
COAL MINING RISK ASSESSMENT SITE INVESTIGATION

REPORT ON A PROPOSED EXTENSION TO THE DUNKIRK PUBLIC HOUSE, UPPER DENBY

On Behalf of-
Ronan Developments and the
Bagden Group

JULY 2020

Job No. 20-07-1599

PREPARED BY



BUTTERFIELD HOUSE
59 OAKENSHAW LANE
WALTON
WAKEFIELD
WF2 6NJ

Tel : 01924 255666
E-mail : cromwell.wood@gmail.com

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Mining Report for the Extension of the Dunkirk Public House, 231 Barnsley Road, Lower Denby HD8 8TX.**Surveyor - John Carlon B.Eng (Hons) C.Eng C.Env MIMM MRICS****Date of Report 18th July 2020.****Client –. Ronan Developments for the Bagden Group****Introduction**

The instruction was given by the client's Architect after discussion with the planning office and consultation with the Coal Authority to undertake a desk top coal mining risk assessment to accompany a planning application for the extension to the public house to extend the restaurant facilities at the above address. The building is currently a public house that is located on Barnsley Road at Lower Denby. To the rear of the property is grazing land and part of the land has been acquired for the extension to the public house for this application. The building is shown on the existing layout plan 2020/19 EX01 prepared by Ronan Developments Architecture and included in appendix A. The property is located within a high-risk referral area on the Coal Authority Interactive map which is due to a record of shallow coal seams existing under or near to the site.

The site has been visited and the area reconnoitred to assess the area for historical coal mining and the types of property in the area. The properties at Lower Denby were built prior to the publication of the first edition Yorkshire County Sheets in 1851 and the public house and the farm at the junction of road networks is shown on that map. Romb Pickle on Miller Hill to the north also existed as did Dry Hill farm to the northeast. There was a public house across the road from the building that is now the Dunkirk that was called the Waggon & Horses. Those buildings are still there. Denby House on Miller Hill was built around 1921 and prior to that the land was enclosed and used as pasture.

The writer is aware of coal mining from a number of collieries to the south of the site around Lower Denby and east towards Bagden and Scissett. The first edition geological map shows the site to be on a fault line that runs in a north westerly direction. To the north of the fault is the sandstone bed above the Black Band coal seam that forms the hill for Lower Denby and to the south of the fault is older strata with the Whinmoor seam. The geological faulting steps the strata down for the south to the north as at Upper Denby the clay works used the Cumberworth Thin fireclay that was at the surface.

The study of the historical maps of the area provides no evidence of coal mining in the near vicinity of the Dunkirk property and the only evidence of mining are the shafts behind the farm on Lower Denby Lane the shafts at Denby Colliery and alongside the railway to Huddersfield from Penistone. The Whinmoor seam is 12 and 16 yards beneath the surface and the outcrop is in the field to the south of Barnsley Road and east of Lower Denby Lane. These mines were operated from 1866 to 1922 when they were abandoned. The mining area was located 70 metres to the south west and is shown on the 1930 edition of the County Sheet geological series number 273 NE in appendix C.

There is no evidence of any coal mining under the site as the geology that underlies Dunkirk is the boundary between the two faults that throws the sandstone down and the Black Bed which is thin and not the seam worked in this area. The Whinmoor was worked to the south and west of the Dunkirk Inn and the Wheatley Lime seam east of Dry Hill Farm and Highfield Farm. The geology has been

mapped where it is exposed from Penistone and Huddersfield in the south, through Halifax and Bradford towards the north of the Leeds as the beds arc around the base of the Carboniferous period coal measures. The geology of the section is well known due to the clay and coal mining activity in the Sheffield, Denby and Halifax area for the clay industry making bricks and pipes from the 1840's to the 1990's.

The interactive coal mining map shows the site to be underlain by shallow coal that has been identified as the Black Band that lies between the Silkstone seam and thick sandstone beds to the Whinmoor seam. Around the Dunkirk public house the seams are extrapolated as outcropping around Dry Hill and Upper Denby. In the geological sequence there is one other seam that has been worked for coal and fireclay that is the Cumberworth Thin coal as there is a thick seat earth below it that has been used in the heavy clay sector for over 140 years. The pipe and brick manufacturers exploited the area around Upper Denby for the coal and the fireclay. These seams are not in the vicinity of the subject property.

These seams were synonymous with the extraction of seat earth fireclay and brick earth and that is why there is a clay works in Upper Denby as the clay will have been used to produce bricks and sewer pipes for the buildings being erected in Denby Dale and further afield in the larger towns and cities. Interestingly the buildings in Denby Dale are stone and that area lay over the sandstone known as the Penistone Flag. Denby lays over brick earth and fireclay so the clay was used to make pipes as there was ample coal to fire the kilns.

The area is perceived by the Coal Authority as high risk due to the depth to the Black Band seam and the strata above which is Carboniferous sandstone. The Black Band is not recorded on the geological map as the outcrops are traced with a broken dashed black line which infers the seams is thin and unable to be worked or it is not evident in the strata. Boreholes have been drilled at Dry Hill Farm and Nether End Farm and the seam was recorded as being 200 mm thick Refer to the log in appendix D. There is no evidence the coal has been worked as the Ordnance Survey Maps of the area do not show any coal mine shafts around the Dunkirk Public House or on Miller Hill, Dry Hill Lane, Common Lane or Hollin Edge. There are shafts shown to the north east around Bagden and Dobroyd and there was mining in this area east of Common Lane from Exley Gate Colliery which closed in 1935. The outcrop of the Cumberworth Thin fireclay would be 50 metres to the south of Barnsley Road so any clay mining could not have extended to the public highway and the subject site.

Most of the coal mining in Denby Dale was to the east around Bagden and Clayton West or around Upper Denby and Upper Cumberworth for the Whinmoor, Cumberworth Thin fireclay, Silkstone and Wheatley Lime seams which are the seams outcropping in the wider area.

Based on the evidence the risk of mining subsidence to the property after the extension is built is negligible to none and there is no evidence of underground mining under the site or subsidence to the buildings in Lower Denby.

The application site is crossed by a downthrow fault that runs diagonally across the site so the foundation trenches for the extension should be inspected once they are open by a mining engineer or geologist to advise the client and the structural engineer if there ought to be some reinforcement in the foundations due to the fault line. It is rare for there to be ground movement but it can happen on fault lines.

The Property

The property is within the Lower Denby area, east of Barnsley and south east of Huddersfield. The current property is a stone built house that was converted into a public house known as the Dunkirk over 100 years ago. The building has been evident since the publication of Ordnance Survey maps in 1851. The public house backs onto a pasture and requires extending to provide more facilities and space for the hospitality business. Refer to plan number HB 2020/19 EX01 C in appendix A of the existing layout prepared by the architect.

The existing building is used as a public house with a function room upstairs and for storage. The public house when originally built in the terrace was for residents who lived on the premises and a public house as located across Barnsley Road. The building is to be extended to afford room for a restaurant facility in a single storey extension. Refer to the drawing numbers 2020/1 PRO 1 Rev F and 2020/19 PRO 2 Rev B.

The neighbouring properties on Barnsley Road have been inspected and there is no sign of subsidence in the area and the properties are traditional construction of double skin sandstone probably on a thick flag rock foundation.

The property is founded on mudstone as it is situated to the south of the fault but the extension could be founded on Carboniferous sandstone. The strata has been confirmed to be 61 metres thick from the borehole drilled at Dry Hill Farm to abstract water in the area and the Black Band Coal seam was found to 200 mm thick at a depth of 4.6 metres. The strata dips to the southeast and is cyclical deposits of sandstone, shale and mudstone. The area is on exposed Lower Coal Measures which has been proven in the mines around Upper Denby and the collieries in the area to the west consisting of the Whinmoor coal seam and the Cumberworth Thin. There has been no mining beneath the application site and no requirements to safeguard the development from past coal mining have to be considered.

The site is in the zone of a major fault so the ground should be inspected when the foundations are excavated for the single storey extension to the rear and side to see if the fault is exposed as there will be a change in strata either side of the fault.

It has been concluded that the strata will provide a competent rock head build the extension to the public house. There is negligible to no risk to the property from legacy coal mining as there is strong evidence there is no underground coal or clay mining in the immediate area.

Mining took place to the east and west of the site at a number of collieries that have been recorded and are as follows;

Exley Gate – Wheatley Lime and Blocking Bed – closed 1937 – catalogue numbers 11596 & 12102

Pinfold and Pinfold New – Whinmoor _ closed 1922 – catalogue numbers 6822 & 7561,

Dunkirk – Whinmoor – closed 1919 - catalogue number 6910

Denby Lower – Whinmoor – closed 1921 – catalogue number 7428.

Background

In December 2012 the Coal Authority published a guidance note on the mine hazards and how they could be mitigated through good planning and design. The Coal Authority divided the coal field areas into two areas, high risk and low risk. The high risk areas are the parts of the exposed coalfield where there are outcrops of coal, mine shafts, adits and openings, recorded incidents of mine treatment, shallow workings or a belief that there may have been, before mine workings were recorded under regulations introduced in the 1872 Mines Act. The Lower Denby area is marked as a referral area due to the presence of shallow coal seams, namely the Whinmoor which is recorded at a depth of 36 feet and has a section thickness of 4 feet from the outcrop located 70 metres to the south of Barnsley Road. In the metric system that is 10 metres below the surface and 1.2 metres thick.

Under the application site there is an interpolated outcrop of Black Band Coal overlain by sandstone so there is a potential for shallow coal mine workings and it needs to be investigated which this report addresses. The conclusion is there is no coal mining underneath the site.

The Coal Authority are responsible for the repair of property if damage was to occur from past coal mining activity and to reduce their liability the Authority are seeking to mitigate the risk of mine related damage on new build properties being engineered to withstand the influence of historical coal mining damage from subsidence or shallow mine workings in the future.

The Coal Authority are not responsible for damage caused to a property through collapse of ground or subsidence caused by other minerals being mined that were not brought under the ownership of the State in the Coal Act 1938. It is important to identify potential hazards to a new build or refurbishment and design an appropriate scheme to stabilise the land if there has been underground mining in coal or other minerals. It is also incumbent on the developer to investigate the ground conditions for any geological features that may be identified and in this case there is a fault crossing the site. Refer to the aerial photographs in appendix B.

Desk Top Study

No coal mines appear to have existed under the application area and more importantly there is no record of any fireclay mining by underground methods within 70 metres of the property. There is an old clay shaft shown on figure 1, the 1866 edition geological map in appendix C. Other mines area shown on the 1930 second edition geological map in appendix C located to the south west of the site. The strata has been confirmed in water abstraction boreholes drilled at the surrounding farms, refer to the borehole information in appendix D.

The surface geology of the site has been considered from the archives held by the company and information in the public domain on the British Geological Survey Geo Index website. The first edition geological map 273 has been relied upon for the section of strata and the location of the limit of the Coal Measures. Refer to figure 1, the plan CWECL/DUN/CMRA/2020-01 for the map where the shaft was logged in 1860. The buildings at the junction of Barnsley Road and Lower Denby Lane can be identified. The geological maps show the strata and outcrops of coal and there is an area between two faults edged brown on figure CWECL/DUN/CMRA/2020-02 where no mining has taken place and there are no mineable coal seams within 60 metres of the surface.

This coal mine risk assessment has been prepared for the submission of a planning application based on the post application advice from the Coal Authority via the Planning Department at Kirklees Council to the architect as the area is in a High Risk Referral Area. This report should be forwarded to the Coal Authority as it should address their concerns. The conclusion of the report is that there is no risk to the development from mining.

Previous Site Investigations in the Area

Properties in the area have been investigated over the past 20 years as areas of land have been developed and it is clear the strata at shallow depth is mudstone over sandstone. The boreholes drilled for the water abstraction and the strata recorded in the mines provide further information on the deeper sections of strata down through the Wheatley Lime and the Cumberworth Thin seam. There is no evidence of mining activity under the public house or the Dry Hill the area. Mining has taken place from the outcrop of the Whinmoor around Upper Denby.

Site investigation work has taken place on the surrounding farms for water abstraction and the boreholes drilled at Nether End and Dry Hill Farms found 200 mm of coal which is likely to be the Black Band seam and over 60 metres of strata where no coal mining was found. The boreholes were drilled for monitoring and abstracting groundwater from two sandstone beds that are found in both boreholes making extrapolation of the geology under the Dunkirk Public House relatively easy as it should be the same to the fault line. The details of the geology have been considered and it is clear the Black Band seam in the area is 200mm thick and outcrops around Dry Hill and near the subject property. From the borehole information around the development the strata has been confirmed in a number of boreholes as sandstone to a depth of 8.7 metres in the field.

Coal Mine Working

Most mines in the exposed coalfield in the Denby area were worked from 1840 to 1920, by a number of colliery companies before nationalisation of the industry in 1947. Collieries existed to the south of Lower Denby and around Bagden and Clayton West working the Silkstone, Whinmoor and Wheatley Lime seams through to the 1920's. There were also workings in the New Hards seam at Hayroyds Colliery until 10 years ago.

Considerations for the Risk of Damage from Past Mining

The area under Dunkirk should be founded on the sandstone strata. The public house and the properties on Tenter House Court are on the top of the sandstone bed that is above the outcrop of the Black Band seam. There will have been no shallow mining in the footprint of the building or the neighbouring houses. The strata has been proven to be over 60 metres deep with no mineable thickness of coal.

The risk of mining related damage is not there as no mining has taken place so work can commence extending the public house on the grant of planning permission. The seam of coal has been confirmed at 0.1 to 0.2 metres in the boreholes and is near the surface on the geological maps so may be exposed in the foundations for the extension. There is a fault also that crosses the site so the foundations trenches should be inspected by a mining engineer whilst work is taking place. No drilling is required on site to investigate the coal seam.

Conclusion of the Risk Assessment

Coal mining has not occurred in the area and any clay mining by pillar and stall mining will be local to the works in Upper Denby and is associated with the Whinmoor and Cumberworth Thin seams that are located to the south of Barnsley Road and west of Lower Denby Lane .

The foundations in the property will be founded on sandstone and mudstone and the property should be safe from the extension work including the excavations adjacent to the rear elevation of the public house as long as the work is supervised by the structural or mining engineer as the foundations are excavated.

It must be noted that the properties on Barnsley Road, in the vicinity of this site have stood for over 150 years and do not show any sign of movement.

If excavations are providing evidence at the rear of the public house of poor ground conditions or remnants of the outcrop of the Black Band coal and seatearth a prudent developer would strengthen the foundations and construction works for the extension based on a scheme designed by the structural engineer. If there are any queries on mining or ground conditions exposed in the foundation trench then the undersigned can be contacted for advice and a site inspection.

The geology of the area has been examined by past mining records, foundation excavations and boreholes to assess the disturbance to the ground at the surface and the beds of strata for the existing land around the public house. The boreholes in the area found hard sandstone at 1.2 metres below the topsoil and subsoil which is stiff grey clay.

The risk from mining subsidence caused by coal mining does not exist as the seam outcrops at the surface in the vicinity of the public house and the sandstone beds under the site will provide good ground conditions at depth. The thick sandstone beds for the Lower Coal Measures series provide good ground conditions and a low risk of movement as the beds are flat tabular deposits.

The risk to the existing property from coal mining does not exist and the risk of damage from the presence of a thin coal seams associated with the sandstone is negligible.

LIMITS OF LIABILITY

Fennell Green & Bates has produced this report on 231 Barnsley Road solely for the use of the client Bagden Group and their professional advisor on matters appertaining to the extension to the Dunkirk public house after receiving planning permission. Both the findings and opinions expressed within the report are relevant to the period of site visit and data supplied and should not be relied upon at a later date twelve months from the date of this report without further discussion with the writer. No part of the report may re-produced or relied upon by any third party who may subsequently advise the client or undertake his own investigation without the prior written consent of Fennell Green & Bates. It is recommended that any other potential interested party consult with the writer of this report prior to undertaking work, changing the design of the proposal, or obtain their own independent report as the contents of this report cannot be relied upon for the purchase of the property or the construction work as it is for the client named on the front of the report.

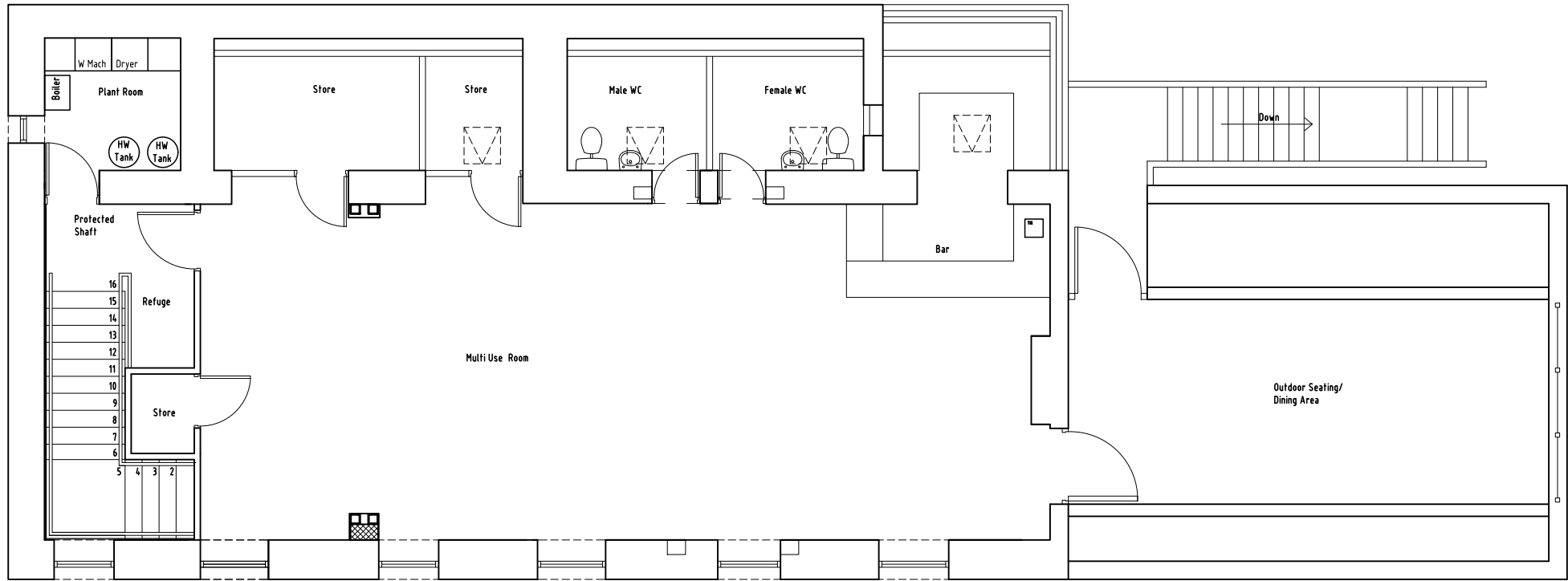
Signed

John Carlon

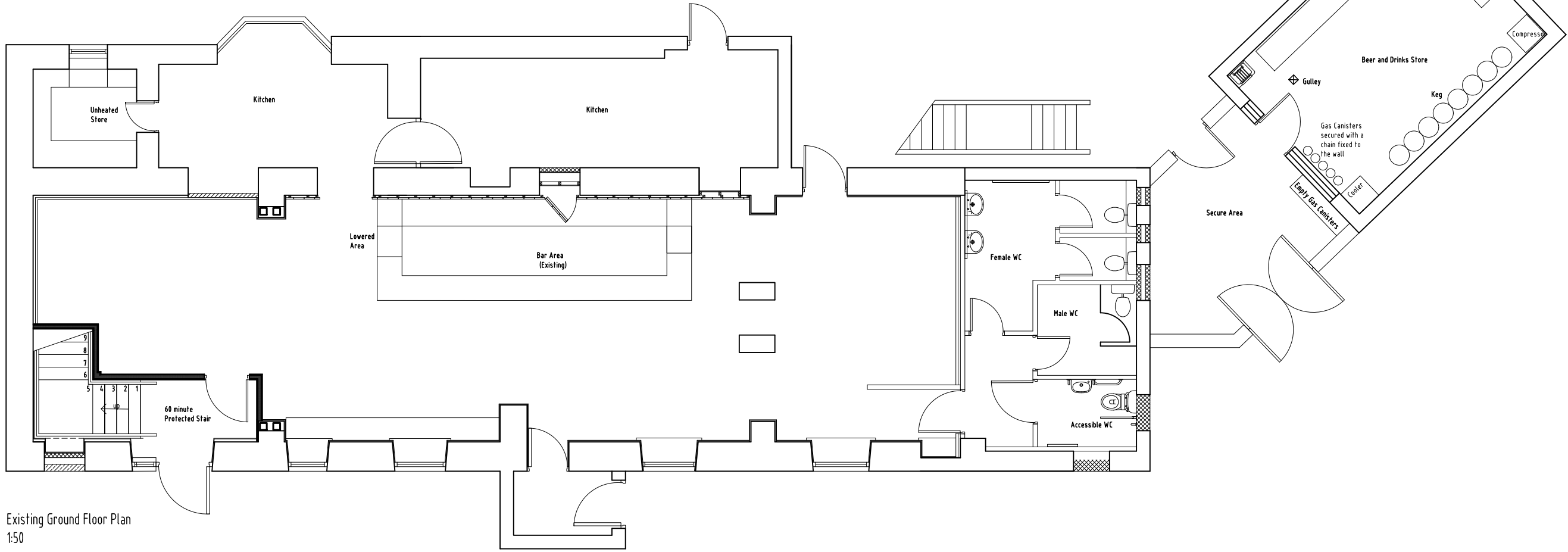
Eur Ing John Carlon B.Eng (Hons) C.Eng MIMM MRICS MIQ MCIWM
Chartered Mineral Surveyor / Chartered Mining Engineer.
July 20th 2020

APPENDIX A

Block Plan and Elevations



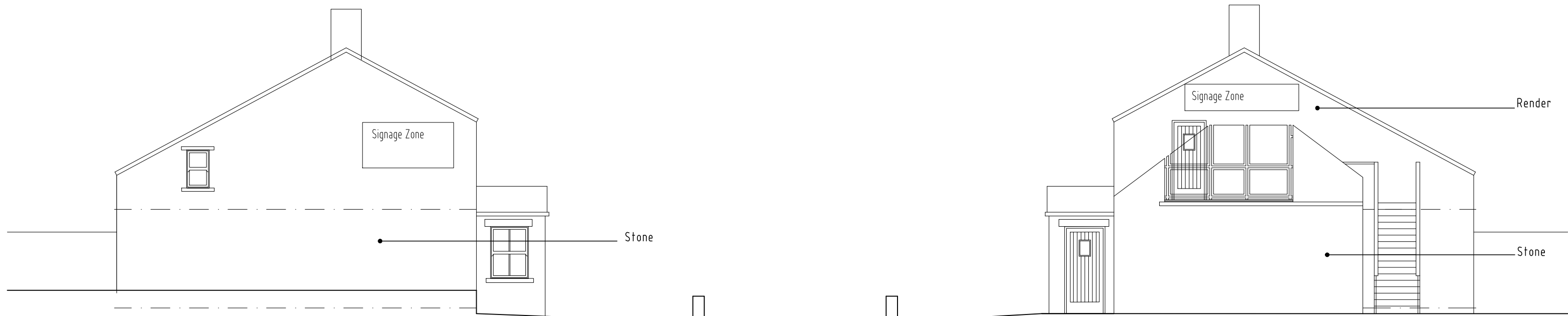
Existing First Floor Plan
1:50



Existing Ground Floor Plan
1:50



South Elevation
1:100

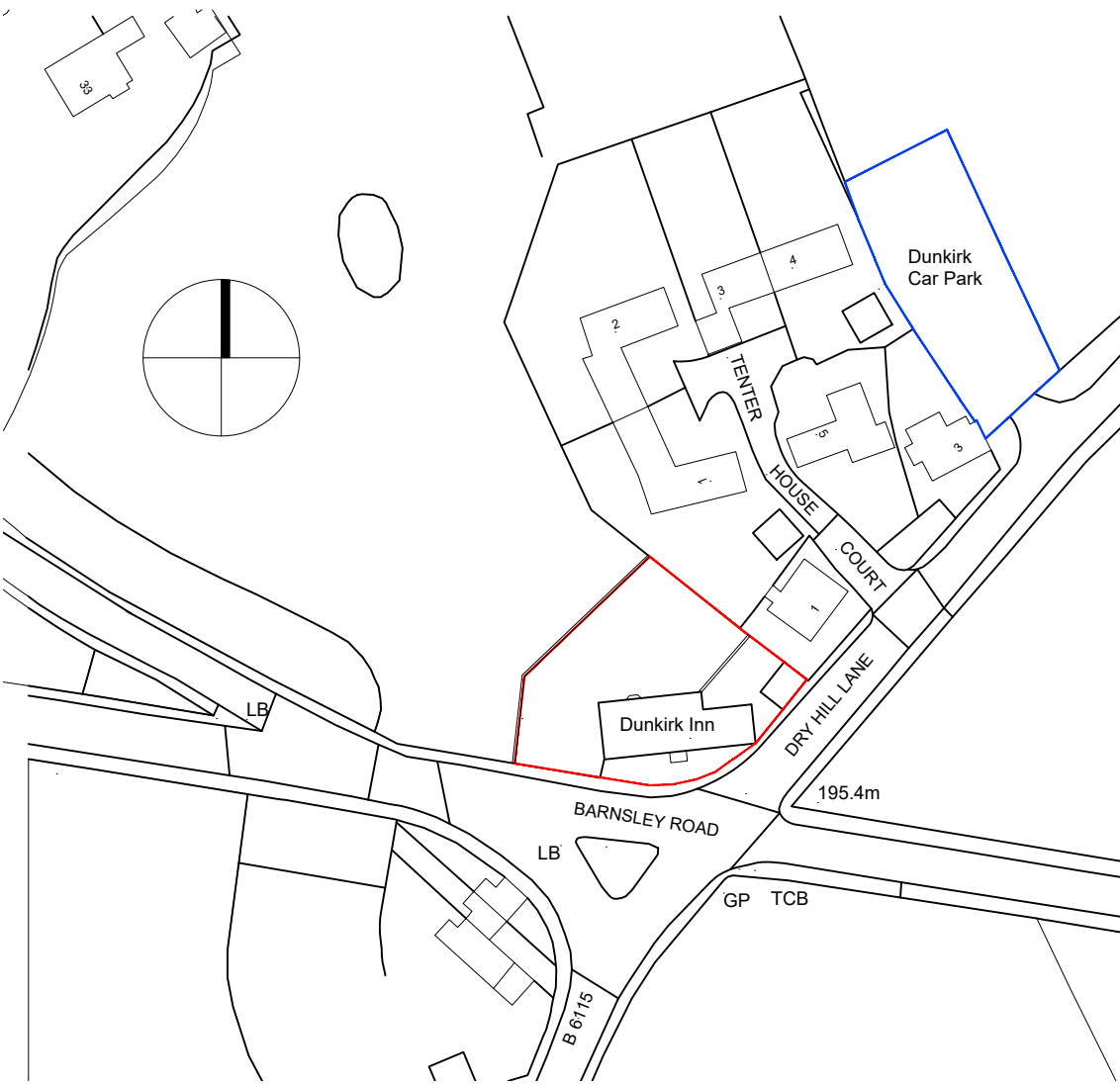


West Elevation
1:100

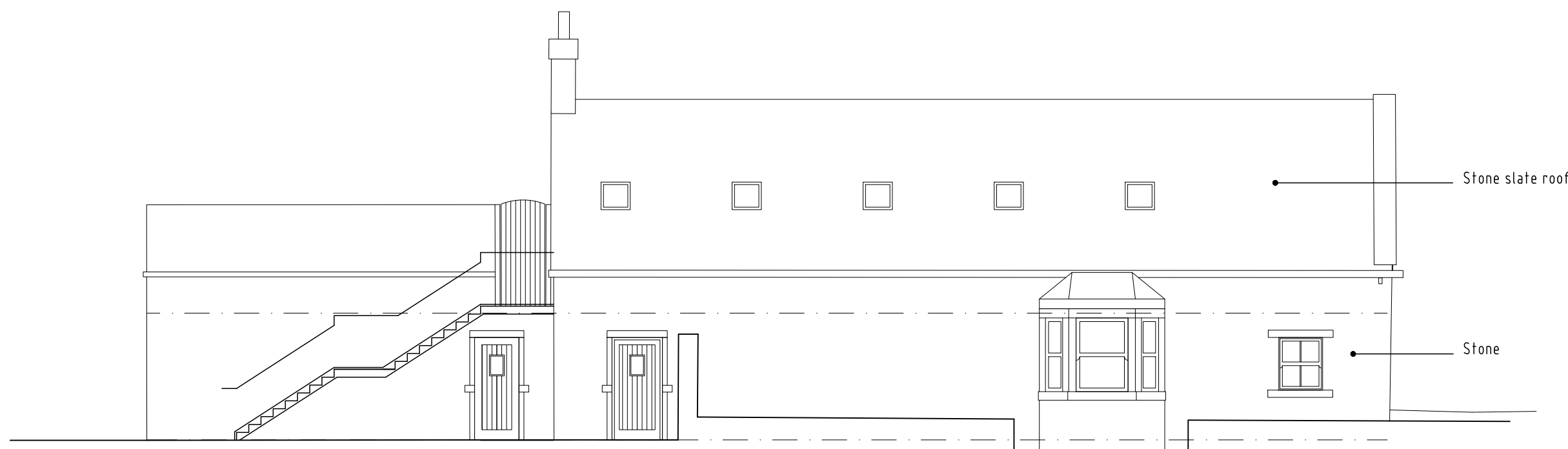
East Elevation
1:100



Existing Site Plan
1:200



Location Plan
1:2500



North Elevation
1:100

C	First floor layout relabelled as Existing	AVR	5/6/20
B	Existing materials added	AVR	28/5/20
A	Location Plan, Site Plan, and Elevations added.	AVR	14/5/20

Revision	Description	By	Date
C	First floor layout relabelled as Existing	AVR	5/6/20
B	Existing materials added	AVR	28/5/20
A	Location Plan, Site Plan, and Elevations added.	AVR	14/5/20



Upper Bagden House
Bagden Lane
Clayton West
Huddersfield
HD8 8LQ
Tel: 01484 865000
Fax: 01484 865071
Email: info@romandevelopments.com

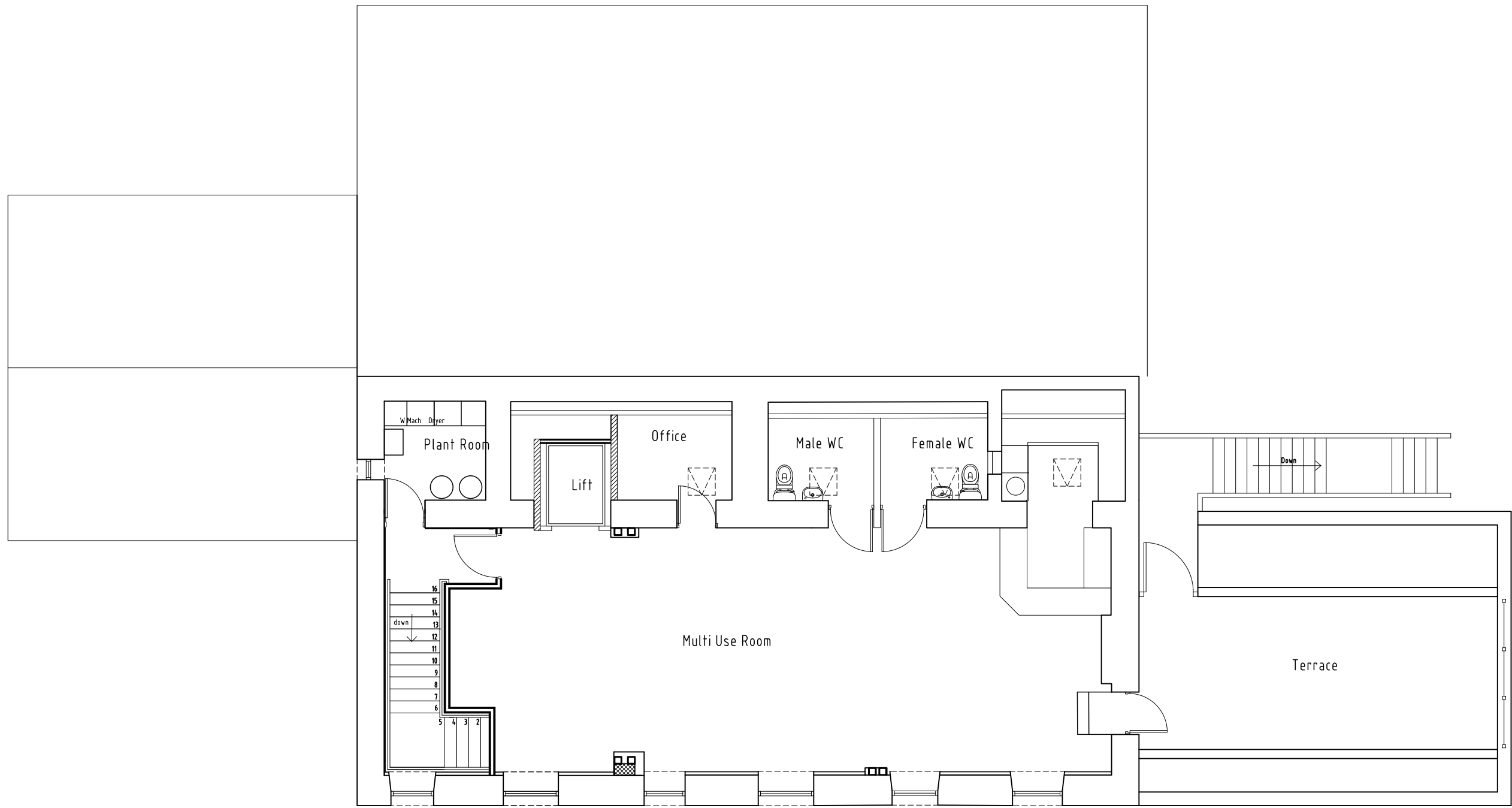
The Bagden Group

Project
Extension to Dunkirk Inn
231 Barnsley Road, Denby Dale

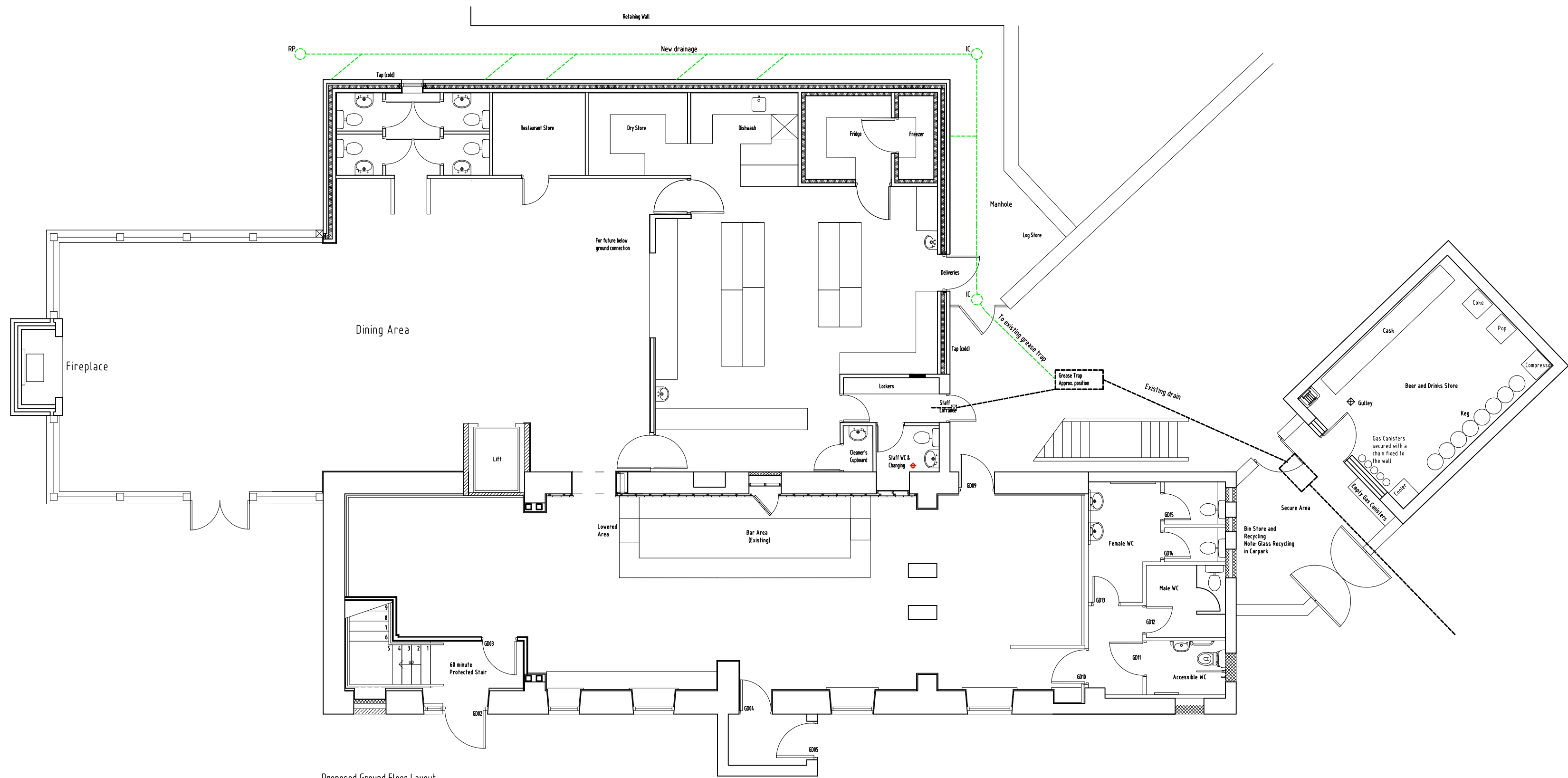
Drawing Title
Existing Site Plan, Plans and Elevations

A1	Scale 1:50	Status Planning		
Drawn AVR		Checked MLR	Date 19/3/20	
Project No. 2020/19		Drawing No. EX01	Revision C	

ALL DATA TO BE CHECKED ON SITE. THIS DRAWING IS THE PROPERTY OF ROMAN DEVELOPMENTS LTD. AND MAY NOT BE COPIED, LOANED, REPRODUCED OR DISCLOSED WITHOUT WRITTEN CONSENT.

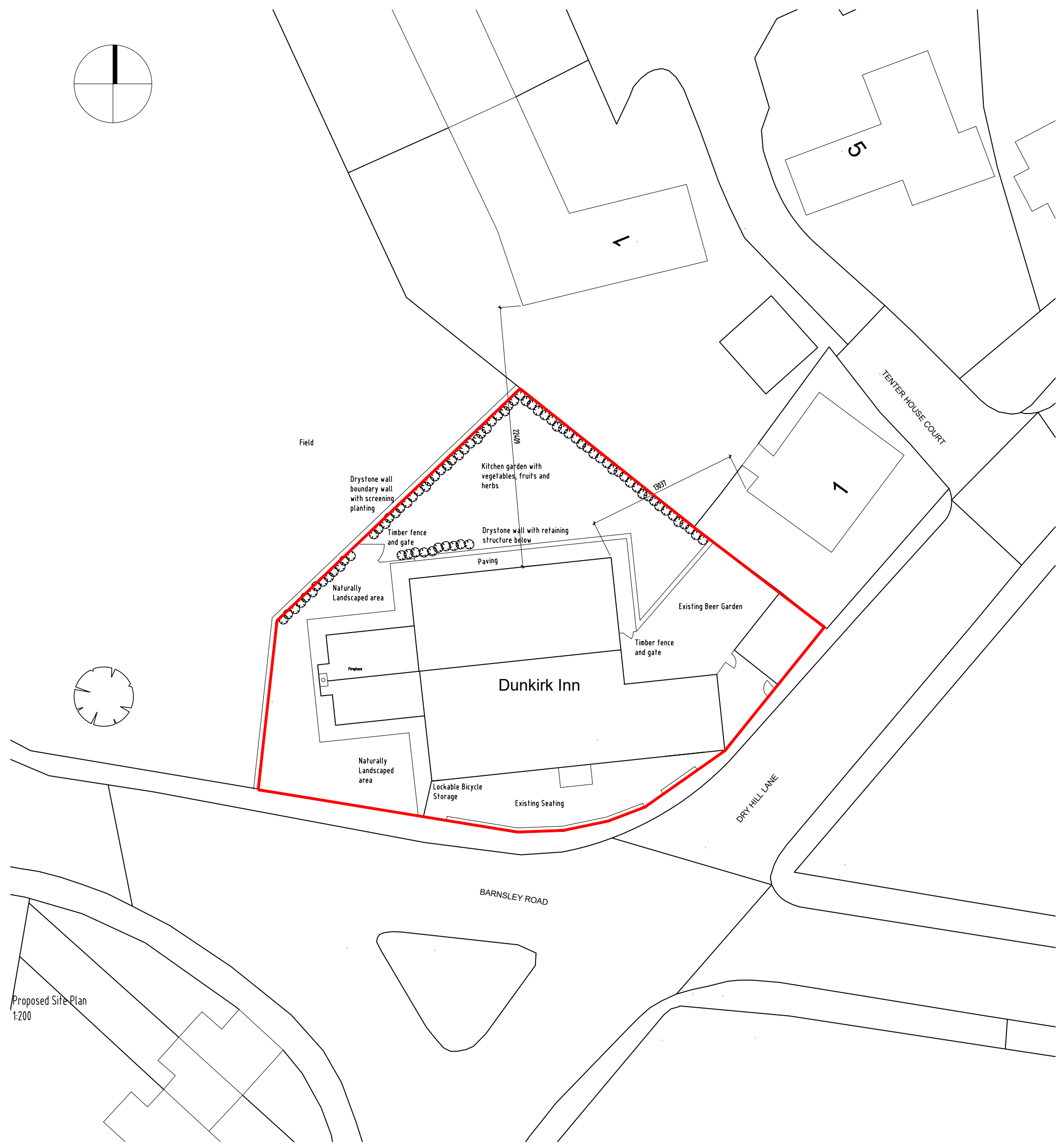


Proposed First Floor Layout
1:100



Proposed Ground Floor Layout
1:100

Proposed Block Plan
1:200



Proposed Site Plan
1:200

F	Internal layout amended, door and window positions altered	AVR	26/5/20
E	First Floor and Site Plan added to drawing. Landscaping added	AVR	14/5/20
D	Foot print increased to allow for social distancing	AVR	5/5/20
C	Lift size reduced, first floor escape stair exit amended	AVR	15/4/20
B	Lift added, stair and lobby amended, WCs and staff facilities added. Kitchen layout amended.	AVR	2/4/20
A	Extension amended, seating and planing areas identified	AVR	23/3/20

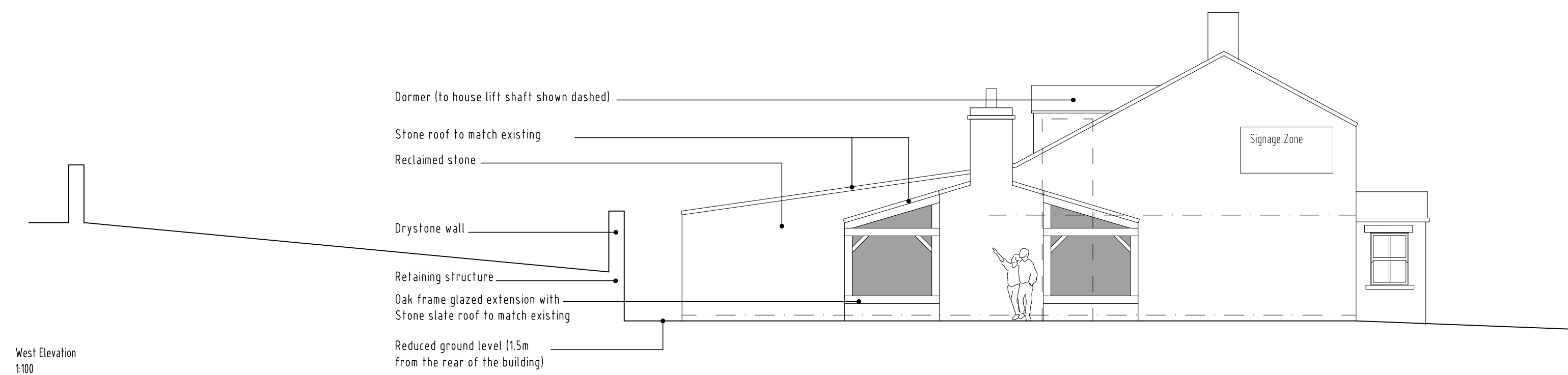
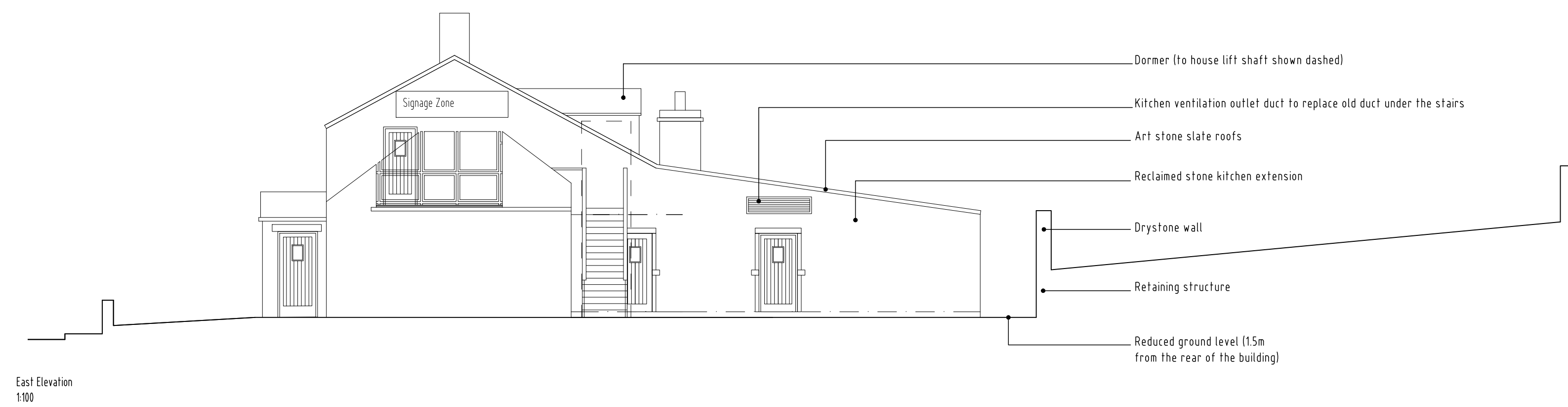
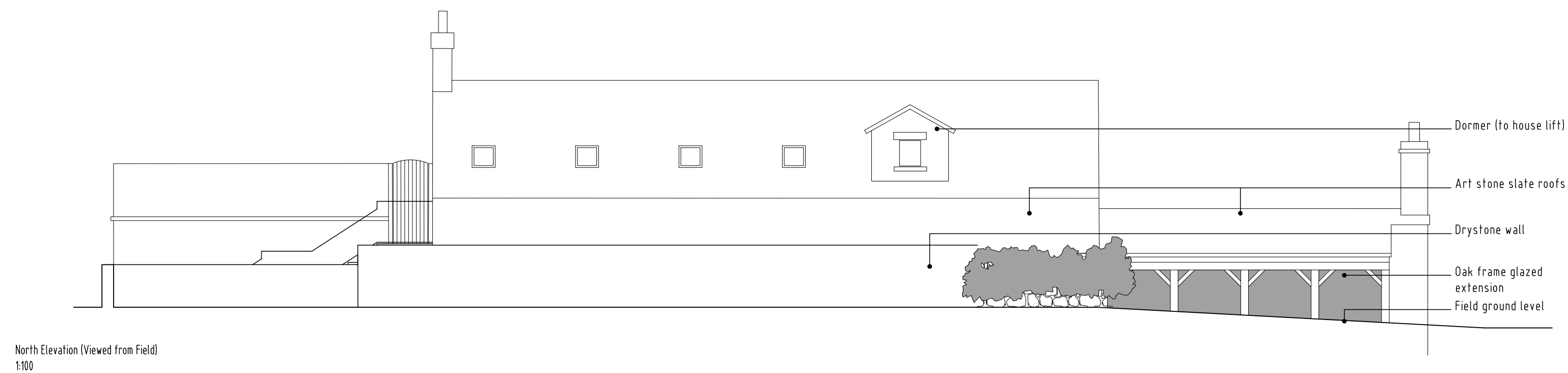
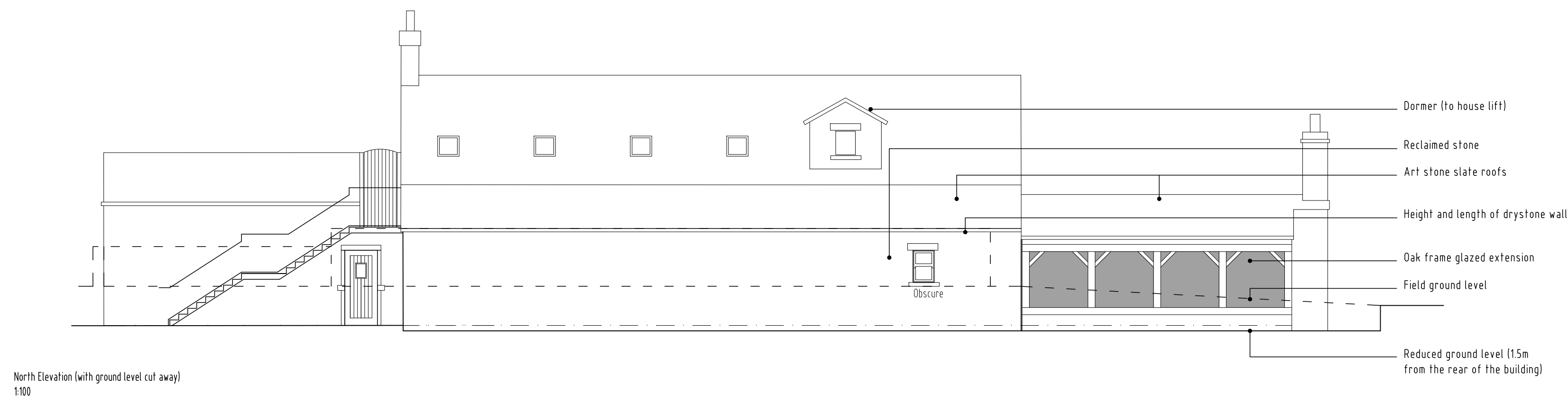
Revision	Description	By	Date
 Upper Bagden House Bagden Lane Clayton West Huddersfield HD8 8LQ Tel: 01484 865000 Fax: 01484 865071 Email: info@romandevelopments.com			

Client The Bagden Group

Project Extension to Dunkirk Inn
231 Barnsley Road

Drawing Title Proposed Site Plan and Floor Plans

A1	Scale 1:50	Status Planning
Drawn AVR	Checked MLR	Date 19/3/20
Project No. 2020/1	Drawing No. PR01	Revision F



Revision	Description	By	Date
08	Position of proposed doors and windows amended	AVR	28/5/20
A	Rear elevation with ground level added. Materials and notes added	AVR	14/5/20



Upper Bagden House
Bagden Lane
Brynton West
Luddersfield
GB 9LQ

Tel: 01484 865000
Tel: 01484 865071
Email: info@ronanddevelopments.com

Client

The Bagden Group

Project

Extension to Dunkirk Inn
231 Barnsley Road

Drawing Title

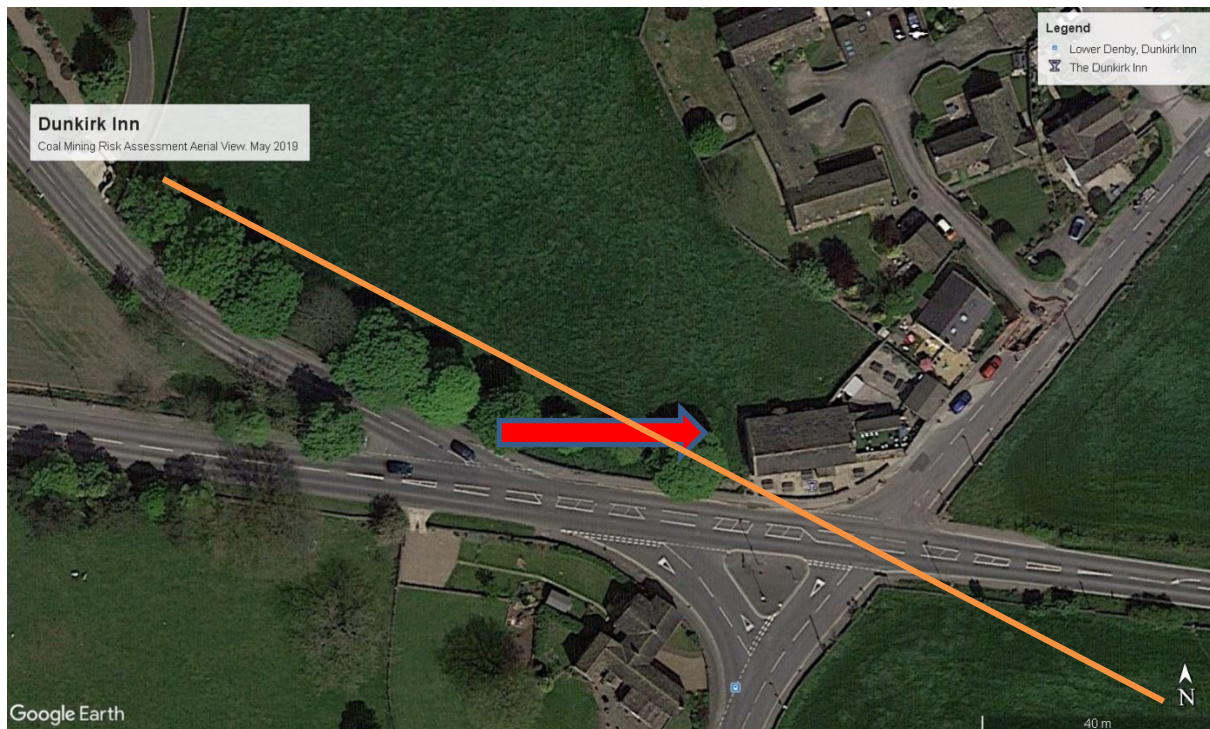
Proposed Elevations

A1	Scale Noted	Status Planning	
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Project No. 2020/19	Drawing No.	PR02	Revision B

APPENDIX B

Aerial Photographs

Report on the Coal Mining Risk to the Extension of the Dunkirk PH Property.



Photograph number 1 showing the location of the property and the position of the fault coloured brown associated with the step faulting across the area that controlled the mining.



Photograph number 2 frontage of the public house.

Report on the Coal Mining Risk to the Extension of the Dunkirk PH Property.



Photograph number 3 showing the rear view of the property looking south. The fault is shown brown.

APPENDIX C

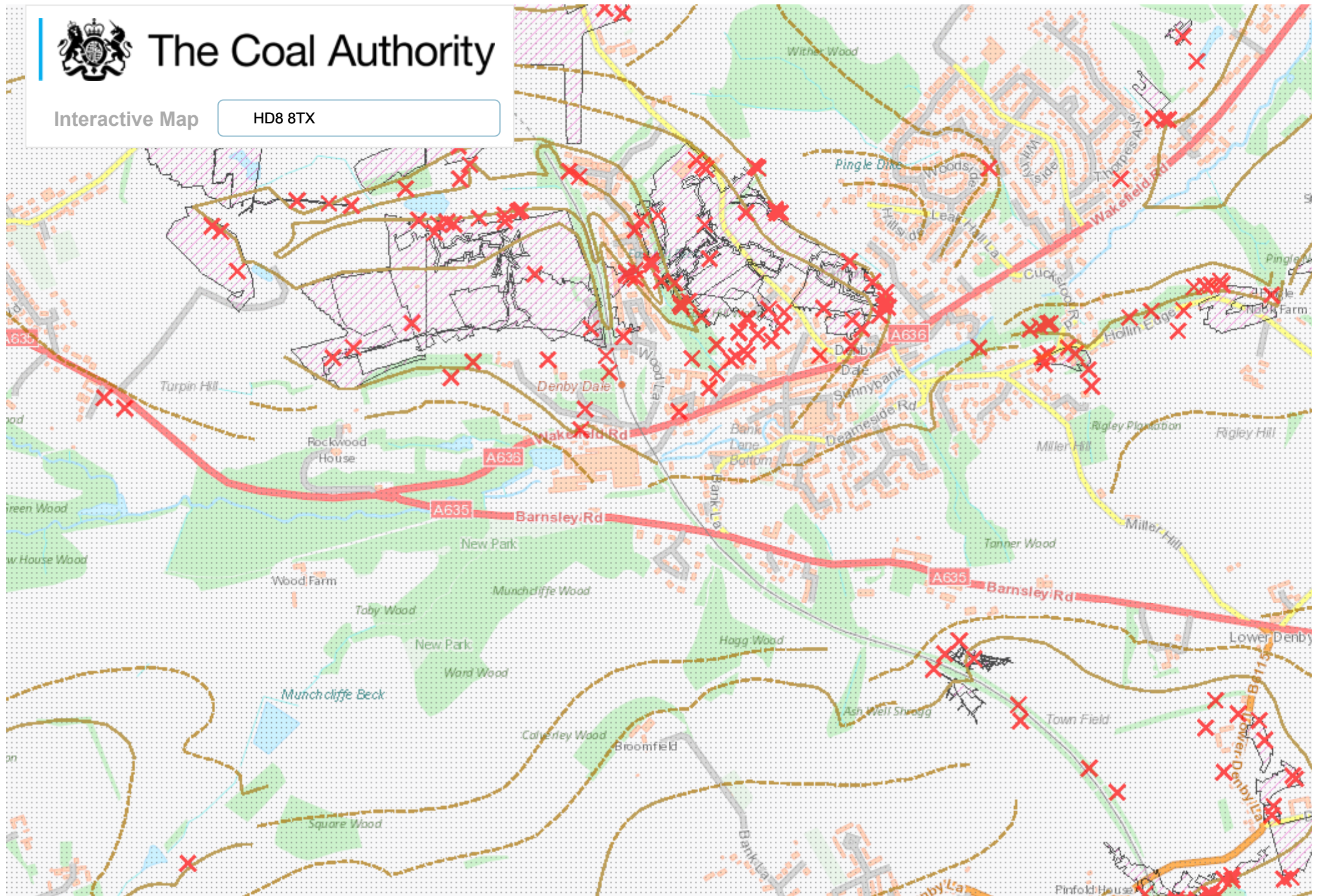
COAL AUTHORITY INTERACTIVE MAP DATA AND THE HISTORICAL GEOLOGICAL MAPS OF THE SITE.

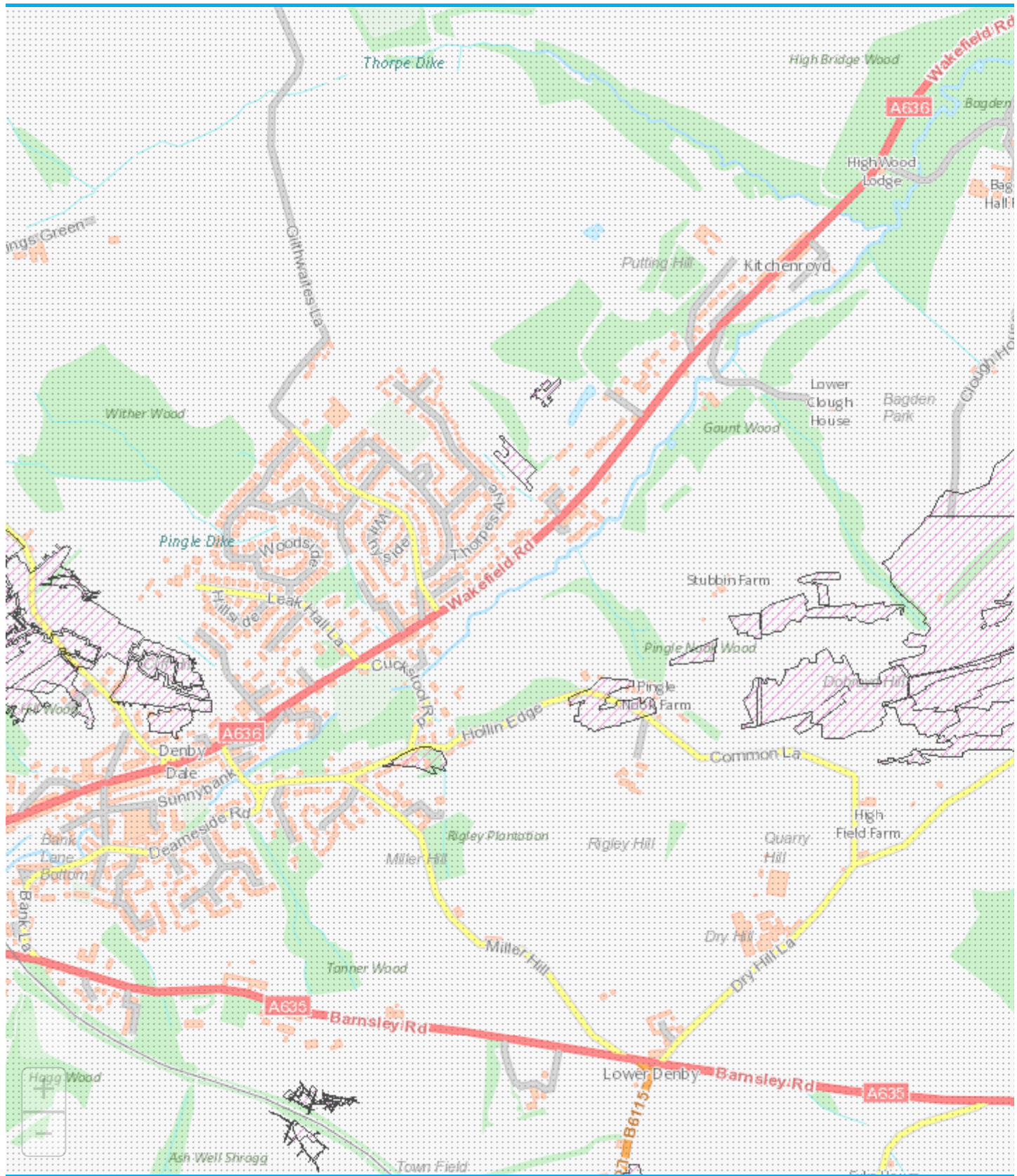


The Coal Authority

Interactive Map

HD8 8TX





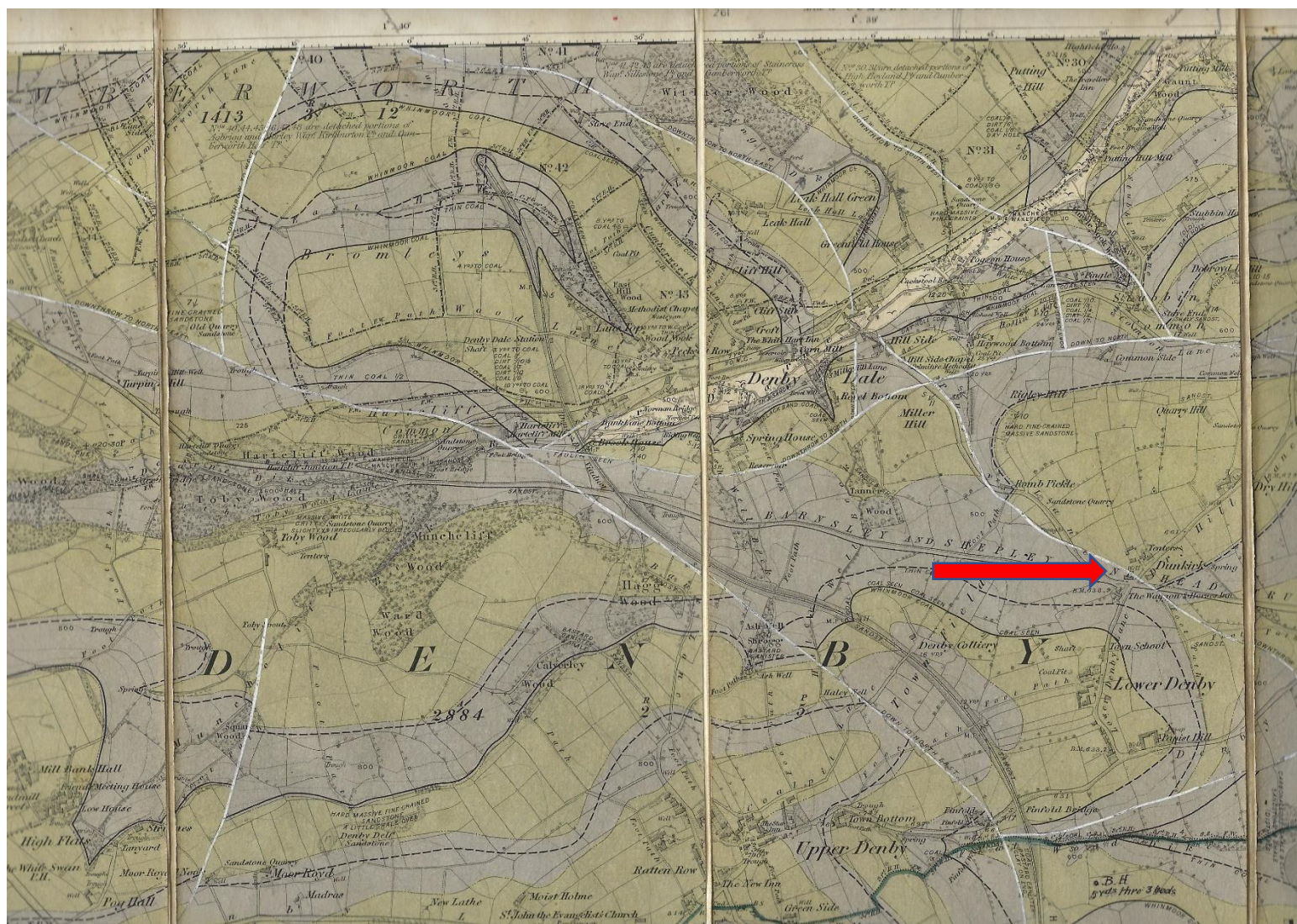


Figure CWECL/CMRA/DUN/CMRA 2020-01 – First edition geological plan of the area with the mines shown in Upper Denby and south of the Barnsley Rd.

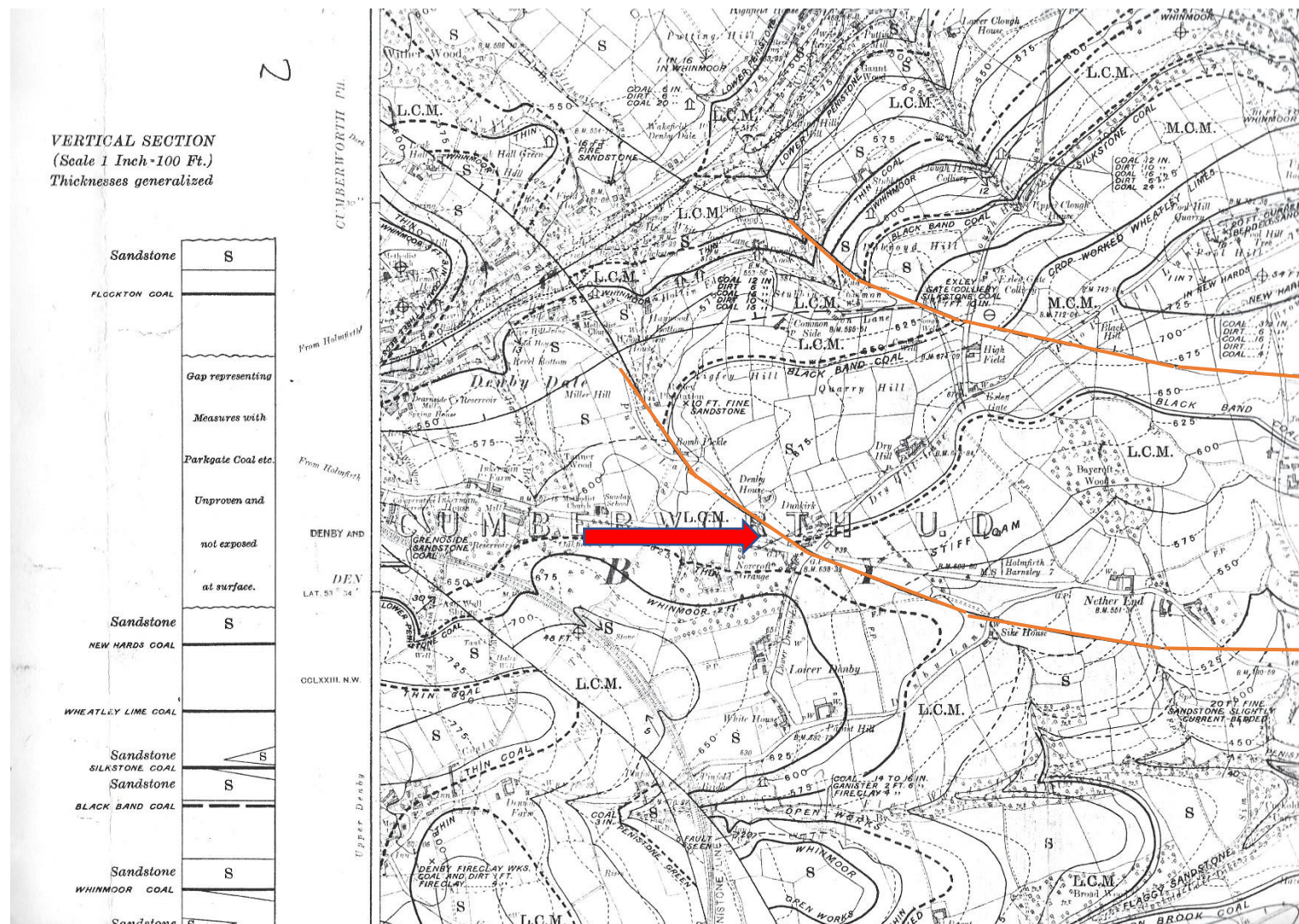


Figure CWECL/CMRA/DUN/CMRA 2020-02 – Second edition geological plan 273NE of the area with the mines shown in Upper Denby and south of the Barnsley Rd. No mining has taken place between the two faults edged brown.

APPENDIX D

BOREHOLE LOGS IN THE LOWER DENBY AREA



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Version 2.0.6

BGS ID: 13953369 : BGS Reference: SE20NW42

British National Grid (27700) : 424150,407100

[Report an issue with this borehole](#)

<<

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SE20/49

C. TEST PUMPING SUMMARY (Please supply fully details on Form WR - 39)

Test Pumping Datum
(if different from borehole datum)

GROUND LEVEL

(mbd)

above
m below borehole datum

Pump Suction Depth

30

mbd

Water Level (Start of Test)

12.5

mbd

Water Level (End of Test)

14.2

mbd

Pumping rate

1.5

m³/d : l/s

for

4

~~days~~/hours

Recovery to (from end of pumping)

12.5 mbd

in

1

mins : hrs : days

Date(s) of measurements

21-9-04

Please Supply Chemical Analysis If Available

D. STRATA LOG

Geological Classification	Description of Strata	Thickness	Depth
		m	m
(BGS only)			
	Top Soil	0-40	0-40
	CLAY	1-70	2-10
	SANDSTONE	3-10	5-20
	GREY MUDSTONE	17-80	23-00
	SANDSTONE	4-90	27-90
	GREY MUDSTONE, SANDSTONE BANDS	12-10	40-00
	{continue on separate page if necessary}		
	Other Comments (eg gas encountered, saline water intercepted, etc)		

FOR OFFICIAL USE ONLY

FILE

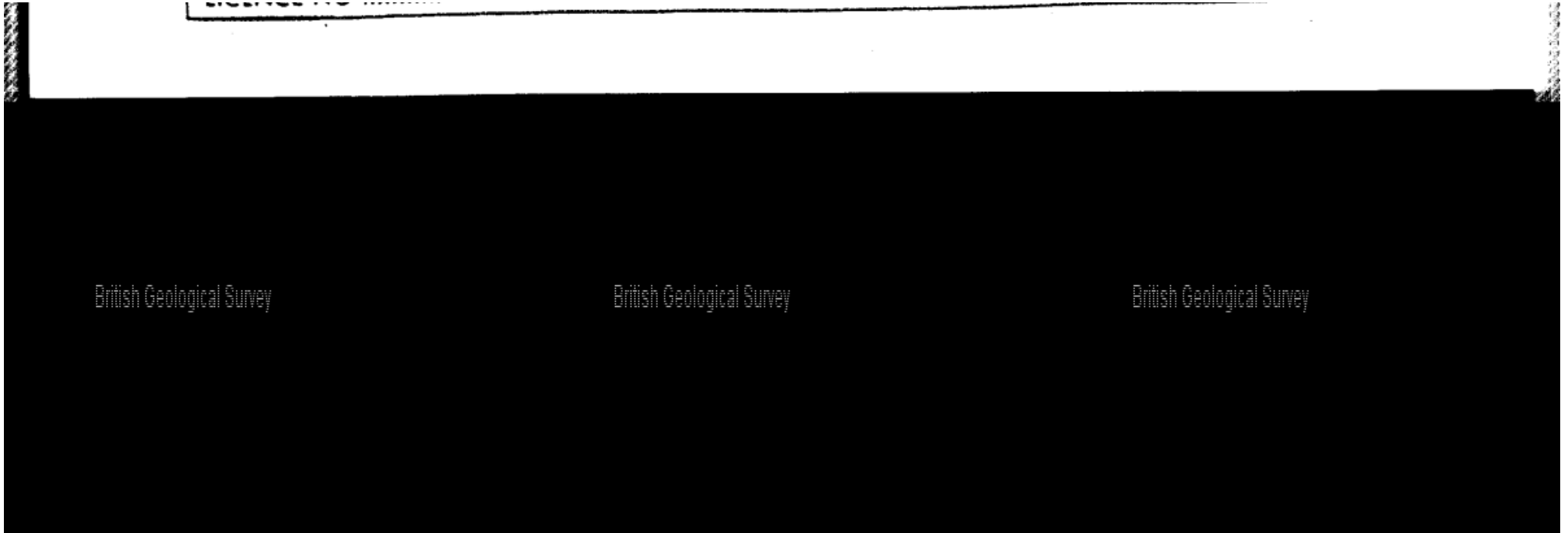
CONSENT NO

BGS REF NO

LICENCE NO

USE OF BH

NGR.....



British Geological Survey

British Geological Survey

British Geological Survey



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

[Report an issue with this borehole](#)

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>>

Central
L.S.

RECORD OF WELL

At DRY HILL FARM

Town or Village DRY HILL

County SOUTH YORKSHIRE

For Institute use only Licence No.

N

SE20/36

86

SE20NW/10

EXACT SITE

OF WELL

Six-inch National Grid sheet and reference SE 240820

For

State whether owner, tenant, builder, contractor, consultant, etc.: OWNER

Address (if different from above)

Level of ground surface above sea level (O.D.) ft (.....m)

*DELETE

If well top is not at ground level state how far above: * ft (.....m)
below:

AS

SHAFT ft (.....m); diameter ft (.....m);

NECESSARY

HEADINGS (please attach details—dimensions and directions)

BORE ft (..... 61.00m); diameter: at top 6 1/8 in (..... 152mm);

at bottom... 5.4 in (..... 139 mm)

Full details of permanent lining tubes (position, length, inner and outer diameters, plain slotted etc.):

..... PLASTIC Lining. Tube - 113mm ID - 103mm A.D.

..... 1-50 Plain at Bottom

..... 24-00 Slotted With Stocking

..... Rest Plain to Surface

Water struck at depths of ft (..... 40:00 m) below well top

Rest level of water ft (..... 38:29 m) ^{above*} well top. Suction at ft (..... 56:00 m) _{below}

Yield on... 24 ^{hours*} test pumping at... 1.059 galls per Hour (..... 1/s) with

depression to ft (..... 52:17 m) below well top. Recovery to rest level in 8 ^{mins*} _{Net Recovery} hours

Capacity of pump g.p.h. (..... l/s)

Date of measurements

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type INTERNAS Motive power... ELECTRIC

Capacity... 1200 galls (..... m³) per hour. Suction at ft (..... 56:00 m)

below well top. Amount pumped galls (..... m³) per day. Estimated

consumption galls (..... m³) per week

Well made by ... MAHMAC CONSTRUCTION LTD. Date of sinking 25/7/90 to 28/7/90

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF

STRATA

OVERLEAF

Received from Malmac
Construction
 Date 8.8.90

INSTITUTE OF GEOLOGICAL SCIENCES
HYDROGEOLOGY UNIT
EXHIBITION ROAD
LONDON SW7 2DE

British Geological Survey
ICS 2494 10 000 7/79

British Geological Survey

Date
Observation well.....
Recorder
ER log
Site marked on
 1" map
 6" map—Grid Sheet.....
 (use symbol)
Copy to.....
.....
Date.....



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

[Report an issue with this borehole](#)

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For Institute use only

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA <i>If measurements start below ground surface, state how far.</i>	THICKNESS			DEPTH		
		Feet	Inches	Metres	Feet	Inches	Metres
Made Ground	FILL			0.60			0.60
Head	SANDY CLAY			2.20			2.80
	MUDSTONE			1.80			4.60
? Black Band Coal	COAL			0.20			4.80
	MUDSTONE SANDSTONE BANDS			9.20			14.00
	SANDSTONE			7.60			21.60
Lower	SANDSTONE BROKEN			2.20			23.80
Coal	SANDSTONE			3.30			27.10
Measures	MUDSTONE SANDSTONE BANDS			9.90			37.00
	SANDSTONE			5.20			42.20
	SANDSTONE MUDSTONE BANDS			17.80			61.00

19/10/90

B/HOLE DAMP 21-60

WET 40.00

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