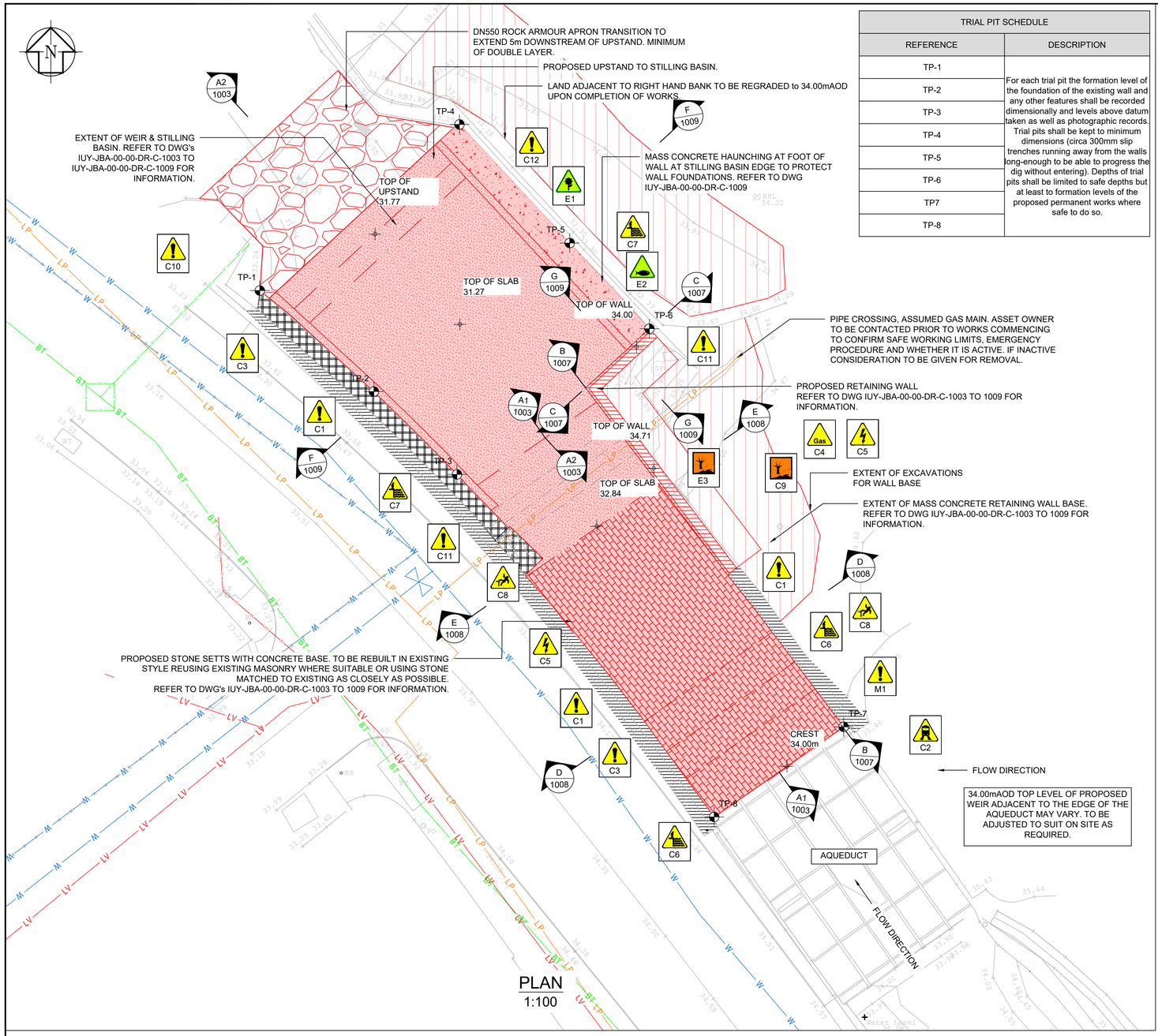

PLAN
1:100

TRIAL PIT SCHEDULE	
REFERENCE	DESCRIPTION
TP-1	For each trial pit the formation level of the foundation of the existing wall and any other features shall be recorded dimensionally and levels above datum taken as well as photographic records. Trial pits shall be kept to minimum dimensions (circa 300mm slip trenches running away from the walls long-enough to be able to progress the dig without entering). Depths of trial pits shall be limited to safe depths but at least to formation levels of the proposed permanent works where safe to do so.
TP-2	
TP-3	
TP-4	
TP-5	
TP-6	
TP7	
TP-8	

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5 4 3 2 1 0 2 4 6
SCALE 1:100 (m)

Safety, Health and Environment information

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant risks

Construction	
C1	Unstable structure - Risk of collapse of wall without warning and potential loss of the road, leading to fatal injury.
C2	Live Railway - Works adjacent to a live railway line, risk of damage to Network Rail infrastructure
C3	Potential interaction with members of public resulting in serious injury.
C4	Risk of services strike due to location above main working area
C5	Buried Services - Unchartered third party service connections causing service strike risk, causing property damage and personnel injury.
C6	Working in a watercourse - Risk of flooding / falls into watercourse resulting in damage to or loss of plant/materials, loss of road, drowning.
C7	Working adjacent to watercourse - Injury, damage to or loss, risk of drowning
C8	Working at height - Risk of fall from height resulting in fall related injury.
C9	Risk of chemical burns, poisoning, skin and lung irritation. Pollution to river environment
C10	Risk scour damage to downstream channel/footbridge
C11	NRW and/or Listed Buildings do not consent to the proposed phase 2 works which may result in delays
C12	Subsidence of ground
Environmental	
E1	Protected Habitat - NRW license required for working within and adjacent to the Afon Llan, risk of prosecution
E2	Working within a protected habitat - Risk of disturbing nesting birds, migrating fish etc - resulting in endangering wildlife or spreading INNS, risk of prosecution
E3	Working with concrete near/within a watercourse - risk of concrete spill resulting in pollution.
Maintenance	
M1	Improper or infrequent inspections/maintenance may lead to failure of weir or stilling basin due to abrasive nature of large cobbled bed material

ANTICIPATED CONSTRUCTION SEQUENCE

1. SITE SET UP - SITE SECURE, WORK AREA ACCESS AND DE-WATERING IN PLACE.
2. SET OUT RIGHT BANK RETAINING WALL MASS CONCRETE BASE EXTENTS.
3. DEMOLISH AND EXCAVATE TO FORMATION LEVEL OF MASS CONCRETE RETAINING WALL BASE EXTENTS ENSURING EXCAVATION BENCHED TO SAFE ANGLES.
4. RE-CHECK SETTING OUT & MARK OUT MASS CONCRETE POUR LEVELS AND STEPS.
5. POUR MASS CONCRETE RETAINING WALL BASE WHICH EXTENDS ACROSS CHANNEL TO FORM FORMATION LEVEL OF STRUCTURAL WEIR SLAB, ENSURE FINISH LEVEL ACCURACY.
6. CONSTRUCT RIGHT BANK RETAINING WALL IN SAFE LIFTS.
7. SET OUT, EXCAVATE AND PROVIDE BLINDING TO STILLING BASIN BASE SLAB UP TO KICKER LOCATION FOR WEIR CHUTE, ENSURING METHODS OF PROTECTING STABILITY TO EXISTING RETAINING WALLS ARE IN PLACE.
8. CONSTRUCT REINFORCEMENT CAGES FOR STRUCTURAL SLAB AND SET OUT FINISH LEVELS BEFORE POURING STILLING BASIN U TO KICKER LOCATIONS.
9. HAUNCH FOOTING USING MASS CONCRETE TO RIGHT BANK EXISTING RETAINING WALL BETWEEN STILLING BASIN AND EXISTING.
10. SET OUT AND PREPARE CHUTE REINFORCEMENT AND POUR CONCRETE TO FINISH LEVEL.
11. SET OUT AND EXCAVATE REMAINING UPPER WEIR TAKING CARE TO RETAIN EXISTING MASONRY TO CLEAN AND REUSE AND BLIND FORMATION LEVEL TO SETTING OUT POINTS.
12. SET OUT STRUCTURAL SLAB STEPS AND BUILD REINFORCEMENT CAGES. ENSURING STEP CRESTS ARE ACCURATE AS THEY WILL HELP GUILD THE WEIR PROFILE, POUR UPPER STRUCTURAL SLAB.
13. USING MASS CONCRETE OF LOW SLUMP TROWEL IN HAUNCHING BETWEEN THE STRUCTURAL SLAB STEPS TO PRODUCE BASE FOR FINAL STONE WEIR PROFILE.
14. BUILD UP THE STONE WEIR SETTS FROM DOWNSTREAM WORKING UPWARDS ON A MORTAR BED ENSURING STONE SETTS ARE TIGHTLY PACKED IN PLACE WITH DRY VERTICAL JOINTS ABUTTING. ONCE COMPLETE FULL ADJUSTMENT GAPS AT TOP AND SIDES AND THEN BRUSH IN A HIGH FLOW GROUT OVER THE STONE SETTS TO FILL VOIDS.
15. DOWNSTREAM OF THE STILLING BASIN INSTALL ROCK ARMOUR.
16. ON EXIT FROM WATERCOURSE REGARD RIGHT BANK.

Our Lifesaving Rules

GENERAL NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (OD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
4. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE.
5. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE SUPERVISOR IMMEDIATELY.
6. THE ELECTRONIC VERSION OF THIS DRAWING IS NOT TO BE USED FOR SETTING OUT.
7. REFER TO CONTRACT SPECIFICATION FOR DETAILS OF MATERIALS AND WORKMANSHIP TO BE USED FOR THE WORKS SHOWN ON THIS DRAWING.
8. HAZARDS TO BE CLEARLY DEFINED AND DISPLAYED AT DESIGN STAGE.

KEY

PROPOSED
EXISTING
TO BE REMOVED

PROPOSED LEVELS 0.000

TRIAL PIT LOCATIONS TP-n

SERVICES

BT	BT UNDERGROUND
LV	ELECTRICITY - LV
W	POTABLE WATER
W	DISUSED POTABLE WATER
LP	GAS - LOW PRESSURE

GRID REF: SN 83030 02730

LOCATION PLAN

NTS

Rev.	Description	Date	Author	Designer	Checker	Approver
B01	FORM B	14/05/25	AB	EH	SR	EP

Document Control
Status FORM B

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Project Title
RESOLVEN AQUEDUCT & WEIR

Drawing Title
GENERAL ARRANGEMENT

NetworkRail

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Parent Model
NOT FROM MODEL

Security Classification **OFFICIAL**
Scale **AS SHOWN**
Author **A.BOSOMWORTH**
Designer **E HOGAN**
Checker **S RIDDLESTONE**
Approver **E PARKER**
Suitability **FORM B**
Revision **B01**
Information Container **IUY-JBA-00-00-DR-C-1002-B01-GA.dwg**
A1 Sheet Size

RESOLVEN AQUEDUCT - WEIR DRAWINGS	
DWG No.	DWG Title.
IUY-JBA-00-00-DR-C-1002	GENERAL ARRANGEMENT
IUY-JBA-00-00-DR-C-1003	WEIR LONG SECTION
IUY-JBA-00-00-DR-C-1004	CONCRETE LAYOUT
IUY-JBA-00-00-DR-C-1005	REINFORCEMENT DETAILING
IUY-JBA-00-00-DR-C-1006	SETTING OUT
IUY-JBA-00-00-DR-C-1007	WALL LONG SECTIONS
IUY-JBA-00-00-DR-C-1008	TYPICAL CROSS SECTIONS
IUY-JBA-00-00-DR-C-1009	TYPICAL DETAILS

UTILITY SERVICES INVESTIGATION GAUGE TO PAS 128

- TYPE D: DESK STUDY
- TYPE C: DESK STUDY AND SITE RECONNAISSANCE
- TYPE B: DESK STUDY WITH SITE RECON AND UTILITY DETECTION SURVEY
- TYPE A: DESK STUDY WITH SITE RECON, UTILITY DETECTION SURVEY & TRIAL HOLES

TYPE D	TYPE C	TYPE B	TYPE A
22/09/23			

THE POSITION OF ANY EXISTING PUBLIC OR PRIVATE SEWERS, UTILITY SERVICES, PLANT OR APPARATUS SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM STATUTORY RECORDS. THE INFORMATION SHOWN IS BELIEVED TO BE CORRECT BUT NO WARRANTY TO THIS IS EXPRESSED OR IMPLIED. OTHER SUCH PLANT OR APPARATUS MAY ALSO BE PRESENT BUT NOT SHOWN. INVESTIGATIONS SHOULD BE UNDERTAKEN ON SITE CONFIRMING LOCATIONS BEFORE BREAKING GROUND.

FULL PAS 128 SERVICES SEARCH, A THROUGH TO D REQUIRED PRIOR TO THE START OF WORKS

ROCK ARMOUR NOTE

TO COMPLY WITH GOOD PRACTICE, ROCK ARMOUR IS PROPOSED TO BE INSTALLED DOWNSTREAM OF THE STILLING BASIN. THIS WILL ALLOW SOME PARTIAL PROTECTION TO THE NATURAL BED. HOWEVER, MODELLING, BOTH 1D AND 3D, SUGGEST VELOCITIES DOWNSTREAM OF THE STILLING BASIN WILL BE CIRCA 4.0-5.0M/S WHICH IS LIKELY TO BE BEYOND THE CAPABILITIES OF MOST READILY AVAILABLE SCOUR PROTECTION, INCLUDING ROCK ARMOUR.

ALTHOUGH THE LARGEST ROCK HAS BEEN SPECIFIED, IT IS LIKELY THAT THIS WILL BE INADEQUATE. THE EXISTING MODEL RUN AS PART OF THE DESIGN SHOWS THAT OUR PROPOSALS DO NOT SIGNIFICANTLY INCREASE THE RISK FURTHER THAN WHAT WAS ALREADY PRESENT IN THE EXISTING SCENARIO. IT CAN ALSO BE SEEN THAT THE STILLING BASIN REDUCES VELOCITIES CONSIDERABLY (CIRCA 5.50M/S ON THE WEIR TO 2.50M/S WITHIN THE BASIN) AND UPON EXITING THE STILLING BASIN THE NATURAL CHANNEL GRADIENT INCREASES THESE BACK UP TO APPROXIMATELY 4.00M/S.

FURTHER INFORMATION IS AVIALBLE WITHIN THE DESIGN DECISION LOG

Grading requirement of stone

	d0 / M0 (Minimum stone size)	d50 / M50 (Average stone size)	d100 / M100 (Maximum stone size)
Size (mm)	420	550	720
Weight (kg)	185	416	933

Minimum properties of stone

Test	Reference BS	Unit	Value
Oven Dry Particle Density (min)	BS EN 13383-2	t/m³	2.5
Apparent Particle Density (min)	BS EN 13383-2	t/m³	2.52
Water Absorption (WA) (max)	BS EN 13383-2	%	2.0
Compressive Strength Category	EN 1926	-	CS_{90}
Resistance to wear: Micro-Deval Co-effiecient (Mde) (max)	BS EN 1097 Part 1	-	10-30
Resistance to fragmentation: Los Angeles test (LA) (max)	BS EN 1097 Part 2	%	<25
Magnesium Sulphate Soundness: (max)	BS EN 1367-2	%	10
Freeze- Thaw Loss: (max)	BS EN 13383-2	%	1.0