

MONA OFFSHORE WIND PROJECT

Environmental Statement

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Image of an offshore wind farm

MONA OFFSHORE WIND PROJECT

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1 Onshore crossing schedule

1.1 Introduction

- 1.1.1.1 The purpose of this Onshore Crossing Schedule is to provide a mechanism to identify the indicative location of a range of obstacles along the onshore cable corridor and 400kV grid connection cable corridor and notes how they are proposed to be crossed. Figure 1.1 to Figure 1.13 show the indicative locations of the obstacles to be crossed.
- 1.1.1.2 There are two broad techniques considered, trenching and trenchless. Trenched crossings will involve a method of installation that requires open trench excavation, disturbing the ground surface. At trenched crossings, micro-siting will be applied, where possible, to reduce or avoid the level of disturbance to the obstacle. Trenchless techniques involve installation in which a pipe, duct or conduit is installed with little or no surface excavation. Where a decision is yet to be made on the crossing technique both trenching and trenchless techniques are identified.
- 1.1.1.3 Locations where a trenchless crossing is required will be secured through a Development Consent Order Requirement.
- 1.1.1.4 The crossing schedule is secured through a requirement of the Development Consent Order. Trenchless installation techniques must be used to install the cable ducts and electrical circuits where identified in the crossings schedule unless otherwise agreed by the relevant planning authority, following consultation with the relevant statutory consultees.

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
LF-OOX-1	292409.28	378202.56	Other Obstacle Crossing	Surface	Sea defences	Trenchless
LF-UTX-1	292410.11	378158.80	Under Track Crossing	Surface	Network Rail - railway	Trenchless
LF-RX-1	292414.23	378110.90	Road Crossing	Surface	North Wales Expressway, A55	Trenchless
LF-RX-2	292414.65	378076.02	Road Crossing	Surface	Abergele Road, A547	Trenchless
LF-PAT-1	292409.38	378197.71	Footpath, Bridleway or other track crossing	Surface	Coastal footpath	Trenchless
LF-UUX-1	292413.62	378099.19	Underground Utilities Crossing	Buried	Zayo Group UK Ltd Co JSM Group Ltd - telecom line	Trenchless
LF-UUX-2	292413.34	378094.54	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
LF-UUX-3	292413.89	378084.69	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
LF-UUX-4	292413.89	378078.88	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
LF-UUX-5	292414.06	378078.69	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
LF-UUX-6	292414.68	378073.37	Underground Utilities Crossing	Buried	Zayo Group UK Ltd Co JSM Group Ltd - telecom line	Trenchless
LF-OOX-2	292409.60	378179.70	Other Obstacle Crossing	Surface	Historic landfill site	Trenchless
LF-EOX-1	292409.70	378143.40	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
LF-EOX-2	292413.33	378091.70	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
LF-EOX-3	292413.80	378080.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
LF-EOX-4	292415.45	378067.35	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
LF-EOX-5	292415.00	378070.00	Environmental Obstacle Crossing	Surface	Grade II listed building (Gwrych Estate Boundary Wall from Tan-yr-Ogof to Gwrych Lodge)	Trenchless
S1-EOX-1	292391.34	377865.62	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or Trenchless
S1-OOX-1	292314.11	377765.46	Other Obstacle Crossing	Buried	Potential mining works	Trenching or Trenchless
S1A-RX-1	292349.03	377583.95	Road Crossing	Surface	Small road through Gwrych Castle Woods	Trenchless
S1A-OOX-1	292359.29	377538.79	Other Obstacle Crossing	Surface	Gwrych Castle Woods Hill	Trenchless
S1A-OOX-2	292432.44	377527.49	Other Obstacle Crossing	Buried	Potential historical mining works	Trenchless
S1A-EOX-1	292351.78	377571.88	Environmental Obstacle Crossing	Surface	Llanddulas Limestone and Gwrych Castle Wood SSSI and ancient woodland	Trenchless
S1A-PAT-1	292369.54	377493.70	Footpath, Bridleway or other track crossing	Surface	Footpath through Gwrych Castle Woods	Trenchless
S1A-EOX-2	292466.44	377467.86	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S2-OOX-1	292601.18	377389.95	Other Obstacle Crossing	Buried	Mineshaft	Trenching or Trenchless
S2-OOX-2	292418.06	377355.49	Other Obstacle Crossing	Buried	Potential mining works	Trenching or Trenchless
S2-EOX-1	292334.93	377262.35	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S2-EOX-2	292218.62	377195.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S2-EOX-3	292193.56	377071.22	Environmental Obstacle Crossing	Surface	Mature tress/ bushes	Trenching
S2-EOX-4	292238.33	377072.18	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S2-EOX-5	292141.40	376978.90	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S2-EOX-6	292079.86	376907.28	Environmental Obstacle Crossing	Surface	Mature trees	Trenchless
S2-EOX-7	292065.43	376810.03	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S2-RX-1	292063.34	376801.02	Road Crossing	Surface	Minor road	Trenchless
S2-EOX-8	292062.36	376796.80	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S2-OUX-1	292062.09	376795.63	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S2-EOX-9	292038.76	376616.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S2-OUX-2	292044.05	376575.40	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
S2-EOX-10	292146.32	376392.85	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S2-EOX-11	292137.71	376356.42	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-RX-2	292139.34	376354.30	Road Crossing	Surface	Tan-y-Gopa Road	Trenchless
S2-EOX-12	292140.51	376352.57	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-13	292326.77	376189.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S2-EOX-14	292447.36	376040.76	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S2-EOX-15	292457.28	376017.02	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S2-WX-1	292530.23	375822.76	Watercourse Crossing	Surface	Watercourse	Trenchless
S2-EOX-16	292531.91	375817.08	Environmental Obstacle Crossing	Surface	Thick tree line	Trenchless
S2-EOX-17	292573.90	375693.61	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-RX-3	292574.58	375691.07	Road Crossing	Surface	Minor road	Trenchless
S2-EOX-18	292575.50	375687.86	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-OUX-3	292594.10	375641.90	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S2-UUX-1	292623.90	375587.27	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
S2-UUX-2	292639.19	375551.10	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S2-EOX-19	292642.31	375543.74	Environmental Obstacle Crossing	Surface	Thick hedgerow/ gorse bush	Trenchless
S2-UUX-3	292765.96	375346.76	Underground Utilities Crossing	Buried	Wales and West Utilities - intermediate pressure gas main	Trenchless
S2-OUX-4	292785.19	375325.63	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S2-EOX-20	292808.79	375299.70	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S2-OUX-5	292878.73	375201.46	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 33 kV overhead	Trenching

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S2-OUX-6	292880.71	375200.48	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
S2-OUX-7	292954.08	375023.52	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S2-WX-2	292953.96	375025.47	Watercourse Crossing	Surface	Watercourse/ ditch	Trenchless
S2-EOX-21	292954.19	375022.10	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S2-EOX-22	292950.82	374922.90	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-23	292947.25	374913.72	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-RX-4	292949.22	374918.78	Road Crossing	Surface	Abergele Road	Trenchless
S2-UUX-4	292944.59	374906.90	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S2-EOX-24	292942.55	374901.65	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-25	293028.87	374743.47	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S2-EOX-26	293142.79	374573.52	Environmental Obstacle Crossing	Surface	Line of mature trees	Trenching
S2-EOX-27	293313.47	374504.96	Environmental Obstacle Crossing	Surface	Line of mature trees and hedgerow	Trenching
S2-EOX-28	293342.95	374460.61	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S2-UUX-5	293440.40	374244.98	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
S2-EOX-29	293437.38	374276.75	Environmental Obstacle Crossing	Surface	Line of mature trees	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S2-EOX-30	293448.45	374090.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S2-RX-5	293470.04	373932.24	Road Crossing	Surface	Minor road leading to the north from where it leaves the B5381, near the junction with A548	Trenchless
S2-RX-6	293503.02	373933.91	Road Crossing	Surface	B5381	Trenchless
S2-RX-7	293607.10	373782.88	Road Crossing	Surface	A548	Trenchless
S2-EOX-31	293472.08	373934.77	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-32	293467.65	373925.99	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-33	293501.50	373938.54	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-34	293505.58	373926.13	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-35	293603.12	373785.12	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-EOX-36	293611.64	373780.31	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S2-OUX-8	293469.38	373930.75	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S2-OUX-9	293504.94	373928.08	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S2-OUX-10	293519.13	373884.94	Overhead Utilities Crossing	Overhead	SP Energy Networks - low voltage overhead	Trenching or trenchless
S2-OUX-11	293599.52	373787.15	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S2-UUX-6	293604.05	373784.60	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
S2-UUX-7	293609.10	373825.97	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
S2-UUX-8	293619.03	373752.61	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S3N/S-WX-1	293808.76	373803.16	Watercourse Crossing	Surface	Watercourse	Trenching or trenchless
S3N/S-EOX-1	293807.79	373806.72	Environmental Obstacle Crossing	Surface	Thick hedgerow/mature trees	Trenching or trenchless
S3N/S-EOX-2	293812.03	373771.67	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S3N/S-EOX-3	293945.58	373814.60	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S3N/S-EOX-4	293971.32	373861.51	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S3N/S-OUX-1	293929.94	373809.59	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S3N/S-EOX-5	295911.87	373779.06	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S3N/S-EOX-6	295891.13	373734.09	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S3N/S-EOX-7	295907.77	373733.78	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S3N/S-EOX-8	295959.02	373748.57	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S3N/S-WX-2	295904.78	373736.94	Watercourse Crossing	Surface	Watercourse	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S3N/S-WX-3	295909.87	373731.56	Watercourse Crossing	Surface	Watercourse	Trenchless
S3N/S-PAT-1	295987.87	373733.12	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
S3S-OUX-1	294056.61	373824.19	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenchless
S3S-OUX-2	294123.12	373766.48	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S3S-OUX-3	294186.40	373712.72	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenchless
S3S-OUX-4	294320.68	373649.25	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead and SP Energy Networks - low voltage overhead	Trenching or trenchless
S3S-WX-1	294104.17	373782.57	Watercourse Crossing	Surface	Watercourse	Trenchless
S3S-WX-2	294196.46	373704.17	Watercourse Crossing	Surface	Watercourse	Trenchless
S3S-EOX-1	294096.98	373868.13	Environmental Obstacle Crossing	Surface	Mature tree	Trenching or trenchless
S3S-EOX-2	294101.82	373848.76	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S3S-EOX-3	294104.17	373782.57	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S3S-EOX-4	294194.44	373705.89	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S3S-EOX-5	294298.23	373694.80	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S3S-EOX-6	294294.12	373632.87	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S3S-OUX-5	294342.86	373605.01	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
S3S-EOX-7	294454.59	373534.16	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S3S-EOX-8	294682.22	373553.11	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S3S-WX-4	294679.97	373552.47	Watercourse Crossing	Surface	Watercourse	Trenchless
S3S-UUX-1	294661.83	373547.34	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S3S-EOX-11	295171.29	373828.09	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S3S-EOX-12	295184.92	373827.68	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S3S-EOX-9	294879.40	373666.24	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S3S-EOX-10	295003.07	373753.21	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S3S-RX-1	295175.88	373827.95	Road Crossing	Surface	Minor road	Trenchless
S3S-OOX-2	295135.48	373817.39	Other Obstacle Crossing	Surface	Remnants of a disused quarry	Trenchless
S3S-EOX-13	295150.95	373828.72	Environmental Obstacle Crossing	Surface	Mature trees	Trenchless
S3S-OUX-6	295321.93	373838.04	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching
S3S-RX-2	295414.55	373872.67	Road Crossing	Surface	Farm track/ access road	Trenchless
S3S-UUX-2	295416.63	373873.50	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S3S-EOX-14	295551.94	373922.60	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S3S-EOX-15	295642.07	373924.62	Environmental Obstacle Crossing	Surface	Intersection of two hedgerows and a single mature tree	Trenching
S3S-EOX-16	295659.74	373941.44	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S3S-EOX-17	295805.33	373816.65	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S3S-OUX-7	295786.68	373843.71	Overhead Utilities Crossing	Overhead / Buried	SP Energy Networks - high voltage 11 kV overhead / buried	Trenching or trenchless
S4N-EOX-2	296442.80	373818.75	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S4N-EOX-3	296449.80	373827.63	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S4N-EOX-4	296412.24	373874.42	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S4N-OUX-1	296477.56	373874.42	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless
S4N-OOX-2	296631.04	373872.12	Other Obstacle Crossing	Surface	Electricity pylon, related to S4N-OUX-1	Trenching or trenchless
S4N-RX-1	296446.15	373824.04	Road Crossing	Surface	Minor road	Trenchless
S4N-EOX-5	296540.42	373894.63	Environmental Obstacle Crossing	Surface	Hedgerow with a large mature tree	Trenching or trenchless
S4N-EOX-6.1	296597.36	373912.27	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S4N-EOX-8.1	296703.73	373978.87	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S4N-EOX-9.1	296716.89	373964.00	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S4N-UUX-1.1	296672.79	373945.88	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
S4N-UUX-2.1	296936.79	374060.61	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S4N-PAT-1.1	296914.57	374055.80	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
S4N-EOX-13.1	296833.30	373976.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S4N-EOX-14.1	296838.14	373976.62	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S4N-RX-2.1	296835.57	373976.38	Road Crossing	Surface	Minor road	Trenchless
S4N-OUX-2.1	296832.67	373976.19	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S4N-EOX-15	296931.81	374117.51	Environmental Obstacle Crossing	Surface	Mature tree	Trenching
S4N-EOX-16	297044.42	374110.59	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S4N-EOX-17	297111.42	374104.55	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S4N-PAT-2	296924.98	374114.98	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
S4N-PAT-3	297196.40	374078.96	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching
S4N-EOX-18	297206.02	374111.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S4N-EOX-19	297358.95	374017.91	Environmental Obstacle Crossing	Surface	Thick tree line/ hedgerow	Trenching
S4N-EOX-20	297459.91	374030.84	Environmental Obstacle Crossing	Surface	Intersection between two hedgerows with a single large mature tree	Trenching or trenchless
S4N-EOX-21	297508.01	374000.96	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S4N-EOX-22	297518.10	374001.38	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S4N-RX-3	297512.09	374001.14	Road Crossing	Surface	Minor road	Trenchless
S4N-OUX-3	297520.56	374001.37	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenching or trenchless
S4N-EOX-1.1	296344.64	373825.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S4N-EOX-2.1	296394.46	373849.13	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S4N-RX-1.1	296402.57	373852.15	Road Crossing	Surface	Minor road, providing access to some farming and residential properties	Trenchless
S4N-EOX-3.1	296412.54	373854.60	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
S4N-OOX-1	296386.92	373901.59	Other Obstacle Crossing	Surface	Electricity pylon, related to S4N-OUX-1	Trenching or trenchless
S4N-EOX-7	296567.58	373953.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S4N-EOX-15.1	296919.20	374050.90	Environmental Obstacle Crossing	Surface	Tree line/ hedgerow	Trenchless
S4N/S-EOX-1	295997.02	373705.03	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S4N/S-EOX-2	296075.37	373691.39	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S4N/S-EOX-3	296098.26	373694.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S5N-EOX-2	297781.48	373969.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S5N-EOX-3	297889.29	373817.53	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S5N-OUX-2	297697.81	373978.73	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
S5N-OUX-3	297896.68	373790.57	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless
S5N-UUX-1	297874.63	373881.49	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S5N-UUX-2	297884.69	373837.60	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
S5N/S-EOX-1	297932.57	373678.55	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S5N/S-EOX-2	297996.73	373591.03	Environmental Obstacle Crossing	Surface	Mature tree	Trenching
S5N/S-EOX-3	298070.26	373612.07	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S5N/S-EOX-4	298154.26	373595.71	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S5N/S-EOX-5	298161.69	373594.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S5N/S-RX-1	298157.61	373594.69	Road Crossing	Surface	Minor road	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S6-EOX-1	298401.21	373556.02	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S6-EOX-2	298562.60	373563.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S6-EOX-3	298695.81	373493.92	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
S6-OUX-1	298716.22	373488.64	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching
S6-EOX-4	298866.06	373460.51	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S6-EOX-5	298873.96	373459.05	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S6-RX-1	298869.27	373459.79	Road Crossing	Surface	Minor road	Trenchless
S6-OUX-2	298867.32	373460.26	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S7N/S-EOX-2	299292.83	373273.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7N/S-EOX-3	299293.32	373268.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7N/S-EOX-4	299312.65	373285.30	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7N/S-EOX-5	299316.26	373258.92	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7N/S-EOX-6	299325.93	373276.94	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7N/S-EOX-7	299326.25	373273.01	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S7N/S-PAT-1	299310.69	373281.04	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
S7N/S-PAT-2	299311.67	373262.69	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
S7N/S-RX-1	299310.85	373272.19	Road Crossing	Surface	Minor road (Cae Onnen)	Trenchless
S7N/S-OUX-1	299298.56	373277.76	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S7N/S-UUX-1	299308.56	373275.41	Underground Utilities Crossing	Buried	SP Energy Networks - underground low voltage line	Trenchless
S7N/S-EOX-1	299246.78	373310.04	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S7N/S-UUX-2	299445.28	373207.50	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7N/S-UUX-3	299449.26	373205.30	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7N/S-UUX-4	299451.21	373204.02	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7N/S-UUX-5	299454.00	373202.01	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7N/S-OOX-1	299386.30	373234.40	Other Obstacle Crossing	Surface	Potential mining works	Trenching or trenchless
S7N/S-OOX-2	299390.11	373163.20	Other Obstacle Crossing	Surface/ buried	Air shaft	Trenching or trenchless
S7N/S-OOX-2.1	299419.31	373219.07	Other Obstacle Crossing	Surface/ buried	Mine shaft	Trenching or trenchless
S7N/S-EOX-9	300850.91	373095.23	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S7N/S-OUX-2	300825.69	373052.50	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching or trenchless
S7N/S-EOX-11	300871.74	373029.62	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S7N/S-EOX-12	300936.18	373050.70	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S7S-PAT-1	299563.20	373117.44	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
S7S-UUX-1	299577.82	373100.83	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7S-OUX-1	299584.78	373084.25	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S7S-EOX-1	299561.61	373120.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7S-EOX-2	299612.15	373125.18	Environmental Obstacle Crossing	Surface	Ancient woodland	Trenchless
S7S-EOX-3	299592.34	373095.76	Environmental Obstacle Crossing	Surface	Mature tree	Trenchless
S7S-EOX-4	299579.28	373056.01	Environmental Obstacle Crossing	Surface	Mature tree	Trenchless
S7S-EOX-5	299740.91	372948.94	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
S7S-EOX-6	299850.92	372836.82	Environmental Obstacle Crossing	Surface	Mature trees	Trenching
S7S-UUX-2	300016.93	372731.55	Underground Utilities Crossing	Buried	SP Energy Networks - underground high voltage 33 kV line	Trenchless
S7S-EOX-7	300104.97	372681.26	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S7S-EOX-8.1	300248.68	372642.71	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
S7S-OUX-2	300185.25	372634.97	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless
S7S-OUX-3	300288.68	372667.39	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching or trenchless
S7S-EOX-9	300310.76	372712.08	Environmental Obstacle Crossing	Surface	Hedgerow with single tree	Trenching or trenchless
S7S-EOX-10	300294.68	372785.81	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S7S-EOX-11	300341.25	372803.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7S-EOX-12	300345.56	372813.71	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S7S-EOX-13	300318.93	372861.55	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S7S-UUX-3	300338.41	372796.77	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S7S-UUX-4	300341.83	372804.87	Underground Utilities Crossing	Buried	SP Energy Networks - underground high voltage 11 kV line	Trenchless
S7S-OUX-4	300345.12	372812.66	Overhead Utilities Crossing	Overhead	BT Openreach underground telecom line	Trenchless
S7S-RX-1	300343.31	372808.39	Road Crossing	Surface	Minor road	Trenchless
S7S-EOX-16	300442.83	372929.52	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
S7S-EOX-14	300418.76	372876.61	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S7S-EOX-15	300407.11	372952.64	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S7S-EOX-17	300447.02	372970.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S7S-EOX-18	300509.14	372960.85	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S7S-EOX-20	300717.05	373090.31	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S7S-EOX-8	300147.86	372703.66	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S8-UUX-1	301050.33	373138.24	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
S8-EOX-1	301052.25	373192.28	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
S8-EOX-2	301173.30	373155.13	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S8-EOX-3	301186.64	373151.30	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S8-EOX-4	301194.95	373148.91	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S8-OUX-1	301165.53	373156.72	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
S8-OUX-2	301185.13	373151.73	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
S8-RX-1	301191.00	373150.05	Road Crossing	Surface	Minor road	Trenchless
S9-EOX-3	301475.92	373250.01	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S9-EOX-4	301447.62	373304.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9-WX-1	301448.72	373303.48	Watercourse Crossing	Surface	Watercourse	Trenching or trenchless
S9-OOX-1	301393.59	373267.28	Overhead Utilities Crossing	Surface	National Grid - proposed pylon location	Trenching or trenchless
S9-OUX-1	301411.83	373336.67	Overhead Utilities Crossing	Surface	National Grid Electricity Transmission - overhead electricity transmission line	Trenching or trenchless
S9-UUX-3	301390.47	373356.29	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - underground line	Trenching or trenchless
S9-UUX-4	301363.94	373377.18	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - fibre optic	Trenching or trenchless
S9-EOX-6	301340.02	373436.49	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9-UUX-5	301454.14	373574.99	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
S9(LSS2)-UUX-1	301492.94	373171.70	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - fibre optic	Trenching or trenchless
S9(LSS2)-UUX-2	301490.70	373165.01	Underground Utilities Crossing	Buried	Vodafone - telecom line	Trenching or trenchless
S9(LSS2)-OUX-1	301493.68	373178.24	Overhead Utilities Crossing	Overhead	National Grid Electricity Transmission - overhead electricity transmission line	Trenching or trenchless
S9(LSS2)-EOX-1	301544.34	373115.87	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9(LSS2)-EOX-2	301491.29	373166.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9(LSS2)-EOX-3	301445.82	373179.23	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless

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Obstacle ID	Easting	Northing	Type	Overhead/Surface/Buried	Description	Crossing Technique
S9-EOX-7	301504.14	373361.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9-EOX-8	301454.43	373448.78	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9-EOX-9	301289.08	373431.89	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
S9-EOX-10	301360.67	373573.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
S9-UUX-6	301544.99	373411.44	Underground Utilities Crossing	Buried	National Grid Electricity Transmission – Fibre Optic Telecom Line	Trenching or trenchless

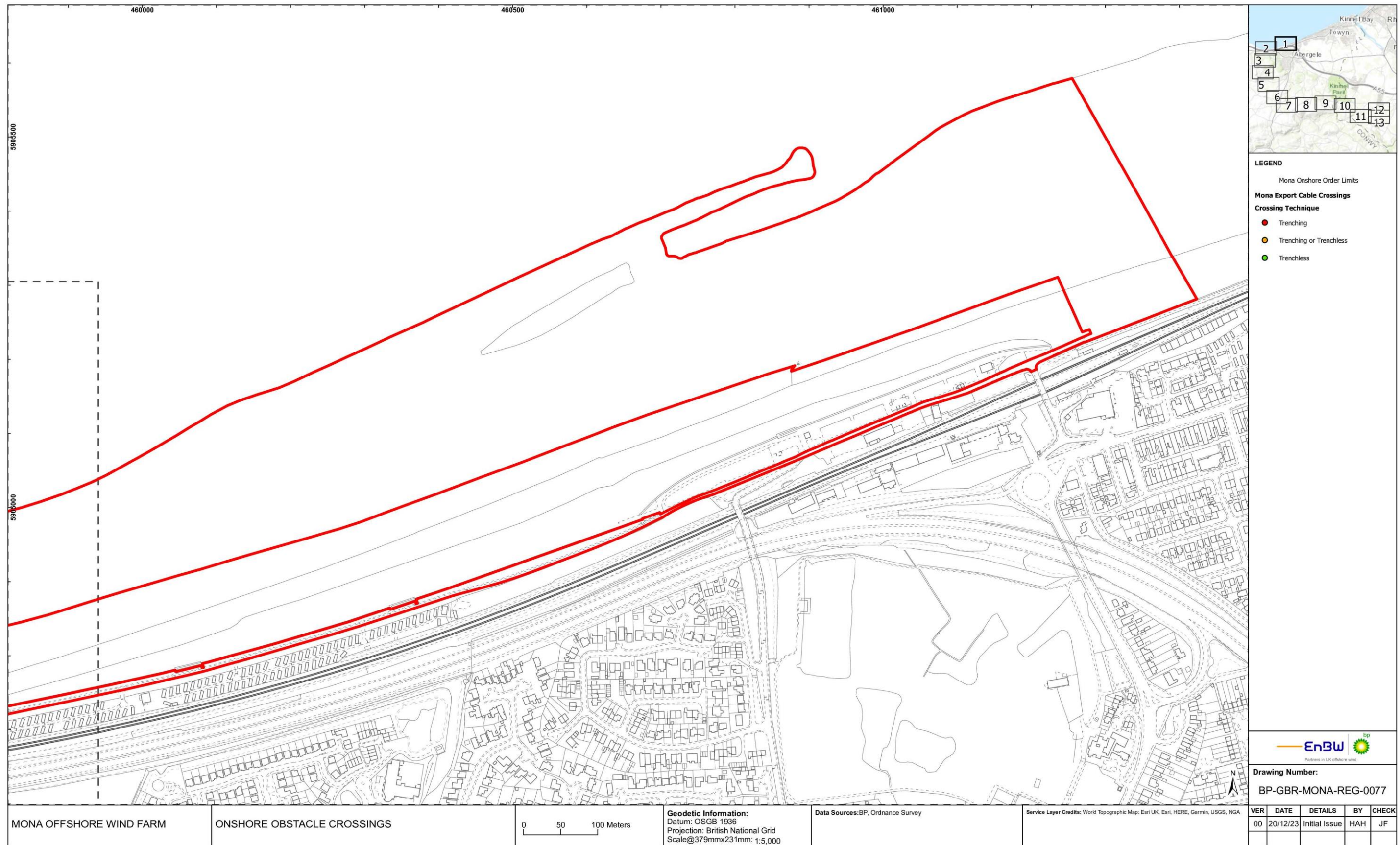


Figure 1.1 Onshore obstacle crossings (part 1).

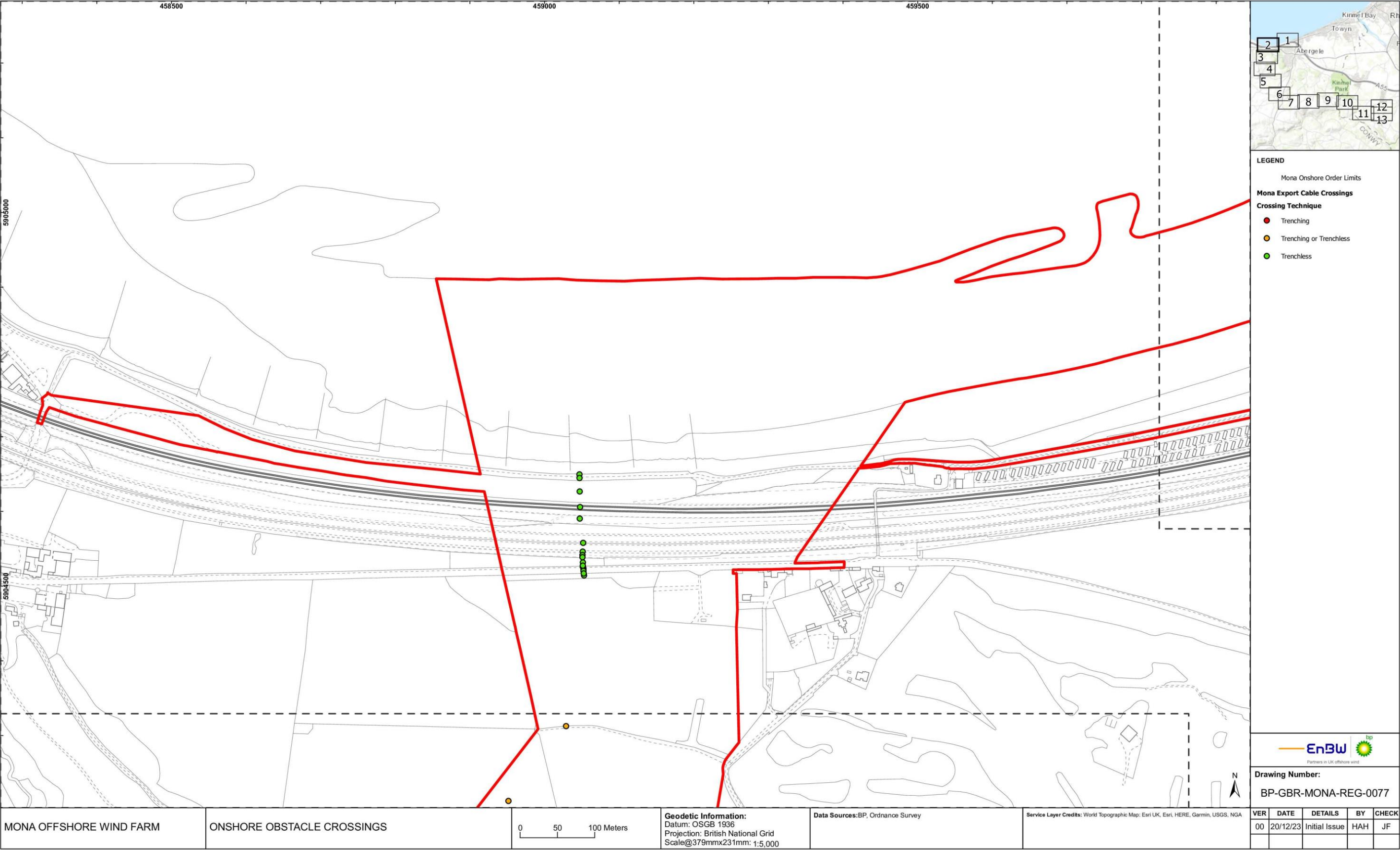


Figure 1.2 Onshore obstacle crossings (part 2).

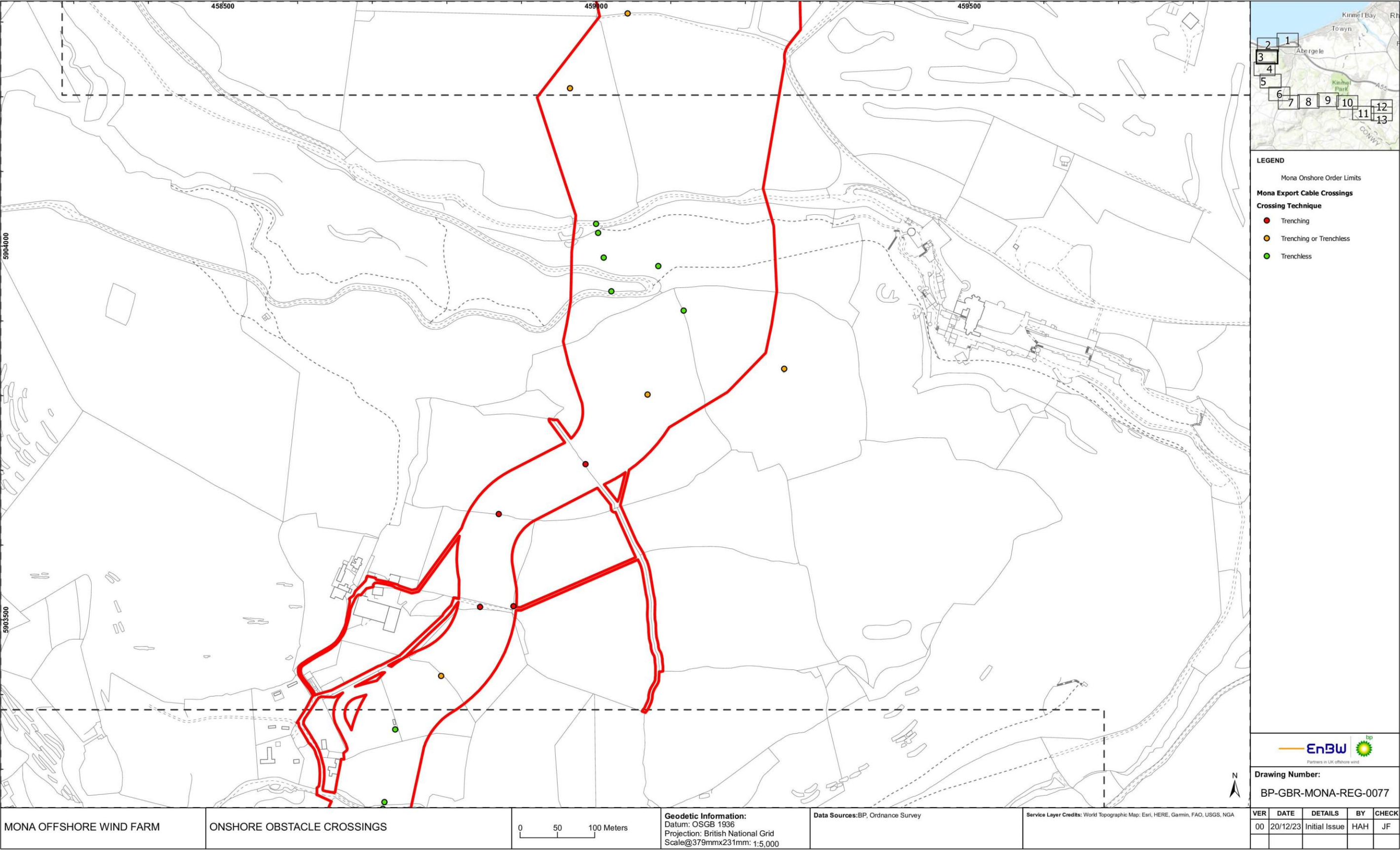


Figure 1.3 Onshore obstacle crossings (part 3).

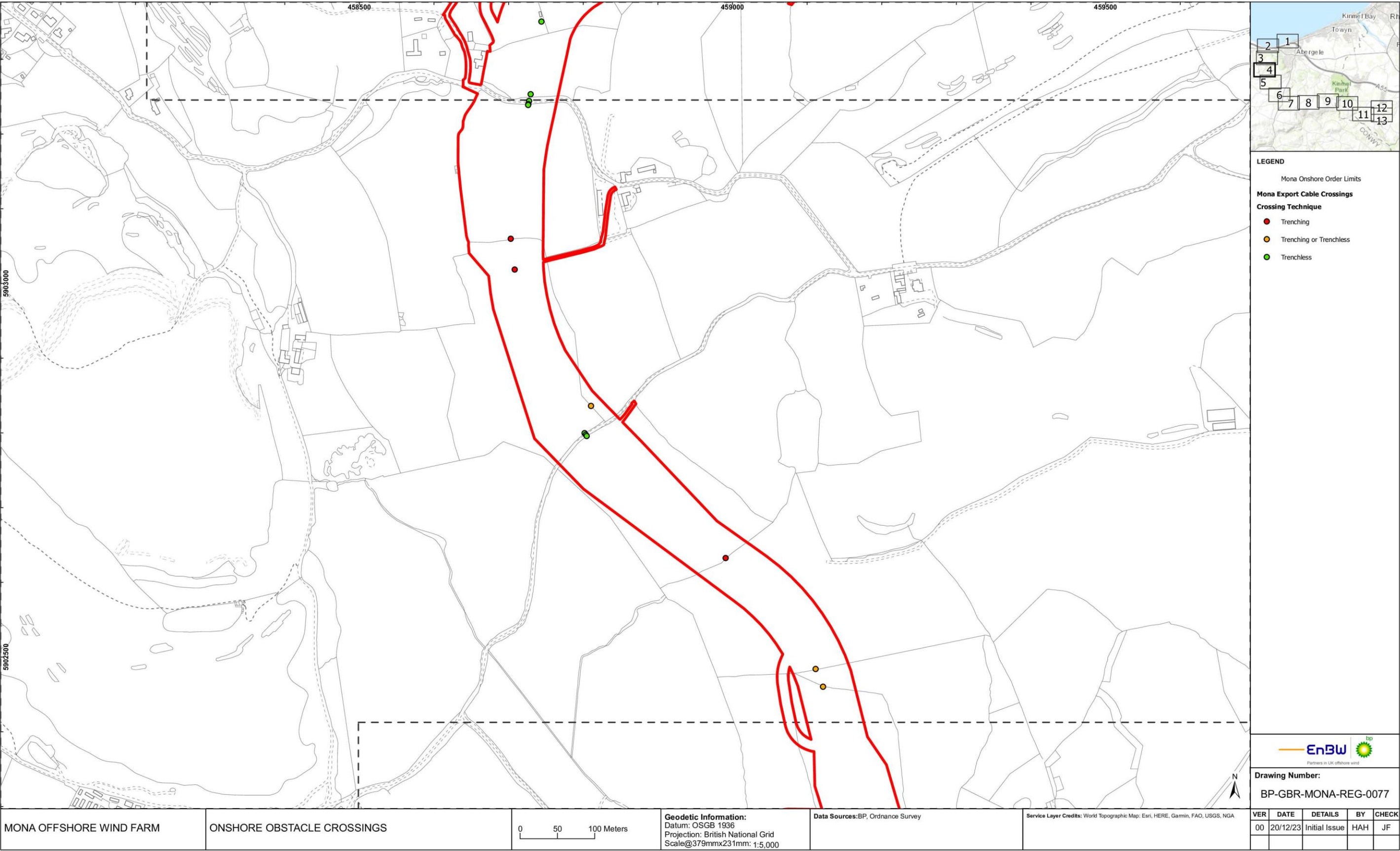


Figure 1.4 Onshore obstacle crossings (part 4).

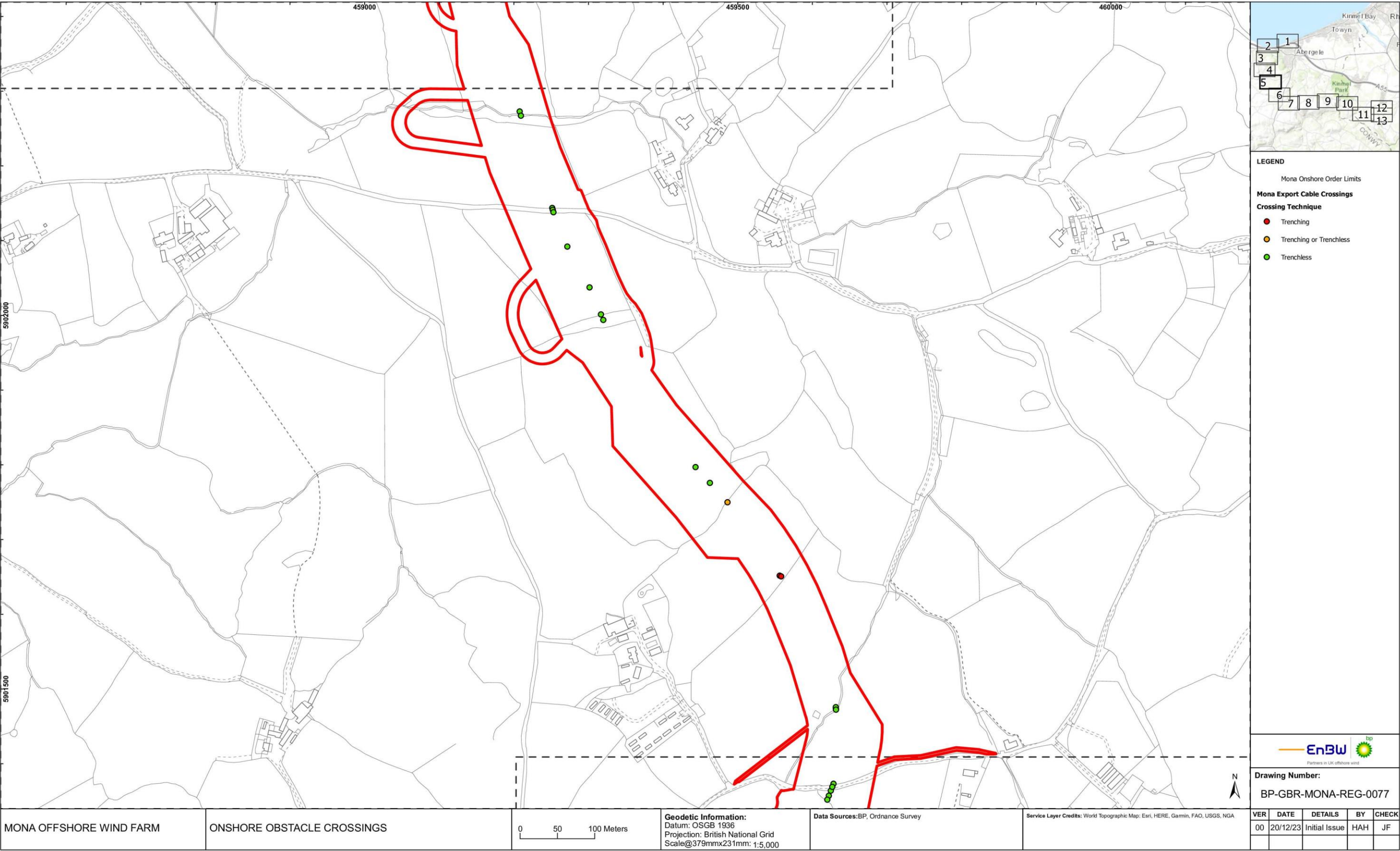


Figure 1.5 Onshore obstacle crossings (part 5).

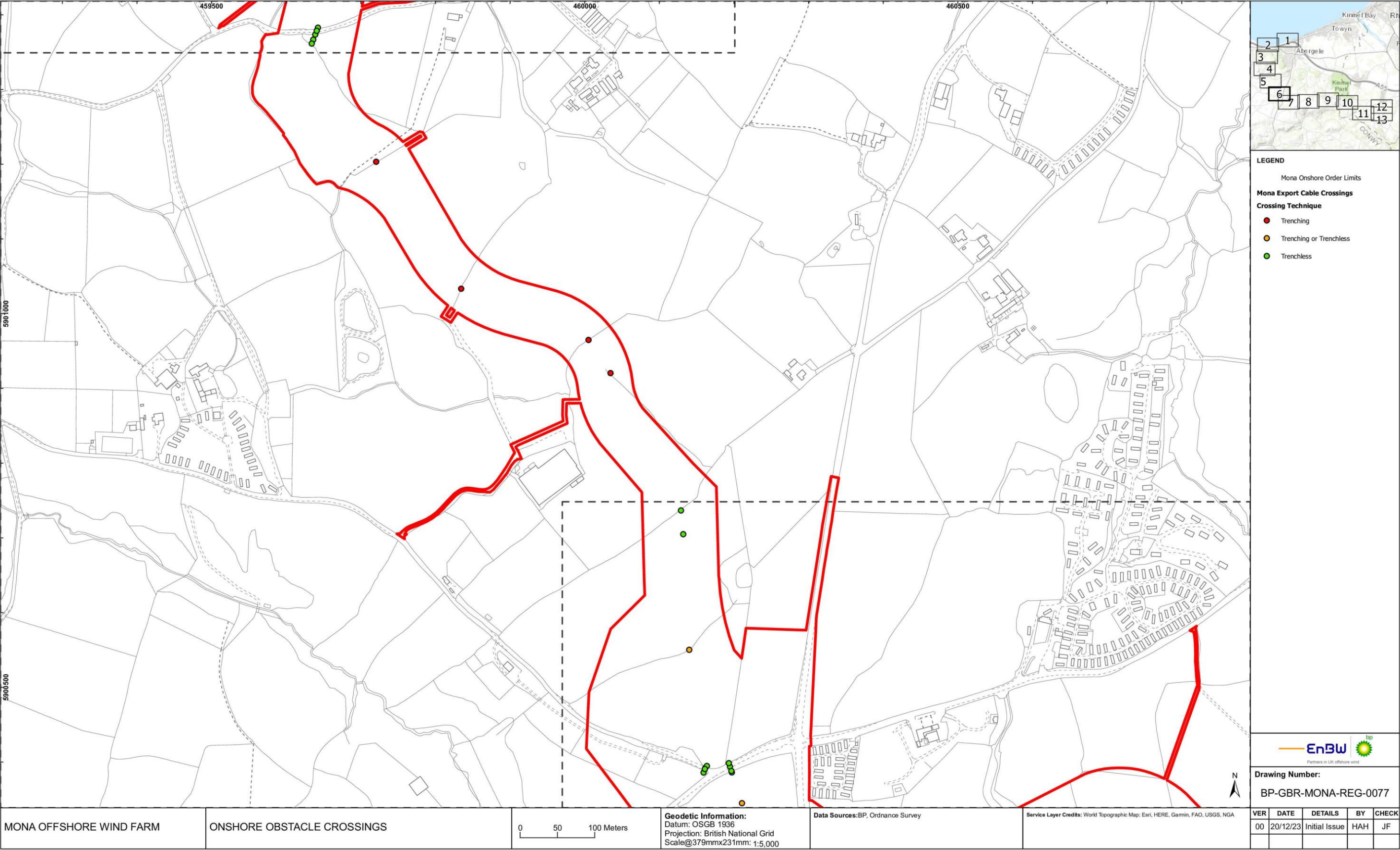


Figure 1.6 Onshore obstacle crossings (part 6).

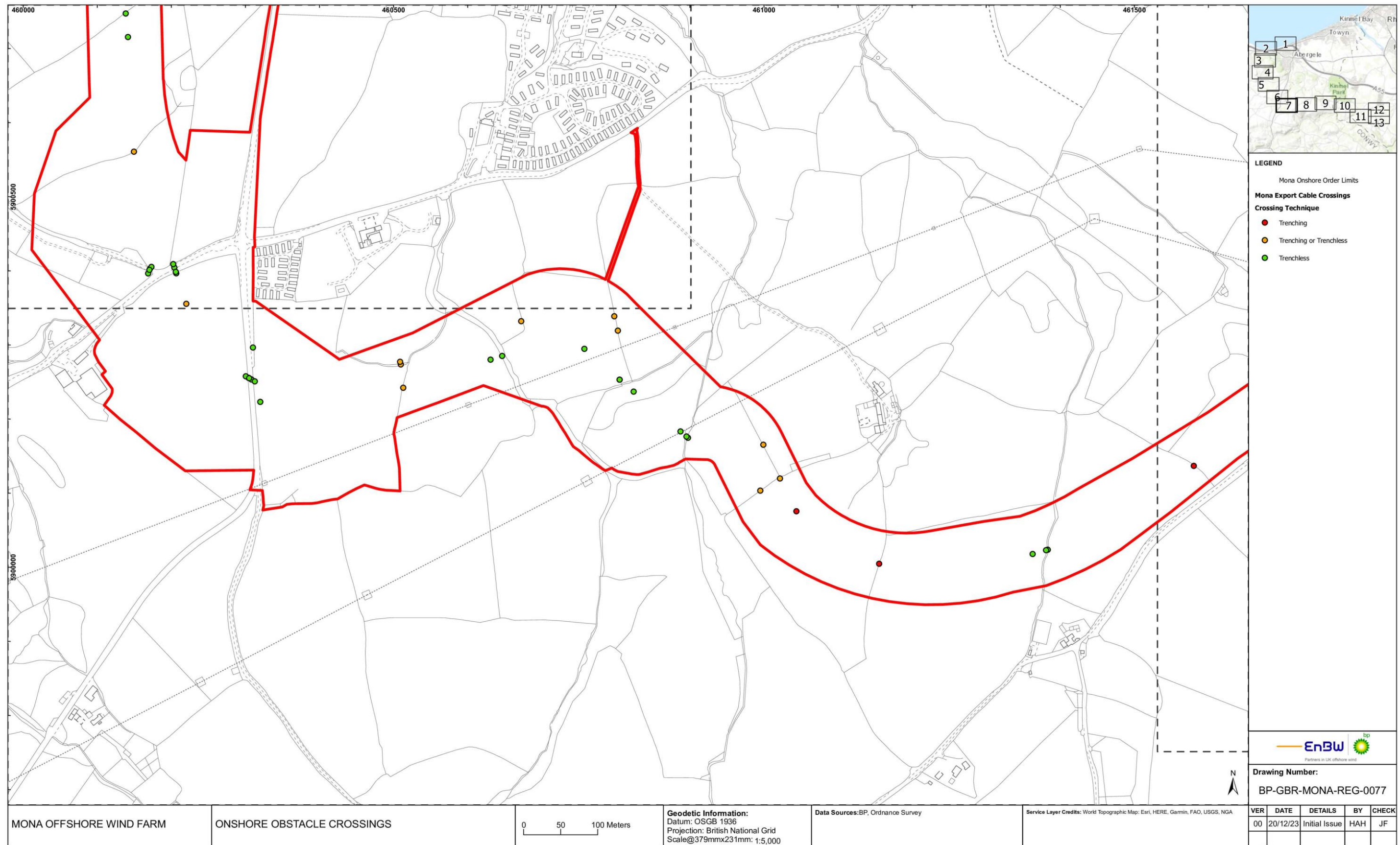


Figure 1.7 Onshore obstacle crossings (part 7).

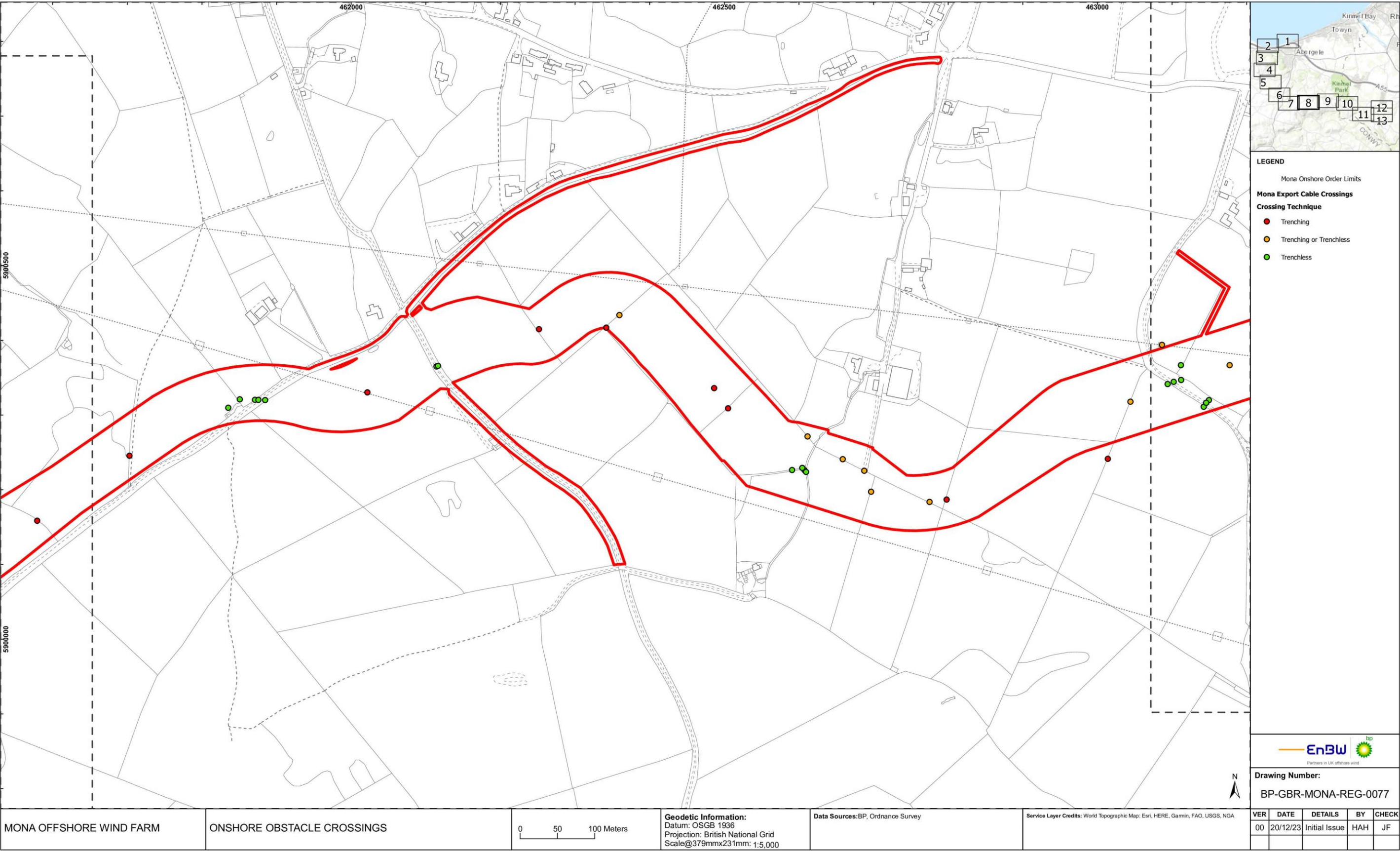


Figure 1.8 Onshore obstacle crossings (part 8).

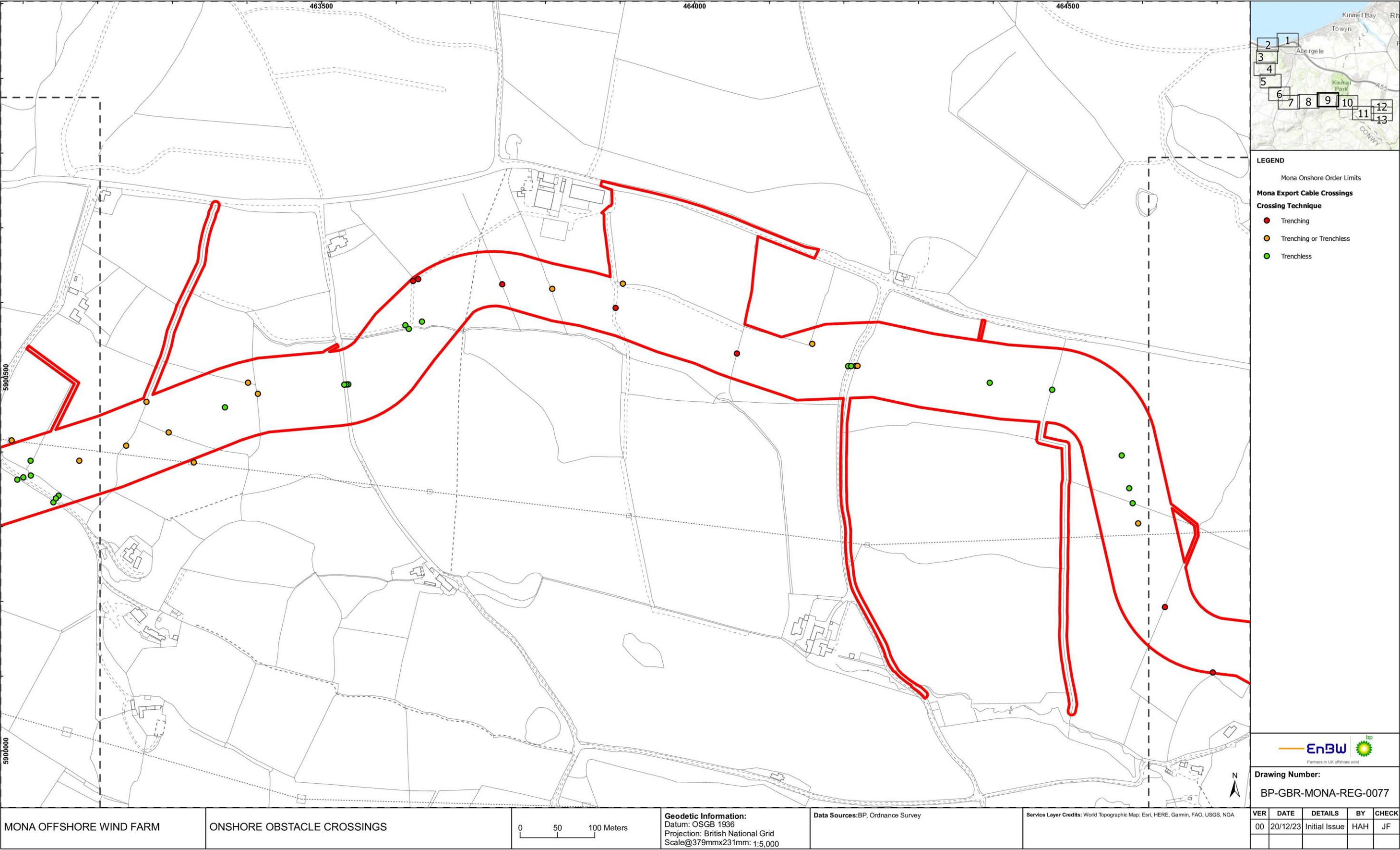


Figure 1.9 Onshore obstacle crossings (part 9).

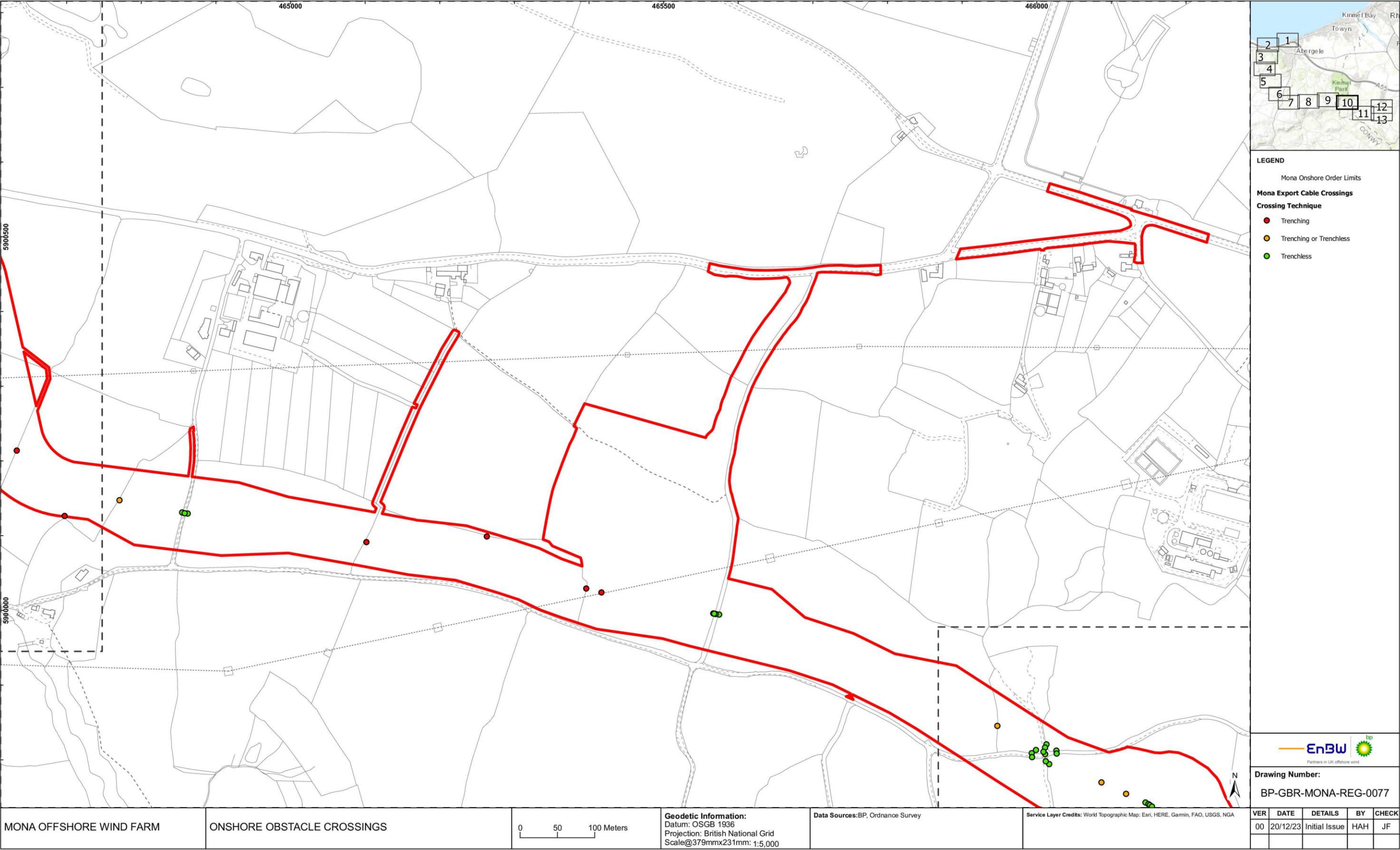


Figure 1.10 Onshore obstacle crossings (part 10).

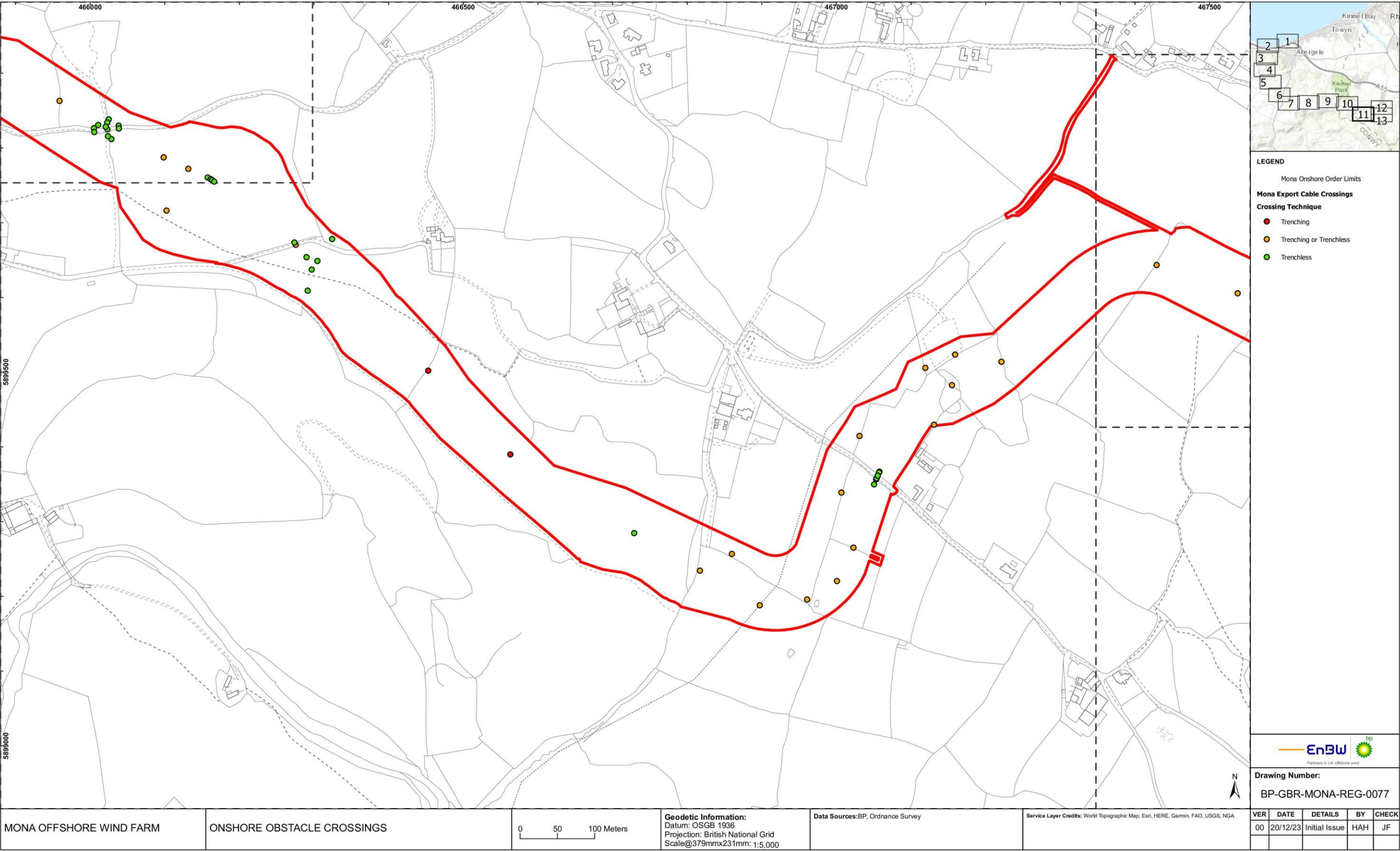


Figure 1.11 Onshore obstacle crossings (part 11).

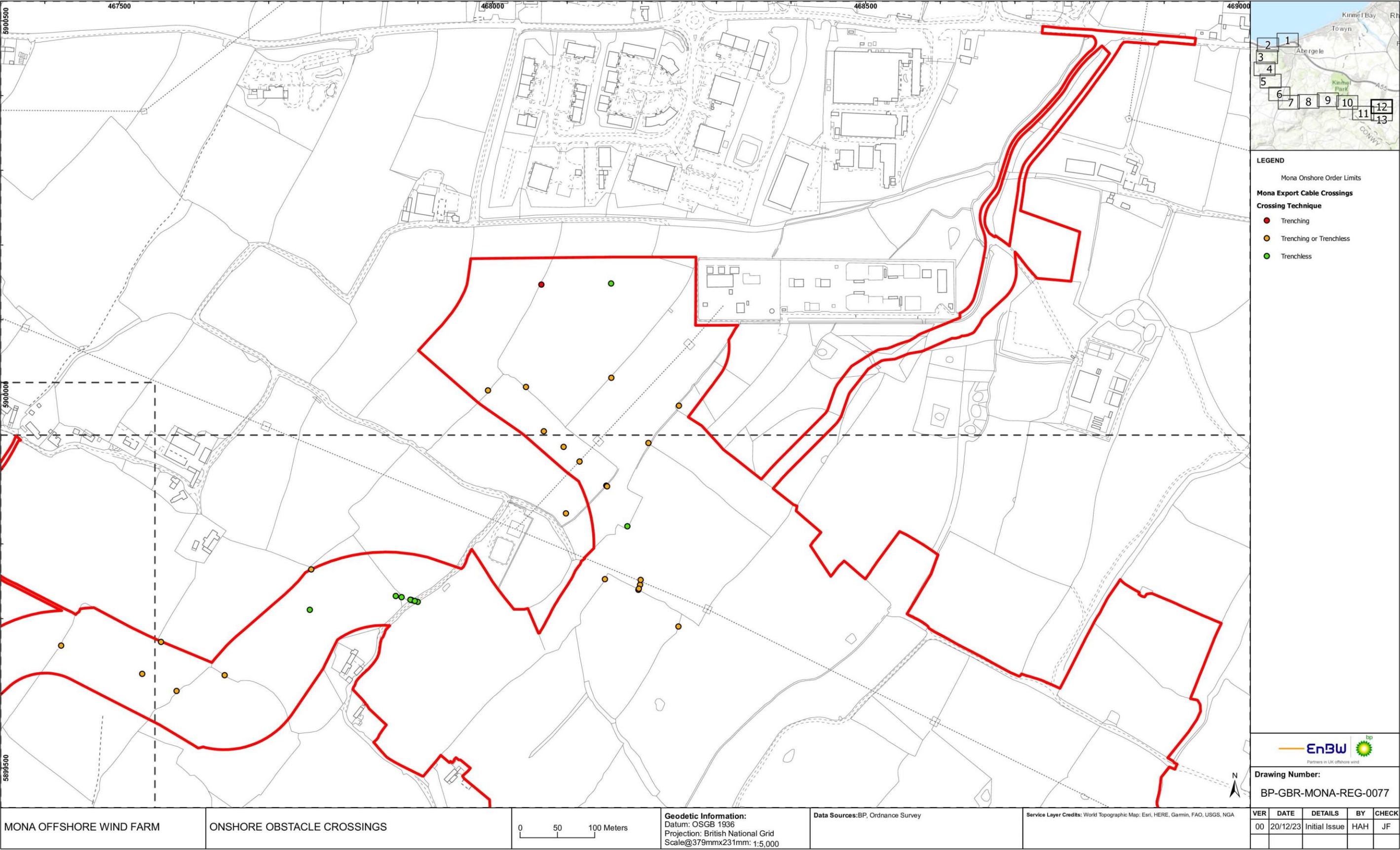


Figure 1.12 Onshore obstacle crossings (part 12).

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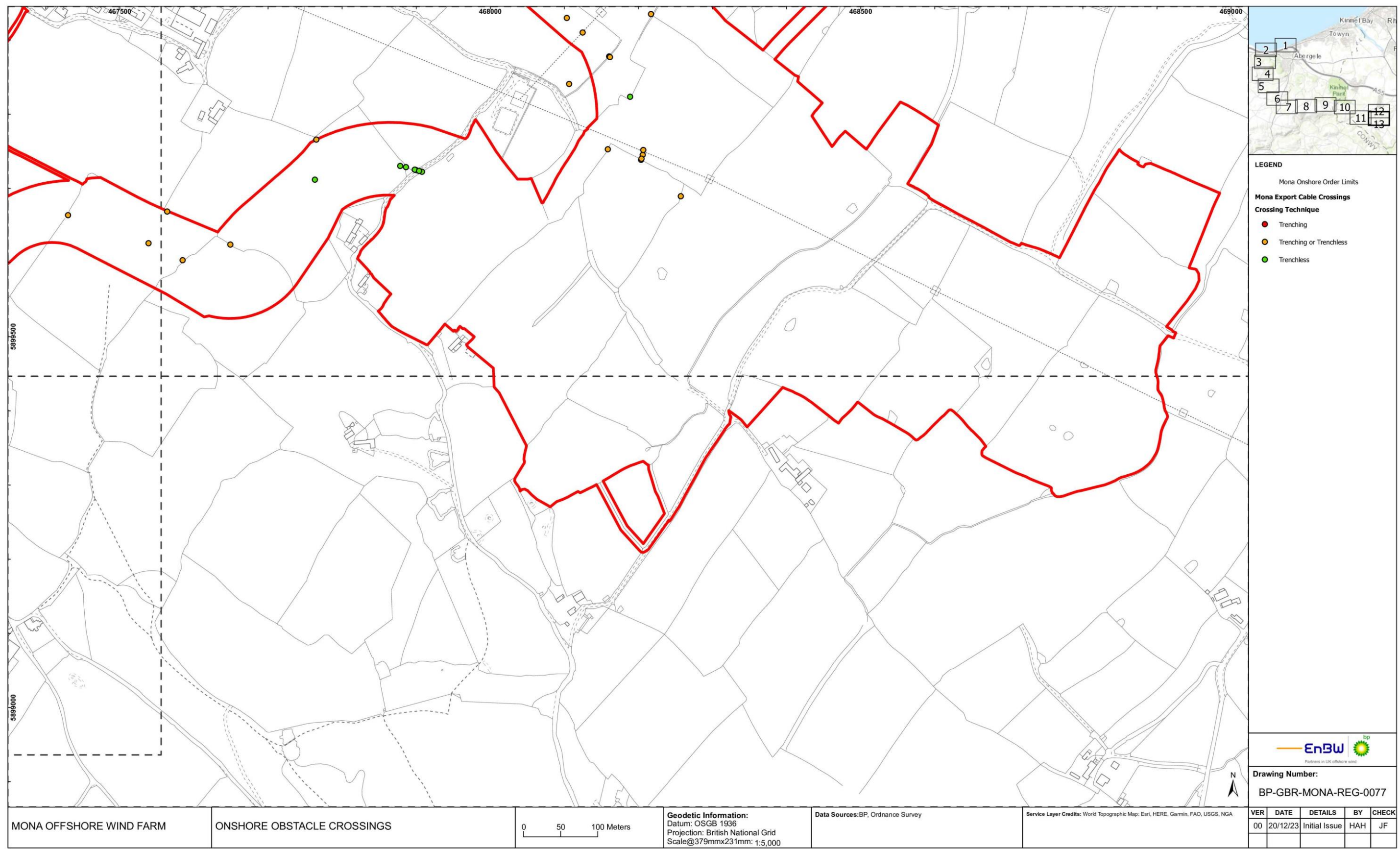


Figure 1.13: Onshore obstacle crossings (part 13).