Kwalita design solutions

Discharging Conditions Statement

- PA20/02856

Chapel Cottage

Chapel Street

Probus

Truro

TR2 4LD

1

The development hereby permitted shall be carried out in accordance with the plans listed below under the heading "Plans Referred to in Consideration of this Application".

Reason: For the avoidance of doubt and in the interests of proper planning.

Not Applicable – All works shall be carried out in accordance with the approved plans.

2

No development other than those works necessary to achieve the visibility splays identified in drawing KDS0060-0010-P01 dated 21.04.20 and as required by condition 5 shall take place until full details of soft and hard landscape works have been submitted to and approved in writing by the Local Planning Authority and these works shall be carried out in accordance with the approved details prior to the occupation of any unit hereby permitted and notice shall be given to the Local Planning Authority when the approved scheme has been completed.

The landscaping details shall include:

- vehicle and pedestrian access and circulation areas.
- full schedule of plants.
- details of the mix, size, distribution, and density of all trees/shrubs/hedges
- cultivation proposals for the maintenance and management of the soft landscaping.
- full details of hard surfacing materials.
- hard and soft landscaping treatment of the frontage of Chapel Cottage

Any trees or plants which within a period of five years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species as those originally planted.

Reason: In the interests of visual amenity and residential amenity and to protect the character of the area in accordance with the aims and intentions of paragraph 127 of the National Planning Policy Framework 2019

Not Applicable – To be dealt with via separate forthcoming application.

3

The development hereby permitted shall be carried out in strict accordance with Tree Protection Plan drawing number 19.227.1.TPP Rev 1 (dated 20.07.20).

Reason: In the interests of visual amenity and residential amenity and to protect the character of the area in accordance with the aims and intentions of paragraphs 127 and 170 of the National Planning Policy Framework 2019

Not Applicable – All works shall be carried out in accordance with the approved plans.

4

No development or demolition other than those works necessary to achieve the visibility splays identified in drawing KDS0060-0010-P01 dated 21.04.20 and as required by condition 5 shall take place until a Construction Traffic Management Plan and programme of works has been submitted to and approved in writing by the Local Planning Authority. The approved Plan shall be adhered to throughout the construction period.

The Plan shall provide for:

I. construction vehicle details (number, size and type);
II. vehicular routes and delivery hours;
III. the parking of vehicles of site operatives and visitors
IV. loading and unloading of plant and materials
V. storage of plant and materials used in constructing of the development;
VI. wheel washing facilities and
VII. measures to control the emission of dust and dirt during construction.

Reason: In the interests of maintaining a safe and efficient highway network and in accordance with the aims and intentions of paragraphs 108 and 109 of the National Planning Policy Framework 2019 and Policy 27 of the Cornwall Local Plan. A pre-commencement condition is necessary to consider highway safety at the construction phase.

Please see Appendix A for Construction Traffic Management Plan

5

Before any other building or engineering works are carried out on the site, all land within the visibility splays as shown on drawing no. KDS0060-0010-P01 dated 21.04.20 (the visibility splays are indicated by a dashed blue line on the approved plan), shall be reduced to a height not exceeding 600mm above the adjoining carriageway level of the lane and thereafter no obstruction shall be permitted within the approved visibility splays.

Reason: To provide satisfactory sight lines in the interests of highway safety and in accordance with the aims and intentions of paragraph 108 of the National Planning Policy Framework 2019 and Policy 27 of the Cornwall Local Plan Strategic Policies 2010-2030.

Not Applicable

6

No development above damp-proof course shall be undertaken until full details of the materials to be used in the construction of the external surfaces (roof slates, slate hanging, natural stone walls, brickwork, windows and doors) of the dwellings hereby permitted have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details and retained as such thereafter.

Reason: In the interests of visual amenity and in accordance with the aims and intentions of with the aims and intentions of paragraph 127 of the National Planning Policy Framework 2019 and Policy 12 of the Cornwall Local Plan Strategic Policies 2010-2030.

Please see Drawing: KDS0060_JB_001_TR2 4LD_M3_A_0015

7

No development or demolition other than those works necessary to achieve the visibility splays identified in drawing KDS0060-0010-P01 dated 21.04.20 and as required by condition 5 shall take place until a structural survey, method statement for the demolition of Chapel Cottage and structural details for the new gable end of Chapel Cottage, undertaken by a suitably qualified professional, have been submitted to and approved in writing by the Local Planning Authority. The development and demolition shall be carried out in accordance with the approved details.

Reason: To safeguard the character of Chapel Cottage (which is in a Conservation Area) in accordance with the aims and intentions of paragraph 196 of the National Planning Policy Framework 2019, and Policy 24 of the Cornwall Local Plan Strategic Policies 2010-2030.

Please see Appendix B for structural survey, method statement and construction details for the demolition of the existing and gable and proposed replacement gable.

8

No development other than those works necessary to achieve the visibility splays identified in drawing KDS0060-0010-P01 dated 21.04.20 and as required by condition 5 until details of the reptile receptor site, the results of any survey carried out at the receptor site, and any habitat enhancements at the receptor site, are submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To protect ecology in accordance with the aims and intentions of paragraphs 170 and 175 of the National Planning Policy Framework 2019 and Policy 23 of the of the Cornwall Local Plan Strategic Policies 2010-2030.

Please see Report: CEC3572 Trevellan House Reptile.

9

The development hereby permitted shall be carried out in strict accordance with 'Mitigation and Recommendation' set out in Section 4 of the Ecological Assessment Report dated January 2020 (ref: CEC2985a Rev A). Prior to the first monitoring site visit following the reptile translocation (as set out in Section 4.4) the survey methods shall be submitted to and approved in writing by the Local Planning Authority. Within 1 month of the date of the final site survey, the monitoring report shall be submitted to and approved in writing by the Local Planning Authority.

Reason: To protect ecology in accordance with the aims and intentions of paragraphs 170 and 175 of the National Planning Policy Framework 2019 and Policy 23 of the of the Cornwall Local Plan Strategic Policies 2010-2030

Not Applicable – All works shall be carried out in accordance with the approved plans.

10

Before the first occupation of the dwellings hereby permitted the first floor window on the South elevation of Plot 1, and the first floor window on the South elevation of Plot 2 shall be fitted with obscure glazing and shall be fixed closed and the windows shall be permanently retained in that condition thereafter.

Reason: To protect the privacy of the occupants of the neighboring dwellings (numbers 36 and 42 Cullen View) in accordance with Policy 12 of the Cornwall Local Plan Strategic Policies 2010-2030.

Not Applicable – All works shall be carried out in accordance with the approved plans.

11

With the exception of the first floor window openings shown on the south elevations of Plot 1 and 2 (as shown on approved drawings no 0006 P01 and 0008 P01), no new openings shall be added to the first floor of the north and south elevations of Plots 1 and 2.

Reason: To protect the privacy of the occupants of the neighbouring dwellings (numbers 24, 26, 30, 36 and 42 Cullen View) in accordance with Policy 12 of the Cornwall Local Plan Strategic Policies 2010-2030.

Not Applicable – All works shall be carried out in accordance with the approved plans.

12

Before the development hereby permitted is first occupied, details of the proposed height, siting, appearance and construction of all boundary treatments (means of enclosure) shall be submitted to and approved in writing by the Local Planning Authority. The approved boundary treatment (means of enclosure) shall be completed in accordance with the approved details prior to the first occupation of the development (or the use hereby approved is commenced) and notice shall be given to the Local Planning Authority when the approved scheme has been completed. The boundary treatment (means of enclosure) shall not thereafter be altered or removed, other than by necessary replacement.

Reason: In the interests of visual and residential amenity and in accordance with the aims and intentions of with the aims and intentions of paragraph 127 of the National Planning Policy Framework 2019 and Policy 12 of the Cornwall Local Plan Strategic Policies 2010-2030.

Please see Drawing: KDS0060_JB_001_TR2 4LD_M3_A_0016

13

No development or demolition other than those works necessary to achieve the visibility splays identified in drawing KDS0060-0010-P01 dated 21.04.20 and as required by condition 5 shall commence until the following details have been submitted to and approved in writing by the Local Planning Authority:

1. A description of the foul and surface water drainage systems operation;
2. Details of the final drainage schemes including calculations and layout;
3. Confirmation from South West Water Ltd that the network has sufficient capacity to cater for this development;
4. A Construction Surface Water Management Plan;
5. A Construction Quality Control Plan;
6. A plan indicating the provisions for exceedance pathways, overland flow routes and proposed detention features;
7. A timetable of construction;
8. Confirmation of who will maintain the drainage systems and a plan for the future maintenance and management, including responsibilities for the drainage systems and overland flow routes.

The Developer must inform the Local Planning Authority of any variation from the details provided and agree these in writing before such variations are undertaken. The surface water drainage systems shall fully manage surface water flows resulting from the developed site up to the 1 in 100 year peak rainfall event plus a minimum allowance of 40% for the impact of climate change.

Flows discharged from the site will be no greater than 1 l/sec for all rainfall events.

The approved scheme shall be implemented in accordance with the timetable so agreed and the scheme shall be managed and maintained in accordance with the approved details for the lifetime of the development.

Reason: To avoid flooding and in the interests of water quality and the residential amenities of future occupiers, in accordance with the aims and intentions of policy 26 of the Cornwall Local Plan Strategic Policies 2010-2030

Please see Appendix C for Drainage Engineer design and specification.

14

Any contamination that is found during the course of construction of the approved development that was not previously identified shall be reported in writing immediately to the local planning authority. Development on the part of the site affected shall be suspended and a risk assessment carried out and submitted to and approved in writing by the local planning authority. Where unacceptable risks are found remediation and verification schemes shall be submitted to and approved in writing by the local planning authority. These approved schemes shall be carried out before the development is resumed or continued.

Reason: To ensure that the health risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with the aims and intentions of the National Planning Policy Framework 2019 with specific reference to paragraphs 170 and 180 and Policy 16 of the Cornwall Local Plan Strategic Policies 2010 - 2030, Adopted November 2016.

Not Applicable – All works shall be carried out in accordance with condition fourteen and any contamination found during construction shall be reported in writing immediately to the local planning authority.

Appendix A - Construction Traffic Management Plan

MR STRINGER
CHAPEL COTTAGE, CHAPEL STREET, PROBUS, CORNWALL

Site Working Risk Assessment / Safe System / Method of Work

Location:	**Etraction of 2 Domestic Dwellings Chapel Street Probus Cornwall TR2 4LD**
Names of Assessors:	Guy Haynes

Probability: 1 = Unlikely 2 = Likely 3 = Highly Likely
Severity: 1 = Minor Injury 2 = Major Injury 3 = Death
Likelihood x Hazard: = Risk Rating e.g. 2 x 3 = 6 (high)

Subject of Assessment:	CDM Site Set Up	**Date of Assessment:**	25/11/20	**Generic Assessment Last Reviewed:**	Initial assessment

Who is at risk:	Employees	✓	Young Person		Public	✓	Inexperienced Person		Sub Contractors	✓	Visitors ✓

Describe the task being performed:

This site working Risk Assessment / Safe System / Method of Work covers the initial Site Set Up and Safe Working by the Client or their Agents at Chapel Street Probus Cornwall.

Hazards

1	Electricity	✓	6	Access/Egress	✓	11	Lighting / Visibility	✓	16	General Public	✓	21	Noise	✓
2	Welfare		7	Work at Height	✓	12	Abrasive Wheels	✓	17	Buried Services	✓	22	Overhead Services	✓
3	Other Workers	✓	8	Work Place Traffic	✓	13	Hot Work	✓	18	Asbestos	✓	23	Crane Age / Lifting	✓
4	COSHH	✓	9	Slip / Trips and Falls	✓	14	Hand Tools	✓	19	Plant and Machinery	✓	24	Storage of Plant and Materials	✓
5	Manual Handling	✓	10	Lone Working	X	15	Power Tools	✓	20	Over Turns of Vehicles	✓	25	Dust / Contamination	✓

Ref. (see above)	Hazard	Probability	Severity	Risk	Control Measures / Safe Methods of Work	Probability	Severity	Risk
1	**ELECTRICITY**	3	3	9	The locations services drawings have been inspected and all services identified. Prior to any excavation or ground penetrating work commencing a scan of the area using a Cable Avoidance Tool must be undertaken.	1	2	2
2	**VIBRATION**	3	2	6	Only use low vibration equipment. All tooling must be marked with its vibration emission levels and employee vibration exposure monitored and recorded.	1	2	2
3	**FALLING OBJECTS**	3	3	9	All employees must wear safety helmets at all times during the activity, with the exception of those persons who are operating mobile plant which is equipped with ROP's and or FOP's.	2	2	4
4	**COSHH CONTROLLED SUBSTANCES**	3	2	6	See individual COSHH assessments for substances being used. It is expected that all operators of plant and equipment will be in contact with, Red Diesel, Diesel Engine Oil, Hydraulic Oil, Transmission Fluid and Lubricating Grease. The users of these substances must apply the specific control measures listed within the substances specific COSHH assessments. Concrete, Cement Mortar admixtures, Chemical Anchors, Sealants and Coatings are also expected to be used and COSHH assessments of these must be available.	1	2	2
5	**MANUAL HANDLING**	3	2	6	Wherever practical, use mechanical handling equipment. Where manual handling cannot be avoided, never exceed your own capabilities and always adopt safe lifting techniques. All employees must have received manual handling training.	1	2	2
6	**ACCESS/ EGRESS**	2	3	6	Access and egress to and from the site and within the area of construction must be maintained in a safe condition at all times. Pedestrian walkways must be used to segregate personnel and Mobile Plant and other workplace traffic including delivery and collection vehicles.	1	3	3
7	**WORKING AT HEIGHT**	3	3	9	All working at height must be conducted using suitable access to height equipment, all equipment must be inspected prior to use and maintained in a safe condition at all times. All users of the equipment must be suitably trained in the equipment's safe use. Equipment must only be erected by trained competent persons.	1	3	3
8	**WORK PLACE / SITE TRANSPORT**	3	3	9	The locations traffic management plan, parking arrangements, site speed limits and general pedestrian / traffic segregation rules must be communicated to all personnel. Physical segregation must be provided in areas of high risk. All workplace transport must be equipped with suitable warning systems such as white noise bleepers, beacons, lights and where applicable cameras. Prior to work commencing suitable measures must be agreed to ensure that the works does not cause additional hazards to the daily running of the site and does not affect nearby residents, provision for Site	1	3	3

					personnel and visitors to park within the curtilage of the development will be provided. All loading and unloading of plant and materials will be undertaken under the control of the Site manager / responsible person / Supervisor and within the site boundary, wherever possible, however there may be necessity to unload heavy or large items on the roadway, where this is deemed necessary specific controls will be implemented.			
9	**SLIPS TRIP'S AND FALLS**	3	2	6	All access and working areas must be maintained in a safe condition at all times, all slips, trips and fall hazards must be removed immediately by those persons finding them. Leads and other items must be routed or protected to eliminate slips, trips and falls of persons.	1	2	2
10	**LONE WORKING**	3	3	9	There will be no Lone Working during this project.	1	3	3
11	**LIGHTING**	3	2	6	Adequate levels of lighting must be provided in all areas for the activity being conducted within that area. The start and finish times for activity must be set out to ensure that the use of Day Light is maximised in order to ensure the safety of those involved in the activity. Where it is found necessary to use task lighting or lighting for security or other purposes consideration must be given to preventing light pollution for neighbours and nearby residents.	1	1	1
12	**ABRASIVE WHEELS**	3	3	9	All abrasive wheels must be used by trained authorised personnel, all flammable materials and substances must be removed from the area of use, a designated hot works area will be provided which will be equipped with a suitable fire extinguisher. Where the use of abrasive wheels is required in an indoor area a Hot Work Permit will be required.	2	2	4
13	**HOT WORKS**	3	3	9	All Hot Works are to be conducted under a permit to work system and is only to be conducted by trained authorised personnel.	2	3	6
14	**HAND TOOLS**	3	2	6	All hand tools must be maintained in a safe condition at all times. All users must inspect the tools to ensure they are safe prior to use. Only use hand tools for the purpose for which they were intended. Never use damaged or defective tools.	1	1	1
15	**POWER TOOLS**	3	3	9	Power tools must be inspected prior to use, all power tools will be PAT tested on a 3-monthly basis. Only trained competent personnel are to use power tools and where applicable the appropriate PPE must be worn.	1	2	2
16	**GENERAL PUBLIC**	3	3	9	Due to the location of this project it is necessary to erect suitable barriers and where required fencing / sheeting to prevent both access to the area, or the release of dust and other particulate matter from the site, this will also assist in the reduction of nuisance noise from the site. Site signage will be displayed to warn of the dangers of a construction site.	1	2	2

17	**BURIED SERVICES**	3	2	6	Prior to any excavation works commencing the area to be excavated must be surveyed by a competent person using cable and services avoidance equipment to ensure that there are no unknown services buried in the area.	1	2	2
18	**ASBESTOS**	1	1	1	As this is virgin ground to be excavated it is not expected that Asbestos will be present. However, care should be taken when it is possible that ACM could have been buried by previous residents or owners.	1	3	3
19	**PLANT AND MACHINERY**	3	3	9	Only trained and authorised personnel are to operate plant and machinery. Prior to the commencement of work the selected contractor is to provide evidence of training for all operators who will be engaged in the activity. The validity of these will be checked.	2	3	6
20	**OVER TURNS OF VEHICLES**	3	3	9	All mobile plant and vehicles that operate in this or any other area of the site must operate in a safe manner at all times in order to ensure that overturns do not occur, specific consideration must be given to ground conditions, slopes and banks. Operators must be aware of the limitations and manufacturers recommendations regarding safe working limitations on banks and slopes in order to prevent overturns.	1	3	3
21	**NOISE**	3	3	9	All operators of Mobile Plant and Equipment which emits noise in excess of 85dba must wear suitable hearing protection. All persons who enter the area on foot for whatever purpose when Mobile Plant and equipment is operating must wear suitable appropriate hearing protection. Suitable measures must be taken to reduce the emission of nuisance noise to neighbours start and finish times should be set to minimise disruption to others it is proposed that work will not start before 8am and the working day will finish at 5pm. Sunday working is not expected.	2	2	4
22	**OVERHEAD CABLES / SERVICES**	3	3	9	Prior to the commencement of Excavating the positions of all overhead obstructions and their heights must be marked. In order to ensure that these services are not struck by plant and or machinery during the excavation process.	1	2	3
23	**CRANE AGE / LIFTING**	3	3	9	All lifting on this project will be conducted using a specialist lifting contractor under a contract lift. The contractor will provide all relevant personnel and documentation.	1	2	2
24	**STORAGE OF PLANT AND MATERIALS**	3	2	6	All items of Plant and materials are to be stored in a secure manner at all times both during the hours of work and outside of working hours. Consideration will be given at all times to the visual appearance of the development to residents and also the affect that waste storage and insecure items can have on them. All items will be stored in a safe manner considering the risk of fire and nuisance.	1	2	2
25	**DUST & CONTAMINATION**	3	2	6	All particulate matter such as Sand, Cement, Aggregates and spoil will be stored and used at all times	1	2	2

					in such a manner that dust generation is minimised and that no visible particulate matter passes the site boundary, this will include the covering of any material which may cause a nuisance through wind whipping. A temporary hard cored area will be provided where possible onsite for the purpose of delivery vehicle parking to reduce the risk of contamination by mud and other matter on to the entrance and adjacent roadways, all drivers of vehicles delivering to the site will be expected to check the wheels of their vehicles and where necessary remove contamination before leaving the site, this will be of particular importance during the winter months and during wet periods. During the summer months should it be found necessary site road ways, spoil and aggregate storage heaps may require damping with water to reduce dust. The site manager / responsible person will inspect all areas on a daily basis and take remedial action to reduce dust and contamination immediately.			

The undersigned have read and understood the above Risk Assessment and the accompanying Method Statements for this project, and agree to work in accordance with these and any other documents relating to safe working practises at all times. Where it is found to be impractical to work to them persons must cease work until a satisfactory resolve is established. (Where an employee has any reading or language barriers the documents must be read to them, and their understanding of the contents assured prior to them commencing work on the project).

NAME (please print):	Signature:	Date:

Construction Phase Traffic Management Plan

CLIENT

Mr Stringer

ADDRESS

Chapel Cottage
Chapel Street
Probus
Cornwall
TR2 4LD

SITE ADDRESS

Chapel Street
Probus
Cornwall
TR2 4LD
NATIONAL GRID REFERANCE No: SW 89842 47892

DESCRIPTION OF PROJECT

Erection of 2 Domestic Dwellings.

PROJECT NO: LGH/KD 04-20

Issue Date:	25/11/20	
Review Date:	25/11/20	
Next Review Due:	25/11/21	
Revision Status:	**A**	

INDEX

1.0 SCOPE

To ensure the safety of all employees, the general public and to reduce the risk of persons being injured due to contact with moving vehicles at this site in Chapel Street Probus, the following procedure must be implemented by those conducting the work. All employees must ensure that the requirements of this procedure are fully implemented at all times by all persons throughout the duration of work.

TRAFFIC MANAGEMENT PLAN FOR SITE AREA

Site Operating and Delivery times will be 08-00hrs to 17-00hrs Monday to Friday
Saturday Site Operating times 08-00hrs to 13-00hrs

2.0 SITE SPEED LIMIT

The site speed limit for all vehicles will be 5 mph; this is a maximum speed, a lesser speed limit will be necessary in the interest of safety in certain areas and at times of heavy congestion. It is appreciated that due to the size and layout of the site speeding other than on initial entry to it is unlikely.

3.0 TYPES OF VEHICLES

The following types of vehicles are expected at this location.

- Cars x 3
- Vans x 2
- Goods Vehicles of all sizes mainly 2, 3 and 4 axel rigid vehicles, max of 2 at any one time
- Pick-up trucks x 2
- Mobile plant equipment, e.g. Excavators, Telescopic Handlers etc.

4.0 ACCESS / EGRESS

General access and egress to the site for employees, visitors and those delivering to the site will be gained off of Chapel Street only. At times when congestion occurs restrictions on the number of vehicles entering the site may be required to ensure the safety of employees, drivers, customers and the public, to this end overspill parking will be provided nearby, by prior agreement. The site supervisor will be responsible for co-ordinating delivery times to reduce disruption and eliminate possible congestion.

5.0 PARKING

All parking will be in the designated onsite parking areas and reverse parking will be the preferred method (in order to ensure good all-round vision when exiting). Employee and Visitor car parking will be in the designated parking areas, again reverse parking will be expected. A disabled parking area will be provided should this be found necessary.

6.0 PEDESTRIAN SAFETY

Defined walkways will be provided to segregate pedestrians from the operating areas of lorries, mobile plant or vehicles within the areas normally accessed by pedestrians. Adequate suitable signage will be provided to warn employees and pedestrians of the areas where these vehicles will be operating. In certain areas, suitable means such as signs and or barriers will be used to prevent access by persons whilst loading / unloading or movements of mobile plant is being undertaken. At all times a suitable width roadway to facilitate emergency vehicle access must be maintained. Vehicle and pedestrian routes will be signed and illuminated where necessary. All persons working on-site will wear either a hi-visibility vest or jacket depending on weather conditions, so they are visible to drivers / operators of large vehicles and plant at all times.

Health and Safety Instructions must be complied with at all times. In the event of compliance appearing impractical, then advice must be sought from the Health, Safety and Environmental Advisor.

7.0 FIRE / EMERGENCY

Access to the site and adjacent properties must not be blocked or obstructed by goods or vehicles at any time, as clear access for the Fire and or Emergency services must be maintained. This will also apply to Chapel Street as well as the site access point.

8.0 HEAVY GOODS VEHICLES

All drivers of heavy goods vehicles must report upon arrival once parked safely to a responsible person on-site. Drivers will be given full instructions before loading or unloading commencing. All loading and unloading of vehicles will be conducted in the designated areas only, which will be communicated to the drivers by those overseeing the activity. Whilst drivers are on-site, they must comply with all site safety rules at all times.

Vehicles awaiting loading / unloading must only park where instructed to by a member of site personnel to prevent obstruction and annoyance of neighbours. Overnight parking will not be permitted. Site workers will be prevented from entering all areas used for loading / unloading so that their safety can be ensured during the activity.

9.0 USE OF BANKSPERSONS

When large vehicles enter the site, they must not reverse or manoeuvre without the aid of a trained banks person, this is to assist the driver in seeing all around the vehicle and to ensure no other persons or vehicles enters the reversing area of that vehicle to eliminate the risk of vehicle / pedestrian contact.

Authorised Bankspersons will be identified via an on-site register.

10.0 HEAVY PLANT

All movements of heavy plant will normally be conducted away from the areas accessed by site personnel where possible. Outside of normal operating hours, where this is found to be impractical for whatever reason, suitable sufficient protective barriers will be erected to prevent contact with persons.

All mobile plant must be fitted with white noise reversing bleepers and amber flashing beacons.

All mobile plant is only to be operated by trained competent personnel.

11.0 PERSONAL PROTECTIVE EQUIPMENT

Due to the nature and risks involved on-site it is necessary for all employees working or walking in the area to wear hi-visibility clothing in the form of vests or jackets, the exact type will be determined by the weather. Safety footwear with steel toe caps must be worn at all times.

For obvious reasons, employees or visitors will be permitted to walk from the respective car parking areas to their place of work without the above stated personal protective equipment on.

Health and Safety Instructions must be complied with at all times. In the event of compliance appearing impractical, then advice must be sought from the Health, Safety and Environmental Advisor.

12.0 SAFETY SIGNAGE

The following safety / warning signs must be clearly displayed at all times.

- Speed limit 5 mph max
- All large vehicles to use bankspersons when reversing during heavily congested times.
- Employees must wear hi–visibility clothing at all times.
- Employees must wear safety footwear at all times.
- Caution vehicles reversing.
- All delivery drivers must report to the Site Office upon arrival.
- Danger Mobile Plant operating.
- Caution Pedestrians.
- All Pedestrians must use the dedicated walkways.
- Smoking permitted in dedicated areas only.
- One-way system in operation (where applicable).
- Mobile phones only to be used in designated areas.

13.0 LOADING AND UNLOADING

During all loading and unloading activities, the vehicles must be parked safely in the dedicated areas with the vehicle's parking brake correctly applied and the vehicle secured. All persons must be away from the vehicle whilst mobile plant engaged in the activity are operating.

When uncoupled trailers, skips or demountable bodies are to be loaded / unloaded the brakes must be properly applied, and in situations where there is a risk of overloading the trailer or body in front of the supporting legs suitable supports must be placed under the trailer / body to prevent tipping forward of the trailer / body.

No persons are permitted within the unloading / loading area whilst mobile plant is operated. This includes drivers!

Once loading / unloading is complete mobile plant will cease operating in the immediate area whilst the driver is securing his load / vehicle before disembarking the loading / unloading area.

All materials will be stored in designated areas within the confines of the site safely and securely, all fine granular material such as building sand, aggregates and soil will be protected to prevent wind whipping and creating nuisance dusts, no dusts of this nature are permitted to be released past the boundary of this site.

14.0 TRAFFIC FLOW

Traffic flow around the site will be depicted by the use of suitable signage to ensure the safety of all site personnel.

Pedestrian segregation from vehicles and plant will be achieved by the use of pedestrian walkways and crossings.

A site plan showing the layout of traffic routes and pedestrian walkways for the complex will be displayed in the site office.

Health and Safety Instructions must be complied with at all times. In the event of compliance appearing impractical, then advice must be sought from the Health, Safety and Environmental Advisor.

15.0 ADVERSE WEATHER CONDITIONS

All areas of the site which are entered by vehicles must be either sanded or hard cored out to eliminate contamination of the road with mud or other debris when exiting site. Should this not be possible, wheel cleaning or washing must be undertaken before vehicles leave the site and cause contamination of the highway.

Consideration must be given to dry dusty conditions and the wind whipping of fine granular material such as aggregates and other materials, this can be controlled by covering or damping down using water from either a hose or sprinkler.

During periods of adverse weather such as snow or ice, a gritting / salting regime must be implemented to ensure the safety of those moving about the site, either by vehicle or on foot. This exercise must be undertaken or arranged by the first person attending the site of a morning during these conditions.

Depending upon the severity of the weather conditions it may in some circumstances be necessary to prohibit some forms of workplace transport such as heavy goods vehicles from entering the site in order to ensure the safety of site personnel.

Implementation of this procedure must be conducted in conjunction with the locations site plan and where applicable all areas will be indicated on that plan.

Appendix B - Structural Survey, Method Statement & Construction Details

silverlake design ltd
structural engineering services | conservation and heritage services

Structural Survey and Assessment

Ref: 3010

April 2021

Project:
Chapel Cottage
Chapel Street
Probus
TR2 4LD

For: Mr John Stringer

INDEX

APPENDICES

1.00 BRIEF

1.01 Silverlake Design was instructed by Jack Burr of Kwalita Design Solutions on behalf of Mr John Stringer to carry out a Structural Survey of Chapel Cottage, Probus in regards to the proposed partially demolition and rebuild of the northern section of the building.

1.02 The inspection was undertaken by Kerstin Hartmann (MSc Building Conservation, Dipl.-Ing. Structural Design) of Silverlake Design Ltd.

1.03 The site visit was carried out on 25th February 2021. The weather conditions were sunny and dry.

1.04 The purpose of this Report was to generally assess the structural implications and existing structure of the northern section of Chapel Cottage and give recommendation for the proposed demolition.

1.05 Any non-structural issues were outside the normal scope of my expertise and therefore such comments are made without prejudice.

1.06 The Report is intended for use by the client and no responsibility is extended to any third party for the whole or part of its content.

1.07 The Report is intended as a guide to the work required only and is not a full specification of work.

2.00 DESCRIPTION OF PROPERTY

General description

2.01 Chapel Cottage is located in the northern section of the designated Probus Conservation area. The building itself is not listed.

2.02 Chapel Cottage is a double storey dwelling constructed in natural rubble stone at ground floor and, according to the building owner, cob walls at upper level, which are now covered with cementitious render. Except the east elevation, all other elevations are now fully rendered.

2.03 The dwelling has been extended to the south in the late C20, and it also appears that the original dwelling was partly extended to the west at the northern section.

2.04 The plan form is rectangular. The east front elevation is facing Chapel Road and directional notations are taken in relation to this.

2.05 The roof is covered with slate and red clay ridge tiles.

2.06 The roof slopes have a bituminous felt underlay, suggesting that the roof has been re-roofed in the past, possibly 30 to 40 years ago.

2.07 The roof structure consists of A-frame trusses spacing approximately 1.20 m. Two rows of purlins at either side and the ridge plate supporting the common rafters.

2.08 The principal rafters are 58 x 130 mm. The purlins are 70 x 70 mm running over the principal rafters. The common rafters are 34x60 mm at 300 mm to 310 mm centres.

2.09 The ceiling joists are 50 x 170 mm. The roof space is insulated above the ceiling joists and no further inspection was carried out.

2.10 The condition of roof structure appears to be in good order.

2.11 The access into the roof space is limited and no close inspection of the gable wall could be carried out.

2.12 From the distance view the internal gable walls appear to have been constructed in cob leaving only the brick chimney stacks exposed within the loft space. However, it could not be established if the upper gable walls are cob walls.

2.13 The first floor joists span across the building from east to west, parallel to the gable wall. The pine floorboards are laid from north to south.

Demolition proposals and alterations to the main building

2.14 The northern section of the building needs to be partially demolished to allow a 3.0 m wide vehicle access to the proposed development at the rear of Chapel Cottage.

2.15 The principal roof members and floor joists span across the building (parallel to the gable), which allows a straightforward removal of the structure.

2.16 The structural elements affected by the partial demolition are

- the complete north gable wall including chimney stack,
- two roof bays including two A-frame trusses, purlins and common rafters (a third truss might need to be moved when exact dimensions are set out on site), ceiling joists,
- several first floor joists and floorboards,
- full height sections of the east and west walls of the main building,
- complete removal of the north-east extension.

2.17 The planning proposals are for rebuilding the north gable wall. It is important to tie the new wall in with the existing remaining wall structure of the east and west walls.

2.18 Therefore, it is normally recommended to use the same materials as existing, which are stone walls at the ground floor and cob at upper level. In this instance however, it might be not viable, and rendered blockwork could be used, except for making good the exposed stone wall at the east elevation.

2.19 A method statement for the demolition of the existing structure, risk assessment and health and safety procedures are to be provided by the building contractor before any works starts on site.

3.0 CONCLUSIONS & RECOMMENDATIONS

3.1 The exact extent of the required partial demolition of the northern section needs to be carefully set out on site to retain as much of the west and east walls as possible. This is important to allow for appropriate toothing in technique of the new wall with the existing structure.

3.2 The material proposal for the new north gable wall is not established at this stage, but is recommended to use a blockwork structure, which could be faced with stonework at ground floor level if desirable. The chimney stack and fireplace are not to be rebuilt.

3.3 There are openings at the east elevation, which are in proximity of the new north gable wall return. Depending on the remaining length of the masonry pier from the opening recess to the new north-east corner, it might be required to carefully take down those piers and rebuild together with the new gable wall. This will need to be assessed when the works start on site.

3.4 The rear (west) wall has an existing wall return where the staircase is located, and the remaining wall length might be adequate to allow for toothing in or alternatively using a wall starter kit. But this should be assessed again when works start on site.

3.5 The existing span of the roof and floor structure allows for an uncomplicated removal of the required section. However, safety measures like propping up of the adjoining structural members are required.

3.6 For lateral stability of the new gable wall restrain straps at first floor and roof level need to be provided or alternative solutions designed by a structural engineer.

3.7 New foundations for the north gable wall are required. The existing footings of the adjoining length walls are likely not adequate for modern building standards and some local underpinning or stepped foundation might be required for the new corners.

3.8 In summary, the partial demolition and rebuild of Chapel Cottage is considered structurally a straightforward operation by an experienced building contractor.

Signed [redacted]

Kerstin Hartmann April 2021

APPENDIX A – PLANS

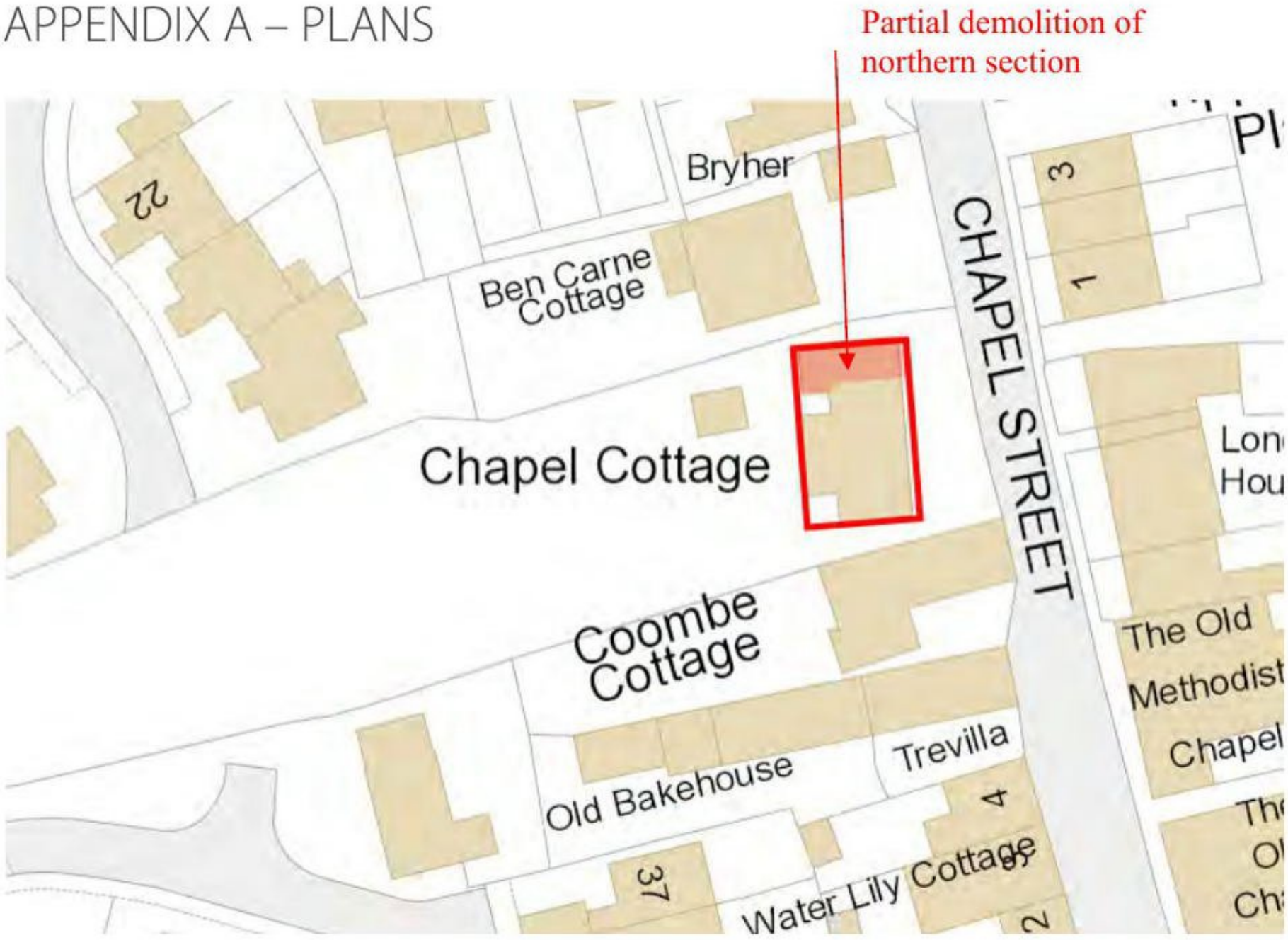


Figure 1 Block Plan showing location of Chapel Cottage

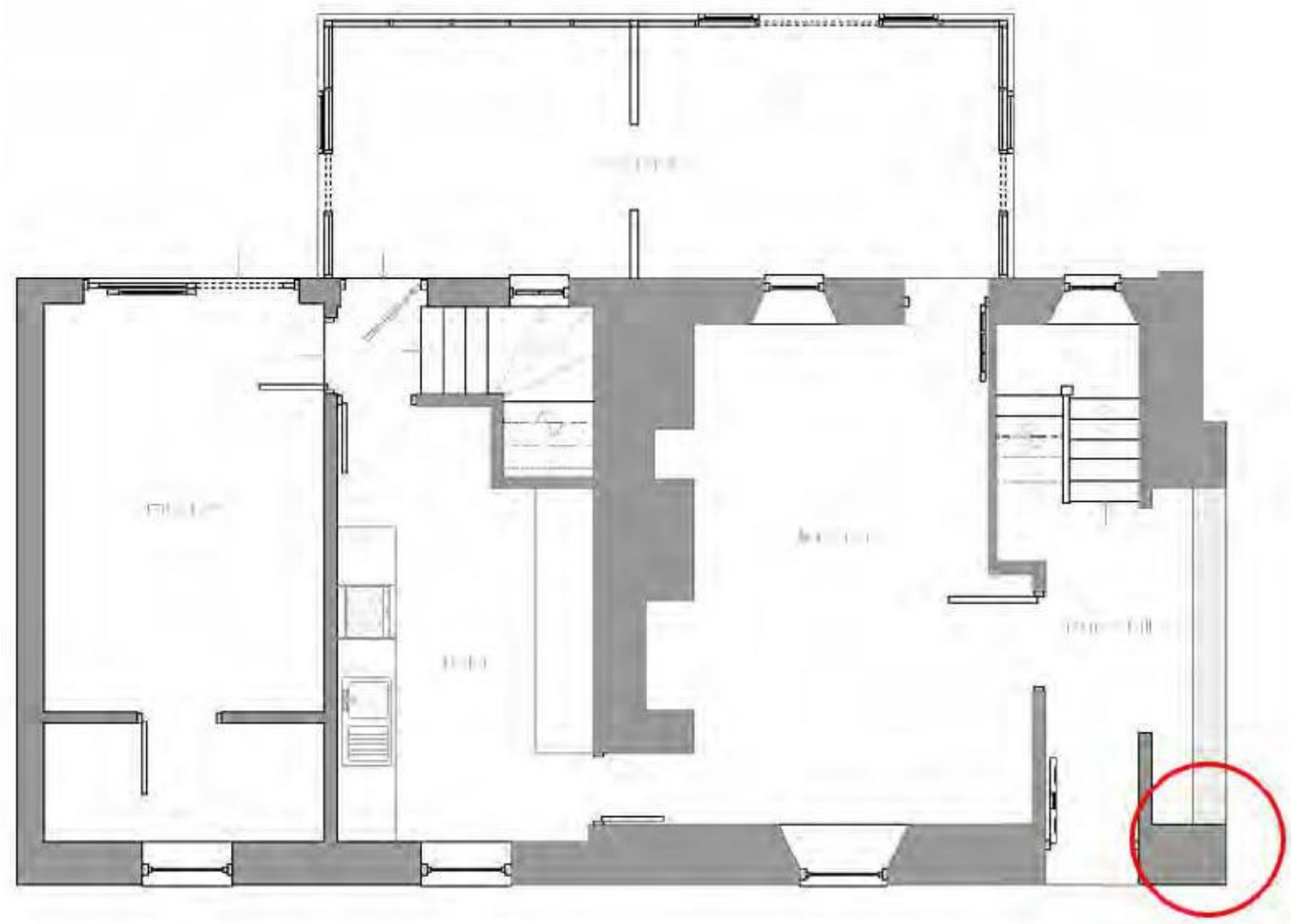


Figure 2 Proposed ground floor

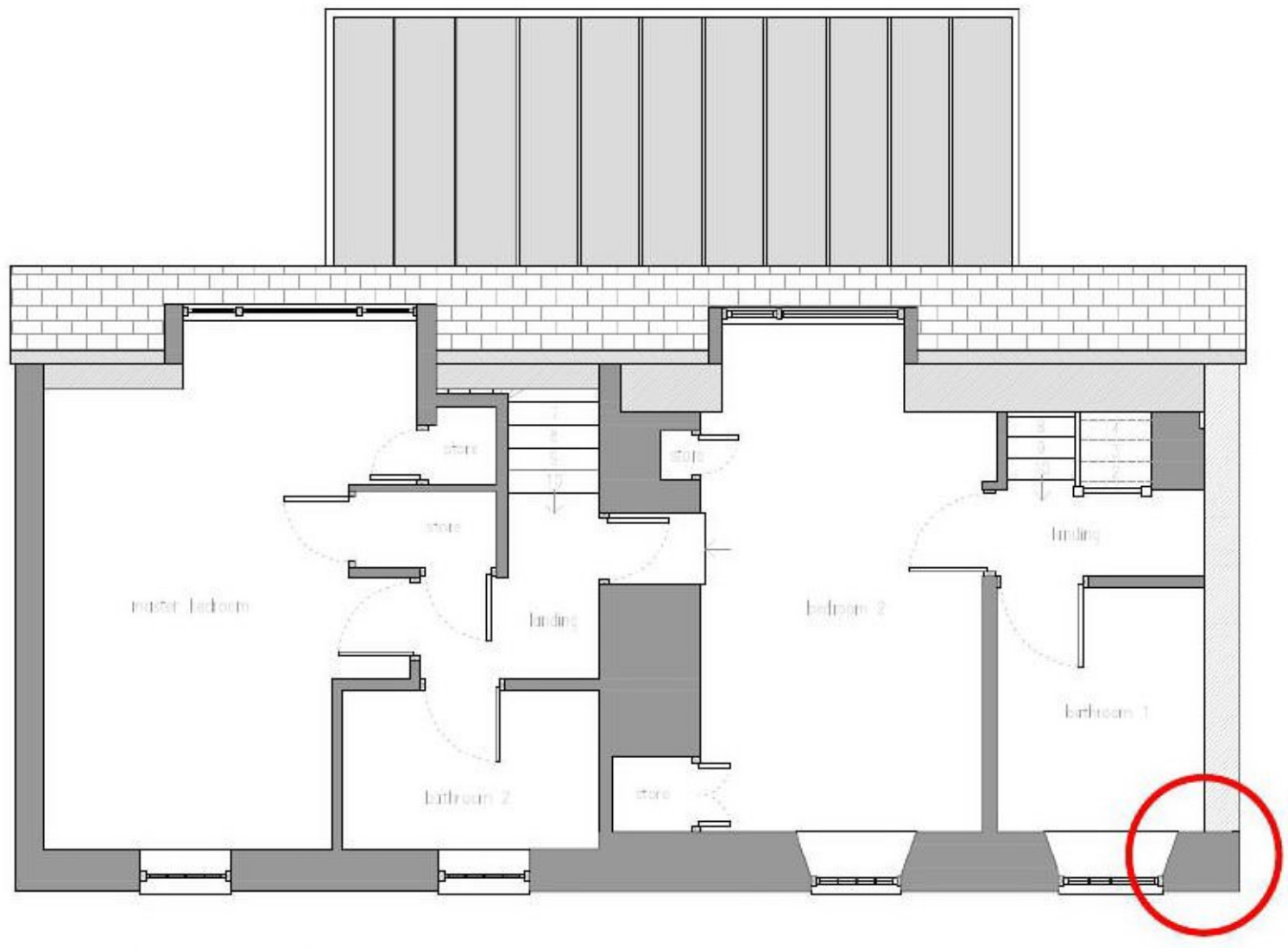


Figure 3 Proposed first floor

APPENDIX B – INDEX OF PHOTOGRAPHS

APPENDIX C – PHOTOGRAPHS

Photo 1 Existing north gable wall

Photo 2 Northern section of east (front) elevation

Photo 3 Existing boundary wall and northern gable

Photo 4 Northern section of west elevation

Photo 5 Internal view of north gable wall and roof structure

Photo 6 Internal view of south gable wall and roof structure

Photo 7 Existing floorboards at northern bed room parallel to length walls

Photo 8 Internal view of northern section of east wall, note three roof trusses

APPENDIX D – TERMS AND CONDITIONS OF REPORT

Limitations of Appraisal: The purpose of this appraisal is limited to an opinion on the structural condition of the property and only in areas described. Only those structural defects that may materially affect the stability of the property are reported on, provided that these defects were reasonably detectable at the time of the inspection. Whilst all reasonable skill and care has been used in preparing this Report, it should be appreciated that no guarantee can be offered that the property will be free from future defects or that existing ones will not suffer from further deterioration.

The Report is designed to answer questions about the defects(s) you have described. The engineer will look at that defect and any other parts of the property which are necessary for him to come to conclusions about the cause and remedy of the problem. He does not necessarily look at all the property. This is a visual inspection. The engineer will not be carrying out any tests (core samples etc.) at this stage and he does not have the right to damage or lift carpets or finishing's without the owner's approval.

Unexposed Parts: Internal inspection is made within the limits of ready accessibility and it is not normal practice to lift floor coverings or floor boards, remove panels or plaster, or move heavier items of furniture. Consequently, we have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and, therefore, we are unable to report that any such part of the property is free from defects. Such unexposed parts may contain problems and the client would need to make special arrangements for these areas to be investigated (where practically possible) if confirmation about their condition is required.

Statutory Requirements: Enquiries with local or statutory authorities have not been carried out. Whilst attention may be drawn to any apparent breach or statutory requirement relevant to the building or site, the absence of such comment does not imply compliance with such requirements.

Foundations: Trial pits where excavated will only represent the exposed area. It is possible that ground/foundation conditions could vary elsewhere.
Method of Inspection: External inspection of the building has been carried out from ground level by visual sighting. This method means that part of the structure may be incapable of inspection and we cannot confirm that they are free from defect. Special arrangements (where practically possible) would need to be made before inspection of these areas could take place.

Methane and Radon: Testing for or enquiry about possible methane presence from geological or organic sources or the presence of or susceptibility to radon gas, have not been carried out as part of this Structural Report.

Building Faults: The property has not been inspected for building faults such as defects in roof coverings, rainwater systems and drains and the presence of rising damp, moisture ingress and fungal and woodworm attack of structural and other timber.

Adjacent Structures: Except where the stability of the house or building may be in question, we do not propose to inspect any other part of the property, for example, detached outbuildings, retaining and other free standing walls, fences, etc. Thus, we will be unable to comment on any such part.

Contamination: The property and site have not been tested for any form of contamination, pollution or any other environment impairment and we are unable to make any comment in this regard. However, such matters are an important consideration and may well affect the value of the property/site and any prospects for future development. Specific environmental audits can be arranged with the appropriate specialists in this field.

Non-structural Timber: non-structural timbers, such as window and door joinery, fascias and soffits, etc. were not inspected.

Disclosure to a Third Party: This Report may not be relied upon by a Third Party for any purpose without the written consent of this Practice. Furthermore, this Report has been prepared and issued specifically for the benefit of the addressee and no responsibility will be extended to any Third Party for the whole or any part of its conte

nt.

Appendix C – Drainage Engineer Design and Specification.

KEY

- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PRIVATE SURFACE WATER LINEAR DRAIN (ACO OR SIMILAR)
- PROPOSED PRIVATE SOAKAWAY CONSTRUCTED USING MODULAR INFILTRATION UNITS
- PROPOSED PRIVATE SURFACE WATER POLYPROPYLENE INSPECTION CHAMBER (475Ø/450Ø P.P.I.C.) (WAVIN SILT TRAP)
- PRIVATE SURFACE WATER MINI ACCESS CHAMBER (MAC) 600mm MAX DEPTH
- PERCOLATION TEST LOCATION
- EXISTING SOUTH WEST WATER COMBINED WATER SEWER
- PRIVATE FOUL WATER INFRASTRUCTURE

DESCRIPTION OF THE SURFACE WATER DRAINAGE SYSTEM

THE PREFERABLE DRAINAGE SOLUTION FOR THE SITE WOULD BE TO DRAIN ALL SURFACE WATER RUNOFF FROM THE DEVELOPMENT USING INFILTRATION, IN LINE WITH BEST PRACTICE GUIDANCE TO DEAL WITH RUNOFF AS CLOSE TO SOURCE AS POSSIBLE.

PERCOLATION TESTS IN GENERAL ACCORDANCE WITH BRE365/CIRIA 156 CARRIED OUT ON SITE EXHIBITED MODERATE INFILTRATION RATES THAT ARE SUITABLE FOR SOAKAWAY DESIGN. ONLY TWO TESTS WERE ABLE TO BE UNDERTAKEN FOR TRIAL PIT 1. THEREFORE, THE SLOWEST INFILTRATION RATE FROM THE TWO TESTS HAS BEEN HALVED IN ORDER TO ESTIMATE THE VALUE FOR THE THIRD TEST.

SOAKAWAYS HAVE BEEN DESIGNED TO A 100 YEAR RETURN PERIOD STORM, INCLUDING A 40% ALLOWANCE FOR CLIMATE CHANGE. SURFACE WATER RUNOFF ORIGINATING FROM ROOF AREAS WILL BE ROUTED INTO SOAKAWAYS.

DESCRIPTION OF THE FOUL DRAINAGE SYSTEM

IT IS PROPOSED THAT THE FOUL WATER FROM THE SITE BE DISCHARGE TO A NEARBY SOUTH WEST WATER COMBINED SEWER, WHICH PASSES THROUGH THE SITE.

SOUTH WEST WATER HAVE CONFIRMED THAT THEY HAVE SUFFICIENT CAPACITY WITHIN THEIR SYSTEM TO RECEIVE FLOWS FROM THIS DEVELOPMENT PROPOSAL.

FUTURE MANAGEMENT PLAN & MAINTENANCE OF THE SYSTEM

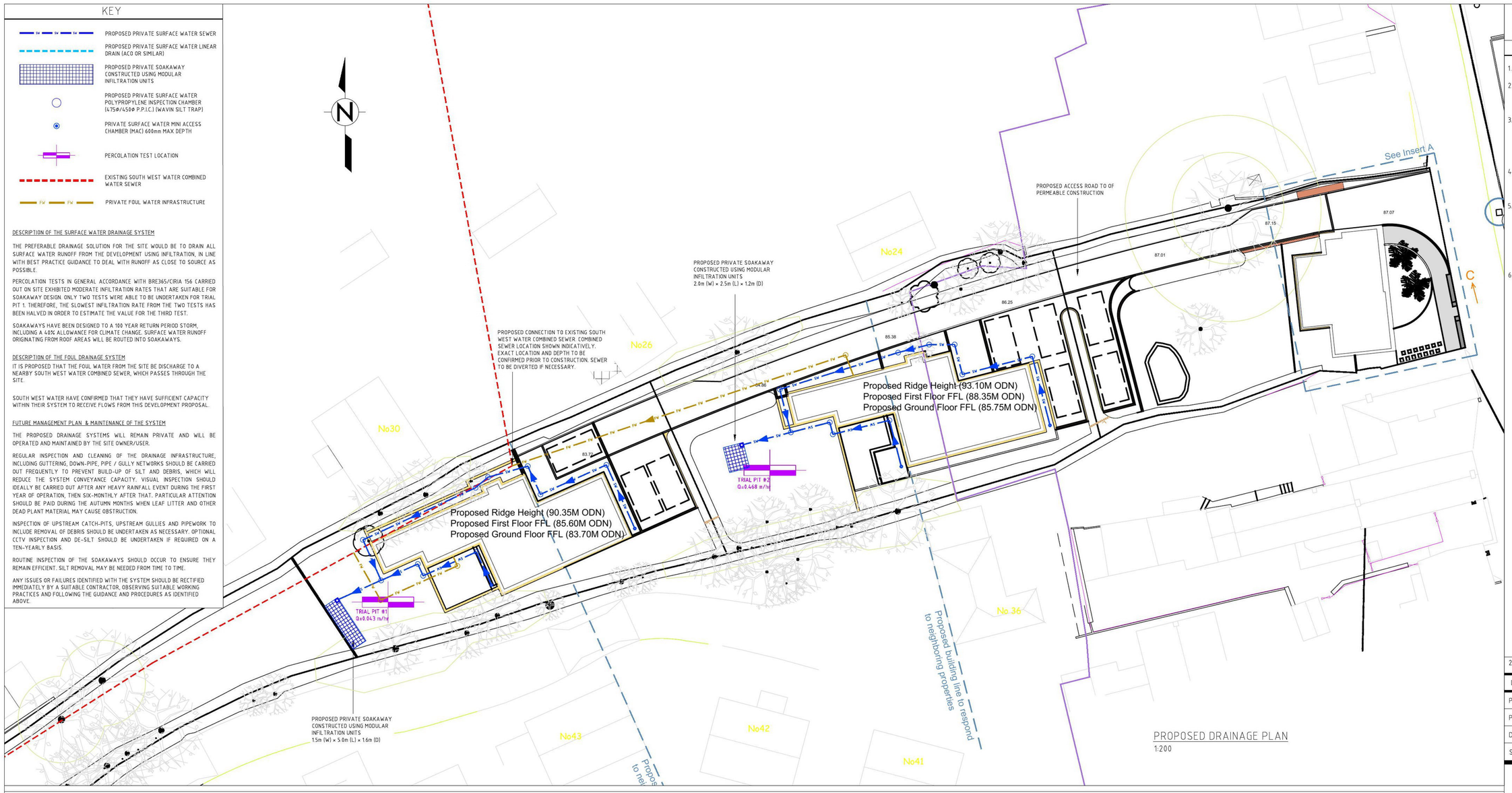
THE PROPOSED DRAINAGE SYSTEMS WILL REMAIN PRIVATE AND WILL BE OPERATED AND MAINTAINED BY THE SITE OWNER/USER.

REGULAR INSPECTION AND CLEANING OF THE DRAINAGE INFRASTRUCTURE, INCLUDING GUTTERING, DOWN-PIPE, PIPE / GULLY NETWORKS SHOULD BE CARRIED OUT FREQUENTLY TO PREVENT BUILD-UP OF SILT AND DEBRIS, WHICH WILL REDUCE THE SYSTEM CONVEYANCE CAPACITY. VISUAL INSPECTION SHOULD IDEALLY BE CARRIED OUT AFTER ANY HEAVY RAINFALL EVENT DURING THE FIRST YEAR OF OPERATION, THEN SIX-MONTHLY AFTER THAT. PARTICULAR ATTENTION SHOULD BE PAID DURING THE AUTUMN MONTHS WHEN LEAF LITTER AND OTHER DEAD PLANT MATERIAL MAY CAUSE OBSTRUCTION.

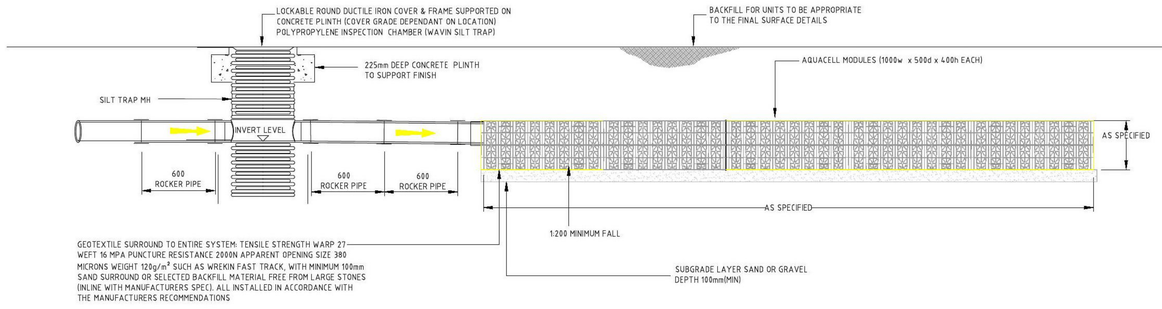
INSPECTION OF UPSTREAM CATCH-PITS, UPSTREAM GULLIES AND PIPEWORK TO INCLUDE REMOVAL OF DEBRIS SHOULD BE UNDERTAKEN AS NECESSARY. OPTIONAL CCTV INSPECTION AND DE-SILT SHOULD BE UNDERTAKEN IF REQUIRED ON A TEN-YEARLY BASIS.

ROUTINE INSPECTION OF THE SOAKAWAYS SHOULD OCCUR TO ENSURE THEY REMAIN EFFICIENT. SILT REMOVAL MAY BE NEEDED FROM TIME TO TIME.

ANY ISSUES OR FAILURES IDENTIFIED WITH THE SYSTEM SHOULD BE RECTIFIED IMMEDIATELY BY A SUITABLE CONTRACTOR, OBSERVING SUITABLE WORKING PRACTICES AND FOLLOWING THE GUIDANCE AND PROCEDURES AS IDENTIFIED ABOVE.



PROPOSED DRAINAGE PLAN
1:200



TYPICAL SECTION THROUGH SURFACE WATER SOAKAWAY

MODULAR INFILTRATION UNITS (AQUACELL)

1:25

NOTES

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4. Materials and workmanship shall comply to the appropriate British Standards and Codes of Practice unless otherwise stated.
5. The activities required to construct the work, shown on drawings clearly marked CONSTRUCTION, may be subject to the provisions of the Construction (Design & Management) Regulations 2015. The Contractor and Client must ensure that they are adequately conversant with these regulations and that the appropriate procedures required under the regulations are observed at all times.
6. Design Risk Assessment

   A risk assessment relating to potential hazards associated with the works described within this drawing, in so far as they have been designed by EDS Ltd, has been undertaken. Risks identified have been eliminated by design wherever practicable. The status with regard to residual risks is as follows:

   The work is at an early planning stage and is not sufficiently advanced to allow a meaningful assessment of risks to be undertaken at this time.

   Designer - EDS Drawing revision - A
   Date - 28:01:21

DATE	DRWN	CHKD.	REV.	NOTES.
28:01:21	JB	AW	A	PRELIMINARY ISSUE

PROJECT MANAGER:-	JAN CLARK
PROJECT ENGINEER:-	JAMES BROOKS
DRAWN DATE:-	JANUARY 2021
SCALE & SHEET SIZE:-	AS STATED @ A1

PRELIMINARY

EDS
Engineering & Development Solutions
- Flood Risk Assessment
- SuDS and Surface Water
- Foul and Sewage Treatment
- Highway Design
- Civil Engineering
- Statutory Approvals

EDS, Unit 10, Penstraze Business Centre, Truro, Cornwall TR4 8PN
(01872) 306311 (Mob) 07973816457
Email: jan@eadsolutions.co.uk
www.eadsolutions.co.uk

CLIENT
KWALITA DESIGN SOLUTIONS

PROJECT
PROPOSED DEVELOPMENT OF TWO RESIDENTIAL DWELLINGS AT CHAPEL COTTAGE, PROBUS

DRAWING TITLE
PROPOSED DRAINAGE PLAN

PROJECT No.	DRAWING No.	REV.
J-1774	3001	A

KEY

EXCEEDANCE PATHWAYS/OVERLAND FLOW ROUTES

SILT FENCE

OVERLAND FLOW

THE SITE IS LOCATED ON SLOPING LAND IN THE CENTRE OF THE VILLAGE OF PROBUS. THE SITE FALLS GENERALLY FROM NORTHEAST TO SOUTHWEST.

OVERLAND FLOW ORIGINATING FROM THE SITE AT PRESENT FALLS TO THE SOUTHWESTERN BOUNDARY OF THE SITE TOWARDS CULLEN VIEW ROAD.

POST DEVELPOMENT RUNOFF WILL BE DISPOSED OF INTO INFILTRATION SYSTEMS, WHICH SERVE EACH DWELLING ON SITE UP TO AND INCLUDING THE 100 YEAR + 40% CLIMATE CHANGE EVENT.

IN THE UNLIKELY EVENT OF A STORM IN EXCESS OF THE 1 IN 100 YEAR RAINFALL EVENT, OR IF THE DRAINAGE SYSTEM WERE TO BECOME BLOCKED, WATER MAY SURCHARGE THE SYSTEM. IN THIS CASE IT IS CONSIDERED THAT THE OVERFLOWING WATER WOULD BE CONVEYED DOWN THE SITE IN A SOUTHWESTERLY DIRECTION, AS PER THE PRE-DEVELOPMENT SCENARIO.

THE PROPOSED DRAINAGE SYSTEM, AND DESIGN STANDARD USED (1 IN 100 YEAR STORM WITH AN ADDITIONAL 40% ALLOWANCE FOR THE EFFECTS OF CLIMATE CHANGE), ANY EXCEEDANCE FLOWS WOULD BE LOWER THAN WOULD FLOW OFF THE SITE IN THE PRE-DEVELOPMENT SCENARIO FOR A SIMILAR STORM EVENT.

CONSTRUCTION QUALITY CONTROL PROCEDURE

BUILDING REGULATIONS PART H 'DRAINAGE AND WASTE DISPOSAL' COVERS THE DESIGN AND INSTALLATION OF SURFACE WATER SYSTEMS. ALL PRIVATE DRAINAGE INCLUDING PIPES, MANHOLES, DOWN PIPES, TANKS AND OTHER DRAINAGE INFRASTRUCTURE ON THE SITE WILL BE INSTALLED IN ACCORDANCE WITH THIS DOCUMENT.

THE DRAINAGE DESIGN HAS BEEN COMPLETED IN LINE WITH THE CORNWALL COUNCIL'S DRAINAGE GUIDANCE FOR CORNWALL DOCUMENT (DGfC).

IN ORDER TO PROVE THAT A SUITABLE SYSTEM WHICH CONFORMS TO THE REQUIREMENTS DETAILED IN DGfC CAN BE IMPLEMENTED FOR THE SITE, A SURFACE WATER DRAINAGE SYSTEM BASED ON INFILTRATION HAS BEEN DESIGNED TO DISPOSE OF SURFACE WATER RUNOFF FROM THE WORST CASE STORM WITH A 100 YEAR RETURN PERIOD IS PROPOSED WITH EXISTING RAINFALL INTENSITIES INCREASED BY 40% TO ALLOW FOR THE POTENTIAL EFFECTS OF CLIMATE CHANGE OVER THE LIFETIME OF THE DEVELOPMENT.

A DRAINAGE DESIGN HAS BEEN UNDERTAKEN FOR THE PROPOSED DEVELOPMENT. THE CONSTRUCTION OF THE DRAINAGE SYSTEM SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH THIS DESIGN.

THE WORKS MUST BE ACCESSIBLE TO THE BUILDING REGULATIONS INSPECTORATE AT ANY TIME.

ONCE THE WORKS ARE COMPLETED MAINTENANCE MUST BE CARRIED OUT FOLLOWING BEST PRACTICE AND/OR MANUFACTURERS RECOMMENDATIONS.

TIMETABLE FOR CONSTRUCTION

CONSTRUCTION WORKS ARE TO TAKE PLACE IN SUCH AN ORDER THAT THE RISK OF POLLUTION AND OVERLAND FLOW INCIDENCES ARE KEPT TO A MINIMUM. CONSTRUCTION IS DUE TO START AS SOON AS POSSIBLE AND EXPECTED TO LAST APPROXIMATELY 3 YEARS.

ANY FEATURES THAT ARE TO BE USED IN THE CONVEYANCE OF SURFACE WATER RUNOFF, I.E. SILT FENCES, ARE TO BE CONSTRUCTED FIRST. CONSTRUCTION RUNOFF IS HEAVILY LADEN WITH SILT, WHICH MUST NOT BE ALLOWED TO BLOCK OR CLOG THE INFRASTRUCTURE DURING SUBSEQUENT CONSTRUCTION PHASES.

FORMAL DRAINAGE INFRASTRUCTURE ARE TO BE FITTED WITH SUITABLE SCREENS, AND SILT TRAPS TO BE REGULARLY INSPECTED AND EMPTIED WHEN NECESSARY.

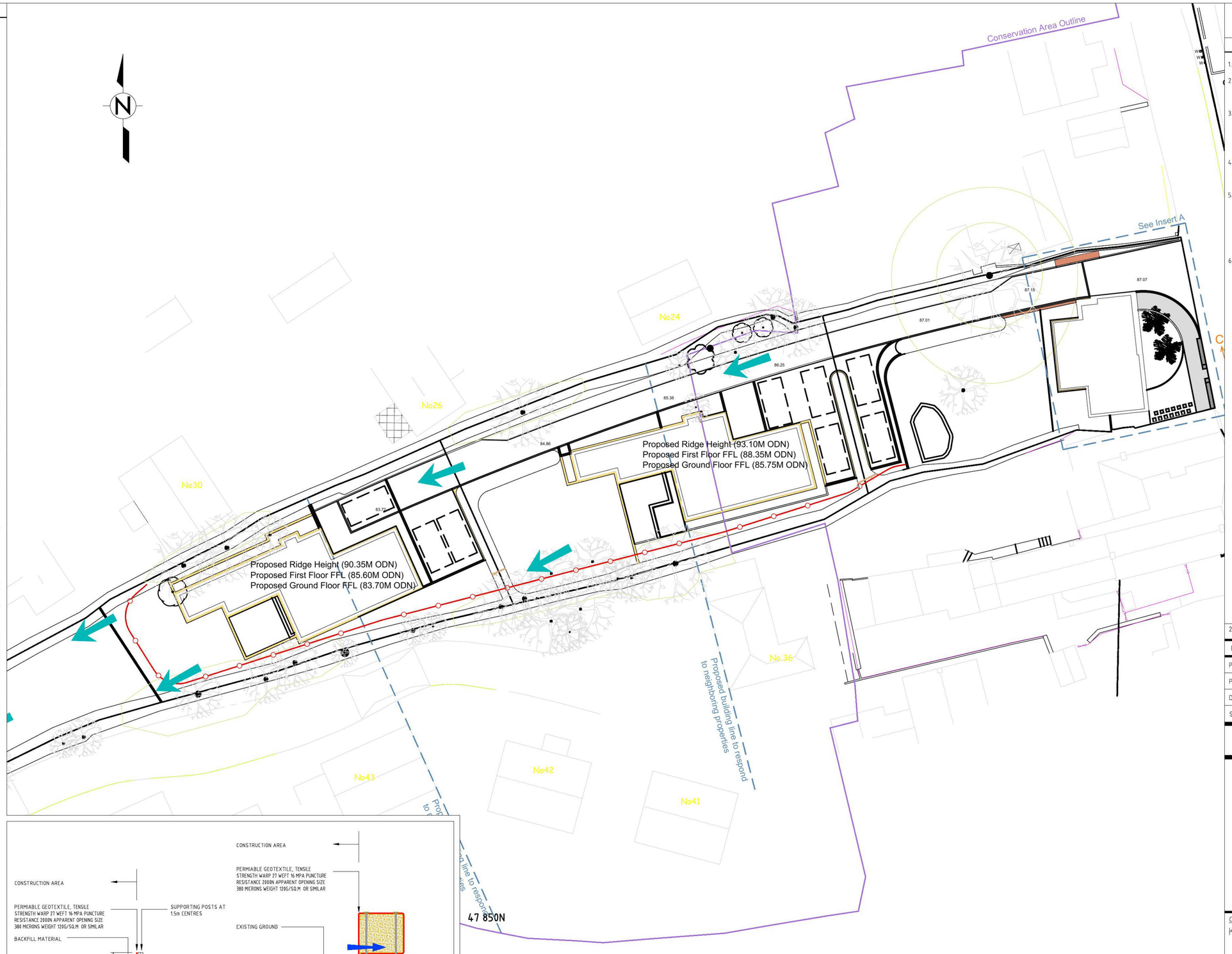
ONCE THE WORKS ARE COMPLETE ALL PARTS OF THE SYSTEM ARE TO BE CHECKED THAT THEY MEET THE DESIGN REQUIREMENTS, ANY SEDIMENTS OR CONSTRUCTION BY-PRODUCT MUST BE REMOVED TO PREVENT LOADING ON DOWNSTREAM INFRASTRUCTURE ONCE SCREENS AND OR OTHER TEMPORARY MEASURES ARE DECOMMISSIONED.

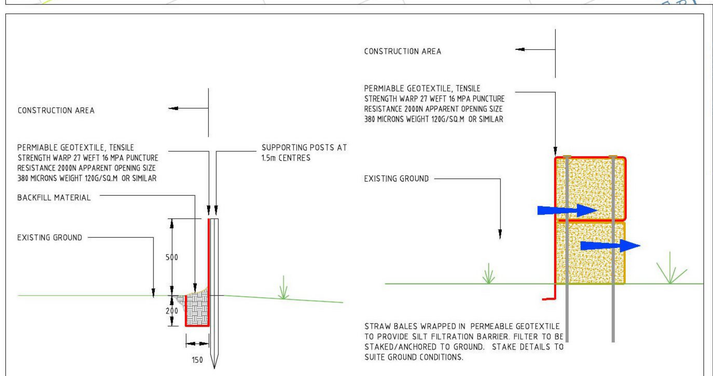
TIMETABLE FOR IMPLEMENTATION OF THE DRAINAGE SYSTEMS

THE CONSTRUCTION AND IMPLEMENTATION OF THE SOAKAWAY SYSTEMS SHOULD BE TOWARDS THE END OF THE DEVELOPMENT. THIS WILL PREVENT THE SOAKAWAYS BECOMING BLINDED BY SILT/MUD RUNOFF THAT IS LIKELY TO OCCUR DURING THE DEVELOPMENT. ALTERNATIVELY, THE SOAKAWAYS CAN BE CONSTRUCTED EARLY ON IN THE DEVELOPMENT. HOWEVER, IT SHOULD REMAIN UNCONNECTED AND PROTECTED FROM THE SILT/MUD RUNOFF FROM THE DEVELOPMENT SITE.

CONSTRUCTION PHASE DRAINAGE PROCEDURE

THE CONSTRUCTION PHASE DRAINAGE IS SHOWN ON THE ADJACENT PLAN. IN ADDITION, ALL WORKS WILL BE CARRIED OUT IN LINE WITH THE ENVIRONMENT AGENCY POLLUTION PREVENTION GUIDELINES.





CONSTRUCTION PHASE SILT FENCE

1:20

CONSTRUCTION PHASE SILT FENCE ('NO DIG' AREA - IF REQUIRED)

1:20

NOTES

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   Designer - EDS Drawing revision - A
   Date - 28:01:21

DATE	DRWN	CHKD.	REV.	NOTES.
28:01:21	JB	AW	A	PRELIMINARY ISSUE

PROJECT MANAGER:-	JAN CLARK
PROJECT ENGINEER:-	JAMES BROOKS
DRAWN DATE:-	JANUARY 2021
SCALE & SHEET SIZE:-	1:200 @ A1

PRELIMINARY

EDS
Engineering & Development Solutions
- Flood Risk Assessment
- SuDS and Surface Water
- Foul and Sewage Treatment
- Highway Design
- Civil Engineering
- Statutory Approvals

EDS, Unit 10, Penstraze Business Centre, Truro, Cornwall TR4 8PN
(01872) 306311 (Mob) 07973816457
Email: jan@eadsolutions.co.uk
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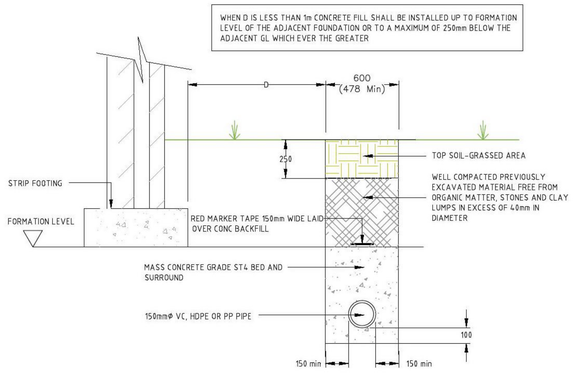
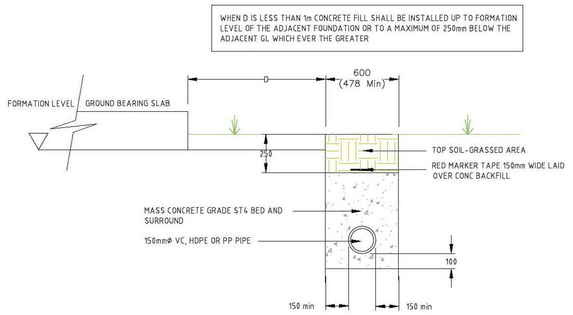
CLIENT
KWALITA DESIGN SOLUTIONS

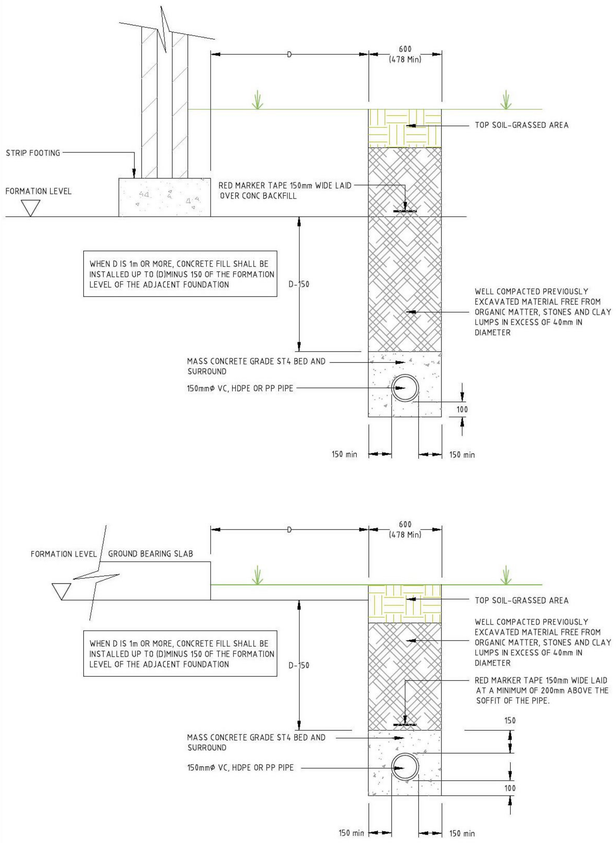
PROJECT
PROPOSED DEVELOPMENT OF TWO RESIDENTIAL DWELLINGS AT CHAPEL COTTAGE, PROBUS

DRAWING TITLE
CONSTRUCTION PHASE DRAINAGE PLAN

PROJECT No.	DRAWING No.	REV.
J-1774	3002	A







PIPEWORK PROTECTION DETAILS FOR RUNS ADJACENT BUILDING FOUNDATIONS 1:20

PROTECTION NOTE:

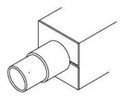
MINIMUM DEPTH OF COVER TO CROWN WITHOUT CONCRETE PROTECTION SHOULD BE AS FOLLOWS:

- DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS, 0.6M;
- DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES, 0.6M;
- DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES, 0.9M;
- OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES, 1.2M

CONCRETE PROTECTION SHALL BE INTERRUPTED OVER ITS FULL CROSS SECTION AT EACH PIPE JOINT

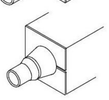
SUPERSLEVE IN CONCRETE:

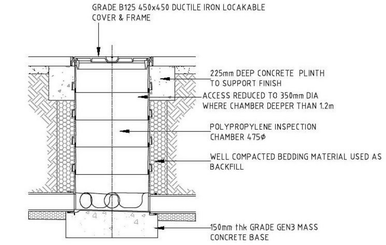
POLYSTYRENE OR FIBREBOARD AT FACE OF EVERY SLEEVE



HEPSEAL IN CONCRETE:

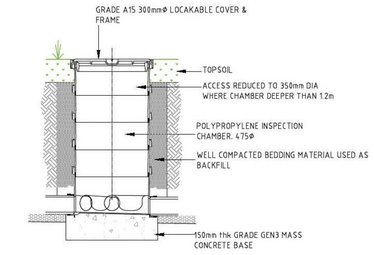
POLYSTYRENE OR FIBREBOARD AT FACE OF EVERY SOCKET





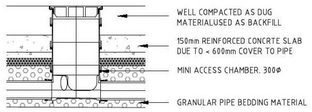
SECTION THROUGH 475Ø POLYPROPYLENE INSPECTION SITUATED IN HARD LANDSCAPED AREAS - 3m MAX DEPTH

1:20



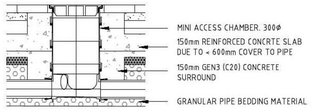
SECTION THROUGH 475Ø POLYPROPYLENE INSPECTION CHAMBER SITUATED IN SOFT LANDSCAPED AREAS - 3m MAX DEPTH

1:20



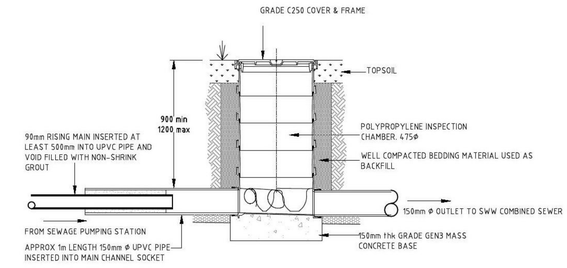
MINI ACCESS CHAMBER SITED IN LANDSCAPED AREAS - 600mm MAX DEPTH

1:20

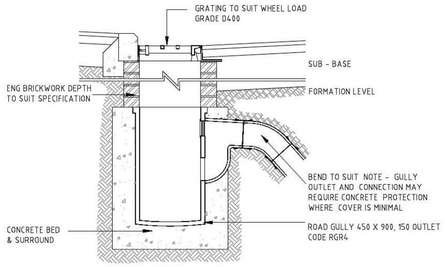


MINI ACCESS CHAMBER SITED IN DRIVEWAYS/PAVED AREAS - 600mm MAX DEPTH

1:20

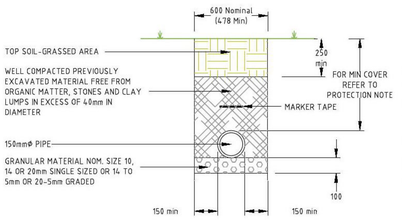


SECTION THROUGH PUMP FLOW DISCHARGE CHAMBER 1:20



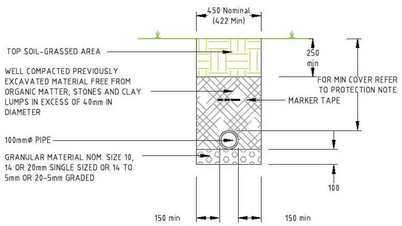
TYPICAL ROAD GULLY CONNECTION DETAIL

1:20



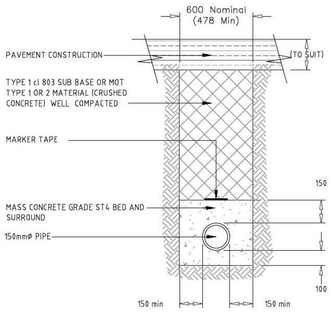
TYPICAL SECTION THROUGH PIPE SITUATED IN SOFT LANDSCAPED AREA

150mmØ VC PIPE SHOWN (HDPE & PP SIMILAR)
CLASS F BEDDING FACTOR 1.9
1:20



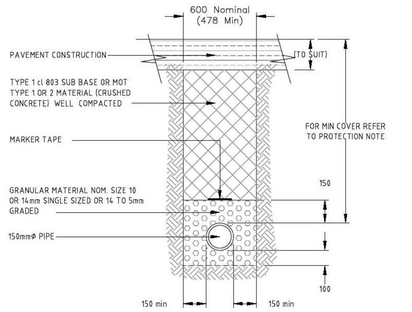
TYPICAL SECTION THROUGH PIPE SITUATED IN SOFT LANDSCAPED AREA

100mmØ VC PIPE SHOWN (HDPE & PP SIMILAR)
CLASS F BEDDING FACTOR 1.9
1:20



TYPICAL SECTION THROUGH PIPE SITUATED IN PROPOSED ROADWAY AREAS WITH CONCRETE PROTECTION

150mmØ VC PIPE SHOWN (HDPE & PP SIMILAR)
MODIFIED CLASS A
1:20



TYPICAL SECTION THROUGH PIPE SITUATED IN PRIVATE ROADWAY AREAS

150mmØ VC PIPE SHOWN (HDPE & PP SIMILAR)
CLASS S BEDDING FACTOR 2.5
1:20

NOTES

1. This drawing is copyright. Refer to details above.
2. This drawing is only to be used for the purposes described in the status box below.
   Work to figured dimensions only, do not scale.
3. This drawing is to be read in conjunction with all other drawings, details and specifications pertaining to the work described. It should only be used for the purpose marked in the status box below, and shall not be used for construction unless clearly marked CONSTRUCTION.
4. Materials and workmanship shall comply to the appropriate British Standards and Codes of Practice unless otherwise stated.
5. The activities required to construct the work, shown on drawings clearly marked CONSTRUCTION, may be subject to the provisions of the Construction (Design & Management) Regulations 2015. The Contractor and Client must ensure that they are adequately conversant with these regulations and that the appropriate procedures required under the regulations are observed at all times.
6. Design Risk Assessment

   A risk assessment relating to potential hazards associated with the works described within this drawing, in so far as they have been designed by EDS Ltd, has been undertaken. Risks identified have been eliminated by design wherever practicable. The status with regard to residual risks is as follows:

   The work is at an early planning stage and is not sufficiently advanced to allow a meaningful assessment of risks to be undertaken at this time.

   Designer - EDS Drawing revision - A
   Date - 28:01:21

DATE	DRWN	CHKD	REV	NOTES
28:01:21	JB	AW	A	PRELIMINARY ISSUE

PROJECT MANAGER:-	JAN CLARK
PROJECT ENGINEER:-	JAMES BROOKS
DRAWN DATE:-	JANUARY 2021
SCALE & SHEET SIZE:-	1:200 @ A1

PRELIMINARY

EDS
Engineering & Development Solutions
- Flood Risk Assessment
- SuDS and Surface Water
- Foul and Sewage Treatment
- Highway Design
- Civil Engineering
- Statutory Approvals

EDS, Unit 10, Penstraze Business Centre, Truro, Cornwall TR4 8PN
(01872) 306311 (Mob) 07973816457
Email: jan@eadsolutions.co.uk
www.eadsolutions.co.uk

CLIENT
KWALITA DESIGN SOLUTIONS

PROJECT
PROPOSED DEVELOPMENT OF TWO RESIDENTIAL DWELLINGS AT CHAPEL COTTAGE, PROBUS

DRAWING TITLE
TYPICAL DRAINAGE DETAILS

PROJECT No.	DRAWING No.	REV.
J-1774	3401	A

Engineering & Development Solutions	Job No.	Job Name	Prepared	Date
Unit 10 Penstraze Business Centre, Truro, Cornwall, TR4 8PN Tel 07973816457	J-1774	Chapel Cottage, Probus	EDS	27/01/2021

Pit Dimensions

Depth (m)	Length (m)	Width (m)
1.90	2.00	0.70

Test Date:	10/12/2021
Trial Pit No.:	TP1
Test No.:	1

Soakaway test - tabulated data

Time (hh:mm)	Depth to Water (m)	Elapsed Time (sec)	Water Depth (m)	% Effective	Volume (m^3)
09:53	1.16	0	0.44	100%	0.62
09:59	1.22	360	0.38	86%	0.53
10:14	1.26	1260	0.34	77%	0.48
10:30	1.34	2220	0.26	59%	0.36
10:44	1.38	3060	0.22	50%	0.31
11:29	1.46	5760	0.14	32%	0.20
11:50	1.51	7020	0.09	20%	0.13
12:35	1.58	9720	0.02	5%	0.03
12:40	1.60	10020	0.00	0%	0.00

% Effective	Vol (m^3)	T (sec)
77%	0.48	1260
59%	0.36	2220
75%	0.46	1380
32%	0.20	5760
20%	0.13	7020
25%	0.15	6516
75%-25%	0.31	5136

Effective Values Summary

Datum (0,0) is ground level at pit

Initial Depth	1.16	m (below datum)
Final Depth	1.60	m (below datum)
Storage Depth	0.44	m (effective depth)
$a_{p50\%}$	2.59	m^2

$$q = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Where:

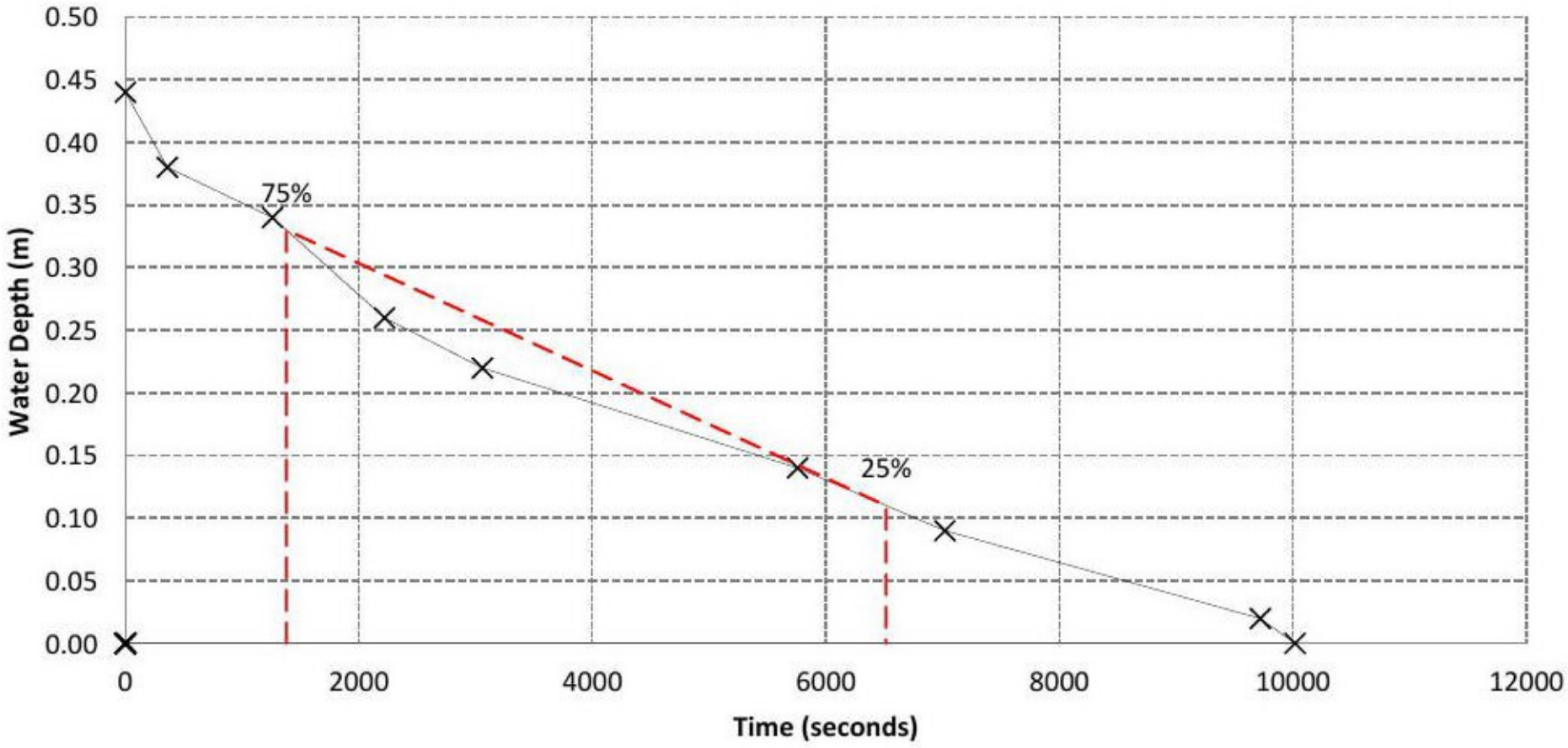
$a_{p50\%}$: Internal surface area of pite up to 50% effective depth, including base area

$t_{p75\text{-}25}$: Time for water to dall from 75% to 25% effective depth

$V_{p75\text{-}25}$: Effective storage volume between 75% & 25% effective depth

q= **2.32E-05** m/sec

0.083 m/hr



Engineering & Development Solutions	Job No.	Job Name	Prepared	Date
Unit 10 Penstraze Business Centre, Truro, Cornwall, TR4 8PN Tel 07973816457	J-1774	Chapel Cottage, Probus	EDS	27/01/2021

Pit Dimensions

Depth (m)	Length (m)	Width (m)
1.90	2.00	0.70

Test Date:	10/12/2021
Trial Pit No.:	TP1
Test No.:	2

Soakaway test - tabulated data

Time (hh:mm)	Depth to Water (m)	Elapsed Time (sec)	Water Depth (m)	% Effective	Volume (m^3)
12:47	0.98	0	0.55	100%	0.77
13:05	1.10	1080	0.43	78%	0.60
13:25	1.15	2280	0.38	69%	0.53
13:50	1.22	3780	0.31	56%	0.43
14:10	1.30	4980	0.23	42%	0.32
14:40	1.38	6780	0.15	27%	0.21
15:08	1.45	8460	0.08	15%	0.11
15:30	1.53	9780	0.00	0%	0.00

% Effective	Vol (m^3)	T (sec)
78%	0.60	1080
69%	0.53	2280
75%	0.58	1500
27%	0.21	6780
15%	0.11	8460
25%	0.19	7080
75%-25%	0.39	5580

Effective Values Summary

Datum (0,0) is ground level at pit

Initial Depth	0.98	m (below datum)
Final Depth	1.53	m (below datum)
Storage Depth	0.55	m (effective depth)
$a_{p50\%}$	2.89	m^2

$$q = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Where:

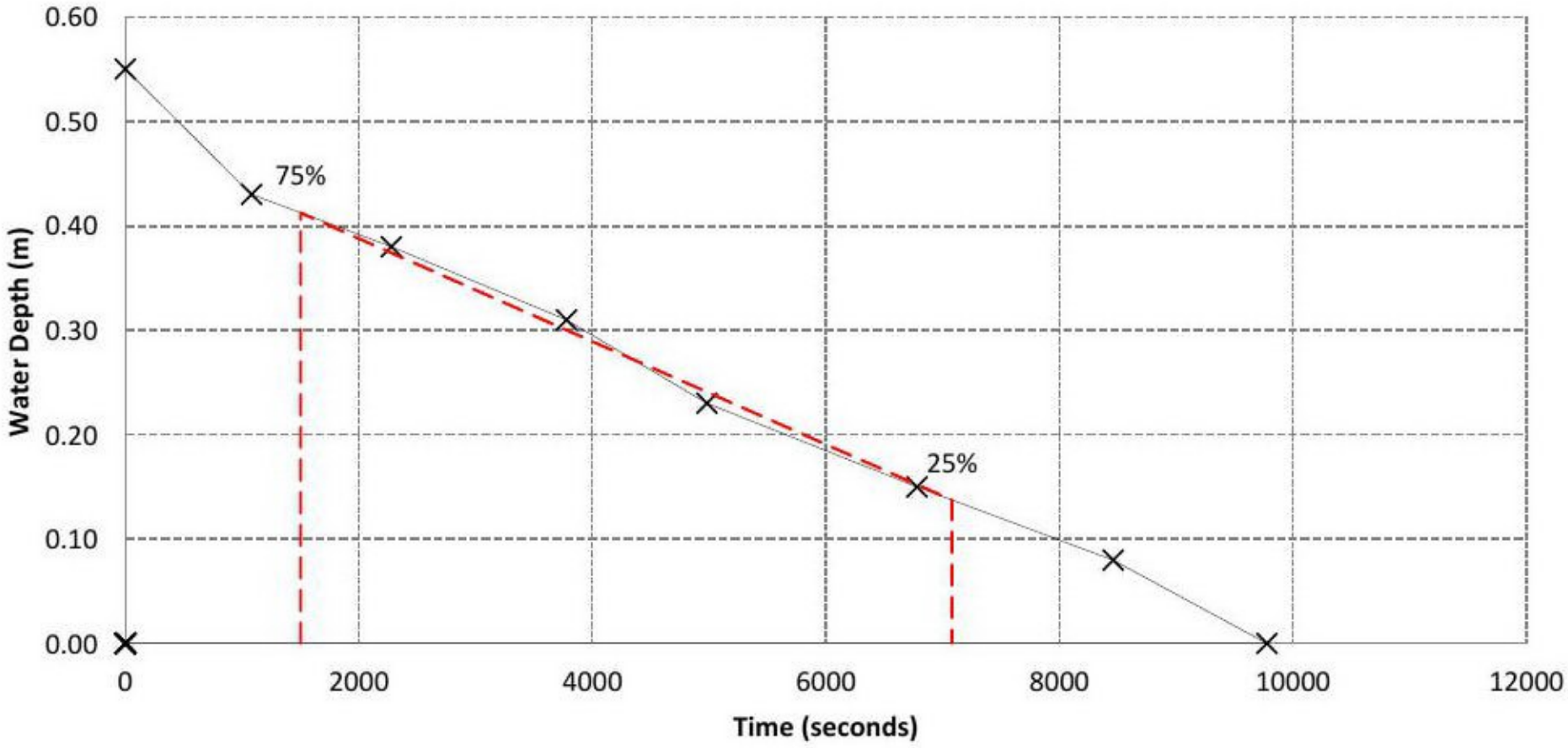
$a_{p50\%}$: Internal surface area of pite up to 50% effective depth, including base area

$t_{p75\text{-}25}$: Time for water to dall from 75% to 25% effective depth

$V_{p75\text{-}25}$: Effective storage volume between 75% & 25% effective depth

q= **2.39E-05** m/sec

0.086 m/hr



Engineering & Development Solutions	Job No.	Job Name	Prepared	Date
Unit 10 Penstraze Business Centre, Truro, Cornwall, TR4 8PN Tel 07973816457	J-1774	Chapel Cottage, Probus	EDS	27/01/2021

Pit Dimensions

Depth (m)	Length (m)	Width (m)
1.90	2.20	1.00

Test Date:	10/12/2021
Trial Pit No.:	TP2
Test No.:	1

Soakaway test - tabulated data

Time (hh:mm)	Depth to Water (m)	Elapsed Time (sec)	Water Depth (m)	% Effective	Volume (m^3)
11:20	1.17	0	0.53	100%	1.17
11:22	1.25	120	0.45	85%	0.99
11:26	1.30	360	0.40	75%	0.88
11:31	1.40	660	0.30	57%	0.66
11:43	1.60	1380	0.10	19%	0.22
11:52	1.70	1920	0.00	0%	0.00

% Effective	Vol (m^3)	T (sec)
75%	0.88	360
57%	0.66	660
75%	0.87	367
57%	0.66	660
19%	0.22	1380
25%	0.29	1263
75%-25%	0.58	895

Effective Values Summary

Datum (0,0) is ground level at pit

Initial Depth	1.17	m (below datum)
Final Depth	1.70	m (below datum)
Storage Depth	0.53	m (effective depth)
$a_{p50\%}$	3.90	m^2

$$q = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Where:

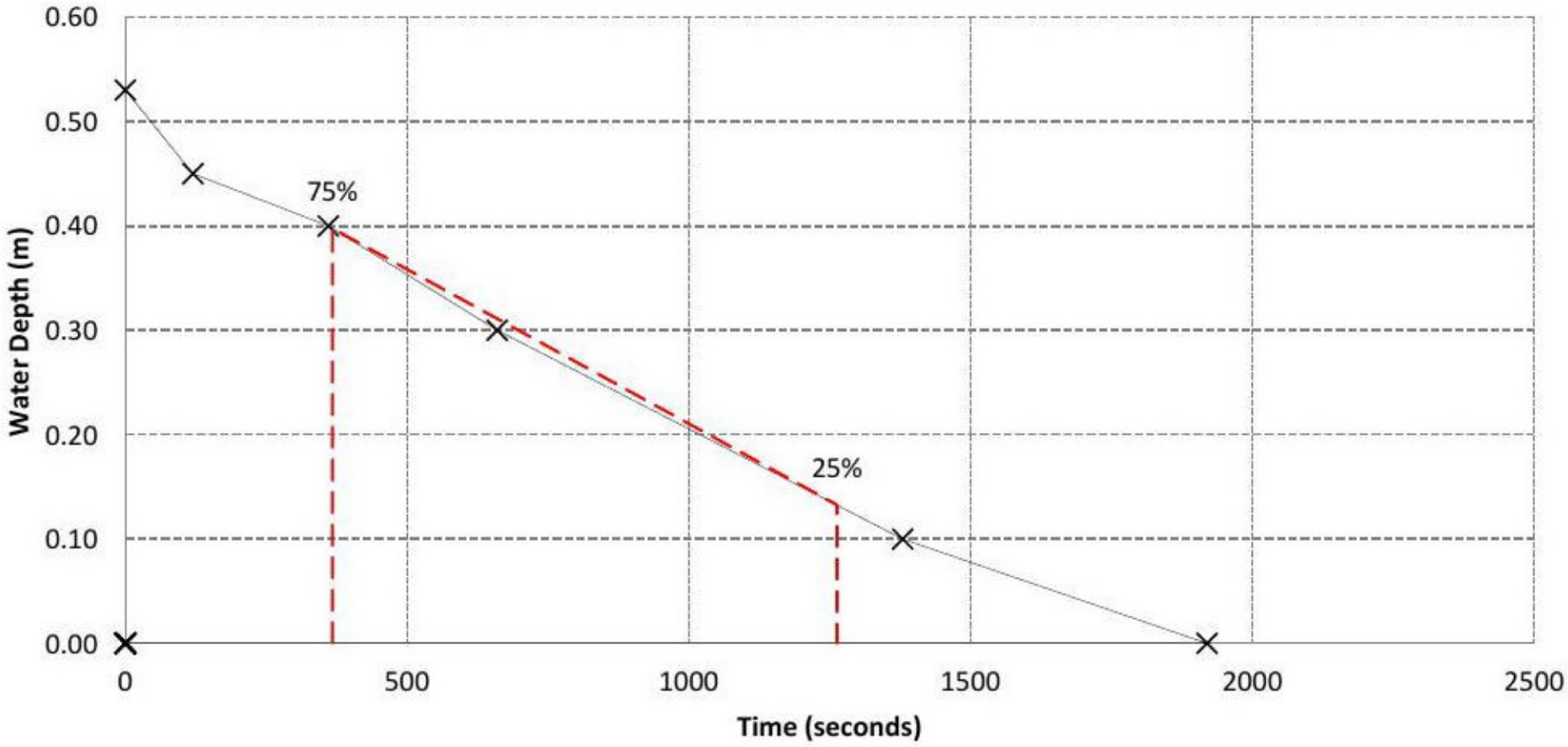
$a_{p50\%}$: Internal surface area of pite up to 50% effective depth, including base area

$t_{p75\text{-}25}$: Time for water to dall from 75% to 25% effective depth

$V_{p75\text{-}25}$: Effective storage volume between 75% & 25% effective depth

q= **1.67E-04** m/sec

0.602 m/hr



Engineering & Development Solutions	Job No.	Job Name	Prepared	Date
Unit 10 Penstraze Business Centre, Truro, Cornwall, TR4 8PN Tel 07973816457	J-1774	Chapel Cottage, Probus	EDS	27/01/2021

Pit Dimensions

Depth (m)	Length (m)	Width (m)
1.90	2.20	1.00

Test Date:	10/12/2021
Trial Pit No.:	TP2
Test No.:	2

Soakaway test - tabulated data

Time (hh:mm)	Depth to Water (m)	Elapsed Time (sec)	Water Depth (m)	% Effective	Volume (m^3)
12:20	1.18	0	0.52	100%	1.14
12:24	1.25	240	0.45	87%	0.99
12:33	1.30	780	0.40	77%	0.88
12:38	1.40	1080	0.30	58%	0.66
12:47	1.60	1620	0.10	19%	0.22
13:00	1.70	2400	0.00	0%	0.00

% Effective	Vol (m^3)	T (sec)
77%	0.88	780
58%	0.66	1080
75%	0.86	810
58%	0.66	1080
19%	0.22	1620
25%	0.29	1539
75%-25%	0.57	729

Effective Values Summary

Datum (0,0) is ground level at pit

Initial Depth	1.18	m (below datum)
Final Depth	1.70	m (below datum)
Storage Depth	0.52	m (effective depth)
$a_{p50\%}$	3.86	m^2

$$q = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Where:

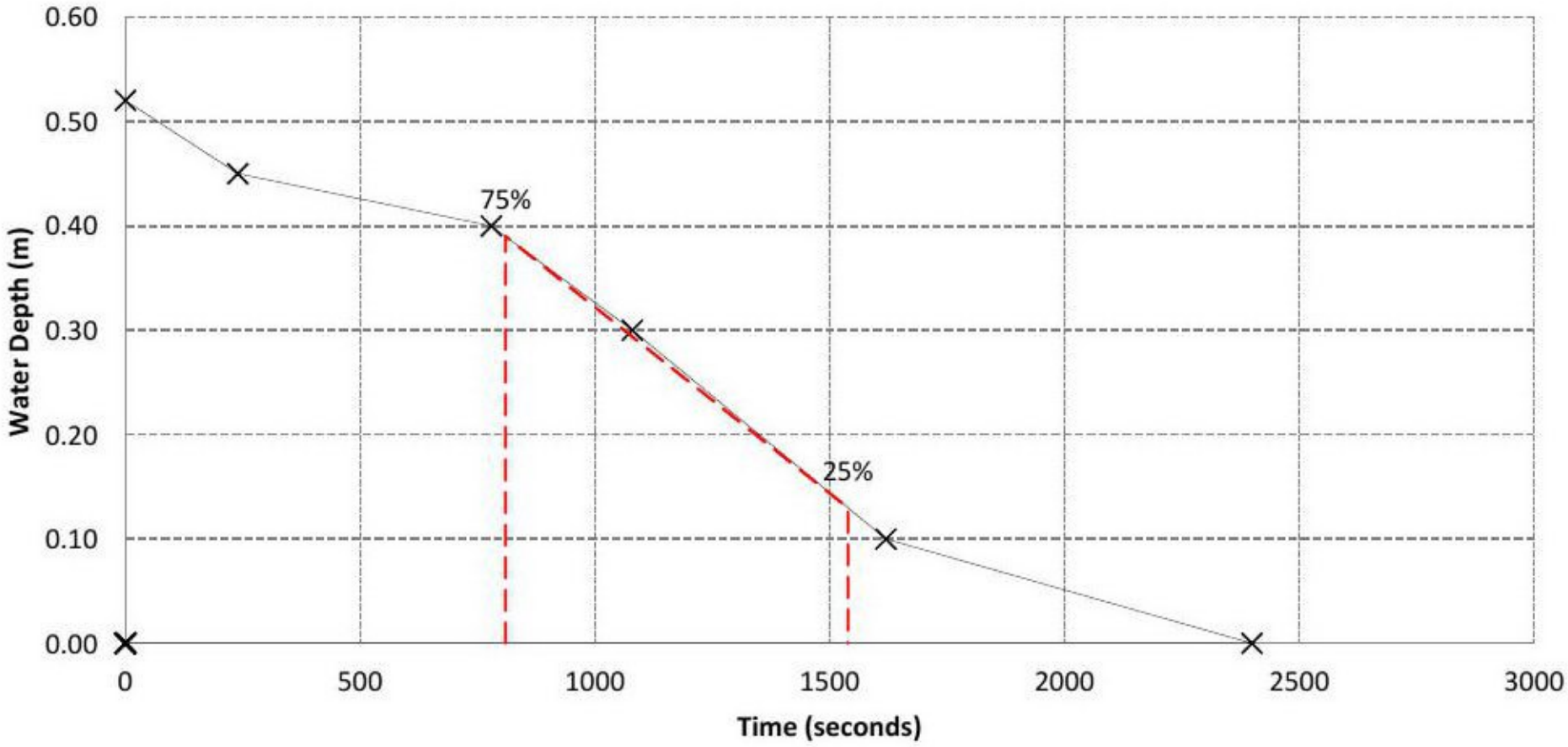
$a_{p50\%}$: Internal surface area of pite up to 50% effective depth, including base area

$t_{p75\text{-}25}$: Time for water to dall from 75% to 25% effective depth

$V_{p75\text{-}25}$: Effective storage volume between 75% & 25% effective depth

q= **2.03E-04** m/sec

0.731 m/hr



Engineering & Development Solutions	Job No.	Job Name	Prepared	Date
Unit 10 Penstraze Business Centre, Truro, Cornwall, TR4 8PN Tel 07973816457	J-1774	Chapel Cottage, Probus	EDS	27/01/2021

Pit Dimensions

Depth (m)	Length (m)	Width (m)
1.90	2.20	1.00

Test Date:	10/12/2021
Trial Pit No.:	TP2
Test No.:	3

Soakaway test - tabulated data

Time (hh:mm)	Depth to Water (m)	Elapsed Time (sec)	Water Depth (m)	% Effective	Volume (m^3)
13:25	1.15	0	0.55	100%	1.21
13:30	1.25	300	0.45	82%	0.99
13:39	1.32	840	0.38	69%	0.84
13:48	1.38	1380	0.32	58%	0.70
13:55	1.58	1800	0.12	22%	0.26
14:15	1.70	3000	0.00	0%	0.00

% Effective	Vol (m^3)	T (sec)
82%	0.99	300
69%	0.84	840
75%	0.91	589
58%	0.70	1380
22%	0.26	1800
25%	0.30	1763
75%-25%	0.61	1174

Effective Values Summary

Datum (0,0) is ground level at pit

Initial Depth	1.15	m (below datum)
Final Depth	1.70	m (below datum)
Storage Depth	0.55	m (effective depth)
$a_{p50\%}$	3.96	m^2

$$q = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Where:

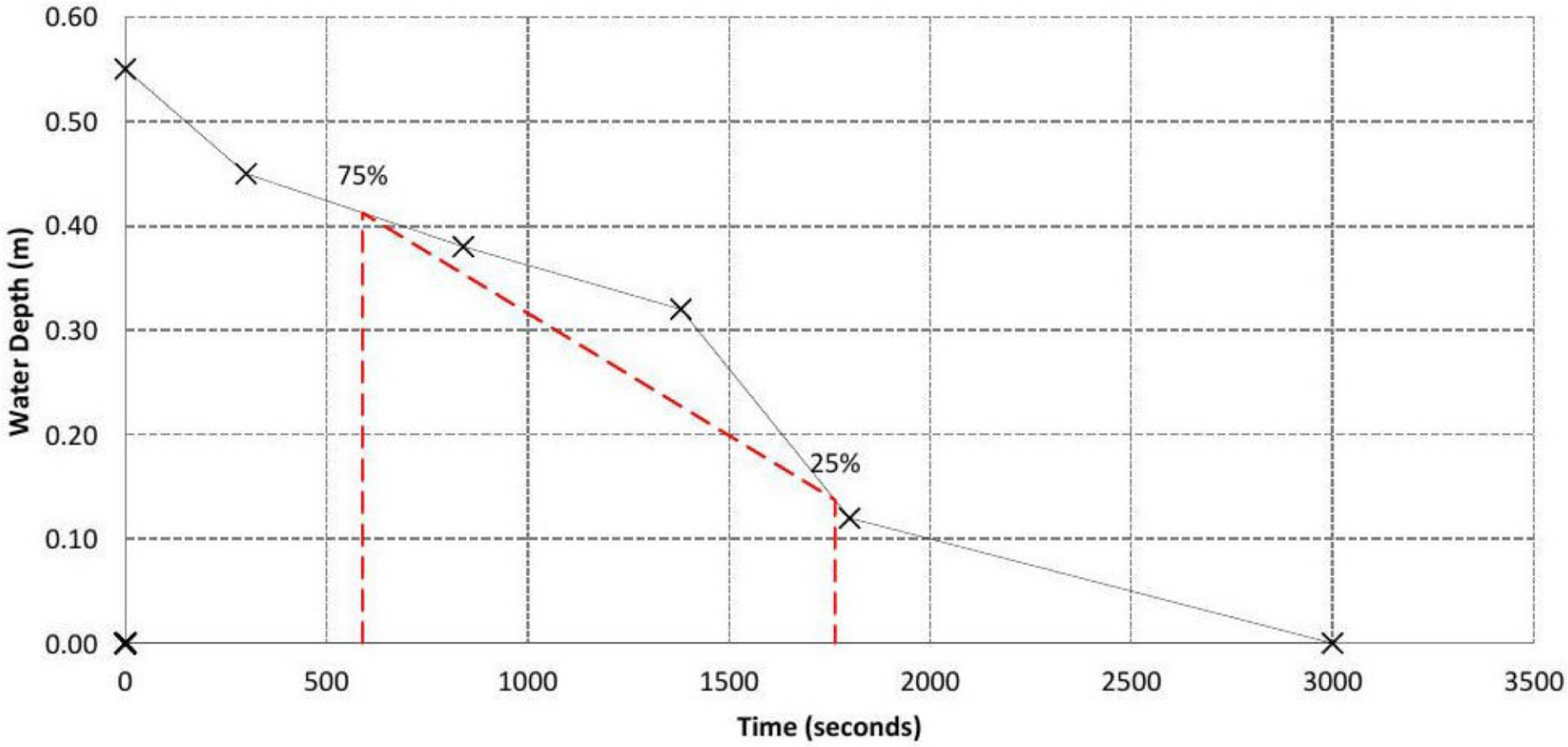
$a_{p50\%}$: Internal surface area of pite up to 50% effective depth, including base area

$t_{p75\text{-}25}$: Time for water to dall from 75% to 25% effective depth

$V_{p75\text{-}25}$: Effective storage volume between 75% & 25% effective depth

q= **1.30E-04** m/sec

0.468 m/hr



Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1027 minutes.

Storm Event		Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15	min Summer	81.241	0.441	0.1	3.1	O K
30	min Summer	81.406	0.606	0.1	4.3	O K
60	min Summer	81.593	0.793	0.1	5.7	O K
120	min Summer	81.794	0.994	0.1	7.1	O K
180	min Summer	81.908	1.108	0.1	7.9	O K
240	min Summer	81.980	1.180	0.1	8.4	O K
360	min Summer	82.066	1.266	0.1	9.0	O K
480	min Summer	82.116	1.316	0.1	9.4	O K
600	min Summer	82.144	1.344	0.1	9.6	O K
720	min Summer	82.157	1.357	0.1	9.7	O K
960	min Summer	82.174	1.374	0.1	9.8	O K
1440	min Summer	82.181	1.381	0.1	9.8	O K
2160	min Summer	82.157	1.357	0.1	9.7	O K
2880	min Summer	82.114	1.314	0.1	9.4	O K
4320	min Summer	82.018	1.218	0.1	8.7	O K
5760	min Summer	81.930	1.130	0.1	8.0	O K
7200	min Summer	81.853	1.053	0.1	7.5	O K
8640	min Summer	81.784	0.984	0.1	7.0	O K
10080	min Summer	81.721	0.921	0.1	6.6	O K
15	min Winter	81.294	0.494	0.1	3.5	O K

Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15	min Summer	106.502	0.0	26
30	min Summer	73.579	0.0	41
60	min Summer	48.720	0.0	70
120	min Summer	31.219	0.0	130
180	min Summer	23.705	0.0	188
240	min Summer	19.347	0.0	246
360	min Summer	14.414	0.0	364
480	min Summer	11.700	0.0	482
600	min Summer	9.942	0.0	600
720	min Summer	8.698	0.0	690
960	min Summer	7.035	0.0	798
1440	min Summer	5.205	0.0	1048
2160	min Summer	3.840	0.0	1460
2880	min Summer	3.090	0.0	1876
4320	min Summer	2.269	0.0	2720
5760	min Summer	1.820	0.0	3520
7200	min Summer	1.537	0.0	4320
8640	min Summer	1.338	0.0	5104
10080	min Summer	1.190	0.0	5856
15	min Winter	106.502	0.0	26

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	81.480	0.680	0.1	4.8	O K
60 min Winter	81.690	0.890	0.1	6.3	O K
120 min Winter	81.918	1.118	0.1	8.0	O K
180 min Winter	82.049	1.249	0.1	8.9	O K
240 min Winter	82.132	1.332	0.1	9.5	O K
360 min Winter	82.233	1.433	0.1	10.2	O K
480 min Winter	82.295	1.495	0.1	10.7	O K
600 min Winter	82.332	1.532	0.1	10.9	O K
720 min Winter	82.353	1.553	0.1	11.1	O K
960 min Winter	82.366	1.566	0.1	11.2	O K
1440 min Winter	82.369	1.569	0.1	11.2	O K
2160 min Winter	82.329	1.529	0.1	10.9	O K
2880 min Winter	82.265	1.465	0.1	10.4	O K
4320 min Winter	82.121	1.321	0.1	9.4	O K
5760 min Winter	81.990	1.190	0.1	8.5	O K
7200 min Winter	81.879	1.079	0.1	7.7	O K
8640 min Winter	81.783	0.983	0.1	7.0	O K
10080 min Winter	81.697	0.897	0.1	6.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	73.579	0.0	41
60 min Winter	48.720	0.0	70
120 min Winter	31.219	0.0	126
180 min Winter	23.705	0.0	184
240 min Winter	19.347	0.0	242
360 min Winter	14.414	0.0	358
480 min Winter	11.700	0.0	470
600 min Winter	9.942	0.0	582
720 min Winter	8.698	0.0	690
960 min Winter	7.035	0.0	888
1440 min Winter	5.205	0.0	1106
2160 min Winter	3.840	0.0	1568
2880 min Winter	3.090	0.0	2024
4320 min Winter	2.269	0.0	2900
5760 min Winter	1.820	0.0	3752
7200 min Winter	1.537	0.0	4552
8640 min Winter	1.338	0.0	5368
10080 min Winter	1.190	0.0	6160

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	17.300	Shortest Storm (mins)	15
Ratio R	0.300	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.016

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.005	4	8	0.005	8	12	0.005

Model Details

Storage is Online Cover Level (m) 83.000

Cellular Storage Structure

Invert Level (m) 80.800 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.04300 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.04300

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	7.5	7.5	1.601	0.0	28.3
1.600	7.5	28.3			

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 83 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	81.785	0.585	0.4	2.8	O K
30 min Summer	81.974	0.774	0.5	3.7	O K
60 min Summer	82.129	0.929	0.6	4.4	O K
120 min Summer	82.214	1.014	0.6	4.8	O K
180 min Summer	82.226	1.026	0.6	4.9	O K
240 min Summer	82.207	1.007	0.6	4.8	O K
360 min Summer	82.148	0.948	0.6	4.5	O K
480 min Summer	82.091	0.891	0.6	4.2	O K
600 min Summer	82.035	0.835	0.5	4.0	O K
720 min Summer	81.983	0.783	0.5	3.7	O K
960 min Summer	81.889	0.689	0.5	3.3	O K
1440 min Summer	81.738	0.538	0.4	2.6	O K
2160 min Summer	81.577	0.377	0.4	1.8	O K
2880 min Summer	81.464	0.264	0.3	1.3	O K
4320 min Summer	81.321	0.121	0.3	0.6	O K
5760 min Summer	81.251	0.051	0.2	0.2	O K
7200 min Summer	81.243	0.043	0.2	0.2	O K
8640 min Summer	81.237	0.037	0.2	0.2	O K
10080 min Summer	81.233	0.033	0.2	0.2	O K
15 min Winter	81.860	0.660	0.5	3.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	106.502	0.0	23
30 min Summer	73.579	0.0	35
60 min Summer	48.720	0.0	60
120 min Summer	31.219	0.0	94
180 min Summer	23.705	0.0	128
240 min Summer	19.347	0.0	162
360 min Summer	14.414	0.0	232
480 min Summer	11.700	0.0	298
600 min Summer	9.942	0.0	366
720 min Summer	8.698	0.0	430
960 min Summer	7.035	0.0	558
1440 min Summer	5.205	0.0	808
2160 min Summer	3.840	0.0	1172
2880 min Summer	3.090	0.0	1536
4320 min Summer	2.269	0.0	2252
5760 min Summer	1.820	0.0	2936
7200 min Summer	1.537	0.0	3632
8640 min Summer	1.338	0.0	4376
10080 min Summer	1.190	0.0	5128
15 min Winter	106.502	0.0	23

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	82.077	0.877	0.6	4.2	O K
60 min Winter	82.260	1.060	0.6	5.0	O K
120 min Winter	82.355	1.155	0.7	5.5	O K
180 min Winter	82.359	1.159	0.7	5.5	O K
240 min Winter	82.325	1.125	0.7	5.3	O K
360 min Winter	82.229	1.029	0.6	4.9	O K
480 min Winter	82.139	0.939	0.6	4.5	O K
600 min Winter	82.056	0.856	0.6	4.1	O K
720 min Winter	81.980	0.780	0.5	3.7	O K
960 min Winter	81.851	0.651	0.5	3.1	O K
1440 min Winter	81.655	0.455	0.4	2.2	O K
2160 min Winter	81.463	0.263	0.3	1.3	O K
2880 min Winter	81.340	0.140	0.3	0.7	O K
4320 min Winter	81.245	0.045	0.2	0.2	O K
5760 min Winter	81.237	0.037	0.2	0.2	O K
7200 min Winter	81.231	0.031	0.1	0.1	O K
8640 min Winter	81.227	0.027	0.1	0.1	O K
10080 min Winter	81.224	0.024	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	73.579	0.0	36
60 min Winter	48.720	0.0	60
120 min Winter	31.219	0.0	98
180 min Winter	23.705	0.0	136
240 min Winter	19.347	0.0	174
360 min Winter	14.414	0.0	248
480 min Winter	11.700	0.0	318
600 min Winter	9.942	0.0	386
720 min Winter	8.698	0.0	454
960 min Winter	7.035	0.0	586
1440 min Winter	5.205	0.0	840
2160 min Winter	3.840	0.0	1212
2880 min Winter	3.090	0.0	1560
4320 min Winter	2.269	0.0	2204
5760 min Winter	1.820	0.0	2904
7200 min Winter	1.537	0.0	3552
8640 min Winter	1.338	0.0	4416
10080 min Winter	1.190	0.0	5112

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	17.300	Shortest Storm (mins)	15
Ratio R	0.300	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.016

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.005	4	8	0.005	8	12	0.005

Model Details

Storage is Online Cover Level (m) 83.000

Cellular Storage Structure

Invert Level (m) 81.200 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.46800 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.46800

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	5.0	5.0	1.201	0.0	15.8
1.200	5.0	15.8			

James Brooks

From: Dunn, Martyn J <mdunn@southwestwater.co.uk>
Sent: 29 January 2021 10:25
To: James Brooks
Subject: RE: Chapel Cottage, Probus (PA20/02856)

James to confirm foul capacity available at the proposed connection point.

As a heads up to you can you/your colleagues going forward send enquires via our team mailbox developerservicesplanning@southwestwater.co.uk as I am retiring end of March and other team members will going forward be picking up such queries and need time to acquaint themselves etc.

Regards

Martyn Dunn Pre-Development Technical Advisor

South West Water

D: 01392 443702

Peninsula House, Rydon Lane, Exeter, EX2 7HR
www.southwestwater.co.uk
.

From: James Brooks <james@eadsolutions.co.uk>
Sent: 28 January 2021 15:48
To: Dunn, Martyn J <mdunn@southwestwater.co.uk>
Subject: Chapel Cottage, Probus (PA20/02856)

Hi Martyn,

We are currently dealing with a development at Chapel Cottage, Probus (Grid Reference: SW 89807 47890) the proposal is to construct two new dwellings, with associated parking.

Part of the condition states that we require "Confirmation from South West Water Ltd that the network has sufficient capacity to cater for this development".

Please could you confirm whether or not South West Water has capacity to receive the foul water flows from this development? I have attached a plan showing where we propose to connect to the combined sewer.

Kind Regards, James

James Brooks

Graduate Engineer

james@eadsolutions.co.uk

EDS | enquiries@eadsolutions.co.uk | www.eadsolutions.co.uk

Contact | Phone 01872 306311 |

Direct Dial | Phone 0333 023 3427 |

Office | Unit 10 Penstraze Business Centre | Truro | Cornwall | TR4 8PN

Engineering & Development Solutions

- **Flood Risk Assessment**
- **SuDS and Surface Water**
- **Foul and Sewage Treatment**
- **Highways**
- **Civil Engineering**

Registered Office: Unit 10, Penstraze Business Centre, Truro Cornwall, TR4 8PN. Registered in England & Wales No. 10467487.

Plot 1

roof slates – natural slate (250mm x 500mm) copper nailed

rendered walls – pre-blended bagged render system (smooth) painted white / De Lank granite quoins

natural stone walls – Callywith rustic stone with lime mortar

brickwork – tumbled red multi

windows – powder coated aluminium (white)

roof windows – Velux conservation roof windows

doors – powder coated aluminium (white) / hardwood front door (clear finish) / hardwood garage door painted white

Plot 2

roof slates – natural slate (250mm x 500mm) copper nailed

slate hanging – natural slate (250mm x 500mm) copper nailed

natural stone walls – Callywith rustic stone with lime mortar

brickwork – tumbled red multi

windows – powder coated aluminium (white)

roof windows – Velux conservation roof windows

doors – powder coated aluminium (white) / hardwood front door (clear finish) / hardwood garage door painted white

Condition 6

No development above damp-proof course shall be undertaken until full details of the materials to be used in the construction of the external surfaces (roof slates, slate hanging, natural stone walls, brickwork, windows and doors) of the dwellings hereby permitted have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details and retained as such thereafter.

Reason: In the interests of visual amenity and in accordance with the aims and intentions of with the aims and intentions of paragraph 127 of the National Planning Policy Framework 2019 and Policy 12 of the Cornwall Local Plan Strategic Policies 2010-2030.

Precedent (example materials) – Fentonladock Cottage, Ladock, Truro, TR2 4NH

NOTES:

1. All dimensions are in millimetres unless otherwise stated.
2. Do not scale from this drawing for construction purposes.

REV	DATE	NATURE OF REVISION
P01	22.03.21	First Issue

REVISIONS

kwalita design solutions

PROJECT TITLE:
Chapel Cottage
Client – Mr Stringer

DRAWING TITLE:
Materials
Condition 6

SCALE: NTS @A1

PROJECT MANAGER: JB		DRAWN BY: JB	
CHECKED: AP	22.03.21	APPROVED: MB	22.03.21

DRAWING NO:

PROJECT	ORIGINATOR	VOLUME	LOCATION
KDS0060 –	JB –	001 –	TR2 4LD –
TYPE	ROLE	NUMBER	
M3	– A	– 0015	

PROJECT REF.:	DRAWING STATUS:	SUITABILITY:	REVISION:
KDS0060	Conditions	S3	P01

Plot Date: 22 March 2021

Boundary Treatment Plan (Scale 1:250)

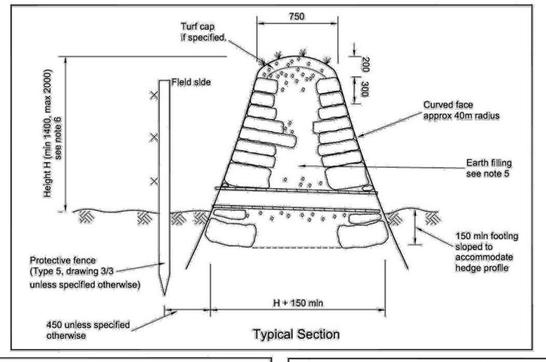
Key

- Boundary Unchanged
- Boundary Type 1 - Cornish Hedge (Type 2)
- Boundary Type 2 - 'Hit and Miss' Timber Fence

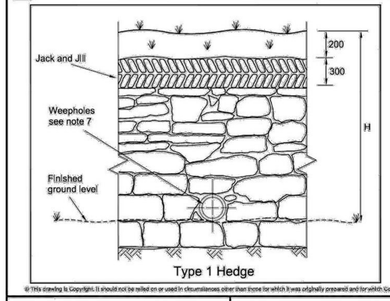
NOTES:

1. All dimensions are in millimetres unless otherwise stated.
2. Do not scale from this drawing for construction purposes.

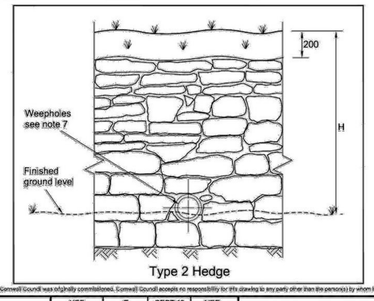
Boundary Type 1 - Cornish Hedge (Type 2) - NTS



Typical Section



Type 1 Hedge



Type 2 Hedge

NOTES

1. This drawing is to be read in conjunction with Specification Clause 370AR.
2. Cornish hedges shall have facings of a suitable natural sound durable stone approved by the Overseeing Organisation.
3. Individual stone sizes are to be as follows:

Stone	Max. size	Min. size
Stretcher course	600x150 face 300 wide	150x50 face 150 wide
Bonding stone		150x150 face 450 long
'Jack and Jill'	200x40 face 300 deep	150x40 face 200 deep

4. Stones shall be laid with bedding planes (where such planes exist) horizontal and with all stones load bearing. Perpendicular joints in adjacent courses are to be staggered by at least 100mm with larger stones in the lower courses. Bonding stones shall be laid at one per 1.0 square metre of hedge (on the face of the hedge)
5. The heart of the hedge and any over excavation behind the facing stone shall be filled with a suitable damp cohesive subsoil well punned in 150 layers as the facework proceeds. A turf cap shall be used where specified, otherwise grass seed to be sewn.
6. The hedge height (H) shall be as described in the contract with a tolerance of +200 to obtain a flowing vertical alignment.
7. Weepholes to be provided at all low points and additionally at 10m nominal spacing unless otherwise described in the contract or directed by the Overseeing organisation. Pipes to be 150 diameter Class L concrete to BS 5911 laid to fall to suit existing ground levels. (Minimum (1 : 50)
8. Ends of hedges at gateways, stiles, fences etc to be vertical and faced with stone.
9. All dimensions are in millimetres.
10. Type 3 hedge to have 'Jack and Jill' course on roadside face and stretcher course on field side face.
11. The protective fence is measured separately from the Cornish hedge
12. Where specified in the contract or instructed by the overseeing organisation "Jack and Jill" course may consist of one row of stone rather than two, but still with a 300mm nominal height.
13. Stone facing of bank shall be as a single face of a Cornish hedge.
14. The protective fence is measured separately from a Cornish hedge.

Highway Construction Details
Environment, Planning and Economy
County Hall, Truro, Cornwall TR1 3AY

Series 7000
Countryside Access Works

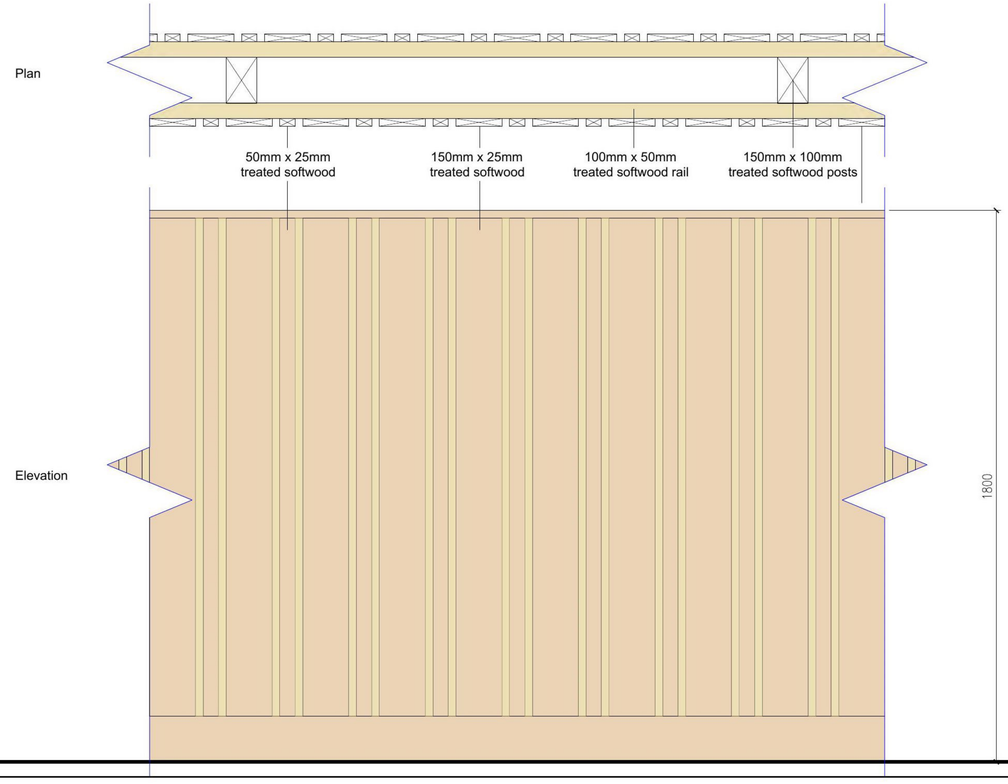
Originator	Issue	Date	Approved
VEE	E	SEPT 10	VEE
VEE	D	OCT 08	VEE
RAF	C	APR 01	RAF
RAF	'B	MAY 99	RAF

Cornish Hedge

Drawing No. 70/34

Scale N.T.S.

Boundary Type 2 - 'Hit and Miss' Timber Fence (scale 1:10)



REV	DATE	NATURE OF REVISION
P01	22.03.21	First Issue

REVISIONS

kwalita design solutions

PROJECT TITLE:
Chapel Cottage
Client – Mr Stringer

DRAWING TITLE:
Boundary Treatments
Condition 12

SCALE: As Shown @A1

PROJECT MANAGER: JB		DRAWN BY: JB	
CHECKED: AP	22.03.21	APPROVED: MB	22.03.21

DRAWING NO:

PROJECT	ORIGINATOR	VOLUME	LOCATION
KDS0060	– JB	– 001	– TR2 4LD –
TYPE	ROLE	NUMBER	
M3	– A	– 0016	

PROJECT REF.:	DRAWING STATUS:	SUITABILITY:	REVISION:
KDS0060	Conditions	S3	P01

Plot Date: 22 March 2021