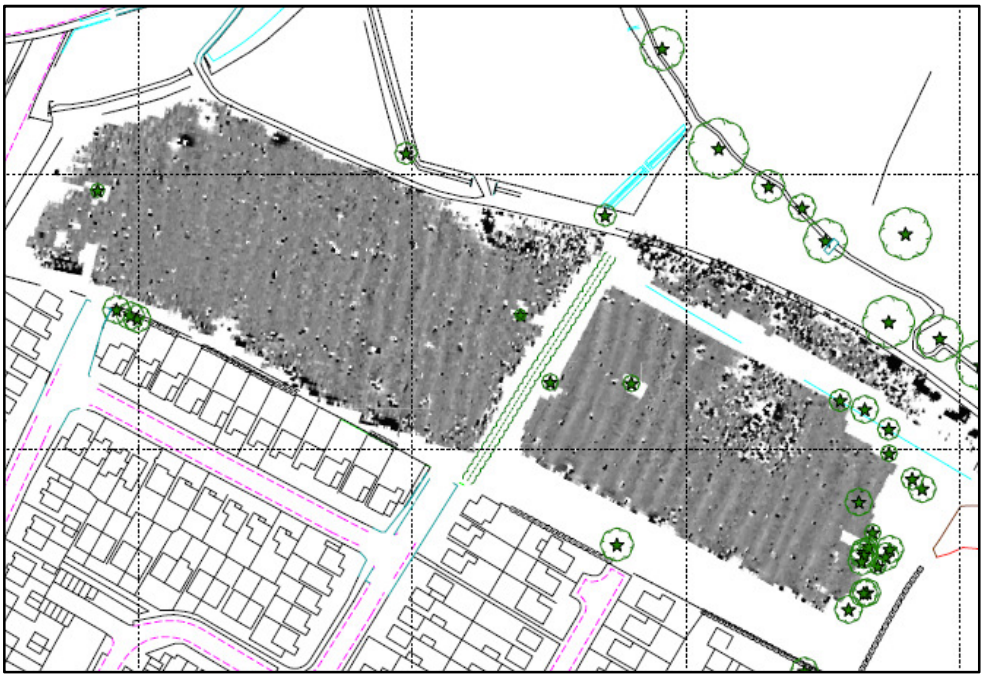

Archaeological geophysical survey on land south of Bunker's Wood Littleover Derbyshire May 2015

Report No. 15/103

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Illustrator: John Walford

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Report No. 15/103

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Illustrations:	John Walford

OASIS REPORT

PROJECT DETAILS	Oasis No. molanort1-213171	
Project name	Archaeological geophysical survey on land south of Bunker's Wood, Littleover, Derbyshire	
Short description	MOLA was commissioned to carry out a detailed magnetometer survey on land south of Bunker's Wood, Littleover, Derbyshire. The survey identified medieval ridge and furrow and one feature of indeterminate origin. Although the feature bears some resemblance to a ditch it falls within an area that was disturbed at around the time that the adjacent sewage works was demolished and is most probably related to this modern disturbance.	
Project type	Geophysical survey	
Site status	None	
Previous work	Desk-based assessment (Gajos 2012)	
Current Land use	Grass fields	
Future work	Unknown	
Monument type/ period	Ridge and furrow	
Significant finds	None	
PROJECT LOCATION		
County	Derbyshire	
Site address	Bunker's Wood, Littleover	
Study area	*c* 3.4ha	
OS Easting & Northing	SK 314 333	
Height OD	*c* 60m aOD	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	Derbyshire Archaeological Planning Officer	
Project design originator	MOLA Northampton	
Director/Supervisor	John Walford	
Project Manager	John Walford	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	20 May 2015	
End date	5 June 2015	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey on land south of Bunker's Wood, Littleover, Derbyshire, May 2015	
Serial title & volume	MOLA Northampton Reports 15/103	
Author(s)	Olly Dindol	
Page numbers	3	
Date	5 June 2015	

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ABSTRACT

MOLA was commissioned to carry out a detailed magnetometer survey on land south of Bunker's Wood, Littleover, Derbyshire. The survey identified medieval ridge and furrow and one feature of indeterminate origin. Although the feature bears some resemblance to a ditch it falls within an area that was disturbed at around the time that the adjacent sewage works was demolished and is most probably related to this modern disturbance.

1 INTRODUCTION

MOLA was commissioned by CgMs Consulting to carry out a magnetometer survey of *c* 3.4ha of land to the south of Bunker's Wood, Littleover, Derbyshire. The aim of this survey was to identify any potential archaeological remains within the proposed development area. The fieldwork was undertaken on 20th May 2015.

2 BACKGROUND

2.1 Topography and geology

The survey area comprises three grass fields situated on the south-western edge of Derby (NGR SK 314 333 (Fig 1)). The fields are rectangular in shape and separated by hedges. The site is bounded to the south by residential areas, to the east by a sports field, to the north by Hell Brook and to the west by the A38.

The survey area lies at a height of 60m aOD on a north-facing slope. The bedrock geology of the area, as recorded by the British Geological Survey, is composed of Edwalton Member mudstone and siltstone. The overlying superficial geology for the northern portion of the site is recorded as comprising alluvial sands and gravels (BGS 2015), whilst there are no records for the superficial geology for the southern portion.

2.2 Historical and archaeological background

The only known archaeological features within the survey area comprise ridge and furrow cultivation (Gajos 2012) dating to the medieval or early post-medieval periods. The Derbyshire HER records no find spots or any evidence of previous archaeological work carried out within the survey area or its immediate surroundings.

The course of the Roman road Ryknild Street runs through the south of Derby some 500m south of the survey area (Pastscape 929982). Both Littleover and Mickleover are mentioned in the Domesday Book (Gajos 2012) although the historic cores of these villages are a considerable distance from the survey area.

Sewage works were constructed to the north-west of the survey area in the 1930s, they were later expanded in the 1960s and demolished in the late 2000s (Gajos 2012).

3 METHODOLOGY

The magnetometer survey was conducted with Bartington Grad 601-2 vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT). All fieldwork methods complied with the guidelines issued by Historic England and by the Institute for Archaeologists and with the method statement for this project (HE 2015; CIfA 2014; MOLA 2015).

An independent network of 30m grid squares was established across each of the three fields. The network was set out by tape measure and tied in to the Ordnance Survey National Grid by measurement with a Leica Viva RTK GPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square.

The survey data was processed using Geoplot 3.00v software. Striping, caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function and de-staggering of the data was performed as necessary. The processed data is presented in this report in the form of grey-tone plots, at a scale of +/- 4nT black/white. The plots have been scaled, rotated and resampled (geo-rectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative overlay has been produced and is shown in Figure 3.

4 SURVEY RESULTS

The only certain archaeological features detected are represented by a series of positive parallel linear anomalies situated across the western and south eastern fields. Two other weakly positive anomalies in the western field are of indeterminate origin.

The parallel linear anomalies are aligned from north to south, the overall shape, weakly positive readings and layout of these anomalies is characteristic of medieval to early post-medieval ridge and furrow cultivation. Furthermore the distribution and layout of the anomalies corresponds with the ridge and furrow earthworks visible on the surface of the field. The ridge and furrow does not appear to continue into the north-eastern field, presumably because the floodplain of the brook was used as meadowland and not for arable cultivation.

The two weakly positive anomalies, situated together in the north-western portion of the western field, are of indeterminate origin. Their regular shape and generally weak intensities (mostly <10nT) would be most consistent with cut and backfilled features (eg sections of a ditch). However, they lie within a zone of more intense magnetic disturbance (see below) which corresponds with an area where aerial photographs show that ridge and furrow has been disturbed during, or subsequent to, the demolition of the adjacent sewage works (Google Earth, 1999 & 2006 images). They could, therefore, have a recent origin.

The survey also detected a large linear anomaly with an alternating magnetic polarity in the eastern portion of the north-eastern field. This sort of anomaly is indicative of modern pipeline and is not of archaeological interest.

Random scatters of ferrous objects, represented by intense dipolar anomalies, were also identified across the three fields. These ferrous objects probably comprise modern rubbish and scrap iron.

Scatters of small dipolar and monopolar anomalies can be identified along the field edges and in the centre of the south-eastern field. These scatters are is the result of the accumulation of modern debris, such as brick rubble or scrap metal in the upper soil layers.

5 CONCLUSION

The only certain archaeological features detected by the survey consisted of earthworks arising from medieval ridge and furrow cultivation. Two magnetic anomalies in the western field could also be archaeological in nature but, as they lie within an area of magnetic 'noise' that is apparently associated with the demolition of the adjacent sewage farm, an interpretation as modern features is considered more probable.

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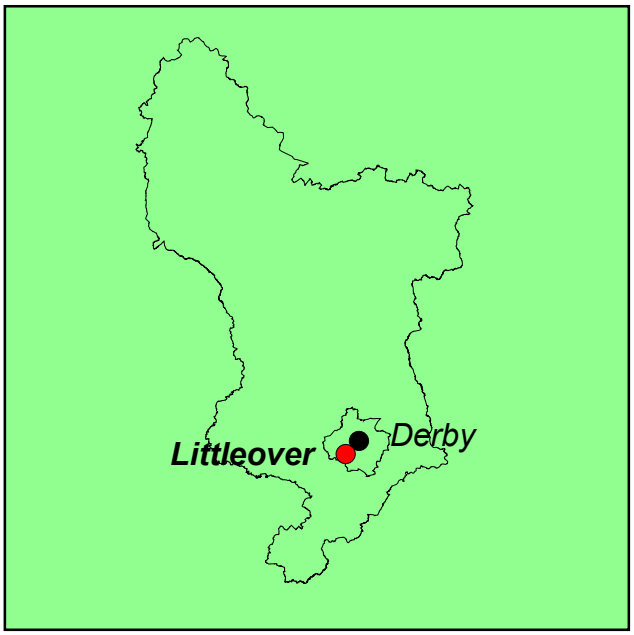
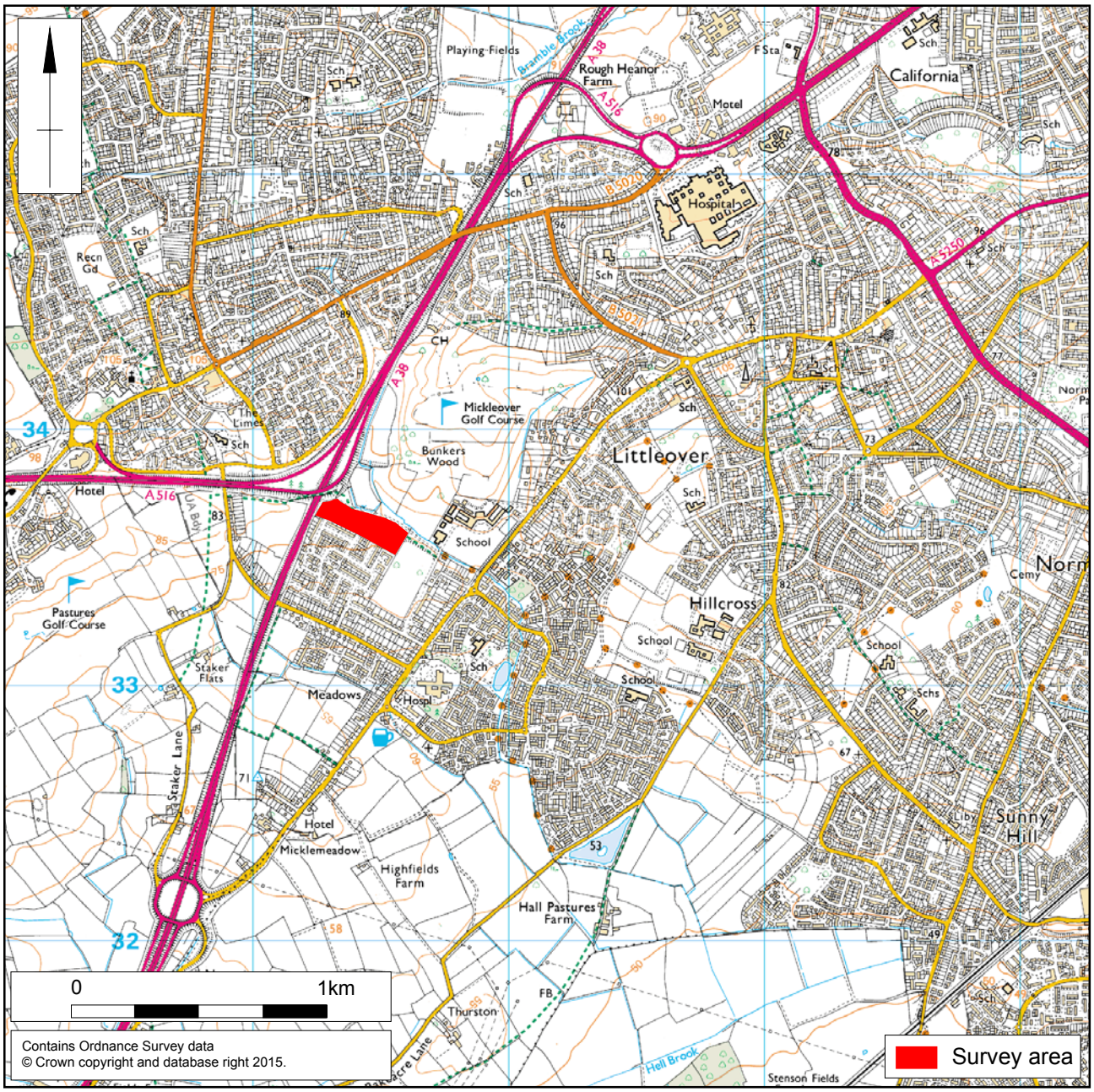
MOLA
5 June 2015



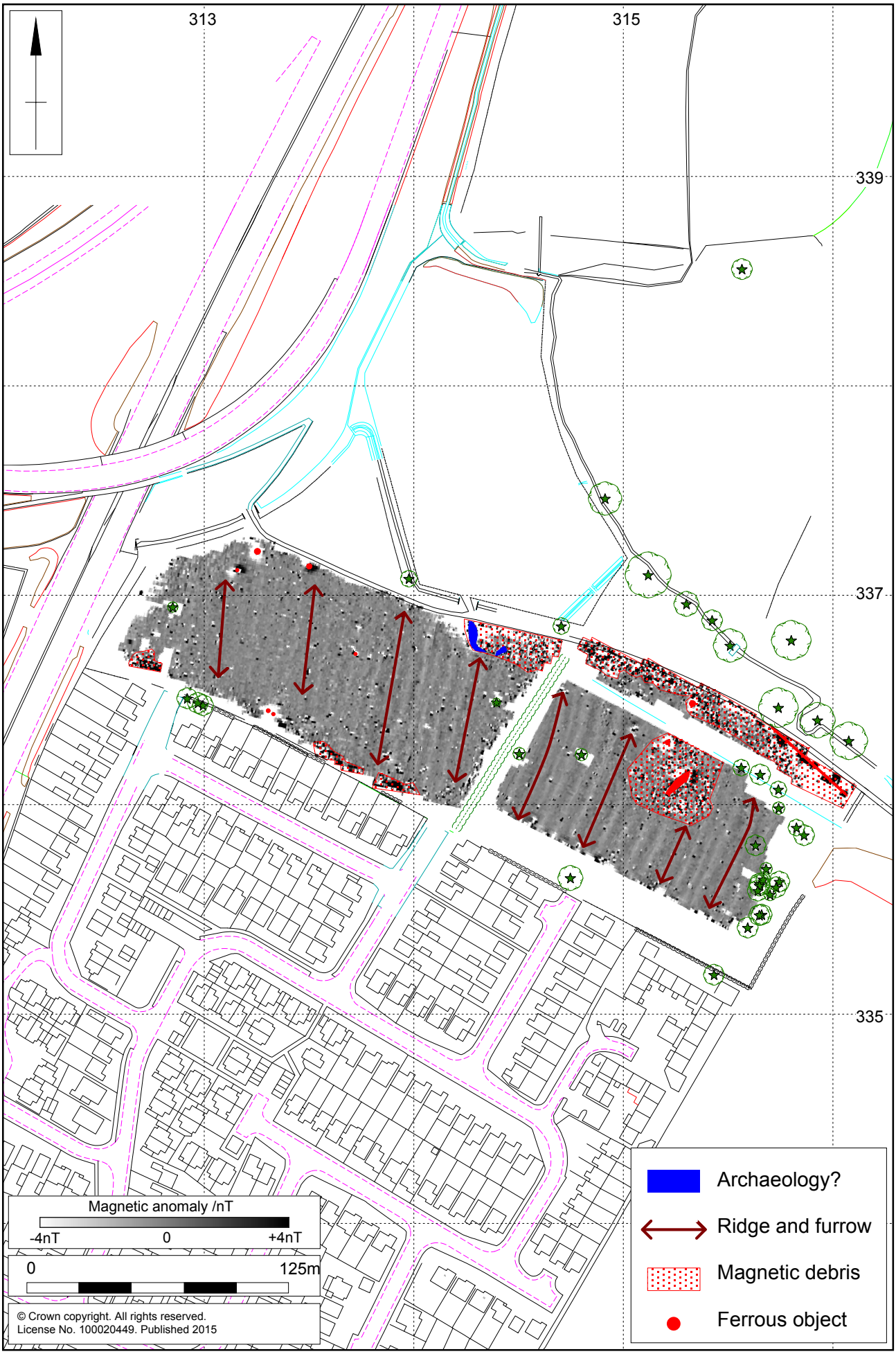


Scale 1:25,000

Site location Fig 1

1:2500

Magnetometer survey results Fig 2



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Magnetometer survey interpretation Fig 3

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