound carriageway and a new southbound carriageway would be constructed alongside at the same level. A new junction with the roads to Elkstone and Winstone, including an underpass beneath the Improvement, would be formed near the Highwayman Public House; the road to Syde would be diverted to the junction.

The Improvement would run west of the existing trunk road from Beechpike to the Five Mile Public House, mostly at existing ground level. The redundant trunk road would be retained to provide access to local properties; its junction with the minor road to Cot Abbey would be retained. A new junction with the roads to Winstone and Duntisbourne Abbots would be formed; an underpass beneath the Improvement to the south of the Centurion Garage would connect the diverted side roads to the redundant trunk road.

From the Five Mile Public House to Daglingworth Quarry, the existing trunk road would be re-used as the southbound carriageway and a new northbound carriageway would be provided west of the existing tree belts which would be retained in a wide central reservation. A new junction with Burcombe Lane and the roads to Duntisbourne Abbots and Duntisbourne Leer, including an underpass beneath the Improvement, would be formed. In Dartley Bottom, the new carriageways would be about 3m above the level of the existing trunk road; an underpass linking the Welsh Way with the road to Middle Duntisbourne would be provided.

The scheme will terminate at a new junction near Daglingworth Quarry, at which the Cirencester and Stratton Bypass scheme will commence. The junction would connect the Improvement with the existing trunk road, Dowers Lane and Daglingworth Quarry.

For safety reasons there will be no private accesses onto the dual carriageway; access to the Improvement will be available via the local road network and the new junctions.

4. MAIN ENVIRONMENTAL EFFECTS INCLUDING MITIGATION MEASURES

The scheme has been designed to minimise environmental problems where possible by careful choice of line and level. Wherever possible the existing trunk road will be re-used as one of the carriageways; elsewhere the Improvement will be integrated into the existing landform and vegetation pattern to help screen views to the new carriageways and blend them into the wider landscape. Retention of the existing tree belts in a wide central reservation to the south of the Five Mile Public House will create a backdrop to the Improvement when viewed from either the east or west.

Landscape measures including tree and shrub planting and earth shaping in places will assist both in blending the Improvement into its surroundings and in reducing the impact of the Improvement on local views, particularly from properties. Mass tree and shrub planting will be concentrated primarily around junctions; mass planting will also generally reinforce and extend the existing tree belts retained in the wide central reservation. Tree and shrub planting will reflect the existing species and all the landscape works will be developed with nature conservation in mind.

Construction of this scheme together with the Cirencester and Stratton Bypass is predicted to lead to a reduction in traffic on the A435 north of Perrott's Brook of about 80% and an increase in traffic on the improved trunk road north of Daglingworth Quarry of about 30%, in the year of opening.

The new junctions near Nettleton and Daglingworth Quarry will be lit. The lighting will be of a type to minimise light spillage and intrusion.

About 125 acres of farmland will be needed to build the scheme and 12 landholdings will be affected. A number of new and replacement accesses will be provided to lessen the impact of the new road on farms. Existing severance will be reduced by the provision of underpasses beneath the Improvement.

Where appropriate, offers of insulation against traffic noise will be made to the owners of affected residential properties.

No connections will be provided between the Improvement and the minor roads to Elkstone (referenced 40865) and Itlay. However, bridleway routes across the Improvement will be provided via underpasses at these locations.

All existing footpath and bridleway routes across the Improvement will be retained; diversions to underpasses or facilities for pedestrians to cross the roads will be provided to maintain routes.

A number of sites of archaeological interest have been identified along the route of the Improvement. Discussions are being held with English Heritage to ensure that important sites are further investigated and recorded before road construction begins.

To safeguard against the risk of polluting watercourses and aquifers, the proposed highway drainage system will include oil interceptors and pollution control where considered necessary.

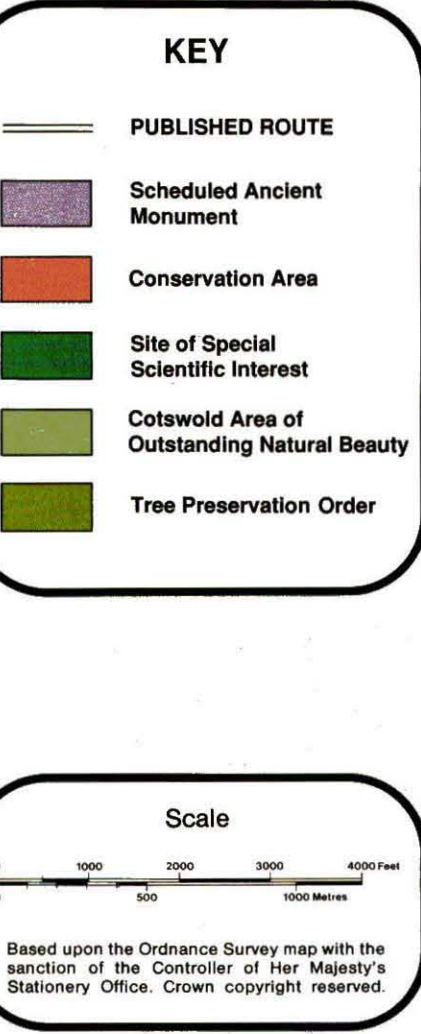
An active badger sett exists adjacent to the Improvement; provision will be made for the badgers to cross the Improvement through an underpass.

5. ALTERNATIVE LAYOUTS

A single scheme was presented at the Public Consultation in 1988. It differed from the published line in two sections: between Beechpike and the Five Mile Public House, the route ran on the line of the existing trunk road; at Nettleton Bottom, the route bypassed the existing trunk road to the east to connect with Birdlip Bypass.

The Preferred Route was announced in August 1989. It was the route presented at Public Consultation, modified to run to the west of the Centurion Garage, easing difficulties of access for local properties and to run further east at Nettleton, reducing environmental impact on the local landscape and residential properties.

A scheme to provide a dual carriageway bypass for Birdlip was included in the Trunk Road Programme in May 1989. The North of Stratton to Nettleton Improvement will terminate at a roundabout near Nettleton which will provide a safe transition from dual to single carriageway prior to construction of the Birdlip scheme, details of which are not yet known.



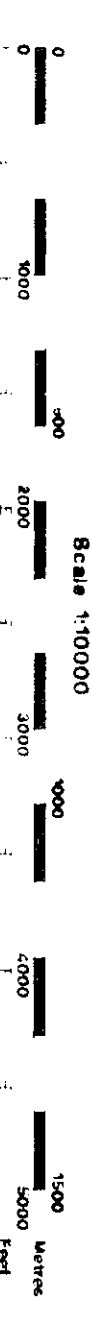


Published Route
Public Consultation
Route

Scheduled Ancient Monument
Site of Special Scientific Interest

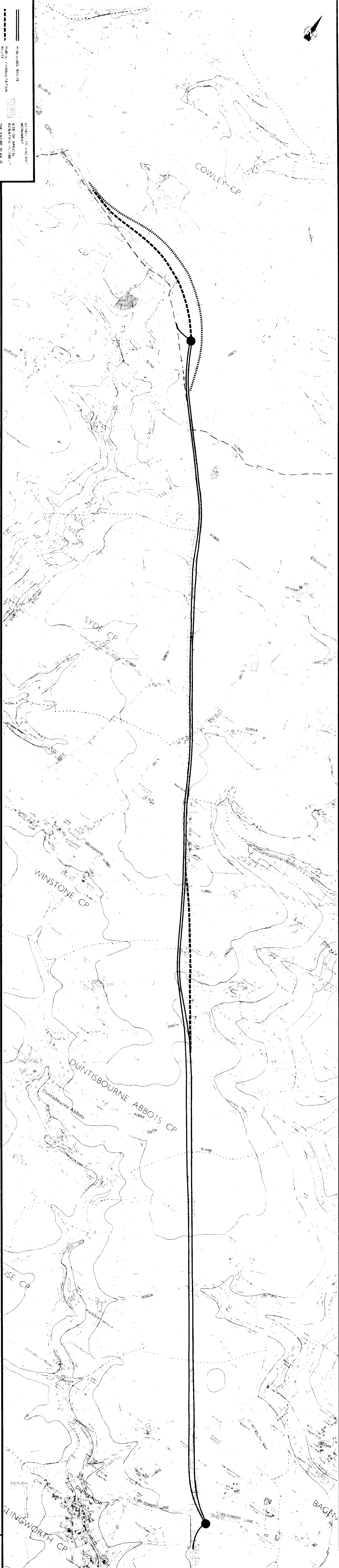
The entire plan is within the proposed natural beauty

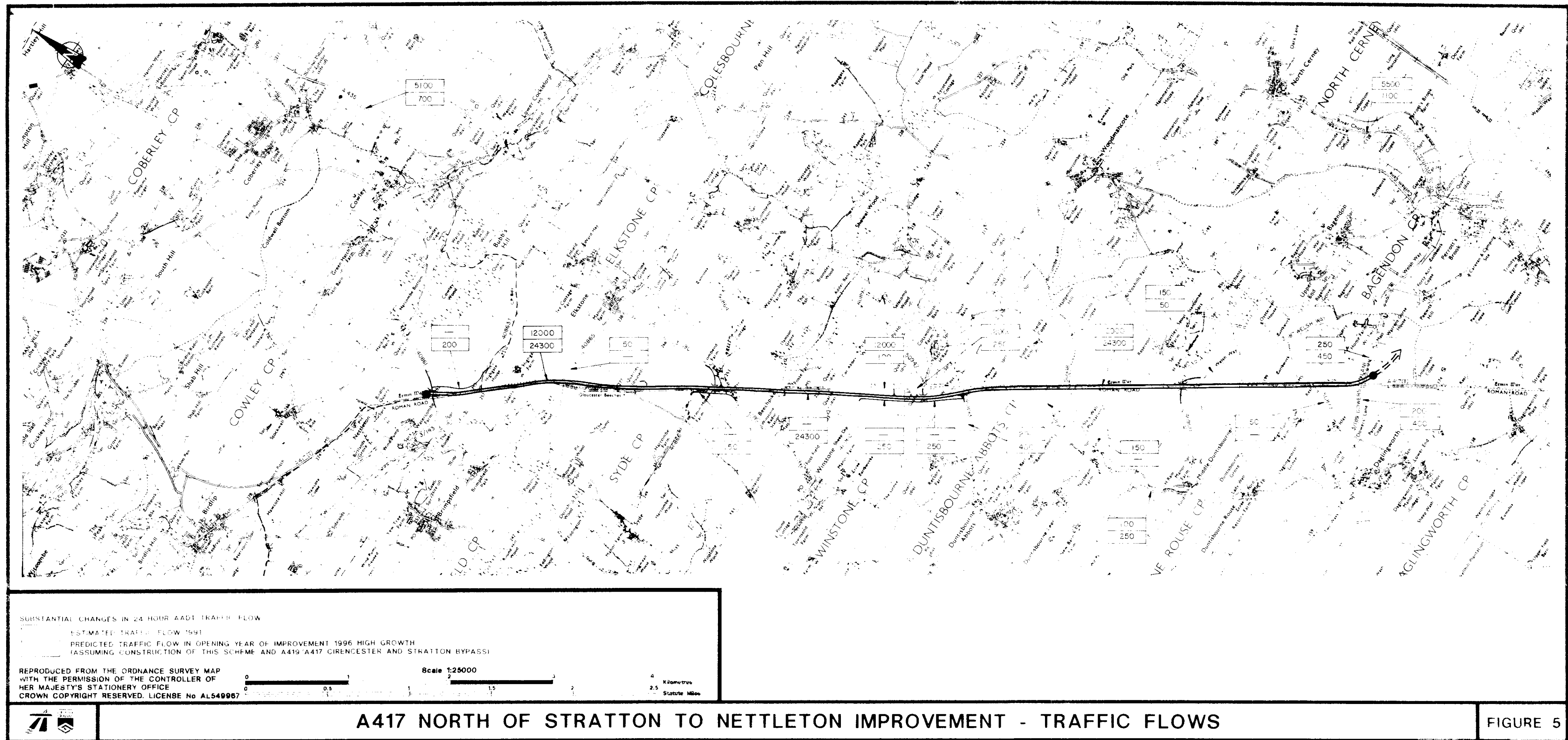
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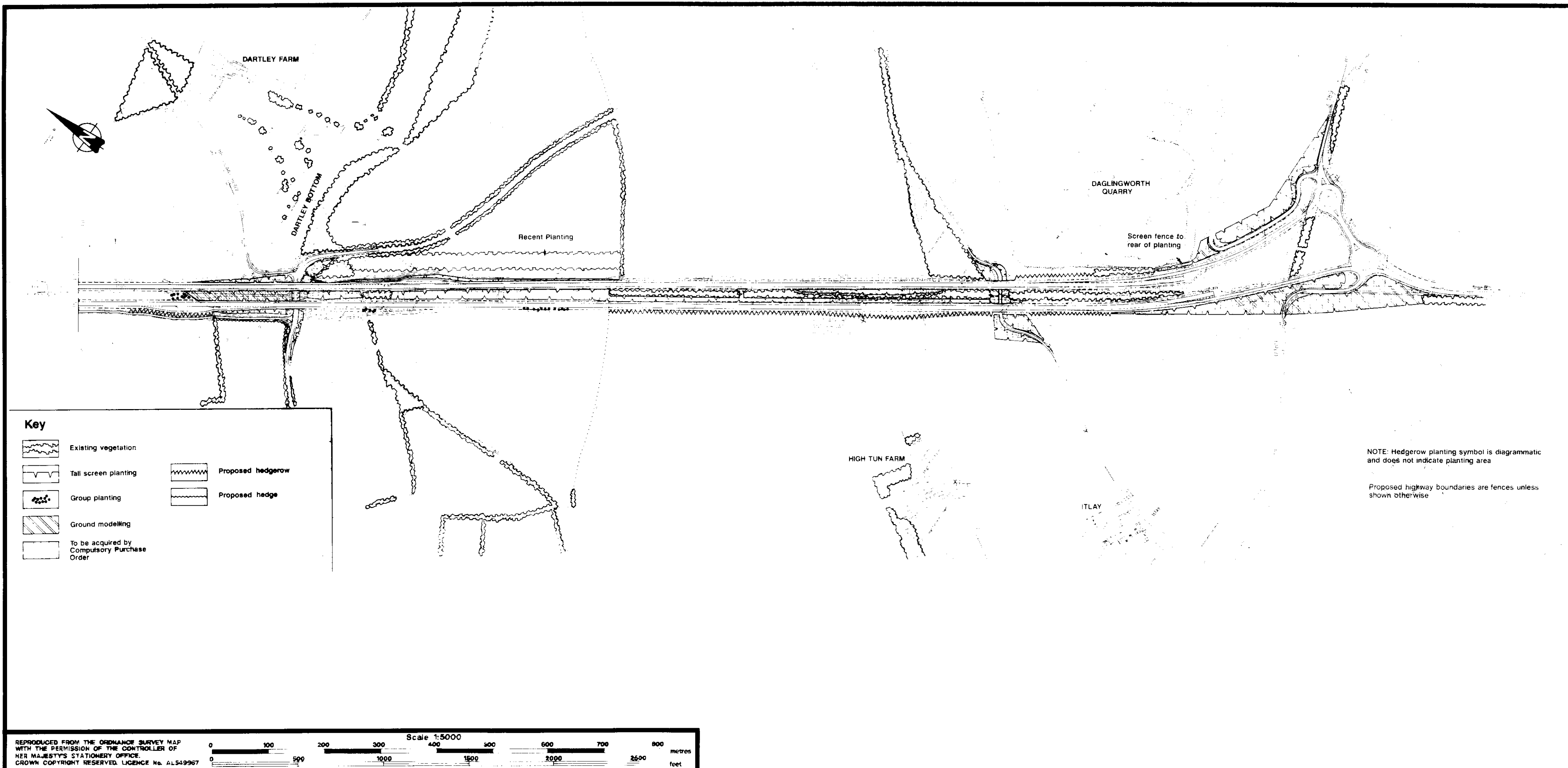
A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - ALTERNATIVE ROUTES AT PUBLIC CONSULTATION

FIGURE 6



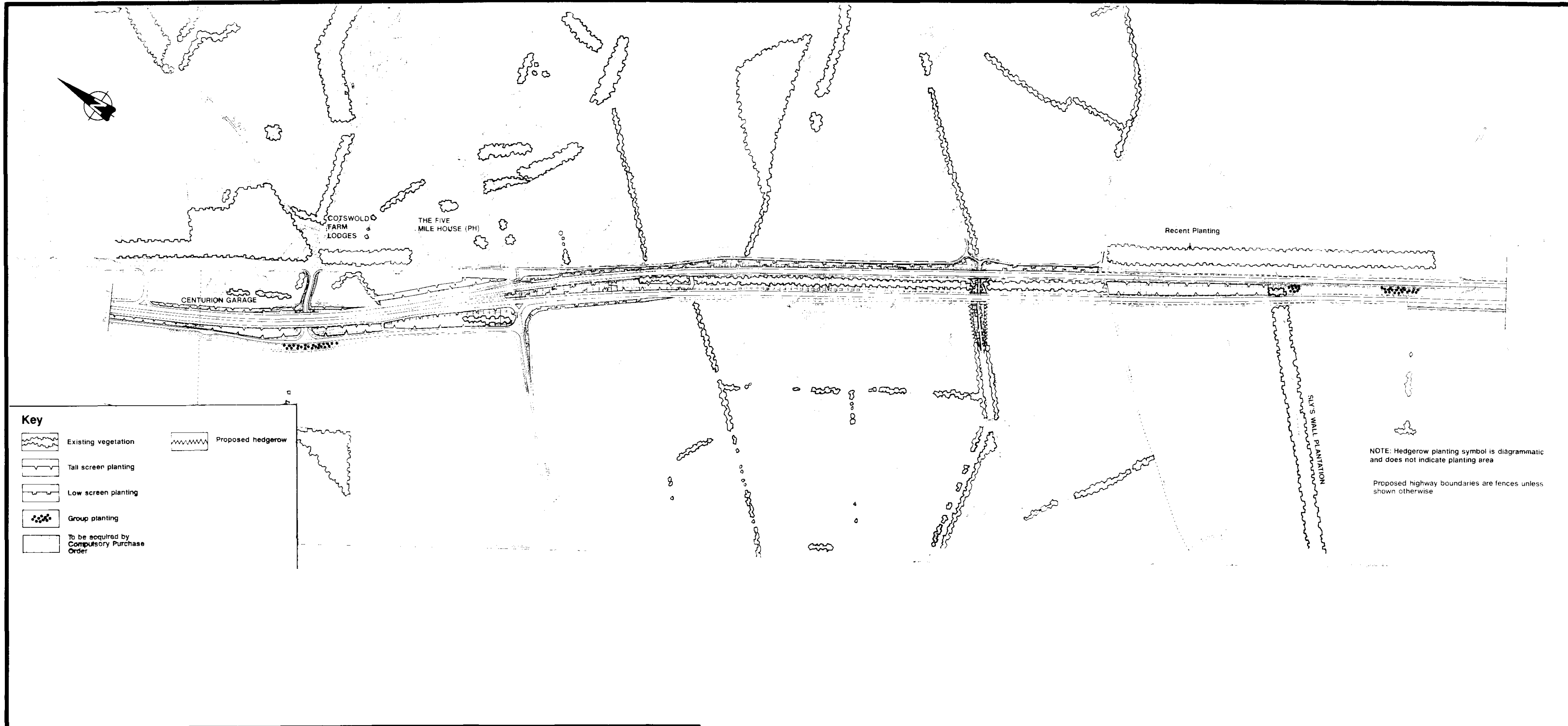


A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - TRAFFIC FLOWS



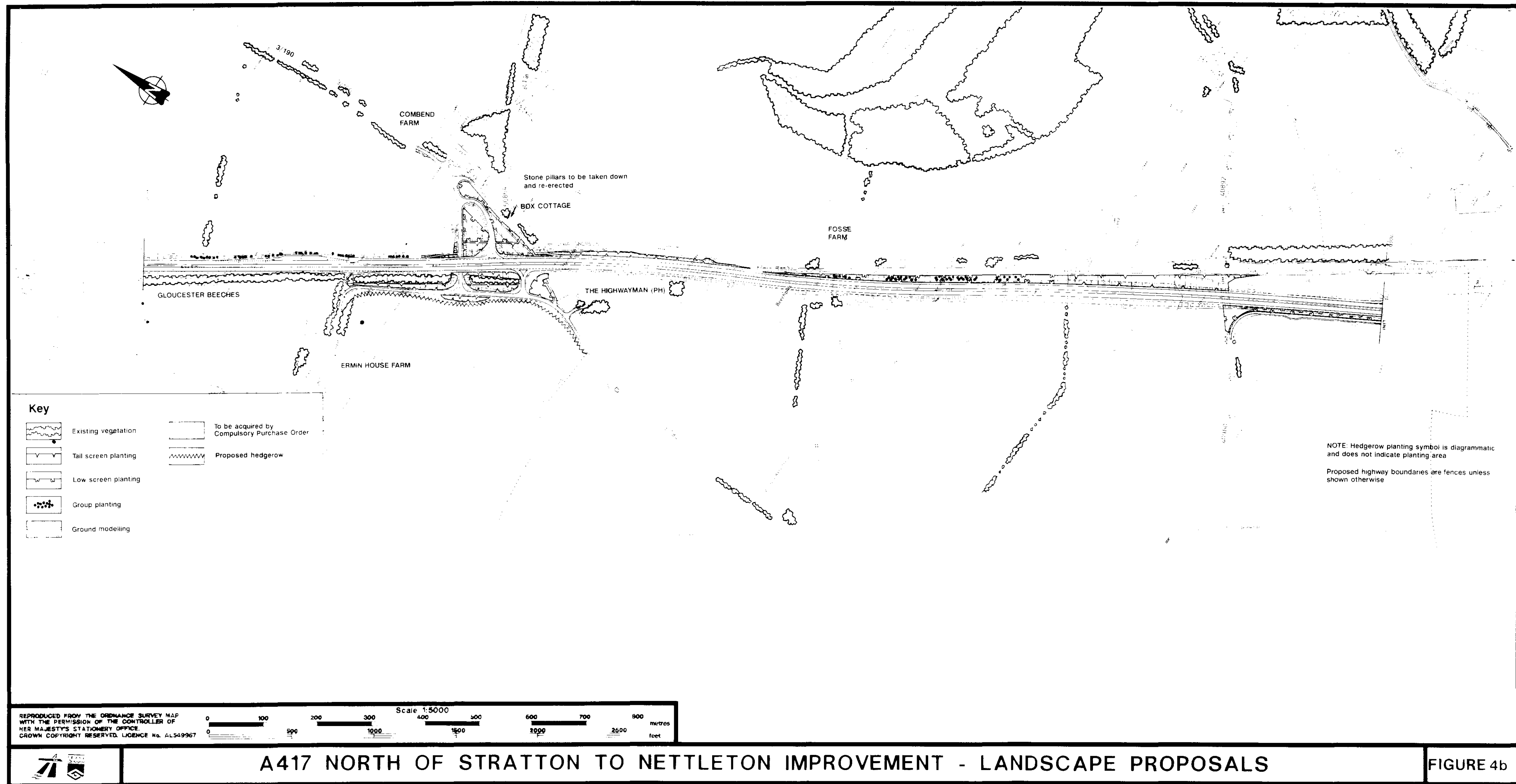
A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - LANDSCAPE PROPOSALS

FIGURE 4d



A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - LANDSCAPE PROPOSALS

FIGURE 4c





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A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - LANDSCAPE PROPOSALS

FIGURE 4a

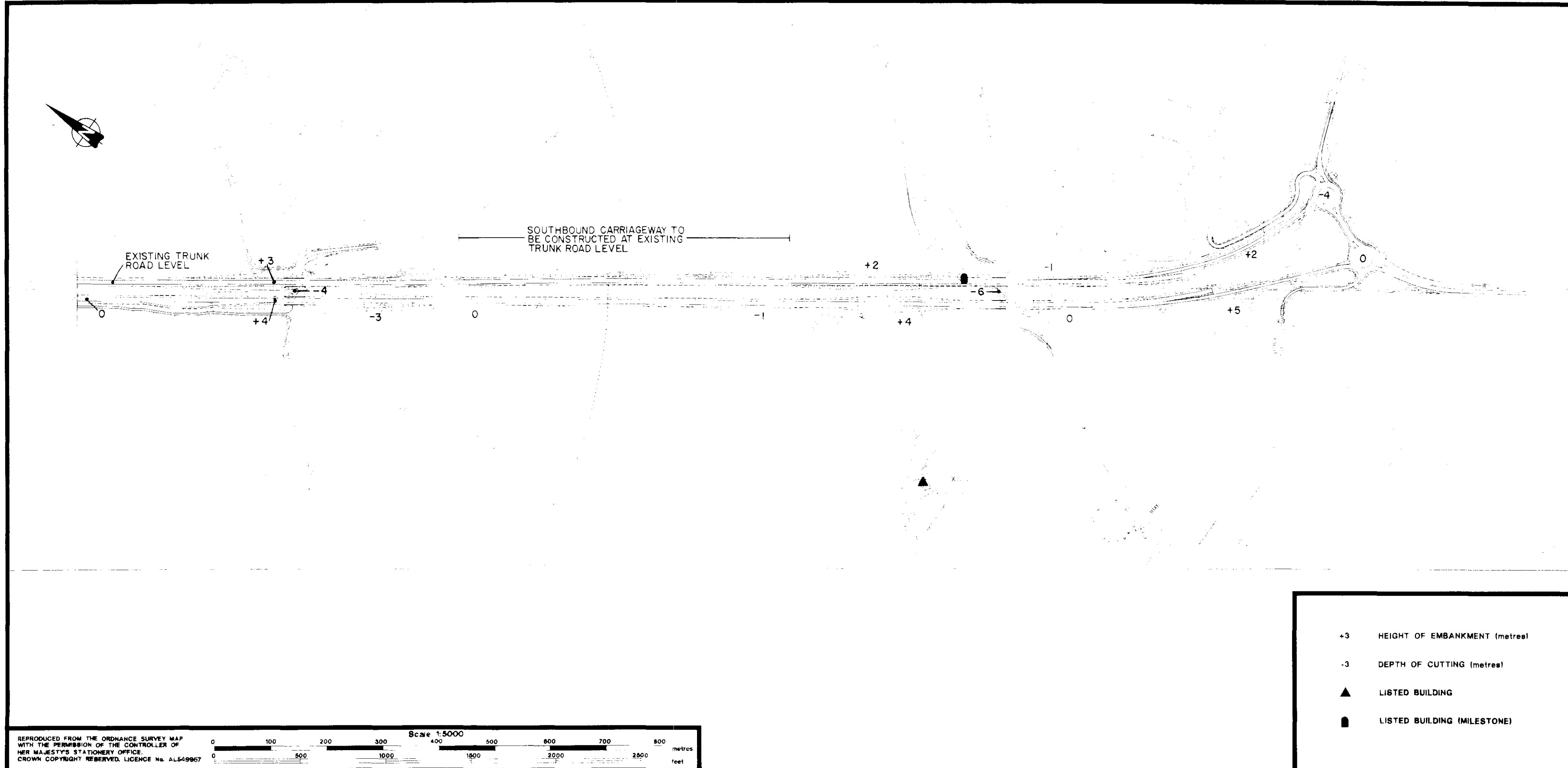
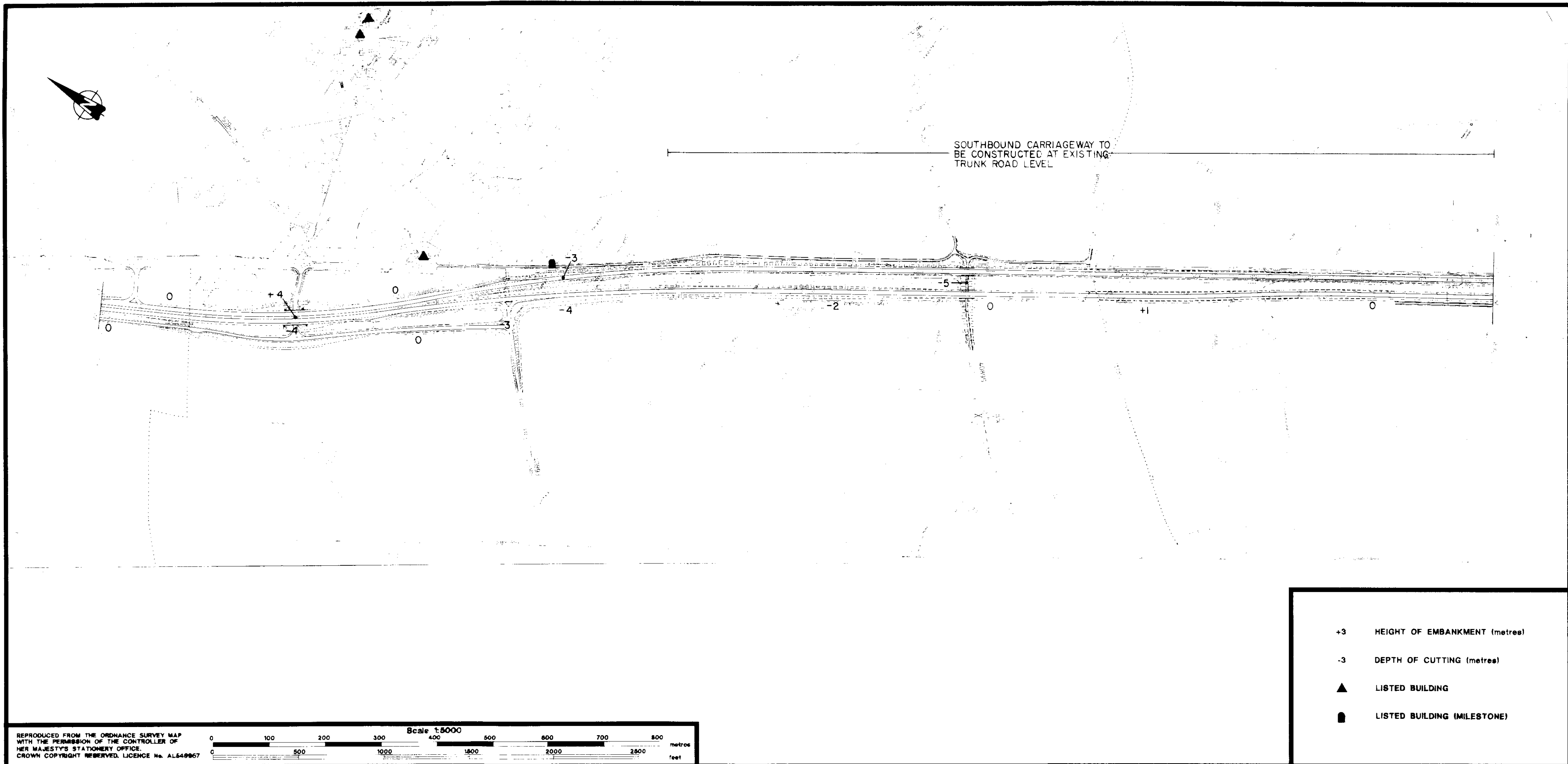


FIGURE 3d



A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - PUBLISHED ROUTE

FIGURE 3c



IMPROVEMENT TO BE CONSTRUCTED
AT EXISTING TRUNK ROAD LEVEL

-5

0

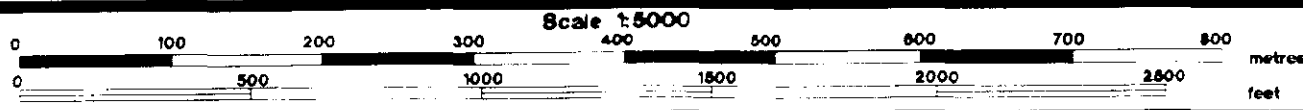
-3

0

5/30

- +3 HEIGHT OF EMBANKMENT (metres)
- 3 DEPTH OF CUTTING (metres)
- ▲ LISTED BUILDING
- LISTED BUILDING (MILESTONE)

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A417 NORTH OF STRATTON TO NETTLETON IMPROVEMENT - PUBLISHED ROUTE

FIGURE 3b

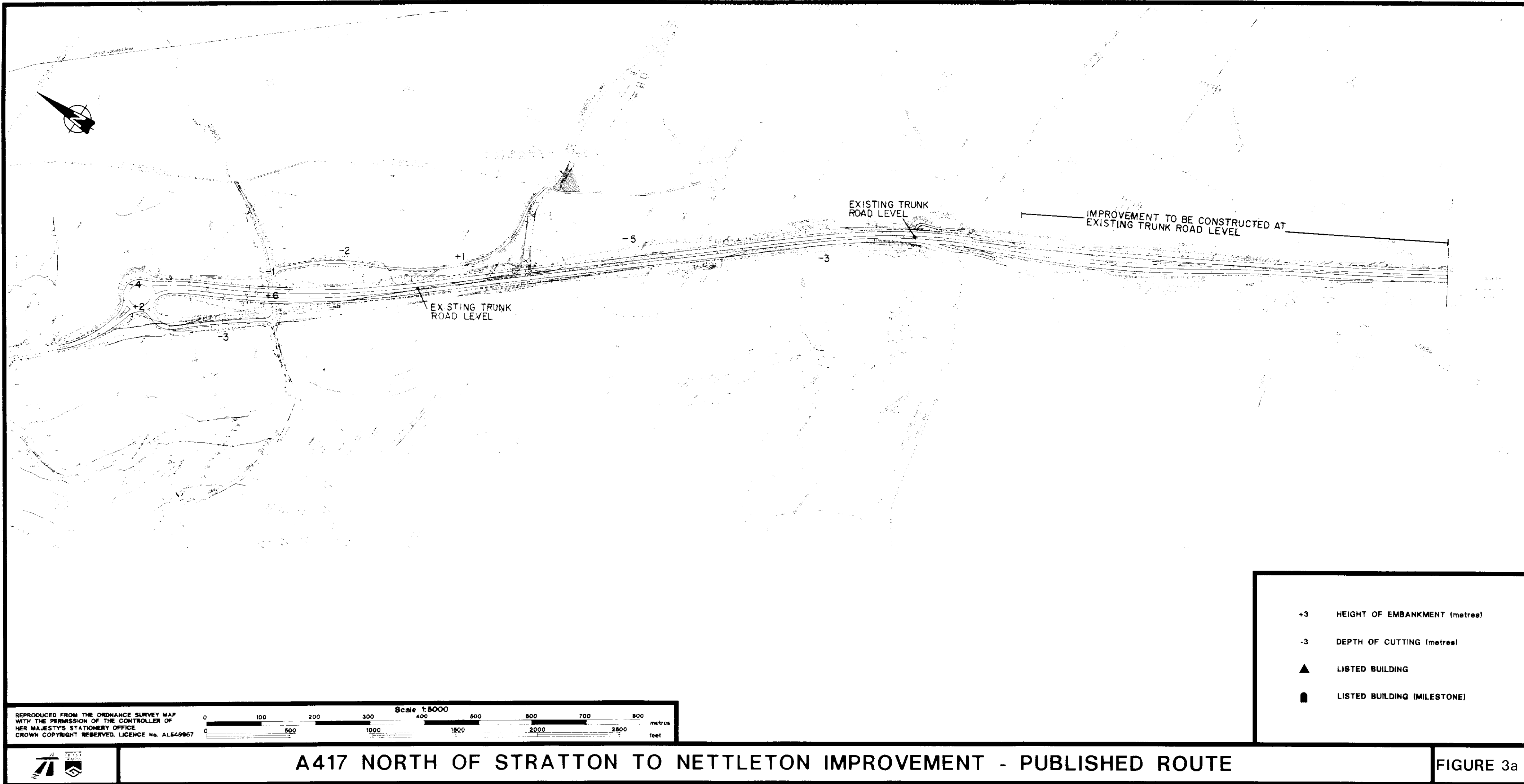


FIGURE 3a