

VOLUME 4: APPENDIX V1-9.3: SCHEDULE OF WATERCOURSE CROSSINGS



Strathy South Wind Farm Grid Connection

Volume 4: Appendix V1-9.3: Schedule of Watercourse Crossings

ASH design+assessment

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SLR Project No.: 428.013137.00001_04

5 February 2025

Revision: Final

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
Final	5 February 2025	A. Searle	K. Rainford	G. Robb
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Basis of Report

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1.0 Introduction

This Appendix contains information relating to the proposed permanent and temporary watercourse crossings, and existing watercourse crossings on tracks which are scheduled to be upgraded to enable construction of the Proposed Development in combination with the Proposed Alignment.

Where access was possible, this report presents photographs and dimensions for each proposed crossing point. The final design of each crossing solution would be agreed with Scottish Environment Protection Agency (SEPA) prior to construction and be determined as part of the detailed site design.

The survey of the proposed watercourse crossings was undertaken between April and September 2024 by experienced SLR hydrologists.

The location of the watercourse crossings is shown in **Volume 2: Figure V1-9.1**.

1.1 Relevant Legislation

The Water Framework Directive (2000/60/EC) (WFD) has been transposed into Scottish legislation as the Water Environment and Water Services (Scotland) Act 2003¹ (or WEWS) and has given Scottish Ministers powers to introduce regulatory controls over activities in order to protect and improve Scotland's water environment. The water environment includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. These regulatory controls, known as the Water Environment (Controlled Activities) (Scotland) Regulations 2011² (CAR) came into force in 2011 and have since been amended in 2013, 2017, and 2021.

With respect to watercourse crossings, CAR requires that all engineering works in inland surface waters and wetlands are subject to authorisation and allow for proportionate risk-based regulation which is outlined in the CAR Practical Guide³. SEPA provide authorisation for watercourse crossings shown on the 1:50,000 scale Ordnance Survey (OS) maps (Landranger Series). All other watercourses are classed as "minor watercourse" and are exempt under CAR.

The design, construction and/or improvements to the crossings would be agreed with SEPA prior to any construction works commencing in accordance with CAR as part of the detailed development design.

¹ Water Environment and Water Services (Scotland) Act 2003, available at <https://www.legislation.gov.uk/asp/2003/3/contents> [Accessed June 2024]

² Water Environment (Controlled Activities) (Scotland) Regulations 2011, available at <https://www.legislation.gov.uk/ssi/2011/209/contents/made> [Accessed June 2024]

³ SEPA (December 2022) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), A Practical Guide, available at https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf [Accessed June 2024]



2.0 Watercourse Crossings

Watercourse Crossing ID	WX01
Watercourse Crossing Details	NGR: NC 84360 62465 Status: New Temporary Crossing. Watercourse Width: N/A Watercourse Depth: N/A Notes: No active watercourse recorded during survey. Likely to be minor watercourse incised in peat. Evidence of peat excavation noted upstream of watercourse.
Photograph Looking Upstream	N/A
Photograph Looking Downstream	N/A



Watercourse Crossing ID	WX02
Watercourse Crossing Details	<p>NGR: NC 84827 62805</p> <p>Status: New Permanent Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Boggy ground with no obvious flowing water. This area is located in a wider channel which is up to 2 m wide and 1.5 m deep and incised in peat.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX03
Watercourse Crossing Details	<p>NGR: NC 86486 64399</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: 0.4 m</p> <p>Watercourse Depth: 0.3 m</p> <p>Notes: Unable to survey existing culvert due to vegetation cover.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX04
Watercourse Crossing Details	<p>NGR: NC 86706 64821</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No watercourse or existing culvert recorded during survey. Potential buried drain / culvert.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX05
Watercourse Crossing Details	<p>NGR: NC 87150 64860</p> <p>Status: New Permanent Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No watercourse recorded during survey. Change in vegetation is noted to be approximately 1 m wide. Potential buried drain or culvert.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX06
Watercourse Crossing Details	<p>NGR: NC 87134 63528</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: 1.5 m</p> <p>Watercourse Depth: 0.2 m</p> <p>Notes: Watercourse slightly wider on downstream side of channel compared to upstream. Channel is heavily vegetated. Unable to survey existing culvert due to vegetation.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	



Watercourse Crossing ID	WX07
Watercourse Crossing Details	<p>NGR: NC 87674 63527</p> <p>Status: New Permanent Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No active watercourse noted during survey, however, a waterlogged area up to 4m wide and 0.5m deep is recorded.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	



Watercourse Crossing ID	WX08
Watercourse Crossing Details	<p>NGR: NC 88804 61979</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Waterlogged area with no active watercourse or flowing water. In a wider channel which is 1.5m wide and 1m deep downstream of crossing. No formal drainage features (culvert etc) noted.</p>
Photograph Looking Upstream	 <p>A photograph showing a grassy, sloping bank with tall, dry grasses and some green vegetation. The slope is steep and appears to be part of a watercourse or drainage area. The background shows a clear sky and distant hills.</p>
Photograph Looking Downstream	 <p>A photograph showing a grassy, sloping bank with tall, dry grasses and some green vegetation. The slope is steep and appears to be part of a watercourse or drainage area. The background shows a clear sky and distant hills.</p>





Watercourse Crossing ID	WX09
Watercourse Crossing Details	<p>NGR: NC 88959 62083</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Downstream of WX08. Crossing location inaccessible during survey. Watercourse adjacent to track (downstream of proposed crossing point) is approximately 1.2 m wide and 0.2 m deep.</p>
Photograph Looking Upstream	Not surveyed.
Photograph Looking Downstream	Not surveyed.





Watercourse Crossing ID	WX10
Watercourse Crossing Details	<p>NGR: NC 88513 61533</p> <p>Status: New Permanent Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No active watercourse. Channel extends to 0.4m wide and 0.5m deep. Small footbridge noted immediately downstream of crossing point with a 0.2m diameter corrugated metal circular pipe beneath.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX11
Watercourse Crossing Details	<p>NGR: NC 88749 61425</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Corrugated metal circular culvert.</p> <p>Crossing Dimensions: 0.5m diameter.</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No active watercourse recorded during survey. Culvert entrance and exit is heavily vegetated. Culvert is reinforced with stone headwall.</p>
Photograph from Upstream	 <p>A photograph showing a steep, grassy bank with a narrow, shallow gully or ditch running down it. The vegetation is dense and appears to be a mix of green and yellowish-brown grasses. The sky is visible at the top of the frame, showing some clouds.</p>
Photograph of Culvert Exit from Downstream	 <p>A photograph showing the exit of a culvert from a downstream perspective. The culvert is heavily overgrown with dense green ferns and other vegetation. A stone headwall is visible at the top of the culvert opening. The surrounding area is grassy and appears to be a field or pasture.</p>





Watercourse Crossing ID	WX12
Watercourse Crossing Details	<p>NGR: NC 88722 61385</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: 0.5m</p> <p>Watercourse Depth: 0.2m</p> <p>Notes: Watercourse is located in a channel which is up to 2m wide downstream of crossing point. No obvious watercourse upstream of the crossing point. No evidence of existing drainage at crossing location (culvert etc), however crossing point and upstream of crossing was overgrown during survey.</p>
Photograph Looking Upstream	
Photograph Looking at Crossing from Downstream	





Watercourse Crossing ID	WX13
Watercourse Crossing Details	<p>NGR: NC 88661 61252</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Corrugated metal circular culvert.</p> <p>Crossing Dimensions: 1.7m diameter.</p> <p>Watercourse Width: 1.4m</p> <p>Watercourse Depth: 0.3m</p> <p>Notes: Channel upstream of culvert was overgrown. Culvert reinforced with stone headwall.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking at Culvert Exit from Downstream	





Watercourse Crossing ID	WX14
Watercourse Crossing Details	<p>NGR: NC 88603 61124</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Twin circular culvert.</p> <p>Crossing Dimensions: 0.8m diameter.</p> <p>Watercourse Width: 0.1m</p> <p>Watercourse Depth: 0.2m</p> <p>Notes: Watercourse located in a channel which is up to 2m wide. Culverts reinforced with a stone headwall.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX15
Watercourse Crossing Details	<p>NGR: NC 88465 60965</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Corrugated circular culvert.</p> <p>Crossing Dimensions: 1m diameter.</p> <p>Watercourse Width: 1.5m</p> <p>Watercourse Depth: 0.3m</p> <p>Notes: None.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking at Culvert Exit from Downstream	



Watercourse Crossing ID	WX16
Watercourse Crossing Details	<p>NGR: NC 88457 60867</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Ford</p> <p>Watercourse Width: 2m</p> <p>Watercourse Depth: 0.4m</p> <p>Notes: Watercourse increases to approximately 6m wide at crossing. Ford crossing is same width of existing track (approximately 3m).</p>
Photograph Looking at Crossing from Upstream	 <p>A photograph showing a narrow watercourse flowing through a grassy field. The water is dark and reflects the sky. The banks are covered in green grass and some rocks. In the background, there are rolling hills under a blue sky with scattered white clouds.</p>
Photograph Looking at Crossing from Downstream	 <p>A photograph showing a watercourse flowing through a grassy field. The water is dark and reflects the sky. The banks are covered in green grass and some rocks. In the background, there are rolling hills under a blue sky with scattered white clouds.</p>





Watercourse Crossing ID	WX17
Watercourse Crossing Details	<p>NGR: NC 88485 60719</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Corrugated circular culvert.</p> <p>Crossing Dimensions: 1.5m diameter.</p> <p>Watercourse Width: 2m</p> <p>Watercourse Depth: 0.4m</p> <p>Notes: Watercourse slightly larger downstream of crossing compared to upstream and located in a channel which is up to 3m wide and 1.5m deep.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX18
Watercourse Crossing Details	<p>NGR: NC 89152 61008</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Corrugated pipe.</p> <p>Crossing Dimensions: 0.4m diameter.</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Watercourse recorded as dry during survey. Watercourse located in channel which is 1m deep and 0.8m wide.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking Downstream	





Watercourse Crossing ID	WX19
Watercourse Crossing Details	<p>NGR: NC 89277 60691</p> <p>Status: Existing Crossing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Channel very overgrown. Watercourse and existing culvert was inaccessible during the survey. Watercourse located in a channel which is approximately 2m wide and 1.5m deep.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	



Watercourse Crossing ID	WX20
Watercourse Crossing Details	<p>NGR: NC 89382 60262</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Ford (dry during survey).</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Stagnant water noted upstream, but no flowing / active watercourse recorded during the survey. Watercourse located in a channel which is up to 1m wide and 0.3m deep.</p>
Photograph Looking at Crossing	
Photograph Looking Downstream	



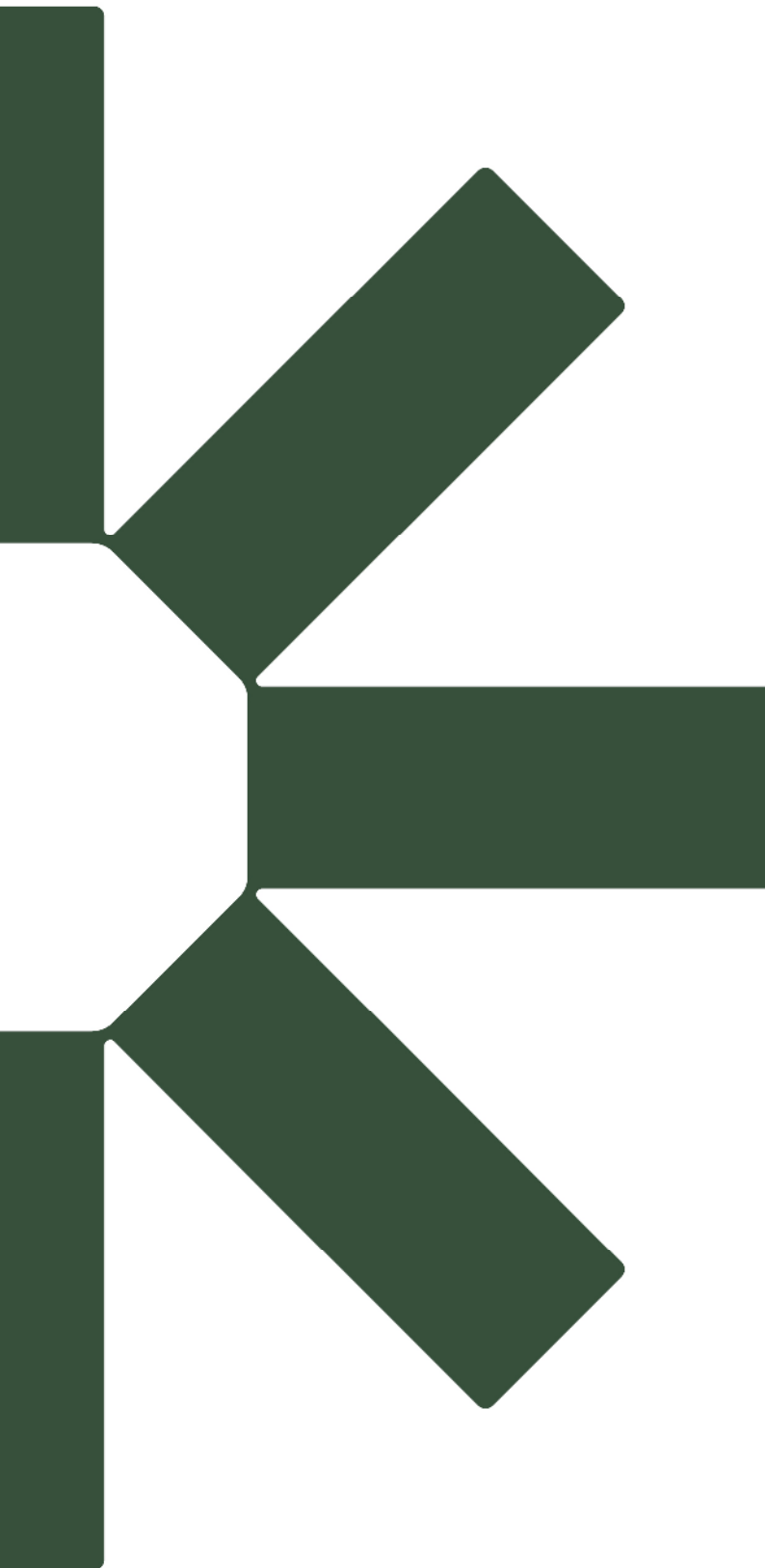
Watercourse Crossing ID	WX21
Watercourse Crossing Details	<p>NGR: NC 89465 60053</p> <p>Status: Existing Crossing</p> <p>Crossing Type: Ford</p> <p>Watercourse Width: 0.2</p> <p>Watercourse Depth: 0.1m</p> <p>Notes: Watercourse located in a channel which up to 2m wide and 0.5m deep. Channel is slightly narrower upstream of crossing point. Downstream of crossing point watercourse channel ill-defined.</p>
Photograph Looking at Crossing	
Photograph Looking Downstream	



Watercourse Crossing ID	WX22
Watercourse Crossing Details	<p>NGR: NC 90490 59622</p> <p>Status: New UGC Crossing</p> <p>Watercourse Width: 1m</p> <p>Watercourse Depth: 0.5m</p> <p>Notes: Watercourse surveyed approximately 50m downstream of the proposed UGC cable crossing. Watercourse incised in bedrock and located within a channel which is up to 15m wide and 5m deep.</p>
Photograph Looking Upstream	N/A
Photograph Looking Downstream	N/A

Watercourse Crossing ID	WX23
Watercourse Crossing Details	<p>NGR: NC 90509 59699</p> <p>Status: New UGC Crossing</p> <p>Watercourse Width: 0.5m</p> <p>Watercourse Depth: 0.1m</p> <p>Notes: Noted to be a man-made channel. Watercourse surveyed approximately 20m downstream of the proposed UGC cable crossing.</p>
Photograph Looking Upstream	N/A
Photograph Looking Downstream	N/A





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