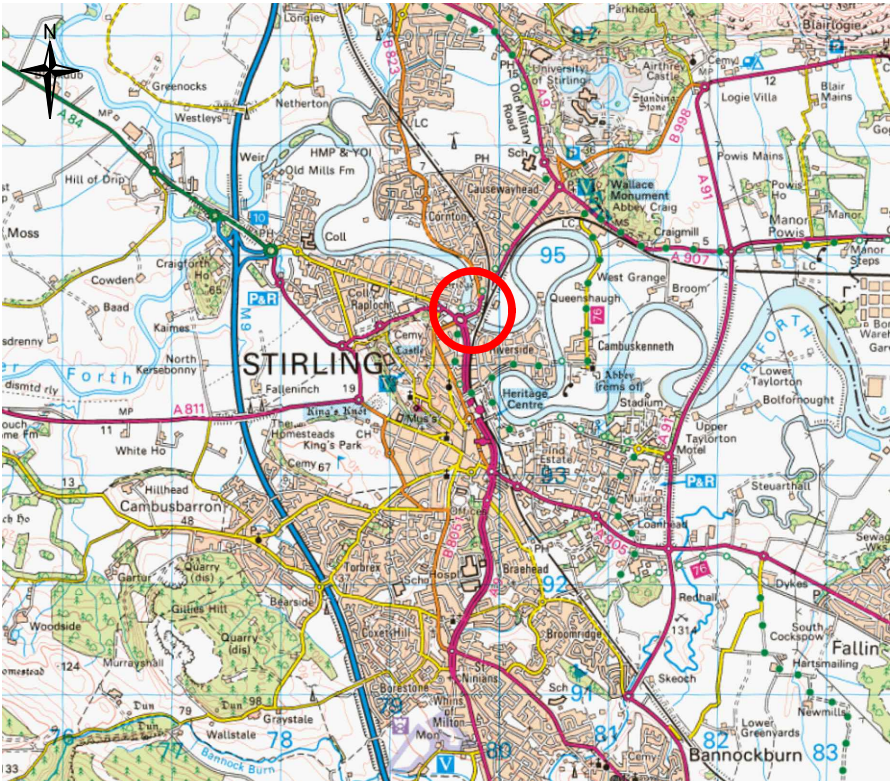




REGIONAL LOCATION OF SITE

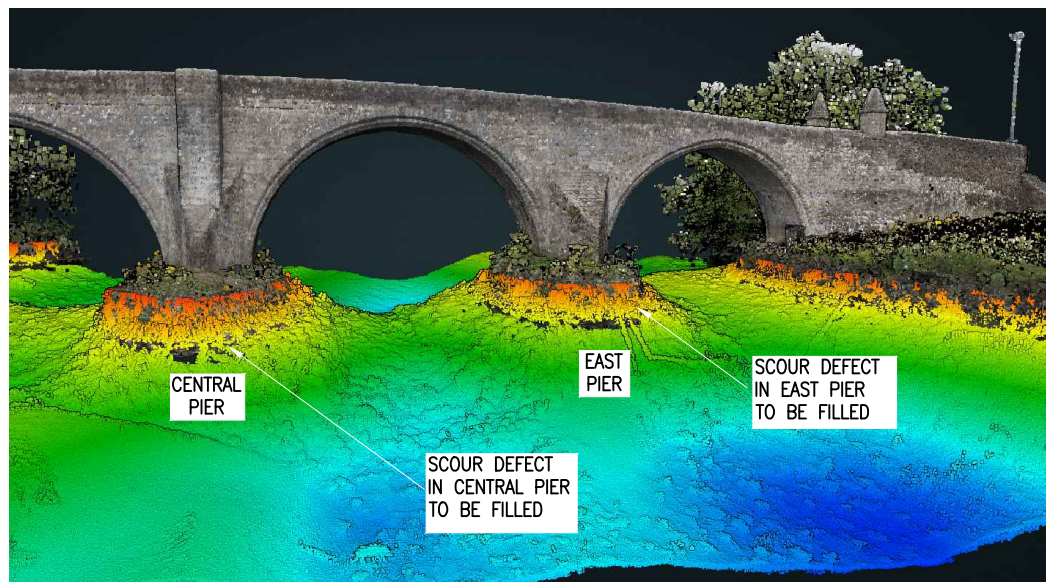
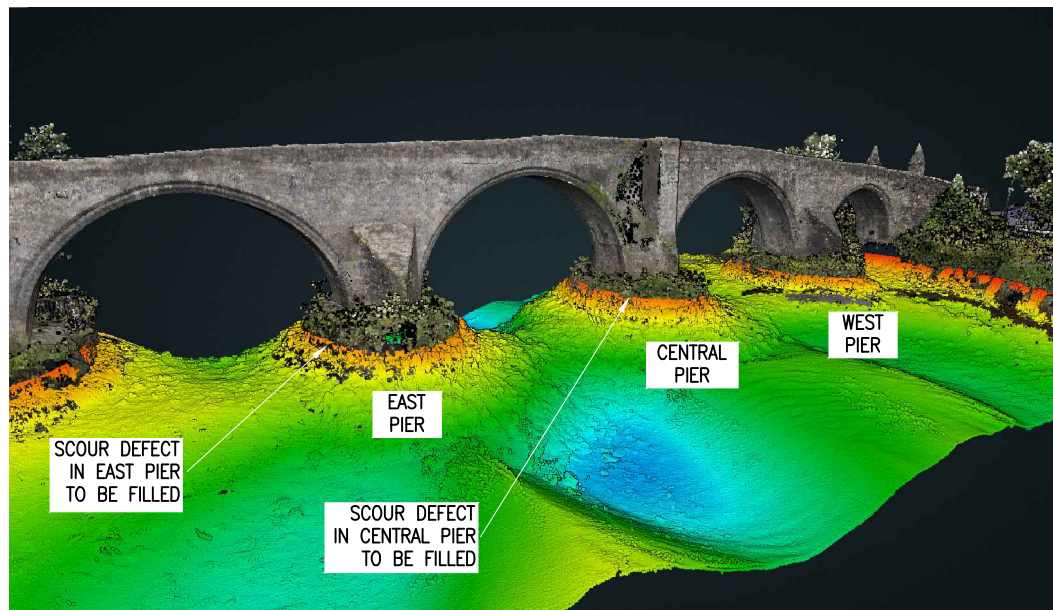
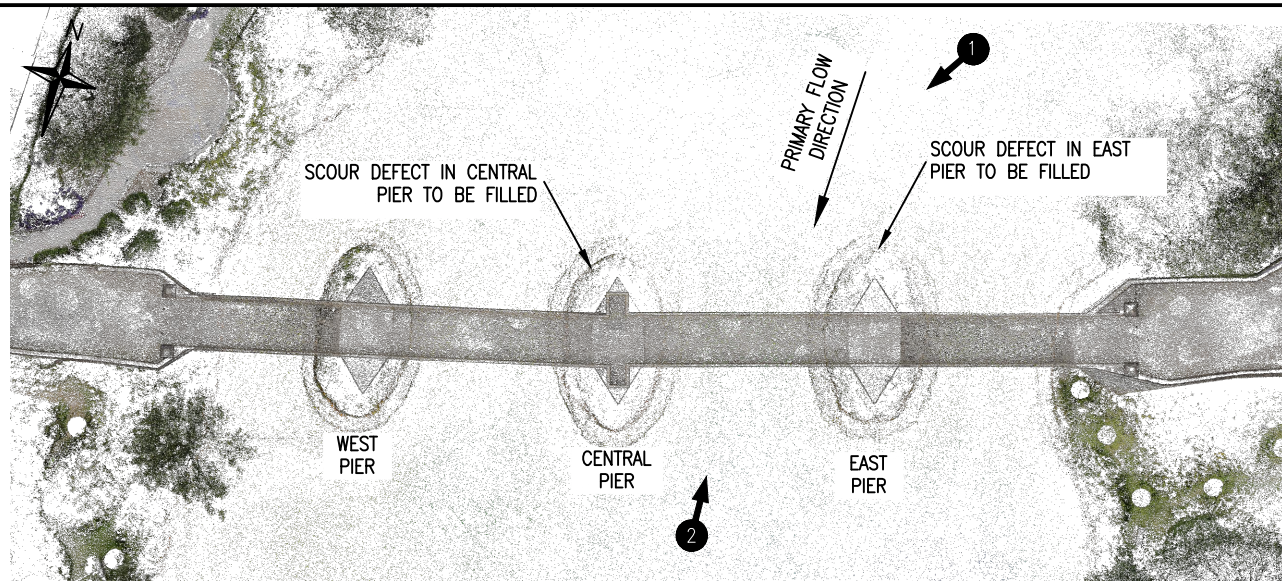
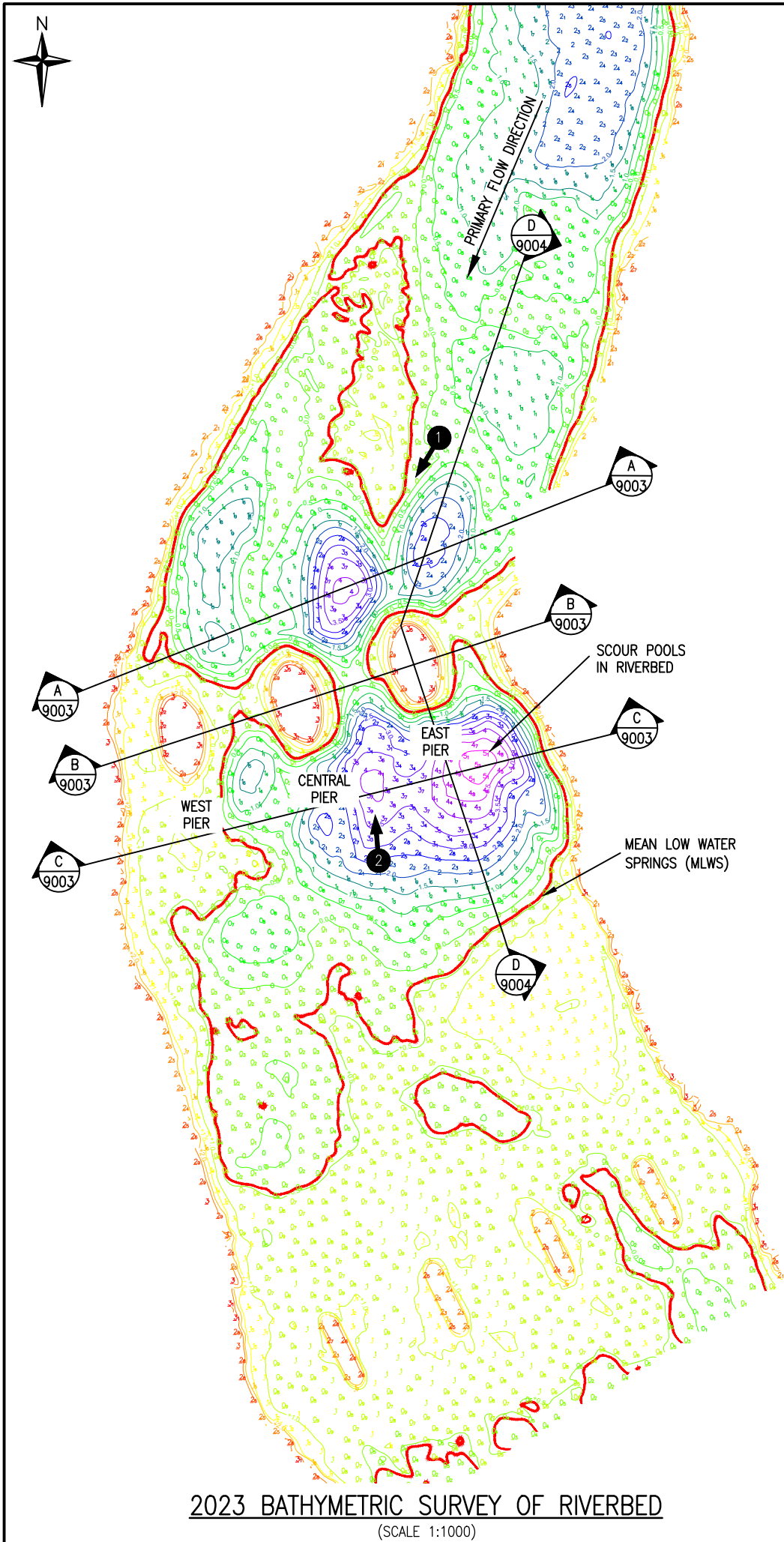


LOCATION OF SITE WITHIN STIRLING

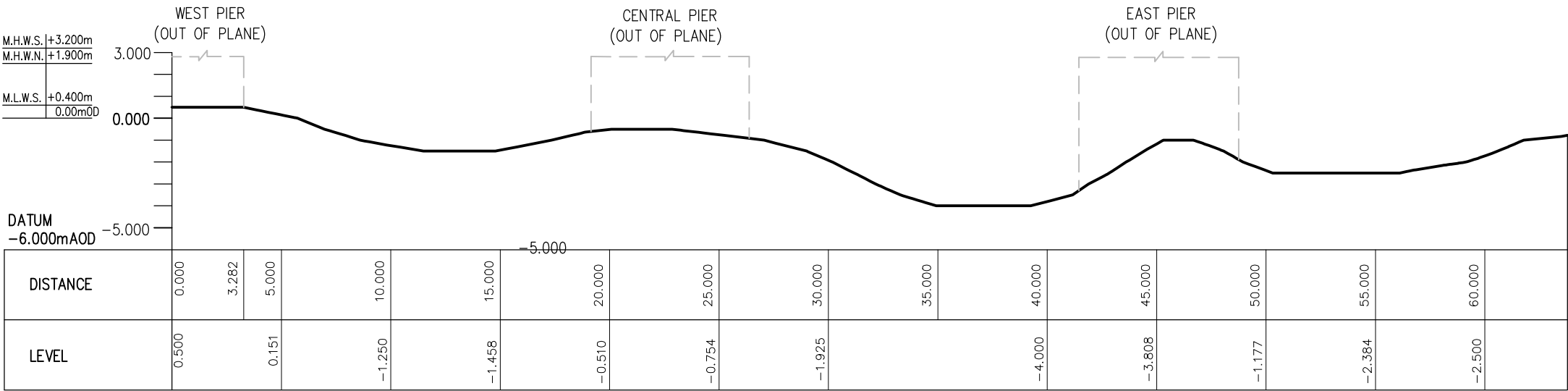


AERIAL IMAGE OF THE SITE AND IMMEDIATE SURROUNDING AREA

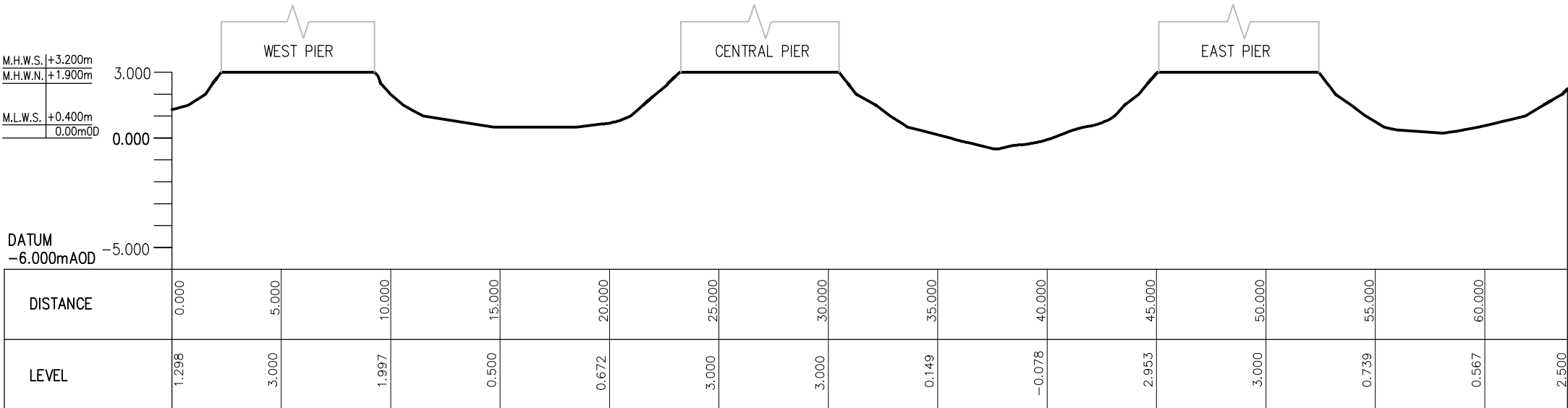
Do not scale from this drawing.			
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION			
IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.			
RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. DAF001			
CONSTRUCTION			
1. ADJACENT ACTIVITIES 2. RESTRICTED SITE 3. INTERFACE WITH PUBLIC 4. NEAR TO WATERWAYS 5. TIDAL WORKING 6. CONTAMINATION 7. SERVICES			
8. UNSTABLE STRUCTURES 9. HAZARDOUS MATERIALS 10. UNFORESEEN GROUND CONDITIONS 11. LEPTOSPIROSIS 12. UNEXPECTED HIGH WATER VELOCITIES 13. SCHEDULED MONUMENT 14. SPECIAL AREA OF CONSERVATION			
MAINTENANCE AND INSPECTION			
• RESTRICTED SITE • INTERFACE WITH PUBLIC • NEAR TO WATERWAYS • TIDAL WORKING • SERVICES			
• UNSTABLE STRUCTURES • LEPTOSPIROSIS • SCHEDULED MONUMENT • SPECIAL AREA OF CONSERVATION			
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.			
NOTES:			
1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.			
Rev.	Date	Description	Drwn. Chkd. Appd.
FAIRHURST		Client:	
4 th Floor, 300 Bath Street, GLASGOW G2 4JR Tel: 0141 204 8800 www.fairhurst.co.uk		 HISTORIC ENVIRONMENT SCOTLAND ÀRAINNEACHD EACHDRAIDHEIL ALBA	
Project Title:			
STIRLING OLD BRIDGE SCOUR REPAIRS			
Drawing Title:			
SITE LOCATION			
Scale at A3: NTS		Status: FOR INFORMATION	
Drawn: KAB	Checked:	Approved:	
Date: 23/01/26	Date:	Date:	
Drawing No.:		Revision:	
162865/9001		—	



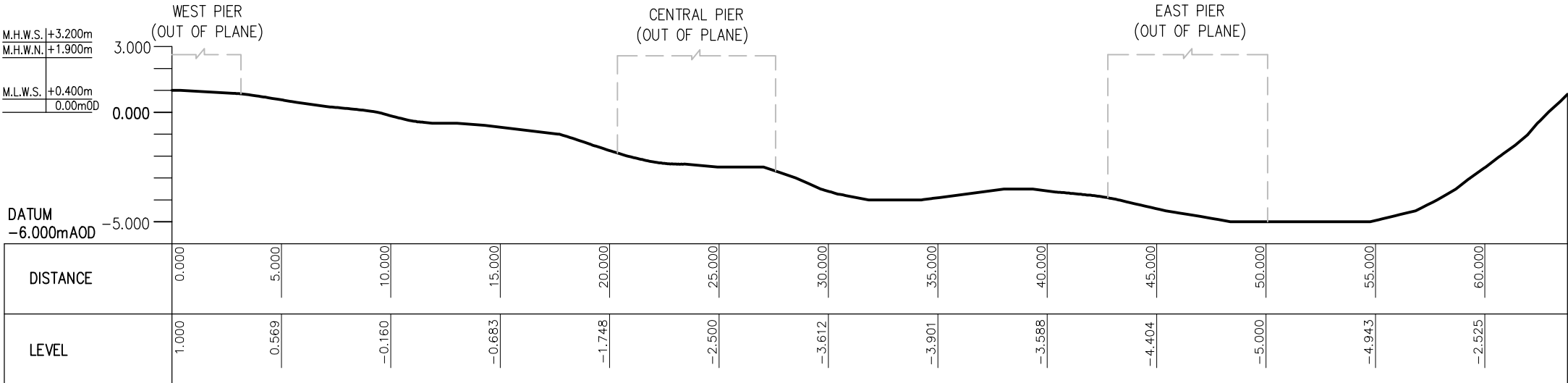
Do not scale from this drawing.			
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION			
IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.			
RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. DAF001			
CONSTRUCTION			
1. ADJACENT ACTIVITIES	8. UNSTABLE STRUCTURES		
2. RESTRICTED SITE	9. HAZARDOUS MATERIALS		
3. INTERFACE WITH PUBLIC	10. UNFORESEEN GROUND CONDITIONS		
4. NEAR TO WATERWAYS	11. LEPTOSPIROSIS		
5. TIDAL WORKING	12. UNEXPECTED HIGH WATER VELOCITIES		
6. CONTAMINATION	13. SCHEDULED MONUMENT		
7. SERVICES	14. SPECIAL AREA OF CONSERVATION		
MAINTENANCE AND INSPECTION			
• RESTRICTED SITE	• UNSTABLE STRUCTURES		
• INTERFACE WITH PUBLIC	• LEPTOSPIROSIS		
• NEAR TO WATERWAYS	• SCHEDULED MONUMENT		
• TIDAL WORKING	• SPECIAL AREA OF CONSERVATION		
• SERVICES			
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.			
LEGEND:			
1 INDICATIVE POSITION AND DIRECTION OF IMAGE			
NOTES:			
1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.			
Rev.	Date	Description	Drwn. Chkd. Appd.
FAIRHURST		Client:	
4 th Floor, 300 Bath Street, GLASGOW G2 4JR Tel: 0141 204 8800 www.fairhurst.co.uk		HISTORIC ENVIRONMENT SCOTLAND	
		ÀRAINNEACHD EACHDRAIDHEIL ALBA	
Project Title:			
STIRLING OLD BRIDGE SCOUR REPAIRS			
Drawing Title:			
CURRENT BRIDGE AND RIVERBED DETAILS			
Scale at A3: AS SHOWN	Status: FOR INFORMATION		
Drawn: KAB	Checked:	Approved:	
Date: 23/01/26	Date:	Date:	
Drawing No.:	162865/9002		Revision: —



SECTION A-A
(SCALE 1:250)



SECTION B-B
(SCALE 1:250)



SECTION C-C
(SCALE 1:250)

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. DAF001

CONSTRUCTION

1. ADJACENT ACTIVITIES

2. RESTRICTED SITE

3. INTERFACE WITH PUBLIC

4. NEAR TO WATERWAYS

5. TIDAL WORKING

6. CONTAMINATION

7. SERVICES

8. UNSTABLE STRUCTURES

9. HAZARDOUS MATERIALS

10. UNFORESEEN GROUND CONDITIONS

11. LEPTOSPIROSIS

12. UNEXPECTED HIGH WATER VELOCITIES

13. SCHEDULED MONUMENT

14. SPECIAL AREA OF CONSERVATION

MAINTENANCE AND INSPECTION

• RESTRICTED SITE

• INTERFACE WITH PUBLIC

• NEAR TO WATERWAYS

• TIDAL WORKING

• SERVICES

• UNSTABLE STRUCTURES

• LEPTOSPIROSIS

• SCHEDULED MONUMENT

• SPECIAL AREA OF CONSERVATION

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.

NOTES:

1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE, ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.

Rev.	Date	Description	Drwn.	Chkd.	Appd.

FAIRHURST

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300 Bath Street,
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G2 4JR

Tel: 0141 204 8800
www.fairhurst.co.uk

Client:



HISTORIC ENVIRONMENT SCOTLAND

ÀRAINNEACHD EACHDRAIDHEIL ALBA

Project Title:

STIRLING OLD BRIDGE
SCOUR REPAIRS

Drawing Title:

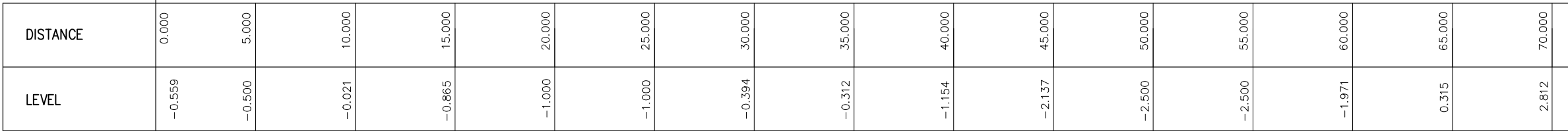
CROSS SECTIONS
SHEET 1 OF 2

Scale of A3: 1:250	Status: FOR INFORMATION
Drawn: KAB	Checked:
Date: 23/01/26	Date:
Drawing No.: 162865/9003	Revision: -

M.H.W.S. +3.200m
M.H.W.N. +1.900m

M.L.W.S. +0.400m
0.00mOD

DATUM
-6.000mAOD

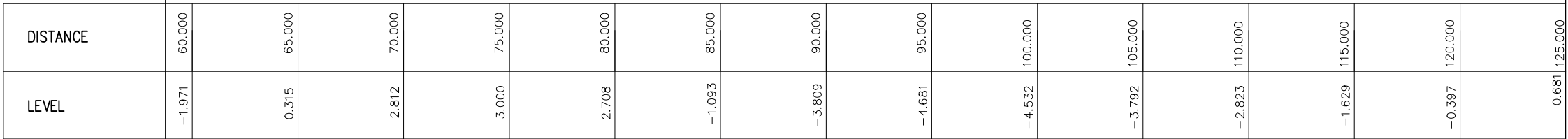


SECTION D-D
(SCALE 1:250)

M.H.W.S. +3.200m
M.H.W.N. +1.900m

M.L.W.S. +0.400m
0.00mOD

DATUM
-6.000mAOD



SECTION D-D
(CONTINUED)
(SCALE 1:250)

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. DAF001

CONSTRUCTION

- | | |
|--------------------------|--------------------------------------|
| 1. ADJACENT ACTIVITIES | 8. UNSTABLE STRUCTURES |
| 2. RESTRICTED SITE | 9. HAZARDOUS MATERIALS |
| 3. INTERFACE WITH PUBLIC | 10. UNFORESEEN GROUND CONDITIONS |
| 4. NEAR TO WATERWAYS | 11. LEPTOSPIROSIS |
| 5. TIDAL WORKING | 12. UNEXPECTED HIGH WATER VELOCITIES |
| 6. CONTAMINATION | 13. SCHEDULED MONUMENT |
| 7. SERVICES | 14. SPECIAL AREA OF CONSERVATION |

MAINTENANCE AND INSPECTION

- | | |
|-------------------------|--------------------------------|
| • RESTRICTED SITE | • UNSTABLE STRUCTURES |
| • INTERFACE WITH PUBLIC | • LEPTOSPIROSIS |
| • NEAR TO WATERWAYS | • SCHEDULED MONUMENT |
| • TIDAL WORKING | • SPECIAL AREA OF CONSERVATION |
| • SERVICES | |

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.

NOTES:

1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.

Rev.	Date	Description	Drwn.	Chkd.	Appd.
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FAIRHURST

4th Floor,
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GLASGOW
G2 4JR

Tel: 0141 204 8800
www.fairhurst.co.uk

Client:



HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

Project Title:

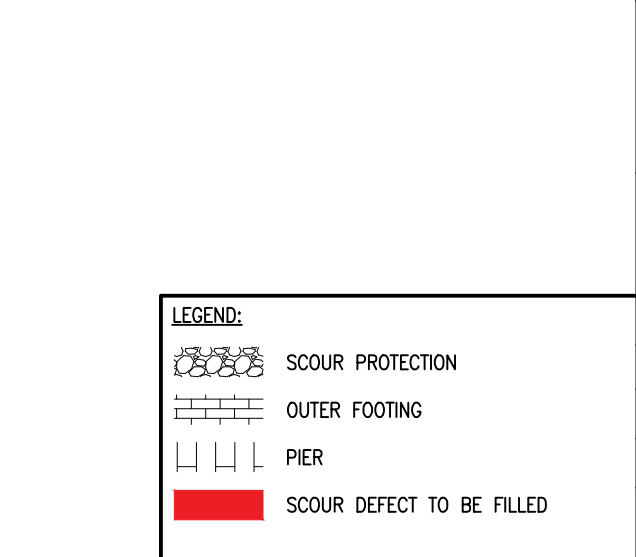
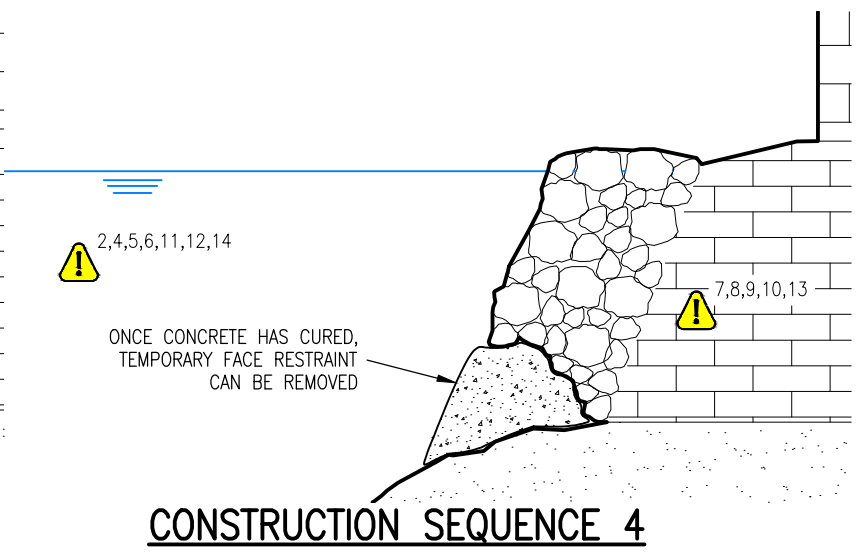
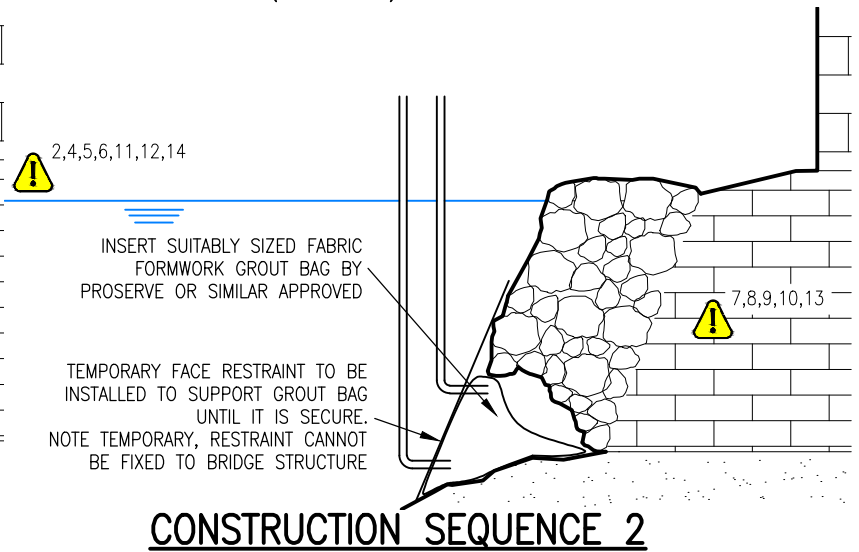
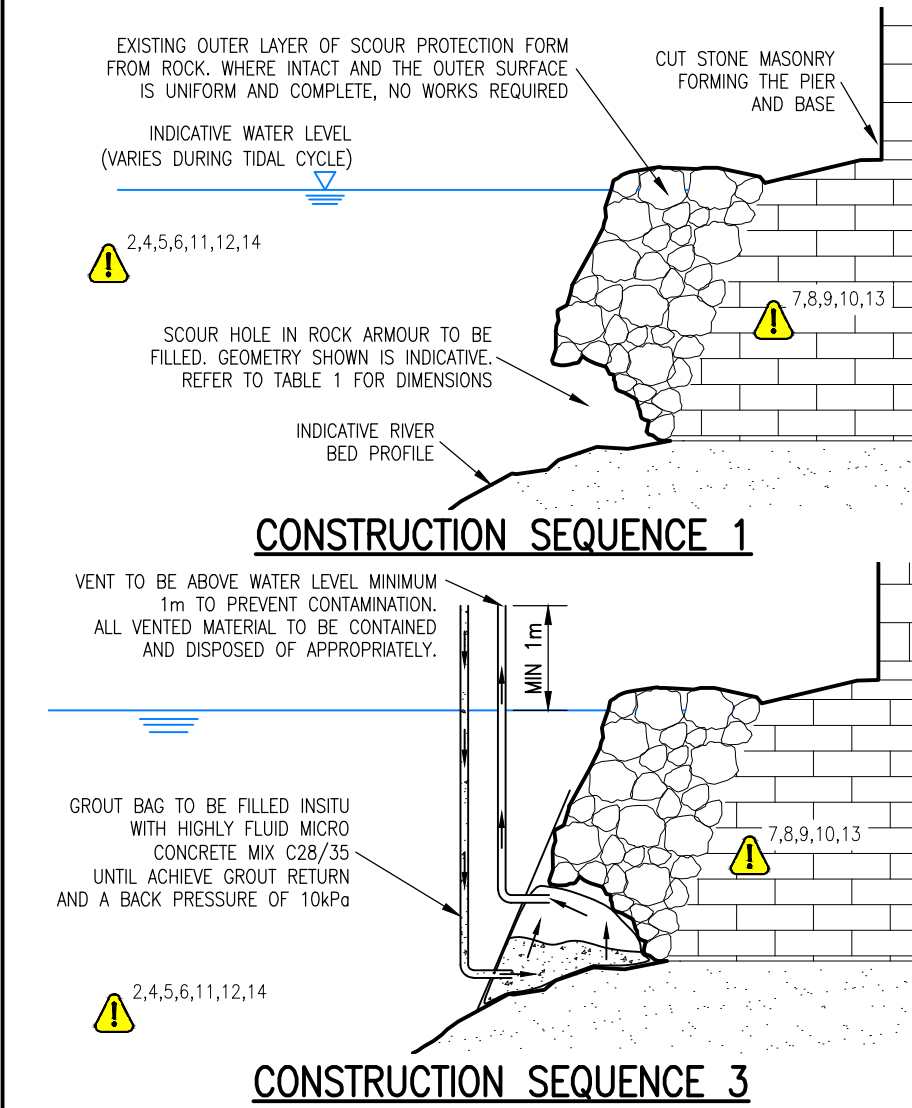
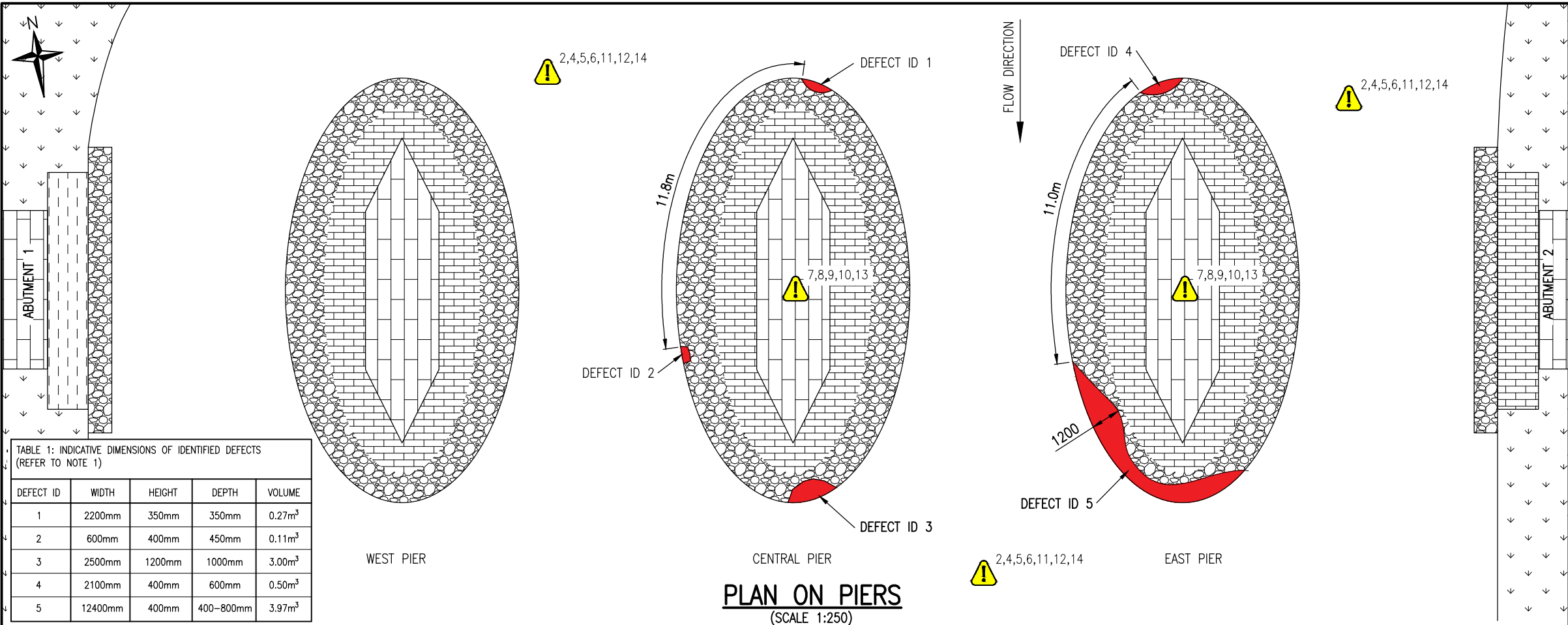
**STIRLING OLD BRIDGE
SCOUR REPAIRS**

Drawing Title:

**CROSS SECTIONS
SHEET 2 OF 2**

Scale at A3: 1:250	Status: FOR INFORMATION
Drawn: KAB	Checked: Approved:
Date: 23/01/26	Date: Date:

Drawing No.:	Revision:
162865/9004	—



LEGEND:

- SCOUR PROTECTION
- OUTER FOOTING
- PIER
- SCOUR DEFECT TO BE FILLED

Do not scale from this drawing.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

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CONSTRUCTION

- 1. ADJACENT ACTIVITIES
- 2. RESTRICTED SITE
- 3. INTERFACE WITH PUBLIC
- 4. NEAR TO WATERWAYS
- 5. TIDAL WORKING
- 6. CONTAMINATION
- 7. SERVICES
- 8. UNSTABLE STRUCTURES
- 9. HAZARDOUS MATERIALS
- 10. UNFORESEEN GROUND CONDITIONS
- 11. LEPTOSPIROSIS
- 12. UNEXPECTED HIGH WATER VELOCITIES
- 13. SCHEDULED MONUMENT
- 14. SPECIAL AREA OF CONSERVATION

MAINTENANCE AND INSPECTION

- RESTRICTED SITE
- INTERFACE WITH PUBLIC
- NEAR TO WATERWAYS
- TIDAL WORKING
- SERVICES
- UNSTABLE STRUCTURES
- LEPTOSPIROSIS
- SCHEDULED MONUMENT
- SPECIAL AREA OF CONSERVATION

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.

NOTES:

- INDICATIVE VOID DIMENSIONS AND VOLUMES OBTAINED DURING PRELIMINARY SURVEY BY SHEARWATER MARINE SERVICES Ltd. IN JULY 2021. A MORE DETAILED SURVEY IS TO BE OBTAINED BY HES IN ADVANCE OF THE WORKS WITH RESULTS PROVIDED TO THE CONTRACTOR.
- NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.
- IT IS ANTICIPATED THAT WORKS ARE ONLY ABLE TO BE UNDERTAKEN WHEN WATER VELOCITIES ARE BELOW 0.5m/s.
- CONTRACTOR TO TAKE UNCERTAINTY AND VARIATION IN WATER VELOCITIES AT DIFFERENT PARTS OF THE STRUCTURE AND WATERCOURSE INTO ACCOUNT DURING PROJECT PLANNING.
- THE CONTRACTOR IS RESPONSIBLE FOR MEASURING THE WATER VELOCITY DURING THE WORKS.

A 14/04/26 MINOR REVISIONS

Rev. Date Description Drwn. Chkd. Appd.

FAIRHURST

4th Floor,
300 Bath Street,
GLASGOW
G2 4JR

Tel: 0141 204 8800
www.fairhurst.co.uk

HISTORIC ENVIRONMENT SCOTLAND

ÀRAINNEACHD EACHDRAIDHEIL ALBA

Project Title:

**STIRLING OLD BRIDGE
SCOUR REPAIRS**

Drawing Title:

GENERAL ARRANGEMENT OF DEFECTS

Scale of A3:
AS SHOWN

Status:
FOR INFORMATION

Drawn:
KAB

Checked:
Date:
26/01/26

Approved:
Date:

Drawing No.:
162865/9005

Revision:
A



DEFECT 1: CENTRAL PIER – UNDERCUT TO THE OUTER FOOTING / SCOUR PROTECTION AT THE TOE OF THE PIER ON THE NORTHERN (UPSTREAM) SIDE



DEFECT 2: CENTRAL PIER – UNDERCUT TO THE OUTER FOOTING / SCOUR PROTECTION ON THE WEST SIDE OF THE PIER, 11.8m FROM THE TOE OF THE NORTHERN (UPSTREAM) SIDE



DEFECT 3: CENTRAL PIER – UNDERCUT TO THE OUTER FOOTING / SCOUR PROTECTION AT THE SOUTHERN (DOWNSTREAM) SIDE OF THE PIER



DEFECT 4: EAST PIER – UNDERCUT TO THE OUTER FOOTING / SCOUR PROTECTION AT THE TOE OF THE PIER ON THE NORTHERN (UPSTREAM) SIDE



DEFECT 5: EAST PIER – UNDERCUT TO THE OUTER FOOTING / SCOUR PROTECTION, 11.0m FROM THE TOE OF THE NORTHERN (UPSTREAM) SIDE. THERE IS AN AREA 1200mm DEEP, 3m FROM THE START OF THE UNDERCUT

Do not scale from this drawing.			
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION			
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RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. DAF001			
CONSTRUCTION			
1. ADJACENT ACTIVITIES		8. UNSTABLE STRUCTURES	
2. RESTRICTED SITE		9. HAZARDOUS MATERIALS	
3. INTERFACE WITH PUBLIC		10. UNFORESEEN GROUND CONDITIONS	
4. NEAR TO WATERWAYS		11. LEPTOSPIROSIS	
5. TIDAL WORKING		12. UNEXPECTED HIGH WATER VELOCITIES	
6. CONTAMINATION		13. SCHEDULED MONUMENT	
7. SERVICES		14. SPECIAL AREA OF CONSERVATION	
MAINTENANCE AND INSPECTION			
• RESTRICTED SITE		• UNSTABLE STRUCTURES	
• INTERFACE WITH PUBLIC		• LEPTOSPIROSIS	
• NEAR TO WATERWAYS		• SCHEDULED MONUMENT	
• TIDAL WORKING		• SPECIAL AREA OF CONSERVATION	
• SERVICES			
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.			
NOTES:			
1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.			
Rev.	Date	Description	Drwn. Chkd. Appd.
FAIRHURST		Client:	
4 th Floor, 300 Bath Street, GLASGOW G2 4JR Tel: 0141 204 8800 www.fairhurst.co.uk		 HISTORIC ENVIRONMENT SCOTLAND ÀRAINNEACHD EACHDRAIDHEIL ALBA	
Project Title:			
STIRLING OLD BRIDGE SCOUR REPAIRS			
Drawing Title:			
SCOUR DEFECT IMAGES			
Scale of A3:		Status:	
NTS		FOR INFORMATION	
Drawn:		Checked:	Approved:
KAB			
Date:		Date:	Date:
26/01/26			
Drawing No.:			Revision:
162865/9006			—

UNDERPINNING GROUT BAG (FABRIC FORMWORK) SPECIFICATION		WATERCOURSE. ALL WASTE FLUIDS MUST BE CONTAINED AND DISPOSED OF APPROPRIATELY.		Do not scale from this drawing.	
		MICRO CONCRETE MIX		SAFETY HEALTH AND ENVIRONMENTAL INFORMATION	
1. THIS SPECIFICATION IS FOR UNDERPINNING GROUT BAGS THAT ARE FILLED IN–SITU WITH A HIGHLY FLUID MIX. THE SYSTEM INCLUDES THE USE OF A VENT STANDPIPE THAT PRESSURISES THE INSIDE OF THE GROUT BAG TO APPROXIMATELY 10–13kPa THUS GUARANTEEING TOP CONTACT AND EFFECTIVE STRUCTURAL UNDERPINNING.		11. THE MIX SHALL BE SUPPLIED BY READY MIX, OR SITE BATCHED, TO GIVE A SUFFICIENT OUTPUT.		IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.	
2. THE UNDERPINNING GROUT BAGS ARE TO BE FABRICATED FROM A TWIN–LAYER FABRIC SUPPLIED BY PROSERVE OR AN ENGINEER APPROVED EQUIVALENT. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE GROUT BAG AND MANUFACTURER TO THE ENGINEER FOR APPROVAL.		12. UNDERPINNING GROUT BAGS SHALL BE PUMP FILLED WITH A MICRO CONCRETE OF 35N/mm² MINIMUM CUBE STRENGTH (C28/35). MICRO CONCRETE IS TYPICALLY A MIX OF LOCAL SAND(S) AND CEMENT OF 2:1 (S:C) PROPORTIONS.		RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. DAF001	
3. THE UNDERPINNING GROUT BAGS ARE TO BE PLACED WITHIN VOIDS, TEMPORARILY RESTRAINED, AND THEN PUMP FILLED WITH A SAND:CEMENT MICRO CONCRETE. THE SYSTEM CAN BE INSTALLED ABOVE OR BELOW WATER.		• CEMENT650kg/m³		CONSTRUCTION	
4. THE UNDERPINNING GROUT BAGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER’S RECOMMENDATIONS AND THIS SPECIFICATION.		• SAND – FINE SHARP WASHED1300kg/m³		1. ADJACENT ACTIVITIES2. RESTRICTED SITE3. INTERFACE WITH PUBLIC4. NEAR TO WATERWAYS5. TIDAL WORKING6. CONTAMINATION7. SERVICES8. UNSTABLE STRUCTURES9. HAZARDOUS MATERIALS10. UNFORESEEN GROUND CONDITIONS11. LEPTOSPIROSIS12. UNEXPECTED HIGH WATER VELOCITIES13. SCHEDULED MONUMENT14. SPECIAL AREA OF CONSERVATION	
5. THE GROUT BAG FABRIC CONSISTS OF TWO WOVEN LAYERS WHICH PREVENT WASHOUT OF MICRO CONCRETE BEFORE SETTING. ALL GROUT BAGS ARE ENGINEERED AND MANUFACTURED BESPOKE FOR EACH PROJECT ARRANGEMENT AND INSTALLATION CONDITIONS. THE GROUT BAGS ARE FABRICATED WITH GENEROUS SURPLUS TO ENSURE THAT THE MATERIAL CAN EXPAND OUT, FULLY FILLING VOIDS, FORMING INTIMATE BEARING CONTACT WITH SOFFITS AND RESTORING GROUT BEARING SUPPORT TO STRUCTURES.		• WATER (BASED ON WATER:CEMENT RATIO OF 0.55)350kg/m³		MAINTENANCE AND INSPECTION	
6. THE MANUFACTURER SHALL PROVIDE THE FOLLOWING SPECIALIST ENGINEERING SUPPORT WORKING IN CONJUNCTION WITH THE CONTRACTOR, TO ENSURE THAT THE UNDERPINNING IS COMPETENTLY INSTALLED:		• (BUT MAY VARY TO SUIT SAND GRADING)		• RESTRICTED SITE• INTERFACE WITH PUBLIC• NEAR TO WATERWAYS• TIDAL WORKING• SERVICES• UNSTABLE STRUCTURES• LEPTOSPIROSIS• SCHEDULED MONUMENT• SPECIAL AREA OF CONSERVATION	
a. REVIEW OF THE CONTRACTOR’S PROPOSED METHOD OF WORKING AND ARRANGEMENT OF THE UNDERPINNING SYSTEM TO SUIT THE WORKING METHOD AND RIVER CONDITIONS.				FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE	
b. TEMPORARY WORKS CALCULATIONS FOR THE LOAD ON THE FACE RESTRAINT, AND CO–ORDINATION WITH THE CONTRACTOR TO ENSURE THE PLANNED FACE RESTRAINT IS SUFFICIENT.				IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.	
c. PREPARATION OF GENERAL ARRANGEMENT DRAWINGS FOR ENGINEER APPROVAL.				NOTES:	
d. PREPARATION OF FABRICATION DRAWINGS FOR GROUT BAGS.				1. NO PLANT OR MATERIALS TO UTILISE THE BRIDGE STRUCTURE. ALL ACCESS TO THE SCOUR DEFECTS IS TO BE VIA THE RIVER.	
e. INSTALLATION GUIDANCE.					
f. SITE SUPPORT VISIT AT THE START OF INSTALLATION AND OFFICE BASED SUPPORT DURING PREPARATION AND INSTALLATION.					
7. THE FABRIC USED IN THE MANUFACTURE OF FABRIC FORMWORK UNITS SHALL BE A SPECIALLY WOVEN POLYAMIDE / POLYPROPYLENE / POLYESTER FABRIC THAT IS DESIGNED TO AVOID ENTRAPPED WATER VOIDS AND ALLOW FOR THE BLEEDING DESCRIBED ABOVE. IN ADDITION, THE FABRIC SHALL ALLOW THE CONCRETE TO BE PROTECTED FROM WASH OUT UNTIL THE MIX ACQUIRES SUFFICIENT STRENGTH.		MICRO CONCRETE MIX TESTING			
8. THE OPENING SIZE IN THE FABRIC SHALL BE ENGINEERED SO THAT:		15. FREE WATER BLEED THROUGH THE PERMEABLE FABRIC LOWERS THE WATER:CEMENT RATIO IN THE CAST UNDERPINNING GROUT BAGS. 100mmØ PERMEABLE FABRIC TEST SOCKS, MAY BE USED TO TAKE CONCRETE SAMPLES FOR TESTING. TYPICALLY 100mmØ CYLINDERS x 200mm HIGH ARE TESTED AT 7 DAYS (1 No) AND 28 DAYS (2 No). NO TESTING IS REQUIRED WHERE A MIX HAS BEEN PREVIOUSLY PROVEN AND DETAILS CAN BE SUBMITTED. THE CONCRETE HAS GOOD STRENGTH AND ABRASION RESISTANCE DUE TO THE LOW WATER:CEMENT RATIO.			
a. THE PRESSURE IN THE FORMS IS CONTROLLED BY VENT STANDPIPES 1m HIGH MINIMUM FOR UNDERPINNING WORKS.		TEMPORARY FACE RESTRAINT			
b. THE OPENING SIZE IN THE FABRIC, O ₉₀ , SHOULD BE LESS THAN THE D ₅₀ SIZE OF THE SAND IN THE MICRO CONCRETE MIX TO ENSURE MICRO CONCRETE TIGHTNESS.		16. THE UNDERPINNING BAGS, WHEN FILLED WITH FLUID MIX COULD ROLL OUT OF THE VOID IF TEMPORARY FACE RESTRAINT IS NOT PROVIDED. THIS FACE RESTRAINT PREVENTS THE FLUID CONCRETE IN THE BAG FROM MOVING TO A LOWER POINT OUTSIDE OF THE VOID, OR ROLLING AWAY FROM THE BACK OF THE VOID.			
c. SF>4 FOR UNDERPINNING AND IRREVERSIBLE WORK.					
d. SF>3 FOR OTHER WORKS.					
9. FROM A SURVEY OF THE VOIDS, A GENERAL ARRANGEMENT DRAWING SHOWING THE PROPOSED UNDERPINNING BAGS IS TO BE PREPARED BY THE MANUFACTURER FOR APPROVAL BY THE ENGINEER. GROUT BAG FABRICATION DRAWINGS ARE THEN PRODUCED, INCORPORATING ADDITIONAL FABRIC TO ENSURE VOIDS ARE FULLY INFILLED AND SUFFICIENT GROUT BEARING SUPPORT IS RESTORED TO THE STRUCTURE.		17. THE FACE RESTRAINT IS SIMPLE AND ESSENTIAL AND CAN OFTEN REQUIRE A CAPACITY OF 10kN/m RESTRAINT FORCE OR HIGHER DEPENDING ON THE SIZE AND SHAPE OF THE VOID.			
10. THE CONTRACTOR IS TO PROVIDE TO THE ENGINEER DETAILS TO SUFFICIENTLY DEMONSTRATE PUMP FILLING OF FORMS IN TREMIE FASHION WITH FILLING FROM THE BOTTOM AND VENTING FROM THE TOP, TO ENSURE CONCRETE QUALITY IS MAINTAINED. NO FLUID VENTED FROM THE TREMIE IS ALLOWED TO ENTER THE		18. THE CONTRACTOR IS TO SUBMIT TO THE MANUFACTURER AND THE ENGINEER DETAILS OF THE PROPOSED FACE RESTRAINT ARRANGEMENT FOR APPROVAL.			
		19. NOTE, DUE TO THE HISTORICAL SIGNIFICANCE AND SCHEDULED MONUMENT STATUS OF THE BRIDGE STRUCTURE, NO PHYSICAL FIXING TO ANY PART OF THE BRIDGE STRUCTURE IS ALLOWABLE. THE TEMPORARY FACE RESTRAINT MUST BE SECURED IN PLACE BY OTHER MEANS.			
		UNDERPINNING GROUT BAG INSTALLATION			
		20. WHERE INSTALLATION IS UNDERWATER BY DIVERS, DIVER INSTALLATION TEAMS SHALL GENERALLY HAVE AN AUDIO AND VISUAL LINK BY WAY OD DIVE CAMERA, FOR MONITORING QUALITY CONTROL, PROGRESS AND SAFETY.			
		21. GROUT BAG INSTALLATION AND FILLING SHALL BE IN ACCORDANCE WITH THIS SPECIFICATION AND WITH THE MANUFACTURERS INSTALLATION GUIDANCE.			
		22. UNDERPINNING GROUT BAGS ARE PUMP FILLED IN TREMIE FASHION WITH FILLING FROM THE BOTTOM AND VENTING FROM THE TOP TO ENSURE CONCRETE QUALITY IS MAINTAINED. GROUT BAGS ARE TO BE FILLED CONTINUOUSLY WITHOUT THE FORMATION OF COLD JOINTS.			