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FLOOD RISK ASSESSMENT

ON

LAND SOUTH OF GYNN LANE, HONLEY

FOR

VIVLY LIVING

E24/8017/FR01A
Rev A – Jan 2026

DEC 2024

Haigh Huddleston Associates is the trading name of Haigh Huddleston Associates Limited
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1.0 INTRODUCTION

1.1 This report is commissioned to investigate and report on the Flood Risk for this site in accordance Planning Practise Guidance- Flood Risk and Coastal Change April 2022 and the proposals for drainage of this site when redeveloped as residential land. The report is based on information supplied by the client and from relevant authorities in both written and verbal format. Some of this information is in verbal form only. No liability can be accepted for information supplied by third parties which is subsequently found to be inaccurate or incorrect.

2.0 THE SITE

2.1 The site is located on land to the south of Gynn Lane, Honley and lies around OS Grid Reference 414570E, 412090N. A site location plan is attached in Appendix A at the rear of the report. The overall site area is approximately 2.7ha.

2.2 The majority of the site is currently undeveloped and consists of a sloping grass field with wooded areas to the north west and south west. A single two storey stone detached house is located in the centre north of the site, with a driveway connecting to Gynn Lane in the north east corner of the site. Adjacent the northern boundary, Ludhill Dike flows as an open watercourse from east to west. It enters site from the north east corner from an approximate 1.0x0.9m stone culvert that runs beneath the railway embankment, before passing beneath the driveway serving the house in the north of the site, and exiting the site in the north west corner.

2.3 The eastern boundary consists of a stone gabion wall retaining a railway embankment 1.7-1.9m above the site. This then slopes upwards to the railway line which runs south to north. The site is elevated above the residential properties to the west of the site, and above Marsh Platt Lane in the south western corner of the site.

2.4 The site generally falls steeply from a high point of 133m AOD in the south eastern corner to a low point of 110m AOD in the south western corner. The surrounding land generally falls from east to west.

3.0 PROPOSED DEVELOPMENT AND DRAINAGE CONSTRAINTS

3.1 It is understood that the proposed development is for a series of detached, semi-detached, terraced town houses (totalling approx 50 units) with associated car parking and access roads. A preliminary site layout is attached in the appendices.

3.2 A site investigation has been undertaken on site previously by Lithos and is detailed in their report no 4749/2 dated September 2024. The following information has been reviewed in order to establish the existing geology and the possibility of soakaways being suitable for the site.

i. The online soil mapping data indicated the site to be underlain by slowly permeable soils.

ii. The investigation has generally proved 300mm of topsoil overlying 0.5-5.0m of sandy gravelly clays and slightly angular to sub-angular coarse gravel. Mudstone or sandstone bedrock was generally encountered at depths of 1.5-3.7m below existing ground levels.

iii. Section13.8.1 of the site investigation report states that soakaways are not considered an effective method of surface water drainage due to the steeply sloping nature of the site.

Further to the above we would not envisage that soakways/infiltration would be suitable for the development due to the slope of the site and the underlying strata.

3.3 There are existing public sewers adjacent to the site :-

i. A 225mm dia combined sewer running east to west beneath Gynn Lane to the north of the site.

ii. A 225mm dia surface water sewer running beneath Gynn Lane and discharging to Ludhill Dike in the north east of the site.

iii. A combined sewer running east to west beneath Marsh Platt Lane to the south west of the site.

v. The primarily open watercourse Lundhill Dike passes under the existing site entrance in the north east corner of the site.

3.4 There are no public sewers crossing the main body of the site. Yorkshire Water have confirmed that there is no capacity within adjacent adopted surface water systems to service the site. They have recommended that surface water is discharged to Ludhill Dyke adjacent the northern boundary of the site. This will require a right of discharge in perpetuity to the existing watercourse which will need to be agreed with the current landowner. Foul drainage can be accommodated in the 225mm dia sewer in Gynn Lane to the north of the site. A copy of the Yorkshire Water records and recent pre-planning enquiry for the site are in the appendices at the rear of the report.

3.5 During the site investigation works into he shallow mine workings on site, rotary boreholes were undertaken using water flush methods. When the existing adit crossing the site was encountered, at a depth of 17.1m below existing ground levels, the pressure generate by the water flush caused an overflow from the adit to flood the rear gardens to Gynn Lane. Although it is proposed to treat the shallow mine workings above the adit, the adit is to remain untreated to maintain the ground water status quo and avoid future flooding incidents from the overflow. The overflow has been located in the rear garden to 16A Gynn Lane and should be periodically monitored during the drilling and grouting works to the shallow mine workings.

3.6 As the majority of the site is currently undeveloped, there are no existing drainage systems serving the site. However, there is a former mill pond located on the western boundary of the site. Investigation works have been undertaken to confirm the drainage arrangement serving the mill pond and detailed correspondence regarding this is contained in Appendix F. A trial trench was undertaken to determine the location of the feed to the mill pond and proved a single 150mm cast iron pipe, approximately 600mm below existing ground levels, running from beyond the railway line located on the eastern boundary of the site. This has historically been concreted up to stem the flow to the mill pond, which has subsequently been dry. As part of the development works this cast iron pipe is to be grubbed out.

3.7 Due to the slope of the land it's likely that a gravity connection for the surface water sewers serving the majority of the site should be feasible. However, it is likely a second discharge will need to be agreed for the run-off for the proposed adoptable highway to the north of the culvert on the access road. This will require a detailed drainage design.

3.8 The proposed foul sewer will need to pass beneath the existing watercourse in the north east corner of the site. This will need to chase down the existing 225mm combined sewer in Gynn Lane to achieve a gravity connection.

4.0 FLOOD RISK

4.1 On reviewing the Environment Agency websites flood risk maps, the site currently falls within flood zone 1: which is designated as low probability of flooding from sea or rivers less than 0.1% (ie 1 in 1000 year) probability of flooding see Fig 1.
The hierarchy of flood zones are described as:

Flood Zone 1: Low Probability. Land assessed as having a less than 1 in 1000 chance of river and sea flooding in any year (<0.1%).

Flood Zone 2: Medium Probability. Land assessed as having between a 1 in 100 and 1 in 1000 chance of river flooding (1% 0.1%) and between a 1 in 200 and 1 in 1000 chance of sea flooding (0.5% 0.1%) in any year.

Flood Zone 3: High Probability. Land assessed as having a 1 in 100 or greater chance of river flooding (>1%) and 1 in 200 or greater chance of sea flooding (>0.5%) in any year.

The site is therefore considered not to be at risk from fluvial flooding from rivers or sea for the 1 in 100 or 1 in 1000 year flood event. The proposed use of the site would be classified as More Vulnerable in Table 2: Flood Risk Vulnerability Classification in the Planning Practise Guidance- Flood Risk and Coastal Change April 2022. In accordance with that table the proposed development would be considered to be appropriate for the site.

4.2 The available EA plans indicate that the majority of the site is not affected by overland surface water flood water (Fig 2 – Surface water flood risk map). The surface water exceedance flows are only shown within the existing Ludhill Dyke crossing the site from east to west on the northern boundary.

4.3 The site does not appear to fall within an area subject to flooding from reservoirs according to the EA maps (Fig 3). We consider the risk of such a source of flooding would be low. The site does not fall within a flood warning zone.

4.4 Due to the size of the development being in excess of 1Ha, it would be necessary to prepare a site specific Flood Risk Assessment for the site.

Fig 1 Flood Risk Map – Environment Agency

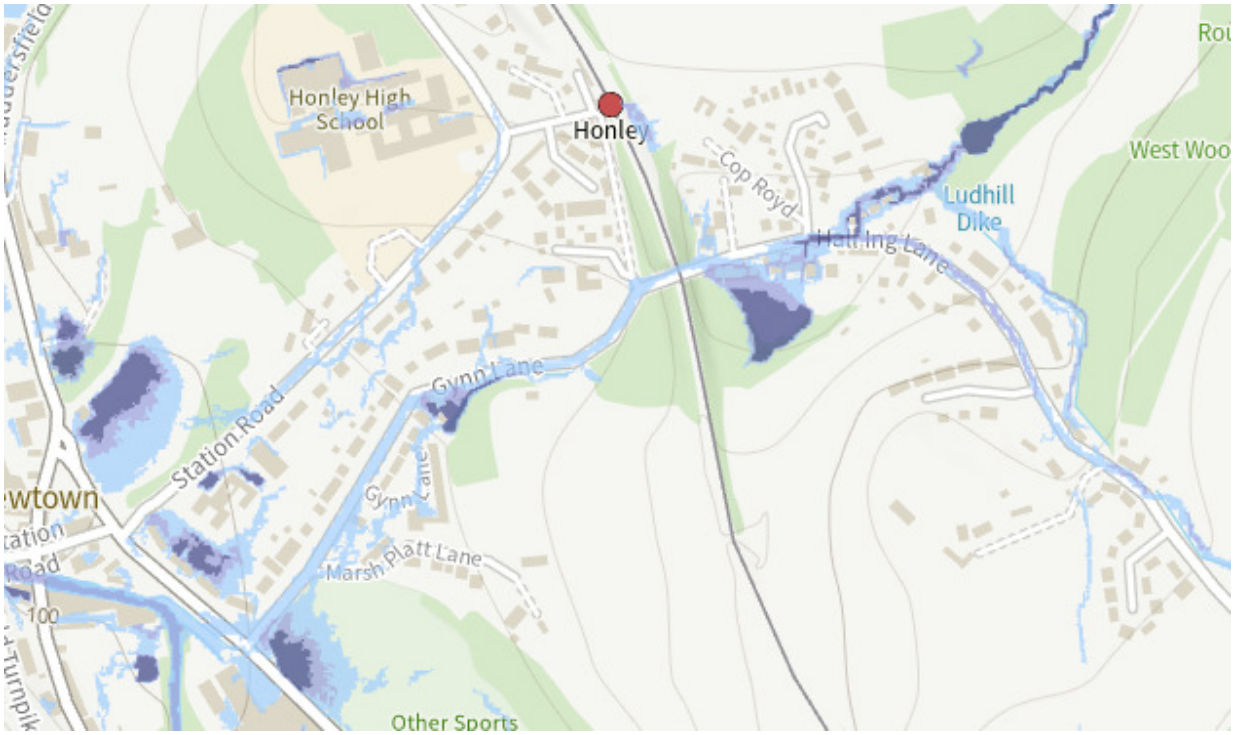

Fig 2 Surface Water Flood Risk Map – Fluvial Flow

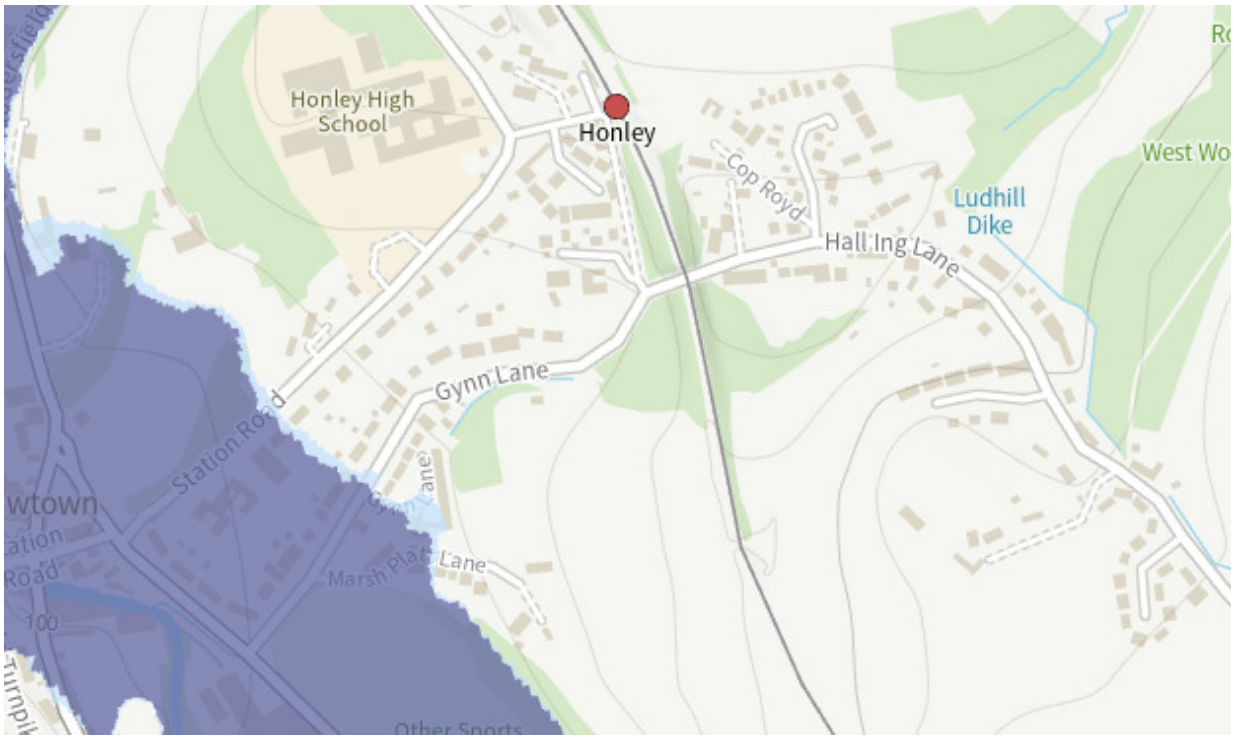

Fig 3 Reservoir Breach Flood Risk Map

4.5 There are a number of potential flooding mechanisms that the Planning Practise Guidance- Flood Risk and Coastal Change April 2022 now requires to be evaluated for each proposed development site. Each method of flooding requires an assessment to be made on its probability relative to the site development. The normal requirement of the document is for no flooding of properties for storms up to a 1% probability or a once in a 100 years storm. The risk assessment also includes for flooding both on site and off site, and the effects of the development on the downstream catchment or the flow regime of the watercourse. NPPG also requires that the effects of severe storms above the normal 1% probability are reviewed together with the effects of climatic change relating to the design life of the development.

4.6 It also requires that the effects of climate change are taken into account together with the impacts of extreme events and flood defence failures. Prior to this the Sequential Test, and where necessary, the Exception test as outlined in Planning Practise Guidance- Flood Risk and Coastal Change April 2022, must also be applied to each development site. These aspects are not covered in this report but the proposed site being in Flood Zone 1, would mean these requirements are already met and do not apply.

4.7 The Planning Practise Guidance- Flood Risk and Coastal Change April 2022 requires that each flooding mechanism is addressed and levels of risk evaluated. We consider there are three main risks of flooding to the site. The alternative mechanisms are not applicable to this site.

- Inundation from floodwaters leaving watercourses or rivers entering the site. This can include the effects on culverted watercourses and where the risk of blockage can occur and from breach scenarios.
- Rainwater falling on the site and not being able to leave the site at sufficient rate to prevent flooding on the site.
- Overland flows from adjacent land sites due to surcharging of sewerage systems or other watercourses.
- The impact of the developed site on the existing drainage systems and off-site surface water systems must also be assessed as part of this flood risk assessment.

5.0 DISCUSSION OF FLOOD RISKS

5.1 Flood Risk from Watercourses, River & Tidal

5.1.1 The proposed development area does not fall within the 0.1% or the 1% probability Flood Risk Maps (Zone 2 and 3) as published by the Environment Agency. The site is therefore considered not to be at risk from fluvial flooding for the once in 100 year flood event. We therefore consider the risk of flooding of the site from River and Sea is acceptable for this type of development on this site.

5.1.2 Although the flood risk maps do not indicate a risk from the existing watercourse, we should consider a scenario where the culvert below the site entrance road becomes blocked or partially obstructed. The proposed culvert to the site entrance is located approximately 15m downstream of the existing culvert beneath the railway embankment on the eastern boundary, there is therefore considered to be minimal opportunity for debris to cause a blockage. In addition to this, the proposed culvert is larger than the existing culvert beneath the railway embankment, therefore ensuring the proposed culvert has sufficient capacity should there be a partial blockage.

5.1.3 In addition to the above, it has been agreed to provide a rakeable trash screen to the proposed culvert, which would ease maintenance but may marginally increase the risk of partial blockages. A 450mm diameter overflow pipe has therefore been incorporated into the proposed culvert headwalls, with double gullies provided on the adoptable highway either side of the culvert so in the event of a partial blockage, any exceedance flows would be directed back into Ludhill Dike downstream of the culvert.

5.1.4 Finally, additional gullies have been provided to Gynn Lane downstream of the proposed culvert, as well as to both sides of the culvert, to encourage any exceedance flows resulting from a blockage back into the watercourse so prevent overland flows running down Gynn Lane. In the event the gullies become blocked, 100mm diameter drainage outlets are to be provided through the existing boundary wall on the low side of Gynn Lane to allow exceedance flows a direct route back to Ludhill Dike. These measures would reduce the flood risk to properties downstream of the proposed culvert.

5.1.5 The flows of Ludhill Dike are currently restricted by the approximately 1.0x0.9m stone culvert that passes beneath the railway embankment to the east of the site. The proposed culvert beneath the site entrance is 2.4x1.2m and, further to discussions with the LLFA, straightens the existing watercourse to reduce the risks of blockage and ensure the water flows unimpeded through the site.

5.1.6 This would maintain the status quo as the watercourse is currently culverted to allow the private drive serving No. 34 Gynn Lane to pass over it. The proposed 2.4x1.2m culvert is considered to be an improvement over the existing culvert with a reduced risk of blockage. The proposed culvert details are included in the appendices to the rear of this report.

5.2 **Risk of Flooding from overland flows from adjacent land.**

5.2.1 The site lies on an area of steeply sloping land, with the surrounding land generally sloping from east to west. Overland flow from the north would be intercepted by the drainage serving Gynn Lane and by Ludhill Dike prior to intercepting the site. The site is situated higher than Ludhill Dike and is not considered to be at risk from it flooding. The land to the west is at a lower level than the site and overland flow would flow to the west away from the site. To the south of the site it is anticipated that the overland flows would generally flow from east to west before being picked up by the drainage to Marsh Platt Lane. No overland flows are indicated on the flood maps. However, during extreme rainfall events there is the potential for low level flood waters entering the site along the eastern site boundary from the railway embankment, which itself will cut off overland flows from the east. Additionally, there is the potential for groundwater seepage from the gabion retaining wall to the railway embankment. We would recommend that plot levels should be slightly elevated above the rear garden areas and proposed road to create a flood route through to the new highway layout and subsequently channel any flood waters along the new highway system. A land drain along the boundary should also be considered to intercept any overland flows.

5.2.2 We would, recommend that an overland flood route is provided through the site to cater for extreme events and in addition to any blockage failure of new drainage systems on site. As is normal under the sewers for adoption criteria and floor levels are to be based a minimum of 300mm above existing ground levels.

5.3 **Risk of Flooding from Rainwater Falling on Site**

5.3.1 The risk of flooding from water falling on site and not being able to leave the site is relatively high. The impermeable area of the site will increase due to the development, and this would increase the run off from the site. This would increase the flood risk to downstream properties unless attenuation measures and restriction of flows took place.

5.3.2 The normal hierarchy for surface water discharge in accordance with current planning and SUDS policies is as follows:

1. The use of infiltration systems such as Soakaways.
2. Discharge to nearby rivers or watercourses with the use of attenuation.
3. Discharge to existing public sewer network with the use of attenuation.

5.3.3 Due to the steeply sloping nature of the site, and the underlying strata, it is unlikely that infiltration methods would be a suitable method of surface water disposal due to the risk of re-emergence. This has been agreed with the LLFA.

5.3.4 Ludhill Dike is located within the northern boundary of the site and flows from east to west. A new connection from the development is proposed to be constructed to the watercourse, the existing landowner will need to confirm that this is acceptable and provide Yorkshire Water a dis-charge in perpetuity from the site. Storm water attenuation systems should be utilised to ensure the flows from the site are reduced to agricultural run-off rates or as otherwise agreed with the Kirklees Land Drainage Authority.

5.3.5 There are no significant existing buildings or paved areas on site. In conjunction with infiltration systems not being suitable an overall discharge rate of 10.5 l/s greenfield discharge rate of 8.5l/s has been agreed for the development by the LLFA. Confirmation of this is included in the appendices to the rear of the report. The overall discharge has been split into an 8.5 l/s restricted discharge from the site, with an allowance of 2 l/s for the proposed adoptable highway downstream of the culvert, making for a total of 10.5 l/s. Negotiations would be required with the authorities and current landowners to secure permission to discharge in perpetuity together with easements etc.

5.3.6 With attenuation of flows there would have to be a storm-water storage facility. The use of above storage systems such as swales, detention basins or ponds, would provide the most sustainable urban drainage system and possibly the most economic but this would entail significant land up take and potentially large, commuted sums. With the recent implementation of the Codes for Adoption by Yorkshire Water there is greater scope for a regulatory body to adopt and maintain the above ground storage facilities than previously. However there is detailed criteria to be met to able this to take place. For the onsite sewerage system to be adopted there would still be a need for underground tanks to provide sufficient attenuation storage for the site so that pipework does not surcharge for the 1 in 2 year event. Based on this criteria, the estimated volumes of storage required are shown in the attached calculation sheets. For this run off the storage volumes require 285 cu.m for the 30 year storm, 390 cu.m. for the 100 year storm and 605 cu.m when 45% extra for climatic change allowance is made. 540 cu.m of storage is to be provided via an attenuation tank in the north of the site, with the remainder provided by the pipework and manholes within the system.

5.3.7 The use of below ground storage facilities on their own, may not provide a suitable level of treatment of the run off from the site and biological systems, at source, may be needed to ensure contaminants are dealt with prior to discharge of site. The use of open swales and ponds would allow the use of reed beds and other organic systems to be employed so should still be considered in the final designs. Primary treatment for the roads would be the use of trapped gullies for all hard standings. The use of filter drains adjacent to private drives or permeable paving on private drives would also provide a first stage treatment of run off from drives and allow a discharge into the top soils on site. Rainwater butts may also be provided to enable some recycling of run off from the roofs and paved areas. The use of green roofs is not considered appropriate in this development. Please note Yorkshire Water will require an easement and access for future maintenance.

5.3.8 The size of the storm water storage facilities would need to be determined accurately in the final detailed designs. These should be all in accordance with the current PPG. The volumes of storage can include flooding to roads and designated areas such as carpark areas or public open space for the 100 year storm with 45% allowance for climate change, but must ensure that no buildings are flooded.

5.3.9 The position and levels of the attenuation has been considered to ensure that any failure or blockage of the outfall will result in above ground flooding to the open section of watercourse to the northern boundary of the site and not affect any of the new or existing properties. Finally, the position of the attenuation tank has been determined to allow accessibility for future maintenance.

5.4 **Impact on existing drainage systems.**

5.4.1 Attenuation has been provided for a significantly increased return period of 1 in 100years plus 45% climate change, in real terms this would lead to a reduced flood risk offsite due to the restricted flows off-site for these storm events. This will ensure that there should be no increase in the flood risk to properties off site or in the drainage networks downstream of the site.

5.4.2 Currently, Nos. 30/32 Gynn Lane to the west of the site has experienced flooding during extreme storm events. This is from a combination of water on Gynn Lane and blocking of a culvert entrance on Ludhill Dike to the north west of the site. It has been agreed with the LLFA to provide a rakeable trash screen to this culvert entrance to ease maintenance and reduce blockages. Double gullies have also been provided to the entrance road on either side of the new culvert. New kerbing is to be provided to the access to Nos. 30/32, along with new gullies on Gynn Lane, as a belts and braces approach to redirecting overflows back into Ludhill Dike. In the event the gullies become blocked, 100mm diameter drainage outlets are to be provided through the existing boundary wall on the low side of Gynn Lane to allow exceedance flows a direct route back to Ludhill Dike.

5.4.3 In addition to the above, due to the risk of overland flow from the railway embankment to the east of the site, it is recommended a land drainage system to intercept flows is designed with an outfall to the existing watercourse in the north of the site.

5.4.4 The above measures have been indicated on the flood routing and engineering feasibility plans included in the appendices to the rear of this report.

5.4.5 The future maintenance of the onsite proposed drainage and attenuation would be carried out by Yorkshire Water or similar approved body as part of the Section 104 Agreement and they would adopt the underground oversized pipework and manholes.

5.4.6 The developer will be responsible to maintain the drainage systems on site until final adoption by Yorkshire Water ensuring that they are working effectively in the intervening period between construction and adoption.

6.0 FUTURE MAINTENANCE

6.1 It is proposed for the surface water system serving the main body of the development to be adopted by Yorkshire or similar approved body under a Section 104 Agreement, this will include the attenuation tank, flow control and outfall headwall. The highway drainage downstream of the culvert, and the culvert itself, are to be adopted by the Local Authority as part of the Section 38 Agreement.

6.2 The maintenance of the attenuation tank should be in line with the SUDS manual (CIRIA C753, 2015) as detailed in table 21.3 below.

Operation and Maintenance Requirements for Attenuation Storage Tanks		
Maintenance schedule	**Required action**	**Typical frequency**
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

6.3 The headwall structures to the culvert, including the overflow pipe and trash screen will need to be inspected to ensure they are free from debris following severe storm events, remove any sediment build-up and manage any nuisance vegetation.

6.4 A management company will be appointed to maintain the open sections of the watercourse on site to ensure it is free from debris following severe storm events and prevent plant growth that may impede flows.

6.5 The developer will be responsible to maintain the drainage systems on site until final adoption by the relevant authority ensuring that they are working effectively in the intervening period between construction and adoption.

7.0 CONCLUSIONS

7.1 The area of the site to be developed currently falls within Flood Zone 1 as defined by the EA Flood maps. The area of the site to be developed is not at risk of flooding from river or tidal water up to a 1% return period. The flood risk is considered to be acceptable for residential development.

7.2 It has been agreed that due to the steeply sloping nature of the site that infiltration methods would be an unsuitable form of surface water disposal. The use of attenuation systems to reduce the run-off from the site to below current discharge rates will be required to ensure there is no increase in flood risk to the downstream catchment. The use of an attenuation tank is proposed adjacent the existing watercourse in the north of the site.

7.3 The risk of overland flows entering the site is considered to be low due to the topography of the area around the site. The risk can be further minimised by providing a flood water route through the site to ensure flood water flows are directed away from the existing and proposed housing. The floor levels of the proposed houses should be a minimum of 300mm above the adjacent road levels or existing ground level.

7.4 If the recommendations within this report are adopted for providing attenuation up to and including the 1 in 100 year + 45% climate change storm events and the flow from site restricted to a maximum of 10.5 l/s, there will be a reduction in the flood risk both to the proposed properties on site, as well as the existing properties downstream of the site.

MARTIN HUDDLESTON. MEng

APPENDIX A

LOCATION PLAN

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Dewsbury
WF12 7BU

Client :	YORKSHIRE COUNTRY PROPERTIES
Job Title:	GYNN LANE, HONLEY
Job No:	E20/8017

LOCATION PLAN

OS Grid Reference : SE145121
Easting : 414571
Northing : 412106

Topographical Survey carried out using GPS.

N

APPENDIX B

EA FLOOD MAP

Flood map for planning

Your reference	Location (easting/northing)	Created
8017 GYNNLANE	**414577/412090**	**13 Dec 2024 17:27**

Your selected location is in flood zone 1, an area with a low probability of flooding.

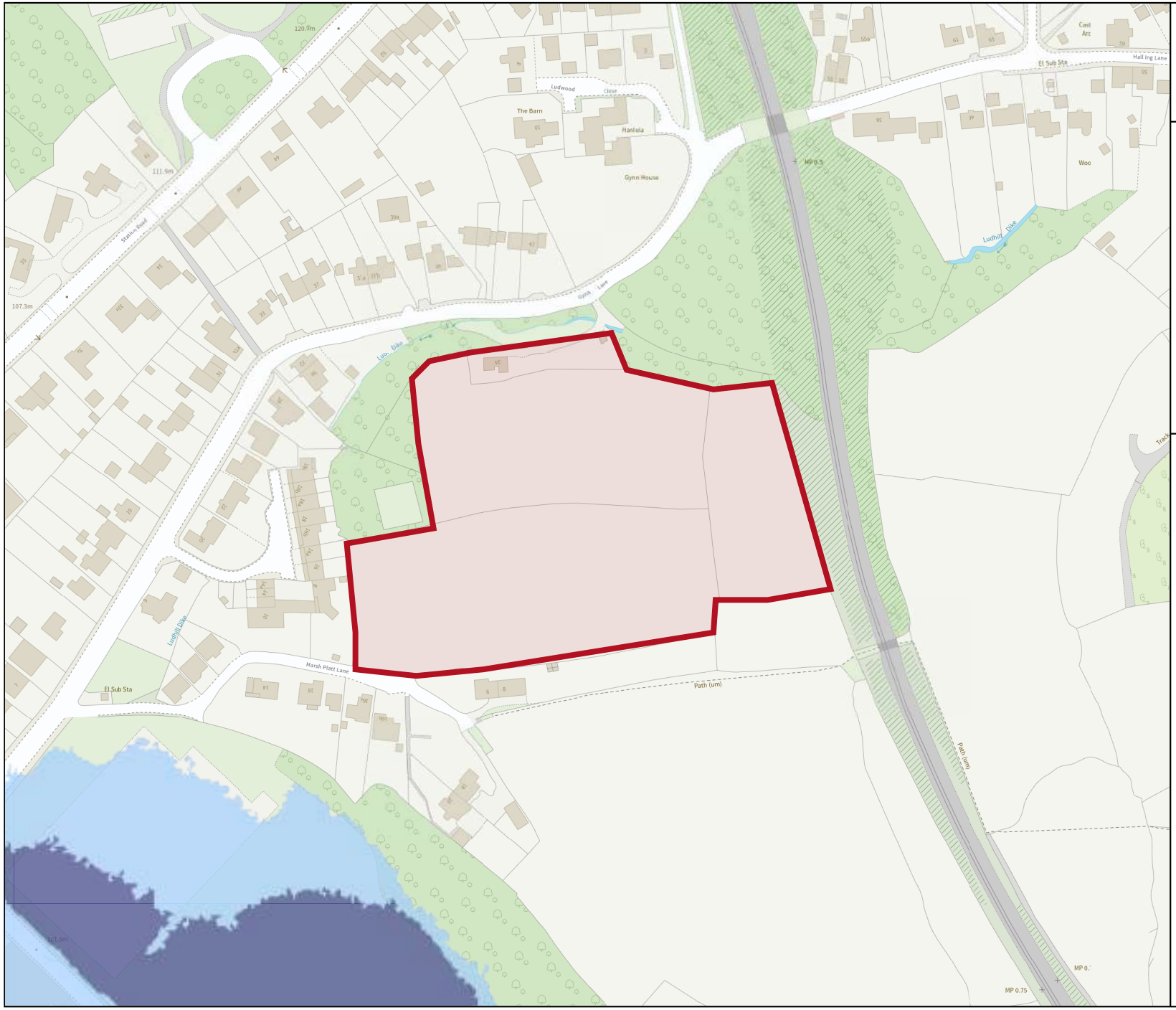
You will need to do a flood risk assessment if your site is **any of the following:**

- bigger that 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
8017 GYNNLANE

Location (easting/northing)
414577/412090

Scale
1:2500

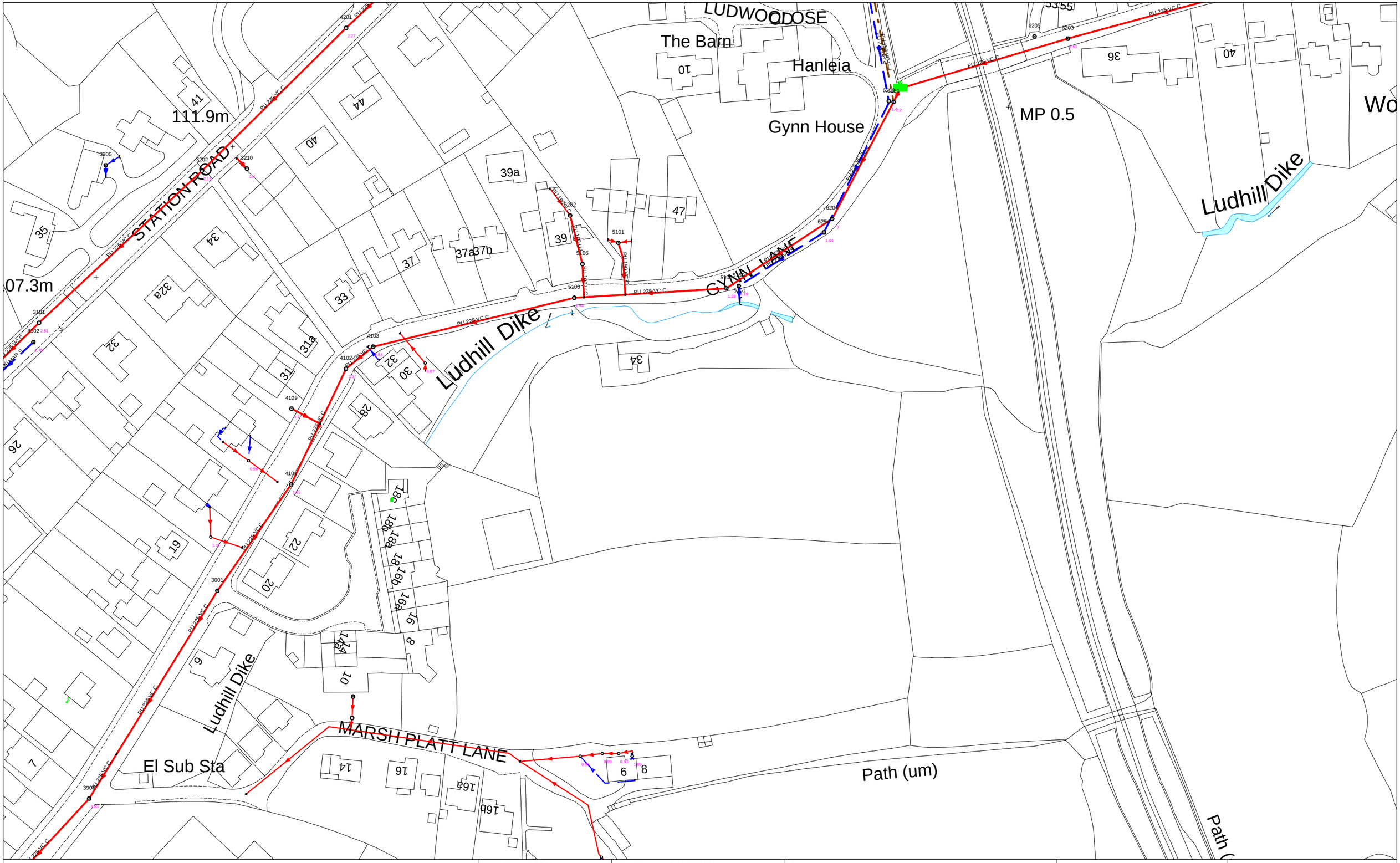
Created
13 Dec 2024 17:27

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m

APPENDIX C

YORKSHIRE WATER RECORDS
LLFA CORRESPONDENCE



	414461 : 412069	Map Name : SE1411NW	Title
		Yorkshire Water, PO Box 500, Halifax Road, Bradford BD6 2LZ Contact Name : YorMap Advisor C ROBERTS Contact Tel : 87 2582	Notes
			(Ody) COPYRIGHT STATEMENTS: Reproduced by permission of Ordnance Survey on behalf of HMSO © Crown copyright and database 2014. All rights reserved Ordnance Survey Licence number 100022432

Partial Key

Foul Sewer = F
Combined Sewer = C
Surface Water Sewer = SW
Trade Sewer = TD
Partially Separate = PS

This plan is furnished as a general guide only and no warranty as to its correctness is given or implied. This plan must not be relied upon in the event of excavations or other works made in the vicinity of public sewers. No house or property connections are shown.

Date Req : 21/05/2024, 15:40:41

Date Gen : 21/05/2024, 15:41:58

Source : Sewer Network Enquiry

UPN: Undefined

Originator: C ROBERTS, YorMap, 87 2582

Consultation Response from KC Lead Local Flood Authority		
2019/91388 Land at Gynn Lane, Honley, Holmfirth,		
Outline application for the erection of up to 50 no. dwellings, all matters reserved except access		
Date Responded: 30th March 2020	**Responding Officer: Paul Farndale**	**Responding Ref:**

Kirklees COUNCIL

Further to our comments of 16th May 2019, 6th August 2019 and 15th January 2020. All previous comments are still relevant.

An updated Technical Note on Drainage by Curtains dated 7th February 2020 has been issued along with several drawings showing a new culverted section of Ludhill Dike under the proposed access.

Kirklees Flood Management & Drainage OBJECTS to this application due to disparities between the technical note and the proposed culverting of Ludhill Dike.

In addition to a trash screen design promoted in the Technical Report being omitted from plans, a meeting on site is required to discuss Land Drainage consent with regard to culvert size and dimensions in relation to the current channel. Opportunities should be taken to remove sharp bends that will result in a loss of energy, flow turbulence, an increase risk of blockage, sediment dropout.

The connection point from site via manhole access, as shown in the Technical Report has been omitted.

A flood routing plan to prevent any blockage scenarios flowing down Gynn Lane has not been explored and therefore not prevented.

Given the recent events along a 700m stretch of Gynn Lane, a section 19 investigation (Flood and Water Management Act 2010) is to be carried out. This has been delayed due to the current Covid 19 crisis and partial lockdown of movement. All opportunities need to be taken wherever possible to reduce flood risk within the locality through this development in accordance with good practice.

A report of potential works will need to be issued in due course to be considered by the LPA for section 106 contributions that benefits the common good for existing and new residents.

This is in addition to that already earmarked within the site locality and noted in the Technical Report.

The current culvert design proposals would appear to increase risk from potential overland flow routes, for blockage and exceedance scenarios, down Gynn Lane where existing properties already suffer internal flooding.

The LLFA supports the restriction of flow to 10.5l/s to help reduce the peak discharge rates to combat flood risk for flows in Ludhill Dike.

However, although the rate of flow has been combatted, given the known and potential risk already associated with this area, the inevitable increase in volume must be considered and mitigated downstream through both off site investment and ensuring that any flood route can get back into Ludhill Dike preferably using hard engineered solutions involving road levels. Overflows from manholes and the use of several new strategically place storm gullies needs to be considered.

To achieve this, the LLFA, Highways DC, Section 38 and the LPA should meet to discuss potential solutions with the developer before any solution is recommended.

APPENDIX D

ENGINEERING FEASIBILITY PLAN
FLOOD ROUTING PLAN
PROPOSED CULVERT DETAILS

NEW FOUL WATER DRAINAGE TO BE CONNECTED INTO EXISTING 225 DIAM COMBINED SEWER VIA MANHOLE (S100). EXISTING SERVICE RECORDS TO BE OBTAINED TO ENSURE NO POTENTIAL CLASHES WITH NEW FOUL SEWER ALIGNMENT. CCTV SURVEY ALSO TO BE UNDERTAKEN ALONG EXISTING COMBINED SEWER AND CONNECTIONS FROM No. 39/43 TO CONFIRM POSITION AND DEPTH.

ADDITIONAL HIGHWAY GULLYS TO BE PROVIDED ALONG GYNN LANE AS PART OF PLANNING CONDITIONS. ALL NEW GULLYS TO DISCHARGE INTO LUDHILL DIKE VIA EXISTING DRAINAGE OUTLET POINTS (LOCATIONS TO BE CONFIRMED).
NEW 100mm Ø DRAINAGE OUTLETS TO BE FORMED INTO WALL TO PROVIDE SECONDARY FLOOD ROUTING INTO WATERCOURSE IN THE EVENT OF GULLY BLOCKAGES

NEW HIGHWAY GULLY TO BE CONSTRUCTED AT SITE ENTRANCE AND CONNECTED INTO EXISTING 225 DIAM SURFACE WATER SEWER

EXISTING CWS & SWS MANHOLES TO BE CONFIRMED PRIOR TO FINAL DESIGN

NEW PEDESTRIAN CROSSING TO BE PROVIDED ON GYNN LANE AS PART OF S278 WORKS

VISIBILITY SPLAY ENCROACHING INTO THIRD PARTY LAND? FOOTPATH ALONG JUNCTION TANGENT TO BE WIDENED TO MIN 1.5m IF POSSIBLE

DOUBLE STORM GULLYS TO BE PROVIDED DOWNSTREAM OF HYDROBRAKE MH13 TO BE CONNECTED INTO EXISTING WATERCOURSE VIA NEW CULVERT CONNECTION

KERBING IMPROVEMENT WORKS TO BE PROVIDED TO THE DRIVE ENTRANCE OF No.30/32 AS PART OF PLANNING CONDITIONS

NEW SURFACE WATER DRAINAGE TO BE DISCHARGED INTO LUDHILL DIKE AT MAXIMUM FLOW RATE OF 8.5ltr/sec VIA NEW HEADWALL OUTFALL. UNDERGROUND ATTENUATION TO BE PROVIDED TO CATER FOR ADDITIONAL FLOOD VOLUMES FOR STORM EVENT UP TO 1 in 100yr +40%CC. AN ADDITIONAL 2ltr/sec PROVIDED FOR HIGHWAY DRAINAGE DOWNSTREAM OF HYDROBRAKE MH13. OVERALL MAXIMUM DISCHARGE RATE: 10.5ltr/sec.

NEW WATERCOURSE CULVERT TO BE CONSTRUCTED BENEATH ADOPTED HIGHWAY AND WATERCOURSE RE-ALIGNED TO SUIT LLFA REQUIREMENTS. NEW CULVERT & HEADWALL STRUCTURE TO BE APPROVED BY KIRKLEES. EXISTING SWS OUTFALL TO BE REMOVED AND RE-CONSTRUCTED BEYOND EXTENTS OF NEW CULVERT WORKS.

DEPTH AND CONSTRUCTION OF THE FOUNDATION TO EXISTING RETAINING STRUCTURE ALONG BOUNDARY TO BE CONFIRMED AND NECESSARY PRECAUTIONS TO BE TAKEN DURING CONSTRUCTION WORKS TO AVOID UNDERMINING EXISTING RAILWAY EMBANKMENT & RETAINING STRUCTURE

TURNING HEAD TO BE MOVED AWAY FROM BOUNDARY TO ENSURE ADEQUATE WORK SPACE FOR CONSTRUCTION OF NEW RETAINING WALL

GYNN LANE
MARSH PLATT LANE
Ludhill Dike
ROAD 1
ROAD 2
ROAD 3
ACCESS ROAD
BANKING
OPEN SPACE WOODLAND
Path (um)
EXISTING EMBANKMENT & RETAINING STRUCTURE

Rev F Culvert detail & drainage to site frontage updated to suit LLFA comments 16.01.26 HH
Rev E Updated to suit planning layout 2479-0301-R05 received 19.110.24. 10.12.24 HH
Attenuation tank & SWS outfall moved east. Sub Station amended to suit.
Rev D Attenuation tank amended to suit tree stand-off distance. 14.11.24 HH
Plot 1 amended back to original position.
Rev C Updated to suit planning layout 2479-0301-R04 received 05.11.24. 13.11.24 HH
Attenuation tank amended to suit clients instruction, Plot 1 moved to suit.
Rev B Updated to suit planning layout 2436-9901-P06C received 15.07.24. 18.07.24 HH
Attenuation tank amended.
Rev A Updated to suit planning layout 2436-9910-P06C. FFL's amended to 11.06.24 HH
clients instructions.

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Client
YORKSHIRE COUNTRY PROPERTIES

Project
GYNN LANE, HONLEY

Detail
PRELIMINARY FEASIBILITY PLAN

Dwn	Chkd	Date	Scale	Dwg No.
HH		MAY-24	1:500@A1	E24/8017/001F

KERBING IMPROVEMENT WORKS TO BE PROVIDED TO THE DRIVE ENTRANCE OF No.30/32 AS PART OF PLANNING CONDITIONS.

NEW RAKEABLE TRASH SCREEN TO BE PROVIDED TO EXISTING CULVERT HEADWALL DOWNSTREAM OF SITE.

ADDITIONAL HIGHWAY GULLYS TO BE PROVIDED ALONG GYNN LANE AS PART OF PLANNING CONDITIONS. ALL NEW GULLYS TO DISCHARGE INTO LUDHILL DIKE VIA EXISTING DRAINAGE OUTLET POINTS (LOCATIONS TO BE CONFIRMED). NEW 100mm$\emptyset$ DRAINAGE OUTLETS TO BE FORMED INTO WALL TO PROVIDE SECONDARY FLOOD ROUTING INTO WATERCOURSE IN THE EVENT OF GULLY BLOCKAGES

DOUBLE STORM GULLYS TO BE PROVIDED DOWNSTREAM OF HYDROBRAKE MH13 TO BE CONNECTED INTO EXISTING WATERCOURSE VIA NEW CULVERT CONNECTION.

EXISTING CULVERT HEADWALL TO LUNDHILL DIKE. CULVERT EXTENDS BENEATH RAILWAY EMBANKMENT.

CULVERT/WATERCOURSE RE-ALLIGNED TO PREVENT FLOW TURBULENCE AND SEDIMENT DROP OUT.

PROPOSED CULVERT BENEATH ADOPTABLE HIGHWAY. CROSS-SECTIONAL AREA GREATER THAN EXISTING CULVERT TO RAILWAY EMBANKMENT. 450mm DIAM EMERGENCY OVERFLOW PIPE TO BE FITTED AT SOFFIT LEVEL OF CULVERT TO ALLOW WATER TO FLOW INTO WATERCOURSE IN THE EVENT OF DEBRIS BUILD UP ON TRASH SCREEN.

LAND DRAINAGE TO BE CONSTRUCTED TO INTERCEPT POSSIBLE OVERLAND FLOW / GROUNDWATER SEEPAGE THROUGH GABION RETAINING STRUCTURE FROM RAILWAY EMBANKMENT.

GYNN LANE

ROAD 1

ROAD 2

ROAD 3

BANKING

Lundhill Dike

OPEN SPACE WOODLAND

MARSH PLATT LANE

Path (um)

Rev A Culvert detail & drainage to site frontage updated to suit LLFA comments 16.01.26 HH

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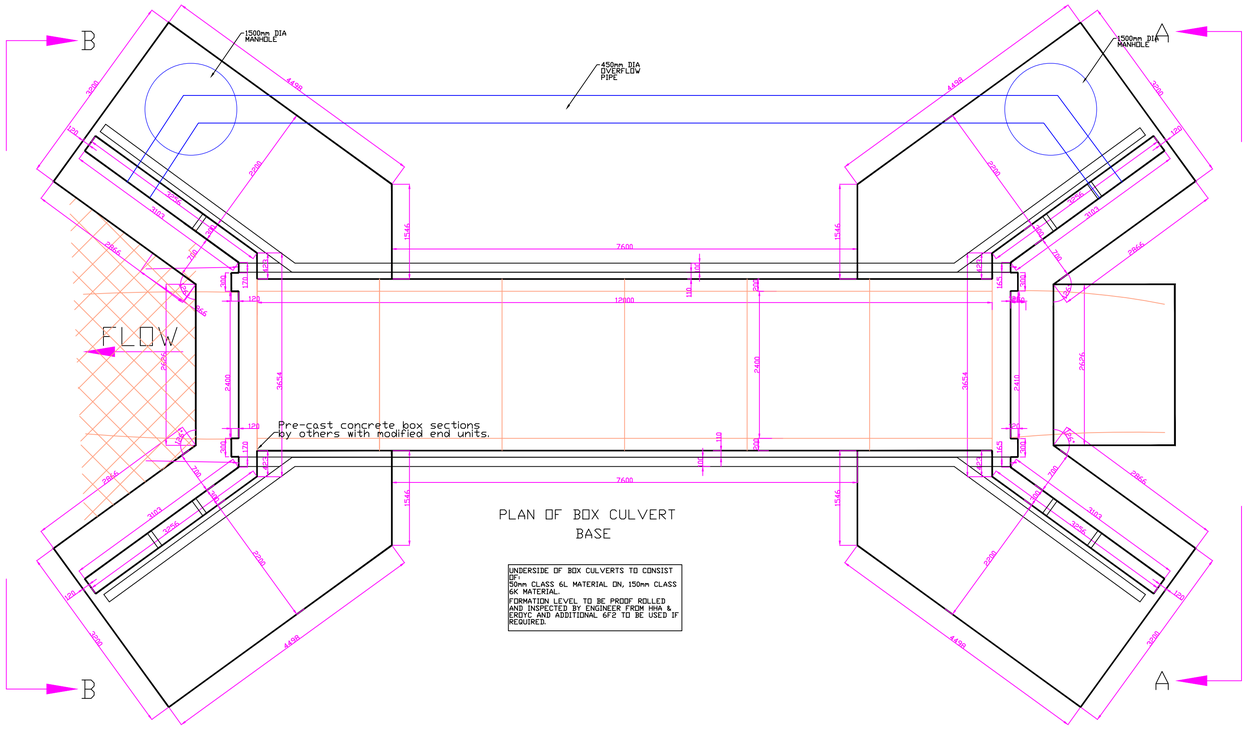
Client
YORKSHIRE COUNTRY PROPERTIES

Project
GYNN LANE, HONLEY

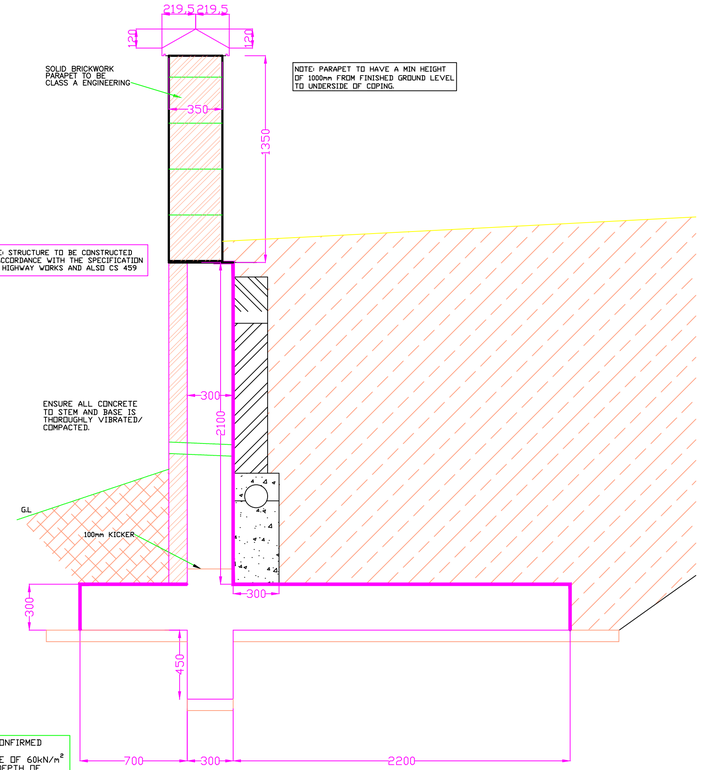
Detail
FLOOD ROUTING PLAN

Dwn	Chkd	Date	Scale	Dwg No.
HN		DEC-24	1:500@A1	E24/8017/019A



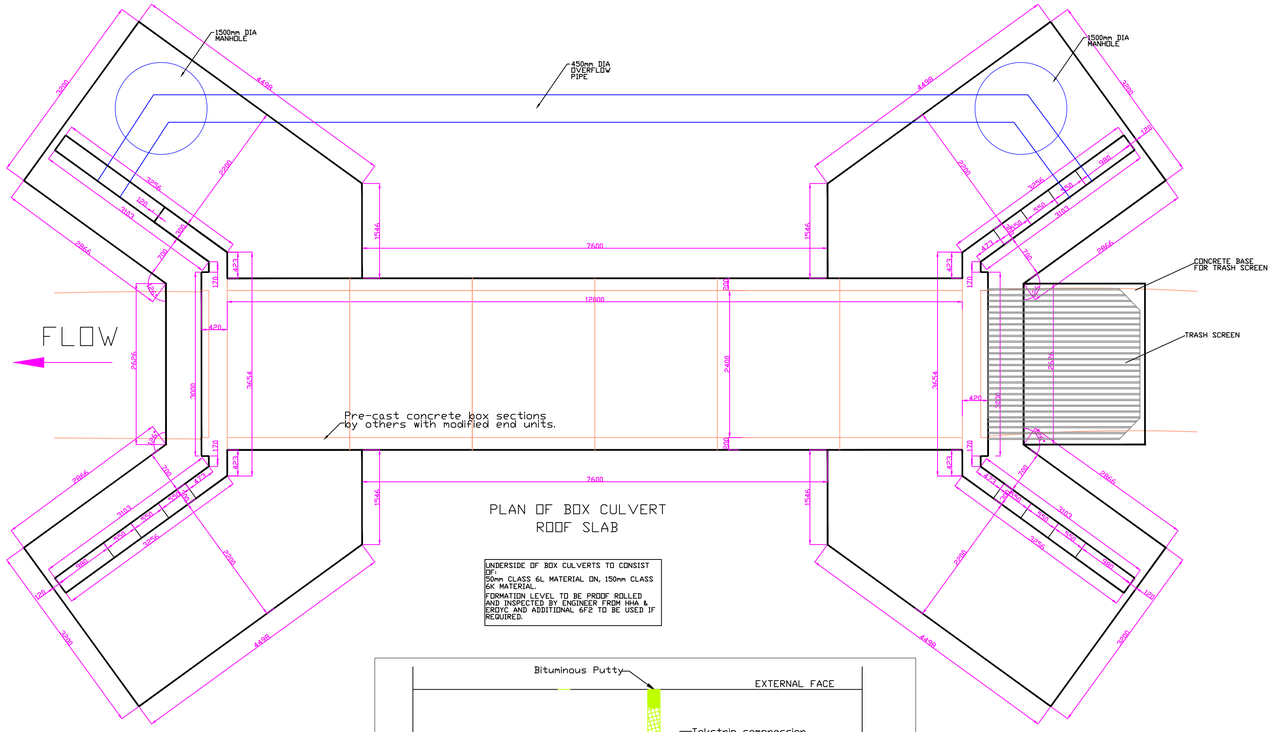
PLAN OF BOX CULVERT BASE

UNDERSIDE OF BOX CULVERTS TO CONSIST OF:
50mm CLASS 6L MATERIAL ON, 150mm CLASS 6K MATERIAL.
FORMATION LEVEL TO BE PROOF ROLLED AND INSPECTED BY ENGINEER FROM HHA & EROYC AND ADDITIONAL 6F2 TO BE USED IF REQUIRED.



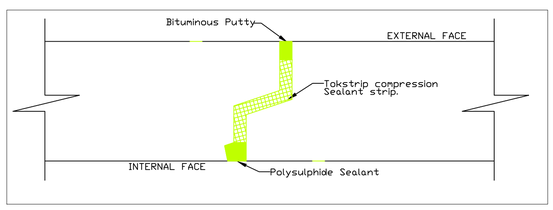
TYPICAL SECTION SHOWING WING WALL CONSTRUCTION DETAILS

ADEQUATE BEARING STRATA TO BE CONFIRMED IN WRITING TO KIRKLEES.
IF AN ALLOWABLE BEARING PRESSURE OF 60kN/m² CANNOT BE CONFIRMED, A FURTHER DEPTH OF MATERIAL SHALL BE EXCAVATED ALL ARDUND THE CONCRETE BASE AND REPLACED WITH MASS CONCRETE.

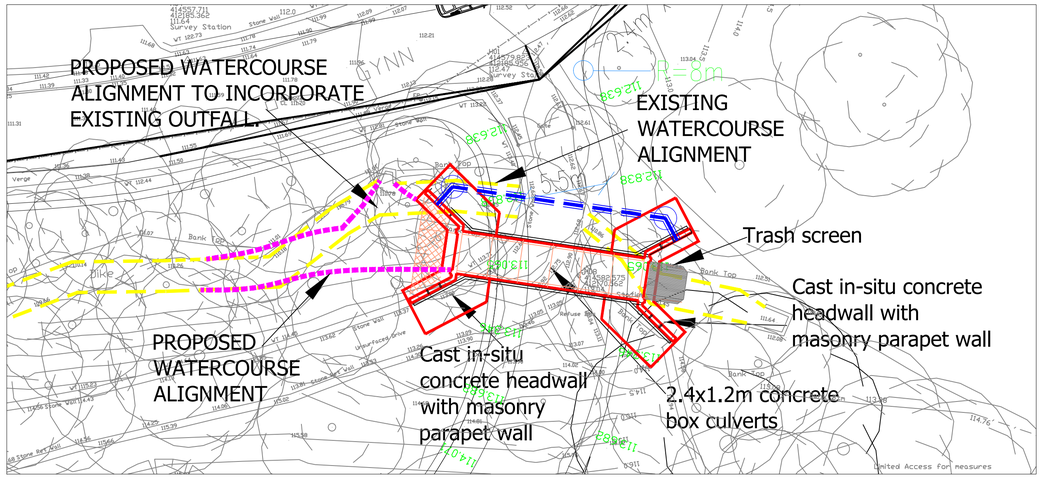


PLAN OF BOX CULVERT ROOF SLAB

UNDERSIDE OF BOX CULVERTS TO CONSIST OF:
50mm CLASS 6L MATERIAL ON, 150mm CLASS 6K MATERIAL.
FORMATION LEVEL TO BE PROOF ROLLED AND INSPECTED BY ENGINEER FROM HHA & EROYC AND ADDITIONAL 6F2 TO BE USED IF REQUIRED.



DETAIL 1 SCALE 1:5



CULVERT LOCATION PLAN
SCALE 1:200

Rev A Overflow pipe added 16.01.26PW

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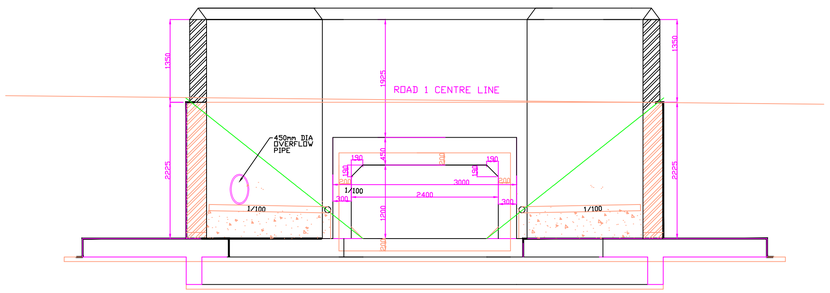
Client
YORKSHIRE COUNTRY PROPERTIES

Project
GYNN LANE, HONLEY

Detail
ROAD 1 CULVERT/HEADWALL CONSTRUCTION DETAILS (DRAWING 1OF2)

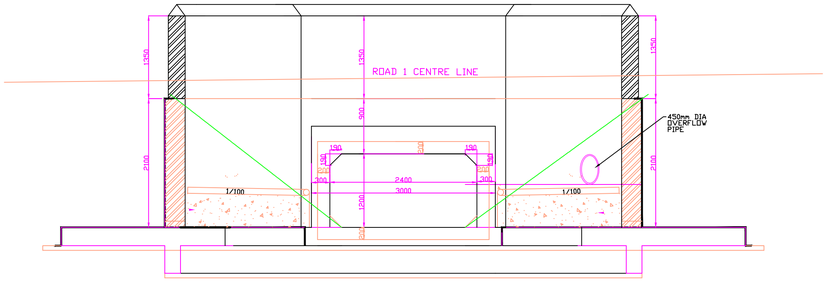
PRELIMINARY

Dwn	Chkd	Date	Scale	Dwg No.
PW	MH	Mar 24	1:50 1:250	E24/8017/200_01A



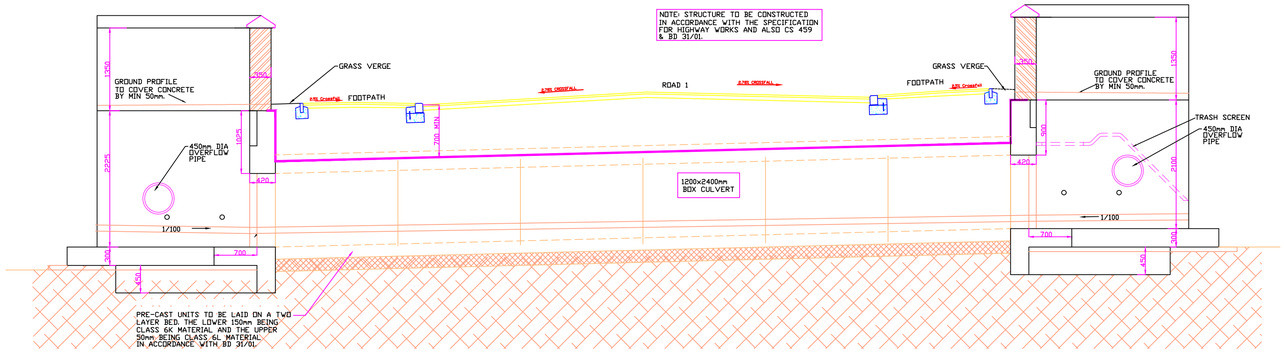
Pre-cast concrete box sections by others with modified end units.

ELEVATION B-B



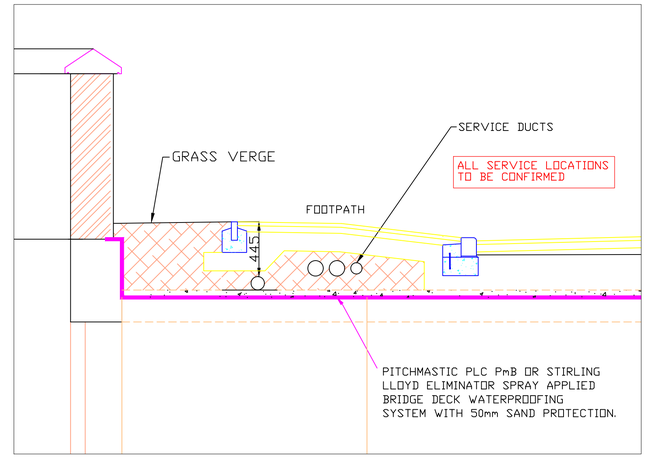
Pre-cast concrete box sections by others with modified end units.

ELEVATION A-A

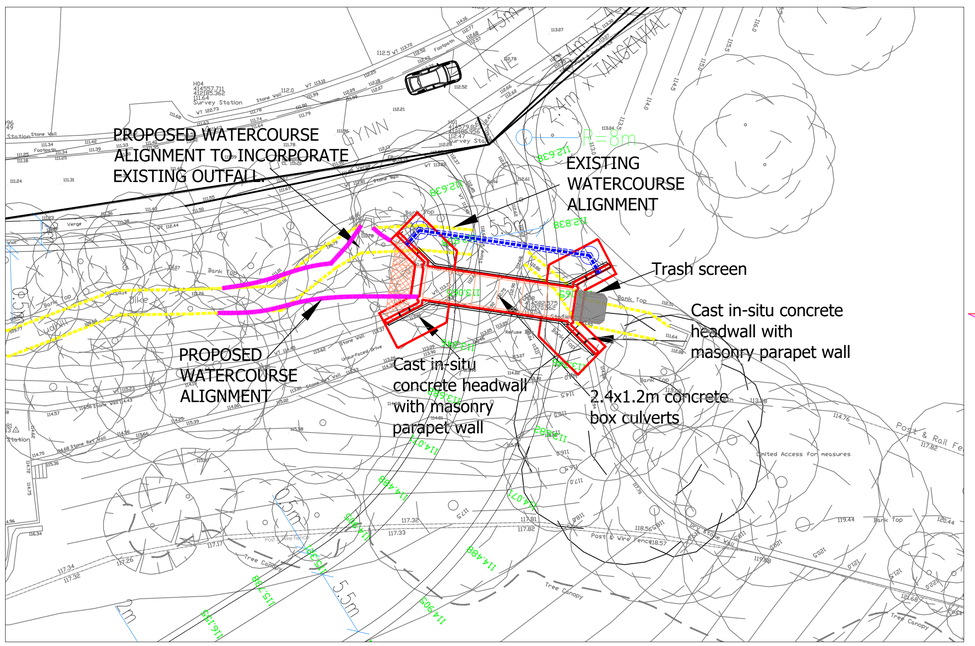


NOTE: SUITABILITY OF FORMATION LEVEL TO BE VERIFIED BY QUALIFIED ENGINEER AND CONFIRMED IN WRITING TO THE TECHNICAL APPROVAL AUTHORITY.

TYPICAL SECTION THROUGH CENTRE OF BOX CULVERT

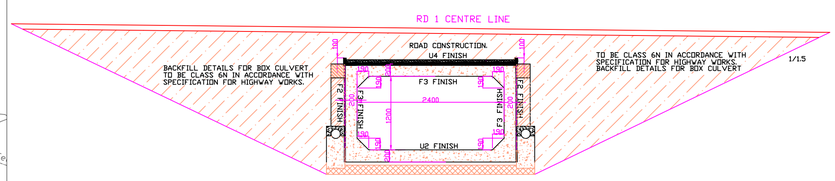


FOOTPATH DETAIL SCALE 1:25



CULVERT LOCATION PLAN
SCALE 1:200

NOTE:
1. EXPOSED ARRISES TO HAVE A 25mm x 25mm CHAMFER.
2. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS.



SECTION THROUGH BOX CULVERT

Rev A Overflow pipe added 16.01.26PW

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Detail
ROAD 1 CULVERT/HEADWALL CONSTRUCTION DETAILS (DRAWING 2OF2)

PRELIMINARY

Dwn	Chkd	Date	Scale	Dwg No.
PW		Mar 24	1:50 1:250	E24/8017/200_02A

APPENDIX E

PRELIMINARY DRAINAGE CALCULATIONS

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	75.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.350	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	4.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.090	4.00	128.769	1200	414646.149	412091.996	1.617
2	0.056	4.00	126.216	1200	414637.043	412131.133	1.466
3	0.037	4.00	126.434	1200	414637.843	412121.165	1.884
4	0.055	4.00	122.709	1200	414585.210	412126.975	1.459
5	0.045	4.00	122.959	1500	414586.009	412117.007	1.984
6	0.140	4.00	123.311	1500	414590.607	412059.691	3.055
7	0.083	4.00	122.809	1500	414587.219	412053.906	2.637
8	0.080	4.00	120.356	1500	414548.606	412046.570	3.459
9	0.144	4.00	119.904	1500	414535.189	412056.037	4.554
10	0.147	4.00	119.001	1500	414530.619	412116.865	4.058
11	0.063	4.00	118.070	1500	414540.097	412130.695	3.239
12	0.017	4.00	115.040	1500	414570.343	412149.658	3.353
13	0.000		115.000	2400	414569.186	412156.799	4.086
14			111.849		414566.971	412170.464	1.349

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	1	3	30.329	0.600	127.152	124.625	2.527	12.0	225	4.13	52.5
2.000	2	3	10.000	0.600	124.750	124.625	0.125	80.0	225	4.11	52.6
1.001	3	5	52.001	0.600	124.550	121.050	3.500	14.9	300	4.34	51.5
3.000	4	5	10.000	0.600	121.250	121.125	0.125	80.0	225	4.11	52.6
1.002	5	6	57.500	0.600	120.975	120.256	0.719	80.0	375	4.82	49.4
1.003	6	7	6.704	0.600	120.256	120.172	0.084	80.0	375	4.87	49.2
1.004	7	8	39.304	0.600	120.172	116.897	3.275	12.0	375	5.00	48.7
1.005	8	9	16.421	0.600	116.897	115.425	1.472	11.2	375	5.05	48.5
1.006	9	10	60.999	0.600	115.350	114.943	0.407	150.0	450	5.66	46.1

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	3.798	151.0	12.8	1.392	1.584	0.090	0.0	44	2.348
2.000	1.463	58.2	8.0	1.241	1.584	0.056	0.0	56	1.030
1.001	4.099	289.7	25.5	1.584	1.609	0.183	0.0	59	2.553
3.000	1.463	58.2	7.8	1.234	1.609	0.055	0.0	56	1.030
1.002	2.027	223.9	37.9	1.609	2.680	0.283	0.0	104	1.523
1.003	2.027	223.9	56.4	2.680	2.262	0.423	0.0	128	1.699
1.004	5.254	580.3	66.7	2.262	3.084	0.506	0.0	85	3.552
1.005	5.450	601.9	77.0	3.084	4.104	0.586	0.0	90	3.789
1.006	1.657	263.6	91.3	4.104	3.608	0.730	0.0	182	1.512

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.007	10	11	16.766	0.600	114.943	114.831	0.112	150.0	450	5.83	45.5
1.008	11	12	35.699	0.600	114.831	111.687	3.144	11.4	450	5.93	45.2
1.009	12	13	7.234	0.600	111.687	110.964	0.723	10.0	450	5.95	45.1
1.010	13	14	13.843	0.600	110.914	110.500	0.414	33.4	225	6.05	44.8

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.007	1.657	263.6	108.3	3.608	2.789	0.877	0.0	201	1.580
1.008	6.058	963.5	115.2	2.789	2.903	0.940	0.0	104	4.143
1.009	6.456	1026.8	117.1	2.903	3.586	0.957	0.0	102	4.353
1.010	2.270	90.3	116.2	3.861	1.124	0.957	0.0	225	2.312

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	30.329	12.0	225	Circular_Default Sewer Type	128.769	127.152	1.392	126.434	124.625	1.584
2.000	10.000	80.0	225	Circular_Default Sewer Type	126.216	124.750	1.241	126.434	124.625	1.584
1.001	52.001	14.9	300	Circular_Default Sewer Type	126.434	124.550	1.584	122.959	121.050	1.609
3.000	10.000	80.0	225	Circular_Default Sewer Type	122.709	121.250	1.234	122.959	121.125	1.609
1.002	57.500	80.0	375	Circular_Default Sewer Type	122.959	120.975	1.609	123.311	120.256	2.680
1.003	6.704	80.0	375	Circular_Default Sewer Type	123.311	120.256	2.680	122.809	120.172	2.262
1.004	39.304	12.0	375	Circular_Default Sewer Type	122.809	120.172	2.262	120.356	116.897	3.084
1.005	16.421	11.2	375	Circular_Default Sewer Type	120.356	116.897	3.084	119.904	115.425	4.104
1.006	60.999	150.0	450	Circular_Default Sewer Type	119.904	115.350	4.104	119.001	114.943	3.608
1.007	16.766	150.0	450	Circular_Default Sewer Type	119.001	114.943	3.608	118.070	114.831	2.789
1.008	35.699	11.4	450	Circular_Default Sewer Type	118.070	114.831	2.789	115.040	111.687	2.903
1.009	7.234	10.0	450	Circular_Default Sewer Type	115.040	111.687	2.903	115.000	110.964	3.586
1.010	13.843	33.4	225	Circular_Default Sewer Type	115.000	110.914	3.861	111.849	110.500	1.124

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
2.000	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
1.001	3	1200	Manhole	Adoptable	5	1500	Manhole	Adoptable
3.000	4	1200	Manhole	Adoptable	5	1500	Manhole	Adoptable
1.002	5	1500	Manhole	Adoptable	6	1500	Manhole	Adoptable
1.003	6	1500	Manhole	Adoptable	7	1500	Manhole	Adoptable
1.004	7	1500	Manhole	Adoptable	8	1500	Manhole	Adoptable
1.005	8	1500	Manhole	Adoptable	9	1500	Manhole	Adoptable
1.006	9	1500	Manhole	Adoptable	10	1500	Manhole	Adoptable
1.007	10	1500	Manhole	Adoptable	11	1500	Manhole	Adoptable
1.008	11	1500	Manhole	Adoptable	12	1500	Manhole	Adoptable
1.009	12	1500	Manhole	Adoptable	13	2400	Manhole	Adoptable
1.010	13	2400	Manhole	Adoptable	14		Junction	

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	✓
Rainfall Events	Singular	Drain Down Time (mins)	240
FSR Region	England and Wales	Additional Storage (m³/ha)	20.0
M5-60 (mm)	19.000	Starting Level (m)	
Ratio-R	0.350	Check Discharge Rate(s)	✓
Summer CV	0.750	Check Discharge Volume	✓
Winter CV	0.840	100 year 360 minute (m³)	
Analysis Speed	Normal		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)		Betterment (%)	0
SAAR (mm)		QBar	
Soil Index	1	Q 1 year (l/s)	
SPR	0.10	Q 30 year (l/s)	
Region	1	Q 100 year (l/s)	
Growth Factor 1 year	0.85		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)		Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m³)	

Node 13 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	110.914	Product Number	CTL-SHE-0115-8500-2400-8500
Design Depth (m)	2.400	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	8.5	Min Node Diameter (mm)	1200

Node 13 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	111.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	182.0	0.0	3.000	182.0	0.0	3.050	0.0	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.32%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	127.196	0.044	12.2	0.0984	0.0000	OK
15 minute summer	2	10	124.808	0.058	7.6	0.1094	0.0000	OK
15 minute winter	3	10	124.610	0.060	24.8	0.0911	0.0000	OK
15 minute summer	4	10	121.307	0.057	7.4	0.1073	0.0000	OK
15 minute winter	5	10	121.078	0.103	38.2	0.2291	0.0000	OK
15 minute winter	6	10	120.403	0.146	56.9	0.3931	0.0000	OK
15 minute winter	7	10	120.258	0.086	67.2	0.2071	0.0000	OK
15 minute winter	8	10	116.989	0.092	77.7	0.2042	0.0000	OK
15 minute winter	9	10	115.542	0.192	96.8	0.4601	0.0000	OK
15 minute winter	10	11	115.163	0.220	115.1	0.5485	0.0000	OK
15 minute winter	11	11	114.940	0.109	121.6	0.2356	0.0000	OK
15 minute summer	12	10	111.806	0.119	122.8	0.2231	0.0000	OK
180 minute winter	13	144	111.437	0.522	32.8	81.8945	0.0000	SURCHARGED
15 minute summer	14	1	110.500	0.000	6.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	3	12.2	2.274	0.081	0.1627	
15 minute summer	2	2.000	3	7.6	0.983	0.131	0.0773	
15 minute winter	3	1.001	5	24.7	2.515	0.085	0.5117	
15 minute summer	4	3.000	5	7.4	0.976	0.127	0.0758	
15 minute winter	5	1.002	6	38.0	1.185	0.170	1.8522	
15 minute winter	6	1.003	7	56.0	1.926	0.250	0.1977	
15 minute winter	7	1.004	8	66.9	3.352	0.115	0.7846	
15 minute winter	8	1.005	9	77.3	3.180	0.128	0.4104	
15 minute winter	9	1.006	10	95.2	1.359	0.361	4.2968	
15 minute winter	10	1.007	11	114.3	2.178	0.434	0.8944	
15 minute winter	11	1.008	12	122.0	3.929	0.127	1.1109	
15 minute summer	12	1.009	13	124.3	3.681	0.121	0.3678	
180 minute winter	13	Hydro-Brake®	14	7.2				141.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.32%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	127.222	0.069	29.8	0.1559	0.0000	OK
15 minute winter	2	10	124.845	0.095	18.6	0.1798	0.0000	OK
15 minute winter	3	10	124.645	0.095	60.7	0.1446	0.0000	OK
15 minute winter	4	10	121.344	0.094	18.2	0.1766	0.0000	OK
15 minute winter	5	10	121.142	0.167	93.8	0.3700	0.0000	OK
15 minute winter	6	10	120.506	0.250	140.1	0.6701	0.0000	OK
15 minute winter	7	10	120.314	0.142	166.9	0.3393	0.0000	OK
15 minute winter	8	10	117.041	0.144	193.1	0.3212	0.0000	OK
15 minute winter	9	10	115.712	0.362	240.5	0.8683	0.0000	OK
15 minute winter	10	10	115.332	0.389	286.5	0.9693	0.0000	OK
15 minute winter	11	10	115.007	0.176	302.7	0.3803	0.0000	OK
240 minute winter	12	236	112.381	0.694	78.3	1.2966	0.0000	SURCHARGED
240 minute winter	13	236	112.381	1.467	63.0	258.0161	0.0000	SURCHARGED
15 minute summer	14	1	110.500	0.000	7.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	3	29.8	2.922	0.197	0.3093	
15 minute winter	2	2.000	3	18.6	1.240	0.320	0.1501	
15 minute winter	3	1.001	5	60.7	3.235	0.209	0.9758	
15 minute winter	4	3.000	5	18.2	1.233	0.313	0.1476	
15 minute winter	5	1.002	6	93.7	1.492	0.418	3.5987	
15 minute winter	6	1.003	7	139.4	2.400	0.623	0.3887	
15 minute winter	7	1.004	8	166.6	4.330	0.287	1.5129	
15 minute winter	8	1.005	9	192.8	3.149	0.320	1.0624	
15 minute winter	9	1.006	10	237.8	1.687	0.902	8.6072	
15 minute winter	10	1.007	11	281.8	2.715	1.069	1.7036	
15 minute winter	11	1.008	12	301.2	4.672	0.313	2.3027	
240 minute winter	12	1.009	13	63.0	1.480	0.061	1.1462	
240 minute winter	13	Hydro-Brake®	14	7.2				175.6

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.32%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	127.232	0.080	38.6	0.1792	0.0000	OK
15 minute summer	2	10	124.861	0.111	24.0	0.2094	0.0000	OK
15 minute winter	3	10	124.656	0.106	78.5	0.1613	0.0000	OK
15 minute summer	4	10	121.359	0.109	23.6	0.2062	0.0000	OK
15 minute summer	5	10	121.171	0.196	121.3	0.4355	0.0000	OK
15 minute winter	6	10	120.553	0.297	181.9	0.7976	0.0000	OK
15 minute summer	7	10	120.333	0.161	216.4	0.3861	0.0000	OK
15 minute winter	8	10	117.084	0.187	251.1	0.4170	0.0000	OK
15 minute winter	9	10	116.137	0.787	308.6	1.8880	0.0000	SURCHARGED
15 minute winter	10	11	115.500	0.557	361.0	1.3880	0.0000	SURCHARGED
15 minute winter	11	10	115.032	0.201	382.6	0.4333	0.0000	OK
360 minute winter	12	352	112.908	1.221	59.1	2.2816	0.0000	SURCHARGED
360 minute winter	13	352	112.908	1.994	116.8	356.3108	0.0000	SURCHARGED
15 minute summer	14	1	110.500	0.000	7.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	3	38.6	3.133	0.256	0.3738	
15 minute summer	2	2.000	3	24.0	1.319	0.413	0.1820	
15 minute winter	3	1.001	5	78.5	3.264	0.271	1.2692	
15 minute summer	4	3.000	5	23.6	1.313	0.406	0.1797	
15 minute summer	5	1.002	6	122.0	1.588	0.545	4.3682	
15 minute winter	6	1.003	7	181.0	2.569	0.809	0.4652	
15 minute summer	7	1.004	8	216.8	4.435	0.374	1.9528	
15 minute winter	8	1.005	9	247.0	3.170	0.410	1.3562	
15 minute winter	9	1.006	10	301.5	1.903	1.144	9.6649	
15 minute winter	10	1.007	11	359.7	2.748	1.364	1.9023	
15 minute winter	11	1.008	12	385.4	4.802	0.400	2.9500	
360 minute winter	12	1.009	13	116.8	1.492	0.114	1.1462	
360 minute winter	13	Hydro-Brake®	14	7.8				244.2

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.32%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	127.250	0.098	55.9	0.2208	0.0000	OK
15 minute winter	2	10	124.890	0.140	34.8	0.2660	0.0000	OK
15 minute winter	3	10	124.679	0.129	113.7	0.1972	0.0000	OK
15 minute winter	4	10	121.389	0.139	34.2	0.2614	0.0000	OK
15 minute summer	5	10	121.225	0.250	175.9	0.5546	0.0000	OK
15 minute summer	6	10	120.709	0.453	261.6	1.2158	0.0000	SURCHARGED
15 minute summer	7	10	120.365	0.193	312.5	0.4626	0.0000	OK
15 minute winter	8	11	117.876	0.979	361.7	2.1823	0.0000	SURCHARGED
15 minute winter	9	11	117.137	1.787	419.2	4.2894	0.0000	SURCHARGED
15 minute winter	10	11	115.904	0.961	499.6	2.3944	0.0000	SURCHARGED
15 minute summer	11	10	115.071	0.240	527.7	0.5165	0.0000	OK
480 minute winter	12	464	113.990	2.303	68.7	4.3041	0.0000	SURCHARGED
480 minute winter	13	464	113.990	3.076	140.8	558.1497	0.0000	SURCHARGED
15 minute summer	14	1	110.500	0.000	7.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	3	55.9	3.447	0.370	0.4919	
15 minute winter	2	2.000	3	34.8	1.434	0.598	0.2426	
15 minute winter	3	1.001	5	113.7	3.265	0.392	1.8621	
15 minute winter	4	3.000	5	34.2	1.429	0.588	0.2393	
15 minute summer	5	1.002	6	174.7	1.695	0.780	5.4117	
15 minute summer	6	1.003	7	260.9	2.735	1.165	0.5612	
15 minute summer	7	1.004	8	312.3	4.404	0.538	3.2901	
15 minute winter	8	1.005	9	342.8	3.158	0.569	1.8112	
15 minute winter	9	1.006	10	421.6	2.661	1.599	9.6649	
15 minute winter	10	1.007	11	501.1	3.637	1.901	2.0463	
15 minute summer	11	1.008	12	529.5	4.899	0.550	4.1715	
480 minute winter	12	1.009	13	140.8	1.471	0.137	1.1462	
480 minute winter	13	Hydro-Brake®	14	9.6				344.7

APPENDIX F

SITE INVESTIGATION INFORMATION

NOTES

- TRIAL PIT
- TRIAL TRENCH
- TOPSOIL STRIP/SHAFT SEARCH
- PROBEHOLE
- APPROXIMATE SITE BOUNDARY

EXPLORATORY HOLE LOCATIONS HAVE BEEN SURVEYED IN (COORDINATES & GROUND LEVEL) ON COMPLETION

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

VIVLY LIVING

JOB TITLE

GYNN LANE, HONLEY

DRAWING TITLE

EXPLORATORY HOLE LOCATIONS (TPs & TTs)

DRAWN	DATE	STATUS
CC	09 08 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	09 08 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:1000	A3	4749/6	

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Trial Pit Log

Trialpit No
TP01
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414507.37 - 412128.96 Level: 118.40	Date 22/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 1.00	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 0.20	B J&T					Dark brown gravelly slightly clayey SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of sandstone. (TOPSOIL)
	0.50	D&B		0.40	118.00		Light brown sandy slightly clayey angular to subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)
				0.70	117.70		Moderately strong light brown SANDSTONE. Recovered as sandy angular to subangular tabular fine to coarse gravel with a medium cobble content. Cobbles are angular, tabular of sandstone. (SOFT BED FLAGS)
				1.00	117.40		*At 1.0m, unable to excavate further.* End of pit at 1.00 m

1
2
3
4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No **TP02**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414533.95 - 412125.12 Level: 118.60	Date 22/07/2024
Location: Honley		Dimensions (m): 2.1 × 0.6, Depth 1.90	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	118.30		Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to coarse of sandstone. (TOPSOIL)
	0.40	D	HVP=58	0.50	118.10		Firm light orangish brown gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to medium of sandstone. (COHESIVE RESIDUAL SOIL)
	0.70	D		1.50	117.10		Light greyish brown clayey slightly sandy angular to subangular fine to medium GRAVEL of sandstone lithorelicts. (GRANULAR RESIDUAL SOIL)
				1.90	116.70		Moderately strong light brown SANDSTONE. Recovered as sandy angular to subangular, tabular fine to coarse gravel with a low cobble content. Cobbles are angular of sandstone. (SOFT BED FLAGS) *End at 1.9m, unable to excavate further.* End of pit at 1.90 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No **TP03**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414566.42 - 412138.74 Level: 118.20	Date 22/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 2.30	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	J&T					Dark brown slightly gravelly slightly sandy CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
				0.30	117.90		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone. (COHESIVE RESIDUAL SOIL)
			HVP=60				
	0.70	D&B					
				1.10	117.10		Light greyish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of sandstone and sandstone lithorelicts. (GRANULAR RESIDUAL SOIL)
				2.00	116.20		Moderately strong light brown SANDSTONE. Recovered as sandy angular tabular fine to coarse gravel of sandstone with a low cobble content. Cobbles are angular of sandstone. (SOFT BED FLAGS)
				2.30	115.90		*At 2.3m, unable to dig further.* End of pit at 2.30 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No **TP04**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414581.72 - 412127.58 Level: 119.90	Date 22/07/2024
Location: Honley		Dimensions (m): 2.4 × 0.6, Depth 2.00	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	119.60		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to medium of sandstone. (TOPSOIL)
			HVP=63	0.80	119.10		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. (COHESIVE RESIDUAL SOIL)
	1.00	T		1.20	118.70		Black slightly clayey angular to subangular fine to medium GRAVEL of coal. (SOFT BED COAL)
	1.30	D		1.40	118.50		Firm light grey slightly sandy CLAY. (COHESIVE RESIDUAL SOIL)
				1.80	118.10		Light orangish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)
				2.00	117.90		Moderately strong light brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel with a medium cobble content. Cobbles are angular of sandstone. (COAL MEASURES) *At 2.0m, unable to excavate further.* End of pit at 2.00 m

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No **TP05**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414609.87 - 412133.68 Level: 122.95	Date 22/07/2024
Location: Honley		Dimensions (m): 2.3 × 0.6, Depth 3.10	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	J&T		0.30	122.65		Dark brown slightly clayey slightly gravelly SAND. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
			HVP=58	0.50	122.45		Firm light orangish brown gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)
	0.90	D&B		2.10	120.85		Light greyish brown clayey slightly sandy angular to subangular, tabular GRAVEL of sandstone and sandstone lithorelicts. (GRANULAR RESIDUAL SOIL)
				3.10	119.85		Dark grey carbonaceous MUDSTONE. Recovered as slightly sandy angular to subangular fine to coarse gravel. (COAL MEASURES)
							End of pit at 3.10 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP06
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414640.76 - 412129.01 Level: 128.05	Date 22/07/2024
Location: Honley		Dimensions (m): 3.5 × 0.6, Depth 3.90	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	127.75		Dark brown sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=50				Light greyish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of carbonaceous mudstone. Pockets of very gravelly clay. (GRANULAR RESIDUAL SOIL)
				3.90	124.15		End of pit at 3.90 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP07
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414552.46 - 412116.53 Level: 119.30	Date 22/07/2024
Location: Honley		Dimensions (m): 3.2 × 0.6, Depth 2.80	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	J&T		0.30	119.00		Dark grey clayey slightly gravelly SAND with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
	1.10	D	HVP=66	1.40	117.90		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone. (COHESIVE RESIDUAL SOIL)
				2.30	117.00		Light greyish brown sandy slightly clayey angular to subangular, tabular fine to coarse GRAVEL of sandstone and mudstone with a low cobble content. Cobbles are angular of sandstone. (GRANULAR RESIDUAL SOIL)
				2.80	116.50		Very weak light grey MUDSTONE. Recovered as slightly sandy angular, tabular fine to coarse gravel with a low cobble content. (COAL MEASURES) *From 2.3m, becoming difficult to excavate.* End of pit at 2.80 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP08
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414507.51 - 412097.40 Level: 118.65	Date 22/07/2024
Location: Honley		Dimensions (m): 2.1 × 0.6 Depth 1.60	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	J&T		0.30	118.35		Dark brown clayey slightly gravelly SAND. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
	0.60	D&B		1.10	117.55		Light brown slightly clayey sandy angular to subrounded fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)
				1.60	117.05		Moderately strong light brown SANDSTONE. Recovered as slightly sandy angular, tabular fine to coarse gravel and cobbles. (SOFT BED FLAGS) *At 1.6m, unable to excavate further.* End of pit at 1.60 m

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No
TP09
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414530.55 - 412099.56 Level: 119.05	Date 22/07/2024
Location: Honley		Dimensions (m): 2.3 × 0.6, Depth 2.20	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	118.75		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
	1.60	D		1.90	117.15		Light greyish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of sandstone and sandstone lithorelicts. (GRANULAR RESIDUAL SOIL)
				2.20	116.85		Weak light brown SANDSTONE. Recovered as a slightly sandy angular, tabular fine to coarse GRAVEL with a low cobble content. (SOFT BED FLAGS) *End at 2.2m, unable to excavate further.* End of pit at 2.20 m

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4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP10
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414558.09 - 412094.55 Level: 120.05	Date 22/07/2024
Location: Honley		Dimensions (m): 2.3 x 0.6, Depth 1.40	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 0.20	B J&T		0.30	119.75		Dark brown sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL)
			HVP=65	1.10	118.95		Firm light brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)
				1.40	118.65		Moderately strong light brown SANDSTONE. Recovered as slightly sandy slightly clayey angular to subangular, tabular fine to coarse gravel with a low cobble content. (SOFT BED FLAGS) *At 1.4m, unable to excavate further.* End of pit at 1.40 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No **TP11**

Sheet 1 of 1

Project Name:	Gynn Lane, Honley	Project No. 4749	Co-ords: 414591.90 - 412102.61 Level: 122.70	Date 22/07/2024
Location:	Honley	Dimensions (m): Depth 2.70	2.4 × 0.6	Scale 1:20
Client:	Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	122.40		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
	0.80	D		0.90	121.80		Light orangish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of sandstone lithorelicts. (GRANULAR RESIDUAL SOIL)
				2.00	120.70		Light greyish brown slightly sandy angular, tabular sandstone and mudstone. (GRANULAR RESIDUAL SOIL)
				2.70	120.00		Weak light brown SANDSTONE interbedded with carbonaceous MUDSTONE. Recovered as slightly sandy angular, tabular fine to coarse gravel with a low cobble content. (COAL MEASURES)
							End of pit at 2.70 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No **TP12**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414620.44 - 412106.67 Level: 128.15	Date 22/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 2.70	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	J&T					Dark brown slightly clayey slightly gravelly SAND. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
				0.30	127.85		Light greyish brown slightly sandy angular to subangular, tabular fine to coarse GRAVEL of carbonaceous MUDSTONE. (GRANULAR RESIDUAL SOIL)
	1.40	D&B					
				1.90	126.25		Weak dark grey carbonaceous MUDSTONE. Recovered as slightly sandy angular, tabular fine to coarse GRAVEL with a low cobble content. (COAL MEASURES)
				2.70	125.45		*At 2.7m, struggling to excavate further.* End of pit at 2.70 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP13
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414644.72 - 412103.86 Level: 130.55	Date 22/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 1.70	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	130.25		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=52	0.60	129.95		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
	0.70	T		0.90	129.65		Black COAL. Recovered as slightly sandy angular fine to coarse gravel. (MIDDLE BAND COAL)
				1.60	128.95		Light orangish brown sandy angular subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)
				1.70	128.85		Moderately strong light brown SANDSTONE. Recovered as slightly sandy angular, tabular fine to coarse gravel with a low cobble content. (MIDDLE BAND ROCK) *At 1.7m, unable to excavate further.* End of pit at 1.70 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP14
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414648.01 - 412072.62 Level: 130.85	Date 22/07/2024
Location: Honley		Dimensions (m): 2.3 × 0.6, Depth 1.70	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	J&T		0.40	130.45		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
	0.90	D	HVP=50	1.20	129.65		Firm light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of sandstone, mudstone and coal. (COHESIVE RESIDUAL SOIL)
	1.40	T		1.50	129.35		Black COAL. Recovered as angular fine to medium gravel. (MIDDLE BAND COAL)
				1.70	129.15		Moderately strong light brown SANDSTONE. Recovered as slightly sandy angular to subangular fine to coarse gravel with a low cobble content. (MIDDLE BAND ROCK) *At 1.7m, unable to excavate further.* End of pit at 1.70 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP15
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414656.28 - 412056.28 Level: 131.40	Date 23/07/2024
Location: Honley		Dimensions (m): Depth 2.20; 2.2 × 0.6	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	131.10		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (TOPSOIL)
			HVP=42	1.60	129.80		Firm light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
	2.00	T		1.90	129.50		Dark greyish brown slightly sandy slightly clayey angular, tabular fine to coarse GRAVEL of carbonaceous mudstone. (GRANULAR RESIDUAL SOIL)
				2.20	129.20		Black COAL. Recovered as angular fine to coarse gravel. (MIDDLE BAND COAL) *At 2.2m, unable to excavate further.* End of pit at 2.20 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP16
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414682.63 - 412067.41 Level: 133.50	Date 23/07/2024
Location: Honley		Dimensions (m): 1.6 × 0.6 Depth 1.10	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	133.30		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=1	0.70	132.80		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
				1.10	132.40		Dark greyish brown slightly sandy slightly clayey angular to subangular, tabular fine to coarse GRAVEL of mudstone. (GRANULAR RESIDUAL SOIL) *Gabion basket 0.5m high beneath retaining wall. Underlain by 0.2m of limestone hardcore.* End of pit at 1.10 m

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No
TP17
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414669.47 - 412110.42 Level: 131.70	Date 23/07/2024
Location: Honley		Dimensions (m): 1.5 × 0.6, Depth 1.20	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	131.50		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=68	0.90	130.80		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
				1.20	130.50		Dark brown slightly sandy slightly clayey angular to subangular fine to coarse GRAVEL of carbonaceous mudstone. (GRANULAR RESIDUAL SOIL) *Gabion wall in east of pit 2.0m above ground level, 0.5m basket beneath on limestone gravel sub base 0.4m thick.* End of pit at 1.20 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP18
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414663.09 - 412125.23 Level: 130.25	Date 23/07/2024
Location: Honley		Dimensions (m): 2.3 × 0.6 Depth 2.30	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	J&T					Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
				0.40	129.85		
	0.60	D	HVP=68				Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (COHESIVE RESIDUAL SOIL)
				1.30	128.95		Black COAL. Recovered as slightly sandy angular fine to coarse gravelly. (MIDDLE BAND COAL)
				1.60	128.65		Light orangish brown slightly sandy slightly clayey angular to subangular fine to medium GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)
				2.20	128.05		Moderately strong light brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel. (MIDDLE BAND ROCK)
				2.30	127.95		*At 2.3m, unable to excavate further.* End of pit at 2.30 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No **TP19**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414671.73 - 412087.52 Level: 132.45	Date 23/07/2024
Location: Honley		Dimensions (m): 2.1 × 0.6, Depth 3.70	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.00			Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (TOPSOIL)
				0.40	132.05		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of sandstone, mudstone and coal. (COHESIVE RESIDUAL SOIL)
			HVP=42				
	1.50	D&B		1.20	131.25		Dark grey clayey slightly sandy angular, tabular fine to coarse GRAVEL of carbonaceous mudstone. (GRANULAR RESIDUAL SOIL)
				2.60	129.85		Weak dark grey carbonaceous MUDSTONE. Recovered as sandy angular tabular fine to coarse gravel. (COAL MEASURES)
				3.70	128.75		End of pit at 3.70 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

Trial Pit Log

Trialpit No **TP20**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414616.31 - 412080.17 Level: 128.25	Date 23/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 3.40	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	127.95		Dark brown sandy slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to medium of sandstone and mudstone. (TOPSOIL)
	0.80	D					Light greyish brown slightly sandy slightly clayey angular to subangular, tabular fine to coarse GRAVEL of carbonaceous mudstone. (GRANULAR RESIDUAL SOIL)
				3.40	124.85		End of pit at 3.40 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No
TP21
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414617.51 - 412053.22 Level: 126.60	Date 23/07/2024
Location: Honley		Dimensions (m): 2.4 × 0.6, Depth 3.40	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	J&T		0.40	126.20		Dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=58	1.80	124.80		Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (COHESIVE RESIDUAL SOIL)
				3.40	123.20		Light greyish brown clayey slightly sandy angular to subangular, tabular fine to coarse GRAVEL of carbonaceous mudstone. (GRANULAR RESIDUAL SOIL)
							End of pit at 3.40 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No
TP22
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414608.72 - 412032.94 Level: 125.60	Date 23/07/2024
Location: Honley		Dimensions (m): 2.4 × 0.6, Depth 3.10	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 0.20	B J&T		0.30	125.30		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (TOPSOIL)
			HVP=48	1.70	123.90		Firm light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal. (COHESIVE RESIDUAL SOIL)
				2.20	123.40		Light greyish brown clayey slightly sandy angular, tabular fine to coarse GRAVEL of sandstone and mudstone. (GRANULAR RESIDUAL SOIL)
				3.10	122.50		Dark grey slightly sandy slightly clayey angular, tabular fine to coarse GRAVEL of carbonaceous mudstone. (COAL MEASURES) End of pit at 3.10 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No **TP23**

Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414575.22 - 412026.04 Level: 121.70	Date 23/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 4.00	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	121.40		Dark brown sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
	0.70	J&T		0.90	120.80		MADE GROUND: Light greyish brown sandy slightly clayey angular to subangular fine to coarse GRAVEL of mudstone, coal and sandstone. (GRANULAR MADE GROUND)
			HVP=54	3.30	118.40		Firm light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
				3.70	118.00		Black COAL. Recovered as slightly sandy angular to subangular fine to coarse gravel. (SOFT BED COAL)
				4.00	117.70		Medium strong light brown SANDSTONE. Recovered as slightly sandy angular to subangular fine to coarse gravel. (COAL MEASURES) End of pit at 4.00 m

1 2 3 4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

LITHOS CONSULTING

Trial Pit Log

Trialpit No
TP24
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414586.43 - 412048.77 Level: 122.50	Date 23/07/2024
Location: Honley		Dimensions (m): 2.4 x 0.6, Depth 3.10	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	J&T		0.30	122.20		Dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (TOPSOIL)
			HVP=52				Firm light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. (COHESIVE RESIDUAL SOIL)
	1.60	D		1.80	120.70		Light greyish brown slightly sandy angular and tabular fine to coarse GRAVEL of sandstone and mudstone. (GRANULAR RESIDUAL SOIL)
				3.10	119.40		End of pit at 3.10 m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

Trialpit No
TP25
Sheet 1 of 1

Project Name: Gynn Lane, Honley	Project No. 4749	Co-ords: 414587.44 - 412075.50 Level: 122.65	Date 23/07/2024
Location: Honley		Dimensions (m): 2.5 × 0.6, Depth 3.20	Scale 1:20
Client: Vivly Living			Logged CC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	122.35		Dark brown slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to medium of sandstone and mudstone. (TOPSOIL)
				3.20	119.45		Light orangish brown clayey angular, tabular fine to coarse GRAVEL of mudstone with pockets of firm clay. (GRANULAR RESIDUAL SOIL) End of pit at 3.20 m

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

Haigh Huddleston & Associates
Civil & Structural Engineering Consultants
Unit 4, Midgley Business Park, Bar Lane, Midgley WF4 4JJ
t 01924 574074 e info@haighhuddleston.co.uk

FAO: Paul Farndale

Kirklees Land Drainage

15 January 2026

Dear Paul

Re: Development at Gynn Lane, Honley for Vivly Homes

Further to your recent planning comments dated July 25 and our meeting with the local residents further site investigation work has been undertaken to determine if there was any existing land drainage associated with the former off site tank/ mill pond on the third party land.

The initial days' work involved the excavation of an extended trial trench along the western site boundary. The trial trench extended for an approximate distance of 47m. The majority of the trial trench encountered shallow sandstone strata at a depth of approximately 1-1.5m. Other than the previously encountered cast iron pipe no other discoloration in the trench sides was observed and the sandstone was intact throughout its entire length. Please note the trial trench extended approximately 15m beyond the return corner where the pond is situated. This was extended to investigate if the line indicated or the historical picture, forwarded to ourselves by the adjacent homeowner, was related to a drainage system. We can confirm that no features were observed, and we would suggest the line on the historical photograph is related to a boundary wall. Site photographs and a location plan are contained in appendix B attached.

The Properties below the site were visited and the surface water drainage (presumably from the mine adit) was identified running with 2 no. manholes in the garden of No. 16a directly below the development site.

The system was relatively shallow and entered the first manhole via an earth cascade before turning 90° in the second manhole with a 300mm dia clay pipe. At the time of our visit the flow was consistent with slight iron staining within each manhole. The source of the flow is likely to be from the mine adit previously identified on site in the Lithos investigation.

Haigh Huddleston & Associates
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A second days investigation was undertaken to determine if there was a buried tank below the off-site shallow dry mill pond. The area at the pond was dry even following the recent heavy rainfall and it is evident that no significant surface water flow enters this area at present time.

The area is heavily overgrown with ivy however a concrete base was proved. A small section was broken out and proved clay strata underlying. Further investigations revealed an 100mm outfall and a 150mm inlet from the shallow cast iron pipework. The inlet has previously had a concrete bung prevented entering the pond area. We would conclude that the cast iron pipework is now redundant and can be removed from the development area when exposed.

I trust the above record is satisfactory, should you have any queries please do not hesitate to contact me direct.

Yours sincerely

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Appendix A

Location Plan


DEPTH
MADE GROUND >3M.
OUTFALL
REDUNDANT
TRIAL TRENCH
300Ø
MH
MH
PARKING
CASCADE
MANHOLE
FROM FROM MINE ADIT.
INLET
CONCRETE
PLUG
150m CAST IRON
PIPEWORK ENTERING
FORMER MILL POND
NOW REDUNDANT
EXTENT OF TRIAL TRENCH
NO EVIDENCE OF ANY OTHER
PIPEWORK OR DRAINAGE FEATURES

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Appendix B

Site Photographs

Figure 1 Dry Mill Pond

Figure 2 Dry Mill Pond

Figure 3 Dry Mill Pond

Figure 4 100mm outfall from mill pond

Figure 5 Inlet from cast iron pipe with concrete plug

Figure 6 Inflow to upstream MH No. 16a

Figure 7 300mm 90deg bend House 16a

Figure 8 Cast Iron Pipe encountered within trial trench

Figure 9 Trial Trench

Figure 10 Trial Trench

Figure 11 Trial Trench

Figure 12 Trial Trench

Figure 13 Trench stepping down with made ground

Figure 14 Trail Trench - Pipe crosing

above, An aerial view of Grove mill at perhaps its greatest extent when run by Thomas Littlewood and Sons. The weaving sheds are to the top of the picture next to Lower Gynn cottages at Pound of Pepper on the bend in Gynn Lane, which runs up the left hand side of the picture. The mill dam sits high above the chimney and Lud Dyke ran across the centre of the site. The mill cottages are prominent in front of the mill. Grove House and garden are bottom right.

below, Thomas Littlewood (1836 - 1892) and his wife Zeruiah (1836 - 1915), photographed at a studio in Blackpool.

Thomas
Ann L
the centre
Littlewoo
Jagger L
Thomas
Zeruiah
who li
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T
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Figure 15 Historical Photo Showing Mill Pond and feature to the south