

TECHNICAL NOTE:

Flood Risk Assessment: Proposed Larinier Fish Pass on the River Exe at Bolham Weir

Prepared for:	Fishtek Consulting
Date issued	14/04/2022
Prepared by:	Michael Underwood
Approved by:	James Dodds
Reference:	P22-068 Fishtek Bolham \ TN Fish Pass FRA
Revision:	REV01
Contents	8 pages, including 4 figures plus 1 appendix

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1 INTRODUCTION

1.1 Background

Fishtek Consulting (Fishtek) are preparing a Flood Risk Activity Permit (FRAP) application on behalf of the Westcountry Rivers Trust (the applicant) for a proposed installation of a Larinier fish pass on the River Exe at Bolham Weir, Tiverton, Devon, EX16 7RW (the 'Site'). The proposed fish pass is part the wider Strategic Exe Weirs project in the River Exe catchment to improve access for migratory fish.

Envireau Water has been commissioned by Fishtek to prepare a Flood Risk Assessment (FRA) to support the FRAP application for the proposed fish pass.

1.2 Scope and Objectives

This FRA assesses the proposed fish pass structure and its potential impact on flood risk at the Site and elsewhere. The FRA has been prepared in accordance with the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2021).

The objective of this FRA is to demonstrate that the installation and operation of the Larinier fish pass will not increase the risk of flooding upstream or downstream of the Site.

1.3 Data Sources

This FRA has been prepared using the following main data and information sources:

- Proposed Larinier fish pass detailed design drawings provided by Fishtek;
- Ordnance Survey mapping;
- Satellite aerial imagery; and
- Environment Agency Fluvial Flood Risk mapping.

2 SITE DESCRIPTION

2.1 Location and Setting

Bolham Weir (the 'Site') is situated approximately 600m to the northwest of Bolham in the Exe Valley at National Grid Reference SS 94855 15302 (see Figure 1). The River Exe flows in a north to south direction towards the town of Tiverton which is located approximately 2.5km south of the Site.

The site and proposed fish pass setting is shown on Figure 2. The land to the west, north and south of the weir principally consists of agricultural land. The Bolham Road (A396) runs adjacent to the eastern bank of the River Exe at the Site. A South West Water pumping station is present 50m to the south of the Site and neighbouring is Riverside House. Marsh Farm is situated 400m northwest of the Site.



Figure 1: Site Location

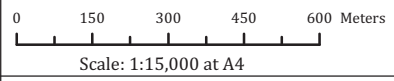
Bolham, Tiverton



Legend

River Exe Flow Direction

Notes:



13 April 2022
NGR: 294,788 E / 115,432 N

Project No. P22-068
Client: Fisktek Consulting
Drawn by: MU
Ref: FIG 1 Site Location



116000
115000
114000

294000 295000 296000

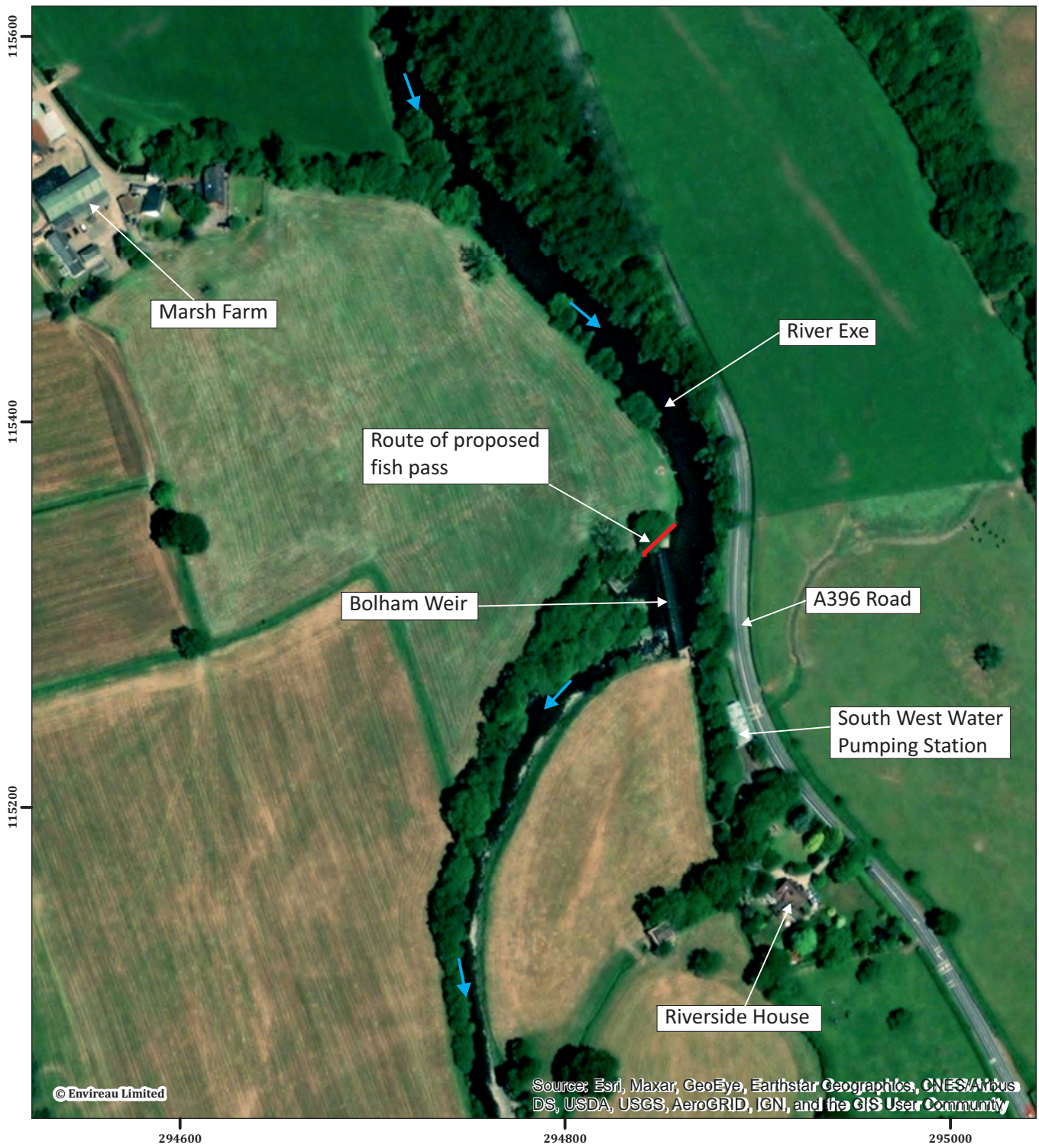


Figure 2: Site Setting

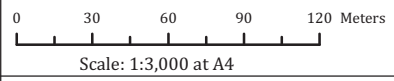
Bolham, Tiverton



Legend

- Proposed Larinier Fish Pass
- ➔ River Exe Flow Direction

Notes:



13 April 2022
 NGR: 294,784 E / 115,327 N

Project No. P22-068
Client: Fisktek Consulting
Drawn by: MU
Ref: FIG 2 Site Setting



2.2 Bolham Weir Structure

Bolham weir is a modern 'crump' type weir construction over a historic weir site (Westcountry Rivers Trust, 2021). The weir has a smooth sloping concrete face which although it controls hydraulic conditions, it poses a significant challenge for all migratory fish. The weir crest along the entire length of the weir ranges from approximately 69.22m to 69.30m AOD. The toe of the weir is at an elevation of 68.10m AOD, approximately 1.2m lower than the weir crest. An image of the weir is shown below in Figure 3.

Figure 3: Bolham Weir Structure (looking north). Source: David Jury, 2020, YouTube.com



2.3 Proposed Larinier Fish Pass

The proposal is to construct a new Larinier fish pass in the field immediately adjacent to the north of Bolham Weir, bypassing the weir itself and tying back into the river channel downstream of the weir (see Figure 2). No changes to the structure of Bolham Weir are proposed. Detailed design drawings are provided in Appendix A.

The proposed Larinier fish pass consists of a narrow constructed concrete channel with side walls. One of the main features of the fish pass is a series of metal plate baffles which are installed on the bed of the pass to reduce flow velocity and turbulence. A studded-tile eel pass will also be installed adjacent to the fish pass channel which is bounded by a concrete access walkway

A small area of armourstone will be placed on the bed of the river at the foot of the western riverbank at the downstream end of the fish pass to prevent scour and erosion of the bank from the fish pass flows. The height of the armourstone will be set below the high flow level (Q10) to ensure no impact on flood flow capacity.

The fish pass will be constructed during a period of lowest flows outside of the fish migration/spawning season (i.e. between June to end of September). A temporary sheet pile cofferdam dam is proposed around the fish pass only to facilitate dry installation.

3 FLOOD RISK ASSESSMENT

3.1 Flood Risk Vulnerability Classification

The proposed Larinier fish pass can be considered “water transmission infrastructure” as per the listed classifications within the NPPF Table D.2 ‘Flood Risk Vulnerability Classification’. The fish pass would therefore be classified as ‘Water-compatible’ development which is an appropriate development type within Flood Zone 3, in accordance with the Sequential Test of the NPPF.

3.2 Fluvial Flood Risk to Fish Pass

An extract of the Environment Agency’s Flood Map for Planning (Rivers and Sea) is shown in Figure 4. The proposed fish pass is shown to lie within Flood Zone 3 (functional floodplain) indicating a high probability of flooding. The floodplain of the River Exe is laterally extensive at the Site, extending some 500m across the full width of the Exe Valley.

3.3 Flood Risk from Fish Pass

The proposed fish pass will be installed in the field adjacent to Bolham Weir and not through the weir itself. No changes are proposed to the structure of Bolham Weir. Therefore, the river channel capacity and flood flow hydraulics upstream and downstream of the weir will remain the same. This is fundamentally different to fish passes which are excavated into the weir itself, thereby causing changes in the water surface elevation upstream and downstream of the weir.

Given the proposed location and bypass design of the fish pass, it will not change gradients, nor alter water surface elevation and flow downstream of Bolham Weir and therefore will not change flood risk. If there is any effect upstream, it will be positive in terms of flood risk as the diversion of some of the river flow to the fish pass will lower the head over Bolham Weir, albeit by a very small amount. Therefore, the fish pass will not pose any risk to nearby receptors.

The mean annual maximum flow (QMED) of the River Exe is significant at 141 m³/s, as gauged 2.5km upstream at Stoodleigh gauging station (ID. 45002) (UK Centre for Ecology & Hydrology, 2022). The flood flow will be significantly greater than the capacity of the proposed fish pass. Therefore, during a flood event, the fish pass will be at or near submerged and floodwater will spill and become stored in the extensive floodplain, returning back to the River Exe channel downstream of the weir, as per the existing scenario.

There are no flood defence assets or designated water storage areas shown on the flood map at the Site or 1km upstream or downstream. The nearest flood defences are located some 1.5km downstream at Tiverton. Therefore, the fish pass will not impact any flood risk assets.

The fish pass will be constructed during a period of lowest flows (June to end of September). The temporary cofferdam to enable safe construction will be confined to the extent of the fish pass only and will not impede the main river channel or flows over the Bolham Weir.



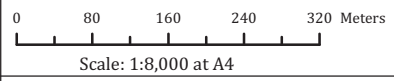
Figure 4: Fluvial Flood Extent

Bolham, Tiverton



- Proposed Larinier Fish Pass
- Environment Agency Flood Zone 3
- Environment Agency Flood Zone 2
- ➔ River Exe Flow Direction

Notes:



13 April 2022
 NGR: 294,822 E / 115,378 N

Project No. P22-068
Client: Fisktek Consulting
Drawn by: MU
Ref: FIG 4 EA Flood Risk



116000

115000

295000

4 CONCLUSIONS

This Flood Risk Assessment demonstrates that:

- The proposed Larinier fish pass will be installed on a field adjacent to the weir and not through the Bolham Weir, thereby “by-passing” the weir;
- No structural changes are proposed to Bolham Weir ensuring the existing flow hydraulics and regime over the weir will remain the same;
- The fish pass is an appropriate development type in Flood Zone 3;
- The fish pass will not alter gradients, water surface elevation or flow downstream or upstream of Bolham Weir; and
- The fish pass will not increase the risk of fluvial flooding upstream or downstream on the River Exe.

REFERENCES

Ministry of Housing, Communities & Local Government. (2021). *National Planning Policy Framework*.

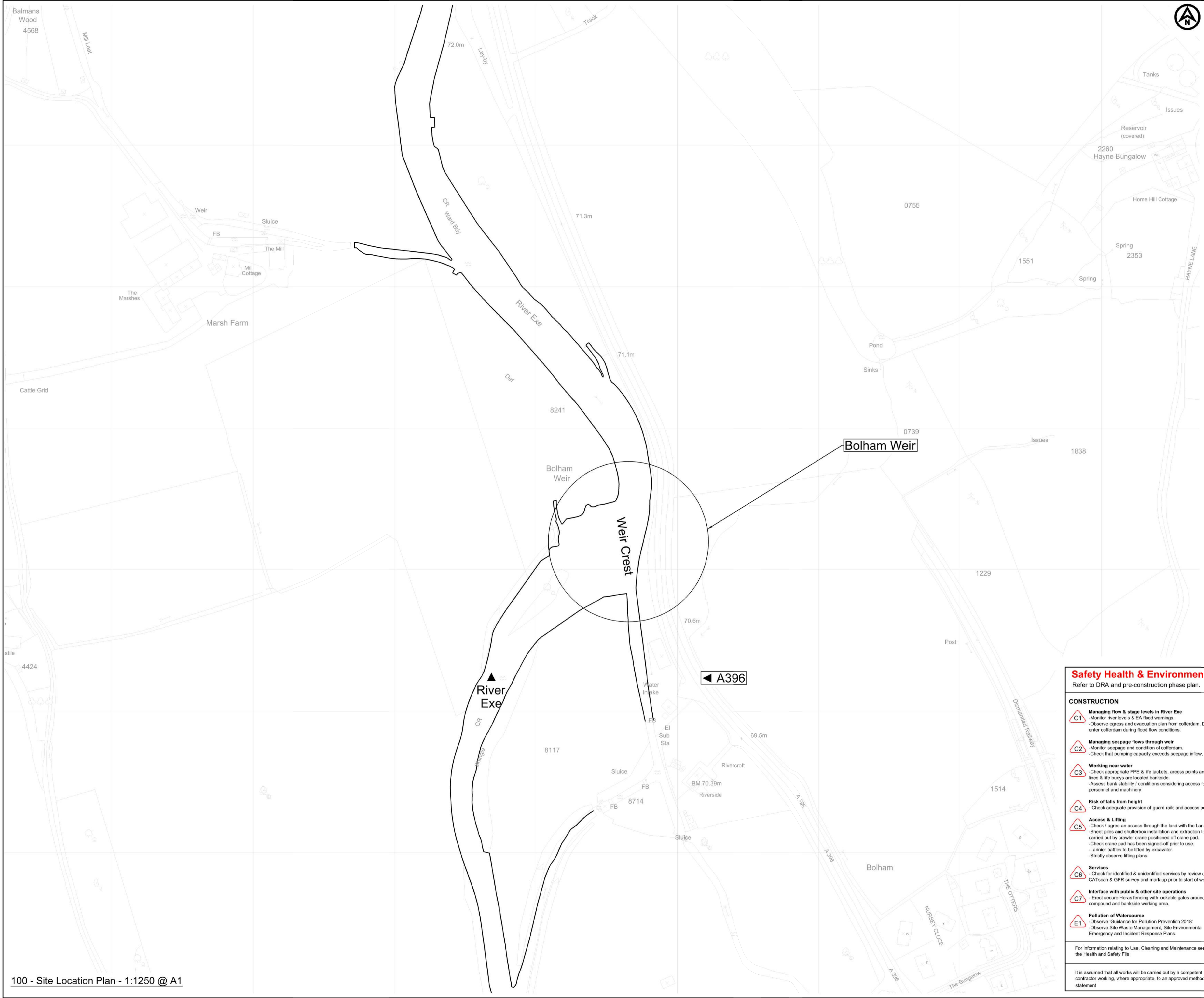
UK Centre for Ecology & Hydrology. (2022, April). *45002 - Exe at Stoodleigh*. Retrieved from National River Flow Archive: <https://nrfa.ceh.ac.uk/data/station/info/45002>

Westcountry Rivers Trust. (2021, March 31). *Strategic Exe Weirs – ‘Design Live’ sites for 2021*. Retrieved from WRT.org.uk: <https://wrt.org.uk/strategic-exe-weirs-design-live-sites-for-2021/>

YouTube. (2020). David Jury, River Exe - Bolham Weir 2. <https://www.youtube.com/watch?v=6I6DHPsiWJE>

APPENDICES

Appendix A Proposed Larinier Fish Pass Design Drawings



NOTES:
1. DIMENSIONS:
 • Are in millimetres unless otherwise stated.
 • Marked thus (*) are approximate.
 • All levels are in metres to Site Datum.

3. SPECIFICATION:
 All works to be carried out in accordance with the Environment Agency Minimum Technical Requirements which shall be the Civil Engineering Specification for the Water Industry (CESWI). All technical requirements clauses apply unless stated as deleted, amended or augmented in accordance with the EA WEM Contract Works Information documentation.

PC1	Initial Issue	xx.02.22
Issue	Description	Date
Detailed Design		
Scale	1:1250	Current Issue Signatures
Original Size	A1	Author: J.Czyrw, Checker: M. Lakin, Approver: S. Pudwell
Datum		© Copyright reserved
Grid		



PROJECT
Bolham Fish Pass

TITLE
Site Location Plan

Drawing No.	Project No.	Issue
200 -	02925 -	P01

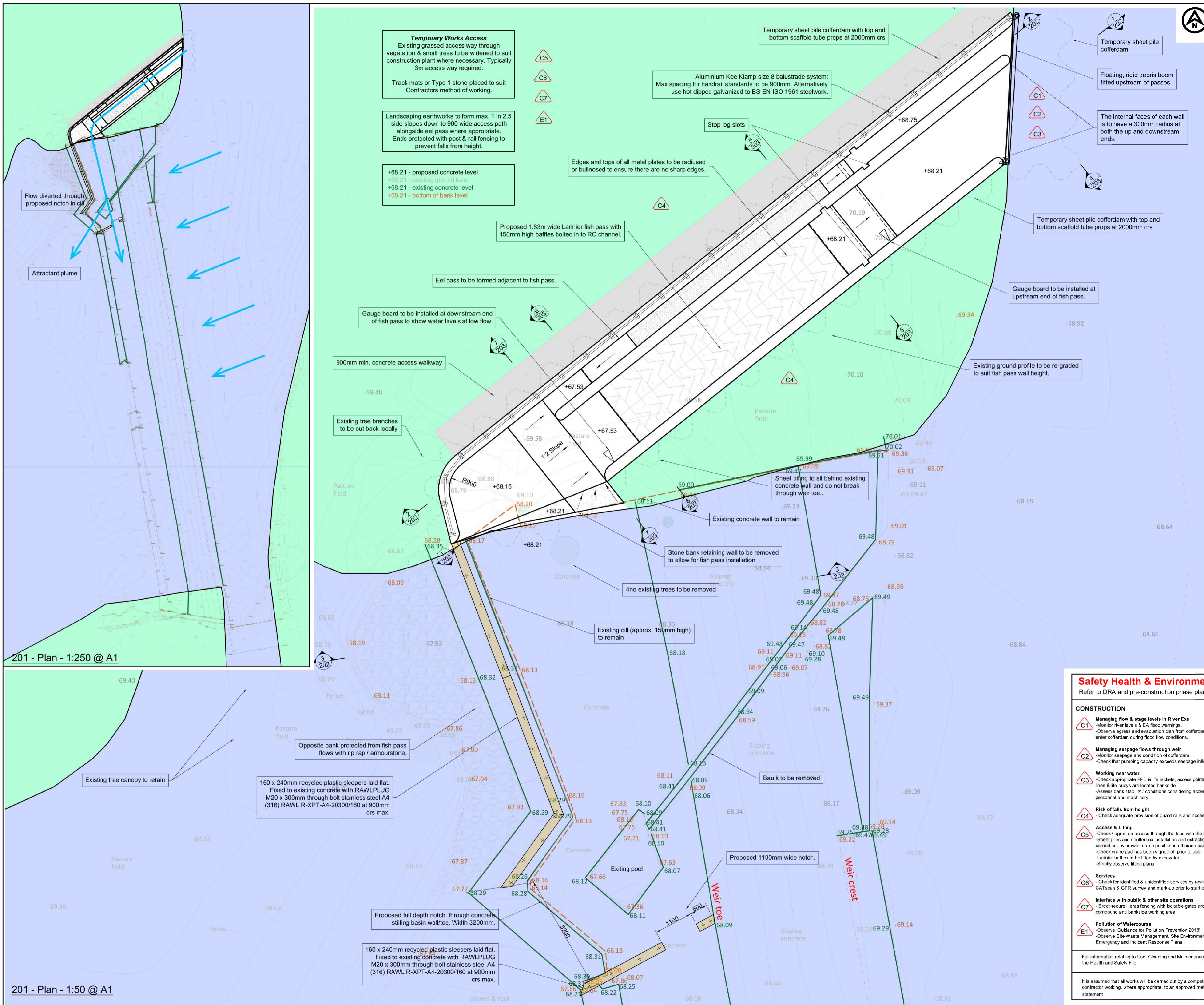
Safety Health & Environmental
 Refer to DRA and pre-construction phase plan.

CONSTRUCTION

- C1 Managing flow & stage levels in River Exe**
 -Monitor river levels & EA flood warnings.
 -Observe egress and evacuation plan from cofferdam. Do not enter cofferdam during flood flow conditions.
- C2 Managing seepage flows through weir**
 -Monitor seepage and condition of cofferdam.
 -Check that pumping capacity exceeds seepage inflow.
- C3 Working near water**
 -Check appropriate FFE & life jackets, access points and throw lines & life buoys are located bankside.
 -Assess bank stability / conditions considering access for personnel and machinery.
- C4 Risk of falls from height**
 -Check adequate provision of guard rails and access points.
- C5 Access & Lifting**
 -Check / agree an access through the land with the Land Owner.
 -Sheet piles and shutterbox installation and extraction to be carried out by crawler crane positioned off crane pad.
 -Check crane pad has been signed-off prior to use.
 -Laminar baffles to be lifted by excavator.
 -Strictly observe lifting plans.
- C6 Services**
 -Check for identified & unidentified services by review of PCI, CATScan & GPR survey and mark-up prior to start of works.
- C7 Interface with public & other site operations**
 -Erect secure Hoas fencing with lockable gates around the site compound and bankside working area.
- E1 Pollution of Watercourse**
 -Observe 'Guidance for Pollution Prevention 2018'
 -Observe Site Waste Management, Site Environmental Emergency and Incident Response Plans.

For information relating to Use, Cleaning and Maintenance see the Health and Safety File

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement



201 - Plan - 1:250 @ A1

201 - Plan - 1:50 @ A1

Temporary Works Access
Existing grassed access way through vegetation & small trees to be widened to suit construction plant where necessary. Typically 3m access way required.

Track mats or Type 1 stone placed to suit Contractor's method of working.

Landscaping earthworks to form max. 1 in 2.5 side slopes down to 900 wide access path alongside eel pass where appropriate. Ends protected with post & rail fencing to prevent falls from height.

+68.21 - proposed concrete level
+68.21 - existing ground level
+68.21 - existing concrete level
+68.21 - bottom of bank level

Aluminium Kee Klamp size 8 balustrade system: Max spacing for handrail standards to be 900mm. Alternatively use hot dipped galvanized to BS EN ISO 1961 steelwork.

Edges and tops of all metal plates to be radiused or bullnosed to ensure there are no sharp edges.

Proposed 1.83m wide Laminar fish pass with 150mm high baffles bolted in to RC channel.

Eel pass to be formed adjacent to fish pass.

Gauge board to be installed at downstream end of fish pass to show water levels at low flow.

900mm min. concrete access walkway

Existing tree branches to be cut back locally

Existing concrete wall to remain

4no existing trees to be removed

Existing cill (approx. 150mm high) to remain

Stone bank retaining wall to be removed to allow for fish pass installation

Opposite bank protected from fish pass flows with rip rap / armourstone.

160 x 240mm recycled plastic sleepers laid flat. Fixed to existing concrete with RAWLPLUG M20 x 300mm through bolt stainless steel A4 (316) RAWL R-XPT-A4-20300/160 at 900mm crs max.

Proposed full depth notch through concrete stilling basin wall/toe. Width 3200mm.

160 x 240mm recycled plastic sleepers laid flat. Fixed to existing concrete with RAWLPLUG M20 x 300mm through bolt stainless steel A4 (316) RAWL R-XPT-A4-20300/160 at 900mm crs max.

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Scale	1:50	Current Issue Signatures
Original Size	A1	Author: J.Czyrwa, Checker: M. Lakin, Approver: S. Pudwell
Datum		© Copyright reserved
Grid		
Filename:		
Client:		





PROJECT

Bolham Fish Pass

TITLE

Site Plan

Drawing No.	Project No.	Issue
201 -	02925 -	P01

Safety Health & Environmental
Refer to DRA and pre-construction phase plan.

CONSTRUCTION

- C1** **Managing flow & stage levels in River Exe**
-Monitor river levels & EA flood warnings.
-Observe egress and evacuation plan from cofferdam. Do not enter cofferdam during flood flow conditions.
- C2** **Managing seepage flows through weir**
-Monitor seepage and condition of cofferdam.
-Check that pumping capacity exceeds seepage inflow.
- C3** **Working near water**
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-Check crane pad has been signed-off prior to use.
-Laminar baffles to be lifted by excavator.
-Strictly observe lifting plans.
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- C7** **Interface with public & other site operations**
-Erect secure Heras fencing with lockable gates around the site compound and bankside working area.
- E1** **Pollution of Watercourse**
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-Observe Site Waste Management, Site Environmental Emergency and Incident Response Plans.

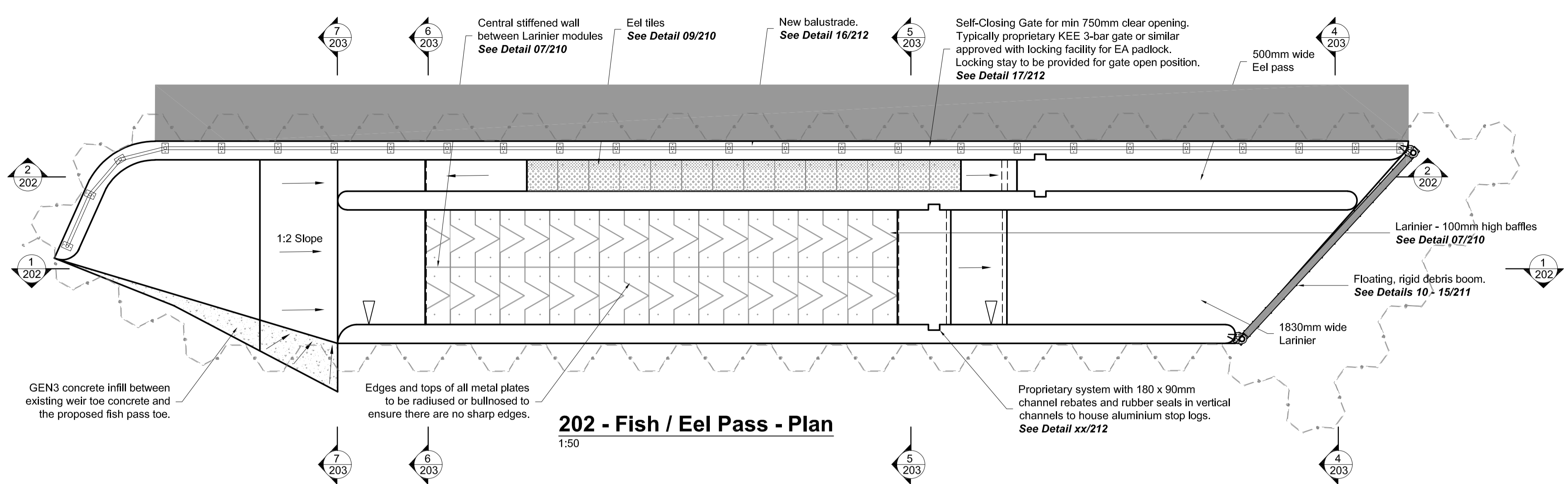
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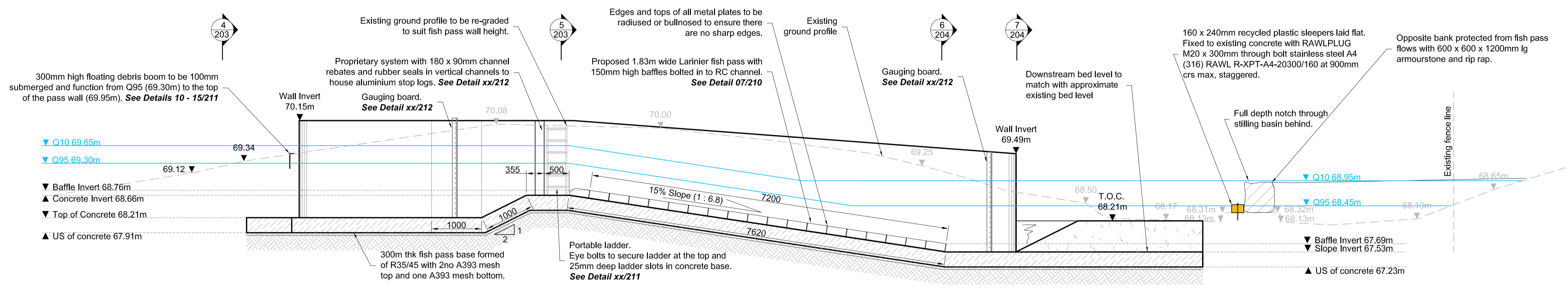
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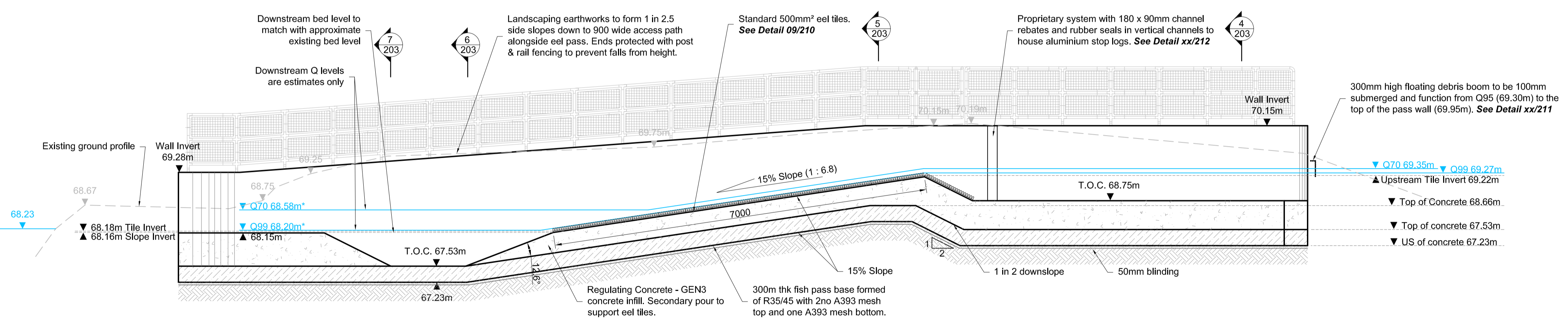
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- RC CONCRETE:**
 - All concrete to comply with BS 8500-2.
 - Concrete to have a min. strength class of C35 / 45.
 - Designed Concrete Specification for Fish Pass walls and base with 60 mm cover
 - Compressive strength class = C35/45
 - Maximum water/cement ratio = 0.60
 - Minimum cement/combination content = 280 kg/m³
 - Recommended cement/combinations types = CEM I, IIIA (Max. 50% ggbs)
 - Maximum aggregate size = 20 mm
 - Chloride content class = Cl 0, 40
 - Consistence class = S2
- Reinforcement:** All steel reinforcement shall be deformed Type 2 and shall be cut and bent to BS4466 or BS 4449. It is to be obtained from firms holding a valid Certificate of Approval for the manufacture and/or fabrication of steel reinforcement issued by the UK Certification Authority for Reinforcing Steels.
- Tying wire for steel reinforcement shall be 1.6mm diameter, annealed mild steel wire complying with BS1052.
- MJ:** Movement joint to comprise 20mm thick hydrocell compressible filler + elastomeric sealant finish (e.g. Nitoseal MS300) or similar approved. Joint filler hydrocell to be fixed to concrete surfaces with Joint Filler Adhesive (rubber based one part contact adhesive)
- FORMWORK:**
 - Exposed formed concrete surfaces to have a fair worked finish unless otherwise indicated.
 - Exposed unformed concrete surfaces to have a wood float finish unless otherwise indicated.
 - Outside edges to have 25mm chamfer. (End 'abutting edges' to have square edge).
- RIP RAP ROCK:**
 - Riprap with mass grading as per BS EN 13383-1:2013 category A standard light grading of LMA40/200.



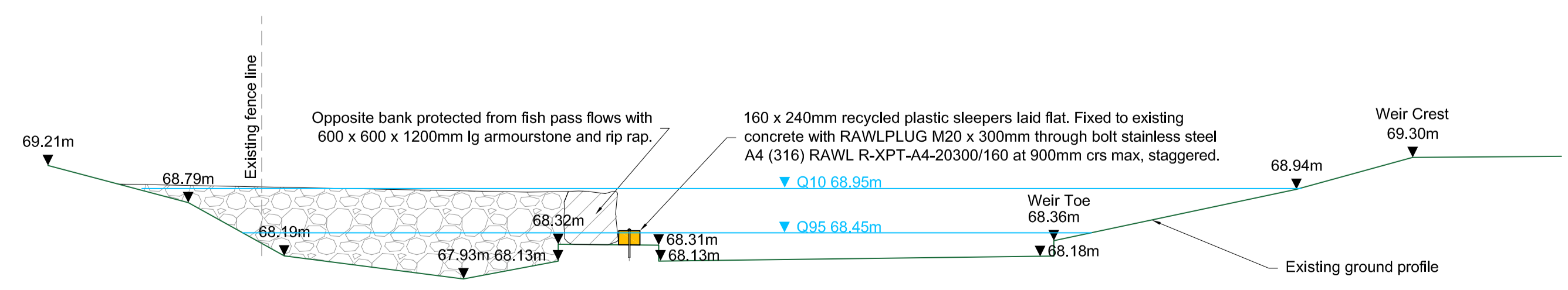
202 - Fish / Eel Pass - Plan
1:50



202 / 01 - Larinier Fish Pass - Typical Long Section
1:50



202 / 02 - Eel Pass - Typical Long Section
1:50



202 / 03 Section through the downstream bank
1:50



Safety Health & Environmental
Refer to DRA and pre-construction phase plan.

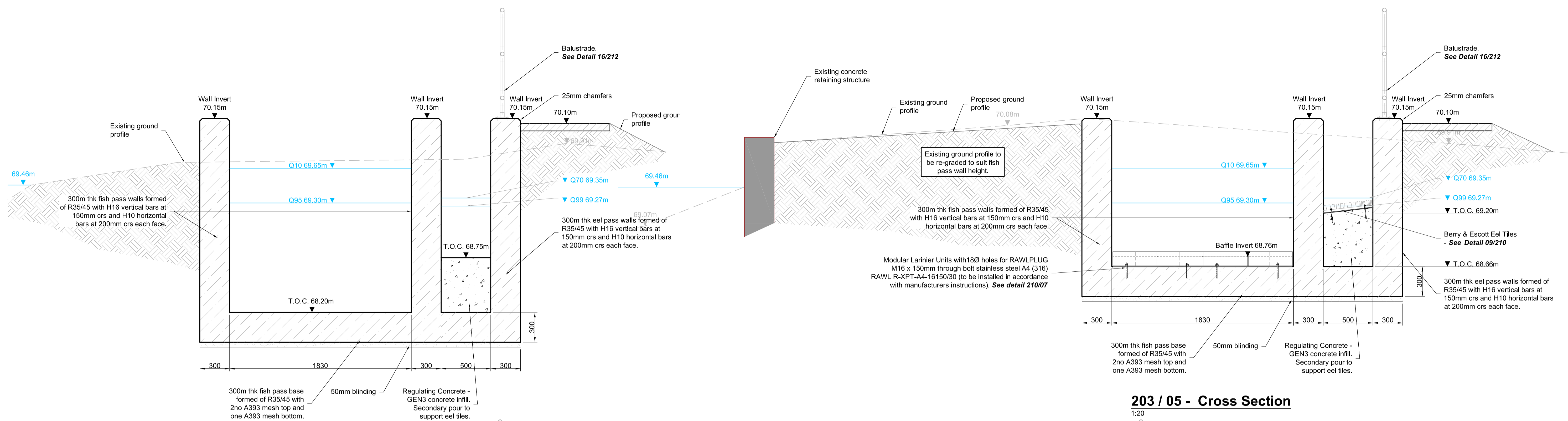
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 - Check crane pad has been signed-off prior to use.
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 - Strictly observe lifting plans.
- C6 Services**
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- C7 Interface with public & other site operations**
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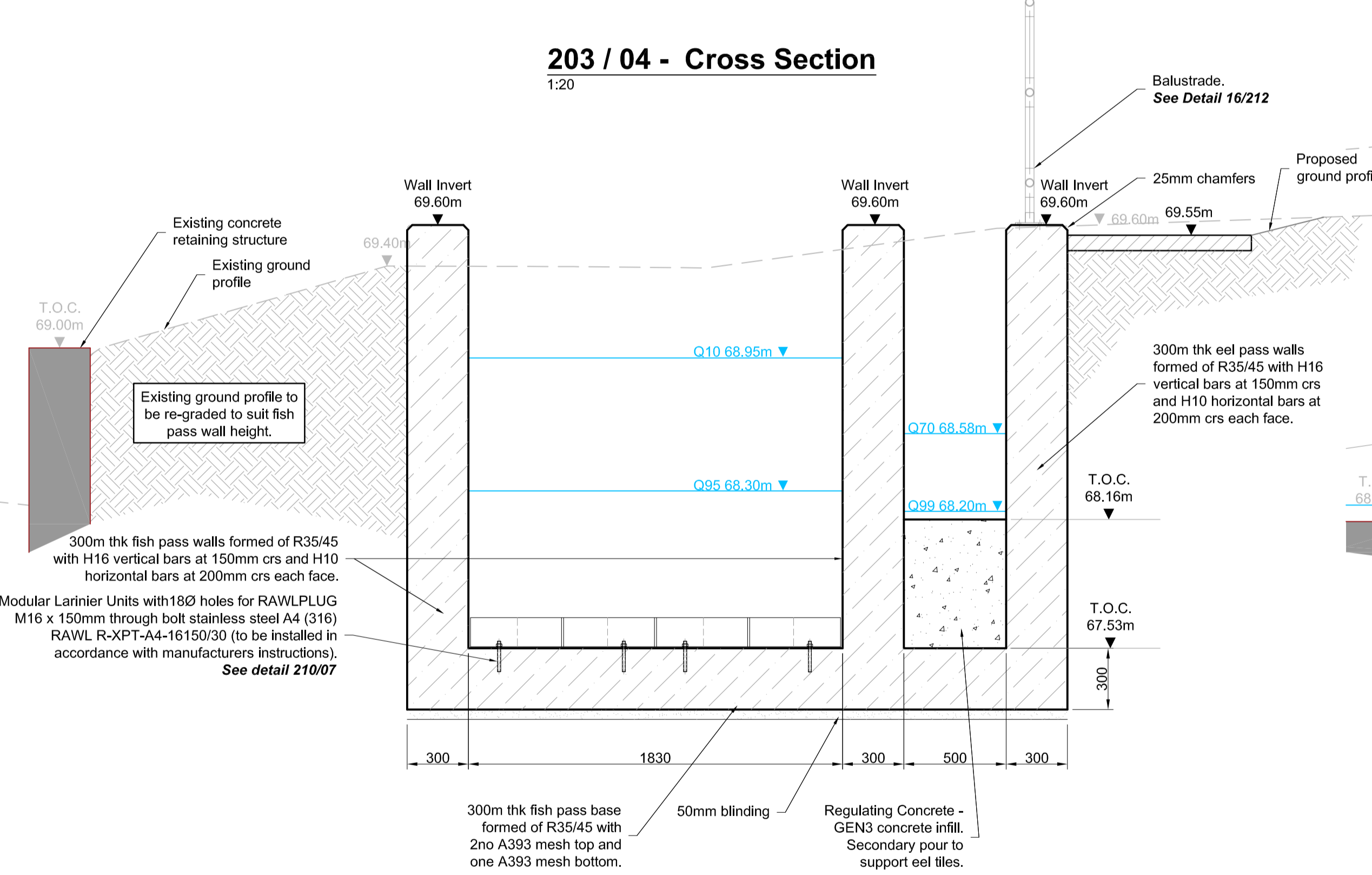
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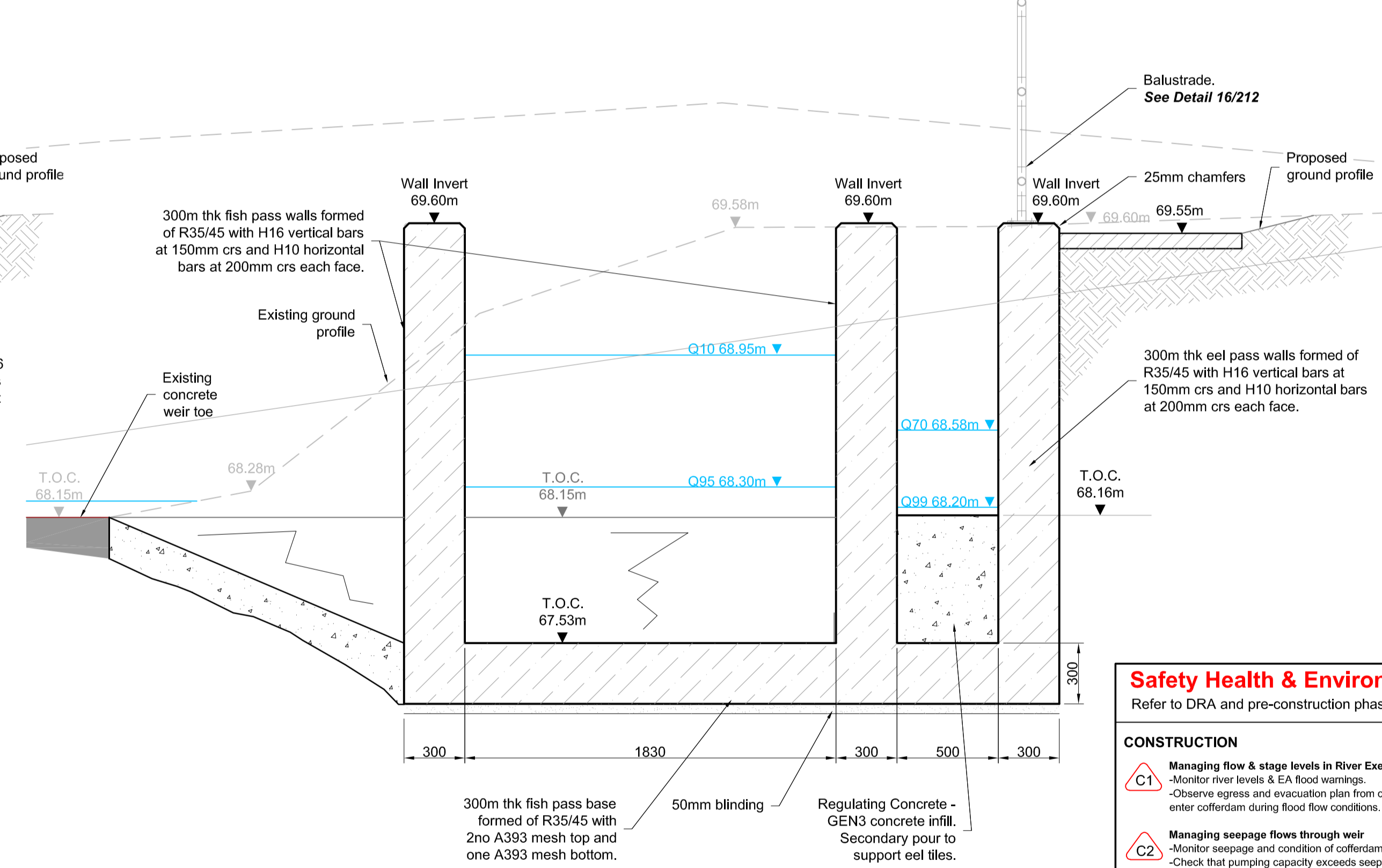
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Datum		Copyright reserved
Grid		
Filename:		
Client		
 		
PROJECT		
Bolham Fish Pass		
TITLE		
Plans		
Drawing No.	Project No.	Issue
202 -	02925 -	P01



203 / 04 - Cross Section
1:20



203 / 06 - Typical Section
1:20



203 / 06 - Typical Section
1:20

203 / 05 - Cross Section
1:20

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Safety Health & Environmental
Refer to DRA and pre-construction phase plan.

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- C4 Risk of falls from height**
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 - Check crane pad has been signed-off prior to use.
 - Larrier batters to be filled by excavator.
 - Strictly observe lifting plans.
- C6 Services**
 - Check for identified & unidentified services by review of PCI, CATScan & GPR survey and mark-up prior to start of works.
- C7 Interface with public & other site operations**
 - Erect secure Heras fencing with lockable gates around the site compound and bankside working area.
- E1 Pollution of Watercourse**
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P01	Initial Issue	xx.02.22
Issue	Description	Date
Detailed Design		
Scale	As Shown	Current Issue Signatures
Author	J.Czyrw	<i>[Signature]</i>
Checker	M. Lakin	<i>[Signature]</i>
Approver	S. Pudwell	<i>[Signature]</i>
Grid		© Copyright reserved
Filename:		
Client		
 		
PROJECT		
Bolham Fish Pass		
TITLE		
Sections Sheet 2 of 2		
Drawing No.	Project No.	Issue
203 -	02925 -	P01

Safety Health & Environmental

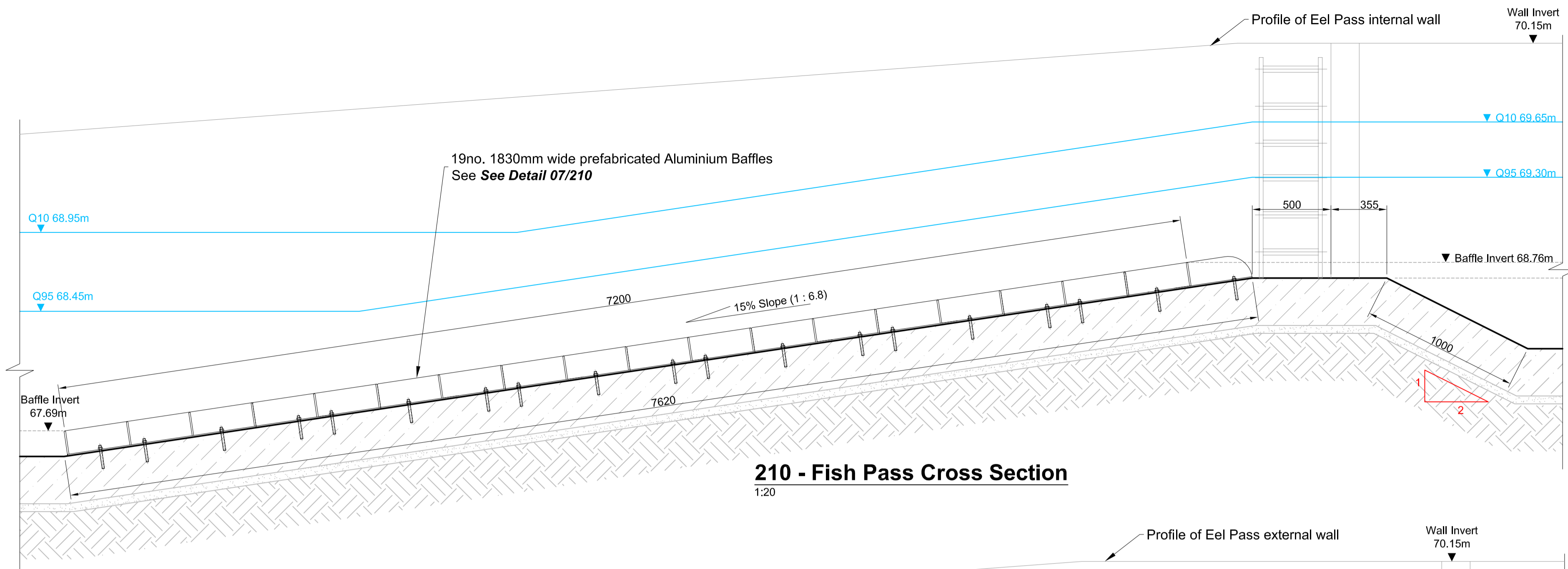
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CONSTRUCTION

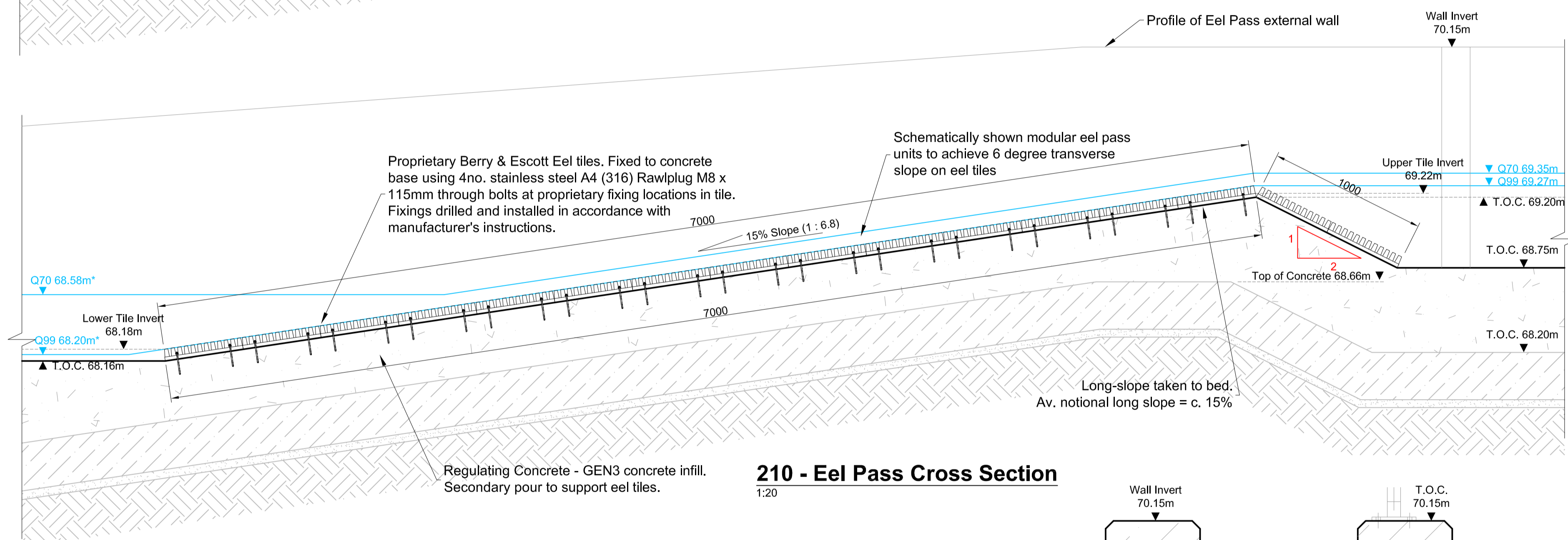
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 - Monitor seepage and condition of cofferdam.
 - Check that pumping capacity exceeds seepage inflow.
- C3** Working near water
 - Check appropriate PPE & life jackets, access points and throw lines & life buoys are located bankside.
 - Assess bank stability / conditions considering access for personnel and machinery
- C4** Risk of falls from height
 - Check adequate provision of guard rails and access points.
- C5** Access & Lifting
 - Check / agree an access through the land with the Land Owner.
 - Sheet piles and shutterbox installation and extraction to be carried out by crawler crane positioned off crane pad.
 - Check crane pad has been signed-off prior to use.
 - Larliner baffles to be lifted by excavator.
 - Strictly observe lifting plans.
- C6** Services
 - Check for identified & unidentified services by review of PCI, CATScan & GPR survey and mark-up prior to start of works.
- C7** Interface with public & other site operations
 - Erect secure Heras fencing with lockable gates around the site compound and bankside working area.
- E1** Pollution of Watercourse
 - Observe 'Guidance for Pollution Prevention 2018'
 - Observe Site Waste Management, Site Environmental Emergency and Incident Response Plans.

For information relating to Use, Cleaning and Maintenance see the Health and Safety File

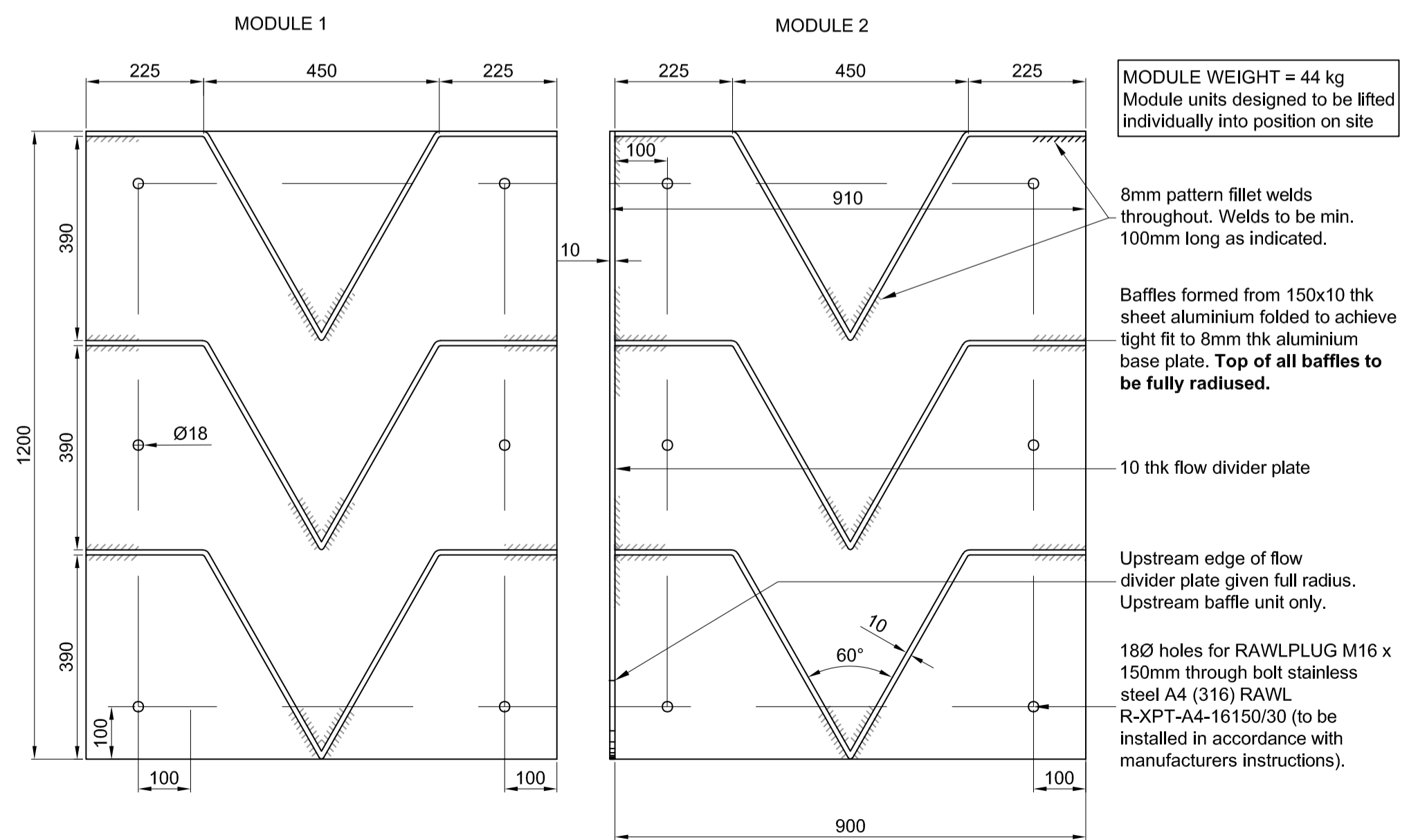
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement



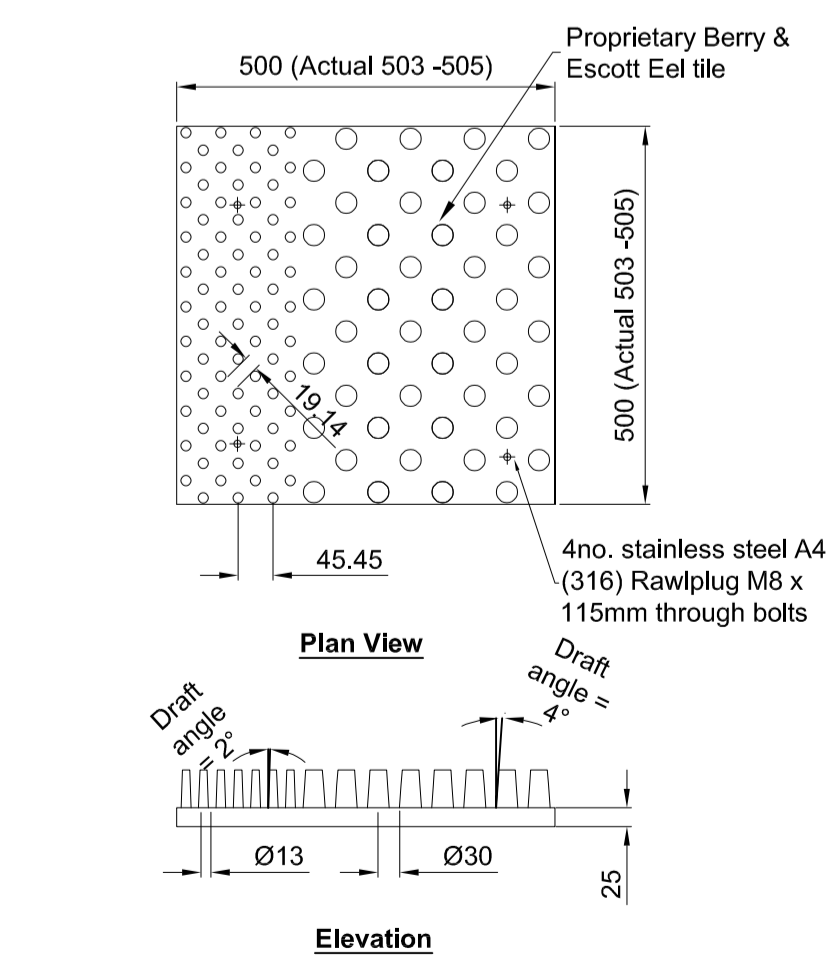
210 - Fish Pass Cross Section
1:20



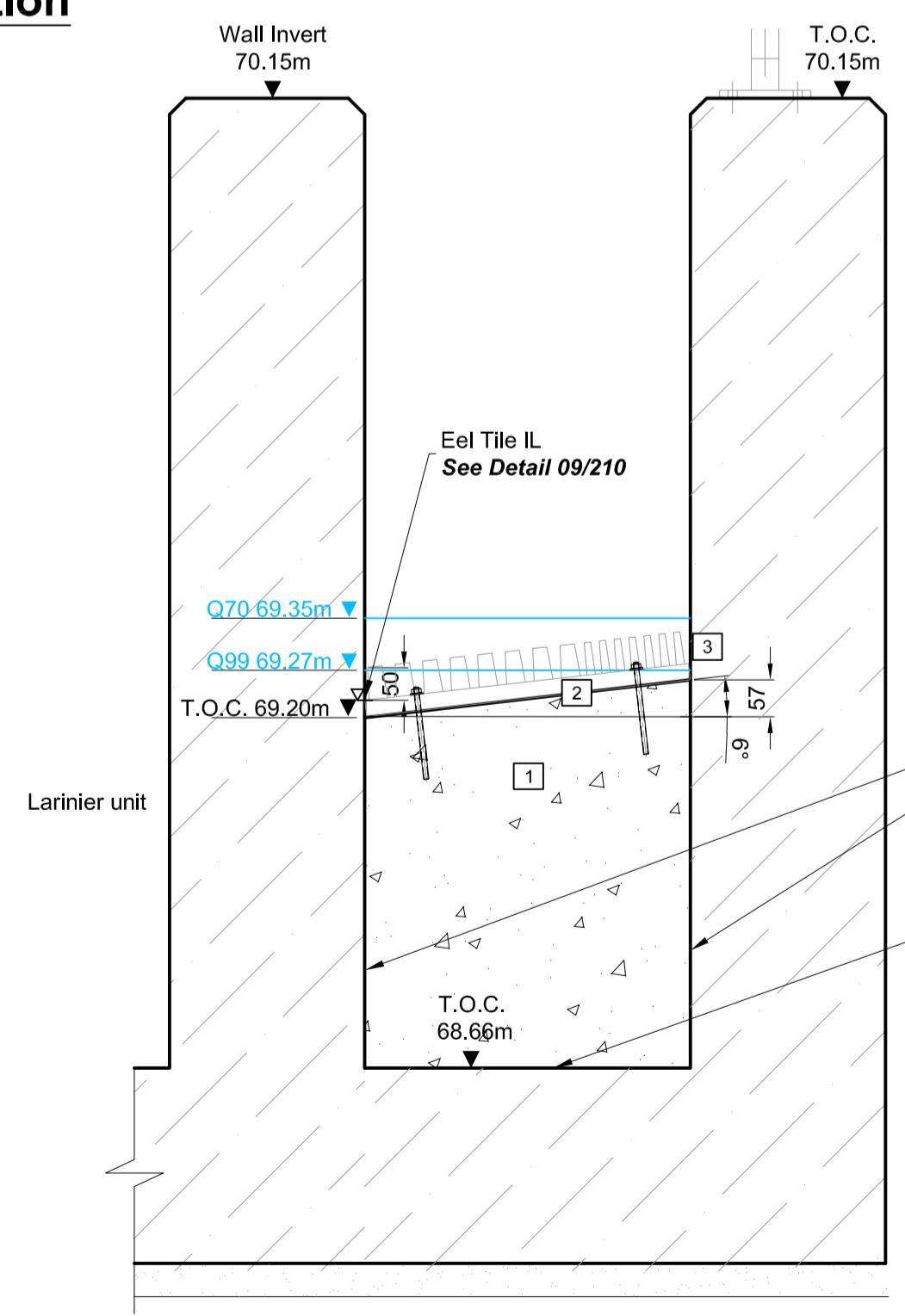
210 - Eel Pass Cross Section
1:20



210 / 07 - Aluminium Baffle Arrangement
1:10



210 / 09 - Detail - Eel Tile Substrate
1:10



210 / 08 - Detail - Eel Tile Cross Section
1:10

- #### Installation of eel pass units
- 1** **Regulating Concrete** - GEN3 concrete infill. Secondary pour to support eel tiles. Cast with 6 degree side slope.
 - 2** **Proprietary Berry & Escott Eel tiles** - Fixed to concrete base using 4no. stainless steel A4 (316) Rawplug M8 x 115mm through bolts at proprietary fixing locations in tile. Fixings drilled and installed in accordance with manufacturer's instructions.
 - 3** **Grout** - Fosroc Renderoc HB45 or similar approved grout applied in accordance with manufacturers instructions. Tertiary pour to infill void.

- #### NOTES:
- 1. DIMENSIONS:**
 - Are in millimetres unless otherwise stated.
 - Marked thus (*) are approximate.
 - All levels are in metres to Site Datum.
 - 2. SPECIFICATION:**

All works to be carried out in accordance with the Civil Engineering Specification for the Water Industry (CESWI). All technical requirements clauses apply unless stated as deleted, amended or augmented in accordance with the Contract Works Information documentation.
 - 3. ALUMINIUM:**
 - All Larinier pass plates & extrusions to be in aluminium unless otherwise indicated.
 - All structural aluminium alloys to BS 8118.
 - Sheet plate grade to be Alloy 5083 0 Temper or similar approved.
 - Thin walled extrusions to be 6082 T6 Temper or similar approved.
 - All aluminium welds to match substrate thickness, typically 10mm for structural plate & stiffeners unless otherwise stated. All welds to be continuous unless otherwise indicated.
 - 4. BOLTS:**
 - All stainless steel to BS5950.
 - All fasteners to be stainless steel A2 (304) set screws, M12 (in 14mm dia holes) unless otherwise indicated.
 - All fasteners to have white M12 (or to suit) nylon washers (Form A Nylon 66 2mm thk x 21mm OD) to isolate stainless steel fasteners from aluminium alloy extrusions & plates.
 - Nut & bolt cover caps in black plastic polyethylene to be fitted where fixings are externally exposed on side walls above ground or bed level.
 - 5. FABRICATION:**
 - Fabrication drawings to be prepared by the fabricator.
 - All fabricated structural steelwork & aluminium structures executed to conform to BS EN 1090-2.
 - Size of connection plates & bolt hole positions to suit fabrication tolerances and checked for fit prior to delivery to site.
 - 6. ASSEMBLY:**
 - Individual module units to be pre-assembled off site prior to delivery.
 - All bolted connection plates to receive a bead line of Sika-flex when connecting units in position on site.
 - Residual open joints to be filled with sika-flex.
 - Sika-flex to black marine grade silicone 291i or similar approved.

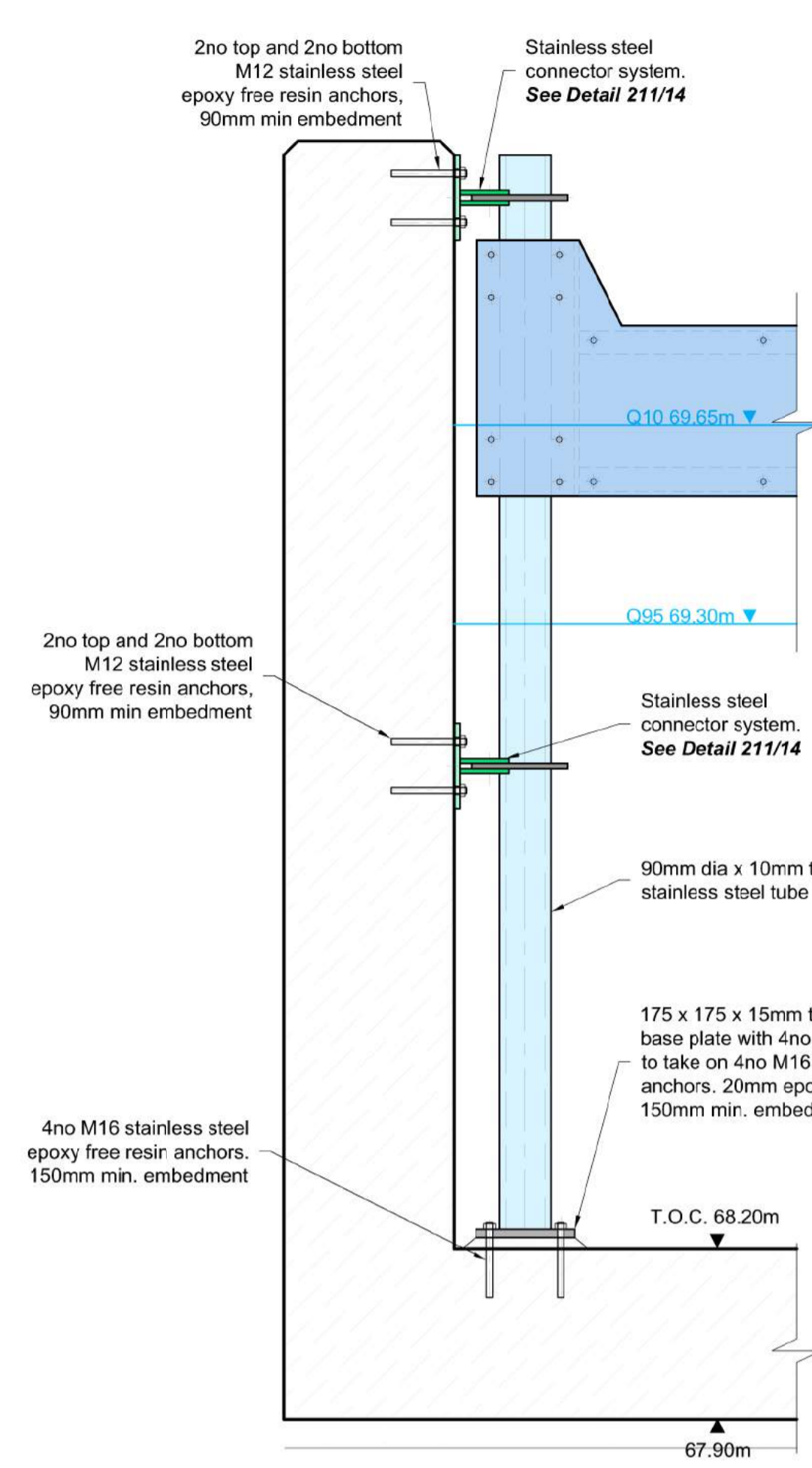
P01	Initial Issue	xx.02.22
Issue	Description	Date
Detailed Design		
Scale	As Shown	Current Issue Signatures
Original Size	A1	Author J.Czyrw Checker M. Lakin Approver S. Pudwell
Datum		Copyright reserved



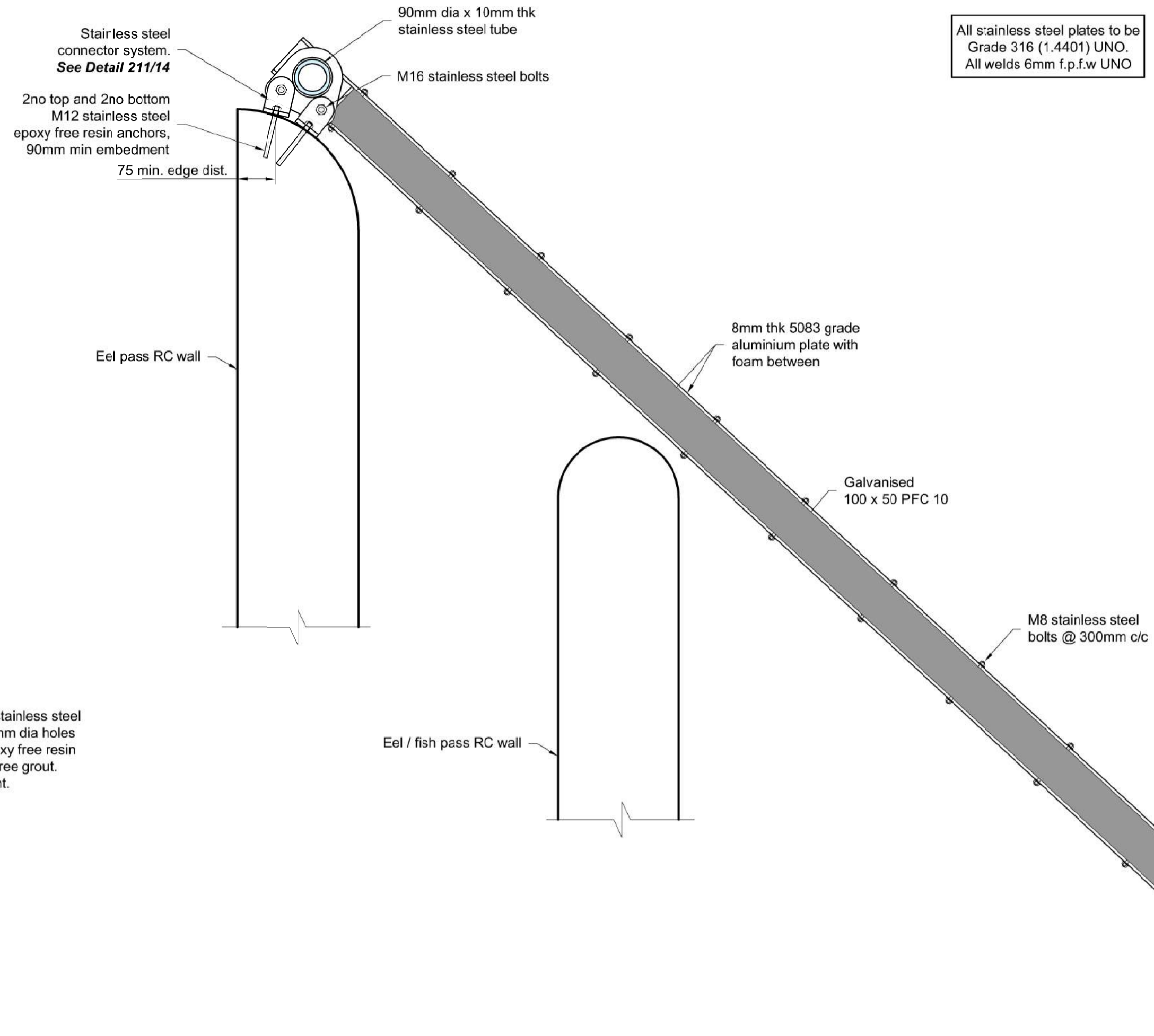
PROJECT
Bolham Fish Pass

TITLE
Details Sheet 1 of 3

Drawing No.	Project No.	Issue
210 -	02925	- P01

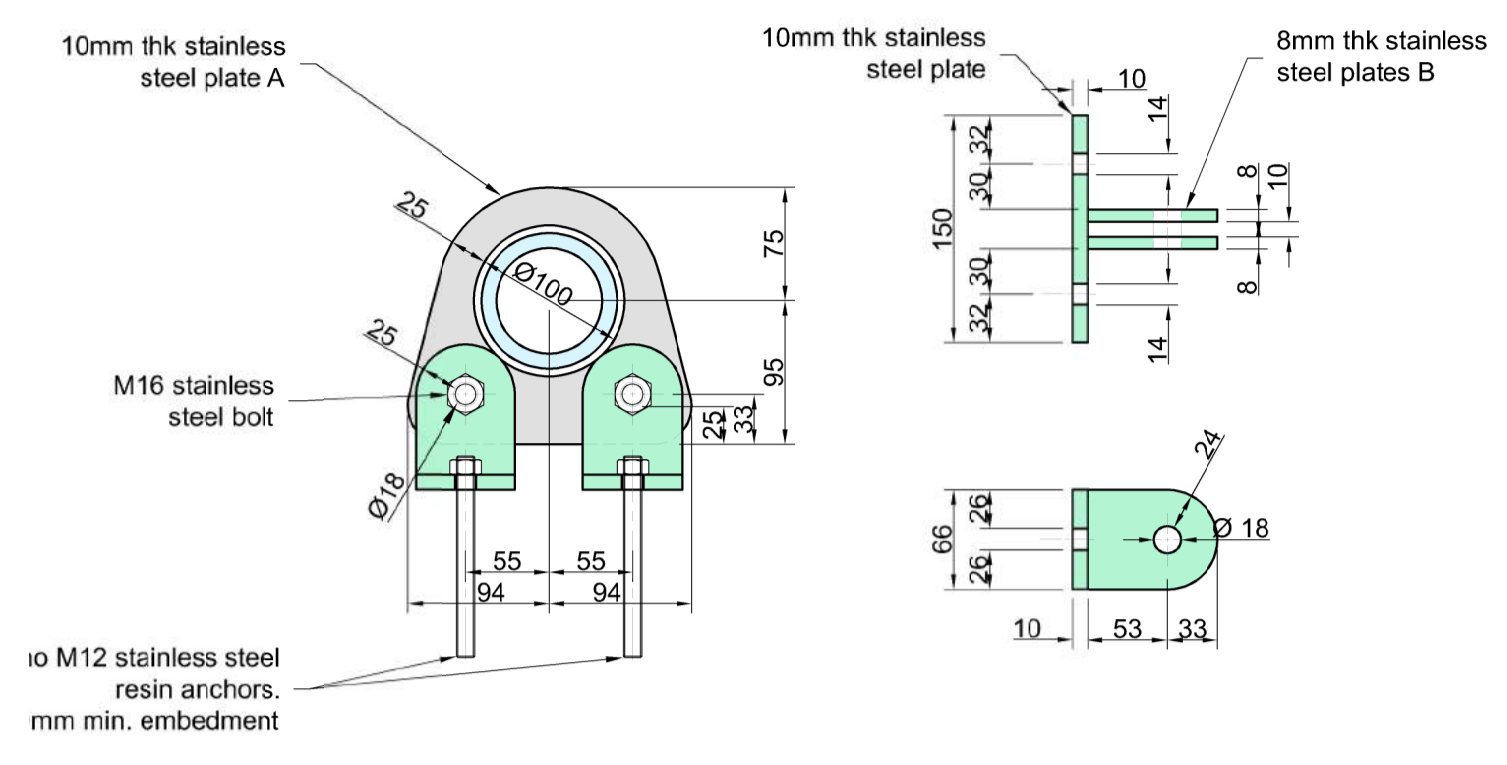


211 / 10 Floating boom - Elevation
(1:10)

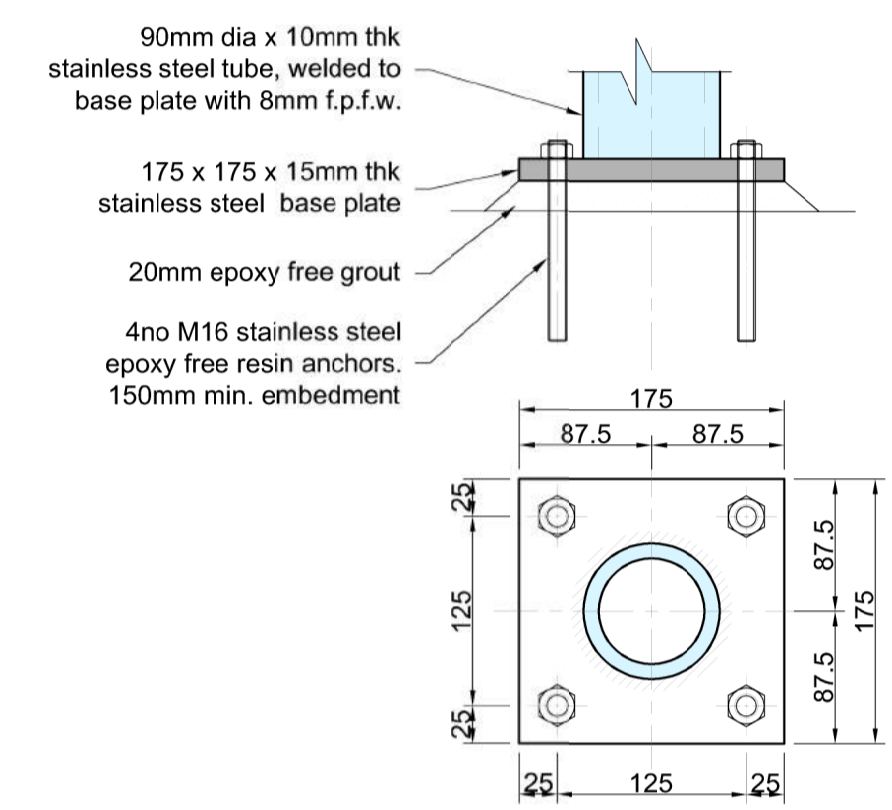


211 / 11 Floating boom fitted upstream of passes.
(1:10)

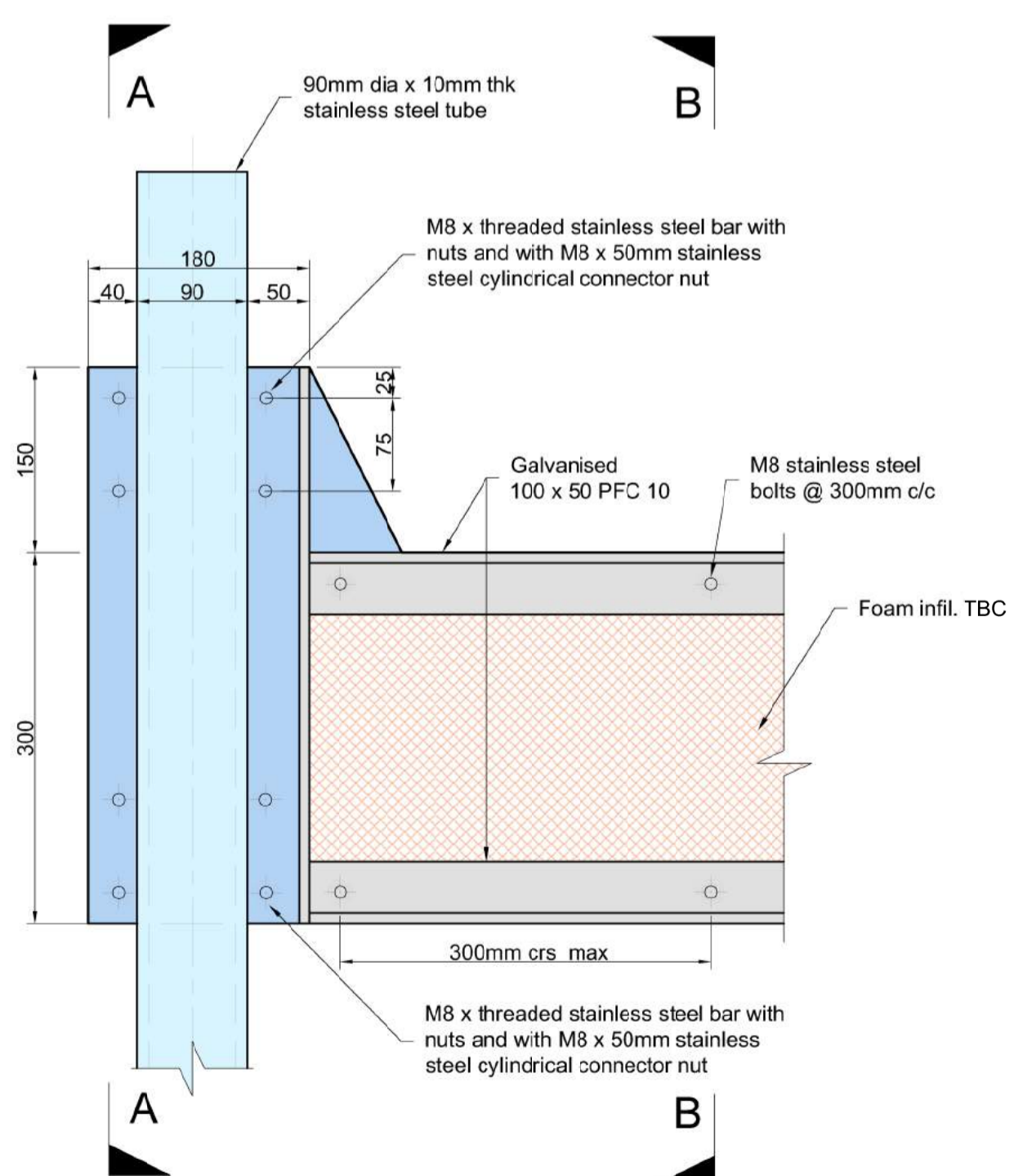
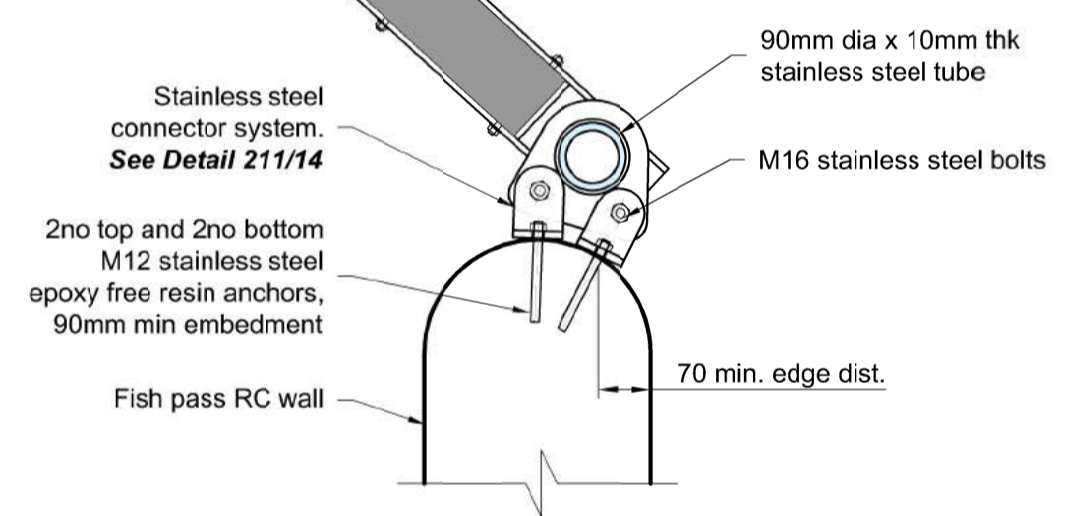
All stainless steel plates to be Grade 316 (1.4401) UNO. All welds 6mm f.p.f.w UNO



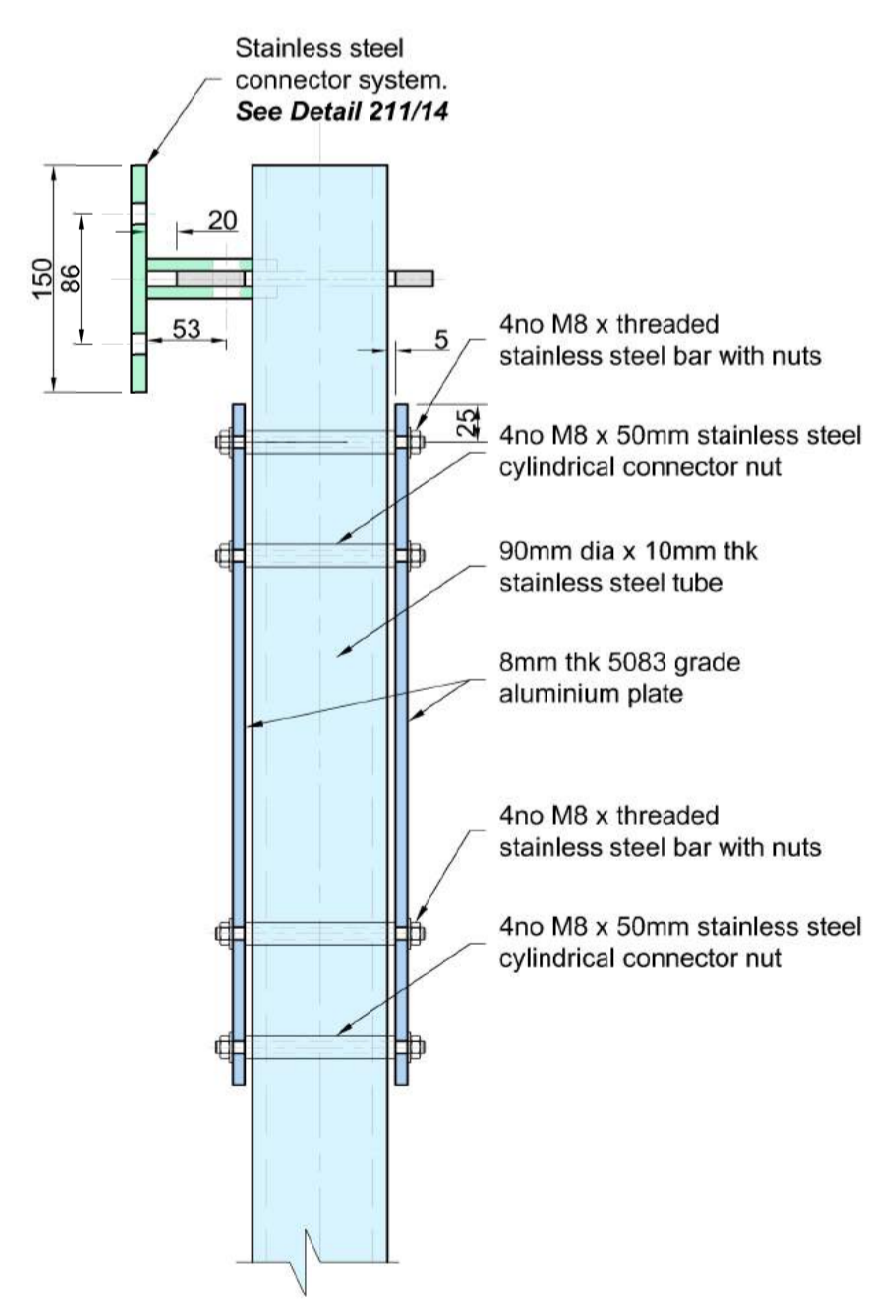
211 / 12 Floating boom - Connector System Details
(1:5)



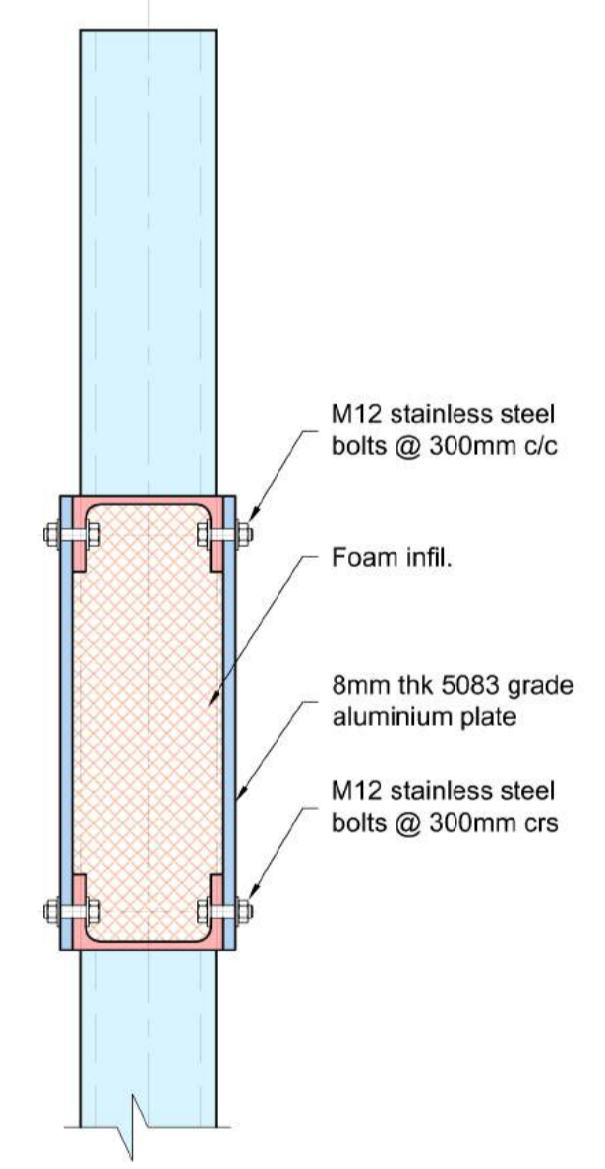
211 / 13 Base plate detail
(1:5)



211 / 14 Floating boom - Long Section
(1:5)



211 / 15 Floating boom - Section A-A
(1:5)



211 / 16 Floating boom - Section B-B
(1:5)

Safety Health & Environmental
Refer to DRA and pre-construction phase plan.

CONSTRUCTION

C1 Managing flow & stage levels in River Exe
-Monitor river levels & EA flood warnings.
-Observe egress and evacuation plan from cofferdam. Do not enter cofferdam during flood flow conditions.

C2 Managing seepage flows through weir
-Monitor seepage and condition of cofferdam.
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-Check appropriate PPE & life jackets, access points and throw lines & life buoys are located on bankside.
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-Erect secure H-ras fencing with lockable gates around the site compound and bankside working area.

E1 Pollution of Watercourse
-Observe 'Guidance for Pollution Prevention 2018'
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PC1	Initial Issue	xx.02.22
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Detailed Design		
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Original Size	A1	Author J.Czyrw
Datum		Checker M. Lakin
Grid		Approver S. Pudwell
© Copyright reserved		
Filename:		
Client		



PROJECT		
Bolham Fish Pass		
TITLE		
Details Sheet 2 of 3		
Drawing No.	Project No.	Issue
211 -	02925	- P01