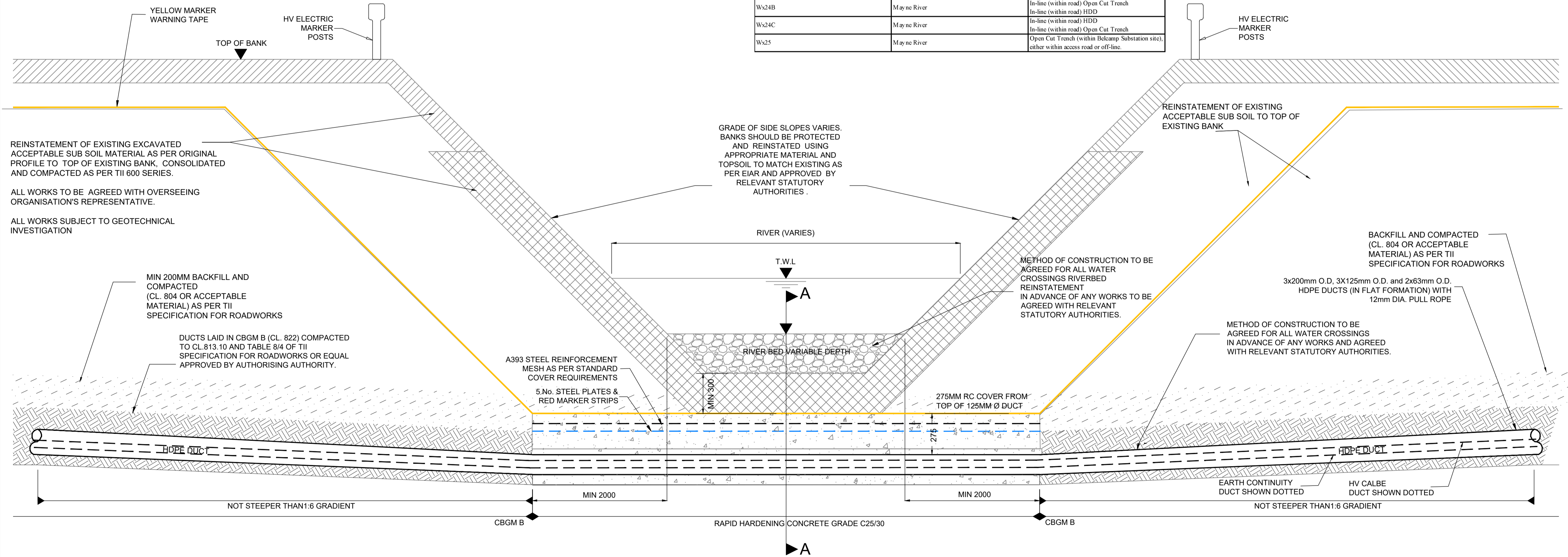


SECTION A-A
N.T.S.

Watercourse crossing Ref No.	Watercourse Name	Crossing Options
Wx01	Brenore Stream	In-line (within road) Open Cut Trench
Wx02	Bracken River	In-line (within road) Open Cut Trench
Wx03	Knock Stream	In-road (within road) Open Cut Trench In-line (within road) HDD
Wx04	Balrobery Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx05	Balrickard Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx06	Rowans Big Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx07	Rowans Little Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx08	Courtough Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx09	Oberstown Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx10	Aldrumman Stream	In-line (within road) HDD In-line (within road) Open Cut Trench
Wx11	Balough Stream	Off-line Open Cut Trench Off-line HDD
Wx12	Deanstown Stream	In-line (within road) HDD Off-line HDD
Wx13	Bally boghill Stream	In-line (within road) HDD Off-line HDD Off-line Open Cut Trench
Wx14	Turvey Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx15	Staffordstown Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx16	Broadmeadow River	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx17	Ward River	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx18	Scapoint Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx19	Greenfields Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx20	Gaybrook Stream	In-line (within road) Open Cut Trench In-line (within road) HDD Off-line Open Cut Trench
Wx21	Hazelbrook Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx22	Sluice Stream	In-line (within road) Open Cut Trench Off-line Open Cut Trench Off-line HDD
Wx23A	Cuckoo Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx23B	Cuckoo Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx23C	Cuckoo Stream	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx24A	Mayne River	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx24B	Mayne River	In-line (within road) Open Cut Trench In-line (within road) HDD
Wx24C	Mayne River	In-line (within road) HDD In-line (within road) Open Cut Trench
Wx25	Mayne River	Open Cut Trench (within Belcamp Substation site), either within access road or off-line.

- GENERAL NOTES:**
- ALL PRODUCTS TO BE UTILISED DURING CONSTRUCTION TO COMPLY WITH EIRGRID FUNCTIONAL SPECIFICATION, TII SPECIFICATION FOR ROAD WORKS AND ALL RELEVANT IRISH (EUROPEAN) AND BRITISH STANDARDS.
 - 300mm MINIMUM VERTICAL AND HORIZONTAL CLEARANCES TO BE OBSERVED BETWEEN CABLE DUCTS AND THIRD PARTY SERVICES (e.g. GAS PIPES (600mm MIN CLEARANCE), WATER MAINS, CULVERTS etc.) IN THE CASE OF HIGH RISK 3RD PARTY SERVICES, GREATER CLEARANCES MAY BE REQUIRED. DESIGNER TO CONSULT 3RD PARTY SERVICE OWNERS FOR GUIDANCE.
 - STEEL PLATES MUST COVER DUCTS. NO OVERLAP IS REQUIRED HOWEVER STANDARD DIMENSIONS MAY RESULT IN AN OVERLAP. SPACING OF 10mm TO BE MAINTAINED BETWEEN STEEL PLATES TO PREVENT THE TRANSFER OF STRAY CURRENT.
 - THE MINIMUM CLEARANCE BETWEEN ALL HV AND COMMUNICATION DUCTS IS 100mm, BUT INCREASED SPACING MAY BE REQUIRED IN ORDER TO ACHIEVE THE CABLE RATING (TO BE CONFIRMED BY ELECTRICAL DESIGNER CABLE RATING CALCULATIONS).
 - DRAWING IS INDICATIVE ONLY. TO BE USED TO AID IN THE DESIGN OF RELEVANT INFRASTRUCTURE.
 - TEMPLES ARE TO BE USED AT 3m INTERVALS DURING DUCT INSTALLATION IN CBGM. PRE-MADE 100mm WIDE CONCRETE SPACERS TO BE USED DURING DUCT INSTALLATION IN WET CONCRETE.
 - MINIMUM SPACING BETWEEN POWER DUCTS TO BE CONFIRMED WITH RATING CALCULATION.
 - MINIMUM CLEARANCE BETWEEN CABLE TRENCH CONCRETE AND RIVER BED TO BE AGREED WITH RELEVANT AUTHORITY.
 - STANDARD MARKER POSTS TO BE INSTALLED AT EITHER SIDE OF RIVER CROSSING.
 - 825mm MINIMUM CLEARANCE TO BE PROVIDED FROM WATERCOURSE BED TO CROWN OF DUCT. ALL CROSSINGS TO BE AGREED WITH IJ/EPA AND OTHER RELEVANT LOCAL AUTHORITIES IN ADVANCE OF THE WORKS AND IN ACCORDANCE WITH EIA.
 - EXACT DUCT SPACING AND TRENCH WIDTHS TO BE CONFIRMED FOLLOWING THERMAL CALCULATIONS AND CONSULTATION WITH EIRGRID.



TYPICAL FULL FLAT FORMATION OFF-LINE CROSS SECTION UNDER WATERCOURSE (RIVERS, STREAMS AND OPEN DITCHES)
N.T.S.

- Key**
- A= 125mm O.D. HDPE DUCT FOR COMMUNICATIONS, SDR=17.6
 - B= 200mm O.D. HDPE DUCT FOR HV CABLE, SDR=21
 - C= 63mm O.D. HDPE DUCT FOR EARTH CONTINUITY CONDUCTOR, SDR=17.6
 - RED MARKER STRIP
 - YELLOW MARKER WARNING TAPE
 - A393 STEEL REINFORCEMENT MESH
 - 6mm GALVANISED STEEL PLATE
 - RAPID HARDENING WET CONCRETE C25/30
 - BACKFILL COMPACTED (CL. 804 OR ACCEPTABLE MATERIAL)
 - EXISTING GROUND
 - REINSTATED RIVERBED
 - CBGM B (CL. 822). COMPACTED TO CL 813.10

- GENERAL NOTES:**
- REFER TO DRAWINGS 281240-ARP-ON-CR-DR-PL-1100 TO 1164 FOR PROPOSED ONSHORE CABLE ROUTE.
 - TYPICAL DETAILS BASED ON EIRGRID FUNCTIONAL SPECIFICATIONS. REFER TO OFD-SS5-526, OFD-SS5-527, OFD-SS5-528, OFD-SS5-528, OFD-SS5-529, OFD-SS5-530, OFD-SS5-531, & OFD-SS5-532.
 - REFER TO DRAWINGS 281240-ARP-ONS-XX-DR-PL-1166 FOR TYPICAL LAYOUT OF HORIZONTAL DIRECTIONAL DRILLING (HDD) COMPOUND.

Rev	Date	By	Chkd	Appd
C01	May 2024	EAM	RM	MD
D00	13.03.24	SB	RM	MD



Client
North Irish Sea Array Windfarm Ltd.



Project Title
North Irish Sea Array Offshore Windfarm

Drawing Title
WATERCOURSE CROSSING - OPEN CUT OPTION - TYPICAL DETAILS

Scale at A1	AS INDICATED
Role	Civil
Suitability	A2 - Approved for Planning
Arup Job No	281240
Name	281240-ARP-ONS-XX-DR-PL-3003
Rev	C01