

PLATES



Plate 1: General view of Phase 4 looking west.



Plate 2: General view of Phase 4 looking east. Phase 3 is visible in the background and the crest of the fill platform is present in the left side of the picture.

PROJECT: PHASE 4 MATERIALS ASSESSMENT, CRYMLYN ROAD, SKEWEN

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Plate 3: View of grassed fill material within the historic railway cutting looking north.



Plate 4: View of grassed fill material (foreground) within the historic railway cutting looking west.

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Plate 5: View of fill material at the surface in Phase 4.



Plate 6: View of fill material at the surface in Phase 4.

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Plate 7: Fill A material arisings excavated from TP03 in the area of the former railway cutting.



Plate 8: Fill A in upper portions of trial pit (TP08), man-made constituents including brick and concrete visible.

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Plate 9: Fill A material arisings excavated from TP09.



Plate 10: Abundant rootlets, organic material, and man-made constituents within Fill B – TP08 arisings.

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Plate 11: Fill B arisings (dark grey) excavated from TP05.



Plate 12: Natural Glacial Diamicton soil arisings excavated from TP04.

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FIGURES

- Key:
- Site Boundary
 - Machine Excavated Trial Pits
 - Hand Dug Trial Pits
 - Location of Underground Water Utilities (approximate only)
 - Location of Attenuation Tanks (approximate only)
 - 20m Spaced Grid



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Location of attenuation tanks and underground utilities interpolated
from Client supplied drawing (Ref. C0981-Overlay).

SCALE: 1:1000 (approx. @ A3)

PROJECT:
CRYMLYN ROAD, SKEWEN

FIGURE 1:
INVESTIGATION POINT PLAN

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Appendix A

Phase 4 Validation Strategy (ESP, 2019)

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Monday, 05 August 2019

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BY EMAIL

CRYMLYN ROAD, SKEWEN STRATEGY TO VALIDATE PHASE 4 EARTHWORKS MATERIAL SUITABILITY

1. Background

Hale Construction (hereafter known as the Client) have constructed the first three phases of a residential development off Crymlyn Road, Skewen. Figure 1 below shows the proposed development to date. We understand the development was constructed in accordance with the planning permission received from Neath Port Talbot Council (Reference: *TBC by Client*).

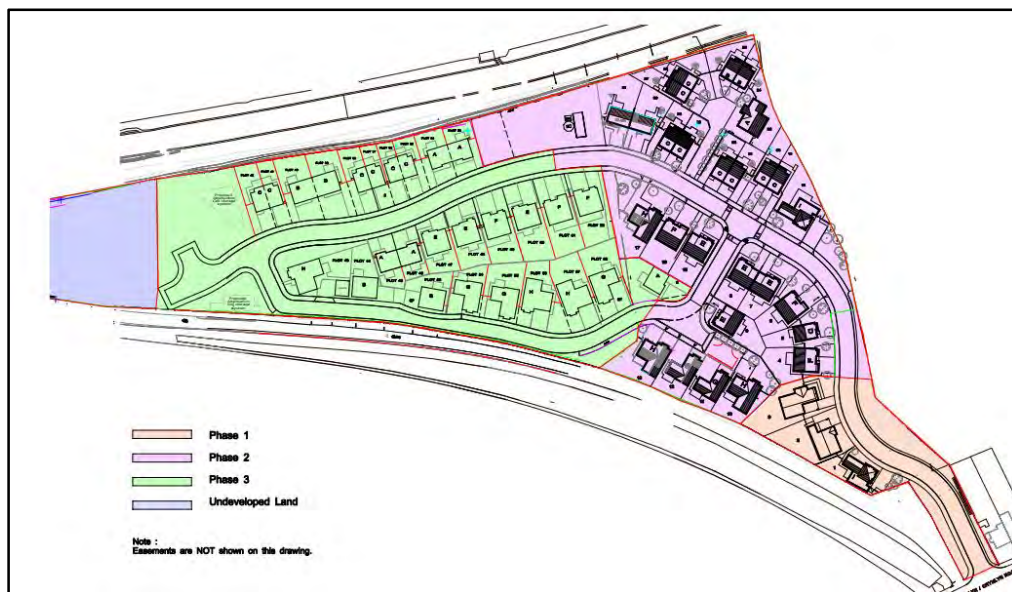


Figure 1 – Phase 1 to 3 Development Plan

Materials excavated from Phase 1 to 3 have been used to raise levels in Phase 4 (coloured blue in Figure 1), which in the short term is intended as public open space. In the long term, should planning approval be gained, there is a potential for residential development in this area.

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AGS Full Member Firm
Network Rail Link-Up/RISQS



Association of Geotechnical &
Geoenvironmental Specialists

The Earth Science Partnership Ltd (ESP), Consulting Engineers, Geologists and Environmental Scientists, were instructed by the Client to develop a validation strategy to demonstrate the suitability of the materials used as part of the earthworks in the Phase 4 area considering the intended use and to verify that they do not pose an environmental risk. We understand an assessment of the geotechnical suitability of the material is not required.

The strategy is to be submitted to the Local Authority by the Client for approval in principal and upon achieving this, the validation strategy will be implemented and reported by ESP.

Previous investigations throughout Phases 1 to 4 have been used to inform this assessment and information has been incorporated into this report where relevant. The reports are presented in full in the appendices.

2. Phase 4 Site and Earthworks

2.1. Site Location

The site is located on the north side of Crymlyn Road and the M4 on the west side of the town of Skewen, Neath. The National Grid Reference of the centre of the site is (SS) 271651 197144 and the postcode is SA10 6ES.

The Phase 4 area currently consists of a sporadically grassed upper triangular plateau (see Plates 1 and 2) with a valley like feature on its north boundary which is wooded. Filling has occurred in part of the valley feature in the west portion and the fill is grassed (see Plate 3 and 4). A public footpath appears to extend through the site.

2.2. Site History

The previous investigation reports by Integral Geotechnique (Wales) Ltd (Report Refs: 11677/MJE/15 and 11677/MJE/16/SI) presented in Appendix C and D respectively, indicates that prior to the recent residential development, no development had occurred in Phase 3 or 4, with it being used as agricultural land. A railway cutting is present along the north boundary, however the former lines have now been removed. A cycle path followed by the M4 is located at the south boundary.

Review of the maps provided as part of the reports would also suggest limited development also occurred in the Phase 1 and 2 areas prior to the current development.

2.3. Phase 4 Earthworks

The client has provided two topographic surveys, one dated October 2015, which is prior to the main earthworks and one dated January 2019 which is post completion. The surveys are presented as Figure 1 and 2 respectively.

In October 2015, the Phase 4 area consists of an upper triangular shaped elevation, narrowing towards the west. It slopes down to the north by around 1 to 3m before sloping steeper down into the railway cutting (which was not surveyed). On the upper elevation, stockpiles of materials are indicated and some earthworks may have occurred relative to the original topography (Phase 1 and 2 have been constructed).

Post completion of the earthworks in Phase 4 (January 2019), the topography is relatively flat on the upper level, with only a slight drop to the north (around 1m). The Phase 4 boundary has extended north in some areas (see Figure 2), following purchase of the railway cutting on the north boundary. Fill depths generally increase in a northerly direction with thicknesses of around 1m in the south, increasing to around 4m in the north, prior to sloping down to the railway cutting. No specification or methodology for the fill placement has been provided.

Some modifications of the slope bordering the railway cutting has been made and in the west portion of Phase 4, filling has also occurred within the railway cutting. As no pre-filling elevations are available from October 2015, the thickness cannot be determined from the surveys, however visual observations on-site (see Section 3) would suggest thicknesses of around 4 to 5m of fill has been placed (see Plates 3 and 4).

The calculated volume of fill across the entire Phase 4 area is not known by the client.

We understand no Materials Management Plan was in place prior to the movement of the soils from the earlier phases to their final Phase 4 location. The client indicates that as the soils were sourced from within the scheme boundary, were originally natural and considered uncontaminated (i.e. not beyond naturally elevated levels in the area), and it was their intention to use them in their natural state in the Phase 4 area, they understood they were exempt from the waste directive. We have been informed they did not intend to discard the material.

The client is aware however they should have formally documented this intention within a soil resource plan, evidenced the re-use and prepared a validation report post completion to be submitted to the local authority.

3. Site Walkover (April 2019)

ESP attended site on the 11th April 2019 to preliminary inspect the Phase 4 area and the earthworks undertaken. Pictures of the current site status are presented as Plates.

The fill extent appeared to be consistent with the recent topographic survey information provided (see Section 2). The fill is partially grassed.

At the surface, the earthworks material appeared to predominantly consist of re-worked glacial soils and apparent coal measures derived coarse grained materials (e.g. sandstone cobbles and boulders) with occasional to common man made materials e.g. bricks, concrete, tiles (see Plates 5 and 6).

No obvious evidence of significant contamination was noted at the surface.

4. Background Information on Phase 4 Earthworks Material

4.1. Previous Investigations

The Client has confirmed that the earthworks material was sourced from the construction of Phase 1 to 3 of the development. We understand these phases as well as Phase 4 formed the overall development scheme which was submitted to the council as a whole and formed part of the urban development plan within the borough.

Considering this, previous investigation information from these phases have been used to gain an initial understanding of the materials used as part of the earthworks. The following investigation information has been provided for Phases 1 to 3:

- Ateb Consult Soakaway Testing Records for Phase 2, dated 25th of January 2013 (Job No: 12/026);
- Ateb Consult Trial Pit Records and Laboratory Test Results for Phase 2, dated 15th of May 2013 (No Reference);
- Ateb Consult Factual Site Investigation and Contamination Testing Report for Phase 3, dated August 2015 (Ref: ref/22). *This report is presented within the Integral Geotechnique Report referenced below;* and
- Integral Geotechnique (Wales) Ltd Combined Desk Study and Site Investigation Report for Phases 3 and 4 dated October 2015 (Ref: 11677/MJE/15).

- Integral Geotechnique (Wales) Ltd Site Investigation Report for Phases 3 and 4 dated March 2016 (Ref: 11677/MJE/16/SI).

The above reports are presented as Appendices A to D.

4.2. Soil Description

The geological map for the area indicates that Phase 1 to 4 are underlain by glacial soils overlying Upper Coal Measures bedrock.

Previous investigation in Phase 2 and 3 recorded localised thin Made Ground (likely fill material from other phases consisting of re-worked natural soils with some man made materials and former vegetation) or Topsoil followed by generally fine grained glacial deposits overlying weathered bedrock, generally described as a shale.

The client has indicated that no Topsoil was used as part of the earthworks in Phase 4 and only glacial and weathered bedrock soils were re-used as fill. Visual assessment of the surface initially confirms this, however man made materials likely associated with the construction works, seem to have also been incorporated into the fill mass.

No visual or olfactory evidence of any contamination was observed during the previous investigations.

Gridded investigation through the fill body will be required to robustly verify the nature of the fill.

4.3. Previous Laboratory Testing

As part of the site investigations in Phase 2 and 3, laboratory testing of the Topsoil, Made Ground consisting of re-worked soils and glacial soils/weathered bedrock (sample description only on the logs) was undertaken and the results are presented in the relevant reports. These can be used to gain an initial understanding of the contamination status of the fill materials and whether they are suitable for use considering the proposed end use and environmental sensitivity in Phase 4.

The test results for the in-situ shallow glacial/weathered bedrock soils generally indicate low levels of contamination that would satisfy the most stringent guideline values. One naturally elevated level of lead was recorded in the glacial soils during the March 2016 investigation, which would exceed the guidelines for a residential end use but would satisfy that of a public open space. Statistically this value is unlikely to be significant. In addition, chrysotile asbestos was identified in a sample between 0.8m and 1.2m at non quantifiable levels (less than 0.001%). The presence of asbestos within the natural undisturbed glacial soils is anomalous and does not seem representative.

Whilst leachate results are not available, considering their natural origin, any leachate levels from these soils would be in accordance with the surrounding deposits and therefore would not be considered a controlled water risk. Soil and leachate testing within the fill mass will be required to confirm the initial suitability indicated by the available results.

We understand no Topsoil was used as part of the earthworks fill, however an initial review of the results does indicate some exceedances when compared to residential guideline values (e.g. Arsenic). Considering the absence of any development on-site, and the industrial history of the Swansea/Neath valley, the levels are likely a result of background contamination. Considering this information, if any Topsoil is encountered as part of the fill mass, targeted testing should be undertaken on these materials to confirm their chemical suitability for use.

Laboratory testing of the Made Ground soils consisting of re-worked natural soils with some man made materials and rare vegetation from the original surface has recorded generally low levels

below the residential guideline values. However, two elevated levels of Arsenic were recorded in the 2016 investigation (47 and 70mg/kg). The levels of arsenic are in accordance with the background levels recorded for the Topsoil. We consider that the elevations are a result of some Topsoil being incorporated into the fill, during their management. The levels are below the public open space guidelines, however they are above the residential. Further testing and assessment as part of the proposed validation strategy will be required to prove that these elevated levels are not representative of the fill mass and that the material is uncontaminated and suitable for use in Phase 4 considering the proposed use.

5. Proposed Strategy for Validating Suitability

5.1. Introduction

Whilst the re-use of natural soils within the site of origin would have been exempt from the waste directive, a formal re-use and management strategy was not in place prior to the earthworks in Phase 4, and this a procedural error on the Client's part. To rectify this and to achieve planning permission, the client is eager to implement a strategy to demonstrate to the Local Authority that the fill materials used in the Phase 4 area are chemically suitable for use, and that they do not include any materials that could harm future end users or controlled waters receptors. Background information on the fill materials provided by the Client initially supports this, however further robust investigation is required.

Preliminary information indicates the soils re-used were site won and predominantly consisted of uncontaminated natural materials. Chemical results indicate they would be suitable for use in a Public Open Space, with further testing required to determine their suitability for a residential use. Where elevated levels have been recorded pre-filling they are considered a result of the incorporation of some Topsoil exposed to background contamination into the fill or naturally elevated levels.

The proposed investigation has been designed to robustly determine the nature and contamination status of the fill material used in the Phase 4 area and in the spirit of the CL:AIRE DoW:CoP demonstrate that the required re-use criteria have been met, retrospectively. The intrusive investigation and strategy was designed and will be undertaken in accordance with the following guidance:

- BS5930:2015 Code of Practice for Ground Investigations;
- BS10175:2017 Investigation of Potentially Contaminated Sites. Code of Practice;
- Welsh Local Government Association/Environment Agency (2012): Development of Land Affected by Contamination: A Guide for Developers.
- Welsh Local Government Association (2012): Requirements for the Chemical Testing of Materials for Various End Uses.
- CL:AIRE Definition of Waste: Development Industry Code of Practice.

To maximise the soil visually exposed during the investigation, trial pitting will be undertaken using a large excavator to ensure progression beyond the base of the fill into the underlying natural material/Made Ground. Disturbed samples of the fill materials and underlying natural soils will be collected from the trial pits for laboratory testing.

The exploratory holes will be supervised and logged by an engineering geologist in general accordance with BS5930:2015, BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2018, and BS EN ISO 14689:2018, along with published weathering schemes.

Descriptions and depths of the strata encountered will be presented on trial pit records with results of in-situ testing also provided. The locations of the investigation points will be surveyed by the Client and added to the current topographic survey.

5.2. Investigation and Sampling Strategy

As general confirmation of the fill chemistry is required, the investigation points will be spread across the site to obtain a general overview of the ground conditions present.

Sampling for soil contaminants will be undertaken on a non-targeted basis, on a 20 to 25m grid spacing pattern (see Figure 2). This spacing would satisfy that of a detailed investigation and will be sufficient to obtain representative information on soil contamination across the site as a whole. Sampling will also be undertaken on a stratified basis to assess changes in concentrations with depth and between fill/soil types.

Where field evidence of contamination is noted, additional samples will be collected for testing.

Environmental samples will be collected for geo-environmental laboratory testing and they will generally comprise a plastic tub, an amber glass jar and an amber glass vial. The sample containers will be provided clean by the testing laboratory and will be appropriate for the proposed testing to be scheduled. Immediately after collection the samples will be placed in sealed cool boxes with ice packs where they will remain during storage and transport to the laboratory.

5.3. Site and Laboratory Testing

Robust site based and laboratory testing will be used to characterise and assess the contamination status of the fill and this is described in the following sections.

5.3.1 Monitoring for Volatile Hydrocarbons

A photo-ionisation detector (PID) will be used during the trial pitting to measure the levels of total volatile hydrocarbons present in the recovered soils. Headspace analyses will be undertaken whereby samples of the soil will be collected in sealed plastic bags from the exploratory holes and then left for a period of time (in the sun to allow any volatiles present to escape into the headspace above the soil). The PID will then be used to measure the levels of total volatile organic compounds (VOC) within the headspace above the sampled soils.

If elevated levels of volatiles are recorded by the P.I.D., TPH, BTEX, SVOC and VOC testing will be scheduled on the sample (see below).

5.3.2 Laboratory Testing - Soil Samples

The previous investigations (Section 2.2) did not identify any particular contaminants of concern in the Phase 1 to 3 areas, which may have been incorporated into the fill mass in Phase 4. However, sporadic elevations of Arsenic, Lead and one identification of chrysotile asbestos was noted.

In order to allow an assessment of the potential chronic risks posed to human health considering the current and proposed end uses, samples of the fill will be analysed for contaminants typically found on brownfield sites in the UK. In addition, we will test samples of the natural ground in the Phase 4 area to allow a comparison of the levels recorded.

The geo-environmental analyses will be carried out by a UKAS accredited testing laboratory with detection limits being generally compatible with the relevant guideline values adopted as part of the assessment (see Section 5.4).

We consider around 20 no. samples will be sufficient to robustly characterise the fill material and 5 no. to provide additional information on the natural soils or Made Ground already present. If larger volumes of fill are encountered above that anticipated, the testing frequency will be adjusted to satisfy Welsh Government guidance.

The general suite of geo-environmental laboratory testing will comprise:

- Arsenic, barium, beryllium, boron, cadmium, total chromium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc;
- US EPA 16 polycyclic aromatic hydrocarbon (PAH) compounds;
- Total monohydric phenols;
- Total cyanide, asbestos qualitative screen (presence or absence);
- Soil organic content, pH value.

If evidence of hydrocarbon is noted (visual, olfactory or P.I.D.), TPH CWG, BTEX, SVOC and VOC testing will be scheduled on the sample.

If any evidence of contamination is identified that is not covered by the above, the testing will be modified to quantify the levels present.

5.3.3 Laboratory Testing - Leachate Samples

In order to allow an assessment of the potential pollution risks to controlled waters, 10no. samples of leachate will be generated from samples of the earthworks materials recovered from the exploratory holes. 5no. samples of the natural soils will also be tested to provide a relative comparison. The leachate preparation will be carried out in accordance with BS EN 12457, at a 10:1 eluate ratio.

The geo-environmental analyses will be carried out by a UKAS accredited testing laboratory with detection limits being generally compatible with the relevant guideline values adopted as part of the assessment (see Section 5.4).

15no. samples of leachate will be analysed for the following determinants:

- Arsenic, barium, beryllium, boron, cadmium, total chromium, copper, iron, lead, mercury, nickel, selenium, vanadium, zinc;
- Aluminium, antimony, cobalt, molybdenum, manganese, silver, sodium, tin;
- US EPA 16 polycyclic aromatic hydrocarbon (PAH) compounds;
- Total monohydric phenols;
- Cyanide, soluble sulphate, pH value.

If evidence of hydrocarbon is noted (visual, olfactory or P.I.D.), TPH CWG, BTEX, SVOC and VOC testing will be scheduled on the sample.

5.4. Suitability Assessment

5.4.1 Risk to End Users

In order to provide an initial 'screen' to identify elevated levels of contaminants within the fill material, a Generic Quantitative Risk Assessment (GQRA) will be undertaken using the most appropriate Generic Assessment Criteria (GAC) determined by assessment of exposure frequency/duration relevant to the critical receptor. As previously indicated, Phase 4 is currently being used as public open space, however there is a potential that residential use could occur in the future.

In accordance with DEFRA, NHBC, NRW and Welsh Government recommendations, the C4SL values will be used as the acceptance criteria in the first instance for assessing human health risks. Where no C4SL is currently available, the Suitable For Use Levels (S4ULs) published in January 2015 by the Chartered Institute of Environmental Health (CIEH) and Land Quality Management (LQM) (Nathanial et al, 2015) will be adopted. Where no C4SL or S4UL is available,

the Soil Guideline Values (SGV) published by the Environment Agency will be adopted as the Generic Assessment Criteria (GAC). For more exotic, predominantly organic, compounds where no SGV, S4UL or C4SL assessment criteria are published, the GAC published by CL:AIRE and the Environmental Industries Commission (CL:AIRE/EIC, 2010) will be adopted.

Details of the Generic Assessment Criteria (GAC) adopted for each contaminant will be presented on the assessment tables in the report. Any exceedances will be subject to statistical assessment and possibly further investigation and testing.

5.4.2 Risks to Controlled Waters

The potential impact of contamination originating at the site to controlled waters in the area of the site (i.e. groundwater and surface water) will be evaluated in line with the Environment Agency guidance (Carey et al, 2006).

Levels of leachable contamination within the soil samples recovered at the site will be analysed, which represents a 'Level One' risk assessment (Carey et al, 2006). As for the assessment of human health risks above, the results of the contamination testing will be compared to assessment criteria appropriate to the controlled water receptors in the area.

The previous investigation report for Phase 3 and 4 (see Appendix C) indicates that the most vulnerable controlled waters receptor is the groundwater in the underlying Upper Coal Measures bedrock which is designated as a Secondary A Aquifer. The overlying glacial deposits are designated as Unproductive Strata and there are no surface water receptors in the vicinity (the nearest being the oil refinery reservoir 300m to the south).

In order to assess the potential risk to groundwater as a general resource beneath the site, the 'concentrations of hazardous substances within groundwater below which the danger of deterioration of the groundwater quality is avoided' published by UKTAG (2016) will be adopted as assessment criteria in the first instance. These UKTAG concentrations have been calculated from thresholds designed to be protective of drinking water, so may be conservative in this instance. Therefore, an exceedance may not necessarily indicate an unacceptable risk. If UKTAG acceptance criteria are not available, the most relevant acceptance criteria will be chosen to provide an indication of the risk presented by the levels present (e.g. EQS, PCV, WHO etc.).

The actual assessment criteria adopted for each contaminant will be presented on the assessment tables in the report.

In addition, to comparing the leachate results of the fill to available acceptance criteria, the results should be also compared to that of the natural soils in the area, to assess whether they are in accordance with the background levels.

5.5. Validation Reporting

On completion, a verification report will be provided which will present the findings of the investigation, and subject to the results, validate that the chemistry of the soils are suitable for use in the Phase 4 area.

If unacceptable levels of contamination are identified, recommendations for the further investigation and/or remedial action will be provided.

On completion, the report should be provided to the Local Authority for approval as part of the planning process.

6 Conclusions and Recommendations

Available information indicates that the fill material in the Phase 4 area predominantly consists of site won re-worked natural materials with some inert man-made materials incorporated within it.

No contaminative history has been identified in the fill donor areas (Phase 1 to 3) and laboratory testing of the natural soils would suggest that the soils are generally chemically suitable considering the proposed end uses. However, due to cross-contamination associated with inert man-made materials (e.g. bricks) and Topsoil with naturally elevated levels of background contamination, this requires robust validation.

An investigation, testing and assessment strategy has been prepared in accordance with current regulatory guidance to achieve this, and we recommend this is presented to the local authority to achieve agreement in principle pre-commencement. The strategy will be reviewed during the works, in reaction to emerging conditions to ensure that it satisfies regulatory requirements.

Upon achieving regulatory approval, the validation strategy will be implemented and reported by ESP.

We trust that the above and attached is clear and provides sufficient information for your present requirements. However, should you have any queries, or require further clarification, please do not hesitate to contact us.

Yours sincerely,



Hywel Davies

Enclosures:

Plates

Figure 1 – Pre Phase 4 Earthworks Topographic Survey

Figure 2 - Post Phase 4 Earthworks Topographic Survey and Proposed Sampling Strategy

Appendix A – Ateb Consult Soakaway Testing Records for Phase 2 (January 2013)

Appendix B – Ateb Consult Trial Pit Records and Laboratory Test Results for Phase 2 (May 2013)

Appendix C – IG (Wales) Ltd Desk Study and Site Investigation for Phases 3 and 4 (October 2015)

Appendix D - IG (Wales) Site Investigation Report for Phases 3 And 4 (March 2016)

Plates



Plate 1: General view of Phase 4 looking west.



Plate 2: General view of Phase 4 looking east. Phase 3 is visible in the background and the crest of the fill platform is present in the left side of the picture.

PROJECT: PHASE 4 VALIDATION STRATEGY, CRYMLYN ROAD, SKEWEN

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Plate 3: View of grassed fill material within the historic railway cutting looking north.



Plate 4: View of grassed fill material (foreground) within the historic railway cutting looking west.

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Figures



Site Boundary

Material Stockpiles

20m

20m

Cycle Path

NOTES:

1. Phase 4 Topographic survey provided by the Client and dated October 2015 (Drawing No: 14/101).
2. The boundary has since expanded to include parts of the cutting on the north boundary in this survey (see Figure 2).

PROJECT:
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SCALE: AS SHOWN

FIGURE 1: PRE PHASE 4
EARTHWORKS TOPOGRAPHIC
SURVEY

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LEGEND:

 Proposed Sampling Location

 Phase 4 Site Boundary

 Areas where excavation is not possible due to existing attenuation tanks and drainage services

NOTES:

1. Phase 4 Topographic survey provided by the Client and dated January 2019 (Drawing No: 14/19).
2. The Phase 4 site boundary has expanded compared to that presented in Figure 1.
3. Investigation point locations are approximate and may need to be adjusted slightly dependent on site conditions.

PROJECT:

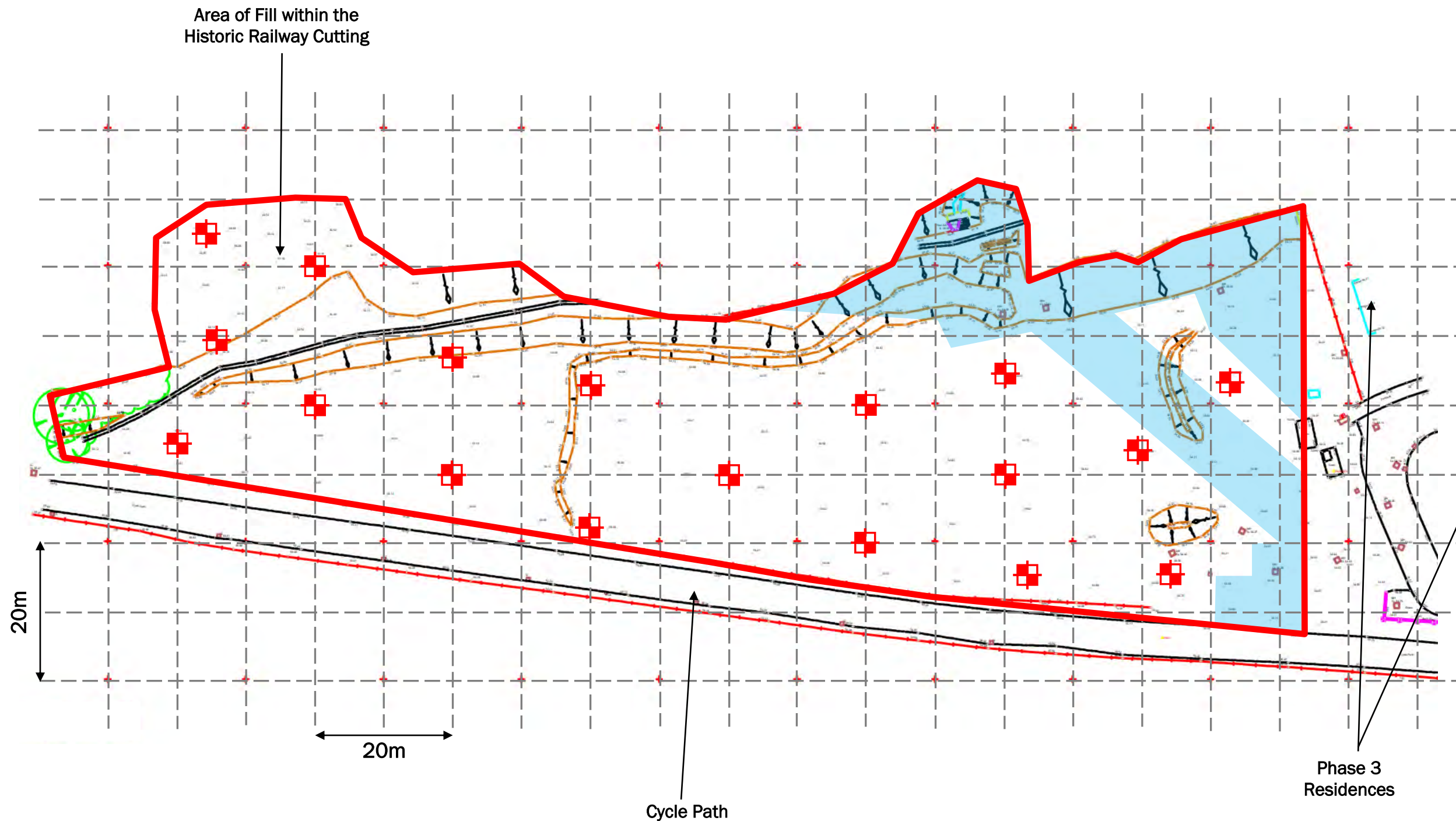
CRYMLYN ROAD, SKEWEN

SCALE: AS SHOWN

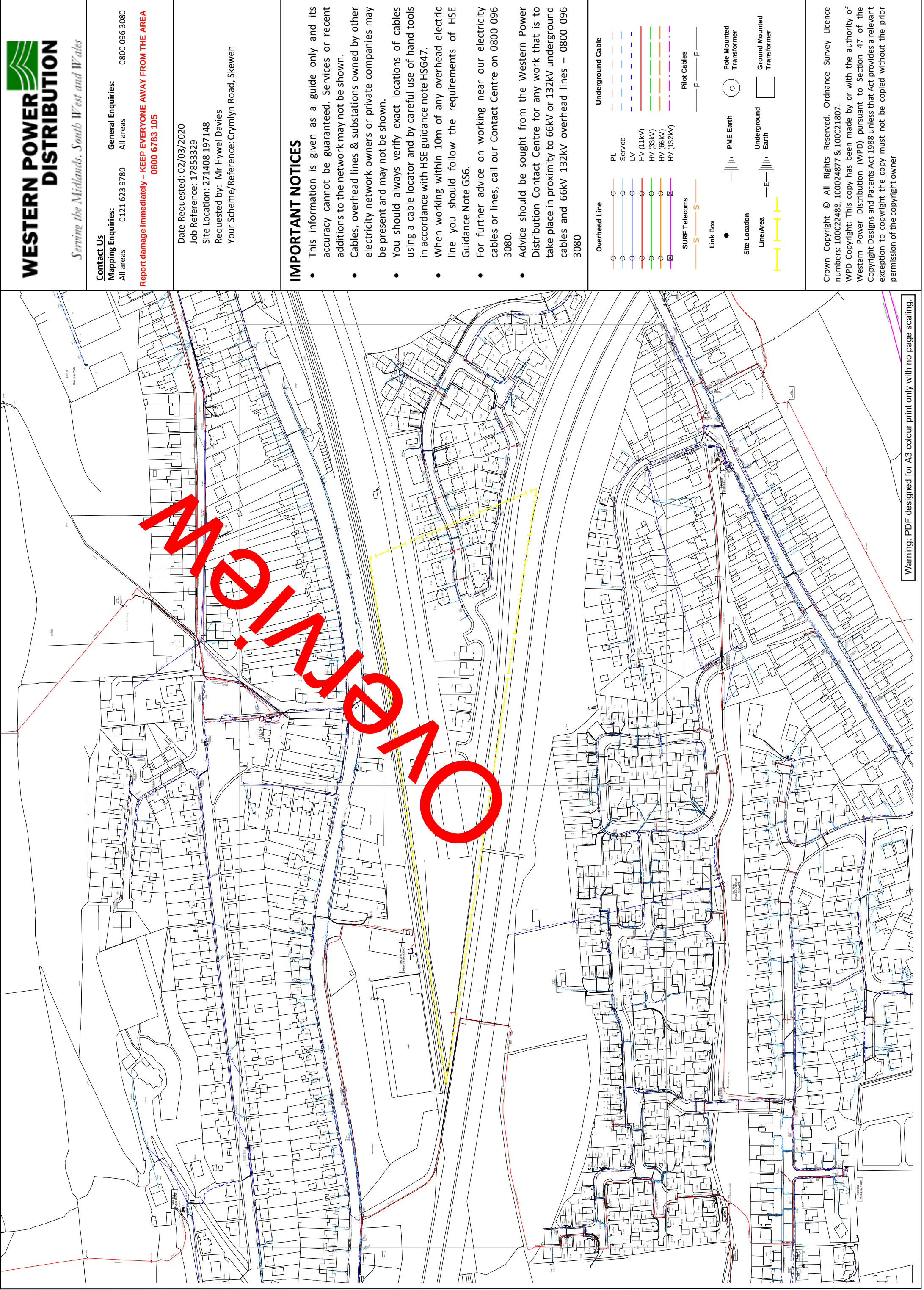
**FIGURE 2: POST PHASE 4
EARTHWORKS TOPOGRAPHIC
SURVEY AND PROPOSED SAMPLING
STRATEGY**

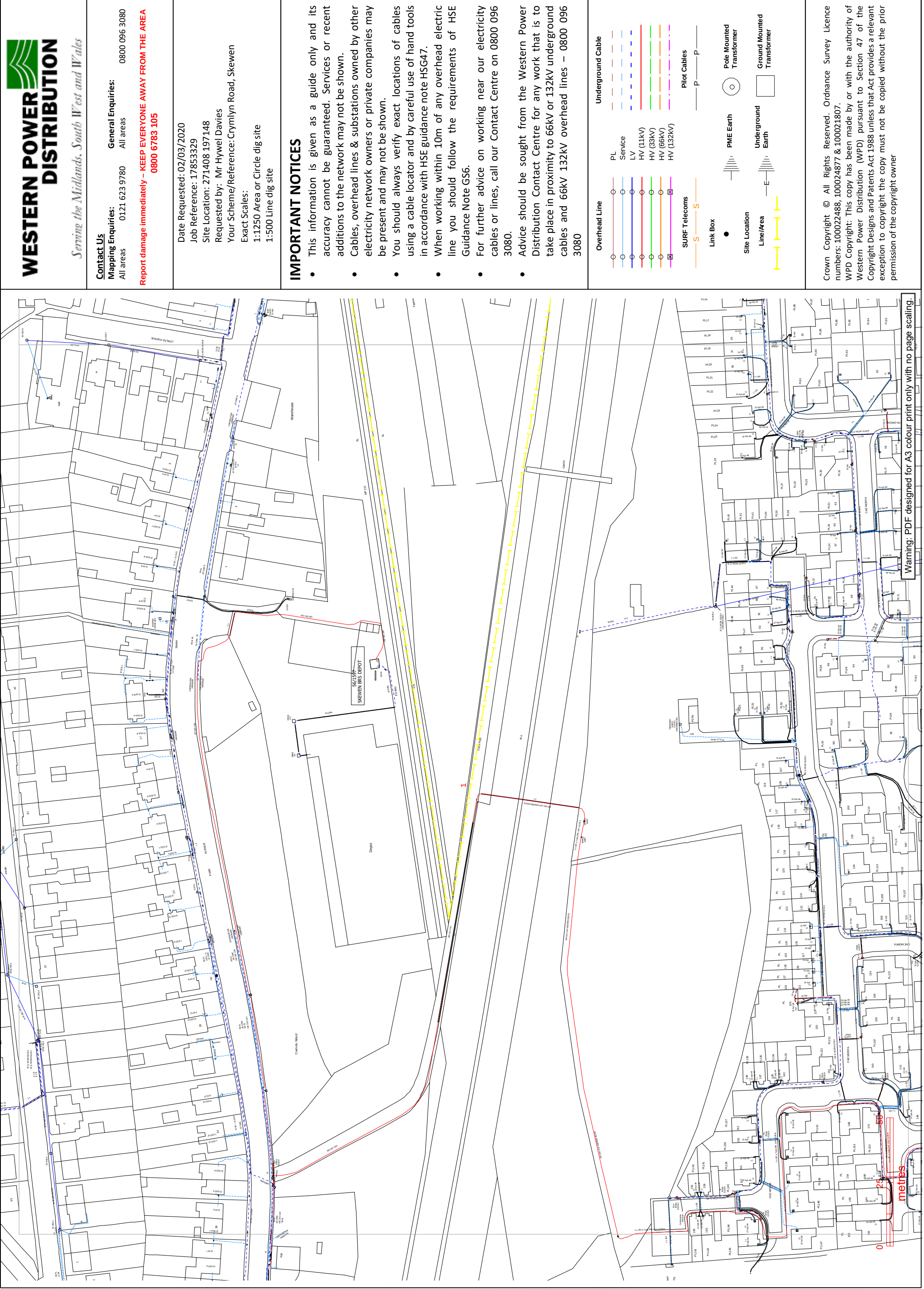
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Appendix B Underground Utility Plans







WESTERN POWER

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Mapping Enquiries:
All areas 0121 623 9780
Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

General Enquiries:
All areas 0800 096 3080

Date Requested: 02/03/2020
Job Reference: 17853329
Site Location: 271408 197148
Requested by: Mr Hywel Davies
Your Scheme/Reference: Crymlyn Road, Skewen
Exact Scales:
1:1250 Area or Circle dig site
1:500 Line dig site

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080

Underground Cable

PL

Service

LV

HV (11kV)

HV (33kV)

HV (66kV)

HV (132kV)

Overhead Line

PL

Service

LV

HV (11kV)

HV (33kV)

HV (66kV)

HV (132kV)

SURF Telecoms

S

S

Link Box

Site Location

Line/Area

Pilot Cables

P

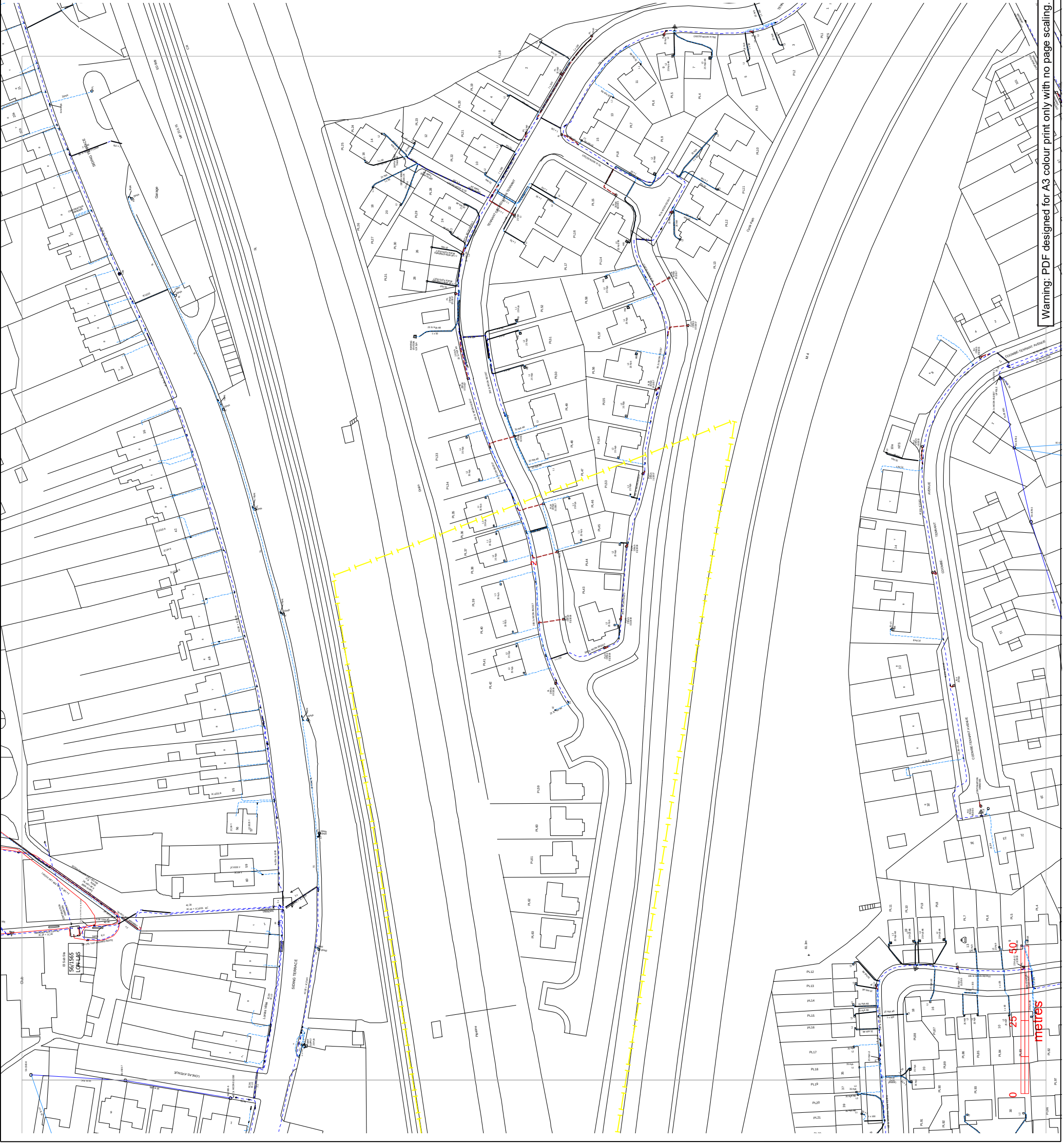
P

Pole Mounted Transformer

Ground Mounted Transformer

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Serving the Midlands, South West and Wales

Contact Us

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Overhead Line

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

Underground Cable

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

SURF Telecoms

- S
- S

Pilot Cables

- P
- P

Link Box

- Link Box

Pole Mounted Transformer

- Pole Mounted Transformer

Site Location

- Site Location

Underground Earth

- Underground Earth

Ground Mounted Transformer

- Ground Mounted Transformer

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