

Tidal Weir North Gate

Upgrade/Refurbishment

Marine Licence Supporting Statement

July 2019



FAIRHURST

CONTROL SHEET

CLIENT: Glasgow City Council

PROJECT TITLE: Tidal Weir

REPORT TITLE: Marine Licence Supporting Statement

PROJECT REFERENCE: 126177

DOCUMENT NUMBER: 126177/GLA/CIV/MLA

STATUS: DRAFT/~~FINAL~~/~~FOR REVIEW~~

Issue & Approval Schedule		Name	Signature	Date
	Prepared by	Chris Weir	Signed copy held on file	18/07/2019
	Checked by	Rebecca Martin	Signed copy held on file	18/07/2019
	Approved by	Grant Scholes	Signed copy held on file	18/07/2019

Revision Record	Issue	Date	Status	Description	Signature	
	2	20/09/19	DRAFT	Dates revised	By	CW
					Check	CW
					Approve	GSDS
	3				By	
					Check	
					Approve	

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1) Applicant Details

The applicant is:

Mr H Dempsey

Position: Engineering Officer

Glasgow City Council

231 George Street

Glasgow

G1 1RX

Tel: 0141 287 9194

Email: henry.dempsey@glasgow.gov.uk

2) Agent Details

The agent's details are as follows:

Mr G Scholes

Position: Technical Director

Fairhurst

225 Bath Street

Glasgow

G2 4GZ

Tel: 0141 204 8800

Email: grant.scholes@fairhurst.co.uk

*NOTE. At the time of writing, a contractor has not been appointed for the works. Fairhurst are the council's engineering design consultant and have been commissioned to design the works and secure the construction licence. The intention is for the Marine Licence to be transferred to the contractor when the contract is awarded. The contractor will provide more detailed information as required on appointment.

5) Project Details

a) Brief description of the project

On the 29th of August 2017 an incident led to the North gate of the Tidal Weir being damaged. The main areas of damage are; the North end of the gate, North end wheel carriage, South end cast thrust rail and South end supporting concrete on the downstream face of the pier. The proposal is to install a temporary supporting structure, shown in Appendix A, to facilitate repair works to the North end of the North gate by removing the load from the current weir structure.

Temporary Works

The proposed structure will provide temporary stability to the tidal weir gate to facilitate the permanent repair works. The pile group, which will be driven to the bedrock approximately 25 m below river bed level, will comprise of steel tubular sections. Steel sections will be fitted spanning between the pile group and the existing gate structure. An additional steel member will span between the supporting structure and the existing north abutment to provide lateral stability. Following the completion of permanent works the supporting piles will be cut and all of the temporary support structure above bed level will be removed.

Permanent Works

The permanent works will include:

- Replacement of the north end thrust roller carriage assembly;
- Removal and replacement of the damaged thrust rail;
- Repair of the thrust rail support reinforced concrete into the north pier;
- Upgrade of mechanical and electrical systems across all 3 gates.

h) Method statement

The following is provided to give an indication of the works required. The Contractor shall provide detailed method statements on appointment prior to the licence being transferred.

Temporary Support Structure

- Drive 4no. Piles to bed using appropriate marine piling plant. Noise generated from piling is estimated to be 40Hz. Noise/Vibration reduction methods will be implemented.
 - Install steel frame to secure the piles together. A Work vessel will be required to provide operative access.
 - Modify the existing gate steelwork to accept new connections
 - Lift the load bearing truss into place spanning between the tidal weir gate and the supporting piles. It is anticipated that the truss will be installed via a crane on land and subsequent access to the structure will be via a temporary walkway mounted on the truss.
 - Install hydraulic jacks.
 - Install lateral brace member spanning between the load bearing truss and the abutment.
 - Mobilise the structure using the hydraulic jacks to remove the load from the North Support.
-

Dry Working Area

- Inspect and prepare abutment wall as far as practical (remove marine growth). Works will be carried out by divers.
- Install connection plate on a grout bed securing the plate using resin anchors with flush anchor bolts left protruding. Plate will be lifted into place from a crane based on land and then installed by divers.
- Install the temporary damn structure with the bolts left protruding previously. All rubber seals should be compressed sufficiently to prevent water ingress. Works will be carried out by divers

North End repairs

- These works will be carried out within the dry working area with access via the temporary support structure
- Remove existing wheel carriage assembly
- Cut back existing steel work and prepare members for new connections
- Install replacement wheel carriage assembly

South End Repairs

- This section of works is accessible from the existing tidal weir structure. A small work vessel may be required to support operatives with the repairs.
- Cut and remove damaged section of thrust rail
- Break out damaged concrete
- Reinstate supporting concrete as necessary
- Install replacement thrust rail section

All in river works to be completed by 31/04/2020

Works above MHWS. Works are expected to cover the following areas,

- Bridge walking deck
- Generator room
- Existing control room

Mechanical and electrical refurbishment

- Strip out redundant components
- Construct steels to accommodate new motors within bridge
- Install new motor pairs (x3)
- Alter safety guards around existing sprocket housing
- Install new GRP containment to provide fully covered cabling
- Install LED task lighting to each sprocket area
- Upgrade generator room including;
 - Sound deadening protection
 - Paint internal walls and floor
 - Install new LED lighting
 - Install Unistrut frame for controls
 - Make good existing flooring and provide rubber matting in front of motor control centre
- Replace chains on all gates
- Deep clean and removal of grease from complete system

All works to be completed by 31/08/2020

i) Potential impacts and mitigation

A preliminary ecological appraisal was commissioned for the project and subsequently carried out by LUC. The appraisal report is attached in Appendix D. The appraisal concluded that there is unlikely to be a detrimental effect on ecology due to the project.

A specialist ecologist (Mhor Environmental Ltd) have identified fish migration patterns from late July to October and then from January to June. Noise, vibration and lighting during the improvement works could disturb fish within the River Clyde, particularly during migration periods. Further to this, any pollution event or sedimentation occurring as a result of the works, particularly during the in-river works, could result in adverse changes to water quality.

In-river works are planned to take place in October, out with migration times, which greatly mitigates the risks detailed above. Piling is unavoidable, however, to further mitigate the risks, soft start/ramp up or low energy piling techniques will be used as far as is reasonable practicable to reduce noise, vibration and silt disturbance.

Disturbed silt is likely to have an adverse impact when combined with already low oxygen levels. Factors leading to low oxygen levels include warm temperatures and low river flow. Large volumes of disturbed silt are not anticipated however, to reduce the effect of this, piling works will be timed to be carried out in neap tides when oxygen levels are higher (as far as is reasonable practicable).

Guidance for pollution prevention will be followed as will the SEPA best practice guidelines. These included;

- PPG1 Understanding your environmental responsibilities
- GPP 5 Works and maintenance in or near water
- PPG 6 Working at construction and demolition sites
- PPG 7 Safe storage - The safe operation of refuelling facilities
- GPP 21 Pollution incident response planning
- GPP 22 Dealing with spills
- WAT-SG-29 Construction methods

The mitigation methods discussed will be incorporated into the works tender documents. The Contractor will provide information regarding specific mitigation processes as part of their detailed method statement.

6) Deposits and/or Removals

a) Permanent deposits and/or removals

Permanent Works

Type of Deposit/Removal	Deposits		Removals	
	Description	Quantity & dimension (metric)	Description	Quantity & Dimensions (metric)
Steel/Iron	Replacement Thrust Rail	1 No.	Damaged Thrust rail to be removed	1 No.
	Short section to be cut out and replaced. See drawings 126177-PC-010 and 126177-PC-020 for details	Dimensions See drawings Weight 310 kg approx	Short section to be cut out and replaced. See drawings 126177-PC-010 and 126177-PC-020 for details	Dimensions See drawings Weight 310 kg approx
	Replacement Wheel Carriage assembly	1 No.	Existing Wheel Carriage assembly	1 No.
	Wheel Carriage carrying 4*600mm diameter wheels in a frame made up of steel angle sections and plates	Dimensions See drawings Weight 2500 kg approx	Wheel Carriage carrying 4*600mm diameter wheels in a frame made up of steel angle sections and plates	Dimensions See drawings Weight 2500 kg approx
Concrete	Concrete Reinstated	1 No.	Concrete to be removed.	1 No.
	Damaged concrete is to be broken out back to sound concrete and then reinstated to the original profile	Dimensions 0.275m ³ Weight 65 kg approx	A section of the abutment is damaged and is to be broken out. See photograph XX and drawing 126177-PC-0010 for details	Dimensions 0.275m ³ Weight 65 kg approx

b) Method of delivery of deposits

Method of delivery for all materials will be included in the contractor method statements. It is anticipated that materials will be primarily delivered by road although barge deliveries may be proposed.

d) Temporary deposits

Temporary Works

Type of Deposit	Description	Quantity & Dimensions (metric)	
Steel/Iron	Pile group to temporarily support the gate structure	4	No.
		610x20thk 30m long piles	Dimensions
		35	Weight (tonnes)
	Load bearing truss spanning from the gate to the pile group	1	No.
		8m span. See drawings for section details	Dimensions
		3.5	Weight (tonnes)
	Steel Plate Assembly to create dry working area	1	No.
		See drawings for details	Dimensions
		3.4	Weight (tonnes)

10) Scotland's National Marine Plan

Scotland's National Marine Plan has been considered in relation to these works. The repair works to the Tidal Weir are critical to retain the upstream water level of the River Clyde which provides amenity to the local community. Maintaining a clean, healthy, safe, productive and diverse watercourse are priority objectives and have been considered for all stages of the repair works.

Specific comments on Scotland's National Marine Plan General policies:

GEN 2 Economic Benefit

The proposed works are being funded by Glasgow City Council. The structural repair works have been designed with minimal intervention by replacing only the necessary components to restore the functionality of the North Gate. This significantly reduces the costs when compared to a full replacement and lessens the impact on the Council spending.

GEN 3 Social Benefit

As a result of the damage to the North Gate the upstream water level dropped significantly, exposing the riverbanks which subsequently failed. The failure of the banks reduced amenity to the riverside communities as public walkways/cycle paths were lost or damaged. The proposed repair works greatly reduce risk of a repeat failure. This is a crucial step in enabling future regeneration works to reinstate the damaged banks which will directly benefit the surrounding community. There is also a local rowing club that utilise this section of the River Clyde for sport and recreation. When fully functional, the Tidal Weir ensures this section of the River Clyde is accessible and reduces the risk to users.

GEN 6 Historic Environment

The Tidal Weir is category B listed structure. The structural repair works have been designed to retain as much of the existing structure as possible as well as modernising the control systems which will promote the longevity of the Tidal Weir.

GEN 7 Landscape/seascape

Several areas of the upstream embankments were damaged as a result of the damage to the Tidal Weir resulting in a loss of landscape including footpaths, cycle paths and viewing platforms. Returning the function of the Weir is a crucial step in restoring the local landscape and enabling future regeneration works.

GEN 13 Noise

Noise during normal operation of the weir is minimal and not likely to have an adverse impact. The effect of noise arising from the works on species in the surrounding area has been considered. Although noise is unavoidable, specific piling techniques will be utilised to reduce noise and the works will be scheduled to reduce the impact of any residual noise. Details of the works have been submitted to the Noise Registry.

12) Consultation

(Summary of consultation correspondence with stakeholders/other bodies)

Marine Scotland

Ecologist – Landuse

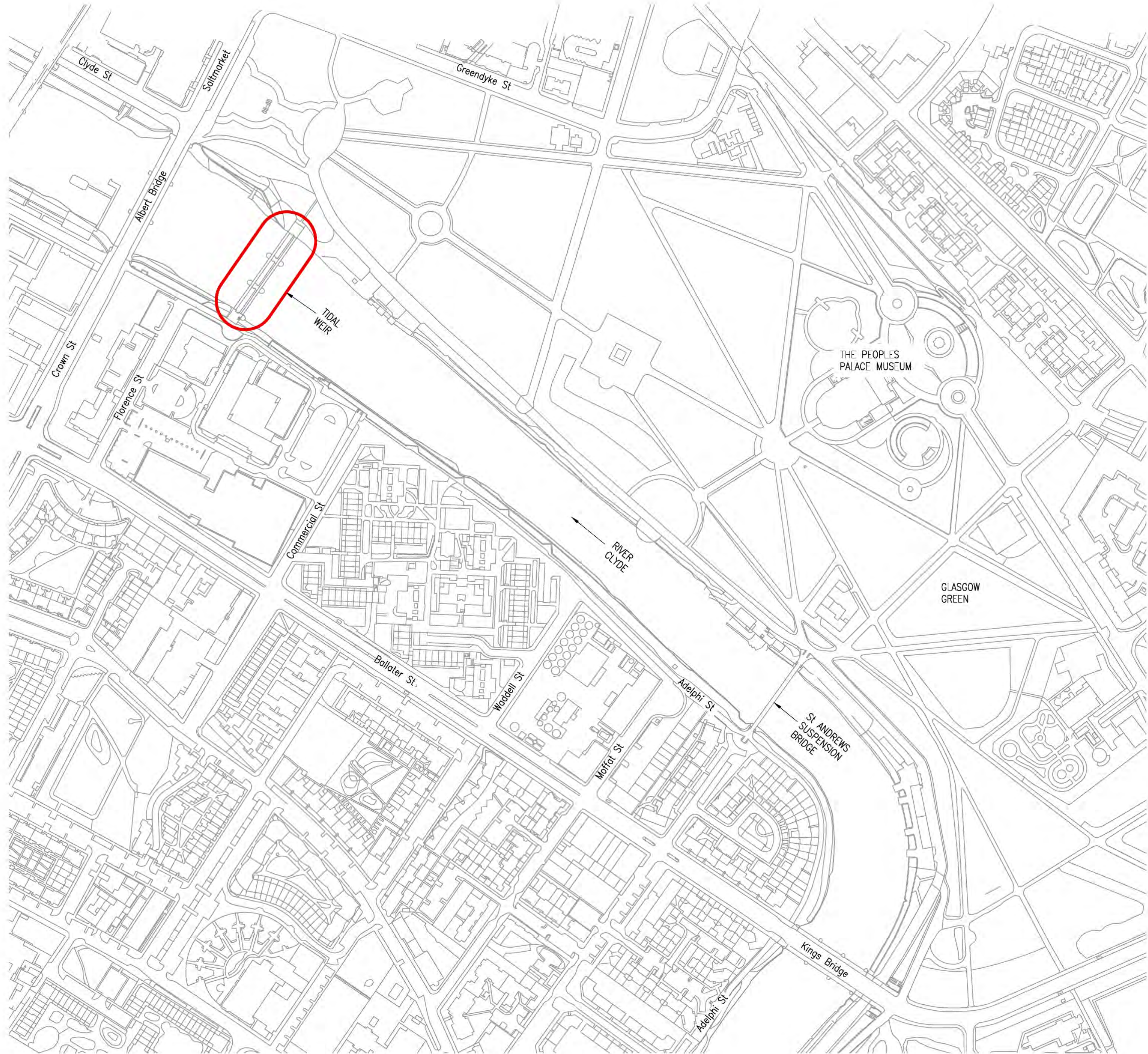
SNH – via Landuse

Mhor Environmental Ltd

Appendix A

Drawings

Drawing Number	Drawing title
126177-PC-0001	Location plan
126177-PC-0002	Existing general arrangement and details
126177-PC-0003	Existing plan and section
126177-PC-0004	Proposed works – General arrangement
126177-PC-0005	Proposed works – Temporary frame
126177-PC-0006	Proposed works – Temporary frame details
126177-PC-0010	Location of defects
126177-PC-0020	Replacement of steel fixings
126177-PC-0030	Location of works



Do not scale from this drawing.
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION
IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.
RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.
CONSTRUCTION
DEMOLITION
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Rev.	Date	Description	Drawn	Checked	Approved

Notes:

DRAFT

Client:



Project Title:

TIDAL WEIR

Drawing Title:

LOCATION PLAN

FAIRHURST

225 Bath Street,
GLASGOW, G2 4QZ
Tel: 0141 204 8800 Fax: 0141 204 8801

Scale at A1:
1:2500

Status:
Preliminary

Drawn:
GAM

Checked:
CW

Approved:
GSDS

Date:
11/01/2019

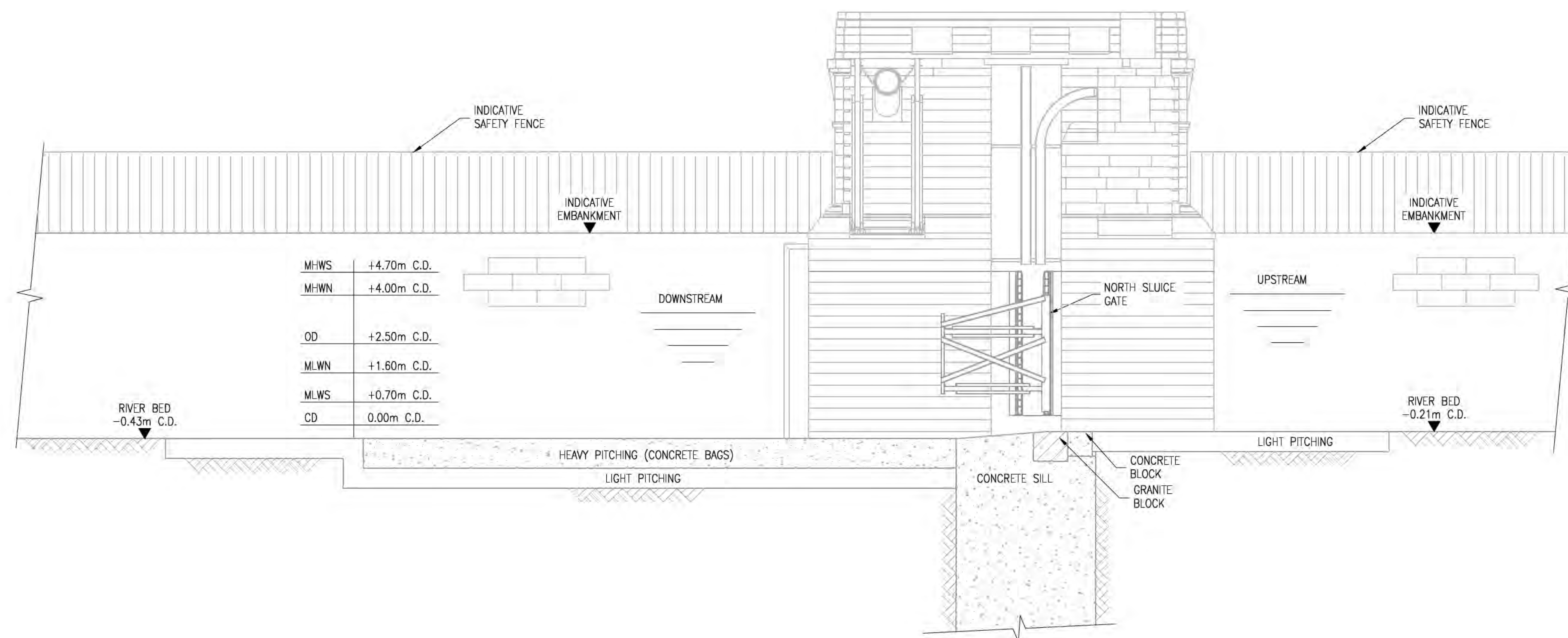
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11/01/2019

Date:
11/01/2019

Drawing No.:
126177-PC-0001

Revision:
-

Rev



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Project Title:
TIDAL WEIR

Drawing Title:
EXISTING PLAN AND SECTION

FAIRHURST

225 Bath Street,
GLASGOW, G2 4GZ
Tel: 0141 204 8800 Fax: 0141 204 8801

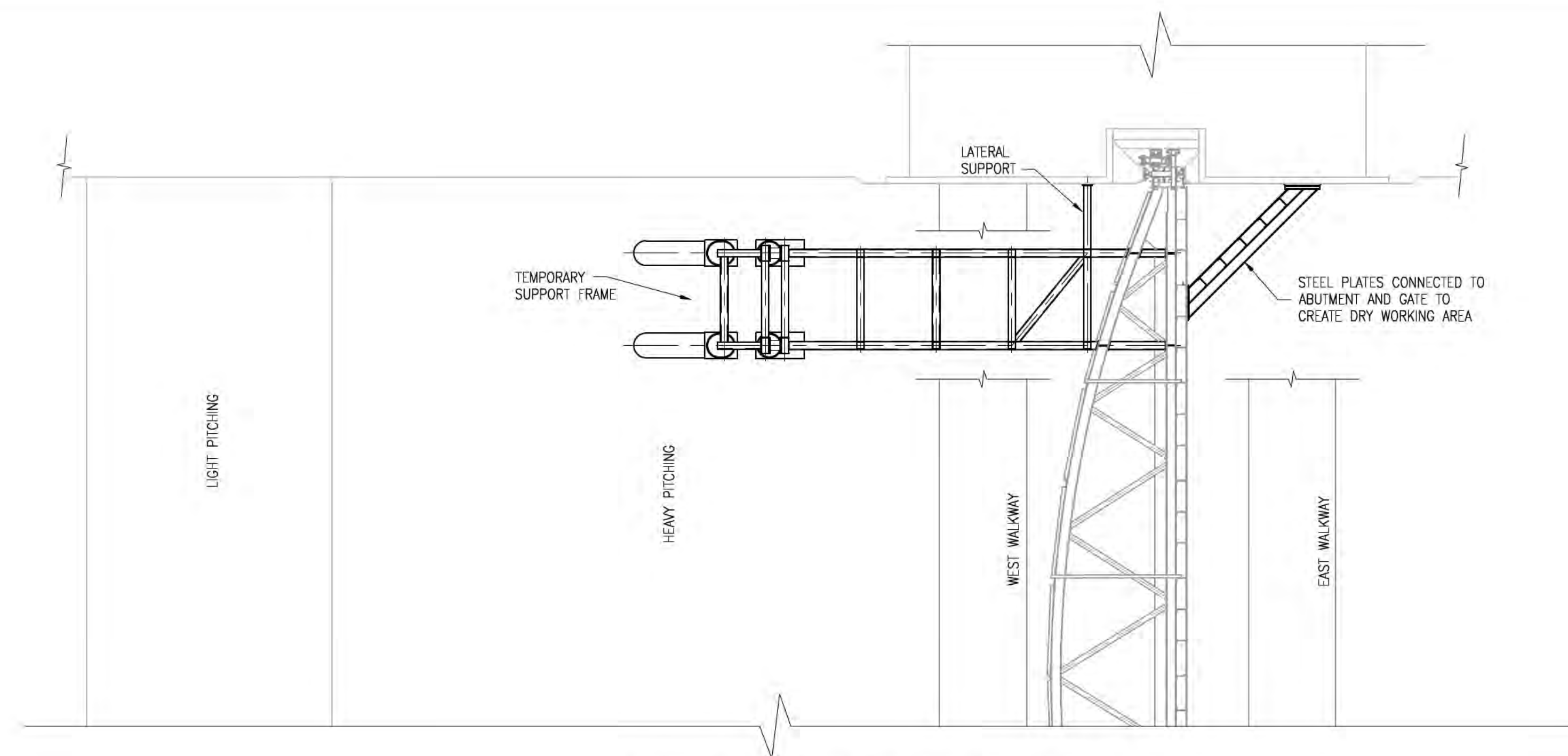
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GAM	CW	GSDS

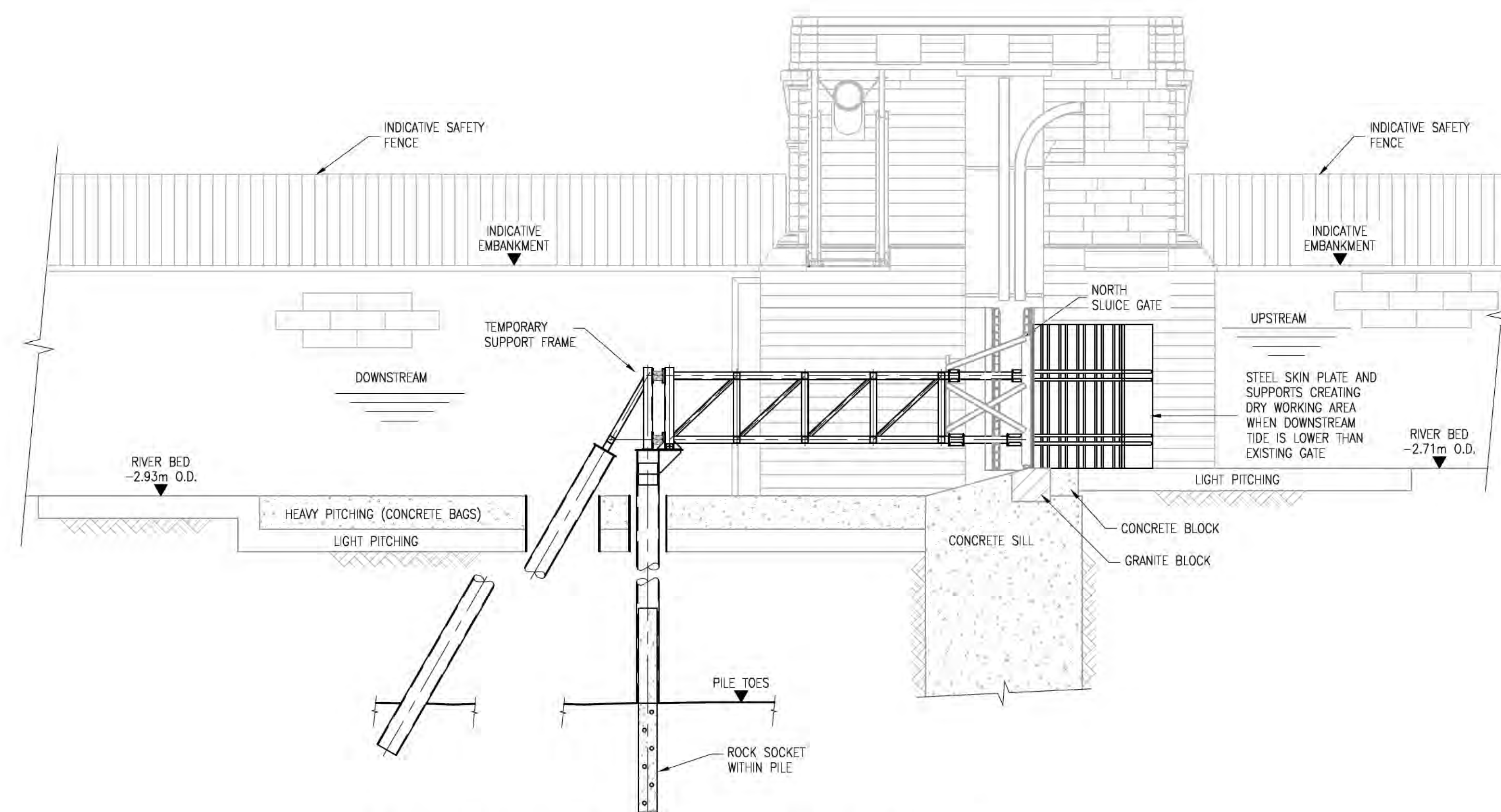
Date:	Date:	Date:
11/01/2019	11/01/2019	11/01/2019

Drawing No.:	Revision:
126177-PC-0003	-

Rev.	Date	Description	Drawn Checked Approved



PLAN AT NORTH GATE SCALE 1:100



TYPICAL SECTION THROUGH NORTH GATE SCALE 1:100

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Rev.	Date	Description	Drawn	Checked	Approved
B	28/02/19	GENERAL REVISIONS	GAM	CW	GSDS
A	26/02/19	TEMPORARY FRAME REVISED AND ROCK SOCKET ADDED	GAM	CW	GSDS

DRAFT

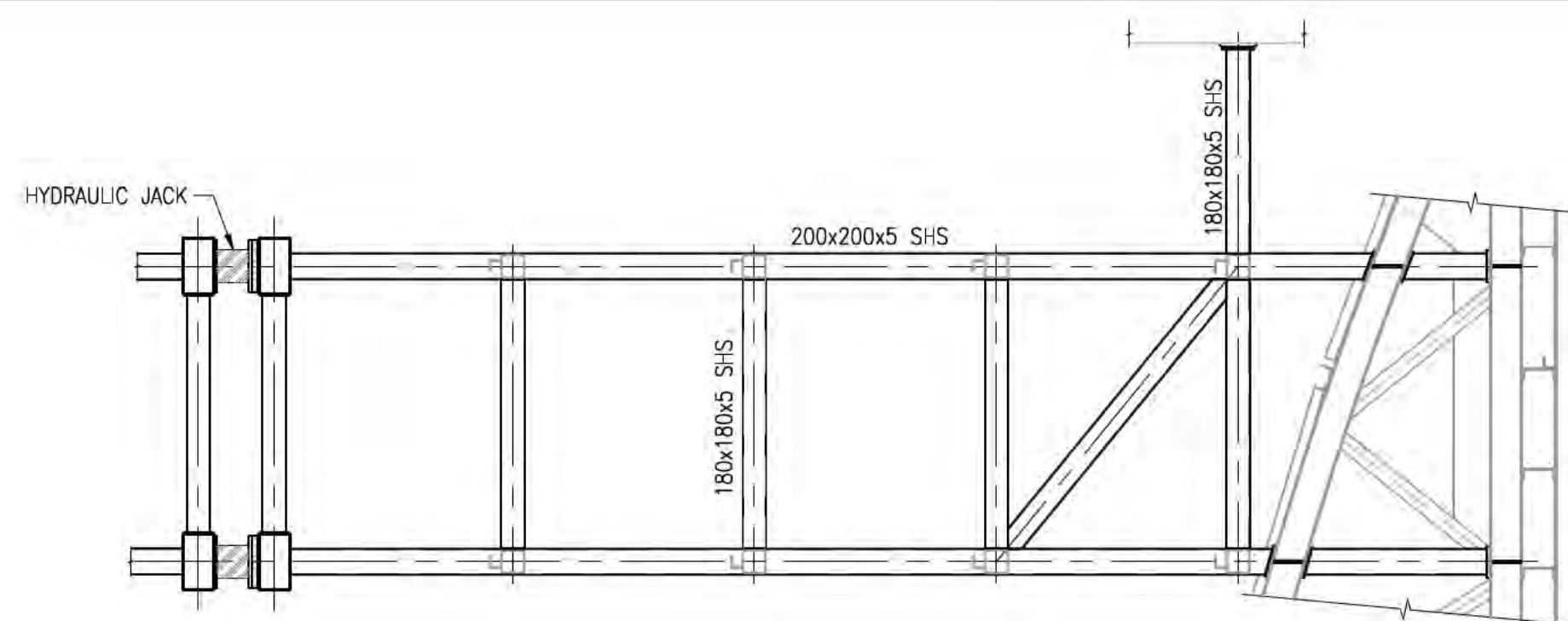


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Drawing Title:	PROPOSED WORKS GENERAL ARRANGEMENT

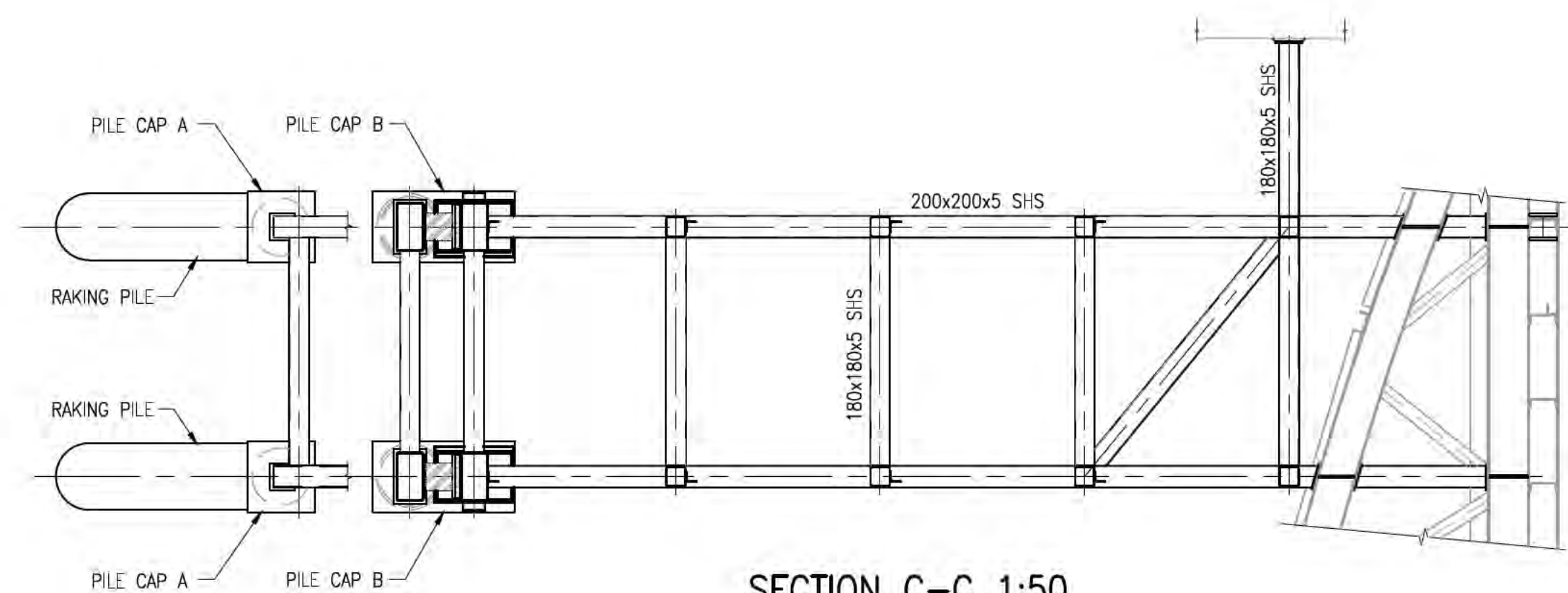
FAIRHURST

225 Bath Street,
 GLASGOW, G2 4GZ
 Tel: 0141 204 8800 Fax: 0141 204 8801

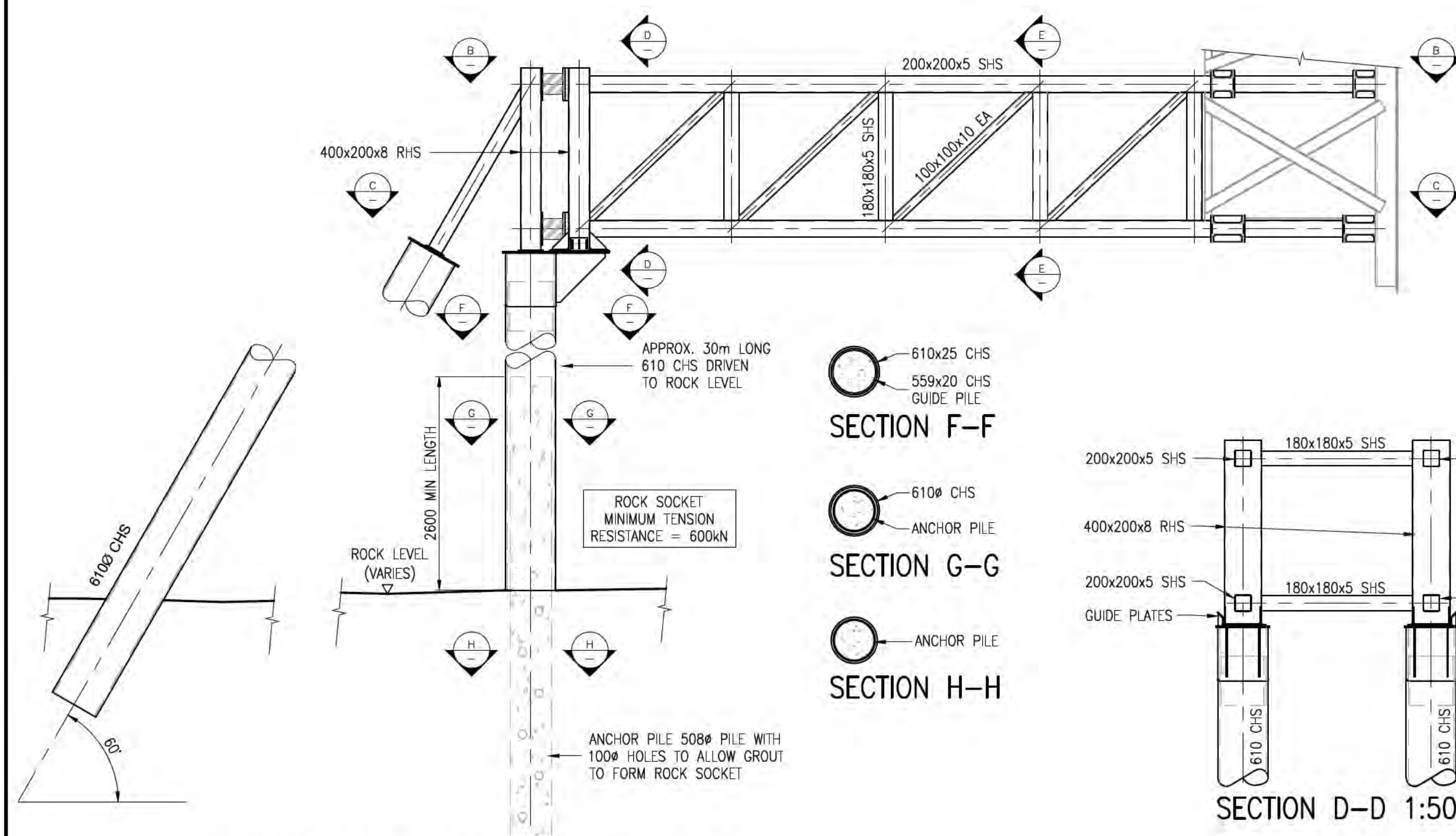
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Drawn: GAM	Checked: CW	Approved: GSDS	
Date: 11/01/2019	Date: 11/01/2019	Date: 11/01/2019	
Drawing No.: 126177-AIP-0004			Revision: B



SECTION B-B 1:50



SECTION C-C 1:50

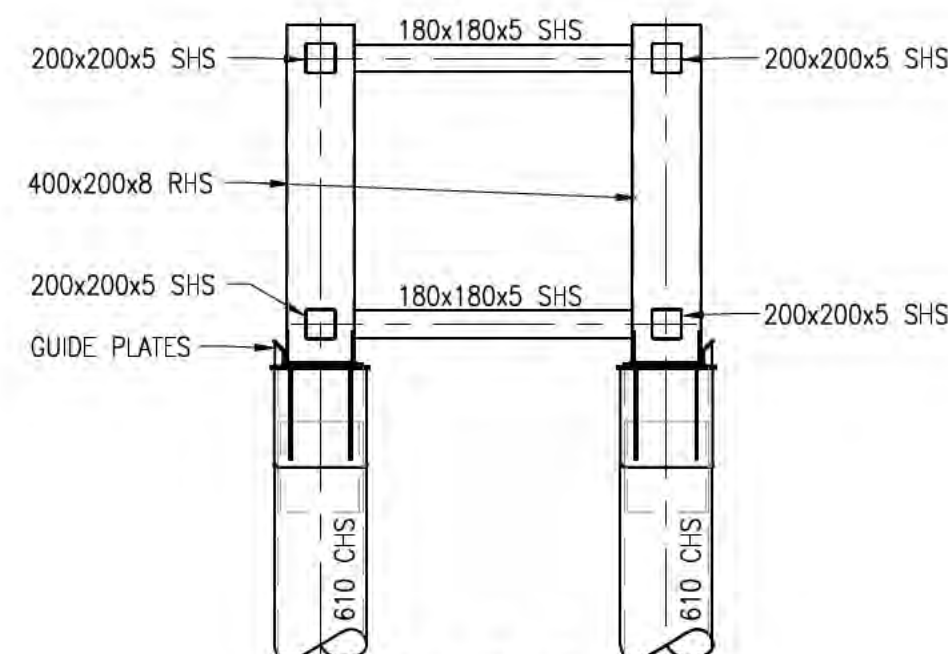


SIDE ELEVATION OF PROPOSED FRAME 1:50

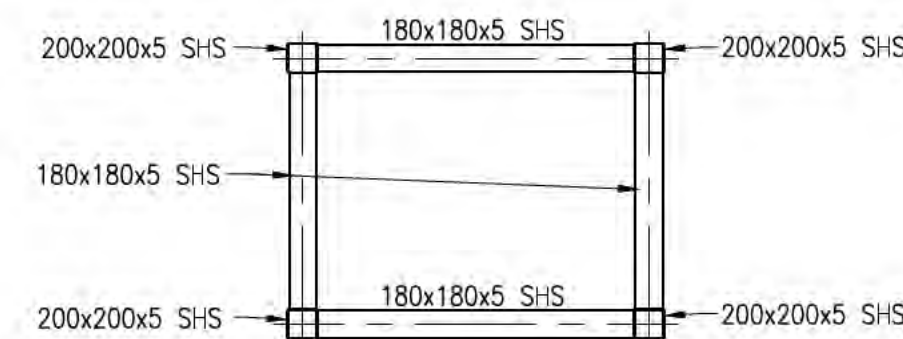
SECTION F-F
610x25 CHS
559x20 CHS
GUIDE PILE

SECTION G-G
610mm CHS
ANCHOR PILE

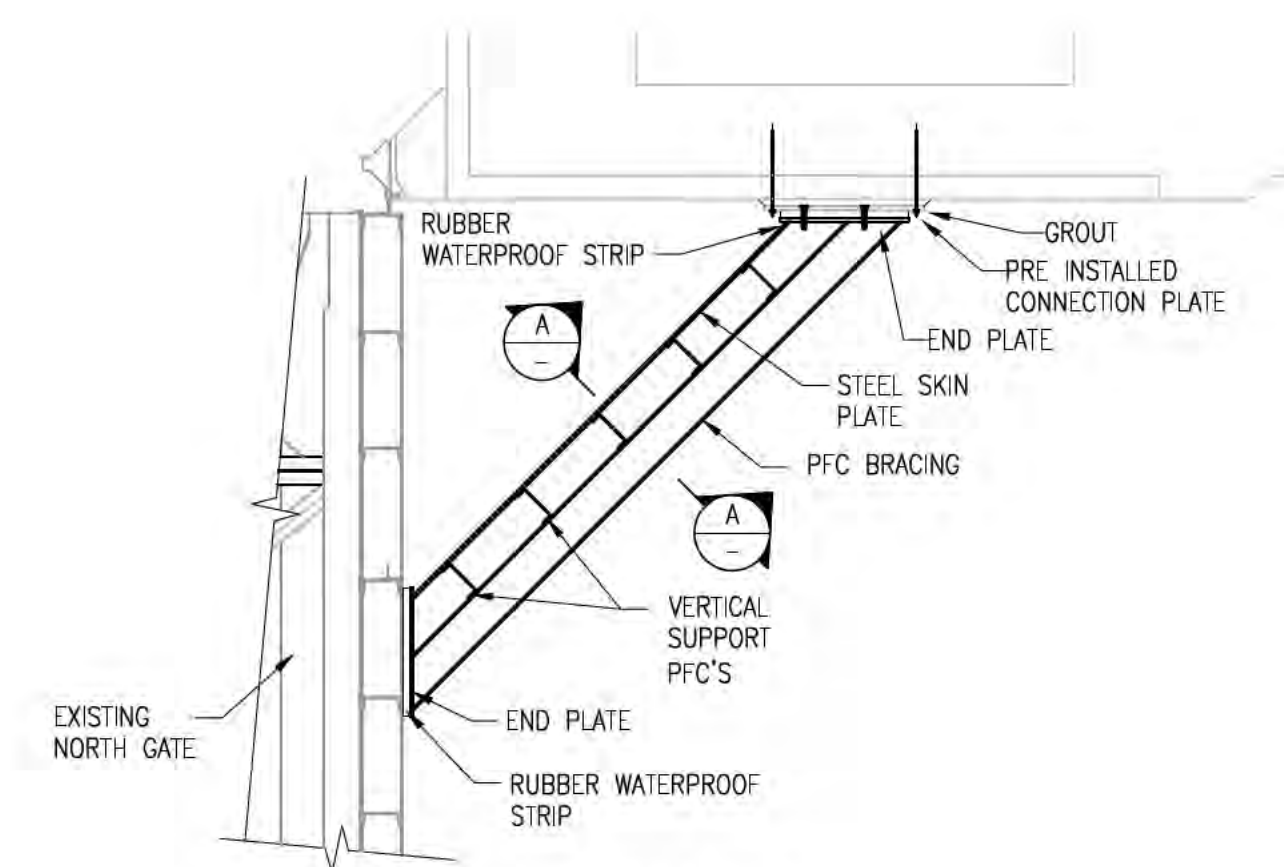
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ANCHOR PILE



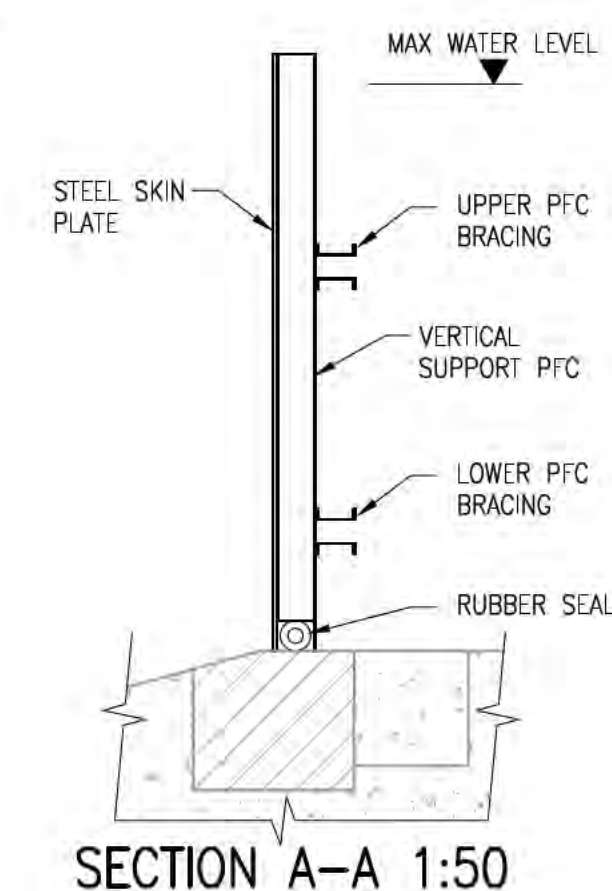
SECTION D-D 1:50



SECTION E-E 1:50



PLAN OF PROPOSED DRY WORKING AREA 1:50



SECTION A-A 1:50

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Rev.	Date	Description	Drawn	Checked	Approved

Notes:

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Client:



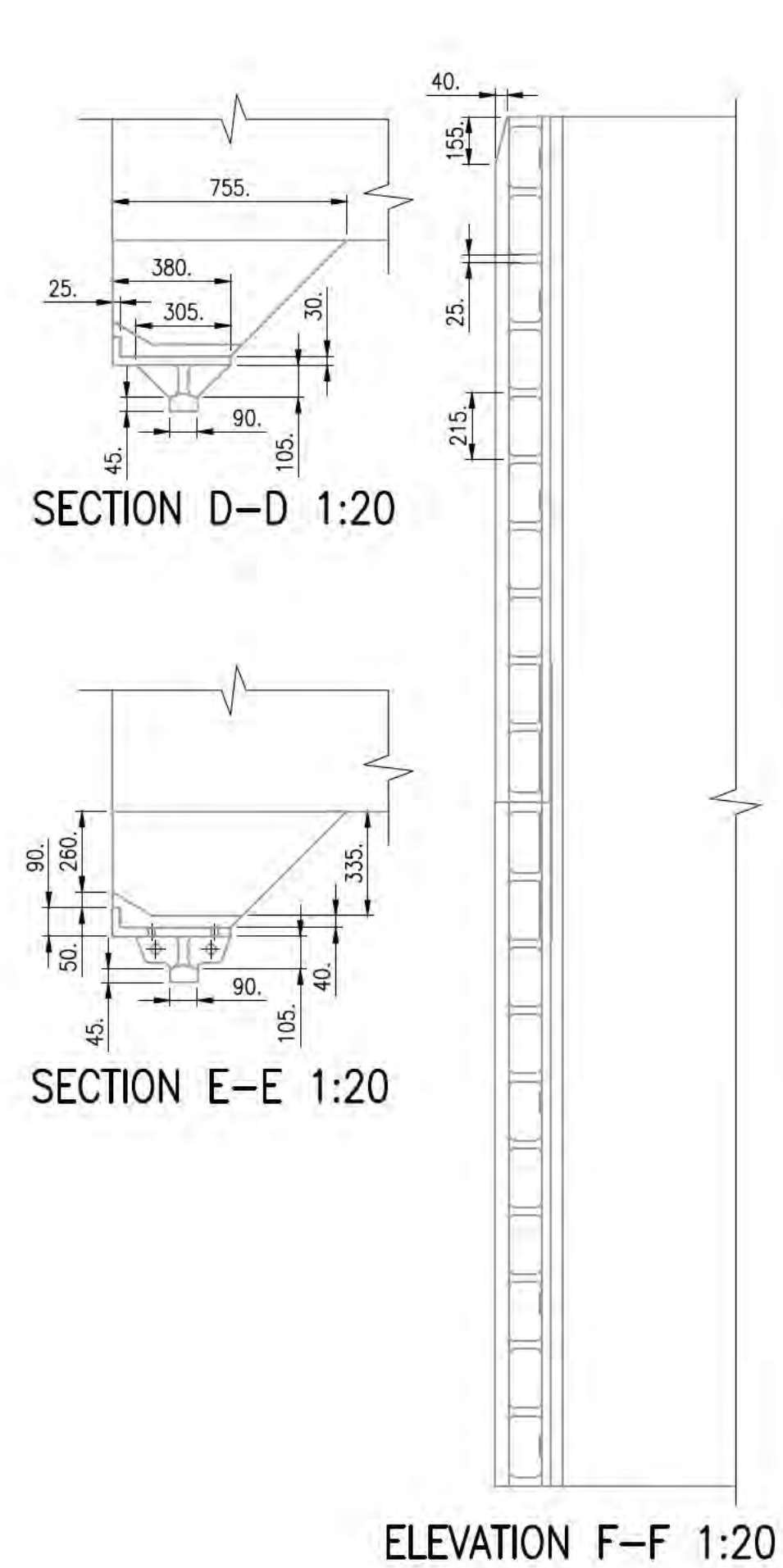
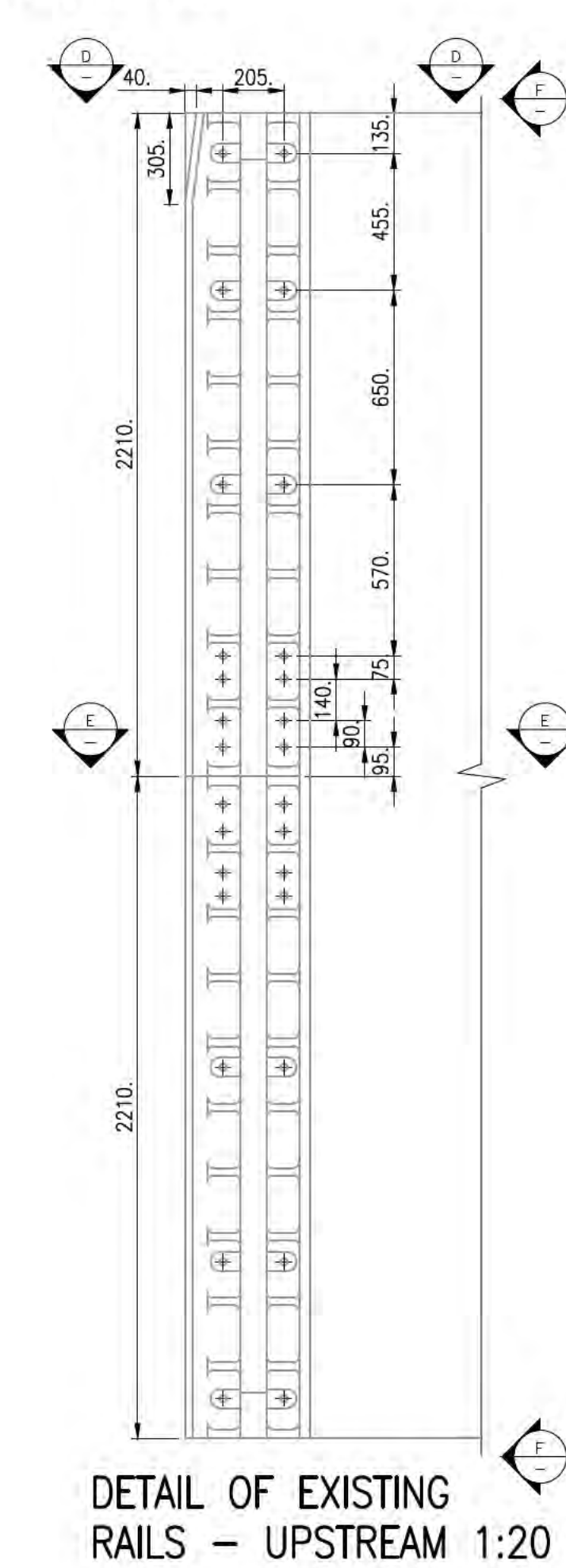
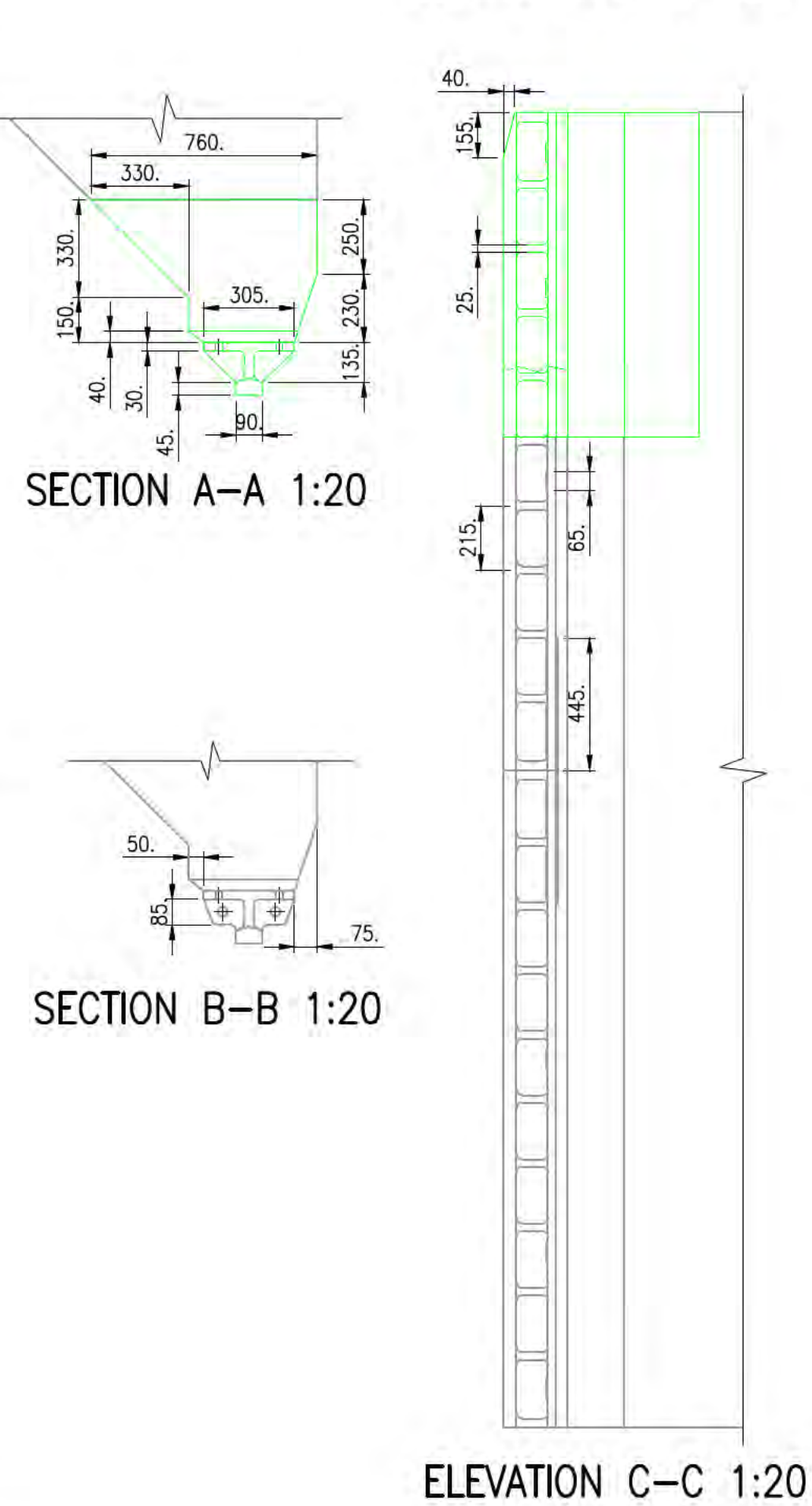
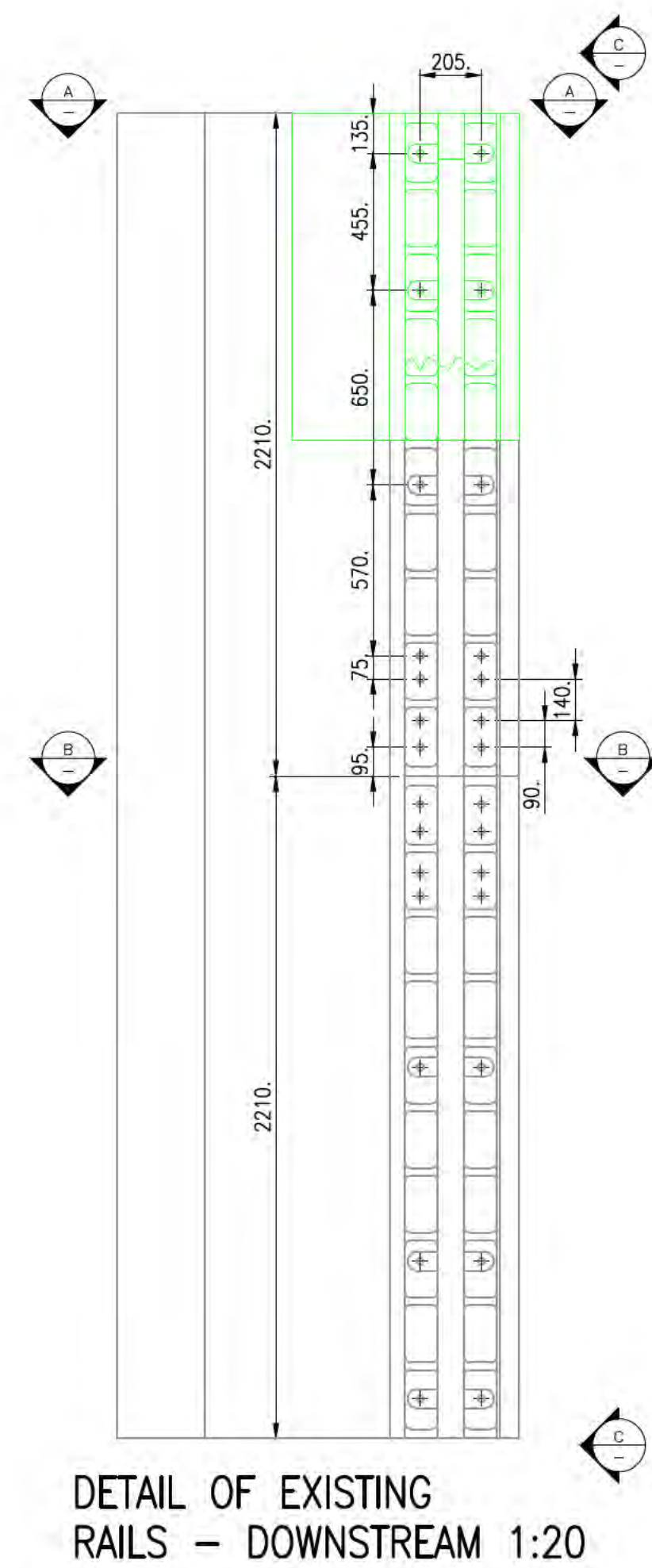
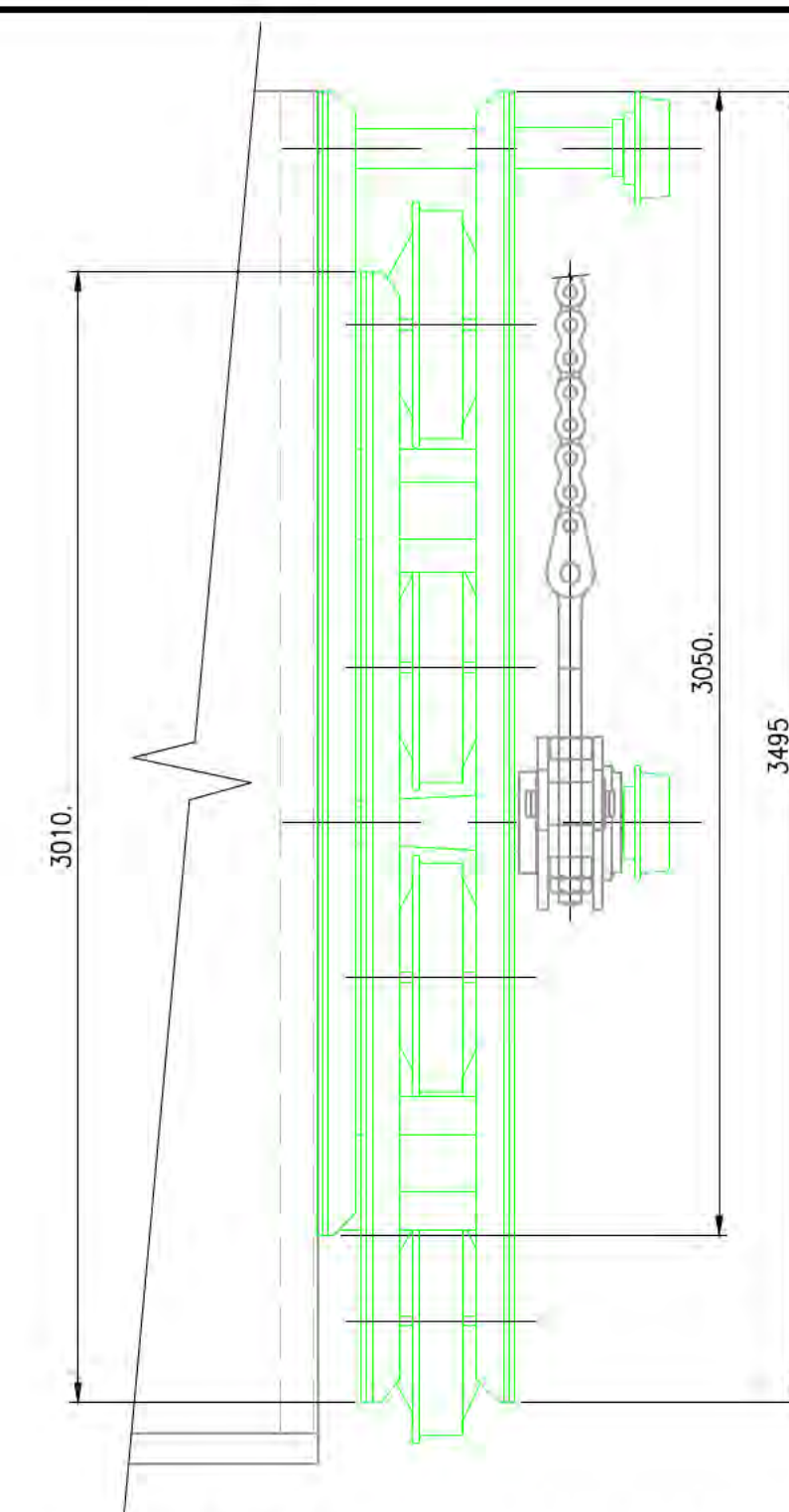
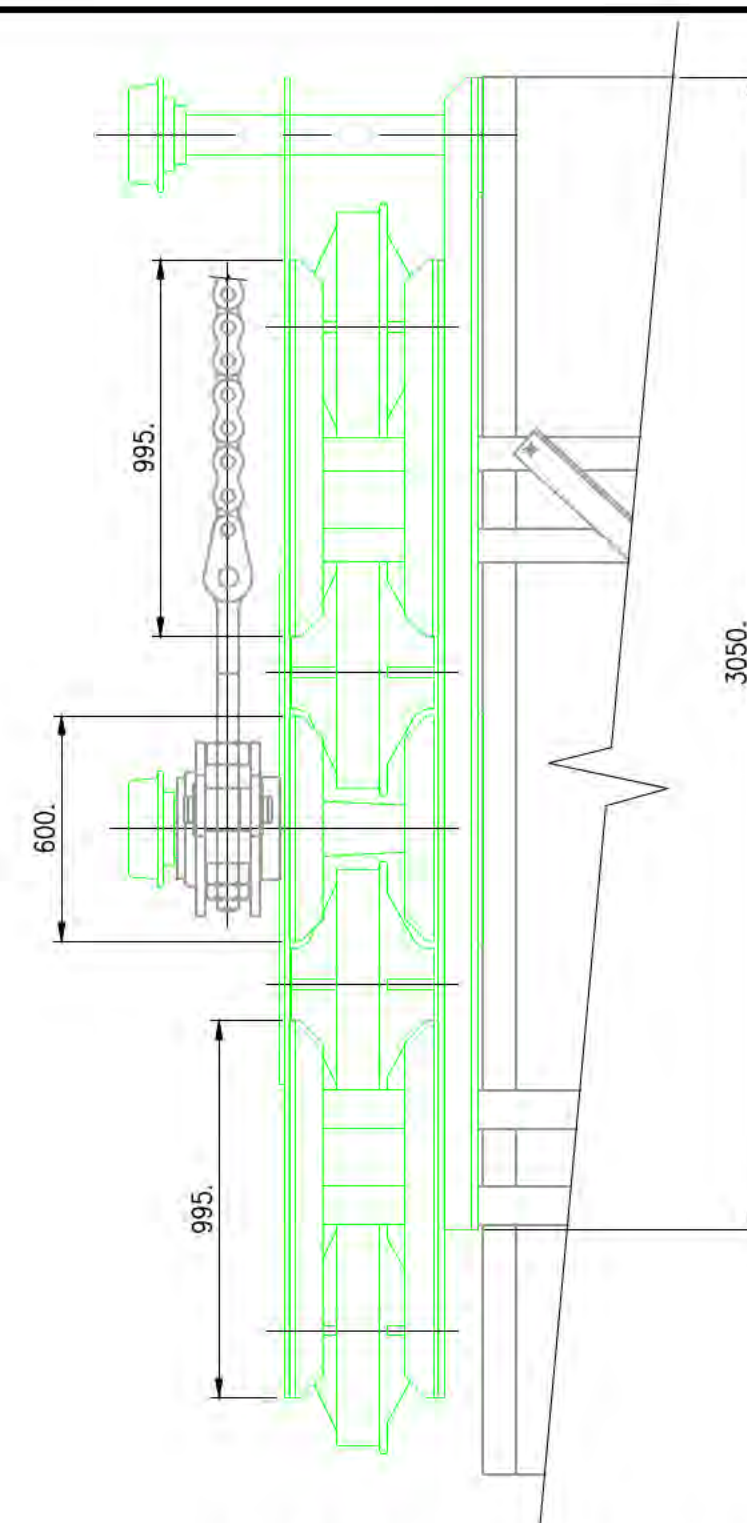
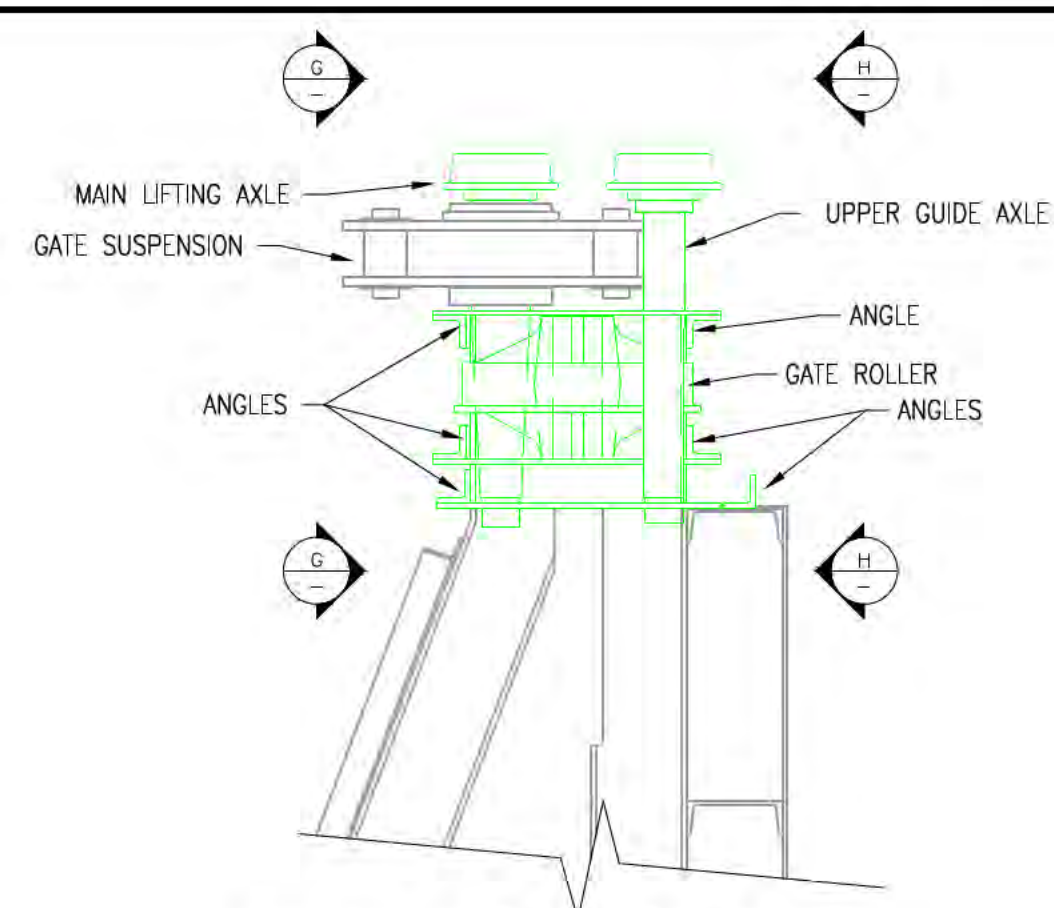
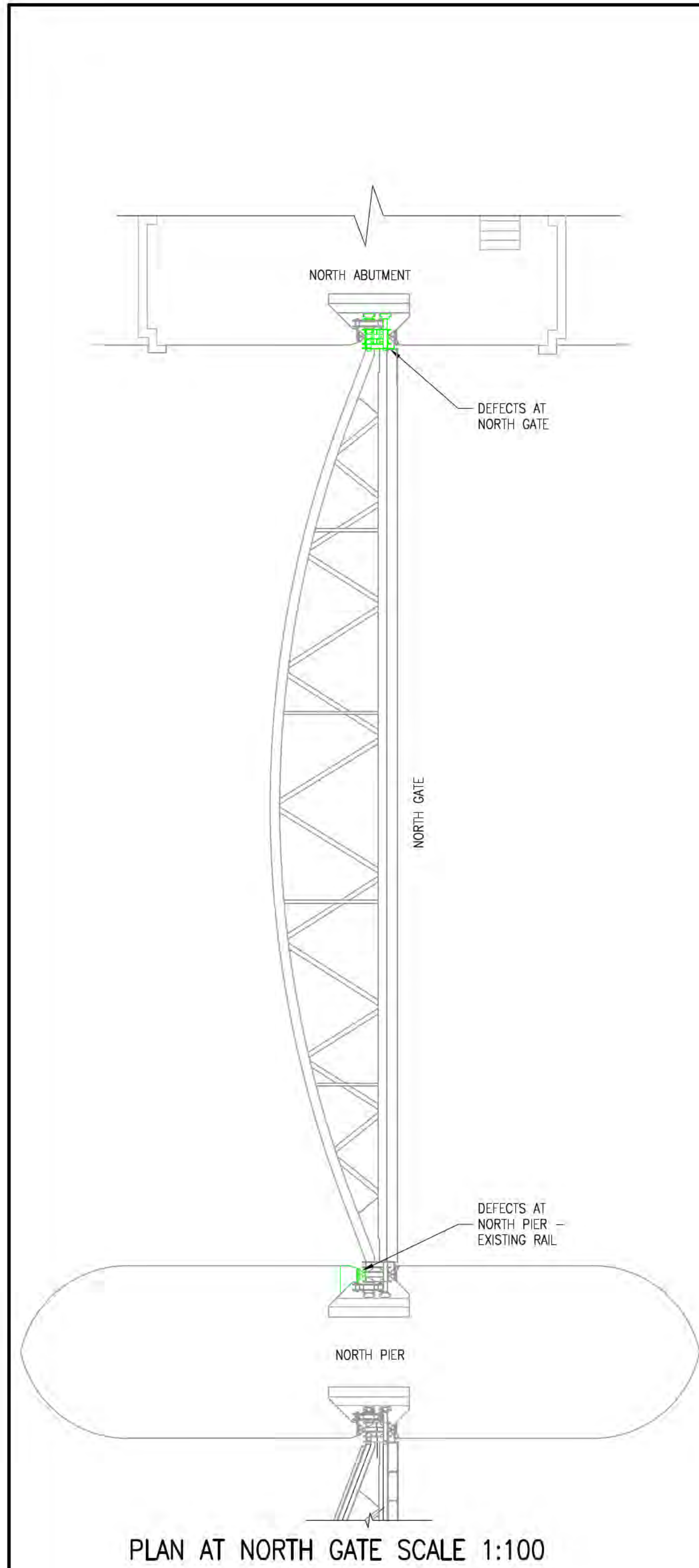
Project Title:

TIDAL WEIR

Drawing Title:

PROPOSED WORKS
TEMPORARY FRAME

FAIRHURST			
225 Bath Street, GLASGOW, G2 4GZ Tel: 0141 204 8800 Fax: 0141 204 8801			
Scale at A1: AS SHOWN		Status: Preliminary	
Drawn: GAM	Checked: CW	Approved: GSDS	
Date: 28/02/2019	Date: 28/02/2019	Date: 28/02/2019	
Drawing No.:		Revision:	
126177-PC-0005		-	



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Rev.	Date	Description	Drawn	Checked	Approved

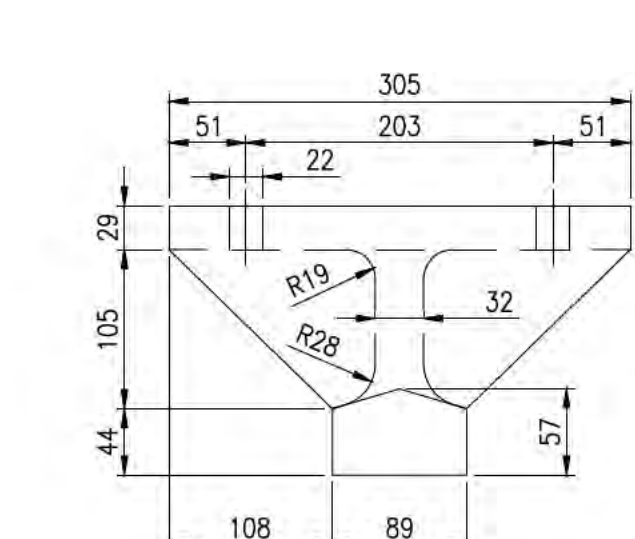
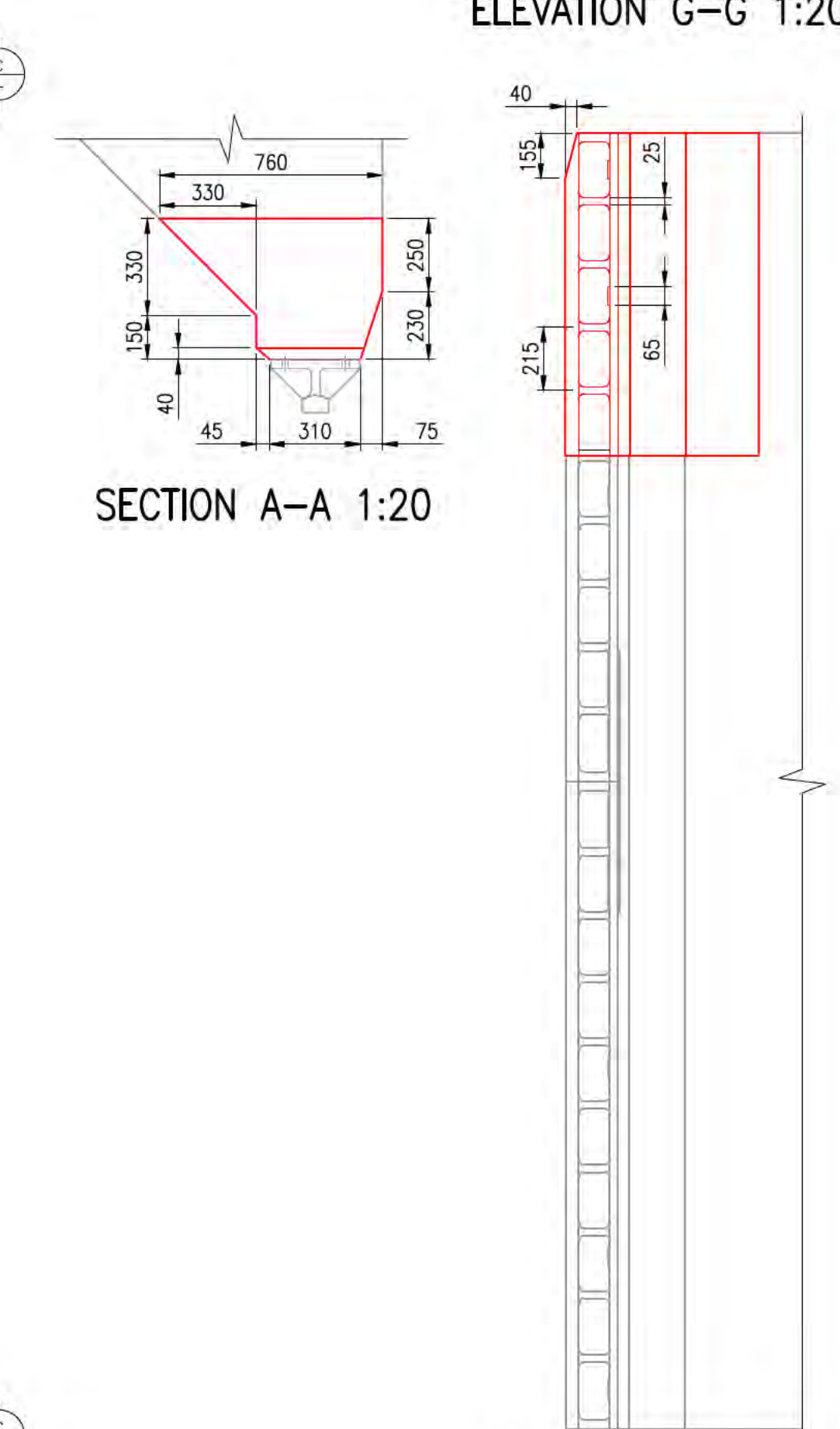
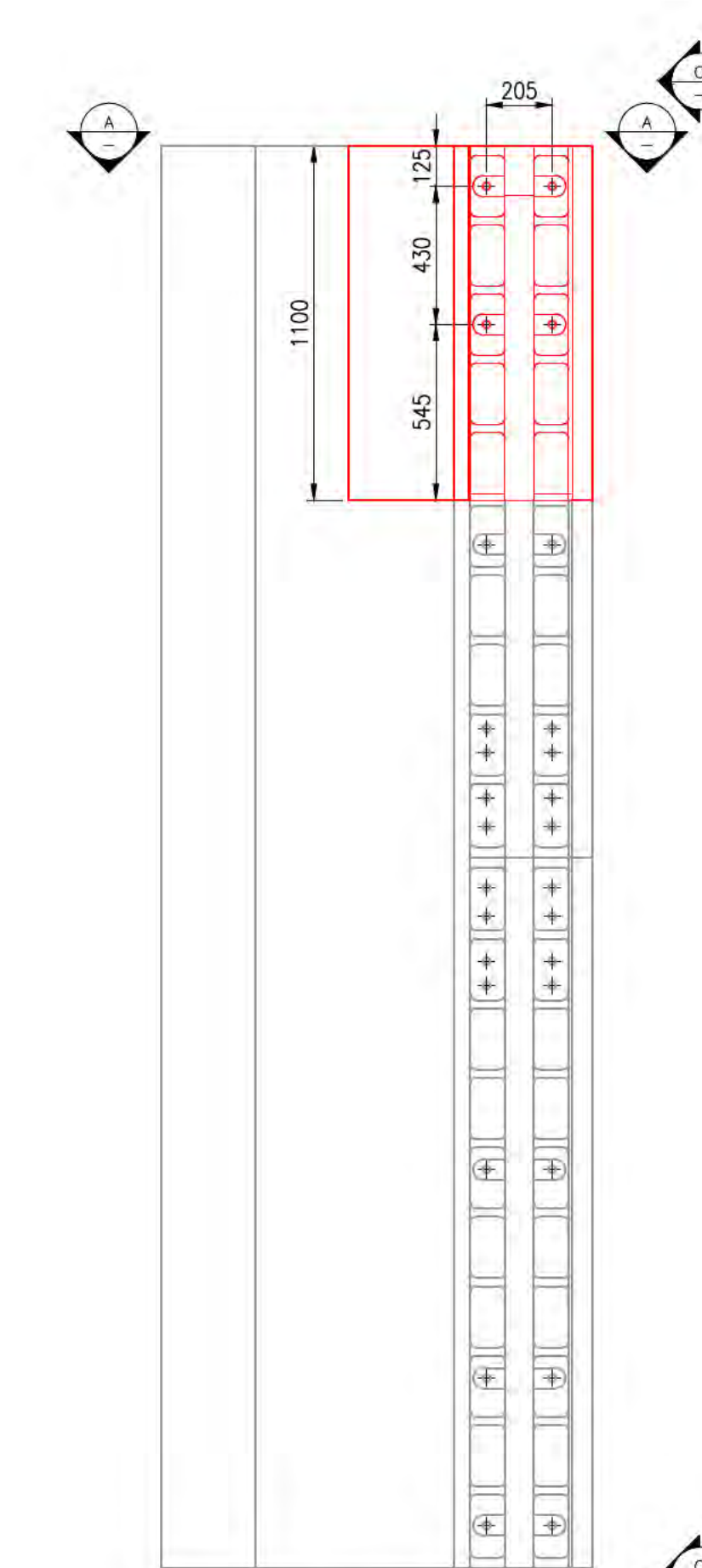
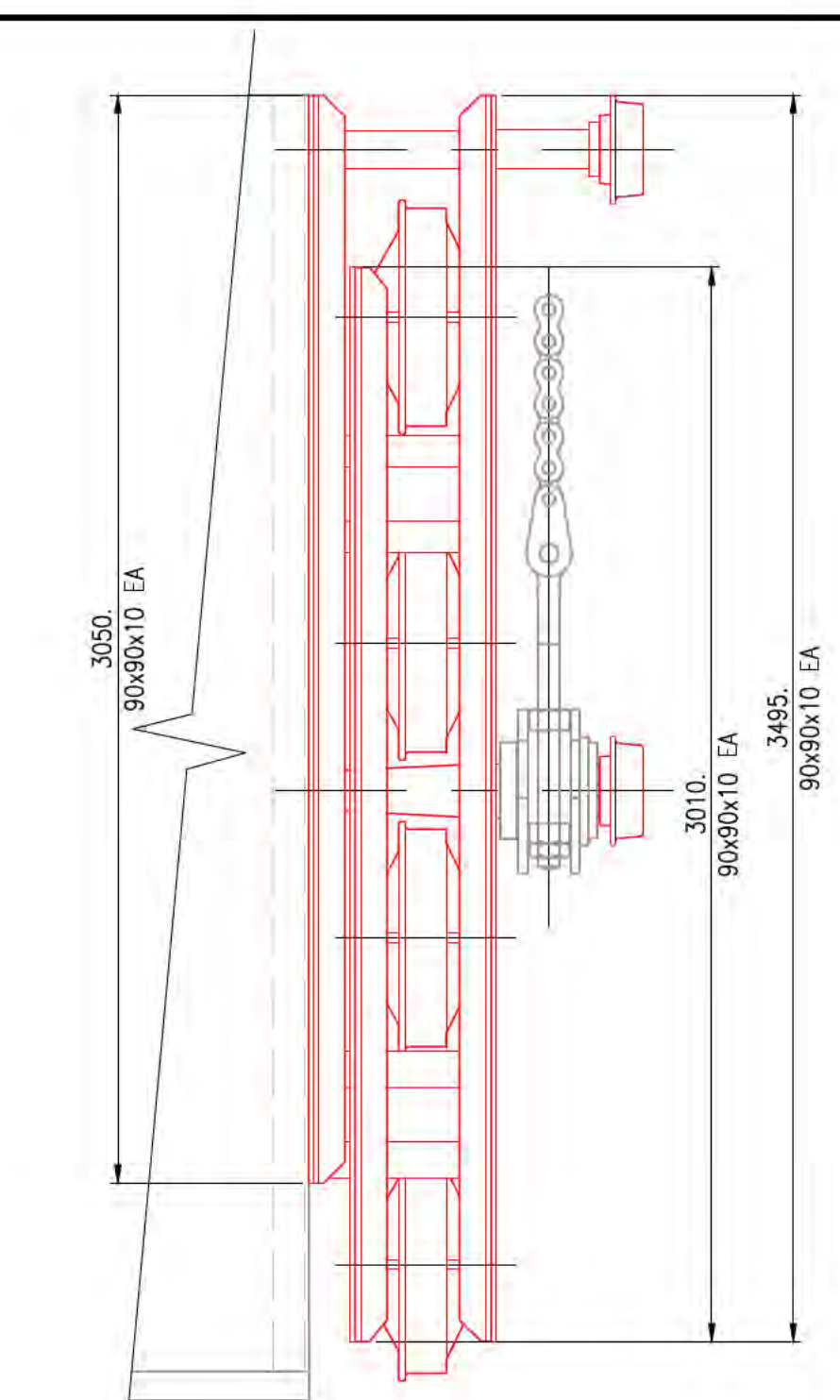
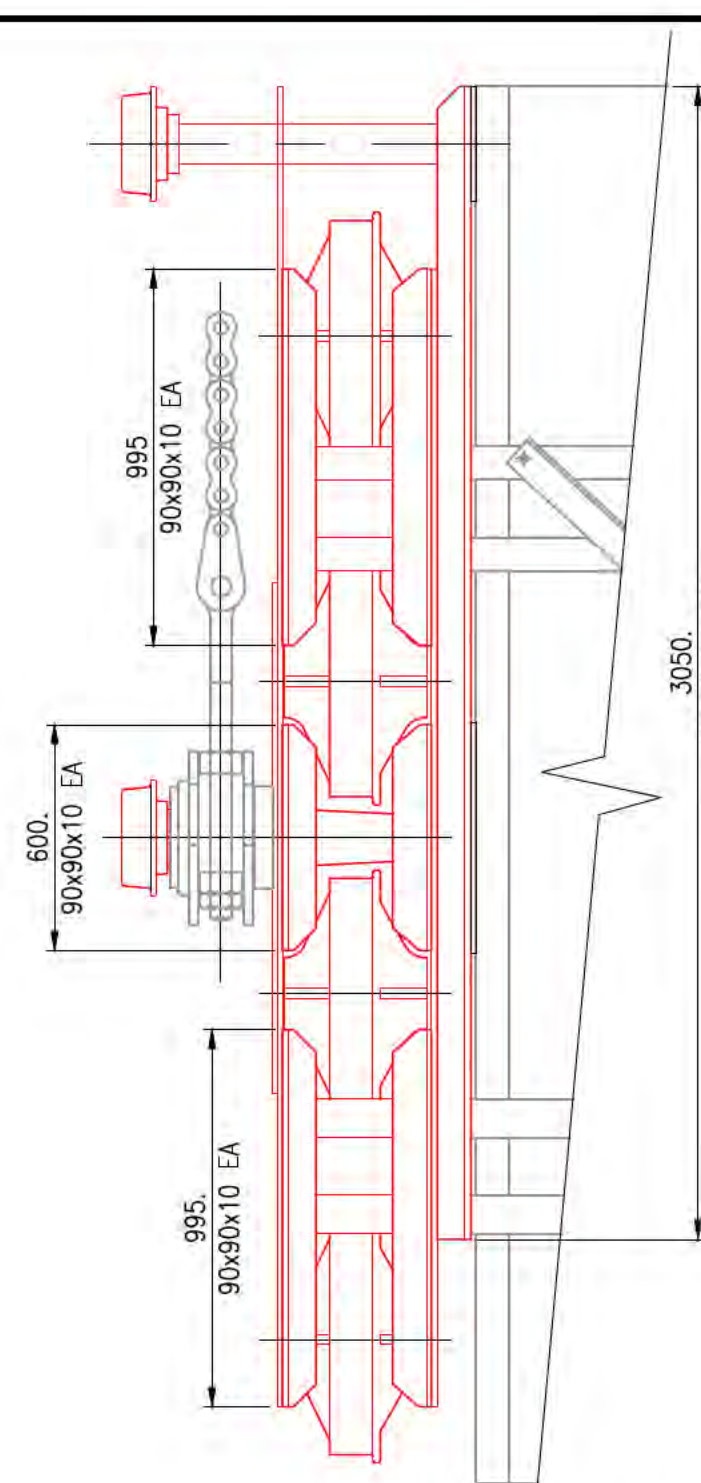
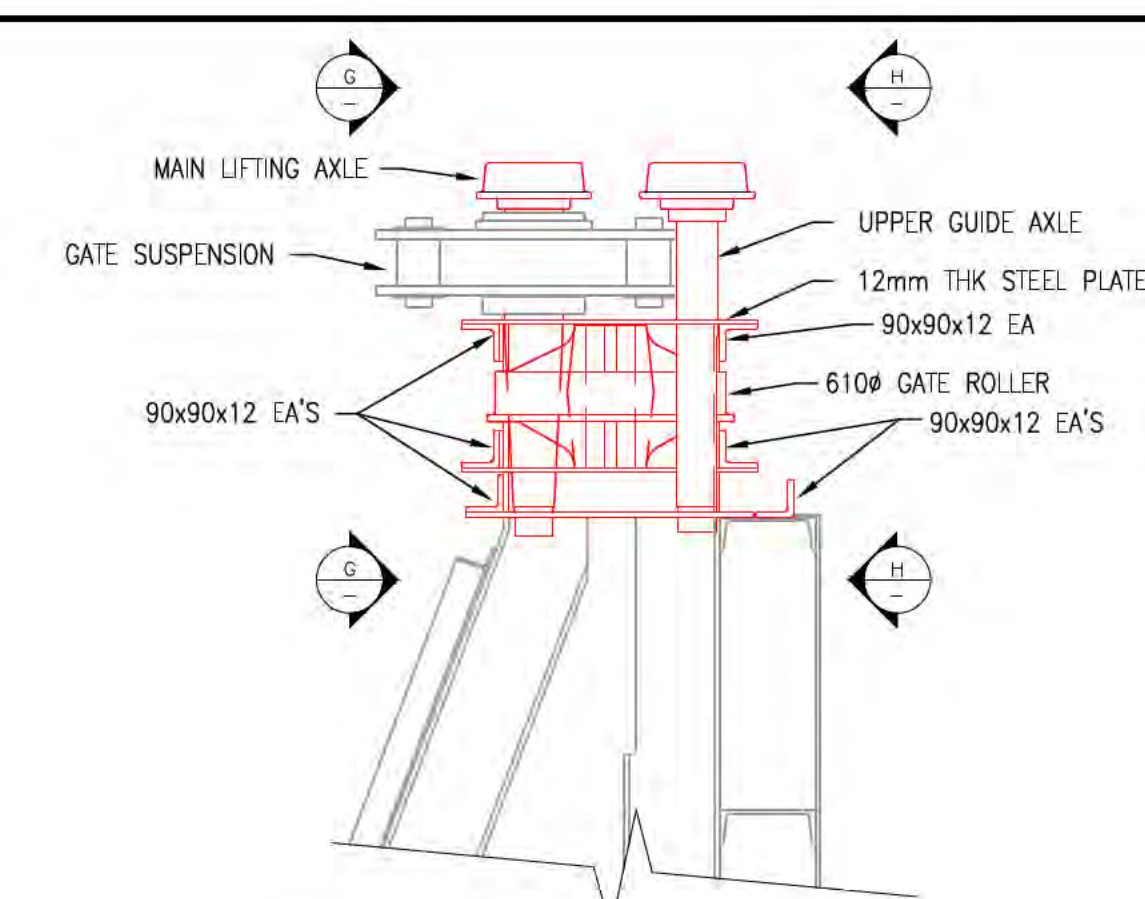
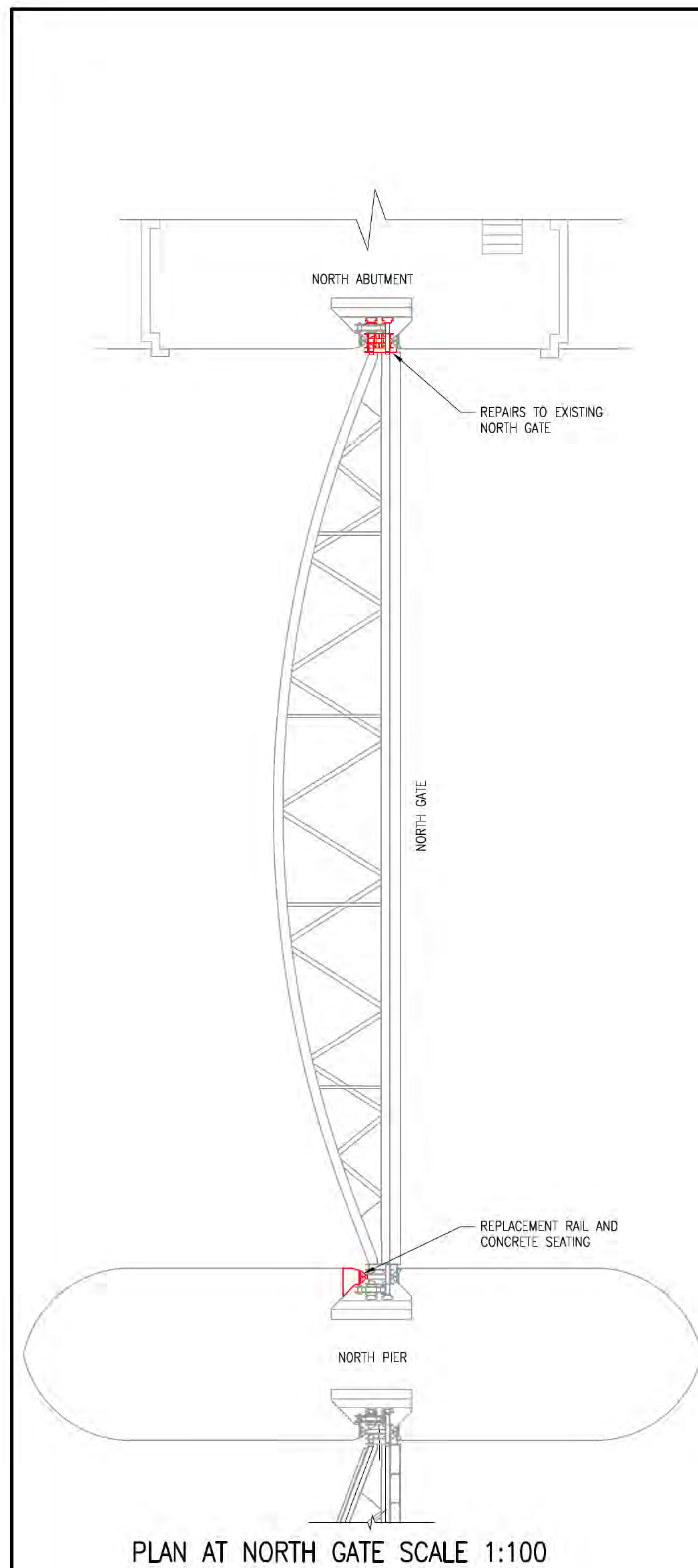
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DRAFT



Project Title:	TIDAL WEIR
Scale at A1:	AS SHOWN
Drawing Title:	LOCATION OF DEFECTS

FAIRHURST		
225 Bath Street, GLASGOW, G2 4GZ Tel: 0141 204 8800 Fax: 0141 204 8801		
Scale at A1:	Status:	
AS SHOWN	Preliminary	
Drawn:	Checked:	Approved:
GAM	CW	GSDS
Date:	Date:	Date:
08/03/2019	08/03/2019	08/03/2019
Drawing No.:	Revision:	
126177-PC-0010	-	



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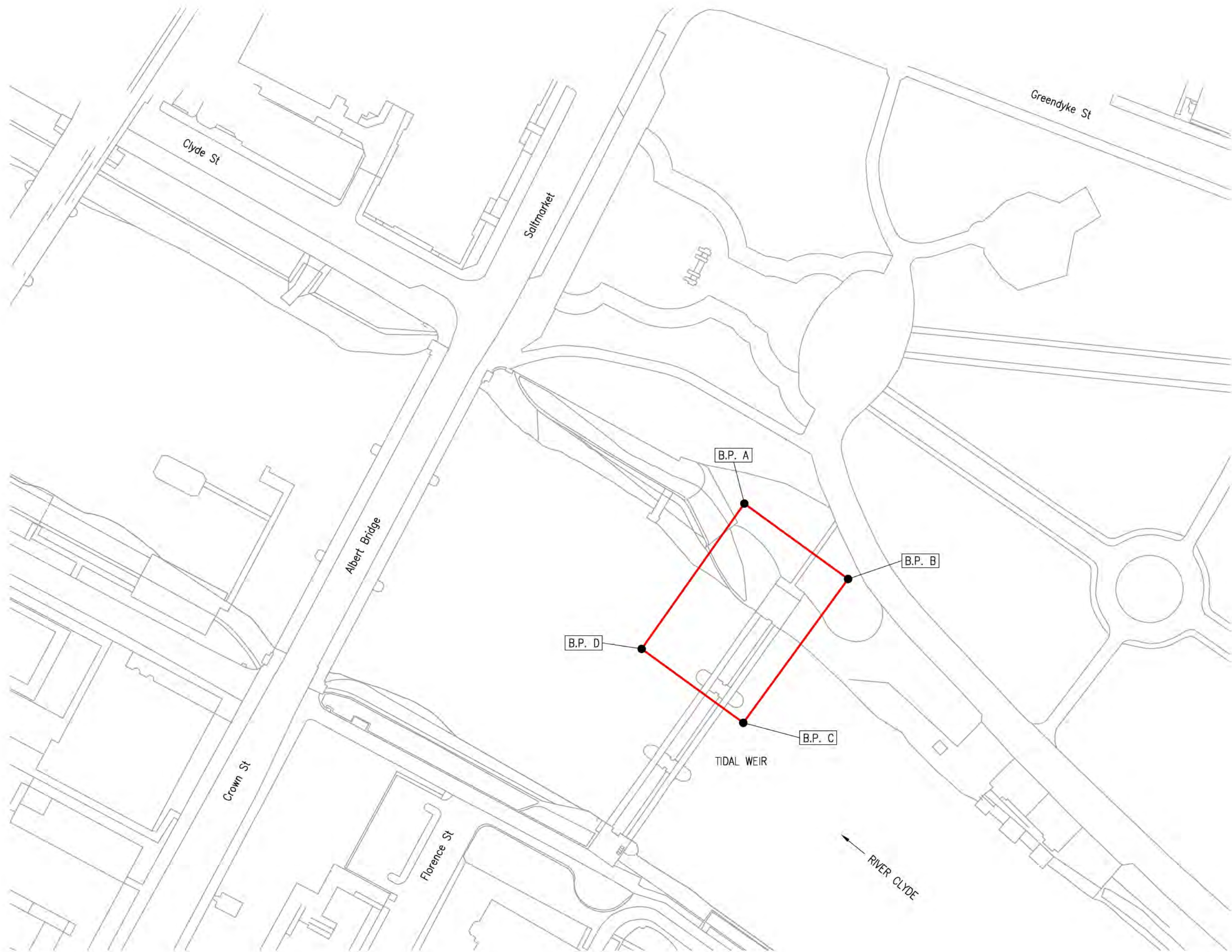
Client:

Project Title: TIDAL WEIR

Replacement of Steel Fixings

225 Bath Street,
GLASGOW, G2 4GZ
Tel: 0141 204 8800 Fax: 0141 204 8801

Scale at A1: AS SHOWN	Status: Preliminary	
Drawn: GAM	Checked: CW	Approved: GSDS
Date: 08/03/2019	Date: 08/03/2019	Date: 08/03/2019
Drawing No.: 126177-PC-0020		Revision: -



AREA OF WORKS BOUNDARY POINTS				
B.P. Ref.	EASTING	NORTHING	LATITUDE	LONGITUDE
A	259528.399E	664446.047N	55°51.1612'N	4°14.7300'W
B	259561.471E	664421.972N	55°51.1490'N	4°14.6975'W
C	259528.068E	664376.086N	55°51.1236'N	4°14.7281'W
D	259495.657E	664399.679N	55°51.1357'N	4°14.7598'W

Do not scale from this drawing.
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION
IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.
RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.
CONSTRUCTION
DEMOLITION
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.

KEY

AREA OF WORKS BOUNDARY

Rev.	Date	Description	Drawn	Checked	Approved

Notes:

DRAFT

Client:




Project Title:

TIDAL WEIR

Drawing Title:

LOCATION OF WORKS



225 Bath Street,
GLASGOW, G2 4GZ
Tel: 0141 204 8800 Fax: 0141 204 8801

Scale at A1: 1:1000	Status: Preliminary	
Drawn: GAM	Checked: CW	Approved: GSDS
Date: 12/04/2019	Date: 12/04/2019	Date: 12/04/2019
Drawing No.: 126177-PC-0030	Revision: -	

Appendix B

Site photographs



Photograph 1: Tidal Weir North Gate



Photograph 2: North Gate at Low Tide



Photograph 3: North Gate at High Tide



Photograph 4: Main Section for Repair



Photograph 5: Example of Damage to Surrounding Landscape

Appendix C

Consultation correspondence

Rebecca Martin

From: MS.MarineLicensing@gov.scot
Sent: 06 March 2019 13:34
To: Rebecca Martin
Subject: RE: 126177: Marine Licence - Tidal Weir River Clyde

Dear Becca

Thank you for contacting Marine Scotland Licensing Operations Team (MS-LOT). After reviewing your letter, MS-LOT has concluded that the proposed temporary and permanent works will require a marine licence. Guidance on marine licence applications and the application forms (in your case for construction) can be found on our [website](#).

Please note that both the temporary and permanent deposits (ie. materials) need to be included in the marine licence application.

Best wishes

Dr Anni Mäkelä

Marine Licensing Casework Manager
Marine Scotland - Marine Planning & Policy

Scottish Government | Marine Scotland | 375 Victoria Road | Aberdeen | AB11 9DB

Direct Line: +44 (0)131 24 41703
General Queries: 0300 244 5046
Email: anni.makela@gov.scot
Website: <http://www.gov.scot/marinescotland>



From: Rebecca Martin <rebecca.martin@fairhurst.co.uk>
Sent: 01 March 2019 16:27
To: MS Marine Licensing <MS.MarineLicensing@gov.scot>
Cc: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: 126177: Marine Licence - Tidal Weir River Clyde

Good Afternoon,

Please find attached a Marine Licence letter for Tidal Weir, River Clyde.

I believe everything is self-explanatory but if there are any queries feel free to email me.

Thank you

Becca

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Rebecca Martin

From: Callum McLaren <Callum.McLaren@landuse.co.uk>
Sent: 08 March 2019 11:00
To: Rebecca Martin
Subject: RE: Clyde Tidal Weir

Hi Becca,

Yeah, that's correct.

Any other queries please don't hesitate to contact me.

Kind regards

Callum

From: Rebecca Martin [mailto:rebecca.martin@fairhurst.co.uk]
Sent: 08 March 2019 10:32
To: Callum McLaren
Subject: RE: Clyde Tidal Weir

Hi Callum,

That's perfect. Just to confirm there is no survey required and SNH/LUC do not need to be involved any further?

Thanks

Becca

Rebecca Martin
Graduate Environmental Consultant

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From: Callum McLaren [mailto:Callum.McLaren@landuse.co.uk]
Sent: 07 March 2019 13:38
To: Rebecca Martin
Subject: RE: Clyde Tidal Weir

Hi Rebecca,

I've had discussions with colleagues and had a look at the surrounding habitat. There shouldn't be any concern with regards to disturbance as the effects from the piling will be minimised by the surrounding water/ Ground vegetation.

Kind regards,

Callum

From: Rebecca Martin [mailto:rebecca.martin@fairhurst.co.uk]
Sent: 06 March 2019 16:37
To: Callum McLaren
Subject: RE: Clyde Tidal Weir

Hi Callum,

They will be steel tubular end bearing piles and assumed to be rotary bored (although the contractor may an alternative method i.e percussive/vibro).

They will be around 300m from the boxes.

Thanks
Becca

Rebecca Martin
Graduate Environmental Consultant

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From: Callum McLaren [mailto:Callum.McLaren@landuse.co.uk]
Sent: 06 March 2019 15:44
To: Rebecca Martin
Subject: RE: Clyde Tidal Weir

Hi Rebecca,

I'll have to double check this.

What type of piling works will there be i.e. what is the method/materials being used...end bearing or friction piles etc. ?

How close will the works be to the bat boxes/ BRP tree?

Thanks,

Callum McLaren

From: Rebecca Martin [mailto:rebecca.martin@fairhurst.co.uk]
Sent: 06 March 2019 15:02
To: Callum McLaren
Subject: RE: Clyde Tidal Weir

Hi Callum,

There will be no machinery access routes within 50m of any of the bat roosts and there is no direct disruption with regards to vegetation clearance.

However there will be a few days where there will be piling work which is exceptionally loud, usually for marine mammals there is a 500m exclusion but do you know if this would affect the bat roosts?

Thanks
Becca

Rebecca Martin
Graduate Environmental Consultant

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From: Callum McLaren [mailto:Callum.McLaren@landuse.co.uk]
Sent: 05 March 2019 10:26
To: Rebecca Martin
Cc: Rebecca Passmore
Subject: RE: Clyde Tidal Weir

Hi Rebecca,

Thanks for this, just for clarity, unless the plans are **directly** affecting the trees with BRP (**within 50m**), we will not have to survey and no further involvement from SNH/ LUC will be required.

Thanks,

Callum McLaren

From: Rebecca Martin [mailto:rebecca.martin@fairhurst.co.uk]
Sent: 01 March 2019 14:38
To: Callum McLaren
Subject: RE: Clyde Tidal Weir

Hi Callum,

Sorry for the delayed reply, the contractor is getting all the plans together that you asked for and also confirming the schedule of when then the works will start, as soon as I get these I will send them over to you.

Just to let you know the embankment works are currently on hold and are not being planned at the moment. So it will just be the Tidal Weir Refurbishment that we are consulting about now.

Thanks
Becca

Rebecca Martin
Graduate Environmental Consultant

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From: Callum McLaren [mailto:Callum.McLaren@landuse.co.uk]
Sent: 18 February 2019 12:12
To: Rebecca Passmore
Cc: Rebecca Martin
Subject: RE: Clyde Tidal Weir

Hello Rebecca,

That's good news, It's our understanding that the SNH area officer was just making you aware of the framework plans and as such it won't affect decisions on ecology related matters.

The legislation protecting bats *Conservation (Natural Habitats, &c.) Regulations 1994* (as amended) ensures that any resting site of bats and the bat themselves are fully protected under European legislation, as such, even if planning or an EIA is not required, the legal issues relate to the features remains.

As features with the potential for bats were noted on the ecology survey, there is an obligation if works are likely to affect (within 50 m) of the features to fully identify whether there are roosts present or not and of what species etc. If roosts are found to be present, a plan setting out species protection measures will also be needed to allow SNH to advise the regulator as to whether the necessary protected species license(s) are likely to be forthcoming. Having looked at the locations of the bat features (see the attached report for reference), the identified trees appear to be around 500 m from the affected areas. Unless works are **directly** affecting these trees (**within 50m**), we will not have to survey and no further involvement from SNH will be required.

Worst case scenario:

If works are likely to affect these bat tree/features i.e. works are within 50 m of the features, SNH would require the features to be fully inspected. Assuming they can't be climbed or inspected by a licensed bat worker, a minimum of two surveys within the appropriate season (April-September).

As such, do you have details of confirmed working areas (including access plans for machinery, Vegetation clearance plans etc.) and schedule for when the works are expected to start?

Please let me know as soon as possible and then I can contact the area officer dealing with this to inform that the repair works will not require EIA/planning and that the features are outwith (I'm assuming they are at the moment) the working area.

Kind regards,

Callum

From: Rebecca Passmore [mailto:rebecca.passmore@fairhurst.co.uk]
Sent: 15 February 2019 12:07
To: Callum McLaren
Cc: Rebecca Martin
Subject: RE: Clyde Tidal Weir

Hi Callum,

Apologies for the delay in getting back to you.

We ran the query regarding the Strategic Development Framework past GCC and the project did not consider it when it was being planned as it they believe it falls under maintenance of an existing structure rather than a development.

The conclusion is that the maintenance works will not impact future development of the river. Do you think SNH will accept this or will they be looking for a justification?

Advice from our planners is that the repair work to the weir does not require EIA or planning.

I've copied in my colleague, Rebecca Martin, as she is supporting me, and this should help things move along more quickly as she will pick up any actions.

Thanks
Rebecca

Rebecca Passmore
MSc CWEM MCIWEM AEECW
Senior Environmental Consultant

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From: Callum McLaren <Callum.McLaren@landuse.co.uk>
Sent: 05 February 2019 10:40
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: RE: Clyde Tidal Weir

Hi Rebecca,
Hope you're well?

Sorry I missed you in the office last week; I was hoping to catch up with you Re the below when you were in but unfortunately I had a bug and was off sick for a couple of days.

Have you had any further developments on the project?

Kind regards,

Callum

From: Rebecca Passmore [<mailto:rebecca.passmore@fairhurst.co.uk>]
Sent: 18 January 2019 10:37
To: Callum McLaren
Cc: Chris Weir
Subject: RE: Clyde Tidal Weir

Thanks Callum.

I've contacted our planning team for advice and will get back to you following that.

Rebecca

Rebecca Passmore
MSc CWEM MCIWEM AEECW
Senior Environmental Consultant

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From: Callum McLaren <Callum.McLaren@landuse.co.uk>
Sent: 18 January 2019 09:44
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Cc: Steve Jackson-Matthews <Steve.Jackson-Matthews@landuse.co.uk>
Subject: RE: Clyde Tidal Weir

Hi Rebecca,

Thanks for your email. Sorry, I don't think I was very clear with what the area officer was saying. The strategic development framework for the river Clyde is being consulted with SNH from Glasgow City council. The area officer was flagging this for your planning team, to ensure that the aims of the project and the council are in confluence. From what I understand, the document isn't aimed at ecology but planning. LUC could certainly assist with this but it wouldn't be delivered from the ecology team. Please let me know if you wish for LUC to assist on this and I can speak to one of my colleagues in the planning team.

I'll hold off on responding to the area officer at the moment until we confirmation RE EIA etc.

Many thanks,

Callum

From: Rebecca Passmore [<mailto:rebecca.passmore@fairhurst.co.uk>]
Sent: 17 January 2019 18:00
To: Callum McLaren
Cc: Chris Weir
Subject: RE: Clyde Tidal Weir

Hi Callum,

Responses below.

Many thanks
Rebecca

Rebecca Passmore
MSc CWEM MCIWEM AEECW
Senior Environmental Consultant

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From: Callum McLaren <Callum.McLaren@landuse.co.uk>
Sent: 16 January 2019 10:33
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Cc: Chris Weir <chris.weir@fairhurst.co.uk>
Subject: Clyde Tidal Weir

Hi Rebecca,

I hope you're well.

I've just received word back from SNH re Clyde Tidal Weir.

SNH are happy with the plans at this stage of the development and I'm intending to respond to them shortly with a response but would like to run a couple of things past you first.

As we had suggested in our report, any works that will potentially affect bats will require further input from ecologists. The area officer commented that any application for regulatory consent from Marine Scotland or (more likely) Glasgow City planning authority will need to be accompanied by surveys that fully identify whether there are roosts present or not and of what species etc. If roosts are found then we would have to consult SNH and set out a species protection plan in order to obtain licences. I will respond to this, to reiterate that we will follow this procedure as plans progress. **Ok.**

The area officer's other comment was to address whether the project will require an EIA- Correct me if I'm wrong on this but it's my understanding that it's only at feasibility stage? **Correct. We need to check the EIA Regs and speak to our internal planners to confirm, but the project is planned to commence this summer.**

I intent to reply to this by saying something along the lines of: "At the moment the project is only at the feasibility stage and as such, does not require an EIA." **Can wait until we get confirmation of that.**

- Do you know whether this project will be going to EIA? **Let us confirm that first.**

Finally, the area officer pointed out that SNH are currently being consulted by Glasgow City Council on a Strategic Development Framework for the River Clyde. He suggested checking that nothing with this project risks conflicting with the aims of that document. **Ok. Will this be an additional cost?**

Please let me know about the stage of the project and if you are happy for me to respond to him. **Let us confirm the EIA situation for ourselves and then respond. Many thanks**

Kind regards,

Callum

Callum McLaren | Consultant Ecologist

37 Otago Street, Glasgow G12 8JJ
T: 0141 334 9595 | M: 07730527843



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From: [Leigh Kelly](#)
To: [Rebecca Martin](#)
Cc: [Rebecca Passmore](#)
Subject: RE: 126177 - Tidal Weir - Fish Advice
Date: 15 May 2019 12:58:58
Attachments: [Draft Method Statement.doc](#)

Rebecca

Please find the updated method statement attached – I am not sure I can add anything to the actual improvement works however I have written a section on fish mitigation. The recent fish kills in the area will put this work under some pressure (SEPA) and being in a public place always make a project come under scrutiny. The salmon run within the River Clyde can differ from other rivers in Scotland so I plan to contact the River Clyde Foundation to establish the actual window. We can then accurately provide the most suitable time to complete these works (outside of the migration period).

This would form part of the Species Protection Plan (if required). Please let me know if you wish me to change/add anything.

Regards

Leigh

Leigh Kelly BA MRes MIFM | Senior Environmental Consultant
Mhor Environmental Ltd

73 Bellshill Road
Motherwell
North Lanarkshire
ML1 3SJ
M: 07707949407
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From: Rebecca Martin <rebecca.martin@fairhurst.co.uk>
Sent: 15 May 2019 10:41
To: Leigh Kelly <l.kelly@mhorenvironmental.com>
Cc: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: RE: 126177 - Tidal Weir - Fish Advice

Hi Leigh,

Sorry for the delay in a response, the engineering team needed to speak to Glasgow City Council about the timescale. Glasgow City Council have said it is unlikely that the piling would be able to be completed in July as the procurement stage hasn't started yet.

Is piling the only activity that would cause an impact to the fish? The engineering team are now thinking they could do some of the other repair works, using a barge, in August/September and then do the piling in October/November once the fish migration has finished.

Thanks

Becca

Rebecca Martin
Graduate Environmental Consultant

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From: Rebecca Passmore
Sent: 13 May 2019 17:28
To: Leigh Kelly
Cc: Rebecca Martin
Subject: RE: 126177 - Tidal Weir - Fish Advice

I'm only aware of 'August'.

Becca, please can you liaise with the engineering team and provide any further information to Leigh?

Thanks
Rebecca

Rebecca Passmore
MSc CWEM MCIWEM MEECW
Senior Environmental Consultant

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From: Leigh Kelly <l.kelly@mhorenvironmental.com>
Sent: 13 May 2019 17:27
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: RE: 126177 - Tidal Weir - Fish Advice

Rebecca

Is there a timescale for these improvement works? End of June will see us past the smolt migration (downstream) however August will then be the beginning of the Salmon migration (upstream). We also have Sea trout migration potentially from mid-August onwards. Both these runs last until October/November. The piles would preferably need to be in before this time. There would be less impact on both species if the works were completed in Winter.

Thanks
LK

Leigh Kelly BA MRes MIFM | Senior Environmental Consultant
Mhor Environmental Ltd

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From: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Sent: 13 May 2019 17:00

To: Leigh Kelly <l.kelly@mhorenvironmental.com>
Cc: Rebecca Martin <rebecca.martin@fairhurst.co.uk>
Subject: RE: 126177 - Tidal Weir - Fish Advice

Thanks Leigh.

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Cheers
Rebecca

Rebecca Passmore
MSc CWEM MCIWEM MEECW
Senior Environmental Consultant

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Sent: 13 May 2019 13:04
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Cc: Rebecca Martin <rebecca.martin@fairhurst.co.uk>
Subject: Re: 126177 - Tidal Weir - Fish Advice

Thanks Rebecca - our day rate is £275.

Thanks again
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Sent: 10 May 2019 18:59
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: Fwd: 126177 - Tidal Weir - Fish Advice

Hi Rebecca

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Speak soon
LK

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To: Leigh Kelly
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Rebecca Martin

From: Rebecca Passmore
Sent: 13 May 2019 17:28
To: Leigh Kelly
Cc: Rebecca Martin
Subject: RE: 126177 - Tidal Weir - Fish Advice

I'm only aware of 'August'.

Becca, please can you liaise with the engineering team and provide any further information to Leigh?

Thanks
Rebecca

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Sent: 13 May 2019 17:27
To: Rebecca Passmore <rebecca.passmore@fairhurst.co.uk>
Subject: RE: 126177 - Tidal Weir - Fish Advice

Rebecca

Is there a timescale for these improvement works? End of June will see us past the smolt migration (downstream) however August will then be the beginning of the Salmon migration (upstream). We also have Sea trout migration potentially from mid-August onwards. Both these runs last until October/November. The piles would preferably need to be in before this time. There would be less impact on both species if the works were completed in Winter.

Thanks
LK

Leigh Kelly BA MRes MIFM | Senior Environmental Consultant
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Appendix D

Preliminary Ecological Appraisal



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Clyde Tidal Weir Restoration

Preliminary Ecological Appraisal

Prepared by LUC
October 2018

Project Title: Clyde Tidal Weir Restoration – Preliminary Ecological Appraisal

Client: Fairhurst

Version	Date	Version Details	Prepared by	Checked by	Approved by
0.1	02/10/18	First Draft	CMc	SJM	SJM
0.2	04/10/18	First draft edits requested by Client	CMc	SJM	SJM



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1 Introduction

Remit

- 1.1 The Clyde Tidal Weir, located in Central Glasgow, failed in August 2017, causing damage to the weir structure itself, and significant erosion at three nearby upstream locations.
- 1.2 Fairhurst was appointed by Glasgow City Council to prepare an assessment of potential repair and restoration options. To inform the assessment of restoration options, LUC was appointed by Fairhurst in September 2018 to prepare a Preliminary Ecological Appraisal (PEA).
- 1.3 This report provides the findings of the PEA.

Site and Project Context

- 1.4 The Clyde Tidal Weir is located at NGR NS 594 644 in Glasgow City Centre. The Weir is located immediately south of Glasgow Green, a large urban recreational space, and immediately north of Florence Street and the Clyde Walkway. Immediately downstream is the Albert Bridge, a busy main thoroughfare into the city.
- 1.5 The general context of the site is that of a busy, highly disturbed city centre location.
- 1.6 For the purposes of this PEA, the project has been divided into two sections (the terminology of which is dictated by Glasgow City Council's Scope of Works):
 - Service Section A – Tidal Weir North Gate: All works necessary to repair the structure of the tidal weir, ensuring its future functionality
 - Service Section B – River Embankment Erosion: All works necessary to remediate significant erosion at three locations upstream of the weir.
- 1.7 **Table 1** provides details of the three main areas of erosion, while figures provided in **Appendix 1** show their location and that of the tidal weir.

Table 1: Service Section B- River Embankment Erosion Areas

Location	Length Affected (Approx.)
Adelphi Street (South Bank)	170m
Waterside Street (South Bank)	95m
Dalmarnock Smartbridge – Carstairs Street (North Bank)	50m

Report Structure

- 1.8 This report is structured as follows:
 - Section 2 – Provides relevant legislative context
 - Section 3 – Provides an overview of methods adopted in the PEA
 - Section 4 – Provides baseline conditions and survey findings

- Section 5 – Provides an interpretation of the baseline
- Section 6 – Provides recommendations and conclusions

1.9 The report is supported by various Appendices, which include maps, figures and photographs, and are referenced throughout.

2 Legislation and Policy

- 2.1 The report has been prepared in cognisance of relevant legislation and policy, including European and domestic environmental legislation, UK nature conservation policy and local biodiversity guidance.
- 2.2 Legislation and policy have informed the scope of this PEA. Relevant legislation and policy is listed below.

Legislation

- 2.3 European and National legislation gives rise to statutory designated sites and protected species, including European Protected species. Legislation relevant to this project includes:
- The Conservation (Natural Habitats, &c.) Regulations 1994 as amended
 - The Wildlife and Countryside Act 1981 (as amended)

Policy

- 2.4 Policy relevant to this project includes:
- The Scottish Biodiversity List¹
 - The Glasgow Biodiversity Action Plan²

¹ The Scottish Biodiversity List: <https://www.gov.scot/Topics/Environment/Wildlife-Habitats/16118/Biodiversitylist/SBL> -available 01/10/18

²Glasgow LBAP: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=31719&p=0> -available 01/10/18

3 Methods

- 3.1 The method adopted in this study follows current best practice as it relates to Preliminary Ecological Appraisal³. Further details are provided below.

Desk Study

- 3.2 Prior to the commencement of fieldwork, a desk study was undertaken to ensure all known ecological constraints were fully considered. The desk study comprised searches for:
- Statutory and non-statutory designated sites within 2km of the tidal weir (and river embankment erosion areas).
 - Existing records of protected species within 2km of the tidal weir (and river embankment erosion areas).^{4,5}
- 3.3 With regard to protected species, based on the urban location of the site, it's highly disturbed nature and it's general lack of mature bankside vegetation, the scope of the desk study was limited to:
- Invasive non-native species (INNS)
 - Otters
 - Bats
- 3.4 An assumption was made that the site has the potential to support a typically urban assemblage of breeding birds, thus these species were not included in the desk study.
- 3.5 In addition to formal desk study, anecdotal evidence was also collected from the Glasgow Humane Society which is responsible for the emergency response on the Clyde and as such patrol the river daily.

Field Study

- 3.6 A site visit was made by an experienced ecologist on 18th September 2018, in dry and overcast conditions. The visit, which was undertaken by boat, aimed to identify all ecological features of interest within the vicinity of the tidal weir, river embankment erosion areas, and a 250m up and down stream buffer.
- 3.7 In recognising the highly disturbed nature of the site and a general lack of natural habitat, the field visit focussed on a search for:
- Invasive non-native species, primarily Japanese knotweed, Giant hogweed and Himalayan balsam
 - Evidence of otter and their resting sites
 - Evidence of bats and suitable roosting features
 - Evidence of breeding birds and suitable habitat for them
 - Existing or potential barriers to fish passage

³ CIEEM Technical Guidance series, Preliminary Ecological Appraisal. www.cieem.net – available 01/10/18

⁴ Data search: <https://nbnatlas.org/> - As was available on 01/10/18

⁵ March 2017: Glasgow Local Plan: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=35882&p=0> - available 01/10/18

- 3.8 The surveyor noted flora and fauna present within the survey area, recording them on a GPS device. Binoculars were used to aid in identification. For safety, and to examine as much of the area as possible, the survey was conducted at a period of low tide from a small power boat piloted by a member of staff from the Glasgow Humane Society. Low tide for 18/09/18 was 13:11. All evidence was recorded and photographed for later analysis and interpretation.
- 3.9 Survey areas are shown in (**Figure 1, Appendix 1**).

Survey Limitations

- 3.10 The time frame in which a survey is undertaken provides a snapshot of activity on the site and will not necessarily detect all evidence of use by a species. Ecological surveys are limited by a variety of factors which affect the presence of flora and fauna such as season, migration patterns and species behaviour. Evidence of species of concern is not always discovered during the survey. This does not mean that a species is absent and as such the surveys also record and assess the suitability of habitats to support protected species.
- 3.11 Due to safety concerns the surveyor was advised not to access the banks. A small portion of the banks were not visible from the river and as such signs of protected species such as otter, could have been missed. A further limitation to the survey is that the river is subject to tidal movements and also regularly used by boats. It is likely that both these factors will affect the persistence of field signs.
- 3.12 This survey was conducted in September, which is still within the optimum time of year to carry out botanical surveys but out with the optimal time period for observing breeding/nesting birds. As such, it is likely that during the summer months, evidence of nesting may be more conspicuous.
- 3.13 However, the timing of the survey is not considered a significant constraint due to the poor quality habitat which could only support a limited variety of species, and that vegetation is regularly disturbed by maintenance and or other human activity, thus making it overall less suitable to protected species.

4 Baseline

Desk Study

- 4.1 There are no statutory designated sites within 2km of the tidal weir or the river embankment erosion areas. However, the River Clyde is a city-wide Site of Importance for Nature Conservation (SINC), a non-statutory designated site.
- 4.2 There are no existing records of protected species within the site itself, however the following species were identified within a 2km area:
- Japanese knotweed
 - Giant hogweed
 - Himalayan balsam
 - Otter
 - Bats (pipistrelle species and Daubenton's bat)
 - A wide range of breeding birds, including waterfowl
- 4.3 The Glasgow Humane Society also advised that in each area surveyed, vegetation management is extensive and regular. As a consequence, the Society's teams have never observed or recorded evidence of protected species.

Field Study

Overview

- 4.4 The field study recorded little evidence of protected species and recorded that the majority of the site is of poor/low suitability for protected species due to the vegetation management and the high levels of disturbance, associated with a city centre location. Other than the weir itself, there were no barriers to fish passage as there were no instream structures. There are opportunities existing for breeding birds and bat roosting potential while extensive evidence of invasive species was recorded; all of which could be potential constraints for the project. Further detail is provided for each Service Section below.
- 4.5 When considering the details below, the reader is referred to figures in **Appendix 1**, photographs in **Appendix 2** and target notes in **Appendix 3**.

Service Section A – Tidal Weir North Gate

- 4.6 The Tidal Weir North Gate unsurprisingly, had invasive non-native species (INNS) within the immediate area. These included Giant Hogweed and Himalayan Balsam –see Figure 2 in **Appendix 1**.
- 4.7 To the North of the weir, an empty nest was recorded within the vegetation –see Figure 2 in **Appendix 1**.
- 4.8 The weir itself, will act as a barrier to fish passage. No other barriers to fish were recorded.

Service Section B – River Embankment Erosion

- 4.9 Similar to the area at the North Gate, the three areas where bank erosion had occurred were noted as having INNS. During the survey at Waterside Street, Himalayan balsam and Giant Hogweed were recorded; no Japanese knotweed was recorded here but all three INNS were noted

at [Redacted] All three areas of service section B have potential to support breeding birds and potential for roosting bats. No signs of Otter were recorded.

- 4.10 [Redacted] Figure 3 in **Appendix 1**. From the surveyors' position within the boat, a tree with the potential to support bats was noted but not fully inspected due to access constraints. At least two purpose made bat boxes were installed on this tree. This tree is noted as Bat Roost Potential- C.
- 4.11 [Redacted] : Figure 4 in **Appendix 1**. From the surveyors' position within the boat, a tree with the potential to support bats was noted as likely to have features which could be used by bats but due to access constraints further inspection would be required to determine level of suitability/BRP. This tree is noted as Bat Roost Potential- A.
- 4.12 [Redacted] Figure 5 in **Appendix 1**. From the surveyors' position within the boat, a tree with the potential to support bats was noted as likely to have features which could be used by bats but due to access constraints further inspection would be required to determine level of suitability/BRP. This tree is noted as Bat Roost Potential- B.

5 Interpretation

- 5.1 The baseline has identified that both the tidal weir and the river embankment erosion areas are of limited ecological value and are unlikely to support protected species. However, the following section provides further discussion around key issues.

Invasive Species

- 5.2 Invasive non-native species (INNS) were identified throughout the river embankment erosion areas and are the most important ecological constraint posed by the proposed restoration project. The Wildlife and Countryside Act creates an offence related to the spread of INNS in the wild, consequently any restoration proposals that involve the excavation of INNS will require careful planning and management. Three invasive non-native plant species were recorded along almost the entire length of the River Clyde section surveyed. Giant Hogweed, Himalayan Balsam, and to a lesser extent localised Japanese Knotweed. All three species are extremely common and often associated with water courses.
- Japanese knotweed is of particular concern to this project as a possible constraint. It is known to be destructive and can destabilise riverbanks and structures.
 - Giant Hogweed produces a dangerous sap which can lead to severe injury. Specialist care must be taken if removing the plant. The dangers associated with this plant should be considered when in the process of re-developing an area to be used by the public. Without extensive removal there could be public health risks if left untreated.
 - Himalayan Balsam presents a constraint similar to Japanese knotweed. Himalayan Balsam once established and dominant, the shallow root system can promote erosion of river banks due to the life history (annual life cycle) of the plant. Dense stands can impede water flow at times of high rainfall, thereby increasing the likelihood of flooding.

Breeding Birds

- 5.3 The areas of scrub along the bank offer some sheltering and potential nesting opportunity for birds. Only one nest was recorded on the survey, it is likely there are several more which were not spotted due to the vegetation coverage and lack of safe access for the surveyor to fully inspect. Several flocks of small passerine and other birds typical of riparian habitat were recorded including a kingfisher.
- 5.4 However, given the high level of vegetation management experienced by the site's vegetation, it is unlikely that a particularly valuable assemblage of breeding birds has had an opportunity to establish.

Otter

- 5.5 Upon completion of the survey it has been noted that none of the sites have particular value with regards to otter. Otters have previously been recorded in and around the Clyde, however, no field signs were noted within the site boundary. Similarly, the pilot of the boat, who has over 60 years' experience on this section of the river, has never seen any otter.
- 5.6 The high level of disturbance and small scale of vegetation makes the site unsuitable for resting or sheltering otter.

Bats

- 5.7 The desk study revealed that several species of bat have been recorded in and around the site. On conducting the PEA survey the surveyor noted three areas within the site with potential to support bats. Bats are fully protected under the Wildlife and Countryside Act 1981 (as amended). This said, the roosting potential recorded is likely to be of limited conservation value to the species.
- 5.8 If it is possible that there will be disturbance, damage to, obstruction or destruction of a roost a licence must be obtained for works to proceed. For a licence to be granted SNH would require activity surveys or if suitable/safe to do so, the tree/features could be climbed and inspected with an endoscope by licenced individual(s). SNH will need consulted on the matter.

6 Recommendations and Conclusions

Recommendations

- 6.1 *Invasive Species:* The law on non-native species is covered by the Wildlife and Countryside Act 1981 (as amended by the Wildlife and Natural Environment (Scotland) Act 2012.). It is recommended that specialist care is taken with regards to INNS. A code of practise produced by the Scottish Government sets out details of responsibilities and requirements along with the relevant governing bodies dealing with invasive species⁶.
- 6.2 It is recommended that a comprehensive invasive species management plan is prepared for the works.
- 6.3 *Breeding Birds:* it is recommended that clearance of vegetation should occur out with the breeding season (March-September inclusively). If vegetation clearance is due to be conducted within the breeding season, it is recommended that pre-works checks take place prior to clearance by a suitably qualified person. Given that a Kingfisher (A Schedule 1 species) was noted during the survey, in order not to contravene the law, if vegetation clearance is to occur during the breeding season it is recommended a licence to cover any disturbance of schedule 1 species should be obtained.
- 6.4 *Otter:* Due to the lack of evidence and unsuitability of the site, we would not recommend further otter surveys for Service Section A or B. However, SNH will be consulted on the matter.
- 6.5 *Bats:* Without having completed bat surveys, or indeed detailed Bat roost potential (BRP) inspection surveys, it is unclear whether or not the features recorded in the PEA are in/of use to bats. So long as the BRP trees are left in place and not disturbed, it is unlikely that works will affect any bats SNH will be consulted in order to determine an appropriate mitigation strategy (assuming disturbance as the minimum risk to the features) or appropriate exclusion zones. In the first instance, we would recommend a detailed BRP survey to assess the suitability and to try to classify the roosts potential to support bats. This will help inform SNH's decision in appropriate further steps (if required).

Conclusions

- 6.6 The site has limited ecological value should the recommendations above be delivered, there is unlikely to be a detrimental effect on ecological features. Furthermore, should invasive species be managed as part of the project, there is potential benefits to ecological features.

⁶ Code of Practice on Non-Native Species - Made by The Scottish Ministers Under Section 14C of the Wildlife and Countryside Act 1981: <https://www.gov.scot/Resource/0039/00398608.pdf> – available 01/10/18

Appendix 1

Figures



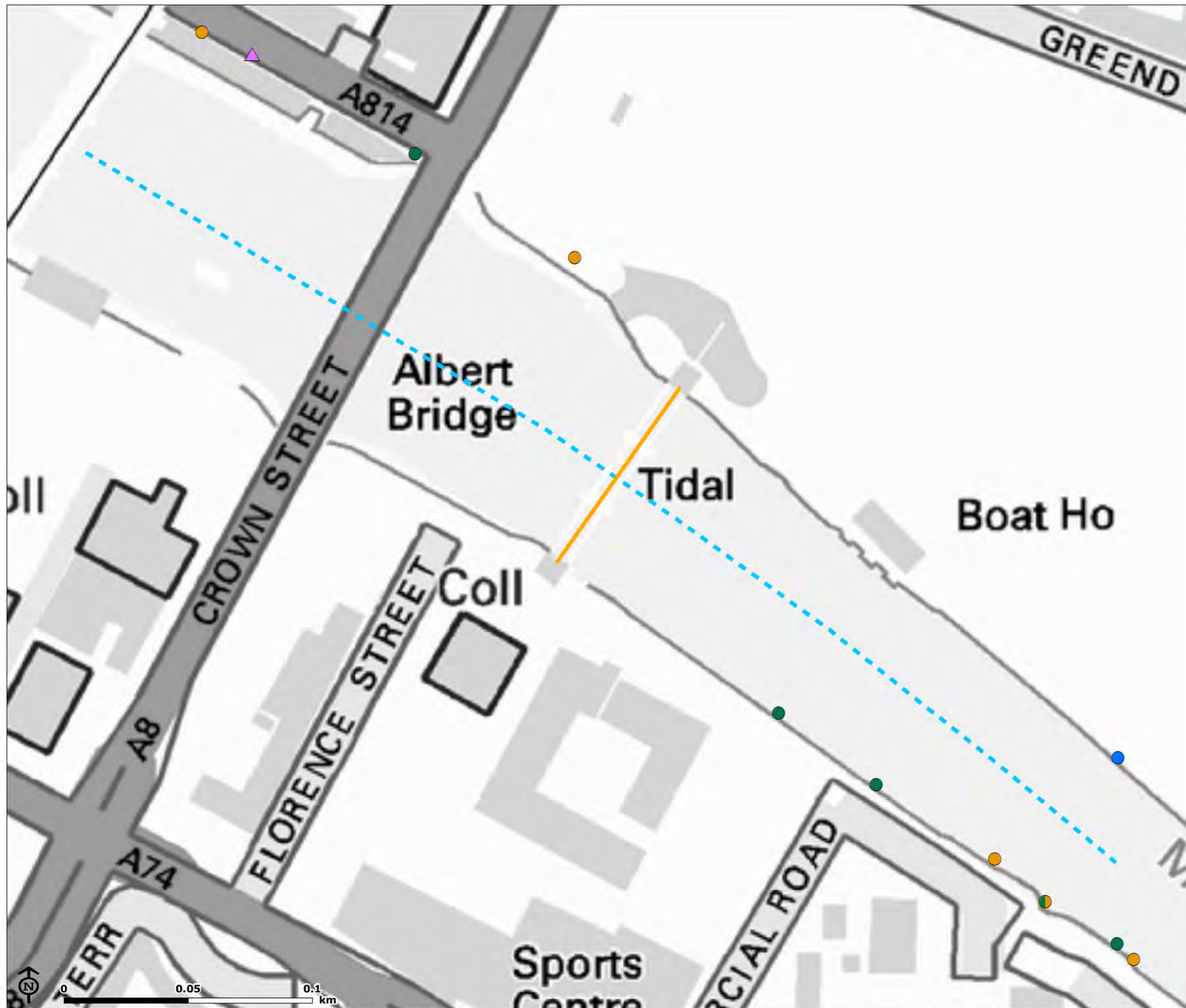
Clyde Tidal Weir - Preliminary Ecological Appraisal

Figure 1: Site Overview

- Clyde Tidal Weir
- - - Tidal Weir 250m Buffer Extent
- Affected Areas**
- Adelphi Street
- Waterside Street
- Dalmarnock Smartbridge - Carstairs Street

Map Scale @A3: 1:8,000





Clyde Tidal Weir - Preliminary Ecological Appraisal

Figure 2: The North Gate Tidal Weir

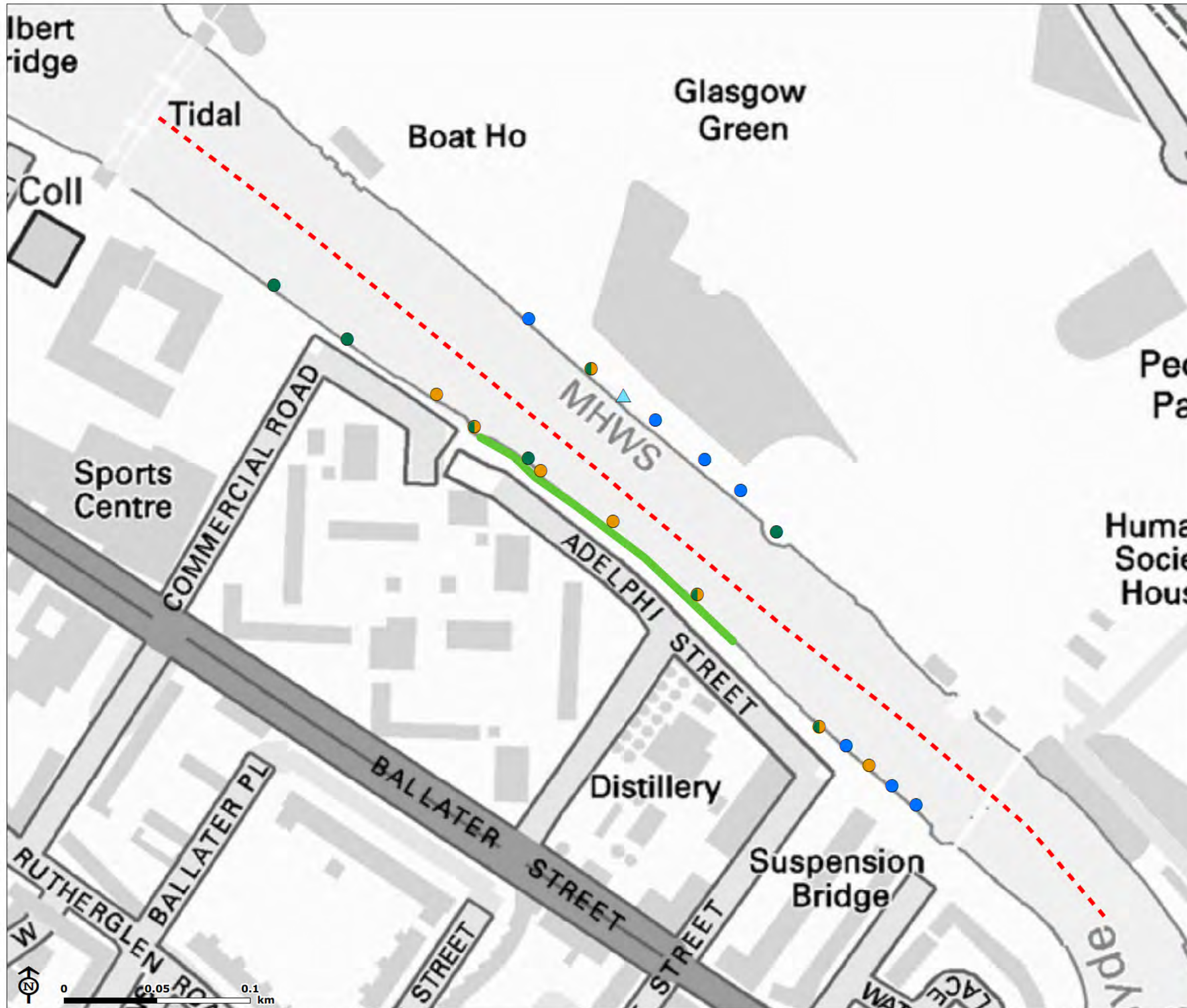
- Clyde Tidal Weir
- Tidal Weir 250m Buffer Extent

Invasive Species

[Redacted]

Map Scale @A3: 1:1,500





Clyde Tidal Weir - Preliminary Ecological Appraisal

Figure 3: Adelphi Street

[Redacted]

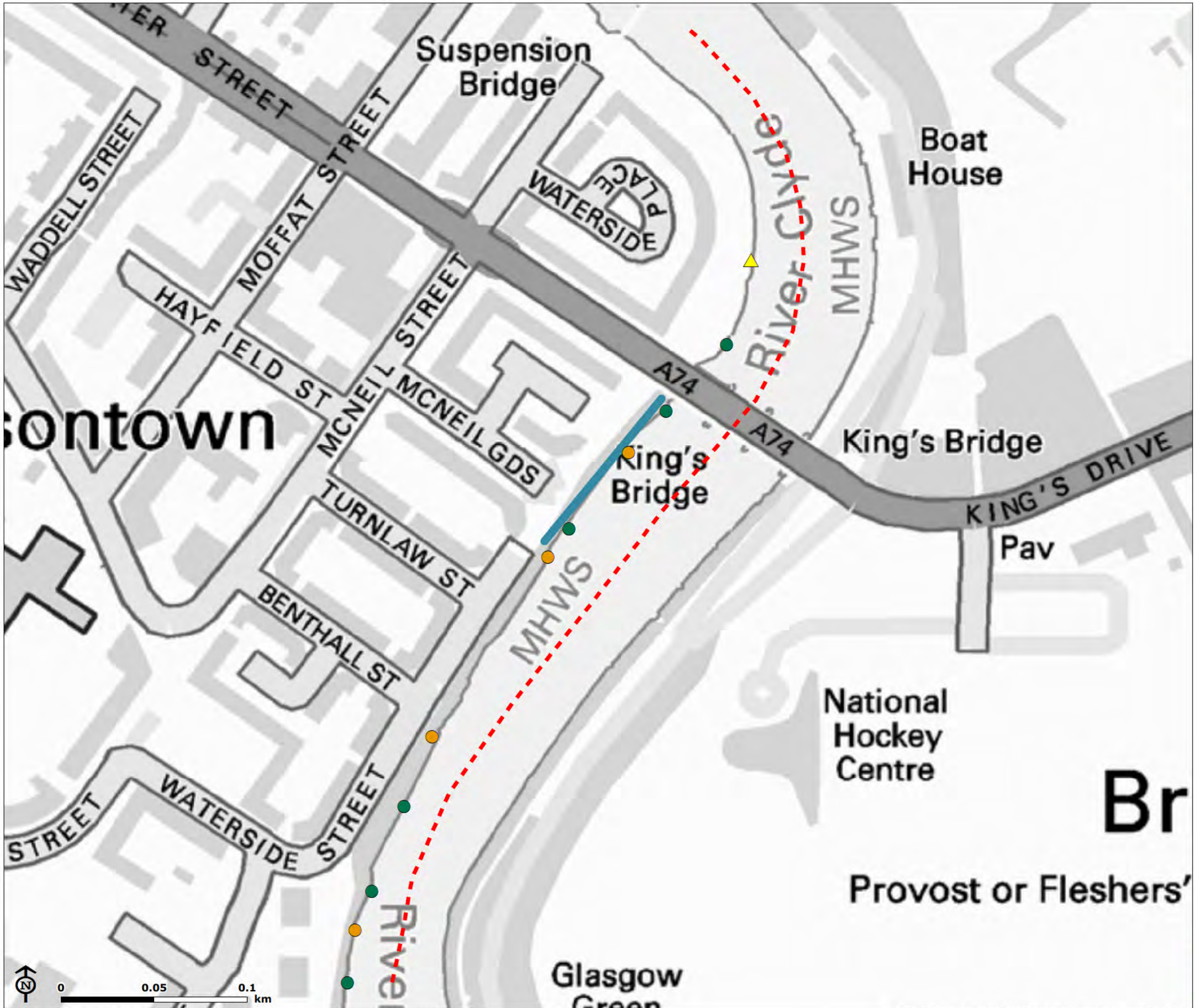


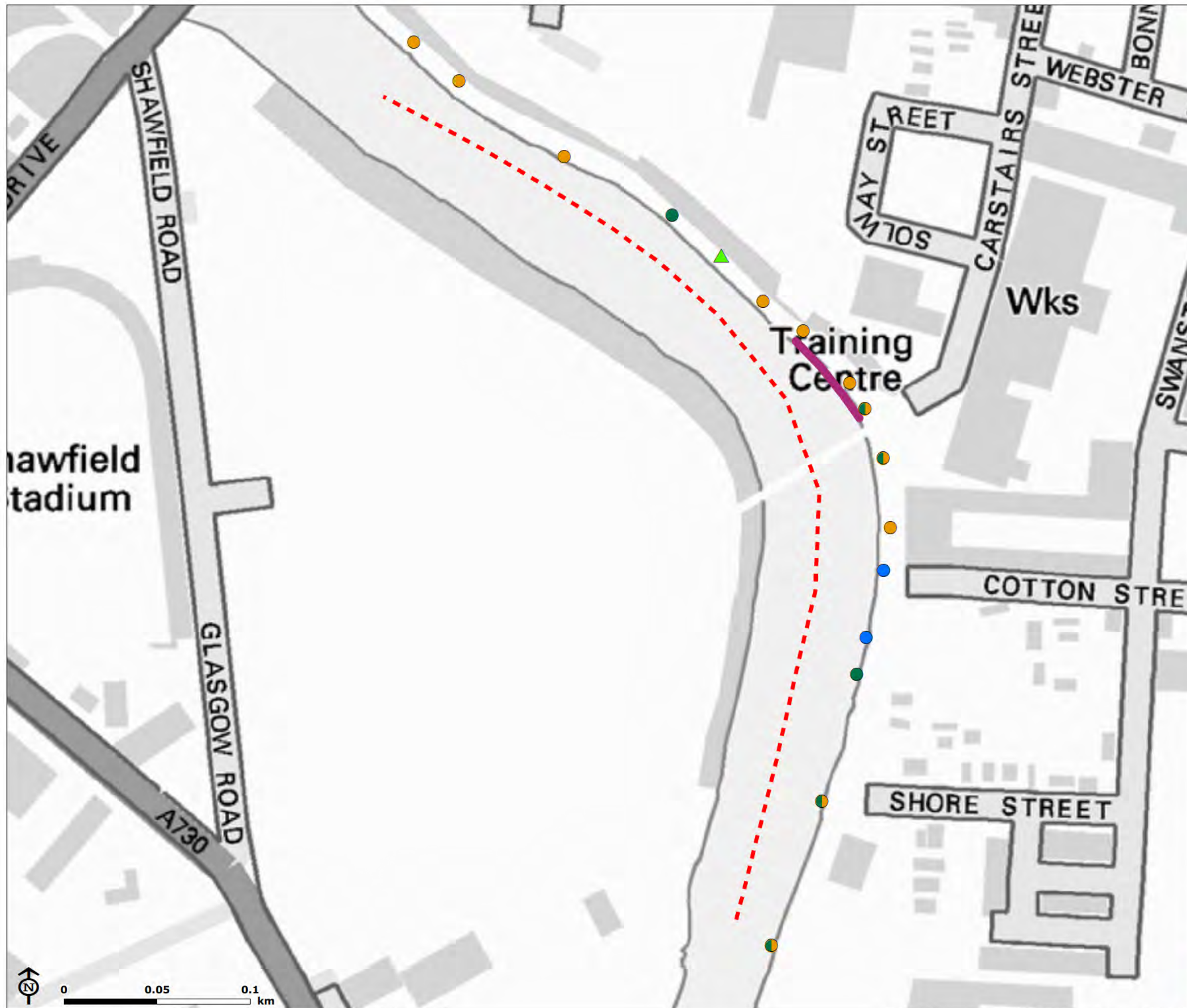
Map Scale @A3: 1:2,000



[illegible]

A detailed map of Glasgow city center focusing on the River Clyde area. The river flows from the bottom left towards the top right. Key streets shown include Waddell Street, Moffat Street, Hayfield St, McNeil Street, Turnlaw St, Benthall St, Waterside Street, and King's Drive. Landmarks such as the Suspension Bridge, Boat House, National Hockey Centre, and Glasgow Green are labeled. A red dashed line indicates a specific path or boundary along the riverbank. Several colored dots (green, yellow, orange) are placed at various points along the river and near the bridges. A scale bar at the bottom left shows distances up to 0.1 km. The word "Glasgow" is partially visible on the left side of the map.

[illegible][illegible]



Clyde Tidal Weir - Preliminary Ecological Appraisal

Figure 5: Dalmarnock Smartbridge - Carstairs Street

[Redacted]



Map Scale @A3: 1:2,000



Appendix 2

Photographs



Image1: Giant Hogweed nearly dead recorded along the bank.



Image2: Stand of Japanese Knotweed in florescence along the North bank.



Image 3: Stand of Himalayan Balsam next to walkway.

Appendix 3

Target Notes

Feature 1	Feature 2	British Grid Reference coordinates	
		X (Easting)	Y (Northing)
Giant Hogweed	Himalayan Balsam	259695	664214
Himalayan Balsam		259671	664234
Giant Hogweed		259618	664256
Giant Hogweed		259579	664284
Giant Hogweed		259716	664193
Himalayan Balsam		259724	664188
Himalayan Balsam		259762	664160
Giant Hogweed	Himalayan Balsam	259806	664121
Giant Hogweed	Himalayan Balsam	259879	664046
Japanese Knotweed		259888	664038
Himalayan Balsam		259894	664032
Japanese Knotweed		259908	664024
Japanese Knotweed		259930	664010
[Redacted]			
Giant Hogweed		260002	663805
Giant Hogweed		259971	663768
Himalayan Balsam		259950	663747
Giant Hogweed		259920	663705
Himalayan Balsam		259912	663689
Himalayan Balsam		259844	663594
Giant Hogweed		259832	663557
Giant Hogweed		259812	663511
Himalayan Balsam		259806	663491
Giant Hogweed		259801	663463
Himalayan Balsam		260697	663034
Himalayan Balsam		260722	663013
Himalayan Balsam		260774	662969
Giant Hogweed		260837	662942
[Redacted]			
Himalayan Balsam		260888	662899
Himalayan Balsam		260906	662879
Himalayan Balsam		260931	662851
Giant Hogweed	Himalayan Balsam	260939	662846
Giant Hogweed	Himalayan Balsam	260949	662811
Himalayan Balsam		260953	662774
Japanese Knotweed		260951	662759
Japanese Knotweed		260940	662715
Giant Hogweed		260935	662695
Giant Hogweed	Himalayan Balsam	260916	662627
Giant Hogweed	Himalayan Balsam	260889	662550
Giant Hogweed		259840	664152
Japanese Knotweed		259829	664175
Japanese Knotweed		259810	664191
Japanese Knotweed		259770	664225
[Redacted]			
Giant Hogweed	Himalayan Balsam	259749	664240
Japanese Knotweed		259715	664267
Himalayan Balsam		259499	664466
Giant Hogweed		259430	664503
Bird's Nest		259364	664543
Himalayan Balsam		259344	664552

Appendix E

Marine Noise Registry

Menu

Marine Noise Registry

Home

Feedback

Logout

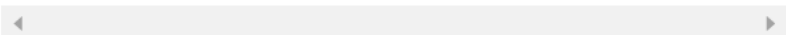
BETA

This is a new service - your [feedback](https://www.gov.uk/feedback) (https://www.gov.uk/feedback) will help us to improve it.

[Home](https://www.gov.uk/home) (https://www.gov.uk/home)[Proposed activities](https://www.gov.uk/activity/index) (https://www.gov.uk/activity/index)[Activity](#)

Activity

Your activity has been successfully submitted with the following values:

Activity Application Number	1815
Status	Proposed
Organisation	Fairhurst Glasgow
Regulator	Marine Scotland
Voluntary Notification	No
Earliest Start Date	01-10-2019
Latest End Date	30-11-2019
Duration	4 days
Activity Type	Impact pile driving
Maximum Hammer Energy	280 kilojoules
Sound pressure level at 1 metre over frequency band 10Hz - 10KHz	215 dB re 1µPa (peak)
Sound exposure level at 1 metre over frequency band 10Hz - 10KHz	190 dB re 1µPa ² .s
Supplementary Information	

Locations

Latitude/Longitude	55.51161 / 4.1473
Close-out Report Due Date	22-02-2020

Close-out report due date is calculated from the latest end date and is dependent upon the regulator associated with the project.

Finished (<https://www.gov.uk/activity/index>)

Audit Trail

10-07-2019 15:41	chris.weir@fairhurst.co.uk	Created as Proposed	Created
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