Land to Rear of Paygrove Lane, Gloucester

Technical Note – Engineering

21-0760_TN002RevB

June 2022

1. Introduction

1.1 Cotswold Transport Planning Ltd (CTP) have been appointed by Cotswold Oak Ltd to provide an Engineering Technical Note (TN) in support of a reserved matters planning application for the residential development and associated open space on land to the rear of Paygrove Lane, Gloucester.

1.2 The application site benefits from outline planning permission, granted in December 2016 by GCC under LPA Ref: 16/01558/OUT, for the construction of up to 10 no. dwellings with associated parking and landscaping and public open space.

2. Site Location

2.1 The site consists of a 1.4ha playing field to the rear of 3 - 29 Paygrove Lane, Gloucestershire, which is located approximately 2.5km north-east of Gloucester City Centre.

2.2 A site location plan is contained in **Appendix A**.

3. Development Proposals

3.1 As mentioned above, outline planning permission for the erection of up to 10 dwellings, public open space and associated works was granted in 2016 (LPA ref: 16/01558/OUT).

3.2 The proposed site layout plan is included at **Appendix B**.

4. Existing Site Conditions

Topography

4.1 Refer to **Appendix C** for site topographical survey.

4.2 The site is predominantly flat with a gentle fall from the southwest boundary at 19.30m AOD to the northeast boundary at 18.80m AOD, with an average ground gradient of 1:300.

Ground Conditions

4.3 Infiltration testing was undertaken on site on 15-16th November 2018 and ground conditions found to be not suitable for soakaways as half drain times could not be achieved and high ground water present. Therefore, discharge to ground at source not possible.

Existing Drainage

4.4 There are no public sewer (Severn Trent) assets within the site boundary. A public foul rising main passes along Paygrove Lane. Existing public assets can be found in Leven Close to the south and College Fields to the north. Refer to Appendix D for ST records.

4.5 An existing Highways drain runs within the footpath of Paygrove Lane.

4.6 The nearest watercourse is the Horsbere Brook located approximately 200m to the east on third party land.

5. Proposed Drainage

Foul Drainage

5.1 Refer to **Appendix D** for Engineering Layout.

5.2 A gravity connection from the development to the public foul asset within College Fields is feasible with localised raising of ground levels and floor levels in the site.

5.3 Severn Trent Water have confirmed capacity within Leven Close and College Fields system. Refer to Appendix C for Severn Trent correspondence.

Surface Drainage

5.4 Refer to **Appendix D** for Engineering Layout.

5.5 In accordance with the SuDS hierarchy of surface water management the following should be considered, in order, for discharge of development surface water run off:

- Discharge to ground at source – soakaways
- Discharge to water body
- Discharge to a surface water sewer, highway drain, or another drainage system
- Discharge to existing combined drainage

5.6 Infiltration testing was undertaken confirms discharge to ground at source not possible.

5.7 The nearest watercourse is 200m to the east and a level analysis has shown a gravity connection is not feasible. The connection would also require third party land agreement. Therefore, discharge to watercourse not possible.

5.8 A storm connection to the existing Highways drain within the footpath of Paygrove Lane was explored but following a CCTV of the system the condition and capacity was found to be inadequate. Gloucestershire County Council Highways confirmed a connection to highways assets for this development will not be permitted.

5.9 A pumped connection from the development to the public storm asset within College Fields is feasible with attenuation required via a SuDS swale, which shall be designed to cater for the 1 in 100 year event with a 40% allowance for climate change.

5.10 Severn Trent Water have confirmed capacity within Leven Close and College Fields system. An allowable storm discharge rate of 2 l/s has been confirmed.

5.11 Refer to **Appendix E** for Calculations.

6. External Works

Access

6.1 Refer to **Appendix D** for Engineering Layout.

6.2 Access to plots to be in accordance with Building Regulations Part M – Category M4(1): Visitable dwellings.

6.3 Surface water from the highway will be collected by standard road gullies which connect to the proposed drainage system.

6.4 Highways to be of flexible construction comprising of asphalt surface finish..

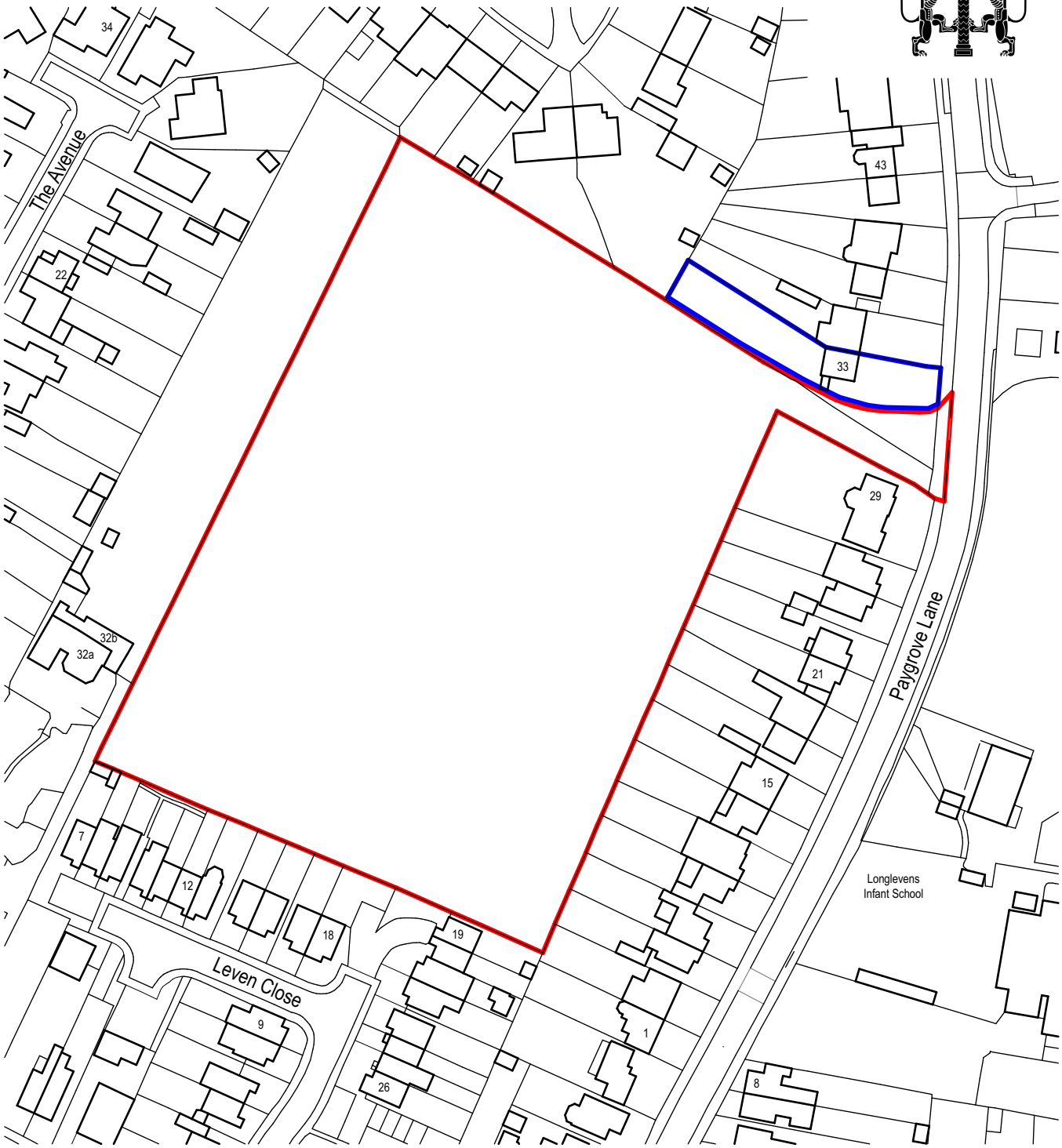
6.5 Finished floor levels to be set a minimum 150mm above external ground level.

APPENDIX A

Scale bar 1:1250
0 20 40 60

NORTH

RIBA
Chartered Practice



coombes : everitt architects limited
105-107 Bath Road
Cheltenham
Gloucestershire
GL53 7LE

[redacted]
www.ce-architects.co.uk

Drawing title:	Site Location Plan
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:1250 @ A4
Date:	November 2021
Project / Drawing No:	21.20.020 SK1000A

APPENDIX B

Existing chain-link and wire mesh fences retained to boundary

Parking spaces and Accessible bays to be demarked to define bays. Accessible bays to be marked with vertical sign to rear of space

Grasscrete, Geo-grid finishes or similar to LA approval to un-adopted access and parking spaces. Access and accessible spaces to be gravel filled, parking bays to be grass filled

Turning for cars

2.0m height restricting barrier (openable for maintenance) at entrance to POS parking area together with lockable (padlock) lower barrier to LPA specification, painted finish in Black to LAP approval

22 number demarked parking bays including 3 suitable for disabled use, finished in paviors, and 19 finished in grasscrete blocks

3.0m wide gate with padlock to LA approval for maintenance access to POS

1.2m high, five rail metal estate railings with black painted finish to boundary of playing field. 'X' indicates 1.2m wide gap to permit pedestrian access to POS

Pedestrian pass gate within estate railings to facilitate foot access to playing field

Existing chain-link fence retained to boundary

Area for playing field with space for potential pitches as per Outline Approval to be cleared of existing planting and weeds, graded to a level finish, and harrowed to a fine tilth, prior to re-seeding with a grass mix suitable for amature playing pitches. Specification to be as agreed with Gloucester City Council

Existing tree planting to site boundaries to be retained as existing and indicated thus

Existing chain-link fence retained to boundary

Existing hedgerow planting to boundary (shown hatched) to be reinforced to form dense planted hedgerow to POS boundaries. Refer to details by MHP landscape consultants

1.2m high, five rail metal estate railings with black painted finish to boundary of playing field

Storm water attenuation basin to design and specification by Cotswold Transport Planning

Access road to be offered for adoption to approval of Gloucestershire County Highways, refer to details by Cotswold Transport Planning

Low hedgerow to POS boundary to allow natural surveillance over space from adjacent houses. Refer to specification by MHP landscape consultants

Turning head for service and emergency vehicles

Visitor parking finished in setts within highway

Existing chain-link fence retained to boundary

1.8m high close boarded fence to boundary at end of access

Replace existing close boarded timber fence with new acoustic timber fence to LPA approval; all at developers expense and with approval of property owner

Brick boundary wall 2.0m high with brick-on-edge coping to match house finishes

Replace existing close boarded timber fence with new acoustic timber fence to LPA approval; all at developers expense and with approval of property owner

tactile paving at pedestrian crossing point

1.8cb indicates 1.8m high close board timber fence to rear plot boundaries and plot sub-divisions. Rear boundary fences erected on development site and without removing neighbouring boundary treatments

Trees to be removed shown dotted

Paths and patios out of 0.6x0.6m pcc slabes laid to falls to drain to adjacent soft landscaping

On plot bin storage

Landscape and Finishes Legend

FFL 19.350 — Proposed floor level

T — Tarmac finishes to highway and drives

PT — Permeable Tarmac finishes to drives

P — PCC block paviors, charcoal grey to GCH / LPA approval

G — Grasscrete block paving

Paths and patios formed out of 600x600x40mm pcc buff riven paving slabs by Tobermore laided over 100mm concrete oversite and drained to adjacent soft landscaped areas.

Russell Bute roof tile Anthracite

Brick - Ibstock Forterra Chelsea Smoked Red

Brick - Ibstock Forterra Atherstone Red Multi

Turf — Areas prepared and laid to turf

Areas prepared and seeded to form playing field

pg — Pea gravel lain over weed supressing membrane

Prepared and planted borders with individual specimen shrub planting

Existing boundary planting retained and reinforced as necessary. Refer to specification by MHP landscape consultants

New hedgerow planting. Refer to specification by MHP landscape consultants

Existing trees to be retained

New tree planting

Trees to be removed

16 Amp power supply to facilitate electric vehicle charge point.

1.8m high close board timber fence with solid timber gates fitted with bolts top and bottom and lock operable from both sides
* indicates 130x130mm hole formed at ground level to provide access for hedgehogs between plots and through boundary

Black painted, five bar estate railings to demark residential development + pedestrian / maintenance pass gate as indicated

2.0m high acoustic fence - 12k Envirofence Jacksons Fencing

B — Paved hardstanding for on plot bin storage. Collection from kerbside to LA regime

Ecological enhancement in accordance with report by All Ecology
Ibstock Enclosed bat box 'C'
2 x Schwegler single nest for House Martins No.13
Schwegler bird home 1B

(B) — Duel use litter / dog waste bin to LA specification.
Wybone MLB112 galvanised steel bin, powder coated black (RAL 9005), pitched lid, litter and dog waste logo in gold applied to two sides, GCC logo applied to two sides, four standard litter apertures
NB In accordance with GCC requirements, temporary signage will be provided adjacent to each bin confirming developer's management co. details as point of contact for collection issues until formally adopted by GCC

(S) — Steel and recyled plastic bench. Wybone RPS/5 steel framed bench painted black (RAL 9005) with brown recyled slats

Trees

AC — Acer Campestre 'streetwise' (Field Maple)

SA — Sorbus Aria (Whitebeam)

PA — Prunus Avium (Cherry)

QR — Quercus Robur (Oak)

All trees and shrubs will conform to the specification for nursery stock as set out in British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees shall conform to BS 5236.
Trees to be 'feathered' 2m high with 5-8cm girth and staked to a height of 750mm and planted in 1.0x1.0m prepared tree pits incorporating 80 litres of TPMC and slow release fertiliser. Roots to be dipped in mycorrhizal inocculant immediately prior to planting.

Planting Notes

Ground preparation and planting works to include:
Excavate planting areas to a minimum depth of 600mm and remove all unsuitable material from site
Ensure / supply and spread 400mm depth of approved topsoil in areas to be planted. Light harrow to provide a fine tilth.
Collect and remove from areas to be planted or turfed all stones greater than 50mm in any dimension.
Supply and plant shrubs incorporating 20g / plant of slow release fertilizer into the backfill.
Provide and spread evenly over planting areas 75mm depth of coarse grade bark mulch.

Planted Borders

To be planted in groups of 3, 5, 7 per box in a random mix at a rate of 5 plants per sq/m

Type (i)	%
Cotoneaster Dameri	20
Berberis Candidula	25
Hedera Colchica Denata Veriegata	15
Mahonia Aquifolium	20
Spirea Japonica Bullata	20

Type (ii)	%
Cornus Canadensis	25
Euonymus Fortunei Radicans	25
Pachysandra Terminalis Veriegata	20
Vinca Major Variegata	20
Hedera Hibernica	10

Specimen Shrub Planting

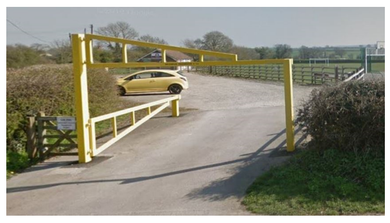
Individual container grown specimen shrubs (minimum 3 litre) shown thus

BD	Berberis Darwinii
CT	Choisya Ternata
FO	Forsythia Ovata
IQ	Ilex Aquifolium Golden Queen
IK	Ilex Altaclerensis Golden King
PV	Philadelphus Virginal
VA	Viburnum Aurora

2.0m high 12k Envirofence - acoustic fence

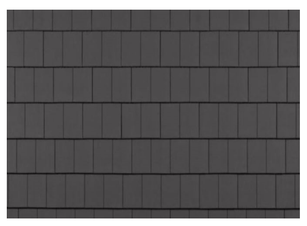
1.8m high close board fence

Ibstock Forterra Chelsea Smoked Red brick



Typical detail for barrier to POS parking space
Height restricted to 2.0m by barrier openable for maintenance traffic only, lower padlockable swing barrier.

1.2m high estate railings and gate



Russell Bute roof tile - anthracite

Ibstock Forterra Atherstone Red Multi

coombes : everitt architects limited
105-107 Bath Road
Cheltenham
Gloucestershire
GL53 7LE
[redacted]

- [ ] Preliminary
- [ ] Feasibility
- [x] Planning
- [ ] Building Regulations
- [ ] Tender
- [ ] Construction issue
- [ ] As Built

RIBA Chartered Practice

Revison

A	03/2022	AH	Hedgerow mix amended
B	03/2022	AH	Proposed layout plan to accord with access indicated on Outline approval
C	03/2022	AH	Access for hedgehogs indicated to new boundary fences
D	04/2022	AH	Ecological enhancement for birds and bats added, in accordance with report by All Ecology
E	05/2022	AH	Revisions to LPA comment
F	06/2022	AH	Surfaces to parking and barrier to POS noted
G	06/2022	AH	Permeable tarmac finishes to drives
H	06/2022	AH	Additional tarmace finishes at entrance to POS parking
I	06/2022	AH	Attenuation area up-dated to Engineering layout

Drawing title: Materials Distribution and Landscaping

Client: Cotswold Oak Ltd

Drawn by: AH Checked: JE

Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens

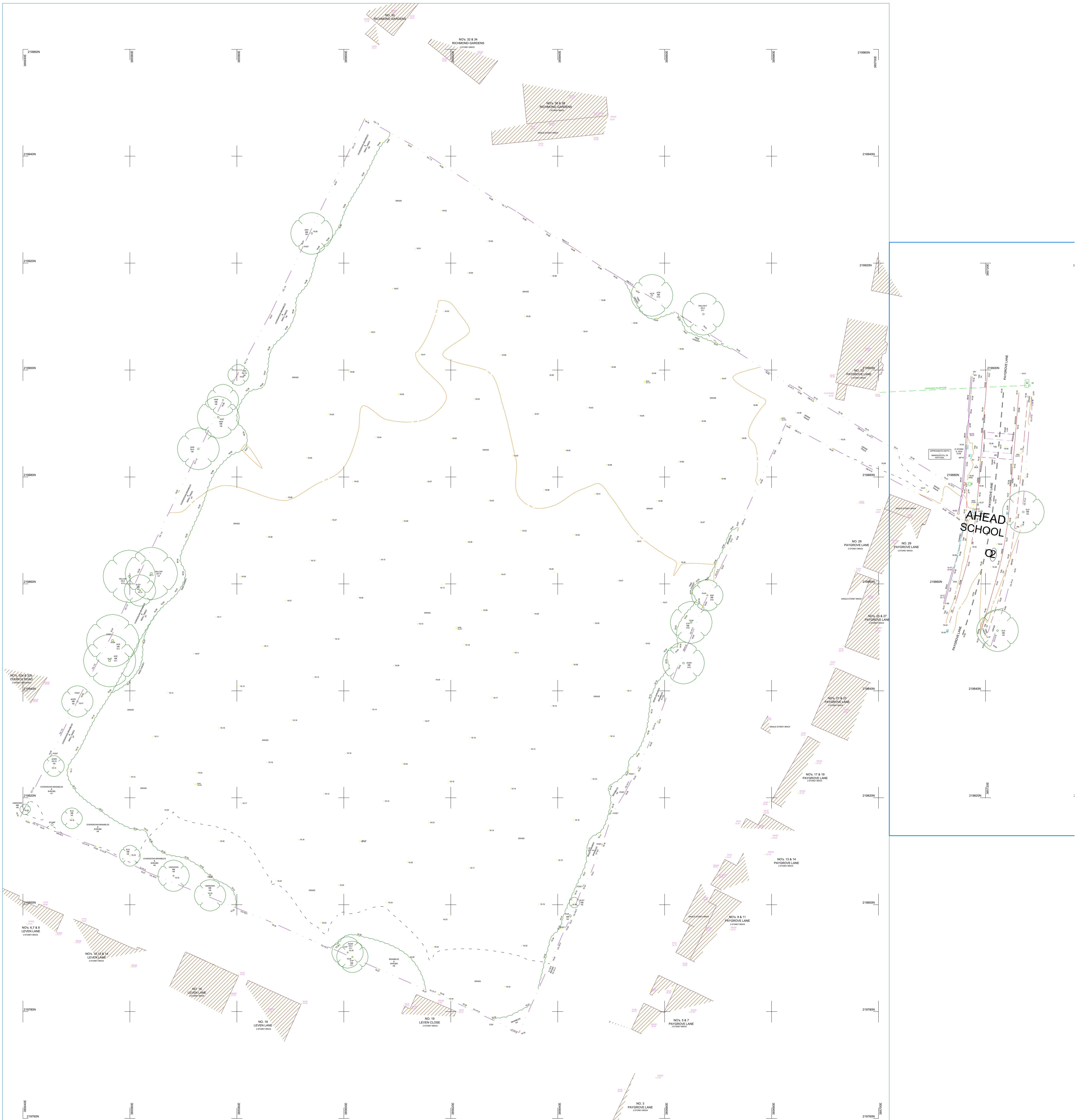
Scale: 1:250 @ A1

Date: January 2022

Project / Drawing No: 21.20.020 PL006 I

coombes : everitt architects

APPENDIX C



Notes

- Datum : Ordnance Survey Level datum via OS Active GPS Network
- Survey Grid : Pseudo-Ordnance Survey National Grid Co-ordinates derived via OS Active GPS Network. Scale Factor Unity.
- Survey contents correct as of date of survey and survey undertaken to agreed specification
- All critical dimensions to be checked prior to site works
- All kerb levels shown are channel levels
- Drainage and Service covers :
  Covers buried or obscured at the time of the survey are not shown. Manholes have not been entered for safety reasons and all pipe diameters are estimated from the surface. Drainage pipe diameters are in millimetres, eg. D100 means a 100mm diameter pipe. The flow type stated is based on visual evidence seen from the surface at the time of the survey. All internal manhole details should be confirmed by the contractor on site prior to site works.
- Trees :
  For concentric spread trees the spread plotted is an average value drawn to scale to the nearest metre. The minimum individual diameter surveyed is 0.15m at 1m up the trunk from the ground. Trunk diameters are not plotted to size. General species are only stated where noted. A qualified arboriculturalist should be consulted for species type and condition. Heights (when requested) are approximate to the nearest metre.

Legend of Abbreviations

AV	Air Valve	FLP	Floodlight Post	SCK	Stop Cock
BEDS	Flower Beds	FP	Footpath	SOF	Soffit Level
BK/W	Brick Wall	G	Gully	ST/W	Stone Wall
BLK/W	Block Wall	GV	Gas Valve	SV	Sluice Valve
BOL	Bollard	HW	Head Wall	SVP	Soil Vent Pipe
BS	Brick Setts	IC	Inspection Cover	TEL	Call Box (telephone)
BT	British Telecom	IL	Invert Level	TH	Threshold Level
BW	Barbed Wire Fence	IR	Iron Railing	TL	Traffic Light
CB	Close Board Fence	LL	Larch-lap Fence	TP	Telegraph Pole
CCTV	Closed Circuit Television Camera	LP	Lamp Post	TV	Cable Television
CELL	Cellar Cover	MB	Multibole Tree	UTL	Unable to Lift (Cover)
CGI	Corrugated Iron Fence	MH	Manhole	V	Valve (Unknown Type)
CL	Cover Level	MP	Marker Post	VP	Vent Pipe
C/L	Chain Link Fence	MP-E	Marker Post - Electric	W-HT	Top of Wall Level
CONC	Concrete Surface	MP-G	Marker Post - Gas	WL	Water Level
CONC/P	Concrete Panel Fence	MP-T	Marker Post - Telephone	WM	Water Meter
CP	Chestnut Paling Fence	MP-W	Marker Post - Water	W/M	Wire Mesh Fence
CRB	Crash Barrier	NAME	Road Nameplate	WO	Washout Valve
D	Diameter (trees in metres / drainage pipes in millimetres)	PAL	Palisade Fence	WV	Water Valve
DK	Drop Kerb	POK	Top of Kerb Level		
E	Electricity Cover	PR	Post and Rail Fence		
EP	Electricity Pole	PW	Post and Wire Fence		
ER	Earth Rod	RE	Rodding Eye		
FFL	Finished Floor Level	RET	Retaining		
FH	Fire Hydrant	RS	Road Sign		
FLAG	Flag Pole	RWP	Rainwater Pipe		

Tree Abbreviations

ALD	Alder
BCH	Beech
CED	Cedar
CHE	Cherry
CYP	Cypress
EUC	Eucalyptus
FAC	False Acacia
FRT	Fruit
HAW	Hawthorn
HOL	Holly
HOAK	Holm Oak
HORN	Hornbeam
HCH	Horse Chestnut
LAR	Larch
LAU	Laurel
MAP	Maple
PLN	London Plane
POP	Poplar
RHO	Rhododendron
ROW	Rowan
SAL	Sallow
SB	Silver Birch
SPR	Spruce
SCH	Sweet Chestnut
WBM	Whitebeam
WIL	Willow

Survey Stations

Station	Easting	Northing	Level
GPS1	385681.615	219890.823	19.079
S001	385726.638	219884.553	19.474
S002	385717.727	219874.906	19.492
S03A	385656.231	219897.779	19.118
S03B	385621.055	219851.695	19.271
S03C	385572.349	219822.509	19.453

4900-07NOV16-01

4900-07NOV16-02

A D Horner Limited

Land and Measured Building Surveyors

51 Bridge Street
Pershore
Worcestershire
WR10 1AL
~~~~~
Telephone: 01386-555486

1 Folly House
Venton
Plymouth, Devon
PL7 5DS
~~~~~
Telephone: 01752-837382

Website: www.adhorner.co.uk
E-mail: enquiries@adhorner.co.uk

Title: Land r/o No.'s 3-29 Paygrove Lane, Longlevens, Gloucester GL2 0AP

Client: Gloucestershire County Council

Date: November 2016

Drawing No: 4900-07NOV16-01

Plot scale: 1 : 250 @ A0
Digital scale: 1 CAD unit : 1 metre

Revision

Surveyed: LM

Checked

0 metres 10

N
Ordnance Survey Grid North

PRELIMINARY

APPENDIX D

PROPOSED PRIVATE PACKAGE PUMPING STATION.
PACKAGE PUMPING STATION TO BE TT PUMPS SATURN DUAL PUMP OR SIMILAR APPROVED PRODUCT.
DISCHARGE TO STW SURFACE WATER NETWORK AT 2l/s.
DISCHARGE RATE TO BE CONFIRMED BY STW.

3m x 3m LINED UNDERDRAINED RAIN GARDEN

FOR ACCESS LEVELS AND DETAILS SEE DRAWING CTP-0100-001 GENERAL ARRANGEMENT

INLETS VIA ACO SUDS SWALE INLETS

ATTENUATION CRATE UNDER SWALE FOR ADDITIONAL STORAGE 33m x 7m x 0.4m DEEP IL 17.38

INDICATIVE

Notes:

1. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
2. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
3. Drawing to be read in conjunction with all other drawings. Any discrepancies are to be reported to the engineer 5 working days in advance of undertaking any work.
4. All pipework to be 100Ø PVC UNO
5. All chambers to be 450Ø Type D Chambers UNO. Chambers marked with diameter to be Type B Chambers (except chamber at pump).

KEY

- SURFACE WATER MANHOLE AND SEWER
- FOUL WATER MANHOLE AND SEWER
- HIGHWAY GULLY AND CONNECTION
- DIFFUSER BOX AND CONNECTION
- 18.450 — FINISHED FLOOR LEVELS
- SWALE
- +19.15 — PROPOSED LEVEL
- RISING MAIN
- HEADWALL
- 1/39 — GRADIENT
- UNDERBUILD (WITH HEIGHT)
- ATTENUATION CRATE
- RAINWATER GARDEN

Rev	Date	Details	Drawn by	Checked by
D	27.06.22	UPDATE FOLLOWING GCC COMMENTS	PG	KT
C	14.06.22	SWALE AMENDED	PG	KT
B	13.05.22	ARCHITECT AND DRAINAGE LAYOUT UPDATED	TB	KT
A	16.02.22	ROAD AND LAYOUT AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Engineering Layout Sheet 1

STATUS: INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:250	26/01/2022	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-0760	C002	D

INLETS VIA ACO SUDS SWALE INLETS

ATTENUATION CRATE UNDER SWALE FOR ADDITIONAL STORAGE 33m x 7m x 0.4m DEEP IL 17.38

1:200

1:200

Paygrove Lane

Leven Close

Longlevens Infant School

INDICATIVE

Notes:

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KEY

- SURFACE WATER MANHOLE AND SEWER
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- RAINWATER GARDEN

Rev	Date	Details	Drawn by	Checked by
D	27.06.22	AMENDED FOLLOWING GCC COMMENTS	PG	KT
C	14.06.22	SWALE AMENDED	PG	KT
B	13.05.22	ARCHITECT AND DRAINAGE LAYOUT UPDATED	TB	KT
A	16/02/22	RAOD AND LAYOUT AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Engineering Layout Sheet 2

STATUS: INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:250	26/01/2022	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-0760	C003	D

APPENDIX E

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1206 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	18.405	1.025	0.0	2.0	2.0	105.7	O K
30 min Summer	18.575	1.195	0.0	2.0	2.0	141.6	O K
60 min Summer	18.695	1.315	0.0	2.0	2.0	180.0	Flood Risk
120 min Summer	18.792	1.412	0.0	2.0	2.0	219.1	Flood Risk
180 min Summer	18.839	1.459	0.0	2.0	2.0	240.4	Flood Risk
240 min Summer	18.866	1.486	0.0	2.0	2.0	253.7	Flood Risk
360 min Summer	18.895	1.515	0.0	2.0	2.0	268.4	Flood Risk
480 min Summer	18.911	1.531	0.0	2.0	2.0	276.7	Flood Risk
600 min Summer	18.919	1.539	0.0	2.0	2.0	280.7	Flood Risk
720 min Summer	18.921	1.541	0.0	2.0	2.0	281.9	Flood Risk
960 min Summer	18.915	1.535	0.0	2.0	2.0	278.8	Flood Risk
1440 min Summer	18.888	1.508	0.0	2.0	2.0	264.8	Flood Risk
2160 min Summer	18.857	1.477	0.0	2.0	2.0	249.0	Flood Risk
2880 min Summer	18.828	1.448	0.0	2.0	2.0	235.3	Flood Risk
4320 min Summer	18.767	1.387	0.0	2.0	2.0	208.6	Flood Risk
5760 min Summer	18.702	1.322	0.0	2.0	2.0	182.5	Flood Risk
7200 min Summer	18.629	1.249	0.0	2.0	2.0	157.5	O K
8640 min Summer	18.547	1.167	0.0	2.0	2.0	134.1	O K
10080 min Summer	18.448	1.068	0.0	2.0	2.0	112.6	O K
15 min Winter	18.406	1.026	0.0	2.0	2.0	105.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	117.448	0.0	108.8	26
30 min Summer	79.010	0.0	146.5	41
60 min Summer	50.812	0.0	188.4	70
120 min Summer	31.621	0.0	234.7	130
180 min Summer	23.637	0.0	263.0	188
240 min Summer	19.105	0.0	283.6	248
360 min Summer	14.037	0.0	312.5	366
480 min Summer	11.286	0.0	335.0	486
600 min Summer	9.522	0.0	345.3	604
720 min Summer	8.282	0.0	345.2	724
960 min Summer	6.640	0.0	345.1	962
1440 min Summer	4.854	0.0	342.3	1238
2160 min Summer	3.541	0.0	472.9	1604
2880 min Summer	2.828	0.0	503.7	1996
4320 min Summer	2.055	0.0	548.9	2816
5760 min Summer	1.637	0.0	583.0	3632
7200 min Summer	1.371	0.0	610.7	4400
8640 min Summer	1.186	0.0	633.4	5192
10080 min Summer	1.049	0.0	654.0	5944
15 min Winter	117.448	0.0	108.8	26

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	18.575	1.195	0.0	2.0	2.0	141.7	O K
60 min Winter	18.695	1.315	0.0	2.0	2.0	180.3	Flood Risk
120 min Winter	18.793	1.413	0.0	2.0	2.0	219.5	Flood Risk
180 min Winter	18.840	1.460	0.0	2.0	2.0	241.1	Flood Risk
240 min Winter	18.868	1.488	0.0	2.0	2.0	254.6	Flood Risk
360 min Winter	18.898	1.518	0.0	2.0	2.0	269.7	Flood Risk
480 min Winter	18.914	1.534	0.0	2.0	2.0	278.4	Flood Risk
600 min Winter	18.923	1.543	0.0	2.0	2.0	282.9	Flood Risk
720 min Winter	18.926	1.546	0.0	2.0	2.0	284.7	Flood Risk
960 min Winter	18.923	1.543	0.0	2.0	2.0	283.1	Flood Risk
1440 min Winter	18.896	1.516	0.0	2.0	2.0	268.8	Flood Risk
2160 min Winter	18.854	1.474	0.0	2.0	2.0	247.5	Flood Risk
2880 min Winter	18.813	1.433	0.0	2.0	2.0	228.3	Flood Risk
4320 min Winter	18.716	1.336	0.0	2.0	2.0	187.9	Flood Risk
5760 min Winter	18.599	1.219	0.0	2.0	2.0	148.6	O K
7200 min Winter	18.446	1.066	0.0	2.0	2.0	112.4	O K
8640 min Winter	17.745	0.365	0.0	2.0	2.0	80.0	O K
10080 min Winter	17.618	0.238	0.0	2.0	2.0	52.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	79.010	0.0	146.6	41
60 min Winter	50.812	0.0	188.5	70
120 min Winter	31.621	0.0	234.7	128
180 min Winter	23.637	0.0	263.1	186
240 min Winter	19.105	0.0	283.6	244
360 min Winter	14.037	0.0	312.4	360
480 min Winter	11.286	0.0	334.9	476
600 min Winter	9.522	0.0	344.2	590
720 min Winter	8.282	0.0	343.8	706
960 min Winter	6.640	0.0	342.9	928
1440 min Winter	4.854	0.0	340.3	1348
2160 min Winter	3.541	0.0	473.2	1672
2880 min Winter	2.828	0.0	503.4	2132
4320 min Winter	2.055	0.0	549.2	3024
5760 min Winter	1.637	0.0	582.6	3856
7200 min Winter	1.371	0.0	610.1	4616
8640 min Winter	1.186	0.0	633.0	5360
10080 min Winter	1.049	0.0	653.9	6048

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	1.000
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.371

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	0.124	4	8	0.124	8	12	0.124

Model Details

Storage is Online Cover Level (m) 18.930

Complex Structure

Cellular Storage

Invert Level (m) 17.380 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	231.0	0.0	0.401	0.1	0.0
0.400	231.0	0.0			

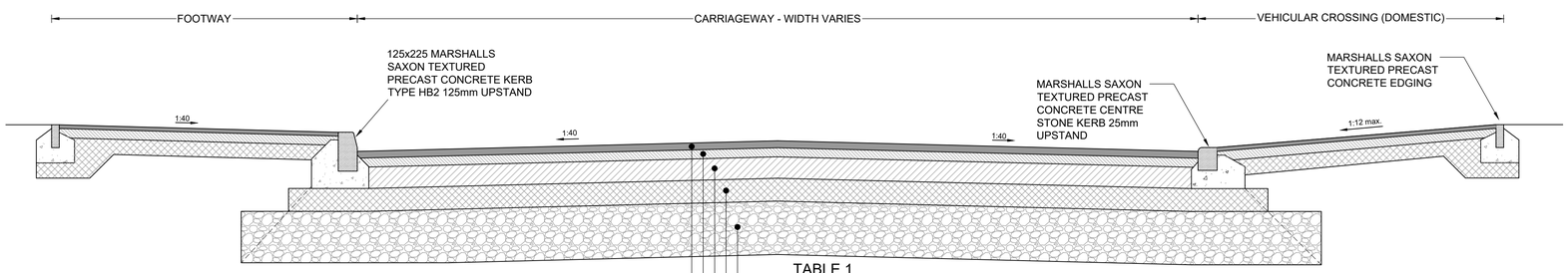
Swale

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	75.0
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	5.0
Safety Factor	2.0	Slope (1:X)	200.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	18.080	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.6		

Pump Outflow Control

Invert Level (m) 17.150

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		



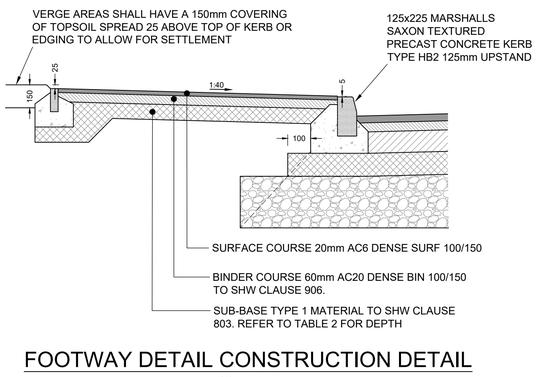
CARRIAGEWAY CONSTRUCTION DETAIL

SCALE 1:20

TABLE 1

SUB GRADE CBR%	SUB BASE THICKNESS	CAPPING LAYER THICKNESS
<=2%	150mm	400mm
<=5%	150mm	200mm
<=15%	200mm	-
<=30%	150mm	-
>30%	0	-

NOTE: MINIMUM TOTAL THICKNESS 450mm IF SUB-GRADE IS FROST SUSCEPTIBLE

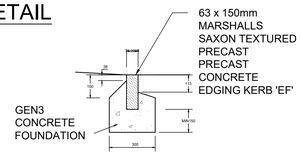


FOOTWAY DETAIL CONSTRUCTION DETAIL

SCALE 1:20

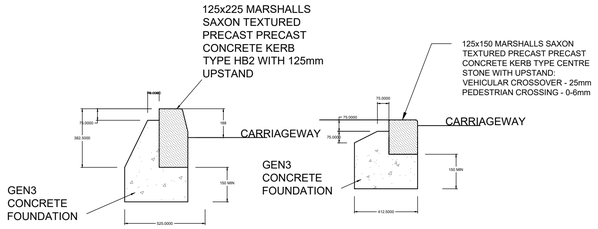
TABLE 2

SUB GRADE CBR%	SUB BASE THICKNESS
<=2%	300mm
>2%	150mm



FOOTWAY EDGING (EF)

SCALE 1:10

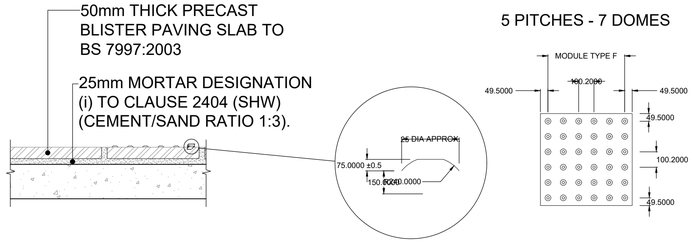


TYPE HB2 HALF BATTER KERB

SCALE 1:20

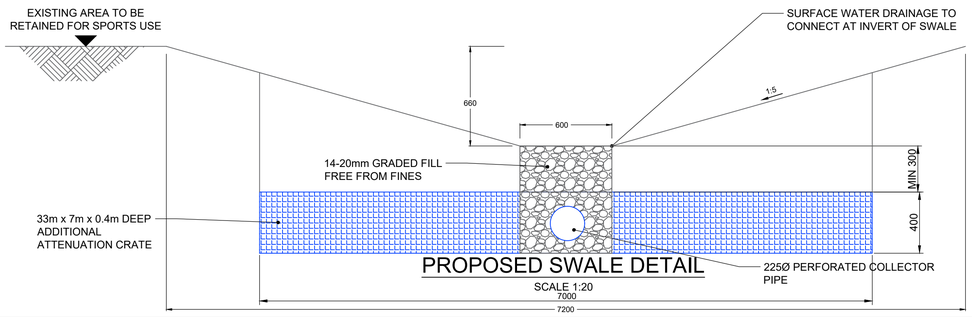
BULLNOSED KERB CENTRE STONE

SCALE 1:10



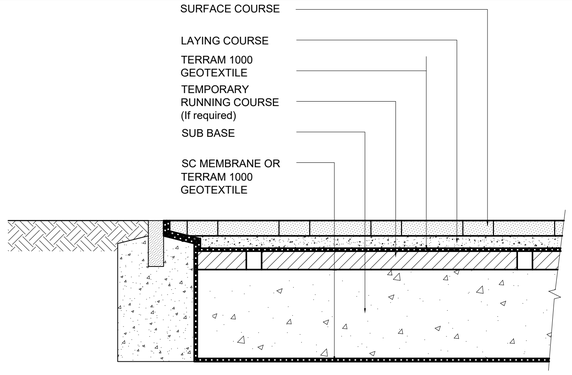
TACTILE PAVING - COLOUR BUFF

SCALE 1:20



PROPOSED SWALE DETAIL

SCALE 1:20

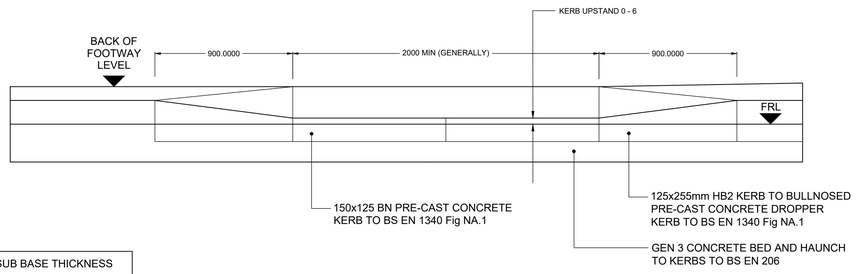


LAYER	SPECIFICATION	THICKNESS (mm)
SURFACE COURSE	PERMEABLE CONCRETE BLOCK PAVIORS TO BS EN 1338:2003 WITH JOINTING GRIT BRUSHED IN	60
LAYING COURSE	2/6.3mm OPEN GRADED CRUSHED ROCK TO BS EN 13242 AGGREGATE (mm)	50
TEMPORARY RUNNING COURSE (If required)	DENSE BITUMEN BINDER COURSE MACADAM, (0/20mm NOMINAL SIZE AGGREGATE). TO CLAUSE 6.5, BS 4987. 100/150 PEN BINDER. TO BE PUNCTURED WITH 50mm DIA. HOLES AT 1.0m CENTRES PRIOR TO RECIEVING LAYING COURSE	60
SUB BASE	10/20mm OPEN GRADED CRUSHED ROCK TO BS EN 13242 AGGREGATE (mm)	350

PRIVATE DRIVE CONSTRUCTION (PERMEABLE PAVING)

1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH "INTERPAVE PERMEABLE PAVEMENT MANUAL" 7th EDITION

PLAN



ELEVATION

TABLE 2

SUB GRADE CBR%	SUB BASE THICKNESS
<=2%	550mm
<=5%	350mm
<=15%	200mm
<=30%	150mm
>30%	0

NOTE: MINIMUM TOTAL THICKNESS 450mm IF SUB-GRADE IS FROST SUSCEPTIBLE

NOTE:
WHERE PEDESTRIAN CROSSING IS NOT PERPENDICULAR TO THE KERB, TACTILE PAVING IS TO BE ALIGNED WITH CROSSING DIRECTION AND A MINIMUM OF 800mm DEPTH OF TACTILE PAVING TO BE PROVIDED.

UNCONTROLLED PEDESTRIAN CROSSING

SCALE 1:20

NOTES:

1. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS STATED OTHERWISE.
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Rev	Date	Details	Drawn by	Checked by
C	27.06.22	SWALE DETAIL UPDATED	PG	KT
B	13/05/22	PERMEABLE PAVING DETAIL ADDED	TB	KT
A	17/02/22	PRIVATE DRIVE SURFACE AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

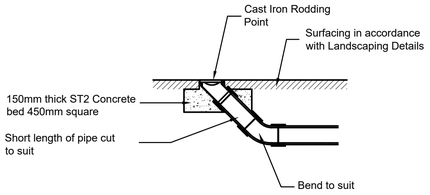
PROJECT: Paygrove Lane, Longlevens

TITLE: Details Sheet 3 - Highways

STATUS: APPROVAL

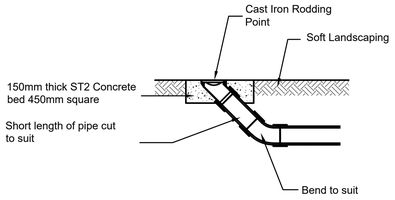
SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
AS SHOWN	FEB 22	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
21-0760	C102	C



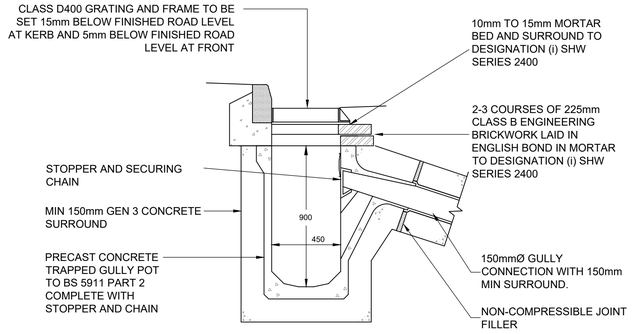
RODDING EYE DETAIL

(Hard landscape Areas)



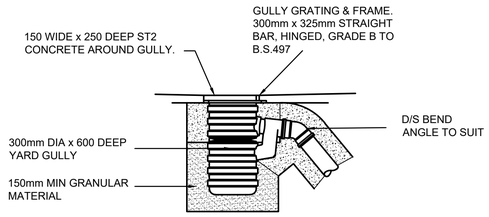
RODDING EYE DETAIL

(Soft landscape Areas)

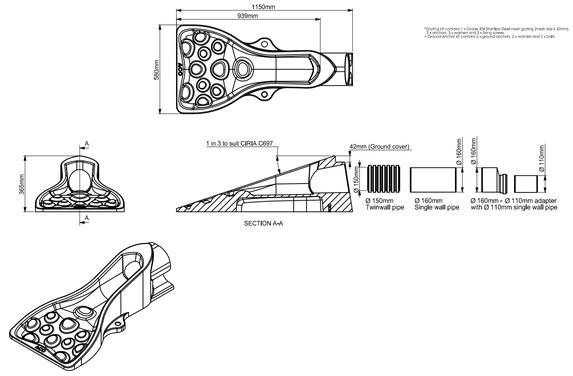


ROAD GULLY

SCALE 1:20

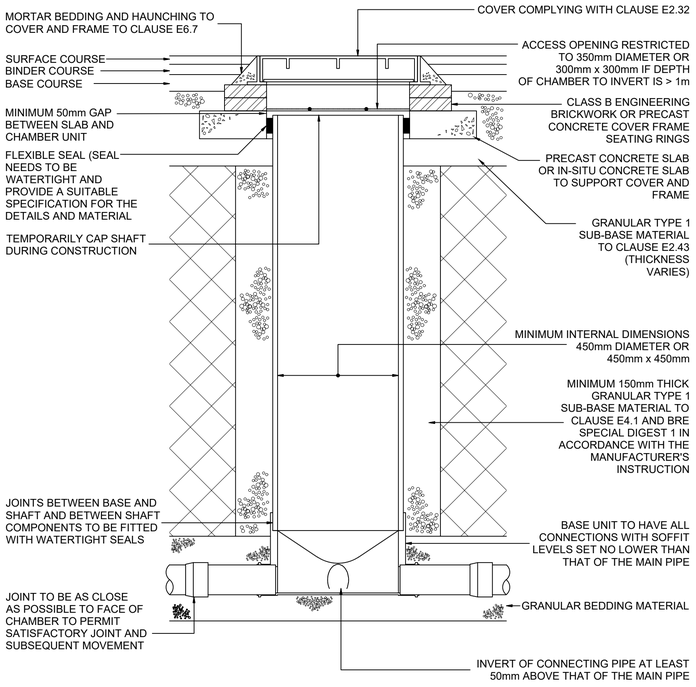


TYPICAL YARD GULLEY DETAIL



ACO SUDS SWALE INLET

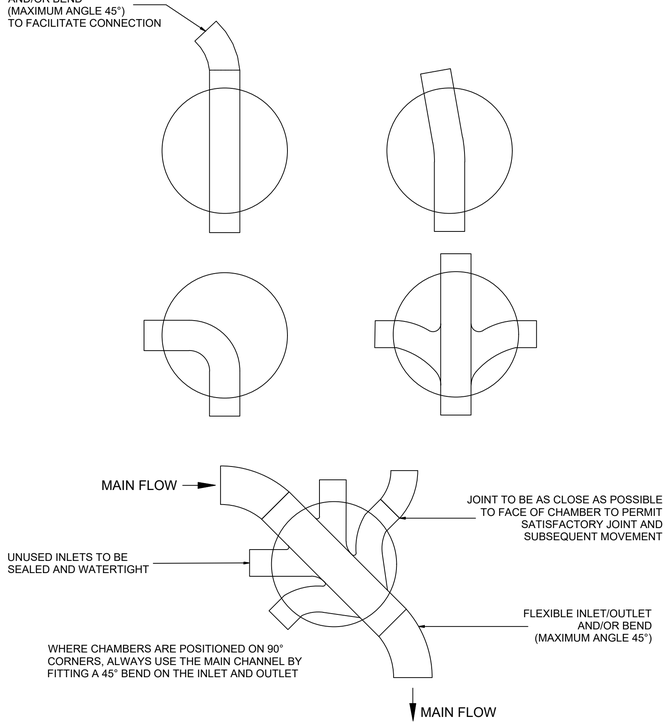
PLASTIC CHAMBERS AND RINGS SHALL COMPLY WITH CLAUSE E2.31



NOTE: WHERE THE ACCESS CHAMBER IS IN THE HIGHWAY THE HIGHWAY AUTHORITY CAN HAVE SPECIFIC REQUIREMENTS

TYPICAL INSPECTION CHAMBER DETAIL - TYPE D

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE UP TO 2m
FLEXIBLE MATERIAL CONSTRUCTION FOR USE IN AREAS SUBJECT TO VEHICLE LOADING
NOT TO SCALE



NOTE: WHERE A BEND IS USED IMMEDIATELY OUTSIDE THE MANHOLE, THIS MAY BE USED AS THE ROCKER PIPE

TYPICAL BASE LAYOUTS FOR TYPE D CHAMBERS

NOT TO SCALE

NOTES:

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Rev	Date	Details	Drawn by	Checked by
A	27.06.22	SUDS INLET DETAIL ADDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

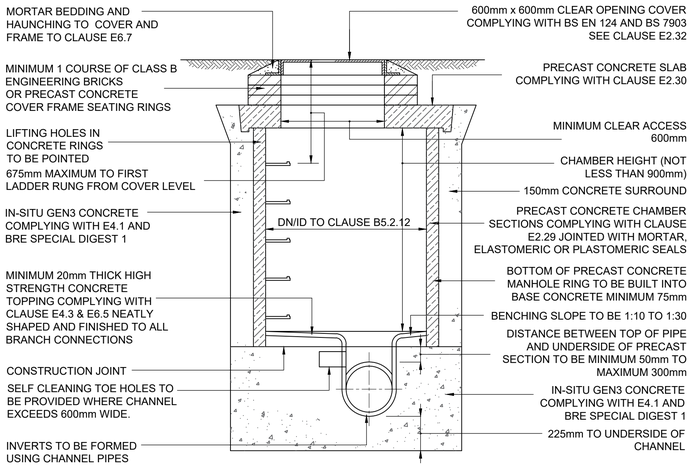
PROJECT: Paygrove Lane, Longlevens

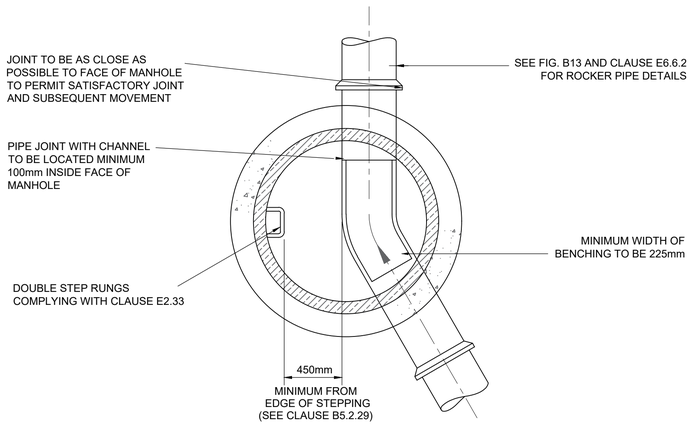
TITLE: Details
Sheet 2 - Drainage

STATUS: APPROVAL

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
AS SHOWN	FEB 22	PG	KT	KT

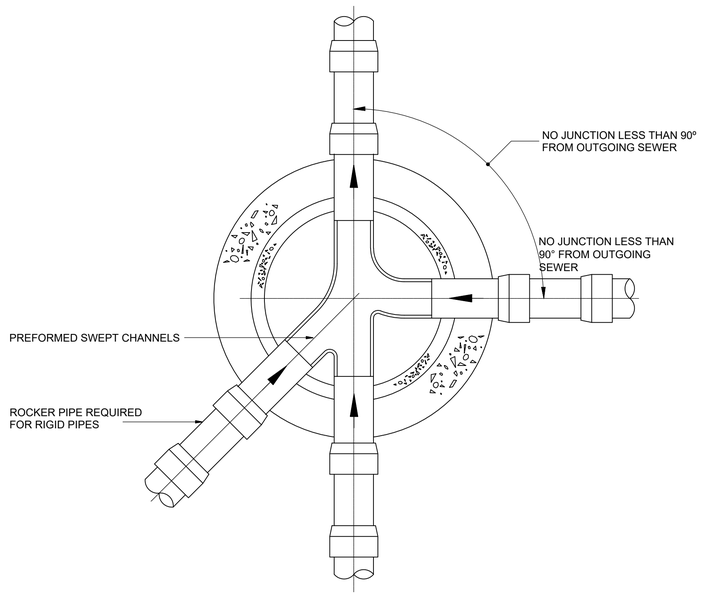
JOB NO:	DRAWING NO:	REVISION:
21-0760	C101	A





TYPICAL MANHOLE DETAIL - TYPE B

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 1.35 TO 3.0m
RIGID MATERIAL CONSTRUCTION WITH CONCRETE SURROUND
NTS



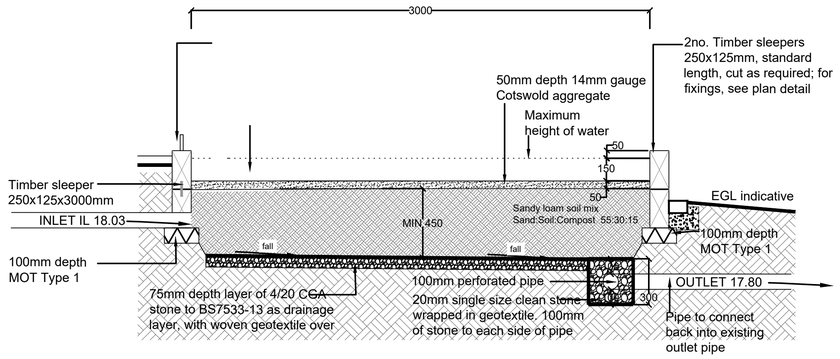
SECTIONAL PLAN

FIG B13 TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

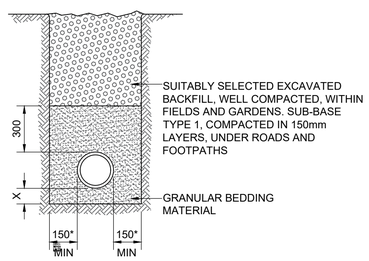
RIGID PIPES BUILT INTO MANHOLES SHOULD HAVE A FLEXIBLE JOINT AS CLOSE AS FEASIBLE TO THE EXTERNAL FACE OF THE STRUCTURE AND THE LENGTH OF OF THE NEXT ROCKER PIPE SHOULD BE AS SHOWN.

Nominal diameter (mm)	Effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

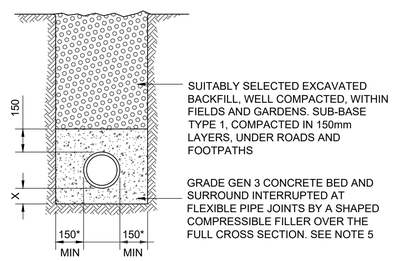
ALL PIPES ENTERING THE BOTTOM OF THE MANHOLE TO HAVE SOFFITS LEVEL.
NOT TO SCALE



RAINWATER GARDEN DETAIL



CLASS S BEDDING



CLASS Z BEDDING

TYPICAL PIPE BEDDING

SCALE 1:10

BEDDING NOTES:

1. * = 150 FOR PIPES DIAMETER UP TO 300mm,
   * = 200mm FOR PIPE DIAMETERS OVER 300mmØ
   BASED ON NARROW TRENCH THEORY: DESIGNER TO CONFIRM FOR SPECIFIC PIPELINE.
2. BACKFILL MATERIAL TO BE SELECTED EXCAVATED MATERIAL WHERE THIS MATERIAL COMPLIES WITH CESWI. ADDITIONAL MATERIAL TO MAKE UP ANY DEFICIENCY TO BE GRANULAR SUB-BASE TYPE 1 UNLESS STATED OTHERWISE.

NOMINAL BORE OF PIPE (min)	AGGREGATE SIZE (mm) SINGLE SIZED	GRADED
100	10	-
150	10 OR 14	14 TO 5
225-300	10,14 OR 20	14 TO 5 OR 20 TO 5
375-525	14 OR 20	14 TO 5 OR 20 TO 5
EXCEEDING 525	14,20 OR 40	14 TO 5 OR 20 TO 5 40 TO 5

   DIM X ≥ 100mm FOR PIPES ≤ 100mmØ
   DIM X ≥ 150mm FOR PIPES > 100mmØ
   DIM X ≥ 200mm FOR PIPES TRENCHES IN ROCK
3. IN WET, SOFT, OR SILTY SOILS, WHERE LATERAL SUPPORT IS NOT OBTAINED OR WHERE FINES MAY MIGRATE, THE GRANULAR BEDDING MATERIAL SHALL BE SURROUNDED BY GEOTEXTILE FABRIC WITH MIN 200 OVERLAP.
4. TRENCH BACKFILL TO MEET HIGHWAY SPECIFICATION WHEN LAID IN ROAD OR FOOTPATH.
5. COMPRESSIBLE FILLER SHALL BE BITUMEN-IMPREGNATED INSULATING BOARD TO BS 622-1. THICKNESS AS TABLE.

NOMINAL DIAMETER OF PIPE (mm)	THICKNESS OF COMPRESSIBLE FILLER (mm)
LESS THAN 450mm	18
450-1200mm	36
EXCEEDING 1200mm	54

NOTES:

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Rev	Date	Details	Drawn by	Checked by
A	27.06.22	RAINWATER GARDEN ADDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Details Sheet 1 - Drainage

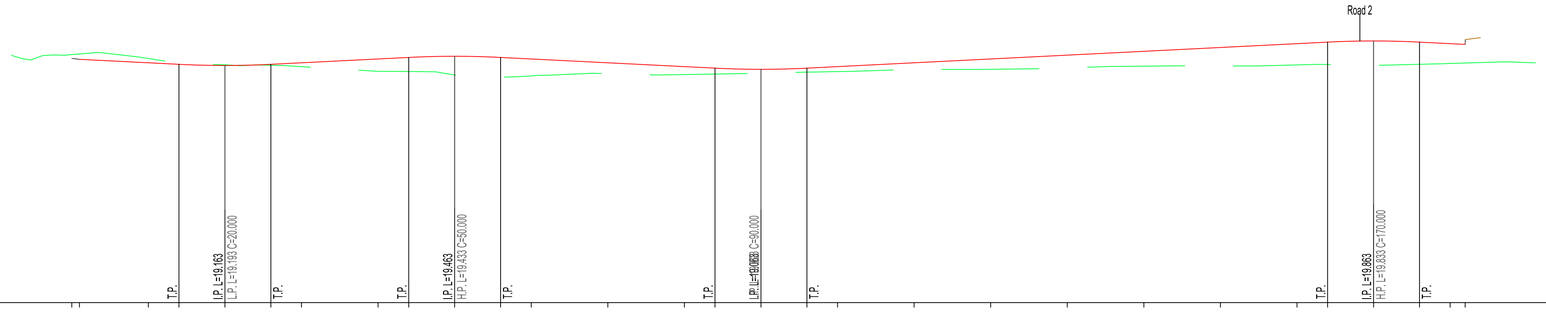
STATUS: APPROVAL

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
AS SHOWN	FEB 22	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
21-0760	C100	A

Road 1

Datum: 13.000M AOD



CHAINAGE ON CENTRELINE (m)	0.000	1.000	10.000	14.000	20.000	26.000	30.000	40.000	44.000	50.000	56.000	60.000	70.000	80.000	84.000	90.000	96.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	164.000	170.000	176.000	180.000	181.959
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	19.378	19.353	19.263	19.223	19.193	19.223	19.263	19.363	19.403	19.433	19.403	19.363	19.263	19.163	19.123	19.093	19.123	19.163	19.263	19.363	19.463	19.563	19.663	19.763	19.803	19.833	19.803	19.763	19.744
LEVELS ON LEFT HAND CHANNEL (m)			19.323	19.283	19.253	19.283	19.323	19.423	19.463	19.493	19.466	19.436	19.346	19.246	19.193	19.176	19.245	19.296	19.396	19.496	19.596	19.696	19.776	19.853	19.893	19.923	19.893	19.853	19.834
LEVELS ON RIGHT HAND CHANNEL (m)			19.203	19.163	19.133	19.163	19.203	19.303	19.343	19.373	19.342	19.287	19.226	19.126	19.086	19.056	19.086	19.126	19.226	19.326	19.426	19.526	19.620	19.716	19.756	19.743	19.713	19.673	19.654
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE			GRADIENT -1.0% (-1 in 100) LENGTH = 13.000m		SAG CURVE K = 6.000 L = 12.000		GRADIENT 1.0% (1 in 100) LENGTH = 18.000m		HOG CURVE K = 6.000 L = 12.000		GRADIENT -1.0% (-1 in 100) LENGTH = 28.000m		SAG CURVE K = 6.000 L = 12.000		GRADIENT 1.0% (1 in 100) LENGTH = 68.000m									HOG CURVE K = 6.000 L = 12.000		GRADIENT -1.0% L = 5.959m	
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE			STRAIGHT LENGTH = 13.967m		CURVE R = 30.000 L = 13.675		STRAIGHT LENGTH = 26.780m				CURVE R = 8.400 L = 13.586		STRAIGHT LENGTH = 77.407m										STRAIGHT L = 5.983m		STRAIGHT LENGTH = 28.499m			
EXISTING LEVELS (m)	19.492	19.535	19.413	19.280	19.234	19.219	19.210	19.186	19.207	19.201	19.189	19.130	19.088	19.080	19.038	19.037	19.027	18.895	18.891	18.898	18.897	18.933	18.930	18.951	18.942	18.935	18.936	18.950	18.947	18.979	19.095	19.038	19.075	19.090	19.090	19.109	19.167	19.183	19.165	19.179	19.179	19.216	19.197	19.240	19.242	19.257	
PROPOSED CHAINAGE (m)	-0.000	1.000																										181.959	183.359
PROPOSED LEVELS (m)	19.378	19.353																										19.744	19.919

NOTES:

1. DO NOT SCALE FROM THIS DRAWING
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AND CHECKED AGAINST ALL OTHER DRAWINGS, ENGINEERING DETAILS, SPECIFICATION AND ANY STRUCTURAL, GEOTECHNICAL OR OTHER SPECIALIST DOCUMENT PROVIDED.

KEY:

- EXISTING GROUND PROFILE
- PROPOSED CENTRELINE PROFILE

Rev	Date	Details	Drawn by	Checked by

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Road Long Section

STATUS: APPROVAL

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
As Shown	FEB 22	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-21-0760	C004	-

Plant Schedules

All plants to be supplied from an HTA approved nursery and in accordance with the National Plant Specification.

NATIVE HEDGE MIX

Species	% Mix	Size/Type
Acer campestre	10	1+1 Transplant 40-60cm Bareroot
Cornus sanguinea	5	1+1 Transplant 40-60cm Bareroot
Corylus avellana	5	1+1 Transplant 40-60cm Bareroot
Crataegus monogyna	65	1+1 Transplant 60-80cm Bareroot
Ilex aquifolium	10	40-60cm, 3L
Rosa arvensis	5	1+1 Transplant 60-80cm Bareroot

Native hedges: Plant in a double staggered row, 300 mm between plants and 400mm between rows. (7 plants per m). Protect with rabbit proof, biodegradable tree/shrub shelter/ guard 60cm in height.

ORNAMENTAL HEDGE

Species	% Mix	Size/Type
Choisya tenata	20	30-40cm, Bushy, 4 breaks, 3L
Escallonia 'Apple Blossom'	20	40-60cm, Bushy, 4 breaks, 3L
Lonicera 'Baggesen's Gold'	20	30-40cm, Bushy, 3 breaks, 3L
Prunus x cistena 'Crimson Dwarf'	20	30-40cm, Bushy, 3 breaks, 3L
Prunus laurocerasus 'Otto Luyken'	20	30-40cm, Bushy, 3 breaks, 3L

Ornamental hedges: Plant in a double staggered row, 450 mm between plants and 400mm between rows. (5 plants per m).

IMPLEMENTATION PROGRAMME

All hedge planting stock to be planted within dormant season (Nov -March) within the first planting season following completion of the building works.

MAINTENANCE PROGRAMME

All planting shall thereafter be maintained for a period of 5 years. If during this time anyhedge plants are removed, die, or are seriously diseased these shall be replaced during the next planting season with others of similar size and species unless the local planning authority gives written consent to any variation. If any plants fail more than once, they shall continue to be replaced on an annual basis until the end of the 5 year maintenance period.

Key

- Existing trees to be retained
- Tree planting - refer to planting details by Coombes Everitt
- Native hedge planting
- Ornamental hedge planting
- Amenity grass to play field area
- Meadow grass seeding to attenuation basin (Meadow mixture for wetlands)

Rev: Date: Drawn: Checked:
Revisions:

Project: Paygrove Lane, Longlevens

Client: Cotswold Oak Ltd

Title: Hedge Planting Proposals

Drawing number: 22084.101 Rev:

Status: For Planning

Drawn By:	Checked By:	Date:	Scale @ A1:
HS	BD	24.5.22	1:250

Paygrove Lane, Longlevens

Hedge Planting Proposals

N

CHARTERED LANDSCAPE ARCHITECTS mhp

MHP DESIGN LTD CORINTH HOUSE 117 BATH ROAD CHELTENHAM GL53 7SL
[redacted] www mhpdesign.com

CHARTERED LANDSCAPE ARCHITECTS mhp

Land at Paygrove Lane MHP Reference: 22084.101 Hedge Planting Proposals

NATIVE HEDGE (SITE PERIMETER)

Boundary vegetation and trees have been cleared. In some locations garden vegetation is growing into the site. It is suggested that where feasible this is trimmed back to the boundary to allow for the establishment of a dense hedge to the edge of the site.

GENERAL NOTES

All plants to be healthy and in compliance of BS3936 Specification For Nursery Stock and planting operations should be carried out in accordance with BS4428 Code of Practice for General Landscape Operations.

IMPLEMENTATION PROGRAMME

Bareroot whips to be planted within the dormant season (Nov-March) within the first available planting season.

GROUND PREPARATION

All soil areas to be cultivated prior to the commencement of planting and seeding operations. Works to include the loosening, aerating and breaking up soil to a depth of 400 mm, with weeds and stones/rubbish removed.

All areas to be planted are to be treated with roundup or similar approved herbicide at least 14 days before planting operations commence

NATIVE HEDGEROW PLANTING

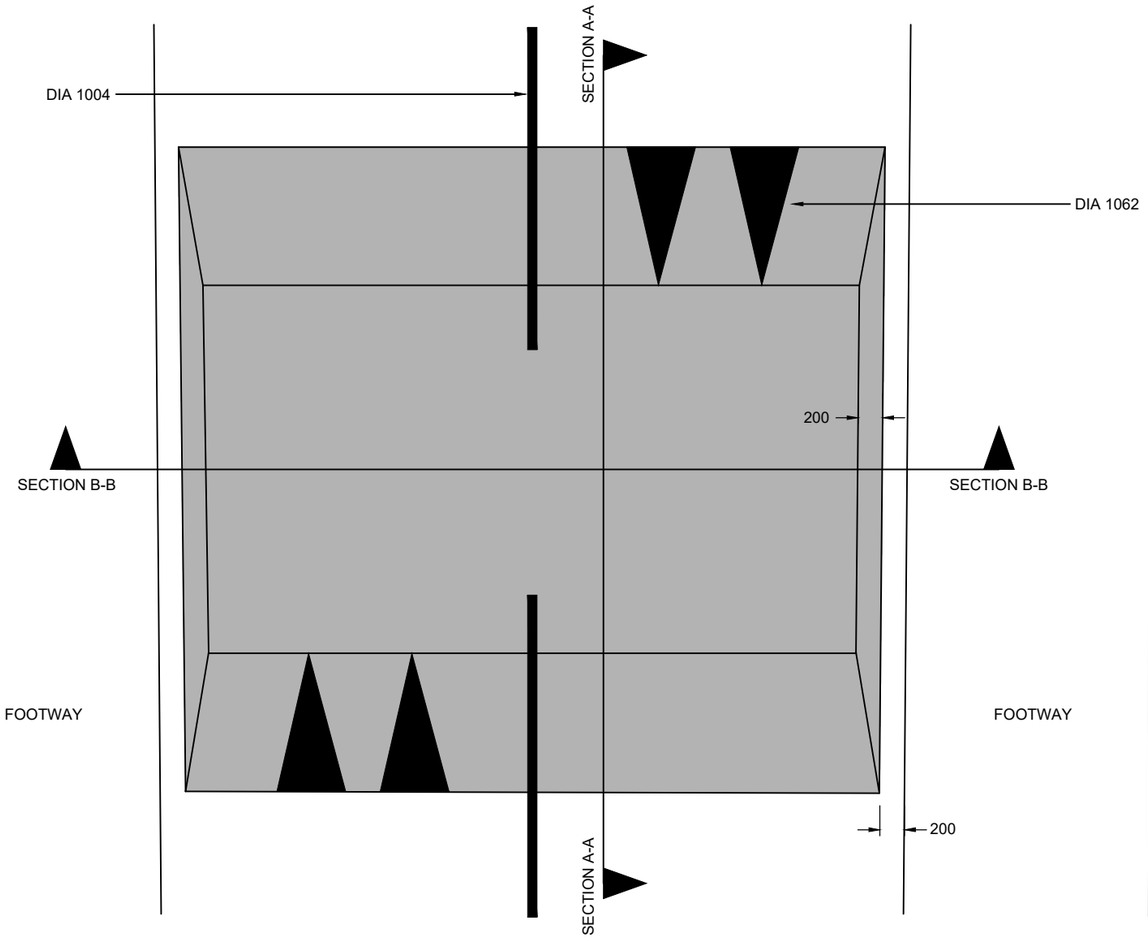
All hedge planting shall be undertaken in a double staggered row to be pit planted in sufficient sized pits capable of fully accommodating the root system. Dead damaged or straggly branches shall be removed after planting. All plants shall be fitted with strim and protection guards, where possible these shall be supplied in black or green with sufficient support and means to allow for expansion.

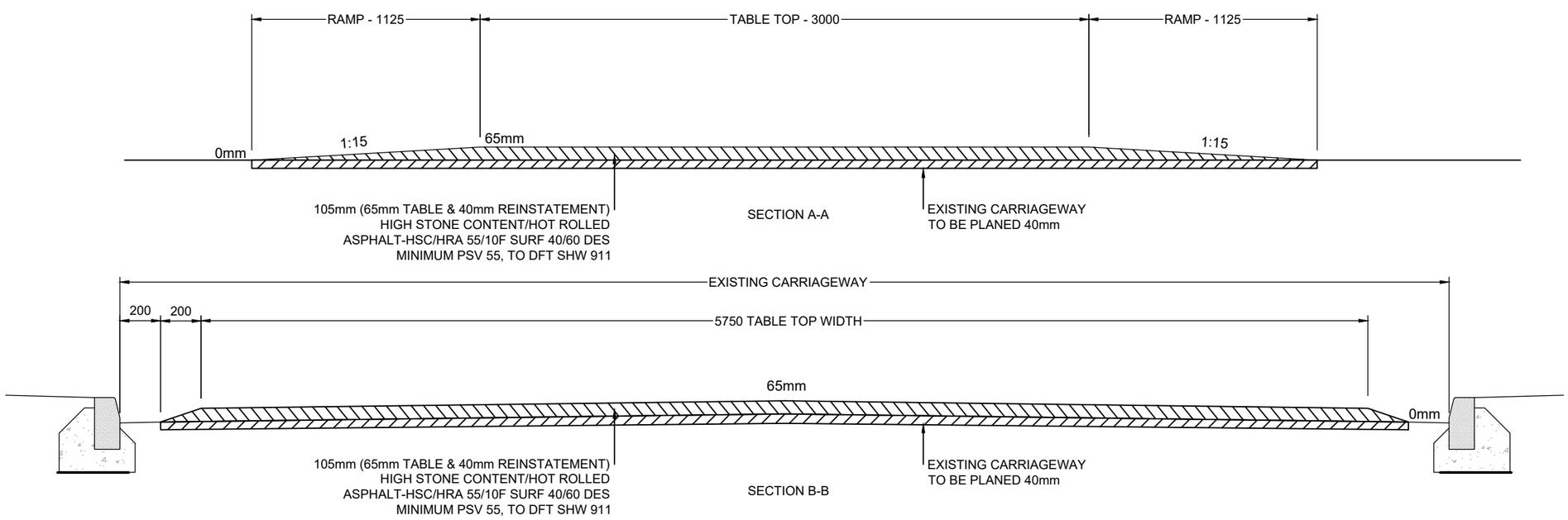
MULCH

Bark mulch (not shredded timber) is to be applied to all hedge areas and spread to a minimum depth of 50 mm with particle size of 30-50mm. The mulch shall be free of disease, pest or weed contamination, treated with a fire retardant and be supplied with a certificate of quality.

REPLACEMENT

During each annual inspection any planting on site that is missing, has died or failed within the defects period will be replaced in accordance with the planting schedule in the next planting season.





Rev	Date	Details	Drawn by	Checked by
-	-	-	-	-

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CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane,
Longlevens

TITLE:
Construction Details
Sheet 2 of 2

STATUS:
APPROVAL

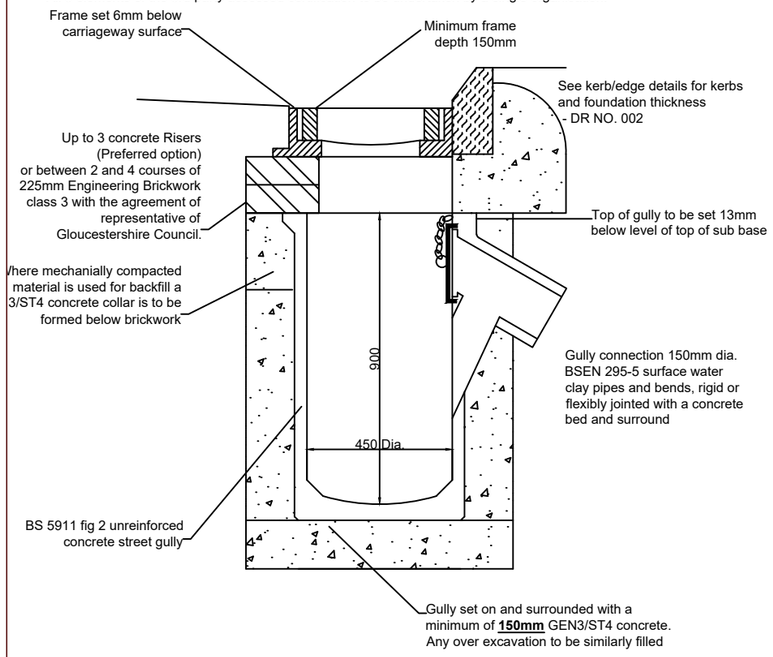
SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
As Shown	27.04.22	SP	DH	MP

JOB NO:	DRAWING NO:	REVISION:
21-0760	2501	-

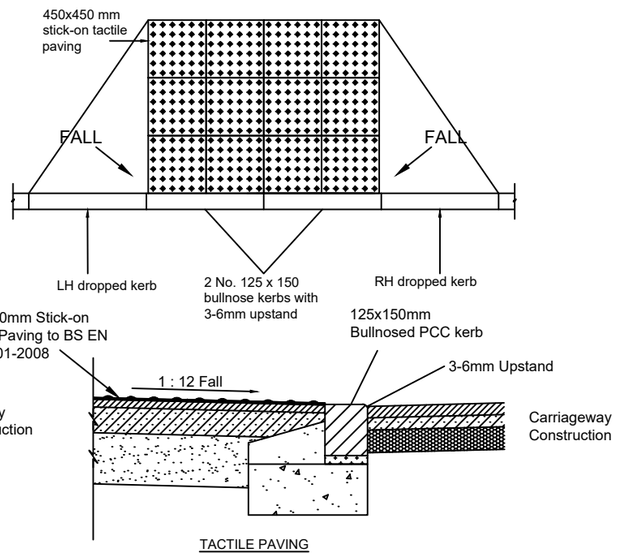
BS EN:124(1994) Grade D400 rectangular hinged gully grating and frame bearing CE approval mark.

All products must satisfy the following:-

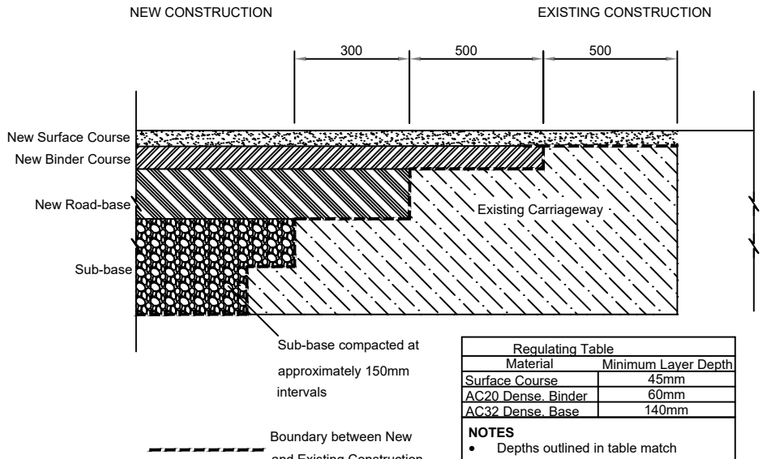
- CE Mark
- BSEN 124
- ISO9001 design & manufacture assessed by 3rd party accredited to BSEN45012.
- Product testing by 3rd party accredited to BSEN45001 & having BSEN124:1994 within its registration.
- Certificates issued by 3rd party accredited to BSEN45011 & having BSEN124:1994 within its scope of registration.
- All 3 elements of the 3rd party assessed certification to be undertaken by a single organisation.



ROAD GULLY



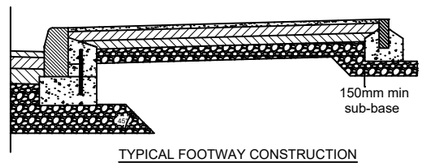
TACTILE PAVING



Regulating Table	
Material	Minimum Layer Depth
Surface Course	45mm
AC20 Dense, Binder	60mm
AC32 Dense, Base	140mm

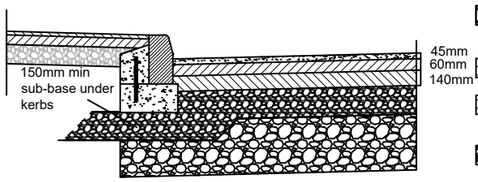
NOTES
- Depths outlined in table match carriageway construction.
- Should it not be possible for the minimum layer depth to be achieved, the underlying layer shall be planed off and regulated.
- Surface course not to be used for regulating.

TIE IN TO EXISTING CARRIAGEWAY



- 25mm AC6 Dense Surf 100/150 to DfT SHW Clause 909
- 60mm AC20 dense bin 100/150 rec to DfT SHW 906
- 100mm AC32 dense base 100/150 rec to DfT SHW 906
- 150mm Type 1 sub base to DfT SHW Clause 803

TYPICAL FOOTWAY CONSTRUCTION

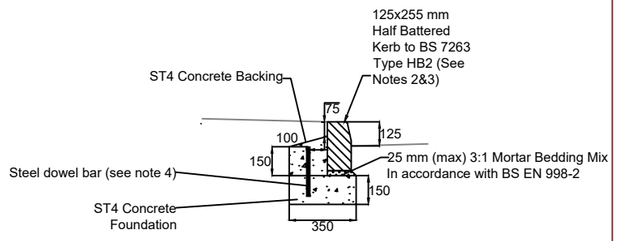


- High Stone Content/Hot Rolled Asphalt-HSC/HRA 55/10F Surf 40/60 des minimum PSV 55, to DfT SHW 911
- AC20 dense bin 100/150 rec to DfT SHW 906
- AC32 dense base 100/150 rec to DfT SHW 906 (in 2 layers)
- Type 1 sub base to DfT SHW Clause 803 6F1 or 6F2 (see sub-base & capping table)
- Capping Layer to SHW Clause 613 (see sub-base and capping table)

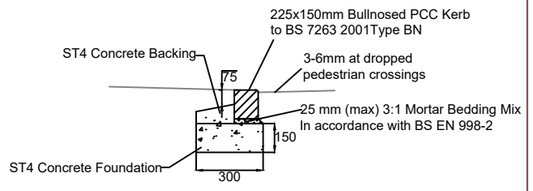
TYPICAL CARRIAGEWAY CONSTRUCTION

Sub-base and Capping

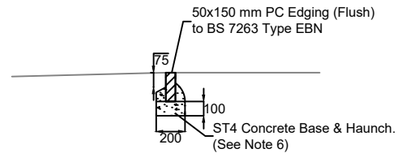
CBR 5% and Above	Type 1 sub-base to SHW Clause 803	225mm
+2.5%-5%	Type 1 sub-base to SHW Clause 803	150mm
	6F1 or 6F2 Capping Layer to SHW Clause 613	350mm
Below 2.5%	Type 1 sub-base to SHW Clause 803	150mm
	6F1 or 6F2 Capping Layer to SHW Clause 613	600mm



HALF BATTERED KERB TYPE HB2



BULL NOSED DROPPED KERB TYPE BN



DETAIL C - EDGING DETAIL

NOTES
1. Kerbs to be laid with slight crossfall so that water sheds from footway/cycleway wearing course without ponding in a channel on top of or behind kerb.
2. Kerbs to be laid with 2mm spaced joint.
3. ST4 Concrete manufactured in accordance with BS 8500-2 Laid in accordance with MCHW Series 2600 Pokered Finish to BS 8102:2009
4. HB2 Kerb: 250x16mm Mild Steel Dowel Bars to BS 4449 Shall be set 100mm into kerb race and spaced at 600mm centeres such that dowel is closer than 150mm to kerb joint.
5. Edging kerbs may be laid onto concrete base in a plastic state

NOTES

1. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS ARE IN METRES, UNLESS STATED OTHERWISE.
2. DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER 5 WORKING DAYS IN ADVANCE OF UNDERTAKING ANY WORK.
3. WORK TO BE UNDERTAKEN IN ACCORDANCE WITH THE GLOUCESTERSHIRE COUNTY COUNCIL SPECIFICATION.

Rev	Date	Details	Drawn by	Checked by
-	-	-	-	-

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Infrastructure and environmental consultants

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CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Construction Details Sheet 1 of 2

STATUS: APPROVAL

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
NTS	27.04.22	SP	DH	MP

JOB NO:	DRAWING NO:	REVISION:
21-0760	2500	-

COTSWOLD TRANSPORT PLANNING

Cotswold Oak Ltd

Paygrove Lane, Longlevens

SuDS Management Plan

May 2022

DOCUMENT REGISTER

CLIENT:	**COTSWOLD OAK LTD**
PROJECT:	**PAYGROVE LANE, LONGLEVENS**
PROJECT CODE:	**CTP-21-0760**

REPORT TITLE:	**SUDS MANAGEMENT PLAN**		
PREPARED BY:	[redacted]	**DATE:**	**MAY 2022**
CHECKED BY:	[redacted]	**DATE:**	**MAY 2022**

REPORT STATUS:	**FOR PLANNING**
REVISION:	**01**

Prepared by **COTSWOLD** TRANSPORT PLANNING LTD
CTP House
Knapp Road
Cheltenham
Gloucestershire
GL50 3QQ

[redacted]

[redacted]

Web: www.cotswoldtp.co.uk

Introduction

1.1 Cotswold Transport Planning were appointed by Cotswold Oak Ltd (herein referred to as "the Applicant") to produce a SuDS Management Plan for a proposed residential development at Paygrove Lane, Longlevens.

1.2 The purpose of this Management Plan is to be read alongside drawings CTP-21-0760_C002 and CTP-21-0760_C003, the site engineering layouts. This document sets out the appropriate maintenance regime for the proposed SuDS features at the proposed development.

Maintenance Regime

1.3 Maintenance of SuDS features are essential to ensure that the surface water drainage system operates effectively and that flooding of the site and surrounding areas is prevented.

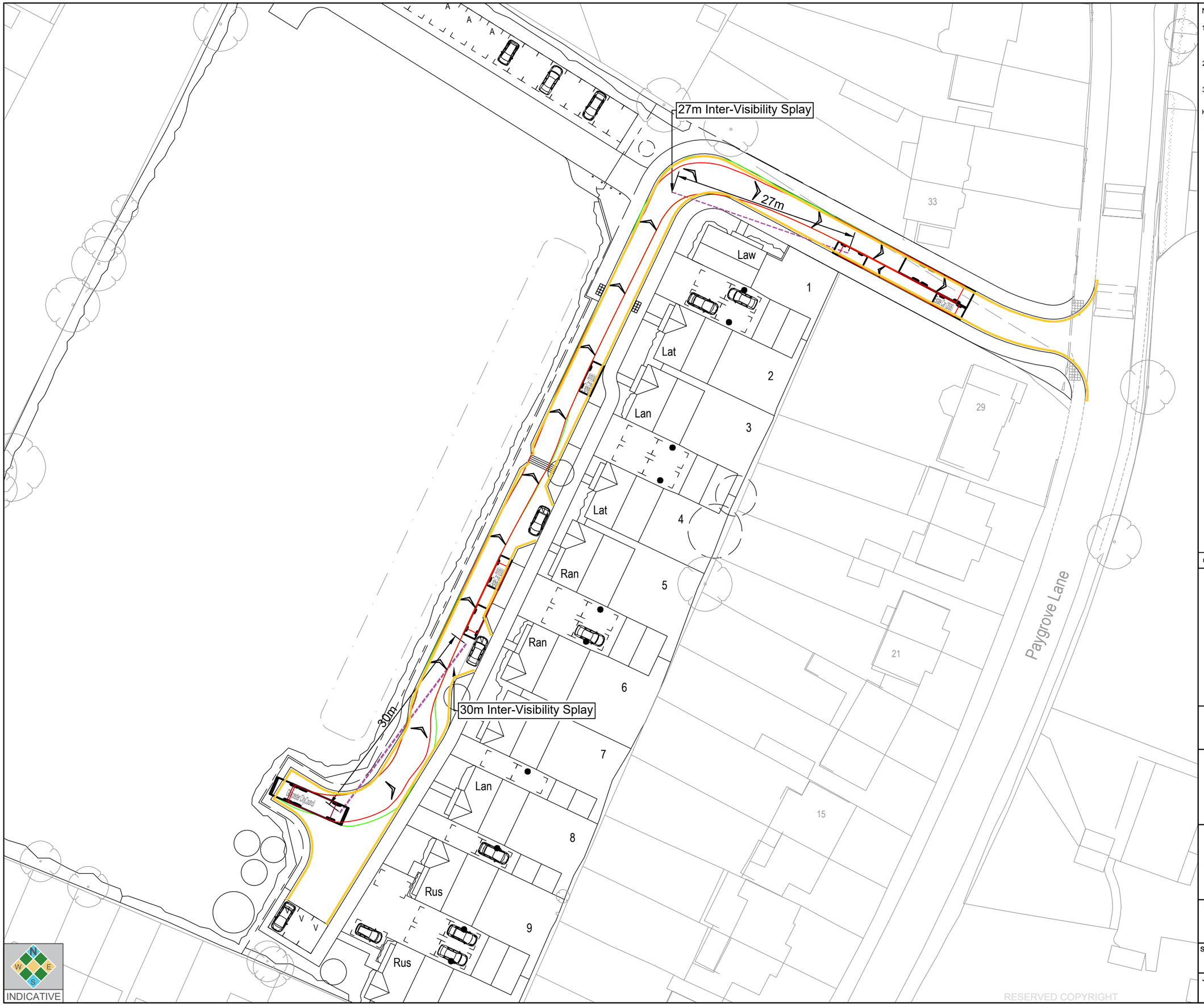
1.4 The responsibility of maintaining the shared surface water SuDS features will fall to a management company, unless within individual plot curtilages (for example individual downpipes and inspection chambers). Within individual plot curtilages, responsibility for the surface water drainage features, will be the responsibility of the plot owner.

1.5 For all drainage aspects a full maintenance regime should be carried out to ensure that drainage systems remain operational in accordance with manufacturer's guidelines and drainage features maintenance requirements as set out in the SuDS Manual (C753).

Drainage Component	Required Action	Typical Frequency
Pipework, manholes, flow control chambers, catch pits and silt traps	Stabilise adjacent areas	As required
	Remove weeds	As required
	Clear any poor performing structures.	As required
	Inspect all structures for poor operation	Three monthly, 48 hours after large storms in first six months
	Monitor inspection chambers. Inspect silt accumulation rates and determine silt clearance frequencies	Annually
Swale	Remove litter and debris	Monthly (or as required)
	Cut the grass – public areas	Monthly (during growing season)

	Inspect marginal and bankside vegetation and remove nuisance plants (for first three years)	Monthly (at start, then as required)
	Inspect inlets, banksides, structures, pipework etc for evidence of blockage and/or physical damage	Monthly
	Inspect water body for signs of poor water quality	Monthly (May – October)
	Inspect silt accumulation rates and establish appropriate removal frequencies; undertake contamination testing once some build up has occurred, to inform management and disposal options.	Half yearly
	Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above the pond base; include max 25% of pond surface)	Annually
	Repair erosion or other damage	As required
	Replant, where necessary	As required
	Aerate when signs of eutrophication are detected	As required
	Repair/rehabilitate inlets, outlets and overflows	As required
	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required
Permeable Paving	Brushing and vacuuming	Once a year or as required
	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required.
	Inspect for evidence of poor operation and/or weed growth	3 monthly, 48 hours after large storms in first 6 months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 1.1: Initial Operation and Maintenance Plan



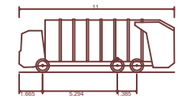
Notes:

1. This drawing is based on the Architects layout (21.20.020_PL005A) received from Coombes Everitt Architects on 24/03/2022.
2. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
3. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.

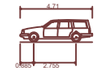
KEY:

Inter-Visibility Splay

Vehicle Profile



Gloucester CityCouncil	
Overall Length	11.000m
Overall Width	2.650m
Overall Body Height	3.756m
Min Body Ground Clearance	0.330m
Track Width	2.650m
Lock to lock time	4.00s
Wall to Wall Turning Radius	11.500m



Estate Car (2006)	
Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

Rev	Date	Details	Drawn by	Checked by
C	26.04.22	Prospoed Road Markings & Updated SPA	FA	JM
B	04.04.22	Updated Layout & SPA	FA	JM
A	10.01.22	Updated Layout & SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane, Longlevens

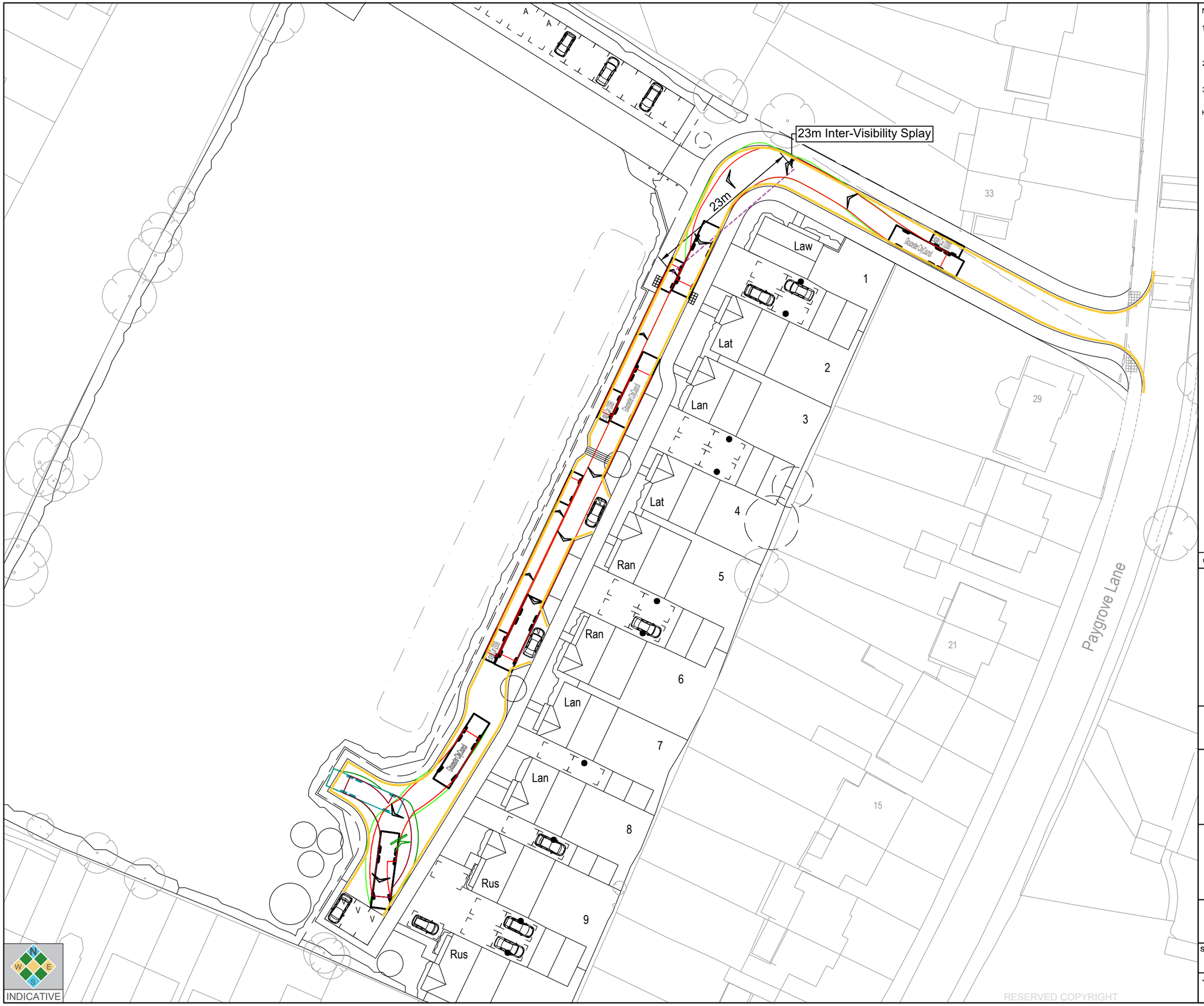
TITLE:
Onsite Swept Path Analysis - Refuse Vehicle Exiting Site

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	26.01.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SP05	C

INDICATIVE



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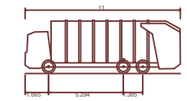
KEY:

Inter-Visibility Splay

Vehicle Profile



Gloucester CityCouncil

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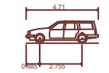

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Kerb to Kerb Turning Radius	5.950m

Rev	Date	Details	Drawn by	Checked by
C	26.04.22	Updated Refuse & SPA	FA	JM
B	04.04.22	Updated Layout & SPA	FA	JM
A	10.01.22	Prospoed Road Markings & Updated SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane, Longlevens

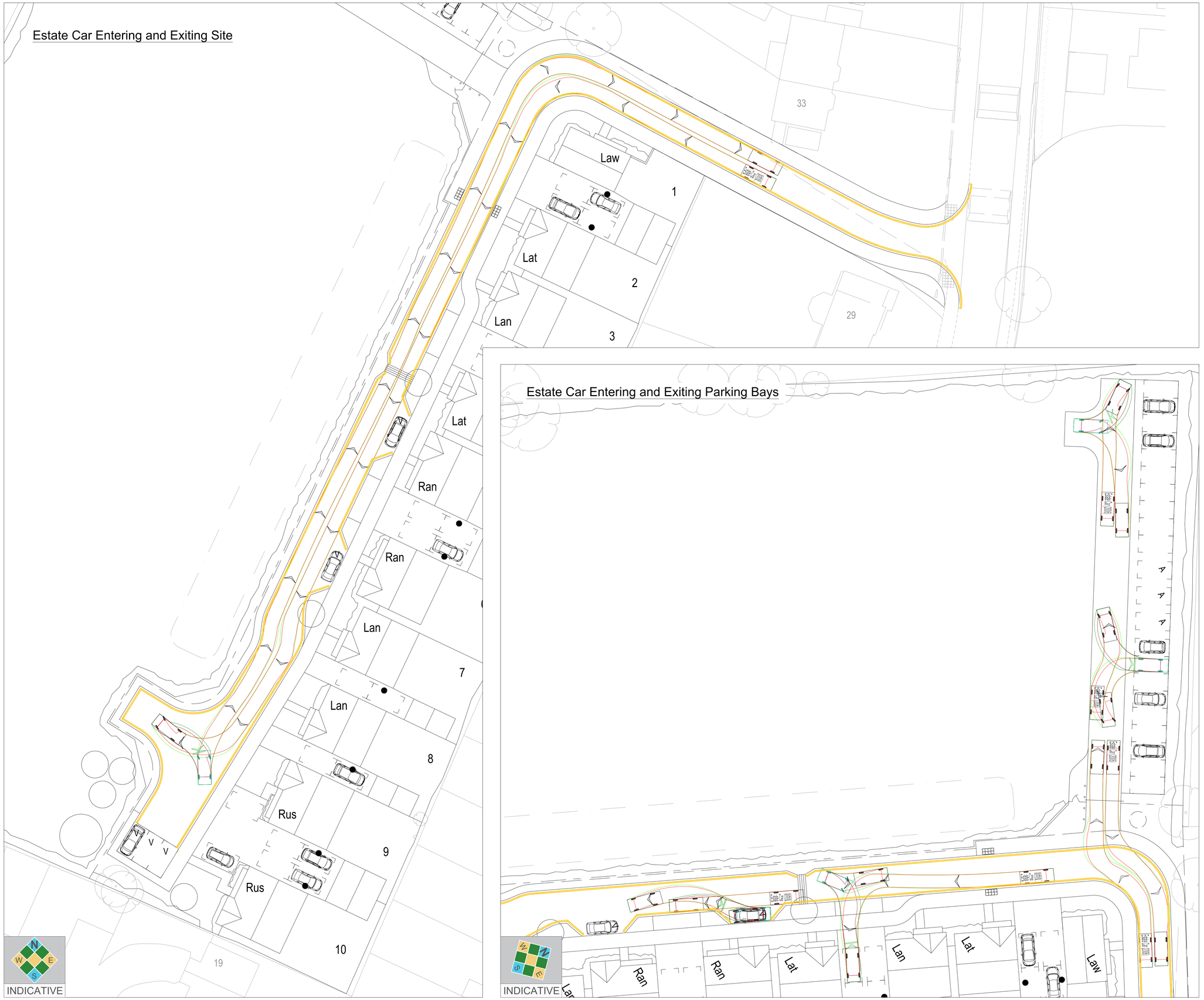
TITLE:
Onsite Swept Path Analysis - Refuse Vehicle Entering Site

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	26.01.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SP04	C

Estate Car Entering and Exiting Site



Estate Car Entering and Exiting Parking Bays

Notes:

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Vehicle Profile

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C	26.04.22	Prospoed Road Markings	FA	JM
B	04.04.22	Updated Layout & SPA	FA	JM
A	10.01.22	Updated Layout & SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

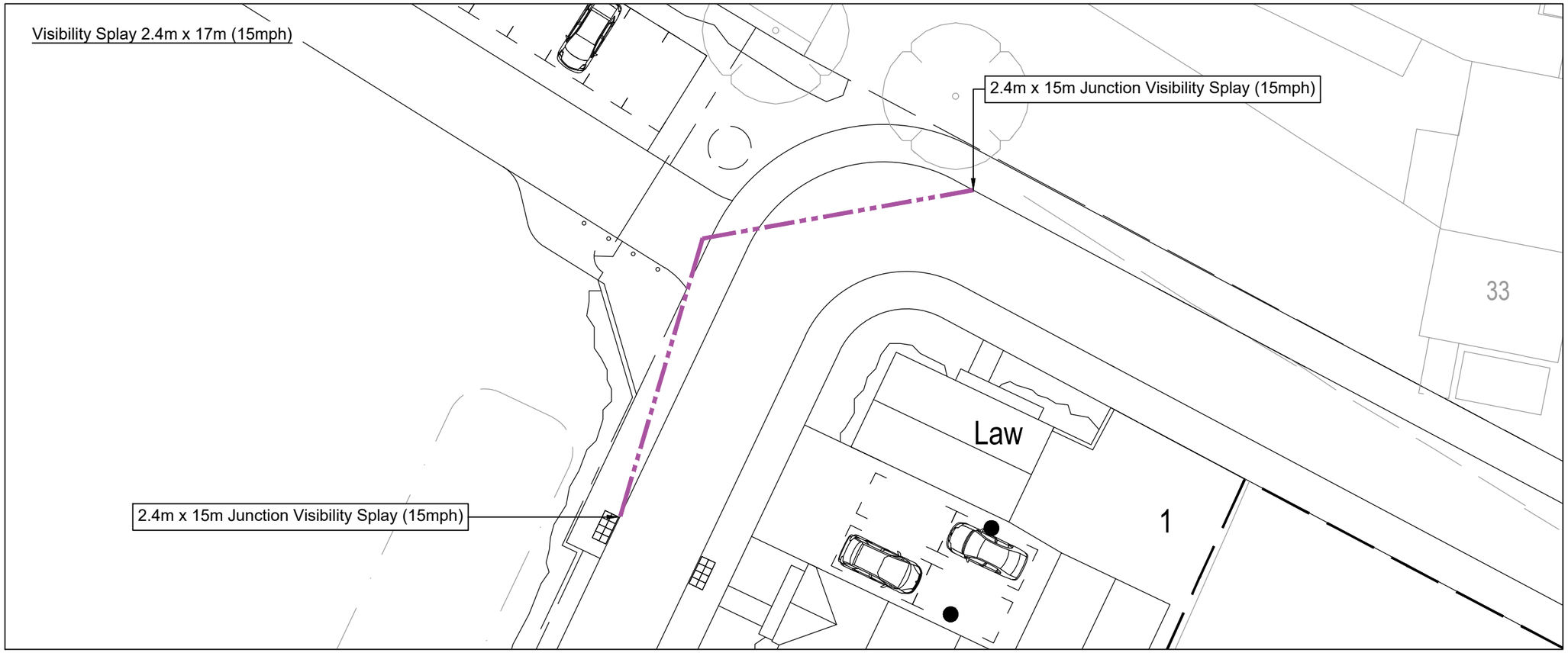
PROJECT:
Paygrove Lane, Longlevens

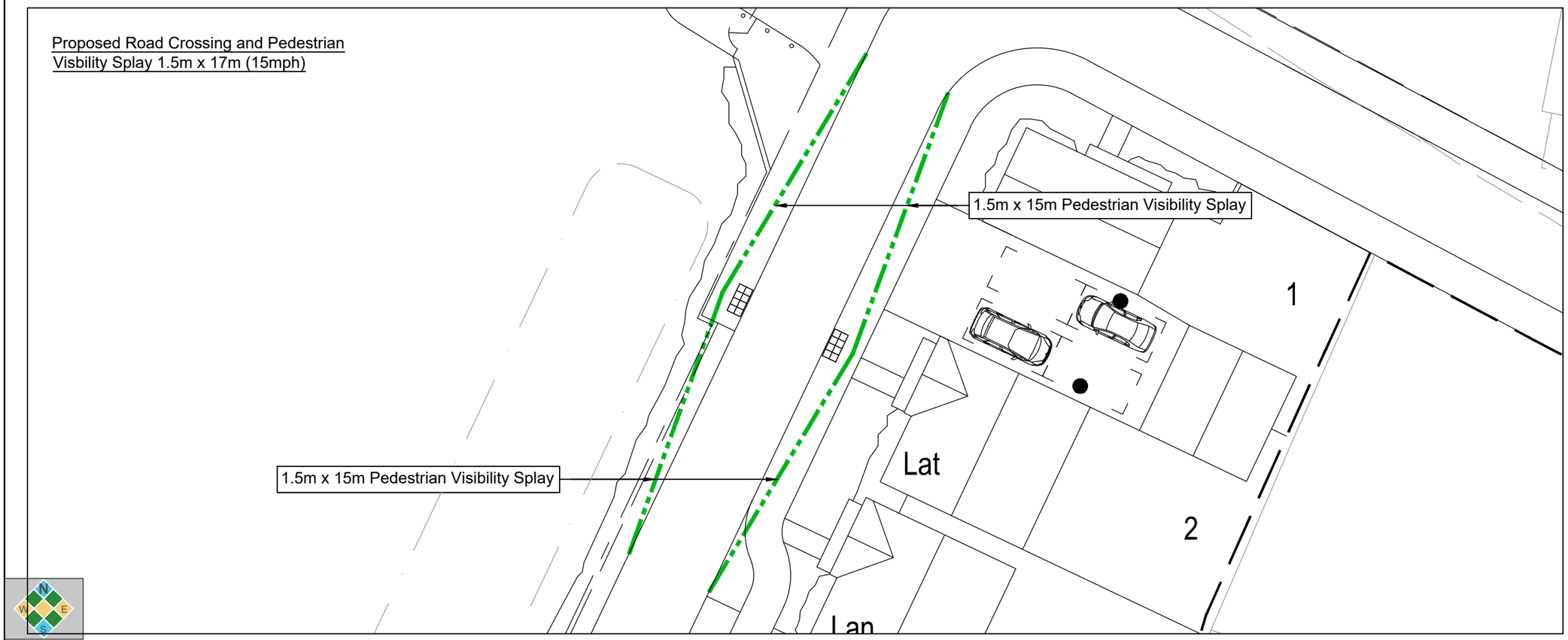
TITLE:
OnSite Swept Path Analysis - Estate Car

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 500	26.01.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SP03	C





INDICATIVE

Notes:

1. This drawing is based on the Architects layout (21.20.020_PL005A) received from Coombes Everitt Architects on 24/03/2022.
2. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
3. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.

KEY:

Junction Visibility Splay 2.4m x 15m

Pedestrian Visibility Splay 1.5m x 15m

Rev	Date	Details	Drawn by	Checked by
B	04.04.22	Updated Layout & Visibility Splays	FA	JM
A	10.01.22	Updated Layout & Visibility Splays	RC	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

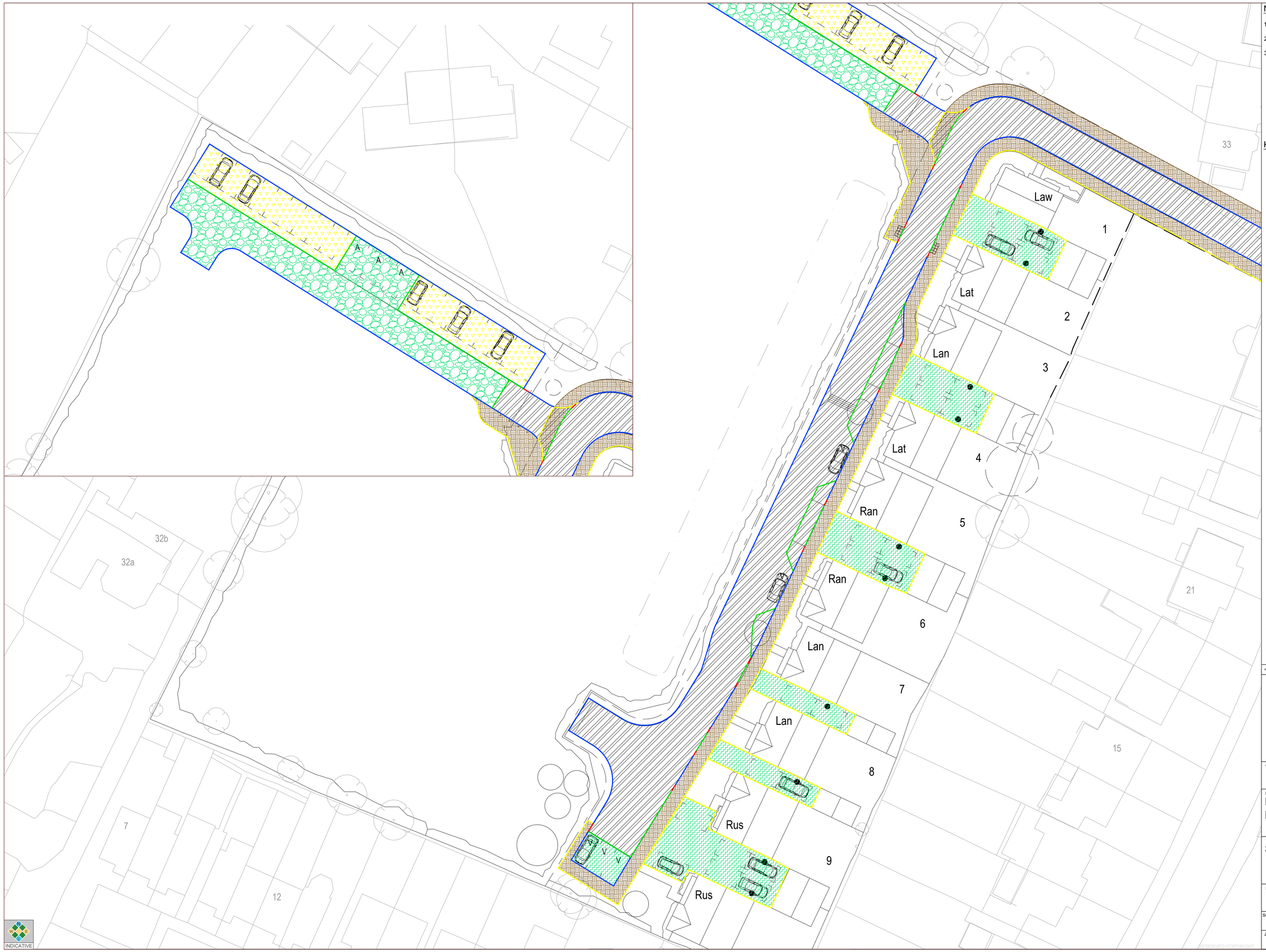
PROJECT:
Paygrove Lane, Longlevens

TITLE:
Internal Visibility Assessment

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	10/02/22	RC	FA	JM

JOB NO:	DRAWING NO:	REVISION:
21-0760	SK03	B



INDICATIVE

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Key

- MACADAM/TARMAC CARRIAGEWAY CONSTRUCTION
- FOOTWAY CONSTRUCTION
- PERMEABLE PRIVATE DRIVE CONSTRUCTION - BLOCK PAVED
- GRASSCRETE OR GEOGRID-GRAVEL CONSTRUCTION
- GRASSCRETE OR GEOGRID-GRASS CONSTRUCTION
- HALF BATTERED 'HB2' KERB WITH 100mm UPSTAND
- BN2 BULL NOSED KERB (3mm UPSTAND AT PEDESTRIAN CROSSINGS, 25mm ELSEWHERE)
- TRANSITION/DROPPER KERB
- EF EDGING KERB (0mm UPSTAND)

Rev	Date	Details	Drawn by	Checked by
E	20/06/22	PUBLIC PARKING FINISHES UPDATED	PG	KT
D	17/06/22	PLOT 10 FOOTPATH AND ENTRANCE TO POS UPDATED	PG	KT
C	14/06/22	GRASSCRETE ADDED	PG	KT
B	13/05/22	ARCHITECT LAYOUT UPDATED	TB	KT
A	17/02/22	DRIVE MATERIAL AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Surfaces Plan

STATUS: INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:250	16/02/22	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-0760	C005	E

INLETS VIA ACO SUDS SWALE INLETS

ATTENUATION CRATE UNDER SWALE FOR ADDITIONAL STORAGE 33m x 7m x 0.4m DEEP IL 17.38

1:200

1:200

INDICATIVE

Notes:

1. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
2. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
3. Drawing to be read in conjunction with all other drawings. Any discrepancies are to be reported to the engineer 5 working days in advance of undertaking any work.
4. All pipework to be 100Ø PVC UNO
5. All chambers to be 450Ø Type D Chambers UNO. Chambers marked with diameter to be Type B Chambers (except chamber at pump).

KEY

- SURFACE WATER MANHOLE AND SEWER
- FOUL WATER MANHOLE AND SEWER
- HIGHWAY GULLY AND CONNECTION
- DIFFUSER BOX AND CONNECTION
- 18.450 FINISHED FLOOR LEVELS
- SWALE
- +19.15 PROPOSED LEVEL
- RISING MAIN
- HEADWALL
- 1/39 GRADIENT
- UNDERBUILD (WITH HEIGHT)
- ATTENUATION CRATE
- RAINWATER GARDEN

Rev	Date	Details	Drawn by	Checked by
F	05.07.22	ARCHITECTS LAYOUT UPDATED	PG	KT
E	30.06.22	CUT OFF SWALE ADDED	PG	KT
D	27.06.22	AMENDED FOLLOWING GCC COMMENTS	PG	KT
C	14.06.22	SWALE AMENDED	PG	KT
B	13.05.22	ARCHITECT AND DRAINAGE LAYOUT UPDATED	TB	KT
A	19/02/222	RACD AND LAYOUT AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Engineering Layout Sheet 2

STATUS: INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:250	26/01/2022	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-0760	C003	F

PROPOSED PRIVATE PACKAGE PUMPING STATION.
PACKAGE PUMPING STATION TO BE TT PUMPS SATURN DUAL PUMP OR SIMILAR APPROVED PRODUCT.
DISCHARGE TO STW SURFACE WATER NETWORK AT 2l/s.
DISCHARGE RATE TO BE CONFIRMED BY STW.
TO BE MAINTAINED BY PRIVATE MANAGEMENT COMPANY

3m x 3m LINED UNDERDRAINED RAIN GARDEN
TO BE MAINTAINED BY PRIVATE MANAGEMENT COMPANY

FOR ACCESS LEVELS AND DETAILS SEE DRAWING CTP-0100-001 GENERAL ARRANGEMENT

250mm DEEP CUT OFF SWALE, 1 IN 5 SLOPES 600mm WIDE BASE

INLETS VIA ACO SUDS SWALE INLETS

ATTENUATION CRATE UNDER SWALE FOR ADDITIONAL STORAGE 33m x 7m x 0.4m DEEP IL 17.38

SW01 CL 18.80 IL 17.43
SW02 CL 19.08 IL 18.45
SW03 CL 18.93 IL 17.15
FW01 CL 18.72 IL 18.72
FW02 CL 19.10 IL 18.30
FW03 CL 19.35 IL 18.07
FW04 CL 19.48 IL 17.66
FW05 CL 19.37 IL 17.59
FW06 CL 19.33 IL 17.24
FW07 CL 19.05 IL 17.07
EX FWMH CL 18.93 IL 17.02
EX SWMH 17.49 SL

Notes:

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4. All pipework to be 100Ø PVC UNO
5. All chambers to be 450Ø Type D Chambers UNO. Chambers marked with diameter to be Type B Chambers (except chamber at pump).

KEY

- SURFACE WATER MANHOLE AND SEWER
- FOUL WATER MANHOLE AND SEWER
- HIGHWAY GULLY AND CONNECTION
- DIFFUSER BOX AND CONNECTION
- 18.450 FINISHED FLOOR LEVELS
- SWALE
- +19.15 PROPOSED LEVEL
- RISING MAIN
- HEADWALL
- 1/39 GRADIENT
- UNDERBUILD (WITH HEIGHT)
- ATTENUATION CRATE
- RAINWATER GARDEN

Rev	Date	Details	Drawn by	Checked by
G	05.07.22	ARCHITECTS LAYOUT UPDATED	PG	KT
F	04.07.22	SECOND SWALE LOCATION AMENDED	PG	KT
E	30.06.22	PITCH CUT OFF SWALE ADDED	PG	KT
D	27.06.22	UPDATE FOLLOWING GCC COMMENTS	PG	KT
C	14.06.22	SWALE AMENDED	PG	KT
B	13.05.22	ARCHITECT AND DRAINAGE LAYOUT UPDATED	TB	KT
A	16.02.22	ROAD AND LAYOUT AMENDED	PG	KT

COTSWOLD TRANSPORT PLANNING

CLIENT: Cotswold Oak Ltd

PROJECT: Paygrove Lane, Longlevens

TITLE: Engineering Layout Sheet 1

STATUS: INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:250	26/01/2022	PG	KT	KT

JOB NO:	DRAWING NO:	REVISION:
CTP-0760	C002	G

INDICATIVE

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1206 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	18.405	1.025	0.0	2.0	2.0	105.7	O K
30 min Summer	18.575	1.195	0.0	2.0	2.0	141.6	O K
60 min Summer	18.695	1.315	0.0	2.0	2.0	180.0	Flood Risk
120 min Summer	18.792	1.412	0.0	2.0	2.0	219.1	Flood Risk
180 min Summer	18.839	1.459	0.0	2.0	2.0	240.4	Flood Risk
240 min Summer	18.866	1.486	0.0	2.0	2.0	253.7	Flood Risk
360 min Summer	18.895	1.515	0.0	2.0	2.0	268.4	Flood Risk
480 min Summer	18.911	1.531	0.0	2.0	2.0	276.7	Flood Risk
600 min Summer	18.919	1.539	0.0	2.0	2.0	280.7	Flood Risk
720 min Summer	18.921	1.541	0.0	2.0	2.0	281.9	Flood Risk
960 min Summer	18.915	1.535	0.0	2.0	2.0	278.8	Flood Risk
1440 min Summer	18.888	1.508	0.0	2.0	2.0	264.8	Flood Risk
2160 min Summer	18.857	1.477	0.0	2.0	2.0	249.0	Flood Risk
2880 min Summer	18.828	1.448	0.0	2.0	2.0	235.3	Flood Risk
4320 min Summer	18.767	1.387	0.0	2.0	2.0	208.6	Flood Risk
5760 min Summer	18.702	1.322	0.0	2.0	2.0	182.5	Flood Risk
7200 min Summer	18.629	1.249	0.0	2.0	2.0	157.5	O K
8640 min Summer	18.547	1.167	0.0	2.0	2.0	134.1	O K
10080 min Summer	18.448	1.068	0.0	2.0	2.0	112.6	O K
15 min Winter	18.406	1.026	0.0	2.0	2.0	105.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	117.448	0.0	108.8	26
30 min Summer	79.010	0.0	146.5	41
60 min Summer	50.812	0.0	188.4	70
120 min Summer	31.621	0.0	234.7	130
180 min Summer	23.637	0.0	263.0	188
240 min Summer	19.105	0.0	283.6	248
360 min Summer	14.037	0.0	312.5	366
480 min Summer	11.286	0.0	335.0	486
600 min Summer	9.522	0.0	345.3	604
720 min Summer	8.282	0.0	345.2	724
960 min Summer	6.640	0.0	345.1	962
1440 min Summer	4.854	0.0	342.3	1238
2160 min Summer	3.541	0.0	472.9	1604
2880 min Summer	2.828	0.0	503.7	1996
4320 min Summer	2.055	0.0	548.9	2816
5760 min Summer	1.637	0.0	583.0	3632
7200 min Summer	1.371	0.0	610.7	4400
8640 min Summer	1.186	0.0	633.4	5192
10080 min Summer	1.049	0.0	654.0	5944
15 min Winter	117.448	0.0	108.8	26

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	18.575	1.195	0.0	2.0	2.0	141.7	O K
60 min Winter	18.695	1.315	0.0	2.0	2.0	180.3	Flood Risk
120 min Winter	18.793	1.413	0.0	2.0	2.0	219.5	Flood Risk
180 min Winter	18.840	1.460	0.0	2.0	2.0	241.1	Flood Risk
240 min Winter	18.868	1.488	0.0	2.0	2.0	254.6	Flood Risk
360 min Winter	18.898	1.518	0.0	2.0	2.0	269.7	Flood Risk
480 min Winter	18.914	1.534	0.0	2.0	2.0	278.4	Flood Risk
600 min Winter	18.923	1.543	0.0	2.0	2.0	282.9	Flood Risk
720 min Winter	18.926	1.546	0.0	2.0	2.0	284.7	Flood Risk
960 min Winter	18.923	1.543	0.0	2.0	2.0	283.1	Flood Risk
1440 min Winter	18.896	1.516	0.0	2.0	2.0	268.8	Flood Risk
2160 min Winter	18.854	1.474	0.0	2.0	2.0	247.5	Flood Risk
2880 min Winter	18.813	1.433	0.0	2.0	2.0	228.3	Flood Risk
4320 min Winter	18.716	1.336	0.0	2.0	2.0	187.9	Flood Risk
5760 min Winter	18.599	1.219	0.0	2.0	2.0	148.6	O K
7200 min Winter	18.446	1.066	0.0	2.0	2.0	112.4	O K
8640 min Winter	17.745	0.365	0.0	2.0	2.0	80.0	O K
10080 min Winter	17.618	0.238	0.0	2.0	2.0	52.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	79.010	0.0	146.6	41
60 min Winter	50.812	0.0	188.5	70
120 min Winter	31.621	0.0	234.7	128
180 min Winter	23.637	0.0	263.1	186
240 min Winter	19.105	0.0	283.6	244
360 min Winter	14.037	0.0	312.4	360
480 min Winter	11.286	0.0	334.9	476
600 min Winter	9.522	0.0	344.2	590
720 min Winter	8.282	0.0	343.8	706
960 min Winter	6.640	0.0	342.9	928
1440 min Winter	4.854	0.0	340.3	1348
2160 min Winter	3.541	0.0	473.2	1672
2880 min Winter	2.828	0.0	503.4	2132
4320 min Winter	2.055	0.0	549.2	3024
5760 min Winter	1.637	0.0	582.6	3856
7200 min Winter	1.371	0.0	610.1	4616
8640 min Winter	1.186	0.0	633.0	5360
10080 min Winter	1.049	0.0	653.9	6048

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	1.000
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.371

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	0.124	4	8	0.124	8	12	0.124

Model Details

Storage is Online Cover Level (m) 18.930

Complex Structure

Cellular Storage

Invert Level (m) 17.380 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	231.0	0.0	0.401	0.1	0.0
0.400	231.0	0.0			

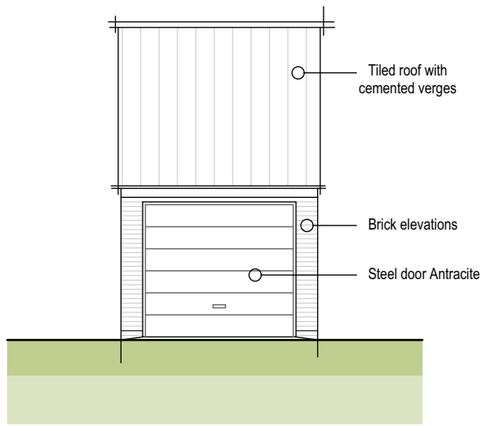
Swale

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	75.0
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	5.0
Safety Factor	2.0	Slope (1:X)	200.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	18.080	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.6		

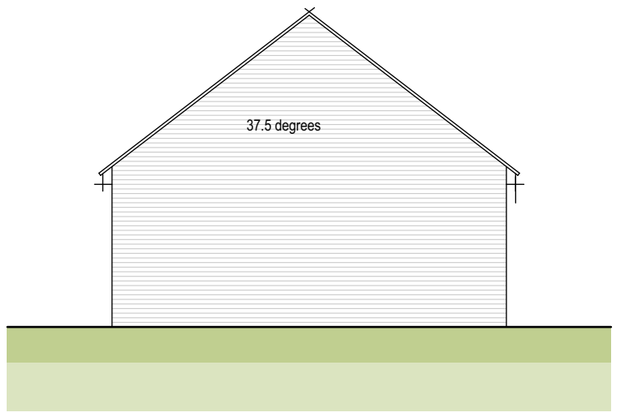
Pump Outflow Control

Invert Level (m) 17.150

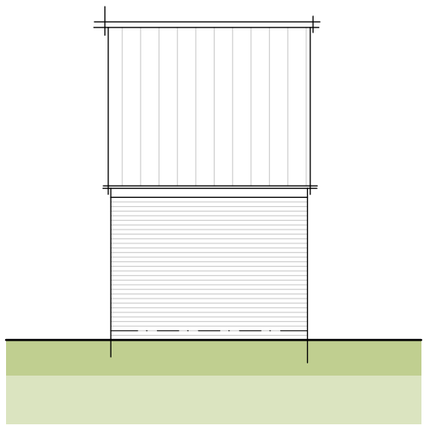
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		



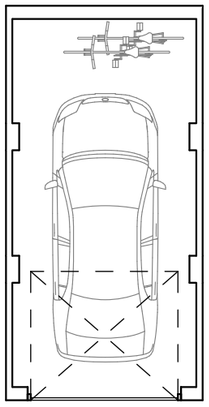
Front Elevation



Side Elevation



Rear Elevation



Single Garages

Scale bar 1:100

0 2 4 6 8 10

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105-107 Bath Road
Cheltenham
Gloucestershire
GL53 7LE
[redacted]
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- ☐ Preliminary
- ☐ Feasibility
- ■ Planning
- ☐ Building Regulations
- ☐ Tender
- ☐ Construction issue
- ☐ As Built

RIBA
Chartered Practice

Revison A

A 05/2022 AH Roof pitch reduced to 37.5 deg.

Drawing title: Proposed Single Garage

Client: Cotswold Oak Ltd

Drawn by: AH Checked: JE

Project No: 21.20.020

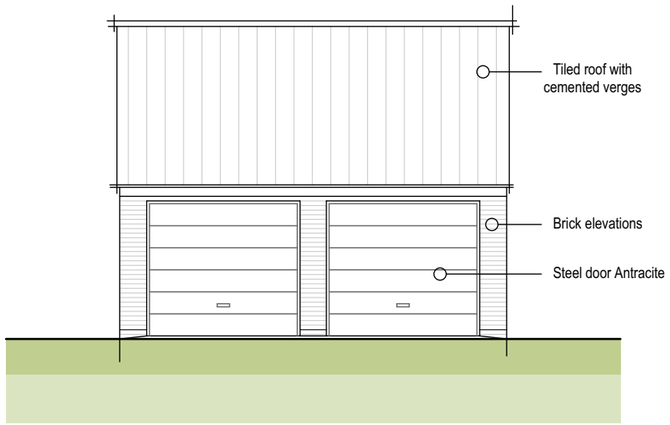
Project: Land at Paygrove Lane, Longlevens

Scale: 1:100 @ A3

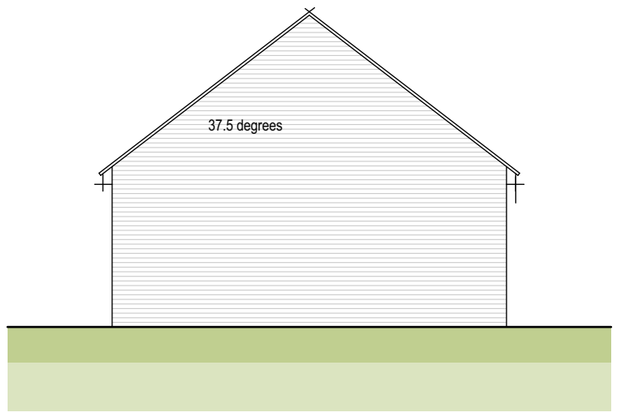
Date: February 2022

Project / Drawing No: 21.20.020 PLG02 A

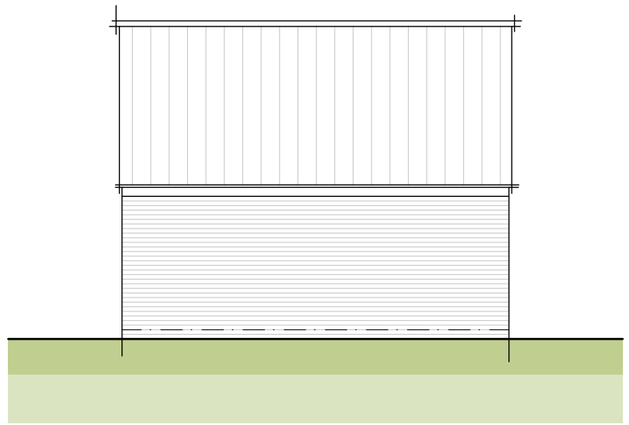
coombes : everitt architects



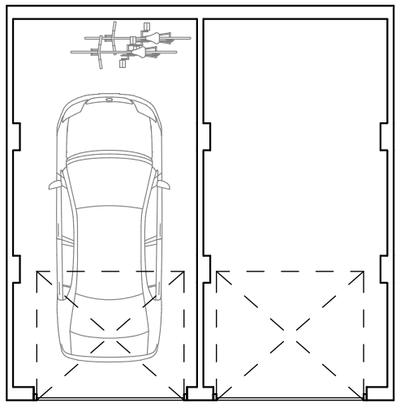
Front Elevation



Side Elevation

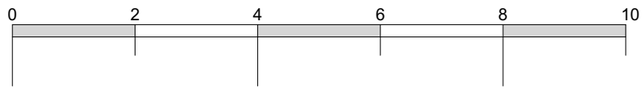


Rear Elevation



Pair Garages

Scale bar 1:100



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GL53 7LE
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- ☐ Preliminary
- ☐ Feasibility
- ■ Planning
- ☐ Building Regulations
- ☐ Tender
- ☐ Construction issue
- ☐ As Built

RIBA
Chartered Practice

Revison A

A 05/2022 AH Roof pitch reduced to 37.5 deg.

Drawing title: Proposed Pair Garages

Client: Cotswold Oak Ltd

Drawn by: AH Checked: JE

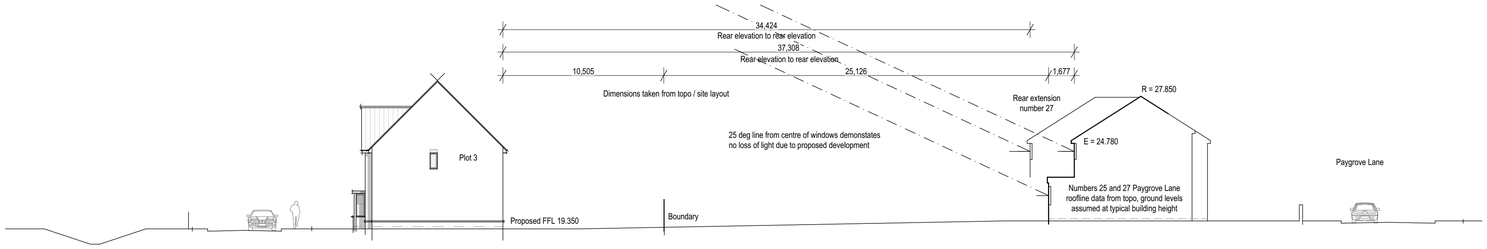
Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens

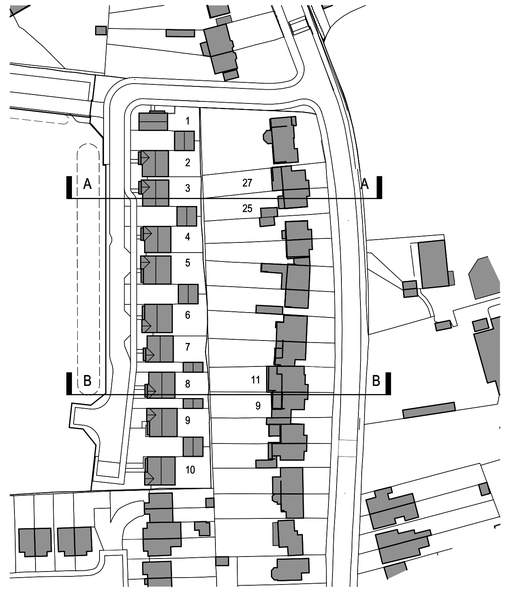
Scale: 1:100 @ A3

Date: February 2022

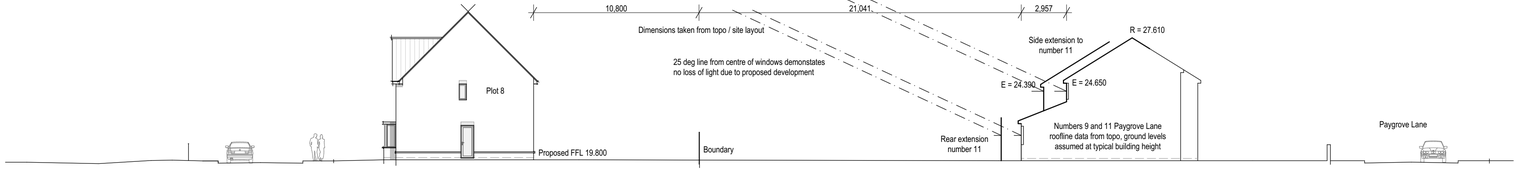
Project / Drawing No: 21.20.020 PLG01 A



Section A-A



Key 1:1000 scale



Section B-B

Scale bar 1:200

0 5 10 15 20

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- ■ Planning
- ☐ Building Regulations
- ☐ Tender
- ☐ Construction issue
- ☐ As Built

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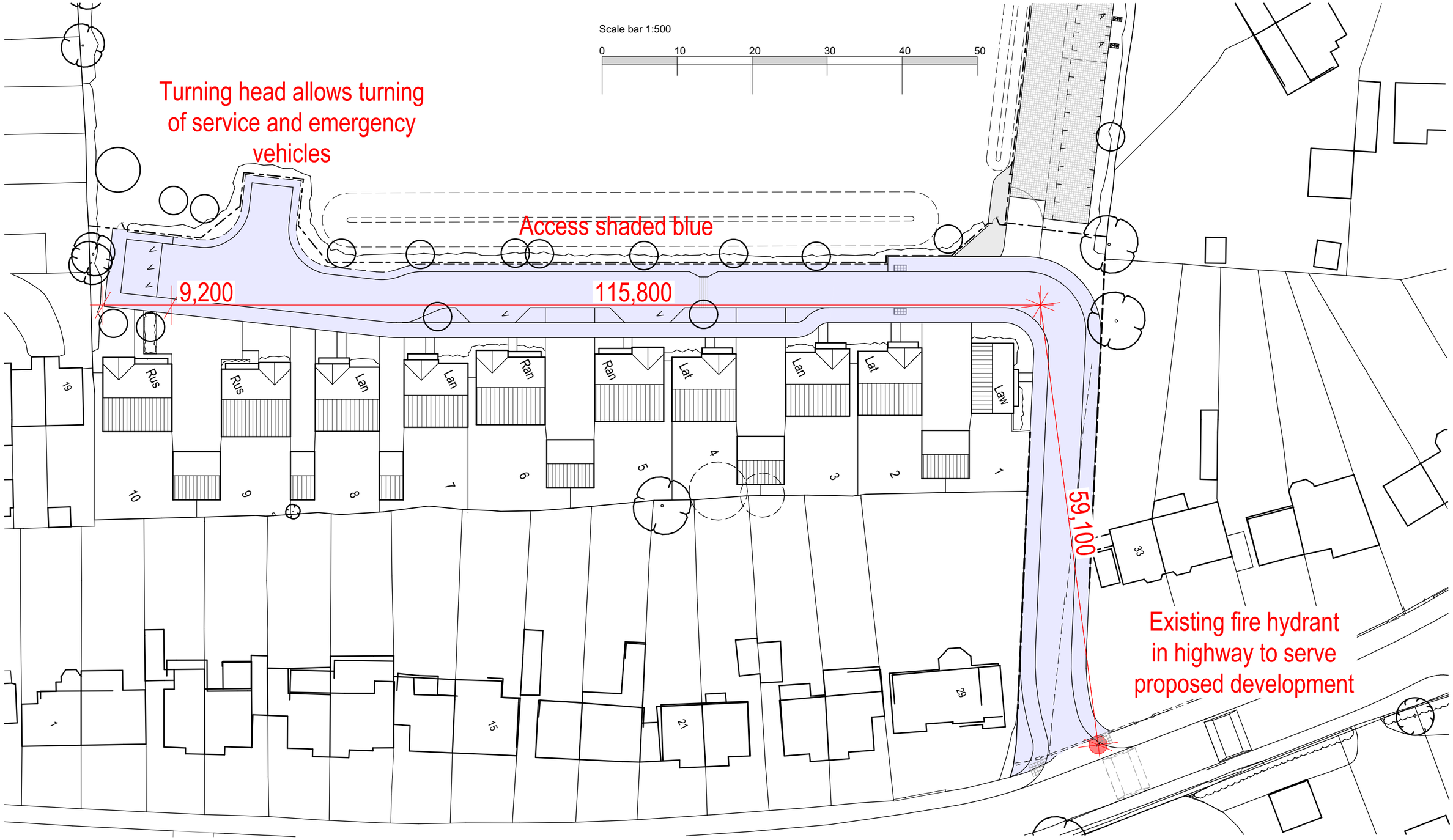
Revison A
A 05/2022 AH Key amended to suit layout revisons
B 07/2022 AH Amended to suit drainage design

Drawing title:	Typical Sections Proposed Development to Existing Paygrove Lane Housing
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:200 @ A1
Date:	April 2022
Project / Drawing No:	21.20.020 PL010 B



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Revison A
A 05/2022 AH Amended to suit layout revisons to LPA comment
B 06/2022 AH Attenuation area revised to suit Engineering layout
C 076/2022 AH Attenuation area revised to suit Engineering layout

Drawing title: Fire Hydrant Strategy Plan
Client: Cotswold Oak Ltd
Drawn by: AH Checked: JE
Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens
Scale: 1:500 @ A3
Date: February 2022
Project / Drawing No: 21.20.020 PL009 C

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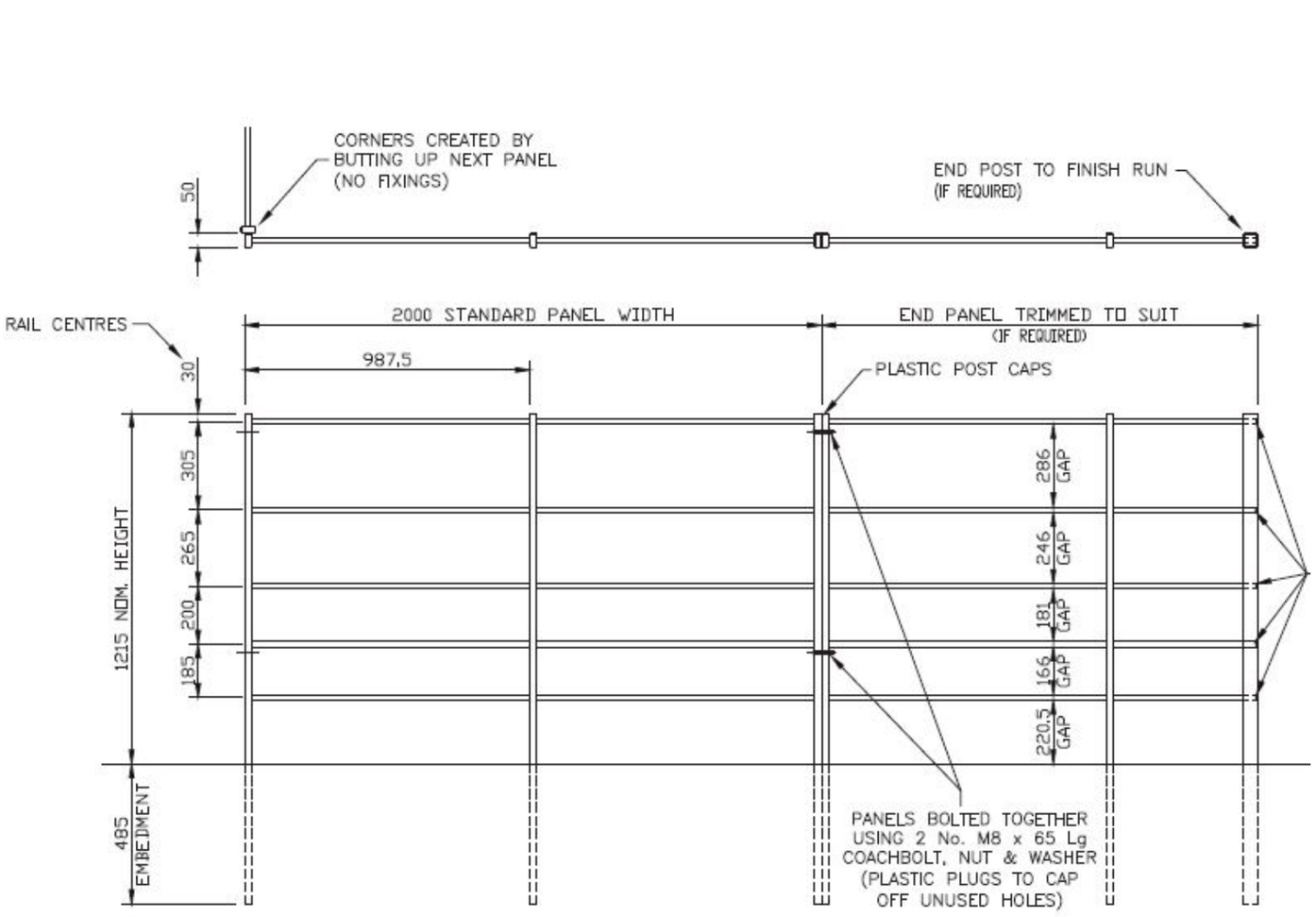

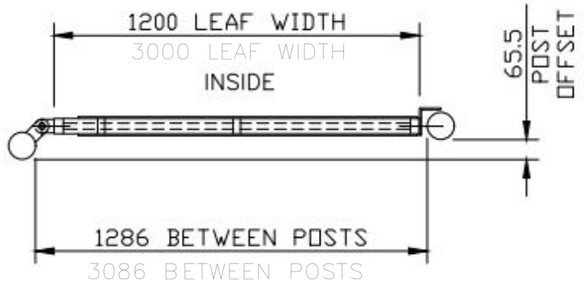

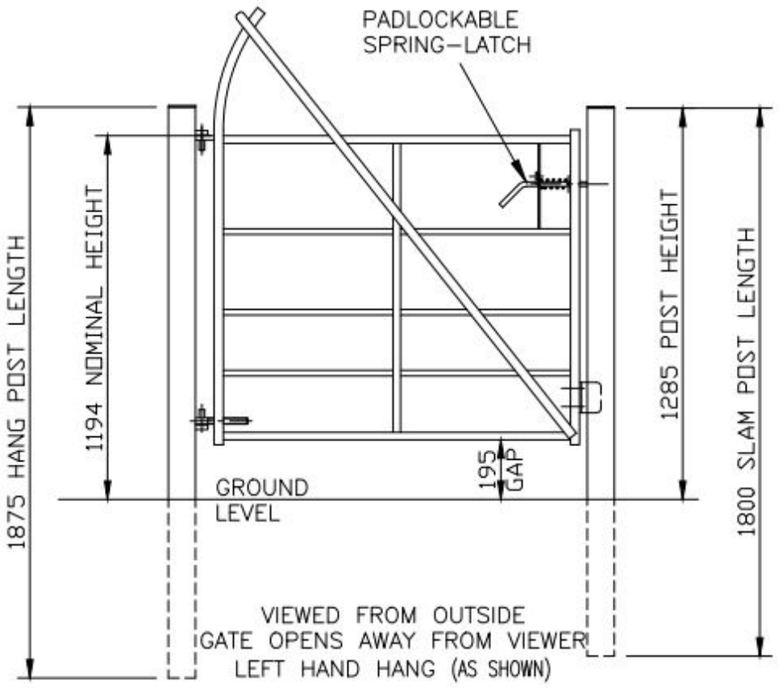

Scale bar 1:20

0 0.5 1.0

ESTATE GATE
1.2m WIDE OR 3.0m WIDE

NOTES.

ALL DIMENSIONS ARE IN mm (UNO)
GAPS UNDER GATES & FENCING
ARE NOMINAL DUE TO GROUND LEVELS.

MATERIALS.

GATE POSTS: ø88.9 CHS
T & B RAILS: 50 x 25 RHS
MID RAILS: ø19 CHS
STILES: 50 x 30 RHS
BRACES: 30 x 6 MS FLAT

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Revisons
A 05/2022 AH 3.0m wide gated referenced

Drawing title:	Estate Railing and Gate Detail	Project:	Land at Paygrove Lane, Longlevens
Client:	Cotswold Oak Ltd	Scale:	1:20 @ A3
Drawn by:	AH Checked: JE	Date:	February 2022
Project No:	21.20.020	Project / Drawing No:	21.20.020 PL007 A

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Existing chain-link and wire mesh fences retained to boundary

Parking spaces and Accessible bays to be demarked to define bays. Accessible bays to be marked with vertical sign to rear of space

Replace existing close boarded timber fence with new acoustic timber fence to LPA approval; all at developers expense and with approval of property owner

Brick boundary wall 2.0m high with brick-on-edge coping to match house finishes

Grasscrete, Geo-grid finishes or similar to LA approval to un-adopted access and parking spaces. Access and accessible spaces to be gravel filled, parking bays to be grass filled

Turning for cars

2.0m height restricting barrier (openable for maintenance) at entrance to POS parking area together with lockable (padlock) lower barrier to LPA specification, painted finish in Black to LAP approval

3.0m wide gate with padlock to LA approval for maintenance access to POS

22 number demarked parking bays including 3 suitable for disabled use, finished in paviors, and 19 finished in grasscrete blocks

1.2m high, five rail metal estate railings with black painted finish to boundary of playing field. 'X' indicates 1.2m wide gap to permit pedestrian access to POS

Pedestrian pass gate within estate railings to facilitate foot access to playing field

tactile paving at pedestrian crossing point

Existing chain-link fence retained to boundary

Area for playing field with space for potential pitches as per Outline Approval to be cleared of existing planting and weeds, graded to a level finish, and harrowed to a fine tilth, prior to re-seeding with a grass mix suitable for amature playing pitches. Specification to be as agreed with Gloucester City Council

Storm water attenuation basin to design and specification by Cotswold Transport Planning

Access road to be offered for adoption to approval of Gloucestershire County Highways, refer to details by Cotswold Transport Planning

1.2m high, five rail metal estate railings with black painted finish to boundary of playing field

Existing tree planting to site boundaries to be retained as existing and indicated thus

Existing chain-link fence retained to boundary

Low hedgerow to POS boundary to allow natural surveillance over space from adjacent houses. Refer to specification by MHP landscape consultants

Turfing head for service and emergency vehicles

Visitor parking finished in setts within highway

Existing planting to boundary, previously cut back, to be replanted with a new native species hedgerow (shown hatched) to form dense planted boundary to POS. Refer to details by MHP landscape consultants

Existing chain-link fence retained to boundary

1.8m high close boarded fence to boundary at end of access

1.8cb indicates 1.8m high close board timber fence to rear plot boundaries and plot sub-divisions. Rear boundary fences erected on development site and without removing neighbouring boundary treatments

Trees to be removed shown dotted

On plot bin storage

Paths and patios out of 0.6x0.6m pcc slabes laid to falls to drain to adjacent soft landscaping

Landscape and Finishes Legend

FFL 19.350 — Proposed floor level

T — Tarmac finishes to highway and drives

PT — Permeable Tarmac finishes to drives

P — PCC block paviors, charcoal grey to GCH / LPA approval

G — Grasscrete block paving, geo-grid or similar to LPA approval to parking within POS. Grass to general parking spaces, and gravel fill to access and accessible spaces.

Paths and patios formed out of 600x600x40mm pcc buff riven paving slabs by Tobermore laided over 100mm concrete oversite and drained to adjacent soft landscaped areas.

Russell Bute roof tile Anthracite

Brick - Ibstock Forterra Chelsea Smoked Red

Brick - Ibstock Forterra Atherstone Red Multi

Turf — Areas prepared and laid to turf

Areas prepared and seeded to form playing field

pg — Pea gravel lain over weed supressing membrane

Prepared and planted borders with individual specimen shrub planting

Existing boundary planting retained and reinforced as necessary. Refer to specification by MHP landscape consultants

New hedgerow planting. Refer to specification by MHP landscape consultants

Existing trees to be retained

New tree planting

Trees to be removed

16 Amp power supply to facilitate electric vehicle charge point.

1.8m high close board timber fence with solid timber gates fitted with bolts top and bottom and lock operable from both sides
* indicates 130x130mm hole formed at ground level to provide access for hedgehogs between plots and through boundary

Black painted, five bar estate railings to demark residential development + pedestrian / maintenance pass gate as indicated

2.0m high acoustic fence - 12k Envirofence Jacksons Fencing

B — Paved hardstanding for on plot bin storage. Collection from kerbside to LA regime

Ecological enhancement in accordance with report by All Ecology
Ibstock Enclosed bat box 'C'
2 x Schwegler single nest for House Martins No.13
Schwegler bird home 1B

(B) — Duel use litter / dog waste bin to LA specification.
Wybone MLB112 galvanised steel bin, powder coated black (RAL 9005), pitched lid, litter and dog waste logo in gold applied to two sides, GCC logo applied to two sides, four standard litter apertures
NB In accordance with GCC requirements, temporary signage will be provided adjacent to each bin confirming developer's management co. details as point of contact for collection issues until formally adopted by GCC

(S) — Steel and recyled plastic bench. Wybone RPS/5 steel framed bench painted black (RAL 9005) with brown recyled slats

Trees

AC — Acer Campestre 'streetwise' (Field Maple)

SA — Sorbus Aria (Whitebeam)

PA — Prunus Avium (Cherry)

QR — Quercus Robur (Oak)

All trees and shrubs will conform to the specification for nursery stock as set out in British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees shall conform to BS 5236.
Trees to be 'feathered' 2m high with 5-8cm girth and staked to a height of 750mm and planted in 1.0x1.0m prepared tree pits incorporating 80 litres of TPMC and slow release fertiliser. Roots to be dipped in mycorrhizal inocculant immediately prior to planting.

Planting Notes

Ground preparation and planting works to include:
Excavate planting areas to a minimum depth of 600mm and remove all unsuitable material from site
Ensure / supply and spread 400mm depth of approved topsoil in areas to be planted. Light harrow to provide a fine tilth.
Collect and remove from areas to be planted or turfed all stones greater than 50mm in any dimension.
Supply and plant shrubs incorporating 20g / plant of slow release fertilizer into the backfill.
Provide and spread evenly over planting areas 75mm depth of coarse grade bark mulch.

Planted Borders

To be planted in groups of 3, 5, 7 per box in a random mix at a rate of 5 plants per sq/m

Type (i)	%
Cotoneaster Dameri	20
Berberis Candidula	25
Hedera Colchica Denata Veriegata	15
Mahonia Aquifolium	20
Spirea Japonica Bullata	20

Type (ii)	%
Cornus Canadensis	25
Euonymus Fortunei Radicans	25
Pachysandra Terminalis Veriegata	20
Vinca Major Variegata	20
Hedera Hibernica	10

Specimen Shrub Planting

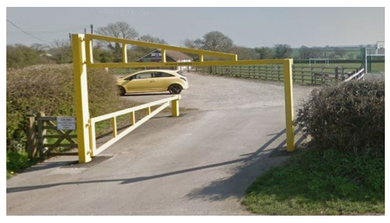
Individual container grown specimen shrubs (minimum 3 litre) shown thus

BD	Berberis Darwinii
CT	Choisya Ternata
FO	Forsythia Ovata
IQ	Ilex Aquifolium Golden Queen
IK	Ilex Altaclerensis Golden King
PV	Philadelphus Virginal
VA	Viburnum Aurora

2.0m high 12k Envirofence - acoustic fence

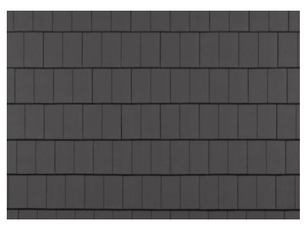
1.8m high close board fence

Ibstock Forterra Chelsea Smoked Red brick



Typical detail for barrier to POS parking space
Height restricted to 2.0m by barrier openable for maintenance traffic only, lower padlockable swing barrier.

1.2m high estate railings and gate



Russell Bute roof tile - anthracite

Ibstock Forterra Atherstone Red Multi

Revison

A	03/2022	AH	Hedgerow mix amended
B	03/2022	AH	Proposed layout plan to accord with access indicated on Outline approval
C	03/2022	AH	Access for hedgehogs indicated to new boundary fences
D	04/2022	AH	Ecological enhancement for birds and bats added, in accordance with report by All Ecology
E	05/2022	AH	Revisions to LPA comment
F	06/2022	AH	Surfaces to parking and barrier to POS noted
G	06/2022	AH	Permeable tarmac finishes to drives
H	06/2022	AH	Additional tarmac finishes at entrance to POS parking
I	06/2022	AH	Attenuation area up-dated to Engineering layout
J	07/2022	AH	Attenuation area up-dated to Engineering layout

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- [ ] Construction issue
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Drawing title: Materials Distribution and Landscaping
Client: Cotswold Oak Ltd
Drawn by: AH Checked: JE
Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens
Scale: 1:250 @ A1
Date: January 2022
Project / Drawing No: 21.20.020 PL006 J

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Accommodation schedule

Unit Mix

Ref	Bedrooms	Bedspaces	Number Off	GIFA sq/ft	Total sq/ft
Lawence	2 + study	3	1	935	935
Latchford	3	6	2	1389	2778
Langley	4	6	3	1389	4167
Ranscombe	4 + study	7	2	1615	3230
Ruscombe	5	8	2	1615	3230
					14340

Scale bar 1:500

0 10 20 30 40 50

Scale bar 1:200

0 5 10 15 20

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Revisions

A	03/2022	AH	Proposed layout to accord with access indicated on Outline approval
B	03/2022	AH	Accommodation schedule revised to indicate Langley house type as 6 bedspace
C	05/2022	AH	Revisions to LPA comment
D	06/2022	AH	Surfaces to parking and barrier to POS noted
E	06/2022	AH	Additonal tarmac surface at entrance to POS parking
F	06/2022	AH	Attenuation area up-dated to Engineering layout
G	07/2022	AH	Attenuation area up-dated to Engineering layout

Drawing title:	Proposed Site Layout and Street Scene
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:500, 1:200 @ A1
Date:	January 2022
Project / Drawing No:	21.20.020 PL005 G

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Existing Block Plan

Proposed Block Plan

Scale bar 1:500

0 10 20 30 40 50

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Revisions
A 03/2022 AH Proposed block plan to accord with access indicated on Outline approval
B 05/2022 AH Revisons to LPA comment
C 05/2022 AH Revisons to LPA comment
D 05/2022 AH Attenuation detail added to Engineer's design

Drawing title:	Existing and Proposed Block Plans
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020

Project:	Land at Paygrove Lane, Longlevens
Scale:	1:500 @ A1
Date:	January 2022
Project / Drawing No:	21.20.020 PL004 D

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21.20.020

New Residential Development
Paygrove Lane, Gloucester

Summary of Compliance with Technical Housing Standards, Nationally Described Space Standards; and required compliance with AD M4(2) required to 25% of development.

Lawrence House Type Plot 1 - Two Bedrooms, Three Persons – M4(2) Compliant 2b3p required gifa 70sq/m – achieved gifa 86.9sq/m. Required storage 2.0sq/m									
Bedrooms					Storage				
Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	U/stairs	GF Cpd	FF Cpd	Wrobe*	Total
11.50	8.52	n/a	n/a	n/a	1.00	n/a	0.40	0.70	2.10
Latchford House Type Plots 2 and 4 – Three Bedrooms, Six Persons – M4(2) Compliant 3b6p required gifa 102sq/m – achieved gifa 121.1sq/m. Required storage 2.5sq/m									
Bedrooms					Storage				
Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	U/stairs	GF Cpd	FF Cpd	Wrobe*	Total
19.41	11.52	11.54	n/a	n/a	1.00	n/a	1.35	1.39	3.74
Langley House Type Plots 3, 7 and 8 – Four Bedrooms, Six Persons 4b6p required gifa 106sq/m – achieved gifa 129.1sq/m. Required storage 3.0sq/m									
Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	U/stairs	GF Cpd	FF Cpd	Wrobe*	Total
12.27	12.03	10.08	8.63	n/a	0.88	n/a	0.47	1.84	3.19
Ranscombe House Type Plots 5 and 6 – Four Bedrooms, Seven Persons 4b7p required gifa 115sq/m – achieved gifa 150.1sq/m. Required storage 3.0sq/m									
Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	U/stairs	GF Cpd	FF Cpd	Wrobe*	Total
12.53	11.51	11.55	7.97	n/a	1.00	n/a	1.45	1.05	3.50
Ruscombe House Type Plots 9 and 10 – Five Bedrooms, Eight Persons 5b8p required gifa 128sq/m – achieved gifa 150.1sq/m. Required storage 3.5sq/m									
Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	U/stairs	GF Cpd	FF Cpd	Wrobe*	Total
12.53	11.51	11.55	7.57	7.50	1.0	0.78	0.67	1.05	3.50

Wrobe* total storage within fitted wardrobes in excess of the wardrobe space specified in 'h' below

Notes:
The Technical housing standards – nationally described space standard requires that:

a. The dwelling provides at least the gross internal floor area and built-in storage area set out in Table 1 of the document and as noted above for each house type
b. A dwelling with two or more bedspaces has at least one double (or twin) bedroom
c. In order to provide one bedspace, a single bedroom has a floor area of at least 7.5m^2 and is at least 2.15m wide
d. In order to provide two bedspaces, a double (or twin bedroom) has a floor area of at least 11.5m^2
e. One double (or twin bedroom) is at least 2.75m wide and every other double (or twin) bedroom is at least 2.55m wide
f. Any area with a headroom of less than 1.5m is not counted within the Gross Internal Area unless used solely for storage (if the area under the stairs is to be used for storage, assume a general floor area of 1m^2 within the Gross Internal Area)
g. Any other area that is used solely for storage and has a headroom of 900-1500mm (such as under eaves) is counted at 50% of its floor area, and any area lower than 900mm is not counted at all
h. A built-in wardrobe counts towards the Gross Internal Area and bedroom floor area requirements, but should not reduce the effective width of the room below the minimum widths set out above. The built-in area in excess of 0.72m^2 in a double bedroom and 0.36m^2 in a single bedroom counts towards the built-in storage requirement
i. The minimum floor to ceiling height is 2.3m for at least 75% of the Gross Internal Area

Furnished layouts are not required to demonstrate compliance.

Part M4(2)

It is confirmed that plots as noted above (Lawrence and Latchford) are to comply in full with the requirements of AD M4(2), which briefly will include the following:

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Directors; Toby Coombes RIBA John Everitt RIBA

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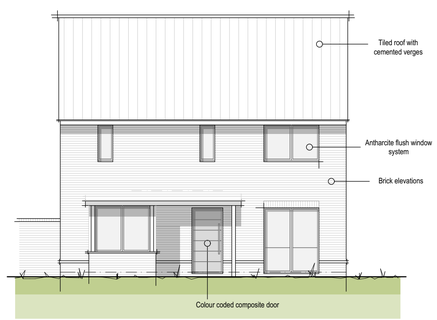
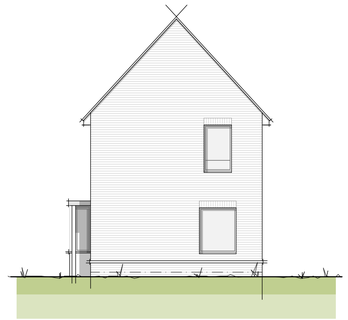
- Principal private entrance to have a1.2x1.2m landing externally. The entrance to be covered for a width of 900mm and a min depth of 600mm. There will be complant external lighting.
- The principal entrance (or alternative to suit ground levels) will have a level threshold.
- External entrance doors will have a minimum clear opening width of 850mm in accordance with dia. 2.2, and extending 1200mm beyond. A minimum 300mm nib to the leading edge of the door and a maximum The maximum reveal to the leading edge to be 200mm.
- All internal door widths and corridor widths to comply with dia 2.3, typically all habitable room, ground floor wc and first floor bathroom to have clear opening of 775mm in conjunction with a corridor width of 1050mm (typically minimum 826mm door leaf).
- Ground floor accommodation to be step free
- Minimum stair width to be 850mm measured 450mm above pitch line (ignoring newels).
- Entrance storey living area.
- Minimum 1200mm infront of and between kitchen units.
- Principal window to principal living area to have glazing that starts a maximum of 850mm above floor level.
- Every bedrooom to provide a 750mm wide clear access route from the door to the window. The window should be obstruction free for a minimum of 750mm.
- Principal bedroom to 750mm clear zone to both sides and the end of the bed, all other doubles to have 750mm clear zone to one side and the end of the bed, and all single bedrooms to have a 750mm with clear zone to the side of the bed. Access zones to bed spaces to be indicated in accordance with dia. 2.4
- All walls, ducts and boxings in required wc/cloakroom/bathrooms to be cablable of supporing grab rails, seats and other adaptions that could impose a load of 1.5kN/m2. Additonal sanitary provision need not comply.
- All dwellings will provide on the entrance storey a suitable wc/cloakroom or bathroom. The door will open outwards. Two or three storey dwellings with one or two bedrooms will comply with dia. 1.3. Two of three storey dwellings with three or more bedrooms will have additonal provision for the installation of a level entry shower in accordance with dia. 2.5 and 2.6.
- Every dwelling will have a bathroom on the same floor as the bedroom described as the principal (bedroom 1) that contains a wc, basin and a bath. The bathroom will meet the provisons of dia. 2.5 and 2.7. Provison for a level entry shower will be made in the bathroom unless elsewhere in the dwelling.
- All services and controls including consumer units, switches, sockets, stopcocks, boiler timer controls and thermostats shall be provided and set out to accord with para. 2.3. Radiator and cooker hood controls are exempt.
- Window handles to be located in accordance with para. 2.3

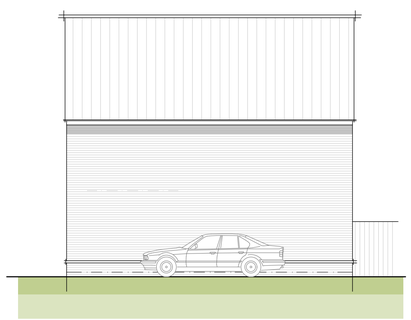
To be read in conjunction with AD Part M M4(2)



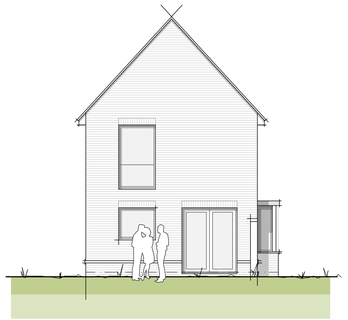
Front Elevation



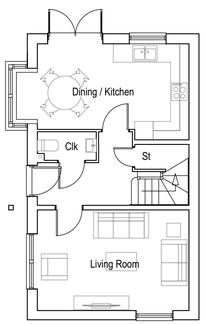
Side Elevation



Rear Elevation



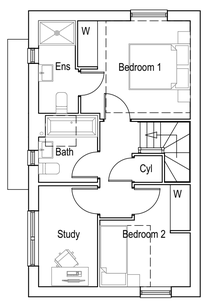
Side Elevation



Ground Floor Plan

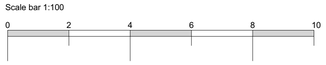
gifa 86.9sq/m (935sq/ft)

Plot 1



First Floor Plan

Scale bar 1:100



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- ☐ Construction issue
- ☐ As Built

RIBA
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Revisons

A	03/2022	AH	Amended to suit technical housing standard and allow compliance with M4(2)

Drawing title:	Lawrence House Type, 2 Bedroom
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:100 @ A1
Date:	November 2021
Project / Drawing No:	21.20.020 PLH01 A

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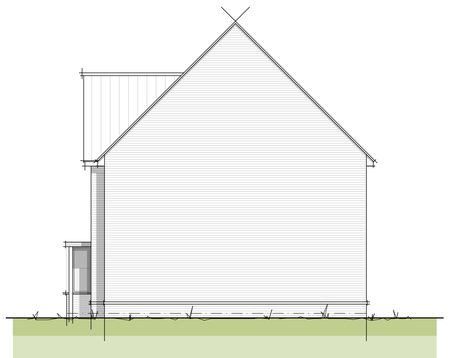
Front Elevation



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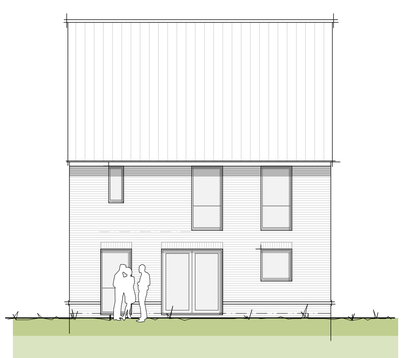

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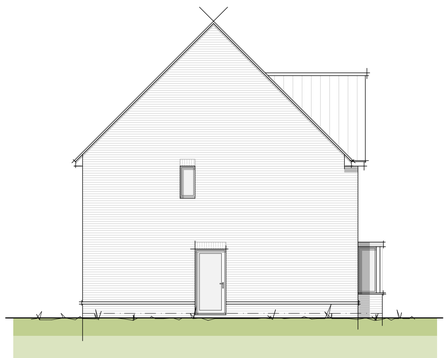

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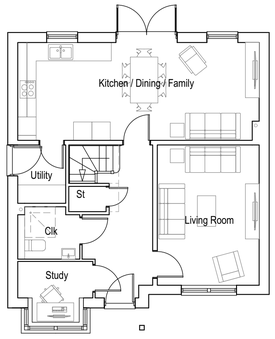
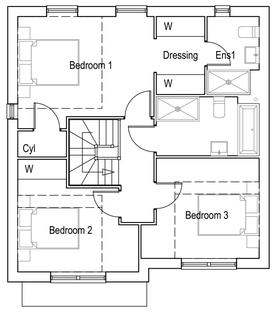


Ground Floor Plan

gifa 129.1sq/m (1389sq/ft)

Plots 2 & 4



First Floor Plan

Scale bar 1:100

0 2 4 6 8 10

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- ☐ Tender
- ☐ Construction issue
- ☐ As Built

RIBA Chartered Practice

Revisons

A 03/2022 AH Amended to suit technical housing standard and allow compliance with M4(2)

Drawing title: Latchford House Type, 3 Bedroom

Client: Cotswold Oak Ltd

Drawn by: AH Checked: JE

Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens

Scale: 1:100 @ A1

Date: November 2021

Project / Drawing No: 21.20.020 PLH02 A

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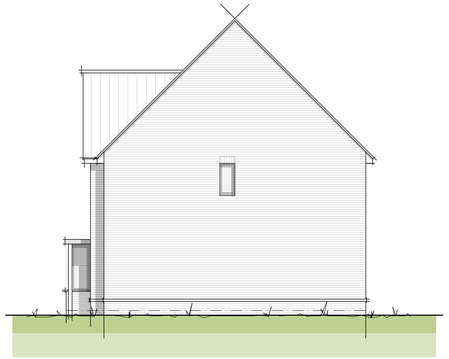
Front Elevation



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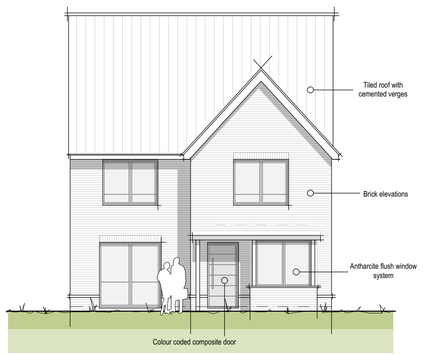

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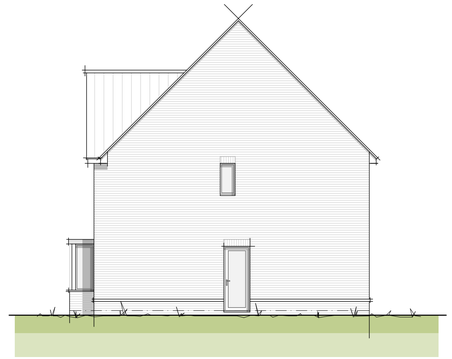

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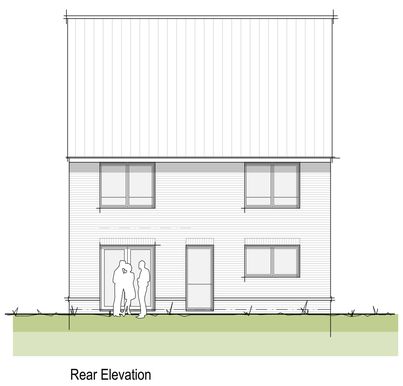

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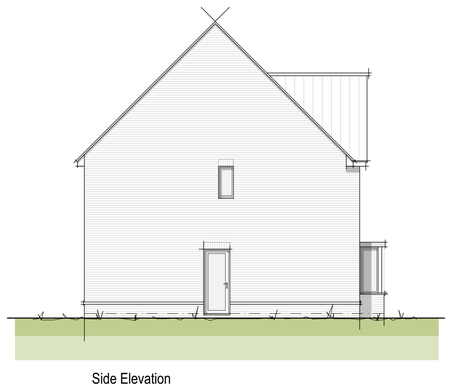

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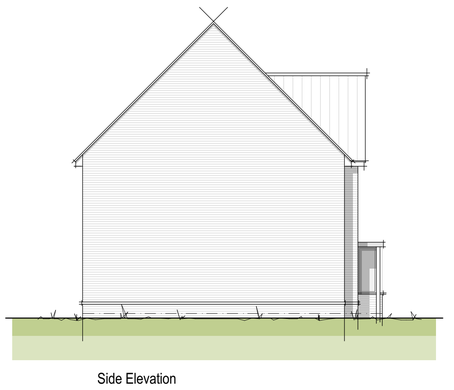

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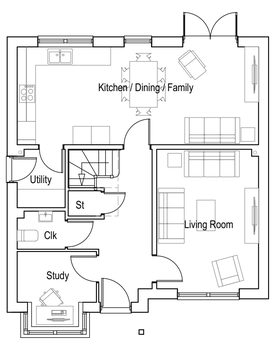
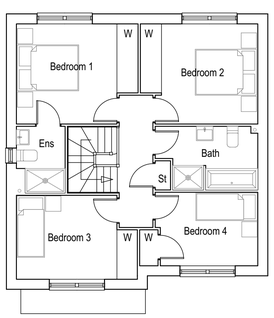
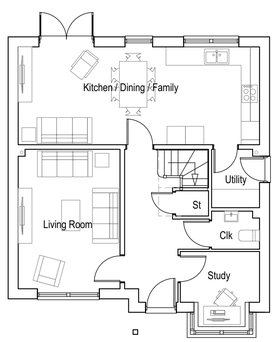


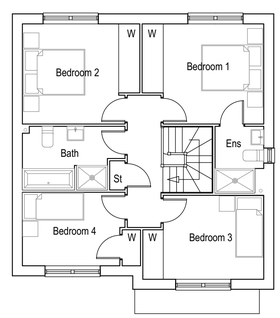
Ground Floor Plan
gifa 129.1sq/m (1389sq/ft)
Plot 3



First Floor Plan

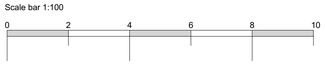


Ground Floor Plan
gifa 129.1sq/m (1389sq/ft)
Plots 7 & 8



First Floor Plan

Scale bar 1:100



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- ☐ Building Regulations
- ☐ Tender
- ☐ Construction issue
- ☐ As Built

Revisons

A 03/2022 AH Amended to suit technical housing standard

Drawing title:	Langley House Type, 4 Bedroom	Project:	Land at Paygrove Lane, Longlevens
Client:	Cotswold Oak Ltd	Scale:	1:100 @ A1
Drawn by:	AH Checked: JE	Date:	November 2021
Project No:	21.20.020	Project / Drawing No:	21.20.020 PLH03 A

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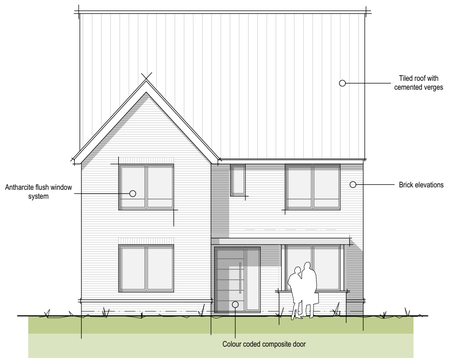
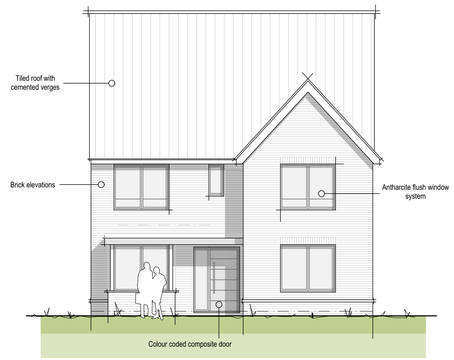


Front Elevation

Side Elevation



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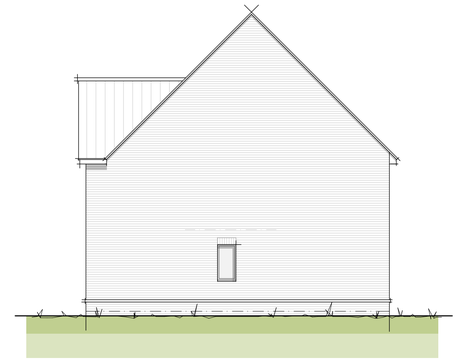


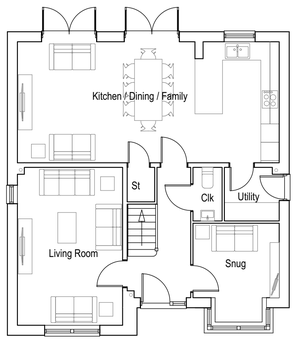
Side Elevation

Rear Elevation

Side Elevation

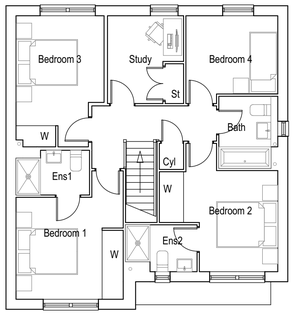
Rear Elevation

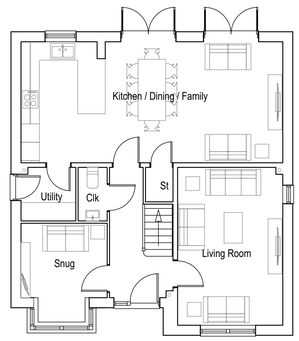
Side Elevation



Ground Floor Plan
gifa 150.1sq/m (1615sq/ft)

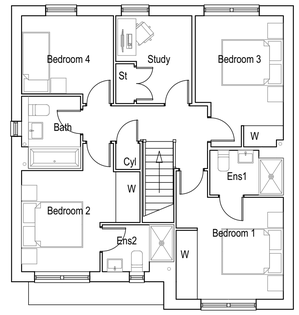
Plot 5





Ground Floor Plan
gifa 150.1sq/m (1615sq/ft)

Plot 6



First Floor Plan

Scale bar 1:100

0 2 4 6 8 10

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- ■ Planning
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- ☐ Tender
- ☐ Construction issue
- ☐ As Built

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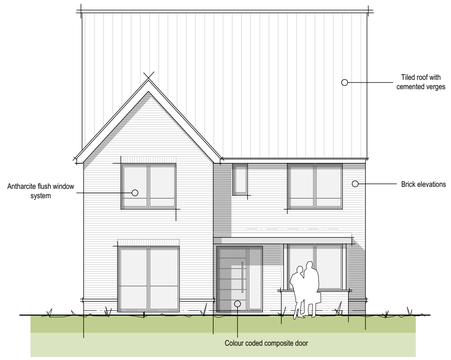
Revisons
A 03/2022 AH Amended to suit technical housing standard

Drawing title: Ranscombe House Type, 4 Bedroom
Client: Cotswold Oak Ltd
Drawn by: AH Checked: JE
Project No: 21.20.020

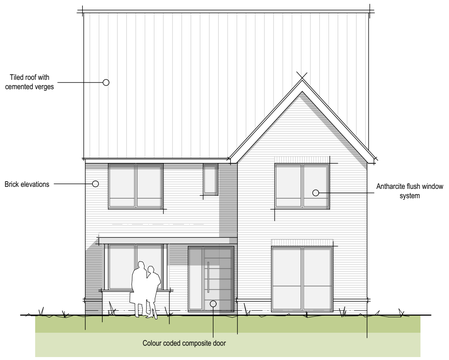
Project: Land at Paygrove Lane, Longlevens
Scale: 1:100 @ A1
Date: November 2021
Project / Drawing No: 21.20.020 PLH04 A

coombes : everitt architects



Front Elevation

Side Elevation



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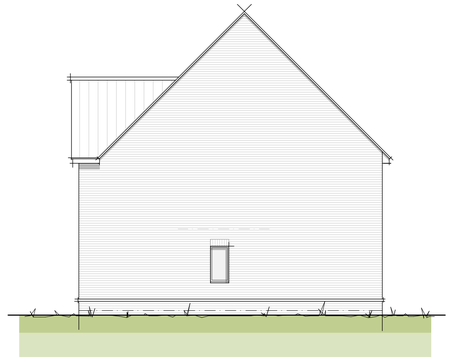
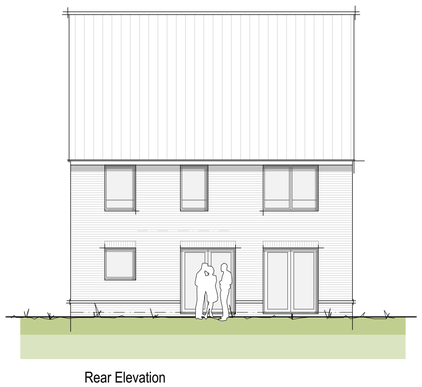
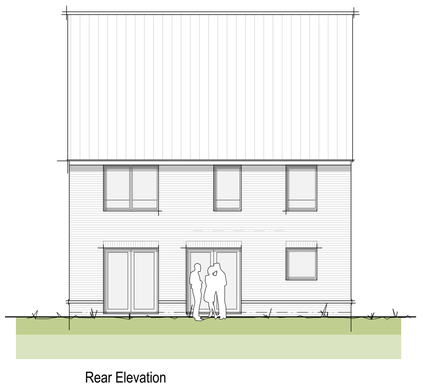


Side Elevation



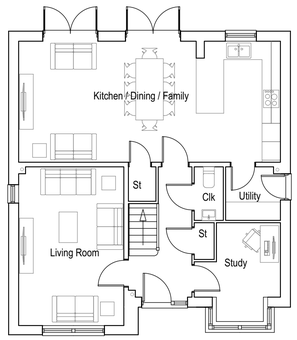
Rear Elevation

Side Elevation



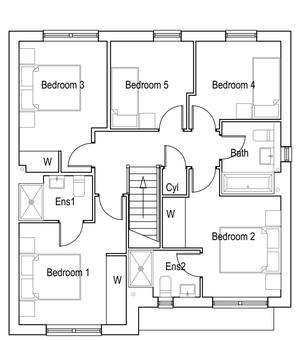
Rear Elevation

Side Elevation

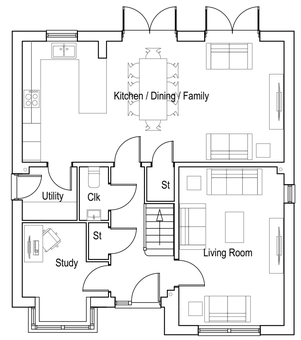


Ground Floor Plan
gifa 150.1sq/m (1615sq/ft)

Plot 9

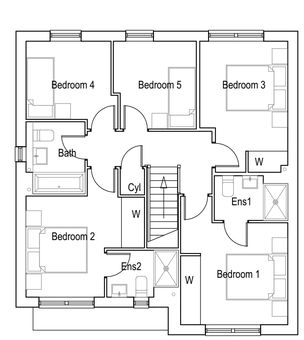


First Floor Plan



Ground Floor Plan
gifa 150.1sq/m (1615sq/ft)

Plot 10



First Floor Plan

Scale bar 1:100

0 2 4 6 8 10

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Revisons
A 03/2022 AH Amended to suit technical housing standard

Drawing title: Ruscombe House Type, 5 bedroom
Client: Cotswold Oak Ltd
Drawn by: AH Checked: JE
Project No: 21.20.020

Project: Land at Paygrove Lane, Longlevens
Scale: 1:100 @ A1
Date: November 2021
Project / Drawing No: 21.20.020 PLH05 A

coombes : everitt architects

Land to Rear of Paygrove Lane, Gloucester

Technical Note – Reserved Matters

21-0760

February 2022

1. Introduction

1.1 Cotswold Transport Planning Ltd (CTP) have been appointed by Cotswold Oak Ltd to provide a Technical Note (TN) in support of a reserved matters planning application for the residential development and associated open space on land to the rear of Paygrove Lane, Gloucester.

1.2 The application site benefits from outline planning permission, granted in December 2016 by GCC under LPA Ref: 16/01558/OUT, for the construction of up to 10no. dwellings with associated parking and landscaping and public open space. By virtue of planning permission being granted, the principle of development has been established at the site and the immediate local highway network has been assessed as suitable to accommodate additional vehicular trips and the general area is suitable in transport terms.

1.3 For the outline application, access was offered for consideration as part of the outline consent and has been approved. Vehicle and pedestrian access is proposed from Paygrove Lane on the eastern boundary of the site.

1.4 As such, this report has been prepared to detail the reserved matters application for the internal layout of the development and to confirm the suitability of access arrangements.

1.5 Overall, this TN demonstrates that the application site access arrangements are safe and suitable for the proposed development and shall not result in a significant impact on the local highway network, and the internal layout arrangements accord with GCC's Manual for Gloucestershire Streets (MfGS) guidance.

2. Site Location

2.1 The site consists of a 1.4ha playing field to the rear of 3 - 29 Paygrove Lane, Gloucestershire, which is located approximately 2.5km north-east of Gloucester City Centre.

2.2 A site location plan is contained in **Appendix B**.

3. Development Proposals

3.1 As mentioned above, outline planning permission for the erection of up to 10 dwellings, public open space and associated works was granted in 2016 (LPA ref: 16/01558/OUT).

3.2 The proposed site layout plan is included at **Appendix C**.

4. Site Access Arrangements

Vehicular Access

4.1 As part of the outline planning permission for the site (LPA ref: 16/01558/OUT), the access arrangements were approved from Paygrove Lane.

4.2 It is also noted that there have been changes in GCC's local guidance since the grant of planning permission. As a result, the access arrangements have been updated and amended to accord with the most recent MfGS Guidance, which in turn has resulted in a new traffic survey being undertaken, and updated visibility splay requirements.

4.3 At the bell mouth, the access has been widened from 4.8m to 6.8m, in accordance with MfGS, to accommodate two-way vehicle movement between a refuse vehicle and a car to reduce any potential conflict with traffic associated with Longlevens Infant School and Paygrove Lane that also serves as a local bus route.

4.4 The proposed access arrangements are provided at **Appendix D.**

Proposed Off-site Highway Works

4.5 Firstly, the existing access to 33 Paygrove lane will be relocated approximately 2.5m north, as shown in **Appendix D**, in order to accommodate the amended access arrangements.

4.6 Secondly, the existing traffic calming measure, in the form of a speed cushion, will be relocated approximately 14m north, see **Appendix D**, in order to accommodate the site access arrangements.

Vehicular Visibility Splay Assessment

4.7 To demonstrate that the access is suitable to accommodate the forecast development traffic, a review of the required visibility has been undertaken due to updated

guidance contained in MfGS since the grant of the original outline planning application.

4.8 A traffic survey was undertaken in the form of an Automatic Traffic Count (ATC) by 360 TSL Ltd, an independent traffic surveyor, on Paygrove Lane, in the vicinity of the proposed site access.

4.9 The ATC survey was undertaken during term time between Wednesday 17th November 2021 and Tuesday 23rd November 2021.

4.10 The full results of the traffic surveys are included as **Appendix E** and the average and 85th percentile vehicle speeds are provided in **Table 4.1**.

Direction	Average Speeds (mph)	85%ile Speeds (mph)
Northbound	18.3mph	22.1mph
Southbound	16.5mph	20.3mph

Table 4.1: Summary of Vehicle Speeds on Paygrove Lane

4.11 The ATC recorded 85th percentile speeds of 22.1mph northbound and 20.3mph southbound.

4.12 As the average speeds are below 40mph, and the 85th percentile speeds are below 37mph, a deceleration rate visibility parameter of 3.68m/s and a 1.5 second reaction time have been applied, in accordance with Table 10.1 of Manual for Streets 2 (MfS2).

Northbound

i) 85th Percentile (Design Speed): 22.1mph
ii) Reaction Time: 1.5 seconds; and
iii) Deceleration Rate: 3.68m/s.

Southbound

iv) 85th Percentile (Design Speed): 20.3mph
v) Reaction Time: 1.5 seconds; and
vi) Deceleration Rate: 3.68m/s.

4.13 With regards to 'X' distance, the standard 2.4m has been used.

4.14 Using the 85th percentile speeds detailed above, the required visibility splays, based on the recommended parameters from the centreline of proposed access, are 24.8m

to the north, to account for southbound speeds, and 28.08m to the south, to account for northbound speeds.

4.15 An access visibility arrangement drawing, provided at **Appendix F**, demonstrates the required emerging visibility splays can be achieved from the access. The drawing also demonstrates that suitable visibility splays can also be provided for the relocated access serving No. 33 Paygrove Lane.

4.16 To assess the suitability of the access to accommodate the anticipated vehicle movements associated with the proposed development, a swept path analysis assessment has been undertaken.

4.17 Vehicle swept path drawings are provided at **Appendix G** to demonstrate that a refuse vehicle and car and two cars can pass simultaneously at the junction.

4.18 On this basis the proposed access arrangement in the form of a priority junction with Paygrove Lane are safe and suitable to serve the proposed development.

Pedestrian Access

4.19 Pedestrian access to the application site will be from Paygrove Lane. A 2m footway is provided along the southern side of the carriageway and 1m margin is provided on the northern side of the carriageway in accordance with MfGS.

Internal Arrangements

4.20 The internal layout has been designed in accordance with the MfGS design criteria for 'Pedestrian Prioritised Streets'. MfGS sets out the criteria for a 'Pedestrian Prioritised Street, as follows:

i) A maximum design speed of 15mph;

ii) A carriageway width between 4.1m – 6.2m (if a bus route);

iii) Footways are to be 2m both sides or 1m where there is no frontage access;

iv) Cycleways are to be on street; and

v) On-street parking to be facilitated through localised carriageway widening.

4.21 The internal layout has been designed to achieve a maximum design speed of 15mph and comprises a 2m footway on the eastern side fronting the dwellings and 1m margin on the western side adjacent to the open space. A dropped kerb and tactile

paving is provided adjacent to plot 1 to facilitate access to the open space and parking area.

4.22 The internal access road includes a bend to the north-west of Plot 1 and the presence of such a feature acts as natural traffic calming within the development, reducing speeds of vehicles as they travel around the bend. A build out is proposed at mid-point adjacent to plot 4, with on street visitor parking bays and changes in the alignment of the carriageway in order to achieve a design speed of 15mph.

4.23 In order to demonstrate that the access to the car parking area serving the open space and pedestrian crossing point has suitable levels of visibility a drawing has been provided at **Appendix H** that demonstrates the car parking area access visibility splays of 2.4m x 15m and pedestrian visibility splays of 1.5m x 15m based on the internal design speed of 15mph.

4.24 To assess the suitability of the internal layout to accommodate the anticipated vehicle movements associated with the proposed development, swept path analysis has been undertaken.

4.25 The swept path drawings provided at **Appendix G** demonstrate that a refuse vehicle and car can suitably access, egress and turn within the site. Inter-visibility has also been demonstrated where the refuse vehicle and car cannot pass on the internal bend and at the turning head.

Parking

4.26 Residential parking standards are set out in MfGS Addendum (2021) and the following are the minimum requirements:

i) One-bed / Two-bed dwellings – one space;

ii) Three-bed / Four-bed dwellings – two spaces; and

iii) Five-bed dwellings – three spaces.

4.27 The proposed layout provides two parking spaces for the two, three and four bed dwellings and three spaces for the five-bed dwelling that accords with MfGS.

4.28 MfGS requires a minimum of one visitor car parking space per five dwellings. Five dedicated visitor parking spaces are provided to also take account of any variation in car ownership/parking demand from the four-bed dwellings.

4.29 The proposed site layout plan provided at **Appendix C**, indicates that 22 spaces will be provided for the public open space, including three accessible parking bays.

4.30 It has been demonstrated that the proposed parking provision meets the guidance provided in MfGS.

Electric Vehicle Charging

4.31 Guidance contained within MfGS states that *'all new dwellings which provide car parking should be fitted with electric vehicle charging infrastructure.'* As such, the dwellings will be provided with active electric vehicle charging facilities, in accordance with MfGS guidance.

Cycle Parking

4.32 In terms of the level of cycle parking provision proposed on-site, MfGS refers to LTN1/20 - Cycle Infrastructure Design, stating *'the ratios in table 11-1 should be applied'*.

4.33 Table 11-1, within the LTN 1/20 – Cycle Infrastructure Design, states that for residential land-use, a minimum of one cycle space should be provided per bedroom.

4.34 A minimum of one cycle parking space per bedroom is therefore to be provided within the proposed garages, which will be sheltered, secure and easily accessible.

4.35 Cycle parking will be provided in accordance with LTN 1/20 and MfGS (2021) guidance.

Servicing and Delivery

4.36 The internal layout has been designed to accommodate the typical servicing requirements for residential developments.

4.37 Refuse collection will take place on site via the internal access road. Swept path analysis drawings demonstrating the suitability of the internal layout to enable a refuse vehicle to manoeuvre internally is shown at **Appendix G.** The internal layout provides adequate turning space within the site, which allows refuse vehicles to access and egress the site in a forward gear.

5. Conclusion

5.1 CTP have been appointed by Cotswold Oak Ltd to provide a Technical Note (TN) in support of a reserved matters planning application for the residential development and associated open space on land to the rear of Paygrove Lane, Gloucester

5.2 This TN demonstrates that the application site access arrangements are safe and suitable for the proposed development and shall not result in a significant impact on the local highway network, and the internal layout arrangements accord with GCC's Manual for Gloucestershire Streets (MfGS) guidance.

5.3 CTP concludes that approval of the reserved matters planning application will not result in a severe or unacceptable impact upon the safety or operation of the surrounding local highway network, and as such there are no significant highways and transportation matters that would preclude Gloucestershire County Council from supporting this planning application.

Appendices

Appendix A Decision Notice 16/01558/OUT

Appendix B Site Location Plan

Appendix C Proposed Site Layout

Appendix D Proposed Site Access Arrangement

Appendix E Traffic Survey

Appendix F Site Access Visibility Splay Arrangement

Appendix G Vehicle Swept Paths

Appendix H Car Park Access and Pedestrian Crossing Point Visibility Splay Arrangement

COTSWOLD
TRANSPORT
PLANNING

Appendix A

Decision Notice 16/01558/OUT

Development Control
4th floor Herbert Warehouse
The Docks, Gloucester GL1 2EQ
Tel: 01452 396786
Email: development.control@gloucester.gov.uk
Website: www.gloucester.gov.uk/planning

APPLICATION NO: 16/01558/OUT
VALIDATED ON: 21st December 2016

TO:
Gloucestershire County Council
c/o Mr Chris Gentle
Roberts Limbrick Ltd
The Carriage Building
Bruton Way
Gloucester
GL1 1DG

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015

Location: **Playing Field Rear 3-29, Paygrove Lane, Gloucester,**

Proposal: **Outline application (with means of access offered for consideration) for residential redevelopment of up to 10 dwellings and public open space including associated landscaping, car parking and access.**

In pursuance of its powers under the above-mentioned Act and Order the City Council as the Local Planning Authority **GRANT OUTLINE PERMISSION** for the development described above in accordance with the terms of the above application and the plan/s submitted therewith subject to the following conditions:

Condition 1
Approval of the details of the appearance, landscaping, layout and scale of the development (hereinafter called "the reserved matters") shall be obtained in writing from the Local Planning Authority prior to the commencement of development except as provided for by other conditions.

Reason
To comply with the requirements of Section 91 of the Town and Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

Condition 2
Plans and particulars of the reserved matters referred to in condition 1 above shall be submitted in writing to the Local Planning Authority and shall be carried out as approved.

Reason
Required to be imposed by Section 92 of the Town and Country Planning Act 1990.

Condition 3
Application for approval of the reserved matters shall be made to the Local Planning Authority before the expiration of 5 years from the date of this permission.

Reason
Required to be imposed by Section 92 of the Town and Country Planning Act 1990.

Condition 4
The development hereby permitted shall begin either before the expiration of 5 years from the date of this permission, or before the expiration of 2 years from the date of approval of the last of the reserved matters to be approved, whichever is the later.

Reason
Required to be imposed by Section 92 of the Town and Country Planning Act 1990.

MAXIMUM PARAMETERS

Condition 5
The development shall comprise no more than 10 no. residential units.

Reason
To define the terms of this permission.

Condition 6
The scale of development shall be no greater than two storeys.

Reason
To secure the maximum scale parameters in the application in the interests of preserving the character and appearance of the area and the amenities of neighbouring residents in accordance with Paragraphs 17 and 58 of the NPPF, Policies BE.1, BE.7, BE.17 and BE.21 of the 2002 City of Gloucester Second Deposit Local Plan, and Policies SD5 and SD15 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017.

DESIGN

Condition 7
No above ground construction of a building shall be commenced until details of all building facing materials and finishes for that building have been submitted to and approved in writing by the Local Planning Authority. Development shall be carried out in accordance with the approved details.

Reason
To ensure that the materials and exterior building components are appropriate to their context, in accordance with Policy SD5 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017, Paragraphs 17 and 58 of the National Planning Policy Framework and Policy BE.7 of the Second Deposit City of Gloucester Local Plan (2002).

Condition 8
Street and open space furniture, screen walls, fences/railings and other means of enclosure shall be implemented only in accordance with details (set out on scaled plans in elevation and layout) that have been submitted to and approved in writing by the Local Planning Authority. Boundary treatments shall be designed so as not to compartmentalise areas of the site, to allow for the passage of small mammals.

Reason
In the interests of privacy and security, to ensure that the design and materials are appropriate to their context, and to secure biodiversity mitigation and enhancement in accordance with Policies SD5, SD10, SD15 and INF4 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017, Paragraphs 17, 58, 109 and 118 of the National Planning Policy Framework and Policies BE.5, BE.7 and B.8 of the Second Deposit City of Gloucester Local Plan (2002).

LANDSCAPE

Condition 9
No development including demolition or site clearance shall be commenced on the site or machinery or material brought onto the site for the purpose of development until full details of adequate measures to protect trees and hedgerows have been submitted to and approved in writing by the local planning authority. These shall include:

A. Fencing. Protective fencing must be installed around trees and hedgerows to be retained on site. The protective fencing design must be to specifications provided in BS5837:2005 or subsequent revisions, unless agreed in writing with the local planning authority. A scale plan must be submitted and approved in writing by the local planning authority accurately indicating the position of protective fencing. No development shall be commenced on site or machinery or material brought onto site until the approved protective fencing has been installed in the approved positions and this has been inspected on site and approved in writing by the local planning authority. Such fencing shall be maintained during the course of development,

B. Tree Protection Zone (TPZ) The area around trees and hedgerows enclosed on site by protective fencing shall be deemed the TPZ. Excavations of any kind, alterations in soil levels, storage of any materials, soil, equipment, fuel, machinery or plant, citing of site compounds, latrines, vehicle parking and delivery areas, fires and any other activities liable to be harmful to trees and hedgerows are prohibited within the TPZ, unless agreed in writing with the local planning authority. The TPZ shall be maintained during the course of development

Reason
To ensure adequate protection to existing trees which are to be retained and to retain habitat, in the interests of the character and amenities of the area and protecting biodiversity in accordance with Policies SD10 and INF 4 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017, Paragraphs 17, 109 and 118 of the National Planning Policy Framework and Policies B.8, B.10 and BE.4 of the Second Deposit City of Gloucester Local Plan (2002). Receipt of details pre-commencement is necessary to fully protect retained trees.

Condition 10
The approved landscaping details shall be carried out in full concurrently with the development and shall be completed no later than the first planting season following the completion of the buildings. The planting shall be maintained for a period of 5 years following implementation. During this time any trees, shrubs or other plants which are removed, die, or are seriously damaged shall be replaced during the next planting season with others of similar size and species unless the local planning authority gives written consent to any variation. If any plants fail more than once they shall continue to be replaced on an annual basis until the end of the 5 year maintenance period.

Reason
To ensure a satisfactory and well planned development and to preserve and enhance the quality of the environment, in accordance with Policies BE.4 and BE.12 of the Second Deposit City of Gloucester Local Plan (2002), Policy SD5 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Paragraphs 17 and 58 of the NPPF.

ARCHAEOLOGY

Condition 11
No development shall take place within the application site until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the Local Planning Authority.

Reason
To make provision for a programme of archaeological mitigation, so as to record and advance understanding of any heritage assets which will be lost, in accordance with paragraph 141 of the National Planning Policy Framework, Policy SD9 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Policies BE.36, BE.37 & BE.38 of the Gloucester Local Plan (2002 Second Stage Deposit). This is necessary pre-commencement of development due to the potential harm to heritage assets from early phase works.

ECOLOGY

Condition 12
Bird and bat boxes (or facilities of a similar nature) shall be installed in accordance with details to be submitted to and approved in writing by the Local Planning Authority. They shall be installed in full in accordance with the approved details prior to occupation of the respective buildings or prior to the end of the first planting season following completion of the development in the event of tree-mounted fittings.

Reason
To secure biodiversity mitigation and enhancement in accordance with Policies SD10 and INF 4 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017, Paragraphs 17, 109 and 118 of the NPPF and Policy B.8 of the 2002 City of Gloucester Second Deposit Local Plan.

Condition 13
No development shall commence until a site walkover survey has been undertaken by a qualified ecologist to investigate the presence of newts on the site and the results have been submitted to the Local Planning Authority. If their presence is confirmed no development shall commence until a mitigation strategy has been submitted to and approved in writing by the Local Planning Authority (including a timetable for its implementation) and the approved strategy shall thereafter be implemented in accordance with its terms.

Reason
To mitigation potential impact on biodiversity in accordance with Policies SD10 and INF 4 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017, Paragraphs 17, 109 and 118 of the NPPF and Policy B.8 of the 2002 City of Gloucester Second Deposit Local Plan.

DRAINAGE

Condition 14
No development shall commence on site until a detailed scheme for the disposal of surface water that employs a SuDS strategy has been submitted to and approved in writing by the Local Planning Authority. The submission must demonstrate the technical feasibility/viability of the drainage system through the use of SuDS to manage the flood risk to the site and elsewhere and the measures taken to manage the water quality for the life time of the development. The drainage scheme shall be carried out in accordance with the approved details and completed in full prior to occupation of the development.

The drainage scheme shall include the following;

- The peak surface water discharge rate from the site for all events up to the critical duration 1 in 100 year (+ 40% climate change) event shall not exceed 3.9 l/s.
- The above rate includes runoff captured from all permeable and impermeable areas within the red line boundary. If the drained area is reduced in size, then the permissible discharge rate shall be re-calculated.
- The SuDS design shall ensure that surface water runoff from the field across the whole of the north boundary is captured.
- The SuDS design shall accommodate as much of the required attenuation volume as possible in a swale. The swale shall not occupy a width of more than 7 metres and shall have side slopes as shallow as possible (not exceeding 1 in 5 on any side facing a playing pitch on the site).
- Any attenuation volume which cannot be accommodated within the swale shall be accommodated within a secondary attenuation feature at a location to be specified.

Reason
To ensure that the development is provided with a satisfactory means of drainage as well as to reduce the risk of creating or exacerbating a flooding problem and to minimise the risk of pollution, in accordance with Policies FRP.1a, FRP.6, FRP.11 of the City of Gloucester Second Deposit Local Plan 2002 Policy INF3 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Paragraph 103 of the NPPF. Details are required pre-commencement given the potential impact on the possible drainage design of early phase works.

Condition 15
No building shall be occupied until a SuDS management and maintenance plan for any SuDS/attenuation features and associated pipework has been submitted to and approved in writing by the Local Planning Authority. The approved SuDS maintenance plan shall be implemented in full in accordance with the agreed terms and conditions and shall operate for the lifetime of the development.

Reason
To ensure that the development is provided with a satisfactory means of drainage as well as to reduce the risk of creating or exacerbating a flooding problem and to minimise the risk of pollution, in accordance with Policies FRP.1a, FRP.6, FRP.11 of the City of Gloucester Second Deposit Local Plan 2002 Policy INF3 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Paragraph 103 of the NPPF.

Condition 16
No development shall commence until a comprehensive scheme for the provision of works for the disposal of foul sewage has been submitted to and approved in writing by the Local Planning Authority. The approved scheme shall thereafter be implemented to serve the development, and no buildings shall be occupied until satisfactory foul water drainage facilities for these buildings are in place and operational.

Reason
To ensure that the development is provided with a satisfactory means of drainage as well as to reduce the risk of creating or exacerbating a flooding problem and to minimise the risk of pollution, in accordance with Policies FRP.1a, FRP.6, FRP.11 of the City of Gloucester Second Deposit Local Plan 2002 Policy INF3 of the Joint Core Strategy Main Modifications 2017 and Paragraph 103 of the NPPF.

ENVIRONMENTAL HEALTH

Condition 17
Prior to commencement of the development hereby permitted, an Environmental Construction Management Plan shall be submitted to and approved in writing by the Local Planning Authority which specifies mitigation measures in respect of the following issues (including preparatory groundworks) in order to prevent nuisance. The development shall not be commenced until the approved plan has been made fully operational, and thereafter it shall be operated and maintained for the full duration of the construction phase. The scheme shall include details of how dust will be qualitatively monitored:

1 Dust from demolition
2 Dust from groundworks
3 Dust from haul roads
4 Dust from stockpiles and material handling/removal
5 Light from security compounds
6 Storage of waste
7 Keeping highways clear of mud
8 Parking for contractors

Reason
To safeguard the amenities of the area and the waterway in accordance with Policies FRP.9, FRP.10, FRP.11 and BE.21 of the 2002 City of Gloucester Second Deposit Local Plan, Policy SD15 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Paragraphs 17, 109, 120 and 123 of the NPPF. This is necessary pre-commencement of development due to the harm that could otherwise be caused by early-phase works.

Condition 18
Construction work and the delivery of materials shall be limited to the hours of 0800 hours to 1800 hours Monday to Friday, 0800hours to 1300hours on Saturdays and for the avoidance of doubt no construction work or deliveries shall take place on Sundays or Bank Holidays.

Reason
To safeguard the amenities of the area in accordance with Policies FRP.9, FRP.10, FRP.11 and BE.21 of the 2002 City of Gloucester Second Deposit Local Plan, Policy SD15 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017 and Paragraphs 17, 109, 120 and 123 of the NPPF.

Condition 19
Prior to the occupation of any unit hereby permitted a noise fence or fences (as may be required) shall be installed in full at the site boundary with any rear garden of a residential property adjacent to the site where that garden would be situated next to the access road of the development, in accordance with a scheme to be submitted to and approved in writing by the Local Planning Authority, and shall be maintained as such thereafter.

Reason
To safeguard the amenities of the area in accordance with Policies FRP.10, FRP.11 and BE.21 of the 2002 City of Gloucester Second Deposit Local Plan, Policy SD15 of the Joint Core Strategy Main Modification Document 2017 and Paragraphs 17, 109, 120 and 123 of the NPPF.

HIGHWAYS

Condition 20
No building on the development shall be occupied until the carriageway(s) (including surface water drainage/disposal, vehicular turning head(s) and street lighting) providing access from the nearest public highway to that dwelling have been completed to at least binder course level and the footway(s) to surface course level.

Reason
To minimise hazards and inconvenience for users of the development by ensuring that there is a safe, suitable and secure means of access for all people that minimises the conflict between traffic and cyclists and pedestrians in accordance with the National Planning Policy Framework paragraph 35 and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017.

Condition 21
No works shall commence on site (other than those required by this condition) on the development hereby permitted until the first 15 metres of the proposed access road, including the junction with the existing public road and associated visibility splays, has been completed to at least binder course level.

Reason
To minimise hazards and inconvenience for users of the development by ensuring that there is a safe, suitable and secure means of access for all people that minimises the conflict between traffic and cyclists and pedestrians in accordance with the National Planning Policy Framework paragraph 35 and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017.

Condition 22
No development shall take place, including any works of demolition, until a Construction Method Statement (for highways impacts) has been submitted to, and approved in writing by, the local planning authority. The approved Statement shall be adhered to throughout the construction period. The Statement shall:

I. specify the type and number of vehicles;
II. provide for the parking of vehicles of site operatives and visitors;
III. provide for the loading and unloading of plant and materials;
IV. provide for the storage of plant and materials used in constructing the development;
V. provide for wheel washing facilities;
VI. specify the intended hours of construction operations;
VII. measures to control the emission of dust and dirt during construction

Reason
To reduce the potential impact on the public highway and accommodate the efficient delivery of goods and supplies in accordance paragraph 35 of the National Planning Policy Framework and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017. This is required pre-commencement of development due to the harm that could otherwise be caused by early-phase works.

Condition 23
No above-ground development shall commence on site until a scheme has been submitted to, and agreed in writing by the Council, for the provision of fire hydrants (served by mains water supply) and no dwelling shall be occupied until the hydrant serving that property has been provided to the satisfaction of the Council.

Reason
To ensure adequate water infrastructure provision is made on site for the local fire service to tackle any property fire.

Condition 24
No above-ground development shall commence until details of the proposed arrangements for future management and maintenance of the proposed streets within the development have been submitted to and approved in writing by the local planning authority. The streets shall thereafter be maintained in accordance with the approved management and maintenance details until such time as either a dedication agreement has been entered into or a private management and maintenance company has been established.

Reason
To ensure that safe, suitable and secure access is achieved and maintained for all people that minimises the conflict between traffic and cyclists and pedestrians in accordance with the NPPF and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017.

Condition 25
The details to be submitted for the approval of reserved matters shall include vehicular parking and turning within the site, and the building(s) hereby permitted shall not be occupied until those facilities have been provided in accordance with the approved plans and shall be maintained available for those purposes for the duration of the development.

Reason
To ensure that a safe, suitable and secure means of access for all people that minimises the conflict between traffic and cyclists and pedestrians is provided in accordance with the National Planning Policy Framework paragraph 35 and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017.

Condition 26
No works shall commence on site on the development hereby permitted until details of the relocated bus stop have been submitted to and approved in writing by the Local Planning Authority and the approved works have been completed and are open to the public.

Reason
To ensure that the development is designed to give priority to pedestrian movements and provide access to high quality public transport facilities in accordance with paragraph 35 of the National Planning Policy Framework and Policy INF1 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy Main Modifications 2017. This is necessary pre-commencement of development due to the potential highway safety issues that could otherwise arise from early-phase works.

Note 1
Reserved matters applications shall include details of any proposed levels changes with scaled plans showing existing and proposed levels for the development (including any to address a local drainage system failure). The grant of outline planning permission does not guarantee that levels changes will be acceptable.

Note 2
The applicant is advised that to discharge highways conditions the Local Planning Authority requires a copy of a completed dedication agreement between the applicant and the Local Highway Authority or the constitution and details of a Private Management and Maintenance Company confirming funding, management and maintenance regimes.

Note 3
The proposed development will involve works to be carried out on the public highway including relocation of the existing adjacent bus stop on the west side of Paygrove Lane, potentially the adjacent speed hump, gully inspection cover and school speed limit advisory sign along with access construction and the applicant/developer is required to enter into a legally binding Highway Works Agreement (including an appropriate bond) with the County Council before commencing those works.

Note 4
The developer will be expected to meet the full costs of supplying and installing the fire hydrants and associated infrastructure.

Note 5
Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and also the Conservation of Habitats and Species Regulations 2010 (as amended). To avoid possible prosecution under this legislation if a bat or evidence of bats using a feature on site is discovered during operations all work which might affect the species should cease and a licensed bat consultant or Natural England contacted and the situation assessed before work can proceed. This advice note should be passed on to any person or /contractors carrying out the development.

This informative is given as a reminder to help you comply with the Wildlife & Countryside Act 1981 (as amended) and avoid possible prosecution. The Act makes it an offence to kill, injure or take any wild bird, and to intentionally remove, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs. In addition the Act states that it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird. If at any time nesting birds are observed on or close to the site then works which might affect them should cease and advice sought from a suitably qualified or experienced person. You are additionally advised that tree or shrub or hedgerow removal works should not take place between 1st March and 31st August inclusive unless a survey by a suitably qualified or experienced person to assess nesting bird activity during this period is undertaken. If it is decided on the basis of such a survey to carry out tree or shrub removal works then it should be ensured that it is done without harming nesting birds or their eggs and that this may require a suitably

qualified or experienced person being in attendance. This informative should be passed on to any persons or contractors carrying out the development.

Note 6
It is recommended that any vegetation clearance or management be carried out outside the bird nesting season of March to August. Where this is not possible, buildings and vegetation should be surveyed for nesting birds by a suitably qualified person prior to works commencing. If found, the habitat must remain intact until the young have fledged.

Note 7
In accordance with the requirements of the National Planning Policy Framework the Local Planning Authority has sought to determine the application in a positive and proactive manner by offering pre-application advice, publishing guidance to assist the applicant, and publishing to the Council's website relevant information received during the consideration of the application thus enabling the applicant to be kept informed as to how the case was proceeding.

Note 8
This permission is associated with a legal agreement dated 24th August 2018 and a unilateral undertaking dated 24th August 2018.

[redacted]

Date: 24th August 2018

City Growth & Delivery Manager

PLEASE SEE NOTES SET OUT IN THE ENCLOSED LEAFLET

COTSWOLD
TRANSPORT
PLANNING

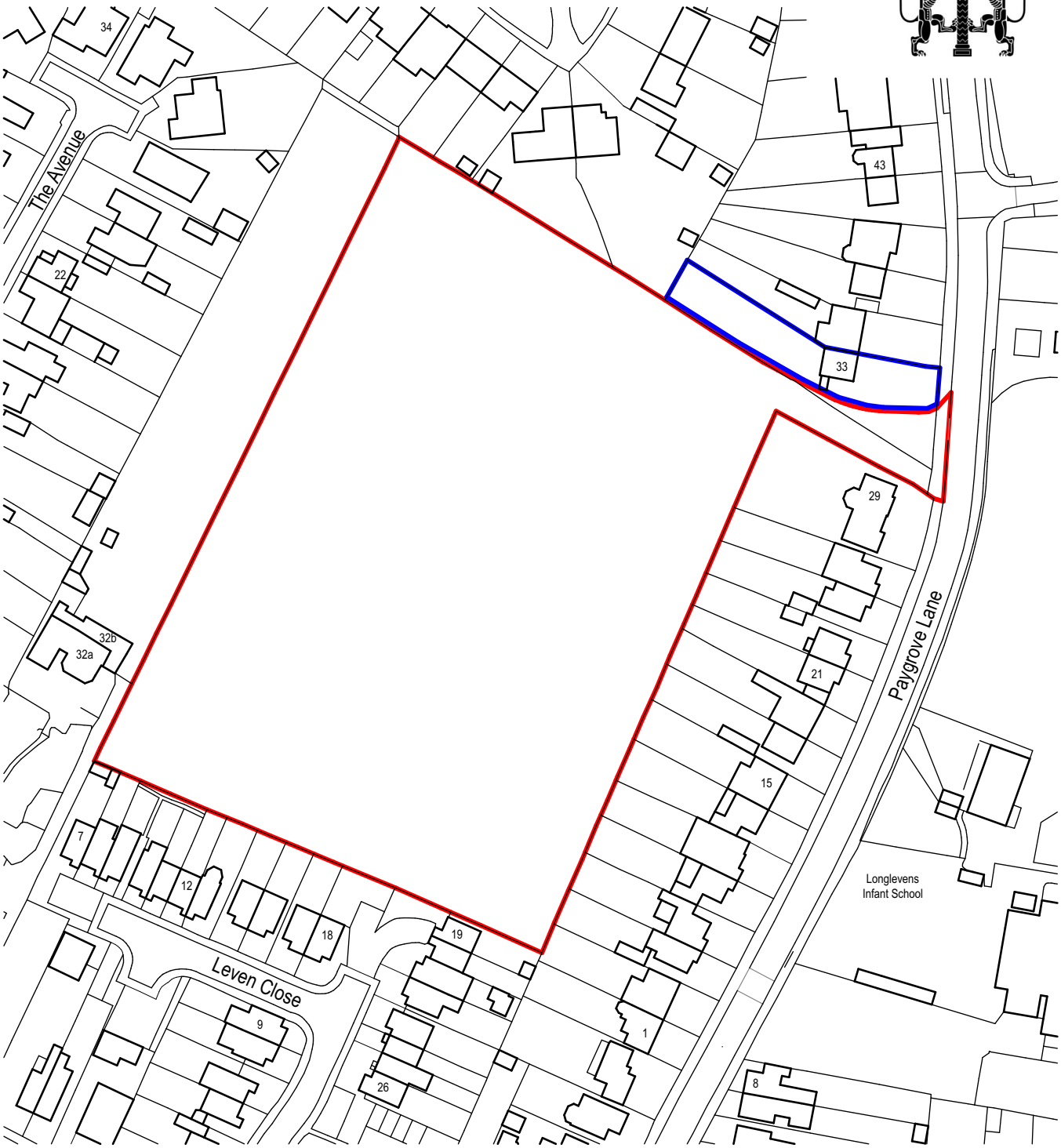
Appendix B

Site Location Plan

Scale bar 1:1250
0 20 40 60

NORTH

RIBA
Chartered Practice



coombes : everitt architects limited
105-107 Bath Road
Cheltenham
Gloucestershire
GL53 7LE

[redacted]
www.ce-architects.co.uk

Drawing title:	Site Location Plan
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:1250 @ A4
Date:	November 2021
Project / Drawing No:	21.20.020 SK1000A

COTSWOLD
TRANSPORT
PLANNING

Appendix C

Proposed Site Layout

Accommodation schedule

Unit Mix

Ref	Bedrooms	Bedspaces	Number Off	GIFA sq/ft	Total sq/ft
Lawence	2 + study	3	1	935	935
Latchford	3	6	2	1389	2778
Langley	4	7	3	1389	4167
Ranscombe	4 + study	7	2	1615	3230
Ruscombe	5	8	2	1615	3230
					14340

Scale bar 1:500

0 10 20 30 40 50

Preliminary

coombes : everitt architects limited
105-107 Bath Road
Cheltenham
Gloucestershire
GL53 7LE
[redacted]
www.ce-architects.co.uk

- [ ] Preliminary
- [ ] Feasibility
- [x] Planning
- [ ] Building Regulations
- [ ] Tender
- [ ] Construction issue
- [ ] As Built

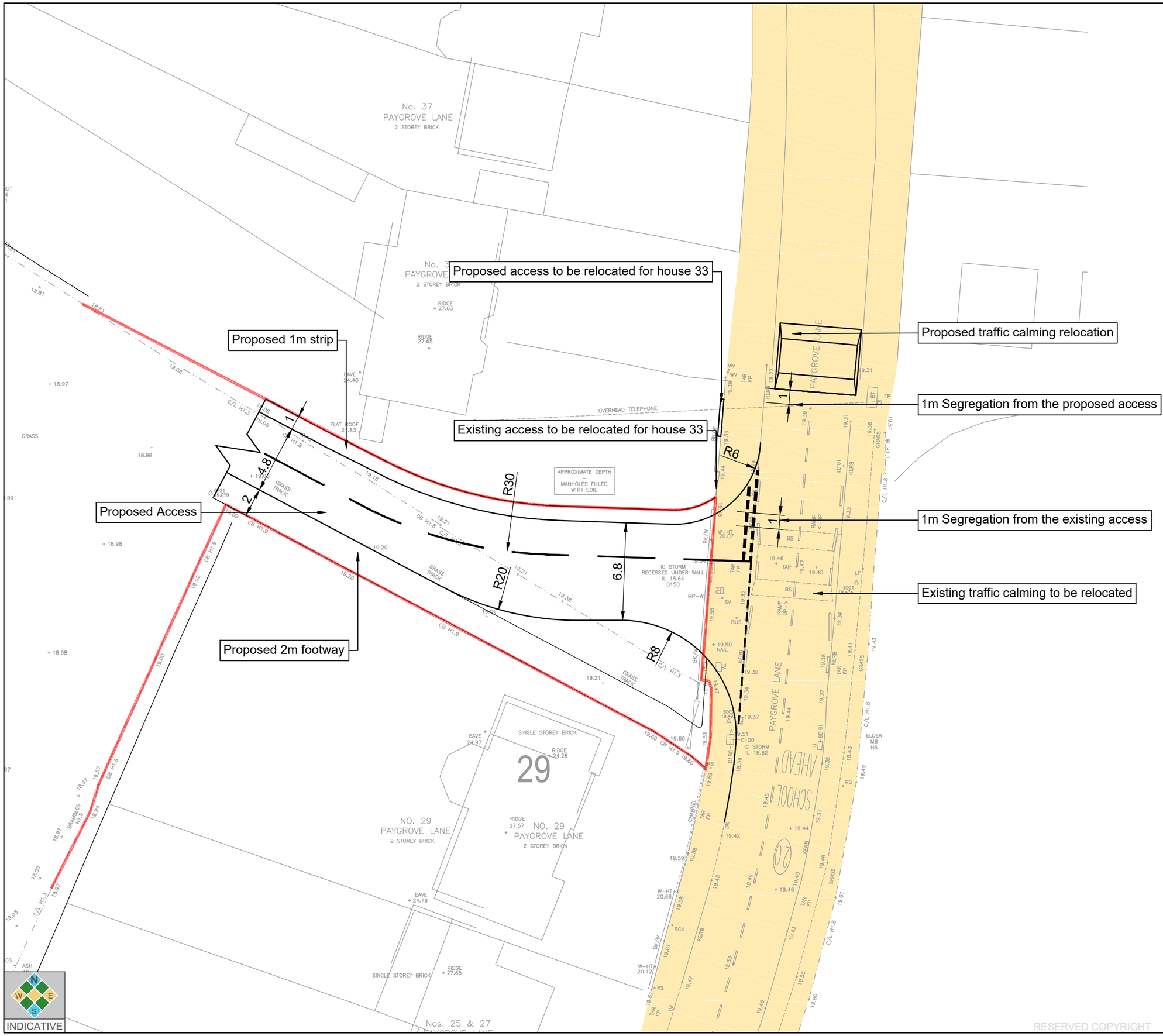
Drawing title:	Proposed Site Layout
Client:	Cotswold Oak Ltd
Drawn by:	AH Checked: JE
Project No:	21.20.020
Project:	Land at Paygrove Lane, Longlevens
Scale:	1:500 @ A1
Date:	January 2022
Project / Drawing No:	21.20.020 PL005

coombes : everitt architects

COTSWOLD
TRANSPORT
PLANNING

Appendix D

Proposed Site Access
Arrangement



Notes:

1. This drawing is based upon drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_SK1001B) received from Coombes Everitt Architects on 04/01/2022.
3. This drawing is based upon drawing number 21.20.020 SK003 by Cotswold Oak Ltd.
4. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
5. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

Site Boundary

Highway Boundary
(Transcribed Highway Boundary based on GCC)

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Highway Boundary & Site Boundary	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane,
Longlevens

TITLE:
Proposed Access

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	29.11.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SK01	A

COTSWOLD
TRANSPORT
PLANNING

Appendix E

Traffic Survey

Gloucester ATC

Direction: Northbound

Hour Beginning	Wed Nov 17	Thu Nov 18	Fri Nov 19	Sat Nov 20	Sun Nov 21	Mon Nov 22	Tue Nov 23	Day Ave.	Day Ave.
00:00	1	5	5	2	10	2	2	3	4
01:00	1	2	1	1	5	1	1	1	2
02:00	1	1	1	0	1	0	0	1	1
03:00	0	0	0	0	2	0	1	0	0
04:00	0	0	1	2	1	0	0	0	1
05:00	0	1	1	3	0	5	4	2	2
06:00	14	14	17	6	4	19	23	17	14
07:00	55	53	45	11	9	59	64	55	42
08:00	99	92	77	35	16	116	81	93	74
09:00	76	61	72	74	36	58	55	64	62
10:00	52	46	54	76	46	54	64	54	56
11:00	57	64	80	73	71	65	56	64	67
12:00	61	65	87	88	86	74	62	70	75
13:00	47	59	74	59	53	67	51	60	59
14:00	52	74	74	53	60	74	72	69	66
15:00	99	119	105	73	76	87	111	104	96
16:00	103	110	104	59	66	112	128	111	97
17:00	136	126	108	61	67	94	119	117	102
18:00	94	77	77	63	44	75	85	82	74
19:00	54	64	69	51	47	55	39	56	54
20:00	37	22	33	31	24	41	29	32	31
21:00	32	32	25	24	17	16	18	25	23
22:00	12	9	13	23	4	13	13	12	12
23:00	10	11	5	16	3	6	1	7	7
Total									
12H(7-19)	931	946	957	725	630	935	948	943	867
16H(6-22)	1068	1078	1101	837	722	1066	1057	1074	990
18H(6-24)	1090	1098	1119	876	729	1085	1071	1093	1010
24H(0-24)	1093	1107	1128	884	748	1093	1079	1100	1019
AM Peak	08:00	08:00	11:00	10:00	11:00	08:00	08:00	08:00	08:00
	99	92	80	76	71	116	81	93	74
PM Peak	17:00	17:00	17:00	12:00	12:00	16:00	16:00	17:00	17:00
	136	126	108	88	86	112	128	117	102

360 TSL Ltd

Direction: Southbound

Hour Beginning	Wed Nov 17	Thu Nov 18	Fri Nov 19	Sat Nov 20	Sun Nov 21	Mon Nov 22	Tue Nov 23	Day Ave.	Day Ave.
00:00	0	1	2	1	4	2	0	1	1
01:00	1	1	0	1	5	2	0	1	1
02:00	1	0	0	0	2	0	0	0	0
03:00	3	1	2	1	0	0	0	1	1
04:00	1	0	0	0	1	1	0	0	0
05:00	10	10	14	3	2	8	13	11	9
06:00	31	31	25	8	6	34	40	32	25
07:00	117	89	103	31	16	87	99	99	77
08:00	128	147	139	61	21	155	132	140	112
09:00	86	78	84	94	67	76	66	78	79
10:00	79	69	64	106	88	56	81	70	78
11:00	66	60	69	88	73	58	66	64	69
12:00	76	66	76	104	81	57	64	68	75
13:00	61	83	82	78	74	71	71	74	74
14:00	56	71	87	58	76	76	73	73	71
15:00	71	73	83	51	47	73	72	74	67
16:00	106	91	114	56	61	99	108	104	91
17:00	87	101	81	57	52	73	95	87	78
18:00	72	60	78	59	41	55	66	66	62
19:00	49	53	45	36	35	49	47	49	45
20:00	30	29	31	18	27	27	20	27	26
21:00	21	12	23	27	17	12	7	15	17
22:00	8	10	11	14	4	12	7	10	9
23:00	2	6	3	15	0	2	1	3	4
Total									
12H(7-19)	1005	988	1060	843	697	936	993	996	932
16H(6-22)	1136	1113	1184	932	782	1058	1107	1120	1045
18H(6-24)	1146	1129	1198	961	786	1072	1115	1132	1058
24H(0-24)	1162	1142	1216	967	800	1085	1128	1147	1071
AM Peak	08:00	08:00	08:00	10:00	10:00	08:00	08:00	08:00	08:00
	128	147	139	106	88	155	132	140	112
PM Peak	16:00	17:00	16:00	12:00	12:00	16:00	16:00	16:00	16:00
	106	101	114	104	81	99	108	104	91

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Wed Nov 17	Thu Nov 18	Fri Nov 19	Sat Nov 20	Sun Nov 21	Mon Nov 22	Tue Nov 23	5-Day Ave.	7-Day Ave.
00:00	1	6	7	3	14	4	2	4	5
01:00	2	3	1	2	10	3	1	2	3
02:00	2	1	1	0	3	0	0	1	1
03:00	3	1	2	1	2	0	1	1	1
04:00	1	0	1	2	2	1	0	1	1
05:00	10	11	15	6	2	13	17	13	11
06:00	45	45	42	14	10	53	63	50	39
07:00	172	142	148	42	25	146	163	154	120
08:00	227	239	216	96	37	271	213	233	186
09:00	162	139	156	168	103	134	121	142	140
10:00	131	115	118	182	134	110	145	124	134
11:00	123	124	149	161	144	123	122	128	135
12:00	137	131	163	192	167	131	126	138	150
13:00	108	142	156	137	127	138	122	133	133
14:00	108	145	161	111	136	150	145	142	137
15:00	170	192	188	124	123	160	183	179	163
16:00	209	201	218	115	127	211	236	215	188
17:00	223	227	189	118	119	167	214	204	180
18:00	166	137	155	122	85	130	151	148	135
19:00	103	117	114	87	82	104	86	105	99
20:00	67	51	64	49	51	68	49	60	57
21:00	53	44	48	51	34	28	25	40	40
22:00	20	19	24	37	8	25	20	22	22
23:00	12	17	8	31	3	8	2	9	12
Total									
12H(7-19)	1936	1934	2017	1568	1327	1871	1941	1940	1799
16H(6-22)	2204	2191	2285	1769	1504	2124	2164	2194	2034
18H(6-24)	2236	2227	2317	1837	1515	2157	2186	2225	2068
24H(0-24)	2255	2249	2344	1851	1548	2178	2207	2247	2090
AM Peak	08:00	08:00	08:00	10:00	11:00	08:00	08:00	08:00	08:00
	227	239	216	182	144	271	213	233	186
PM Peak	17:00	17:00	16:00	12:00	12:00	16:00	16:00	16:00	16:00
	223	227	218	192	167	211	236	215	188

360 TSL Ltd

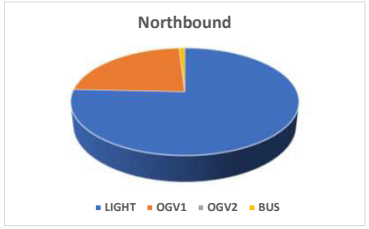
Gloucester ATC

Direction: Northbound

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	1093	826	251	1	15
Thu 18 Nov	1107	828	266	0	13
Fri 19 Nov	1128	838	276	2	12
Sat 20 Nov	884	652	228	0	4
Sun 21 Nov	748	583	162	0	3
Mon 22 Nov	1093	857	225	0	11
Tue 23 Nov	1079	815	256	0	8
5 Day Ave.	1100	833	255	1	12
7 Day Ave.	1019	771	238	0	9

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	100.0%	75.6%	23.0%	0.1%	1.4%
Thu 18 Nov	100.0%	74.8%	24.0%	0.0%	1.2%
Fri 19 Nov	100.0%	74.3%	24.5%	0.2%	1.1%
Sat 20 Nov	100.0%	73.8%	25.8%	0.0%	0.5%
Sun 21 Nov	100.0%	77.9%	21.7%	0.0%	0.4%
Mon 22 Nov	100.0%	78.4%	20.6%	0.0%	1.0%
Tue 23 Nov	100.0%	75.5%	23.7%	0.0%	0.7%
5 Day Ave.	100.0%	75.7%	23.2%	0.1%	1.1%
7 Day Ave.	100.0%	75.7%	23.3%	0.0%	0.9%

360 TSL Ltd

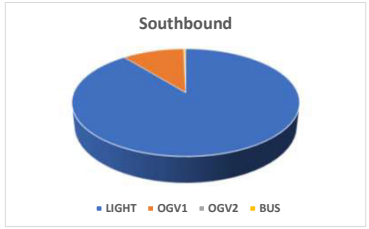


Direction: Southbound

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	1162	1016	139	0	7
Thu 18 Nov	1142	1026	113	0	3
Fri 19 Nov	1216	1039	171	2	4
Sat 20 Nov	967	869	98	0	0
Sun 21 Nov	800	738	62	0	0
Mon 22 Nov	1085	990	90	1	4
Tue 23 Nov	1128	1009	115	2	2
5 Day Ave.	1147	1016	126	1	4
7 Day Ave.	1071	955	113	1	3

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	100.0%	87.4%	12.0%	0.0%	0.6%
Thu 18 Nov	100.0%	89.8%	9.9%	0.0%	0.3%
Fri 19 Nov	100.0%	85.4%	14.1%	0.2%	0.3%
Sat 20 Nov	100.0%	89.9%	10.1%	0.0%	0.0%
Sun 21 Nov	100.0%	92.3%	7.8%	0.0%	0.0%
Mon 22 Nov	100.0%	91.2%	8.3%	0.1%	0.4%
Tue 23 Nov	100.0%	89.5%	10.2%	0.2%	0.2%
5 Day Ave.	100.0%	88.6%	11.0%	0.1%	0.3%
7 Day Ave.	100.0%	89.2%	10.5%	0.1%	0.3%

360 TSL Ltd

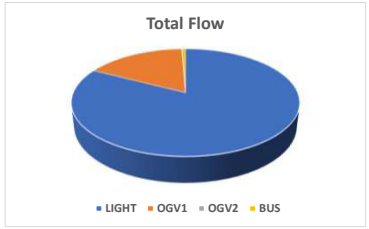


Direction: Total Flow

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	2255	1842	390	1	22
Thu 18 Nov	2249	1854	379	0	16
Fri 19 Nov	2344	1877	447	4	16
Sat 20 Nov	1851	1521	326	0	4
Sun 21 Nov	1548	1321	224	0	3
Mon 22 Nov	2178	1847	315	1	15
Tue 23 Nov	2207	1824	371	2	10
5 Day Ave.	2247	1849	380	2	16
7 Day Ave.	2090	1727	350	1	12

	Total Volume	LIGHT	OGV1	OGV2	BUS
Wed 17 Nov	100.0%	81.7%	17.3%	0.0%	1.0%
Thu 18 Nov	100.0%	82.4%	16.9%	0.0%	0.7%
Fri 19 Nov	100.0%	80.1%	19.1%	0.2%	0.7%
Sat 20 Nov	100.0%	82.2%	17.6%	0.0%	0.2%
Sun 21 Nov	100.0%	85.3%	14.5%	0.0%	0.2%
Mon 22 Nov	100.0%	84.8%	14.5%	0.0%	0.7%
Tue 23 Nov	100.0%	82.6%	16.8%	0.1%	0.5%
5 Day Ave.	100.0%	82.3%	16.9%	0.1%	0.7%
7 Day Ave.	100.0%	82.6%	16.8%	0.1%	0.6%

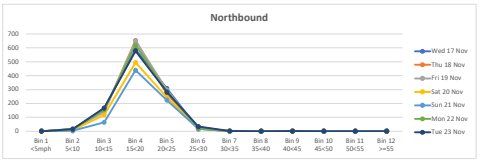
360 TSL Ltd



Gloucester ATC

Direction: Northbound

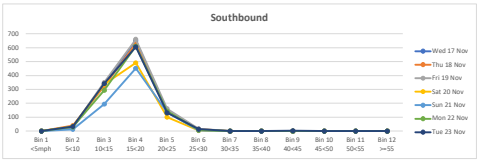
	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Wed 17 Nov	1093	22.2	18.2	3.8	0	13	164	589	309	17	0	0	0	0	0	1
Thu 18 Nov	1107	21.9	18.2	3.6	0	14	143	653	266	31	0	0	0	0	0	0
Fri 19 Nov	1128	22.0	18.3	3.6	0	18	138	651	296	23	2	0	0	0	0	0
Sat 20 Nov	884	22.0	18.4	3.6	0	8	117	495	244	20	0	0	0	0	0	0
Sun 21 Nov	748	22.2	18.8	3.3	0	3	64	439	224	17	1	0	0	0	0	0
Mon 22 Nov	1093	21.9	18.2	3.6	0	13	155	621	282	21	1	0	0	0	0	0
Tue 23 Nov	1079	22.3	18.3	3.9	0	15	167	579	282	33	2	0	1	0	0	0
5 Day Ave.	1100	22.1	18.2	3.7	0	15	153	619	287	25	1	0	0	0	0	0
7 Day Ave.	1019	22.1	18.3	3.6	0	12	135	575	272	23	1	0	0	0	0	0



360 TSL Ltd

Direction: Southbound

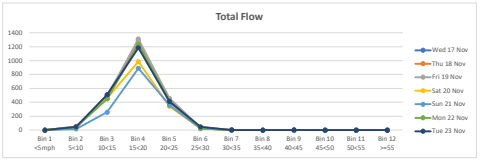
	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Wed 17 Nov	1162	20.1	16.5	3.5	0	23	340	649	143	7	0	0	0	0	0	0
Thu 18 Nov	1142	20.3	16.5	3.7	0	40	322	629	137	14	0	0	0	0	0	0
Fri 19 Nov	1216	20.4	16.6	3.7	0	30	350	660	160	16	0	0	0	0	0	0
Sat 20 Nov	967	19.7	16.0	3.6	0	34	338	491	100	4	0	0	0	0	0	0
Sun 21 Nov	800	20.7	17.0	3.5	0	13	194	452	135	6	0	0	0	0	0	0
Mon 22 Nov	1085	20.4	16.6	3.6	0	30	293	611	143	7	0	1	0	0	0	0
Tue 23 Nov	1128	20.4	16.4	3.8	0	33	342	606	131	14	0	0	2	0	0	0
5 Day Ave.	1147	20.3	16.5	3.7	0	31	329	631	143	12	0	0	0	0	0	0
7 Day Ave.	1071	20.3	16.5	3.6	0	29	311	585	136	10	0	0	0	0	0	0



360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Wed 17 Nov	2255	21.2	17.4	3.7	0	36	504	1238	452	24	0	0	0	0	0	1
Thu 18 Nov	2249	21.2	17.3	3.7	0	54	465	1282	403	45	0	0	0	0	0	0
Fri 19 Nov	2344	21.3	17.4	3.7	0	48	488	1311	456	39	2	0	0	0	0	0
Sat 20 Nov	1851	21.0	17.1	3.8	0	42	455	986	344	24	0	0	0	0	0	0
Sun 21 Nov	1548	21.5	17.9	3.5	0	16	258	891	359	23	1	0	0	0	0	0
Mon 22 Nov	2178	21.2	17.4	3.7	0	43	448	1232	425	28	1	1	0	0	0	0
Tue 23 Nov	2207	21.4	17.3	4.0	0	48	509	1185	413	47	2	0	3	0	0	0
5 Day Ave.	2247	21.3	17.4	3.8	0	46	483	1250	430	37	1	0	1	0	0	0
7 Day Ave.	2090	21.3	17.4	3.7	0	41	447	1161	407	33	1	0	0	0	0	0



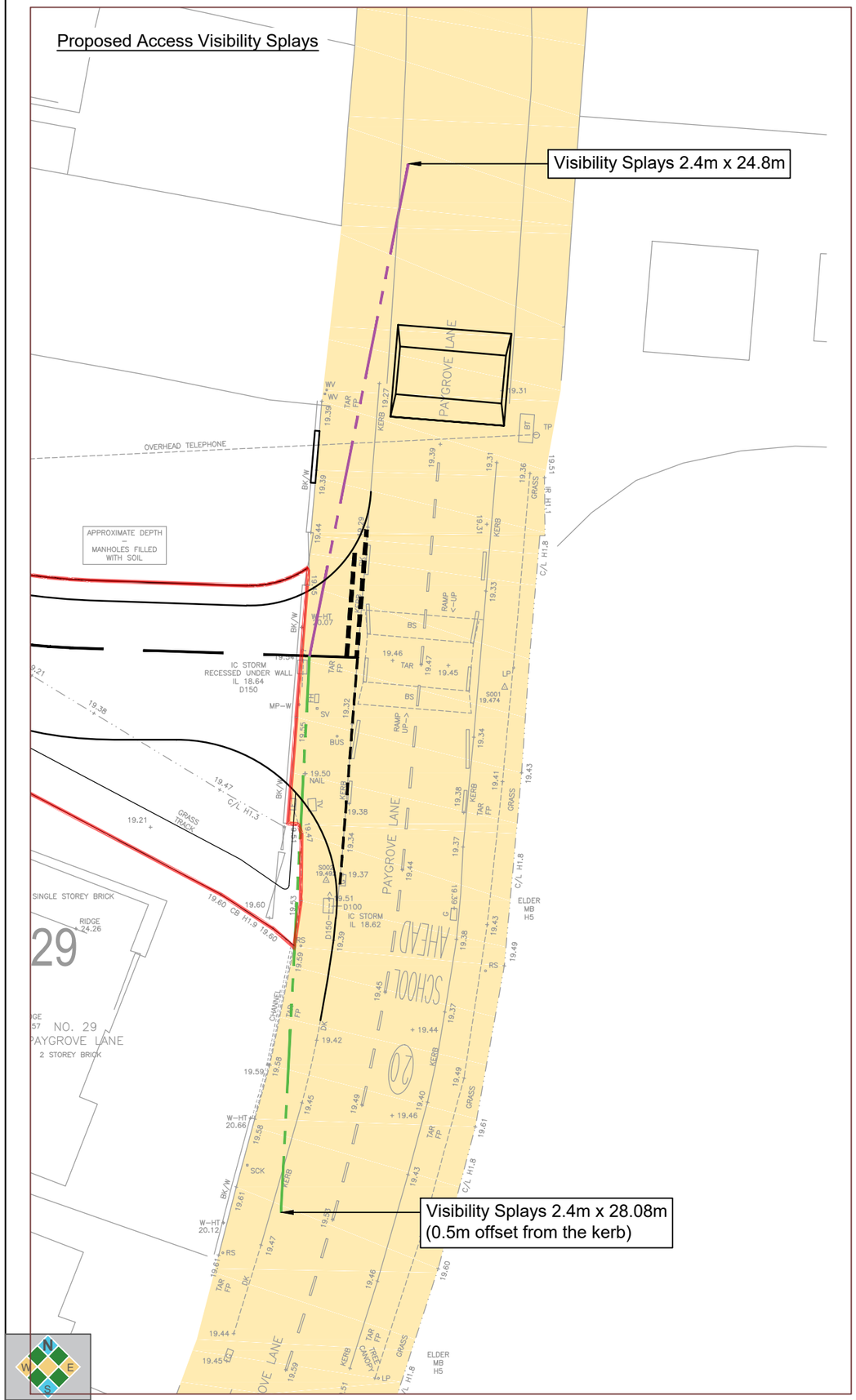
360 TSL Ltd

COTSWOLD
TRANSPORT
PLANNING

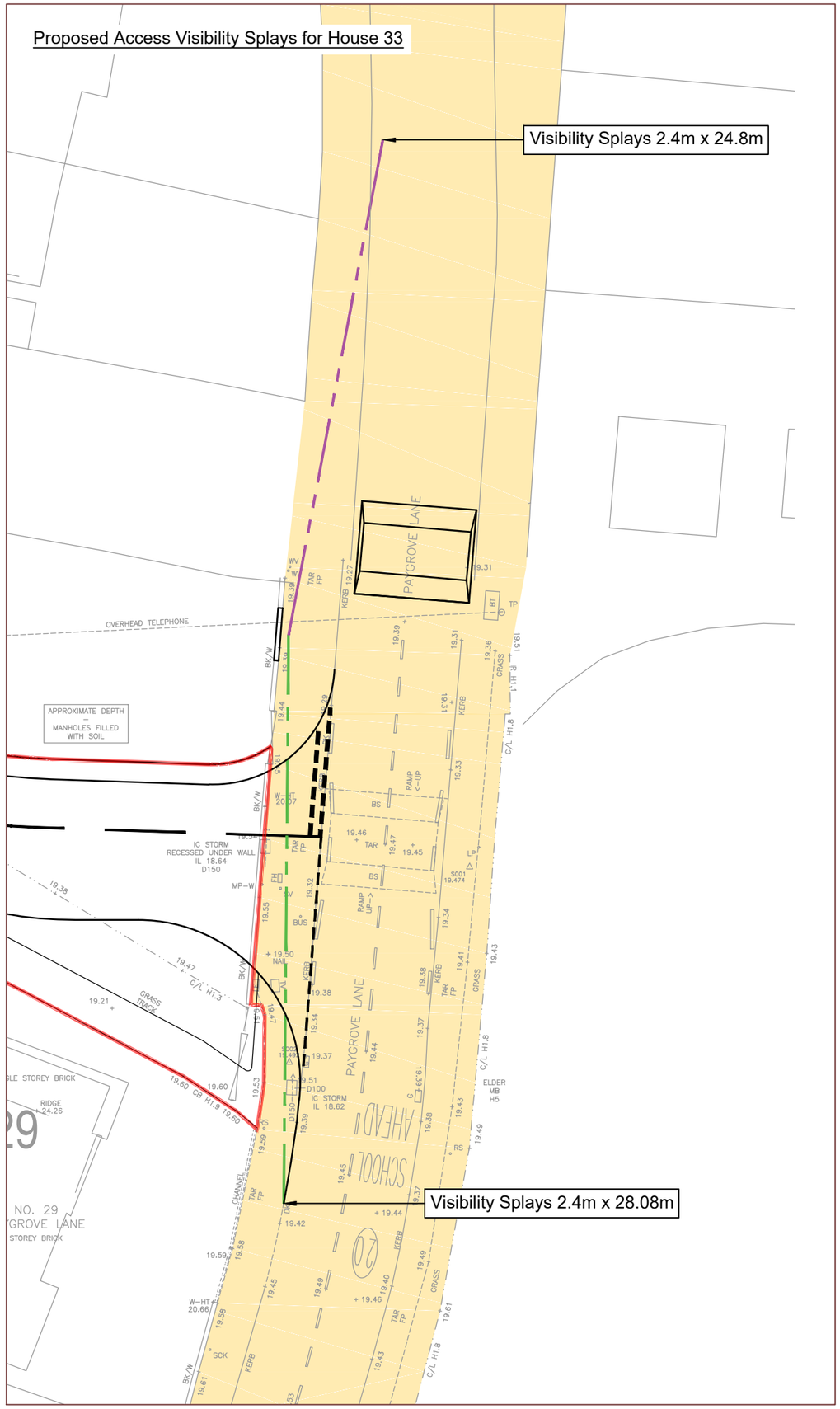
Appendix F

Site Access Visibility Splay
Arrangement

Proposed Access Visibility Splays



Proposed Access Visibility Splays for House 33



Notes:

1. This drawing is based upon drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_SK1001B) received from Coombes Everitt Architects on 04/01/2022.
3. This drawing is based upon drawing number 21.20.020 SK003 by Cotswold Oak Ltd.
4. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
5. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

- Site Boundary
- Highway Boundary (Transcribed Highway Boundary based on GCC)
- Visibility Splay 2.4m x 24.8m Based on a Recorded 85th Percentile Speed of 20.3mph
- Visibility Splay 2.4m x 28.08m (0.5m offset from the kerb) Based on a Recorded 85th Percentile Speed of 22.1 mph

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Highway Boundary & Site Boundary	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane, Longlevens

TITLE:
Proposed Access Visibility Assessment

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	29.11.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SK02	A

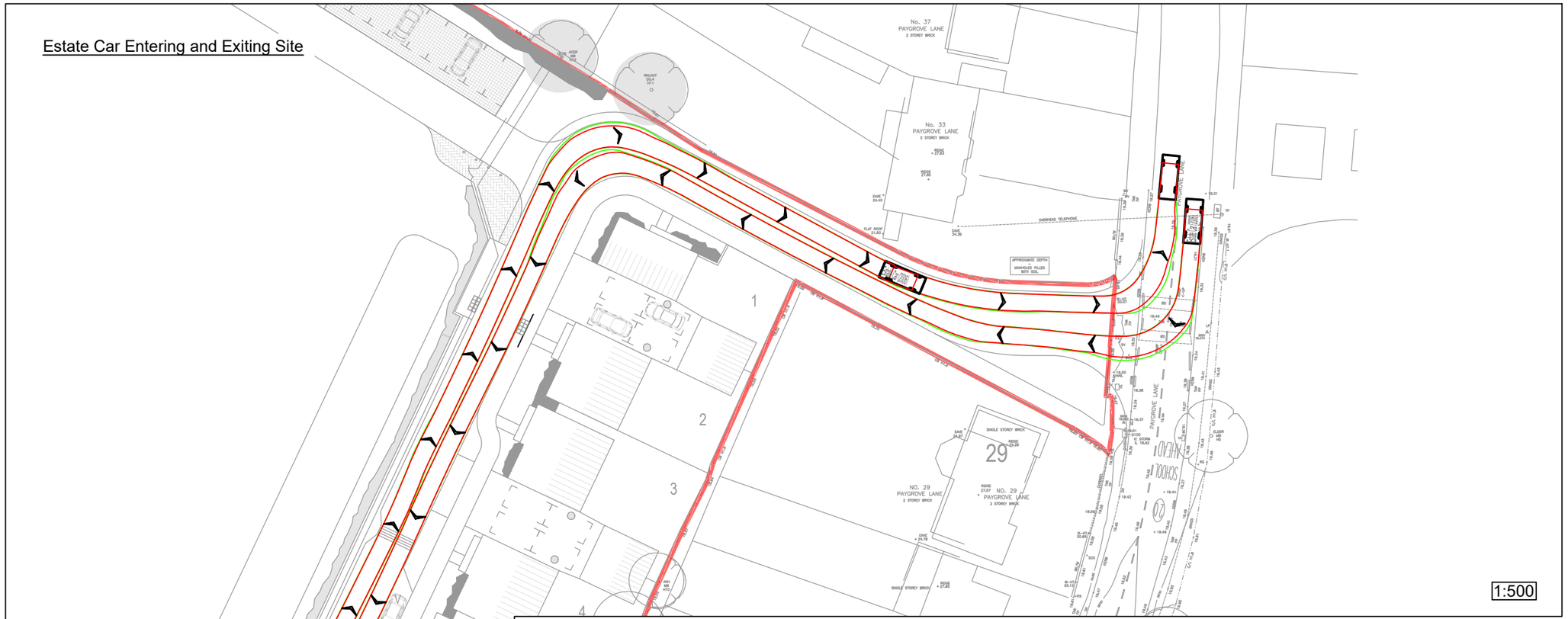
INDICATIVE

COTSWOLD
TRANSPORT
PLANNING

Appendix G

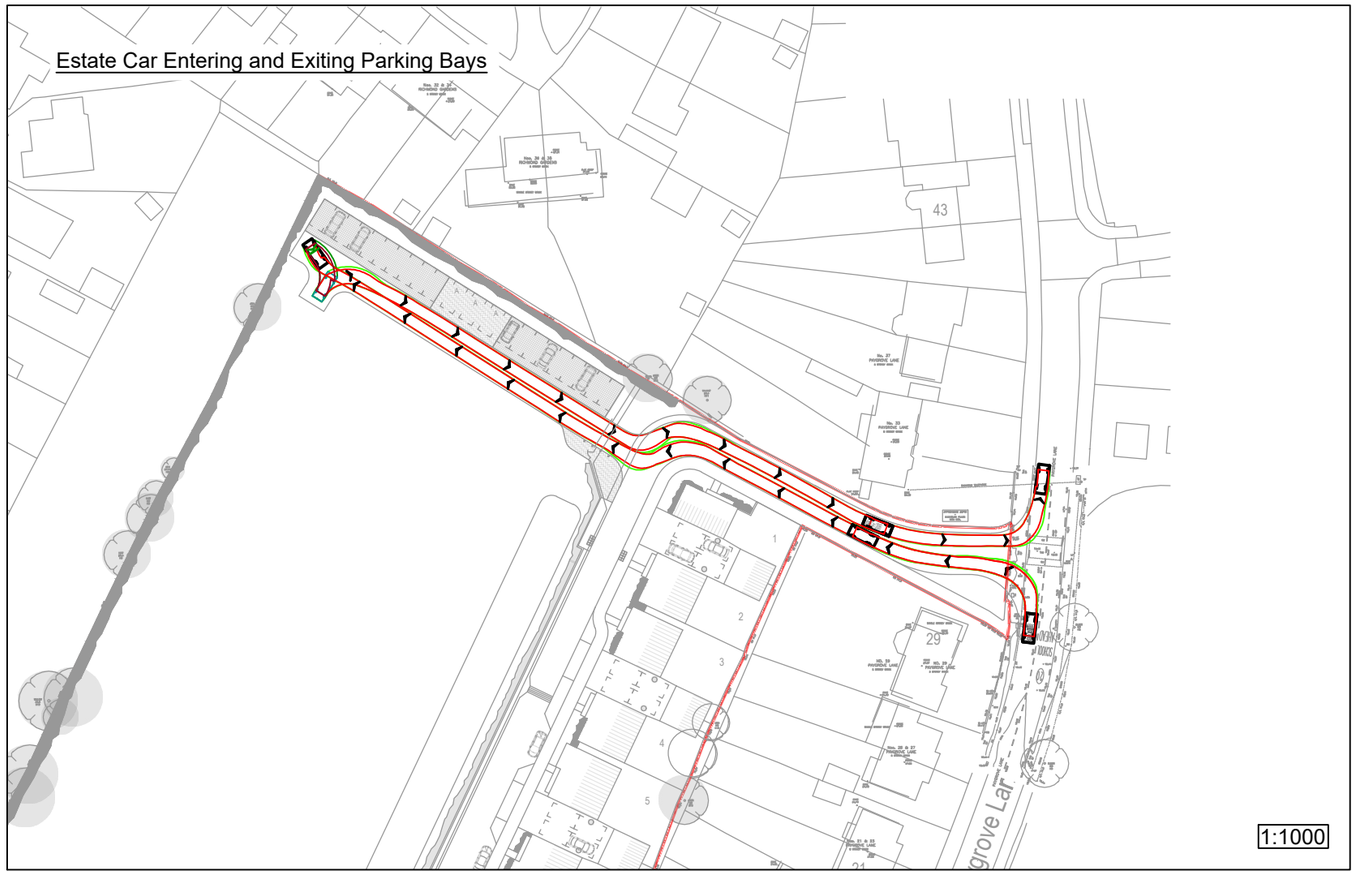
Vehicle Swept Paths

Estate Car Entering and Exiting Site



1:500

Estate Car Entering and Exiting Parking Bays



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INDICATIVE

Notes:

1. This drawing is based upon topographical survey drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_PL005) received from Coombes Everitt Architects on 04/02/2022.
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4. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

Site Boundary

Vehicle Profile

Estate Car (2006)	
Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Updated Layout & SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

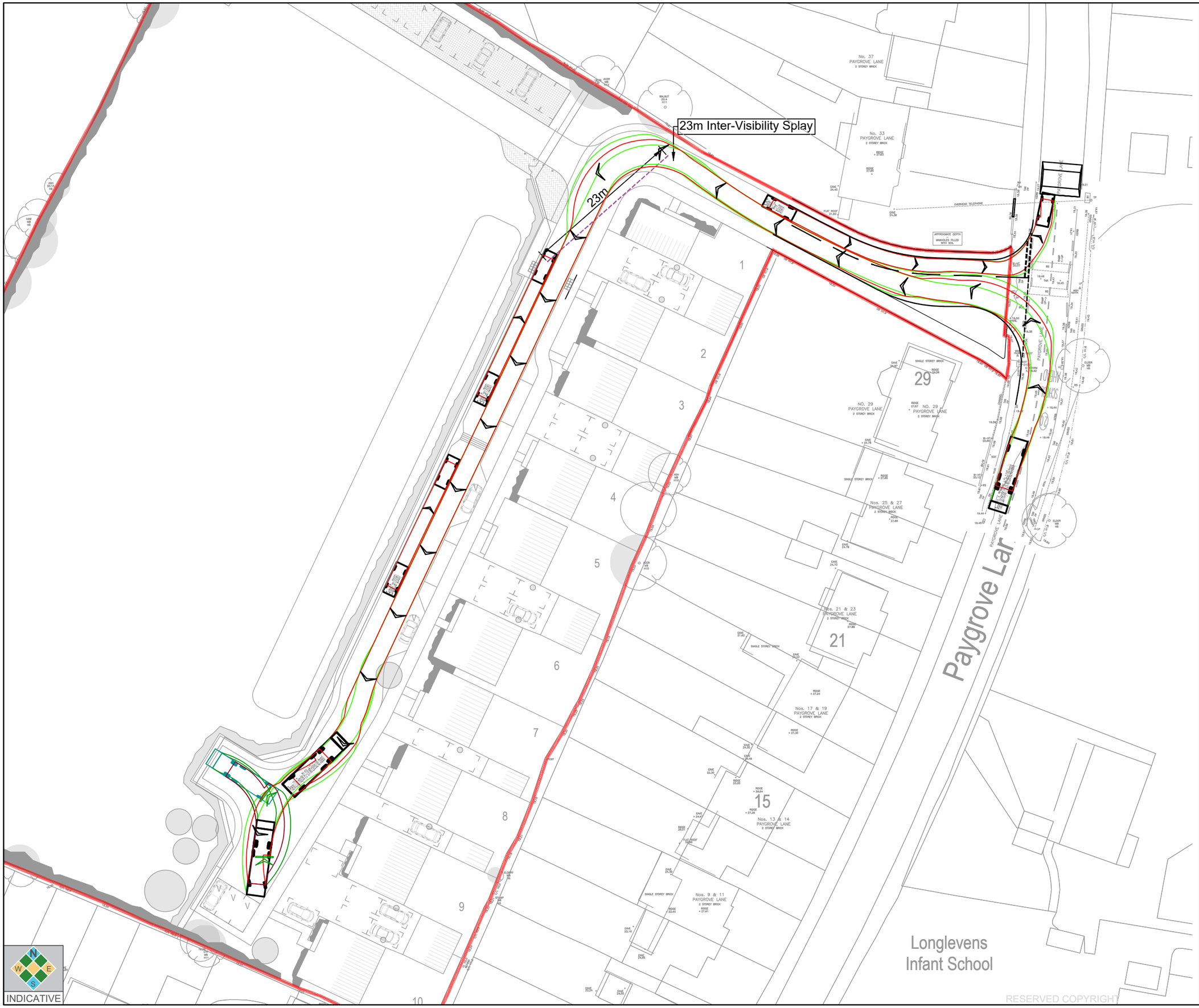
PROJECT:
Paygrove Lane, Longlevens

TITLE:
OnSite Swept Path Analysis - Estate Car

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 500	26.01.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SP03	A



Notes:

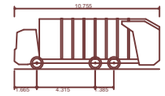
1. This drawing is based upon topographical survey drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_PL005) received from Coombes Everitt Architects on 04/02/2022.
3. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
4. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

Site Boundary

Inter-Visibility Splay

Vehicle Profile



Phoenix 2 Duo Recycler (P2-12W with Elite 6x2 MS chassis)

Overall Length	10.755m
Overall Width	2.530m
Overall Body Height	3.756m
Min Body Ground Clearance	0.309m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	11.450m

Estate Car (2006)

Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Updated Layout & SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

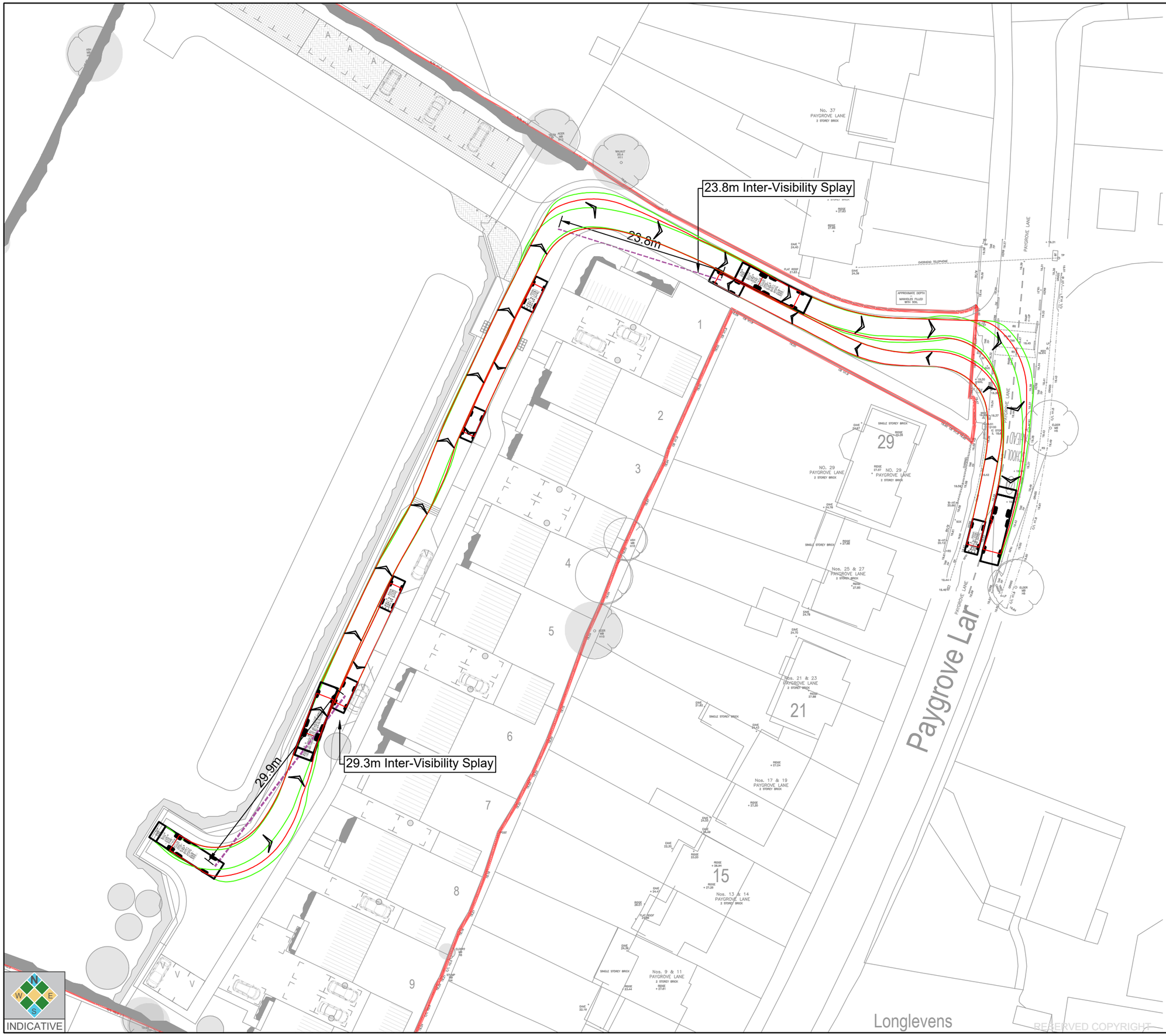
PROJECT:
Paygrove Lane, Longlevens

TITLE:
Onsite Swept Path Analysis - Refuse Vehicle Entering Site

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	26.01.2021	FA	JM	BQ

JOB NO:	DRAWING NO:	REVISION:
21-0760	SP04	A



Notes:

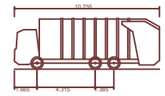
1. This drawing is based upon topographical survey drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_PL005) received from Coombes Everitt Architects on 04/02/2022.
3. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
4. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

Site Boundary

Inter-Visibility Splay

Vehicle Profile



Phoenix 2 Duo Recycler (P2-12W with Elite 6x2 MS chassis)

Overall Length	10.755m
Overall Width	2.530m
Overall Body Height	3.756m
Min Body Ground Clearance	0.309m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	11.450m

Estate Car (2006)

Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Updated Layout & SPA	FA	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane, Longlevens

TITLE:
Onsite Swept Path Analysis - Refuse Vehicle Exiting Site

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	26.01.2021	FA	JM	BQ

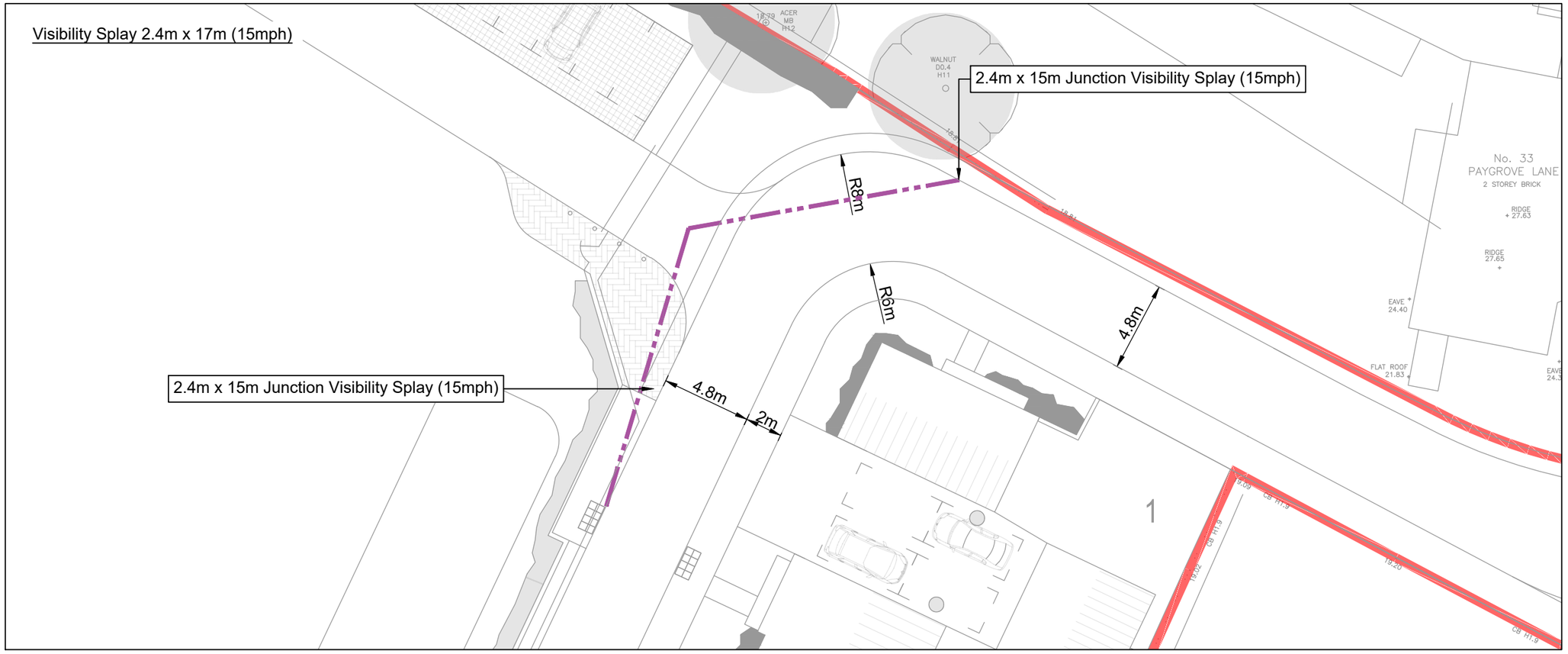
JOB NO:	DRAWING NO:	REVISION:
21-0760	SP05	A

COTSWOLD
TRANSPORT
PLANNING

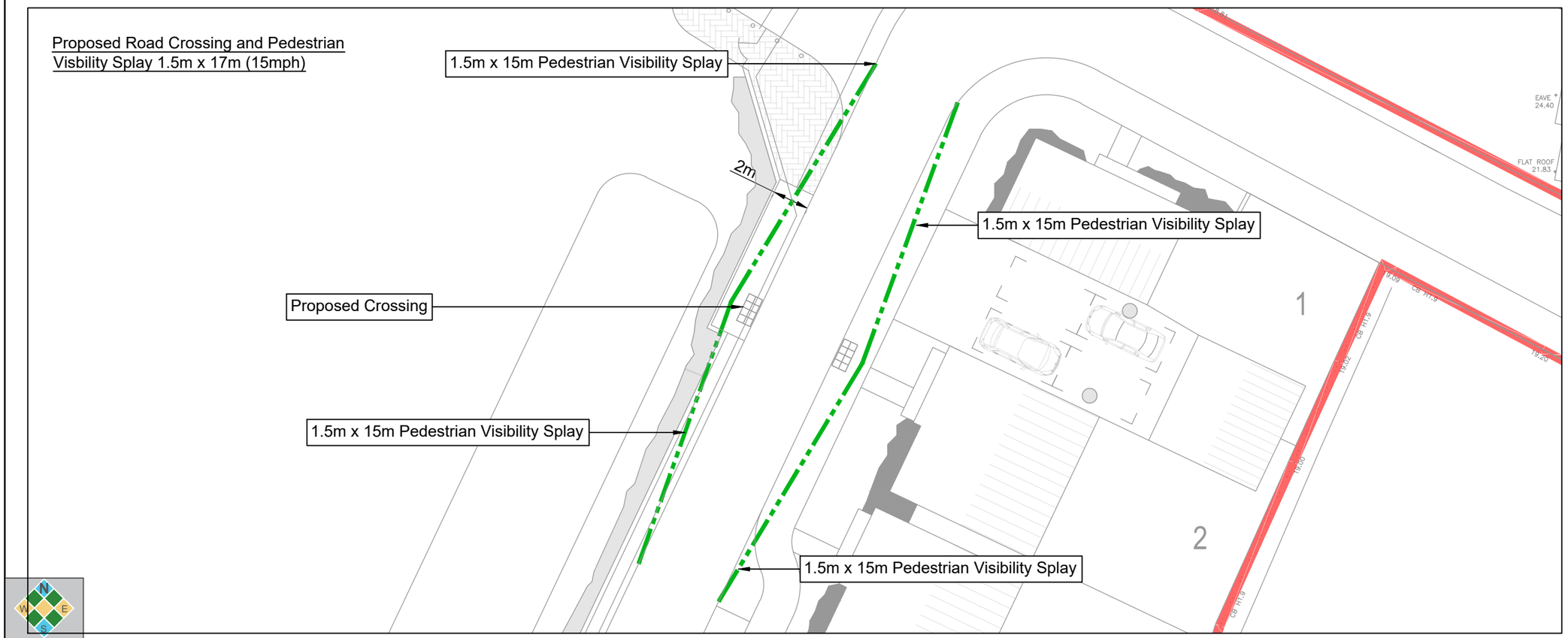
Appendix H

Car Park Access and Pedestrian Crossing Point Visibility Splay Arrangement

Visibility Splay 2.4m x 17m (15mph)



Proposed Road Crossing and Pedestrian Visbility Splay 1.5m x 17m (15mph)



INDICATIVE

Notes:

1. This drawing is based upon topographical survey drawing number 4900-07NOV16-01 by A D Horner Limited.
2. This drawing is based on the Architects layout (21.20.020_PL005) received from Coombes Everitt Architects on 04/02/2022.
3. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
4. Highway boundary information has been provided by Gloucestershire County Council (GCC) and has been overlaid by Cotswold Transport Planning onto the topographical survey on a best fit basis.

KEY:

- Site Boundary
- Junction Visibility Splay 2.4m x 15m
- Pedestrian Visibility Splay 1.5m x 15m

Rev	Date	Details	Drawn by	Checked by
A	10.01.22	Updated Layout & Visibility Splays	RC	JM

COTSWOLD TRANSPORT PLANNING

CLIENT:
Cotswold Oak Ltd

PROJECT:
Paygrove Lane, Longlevens

TITLE:
Internal Visibility Assessment

STATUS:
INFORMATION

SCALE @ A3:	DATE:	DRAWN:	CHECKED:	APPROVED:
1: 250	10/02/22	RC	FA	JM

JOB NO:	DRAWING NO:	REVISION:
21-0760	SK03	A

COTSWOLD
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Cotswold Transport Planning Ltd

Please visit our website at:
www.cotswoldtp.co.uk

Office locations in:
Bedford
Bristol
Cheltenham (HQ)

Registered Office: CTP *H*ouse *K*napp Road, Cheltenham Gloucestershire, GL*50* 3*QQ* Registered in England and Wales No. 9228763.

-10mm 0 10mm

CAD FILE NAME : GL158T-001 Rev A (west)

EXISTING GATED ACCESS

KEY

- PROPOSED 'BUFF' TACTILE PAVING IN ACCORDANCE WITH GCC MANUAL FOR GLOUCESTERSHIRE STREETS.
- NEW CARRIAGEWAY CONSTRUCTION WITHIN HIGHWAY.
- NEW CARRIAGEWAY CONSTRUCTION WITHIN SITE.
- NEW FOOTWAY CONSTRUCTION.

REV		DR	CH	AP	DATE
A	ACCESS REVISED TO SHOW BELL-MOUTH JUNCTION WITH FOOTWAYS.	JD	TH	TH	23.12.15

PROJECT: LAND WEST OF PAYGROVE LANE, GLOUCESTERSHIRE

CLIENT: GLOUCESTERSHIRE COUNTY COUNCIL

DRAWING TITLE: SITE ACCESS ARRANGEMENT

DRAWN BY	CHECKED BY	APPROVED BY	DATE	SCALES @ A3 SIZE	ISSUE STATUS
JD	TH	TH	03.11.15	1:500	PLANNING

Matrix TRANSPORT PLANNING • DEVELOPMENT ENGINEERING [redacted]

DRAWING NUMBER: GL158T-001

REV.: A