

AGENDA ITEM 5

APPENDIX I

2019/005 I/DET

PLANS

Overall Plan

Author: Kelly McKellar

Scale @ A3: 1:10,000

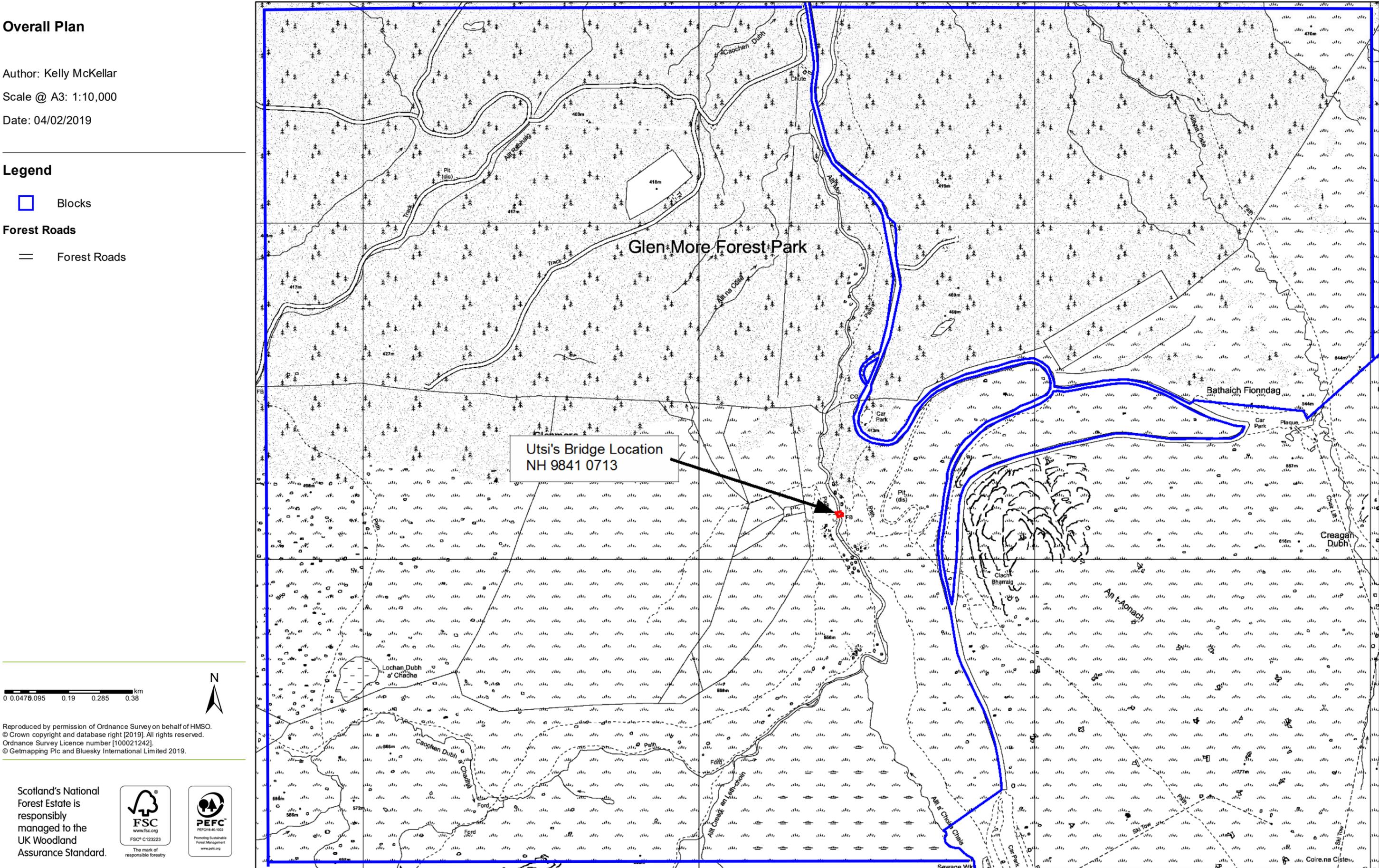
Date: 04/02/2019

Legend

 Blocks

Forest Roads

 Forest Roads

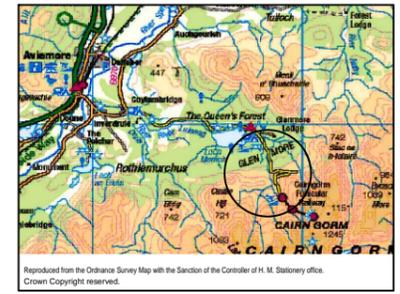


Reproduced by permission of Ordnance Survey on behalf of HMSO.
© Crown copyright and database right [2019]. All rights reserved.
Ordnance Survey Licence number [100021242].
© Getmapping Plc and Bluesky International Limited 2019.

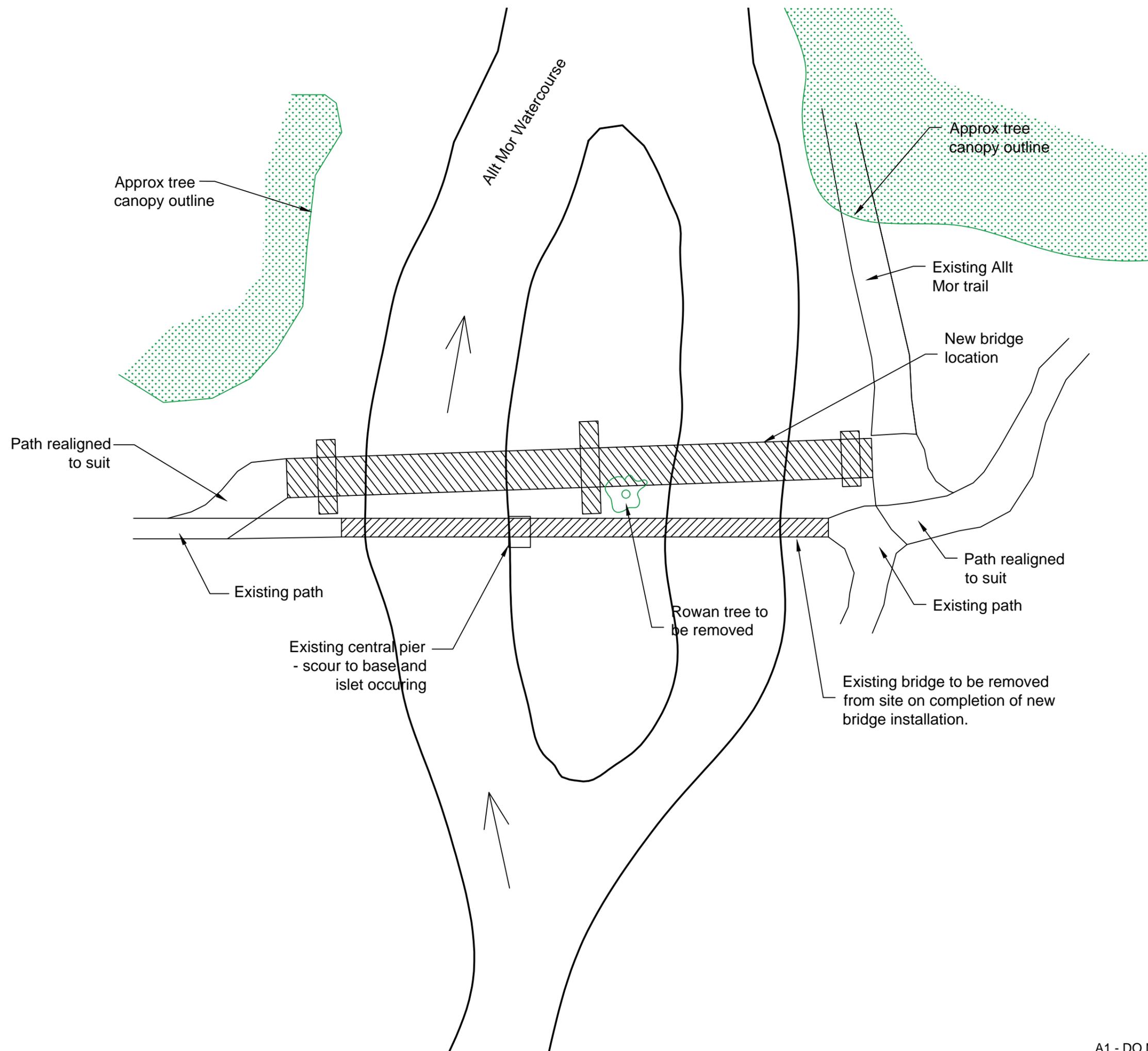
 Blocks

Forest Roads

 Forest Roads



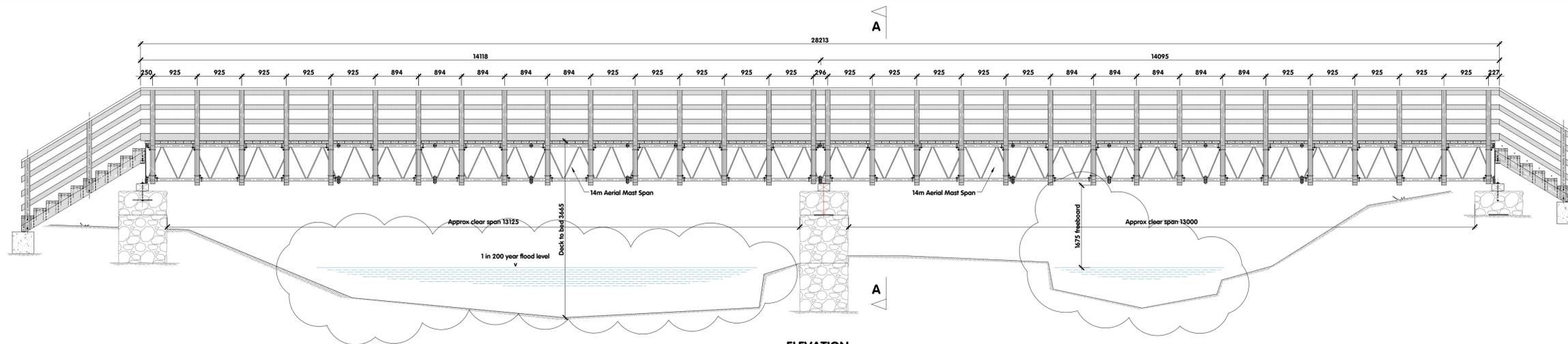
LOCATION PLAN



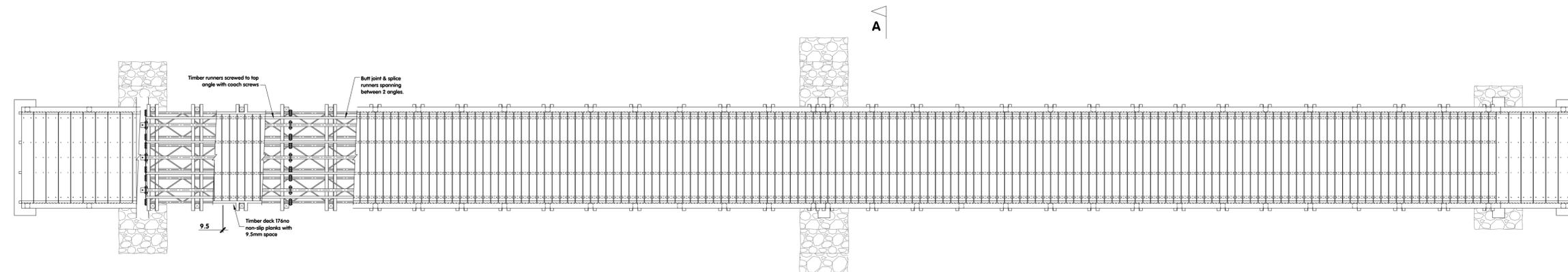
- AERIAL MAST NOTES:
1. This drawing is to be read in conjunction with the Specification and all relevant Engineers drawings. All brand named products may be replaced with equal products subject to approval by the designer.
 2. All dimensions are in millimetres unless stated otherwise.
 3. All levels are in metres unless stated otherwise.
 4. **TIMBER** - All graded timber to be supplied with appropriate CE marking. Where specified holes to be drilled before treatment. All softwood except Larch heartwood to be treated with Tanalith-E preservative. Cuts and holes made on site to be treated with Ensele 3450. All timber to be from a sustainable source FSC certified or equivalent. Certification must be provided before timber will be approved. Handrail timbers must span at least 3 posts and joins on adjacent rails must not be on the same post. Allowance for cutting waste is the contractors responsibility.
 5. All concrete to comply with EN206:BS8500. Mix RC35, S2 slump, 280kg cement and water cement ratio 0.6. Surface finish, all hidden faces F1, visible faces F5.
 6. A plumb line should be set up between first and last handrail posts of each span to ensure the handrails are horizontal and do not show dead load deflection.
 7. Ground bearing capacity to be assessed and approved by the Engineer.
 8. All bolts, screws and washers to be spun galvanised.
 9. Steel bridge kit from Haley Engineering, supplied with CE Marking. All steelwork & coach screws to be hot dip galvanised in accordance with BS EN ISO 1461:2009
 10. Nuts to be tack welded to 'U' bolt shafts after final tightening, wire brush cleaned and galvalroid welded area.
 11. Should construction be delayed for more than 1 year from the date of issue, please contact CETS for the latest drawing revision.
 12. The new bridges are located at approx OS grid reference NH 984 071.

Revision	Date	Changes	Drawn	Checked
Drawing Status:				
CONSTRUCTION				
Client:				
FORESTRY COMMISSION SCOTLAND				
Civil Engineering Technical Services				
		Silvan House, 231 Corstorphine Road, Edinburgh, EH12 7AT Tel: 0300 067 6971		
Job Title:				
UTSI'S BRIDGE GLENMORE NORTH REGION				
Drawing Title:				
SITE PLAN				
Drawn: KMCK		Job No: CETS/1621		Date: 10 Mar 2019
Checked:		Scales: 1:200		Revision:
Drawing No: CETS/1621/03		Revision:		

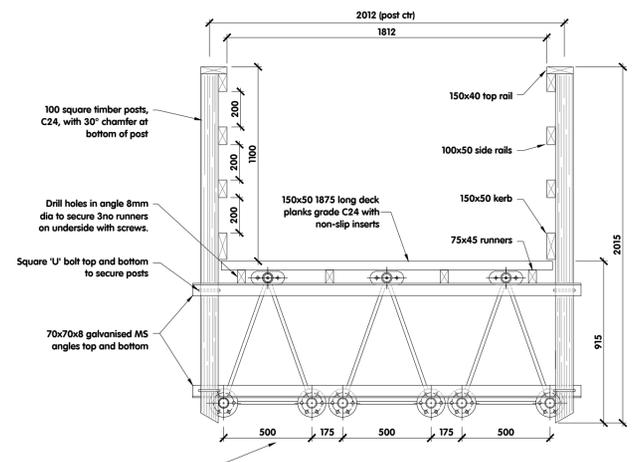
A1 - DO NOT SCALE



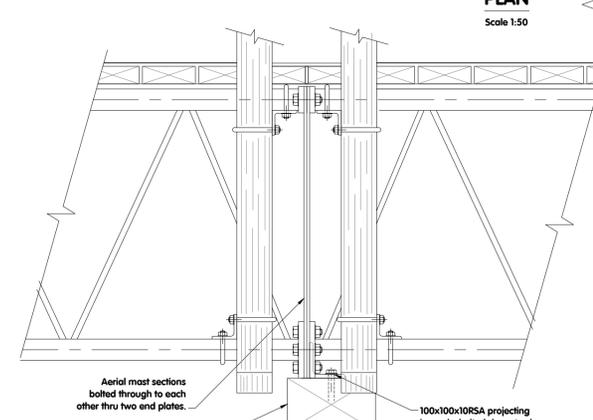
ELEVATION
Scale 1:50



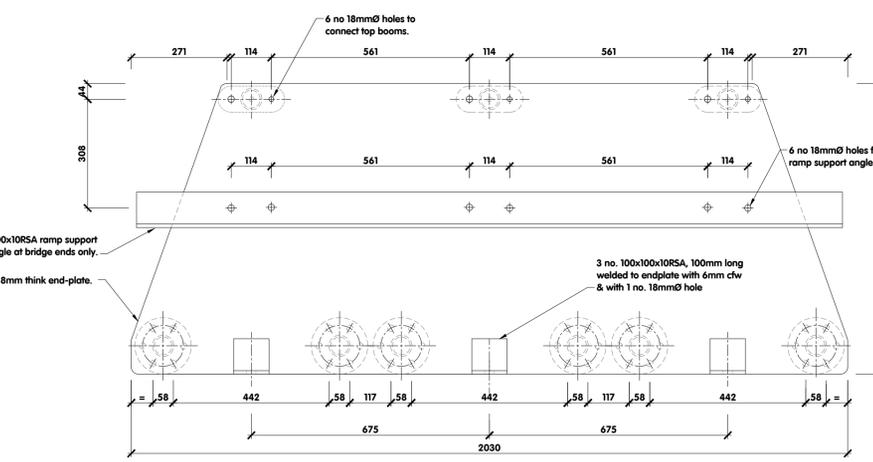
PLAN
Scale 1:50



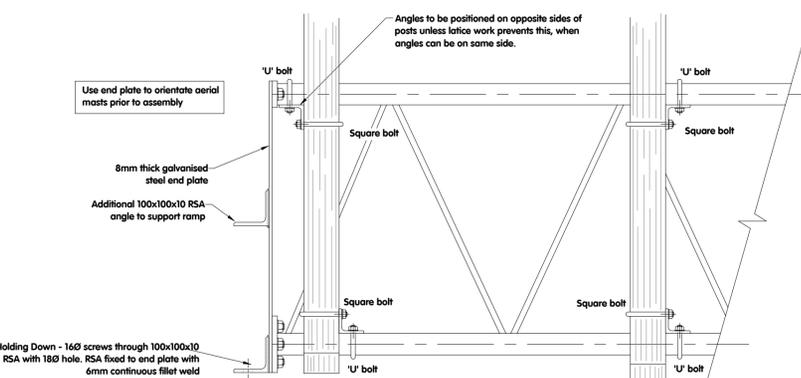
TYPICAL SECTION
Scale 1:20



SPAN CONNECTION DETAIL
Scale 1:10

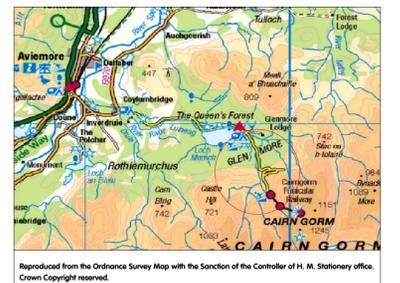


END PLATE DETAIL
Scale 1:10



DETAILED ELEVATION - SUPPORT
Scale 1:10

Inspection & Design Criteria	
RESIDUAL HAZARDS Services	None
MAINTENANCE & INSPECTION	Category C Bridge
General Inspection	Grade 3 visual inspection every two years.
Principal Inspection	Grade 3 close examination every six years.
DESIGN CRITERIA	
Catchment Area	14.4km ²
Bed Gradient	1 in 10 approx
Flood Return Period	1 in 100 yrs
Load Capacity	3.2kN/m ² Normal Loading
Handrail Loading	0.74kN/m at 1.2m above deck
Design Life	50 years
Completion Date	--- 2019



LOCATION PLAN

- AERIAL MAST NOTES:**
- This drawing is to be read in conjunction with the Specification and all relevant Engineers drawings. All brand named products may be replaced with equal products subject to approval by the designer.
 - All dimensions are in millimetres unless stated otherwise.
 - All levels are in metres unless stated otherwise.
 - TIMBER** - All graded timber to be supplied with appropriate CE marking. Where specified holes to be drilled before treatment. All softwood except Larch heartwood to be treated with Tanalith-E preservative. Cuts and holes made on site to be treated with Ensele 3450. All timber to be from a sustainable source FSC certified or equivalent. Certification must be provided before timber will be approved. Handrail timbers must span at least 3 posts and joints on adjacent rails must not be on the same post. Allowance for cutting waste is the contractors responsibility
 - All concrete to comply with EN206:BS58500. Mix RC35, S2 slump, 280kg cement and water cement ratio 0.6. Surface finish, all hidden faces F1, visible faces F5.
 - A plumb line should be set up between first and last handrail posts of each span to ensure the handrails are horizontal and do not show dead load deflection.
 - Ground bearing capacity to be assessed and approved by the Engineer.
 - All bolts, screws and washers to be spun galvanised.
 - Steel bridge kit from Haley Engineering, supplied with CE Marking. All steelwork & coach screws to be hot dip galvanised in accordance with BS EN ISO 1461:2009
 - Nuts to be tack welded to 'U' bolt shafts after final tightening, wire brush cleaned and galvafruid welded area.
 - Should construction be delayed for more than 1 year from the date of issue, please contact CETS for the latest drawing revision.
 - The new bridges are located at approx OS grid reference NH 984 071.

Revision	Date	Changes	Drawn	Checked
C	13/06/19	Flood levels adjusted.	GW	GW
B	20/05/19	Change to 1 in 200 year flood level.	GW	GW
A	15/04/19	Deeper aerial mast sections.	BM	GW

CONSTRUCTION

Client:
FORESTRY COMMISSION SCOTLAND

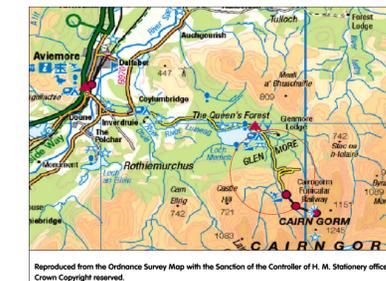
CIVIL ENGINEERING TECHNICAL SERVICES
Forestry and Land Scotland
Coilltearachd agus Fearann Alba
Silvan House, 231 Corstorphine Road, Edinburgh, EH12 7AT
Tel: 0131 370 5121

Job Title:
**UTSI'S BRIDGE
GLENMORE
NORTH REGION**

Drawing Title:
**AERIAL-MAST BRIDGE
2 No. 14m CLEAR SPANS
GENERAL LAYOUT**

Drawn: GW	Job No: CETS/1621	Date: 30 Nov 2018
Checked:	Scales: 1:100, 1:50, 1:20, 1:10, 1:5	
Drawing No: CETS/1621/01	Revision: C	

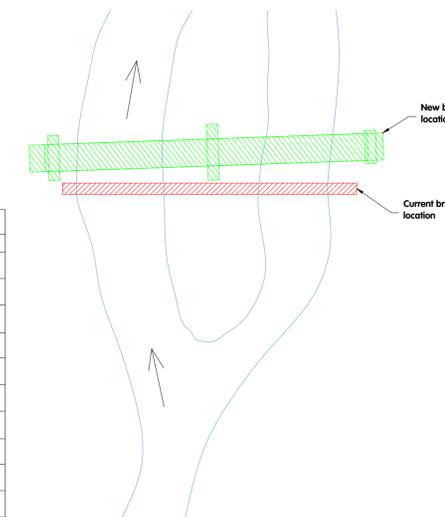
A1 - DO NOT SCALE



LOCATION PLAN

AERIAL MAST NOTES:

- This drawing is to be read in conjunction with the Specification and all relevant Engineers drawings. All brand named products may be replaced with equal products subject to approval by the designer.
- All dimensions are in millimetres unless stated otherwise.
- All levels are in metres unless stated otherwise.
- TIMBER** - All graded timber to be supplied with appropriate CE marking. Where specified holes to be drilled before treatment. All softwood except Larch heartwood to be treated with Tanalith-E preservative. Cuts and holes made on site to be treated with Ensele 3450. All timber to be from a sustainable source FSC certified or equivalent. Certification must be provided before timber will be approved. Handrail timbers must span at least 3 posts and joins on adjacent rails must not be on the same post. Allowance for cutting waste is the contractors responsibility
- All concrete to comply with EN206-BS8500. Mix RC35, S2 slump, 280kg cement and water cement ratio 0.6. Surface finish, all hidden faces F1, visible faces F5.
- A plumb line should be set up between first and last handrail posts of each span to ensure the handrails are horizontal and do not show dead load deflection.
- Ground bearing capacity to be assessed and approved by the Engineer.
- All bolts, screws and washers to be spun galvanised.
- Steel bridge kit from Haley Engineering, supplied with CE Marking. All steelwork & coach screws to be hot dip galvanised in accordance with BS EN ISO 1461:2009
- Nuts to be tack welded to 'U' bolt shafts after final tightening, wire brush cleaned and galvafruid welded area.
- Should construction be delayed for more than 1 year from the date of issue, please contact CETS for the latest drawing revision.
- The new bridges are located at approx OS grid reference NH 984 071.



KEY PLAN

Scale NTS

Hardware Schedule (Extra over Bridge Kit)

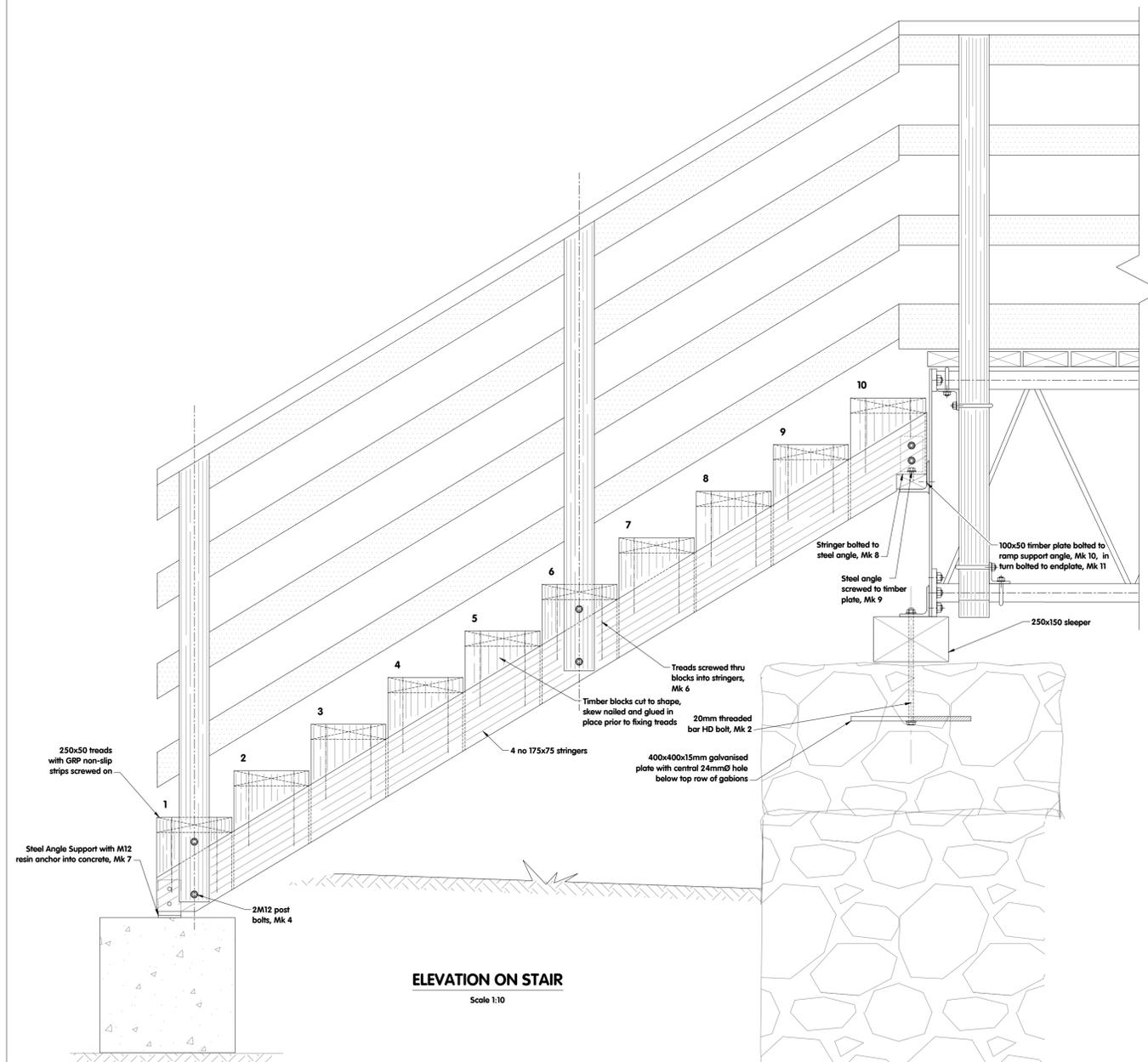
MARK	PART	FIXING	TYPE	LENGTH	No.
1	Deck boards & Rails	Screws	6mm Ø cross-headed quick start csk wood screws, stainless steel	100	1020
2	Holding down Bolts	Threaded Bar	20mm Ø plated threaded bar with 3 no. hex nuts and Form G washer	750	12
3	Runner	Coach Screw	Galvanised 6mm Ø	60	128
4	Ramp post bolts	Coach Bolt	Galvanised 12mm Ø with 1 no. hex nut and 2 no. Form G washers	250	12
5	HD screws into sleepers	Coach Screw	Galvanised 16mm Ø with Form A washer	75	9
6	Ramp tread fixings	Screws	6mm Ø cross-headed quick start csk wood screws, stainless steel	250	100
7	Stringer angle anchors	Threaded Bar	12mm Ø plated threaded bar with 1 no. Form A washer	200	8
8	Stringer angle bolts	Coach bolt	Galvanised 12mm Ø with 1 no. hex nut and 2 no. Form G washers	125	16
9	Stringer angle to plate	Coach screw	Galvanised 12mm Ø	60	8
10	Timber plate to ramp angle	Coach bolt	Galvanised 12mm Ø with 1 no. hex nut 1 no Form A washer, and 1 no. Form G washer	75	10
11	Ramp support angle to endplate	Black bolt Gr 4.6	Plated 16mm Ø with 1 no hex nut and Form A washer	60	12

Timber Schedule - Refer to Note 4
Contractor to establish exact dimensions, lengths and quantities before cutting and treating, and to make allowance for cutting waste.

Part	Species	Grade	Finish	Treatment	Size (mm)	No.	Notes
Deck Planks	Larch/Fir	C24	Sawn	Tanalith E	150 x 50 1875 long	176	With Non-slip inserts
Runners	Oak	-	Sawn	None	75x45 28000 long	4	
Bridge Posts	Larch	C24	Sawn	Tanalith E	100x100 1970 long	56	45° cut one end.
End Posts	Larch	C24	Sawn	Tanalith E	100x100 1940 long	8	30° cut one end.
Top Rails	Larch heartwood	GS	Dressed	None	150x40 28500 long	2	Fix to a minimum of three posts.
Side Rails	Larch heartwood	GS	Dressed	None	100x50 28500 long	6	Fix to a minimum of three posts.
Kerbs	Larch heartwood	GS	Dressed	None	150x50 28500 long	2	Fix to a minimum of three posts.
Sleepers	Oak	D40	Sawn	None	250x150 2500 long	3	
Ramp Posts	Larch	C24	Sawn	Tanalith E	100x100 1525 long	6	30° cut one end.
Ramp 1 - Top Rail	Larch heartwood	GS	Dressed	None	150x40 2890 long	2	
Ramp 1 - Side Rails	Larch heartwood	GS	Dressed	None	100x50 2890 long	8	
Ramp 1 - Stringers	Larch/Fir	GS	Sawn	Tanalith E	175x75 2990 long	4	
Ramp 2 - Top Rail	Larch heartwood	GS	Dressed	None	150x40 1695 long	2	
Ramp 2 - Side Rails	Larch heartwood	GS	Dressed	None	100x50 1695 long	8	
Ramp 2 - Stringers	Larch heartwood	GS	Dressed	None	175x75 1795 long	4	
Ramp Deckboards	Larch/Fir	GS	Sawn	Tanalith E	250x50 1900 long	16	Screw on GRP non-slip strips on top.
Ramp Support Angle Plate	Larch/Fir	GS	Sawn	Tanalith E	100x50 2000 long	2	Bolt onto ramp support angle.
Tread Supports	Larch/Fir	GS	Sawn	Tanalith E	250x150x75	32	
Dwangs	Larch/Fir	GS	Sawn	Tanalith E	150x50x1000	8	

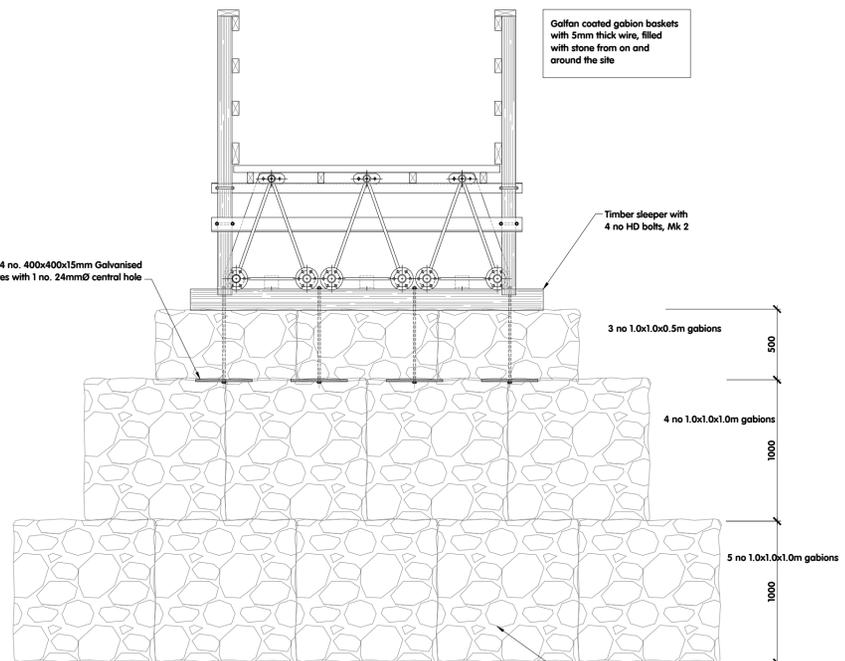
Bridge Kit to include

Item	No.
3m Type C mast	24
2m Type C mast	6
70x70x8 RSA - 2200 long	64
End Plates - 2030x822, 8mm thick With additional holes as drawn and HD angles welded on	4
75 Cr Galvanised steel circular U bolts	288
75 Cr Galvanised steel circular U bolts Galvanised steel rectangular U bolts	128
100x100x8 RSA - 2000 long ramp support angles	2
All fixings for mast & end plates	
400x400x15mm thk galvanised HD plates with central 24mmØ hole.	12
Galvanised steel stringer angle fixings 125x75x8RSA, 75mm long	16
0.5x1.0x1.0 Gabion baskets	9
1.0x1.0x1.0 Gabion baskets	13



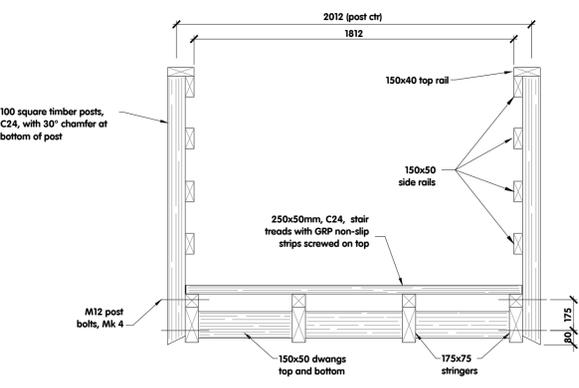
ELEVATION ON STAIR

Scale 1:10



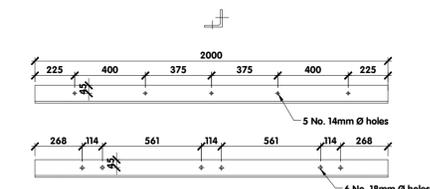
CENTRAL PIER ELEVATION

Scale 1:25



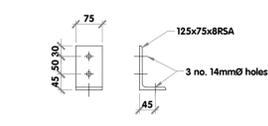
SECTION THRU STEPS

Scale 1:20



RAMP SUPPORT ANGLE DETAIL

Scale 1:20



STRINGER ANGLE FIXING

Scale 1:10

A1 - DO NOT SCALE

Revision	Date	Changes	BM	GW
A	15/04/19	Bridge deck raised.		
Drawing Status: CONSTRUCTION				
Client: FORESTRY COMMISSION SCOTLAND				
Service: CIVIL ENGINEERING TECHNICAL SERVICES				
		Silvan House, 231 Corstorphine Road, Edinburgh, EH12 7AT Tel: 0131 370 5121		
Job Title: UTSI'S BRIDGE GLENMORE NORTH REGION				
Drawing Title: AERIAL-MAST BRIDGE 2 No. 14m CLEAR SPANS RAMP DETAILS				
Drawn: GW	Job No: CETS/1621	Date: 30 Nov 2018		
Checked:	Scale: 1:100; 1:50; 1:20; 1:10; 1:5	Revision:		
Drawn No:	CETS/1621/02	Revision:	A	

This drawing is protected by Copyright