Swansea Foreshore Ice-cream Parlour/ Restaurant

Written by; Jack Llewellyn

Student Number; 1811703

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Introduction

The site is located between County Hall and the Marriot Hotel. The building, which is to share parts of the car park of both of the existing adjacent facilities, is to have a GIA (Gross Internal Area) at ground floor level of approximately 300 square metres. This, containing the restaurant, café bar, ice-cream parlour, kitchen, food-stores etc. At first and second floor levels, there is a manager's apartment and staff room. These are each to have a GIA of approximately 150 square metres.

Site Walkover Observations

Walking over the proposed site there is a mix of ground levels and ground properties.

On the site there is sections of 2 car park areas, a paved seating area, manholes situated in a line and at different levels, existing trees and a private right of way on the proposed site which connects both carparks.

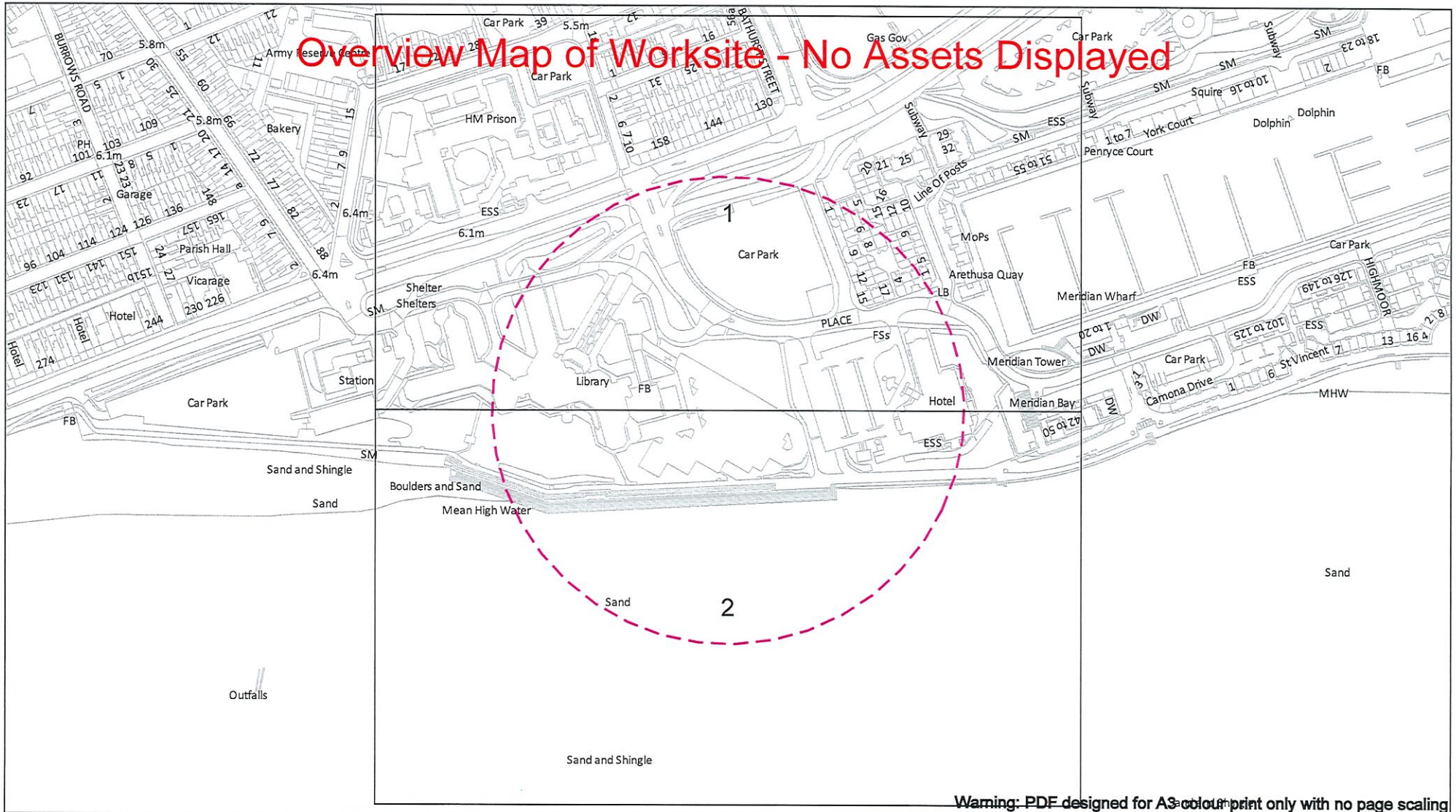
There is surface water drains on the carparks and bushes along the hills either sides of the site.

Excluding the tarmac surface of the carparks, paving of the seating area on-top of one of the hills and soil. There is also a man-made surfaces live the pathways on the site and an area with can be driven into through the Marriot car park but is blocked by a lockable gate.

Desktop Study

I have asked several Gas, Electrical and Water distributors to see if the proposed works will affect their cables etc. Western Power Distribution has come back with a drawing illustrated below:

Overview Map of Worksite - No Assets Displayed



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: 14/02/2019
Job Reference: 14823504
Site Location: 264992 192067
Requested by:
Mr Jack Llewellyn
Your Scheme/Reference:
OOGA BOOGA

Scale: 1:2563 (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

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.

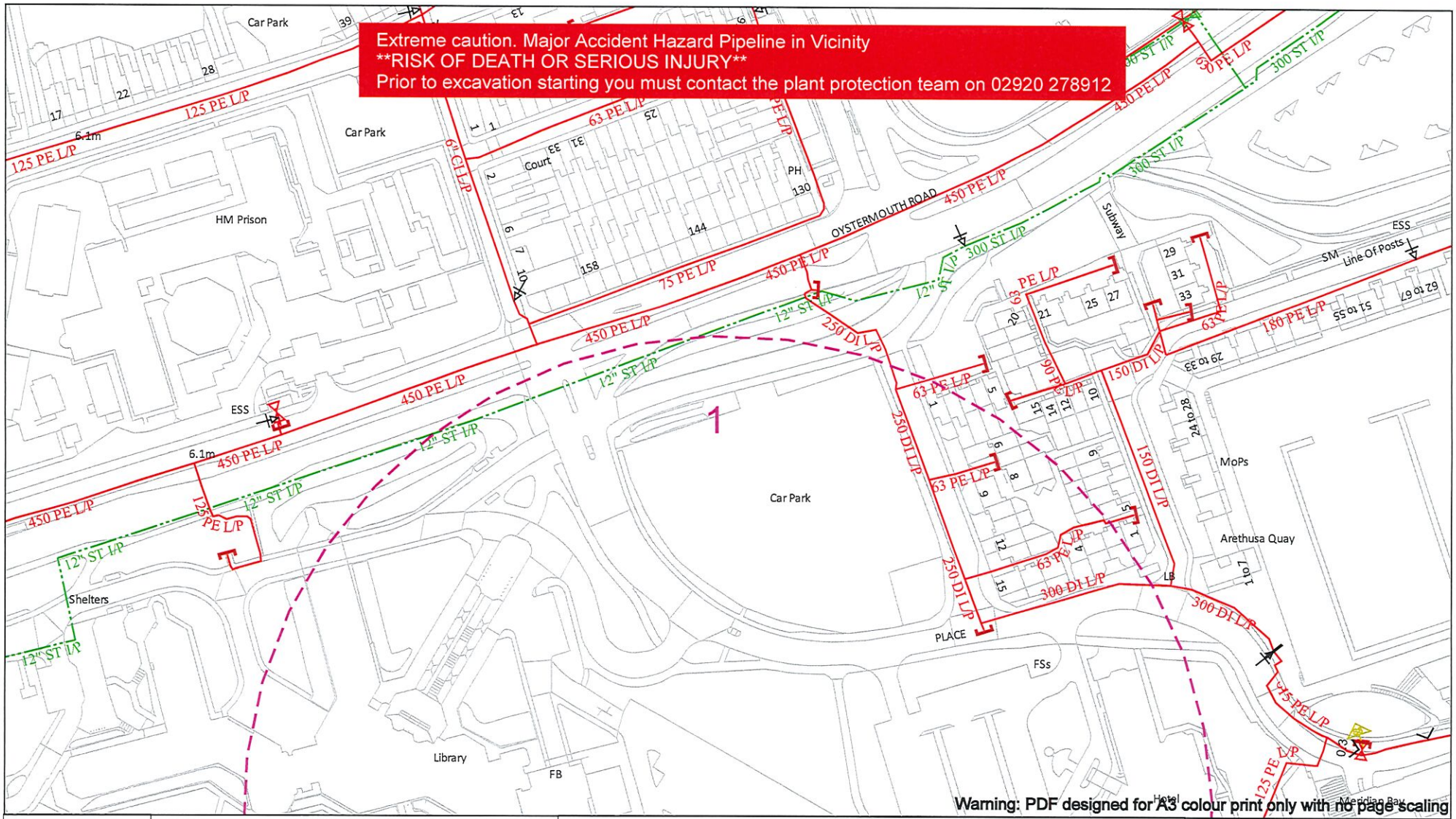
Dial before you dig

Dial 029 2027 8912 before you start work

Investigate Determine exactly where your pipes are before you dig. Make sure you know what's below.

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

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100m

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High Pressure (HP) >7bar

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

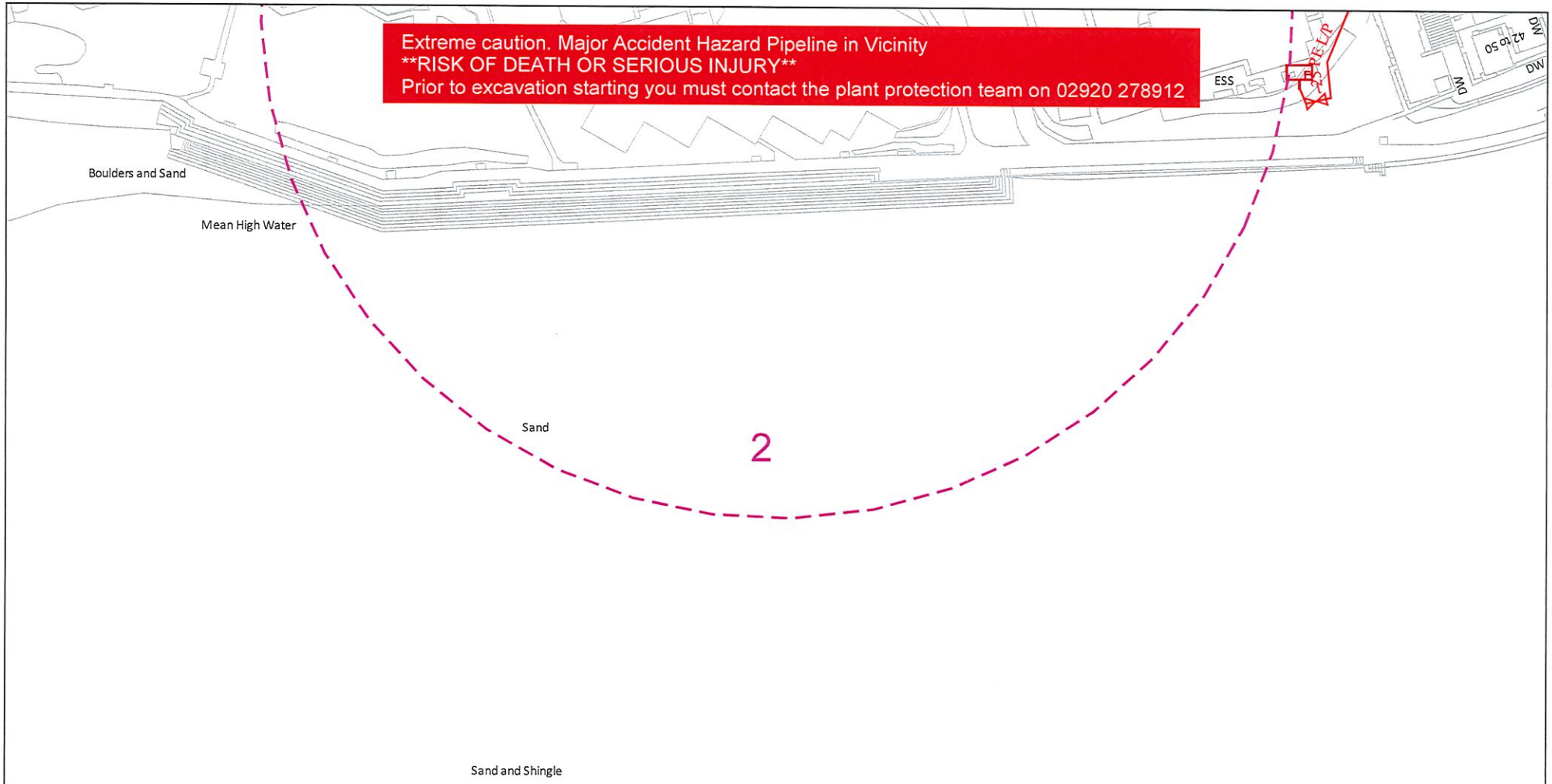
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Dial before you dig

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Investigate Ensure you dig, make sure you know what's below.
Go ahead Dig your excavation! Now you can dig safely.

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Requested by:
Mr Jack Llewellyn
Your Scheme/Reference: OOGA BOOGA

Scale: 1:1250 (When plotted at A3)

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Governor Station
Change of Diameter
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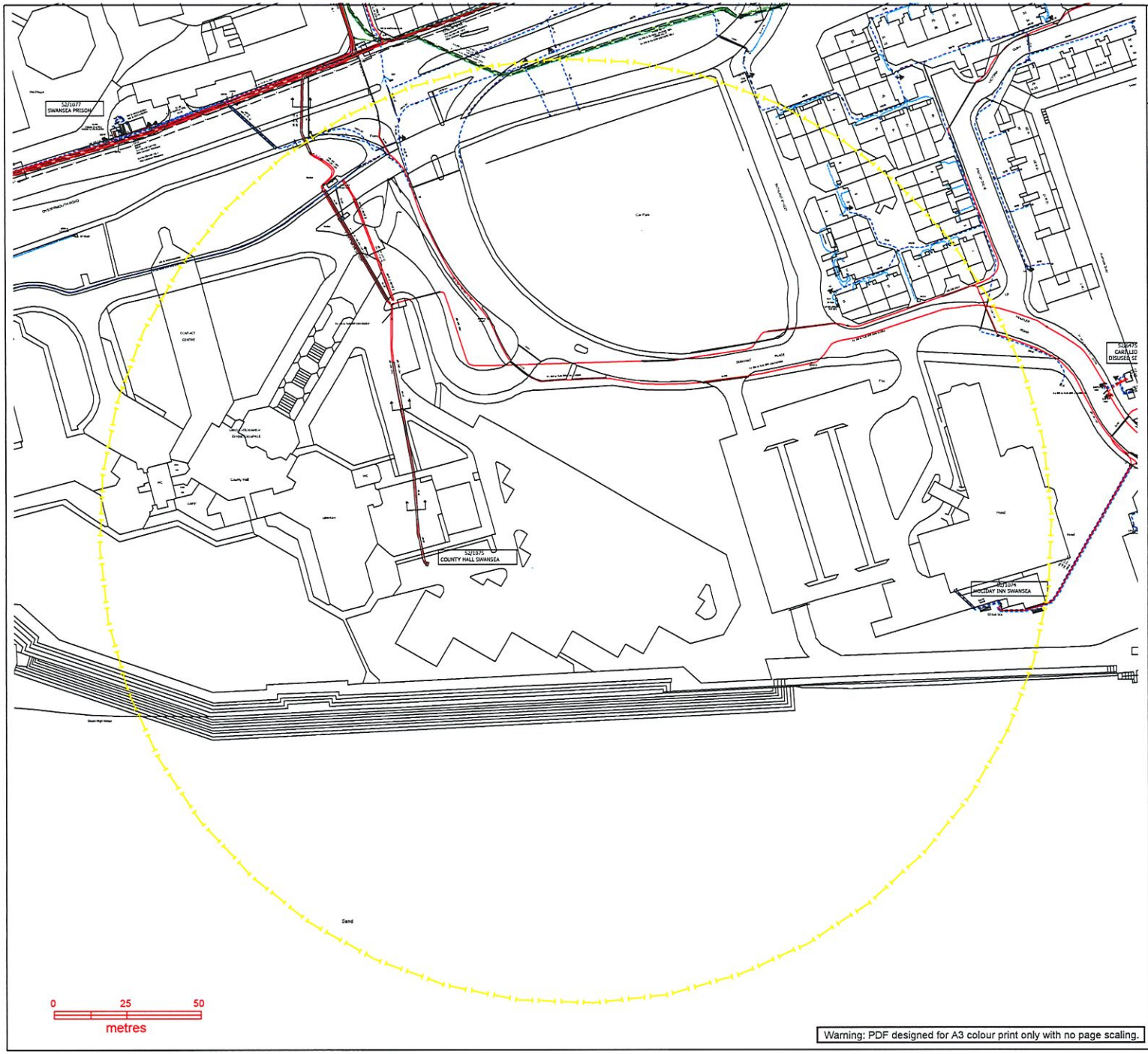
Dial 029 2027 8912 before you start work.

Investigate

Go ahead

We need 10 days' notice

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Plans generated by DigSAFE Pro (tm) software provided by LinesearchbeforeUdig

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Serving the Midlands, South West and Wales

Contact Us

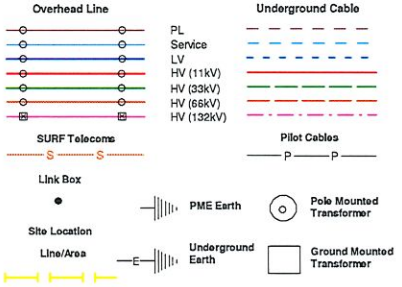
Mapping Enquiries:		General Enquiries:	
All areas	0121 623 9780	All areas	0800 096 3080

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

Date Requested: 12/02/2019
Job Reference: 14823504
Site Location: 265330 192321
Requested by: Mr Jack Llewellyn
Your Scheme/Reference: OOGA BOOGA
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



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As you can see, the area of works does not run near any live cables. A letter received from them said that this image was slightly dated and may have cables there so a check with a CAT scanner may be needed to assure that there are no extra running cables under the site that are not shown in the drawing below.

Wales & West Utilities also can back in touch and have found no utilities within the area. They also came back with how to notify them if works commence in that area and how long a reply would take.

The closest ground test near/ on the site was a bore hole. The results were provided by the British Geology Survey (BGS) and their results are below:

DRILLING METHOD	GROUND LEVEL	NATIONAL GRID REFERENCE	BOREHOLE NUMBER
Percussion 200 mm dia. to 15·0 m "Open hole" rotary drilling from 15·0m to 22·0 m	+ 9·18 m O.D	SS 65399228 SS6958 BLS	2

MACHINE	CORE BARREL AND BIT DESIGN	ORIENTATION	SITE
Dando "Investigator"		Vertical	PROPOSED NEW COUNTY HALL PAXTON STREET SWANSEA

SOIL SAMPLES DEPTH AND TYPES	DRILLING AND CASING PROGRESS	WATER STRUCK % AND a.m. LEVEL	R. Q. D. %	CORE RECOVERY % AND SIZE	DESCRIPTION OF STRATA	THICKNESS m	O.D. LEVEL	SYMBOLIC LOG
	5·2·75				G.L. MADE GROUND consisting of ashes.	0·50	9·18	
					0·60		8·68	
1·00 P N= 8					MADE GROUND consisting of loose, Light grey Fine-medium sand.	1·00		
1·80 P N= 6					1·60		7·68	
					MADE GROUND consisting of grey sand with layers of soft sandy clay	1·05		
3·00 P N= 9					2·65		6·63	
					MADE GROUND consisting of soft red-brown sand clay with brick shale.	0·85		
					3·50		5·68	
4·00 P N= 75 for 150 mm					MADE GROUND consisting of dense bricks, ashes, sand and clay.	1·45		
5·00 P N = 105 for 225 mm		5·2·75 ▼5·7 7·2·75 10·2·75 11·2·75			4·95		4·23	
6·00 P N = 75 for 150 mm	5·2·75 6·2·75				Very dense brown sandy GRAVEL with traces of sandy clay	2·05		
7·00 P N= 77					7·00		2·18	
					Very dense brown SAND with some gravel.	0·95		
8·00 P N = 34					7·95		1·23	
					Stiff grey-brown gravelly BOULDER CLAY	3·05		
9·00 P N= 67								
10·00 P N= 63					Borehole continued to 22·0 m			

REMARKS Borehole drilled by STRATA SURVEYS Ltd Cheshire. Scale 1:50 Sheet 1 of 3

P = Standard Penetration Test ▼ = Water a.m. level

N = Number of blows for 300 mm (unless otherwise stated) Borehole chiselled from 4·0m to 15·0m

WEST GLAMORGAN COUNTY COUNCIL COUNTY ENGINEER AND SURVEYOR'S DEPT.

SITE
PROPOSED NEW COUNTY HALL
PAXTON STREET SWANSEA

SHEET 2 OF 3

BOREHOLE NUMBER
SS695E 345 2

SOIL SAMPLES DEPTH AND TYPES	DRILLING AND CASING PROGRESS	WATER RECOVERY % AND a.m. LEVEL	R.Q.D.	CORE RECOVERY % AND SIZE	DESCRIPTION OF STRATA	THICKNESS m	O.D. LEVEL	SYMBOLIC LOG
					11.00		-1.82	
11.00 P N=75 for 150 mm	6.2.75 / 7.2.75				Very stiff grey gravelly BOULDER CLAY			
12.00 P N= 75 for 150 mm	7.2.75 / 10.2.75							
13.00 P N= 75 for 150 mm								
14.00 CP N=75 for 75 mm								
15.00 CP N= 105 for 150mm	10.2.75 / 11.2.75					7.60		
16.50 CP N=75 for 150mm								
18.00 CP N= 75 for 150mm								
	11.2.75 / 12.2.75				18.60		-9.42	
"Open hole" drilling due to pebbles falling in hole - coring not possible.					Grey MUDSTONE (Driller's description)	3.40 (penetrated)		
					Borehole continued to 22.00 m			

REMARKS

P= Standard Penetration Test
CP= Standard Penetration Test - solid cone
N= Number of blows for 300 mm (unless otherwise stated)

WEST GLAMORGAN COUNTY COUNCIL COUNTY ENGINEER AND SURVEYOR'S DEPT.

SITE: PROPOSED NEW COUNTY HALL, PAXTON STREET SWANSEA

SHEET 3 OF 3

BOREHOLE NUMBER: SEEASE 345 2

SOIL SAMPLES DEPTH AND TYPES	DRILLING AND CASING PROGRESS	WATER RECOVERY % AND a.m. LEVEL	R.Q.D.	CORE RECOVERY % AND SIZE	DESCRIPTION OF STRATA	THICKNESS m	O.D. LEVEL	SYMBOLIC LOG
	12.2.74				22.00 Bottom of hole		-12.82	

REMARKS

On completion of the borehole the casing was withdrawn and a standpipe inserted to 6.50m with a cement - bentonite plug from 5.0m to 6.0m.

WEST GLAMORGAN COUNTY COUNCIL COUNTY ENGINEER AND SURVEYOR'S DEPT.

Through a Landscaping website I found that the soil situated in the area is Loamy. Loam soil is known as the "perfect soil" as it has a mixture of sand, silt, clay and avoid the extreme characteristics of the other types of soil like chalky soils, silt, sandy or clay soils.

Site/ Ground Investigation

I would firstly email Swansea council, Gas, Electric and Water suppliers to see what pipes/ cables etc. are running under the site and too see if they are in use as this would affect what can be done on the site e.g. the possibility to joining onto a main water supply or moving where the building can be placed.

Trees to be marked up for falling or cutting back and meetings with tree surgeons and bush specialists to see if the trees and bushes can be removed and to make sure that they are no endangered or an invasive species that needs a specialist to remove.

Regarding water pipes, I would also try and find the direction of the flowing water, the change of the pipe heights and to find the depth of them and diameter.

I would also try to find the owner of the private right of way to notify him of the proposed works and do ground tests.

The ground testing would come after confirmation or drawings that illustrate the locations of pipes and so-fourth to make sure the they are not accidentally dug up or broken.

The tests I would take place are as following and with reason why:

- Trail Pits- This test is carried out to recover large bulk samples of the soil. The disadvantage is the level of surface disturbance and the difficulty in carrying out effective reinstatement of the excavations. If there is water present in the excavation, problems may be encountered due to instability of the side walls. There can also be difficulty obtaining representative samples of the ground due to fine material washing out with the water as the sample is recovered.
- Bore Holes- By inserting a pipe into the ground and a cage covered in semi-permeable material in the pipe. A certain amount of water is placed into the cage and time how long it takes for the water level to reach the original water

level it was. This is to see how much water passes through into the ground and can affect the foundations and if certain measures need to be taken to allow a certain amount of water to pass into the ground.

- Asbestos Testing- A sample from the ground is taken and testing. This test is god for this site as it is a "Brownfield Site"- where commercial or pervious development has taken place on or around the site.
- Radiation- A sample of the ground is taken like the asbestos test. The sample is then taken to a laboratory to be tested for radiation of the water, air, soil, food, environment and the Health and Safety on the site. The test would be a good idea as radiation could've occurred due to World War 2 as bombs affected the area.
- Sampling (SPT, Core Sample, Bulk and Water)- All that are above are types of sampling or testing however, SPT (Standard Penetration Test) is to see how compact the soil is on the site, how loose it is. These results would affect the type of foundations and depth as well as limits needed for the size of the building.

Proposed Swansea Foreshore Ice-cream Parlour Sketches

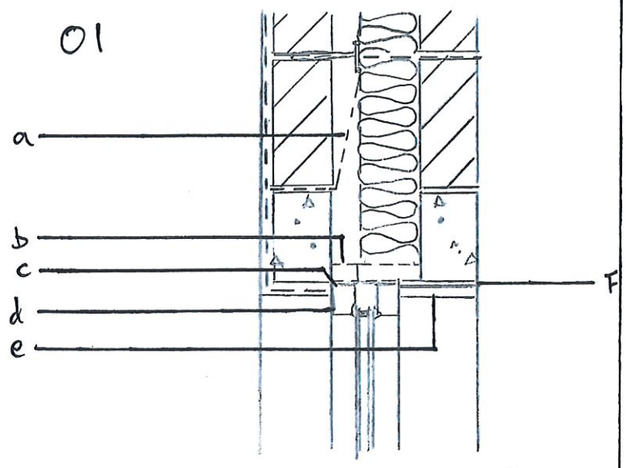
Below will be numerous drawing pages illustrating the construction detail of the proposed building, details and annotations of each drawing can be found in the appendix.

No drawings are to scale unless specified.

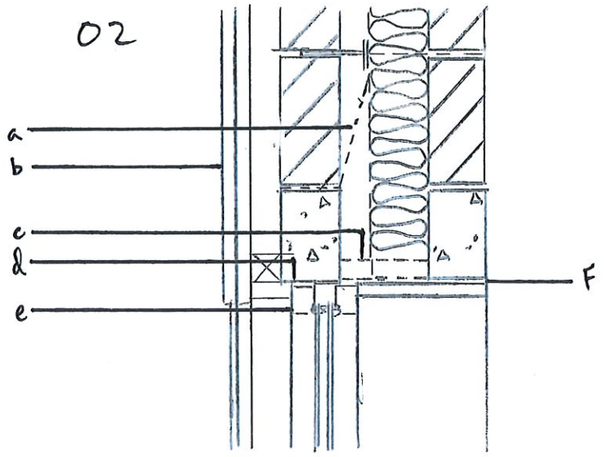
General Notes for the Drawings:

- Steelwork to be galvanised and be suitable for use in coastal location.
- Cutting, Drilling and shop welding to be completed before the steel is galvanised.
- Ground Floor- ice cream shop and restaurant
- First and Second Floor- staff room and managers apartment

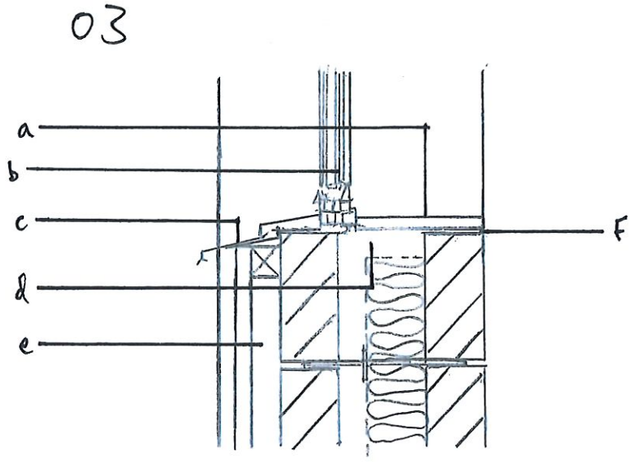
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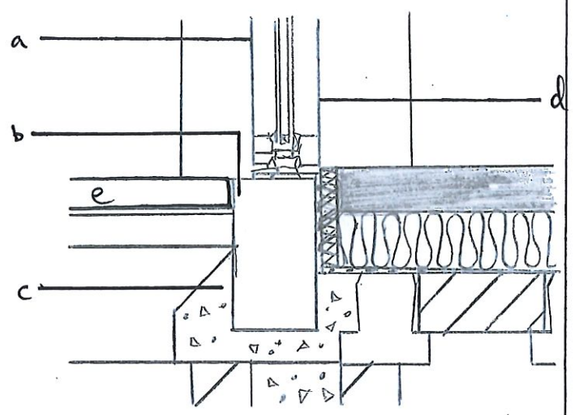
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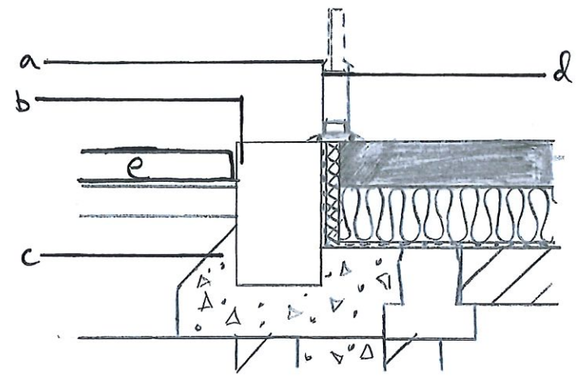
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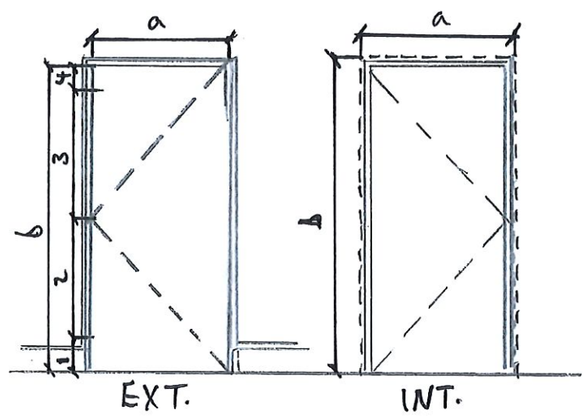
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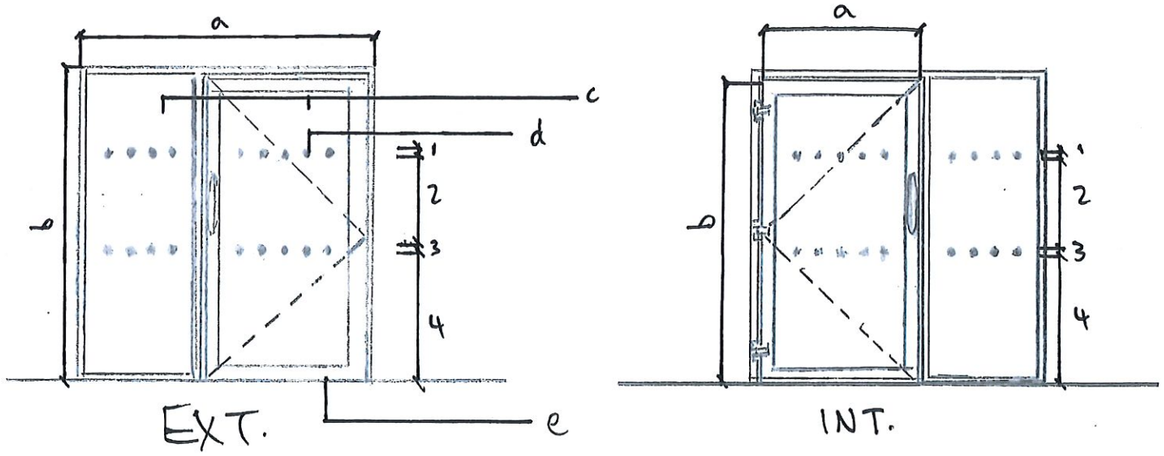
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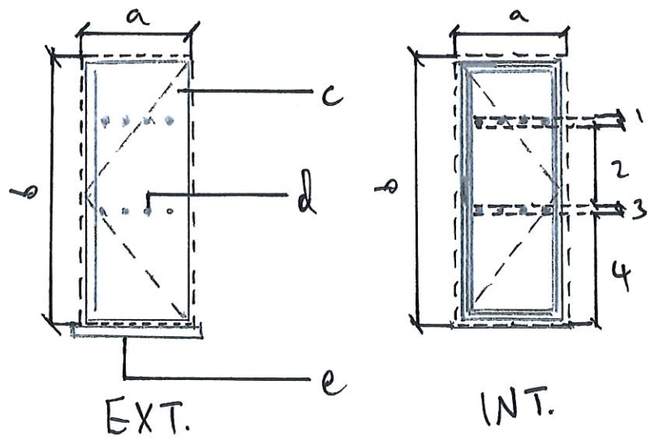
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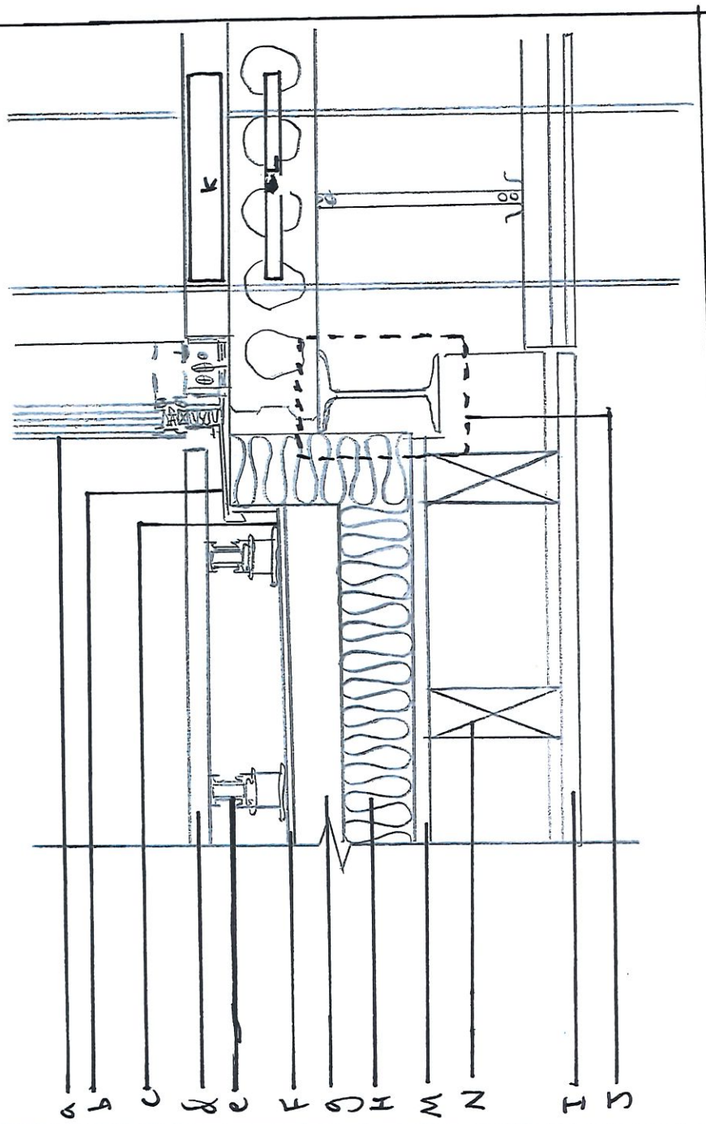
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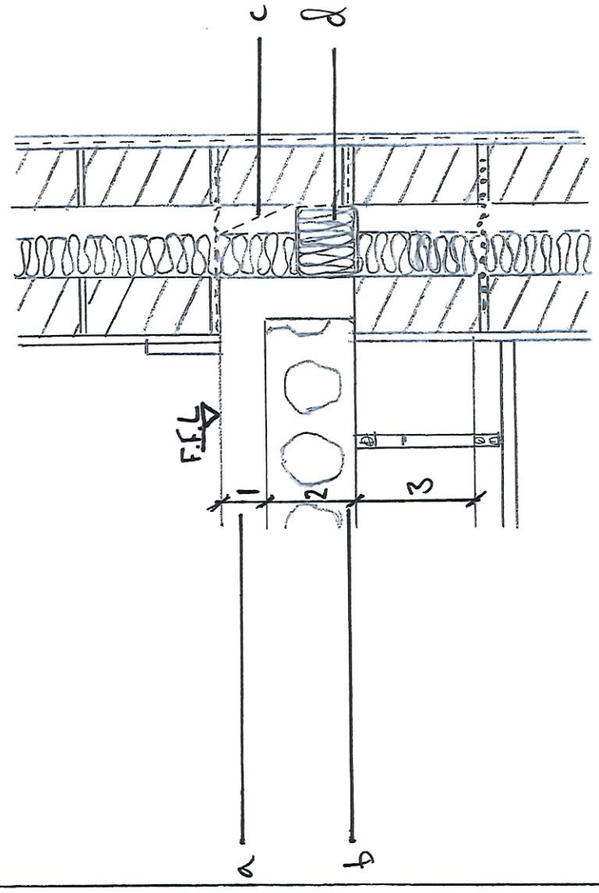
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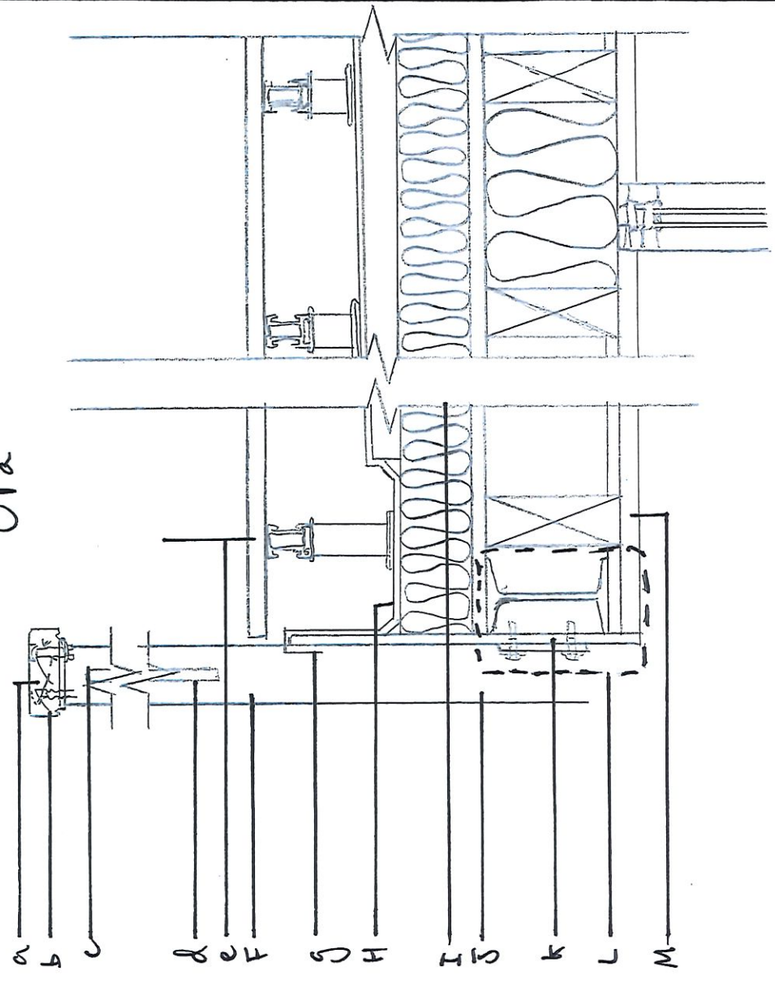
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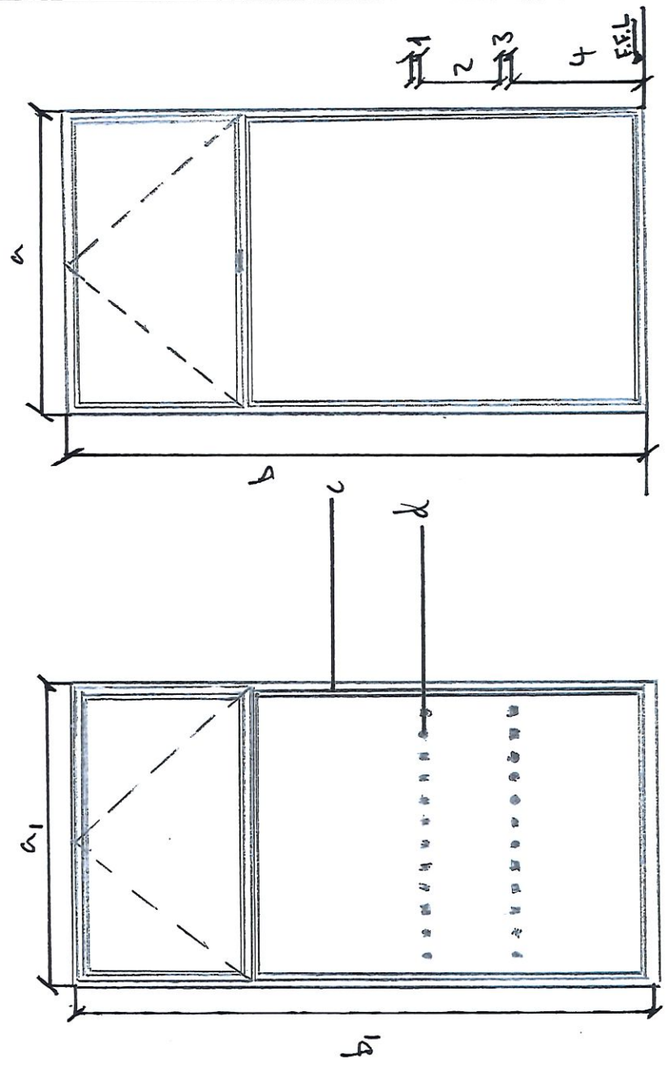
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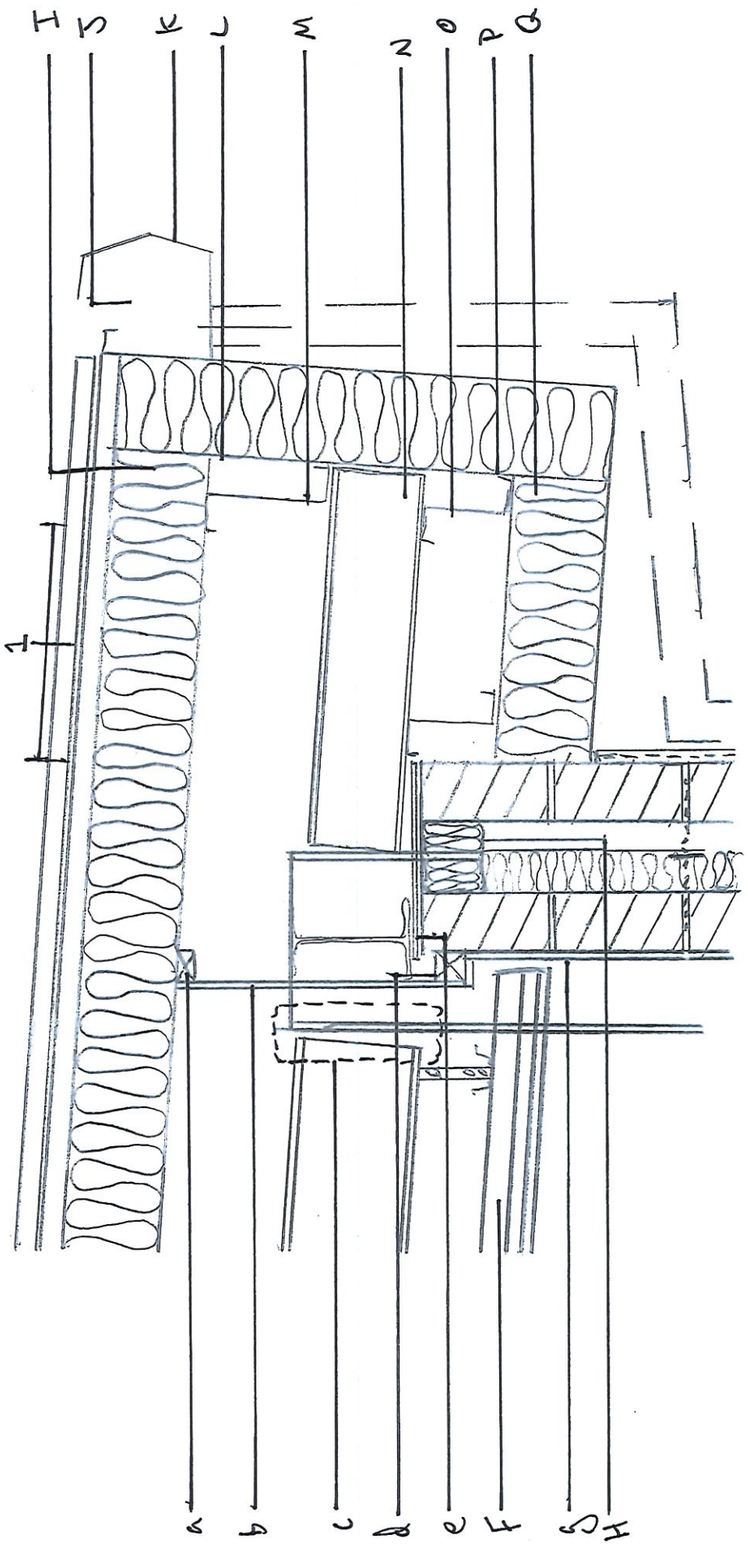


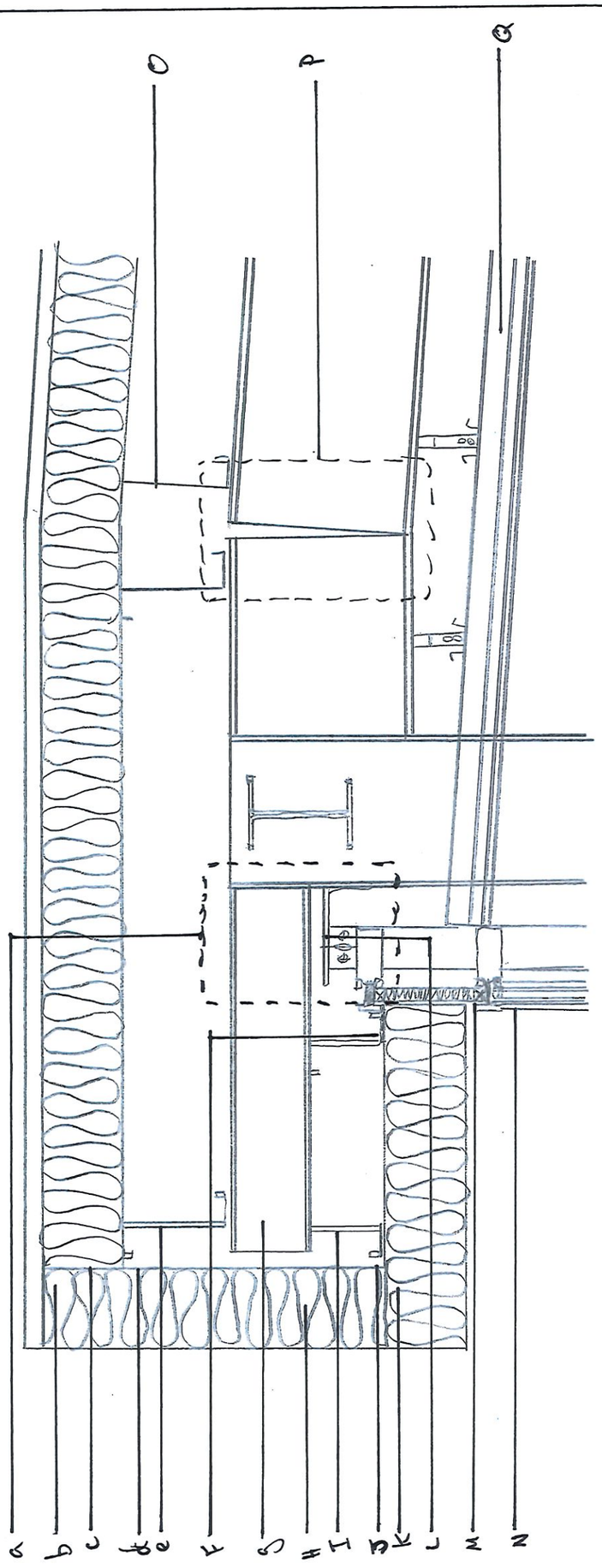
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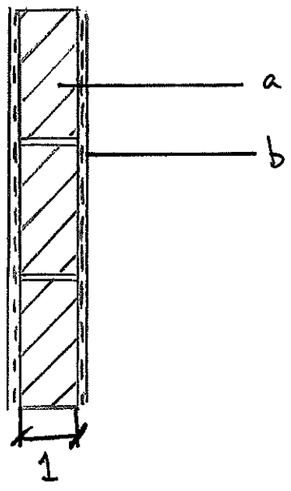
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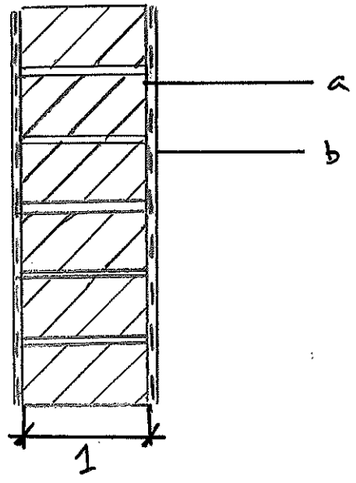


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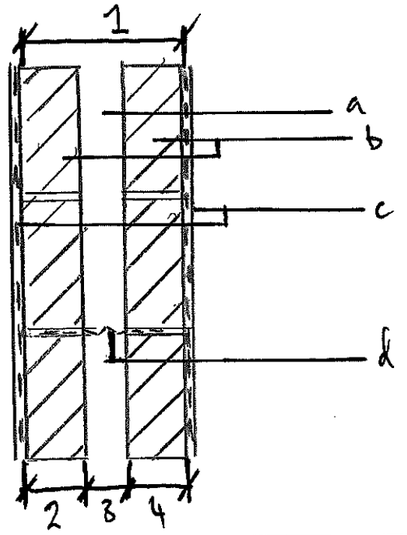
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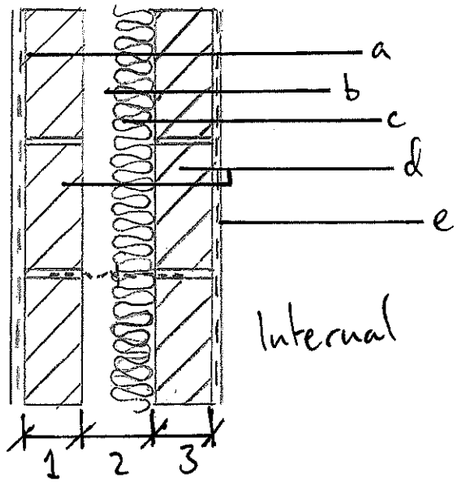
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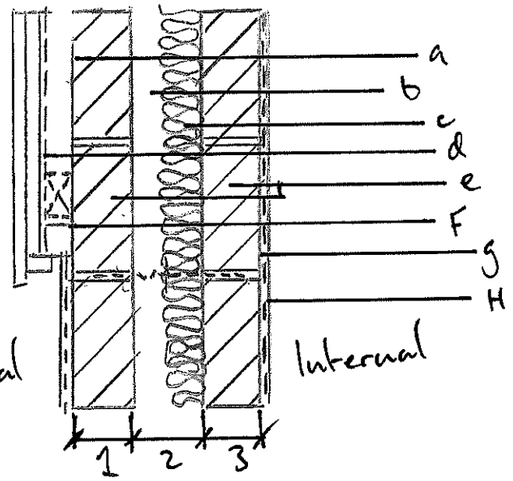
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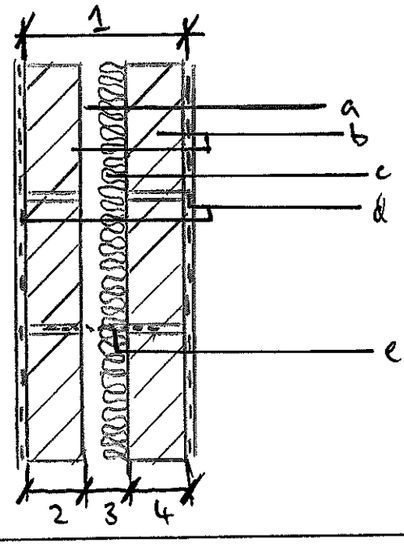
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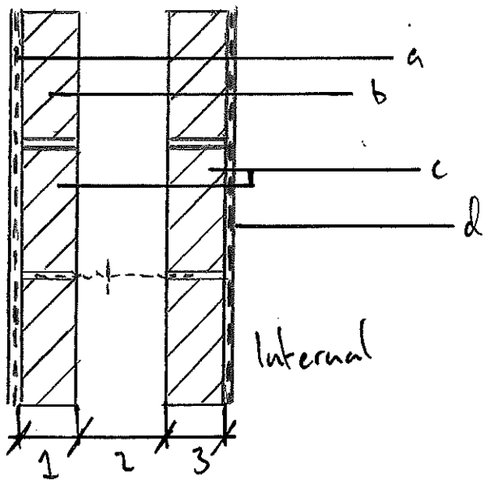
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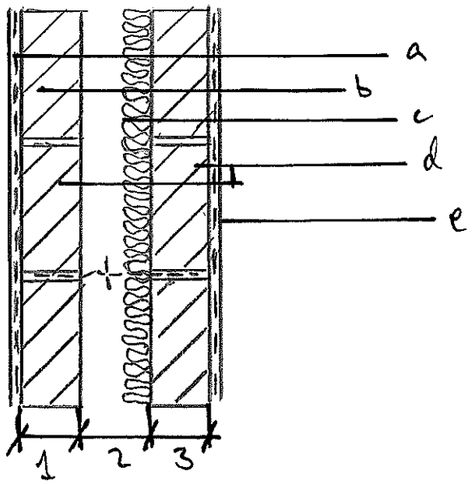
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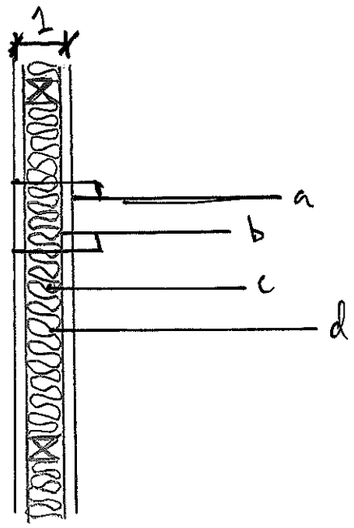
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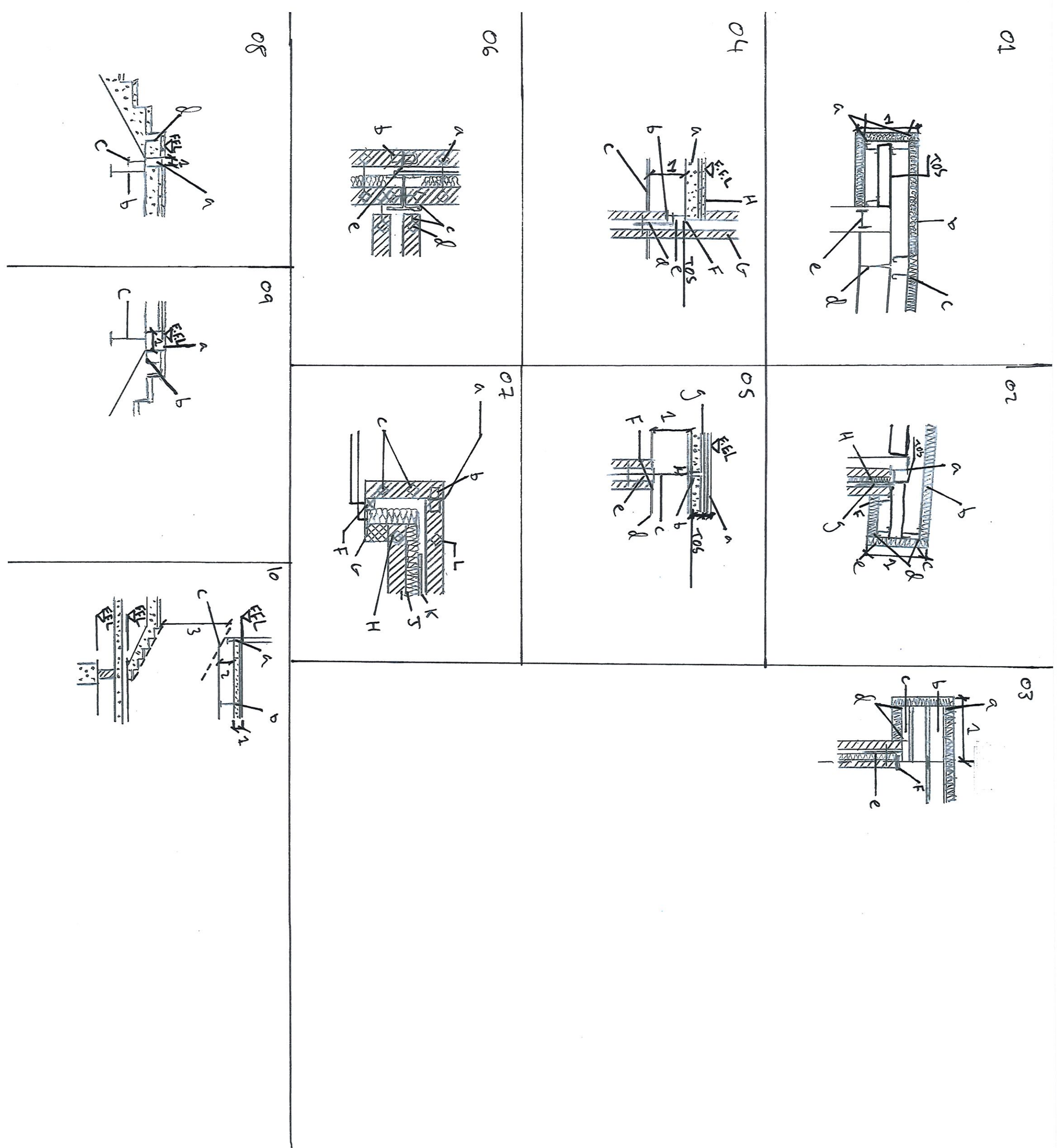


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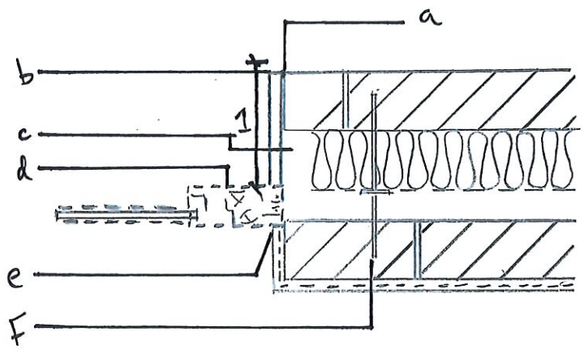


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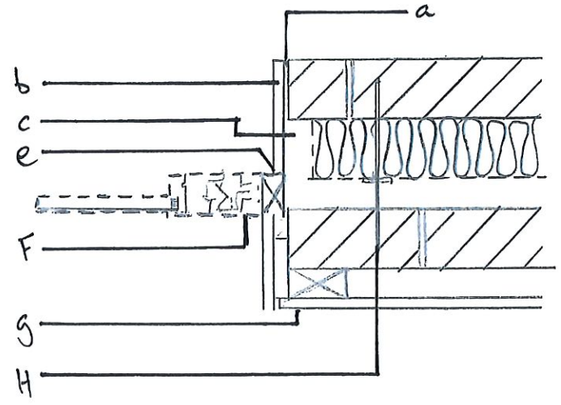
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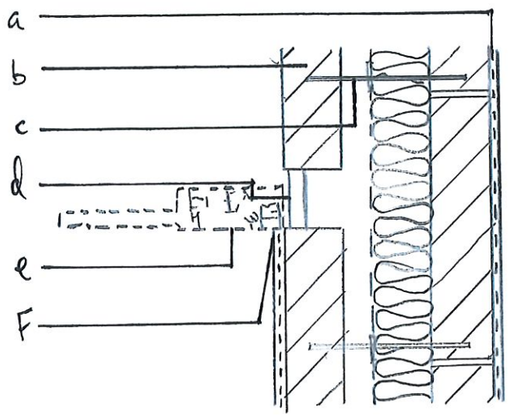
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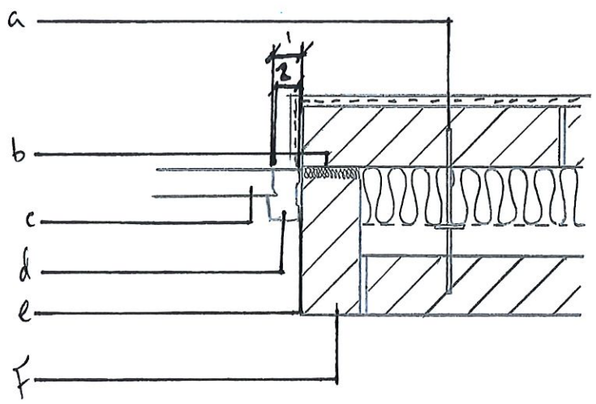
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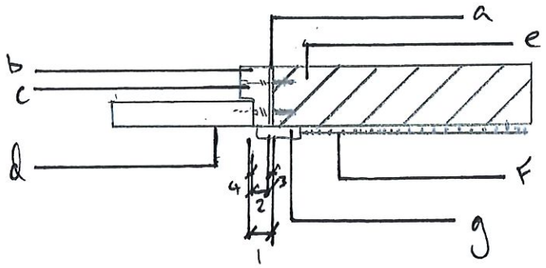
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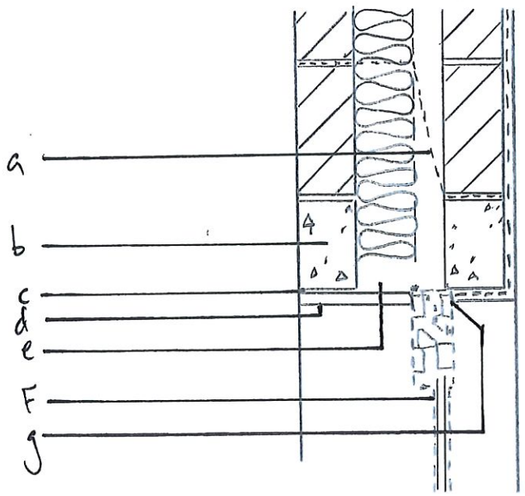
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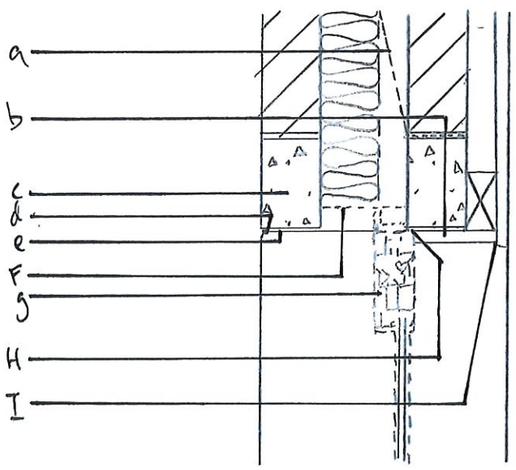
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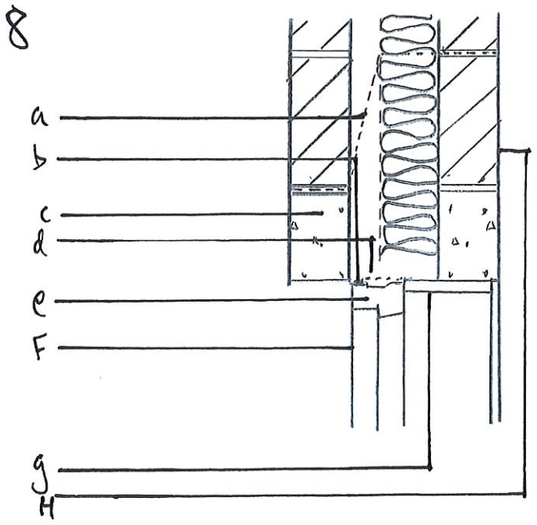
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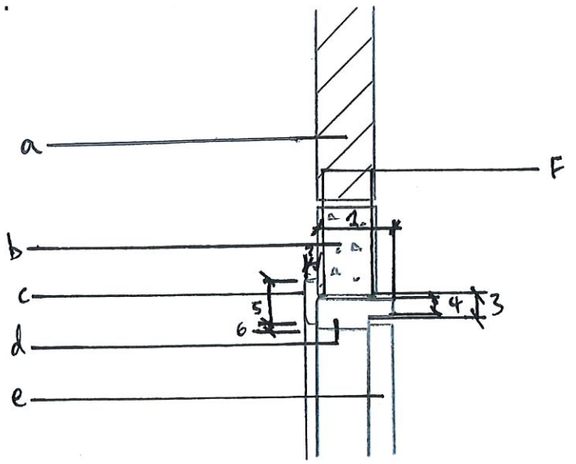
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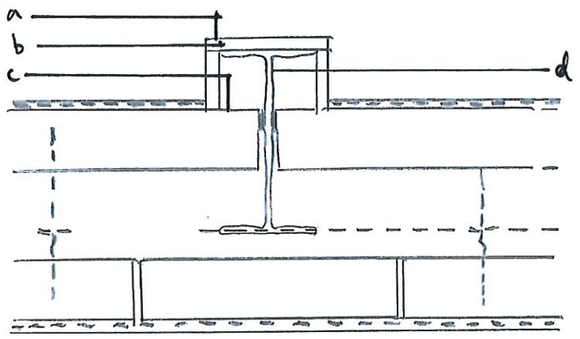


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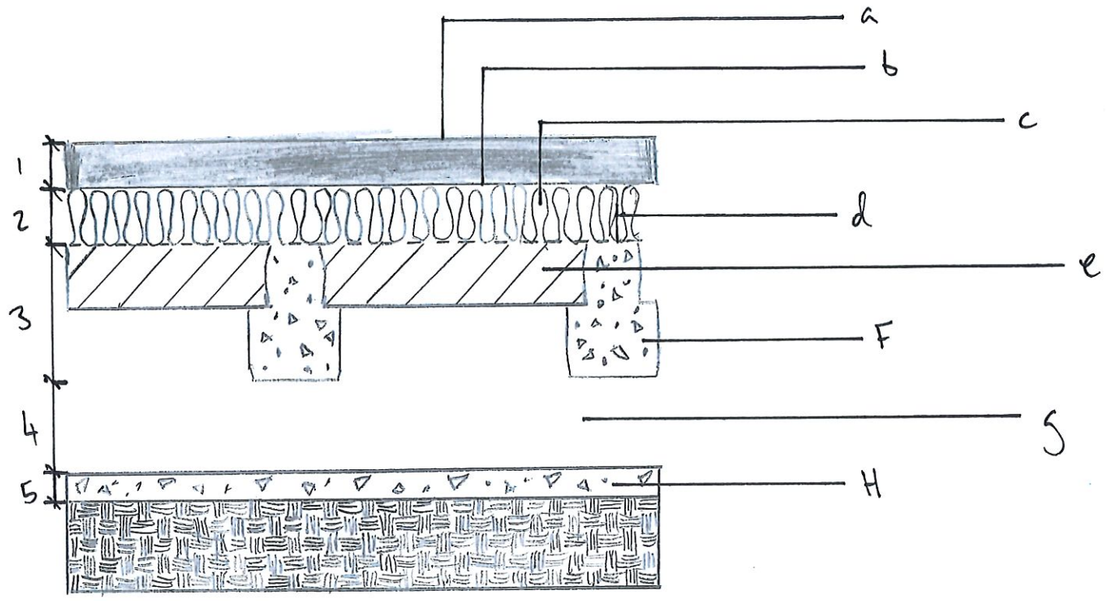


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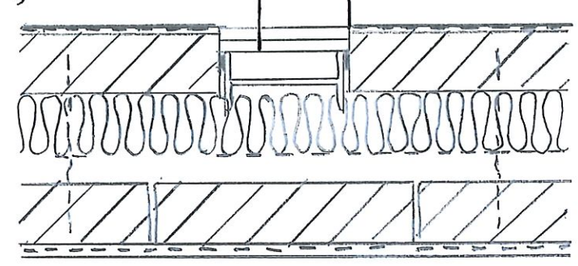
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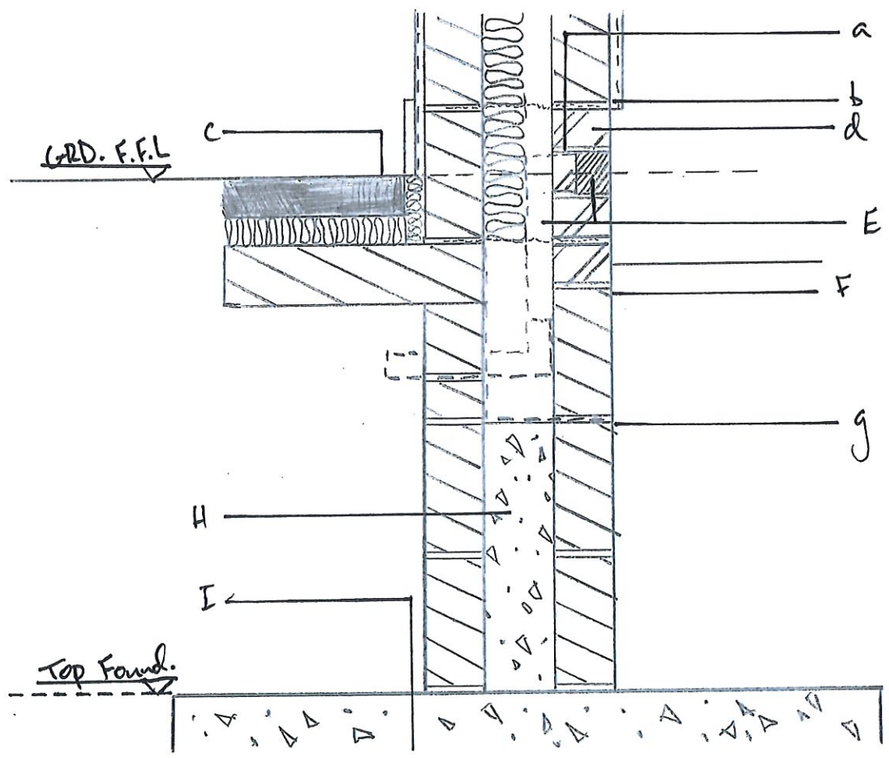
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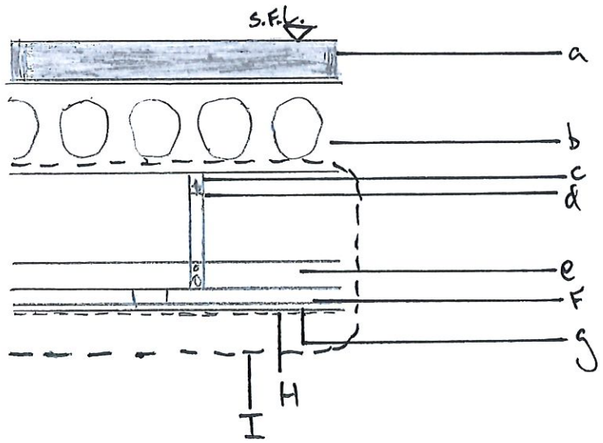
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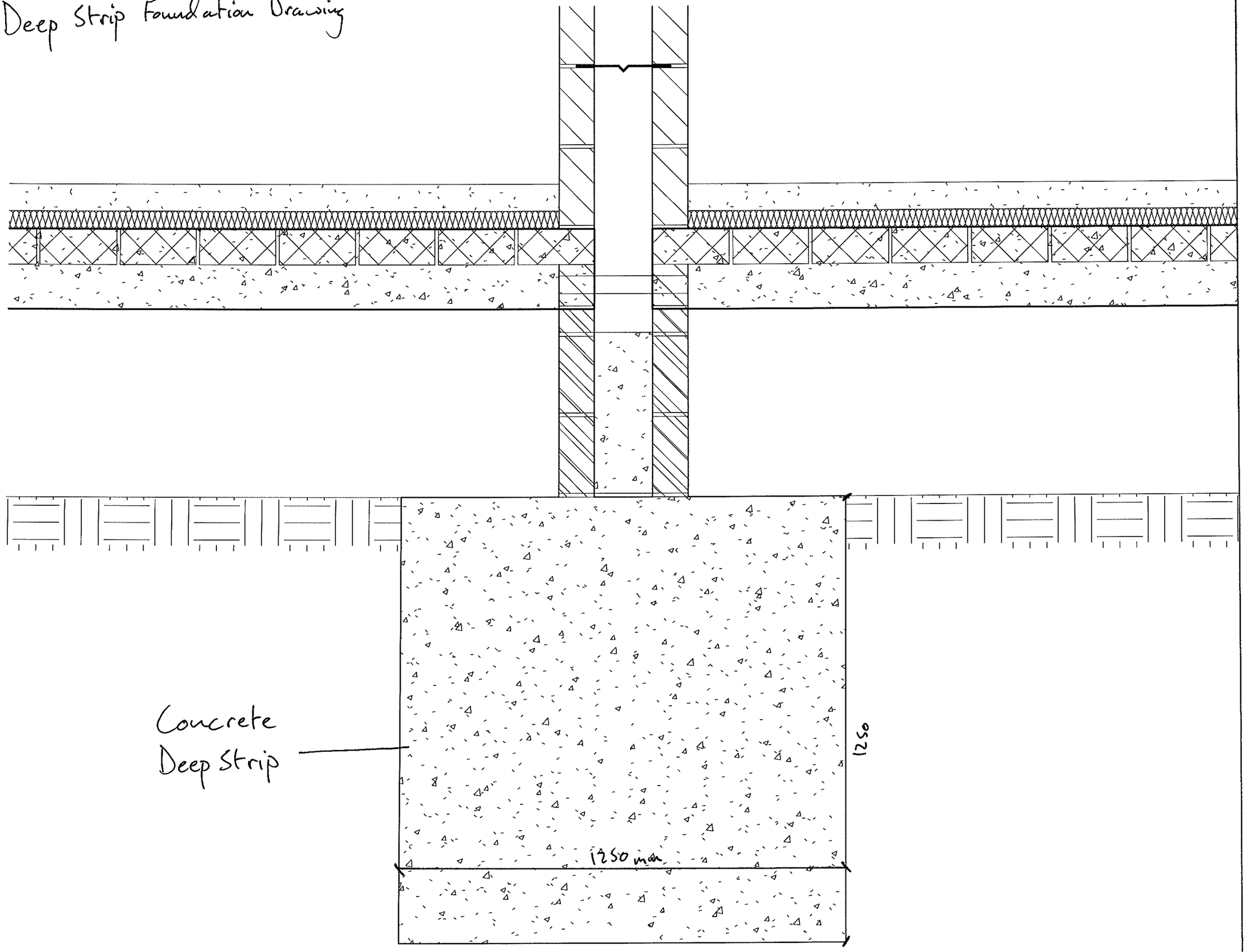
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Page: 7.

Drawing

Deep Strip Foundation Drawing



Drawing Page: 8

Site Set-Up and Plant

The plant required to completes the job would include the following and the reasons for that plant below:

- Excavators to dig the trenches for the deep-strip foundations
- Merlo Rotator to move material on/off site and from lorries
- Concrete Pump and Concrete Lorry, to pump and supply the concrete into the foundations
- Dumpers to remove the spoil material
- Rollers to roll the ground flat and level for where the proposed build is and for the plant to move around the site easily
- Road sweepers to clean the road as lorries go off site into public roads
- All terrain forklift to move material etc.
- MEWPS (Mobile Elevated Walking Platforms) to allow workers to reach heights

Although the plant has been explained for their purpose on the site, they would only be there temporarily and will be on and off site as works progress.

An image below shows the site set-up and layout of locations for certain things.



SITE BOUNDARY

SITE HOARDING

PROPOSED BUILDING LOCATION

STORAGE / LAY DOWN AREA

SITE PARKING

OFFICES / TOILETS

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Appendix

Proposed Swansea Foreshore Ice-cream Parlour Sketches

Drawing Page: 1

Drawing No.01-Typical Window Head In Ex Render Block Wall

Annotations of Drawing:

- Point A- DPC (Damp Proof Course) Cavity Tray
- Point B- Cavity Closer
- Point C- Aluminium Windows
- Point D- 18mm THK. MDF Lining Painted to Match Skirting Board
- Point E- Mastic Seal

Drawing No.02- Typical Aluminium Win Head In Ex Timber Clad Block Wall

Annotations of Drawing:

- Point A- DPC (Damp Proof Course) Cavity Tray
- Point B- Refer to 1071D- 505 for Cladding Details
- Point C- Thermabate Cavity Closer
- Point D- Mastic Selant Between Frame & Cavity Closer Internal and External
- Point E- Aluminium Windows
- Point F- Mastic Seal

Drawing No.03- Typical Aluminium Win. Cill In Ex Timber Clad Wall

Annotations of Drawing:

- Point A- Oak Cill Board Internally, Finish to Match Oak Flooring
- Point B- Aluminium Windows
- Point C- Propriatery Aluminium Cill, Finished to Match Window
- Point D- Thermabate Cavity Closer
- Point E- Vertical Board on Board Cladding
- Point F- Mastic Seal

Drawing No.04- Typical Ground Floor Aluminium Window/ Screen Cill

Annotations of Drawing:

- Point A- Aluminium Windows
- Point B- 125x150mm Chamfered Conservation Kerb to Match External Paving
- Point C- 600x300x50mm Conservation Concrete Pavers
- Point D- Concrete Bedding/ Haunching
- Point E- 1200 Gauge DPM (Damp Proof Membrane) to Return Up to Inside Cill

Drawing No.05- Typical External Aluminium Door Threshold

Annotations of Drawing:

- Point A- Aluminium Windows
- Point B- 125x150mm Chamfered Conservation Kerb to Match External Paving
- Point C- Concrete Bedding/ Haunching
- Point D- 1200 Gauge DPM (Damp Proof Membrane) to Return to Inside Cill
- Point E- 600x300x50mm Conservation Concrete Pavers

Drawing No.06- Typical External Solid Timber Door Elevation

Annotations of Drawing (EXTERNAL(EXT.)):

- Point A- Door Leaf (Width)
- Point B- Door Height (Height)

Dimensions (EXTERNAL(EXT.)):

- Dimensions No.1- 225mm
- Dimensions No.2- 795mm
- Dimensions No.3-870mm
- Dimensions No.4- 150mm

Annotations of Drawing (INTERNAL(INT.):

- Point A- Structural Opening (Width)
- Point B- Structural Opening (Height)

Drawing No.07- Typical Aluminium Door Internal/ External Elevations

Annotations of Drawing (EXTERNAL(EXT.)):

- Point A- Structural Opening (Width)
- Point B- Structural Opening (Height)

Dimensions (EXTERNAL(EXT.)):

- Dimensions No.1- 50mm
- Dimensions No.2- 600mm
- Dimensions No.3- 50mm
- Dimensions No.4- 860mm

Drawing No.07- Typical Aluminium Door Internal/ External Elevations

Annotations of Drawing (INTERNAL(INT.)):

- Point A- Door Leaf (Width)
- Point B- Door Height (Height)

Dimensions (INTERNAL(INT.)):

- Dimensions No.1- 50mm
- Dimensions No.2- 600mm
- Dimensions No.3- 50mm
- Dimensions No.4- 860mm

Drawing No.08- Typical Aluminium Window Elevations

Annotations of Drawing (EXTERNAL(EXT.)):

- Point A- Window Width
- Point B- Window Height
- Point C- Aluminium Window
- Point D- Manifestation
- Point E- Aluminium Cill, Finish/ Colour to Match Window

Drawing No.08- Typical Aluminium Window Elevations

Annotations of Drawing (INTERNAL(INT.)):

- Point A- Structural Opening Width

- Point B- Structural Opening Height

Dimensions (INTERNAL(INT.)):

- Dimensions No.1- 50mm
- Dimensions No.2- 550mm
- Dimensions No.3- 50mm
- Dimensions No.4- 740mm

Note For Drawing No.08:

Windows located in timber clad ealls require sub frames to prevent casements/ trickle vents becoming blocked.

Drawing Page: 2

Drawing No. 01a- Curtain Wall/ External Terrace Threshold Detail

Annotations of Drawing:

- Point A- Hardwood Balustrade Fixed to Steel Frame
- Point B- Drip Cut Into Timber
- Point C- Glass Infill Panel
- Point D- Glass Infill Panel
- Point E- Timber Deck
- Point F- Vertical Steel Balastrade Support Design
- Point G- Single Ply Membrane to Wrap over Balcony Edge Steel
- Point H- Single Ply Membrane to Form Internal Gutter Drainage to Outlets at Either End of The Building
- Point I- Insulation Cut to Falls
- Point J- 120mm Insulation
- Point K- Galvanised Steel Plate to Form Edge of External Terrace
- Point L- Section of Connection of Steel Beam From The Steel Frame
- Point M- 300mm Eternit External Cladding Board to Shop Front Soffit

Drawing No. 01b- Curtain Wall/ External Terrace Threshold Detail

Annotations of Drawing:

- Point A- Curtain Wall System

- Point B- Aluminium Cill As Part of Curtain Wall System
- Point C- Single Ply Membrane to Wrap Up Under Aluminium Cill
- Point D- Timber Deck
- Point E- Adjustable Plastic Supports Sitting on Insulation/ Single Ply Membrane
- Point F- Plastic Single Ply Membrane
- Point G- Insulation Cut to Falls
- Point H- 120mm Insulation Board
- Point I- 30mm PlasterBoard Ceiling to Underside of External Terrace
- Point J- Steel Connection
- Point K- 75mm Structural Screed
- Point L- 150mm Concrete Planks
- Point M- 25mm Marine Plywood to Form External Terrace
- Point N- 225mm Timbers Spanning Between Steels

Drawing No. 02- Curtain Wall Elevation Detail

Annotations of Drawing:

- Point A1- Window Width
- Point A- Structural Opening (Width)
- Point B1- Window Height
- Point B- Structural Opening (Height)
- Point C- Aluminium Curtain Walling System
- Point D- Manifestation

Dimensions:

- Dimensions No.1- 50mm
- Dimensions No.2- 550mm
- Dimensions No.3- 50mm
- Dimensions No.4- 900mm

Drawing No. 03- First Floor External Wall Detail

Annotations of Drawing:

- Point A- 75mm Structural Screed
- Point B- 150mm Concrete Planks
- Point C- DPC (Damp Proof Course)
- Point D- Insulated Fire Block Between Floors

Dimensions:

- Dimensions No.1- 75mm
- Dimensions No.2- 150mm
- Dimensions No.3- 200mm

Notes:

- 600x600mm Tiled Suspended Ceiling
- Dimension No.3- 200mm Acts As a Service Void

Drawing Page: 3

Drawing No. 01- Typical South Elevation Eves Detail

Annotations of Drawing:

- Point A- Steel Connection
- Point B- Insulated Roof Panel
- Point C- Sealed with Mastic Joints, to Achieve Air Tightness
- Point D- Eves Angle
- Point E- Metal Perlin
- Point F- Mastic Seal to Air Tight Membrane Fixed to Underside of Metal Perlin
- Point G- Structural Steel
- Point H- Insulated Panel
- Point I- Metal Perlin
- Point J- Eves Angle
- Point K- Insulated Panel
- Point L- Steel Angle Welded to Main Frame to Support Cutrain Wall
- Point M- Curtain Wall Insulated Spandrel Panel
- Point N- Curtain Wall System
- Point O- Metal Perlin

- Point P- Steel Connection
- Point Q- Suspended Ceiling As Part of Tennant Fit Out

Drawing No. 02- Typical South Elevation Eves Detail

Annotations of Drawing:

- Point A- 50x25 Battened Fixed to Underside of Roof Panel
- Point B- 12mm Cement Board Mastic Sealed Top and Bottom to Create Air Tight Building
- Point C- Steel Connection
- Point D- 50x50 Batten Fixed Blockwork
- Point E- Cavity Capped with Cement Board
- Point F- Suspended Ceiling As Part of Tennant Fit Out
- Point G- Internal Skim to Finish Against Timber Batten
- Point H- Insulated Fire Barrier at Top of Cavity
- Point I- Insulated Roof Panel
- Point J- Gutter Support
- Point K- Alluminum Gutter
- Point L- Eves Angle
- Point M- Metal Perlin
- Point N- Structural Steel
- Point O- Metal Perlin
- Point P- Eves Angle
- Point Q- Insulated Panel

Dimensions:

- Dimensions No.1- 200mm, Fixing Centres

Drawing Page: 4

Drawing No. 01- B1, 100mm Block

Annotations of Drawing:

- Point A- 100mm Dense Concrete

- Point B- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 100mm

Drawing No. 02- B2, 215mm Block

Annotations of Drawing:

- Point A- 100mm Dense Concrete
- Point B- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 215mm

Drawing No. 03- B3, 275mm Internal Cavity Parting Wall

Annotations of Drawing:

- Point A- 75mm Clear Cavity
- Point B- 100mm Dense Concrete Block
- Point C- Gypsum Plaster Finish on Sand & Cement Render
- Point D- Wall Tie

Dimensions:

- Dimensions No.1- 275mm
- Dimensions No.2- 100mm
- Dimensions No.3- 75mm
- Dimensions No.4- 100mm

Drawing No. 04- B4, 320mm External Cavity Wall

Annotations of Drawing:

- Point A- Sand & Cement Render
- Point B- 50mm Clear Cavity
- Point C- 70mm Cavity Board
- Point D- 100mm Dense Concrete Block

- Point E- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 100mm
- Dimensions No.2- 120mm
- Dimensions No.3- 100mm

Drawing No. 05- B5, 320mm External Timber Clad Cavity Wall

Annotations of Drawing:

- Point A- Sand & Cement Render
- Point B- 50mm Clear Cavity
- Point C- 70mm Cavity Board
- Point D- Timber Battens Fixed to Blockwork
- Point E- 100mm Dense Concrete Block
- Point F- Breather Membrane
- Point G- Insect Mesh Fixed to Underside of Battens
- Point H- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 100mm
- Dimensions No.2- 120mm
- Dimensions No.3- 100mm

Drawing No. 06- B6, 275mm Insulated Cavity Wall

Annotations of Drawing:

- Point A- 25mm Clear Cavity
- Point B- 100mm Dense Concrete Block
- Point C- 50mm Cavity Board
- Point D- Gypsum Plaster Finish on Sand & Cement Render
- Point E- Wall Tie

Dimensions:

- Dimensions No.1- 275mm
- Dimensions No.2- 100mm
- Dimensions No.3- 75mm
- Dimensions No.4- 100mm

Drawing No. 07- B7, 350mm Internal Cavity Wall

Annotations of Drawing:

- Point A- Sand & Cement Render
- Point B- 50mm Clear Cavity
- Point C- 100mm Dense Concrete Block
- Point D- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 100mm
- Dimensions No.2- 150mm
- Dimensions No.3- 100mm

Drawing No. 08- B8, 320mm Insulated 50mm Insulated Cavity Wall

Annotations of Drawing:

- Point A- Sand & Cement Render
- Point B- 50mm Clear Cavity
- Point C- 50mm Cavity Board
- Point D- 100mm Dense Concrete Block
- Point E- Gypsum Plaster Finish on Sand & Cement Render

Dimensions:

- Dimensions No.1- 100mm
- Dimensions No.2- 120mm

- Dimensions No.3- 100mm

Drawing No. 09- B9, P1 Timber Stud Wall

Annotations of Drawing:

- Point A- 3mm Thistle Plaster Finish
- Point B- 12.5mm Wallboard Plaster Board
- Point C- 65mm Acoustic Fire Board Insulation
- Point D- 63x38mm CLS (Canadian Lumber Standard) Timber Studs at 600mm Centres

Dimensions:

- Dimensions No.1- 90mm

Drawing Page: 5

Drawing No. 01- Upper Eaves Detail

Annotations of Drawing:

- Point A- 2 No. Cleader Rails for Fixing Fascia Cladding
- Point B- 100mm Thick Composite Cladding
- Point C- Metal Z-Section Perlin
- Point D- Splice Connection by Steel Fabrication
- Point E- Steel Beam
- TOS- Top Of Steel

Dimensions:

- Dimensions No.1- 712mm

Drawing No. 02- Lower Eaves Detail

Annotations of Drawing:

- Point A- Steel Beam
- Point B- 100mm Composite Cladding
- Point C- Metal Perlin
- Point D- 2 No. Cleader Rails for Fixing Fascia Cladding
- Point E- Metal Perlin

- Point F- Metal Perlin
- Point G- 20mm Thick Compressible Board Filler Between Eaves Beam & Top of Masonry Wall
- Point H- Stainless Steel Sliding Anchor Ties Between Eaves Beam & Masonry Wall at 900mm Horizontal Centres. Isolation Pads Between Mild Steel and Stainless Steel
- TOS- Top Of Steel

Dimensions:

- Dimensions No.1- 712mm

Drawing No. 03- Verge Detail

Annotations of Drawing:

- Point A- Cleader Rail to Support Fascia Cladding
- Point B- Metal Perlin
- Point C- Truss at 1800mm, Fully Welded to Rafter Web
- Point D- 2 No. Cleader Rails Spanning Between RSA (Rolled Steel Angle) to Support Soffit
- Point E- Stainless Steel Sliding Anchor Ties Between Rafters & Masonry Walls at 900mm Horizontal Centres. Isolation Pads Between Mild Steel and Stainless Steel
- Point F- 20mm Thick Compressible Board Eaves Beam & Top of Masonry Wall

Drawing No. 04- Plank Edge Detail

Annotations of Drawing:

- Point A- 150mm Deep Precast Concrete Floor Planks
- Point B- 20mm Thick Compressible Board Filled Between Masonry and Steel
- Point C- Suspended Ceiling
- Point D- Sliding Anchor Ties at 900mm Horizontal Centres
- Point E- Steel Beam
- Point F- Planks Laid on Mortar Bed to Take out Pre-Camber

- F.F.L- Finished Floor Level
- TOS- Top Of Steel

Dimensions:

- Dimensions No.1- 435mm

Drawing No. 05- Plank Support Detail

Annotations of Drawing:

- Point A- 75mm Deep Concrete Bonded Screed with Mesh at Mid Depth
- Point B- Bearing for Concrete Planks on to Top Flange of Steel Beams
- Point C- Steel Beams
- Point D- Suspended Ceiling
- Point E- Sliding Anchor Ties at 900mm Horizontal Centres
- Point F- 20mm Thick Compressible Board Filled Between Masonry & Steel
- F.F.L- Finished Floor Level
- TOS- Top Of Steel

Dimensions:

- Dimensions No.1- 435mm

Drawing No. 06- Movement Joint Detail 1

Annotations of Drawing:

- Point A- Stainless Steel Wall Ties Spaced at 225mm Vertical at Joint Position. Wall ties Spaced at 900mm Horizontal and 450mm Vertical Centres to Other Locations, Closed at Wall Openings
- Point B- Proprietary Stainless Steel Debonding Tie Across Joint at 450mm Vertical Centres
- Point C- Stainless Steel Frame Cramps
- Point D- Steel Beam

- Point E- 10mm Wide Movement Joint with Proprietary Compressible Foam Filler with Sealant to External Face Coloured to Match Surrounding Wall Finishes
- F.F.L- Finished Floor Level
- TOS- Top Of Steel

Drawing No. 07- Movement Joint Detail 2

Annotations of Drawing:

- Point A- 10mm Wide Movement Joint with Proprietary Compressible Foam Filler with Sealant to External Face Coloured to Match Surrounding Wall Finishes
- Point B- Proprietary Stainless Steel Debonding Tie Across Joint at 450mm Vertical Centres
- Point C- Stainless Steel Frame Cramps
- Point F- Cavity Closer
- Point G- Steel Beam
- Point H- Stainless Steel Frame Cramps
- Point J- Cavity Wall Construction
- Point K- 15x150mm Thick Cross Bracing
- Point L- Stainless Steel Wall Ties Spaced at 225mm Vertical at Joint Position. Wall ties Spaced at 900mm Horizontal and 450mm Vertical Centres to Other Locations, Closed at Wall Openings

Drawing No. 08- Staircase Support 1

Annotations of Drawing:

- Point A- Concrete Screed to Fill Gap Between Floor Planks & Stairs
- Point B- Steel Beam
- Point C- Steel Beam
- Point D- Steel Staircase Support into Stairs
- F.F.L- Finished Floor Level

Dimensions:

- Dimensions No.1- 100mm

Drawing No. 09- Staircase Support 2

Annotations of Drawing:

- Point A- Concrete Screed to Fill Gap Between Floor Planks & Stairs
- Point B- Steel Staircase Support into Stairs
- Point C- Steel Beam
- F.F.L- Finished Floor Level

Dimensions:

- Dimensions No.1- 230mm

Drawing No. 10- Staircase Section

Annotations of Drawing:

- Point A- Steel Beam
- Point B- Steel Beam
- Point C- Chamfered Ceiling
- F.F.L- Finished Floor Level

Dimensions:

- Dimensions No.1- 225mm
- Dimensions No.2- 435mm
- Dimensions No.3- 2000mm

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Drawing No. 01- Typical Aluminium Door Jam In External Render Block Wall

Annotations of Drawing:

- Point A- Mastic Seal
- Point B- 18mm Thick MDF (Medium Density Fireboard) to Match Skirting
- Point C- Cavity Closer
- Point D- Aluminium Glazed Door
- Point E- Selant to All Junctions, Internal & External, Including Back Face of Frame During Installation

- Point F- Cavity Wall Ties Spaced 225mm Vertically to All Openings

Dimensions:

- Dimensions No.1- 210mm

Drawing No. 02- Typical Aluminium Door Jam In External Timber Clad Block Wall

Annotations of Drawing:

- Point A- Mastic Seal
- Point B- 18mm Thick MDF (Medium Density Fireboard) to Match Skirting
- Point C- Cavity Closer
- Point E- Selant to All Junctions, Internal & External, Including Back Face of Frame During Installation
- Point F- Aluminium Glazed Entrance Door. Where Doors are Located in Timber Cladding External Walls Subframes are to be Allowed For
- Point G- Timber Clad
- Point H- Cavity Wall Ties Spaced 225mm Vertically to All Openings

Drawing No. 03- Typical Aluminium Door Jam In External Render Block Wall

Annotations of Drawing:

- Point A- 3mm Thick Thistle Skim On, 10mm Thick Sand & Cement Base Coat
- Point B- 350mm Insulated Cavity Construction
- Point C- Cavity Wall Ties Spaced 225mm, Vertically to All Openings
- Point D- Cavity Closer
- Point E- Aluminium Glazed Entrance Door
- Point F- Selant to All Junctions, Internal & External, Including Back Face of Frame During Installation

Drawing No. 04- Typical Timber Door Jam In External Render Block Wall

Annotations of Drawing:

- Point A- Cavity Wall Ties Spaced 225mm, Vertically to All Openings
- Point B- Vertical Insulated DPC (Damp Proof Course)
- Point C- Proprietary Timber Frame Ledge & Braced External Timber Door
- Point D- Proprietary Hardwood Frame, Including Weather Seals to All External Doors
- Point E- Mastic Seal
- Point F- Fair Faced Common Concrete Block Work

Dimensions:

- Dimensions No.1- 50mm
- Dimensions No.2- 45mm

Drawing No. 05- Typical Internal Timber Door Jam Block Wall

Annotations of Drawing:

- Point A- Intumescent Selant
- Point B- Hardwood Casing
- Point C- Casing Plugged & Screwed
- Point D- 44mm Thick Veneered Door, For Fire Integrity
- Point E- 100mm Thick Fair Faced Common Block Work
- Point F- Thistle Plaster Skim on Sand & Cement Undercoat
- Point G- 20x75mm Architrave

Dimensions:

- Dimensions No.1- 40mm
- Dimensions No.2- 30mm
- Dimensions No.3- 5mm
- Dimensions No.4- 5mm

Drawing No. 06- Typical Head Detail Aluminium Door in External Block Wall

Annotations of Drawing:

- Point A- Highload DPC (Damp Proof Course) Above Lintels
- Point B- Prestressed Concrete Lintel

- Point C- Mastic Seal
- Point D- 18mm Thick MDF (Medium Density Fireboard) Lining Painted to Match Skirting Board
- Point E- Cavity Closer
- Point F- Aluminium Glazed Entrance Door
- Point G- Selant to All Junctions, Internal & External, Including Back Face of Frame During Installation

Drawing No. 07- Typical Head Detail Aluminium Door in External Timber Clad Block Wall

Annotations of Drawing:

- Point A- Highload DPC (Damp Proof Course) Above Lintels
- Point B- Timber Board to Match Cladding Material Fixed Across Head
- Point C- Prestressed Concrete Lintel
- Point D- Mastic Seal
- Point E- 18mm Thick MDF (Medium Density Fireboard) Lining Painted to Match Skirting Board
- Point F- Cavity Closer
- Point G- Aluminium Glazed Entrance Door. Where Doors are Located in Timber Cladding External Walls Subframes are to be Allowed For
- Point H- Selant to All Junctions, Internal & External, Including Back Face of Frame During Installation
- Point I- Undercut to Cladding to Provide a Positive Drip

Drawing No. 08- Typical Head Detail Timber Door in External Block Wall

Annotations of Drawing:

- Point A- Highload DPC (Damp Proof Course) Above Lintels
- Point B- Mastic Seal
- Point C- Prestressed Concrete Lintel
- Point D- Cavity Closer
- Point E- Proprietary Hardwood Frame, Including Weather Seals to All External Doors

- Point F- Proprietary Timber Framed Ledge &Braced External Timber Door
- Point G- 18mm Thick MDF (Medium Density Fireboard) Lining Painted to Match Skirting Board
- Point H- Fair Faced Common Concrete Block Work

Drawing No. 09- Typical Internal Timber Door in Block Wall

Annotations of Drawing:

- Point A- 100mm Thick Dense Concrete Block
- Point B- Prestressed Concrete Lintel
- Point C- 75x25mm Softwood Architrave
- Point D- Hardwood Casing
- Point E- 44mm Thick Veneered Door, For Fire Integrity
- Point F- Mastic Seal

Dimensions:

- Dimensions No.1- 130mm
- Dimensions No.2- 20mm
- Dimensions No.3- 40mm
- Dimensions No.4- 30mm
- Dimensions No.5- 75mm
- Dimensions No.6- 10mm

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Drawing No. 01- Typical Steel Fire Encasement in Block Wall

Annotations of Drawing:

- Point A- Cover Joint
- Point B- 20mm Thick Firecase to Steels
- Point C- Steel Angle Fixed at 600mm Centres
- Point D- Steel Structure

Drawing No. 02- Typical Ground Floor Construction

Annotations of Drawing:

- Point A- 75mm Screed
- Point B- 500 Gauge DPM (Damp Proof Course)
- Point C- 100mm Floorboard Insulation
- Point D- 1200 Gauge DPM (Damp Proof Course
- Point E- Concrete Block Infill
- Point F- Beam & Block
- Point G- 150mm Ventilated Air Space
- Point H- 50mm Oversite Concrete

Drawing No. 03- Typical Steel Fire Encasement in Block Wall

Annotations of Drawing:

- Point A- 13mm Stainless Steel Stop Bead
- Point B- 20mm Thick Firecase to Steel, Allowance for Double Skin To Finish In Line Plaster Face

Drawing No. 04- Typical First/ Second Floor Construction

Annotations of Drawing:

- Point A- 75mm Structural Screed
- Point B- 150mm Concrete Planks
- Point C- Soffit Cleat
- Point D- Steel Angle
- Point E- Suspended Ceiling System
- Point F- Ceiling Section
- Point G- 12.5mm Fireline
- Point H- Thistle Plaster Finish
- Point I- Suspended Ceiling
- S.F.L- Structural Floor Level

Drawing No. 05- Typical Ground Floor Edge Construction

Annotations of Drawing:

- Point A- Horizontal DPC (Damp Proof Course)
- Point B- Stainless Steel Stop Beads
- Point C- 25mm Perimeter Insulation
- Point D- Brick Plinth to Base of Building
- Point E- Periscope Underfloor Ventilation
- Point F- Tarmac Surface Finish
- Point G- DPM (Damp Proof Course)
- Point H- Lean Concrete Mix
- Point I- Top of Foundation
- GRD. F.F.L- Ground Finished Floor Level

WW/SP/SSW/22



SPECIFICATION FOR

SAFE WORKING IN THE VICINITY OF PIPELINES AND ASSOCIATED INSTALLATIONS OPERATING ABOVE 2 BARG - REQUIREMENTS FOR THIRD PARTIES

JUNE 2013

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FOREWORD

This Specification was approved, by Chris Clarke, Director of Asset Management and HS&E Dept on 21st June 2013 for use by managers, engineers and supervisors throughout Wales & West Utilities Limited.

Documents are revised, when necessary, by the issue of new editions. Users should ensure that they are in possession of the latest edition by referring to the document library available on the company intranet.

Compliance with this document does not confer immunity from prosecution for breach of statutory or other legal obligations.

BRIEF HISTORY

First published as T/SP/SSW22	October 2001	EPSG/L01/283
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Editorial update to comply with GRM	August 2004	
Document revised to remove reference to Transco and replace with WWU Ltd.	May 2006	
Document revised to reflect WWU management structure, include IP pipelines and update letters	April 2013	

KEY CHANGES (Identify the changes from the previous version of this document)

Section	Amendments
1	Scope extended from any pipe operating above 7bar to above 2bar gauge
5 & 6	References added to T/PR/P/18
8	References added to wind turbine development near pipelines

USE

This document is provided by Wales & West Utilities Limited for information and reference.

MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

must: indicates a mandatory requirement.

should: indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

SPECIFICATION FOR

SAFE WORKING AND DEVELOPMENT IN THE VICINITY OF PIPELINES AND ASSOCIATED INSTALLATIONS OPERATING ABOVE 2 BARG - REQUIREMENTS FOR THIRD PARTIES

INTRODUCTION

This specification is for issue to third parties carrying out work in the vicinity of high pressure gas pipelines (above 2 bar gauge) and associated installations and is provided to ensure that individuals planning and undertaking work take appropriate measures to prevent damage.

Any damage to a high-pressure gas pipeline or its coating can affect its integrity and can result in failure of the pipeline with potential serious hazardous consequences for individuals located in the vicinity of the pipeline if it were to fail. It is therefore essential that the procedures outlined in this document are complied with when working near to a high pressure, above 2 bar gauge, pipeline. If any work is considered by Wales & West Utilities to be in breach of the requirements stipulated in this document then the Wales & West Utilities responsible person will suspend the work until the non-compliances have been rectified.

The Pipelines Safety Regulations state that "No person shall cause such damage to a pipeline as may give rise to a danger to persons" (Regulation 15). Failing to comply with these requirements could therefore also result in prosecution by the Health and Safety Executive (HSE).

The requirements in this document are in line with the requirements of the IGE (Institution of Gas Engineers) recommendations IGE/SR/18 Edition 2 - Safe Working Practices To Ensure The Integrity Of Gas Pipelines And Associated Installations and the HSE's guidance document HS(G)47 Avoiding Danger from Underground Services.

It is the responsibility of the third party to ensure that any work carried out also conforms with the requirements of the Construction and Design Management Regulations and all other relevant health and safety legislation.

WHEN CARRYING OUT WORK IN THE VICINITY OF A HIGH PRESSURE PIPELINE FOLLOW THE FOLLOWING PROCESS

CONTACT WALES & WEST UTILITIES

Contact Wales & West Utilities to obtain formal consent - Section 2 of this document.
Note: at least 7 days' notice prior to commencement of the work is normally required

CONSIDER SAFETY

Consider the safety requirements - Section 3 of this document.

INFORM Wales & West Utilities **AND REQUEST PIPELINE LOCATION**

Inform Wales & West Utilities prior to carrying out work and arrange for Wales & West Utilities to locate the pipeline - Section 4 of this document
Note: at least 7 days' notice is normally required

OBSERVE RESTRICTIONS

Observe Wales & West Utilities restrictions on the allowed proximity of mechanical excavators and other power tools and the measures to protect the pipeline from construction vehicles when carrying out the work – Sections 5, 6 and 7 of this document.
Note: Wales & West Utilities may wish to supervise the work, consult Wales & West Utilities to confirm whether or not this is the case.

SPECIFIC ACTIVITIES

If work involves any of the following activities:

- No-Dig Techniques
- Increase in Cover
- Piling
- Demolition
- Hot Work
- Blasting
- Surface Mineral Extraction
- Deep Mining
- Landfilling
- Pressure Testing
- Seismic Surveys
- Wind Turbines

Comply with the requirements in Section 8 of this document

CONSULT WALES & WEST UTILITIES

Consult Wales & West Utilities prior to any backfilling over, alongside or under the pipeline and obtain Wales & West Utilities agreement to proceed. Normally Wales & West Utilities require 48 hours notice prior to backfilling - Section 9 of this document.

IMPORTANT: This flowchart should be used in conjunction with the entire SSW22 document and not in isolation, AND if at any time during the works the pipeline is damaged even slightly then observe the precautions in Section 10 of this document.

IF IN DOUBT CONTACT Wales & West Utilities

1. SCOPE

This specification sets out the safety precautions and other conditions affecting the design, construction and maintenance of services, structures and other works in the vicinity of Wales & West Utilities pipelines and associated installations operating at pressures greater than 2 bar gauge, located in both negotiated easements (see Section 12), in public highways and within the wider area of interest around a pipeline.

2. FORMAL CONSENT

High pressure pipelines are generally laid across country within an easement agreed with the landowner or within the highway.

As the required arrangements for working within an easement and working within the highway differ, this document has been structured to highlight the specific requirements for these two types of area where work may be carried out.

Generally, normal agricultural activities are not considered to affect the integrity of the pipeline, however consult Wales & West Utilities prior to undertaking deep cultivation in excess of 0.5m.

In all other cases no work shall be undertaken in the vicinity of the pipeline without the formal written consent of Wales & West Utilities.

Any documents, handed to contractors on site by Wales & West Utilities must be signed for by the site manager. Wales & West Utilities will record a list of these documents using the form in Appendix A, and the contractor should maintain a duplicate list.

2.1 Within an Easement

The promoter of any works (see Section 12) within an easement must provide Wales & West Utilities with details of the proposed works including a method statement of how the work is intended to be carried out.

Work must not go ahead until formal written consent has been given by Wales & West Utilities. This will include details of Wales & West Utilities protection requirements, contact telephone numbers and the emergency telephone number.

On acceptance of Wales & West Utilities requirements the promoter of the works must give Wales & West Utilities 7 working days' notice, or shorter only if agreed with Wales & West Utilities, before commencing work on site.

2.2 Within the Highway

Work must be notified to Wales & West Utilities in accordance with the requirements of The New Roads and Street Works Act (NRSWA) and HS(G)47.

The promoter of any works within the highway should provide Wales & West Utilities with details of the proposed works including a method statement of how the work is intended to be carried out. This should be submitted 7 working days before the planned work is to be carried out or shorter, only if agreed with Wales & West Utilities. If similar works are being carried out at a number of locations in close proximity a single method statement should be adequate.

Work should not go ahead until formal written consent has been given by Wales & West Utilities. This will include details of Wales & West Utilities' protection requirements, contact telephone numbers and the emergency telephone number.

2.3 Within the Area of Interest

Certain other activities , such as the development of adjacent land with buildings, or other constructions which may have an impact on the safe operation of above 2 bar gauge pipelines, must also be notified to Wales & West Utilities, for example the construction of wind turbines, masts or aerials.

Developers should ensure early consultation with Wales & West Utilities in respect of such development, rather than relying on local authority planning consultation, which may lead to substantial late changes to design or constraints on the planned development.

3. HS&E CONSIDERATIONS

3.1 Safe Control of Operations

All working practices must be agreed by Wales & West Utilities prior to work commencing. All personnel working on site must be made aware of the potential hazard of the pipeline and the actions they should follow in case of an emergency. The Site Document Control Form (Appendix A) should be used to record the list of relevant documents that have been provided by Wales & West Utilities to the contractor.

3.2 Deep Excavations

Special consideration should be given to the hazards associated with deep excavations. The HSE document CIS08 'Safety in Excavations' provides further guidance and is available on the HSE web site www.hse.gov.uk

3.3 Positioning of Plant

Mechanical excavators must not be sited or moved above the pipeline unless written authority has been given by the Wales & West Utilities responsible person.

Mechanical excavators must not dig on one side of the pipeline with the cab of the excavator positioned on the other side.

Mechanical excavators and other traffic must be positioned far enough away from the pipeline trench to prevent trench wall collapse.

3.4 General

Activities associated with working in the vicinity of pipelines operating above 2 bar gauge may have impact on the safety of the general public, Wales & West Utilities staff and contractors, and may affect the local environment. Contractors must carry out suitable and adequate risk assessments prior to the commencement of work to ensure that all such issues are properly considered and risks mitigated.

4. PIPELINE LOCATING

The third party should give 7 working days' notice (or shorter as agreed with Wales & West Utilities) to ensure that the pipeline is suitably located and marked out by Wales & West Utilities prior to the work commencing.

Prior to work commencing on site the pipeline must be located and pegged or suitably marked out by Wales & West Utilities personnel. In exceptional circumstances with the prior agreement of Wales & West Utilities the locating and marking out of the pipeline could be carried out by competent third parties on behalf of the contractor as long as Wales & West Utilities is assured of their competence and the procedures to be followed.

Safe digging practices, in accordance with HSE publication HS(G)47 should be followed as both direct and consequential damage to gas plant can be dangerous both to employees and to the general public.

Previously agreed working practices should be reviewed and revised based on current site conditions. Any changes must be agreed by the Wales & West Utilities responsible person.

The requirements for trial holes to locate the pipeline or determine levels at crossing points must be determined on site by the Wales & West Utilities responsible person.

The excavation of all trial holes must be supervised by the Wales & West Utilities responsible person.

5. SLABBING AND OTHER PROTECTIVE MEASURES

No protective measures including the installation of concrete slab protection should be installed over or near to the Wales & West Utilities pipeline without the prior permission of Wales & West Utilities. Wales & West Utilities will need to agree the material, the dimensions and method of installation of the proposed protective measure. The method of installation must be confirmed through the submission of a formal written method statement from the contractor to Wales & West Utilities.

Where permanent slab protection is to be applied over the pipeline Wales & West Utilities should carry out a survey (Pearson or DCVG Survey) of the pipeline to check that there is no existing damage to the coating of the pipeline prior to the slab protection being put in place. In addition the pipeline records should be consulted to determine whether any other investigations or remedial works would be needed in advance of the slab construction, e.g. reference to T/PR/P/18. Wales & West Utilities must therefore be contacted prior to the laying of any slab protection to arrange this survey. The Safety precautions detailed in Sections 3 and 6 of this document should also be observed during the installation of the pipeline protection.

6. EXCAVATION

6.1 In Proximity to a Pipeline in an Easement

Third parties must not excavate unsupervised, with a powered mechanical excavator closer than 3 metres to the Wales & West Utilities located pipeline or with hand held power tools closer than 1.5 metres. Any fitting, attachment or connecting pipework on the pipeline must be exposed by hand. All other excavation must be by hand.

Consideration may be given to a relaxation of these limits by agreement with the Wales & West Utilities responsible person on site and only whilst he remains on site. In this case a powered mechanical excavator must not be allowed to excavate closer than 0.6 metres to the nearest part of the pipeline.

Where sufficient depth of cover exists, following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 0.25 metres, using a toothless bucket.

No topsoil or other materials should be stored within the easement without the written permission of Wales & West Utilities.

No topsoil or materials should be stored over the pipeline.

No fires should be allowed in the easement strip or close to above ground gas installations.

After the completion of the work the level of cover over the pipeline should be the same as that prior to work commencing unless agreed otherwise with the Wales & West Utilities responsible person.

No new service shall be laid parallel to the pipeline within the easement. In special circumstances, and only with formal written agreement from Wales & West Utilities, this may be relaxed for short excursions where the service shall be laid no closer than 600 mm to the side of the pipeline.

Where work is being carried out parallel to the pipeline within or just alongside the easement a post and wire fence must be erected as a protective barrier between the works and the pipeline.

6.2 In Proximity to a Pipeline in the Highway

Removal of the bituminous or concrete highway surface layer by mechanical means is permitted to depth of 300 mm, although the use of chain trenchers to do this shall not be permitted within 3 metres of the pipeline. The Wales & West Utilities responsible person may want to monitor this work.

Where the bituminous or concrete highway surface layer extends below 0.3 metres deep it should only be removed by handheld power assisted tools under the supervision of the Wales & West Utilities responsible person. In exceptional circumstances, and following a risk assessment, these conditions may be relaxed by the Wales & West Utilities responsible person.

Third parties should not excavate, unsupervised, with a powered mechanical excavator closer than 3 metres to the located Wales & West Utilities pipeline or with hand held power tools closer than 1.5 metres. Any fitting or attachment must be exposed by hand.

In special circumstances consideration may be given to a relaxation of these rules by agreement with the Wales & West Utilities responsible person on site and only whilst he remains on site only whilst he remains on site and only whilst he remains on site to supervise this work..

The use of 'No dig' techniques is covered in Section 8.1.

Any new service running parallel to the pipeline should be laid no closer than 600 mm to the pipeline (see Section 6.4).

6.3 Crossing Over a Pipeline

Where a new service is to cross over the pipeline a clearance distance of 600 mm between the crown of the pipeline and underside of the service must be maintained. If this cannot be achieved the service must cross below the pipeline with a clearance distance of 600 mm.

In special circumstances this distance may be reduced at the discretion of the Wales & West Utilities responsible person on site.

6.4 Crossing Below a Pipeline

Where a service is to cross below the pipeline a clearance distance of 600 mm between the crown of the service and underside of the pipeline should be maintained.

The exposed pipeline must be suitably supported. The Wales & West Utilities responsible person must be consulted and a stress analysis may be required in order to establish support requirements. The stress analysis should be carried out by individuals with demonstrated expertise in this area, Wales & West Utilities can be consulted for advice on suitable specialists. Wales & West Utilities may request a copy of the stress analysis to confirm its adequacy.

Specific additional constraints apply to Wales & West Utilities pipelines that fall under the requirements of T/PR/P/18.

All supports must be removed prior to backfilling.

The exposed pipelines must be protected by matting and suitable timber cladding.

6.5 Cathodic Protection

Cathodic Protection is applied to all of Wales & West Utilities above 2 bar gauge buried steel pipelines and is a method of protecting pipelines with damaged coatings from corrosion by maintaining an electrical potential difference between the pipeline and anodes placed at strategic points along the pipeline.

Where a new service is to be laid and similarly protected, Wales & West Utilities will undertake interference tests to determine whether the new service is interfering with the cathodic protection of the Wales & West Utilities pipeline.

Should any cathodic protection posts or associated apparatus need moving to facilitate third party works reasonable notice, typically 7 days, should be given to Wales & West Utilities. Wales & West Utilities will undertake this work and any associated costs will be borne by the third party.

7. CONSTRUCTION TRAFFIC

Where existing roads cannot be used construction traffic should ONLY cross the pipeline at previously agreed locations. All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for a distance of 6 metres. The pipeline shall be protected at the crossing points by temporary rafts of either sleeper or reinforced concrete construction, constructed at ground level. The Wales & West Utilities responsible person will review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.
Notices directing traffic to the crossing points should be erected.

8. SPECIFIC ACTIVITIES

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of the pipeline. Consult Wales & West Utilities if you are intending to undertake one of the listed prescribed activities and/or you require further advice on whether the work that you are intending to undertake has the potential to affect the pipeline.

8.1 No-Dig Techniques

Where the contactor intends using no dig techniques then a formal method statement must be produced for all work that would encroach (either above or below ground) within the pipeline easement. This method statement must be formally agreed with Wales & West Utilities prior to the commencement of the work. Wales & West Utilities may wish to be present when the work is being carried out and must therefore be given adequate advance notice before the commencement of the work.

8.2 Increase in Cover

A pipeline integrity assessment must be provided for situations involving a final cover depth exceeding 2.5 metres. This assessment should take due account of both soil 'dead' loading and ground settlement due to earthworks. Embankment design and construction over pipelines must give consideration to prevention of any instability. Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.3 Piling

No piling will be allowed within 15 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline should be limited to a maximum level of 75 mm/sec. In any event the ground vibration shall be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request. A typical monitoring device would be the Vibrock V801 seismograph and tri-axial geophone sensor.

Where ground conditions are of submerged granular deposits of silt and sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.4 Demolition

No demolition should be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline must be limited to a maximum level of 75 mm/sec. In any event the ground vibration shall be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

Where ground conditions are submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.5 Blasting

No blasting should be allowed within 250 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline must be limited to a maximum level of 75 mm/sec. In any event the ground vibration must be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

Where ground conditions are of submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.6 Surface Mineral Extraction

An assessment must be carried out on the effect of surface mineral extraction activity within 100 metres of a pipeline. Consideration should also be given to extraction around groundbeds and other pipeline associated plant and equipment.

Where the mineral extraction extends up to the pipeline easement, a stable slope angle and stand-off distance between the pipeline and slope crest must be determined by Wales & West Utilities. The easement strip should be clearly marked by a suitable permanent boundary such as a post and wire fence, and where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the contractor. The pipeline easement and slope needs to be inspected periodically to identify any signs of developing instability. This may include any change of slope profile including bulging, the development of tension cracks on the slope or easement, or any changes in drainage around the slope. The results of each inspection should be recorded.

Where surface mineral extraction activities are planned within 100 metres of the pipeline but do not extend up to the pipeline easement boundary, an assessment, by Wales & West Utilities must be made on whether the planned activity could promote instability in the vicinity of the pipeline. This may occur where the pipeline is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives the provisions of section 8.5 apply.

8.7 Deep Mining

Pipelines routed within 1 km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance, which can be arranged through Wales & West Utilities.

8.8 Landfilling

The creation of slopes outside of the pipeline easements may promote instability within the vicinity of the pipeline. An assessment should therefore be carried out, by Wales & West Utilities, on the effect of any landfilling activity within 100 metres of a pipeline. The assessment is particularly important if landfilling operations are taking place on a slope in which the pipeline is routed.

8.9 Pressure Testing

Hydraulic pressure testing will not be permitted within 8 metres of the pipeline unless suitable precautions have been taken against the effects of a burst. These precautions should include limiting of the design factor to 0.3 for the third party pipeline for a distance of 6 metres either side of the Wales & West Utilities pipeline, and the use of mill tested pipe or sleeving.

8.10 Seismic Surveys

Wales & West Utilities must be advised of any seismic surveying work in the vicinity of pipeline that will result in Wales & West Utilities' pipeline being subjected to peak particle velocities in excess of 50 mm/sec. In any event the ground vibration near to the pipeline shall also be monitored by the contractor whilst the survey work is being carried out.

Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration should be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

8.11 Hot Work

The Wales & West Utilities responsible person on site should supervise all welding, burning or other 'hot work' that takes place within the easement.

8.12 Wind Turbines

Wales & West Utilities must be advised of any planned development of wind turbines in the vicinity of an above 2 bar gas pipelines to ensure the development does not impact on the future safe operation of the pipeline. Industry guidance states that any wind turbine must be sited no closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of the pipeline.

9. BACKFILLING

Third parties must provide Wales & West Utilities with 7 days' notice, or shorter notice only if agreed with Wales & West Utilities, of the intent to backfill over, under or alongside the pipeline. This requirement should also apply to any backfilling operations alongside the pipeline within 3 metres of the pipeline. Any damage to the pipeline or coating must be reported to the Wales & West Utilities responsible person in order that damage can be assessed and repairs can be carried out.

Minor damage to pipe coating and damage to test leads will normally be repaired by Wales & West Utilities free of charge.

No backfilling should be undertaken without Wales & West Utilities agreement to proceed. When backfilling, the pipeline should be surrounded by at least 300mm of soft fill (i.e. stone dust) containing no stones, bricks, lumps of concrete, etc. The Wales & West Utilities responsible person will stipulate the necessary consolidation requirements.

If the pipeline has been backfilled without the knowledge of the Wales & West Utilities responsible person then he will require the material to be re-excavated in order to enable the condition of the pipeline coating to be confirmed.

10. ACTION IN THE CASE OF DAMAGE TO THE PIPELINE

If the Wales & West Utilities pipeline is damaged, even slightly, and even if no gas leak has occurred then the following precautions must be taken immediately:-

- Shut down all plant and machinery and extinguish any potential sources of ignition.
- Evacuate all personnel from the vicinity of the pipeline.
- Notify Wales & West Utilities using the free 24 hour emergency telephone number **0800 111 999***[1]
- Notify the Wales & West Utilities responsible person or his office immediately using the contact telephone number provided.
- Ensure no one approaches the pipeline.
- Do not try to stop any leak.

[1] * All calls are recorded and may be monitored

11. REFERENCES

NRSWA	New Roads & Street Works Act
HS(G)47	Avoiding Danger from Underground Services
IGE/SR/18	Safe Working Practices to Ensure the Integrity of Gas Pipelines and Associated Installations
T/PR/P/18	Working on Pipelines Containing Defective Girth Welds or Girth Welds of Unknown Quality
CIS08	Safety in Excavations (HSE document)

12. GLOSSARY OF TERMS

Contractor:	the person, firm or company with whom Wales & West Utilities enters into a contract to which this specification applies, including the Contractor's personal representatives, successors and permitted assigns.
Easement:	Easements are negotiated legal entitlements between Wales & West Utilities and landowner and allow Wales & West Utilities to lay, operate and maintain pipelines within the easement strip. Easement strips may vary in width typically between 6 and 25 metres depending on the diameter and pressure of the pipeline. Consult Wales & West Utilities for details of the extent of the easement strip where work is intended.
Liquefaction:	Liquefaction is a phenomenon in which the strength and stiffness of the soil is reduced by earthquake shaking or other rapid loading. Liquefaction occurs in saturated soils, that is, soils in which the space between individual particles is completely filled with water. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support pipelines or other components is reduced.
Pearson Survey:	a survey used for locating coating defects on buried pipeline services.
DCVG Survey:	Direct Current Voltage Gradient, a survey for locating and grading coating defects on buried pipeline service
Promoter of new works:	the person or persons, firm, company or authority for whom new services, structures or other works in the vicinity of existing Wales & West Utilities pipelines and associated installations operating above 7 bar gauge are being undertaken.
Wales & West Utilities responsible person:	the person or persons appointed by Wales & West Utilities with the competencies required to act as the Wales & West Utilities representative for the purpose of the managing the particular activity.
Wayleave:	general term which is considered equivalent to 'easement' in this document.

APPENDIX A

SITE DOCUMENT CONTROL FORM - SAMPLE

Emergency Telephone No. **0800 111 999***

Plant Protection Telephone No. **02920278912**

SITE DOCUMENT CONTROL FORM	
Activity Reference:	
Activity Location:	
Site Manager: *(name & telephone number)*	
Wales & West Utilities Contact: *(name & telephone number)*	

The following documents were issued to *(individual's name)*

..... **of**

(company name and address)

.....

by *(Wales & West Utilities representative)*

.....**on**

(date).....**:-**

Documents:-

(List of documents)

Signed : *(by the recipient)*

Date of signature :

Emergency Telephone No. 0800 111 999*

Plant Protection Telephone No. 02920 278912

SITE DOCUMENT CONTROL FORM

Activity Reference:	
Activity Location:	
Site Manager: *(name & telephone number)*	
Wales & West Utilities Contact: *(name & telephone number)*	

The following documents were issued to (Individuals Name)

.....**of**

(company name and address)

.....

by *(Wales and West Utilities representative)*

....**on**

(date) ..... **:-**

Documents:-

Signed :

Date of signature :

ENDNOTE

Comments

Comments and queries regarding the technical content of this document should be directed to:

Asset Management & HSE Dept
Wales & West Utilities Ltd
Wales & West House
Spooner Close
Celtic Springs
Coedkernew
Newport
NP10 8FZ.

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Company Address
Wales and West Utilities Ltd,
Wales and West House,
Spooner Close, Celtic,
Springs, Coedkernew,
Newport, NP10 8FZ

Our Ref: 14823504 OOGA BOOGA

Thursday, 14 February 2019

Jack Llewellyn

Dear Jack Llewellyn

Thank you for contacting us regarding Wales & West Utilities equipment at the above site.

I enclose an extract from our mains records of the area covered by your proposals together with a comprehensive list of General Conditions for your guidance. This information is given as a general guide and its accuracy cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated.

Where the Wales & West Utilities (WWU) plan includes a warning label about our higher pressure apparatus you must contact the WWU dig team for further guidance. If it is deemed that a site visit is required for this location we require a minimum of 10 days' notice to arrange a site visit for our engineers to give further guidance. Depending upon the nature of the works the site visit may be deemed chargeable.

No liability of any kind whatsoever is accepted by Wales and West Utilities (WWU), its agents or servants for any error or omission. Please note that all WWU equipment on site should be assumed to be LIVE until proven otherwise.

Safe digging practices, in accordance with HS(G)47, Avoiding Danger from underground services must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. Safe working procedures should be defined and practiced.

Irrespective of whether the pipeline is directly affected by the proposed development I enclose for information our general requirements for working in the vicinity of gas pipelines operating above 2 barg (T/SP/SSW22). It is our strong recommendation in the interests of safety that these general requirements be adhered to.

There are minimum proximity distances for buildings from WWU mains depending on both the operating pressure and the material of the main. Advice should be sought from WWU prior to building works taking place to confirm these distances. For High Pressure pipelines you must seek further guidance from the HSE and Local Authority Planning team regarding their PADHI distances regarding building proximities as these may be in addition to WWU proximity distances for a pipeline.

In the presence of our >2barg gas pipelines no excavations are to take place within 10m of the confirmed position of these mains without prior consultation with WWU.

WWU reserves its position completely to enforce the terms of any existing easement against the landowner, even if this results in any planning permission granted not being able to be fully implemented.

Wales & West Utilities have no planning objections to these proposals, although it should be noted that Wales & West's apparatus is held pursuant to easements and it has other private law rights in relation to the use of

Company Address
Wales and West Utilities Ltd,
Wales and West House,
Spooner Close, Celtic,
Springs, Coedkernew,
Newport, NP10 8FZ

the land in the vicinity of its apparatus. Wales & West's private law land rights are not material planning considerations and therefore no comment is made in relation to those rights and they have no impact on whether or not planning permission should be granted, or whether, if permission is granted, it can lawfully be implemented. It should also be noted that Wales & West's apparatus may be at risk during construction works and should the planning application be approved, then we require the promoter of these works to contact us directly to discuss our requirements in detail. Should diversion works be required these will be fully chargeable.

You must not build over any of our plant or enclose our apparatus.

Where diversions to WWU apparatus are needed to allow change to occur on site, the cost of these alterations may be charged to the persons responsible for the works.

If you have requested a new connection the WWU connections team will where necessary prepare detailed proposals and provide a quotation for any necessary alterations and/or development of our equipment on the site.

If you require advice in connection with your proposals please contact the relevant number below.

Yours sincerely,
WWU Dig Team

Gas Emergency Number:
In an emergency call 0800 111 999, 24 hours a day.

Mapping Enquiries:
If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:

Telephone	02920 278912
Email	dig@wwutilities.co.uk

General Enquiries:
If you have a general enquiry, please call us on the following number

All areas	0800 912 29 99

LinesearchbeforeUdig:
If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact LinesearchbeforeUdig using the following information:

Telephone	0845 437 7365
Email	enquiries@linesearchbeforeudig.co.uk
Website	www.linesearchbeforeudig.co.uk

Wales & West Utilities Limited

General Conditions to be observed for the Protection of Apparatus and the Prevention of Disruption to Gas Supplies.

General conditions affecting the design, construction or maintenance of services and/or structures or other works in the vicinity of Wales & West Utilities (WWU) plant, pipelines and associated installations:

These general conditions apply only to the gas apparatus and pipes operated by WWU. It is possible that there may be other gas transporters with apparatus in the vicinity, therefore you should ensure that you have made enquiries of them and have complied with their requirements.

1. GRAPHIC REPRESENTATION OF GAS MAINS

Any plans supplied or marked up by WWU will indicate the **APPROXIMATE** location of its apparatus. This information is provided as a general guide only; its accuracy cannot be guaranteed and is given without obligation or warranty. Service pipes are not shown but their presence should be anticipated. No liability whatsoever is accepted by WWU, its agents or servants for any error, omission, discrepancy or deviation. Plans on site should be current, i.e. no older than 28 days from the date of issue. Gas pipes owned by other Gas Transporters, or otherwise privately owned, may be present in this area (pink areas indicated on our plans). Information with regard to such pipes should be obtained from the relevant owners.

Should you require assistance on site locating WWU apparatus, please contact our Plant Protection Team on **02920 278912.**

2. METHODS OF WORKING

The following methods of work shall not normally be permitted within the limits of distance indicated (relative to the established pipe position). Any variances must have consent from WWU before works commence on site:

Mechanical Excavation	**3m (1m** for low pressure mains)	Hydraulic Testing	**8 m**
Piling / Pile removing / Boring	**15m**	Welding or other hot works*	**15m**
Directional Drill Operations	**15m**	Explosives	**250m**

* NOTE: Welding or other hot works involving naked flames shall be carried out at a safe distance to the satisfaction of a WWU Engineer. A check should be made prior to the commencement of works, to ensure a gas free atmosphere exists. It is also necessary to monitor the atmosphere at regular intervals for the duration of the works. In no case shall such activities take place in any Wales & West Utilities Easement without the written consent and in the presence of a WWU representative.

WWU must be consulted prior to carrying out any excavation work within **10m** of any above or below ground gas installations or pipeline. No excavation works may commence within **50m** of a High Pressure or Very High Pressure Pipeline unless the pipeline has been located by tracing and its precise route identified.

In addition to the above methods of working, WWU must be contacted prior to any External Wall Installation (EWI) schemes, proposed solar farms and wind turbine installations.

No work shall be undertaken near, nor heavy plant or equipment moved over, any gas pipeline or apparatus until all of the conditions specified by WWU have been complied with.

Where WWU have apparatus in the vicinity of your work, any damage to it could have serious consequences. In view of this and in the interests of safety, a meeting should be arranged before the commencement of work on site between WWU representatives, representatives of the promoting authority, the contractors and any other interested parties. At this meeting the suggested program of site works and plant safety should be discussed. It is essential that this meeting is convened well in advance of commencement on site. Access to WWU plant and facilities for inspection by WWU staff must not be affected. Where formal consent has been given, **A MINIMUM OF SEVEN DAYS NOTICE IS REQUIRED** before carrying out work in WWU easements, or the appropriate notice under the New Roads & Street Works Act (NRSWA) where existing plant is situated within the public highway.

Further guidance can also be sought from the document **HS(G)47 – Avoiding Danger from Underground Services** from the HSE website.

3. PROXIMITY OF OTHER PLANT

A minimum clearance of **600 millimetres (mm)** should be allowed between all plant being installed and an existing gas main operating above 2 bar medium pressure (MP), whether the adjacent plant is parallel to or crossing the gas pipe. For mains operating at MP or below, this distance can be reduced to 300mm. **NO APPARATUS SHOULD BE LAID OVER AND ALONG THE LINE OF A GAS PIPE, IRRESPECTIVE OF CLEARANCE.**

No manhole or chamber shall be built over or around a gas pipe and no work should be carried out which results in a reduction of cover or protection over a pipe without consultation with and the agreement of WWU staff.

4. PROTECTION

Where any works cross or run in close proximity to WWU apparatus, periodic visits must be made by a WWU engineer. His requests for protection or support to the apparatus shall be immediately observed.

Suitably designed crossing points are to be constructed to the satisfaction of a WWU Engineer. These crossing points shall be clearly indicated by the erection of bunting and crossings at other places should be prevented.

Backfill material adjacent to WWU apparatus shall be soft fill or sand, containing no stones, bricks, or lumps of concrete etc., placed to a minimum 150mm around the mains and is to be well compacted by hand. No power consolidation shall take place above the main until 300mm of soft fill has been compacted by hand.

Wales & West Utilities Limited

5. DAMAGE TO COATINGS

Where a gas pipe is coated with special wrapping and this is damaged, even to a minor extent, WWU must be notified so that repairs can be made to prevent future corrosion and subsequent leakage. **WHERE MINOR DAMAGE TO COATING IS REPORTED TO WWU PRIOR TO BACKFILL, THE NECESSARY REPAIR WILL BE MADE FREE OF CHARGE.**

6. CATHODIC PROTECTION

Where WWU apparatus is cathodically protected either by sacrificial anode or impressed current systems and where new apparatus is to be laid and is to be similarly protected, WWU will require to carry out interaction tests to determine whether its own system is adversely affected. The cost of any mutually agreed remedial action will be recharged to the authority installing the new apparatus. If any bond wires, test leads etc., used in connection with cathodic protection systems are damaged or found to be in poor condition, broken or disconnected, WWU must be notified prior to backfilling so that a repair can be made.

7. HOT WORKS

Even when a gas free atmosphere exists care must be taken when carrying out hot works in close proximity to gas plant in order to ensure that no damage occurs. Particular care must be taken to avoid damage by heat or naked flames to plastic gas pipes or to the protective coatings on other pipes.

8. DEMOLITION

Live gas services must be disconnected **PRIOR** to demolishing any property, arrangements must be made for WWU to check for the presence of any live gas services.

9. TREE PLANTING

WWU must be contacted prior to all tree-planting works above or near our apparatus. Further information can then be made available.

10. DEEP EXCAVATIONS

Any work involving deep excavations (1.5m or more) will be subject to the "Model Consultative Procedure for Pipeline Construction involving Deep Excavations". This may require the diversion of WWU apparatus prior to the commencement of your works. Detailed plans and cross sections will be required in order to determine the effect of these works on WWU apparatus.

11. RENEWABLE ENERGY INSTALLATIONS

Wind Turbines – WWU must be advised of any planned development of wind turbines in the vicinity of an above 2 bar gas pipelines to ensure the development does not impact on the future safe operation of the pipeline. Industry guidance states that any wind turbine must be sited no closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of the pipeline.

Solar Farms – WWU must be contacted regarding planned solar farms being considered in the vicinity of WWU gas pipelines.

EWI – WWU must be contacted regarding any EWI scheme to ensure the scheme does not impact upon WWU's apparatus.

12. LEAKAGE FROM GAS MAINS OR SERVICES

If damage or leakage is caused or an escape of gas is smelt or suspected the following action should be taken at once:

- Remove all personnel from the immediate vicinity of the escape.
- Inform the 24hr Gas Emergency Service on **0800 111 999**
- Prevent any approach by the public, prohibit smoking, and extinguish all naked flames or other sources of ignition for at least 15 metres from the leakage. Do not operate any electrical switches in the vicinity of the escape.
- Assist gas personnel, Police and/or Fire Services as requested.

IN THE EVENT OF A LEAK, OBSERVE THE ABOVE BUT DO NOT ATTEMPT TO SEAL THE LEAK
REMEMBER - IF IN DOUBT; SEEK ADVICE FROM WWU

13. BUILDING PROXIMITIES

There are minimum proximity distances for buildings from WWU mains depending on both the operating pressure and the material of the main. Advice should be sought from WWU prior to building works taking place to confirm these distances. For High Pressure pipelines you must seek further guidance from the HSE and Local Authority Planning team regarding their PADHI distances regarding building proximities as these may be in addition to WWU proximity distances for a pipeline.

Temporary buildings should not be placed above any gas pipe or within 3.0 metres of mains operating above 75mbar (medium, intermediate and high pressure mains) during construction activities and in no circumstances should permanent structures be built over any pipe transporting gas.

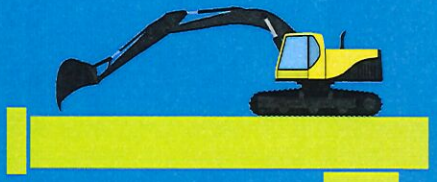
14. SITE RESPONSIBILITIES

All costs incurred by WWU for the repair of direct or consequential damage to gas plant will be rechargeable (with the exception of paragraph 5). WWU reserves the right to divert any affected apparatus or alternatively specify suitable protection of its apparatus. If proved necessary during the course of site works, the cost of which will be chargeable.

The above requirements do not relieve you of the responsibility of taking all precautions necessary to safeguard the Company's plant and to avoid risk to persons and property. The persons for whom the works are being undertaken, their servants, agents and contractors shall indemnify WWU servants, agents and contractors against any loss, damage, expenses, claims and actions incurred or brought against Wales & West Utilities, its servants, agents and contractors in consequence of the provision of these works and activities associated therewith or ancillary thereto.

KEY TO MAPS

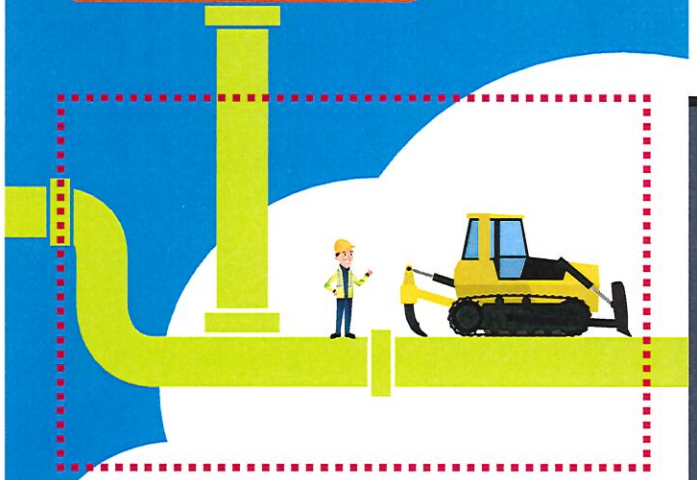
LP	Low Pressure	**CI**	Cast Iron
MP	Medium Pressure	**SI**	Spun Iron
IP	Intermediate Pressure	**DI**	Ductile Iron
HP	High Pressure	**PE**	Polyethylene
		ST	Steel



Every day, underground gas pipes get damaged by people digging without knowing what's below. This can be catastrophic. It might cause serious injury to you and others around you. The costs of repair, fines and fees can be huge. Your project will be delayed and your reputation damaged.

We have designed this leaflet to help you dig safely. And the first thing to do – long before you start work – is call us.

What's the number?
029 2027 8912



CARD POSITION (DO NOT PRINT)

We're here to
help

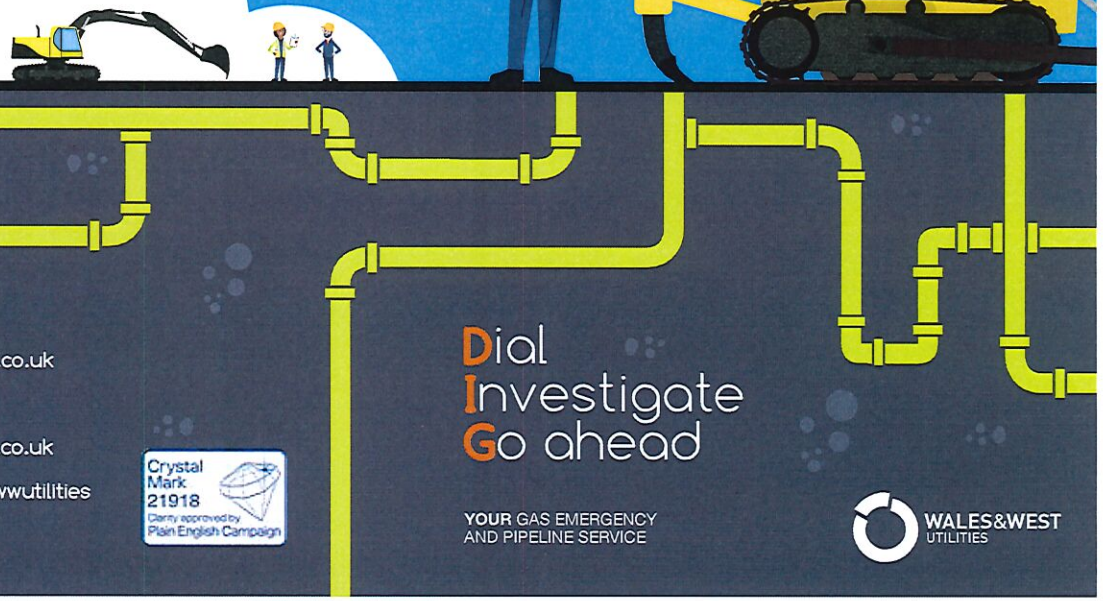
Need help or advice?
Call our **Plant Protection team** on
029 2027 8912
or email **dig@wwutilities.co.uk**

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

Dial before you dig

We need **10 days'** notice





dig@wwutilities.co.uk
029 2027 8912
www.wwutilities.co.uk
facebook.com/wwutilities
@WWUtilities

Crystal Mark 21918
Clarity approved by Plain English Campaign

Dial
Investigate
Go ahead

YOUR GAS EMERGENCY AND PIPELINE SERVICE

WALES&WEST UTILITIES

Can you DIG it?

We bring the gas to homes and businesses across Wales and the south west of England. We invest money, time and effort every year to make sure our pipelines are protected – but the biggest danger to our network is you.



Dial 029 2027 8912

D is for Dial

Digging can be dangerous. Hit a gas pipe and you might cause a gas leak, a fire or explosion.

So phone us first on **029 2027 8912** or email **dig@wwutilities.co.uk**

- You can find out where our pipes are.
- You need to give us 10 working days' notice before you start working.



Investigate www.wwutilities.co.uk

I is for Investigate

It's the only way to stay safe

- Before you start work, you must get a copy of our up-to-date gas plans and General Conditions and keep them with you on site.
- Use our online mapping service to find the mains pipes under your land.
- Working near a medium-, or intermediate- or high-pressure gas pipe? You might need a site visit – call us so we can arrange it.
- Plan ahead – we need at least 10 days' notice for a site visit.
- You'll also need our publication 'SSW22 Safe working in the vicinity of high-pressure pipelines and associated installations'.
- Remember, you can't work on a Wales & West Utilities wayleave or easement (land which we have rights over to maintain our gas network) without written permission.
- And you can't work near or move heavy equipment over any gas pipeline until all our conditions have been met and we agree your method of working.
- Watch the video on our website to find out more.

Go ahead Stay safe

G is for Go ahead

- Make sure you have our up-to-date gas plans on site.
- Need extra advice? Call our Plant Protection team on **029 2027 8912** or email **dig@wwutilities.co.uk**
- Use cable- and pipe-locating devices.
- Use safe digging practices, taking every precaution to avoid damaging gas pipes, damaging yourself and damaging your bank balance. You will be billed for any costs if something goes wrong.
- If in doubt, phone us again. We're happy to help.

We need **10 days'** notice



!

Smell gas?

Our Gas Emergency Service is on call 24 hours a day, seven days a week, 365 days a year.

If you cause a gas leak, or think the network might be leaking, call the Gas Emergency Service immediately on **0800 111 999**.

- Get everyone away from the leak.
- Ask everyone in nearby buildings to leave until we're sure it's safe.
- Put out all naked flames and other sources of ignition and make sure no one smokes within 15 metres of the leak.
- Don't try to fix the leak by filling the hole, as gas may enter buildings.
- Don't try to operate any valves.
- Don't let anyone go near the leak.
- Help our engineers, the police or fire services if they ask.

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Our Ref: 14823504 Your Ref: OOGA BOOGA

Tuesday, 12 February 2019

Western Power Distribution,
Mapping Centre
Toll End Road
Tipton
West Midlands
United Kingdom
DY4 0HH
www.westernpower.co.uk

Map Response
T 0121 623 9780
WPDMapResponse
@westernpower.co.uk

LinesearchbeforeUdig
Help Desk 0845 437 7365

Dear Jack Llewellyn

Thank you for your enquiry dated Tuesday, 12 February 2019

I now enclose a copy of our plan showing existing Western Power Distribution (WPD) Electricity / WPD Surf Telecom apparatus in the vicinity of your proposed works. This information is given as a general guide only and its accuracy cannot be guaranteed. Please note that all WPD equipment on site should be assumed to be LIVE until WPD prove otherwise and provide you with confirmation to this effect in writing. Recent additions to our network, or service connections between the main cable and a building or street lamp may not be shown.

Damage to underground cables and contact with overhead lines can cause severe injury or may prove fatal. If you are excavating on site in the vicinity of either WPD Electrical apparatus or WPD Surf Telecom apparatus you must comply with the requirements of the following:-

Health & Safety Executive guidance HS(G)47, Avoiding Danger from underground services.

Work taking place in the vicinity of our plant is also regulated under the:-

Electricity at Work Regulations 1989, Health and Safety Act 1974, CDM Regulations 2015.
Safe working procedures should be defined and practiced

Please ensure that the use of mechanical excavators in the vicinity of our plant is kept to a minimum. WPD Surf Telecom ducts contain fibre cables, which are expensive to repair. Therefore, extreme care must be taken whilst working in the vicinity of these ducts, hand digging methods being used to determine their precise position.

If there are overhead lines crossing your site and your proposal involves building works which may infringe the clearance to our overhead system then you should call the relevant general enquiries number (see page 2 of this letter) for advice. Where overhead lines cross your site you must comply with the requirements of Health & Safety Executive guidance as laid down in GS6, Avoidance of Danger from Overhead Electric Lines.

Where diversions to WPD apparatus are needed to allow change to occur on site, the cost of these alterations may be charged to the persons responsible for the works.

If you require advice in connection with your proposals please contact the relevant general enquiries number (see page 2 of this letter)

Following consultation the local Western Power Distribution team will where necessary prepare detailed proposals and provide a quotation for any necessary alterations and/or development of our equipment on the site.

Yours sincerely
WPD Map Response Team

Western Power Distribution PLC
South West - 02366894
South Wales - 02366985
East Midlands - 02366923
West Midlands - 03600574

Registered in
England and Wales

Registered Office:
Avonbank
Feeder Road
Bristol
BS2 0TB

Safety Documents:
https://www.westernpower.co.uk/customers-and-community/health-safety/public-safety-advice

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

Contact Us

Emergency or Power Supply issues
In an emergency call 105, 24 hours a day.

Mapping Enquiries
If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:

Telephone	0121 623 9780
Email	WPDMapResponse@westernpower.co.uk

General Enquiries
If you have a general enquiry, please call us on the following telephone number:

All areas	0800 096 3080

LinesearchbeforeUdig
If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact LinesearchbeforeUdig using the following information:

Telephone	0845 437 7365
Email	enquiries@linesearchbeforeudig.co.uk
Website	www.linesearchbeforeudig.co.uk

Safety Documents:
https://www.westernpower.co.uk/customers-and-community/health-safety/public-safety-advice

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Steps to help keep you safe

- **If you are working within 10 metres of our 33kV, 66kV, 132kV underground electricity cables or within 10 metres of an overhead electricity line you should call the relevant General Enquiries for free safety advice.**

  Safety Documents – please download our informative safety documents to help ensure that you, your staff and the public are kept safe whilst working in the vicinity of electricity.
  https://www.westernpower.co.uk/customers-and-community/health-safety/public-safety-advice

- **Make sure you have up to date plans** - remember that recent additions to our network or service connections between the main cable and a building or street lamp may not be shown.

- **Look for signs of service cables -** an electricity meter box or nearby streetlamp may give you an indication that service cables are present in your area of work.

- **Non WPD Network** - electricity cables, lines and equipment owned by others may also be present in addition to WPD network. They are unlikely to be shown on our plans.

- **Use a cable locator** - trace electricity cables and mark the position of them using paint or other waterproof marking on the ground.

- **Hand dig trial holes** - to confirm the position of cables in close proximity to your area of your work and use spades and shovels rather than picks, pins or forks.

- **Have an emergency plan** - so that everyone working on site understands what to do in the event of an underground electricity cable being damaged or contact being made with an overhead electricity line.

- **If you are working within 10 metres** of an overhead electricity line then it may be necessary for you to erect warning signs and markers, or height restriction goal posts. Ensure that you comply with the requirements of Health & Safety Executive guidance laid down in GS6, Avoidance of Danger from Overhead Electric Lines.

- **If you are erecting a structure** that could allow anyone standing on it, or its access device (ladder, scaffold, MEWP), to come within 3m of any overhead electric line then **you must inform us**. This is your duty and a legal requirement under the Electricity Safety, Quality & Continuity Regulations 2002.

- **If you cannot work safely** around the underground electricity cable or overhead electricity line, then you may need to get it moved to allow your works to go ahead. Call the general enquiry numbers above for guidance.

- **It is possible that cables or pipes may be embedded in concrete** - electricity cables embedded in concrete MUST be made 'dead' by Western Power Distribution or the cable owner before the concrete is broken out. Alternatively, another safe way of working should be agreed.

Cables are sometimes covered by tiles or a marker tape - these can be concrete, polythene or earthenware and are a useful early warning of the presence of cables; you should avoid disturbing any tiles or tape to expose the cable. Not all cables have these warning indicators.

Electricity Network Information Plans Fees 01 December 2015

WESTERN POWER DISTRIBUTION
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LinesearchbeforeUdig (LSBUD) – online service

Non Chargeable e.g. Local Authority, Utility, Architect, Developer, Electrical Design Consultants or, Independent Connection Providers (ICP) including contractors excavating on their behalf	
LSBUD internet/email	Free
Chargeable - Commercial use of plans and data e.g. Solicitor, Conveyancer, Search Company. Including, but not limited to, resellers and speculative consultancy	
LSBUD internet/email (Pay As You Go and **Monthly Invoice***)	£15 per enquiry

***Monthly Invoice - Standard payment terms are 30 days net of receipt of invoice**

Paper Plans – Map Response Team (see below for contact details)

Private Domestic Enquiry e.g. homeowner requesting plans of their own property	
Single Paper Plan Postal service	Free
Chargeable e.g. Solicitor, Conveyancer, Search Company, Local Authority, Utility, Architect, Consultant, Developer or, Independent Connection Providers (ICP) including contractors excavating on their behalf. Including, but not limtied to, resellers and speculative consultancy	
Single Paper Plan Postal service	£30.00 *Multiple plans price on application*

- All prices are **exclusive of VAT**
- Plans are not suitable for black and white photocopying

To register for **LSBUD** go to http://www.westernpower.co.uk/locationplans or http://www.linesearchbeforeudig.co.uk

For more information please contact the Map Response Team:

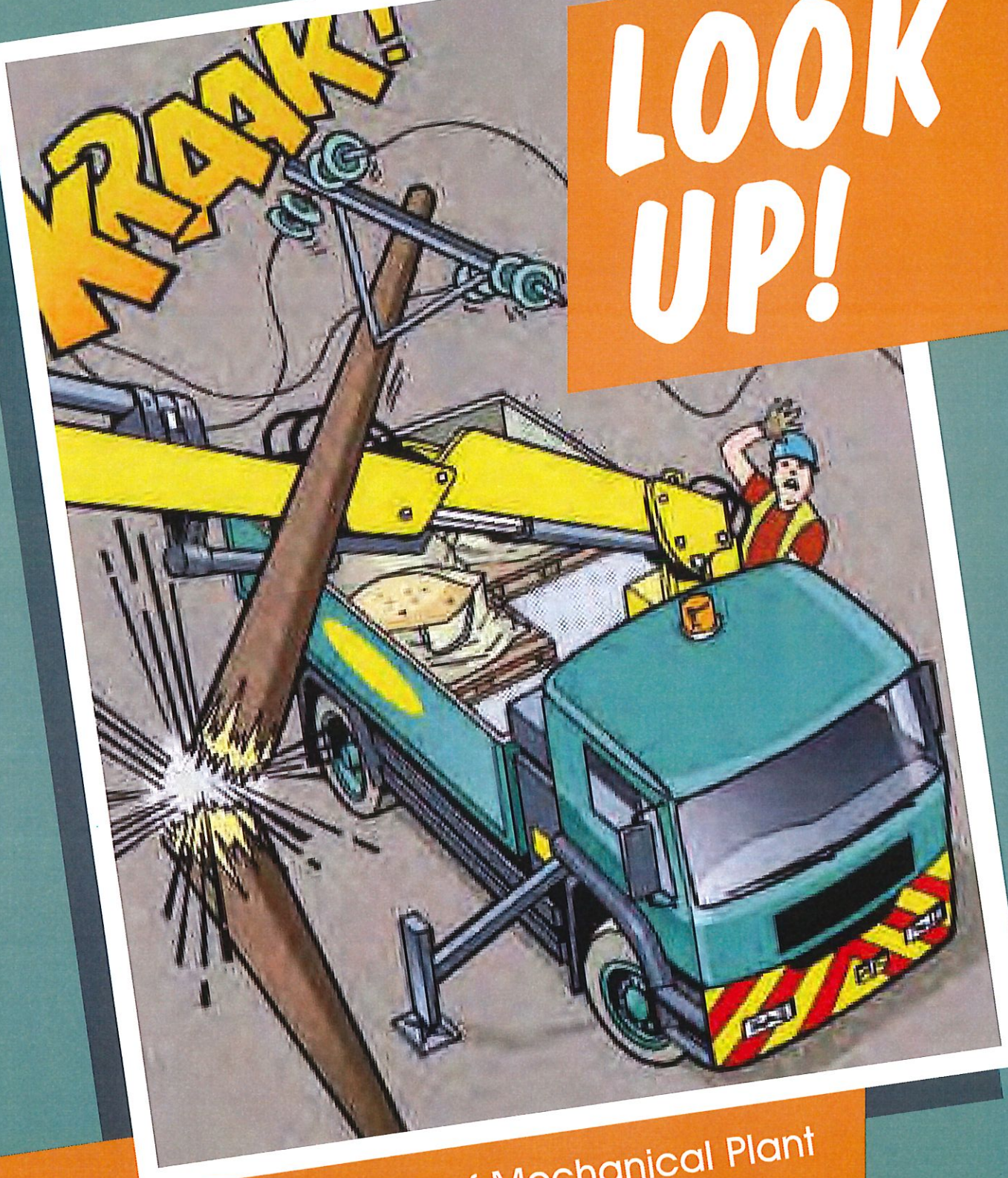
Email: WPDWebMap@westernpower.co.uk

Post: Map Response Team, Western Power Distribution, Mapping Centre
Toll End Road, Tipton, West Midlands DY4 0HH

Phone: 0121 623 9780

Fax: 0121 623 9223

LOOK OUT-



LOOK UP!

A Guide to the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines

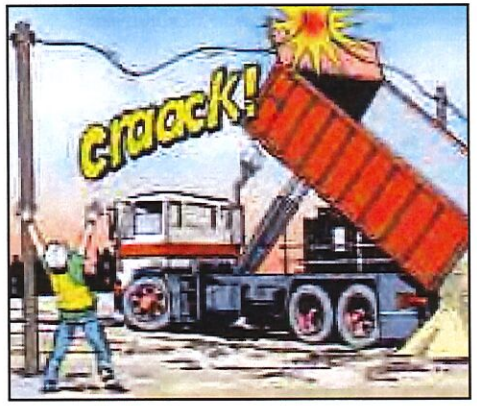
WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

The Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines

Introduction

Every year in the UK on average, two people are killed and many more are injured when mechanical plant and machinery comes into contact or close proximity to overhead electricity lines.

This booklet has been produced for anyone who uses mobile plant, (such as Hiabs, MEWPs, Tipper Lorries and Trailers, Grab Lorries, Concrete Conveyors and Excavators) for short duration work and provides general guidance on how to avoid becoming part of these statistics.



1 BEFORE STARTING WORK

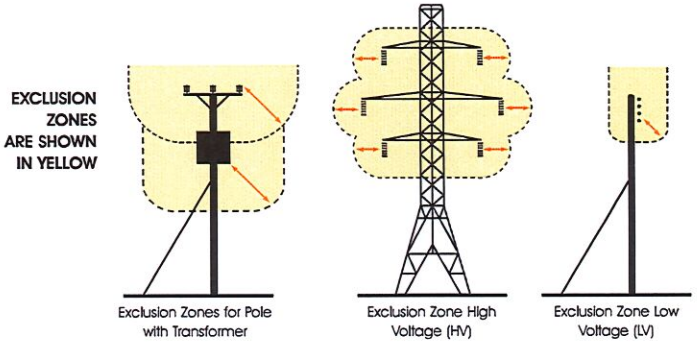
- Overhead lines have the advantage that they can easily be seen, so before you set up your vehicle or plant always:

STOP AND LOOK UP!

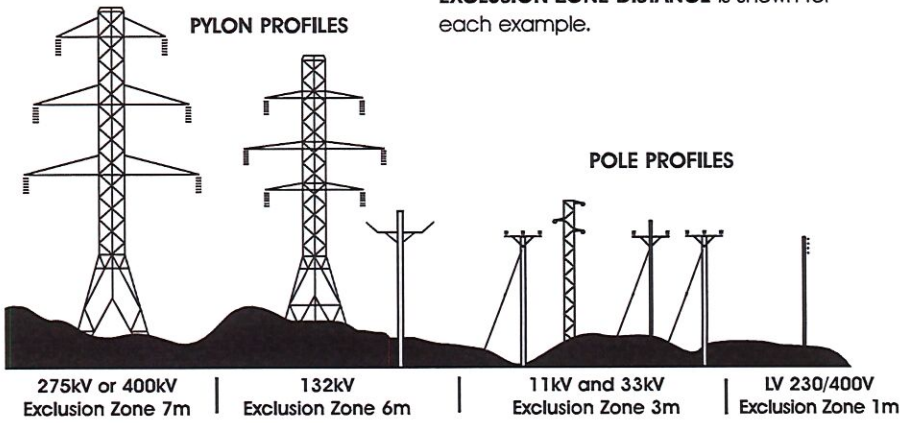
- If you are working at night, or in conditions of poor visibility, you should use spotlights or a torch to carefully check that there are no overhead lines within your vehicle's reach.
- Always assume that our lines are live unless we have informed you otherwise in writing.
- If you are in any doubt about whether the lines in question are power or telephone (this is a very common mistake) – always assume that they are power lines and are live.
- It is not normally practical for electricity companies to shroud high voltage conductors and even when low voltage conductors are shrouded, the shrouding is not designed to protect against contact by mechanical plant – again, always assume the lines are live.

2 EXCLUSION ZONES

- Overhead power lines are not normally insulated and so any contact can result in serious or fatal injuries.
- Electricity at high voltages can also jump gaps with no warning whatsoever, so it is also dangerous to let your plant approach too close to a line.
- The distance that electricity can jump depends on the voltage of the line. The higher the voltage, the further you must stay away from the line and any other equipment that may be fitted to the pole or pylon. This distance is called the **EXCLUSION ZONE.** Examples of this are shown highlighted in the diagram below.



- You must not allow any part of your plant to enter the **EXCLUSION ZONE.**
- The diagram below shows typical types of overhead lines and provides a guide to help you assess the line voltage of lines on wooden poles or steel pylons. The minimum **EXCLUSION ZONE DISTANCE** is shown for each example.

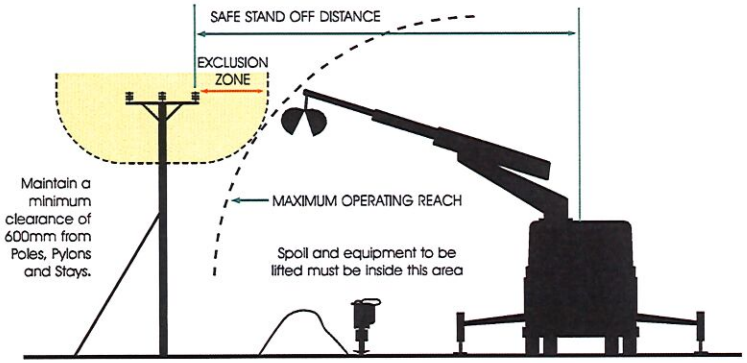


- Please note that these are absolute minimum distances that should under no circumstances be infringed. ***If you do – it could prove fatal.***

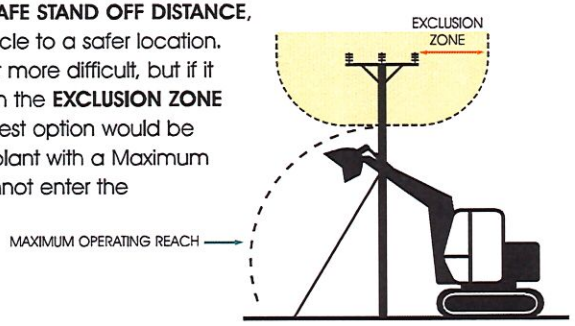
- As well as staying away from the lines or equipment, you should also stay at least 600mm away from any part of poles, pylons and stay wires.
- Please remember that is for guidance only, and if you are in any doubt, please call us for advice before setting up your plant or starting work.

3 STAND OFF DISTANCES

- If there are power lines in the vicinity of your work the best way to make sure you stay out of the **EXCLUSION ZONE** is to position your vehicle at a **SAFE STAND OFF DISTANCE** so that, even when fully extended, no part of it can accidentally reach inside the **EXCLUSION ZONE.**
- This **SAFE STAND OFF DISTANCE** can be calculated by adding the **EXCLUSION ZONE** distance for the appropriate voltage of the line to the Maximum Operating Reach of your vehicle. This is shown in the diagram below.

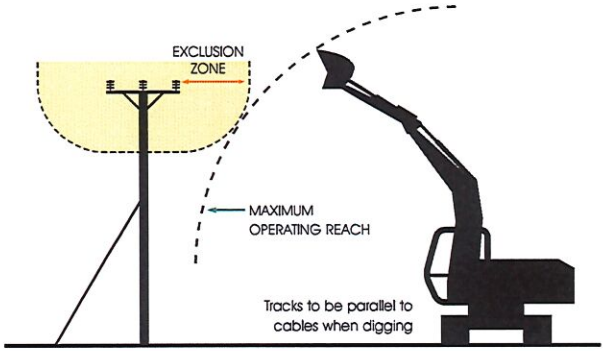


- If you position your vehicle outside of the **SAFE STAND OFF DISTANCE**, there is no risk of accidental contact with the lines and no danger of electricity jumping from the line to your vehicle.
- If you cannot achieve a **SAFE STAND OFF DISTANCE**, consider moving your vehicle to a safer location. It may make your job a bit more difficult, but if it means you stay away from the **EXCLUSION ZONE** - it will be safer. The next best option would be to consider using smaller plant with a Maximum Operating Reach that cannot enter the **EXCLUSION ZONE.**



- You may not be able to achieve either of these options, so, as a last resort, if you cannot avoid operating large items of plant in the vicinity of lines, you **MUST** make sure that the plant is fitted with restraints to ensure that the **EXCLUSION ZONE** cannot be entered. These restraints may be electrical or hydraulic systems fitted to the plant, or mechanical devices such as chains.

  Please seek advice from the plant manufacturer for more information on choices available for your particular item of plant.
- If you are using a mechanical excavator to dig parallel to the line, it is good practice to position the excavator with the tracks or wheels parallel to the line, so as you move along the excavation the **SAFE STAND OFF DISTANCE** is easily maintained.



- Care must also be taken to avoid non-mechanical equipment, (e.g. scaffold poles, ladders and long loads such as lengths of steel or timber) from entering the **EXCLUSION ZONE.**
- Always maintain at least 600mm clearance from your plant to any of our poles, stay wires or pylons. Any contact with these by your plant could cause the line to break and fall to the ground.

4 EMERGENCY PROCEDURES

If contact is made with an overhead line, you must immediately clear the area and suspend all work within 50m of the damage because the line could still be live, or become live again.

The operator of a machine that is in contact with an overhead line should take the following steps:

- **If the machine is still operable:**
  - lower any raised parts that are controlled from the driving position and/or drive the vehicle clear of the line, as long as neither of these actions risk breaking the line or dragging it to the ground.

- **If the machine is not operable or cannot be driven clear of the line:**
  - stay in the cab.
  - contact your site manager or us immediately by radio or mobile phone or as soon as possible by any other method.
  - instruct everyone outside the vehicle not to approach it.
  - do not exit the cab until given confirmation BY WPD PERSONNEL that it is safe to do so.

- **If the machine is inoperable or cannot be driven free and there is risk of fire or other immediate hazard:**
  - jump clear of the vehicle, avoiding simultaneous contact with any part of the machine and the ground.
  - try to land with your feet as close together as possible.
  - where possible, continue to move away from the vehicle using "bunny hops" with your feet together until at least 15m from the vehicle.
  - instruct other people in the vicinity not to approach the vehicle.
  - do not return to the vehicle until given confirmation BY WPD PERSONNEL that it is safe to do so.

Whatever the circumstances please contact us on our emergency number immediately and tell us what has happened.

Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and to reduce any disruption to your work.

Our emergency number is:

105 or 0800 6783 105

Please report any damage or contact no matter how minor they may seem to you at the time. Whilst the damage may not cause a serious problem at the time of contact it could fail later, causing danger to our staff and members of the public, disruption to our customer's supplies, and – if we trace the damage back to you – a larger repair bill!

5 MORE INFORMATION

- Proximity Warning Systems (such as Wire Watcher – see *wirewatcher.co.uk* for information) may be fitted to your vehicle. Never turn these devices off or disable them in any way.
- Take note of any warnings these proximity warning systems may provide but do not use the presence of such devices as a reason not to follow the advice provided in this leaflet.
- For your information, we are legally obliged to report all contact with our system to the Department of Trade and Industry (DTI), and, if you are an employer, you may be obliged to report incidents involving your staff or contractors to the Health & Safety Executive (HSE). Even if no one is hurt, you could still find yourself being prosecuted for causing a dangerous occurrence.

6 FURTHER READING

For advice related to signing and guarding at longer term work sites please also refer to WPD booklet "Avoidance of Danger from Electricity Overhead Lines and Underground Cables"

More detailed information is also published in the following documents available from the HSE.

GS6 – Avoidance of Danger from Overhead Lines.

HS(G) 47 – Avoiding Danger from Underground Services.

Along with Forestry Industry Safety Accord (FISA) publication **FISA 804 - Electricty at Work: Forestry.**

If you require more site-specific information relating to our equipment at your location please contact us on the relevant **GENERAL ENQUIRIES NUMBER:**

0800 096 3080

FINALLY.... Please, always remember that electricity overhead lines can be very dangerous – **the general rule is *STAY AWAY* and *STAY SAFE!***

For the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines ALWAYS FOLLOW THESE SIMPLE RULES – THEY COULD SAVE YOUR LIFE!

- **Treat all overhead lines as live and dangerous**
- **Any contact may be fatal or cause very serious injuries**
- **Electricity can jump gaps**
- **Before you set up or use plant near to lines – STOP and LOOK UP**
- **Take special care and use lights in the dark or poor light conditions**
- **If there are lines in the vicinity of your work – stay well away**
- **Set up your plant with care to reduce the chance of contact**
- **If you are unsure or need advice**

  - please ask us before starting work

Our emergency number is: 105 or 0800 6783 105

You can also call 105 if you spot damage to electricity power lines, poles and substations which could put you or someone else in danger.

If there's a serious immediate risk, you should also call the emergency services.

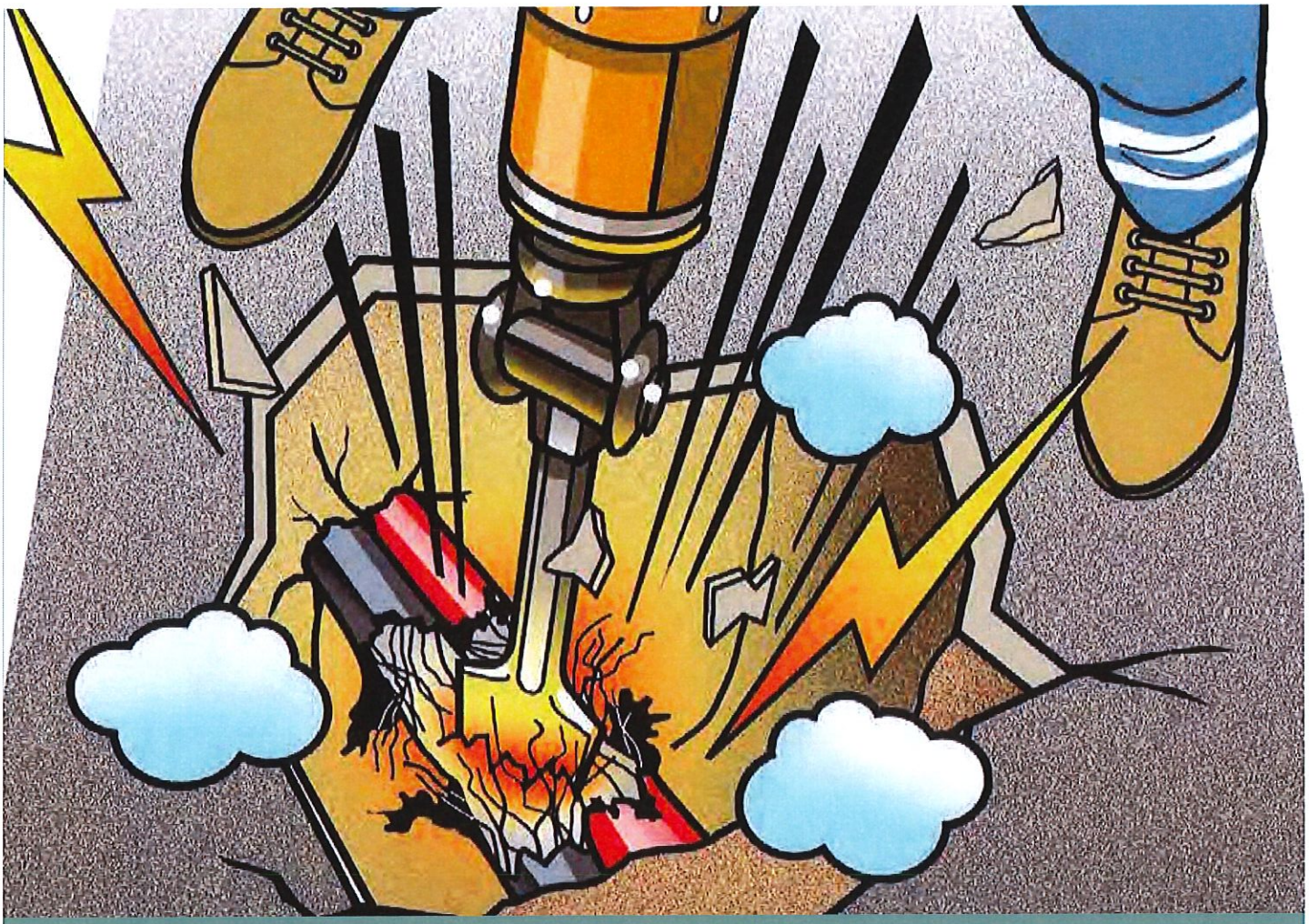
This booklet is issued by the Safety Team: wpdsafetyhelpline@westernpower.co.uk

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Avoidance of Danger from Electricity Overhead Lines and Underground Cables

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Avoidance of Danger from Electricity Overhead Lines and Underground Cables

Introduction

In the UK on average, 20 people are killed and 400 people are injured as a result of coming into contact (or close proximity) with electricity overhead lines and underground cables.

Although electric shock is the first thing that people associate with coming into contact with our network, those who have witnessed the effects of damage to our system are shocked by the amounts of heat, light and noise that are the result of an electrical flashover.

In the Midlands, South West and South Wales, Western Power Distribution (WPD) have had to attend to incidents where people have accidentally made contact with one of our live electricity overhead lines or damaged an underground cable and become seriously injured.

A significant number of these accidents occurred whilst people were working in the vicinity of overhead and underground electrical apparatus and this booklet has been produced to provide general guidance on how you and your employees can avoid becoming one of these statistics.

Our Operational Area



PLANNING YOUR WORK.

It makes sense to consider your safety while in the vicinity of our equipment as early in your planning process as possible.

One of the first things you should do whenever you are planning your work is to check whether there is any of our equipment in the immediate vicinity. You should do this whether your work is taking place on public (e.g. highways and footpaths) or on private land.

For instance, take a good look around your site to see if there are any visible overhead lines. You should also bear in mind that we have a very extensive network of underground cables, and we are always happy to supply a plan from our Map Response Team who can be contacted via the following;

Tel: 0121 623 9780
Fax: 0121 623 9223

WPDMapResponse@westernpower.co.uk

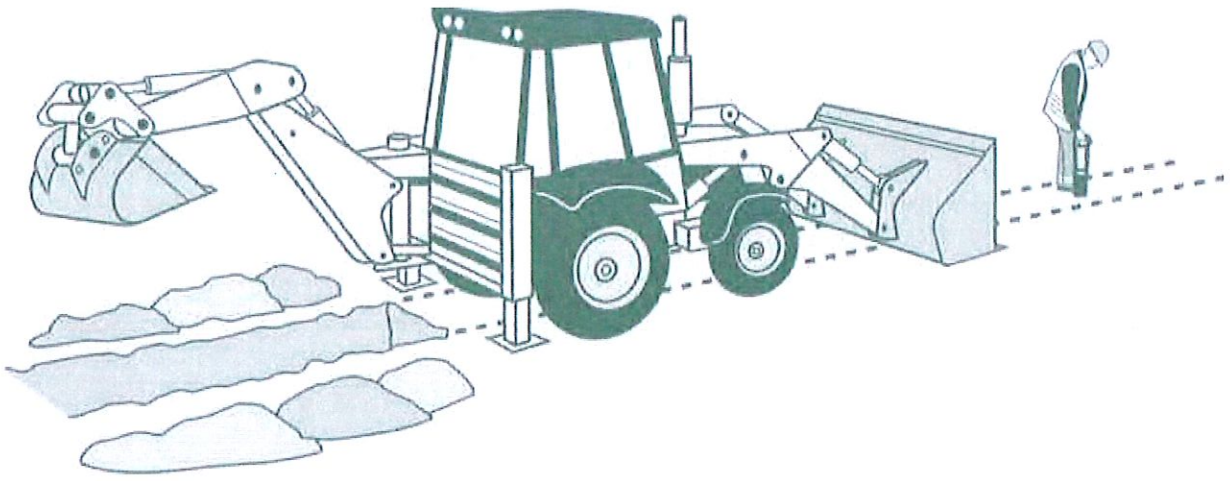
An online mapping service is available at
www.westernpower.co.uk/locationplans

It is always safer to assume that there are underground cables present in the ground until you have proven otherwise.

WORKING IN THE VICINITY OF UNDERGROUND CABLES

Having obtained copies of our network maps, it is important to recognise that in most cases there will be no surface indication of the presence of our underground cables. We therefore advise that you take the following actions:

- Make sure that you have up-to-date copies of our cable record plans ON SITE - not back in the office.
- Don't assume that these plans are to scale if they have been faxed or copied.
- Make sure that a competent person using a Cable Avoidance Tool (CAT) locates all of the cables shown on these plans.
- Mark the locations of cables on the ground surface with waterproof road paint or other permanent marker.
- Always assume that our cables are live unless we have informed you, in writing, otherwise.



- By hand, dig trial holes to locate the exact position of all cables. Always use a spade or shovel – never use a pick, fork or power tool – push the spade or shovel into the ground applying foot pressure.

- Look out for ducts, marker tape or tiles but do not rely on these. Even if a cable route was originally laid in a duct or with a marker tape, these may have been removed during other excavations at a later date along all or part of the cable route.
- Brief all people working in the vicinity of the presence and location of all underground cables.

UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT TO WORK ON, OR INTERFERE WITH, ANY OF OUR UNDERGROUND CABLES.
The only people qualified to work on this equipment are our operatives; who have been specifically trained and are authorised in writing to do so.

Please also be aware that:

- Cable record plans are not guaranteed to be completely accurate. Kerb lines, roads and buildings may have been moved or altered since the cables were laid.
- Cables should ordinarily be at least 450mm deep but don't assume this to be the case where you are working – ground levels could have changed.
- Not all service cables are shown on record plans, so look for cables running down poles and bear in mind that all buildings, street lights and street furniture are likely to have cables running to them. Cables feeding street furniture may be relatively shallow near to the furniture.
- Cables do not run in straight lines. They often "snake" through the ground avoiding surface and buried obstacles that may not be visible to you.
- Cables are flexible and can change direction and depth abruptly – for this reason never use mechanical excavators within 0.5m of any underground electricity cable even if you have located it with trial holes.

- **No attempt should be made to break out concrete surrounding a cable. Please contact us immediately on our general enquiries number and we will discuss the options for safe working which may include making the cable dead or you moving your work site if possible. If we need to make the cable dead we may need to provide our customers with two weeks notice of the power interruption.**
- Our cables and joints are not designed to act as steps or to be left unsupported. If you remove support from any cable, you will need to support it using temporary hangers at not more than 0.5m intervals.
- When backfilling, please consolidate the ground under the cables, cover the cable with soil free of stones or with stone dust and replace any cable marker tiles, ducts and tape.

IF YOU DAMAGE AN UNDERGROUND CABLE

you must immediately clear the area of personnel, because the cable could still be live, or become live again.

If a machine is still in contact with the cable, instruct the driver to JUMP clear. Do not touch any part of the machine.

Please contact us on our emergency number immediately and tell us what has happened. Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and lessen the disruption to your work.

Please report any damage to a cable, however superficial it might seem. The cable may not fail at the time of damage, but it could fail later, causing danger to our staff and other contractors, disruption to our customers' supplies, and also – if we trace the damage back to you – a very much larger repair bill.

WORKING IN THE VICINITY OF OVERHEAD LINES

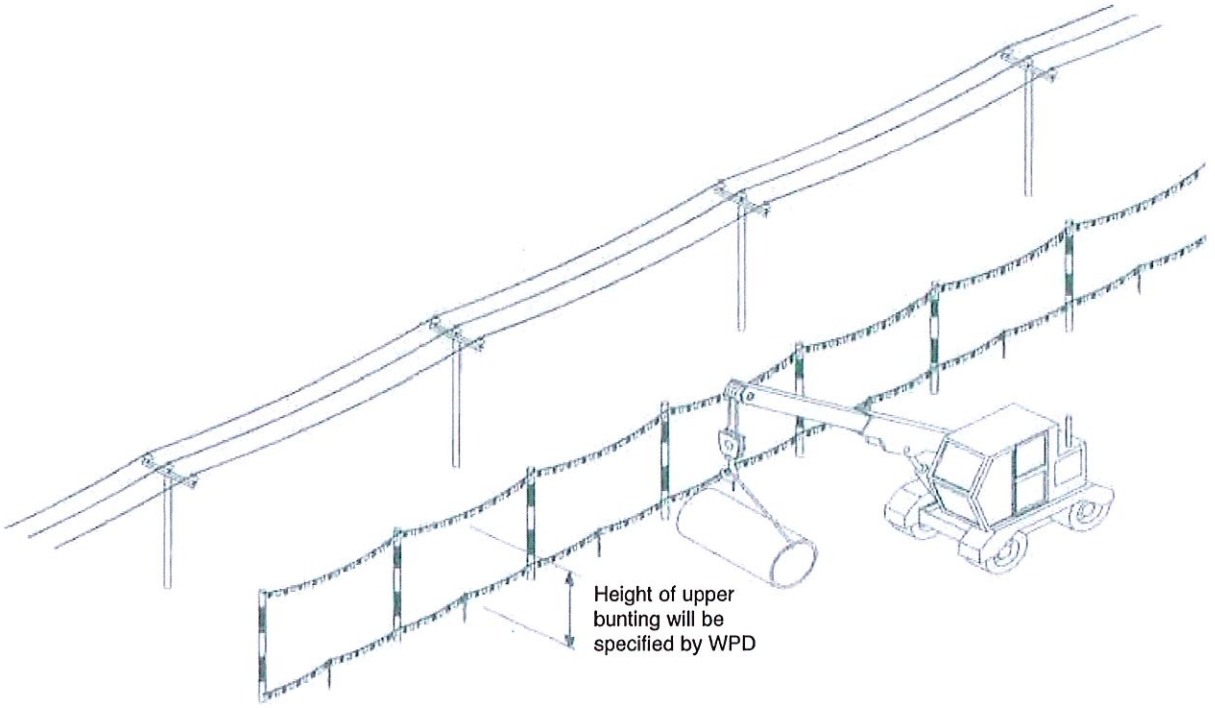
UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT TO WORK ON, OR INTERFERE WITH ANY OF OUR OVERHEAD LINE EQUIPMENT OR SERVICE WIRES.

The only people qualified to work on this equipment are our operatives; who have been specifically trained and are authorised in writing to do so.

Overhead lines have the advantage that, unlike underground cables, they can easily be seen.

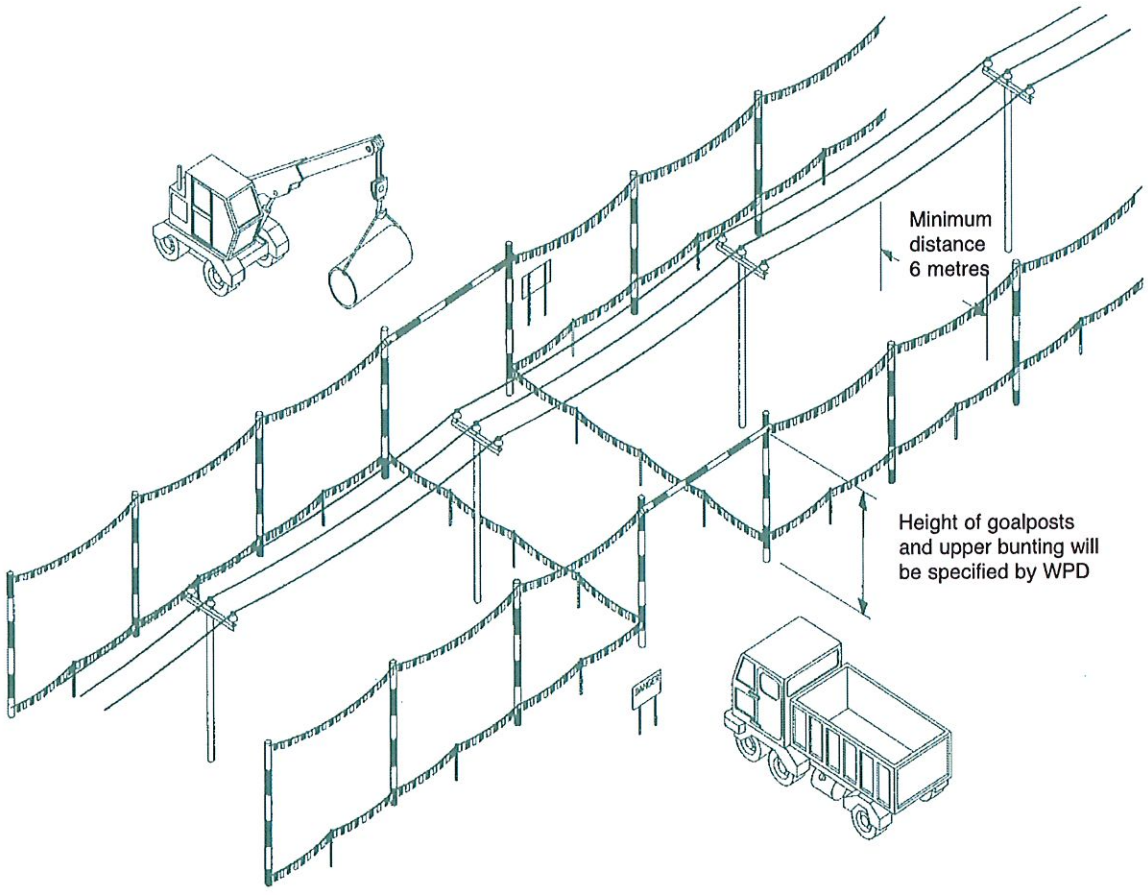
- Always assume that our overhead lines are live unless we have informed you otherwise in writing.
- We will be able to advise you about the type and voltage of the overhead lines in question and provide you with information about the clearances that you must adhere to during your work. Please ring our regional general enquiries number for further advice.
- If you are in any doubt about whether the overhead lines in question are power or telephone (this is a very common mistake) – please ask us.
- In some circumstances, we may be able to temporarily shroud low voltage overhead lines and services running to buildings if you need to work in the vicinity e.g. for scaffolding erection, fascia repairs and painting work on domestic properties. We don't normally charge for the shrouding of overhead lines, but please give us as much notice as possible.
- If you think that you will be working close to our overhead lines and they need shrouding – please don't start work until we have agreed what needs to be done and all safety precautions are in place.
- Please note that it is not technically possible to shroud high voltage lines, so if you cannot avoid working near to our high voltage lines, contact us and we will be happy to meet with you to discuss safe alternatives.

- If it is decided that work can go ahead in the vicinity of our overhead lines but there is a risk of you infringing the safety clearances from the overhead lines, you have a responsibility to erect safety barriers to segregate your works from the area around the overhead lines. The detailed requirements for these barriers are provided in the HSE document GS6 'Avoidance of Danger from Overhead Lines'. As a summary they should consist of:
  - Red and white coloured posts erected at 6m intervals, with coloured bunting stretched between their tops, supplemented by low level bunting erected at 1m above ground level, supported at 3m intervals on red and white coloured posts. This is shown below.



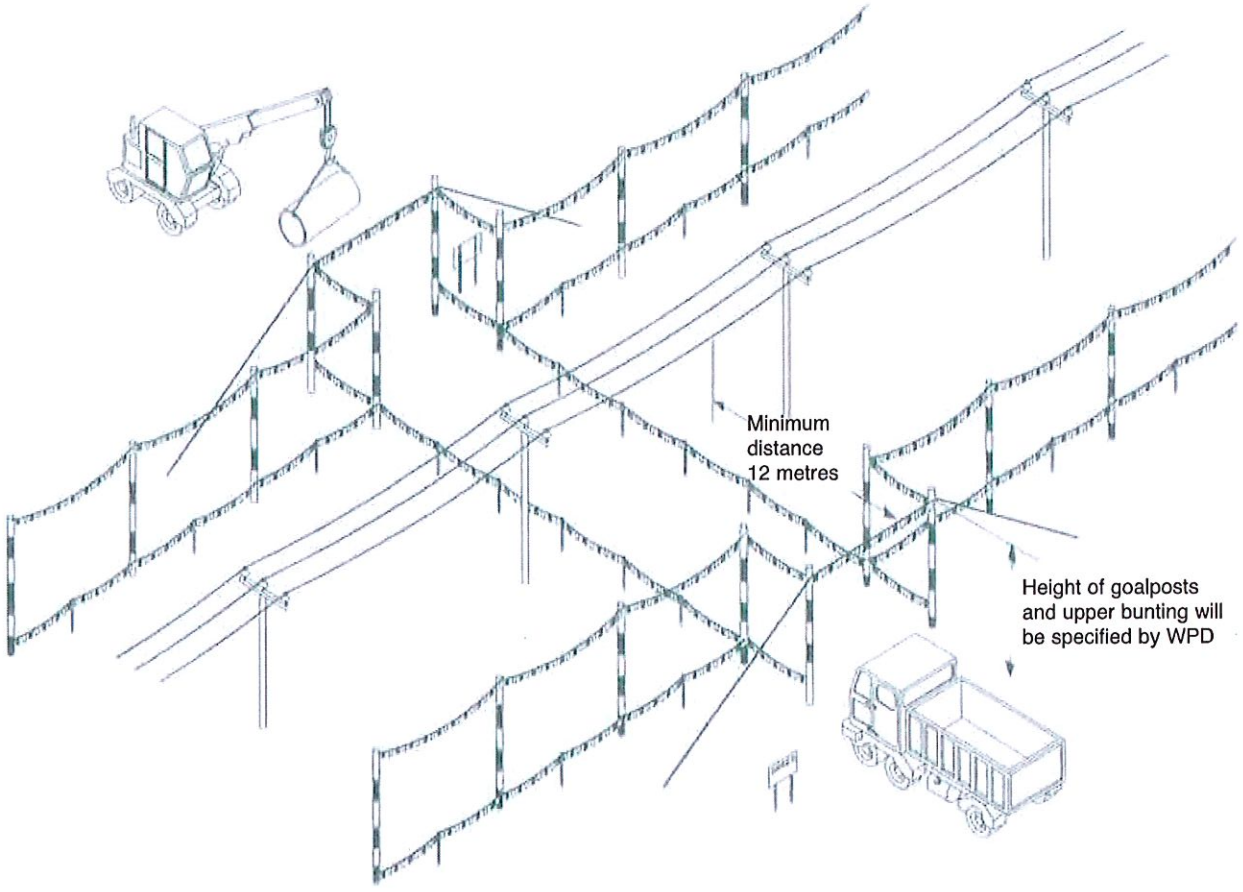
  - We are able to advise you on the height of the barriers and any additional clearances necessary if you are using large plant on your site.
  - Any bunting, ropes and lanyards used should be made from an insulating material.
  - These barriers should be erected parallel to the overhead line at a minimum distance of 6m horizontally from the outermost conductor of the overhead line.

- The supports may be supported by rubble or concrete filled barrels or buried directly in the ground.
- Danger Notices should be fixed to all of your high level supports.
- The ground enclosed within these barriers is best regarded as "dead ground" in which all foot and vehicular traffic is forbidden, in all circumstances, for the duration of your work.
- Where it is necessary for foot and vehicular traffic to pass under the line, you will need to form a marked access way between the barriers as shown below.



- This access way should comprise of bunting erected 1m above ground, supplemented by high level "goal-posts" erected at either end.
- The goal post cross bars should be rigid, made of insulating material and positioned in a location and at a height specified by us.

- The access route should be as narrow as possible and should not normally exceed 10m in width.
- If it is necessary to make the access route wider than this, you may find it impractical to use rigid cross bars, so you may use a tensioned rope and bunting instead. If you use rope and bunting as a cross bar, you should move the entrance to the access route out to a minimum distance of 12m from the outermost conductor of the line. This is to allow for any stretching of the rope if pulled by your plant.



- If you decide to use steel wire rope to support the barrier, this must be effectively connected to earth at both ends.
- You should also install Danger Notices at all probable directions of approach and clearly display the cross bar height.
- If you are working at night, or in conditions or poor visibility, you should ensure the area is well lit and that the overhead lines are clearly visible.
- Whatever measures you take, you should ensure that everyone working in the vicinity of overhead lines is briefed about the risks and what safety measures are in place. Do not permit anyone to carry long objects, especially scaffold poles, ladders and irrigation pipes in the vicinity of overhead lines.
- You should ensure that all shrouding, barriers and signs are regularly inspected and maintained so that they remain effective.
- Overhead lines are not normally insulated and electricity at high voltages may jump, so a dangerous situation can arise just from a close approach.
- Cranes and excavators working near overhead lines are at increased risk because of the possibility of the jib/arm slewing or being raised into the overhead line, or the load swinging into the overhead line. You may therefore also need to fit plant and vehicles with restricting chains etc. to physically restrain their operation – we can advise on this if you wish.
- If you are planning to carry out tree cutting or arboriculture work in the vicinity of our overhead lines, you need to be aware that this is a complex, high risk activity and we recommend that you employ a competent tree surgeon, who complies with all of the requirements of Forestry industry Safety Accord (FISA) publication FISA 804 - Electricity at work: Forestry.

If contact is made with an overhead line

you must immediately clear the area and suspend all work within 50m of the damage because the line could still be live, or become live again.

The operator of a machine that is in contact with an overhead line should:

- **if the machine is still operable and the operator is still in the cab:**

  provided that you do not risk breaking the overhead line or dragging it to the ground, immediately lower the raised parts of the machine USING ONLY THE CONTROLS IN THE CAB and/or drive the vehicle clear of the overhead line.

  contact us immediately on our emergency number so that we can check the overhead lines.

  instruct other people in the vicinity not to approach the vehicle.

- **if the machine is not operable, cannot be driven clear of the overhead line or there is a risk that doing so will break the line or drag it to the ground:**

  stay in the cab.

  contact your site manager or us immediately on our emergency number by radio or mobile phone or as soon as possible by any other method.

  instruct everyone outside the vehicle not to approach it.

  do not exit the cab until given confirmation BY WPD PERSONNEL that it is safe to do so.

- **if the machine is inoperable or cannot be driven free and there is risk of fire or other immediate hazard:**

  JUMP clear of the vehicle, avoiding simultaneous contact with any part of the machine and the ground.

  try to land with your feet as close together as possible.

  where possible, continue to move away from the vehicle using "bunny hops" with your feet together until at least 15m from the vehicle.

  instruct other people in the vicinity not to approach the vehicle.

  contact us immediately on our emergency number.

  do not return to the vehicle until given confirmation by WPD PERSONNEL that it is safe to do so.

Whatever the circumstances please contact us on our emergency number immediately and tell us what has happened. Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and lessen any disruption to your work.

Please report any damage or contact no matter how minor they may seem to you at the time. The damage may not cause a serious problem at the time of damage, but it could fail later, causing danger to our staff and members of the public, disruption to our customers' supplies, and – if we trace the damage back to you – a large repair bill.

MORE INFORMATION

For your information, we are legally obliged to report all contact with our system to the Health & Safety Executive (HSE), and, if you are an employer, you may be obliged to report incidents involving your staff or contractors to the HSE. Even if no one is hurt, you could be prosecuted for failing to report such an incident.

More detailed general information on this subject is available in the following publications from the HSE:

HSG(47) – Avoiding Danger from Underground Services

GS6 – Avoidance of Danger from Overhead Lines

Along with Forestry Industry Safety Accord (FISA) publication FISA 804 – Electricity at Work: Forestry

If you require more site-specific information relating to our equipment at your location please contact us on our regional general enquiries numbers.

Our general enquiries numbers are;

Midlands General Enquiries	0845 724 0240
South Wales General Enquiries	0845 601 3341
South West General Enquiries	0845 601 2989

FINALLY...

Please, always remember that electricity cables and overhead lines can be very dangerous – the general rule is STAY AWAY and stay safe.

NOTES

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

This booklet is issued by the Safety Team

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2014, 4th issue

Our emergency number is:
0800 6783 105

Calling from a mobile?
East Midlands
0330 123 5009
West Midlands
0330 123 5008
South Wales
0330 123 5002
South West
0330 123 5001

Linesearch before dig

Enquiry Confirmation

LSBUD Ref: 14823504

Date of enquiry: 12/02/2019
Time of enquiry: 12:20

Enquirer

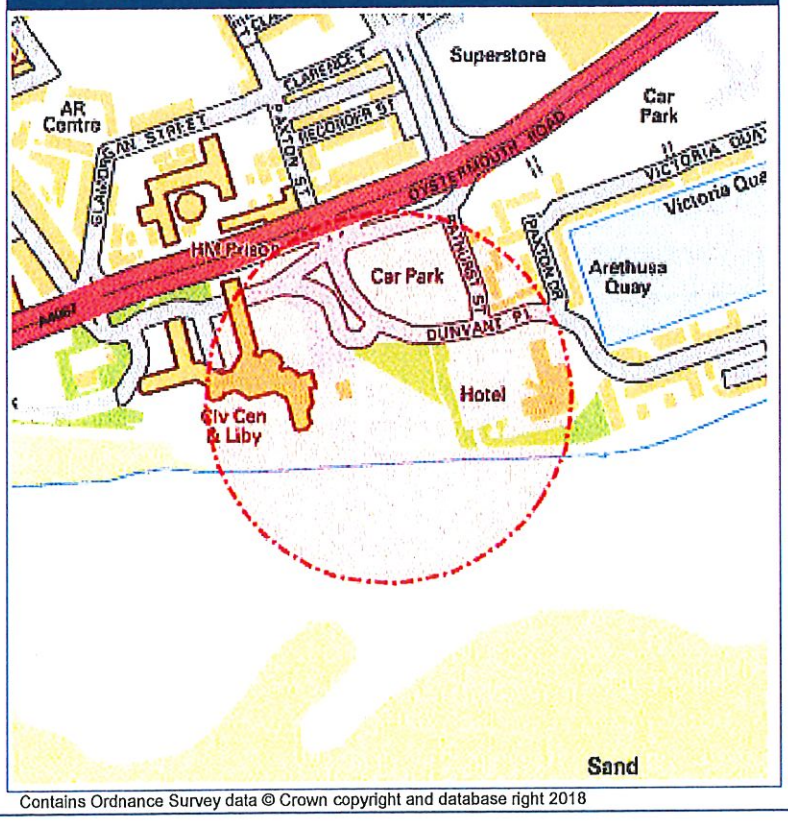
Name	Mr Jack Llewellyn	Phone	
Company	TRJ	Mobile	
Address			
Email			

Enquiry Details

Scheme/Reference			
Enquiry type	Planned Works	Work category	Development Projects
Start date		Work type	Commercial/industrial
End date		Site size	340 metres diameter
Searched location	SA1 3SS	Work type buffer*	75 metres
Confirmed location	265330 192321		
Site Contact Name	Jack Llewellyn	Site Phone No	
Description of Works	Proposed Ice-cream Parlour, 3 storey. Ground floor- commercial (300m2), 1st and 2nd are staff rooms (150m2 each).		

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

Site Map



V3.3.6 Contains Ordnance Survey data © Crown copyright and database right 2018

Linesearch before Udig

Enquiry Confirmation

LSBUD Ref: 14823504

Date of enquiry: 12/02/2019
Time of enquiry: 12:20

Asset Owners

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.linesearchbeforeudig.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

Notes. Please ensure your contact details are correct and up to date on the system in case the LSBUD Members need to contact you.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LinesearchbeforeUdig accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Asset Owners & Responses. Please note the enquiry results include the following:

1. "LSBUD Members" who are asset owners who have registered their assets on the LSBUD service.
2. "Non LSBUD Members" are asset owners who have not registered their assets on the LSBUD service but LSBUD is aware of their existence. Please note that there could be other asset owners within your search area.

Below are three lists of asset owners:

1. LSBUD Members who have assets registered within your search area. ("Affected")
    a. These LSBUD Members will either:
        i. Ask for further information ("Email Additional Info" noted in status). The additional information includes: Site contact name and number, Location plan, Detailed plan (minimum scale 1:2500), Cross sectional drawings (if available), Work Specification.

        ii. Respond directly to you ("Await Response"). In this response they may either send plans directly to you or ask for further information before being able to do so, particularly if any payments or authorisations are required.

2. LSBUD Members who do not have assets registered within your search area. ("Not Affected")

3. Non LSBUD Members who may have assets within your search area. Please note that this list is not exhaustive and all details are provided as a guide only. It is your responsibility to identify and consult with all asset owners before proceeding.

National Grid. Please note that the LSBUD service only contains information on National Grid's Gas above 7 bar asset, all National Grid Electricity Transmission assets and National Grid's Gas Distribution Limited above 2 bar asset.

For National Grid Gas Distribution Ltd below 2 bar asset information please go to www.beforeyoudig.nationalgrid.com

Linesearch before dig

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LSBUD Ref: 14823504

Date of enquiry: 12/02/2019
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LSBUD Members who have assets registered on the LSBUD service within the vicinity of your search area.

List of affected LSBUD members			
Asset Owner	**Phone/Email**	**Emergency Only**	**Status**
Wales and West Utilities	02920278912	0800111999	Await response
Western Power Distribution	08000963080	08006783105	Await response

LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area. Please be aware that LSBUD Members make regular changes to their assets and this list may vary for new enquiries in the same area.

List of not affected LSBUD members		
AWE Pipeline	Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)
BP Exploration Operating Company Limited	BPA	Carrington Gas Pipeline
CATS Pipeline c/o Wood Group PSN	Cemex	Centrica Storage Ltd
CLH Pipeline System Ltd	Concept Solutions People Ltd	ConocoPhillips (UK) Ltd
DIO (MOD Abandoned Pipelines)	Drax Group	E.ON UK CHP Limited
EirGrid	Electricity North West Limited	ENI & Himor c/o Penspen Ltd
EnQuest NNS Limited	EP Langage Limited	ESP Utilities Group
ESSAR	Esso Petroleum Company Limited	Fulcrum Pipelines Limited
Gamma	Gateshead Energy Company	Gigaclear PLC
Gtt	Hafren Dyfrdwy	Humbly Grove Energy
IGas Energy	INEOS FPS Pipelines	INEOS Manufacturing (Scotland and TSEP)
INOVYN Enterprises Limited	Intergen (Coryton Energy or Spalding Energy)	Mainline Pipelines Limited
Manchester Jetline Limited	Manx Cable Company	Marchwood Power Ltd (Gas Pipeline)
Melbourn Solar Limited	National Grid Gas (Above 7 bar), National Grid Gas Distribution Limited (Above 2 bar) and National Grid Electricity Transmission	Northumbrian Water Group
NPower CHP Pipelines	Oikos Storage Limited	Ørsted
Perenco UK Limited (Purbeck Southampton Pipeline)	Petroineos	Phillips 66
Premier Transmission Ltd (SNIP)	Prysmian Cables & Systems Ltd (c/o Western Link)	Redundant Pipelines - LPDA
RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)	RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals
Scottish Power Generation	Seabank Power Ltd	Severn Trent (Chester area only)
SGN	Shell (St Fergus to Mossmorran)	Shell Pipelines
SSE (Peterhead Power Station)	Tata Communications (c/o JSM Construction Ltd)	Total (Colnbrook & Colwick Pipelines)
Total Finaline Pipelines	Transmission Capital	UK Power Networks
Uniper UK Ltd	Vattenfall	Veolia ES SELCHP Limited
Westminster City Council	Wingas Storage UK Ltd	Zayo Group UK Ltd c/o JSM Group Ltd

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The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding. Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.

Non-LSBUD members (Asset owners not registered on LSBUD)			
Asset Owner	**Preferred contact method**	**Phone**	**Status**
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08009173993	Not Notified
CenturyLink Communications UK Limited	plantenquiries@instalcom.co.uk	02087314613	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Dwr Cymru Welsh Water	ndcenquiries@dwrcymru.com	0800 917 2652	Not Notified
Energetics Electricity	plantenquiries@energetics-uk.com	01698404646	Not Notified
ENGIE	nrswa@cofely-gdfsuez.com	01293 549944	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Interoute	interoute.enquiries@plancast.co.uk	02070259000	Not Notified
KPN (c/-Instalcom)	kpn.plantenquiries@instalcom.co.uk	n/a	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sota	SOTA.plantenquiries@instalcom.co.uk		Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified
Vtesse Networks	https://plant.interoute.com/plant-enquiries/	01992532100	Not Notified

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