Eastwood
CONSULTING ENGINEERS

Flood Risk Assessment

LAND SOUTH OF LONGSIGHT ROAD, LANGHO

HALLAM LAND MANAGEMENT LTD

26/02/2025

Eastwood
CONSULTING ENGINEERS

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FLOOD RISK ASSESSMENT

LAND SOUTH OF LONGSIGHT ROAD, LANHGO

FOR

HALLAM LAND MANAGEMENT LTD

49343-ECE-XX-XX-RP-C-0001 **26 February 2025**

FLOOD RISK ASSESSMENT

LAND SOUTH OF LONGSIGHT ROAD, LANHGO

FOR

HALLAM LAND MANAGEMENT LTD

Job No.	:	49343
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Approved :		

Chris Hodge

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Issue 1:	*03 December 2024*	
Issue 2:	*14 February 2025*	*Updated with new layout and associated drainage strategy text changes. Inclusion of new EA surface water flood maps and NPPF reference*
Issue 3:	*26 February 2025*	*Updated with new layout, location plan and minor text changes.*

EXECUTIVE SUMMARY

The project comprises the proposed development of a 20.01 hectare greenfield site for residential use.

The Environment Agency's Flood Map for Planning shows the site to lie within Flood Zone 1.

For both the present day and climate change (2040-2060s) scenario there are four low to high risk surface water flow routes noted to cross the site with a south to north orientation: two are unnamed watercourses; one lining the woodland in the north and another crossing the centre of the site. There are two overland flow routes in the west of the site; one generated from greenfield runoff within the site boundary, the other originating from off-site runoff. The small isolated areas at low to high risk of surface water ponding are associated with topographic depressions.

The site is recorded to lie within Flood Zone 1 and is not at risk of fluvial flooding, however there are surface water overland flow paths crossing the site, therefore a sequential test should be considered for the site location in line with National Planning Policy Framework (February 2025). A Sequential Test has been undertaken by NJL Consulting and has been submitted in support of this application. The scope of the Sequential Test was agreed with Ribble Valley Borough Council.

The surface water flow routes corresponding with the unnamed watercourses crossing the site (on the north-eastern boundary and in the centre of the site) should be maintained by routing through or around the site. The proposed surface water drainage system will be designed to accommodate surface water flooding that is generated from greenfield runoff within the site boundary (central-western flow route).

Ground levels will be altered to raise topographic depressions to match the remaining areas of the site. The raising of levels and presence of surface water drainage features will remove any surface water ponding and will lower the modelled flood depth.

Surface water disposal is considered in accordance with the drainage hierarchy in Building Regulations Part H 2015 and Planning Practice Guidance 'Reducing the causes and impacts of flooding', paragraph 80.

Infiltration type SuDS such as soakaways will not be viable due to the impermeable ground conditions (clay and silt) on the site. Soakaway testing was conducted by Lithos Consulting (Ref:

008/5200/REG/dw), however infiltration rates were not calculated as the water level did not fall to the 25% effective depth.

Surface water disposal will likely be via gravity to attenuation basins in the northern portions of the site before discharging via gravity to the central watercourse. This is subject to approval from the Lead Local Flood Authority and ordinary watercourse consent will also likely be required.

Surface water discharge will likely be restricted to the greenfield runoff rate of the developable catchment area of the central watercourse. The greenfield runoff rate has been proportionally split for the proposed west and east development areas to determine the proposed discharge rates, equating to 33.7 l/s and 18.3 l/s, subject to approval from the Lead Local Flood Authority.

Attenuation storage will be provided for rainfall events up to the return period of 1 in 100 year plus 50% climate change. The total estimated storage volume is approximately 2820 m^3 and 2040 m^3 for the central and eastern drainage networks respectively, subject to detailed design.

Source control SuDS features such as permeable paving (Type C) may be suitable, subject to site conditions, to provide source control water treatment and attenuation.

Foul effluent will likely discharge via gravity to the site low point before being pumped to the 300 mm public foul water sewer within the south-eastern boundary of the site, subject to approval from United Utilities.

Both the surface and foul water drainage systems will be offered for adoption by United Utilities or a NAV (New Appointments and Variations).

1.0 THE DEVELOPMENT

1.1 Introduction

This Flood Risk Assessment has been prepared in accordance with current National Planning Policy Framework[1] and Planning Practice Guidance 'Flood Risk and Coastal Change'[2] on the instruction of Hallam Land Management Ltd. Any other parties using the information in this report do so at their own risk, unless previously approved in writing. This report only outlines a general drainage strategy for the proposed development. Detailing of the drainage strategy should be provided within, and referenced from, the site specific Drainage Assessment Report (Ref: 49343-ECE-XX-XX-RP-C-0002) and associated plans.

The project comprises the proposed development of a 20.01 hectare greenfield site for residential use.

1.2 Site Location and Description

The site is located north of Langho, to the north of Blackburn, and is centred on coordinates 370282E, 434509N (Appendix 1).

The site is bounded by Longsight Road to the north, woodland and residential properties to the east, a railway line to the south, Whitehalgh Lane along the western border and a row of private residential dwellings on the north-western boundary.

The site is currently occupied by grassed farmland boarded by mature trees, hedgerows and wooden fences. An unnamed watercourse lines the woodland on the north-eastern border with a second passing through the south-north centreline of the site. There is also a public right of way crossing the eastern portion of the site.

The area east of the central watercourse falls from approximately 98.80 mAOD in the south to 77.00 mAOD in the north-west at an average gradient of 1 in 16. The area west of the central watercourse falls from approximately 102.33 mAOD in the south to 78.60 mAOD in the north at an average gradient of 1 in 17 (Appendix 2).

[1] https://www.gov.uk/government/publications/national-planning-policy-framework--2
[2] https://www.gov.uk/guidance/flood-risk-and-coastal-change

Proposals are for the development of up to 300 household properties with access from Longsight Road to the north (Appendix 3).

1.3 Environment Agency - Flood Map for Planning

The Environment Agency's Flood Map for Planning (Figure 1 and Appendix 4) shows that the site lies within Flood Zone 1 (low risk); land having a less than 1 in 1,000 annual probability of flooding from rivers or sea.

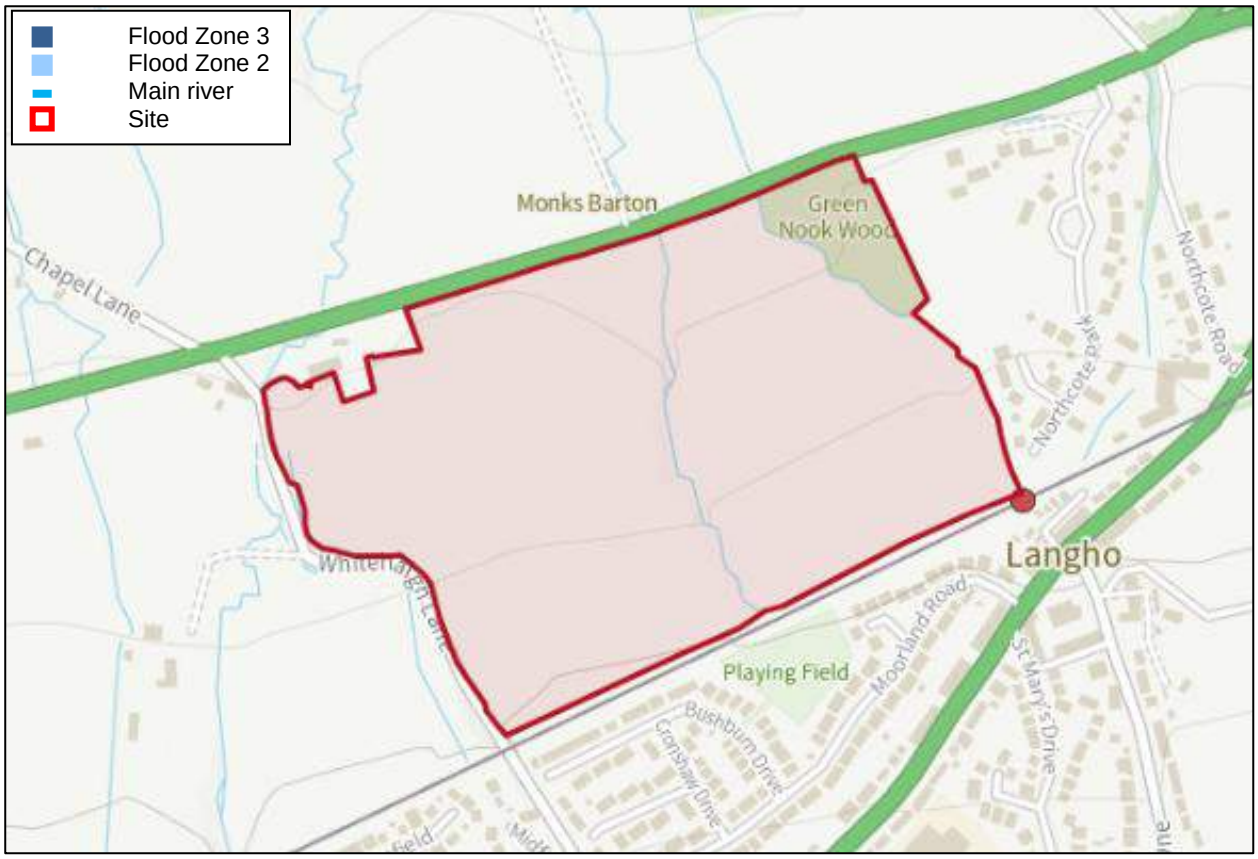

Figure 1: Environment Agency's Flood Map for Planning

1.4 Surface Water

The Environment Agency surface water flood risk maps for both the present day and climate change (2040-2060s) scenario (Figure 2, 3 and Appendix 3) show the majority of the site to be at very low risk of surface water flooding. There are four low to high risk surface water flow routes noted to cross the site with a south to north orientation. There are also small isolated areas at low to high risk of surface water ponding.

Very low risk refers to land having less than a 1 in 1,000 annual exceedance probability of flooding (0.1% AEP). Low risk refers to land having between a 1 in 1,000 and 1 in 100 annual exceedance probability of flooding (0.1% - 1% AEP). Medium risk refers to land having between 1 in 100 and 1 in 30 annual exceedance probability of flooding (1% - 3.33% AEP). High risk refers to land having a greater than 1 in 30 annual exceedance probability of flooding (>3.33% AEP).

Figure 2: Environment Agency – Risk of surface water flooding map (present day scenario)

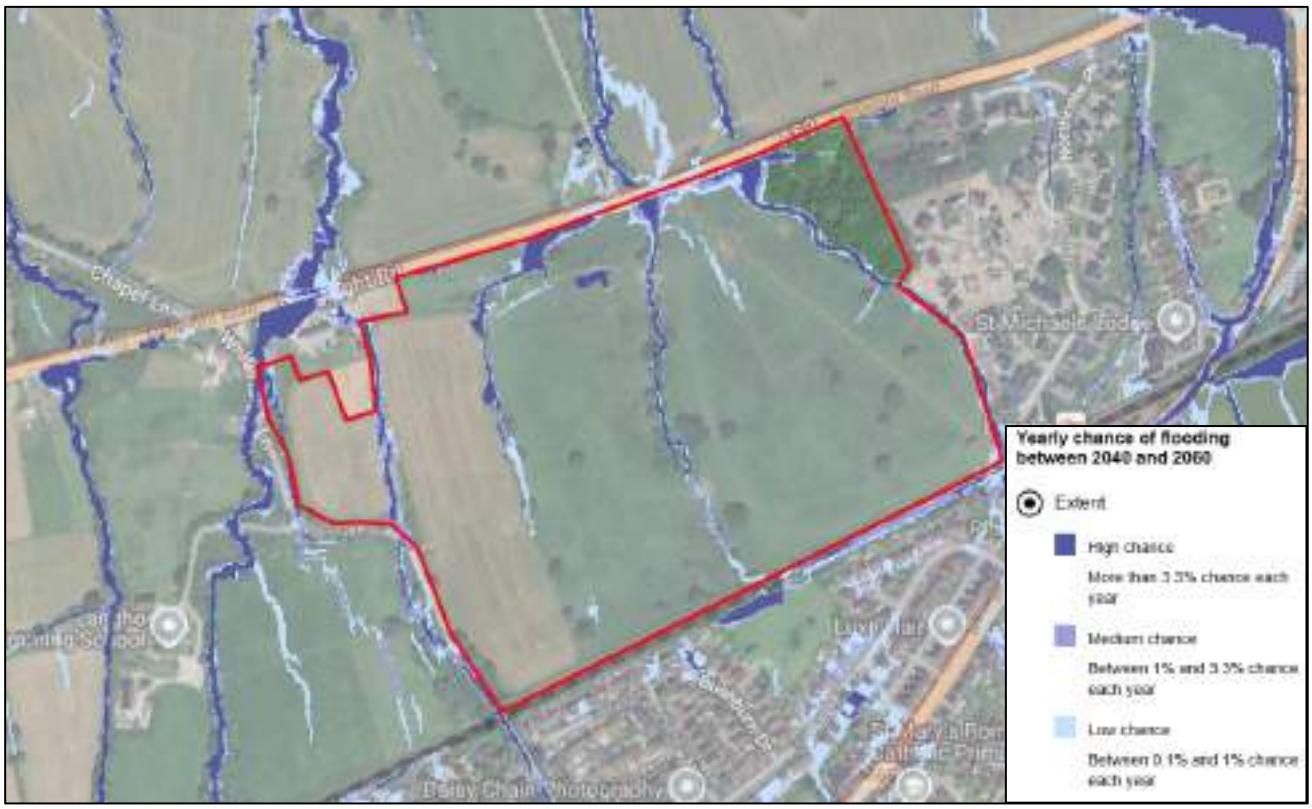

Figure 3: Environment Agency – Risk of surface water flooding map (2040-2060s, climate change scenario)

1.5 Ribble Valley Borough Council Strategic Flood Risk Assessment

The Ribble Valley Borough Council's Strategic Flood Risk Assessment flood map is based on the Environment Agency flood map and records the site to be within Flood Zone 1 (Appendix 5).

2.0 FLOOD RISK

2.1 Potential Sources of Flooding

The Environment Agency and Strategic Flood Risk Assessment maps are intended for general guidance on flood risk and it is also necessary to consider other, more detailed, sources in relation to local factors.

2.1.1 Fluvial and Tidal

There are two unnamed watercourses crossing the site; one lining the woodland in the north-east and another in the centre of the site. There is another unnamed watercourse located immediately north-west of the site. These watercourses are all tributaries of Bushburn Brook that is located approximately 510 m north of the site. These watercourses are not tidally influenced, therefore flood risk from these sources is assessed as negligible.

2.1.2 Surface Water (depths and flow paths)

Surface water flooding depths

The Environment Agency surface water flood risk maps for the present day scenario and climate change scenario (2040-2060s) (Figure 3 and Appendix 4) show the surface water flooding on site to have a very low (< 0.1 %) to high (> 3.3 %) chance of depths reaching 0.3 m each year. The majority of surface water ponding is shown to have a very low (< 0.1%) chance of depths reaching 0.6 m, with a small area within the watercourse channels having a low risk (0.1%-1%). There are also isolated areas around the culvert entrance on the northern site boundary to have a medium (1% - 3.3%) to high (> 3.3%) chance of flood depths reaching 0.6 m.

Surface water flow routes

For both the present day and climate change (2040-2060s) scenario there are four low to high risk surface water flow routes crossing the site with a south to north orientation (Appendix 4). Two of the flow routes (lining the north-eastern woodland and in the centre of the site) correspond with unnamed watercourses crossing the site. One of the western flow routes is generated from greenfield runoff within the site boundary, whilst the other is generated off site to the south and joins an ordinary watercourse at a point north-west of the site.

The small isolated areas at low to high risk of surface water ponding are associated with topographic depressions.

2.1.3 Reservoir

The Environment Agency reservoir flood risk map (Figure 4 and Appendix 4) shows the whole site to lie outside of the maximum extent of flooding from reservoirs, even when there is flooding from rivers.

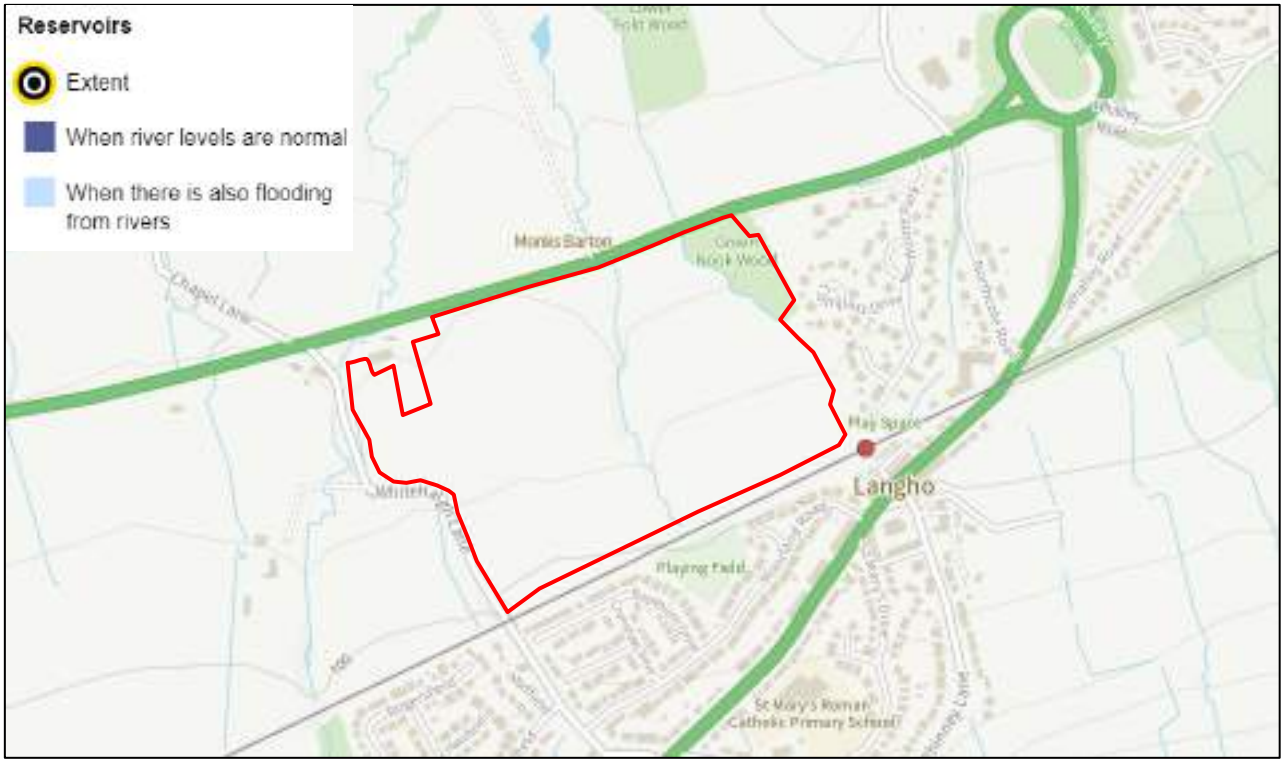

Figure 4: Environment Agency – Risk of reservoir flooding map

2.1.4 Groundwater

Groundwater is a potential flood risk to areas which are low lying and on permeable ground or, occasionally, to areas of higher ground in the vicinity of springs. There is no online public record of any flood risk to the site associated with groundwater.

2.1.5 Sewerage

The surrounding public sewer network is owned and maintained by United Utilities. There is no online public record of any flood risk to the site associated with these sewers.

2.2 Historic Flooding

Online mapping records the site to be outside the historical flood outline (Figure 5 and Appendix 4).

Figure 5: Environment Agency – Risk of historic flooding map

2.3 Residual Flood Risk

The site lies within Flood Zone 1 and is not at risk of fluvial or tidal flooding.

For both the present day and climate change (2040-2060s) scenario there are four low to high risk surface water flow routes noted crossing the site with a south to north orientation. Two unnamed

watercourses and two overland flow routes generated from greenfield runoff originating within and off site. Small isolated areas at low to high risk of surface water ponding are associated with topographic depressions.

These risks are not a development constraint and will be managed on the site within the surface water drainage strategy and by the mitigation measures in Section 2.4.

2.4 Flood Mitigation Measures

The unnamed watercourses crossing the site (adjacent to the eastern woodland and in the centre of the site) should be maintained.

The western flow route originating off site should be maintained by being routed through or around the proposed development.

The proposed surface water drainage system will be designed to accommodate surface water flooding that is generated from greenfield runoff within the site boundary (central-western flow route).

The ground levels on the site will be altered to raise topographic depressions to match the remaining areas of the site. The raising of levels and presence of surface water drainage features will remove surface water ponding and will lower the modelled flood depth.

3.0 NATIONAL PLANNING POLICY FRAMEWORK

The National Planning Policy Framework (February 2025) sets out the principles for assessing the suitability of sites for development, in relation to flood risk, as part of the planning process.

3.1 Sequential Test

Initially a Sequential Test is applied to the allocation of land suitable for development. The test is required for any development proposals in areas at risk of flooding, taking into account all sources of flood risk.

The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites, appropriate for the proposed development, in areas with a lower probability of flooding.

The site lies within Flood Zone 1 and is not at risk of fluvial flooding, however there are surface water overland flow paths crossing the site, therefore a sequential test should be considered in line with National Planning Policy Framework (February 2025). A Sequential Test has been undertaken by NJL Consulting and has been submitted in support of this application. The scope of the Sequential Test was agreed with Ribble Valley Borough Council.

3.2 Climate Change

An issue emphasised in the Planning Policy Guidance is the requirement to take account of potential climate change effects. New development is generally accepted as having a 100 year design life for flood risk purposes. Climate change allowances for peak rainfall intensity[3] are to be selected based on the assigned values for the relevant Management Catchment and epoch suited to the design life of the development. For the Ribble Management Catchment the Upper End Allowance of 50 % should be used to assess storage requirements.

[3] https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall

4.0 DRAINAGE STRATEGY

Detailing of the drainage strategy is provided within a separate site specific Drainage Assessment Report (Ref: 49343-ECE-XX-XX-RP-C-0002) and associated plans. A summary of the proposed drainage strategy is noted below.

4.1 Proposals for surface water disposal

The final disposal strategy for surface water run-off requires detailed consideration and approval during the design phase of the project. The final design will need the approval of the relevant statutory bodies but will broadly follow these principles:

- Infiltration type SuDS such as soakaways will not be viable due to the impermeable ground conditions (clay and silt) on the site. Soakaway testing was conducted by Lithos Consulting (Ref: 008/5200/REG/dw), however infiltration rates were not calculated as the water level did not fall to the 25% effective depth.

- Surface water disposal will likely be via gravity to attenuation basins in the northern portions of the site before discharging via gravity to the central watercourse. This is subject to approval from the Lead Local Flood Authority and ordinary watercourse consent will also likely be required.

- Surface water discharge will likely be restricted to the greenfield runoff rate of the developable catchment area of the central watercourse. The greenfield runoff rate has been proportionally split for the proposed western and eastern development areas to determine the proposed discharge rates, equating to 33.7 l/s and 18.3 l/s, subject to approval from the Lead Local Flood Authority.

- Attenuation storage will be provided for rainfall events up to the return period of 1 in 100 year plus 50% climate change. The total estimated storage volume is approximately 2820 m^3 and 2040 m^3 for the central and eastern drainage networks respectively, subject to detailed design. Attenuation calculations are provided in Appendix 8.

- Source control SuDS features such as permeable paving (Type C) may be suitable, subject to site conditions, to provide source control water treatment and attenuation.

- The surface water drainage system will be offered for adoption to United Utilities or a NAV (New Appointments and Variations).

4.2 Proposals for foul water disposal

Foul effluent will likely discharge via gravity to the site low point before being pumped to the 300 mm public foul water sewer within the south-eastern boundary of the site (Appendix 6), subject to approval from United Utilities.

The foul water drainage system will be offered for adoption to United Utilities or a NAV (New Appointments and Variations).

4.3 Residual flood risk

There is a potential flood risk to site occupiers and to others from surface water runoff as a result of the development as all surface water will now be channelled within the drainage network rather than be allowed to flow overland. The residual risk of surface water flooding caused by channelling all surface runoff into the drainage network can be managed by the general flood mitigation measures outlined in Section 4.4.

4.4 Mitigation measures

The proposed surface water drainage system is designed to current best practice and to the standards laid out in the publication ‘Design and Construction Guidance for foul and surface water sewers’ and Building Regulations Part H 2015.

In the event of surface water exceedance during extreme rainfall events the site is laid out so that surface water runoff is directed away from buildings, including those on neighbouring streets.

5.0 CONCLUSIONS

1. The site to lie within Flood Zone 1 and for the present and climate change (2040-2060s) scenario, there are four low to high risk surface water flow routes noted to cross the site with a south to north orientation: two are unnamed watercourses; one lining the woodland in the north-east and another crossing the centre of the site. There are two overland flow routes in the west of the site; one generated from greenfield runoff within the site boundary, the other originating from off-site runoff. There are also small isolated areas at low to high risk of surface water ponding associated with topographic depressions.

2. The Environment Agency's Flood Map for Planning shows the site to lie within Flood Zone 1 and is not at risk of fluvial flooding, however there are surface water overland flow paths crossing the site; therefore, a sequential test should be considered in line with National Planning Policy Framework (February 2025). A Sequential Test has been undertaken by NJL Consulting and has been submitted in support of this application. The scope of the Sequential Test was agreed with Ribble Valley Borough Council.

3. The surface water flow routes corresponding with the unnamed watercourses crossing the site (on the north-eastern boundary and in the centre of the site) should be maintained by routing through or around the site.

4. The proposed surface water drainage system will be designed to accommodate surface water flooding that is generated from greenfield runoff within the site boundary (central-western flow route).

5. Ground levels will be altered to raise topographic depressions to match the remaining areas of the site. The raising of levels and presence of surface water drainage features will remove any surface water ponding and will lower the modelled flood depth.

6. Infiltration type SuDS such as soakaways will not be viable due to the impermeable ground conditions (clay and silt) on the site. Soakaway testing was conducted by Lithos Consulting (Ref: 008/5200/REG/dw), however infiltration rates were not calculated as the water level did not fall to the 25% effective depth.

7. Surface water disposal will likely be via gravity to attenuation basins in the northern portions of the site before discharging via gravity to the central watercourse. This is subject to approval from the Lead Local Flood Authority and ordinary watercourse consent will also likely be required.

8. Surface water discharge will likely be restricted to the greenfield runoff rate of the developable catchment area of the central watercourse. The greenfield runoff rate has been proportionally split for the proposed west and east development areas to determine the proposed discharge rates, equating to 33.7 l/s and 18.3 l/s, subject to approval from the Lead Local Flood Authority.

9. Attenuation storage will be provided for rainfall events up to the return period of 1 in 100 year plus 50% climate change. The total estimated storage volume is approximately 2820 m^3 and 2040 m^3 for the central and eastern drainage networks respectively, subject to detailed design.

10. Source control SuDS features such as permeable paving (Type C) may be suitable, subject to site conditions, to provide source control water treatment and attenuation.

11. Foul effluent will likely discharge via gravity to the site low point before being pumped to the 300 mm public foul water sewer within the south-eastern boundary of the site subject to approval from United Utilities.

12. Both the surface and foul water drainage systems will be offered for adoption to United Utilities or a NAV (New Appointments and Variations).

13. The level of risk and safeguards available are considered appropriate to this class of development.

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APPENDICES

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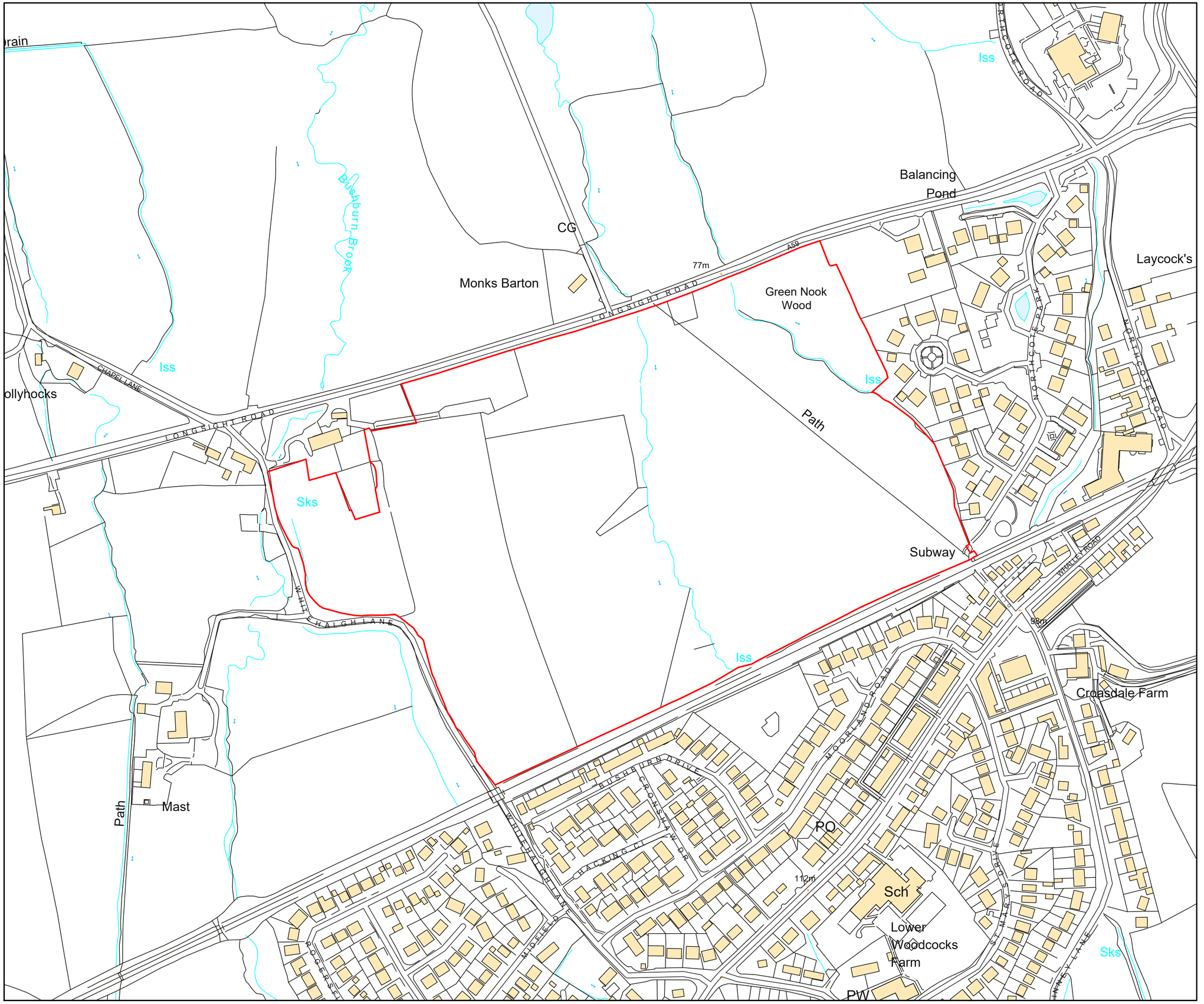
APPENDIX 1

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-



N

0 20 40 60 80 100m

Project
LAND OFF LONGSIGHT ROAD, LANGHO

Drawing Title
SITE LOCATION PLAN

Date	Scale	Drawn by	Check by
29.10.2024	1:2500 @ A2	SN	JB

Project No	Drawing No	Revision
333101612	0100	-

Stantec

Stantec UK Limited
100 Barbirolli Square
Manchester
M2 3PW
T: 0161 245 8900

stantec.com\uk

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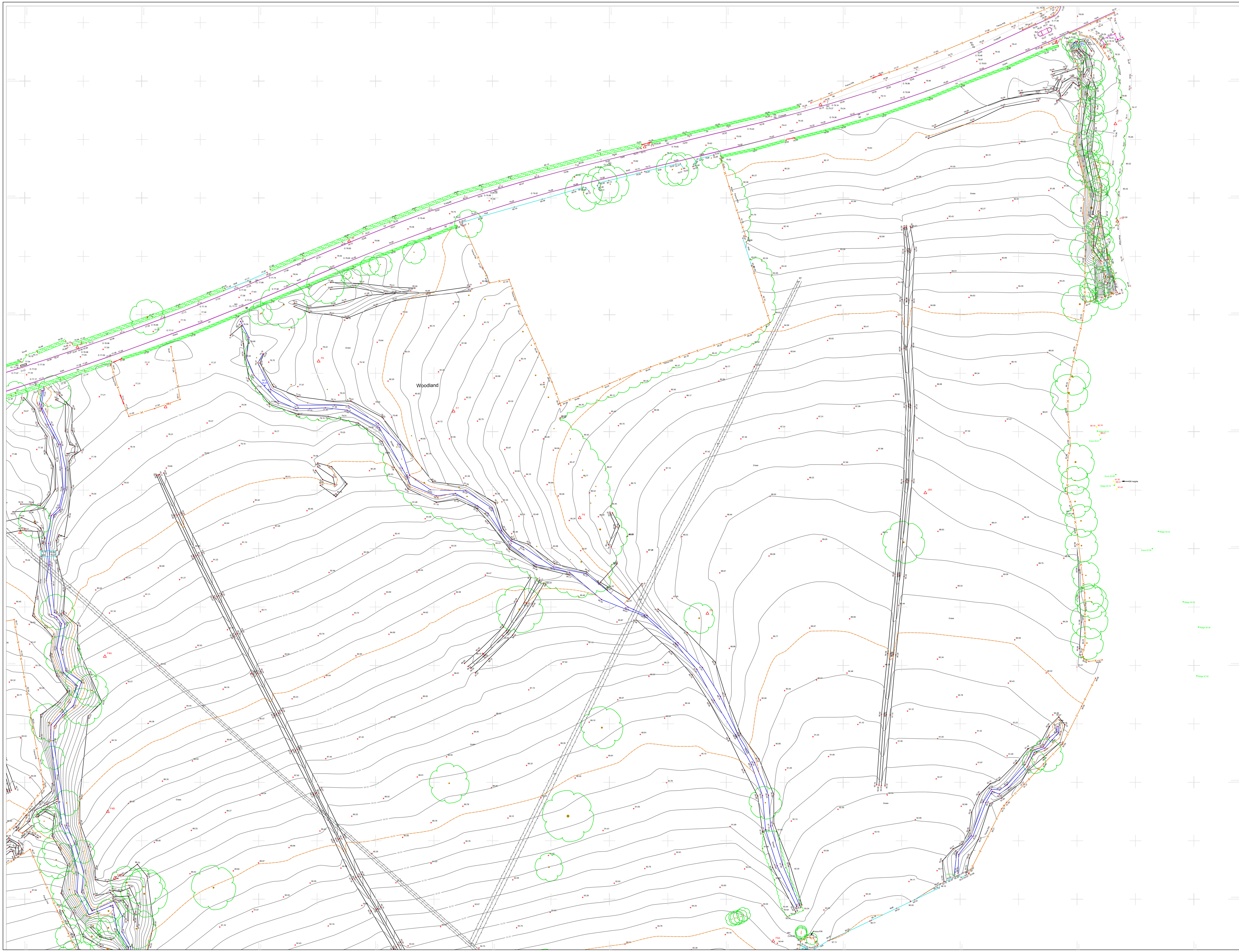
Eastwood
CONSULTING ENGINEERS

APPENDIX 2



Members of

Legend

AV	Air valve
BH	Borehole
BOL	Bollard
BT	British Telecom cover
CATV	Cable television cover
CL	Cover level
DPC	Damp proof coarsing level
Earth/ER	Earthing rod
ELEC	Electric cover
EP	Electricity pole
Fence I/R	Iron railing fence
Fence C/B	Closeboard fence
Fence C/P&P	Concrete post & panel fence
Fence Pa	Palisade fence
Fence P/W	Post and wire fence
Fence P/R	Post and rail fence
Fence P/P	Post and panel fence
FFL	Finished floor level
F/B	Flower bed
FH	Fire Hydrant
G	Gulley
GAS	Gas cover
IC	Inspection chamber
IL	Invert level
INV	Invert level
LP	Lamp post
LT	Light
MH	Manhole
Nynex	Telecommunications cover
OSBM	Ordnance Survey Bench Mark
PTM	Parking ticket machine
RE	Rodding eye
RS	Road sign
R/t wall	Retaining wall
SBX	Switch box
SP	Sign post
SPS	Safety playing surface
ST	Stop tap
SV	Service valve
TBM	Temporary Bench Mark
TP	Telegraph pole
TRP	Trial pit
TRL	Traffic light
W	Water cover
WL	Water level
WO	Wash out

SURVEY STATIONS

Name	Easting	Northing	Height
F1	369876.767	434437.517	82.179
F1A	369901.412	434365.533	85.376
F2	369969.109	434415.555	83.221
F2A	370080.788	434182.071	101.233
F3	370097.930	434501.435	80.839
F4	370197.969	434556.844	79.296
F4A	370234.240	434503.839	82.317
F4B	370235.492	434437.429	86.640
F4C	370238.498	434409.040	88.347
F4D	370274.150	434344.214	92.746
F4E	370278.836	434279.601	95.109
F5	370260.196	434610.517	77.788
J1	369913.766	434542.903	77.915
J10	370661.687	434764.507	78.326
J11	370666.435	434731.661	79.334
J12	370667.270	434690.039	81.027
J1A	369823.918	434512.170	78.810
J1B	369846.225	434470.087	79.273
J1C	369847.673	434428.642	80.037
J1D	369890.909	434314.516	86.000
J1E	369975.197	434317.974	88.312
J1F	370020.547	434217.587	95.488
J2	369974.818	434560.325	79.326
J3	370060.437	434585.759	79.182
J4	370148.708	434612.801	77.877
J5	370222.475	434636.154	77.096
J6	370338.695	434681.538	78.842
J7	370465.078	434721.774	79.719
J8	370540.299	434739.940	79.279
J9	370641.097	434766.484	78.274
J9A	370585.137	434573.809	88.409
F6	370325.652	434630.130	78.186
F7	370383.377	434608.709	82.298
F8	370437.309	434563.156	85.694
F9	370491.935	434522.223	88.836
F9A	370520.093	434382.028	94.618

KEY DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE COMMENCEMENT OF ANY WORKS

NOTE

Grid and Levels related to OS using GPS active network

Amendments

	Date	Surveyor	Description of work

Powers&Tiltman Ltd
Land Surveyors

Meridian House
58/60 Hillside Road, Frodsham, Cheshire WA6 6AG
Tel: 01928 734473 Fax: 01928 735573
Email: mail@powerstiltman.co.uk
www.powerstiltman.co.uk

Land off Longsight Road

Langho

Topographical Survey

Client : Hallam Land Management

Surveyed By : NS	Date : 25/02/2014	Scale
Drawn By : NS	Drawing No : 6886/01 Sheet 1	1:500
Checked By : MP	Amendment :	

Members of

Legend

AV	Air valve
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Fence C/P&P	Concrete post & panel fence
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Fence P/W	Post and wire fence
Fence P/R	Post and rail fence
Fence P/P	Post and panel fence
FFL	Finished floor level
F/B	Flower bed
FH	Fire Hydrant
G	Gulley
GAS	Gas cover
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INV	Invert level
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PTM	Parking ticket machine
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F3	370097.930	434501.435	80.839
F4	370197.969	434556.844	79.296
F4A	370234.240	434503.839	82.317
F4B	370235.492	434437.429	86.640
F4C	370238.498	434409.040	88.347
F4D	370274.150	434344.214	92.746
F4E	370278.836	434279.601	95.109
F5	370260.196	434610.517	77.788
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J1C	369847.673	434428.642	80.037
J1D	369890.909	434314.516	86.000
J1E	369975.197	434317.974	88.312
J1F	370020.547	434217.587	95.488
J2	369974.818	434560.325	79.326
J3	370060.437	434585.759	79.182
J4	370148.708	434612.801	77.877
J5	370222.475	434636.154	77.096
J6	370338.695	434681.538	78.842
J7	370465.078	434721.774	79.719
J8	370540.299	434739.940	79.279
J9	370641.097	434766.484	78.274
J9A	370585.137	434573.809	88.409
F6	370325.652	434630.130	78.186
F7	370383.377	434608.709	82.298
F8	370437.309	434563.156	85.694
F9	370491.935	434522.223	88.836
F9A	370520.093	434382.028	94.618

KEY DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE COMMENCEMENT OF ANY WORKS

NOTE

Grid and Levels related to OS using GPS active network

Amendments

	Date	Surveyor	Description of work

Powers&Tiltman Ltd
Land Surveyors

Meridian House
58/60 Hillside Road, Frodsham, Cheshire WA6 6AG
Tel: 01928 734473 Fax: 01928 735573
Email: mail@powerstiltman.co.uk
www.powerstiltman.co.uk

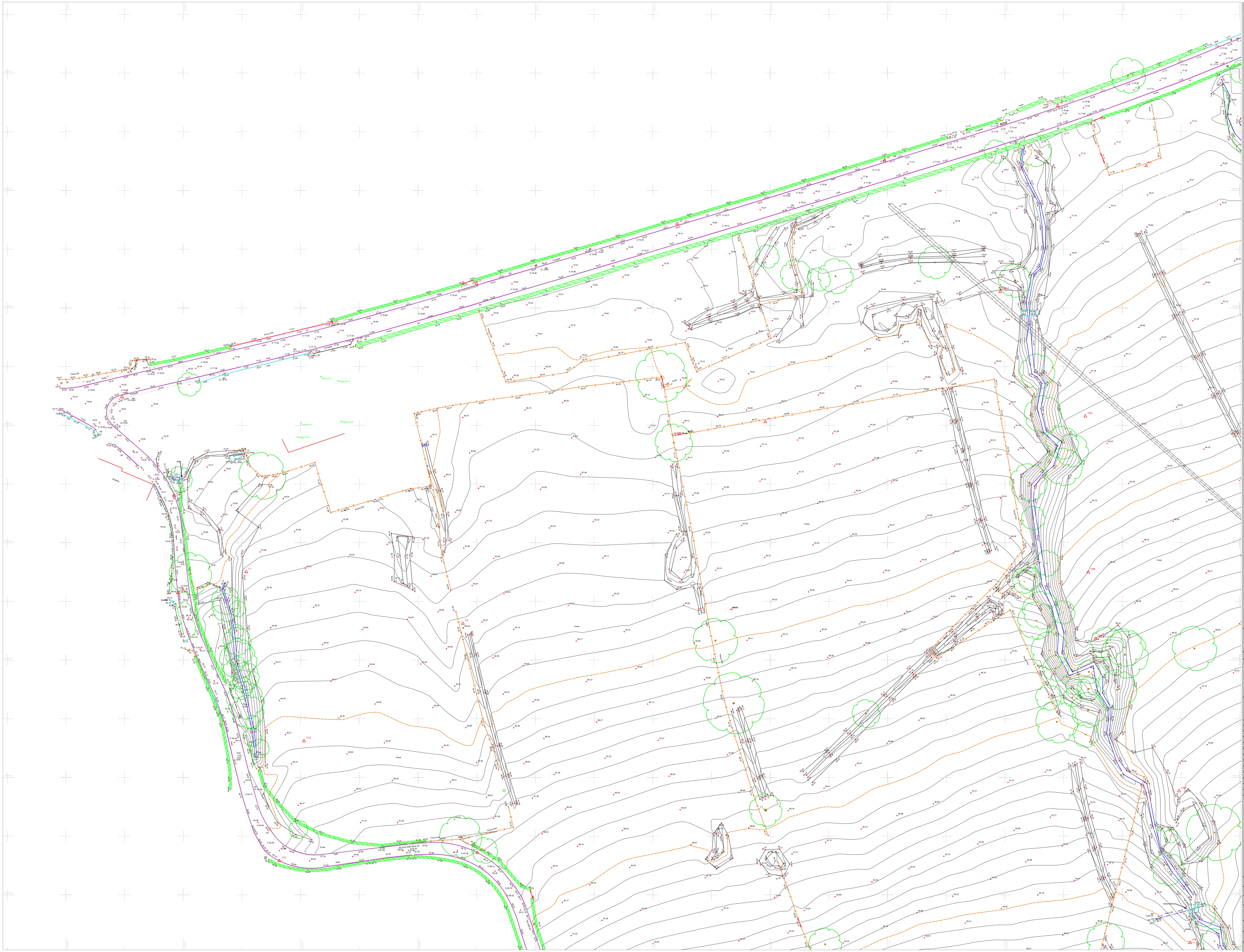
Land off Longsight Road

Langho

Topographical Survey

Client : Hallam Land Management

Surveyed By : NS	Date : 25/02/2014	Scale 1:500
Drawn By : NS	Drawing No : 6886/01 Sheet 2	
Checked By : MP	Amendment :	



Members of

Legend

AV	Air valve
BH	Borehole
BOL	Bollard
BT	British Telecom cover
CATV	Cable television cover
CL	Cover level
DPC	Damp proof coarsing level
Earth/ER	Earthing rod
ELEC	Electric cover
EP	Electricity pole
Fence I/R	Iron railing fence
Fence C/B	Closeboard fence
Fence C/P&P	Concrete post & panel fence
Fence Pa	Palisade fence
Fence P/W	Post and wire fence
Fence P/R	Post and rail fence
Fence P/P	Post and panel fence
FFL	Finished floor level
F/B	Flower bed
FH	Fire Hydrant
G	Gulley
GAS	Gas cover
IC	Inspection chamber
IL	Invert level
INV	Invert level
LP	Lamp post
LT	Light
MH	Manhole
Nynex	Telecommunications cover
OSBM	Ordnance Survey Bench Mark
PTM	Parking ticket machine
RE	Rodding eye
RS	Road sign
R/t wall	Retaining wall
SBX	Switch box
SP	Sign post
SPS	Safety playing surface
ST	Stop tap
SV	Service valve
TBM	Temporary Bench Mark
TP	Telegraph pole
TRP	Trial pit
TRL	Traffic light
W	Water cover
WL	Water level
WO	Wash out

SURVEY STATIONS

Name	Easting	Northing	Height
F1	369876.767	434437.517	82.179
F1A	369901.412	434365.533	85.376
F2	369969.109	434415.555	83.221
F2A	370080.788	434182.071	101.233
F3	370097.930	434501.435	80.839
F4	370197.969	434556.844	79.296
F4A	370234.240	434503.839	82.317
F4B	370235.492	434437.429	86.640
F4C	370238.498	434409.040	88.347
F4D	370274.150	434344.214	92.746
F4E	370278.836	434279.601	95.109
F5	370260.196	434610.517	77.788
J1	369913.766	434542.903	77.915
J10	370661.687	434764.507	78.326
J11	370666.435	434731.661	79.334
J12	370667.270	434690.039	81.027
J1A	369823.918	434512.170	78.810
J1B	369846.225	434470.087	79.273
J1C	369847.673	434428.642	80.037
J1D	369890.909	434314.516	86.000
J1E	369975.197	434317.974	88.312
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Topographical Survey

Client : Hallam Land Management

Surveyed By : NS	Date : 25/02/2014	Scale 1:500
Drawn By : NS	Drawing No : 6886/01 Sheet 3	
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