

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 5, Annex 5.3: Onshore Crossing Schedule

F03

Deadline: 5

Application Reference: EN010137

Document Number: F.5.4.3 F03

Document Reference: MOCNS-J3303-JVW-00010

3 December 2024

F03



Image of an offshore wind farm

MONA OFFSHORE WIND PROJECT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
F01	Application	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	Feb 2024
F02	Deadline 1	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	August 2024
F03	Deadline 5	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	Mona Offshore Wind Ltd.	3 December 2024

Prepared by:

Prepared for:

Mona Offshore Wind Ltd.

Mona Offshore Wind Ltd.

Contents

1	ONSHORE CROSSING SCHEDULE.....	1
1.1	Introduction	1

Figures

Figure 1.1	Onshore obstacle crossings (part 1).....	21
Figure 1.2	Onshore obstacle crossings (part 2).....	22
Figure 1.3	Onshore obstacle crossings (part 3).....	23
Figure 1.4	Onshore obstacle crossings (part 4).....	24
Figure 1.5	Onshore obstacle crossings (part 5).....	25
Figure 1.6	Onshore obstacle crossings (part 6).....	26
Figure 1.7	Onshore obstacle crossings (part 7).....	27
Figure 1.8	Onshore obstacle crossings (part 8).....	28
Figure 1.9	Onshore obstacle crossings (part 9).....	29
Figure 1.10	Onshore obstacle crossings (part 10).....	30
Figure 1.11	Onshore obstacle crossings (part 11).....	31
Figure 1.12	Onshore obstacle crossings (part 12).....	32
Figure 1.13:	Onshore obstacle crossings (part 13).....	33

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 existing 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, micrositing 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. At trenchless crossings, it is possible that the haul road will still be temporarily installed to facilitate construction, where this is the case micrositing will be applied, where possible, to reduce or avoid the level of disturbance to the obstacle.
- 1.1.1.3 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 highway authority.

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
1	LF-OOX-1	292409.28	378202.56	Other Obstacle Crossing	Surface	Sea defences	Trenchless
2	LF-UTX-1	292410.11	378158.80	Under Track Crossing	Surface	Network Rail - railway	Trenchless
3	LF-RX-1	292414.23	378110.90	Road Crossing	Surface	North Wales Expressway, A55	Trenchless
4	LF-RX-2	292414.65	378076.02	Road Crossing	Surface	Abergele Road, A547	Trenchless
5	LF-PAT-1	292409.38	378197.71	Footpath, Bridleway or other track crossing	Surface	Coastal footpath	Trenchless
6	LF-UUX-1	292413.62	378099.19	Underground Utilities Crossing	Buried	Zayo Group UK Ltd Co JSM Group Ltd - telecom line	Trenchless
7	LF-UUX-2	292413.34	378094.54	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
8	LF-UUX-3	292413.89	378084.69	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
9	LF-UUX-4	292413.89	378078.88	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
10	LF-UUX-5	292414.06	378078.69	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
11	LF-UUX-6	292414.68	378073.37	Underground Utilities Crossing	Buried	Zayo Group UK Ltd Co JSM Group Ltd - telecom line	Trenchless
12	LF-OOX-2	292409.60	378179.70	Other Obstacle Crossing	Surface	Historic landfill site	Trenchless
13	LF-EOX-1	292409.70	378143.40	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
14	LF-EOX-2	292413.33	378091.70	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
15	LF-EOX-3	292413.80	378080.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
16	LF-EOX-4	292415.45	378067.35	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
17	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
18	S1-EOX-1	292391.34	377865.62	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or Trenchless
19	S1-OOX-1	292314.11	377765.46	Other Obstacle Crossing	Buried	Potential mining works	Trenching or Trenchless
20	S1A-RX-1	292349.03	377583.95	Road Crossing	Surface	Small road through Gwrych Castle Woods	Trenchless
21	S1A-OOX-1	292359.29	377538.79	Other Obstacle Crossing	Surface	Gwrych Castle Woods Hill	Trenchless
22	S1A-OOX-2	292432.44	377527.49	Other Obstacle Crossing	Buried	Potential historical mining works	Trenchless
23	S1A-EOX-1	292351.78	377571.88	Environmental Obstacle Crossing	Surface	Llanddulas Limestone and Gwrych Castle Wood SSSI and ancient woodland	Trenchless
24	S1A-PAT-1	292369.54	377493.70	Footpath, Bridleway or other track crossing	Surface	Footpath through Gwrych Castle Woods	Trenchless
25	S1A-EOX-2	292466.44	377467.86	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
27	S2-OOX-2	292418.06	377355.49	Other Obstacle Crossing	Buried	Potential mining works	Trenching or Trenchless
28	S2-EOX-1	292334.93	377262.35	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
29	S2-EOX-2	292218.62	377195.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
30	S2-EOX-3	292193.56	377071.22	Environmental Obstacle Crossing	Surface	Mature tress/ bushes	Trenching
31	S2-EOX-4	292238.33	377072.18	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
32	S2-EOX-5	292141.40	376978.90	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
33	S2-EOX-6	292079.86	376907.28	Environmental Obstacle Crossing	Surface	Mature trees	Trenchless
34	S2-EOX-7	292065.43	376810.03	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
35	S2-RX-1	292063.34	376801.02	Road Crossing	Surface	Minor road	Trenchless
36	S2-EOX-8	292062.36	376796.80	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
37	S2-OUX-1	292062.09	376795.63	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
38	S2-EOX-9	292038.76	376616.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
39	S2-OUX-2	292044.05	376575.40	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
40	S2-EOX-10	292146.32	376392.85	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
41	S2-EOX-11	292137.71	376356.42	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
42	S2-RX-2	292139.34	376354.30	Road Crossing	Surface	Tan-y-Gopa Road	Trenchless
43	S2-EOX-12	292140.51	376352.57	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
44	S2-EOX-13	292326.77	376189.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
45	S2-EOX-14	292447.36	376040.76	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
46	S2-EOX-15	292457.28	376017.02	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
47	S2-WX-1	292530.23	375822.76	Watercourse Crossing	Surface	Watercourse	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
48	S2-EOX-16	292531.91	375817.08	Environmental Obstacle Crossing	Surface	Thick tree line	Trenchless
49	S2-EOX-17	292573.90	375693.61	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
50	S2-RX-3	292574.58	375691.07	Road Crossing	Surface	Minor road	Trenchless
51	S2-EOX-18	292575.50	375687.86	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
52	S2-OUX-3	292594.10	375641.90	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
53	S2-UUX-1	292623.90	375587.27	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
54	S2-UUX-2	292639.19	375551.10	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
55	S2-EOX-19	292642.31	375543.74	Environmental Obstacle Crossing	Surface	Thick hedgerow/ gorse bush	Trenchless
56	S2-UUX-3	292765.96	375346.76	Underground Utilities Crossing	Buried	Wales and West Utilities - intermediate pressure gas main	Trenchless
57	S2-OUX-4	292785.19	375325.63	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
58	S2-EOX-20	292808.79	375299.70	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
59	S2-OUX-5	292878.73	375201.46	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 33 kV overhead	Trenching
60	S2-OUX-6	292880.71	375200.48	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
61	S2-OUX-7	292954.08	375023.52	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
62	S2-WX-2	292953.96	375025.47	Watercourse Crossing	Surface	Watercourse/ ditch	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
63	S2-EOX-21	292954.19	375022.10	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
64	S2-EOX-22	292950.82	374922.90	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
65	S2-EOX-23	292947.25	374913.72	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
66	S2-RX-4	292949.22	374918.78	Road Crossing	Surface	Abergele Road	Trenchless
67	S2-UUX-4	292944.59	374906.90	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
68	S2-EOX-24	292942.55	374901.65	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
69	S2-EOX-25	293028.87	374743.47	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
70	S2-EOX-26	293142.79	374573.52	Environmental Obstacle Crossing	Surface	Line of mature trees	Trenching
71	S2-EOX-27	293313.47	374504.96	Environmental Obstacle Crossing	Surface	Line of mature trees and hedgerow	Trenching
72	S2-EOX-28	293342.95	374460.61	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
73	S2-UUX-5	293440.40	374244.98	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
74	S2-EOX-29	293437.38	374276.75	Environmental Obstacle Crossing	Surface	Line of mature trees	Trenchless
75	S2-EOX-30	293448.45	374090.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
76	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
77	S2-RX-6	293503.02	373933.91	Road Crossing	Surface	B5381	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
78	S2-RX-7	293607.10	373782.88	Road Crossing	Surface	A548	Trenchless
79	S2-EOX-31	293472.08	373934.77	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
80	S2-EOX-32	293467.65	373925.99	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
81	S2-EOX-33	293501.50	373938.54	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
82	S2-EOX-34	293505.58	373926.13	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
83	S2-EOX-35	293603.12	373785.12	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
84	S2-EOX-36	293611.64	373780.31	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
85	S2-OUX-8	293469.38	373930.75	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
86	S2-OUX-9	293504.94	373928.08	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
87	S2-OUX-10	293519.13	373884.94	Overhead Utilities Crossing	Overhead	SP Energy Networks - low voltage overhead	Trenching or trenchless
88	S2-OUX-11	293599.52	373787.15	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
89	S2-UUX-6	293604.05	373784.60	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
90	S2-UUX-7	293609.10	373825.97	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
91	S2-UUX-8	293619.03	373752.61	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
92	S3N/S-WX-1	293808.76	373803.16	Watercourse Crossing	Surface	Watercourse	Trenching or trenchless
93	S3N/S-EOX-1	293807.79	373806.72	Environmental Obstacle Crossing	Surface	Thick hedgerow/mature trees	Trenching or trenchless
94	S3N/S-EOX-2	293812.03	373771.67	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
95	S3N/S-EOX-3	293945.58	373814.60	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
96	S3N/S-EOX-4	293971.32	373861.51	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
97	S3N/S-OUX-1	293929.94	373809.59	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
98	S3N/S-EOX-5	295911.87	373779.06	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
99	S3N/S-EOX-6	295891.13	373734.09	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
100	S3N/S-EOX-7	295907.77	373733.78	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
101	S3N/S-EOX-8	295959.02	373748.57	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
102	S3N/S-WX-2	295904.78	373736.94	Watercourse Crossing	Surface	Watercourse	Trenchless
103	S3N/S-WX-3	295909.87	373731.56	Watercourse Crossing	Surface	Watercourse	Trenchless
104	S3N/S-PAT-1	295987.87	373733.12	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
105	S3S-OUX-1	294056.61	373824.19	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenchless
106	S3S-OUX-2	294123.12	373766.48	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
107	S3S-OUX-3	294186.40	373712.72	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenchless
108	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
109	S3S-WX-1	294104.17	373782.57	Watercourse Crossing	Surface	Watercourse	Trenchless
110	S3S-WX-2	294196.46	373704.17	Watercourse Crossing	Surface	Watercourse	Trenchless
111	S3S-EOX-1	294096.98	373868.13	Environmental Obstacle Crossing	Surface	Mature tree	Trenching or trenchless
112	S3S-EOX-2	294101.82	373848.76	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
113	S3S-EOX-3	294104.17	373782.57	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
114	S3S-EOX-4	294194.44	373705.89	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
115	S3S-EOX-5	294298.23	373694.80	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
116	S3S-EOX-6	294294.12	373632.87	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
117	S3S-OUX-5	294342.86	373605.01	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
118	S3S-EOX-7	294454.59	373534.16	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
119	S3S-EOX-8	294682.22	373553.11	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
120	S3S-WX-4	294679.97	373552.47	Watercourse Crossing	Surface	Watercourse	Trenchless
121	S3S-UUX-1	294661.83	373547.34	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
122	S3S-EOX-11	295171.29	373828.09	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
123	S3S-EOX-12	295184.92	373827.68	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
124	S3S-EOX-9	294879.40	373666.24	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
125	S3S-EOX-10	295003.07	373753.21	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
126	S3S-RX-1	295175.88	373827.95	Road Crossing	Surface	Minor road	Trenchless
127	S3S-OOX-2	295135.48	373817.39	Other Obstacle Crossing	Surface	Remnants of a disused quarry	Trenchless
128	S3S-EOX-13	295150.95	373828.72	Environmental Obstacle Crossing	Surface	Mature trees	Trenchless
129	S3S-OUX-6	295321.93	373838.04	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching
130	S3S-RX-2	295414.55	373872.67	Road Crossing	Surface	Farm track/ access road	Trenchless
131	S3S-UUX-2	295416.63	373873.50	Underground Utilities Crossing	Buried	BT Openreach - underground telecom line	Trenchless
132	S3S-EOX-14	295551.94	373922.60	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
133	S3S-EOX-15	295642.07	373924.62	Environmental Obstacle Crossing	Surface	Intersection of two hedgerows and a single mature tree	Trenching
134	S3S-EOX-16	295659.74	373941.44	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
135	S3S-EOX-17	295805.33	373816.65	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
136	S3S-OUX-7	295786.68	373843.71	Overhead Utilities Crossing	Overhead / Buried	SP Energy Networks - high voltage 11 kV overhead / buried	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
137	S4N-EOX-2	296442.80	373818.75	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
138	S4N-EOX-3	296449.80	373827.63	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
139	S4N-EOX-4	296412.24	373874.42	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
140	S4N-OUX-1	296477.56	373874.42	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless
141	S4N-OOX-2	296631.04	373872.12	Other Obstacle Crossing	Surface	Electricity pylon, related to S4N-OUX-1	Trenching or trenchless
142	S4N-RX-1	296446.15	373824.04	Road Crossing	Surface	Minor road	Trenchless
143	S4N-EOX-5	296540.42	373894.63	Environmental Obstacle Crossing	Surface	Hedgerow with a large mature tree	Trenching or trenchless
144	S4N-EOX-6.1	296597.36	373912.27	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
145	S4N-EOX-8.1	296703.73	373978.87	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
146	S4N-EOX-9.1	296716.89	373964.00	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
147	S4N-UUX-1.1	296672.79	373945.88	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
148	S4N-UUX-2.1	296936.79	374060.61	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
149	S4N-PAT-1.1	296914.57	374055.80	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
150	S4N-EOX-13.1	296833.30	373976.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
151	S4N-EOX-14.1	296838.14	373976.62	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
152	S4N-RX-2.1	296835.57	373976.38	Road Crossing	Surface	Minor road	Trenchless
153	S4N-OUX-2.1	296832.67	373976.19	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
154	S4N-EOX-15	296931.81	374117.51	Environmental Obstacle Crossing	Surface	Mature tree	Trenching
155	S4N-EOX-16	297044.42	374110.59	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching
156	S4N-EOX-17	297111.42	374104.55	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
157	S4N-PAT-2	296924.98	374114.98	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
158	S4N-PAT-3	297196.40	374078.96	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching
159	S4N-EOX-18	297206.02	374111.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
160	S4N-EOX-19	297358.95	374017.91	Environmental Obstacle Crossing	Surface	Thick tree line/ hedgerow	Trenching
161	S4N-EOX-20	297459.91	374030.84	Environmental Obstacle Crossing	Surface	Intersection between two hedgerows with a single large mature tree	Trenching or trenchless
162	S4N-EOX-21	297508.01	374000.96	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
163	S4N-EOX-22	297518.10	374001.38	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
164	S4N-RX-3	297512.09	374001.14	Road Crossing	Surface	Minor road	Trenchless
165	S4N-OUX-3	297520.56	374001.37	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
166	S4N-EOX-1.1	296344.64	373825.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
167	S4N-EOX-2.1	296394.46	373849.13	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
168	S4N-RX-1.1	296402.57	373852.15	Road Crossing	Surface	Minor road, providing access to some farming and residential properties	Trenchless
169	S4N-EOX-3.1	296412.54	373854.60	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenchless
171	S4N-EOX-7	296567.58	373953.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
172	S4N-EOX-15.1	296919.20	374050.90	Environmental Obstacle Crossing	Surface	Tree line/ hedgerow	Trenchless
172.1	S4N-WX-1	296928.20	374053.70	Watercourse Crossing	Surface	Watercourse	Trenchless
173	S4N/S-EOX-1	295997.02	373705.03	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
174	S4N/S-EOX-2	296075.37	373691.39	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
175	S4N/S-EOX-3	296098.26	373694.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
176	S5N-EOX-2	297781.48	373969.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
177	S5N-EOX-3	297889.29	373817.53	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
178	S5N-OUX-2	297697.81	373978.73	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching
179	S5N-OUX-3	297896.68	373790.57	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
180	S5N-UUX-1	297874.63	373881.49	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
181	S5N-UUX-2	297884.69	373837.60	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
182	S5N/S-EOX-1	297932.57	373678.55	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
183	S5N/S-EOX-2	297996.73	373591.03	Environmental Obstacle Crossing	Surface	Mature tree	Trenching
184	S5N/S-EOX-3	298070.26	373612.07	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
185	S5N/S-EOX-4	298154.26	373595.71	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
186	S5N/S-EOX-5	298161.69	373594.25	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
187	S5N/S-RX-1	298157.61	373594.69	Road Crossing	Surface	Minor road	Trenchless
188	S6-EOX-1	298401.21	373556.02	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
189	S6-EOX-2	298562.60	373563.59	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
190	S6-EOX-3	298695.81	373493.92	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching
191	S6-OUX-1	298716.22	373488.64	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching
192	S6-EOX-4	298866.06	373460.51	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
193	S6-EOX-5	298873.96	373459.05	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
194	S6-RX-1	298869.27	373459.79	Road Crossing	Surface	Minor road	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
195	S6-OUX-2	298867.32	373460.26	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
196	S7N/S-EOX-2	299292.83	373273.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
197	S7N/S-EOX-3	299293.32	373268.26	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
198	S7N/S-EOX-4	299312.65	373285.30	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
199	S7N/S-EOX-5	299316.26	373258.92	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
200	S7N/S-EOX-6	299325.93	373276.94	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
201	S7N/S-EOX-7	299326.25	373273.01	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
202	S7N/S-PAT-1	299310.69	373281.04	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
203	S7N/S-PAT-2	299311.67	373262.69	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenchless
204	S7N/S-RX-1	299310.85	373272.19	Road Crossing	Surface	Minor road (Cae Onnen)	Trenchless
205	S7N/S-OUX-1	299298.56	373277.76	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
206	S7N/S-UUX-1	299308.56	373275.41	Underground Utilities Crossing	Buried	SP Energy Networks - underground low voltage line	Trenchless
207	S7N/S-EOX-1	299246.78	373310.04	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
208	S7N/S-UUX-2	299445.28	373207.50	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
209	S7N/S-UUX-3	299449.26	373205.30	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
210	S7N/S-UUX-4	299451.21	373204.02	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
211	S7N/S-UUX-5	299454.00	373202.01	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
212	S7N/S-OOX-1	299386.30	373234.40	Other Obstacle Crossing	Surface	Potential mining works	Trenching or trenchless
213	S7N/S-OOX-2	299390.11	373163.20	Other Obstacle Crossing	Surface/ buried	Air shaft	Trenching or trenchless
214	S7N/S-OOX-2.1	299419.31	373219.07	Other Obstacle Crossing	Surface/ buried	Mine shaft	Trenching or trenchless
215	S7N/S-EOX-9	300850.91	373095.23	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
216	S7N/S-OUX-2	300825.69	373052.50	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching or trenchless
217	S7N/S-EOX-11	300871.74	373029.62	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
218	S7N/S-EOX-12	300936.18	373050.70	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
219	S7S-PAT-1	299563.20	373117.44	Footpath, Bridleway or other track crossing	Surface	Farm track	Trenching or trenchless
220	S7S-UUX-1	299577.82	373100.83	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
221	S7S-OUX-1	299584.78	373084.25	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
222	S7S-EOX-1	299561.61	373120.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
223	S7S-EOX-2	299612.15	373125.18	Environmental Obstacle Crossing	Surface	Ancient woodland	Trenchless
224	S7S-EOX-3	299592.34	373095.76	Environmental Obstacle Crossing	Surface	Mature tree	Trenchless
225	S7S-EOX-4	299579.28	373056.01	Environmental Obstacle Crossing	Surface	Mature tree	Trenchless
226	S7S-EOX-5	299740.91	372948.94	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
227	S7S-EOX-6	299850.92	372836.82	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
228	S7S-UUX-2	300016.93	372731.55	Underground Utilities Crossing	Buried	SP Energy Networks - underground high voltage 33 kV line	Trenchless
229	S7S-EOX-7	300104.97	372681.26	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
230	S7S-EOX-8.1	300248.68	372642.71	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
231	S7S-OUX-2	300185.25	372634.97	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 132 kV overhead	Trenching or trenchless
232	S7S-OUX-3	300288.68	372667.39	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenching or trenchless
233	S7S-EOX-9	300310.76	372712.08	Environmental Obstacle Crossing	Surface	Hedgerow with single tree	Trenching or trenchless
234	S7S-EOX-10	300294.68	372785.81	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
235	S7S-EOX-11	300341.25	372803.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
236	S7S-EOX-12	300345.56	372813.71	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
237	S7S-EOX-13	300318.93	372861.55	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
238	S7S-UUX-3	300338.41	372796.77	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
239	S7S-UUX-4	300341.83	372804.87	Underground Utilities Crossing	Buried	SP Energy Networks - underground high voltage 11 kV line	Trenchless
240	S7S-OUX-4	300345.12	372812.66	Overhead Utilities Crossing	Overhead	BT Openreach underground telecom line	Trenchless
241	S7S-RX-1	300343.31	372808.39	Road Crossing	Surface	Minor road	Trenchless
242	S7S-EOX-16	300442.83	372929.52	Environmental Obstacle Crossing	Surface	Mature trees	Trenching or trenchless
243	S7S-EOX-14	300418.76	372876.61	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
244	S7S-EOX-15	300407.11	372952.64	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
245	S7S-EOX-17	300447.02	372970.41	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
246	S7S-EOX-18	300509.14	372960.85	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
247	S7S-EOX-20	300717.05	373090.31	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
248	S7S-EOX-8	300147.86	372703.66	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless
249	S8-UUX-1	301050.33	373138.24	Underground Utilities Crossing	Buried	Dwr Cymru - Welsh Water main	Trenchless
250	S8-EOX-1	301052.25	373192.28	Environmental Obstacle Crossing	Surface	Hedgerow/ mature trees	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
251	S8-EOX-2	301173.30	373155.13	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
252	S8-EOX-3	301186.64	373151.30	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
253	S8-EOX-4	301194.95	373148.91	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
254	S8-OUX-1	301165.53	373156.72	Overhead Utilities Crossing	Overhead	SP Energy Networks - high voltage 11 kV overhead	Trenchless
255	S8-OUX-2	301185.13	373151.73	Overhead Utilities Crossing	Overhead	BT Openreach - overhead telecom line	Trenchless
256	S8-RX-1	301191.00	373150.05	Road Crossing	Surface	Minor road	Trenchless
257	S9-EOX-3	301475.92	373250.01	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
258	S9-EOX-4	301447.62	373304.40	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
259	S9-WX-1	301448.72	373303.48	Watercourse Crossing	Surface	Watercourse	Trenching or trenchless
260	S9-OOX-1	301420.00	373296.00	Overhead Utilities Crossing	Surface	Interaction with proposed National Grid works	Trenching or trenchless
261	S9-OUX-1	301411.83	373336.67	Overhead Utilities Crossing	Surface	National Grid Electricity Transmission - overhead electricity transmission line	Trenching or trenchless
262	S9-UUX-3	301390.47	373356.29	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - underground line	Trenching or trenchless
263	S9-UUX-4	301363.94	373377.18	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - fibre optic	Trenching or trenchless
264	S9-EOX-6	301340.02	373436.49	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

Mapping ID	Obstacle ID	Easting	Northing	Type	Overhead / Surface / Buried	Description	Crossing Technique
265	S9-UUX-5	301454.14	373574.99	Underground Utilities Crossing	Buried	Wales and West Utilities - high pressure gas main	Trenchless
266	S9(LSS2)-UUX-1	301492.94	373171.70	Underground Utilities Crossing	Buried	National Grid Electricity Transmission - fibre optic	Trenching or trenchless
267	S9(LSS2)-UUX-2	301490.70	373165.01	Underground Utilities Crossing	Buried	Vodafone - telecom line	Trenching or trenchless
268	S9(LSS2)-OUX-1	301493.68	373178.24	Overhead Utilities Crossing	Overhead	National Grid Electricity Transmission - overhead electricity transmission line	Trenching or trenchless
269	S9(LSS2)-EOX-1	301544.34	373115.87	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
270	S9(LSS2)-EOX-2	301491.29	373166.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
271	S9(LSS2)-EOX-3	301445.82	373179.23	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
272	S9-EOX-7	301504.14	373361.52	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
273	S9-EOX-8	301454.43	373448.78	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
274	S9-EOX-9	301289.08	373431.89	Environmental Obstacle Crossing	Surface	Hedgerow	Trenching or trenchless
275	S9-EOX-10	301360.67	373573.50	Environmental Obstacle Crossing	Surface	Hedgerow	Trenchless
276	S9-UUX-6	301544.99	373411.44	Underground Utilities Crossing	Buried	National Grid Electricity Transmission – Fibre Optic Telecom Line	Trenching or trenchless

MONA OFFSHORE WIND PROJECT

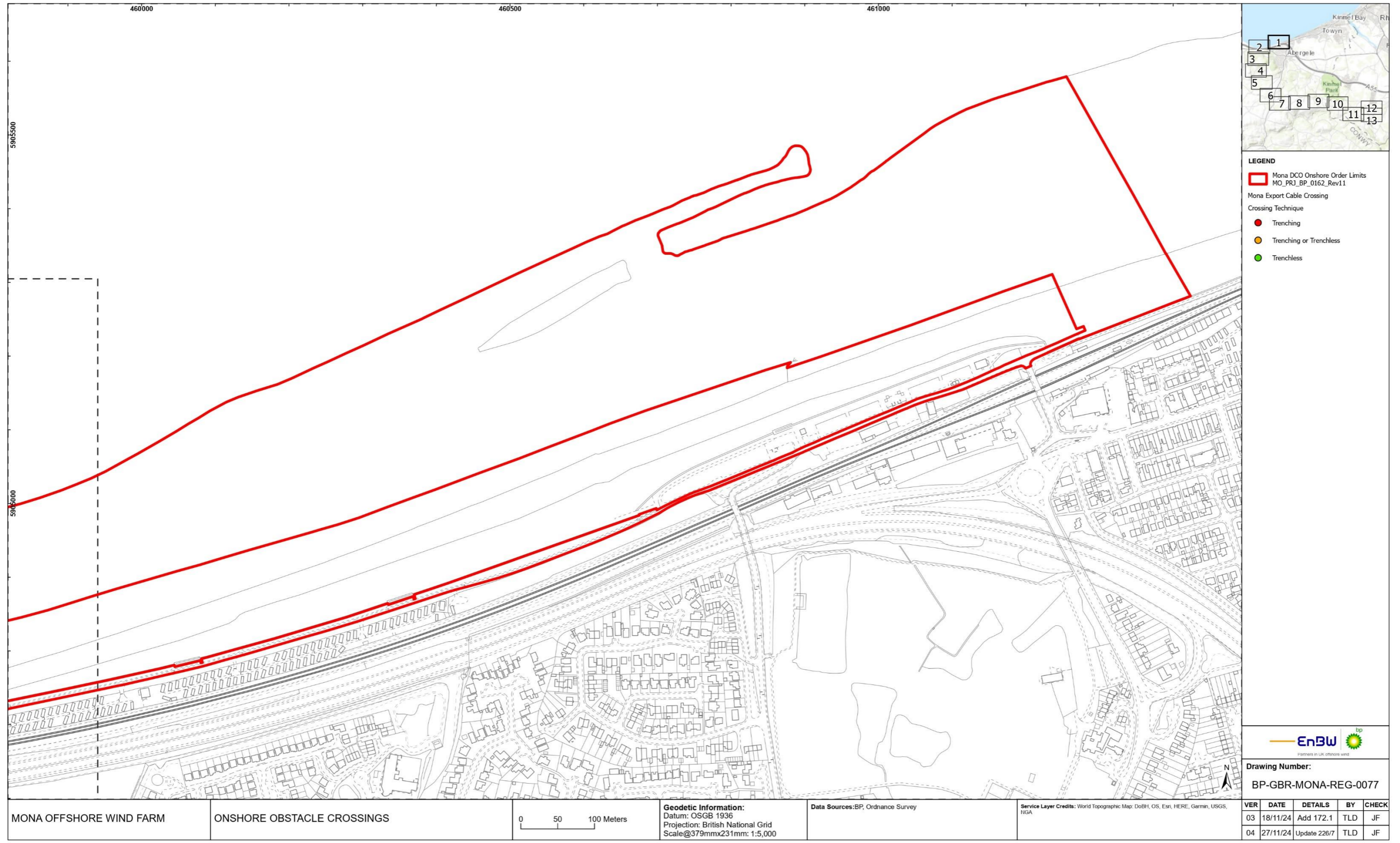


Figure 1.1 Onshore obstacle crossings (part 1).

MONA OFFSHORE WIND PROJECT

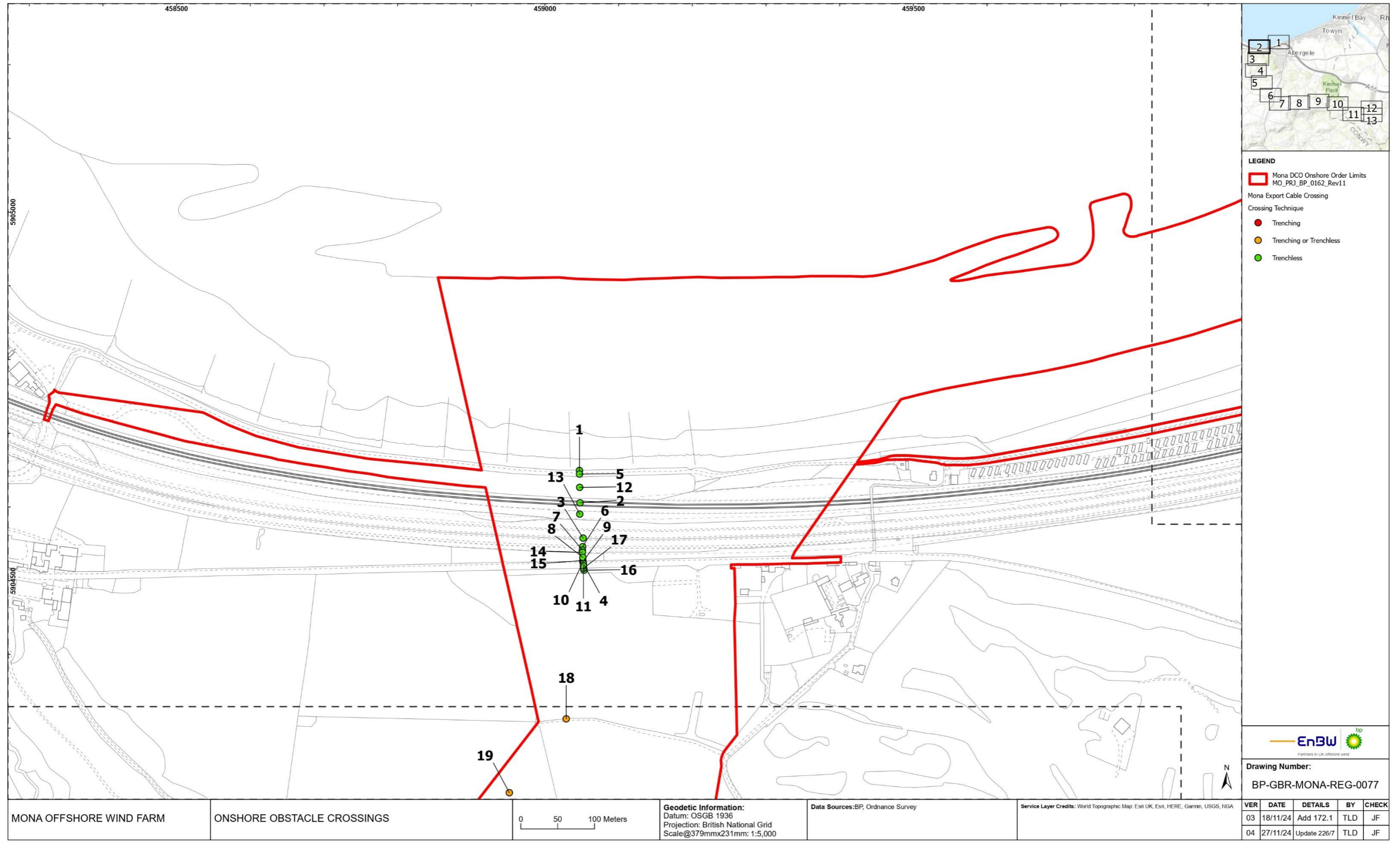


Figure 1.2 Onshore obstacle crossings (part 2).

MONA OFFSHORE WIND PROJECT

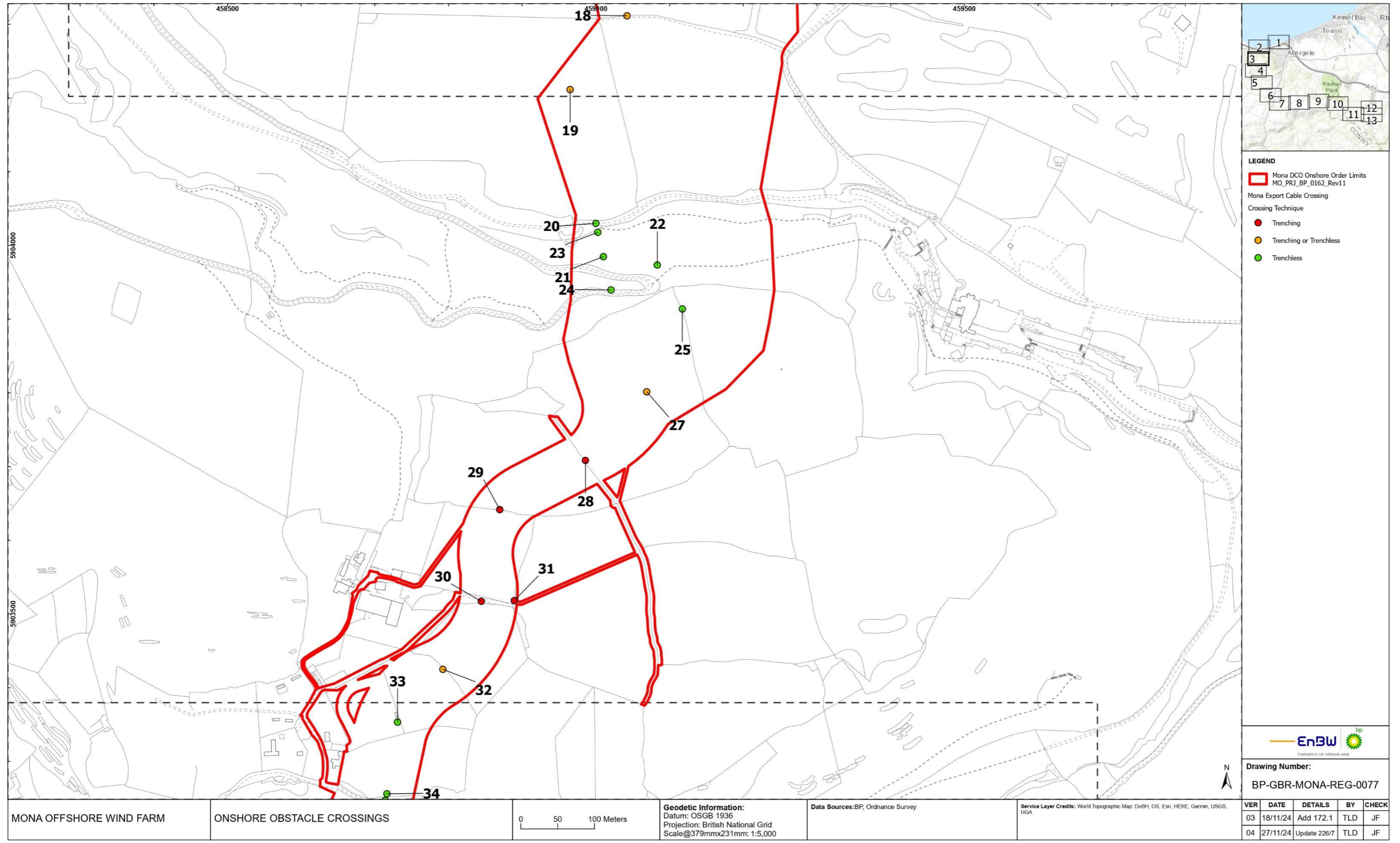


Figure 1.3 Onshore obstacle crossings (part 3).

MONA OFFSHORE WIND PROJECT

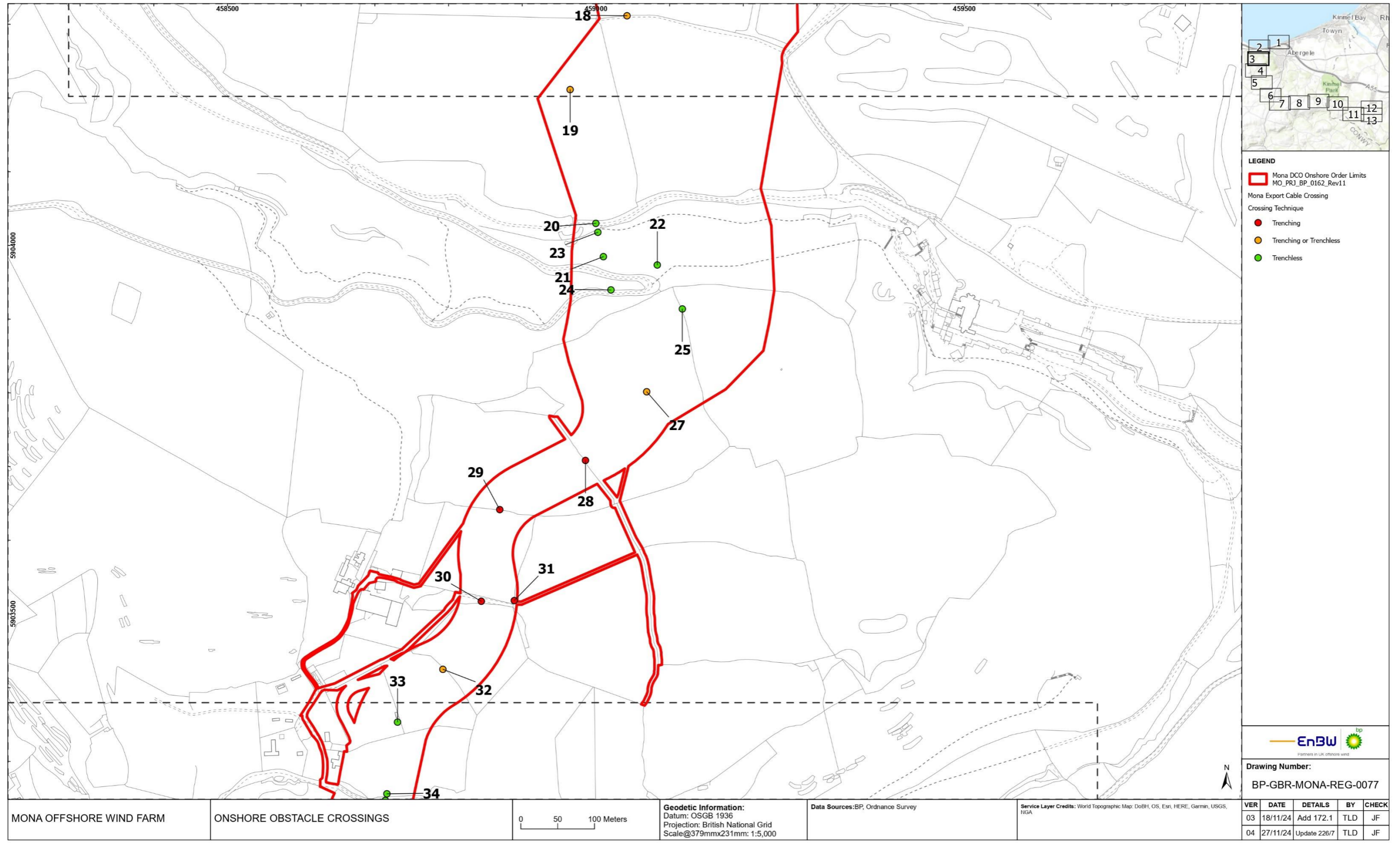


Figure 1.4 Onshore obstacle crossings (part 4).

MONA OFFSHORE WIND PROJECT

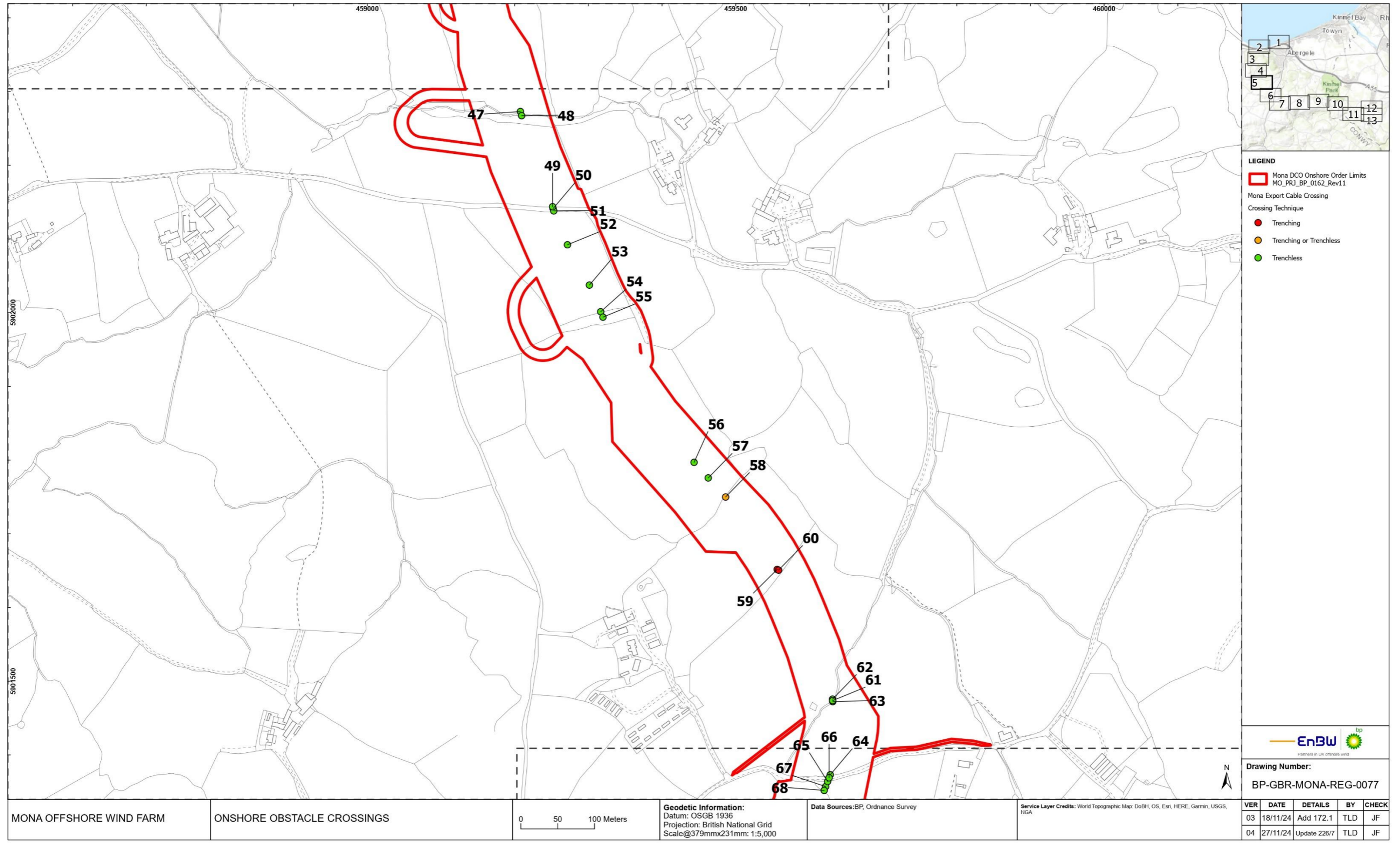


Figure 1.5 Onshore obstacle crossings (part 5).

MONA OFFSHORE WIND PROJECT

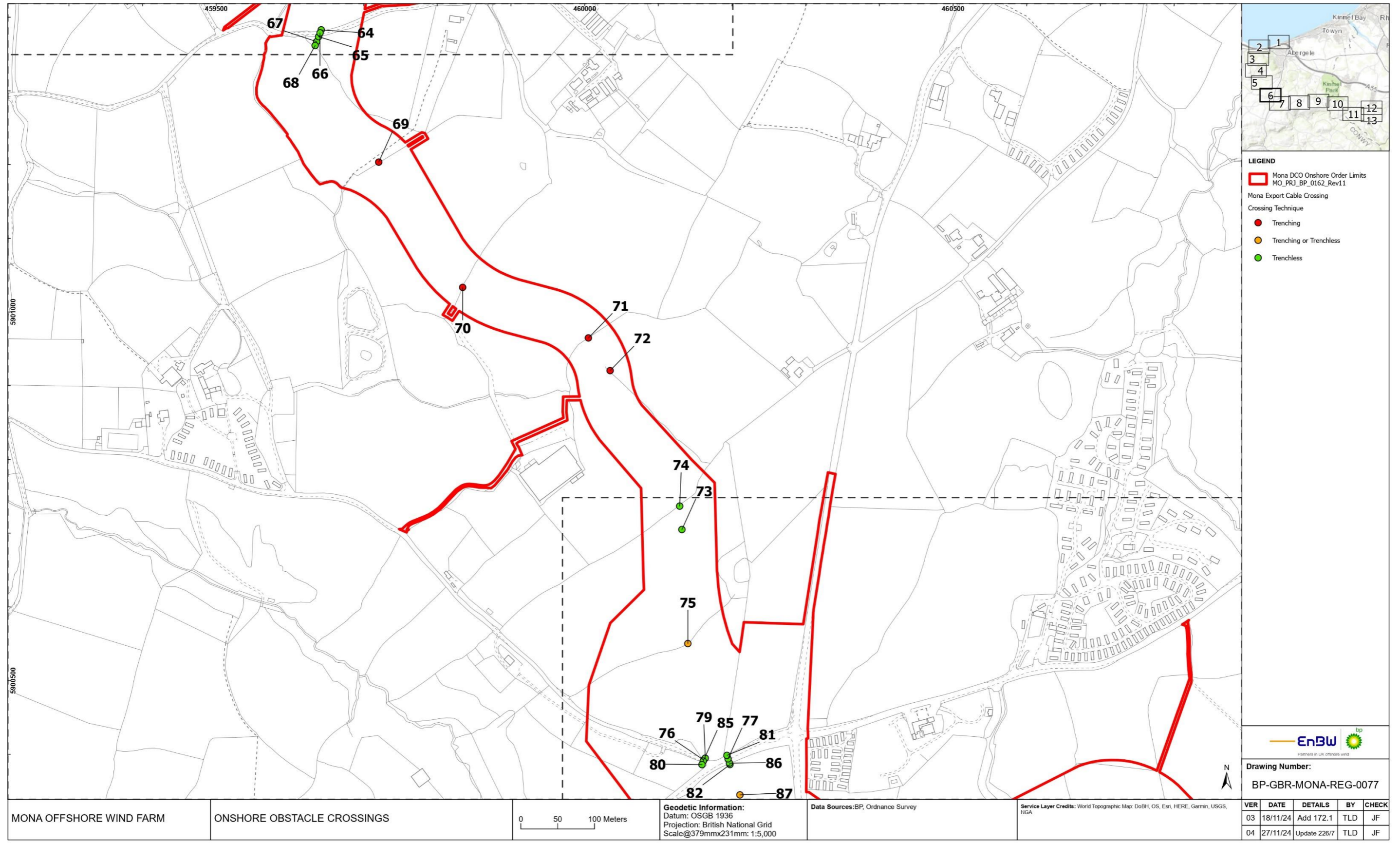


Figure 1.6 Onshore obstacle crossings (part 6).

MONA OFFSHORE WIND PROJECT

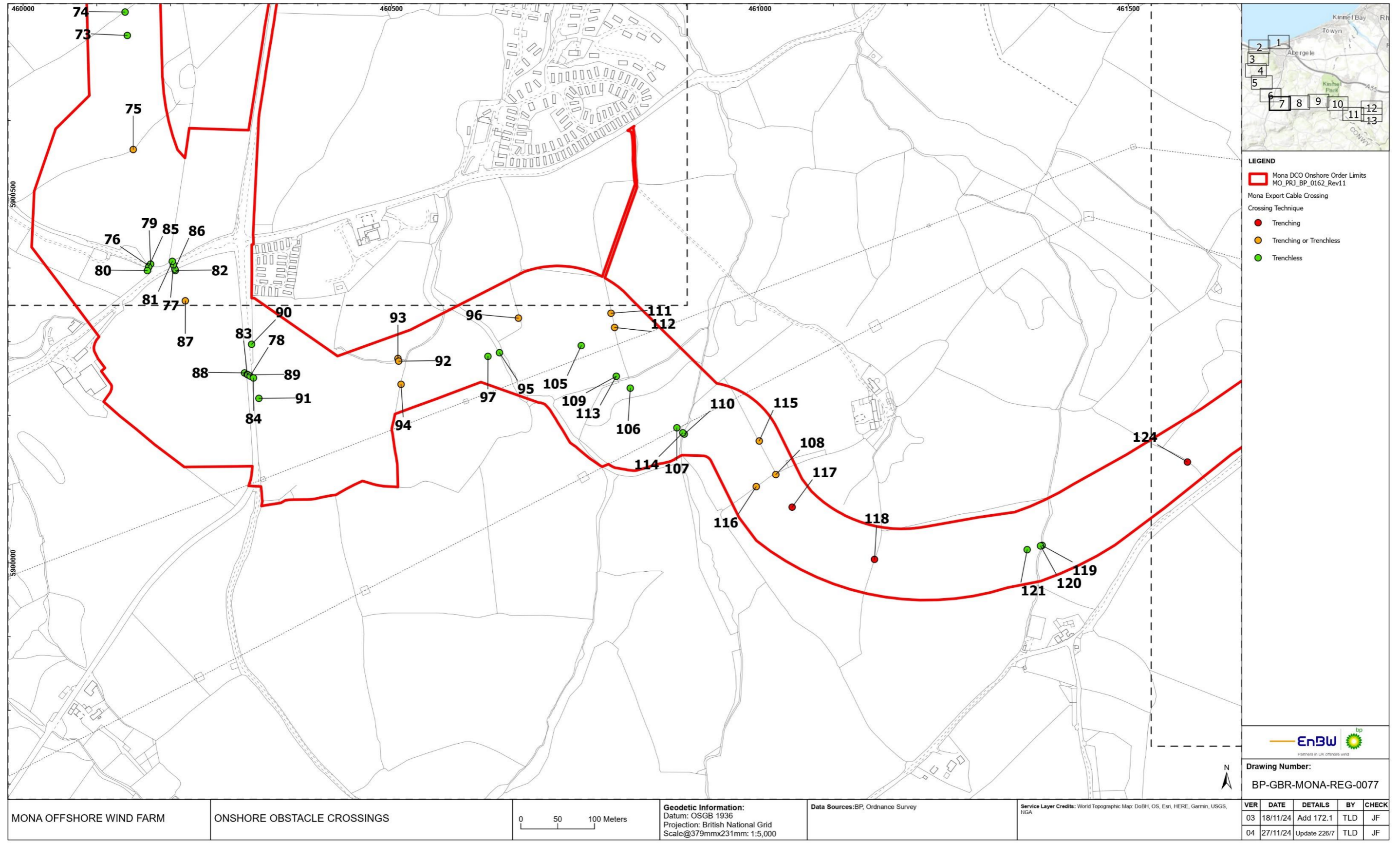


Figure 1.7 Onshore obstacle crossings (part 7).

MONA OFFSHORE WIND PROJECT

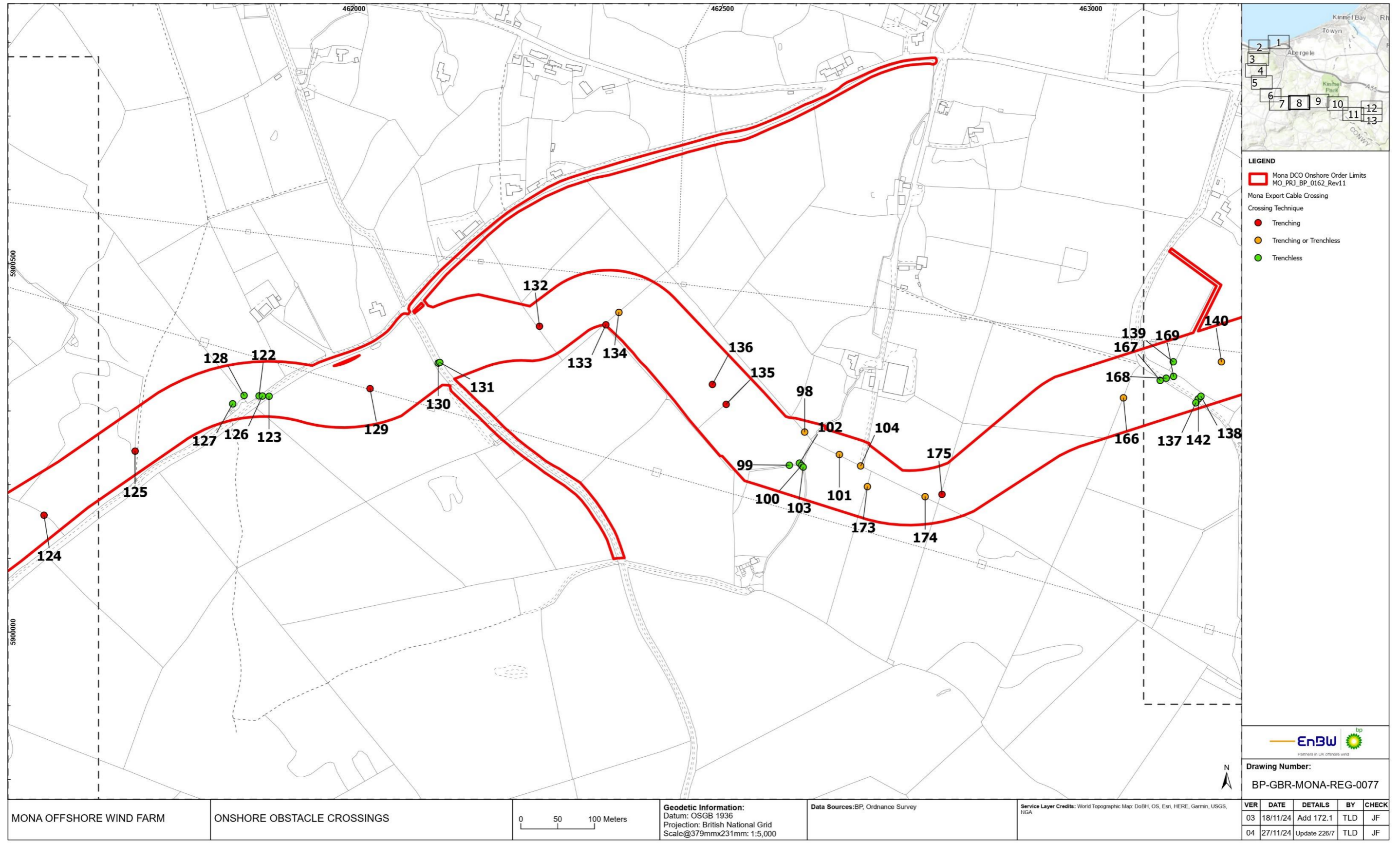


Figure 1.8 Onshore obstacle crossings (part 8).

MONA OFFSHORE WIND PROJECT

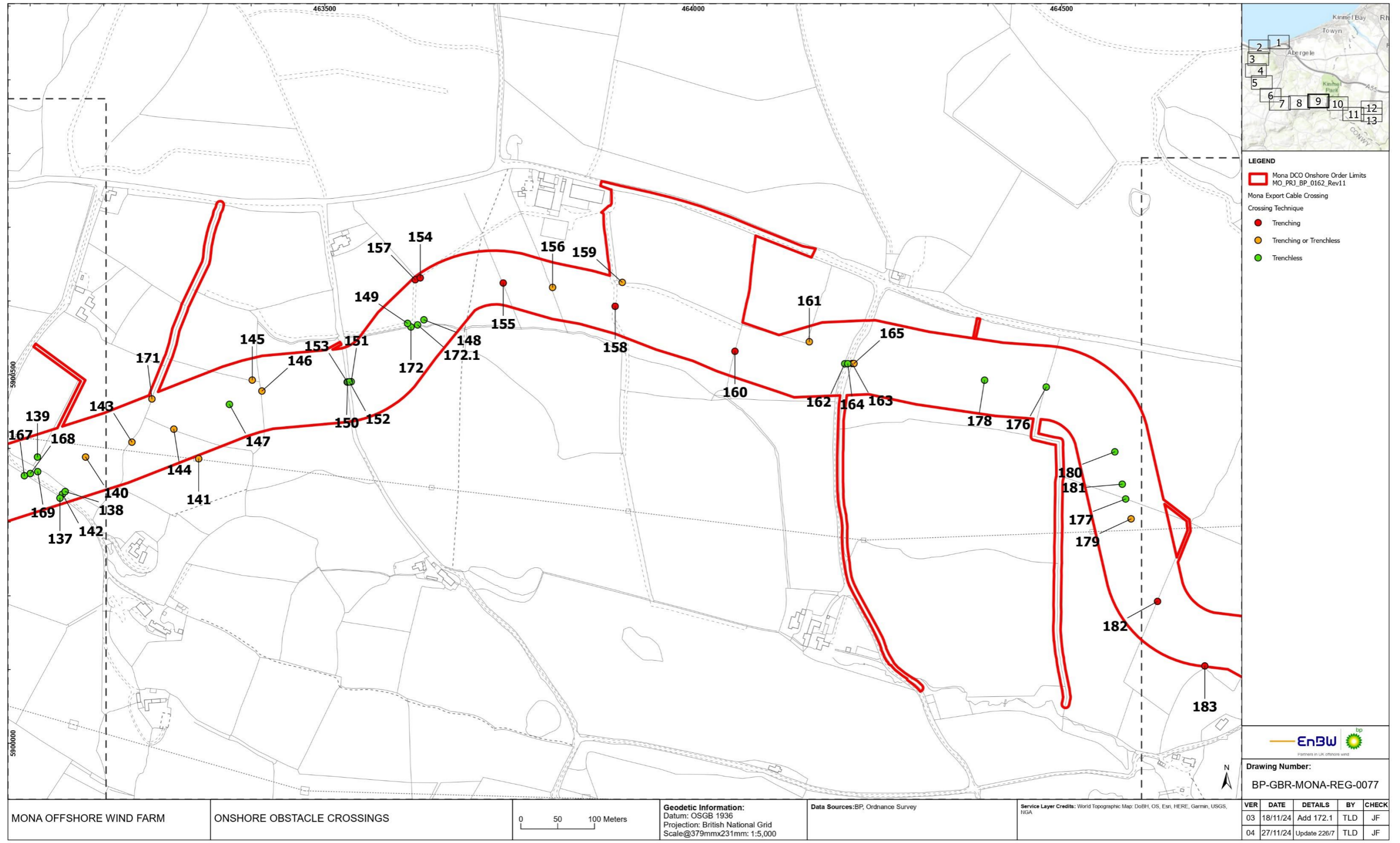


Figure 1.9 Onshore obstacle crossings (part 9).

MONA OFFSHORE WIND PROJECT

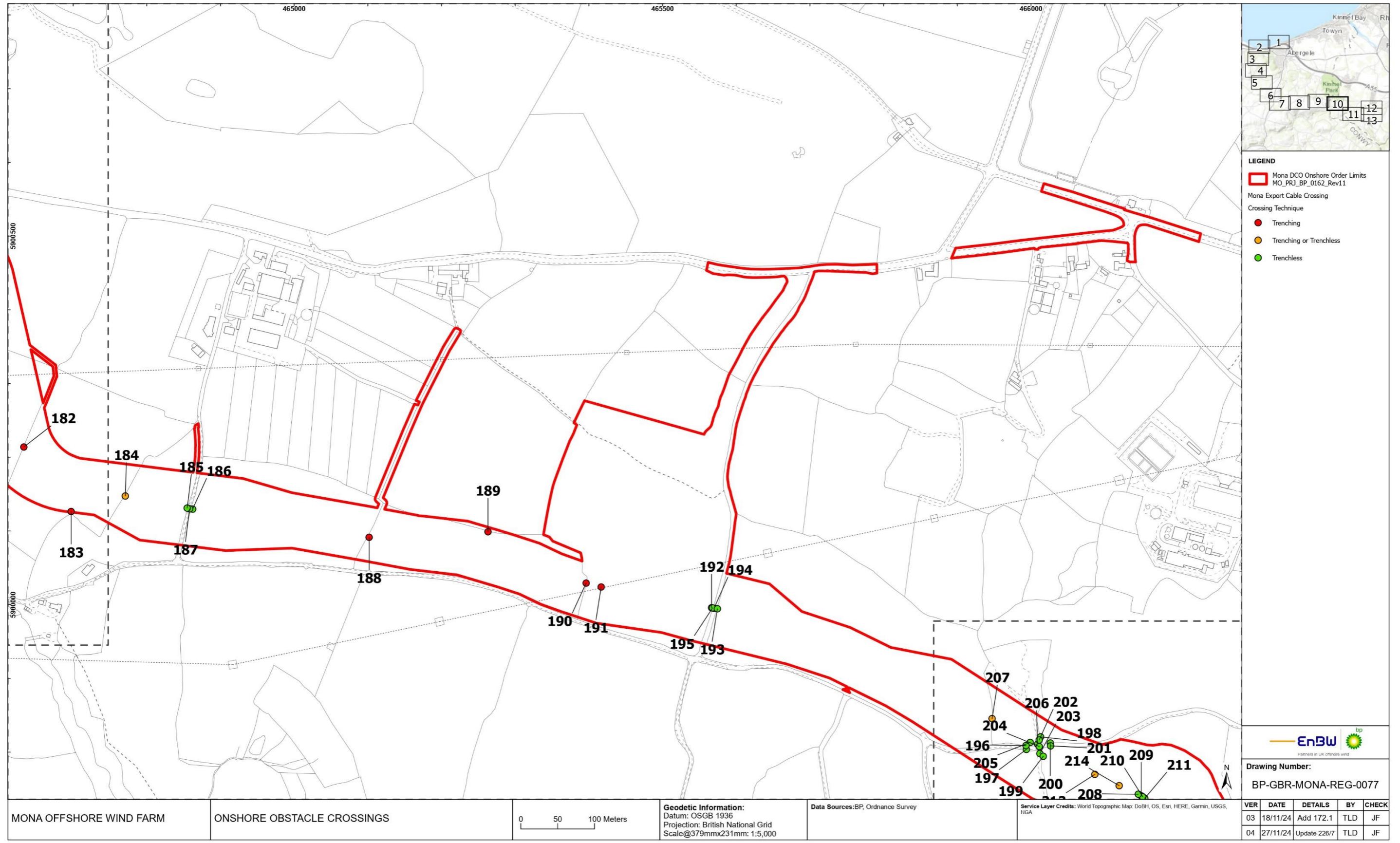


Figure 1.10 Onshore obstacle crossings (part 10).

MONA OFFSHORE WIND PROJECT

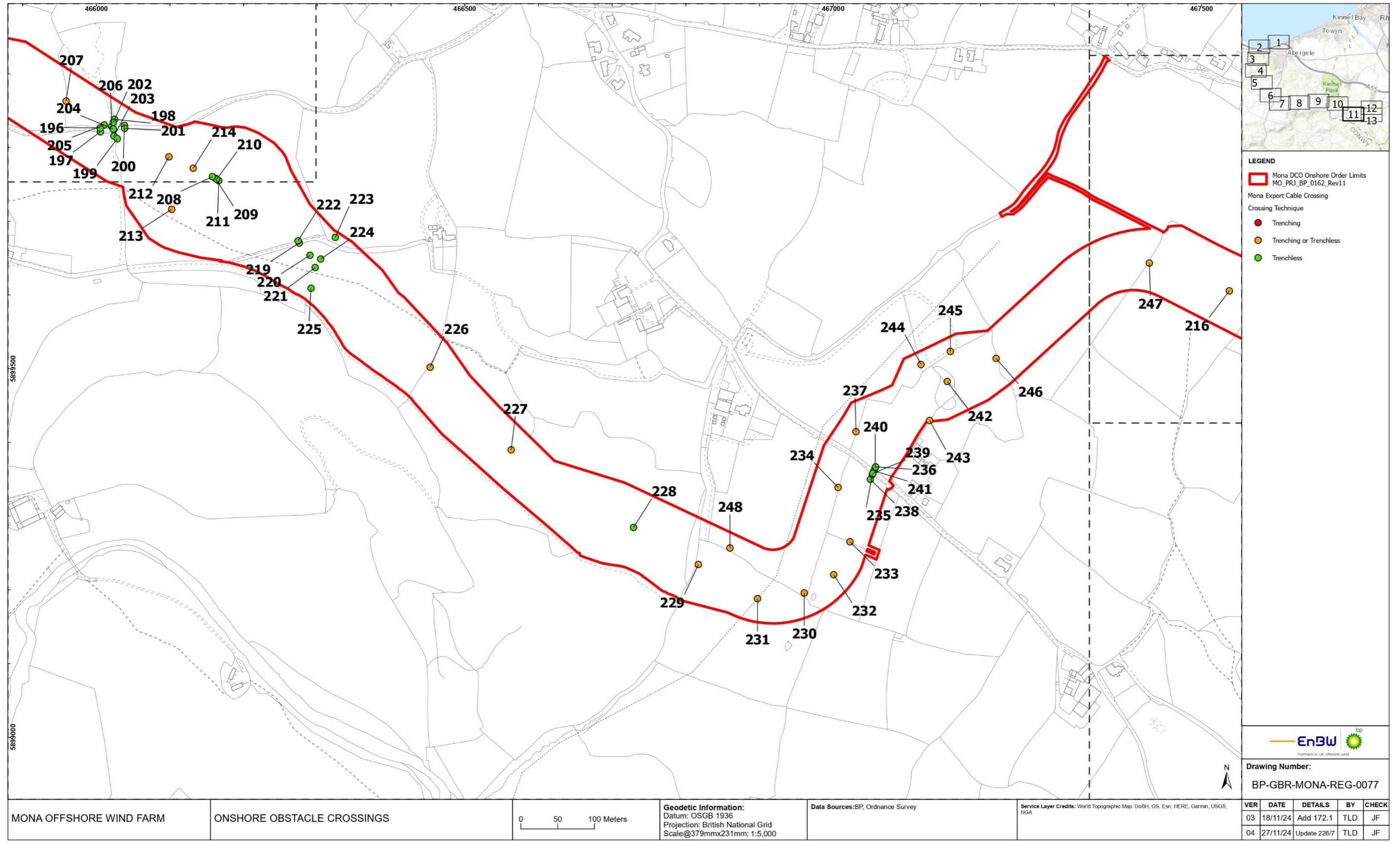


Figure 1.11 Onshore obstacle crossings (part 11).

MONA OFFSHORE WIND PROJECT

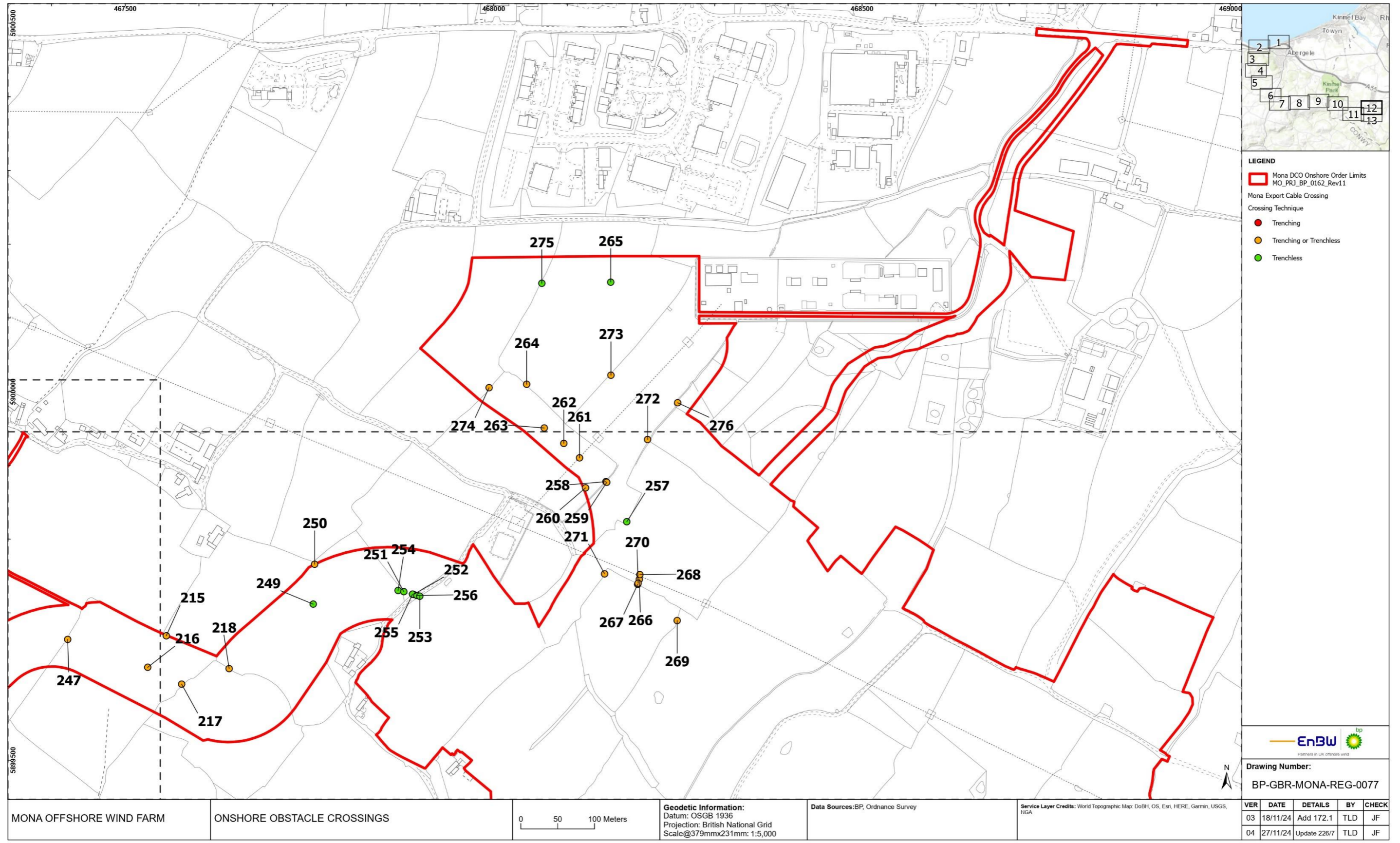


Figure 1.12 Onshore obstacle crossings (part 12).

MONA OFFSHORE WIND PROJECT

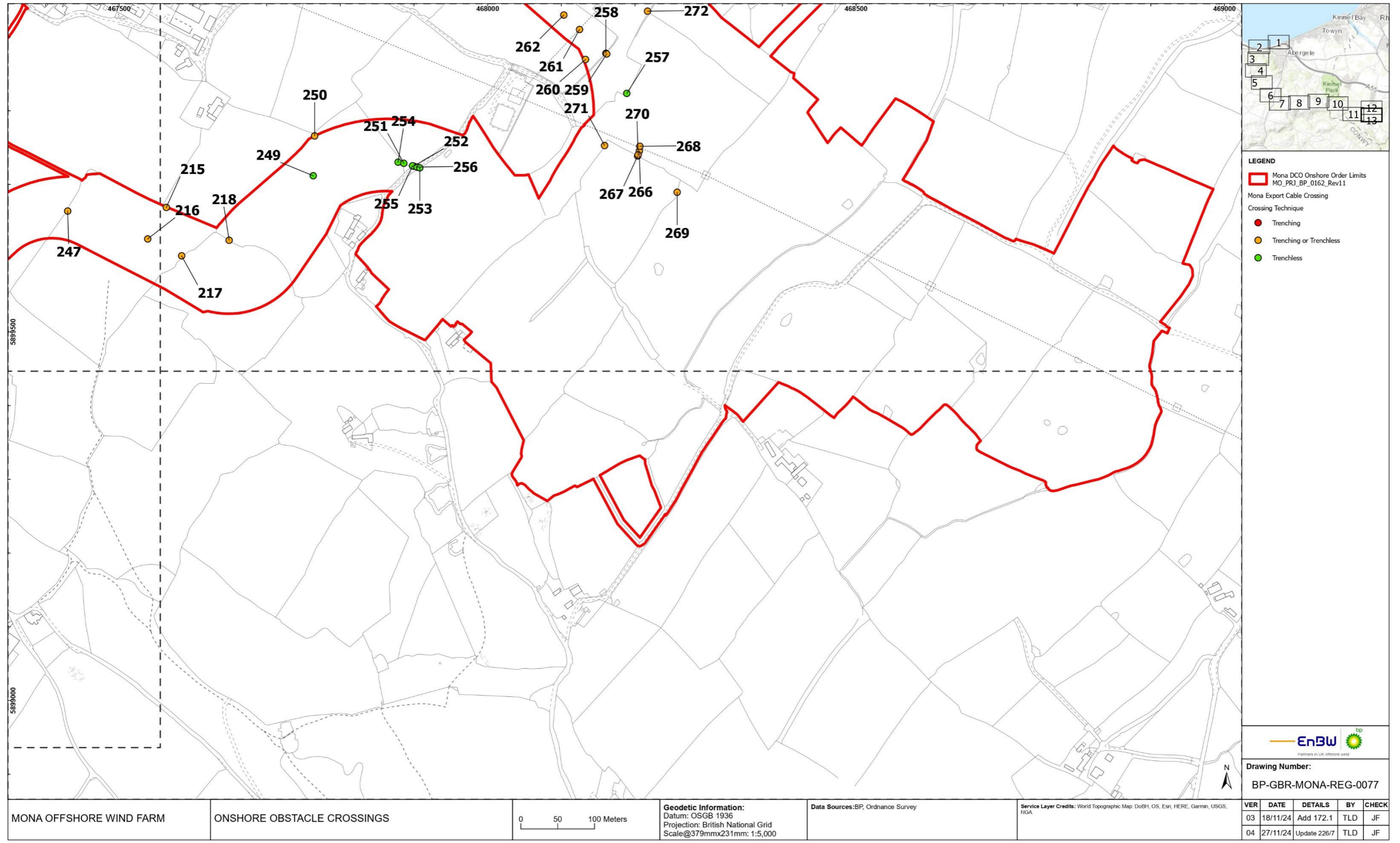


Figure 1.13: Onshore obstacle crossings (part 13).