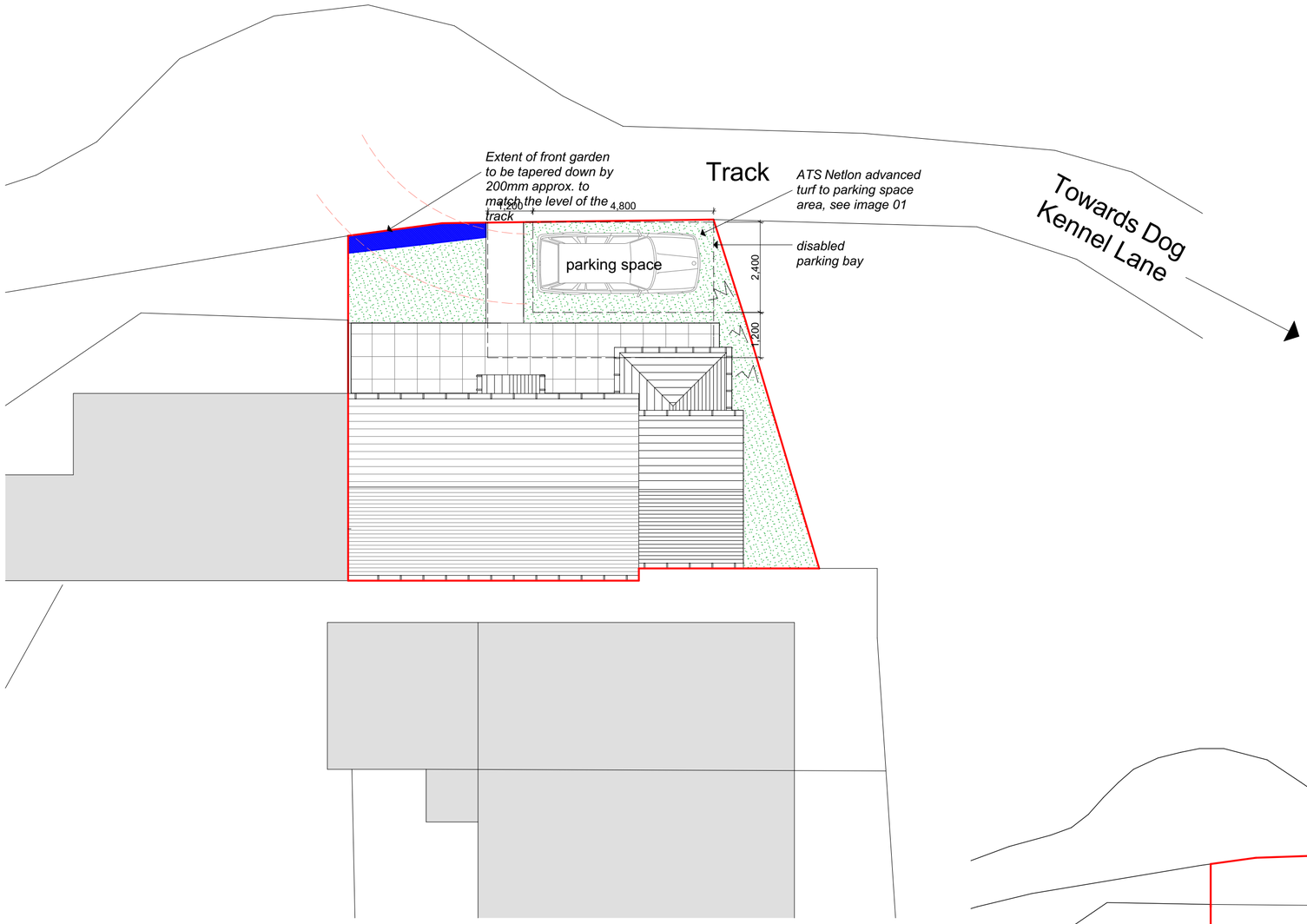
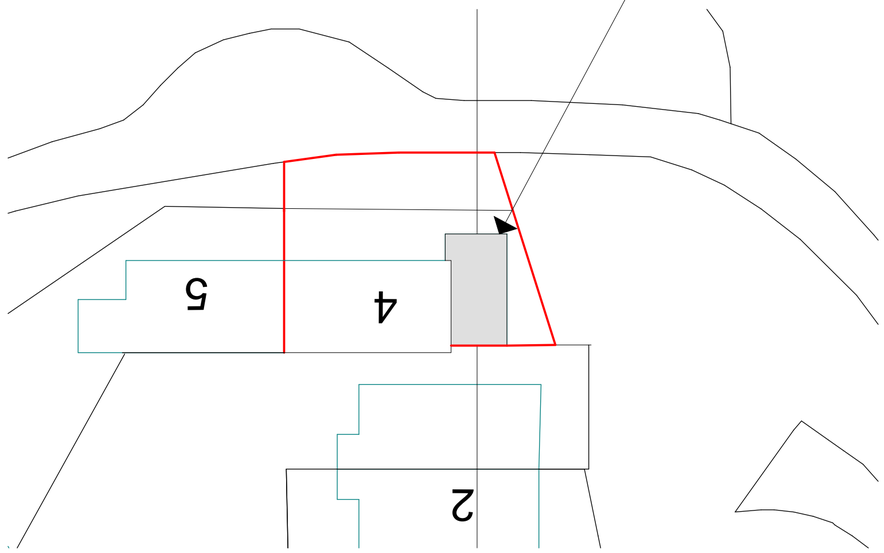


01 Site Plan



02 Site Block Plan
1:200

Typical construction detail

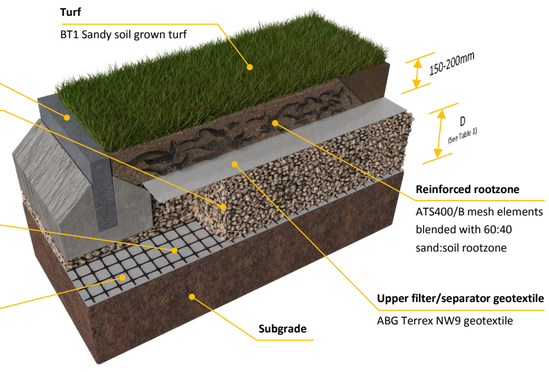


Image 01 - ATS as used in National Trust AONB and Conservation area sites

1:100 @ A1
m (metres)
0 1 2 3 4 5 6 7 8 9 10

General Notes:-

North Point:-

North

Rev	Reason	Date
E	Parking access shown	09/04/2021
C	Minor alterations	09/02/2021
A	Block Plan added	12/10/2020

Scales @ A1
1:100, 1:200, 1:1

Project No.
261

Status

Purpose of Issue
SKETCHES FOR COMMENTS

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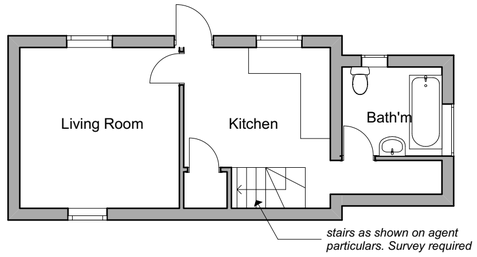
Project
4 Artichoke Heights, Dog Kennel Lane, Chorleywood

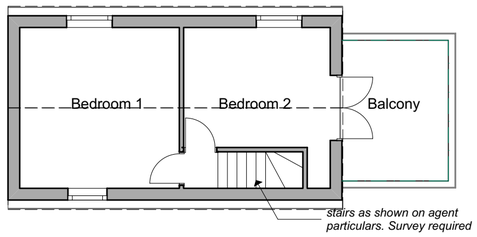
Layout Title
Site Plan

Client
Mr B. Griffiths

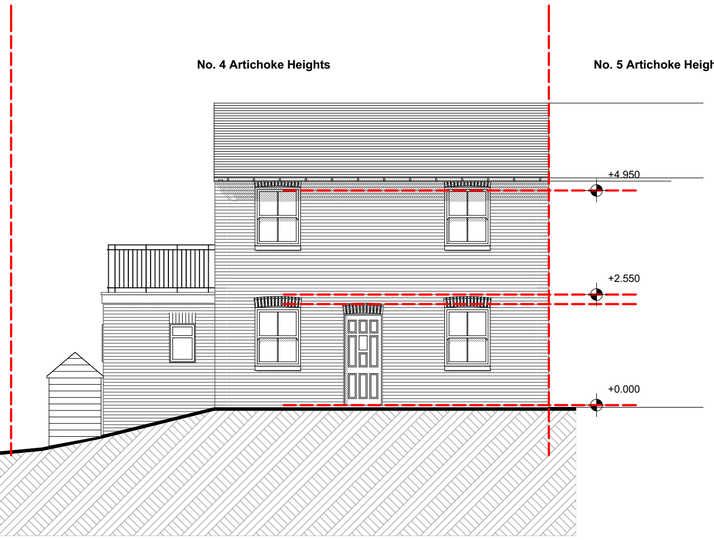
Drawing Number
2020/261/003E



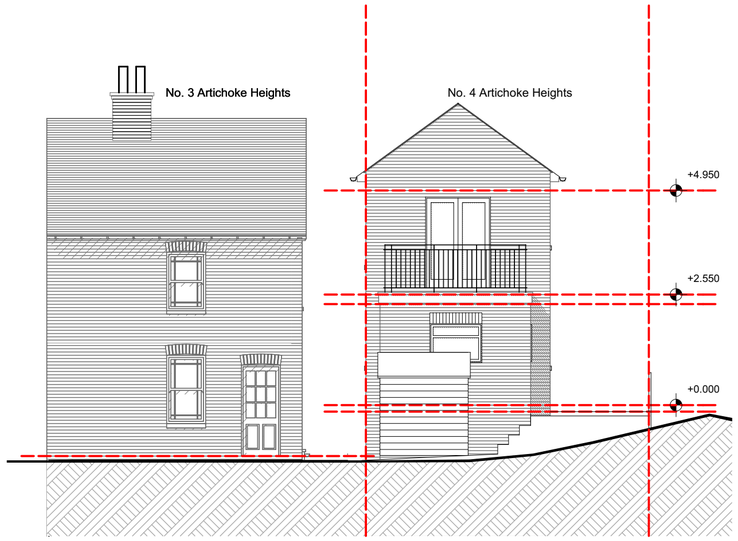
01 Existing ground floor plan



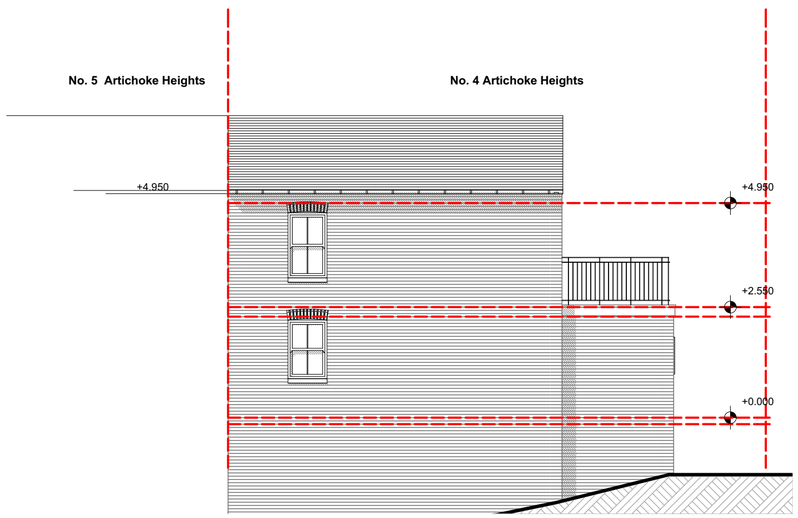
02 Existing first floor plan



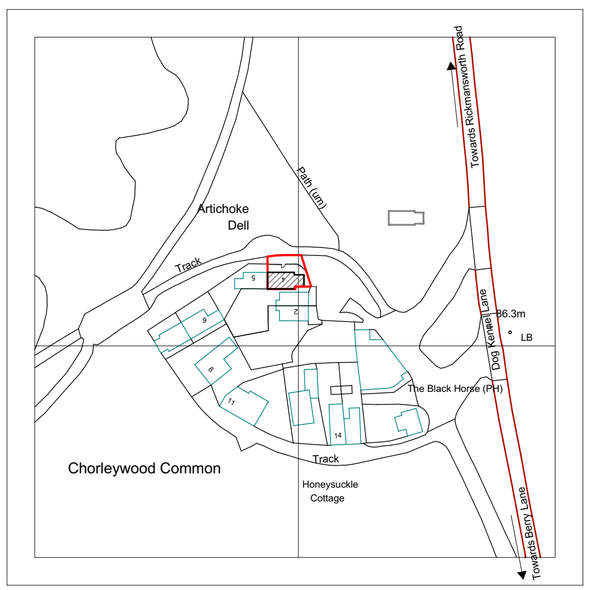
03 Existing front elevation



04 Existing side elevation



05 Existing rear elevation



06 Site location plan
1:1250

1:1250 @ A1
m (metres)

1:100 @ A1
m (metres)
0 1 2 3 4 5 6 7 8 9 10

General Notes:-

North Point:-

North

Rev	Reason	Date

Scales @ A1
1:100,
1:1250

Project No.
261

Status

Purpose of Issue
SKETCHES FOR COMMENTS

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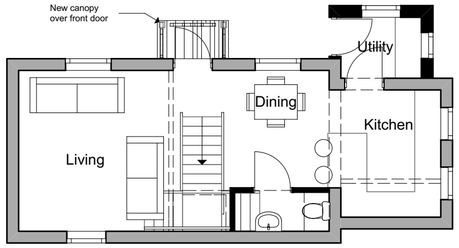
Project
4 Artichoke Heights, Dog Kennel Lane, Chorleywood

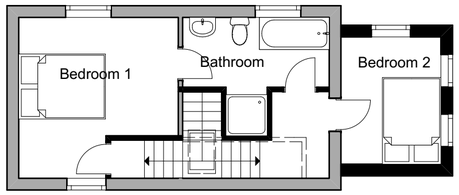
Layout Title
Existing plans and Elevations

Client
Mr B. Griffiths

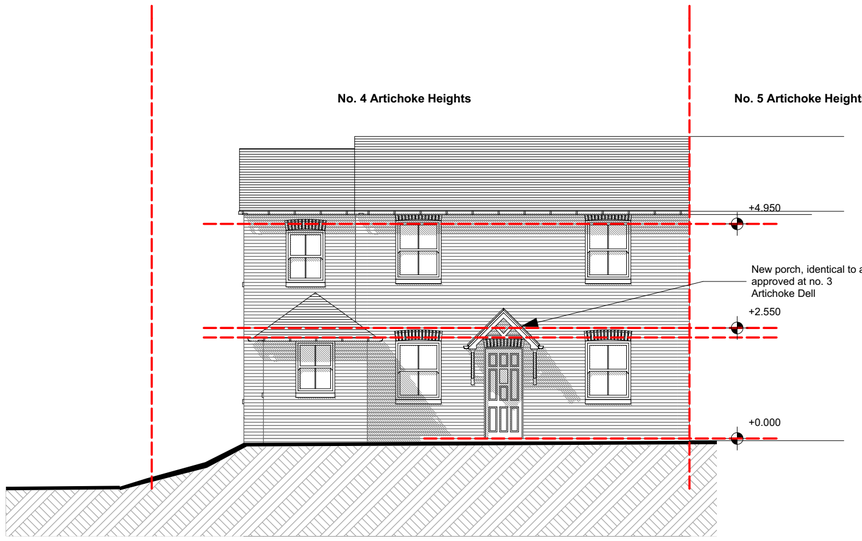
Drawing Number
2020/261/001



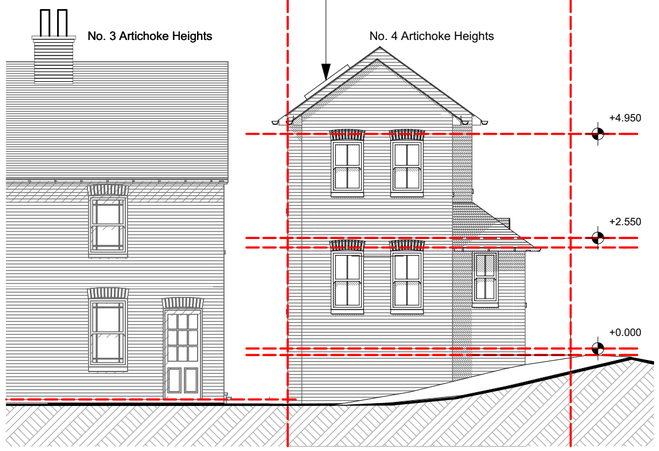
01 Proposed ground floor plan



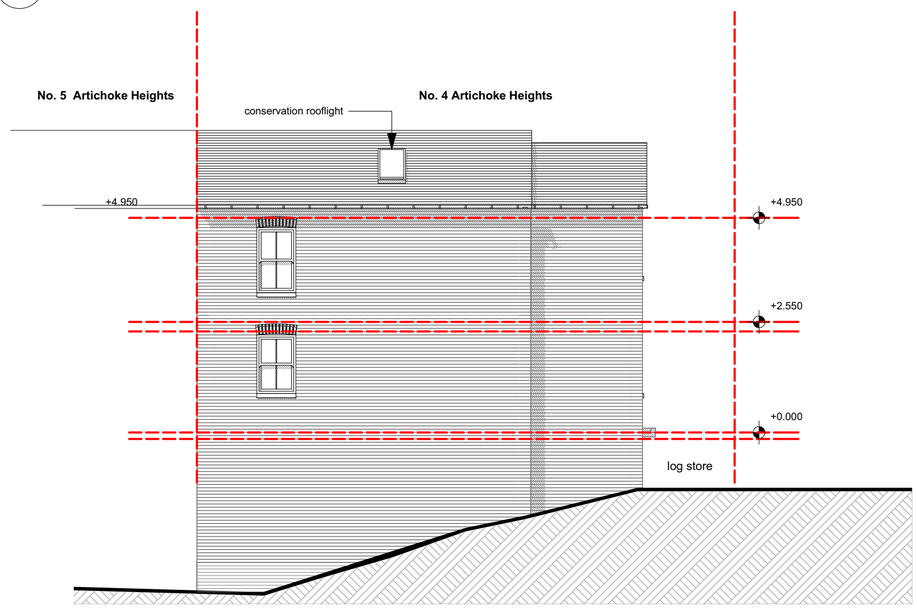
02 Proposed first floor plan



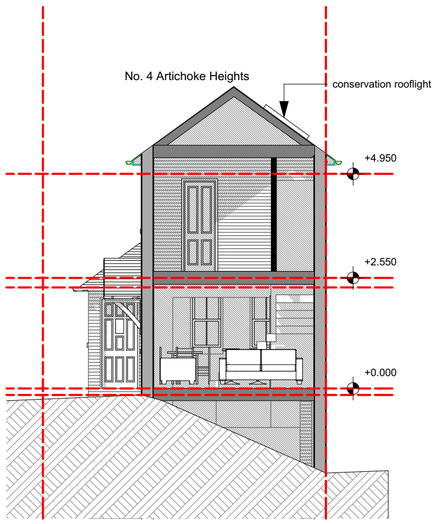
03 Proposed front elevation



04 Proposed side elevation



05 Proposed rear elevation



06 Proposed side elevation

1:100 @ A1
m (metres)
0 1 2 3 4 5 6 7 8 9 10

General Notes:-

North Point:-

North

Rev	Reason	Date
C	Minor alterations	09/02/2021

Scales @ A1: 1:100

Project No.: 261

Status

Purpose of Issue: SKETCHES FOR COMMENTS

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Project

4 Artichoke Heights, Dog Kennel Lane, Chorleywood

Layout Title

Proposed Plans and Elevations

Client

Mr B. Griffiths

Drawing Number

2020/261/002D

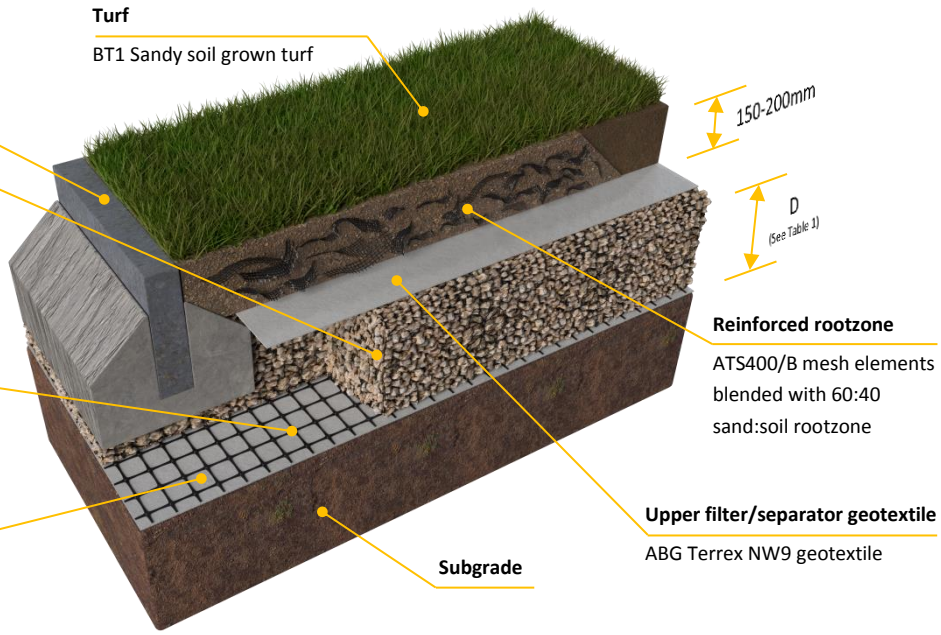
Advanced Turf® System (ATS)

Structural design guidance for vehicular access

Technical Note

The Advanced Turf System (ATS) is suitable for a wide range of trafficked applications where a free-draining, compaction resistant and high load bearing, discreetly reinforced natural grass surface is required. Typical applications include fire & emergency access lanes, HGV maintenance & MEWP routes, overflow parking, event areas, helipads & airfield aprons, pedestrian & disabled access, and sculptured slopes. This document is intended to be a summary presenting typical solutions. Contact ABG for detailed site specific advice.

Typical construction detail



Technical Specification

System	Advanced Turf® System (ATS)
Colour	Brown
Mesh material	Polypropylene Homopolymer
Mesh density	905 – 908 kg/m^3
Mesh element dimensions	100mm x 50mm
Mesh aperture pitch	10mm + 2mm - 1mm
Mesh tensile strength	3.3kN/m (longitudinal and transverse)
Mesh junction strength	≥ 50% of the strand strength
Mesh flexural recovery	High flexural recovery ≥ 95%
Mesh/rootzone blend ratio	5.4kg mesh elements per m³ of rootzone
Permissible axle load	Standard HGV loadings up to 10 tonnes per axle ≅ 100kN
Chemical resistance	Excellent
UV stability	High resistance to colour & strength degradation
Infiltration capacity	High infiltration rate up to 150mm/hr
Upper filter/separator geotextile	ABG Terrex NW9 non-woven geotextile 1.1mm thick, 120g/m^2, zero breakthrough head
Sub-base material	DTp Type 3 or a drained Type 1, or BS 7533-13 4/20 or 4/40 (Ref. Note D)
Sub-base layer thickness	Refer to Table 1 for thickness 'D' in millimetres (mm)
Sub-base stabilisation	Typically Abgrid 20/20 or 30/30 geogrid (see Table 1). Alternative options may be suitable (Ref. Note C)
Lower filter/separator geotextile	ABG Terrex NW9 non-woven geotextile 1.1mm thick, 120g/m^2, zero breakthrough head

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Advanced Turf® System (ATS)

Structural design guidance for vehicular access

creative geosynthetic engineering

Technical Note

NOTES

A. For advice on the installation and maintenance of ATS, please refer to the ABG Advanced Turf® Installation Guide.
B. Advice on subgrade CBR% strengths, ground conditions, and construction over weak ground is available from ABG.
C. Alternative ABG stabilisation geosynthetics may be used in lieu of ABG Abgrid geogrid. These include ABG Gridtex Type 2 high-strength woven geotextile or ABG Abweb geocells. If the sub-base stabilisation is omitted, the total sub-base layer thickness ('D' on Table 1) is typically increased by a minimum of 50%.
D. Sub-base design options:
   D1. Where a **porous sub-base** is required for SuDS applications a permeable open-graded (reduced-fines) aggregate is recommended, such as DTp Type 3 low-fines roading aggregate, or BS 7533-13:2009 SuDS aggregate (4/20 or 4/40).
   D2. Where a **non-porous sub-base** is required a conventional DTp Type 1 sub-base is recommended. It is essential that a drainage system such as ABG Fildrain is incorporated. Specific advice is available from ABG.
   D3. Where **no sub-base layer** is required (such as on subgrade soils with a CBR > 6%), the geotextiles and sub-base stabilisation can be omitted.
E. Maximum sub-base particle size should match minimum sub-base thickness but must not exceed 75mm diameter. For sub-base thicknesses of around 100mm, a minimum 37.5mm particle size should be adopted to allow effective installation of the Abgrid.
F. The sub-base must be overlaid by a Terrex NW9 geotextile to provide separation, enhanced water treatment function and prevent migration of the bedding layer.
G. Typical paving edge restraint solutions include concrete, timber, railway sleepers, steel, heavy-duty plastic, or by simply leaving a 45° battered edge to the compacted ATS rootzone layer where it will abut an adjacent grassed area.
H. Advanced Turf Access Routes can be delineated using kerbs, bollards, marker posts, trees or planted areas as required.
I. Fertiliser will help to establish and maintain a healthy grass sward which is capable of sustaining traffic. Local and seasonal weather conditions will determine the degree of irrigation required. Inadequate irrigation during the grass establishment period may result in drought conditions and a failure to establish uniform quality grass cover.
J. The maximum advised gradient for fire access, disabled access, and other vehicular applications is 8% (1:12) 5°.
K. When designed in accordance with the recommendations, Advanced Turf complies with BS8300:2009 : "Design of buildings and their approaches to meet the needs of disabled people" – Code of Practice (ISBN 9780 580 57419) & Building Regulations Document 'M' Section 6.
L. All stated dimensions & weights are nominal and in accordance with manufacturing +/- tolerances.
M. The recommendations in this document are only suitable for use with ABG products.
N. Advanced Turf® is a registered trademark of Schweitzer-Mauduit International (SWM)

Table 1: Advanced Turf® System (ATS) typical DTp Type 3 sub-base thickness (D) requirements – refer to specific construction drawing

CBR strength of subgrade soil (%) (*see Table 2*)	ATS reinforced rootzone layer thickness (mm)	DTp Type 3 sub-base thickness (D, mm) Light vehicles only with emergency HGV access	Light vehicles with one HGV per week	ABG Abgrid geogrid
>6	150 or 200	No sub-base	No sub-base	Abgrid 20/20
4 – 6	200	100 (no geogrid required)	100	Abgrid 20/20
2 – 4	200	100	150	Abgrid 30/30
1 - 2	200	150	250	Abgrid 30/30

Table 2: Field guidance for estimating sub-grade shear strengths

CBR (%)	DCP Result[1] (Sandy Soils)	HSV Result[1] (Clayey Soils)	Tactile (Clayey Soils)	Visual (Clayey or Sandy Soils)
<1	<1	<30kPa	Easily indented by fingers	Adult standing will sink >30mm
1 - 2	<1	30-60kPa	Indented by strong finger/thumb pressure	Adult walking sinks 10-30mm
2 - 4	1 - 2	60-120kPa	Cannot be indented by thumb pressure	Utility truck ruts 10-25mm
5 – 7	2 - 3	120-200kPa	Can be indented by thumb nail	Loaded construction vehicle ruts by 25mm
>8	>3	>200kPa	Difficult to indent by thumb nail	Loaded construction vehicle ruts by <10mm

Note: 1. DCP results are expressed as blows per 100mm penetration. HSV results are expressed as "undrained shear strength" or C_u

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