Carmarthenshire County Council

Machynys Hotel

Utilities and Drainage Strategy

ARP-ZZZ-ZZ-RP-C-00001

Rev 1 | 18 December 2020

Job number 278688-00

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ARUP

Contents

Appendices

1 Introduction

1.1 Report Scope

This report is to support an application for outline planning permission by Carmarthenshire County Council (CCC) for the development of:

- Up to 140 bedroom hotel;
- Associated car parking and access roads;
- new vehicular access off the B4304 road including an all movement junction;
- associated infrastructure;
- land profiling and associated landscaping;

at Machynys Central, Llanelli.

This report outlines the potential strategies to provide the proposed development with potable water and also the potential strategies for the collection and disposal of both storm and foul drainage.

1.2 Location and Description

The hotel site of Machynys Central is located on the Machynys promontory, to the south-east of Llanelli. The site is some 3.7 hectares in size, the centre is at Grid Reference 251186, 198308, see Figure 1 below. The site is bounded to the north by the B4304; to the south and east by Machynys Golf Club and to the west by undeveloped land earmarked for a residential development.

Figure 1 Site Location

The site comprises open, disused land consisting of low level rough grass/scrub, but heavily overgrown in the north. The site and surroundings have previously

been subject to historical industrial development, but has been disused for some time. Available topographical information and LIDAR information indicates that the site is generally flat on the eastern side, locally undulating with site levels varying between 5.1mAOD and 5.8mAOD. Ground level rises to 6.6mAOD in the west; a bund is located along the northern edge of the site, adjacent to the B4304 rising up to 8.1mAOD.

1.3 Development Proposals

The concept development proposals are illustrated on drawing AL-0-02 in Appendix C, consisting of a 140 bed hotel and associated car parking. The development will include a new primary access road to the east and secondary (emergency) access road to the west, both connected to the B4304 Llanelli Coastal Road to the north, together with landscaped areas. As indicated in the Flood Consequences Assessment, the buildings, car parking and site roads will need to be raised above 6.87mAOD to comply with the requirements of TAN15. Consequently, ground levels will need to be uplifted by between 0.3m and 1.9m across much of the site to allow development to proceed.

1.4 Other Reports

The following separate reports should be referenced for further information:

- Machynys Hotel: Geoenvironmental and Geotechnical Desk Study Note (Arup, December 2020)
- Machynys Hotel: Flood Consequences Assessment (Arup, December 2020).

2 Existing Infrastructure

2.1 Introduction

The following service providers were contacted to determine the location of existing assets within or adjacent to the plot boundary:

- Gas – Wales & West Utilities (WWU)
- Electricity – Western Power Distribution (WPD)
- Potable water supply – Dwr Cymru Welsh Water (DCWW)
- Storm and foul drainage – DCWW
- Telecommunications – BT

The plant records are contained in Appendix A and a summary of the findings is provided below.

2.2 Gas

No gas infrastructure exists within the site.

A 315mm PE low pressure pipe is located along the B4034 to the north of the development.

2.3 Electricity

A 33kV underground cable and 3No. 132kV underground cables are located along the northern boundary of the site within the southern verge of the B4304 Llanelli Coastal Road. An 11kV underground cable runs along the northern boundary of the site within the northern verge of the B4304.

3No. 11kV underground cables are located along the eastern side of the Machynys Golf Club access road to the east of the site.

2.4 Potable Water

DCWW records confirm that potable water supply mains are located within and around the vicinity of the sites. A potable water supply is located within the northern verge of the B4304 and another is located to the north east of the site, at the roundabout access.

The site is crossed by an abandoned 4inch water distribution main. Although the main is abandoned; it retains its status as a public asset and therefore has a 3m protection zone either side of its centreline. There may be an opportunity to seek ownership of the main through a deed of transfer – however transferral is not guaranteed.

2.5 Surface Water Drainage

Plant records confirm that public sewers exist to the south west of the development. This surface water sewer outfalls into the ditch to the south of the proposed hotel site.

2.6 Foul Drainage

Public foul sewers and a foul pumping station exist to the south west of the proposed development. The pressurised foul rising main from this pumping station heads north to the west of the proposed hotel site.

2.7 Telecommunications

BT telecommunication infrastructure currently exist within the site area. A cable with joint boxes is located within the southern verge of the B4304 to the north of the site. Another cable is shown on the plans which crosses the western edge of the site, traversing from the B4304 towards the Machynys golf course. BT plans received show this to be overhead.

3 Proposed Strategies

3.1 Introduction

Dwr Cymru Welsh Water have been contacted to determine whether sufficient capacity exists in the local network to supply the proposed development. A summary of the responses received to date is provided below.

Copies of the correspondence are contained in Appendix B.

3.2 Potable Water

The estimated peak water demand for the whole development is approximately 1l/sec. This estimate is preliminary and should be reviewed in subsequent design stages when further detailed information is available for occupancy and proposed hotel facilities.

The proposed strategy for supplying the development with potable water is from the DCWW potable water network. DCWW have proposed a connection to the 250mm watermain within the B4304, north east of the proposed site entrance.

3.3 Foul Drainage

3.3.1 Proposed Connection

DCWW have stated that the foul flows from the proposed development can be accommodated within the public sewerage system, see Appendix B. DCWW suggests a connection to the foul sewer currently servicing the existing Machynys South development. DCWW proposes that connection should be made to the 150mm sewer between manholes SS50988104 and SS5098911 located to the south west of the site. The sewer discharges into the adjacent Nicklaus Coast Villages Sewerage Pumping Station. However, we are awaiting a response from DCWW to confirm if the proposed neighbouring Machynys residential development has been included within their assessment.

A proposed concept drainage layout showing the foul connection is presented in Appendix C. It is proposed that the foul drainage will be transferred via both gravity and rising main to reach the DCWW network. The proposed foul pumping station adjacent to the hotel site has already been approved for planning, this will be used to transmit the flow from the Machynys Hotel to the DCWW sewer to the south west of the site.

3.3.2 Foul Betterment

There is limited capacity within Llanelli's local foul drainage network, therefore any new connections need to comply with a Memorandum of Understanding (MoU), dated September 2011, which is an agreement between Carmarthenshire County Council (CCC), Dŵr Cymru Welsh Water (DCWW) and National Resources Wales (NRW).

3.3.2.1 Memorandum of Understanding

The MoU sets the conditions required to allow new foul drainage connections into the local network. As part of the MOU, a comparable amount of surface water flow needs to be removed from the combined network to enable development to proceed. The recent development of the old Draka site to the north of Delta Lakes into a modern primary school and playing fields has removed a net flow of 80.82 l/s from the combined drainage network in the area.

It should be noted that it was CCC that delivered the original scheme of works to remove the surface water from the public combined network at Draka. This new hotel development is being proposed by CCC who want to utilise their previous investments and use drainage savings secured at Draka to deliver its regeneration proposals for the area.

The MoU sets out hydraulic flow data which is to be used for the "Betterment" calculations. The peak foul flow to be used for the comparison for a hotel is 0.021 l/head/second. This results in a peak flow rate for the proposed hotel development of 2.94 l/s, however the peak flow discharged into DCWW's external sewer network will be significantly less than this, since pumping stations store peak flows and transmit at a lower flow rate. The MOU Statement has been included in Appendix D.

3.4 Storm Drainage

Schedule 3 of the Flood and Water Management Act 2010 establishes SuDS Approving Bods (SABs) in local authorities in Wales. Since the 7th January 2019, developments greater than 100m^2 or developments containing more than one building will be required to submit a SAB application. This application requires developers to utilise Sustainable Drainage Systems (SuDS) in their surface water management for a development. As the area of proposed development is approximately 3.7Ha, the development requires a SAB application.

SuDS aim to manage rainfall on site using methods that mimic natural processes, by making use of the landscape and vegetation to control the flow, volume and quality of the surface water runoff. In addition to this, SuDS also provide amenity and biodiversity benefits by providing aesthetically pleasing and natural landscapes, and biodiversity benefits by creating habitats for wildlife and vegetated areas.

The Welsh Government's (WG) "Statutory Standards for Sustainable Drainage Systems" contains six standards, which details the requirements for any SuDS proposed. These sections are as follows:

S1. Runoff destination

S2. Hydraulic control

S3. Water quality

S4. Amenity

S5. Biodiversity

S6. Construction, operation and maintenance

These form a set of principles which must be considered in the design of the SuDS features in order to obtain approval by the SAB.

3.4.1 Runoff Destination

The WG's SuDS Standard S1 provides a discharge hierarchy for surface water from developments, as well as exemption criteria for each level that must be met before the next level can be considered. The discharge hierarchy is shown below:

- Level 1: Surface water runoff is collected for use;
- Level 2: Surface water runoff is infiltrated to ground;
- Level 3: Surface water runoff is discharged to a surface water body;
- Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;
- Level 5: Surface water runoff is discharged to a combined sewer.

The aim of this is to encourage developments to use runoff as a resource and ensure that runoff is sustainably managed to avoid any negative impacts from the development, such as increased flood risk. Using this hierarchical approach, it is proposed that the surface water runoff generated from the proposed development will be discharged to the existing drainage ditch to the south of the site, see drawing presented in Appendix C. This is on the basis that the reuse of water is likely to be unfeasible and that the existing ground conditions are likely to be unfavourable to allow infiltration due to the presence of made ground and low permeability alluvial soils beneath the site.

3.4.2 Hydraulic Control

The proposed development site is currently an unused area of land, although previously developed, it could be considered as a greenfield site in terms of drainage. The peak flow rate of the rainfall runoff from the undeveloped site is the Greenfield Runoff Rate (GRR).

Standard S2 requires that:

1. The first 5mm falling on the site is intercepted, therefore producing no runoff for small storm events.
2. The peak flow rate for the 1 in 1-year event for the development is controlled to mitigate negative impacts on the flood risk of the receiving water bodies.
3. The peak flow rates and runoff volume for the 1 in 100-year event for the development is controlled to mitigate negative impacts on the flood risk of the receiving watercourse, with a suitable allowance for climate change (assumed 40% at this stage).

To meet the interception requirements, appropriately sized SuDS features are required with sufficient retention time to allow the flow to be intercepted. To meet

these requirements, different SuDS components are proposed within the development, see drawing in Appendix C, these include the following:

- rain gardens / bioretention systems
- permeable paving
- dry pond
- swale

To manage the peak surface water runoff generated from the proposed development hardstandings, the flows will need to be restricted and attenuated to agreed rates with the SAB. The attenuation features will be needed to either provide storage for the surface water runoff to be discharged at greenfield runoff rate (GRR) or at the mean annual flood flow (Q_{bar}) for all storm events up to and including the 1 in 100-year return period including an allowance of 40% for climate change.

Until it can be demonstrated that the difference in pre and post runoff volume for the 1 in 100-year return period, 6 hour rainfall event can be discharged at 2 l/s/Ha or Q_{bar} whilst allowing the site to discharge at GRR, then hydraulic control measures are proposed to be discharged at Q_{bar} for all storm events up to and including the 1 in 100-year return period including an allowance of 40%.

The GRR and Q_{bar}, have been estimated as follow assuming the proposed illustrative site layout shown in Appendix C which has impermeable area of approximately 1.28 Ha contributing into the drainage catchment:

- 1 in 1 year: 5.8 l/s
- 1 in 30 year: 11.7 l/s
- 1 in 100 year: 14.3 l/s
- Q_{bar}: 6.6 l/s

The attenuation volume for the proposed development has been estimated to be 1280m³ assuming the discharge rate is limited to Q_{bar}. This will need to be reviewed in later design stages as the masterplan is developed.

3.4.3 Water Quality

The water quality standard, S3, requires treatment for surface water runoff to prevent negative impacts on the receiving waterbody in terms of its quality.

The proposed site will include non-residential car parking, roads and a service yard. The ‘Simple Index Approach' (SIA) could be used to analyse the proposed land use and SuDS components. The roads and service yard are likely to be the primary sources of pollution. Appropriate SuDS features will need to be selected to ensure anticipated pollutants from the development are sufficiently treated prior to discharge into the downstream receptor and will likely consist of:

- bioretention features / raingardens
- dry retention pond

- swale
- permeable paving

The development proposals must ensure that such features / processes are achieved prior to discharge into the existing ditch where possible.

Figure 2 shows an indicative cross section of a bioretention feature. The planting specification and protection measures to prevent pedestrian overrun adjacent to the biorientation systems are not shown but will need to be considered in subsequent design stages and Full SABS Applications. The protection measures will need to deter people from walking over the bioretention systems whilst allowing surface water runoff to flow into the SuDS features.

Bioretention features are proposed to meet the interception requirements for each of the catchments they serve including the service roads as well as the roof drainage. These will allow treatment of water through the filter media as close to source as possible.

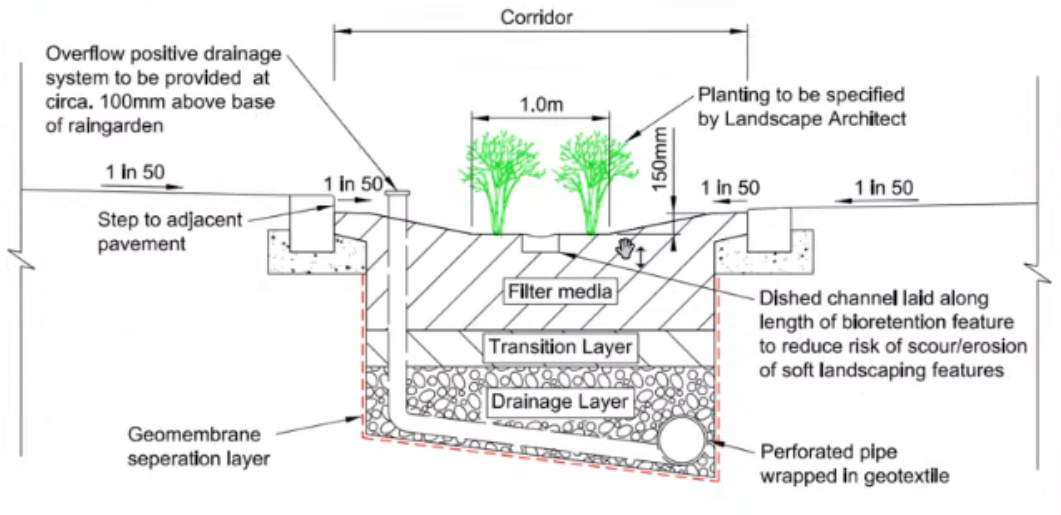


Figure 2 Typical Section through bioretention feature

Permeable paving is proposed with the car park layout. This will allow treatment of the rainfall to occur at source, removing suspended solids and hydrocarbons from the surface water prior to discharging to the retention pond and swale.

The surface water drainage will be discharged to the existing drainage ditch located along the southern boundary of the site, see drawing in Appendix C.

3.4.4 S4 – Amenity

The Welsh Standards S4 states that the surface water management systems should maximise amenity benefits.

The SuDS components proposed such as bioretention systems are well suited to providing significant amenity benefits through green, vegetated areas adjacent to the proposed development. This will be integrated with the wider landscaping proposals to ensure the amenity space can be maximised by the integration of other landscaping features such as seating and benches for people to use.

3.4.5 S5 - Biodiversity

The Standard S5 requires that surface water management systems also maximise biodiversity benefits.

Bioretention systems provide a significant contribution to biodiversity and quality habitats for wildlife. Proposed vegetation will be designed to support local diversity through liaison between landscape architects and horticultural/arboricultural experts where necessary.

3.4.6 Management and Maintenance Plan

The proposed drainage will be subject to adoption by Carmarthenshire County Council and DCWW. Consequently, the management and maintenance of the drainage will be subject to their specific management and maintenance requirements, however they are likely to include the following:

- Manholes and Catchpits – Inspections and cleaning with vacuum pumps, or manual removal if required
- Pipelines – Inspections, jet washing if necessary
- Headwalls – Inspections and manual sediment removal
- Attenuation ponds– Inspections, litter removal, grass cutting and shrub/weed management, sediment removal
- Swales & bioretention systems - Inspections, litter removal, grass cutting and shrub/weed management, sediment removal
- Vortex flow control devices – Inspections and cleaning with vacuum pumps, or manual removal if required.
- Road gullies, channel drains, flow paths – Cleaning with vacuum pumps, litter/debris removal, sediment removal

All drainage should be inspected and maintained regularly during construction prior to final handover. During the first year of operation, regular monitoring of the system will be required to identify any changes, issues or modifications required to optimise the system. Inspection should also be undertaken immediately after a significant storm event. These reviews will help confirm the performance of the system, it will also identify potential system failures such as blockages, poor infiltration and poor water quality.

4 Conclusion

This report has identified that some utilities exist within or immediately adjacent to the site. Those believed to be located within the site and need further consideration in the next design stages include:

- Foul water rising main from southern pumping station
- Potable water main (believed to be redundant)
- Telecommunications Infrastructure.

Proposed strategies have been proposed within the report for the supply of potable water and drainage.

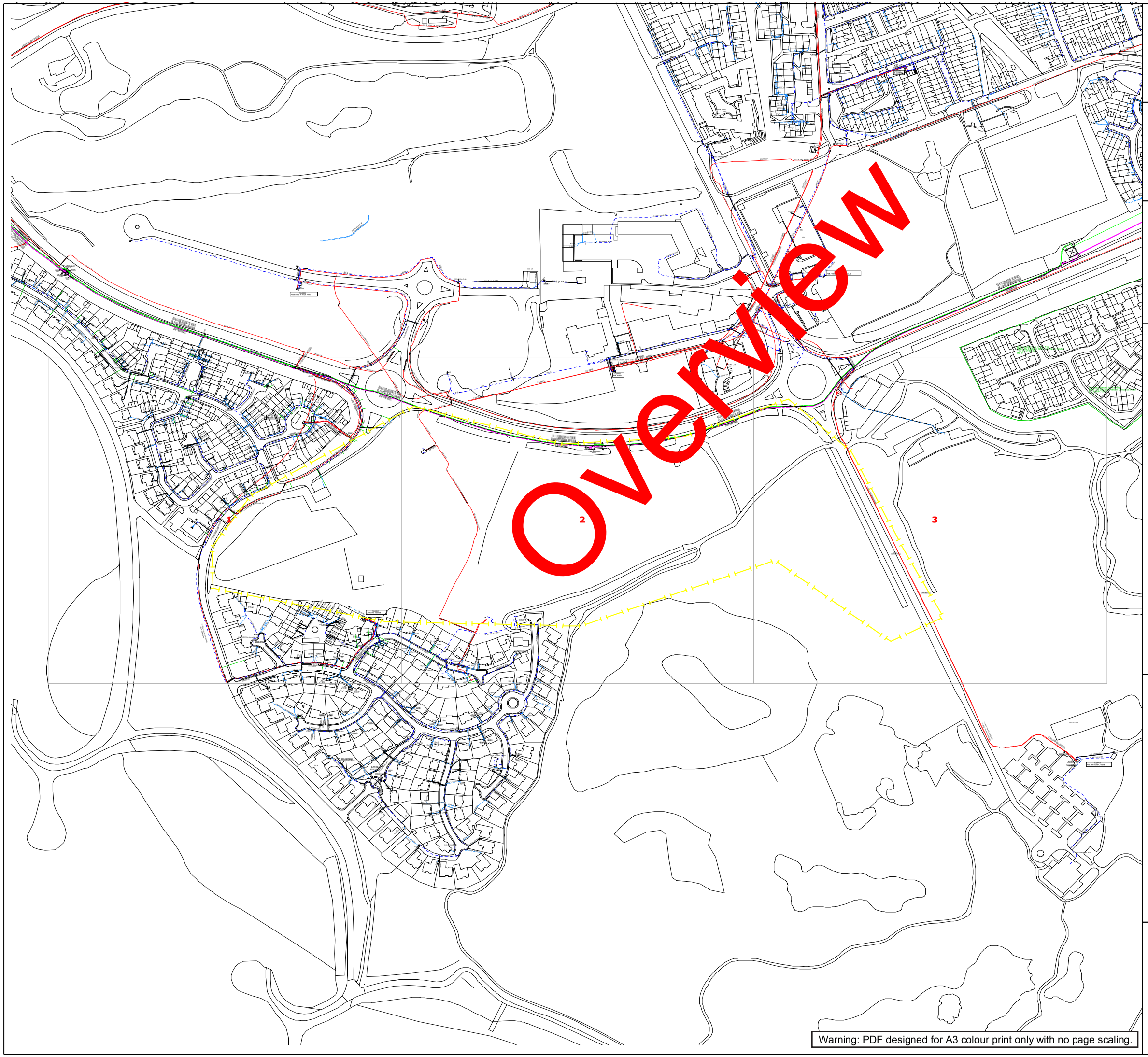
The proposed foul and surface water drainage strategy for the hotel site are shown on the drawing presented in Appendix C. The point of connection for the foul drainage to the DCWW network is to the 150mm sewer to the south west of the site, adjacent to the existing Nicklaus Coast Villages Sewerage Pumping Station. DCWW are still to confirm that the proposed neighbouring residential development has been included in their assessment.is yet to be confirmed by DCWW

Sustainable drainage measures are proposed to deal with surface water discharge. Rain gardens, swales, permeable paving and an attenuation ponds are proposed to treat and attenuate flows before discharge into the existing watercourse to the south of the site.

Appendix A

Existing plant records

A1



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Requested by: Mrs Carol-Ann Meredith
Your Scheme/Reference: Machynts Hotel

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Overhead Line

Underground Cable

PL
Service
LV
HV (11kV)
HV (33kV)
HV (66kV)
HV (132kV)

SURF Telecoms (S — S)

Pilot Cables (P — P)

Link Box

PME Earth

Pole Mounted Transformer

Site Location

Line/Area

Underground Earth (E)

Ground Mounted Transformer

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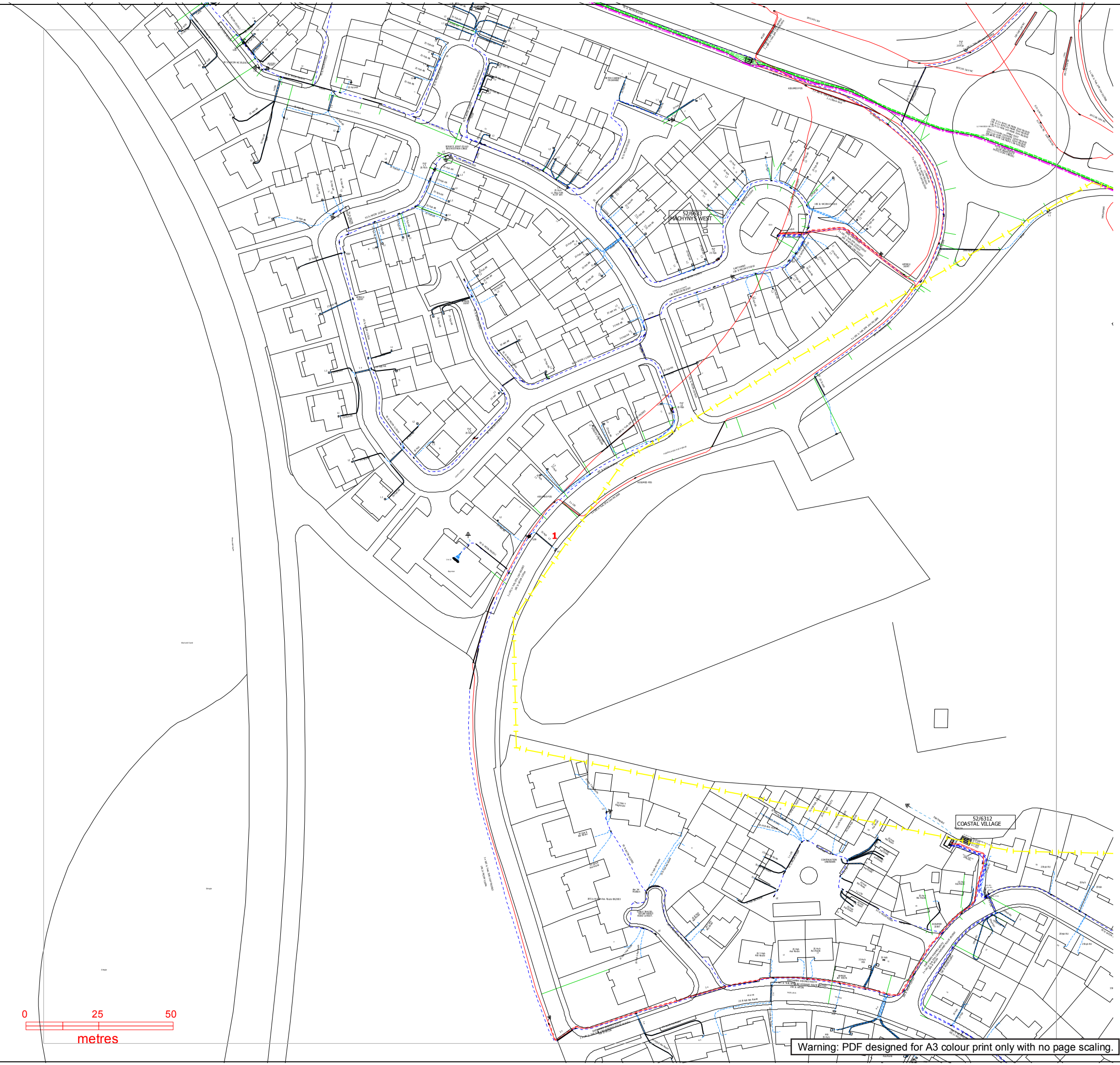

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1:1250 Area or Circle dig site
1:500 Line dig site

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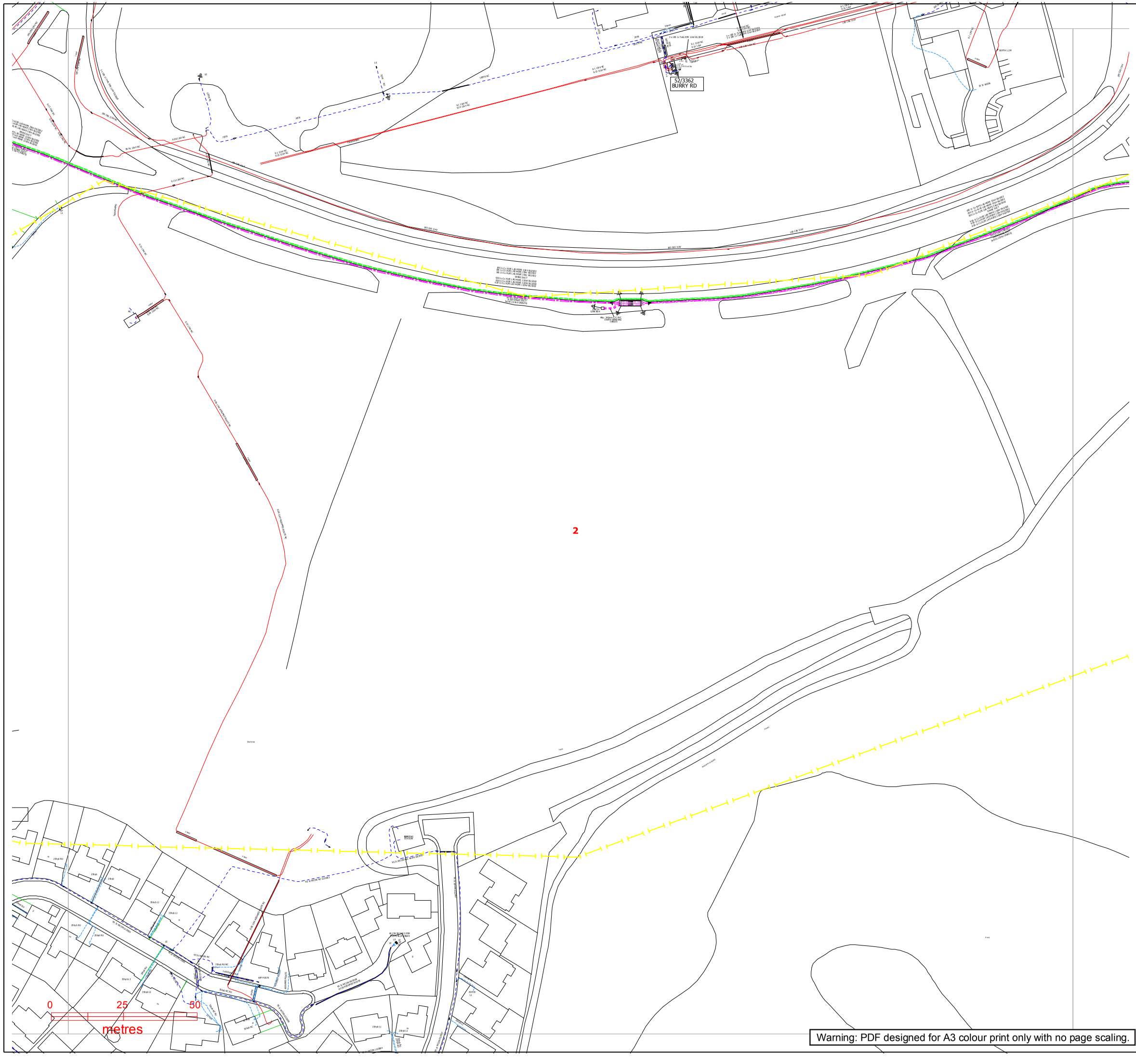

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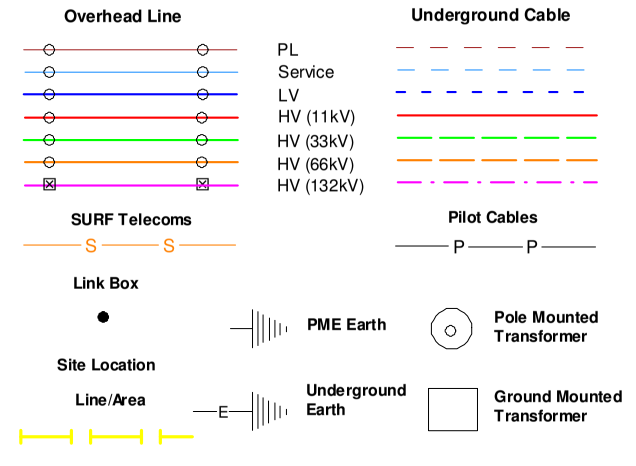

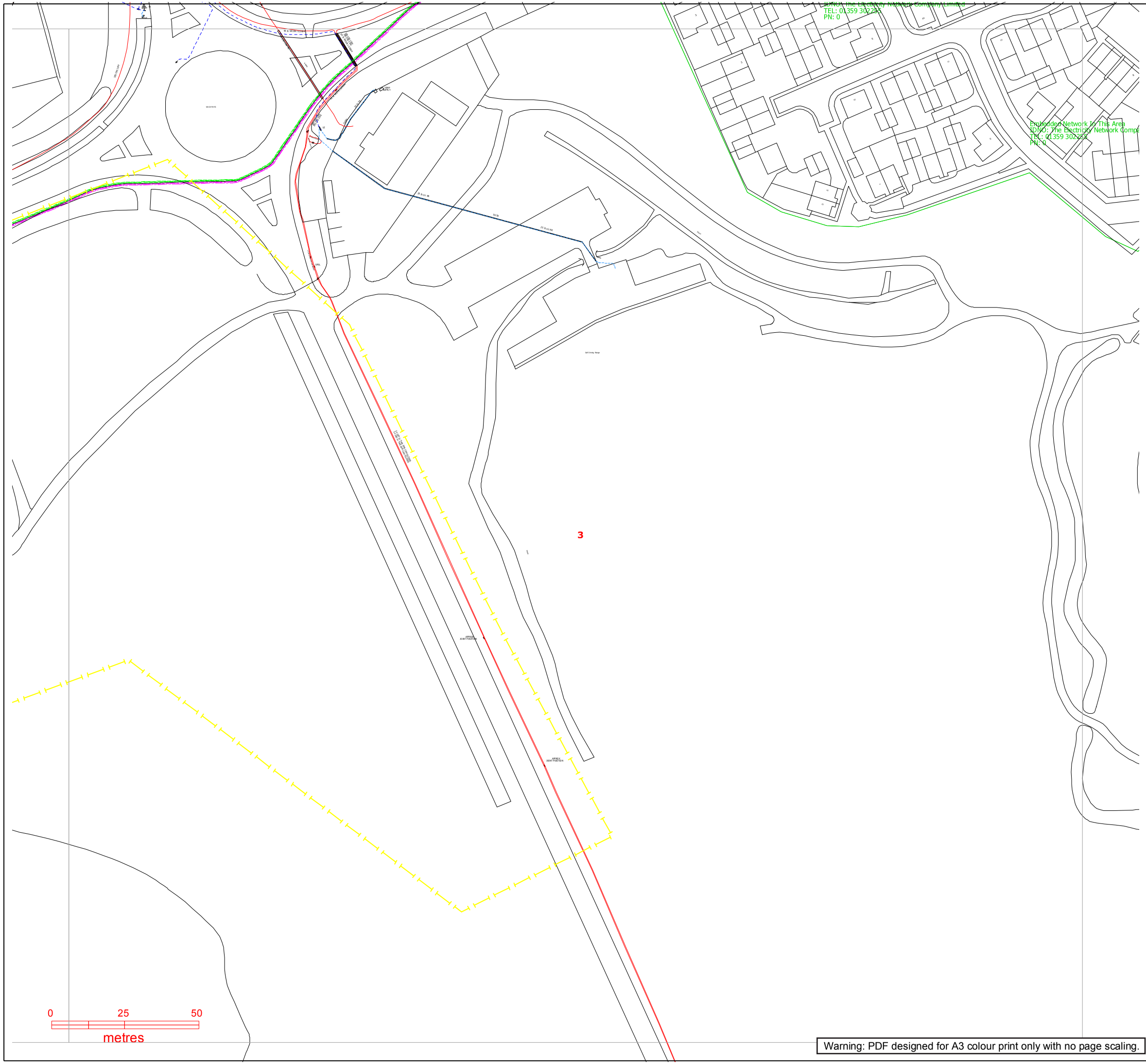

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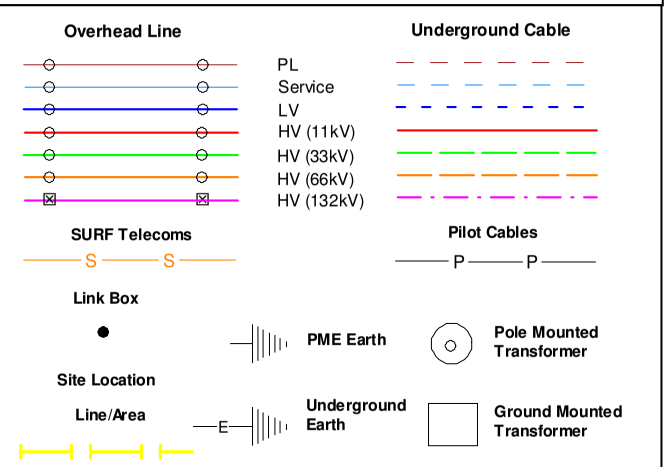

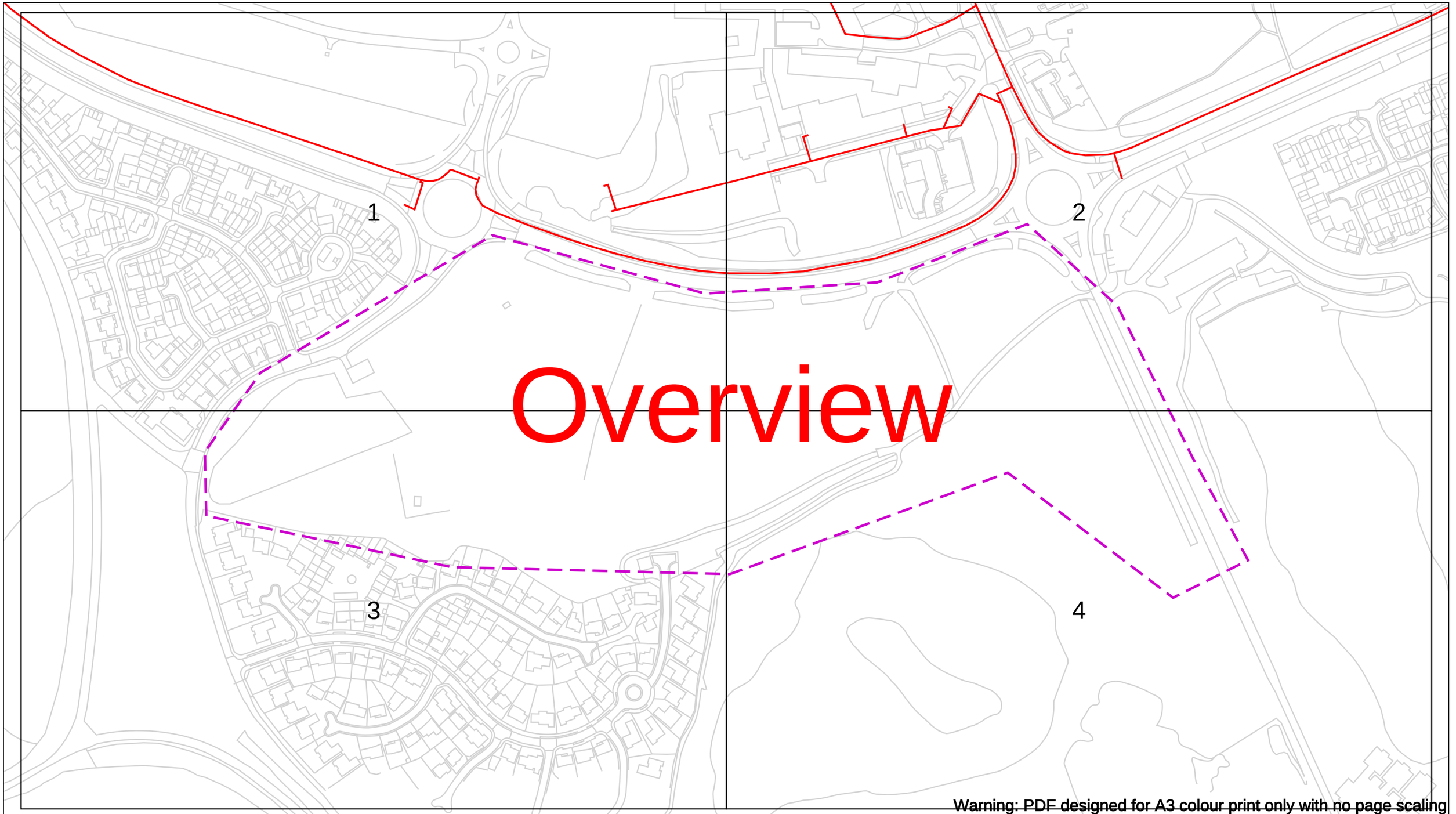

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Date Requested: 07/12/2020
Job Reference: 20733706
Site Location: 250983 198255
Requested by:
Mrs Carol-Ann Meredith
Your Scheme/Reference:
Machynts Hotel

Scale: 1:2563 (When plotted at A3)

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- Service pipes, valves, syphons, stub connections etc. may not be shown but their presence should be anticipated
- You must use safe digging practices in accordance with HS(G)47 to establish the actual position of mains, services and other apparatus before any mechanical excavation is used
- It is your responsibility to ensure this information is provided to all persons working near our plant
- If in doubt call the WWU dig team on 02920 278912

In case of an emergency call 0800 111 999

Dig Sites

Area: Line:

- Low Pressure (LP) 21mbar – 75mbar
- Medium Pressure (MP) 350mbar – 2bar
- Intermediate Pressure (IP) 2bar – 7bar
- High Pressure (HP) >7bar

- Line/Fire Valve
- Governor Station
- Change of Diameter
- End Cap
- Depth of cover

WALES&WEST UTILITIES

Smell gas?
Call the Gas Emergency Service on 0800 111 999.

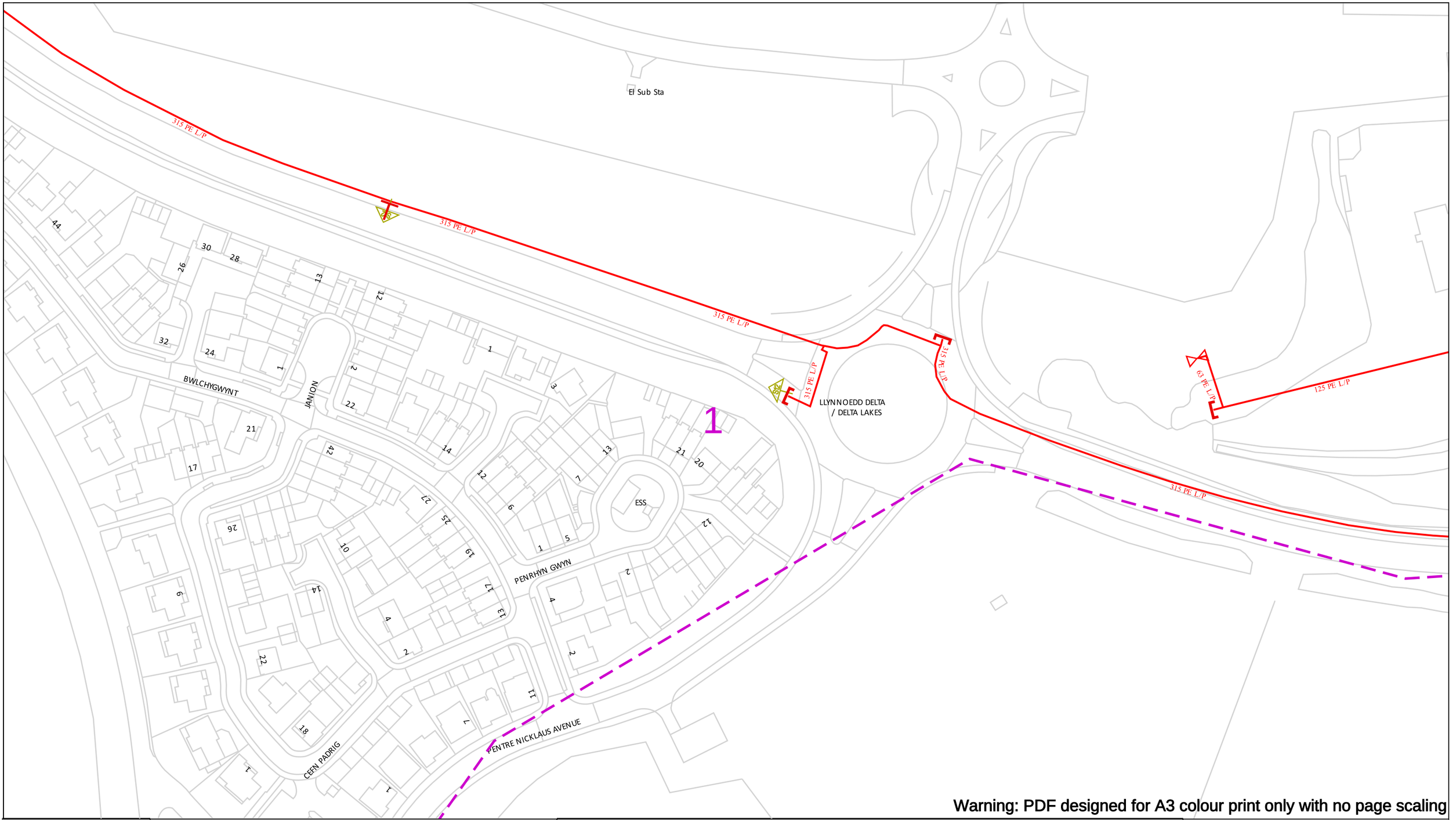
Dial before you dig

Dial
Call 029 2027 8912 before you start work.

Investigate
Before you dig, make sure you know what's below.

Go ahead
Done your research? Now you can dig safely.

We need 10 days' notice



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100m

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Low Pressure (LP) 21mbar – 75mbar
Medium Pressure (MP) 350mbar – 2bar
Intermediate Pressure (IP) 2bar – 7bar
High Pressure (HP) >7bar

Line/Fire Valve
Governor Station
Change of Diameter
End Cap
Depth of cover

WALES&WEST UTILITIES

Smell gas?
Call the Gas Emergency Service on 0800 111 999.

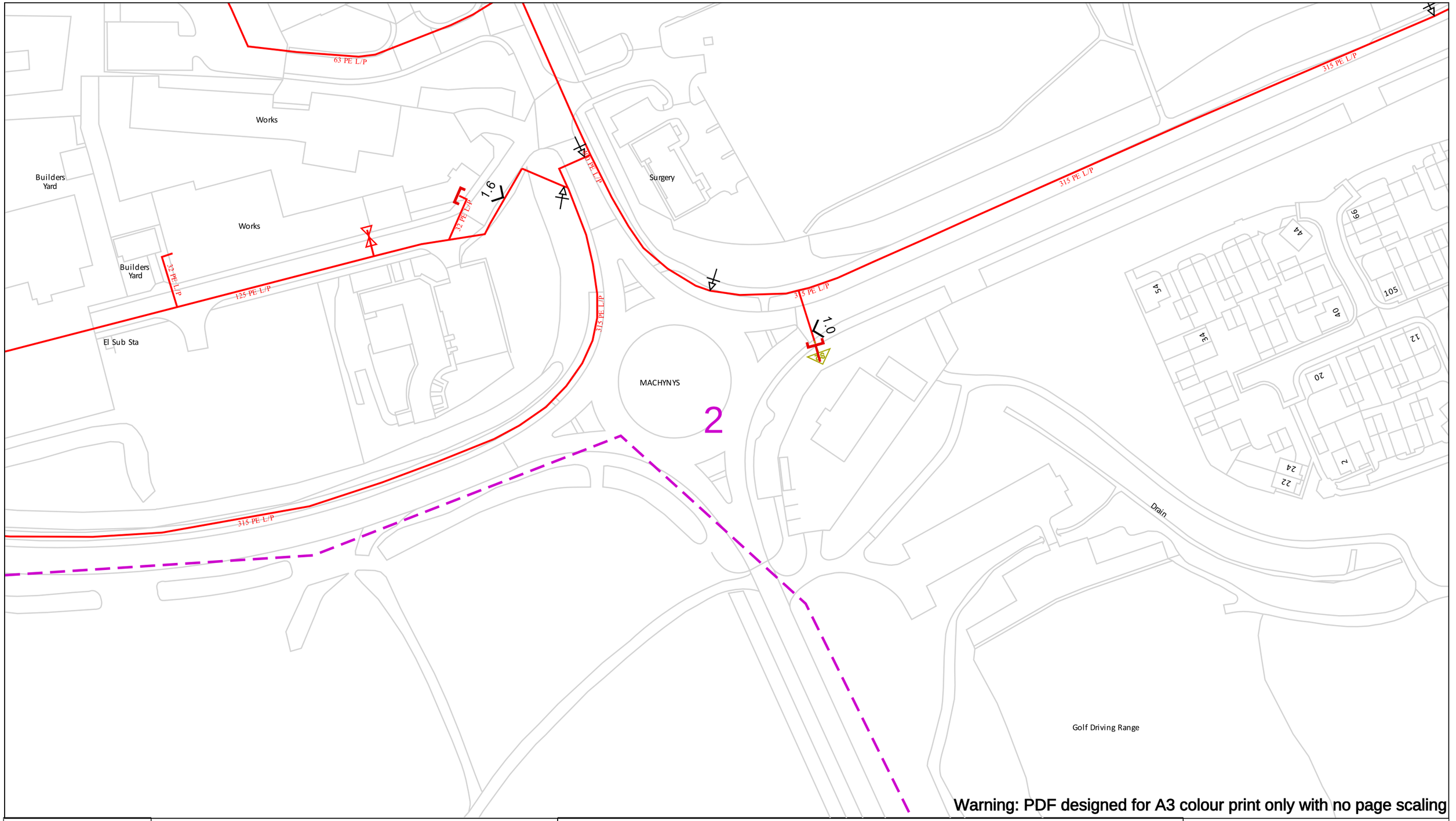
Dial before you dig

Dial
Call 029 2027 8912 before you start work.

Investigate
Before you dig, make sure you know what's below.

Go ahead
Done your research? Now you can dig safely.

We need 10 days' notice



Warning: PDF designed for A3 colour print only with no page scaling

Contact Us
Mapping Enquiries: 02920 278 912
General Enquiries: 0800 912 2999

Date Requested: 07/12/2020
Job Reference: 20733706
Site Location: 250983 198255
Requested by:
Mrs Carol-Ann Meredith
Your Scheme/Reference: Machynts Hotel

Scale: 1:1250 (When plotted at A3)

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed
- The plan only shows those pipes owned by Wales & West Utilities (WWU) as its role as a licensed Gas Transporter
- Service pipes, valves, syphons, stub connections etc. may not be shown but their presence should be anticipated
- You must use safe digging practices in accordance with HS(G)47 to establish the actual position of mains, services and other apparatus before any mechanical excavation is used
- It is your responsibility to ensure this information is provided to all persons working near our plant
- If in doubt call the WWU dig team on 02920 278912

In case of an emergency call 0800 111 999

100m

Dig Sites

Area:

Line:

Low Pressure (LP) 21mbar – 75mbar

Medium Pressure (MP) 350mbar – 2bar

Intermediate Pressure (IP) 2bar – 7bar

High Pressure (HP) >7bar

Line/Fire Valve

Governor Station

Change of Diameter

End Cap

Depth of cover

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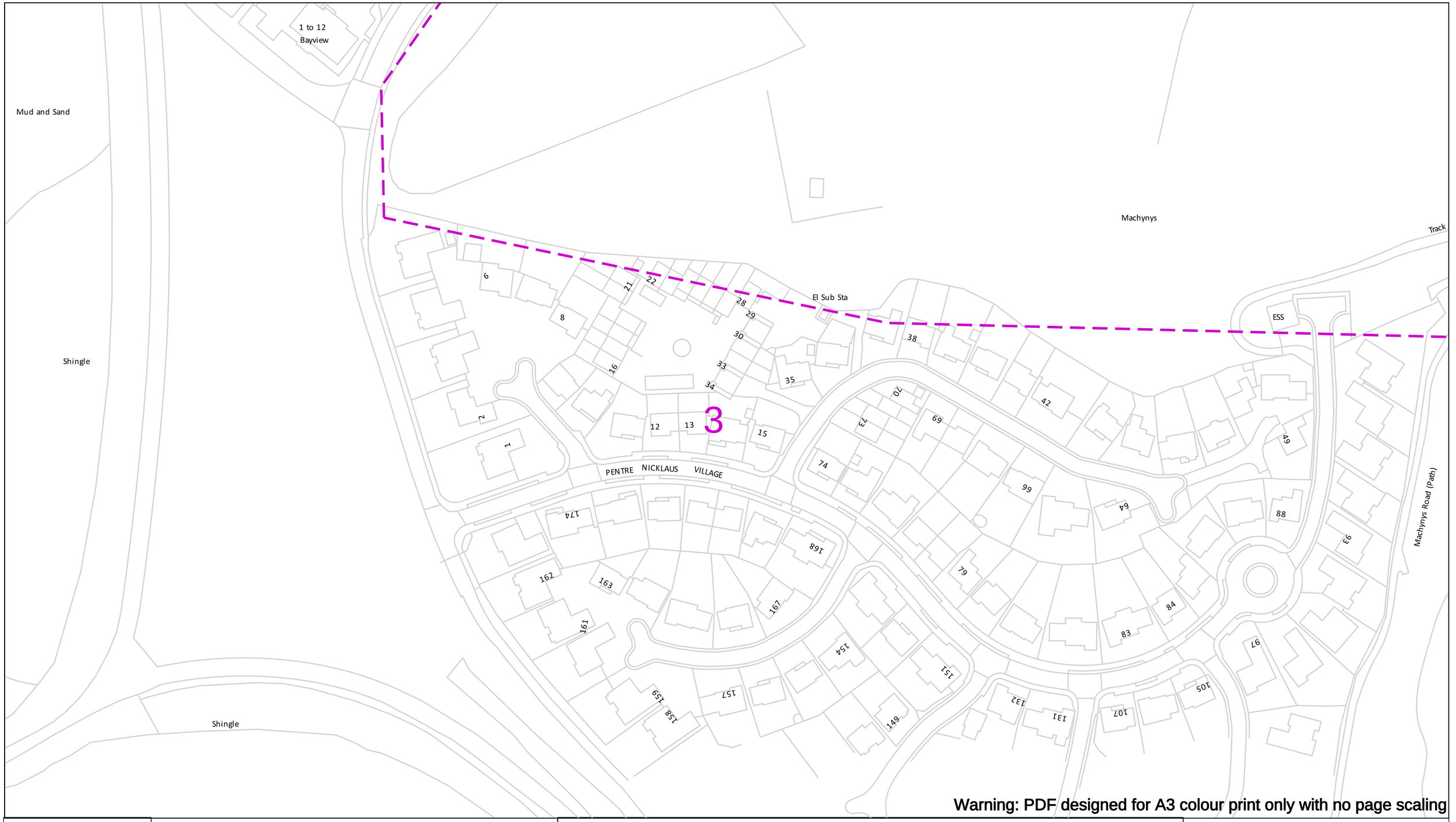

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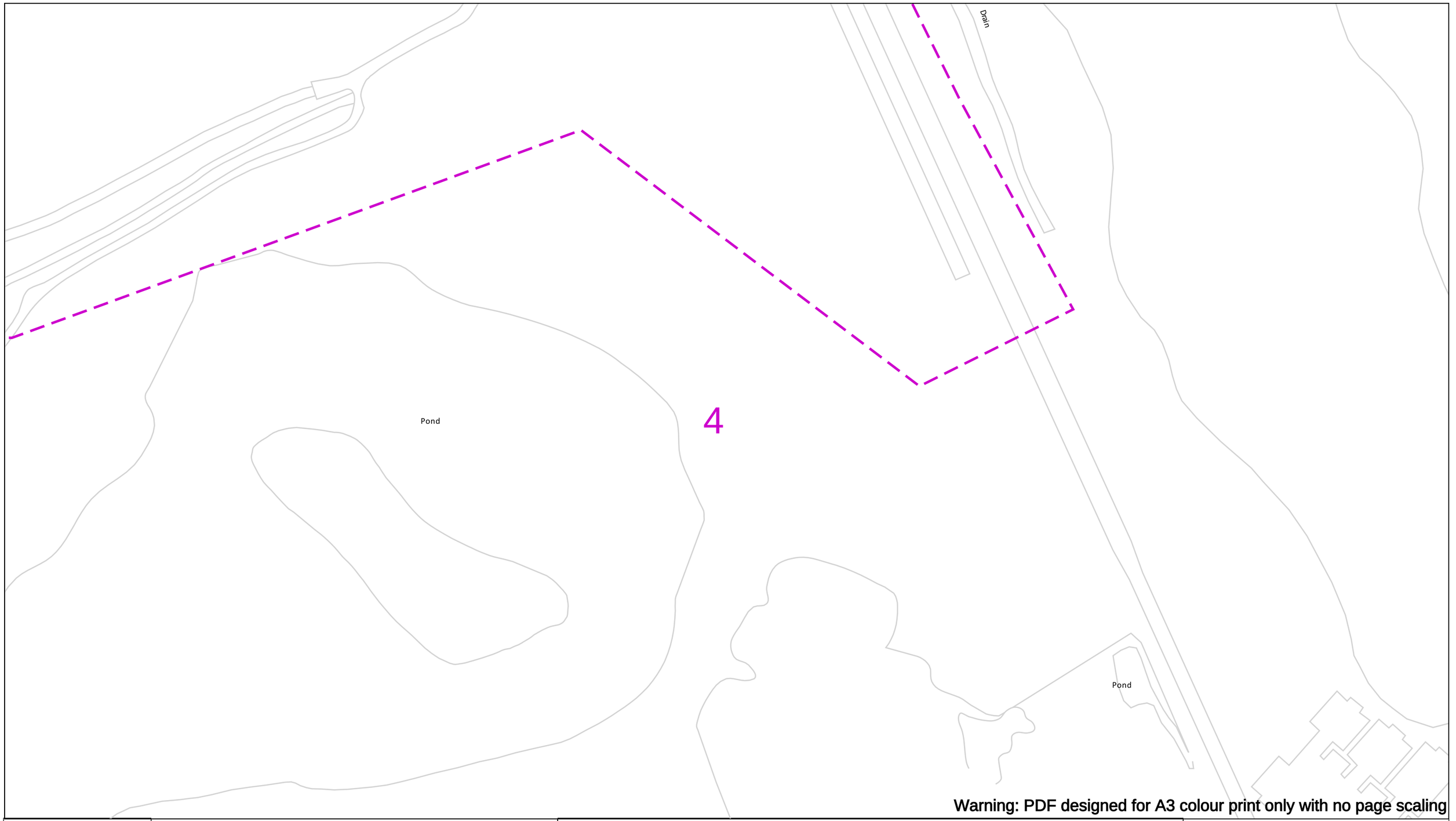

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Done your research? Now you can dig safely.

We need 10 days' notice

Dŵr Cymru
Welsh Water

PPA0005360

N
W E
S

LEGEND(Representative of most common features)

Waste network:

- Foul chamber
- Surface water chamber
- Combined chamber
- Combined sewer overflow
- Special purpose chamber
- Treatment works
- Pumping station
- Outfall
- Lamphole
- Storm Overflow
- Rising main
- Gravity sewer
- Private sewer
- Private sewer subject to Sect. 104 adoption agreement
- Private Sewer Transfer
- Lateral Drain
- Inspection Chamber

NB: Sewer symbol colour indicates the type.

RED - Combined
GREEN - Surface Water
BROWN - Foul
Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Map Ref:	251376,198228
Map scale:	1:1250
Printed by:	Lester Barrow
Printed on:	09 Dec 2020

Dŵr Cymru
Welsh Water

PPA0005360

N
W E
S

LEGEND

Clean network:

- Sluice valve
- Pressure reducing valve
- Meter
- Bulk meter
- Hydrant (FH)
- Cap end
- Air valve
- Stop tap
- Water Treatment Works
- Water Pumping Station
- Existing main
- Non-operational main
- Raw Water

NB: Water main symbol colour indicates the type.

LIGHT BLUE - Trunk
DARK BLUE - Distribution
YELLOW - Raw Water

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Map Ref:	251206,198197
Map scale:	1:1250
Printed by:	Lester Barrow
Printed on:	09 Dec 2020

(c) Crown copyright and database rights 2020 Ordnance Survey 100019209 | Date: 07/12/20 | Scale: 1:1250 | Map Centre: 251162,198309 | Data updated: 01/10/20 | Telecoms Plan A3

Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the "Affected Postcodes.pdf", which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2020 Ordnance Survey 100019209.

Duct, Trench | Chamber | Cabinet

carol-ann.meredith@arup.com

Virgin media

Appendix B

Correspondence with service providers

B1

Dŵr Cymru
Welsh Water

Developer Services
PO Box 3146
Cardiff
CF30 0EH

Tel: +44 (0)800 917 2652
Fax: +44 (0)2920 740472
E.mail: developer.services@dwrcymru.com

Gwasanaethau Datblygu
Blwch Post 3146
Caerdydd
CF30 0EH

Ffôn: +44 (0)800 917 2652
Ffacs: +44 (0)2920 740472
E.bost: developer.services@dwrcymru.com

Mrs Katie Amos
Ove Arup
4 Pierhead Street
Cardiff
CF10 4QP

Date: 08/12/2020
Our Ref: PPA0005360

Dear Mrs Amos

Grid Ref: SS509983 251194 198277
Site Address: Machynys Hotel, B4304, Llanelli, Carmarthenshire
Development: Proposed Hotel

I refer to your pre-planning enquiry received relating to the above site, seeking our views on the capacity of our network of assets and infrastructure to accommodate your proposed development. Having reviewed the details submitted I can provide the following comments which should be taken into account within any future planning application for the development.

APPRAISAL

Firstly, we note that the proposal relates to a development of 140 bed hotel and acknowledge the site comprises of a potential windfall development with no allocated status in the Local Development Plan (LDP). Accordingly, whilst it does not appear an assessment has been previously undertaken of the public sewerage system, we offer the following comments as part of our appraisal of this development.

Please note, notwithstanding the following assessment, we would advise there is also a mandatory requirement to undertake pre-application consultation with all 'Specialist Consultees', including Dwr Cymru Welsh Water as the statutory water and sewerage undertaker, in accordance with Schedule 4 of Town & Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016. As a major development, amounting to more than 1000 sqm, you will be statutorily required to consult Welsh Water and a substantive response will be issued within 28 days from the date of the notice as per the requirements of Article 2E.

Public Sewerage Network

The proposed development site is located in the immediate vicinity of a separate sewerage system, which drains to Pentre Nicklaus Coast Village SPS and then on to Llanelli Wastewater Treatment Works (WwTW).

This catchment discharges into national and international designated waters, comprising the Loughor Estuary which forms part of the Carmarthen Bay & Estuaries European Marine Site and is the collective name for three European 'Natura 2000' designated areas, namely Carmarthen Bay & Estuaries Special Area of Conservation, Carmarthen Bay Special Protection Area and Burry Inlet Special Protection Area.

A key fundamental issue associated with any proposed development(s) located on both the Carmarthenshire and Swansea side of the Estuary is the potential impact of any revised or additional water discharges, either foul of surface water, will have on the local drainage systems and ultimately the designated waters. Dwr Cymru Welsh Water is contributing towards improving the water quality in the Estuary by undertaking key infrastructure improvements at its Northumberland Avenue and Llanant Waste Water Treatment Works which are designed to improve arrangements for dealing with surface water, provide ultra violet treatment and phosphate removal. Equally developers too, can also play a significant part in mitigation measures by incorporating sustainable drainage facilities within their proposals.

You are also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The presence of such assets may affect the proposal. In order to assist you may contact Dwr Cymru Welsh Water on 0800 085 3968 to establish the location and status of the apparatus in and around your site. Please be mindful that under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

Surface Water Drainage

As of 7th January 2019, this proposed development is subject to Schedule 3 of the Flood and Water Management Act 2010. The development therefore requires approval of Sustainable Drainage Systems (SuDS) features, in accordance with the 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems'. As highlighted in these standards, the developer is required to explore and fully exhaust all surface water drainage options in accordance with a hierarchy which states that discharge to a combined sewer shall only be made as a last resort. Disposal should be made through the hierarchical approach, preferring infiltration and, where infiltration is not possible, disposal to a surface water drainage body in liaison with the Land Drainage Authority and/or Natural Resources Wales.

It is therefore recommended that the developer consult with Carmarthenshire County Council as the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features. Please note, DCWW is a statutory consultee to the SAB application process and will provide comments to any SuDS proposals by response to SAB consultation. Please refer to further detailed advice relating to surface water management included in our attached Advice & Guidance note. In addition, please note that no highway or land drainage run-off will be permitted to discharge directly or indirectly into the public sewerage system.

Foul Water Drainage – Sewerage Network

We have considered the impact of foul flows generated by the proposed development and concluded that flows can be accommodated within the public sewerage system. We advise that the flows should be connected to the 150mm sewer between manholes SS50988104 and SS5098911. However, with respect to the Memorandum of Understanding (MoU) requirements for the aforementioned designated waters, we remind that a strategy for surface water removal shall be implemented delivering sufficient compensation for foul flows.

Should a planning application be submitted for this development we will seek to control these points of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account. In addition, for the purpose of any forthcoming planning application submission, we request that details are submitted for the proposed surface water removal strategy. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.

You may need to apply to Dwr Cymru Welsh Water for any connection to the public sewer under Section 106 of the Water industry Act 1991. However, if the connection to the public sewer network is either via a lateral drain (i.e. a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Foul Sewers and Lateral Drains and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of www.dwrcymru.com.

Foul Water Drainage – Sewage Treatment

No problems are envisaged with the Wastewater Treatment Works for the treatment of domestic discharges from this site.

Potable Water Supply

A water supply can be made available to service this proposed development. Initial indications are that a connection can be made from the 250mm diameter DICL watermain in 251068,198355 location. The cost of providing new on-site watermains can be calculated upon the receipt of detailed site layout plans which should be sent to the above address.

I trust the above information is helpful and will assist you in forming water and drainage strategies that should accompany any future planning application. I also attach copies of our water and sewer extract plans for the area, and a copy of our Planning Guidance Note which provides further information on our approach to the planning process, making connections to our systems and ensuring any existing public assets or infrastructure located within new development sites are protected.

Please note that our response is based on the information provided in your enquiry and should the information change we reserve the right to make a new representation. Should you have any queries or wish to discuss any aspect of our response please do not hesitate to contact our dedicated team of planning officers, either on 0800 917 2652 or via email at **developer.services@dwrcymru.com**

Please quote our reference number in all communications and correspondence.

Yours faithfully,

Owain George
Planning Liaison Manager
Developer Services

***Please Note** that demands upon the water and sewerage systems change continually; consequently the information given above should be regarded as reliable for a maximum period of 12 months from the date of this letter.*

Appendix C

Illustrative Site Layout

Proposed drainage strategy drawing

C1

Illustrative Site Layout

Notes:

1. Illustrative masterplan layout only to define development quantum.
2. All matters are reserved, final design/layout is subject to design development.
3. Highway access is subject to development and agreement with the Local Authority as a reserved matters application or to be developed by the adjacent housing development.

Issue	Date	By	Chkd	Appd
P01	18/12/20	PB	AP	ME
Issued for Planning Purposes				

ARUP
4 Pierhead St, Capital Waterside
Cardiff, CF10 4QP
T +44(0)29 20473727 F +44(0)29 20472277
www.arup.com

Client: Carmarthenshire County Council

Job Title: Proposed Hotel at Machynys East, Llanelli

Drawing Title: Illustrative Site Layout

Scale at A1: 1:500
Discipline: Architectural
Job No: 278688
Drawing Status: Outline Planning
Drawing No: AL-0-02
Issue: P01

A1

N

B4304

Proposed pumping station already approved for planning

Attenuation pond
Estimated storage volume = 1070m³

Hotel Building

Nicklaus Avenue

Drain

Attenuation pond
Estimated storage volume = 210m³

Connection to existing ditch

For Continuation See Inset

Inset

Track

ESS

Connection to existing DCWW foul sewer

Legend

- Site Boundary
- Foul Drainage
- Foul Rising Main
- Permeable Paving
- Rain Gardens
- Swale
- Surface Water Drainage
- DCWW Foul Sewer
- DCWW Foul Rising Main
- DCWW Storm Sewer

Notes

1. All dimensions are in metres unless noted otherwise. Do not scale.

2. The drawing is for concept design purposes only. Drainage alignment indicative only and subject to change based on development of masterplan. Drawing to be read in conjunction with the Drainage Strategy Report.

J:\278000\278688-40\4 Internal Project Data\4-30 Drawings\4-31 Issue drawings\CG1000.dgn

Issue	Date	By	Chkd	Appd
P01	18/12/20	CB	KA	JS
Concept Design Issue				

ARUP

4 Pierhead St, Capital Waterside
Cardiff, CF10 4QP
T +44(0)29 20473727 F +44(0)29 20472277
www.arup.com

Client
Carmarthenshire County Council

Job Title
Machynys Hotel

Drawing Title
Proposed Drainage

Scale at A1 1:500

Discipline Infrastructure

Drawing Status
Concept Design

Job No	Drawing No	Issue
278688	**CG1000**	**P01**

Do not scale

Appendix D

MOU Statement

D1

ARUP

Subject	Machynys Hotel - MOU		
Date	4 December 2020	**Job No/Ref**	278688

Machynys Hotel

MOU Statement

1 Introduction

It is proposed to develop the Machynys site as a hotel. The proposed development will generate foul flows which will be connected into Dŵr Cymru Welsh Water's (DCWW) foul network. The flows have been estimated based on the current proposals with 140 bedrooms. In addition, the inclusion of flows into DCWW will need to adhere to the Memorandum of Understanding (MOU) dated September 2011. This statement summarises the requirement of the MOU and describes how the requirements are met for this specific development.

2 MOU Requirements

The MOU agreed by various parties, including Carmarthenshire County Council (CCC) and DCWW, requires that for every new development which imposes additional foul flows on the network, a comparable amount of flow is removed so that there is no net increase in flow into the sewer network. To facilitate future development, CCC have been removing surface water drainage that previously connected into the combined sewer network, and have been keeping a register of such surface water removal which can then be used for subsequent development needs.

3 Site Foul Flows

The proposed development at Machynys will generate foul flows. The foul drainage will be transferred via both gravity and rising mains. The total foul flows generated by the proposed hotel, based on the MoU, is 2.94 l/s, however the peak flow discharged into DCWW's external sewer network will be significantly less than this, since pumping stations store peak flows and transmit at a lower flow rate.

4 Compensation Site

The old Draka Enfield Copperworks site is located to the north of Machynys, adjacent to DCWW's Northumberland Pumping Station. This was previously a wire factory, and was covered by buildings and hardstandings. Part of the site (2.78Ha), as shown on Figure 1, has recently been transformed into a new primary school together with associated playground, playing fields and car parking.

Figure 1 – New Primary School site north of Delta Lakes

According to the developer's advisor, Asbri Planning, the site was previously covered by hardstandings, and contained a drainage network which directed surface water and foul flows to the combined sewer network within new Dock Road to the east. Surface water flows from the new development are infiltrated into the ground, therefore a significant amount of surface water flow has been removed from the combined drainage network.

In accordance with the MOU, the removal of surface water from the combined sewer network is calculated as follows:

- Rainfall event - 1 in 30 yr storm, 5 hour duration
- Rainfall intensity Burry Inlet (i) 10.8 mm/hr
- Area 2.78ha

Actual Surface Water Removal
Peak Flow = 2.78 x Area x i
Peak Flow = 2.78 x 2.78 x 10.8 = 83.47 l/s

Foul flow generated from school development = 2.65 l/s

Flow reduction/betterment = 83.47-2.65 = 80.82 l/s

In accordance with the MOU, CCC will directly align its betterment provision with the removal of surface water at the Draka site and shall call of the register of achieved capacity held by the Local Planning Authority.

Additionally it is understood that CCC have allocated 39 l/s of capacity to the proposed the nearby Delta Lakes, Wellness and Life Science Village, development and another 0.468 l/s to the Machynys Residential Development.

Therefore, unless CCC have allocated other development flows to the Draka site there is 41.35 l/s of free capacity that the hotel development (2.94 l/s) could utilise.

5 Conclusion

The development of Hotel will generate additional flow which will discharge into DCWW's combined drainage network. The total foul flows generated is 2.94 l/s, although actual flows will be lower as the foul flows are stored and pumped. As part of the MOU, a comparable amount of surface flow needs to be removed from the combined network to enable development to proceed. The recent development of the old Draka site to the north of Delta Lakes into a modern primary school and playing fields has removed a net flow of 80.82 l/s from the combined drainage network in the area. CCC have elected that a proportion of the benefit gained from Draka can be earmarked as MOU justification for the Machynys hotel development.