

320110580P

Hydroelectric-power schemes**Pre-application form****Environment
Agency**

Please read through this form and the guidance notes carefully before you fill this form in. Please write clearly in the answer spaces.

This form is designed to help you, and us, understand your hydroelectric-power scheme. It will help you to give us the information needed to support a formal application for your proposed scheme, and help us to consider any future application for permission.

There are two parts to the form. We will appoint an account manager to help you through the whole process of applying for the permissions you need.

It should take you about 30 minutes to fill in this form.

1 Part A

This part will not involve providing technical information.

For all schemes we need a basic level of information to allow us to identify any problems or show stopping issues. You must read our Good Practice Guidelines (GPG) and attach the environmental site audit checklist (WR325) to this form.

Please make sure you give as much detail as you can in this form and the checklist so we can make an initial evaluation of your proposal. We do not expect you to be carrying out detailed work at this stage.

If you can provide more detailed technical information on your proposed scheme, please fill in part B.

2 Part B

This part will involve providing technical information on the design of the scheme. You do not need to fill in this part at the moment if you do not have the information we ask for.

Before we approve your scheme we need more detailed information on its design. Through discussions with us and your account manager we will tell you what information you need to provide and how you can get it.

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- 3 Scheme details
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Part A**1 Contact details****1.1 Are you the**

Applicant? ☒

Go to question 1.3

Applicant's agent? ☐

Give your contact details in question 1.2 below

Applicant's advisor? ☐

Give your contact details in question 1.2 below

1.2 Contact details (if an agent or advisor)

Title (Mr, Mrs, Miss and so on) _____

First name _____

Last name _____

Name of company or organisation, if appropriate

Address

Postcode _____

1 Contact details, continued

Contact numbers, including the area code

Phone _____

Fax _____

Mobile _____

Email _____

1.3 Applicant's name

Title (Mr, Mrs, Miss and so on) Mr

First name Timothy

Last name Ashworth

Name of company or organisation, if appropriate

Whalley Community Hydro Limited

1.4 Have you spoken to anyone in the Environment Agency about the proposal?

Yes ☒ Title (Mr, Mrs, Miss and so on) Ms

First name Rebecca

Last name McAllister

Phone 01772 714027

No ☐

1 Contact details, continued**1.5 Have you approached any of the conservation agencies (for example, Natural England or Countryside Council for Wales) about your proposed scheme?**No ☐Yes ☒ Include details below and a copy of any comments they have made

Forest of Bowland AONB Dunsop Bridge Lancs BB7 3AY
Contact is maintained and AONB Cathy Hopley is very supportive. Whalley Hydro is being used as the pattern for other potential Hydro sites in the AONB and Whalley Hydro have attended and/or presented at relevant meetings.

2 Site details

Please provide a map (see the guidance notes) labelling all the site details you give in the following section.

2.1 Site name

Whalley Weir

2.2 Name of watercourse

River Calder

2.3 Location details – specify the location of the proposed scheme, using 10-figure National Grid References (NGRs; see the guidance notes)

NGR of abstraction point

SD7349135897

NGR of discharge point

SD7346135879

NGR of any proposed impoundment
(for example, weir, sluice, hatch)

Description of any proposed impoundments

N/A

NGR of any existing impoundment

SD7343135897

Description of any existing impoundment

Gentle sloping weir previously used to supply the leat which powered a corn mill

NGR of any proposed or existing water-control structure (for example, lock, waterwheel, fish pass or canoe pass)

SD7340835917

NGR and description of any other relevant features

Sluice gate for control of the water flow into the mill leat – now redundant

2 Site details, continued**2.4 Please provide a brief description of the proposal**

Entirely for the benefit of the local community, to generate 100kW of electric power from a turbine located in a channel adjacent to Whalley Weir and incorporating a 'state of the art' fish pass and a generator building with educational facilities.

2.5 Length of any depleted reach created

35.00 metres

2.6 What type of turbine do you propose to use?

Archimedes screw

2.7 Proposed turbine flow

Maximum instantaneous turbine flow

7,310.00 l/s (litres per second)

Maximum hourly turbine flow

26,316.00 m³/hour (cubic metres per hour)

Maximum daily turbine flow

631,584.00 m³/day (cubic metres per day)

Maximum annual turbine flow

139,000,000.00 m³/year (cubic metres per year)

Minimum turbine start-up flow

1,000.00 l/s (litres per second)

2.8 How have you worked out the above quantities?

Using river flow data from the gauging station 500m downstream of Whalley Weir and computed by experienced professional

2.9 If you are proposing to raise the level of an existing impoundment, how much by (in millimetres)?

mm

2.10 Does the applicant have or expect to have a current or proposed right of access to any proposed abstraction point? (Include any details on a separate map – see the guidance notes)Yes ☒No ☐ You will need to make arrangements to get access. You cannot make a formal application until you have or expect to have a right of access**2.11 Have you applied for planning permission?**Yes ☒ Name of local planning authority

Ribble Valley Borough Council

Application reference number

3/2011/0580

Status: pending ☒ approved ☐ refused ☐No ☐

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Part B

You may not yet have all the information we ask for below. We will, however, need this information for more detailed discussions on your proposed hydroelectric-power scheme.

3 Scheme details**3.1 Gross head**

2.20 metres

3.2 Net head

metres

3.3 Estimated generating potential

100.00 kW

3.4 Annual generating potential

365,000.00 kWhrs

3.5 Explain how the scheme would be controlled

By electronic sensors and automatic electric/hydraulic actuators

4 Water resource considerations

You will need to support this pre-application, and your formal application, with an assessment of the existing hydrology (the properties of the watercourse and its effect on the land) at the site.

For more help please see the guidance notes.

4.1 Flow duration statistics

Please send us a copy of the flow duration curve for the site (graph and data).

What are the relevant flow duration statistics?

Q_{95}

1.943m³/s

Q_{50}

4.638m³/s

Q_{40}

5.9m³/s

Q_{10}

19.58m³/s

Q_{MEAN}

8.57m³/s

What is the ratio of Q_{95} : Q_{MEAN}

0.227

4 Water resource considerations, continued

4.2 What prescribed flow do you propose to maintain in the depleted reach, or over the depleted weir, when the hydropower scheme is operating?

1,280.00 l/s

4.3 How have you worked out the prescribed flow?

$Q_{95} = 1980 \text{ l/s}$

4.4 How will you make sure the prescribed flow is maintained?

Using electronic sensors and automated flow control with recording facilities

4.5 Is the prescribed flow in line with the Good Practice Guidelines?

No ☐ Explain why not in the space below

Yes ☒

5 Fisheries considerations

5.1 Give details of the fish screening for both the intake and outfall proposed for your hydroelectric-power scheme

	Intake	Outfall
Type of fish screen	Trash - barscreen	Behavioural - barscreen
Screen size (mm)	100mm	150mm (H & S) Sufficient
Screen dimensions (mm) (width x height)	Sufficient that intake velocity is <0.5m/s	As required
Angle to main flow path (degrees)	40 degs	
Approach velocity (m/s)	<0.5m/s	
How did you work this out?	Volume & angle of flow and area	
NGR (10-figure)	SD7349335897	SD7346135882

5.2 Is the fish screening in line with the Good Practice Guidelines?

No ☐ Explain why not in the space below

Yes ☒

5.3 Give details of any proposed bywash channel, if one is present, for your hydroelectric-power scheme

Main features of the bywash channel

N/A

Flow needed to effectively operate the bywash channel, including units

N/A

5 Fisheries considerations, continued

5.4 Give details of any other screening methods proposed (for example, behavioural)?

Behavioural/dissuader

5.5 Does the proposed scheme include an upstream fish pass or passes?

Yes ☒ What type of fish pass are you proposing?

Double Larinier, ie. two resting pools.

What are the intended target species?

All river fish species including eel/elver..

What is the proposed flow for the fish pass?

1.18 m/s

No ☐ Explain why not and the reasons for not following the Good Practice Guidelines

6 Flood risk considerations

6.1 Have you completed a flood risk assessment or flood consequence assessment?

Yes ☒ Send us a copy with this form and go to section 7

No ☐ Go to question 6.2

6.2 Give details of any proposed in-river construction or modification which could change the flood risk

7 Planning considerations

7.1 Have you asked the local planning authority what information you need to include in your planning application and to discuss issues that may arise for your proposal?

Yes ☒ Please provide a copy of any written advice or summary of verbal advice you have received

No ☐ We recommend you do this before going further with your application

7.2 Have you considered the need for an environmental impact assessment?

Yes ☒ Go to question 7.5

No ☐ Answer questions 7.3 and 7.4

7.3 Will your scheme produce 0.5 MW or more of power?

Yes ☐ Go to question 7.5

No ☐

7 Planning considerations, continued

7.4 Is your scheme in a sensitive area (for example, a site of special scientific interest, a nature reserve and so on)?

Yes ☐ Please also answer question 7.5

No ☐

7.5 Have you asked your local planning authority for a screening opinion to find out if you have to carry out an environmental impact assessment or provide an environmental statement with your planning application?

Yes ☐ If you have received a screening opinion, please attach it to this form

No ☒

7.6 Is land contamination potentially an issue

with the existing use of the site?

Yes ☐

No ☒

from previous uses of the site?

Yes ☐

No ☒

Are you sending a preliminary risk assessment with this form?

Yes ☐

No ☒

8 Checklist

Please read through this list and tick the items you are sending to us:

Completed form ☒

Completed environmental site audit checklist (WR325) ☐

Copy of any comments made by conservation agencies ☐

Map or sketch plan showing site details ☒

Map or sketch plan showing rights of access ☒

Hydrology assessment ☒

Flow duration curve (graph and data) ☒

Flood risk assessment or flood consequence assessment ☒

Advice from the local planning authority on information needed for the planning application and issues that may arise ☐

Screening opinion from the local planning authority ☐

Enough photographs of the site to give a clear impression of the proposed location of the scheme and any control structures ☒

Continuation sheets for answers to questions. ☐

How many?

9 The Data Protection Act 1998

We, the Environment Agency, will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of the licence, permit or registration;
- process renewals; and
- keep the public registers up to date.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).

We may pass the information on to our agents or representatives to do these things for us.

10 Next steps

Please return this form and any supporting information to:

Permitting Support Centre
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Or send an email to PSC-WaterResources@environment-agency.gov.uk.

If you need to talk to someone about this form or need help filling it in, phone the Permit Support Centre on 0114 289 8340 (8am to 6pm Monday to Friday).

We'll get in touch with you shortly, either to give you our decision and tell you the likely timescale, or to ask for more information.

**For Environment Agency use only**

Date received (DD/MM/YYYY)

Our reference number

Account Manager



320110580P
Spaans Babcock Ltd.

Fish pass design proposal,
Whalley Weir Hydro Scheme

Client:
Whalley Community Hydro Limited

Our reference: SG/3238/Design
Monday, October 31, 2011

Fish pass design proposal

<i>Revision</i>	<i>Date</i>	<i>Reason</i>
0	31/10/11	Original

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Web: www.spaansbabcock.com



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www.spaansbabcock.com

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1 Introduction

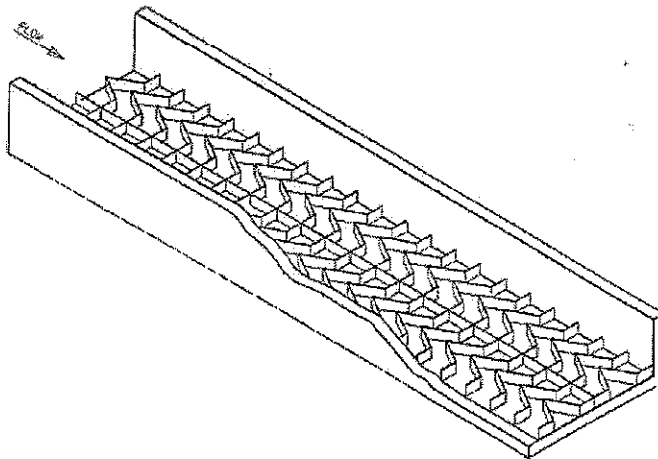
This report contains a design proposal for a fish pass and eel/elver pass for the proposed hydro scheme at Whalley Weir.

2 Fish pass

We are proposing for this type of river a Larinier super active baffle fish pass of double width. The pass is designed for a water level $H_a = 270\text{mm}$. This will result in a flow speed of 1.18m/s and water passage of 700l/s . The 700l/s is about 10% of the turbine flow.

A H_a of 270mm will be maintained till $Q_{27.5}$ with flows above the head will increase and the flow and flow speed will increase.

According to the good practice guidance of the EA these values are well within the guidelines and suitable for most fish.



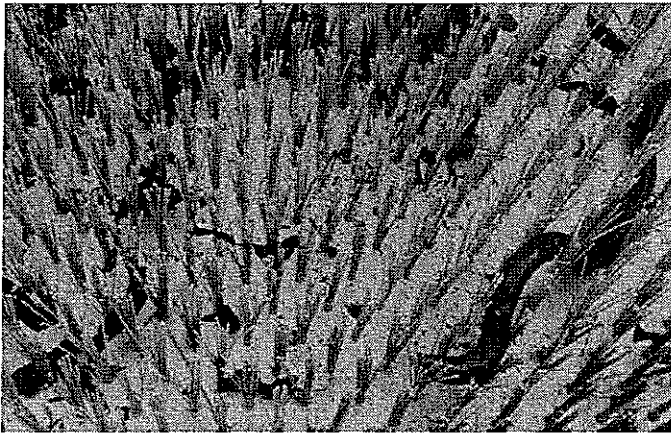
3 Eel or Elver pass

We have proposed an up and over eel/elver pass. We can supply brushes with 20mm (for elvers) or 30mm suitable for larger size eels. For the design this doesn't make a difference. We have included a double 150mm brush. The trunk is 300mm square with lid for easy maintenance.

Total brush width is 300mm.

We are using a bilge pump able to pump 25-50 l/s at the highest point. This pump will run from dusk till dawn.

Please find below a picture:

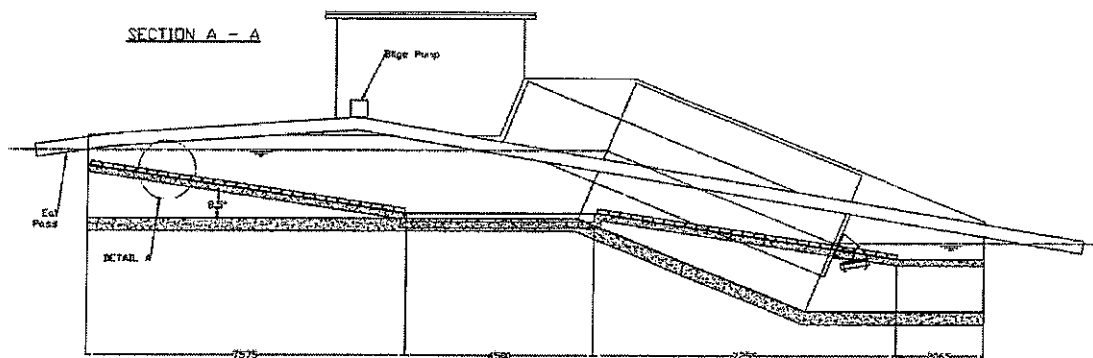
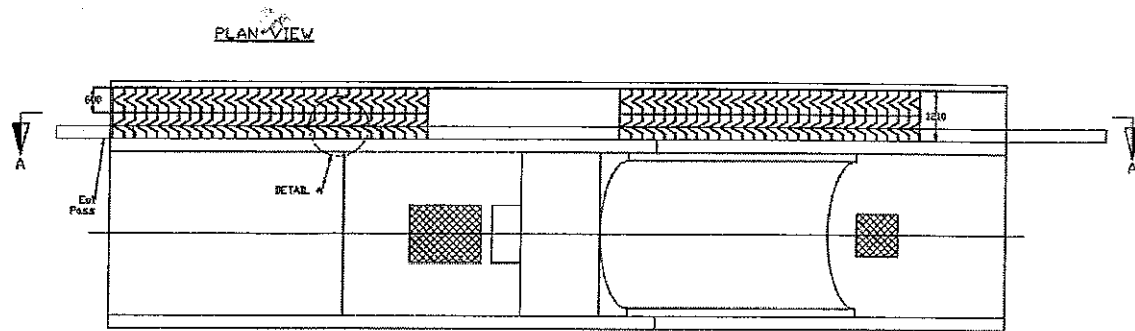


We intent to use:

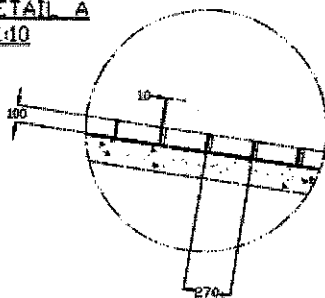
1000x150x12, 0.8mm diameter black or green polyester 4mm tufts at 20 or 30mm spacing.

4 Design proposal at Whalley Weir

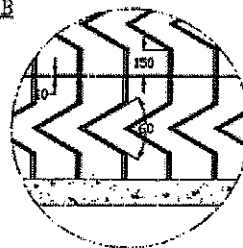
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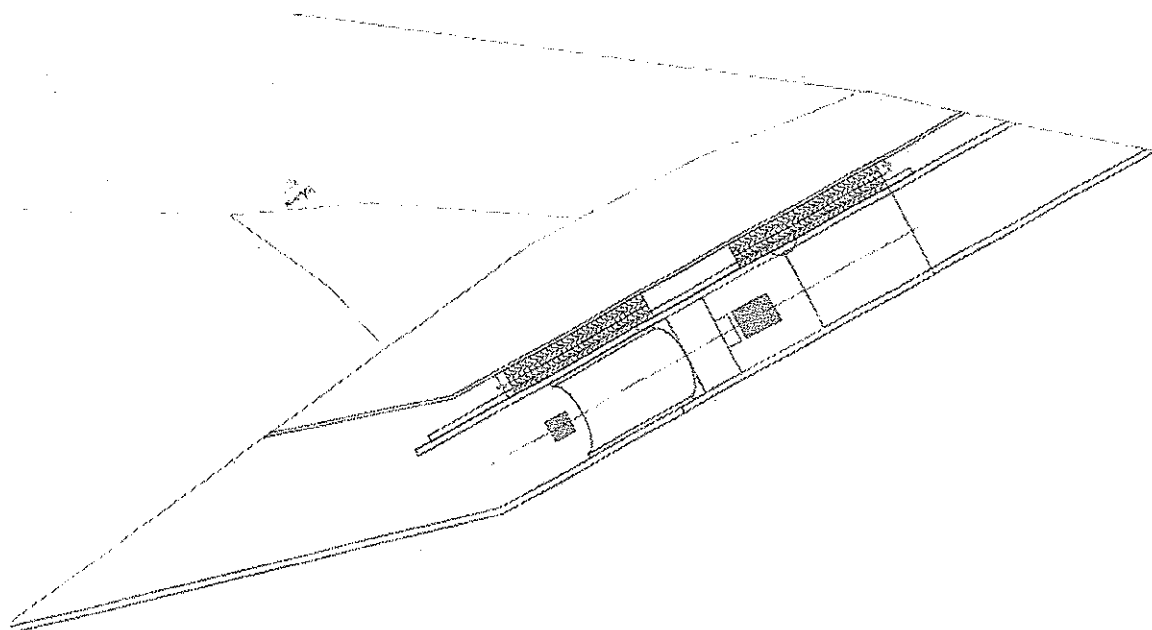


DETAIL A
X1:10



DETAIL B
X1:10





Whalley weir fish pass proposal

We trust our proposal meets with your requirements however if you should have need for any explanation of our proposal or additional information please do not hesitate to contact us.

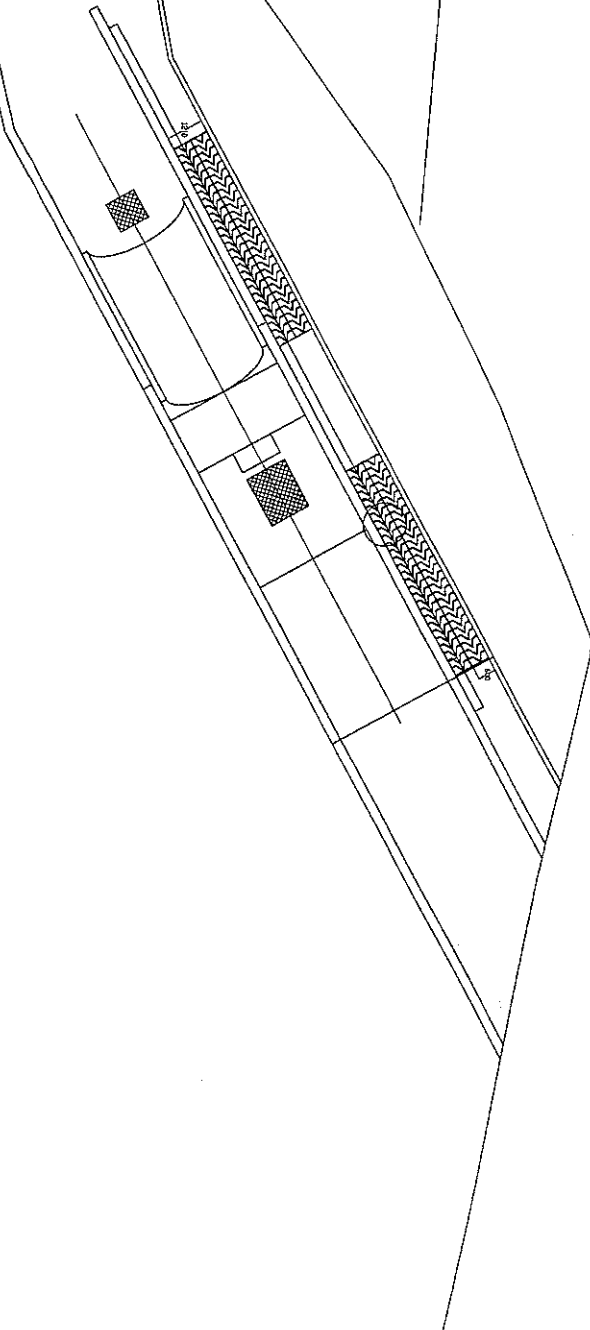
Yours Faithfully
SPAANS BABCOCK LTD

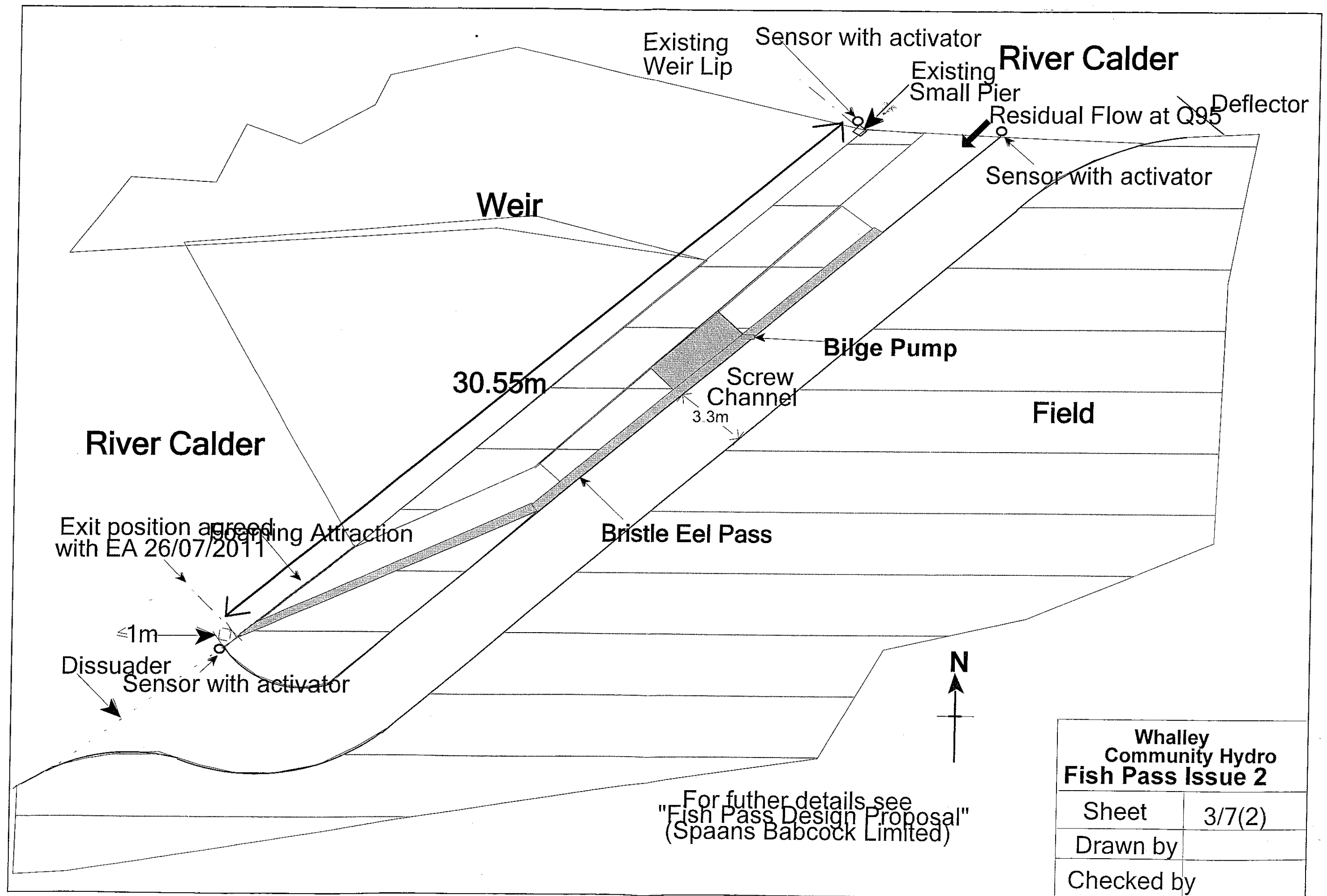


Bert Boersma
Technical Sales Manager

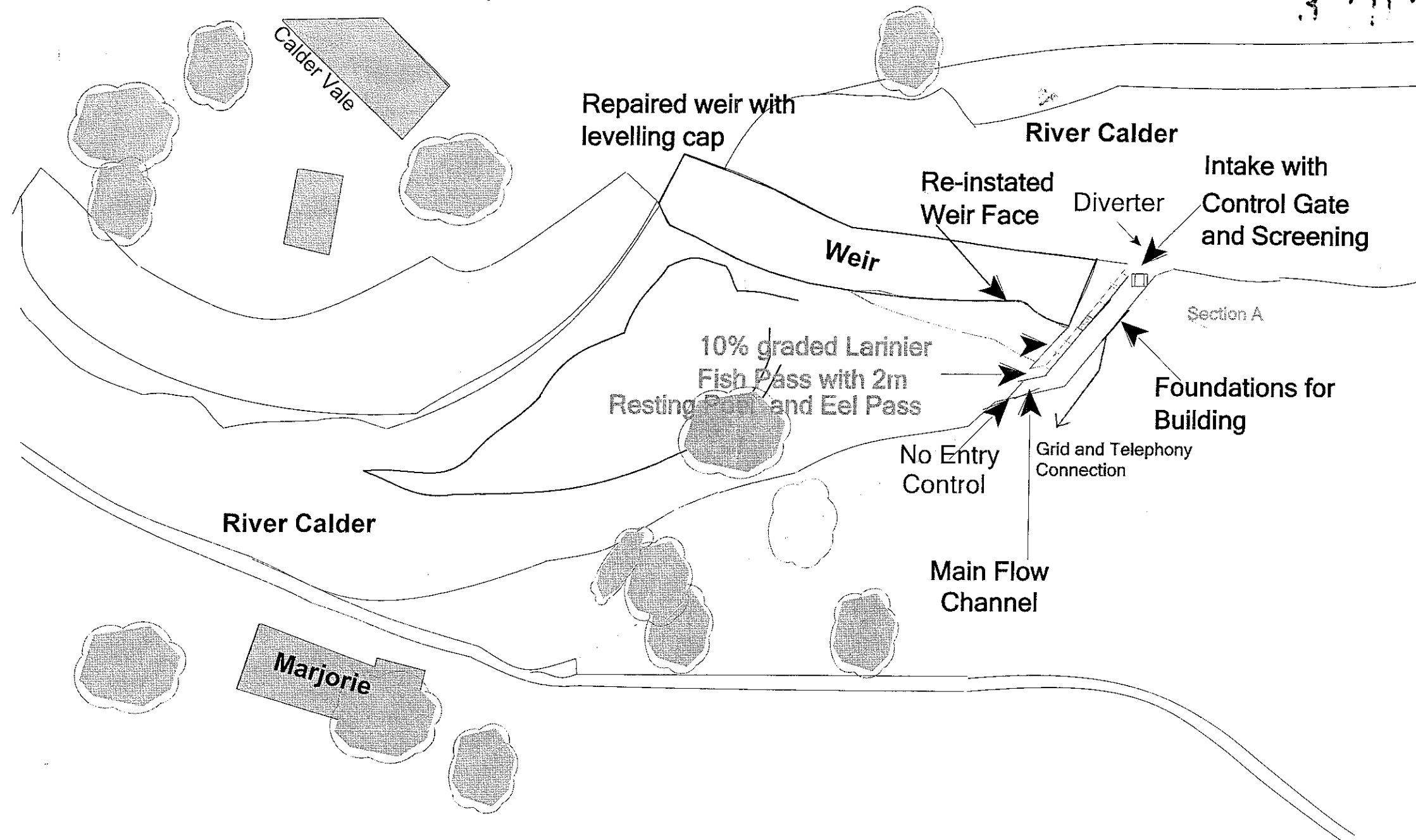
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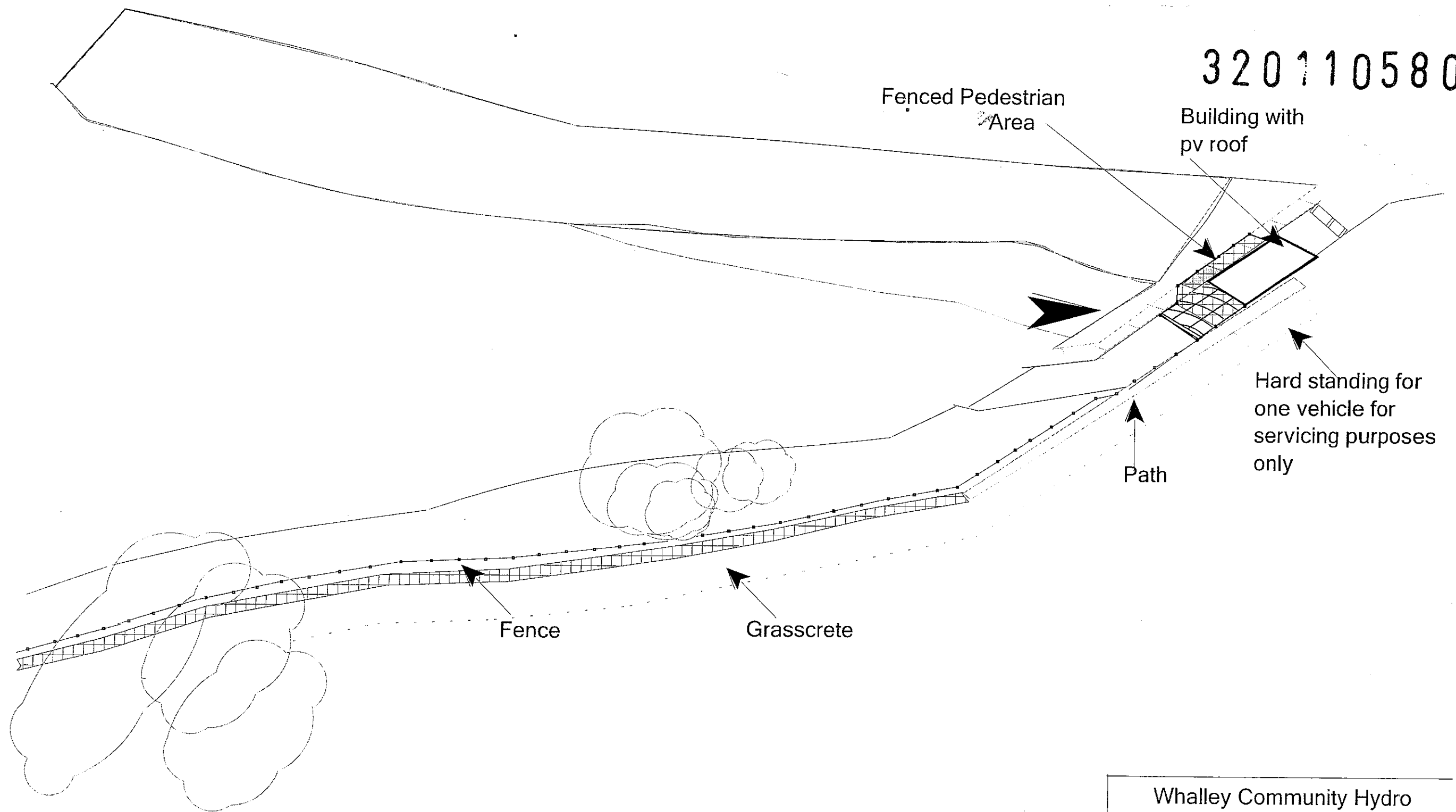


Scale 1 : 1250



Whalley Community Hydro Excavated Channels	
Sheet	4/7
Drawn by	
Checked by	

320110580P



Whalley Community Hydro
Completed Scheme

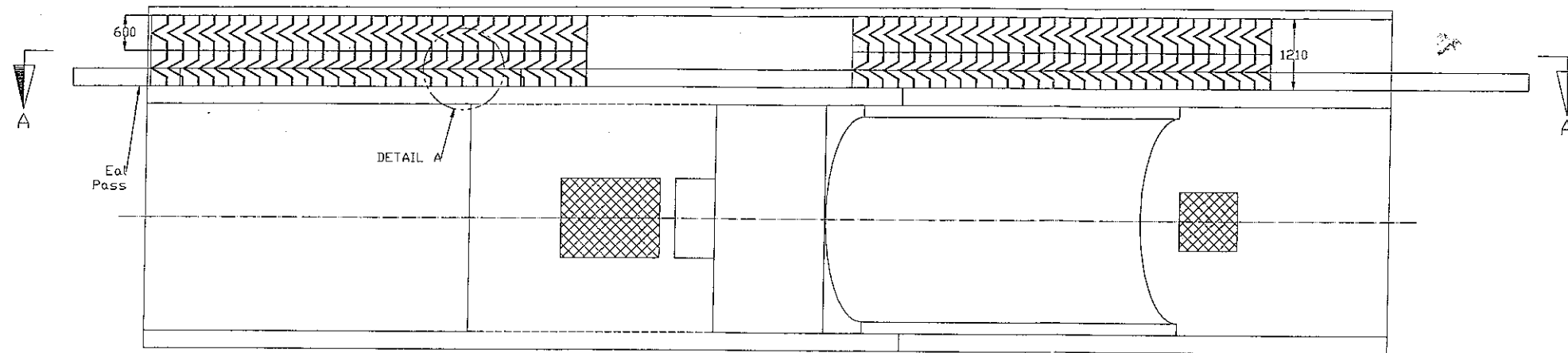
Sheet

6/7

Drawn by

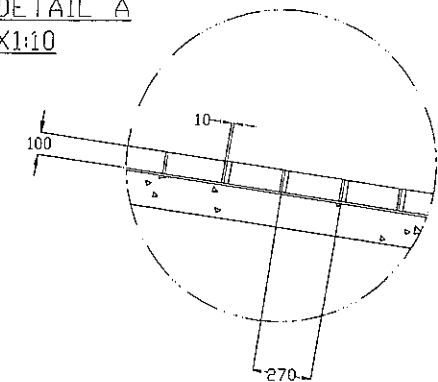
Checked by

PLAN VIEW

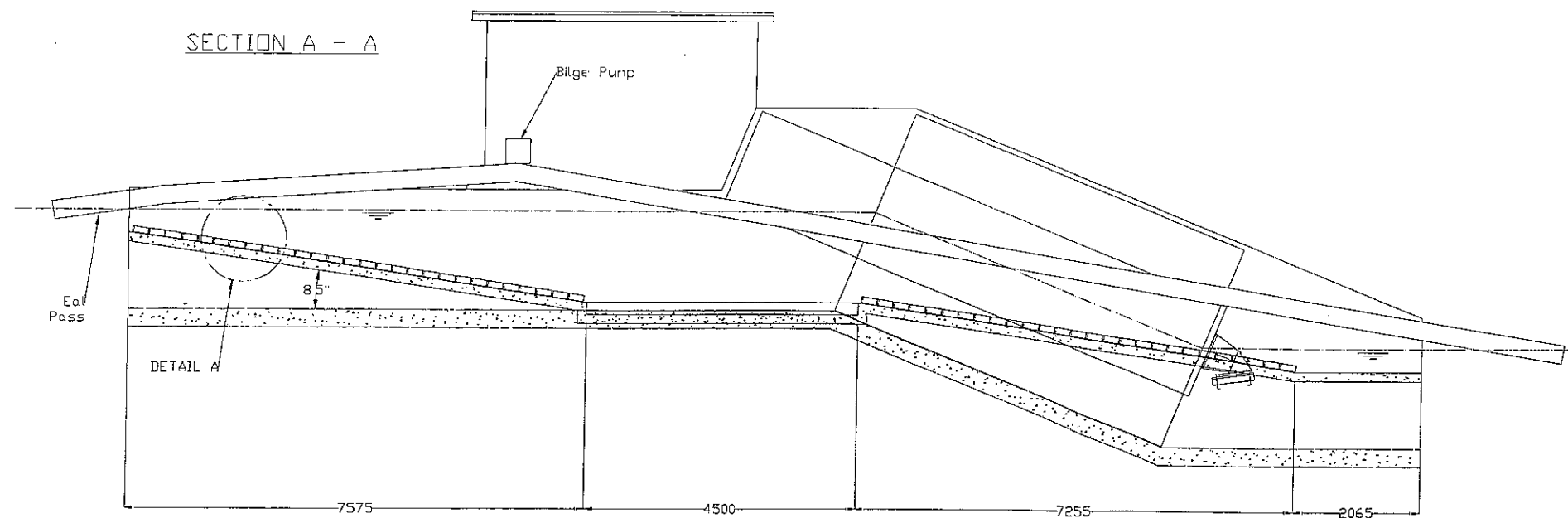


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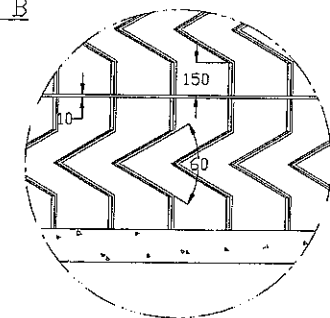
DETAIL A
X1:10



SECTION A - A



DETAIL B
X1:10



DO NOT USE FOR CONSTRUCTION

REINFORCED CONCRETE BY OTHERS	
Customer: Speans Babcock Ltd.	Scale: 1:50
Project name: Whalley Weir	Date: 31.10.11
Description: Double Larkier Fish Pass	Drawn by: MJW
Name: Fish Pass Design Proposal	Approved by: BB
Speans Babcock Ltd	File no.:
HEYWOOD, ENGLAND	Contract no: 563238
AI	Drw. no. 3238-1001