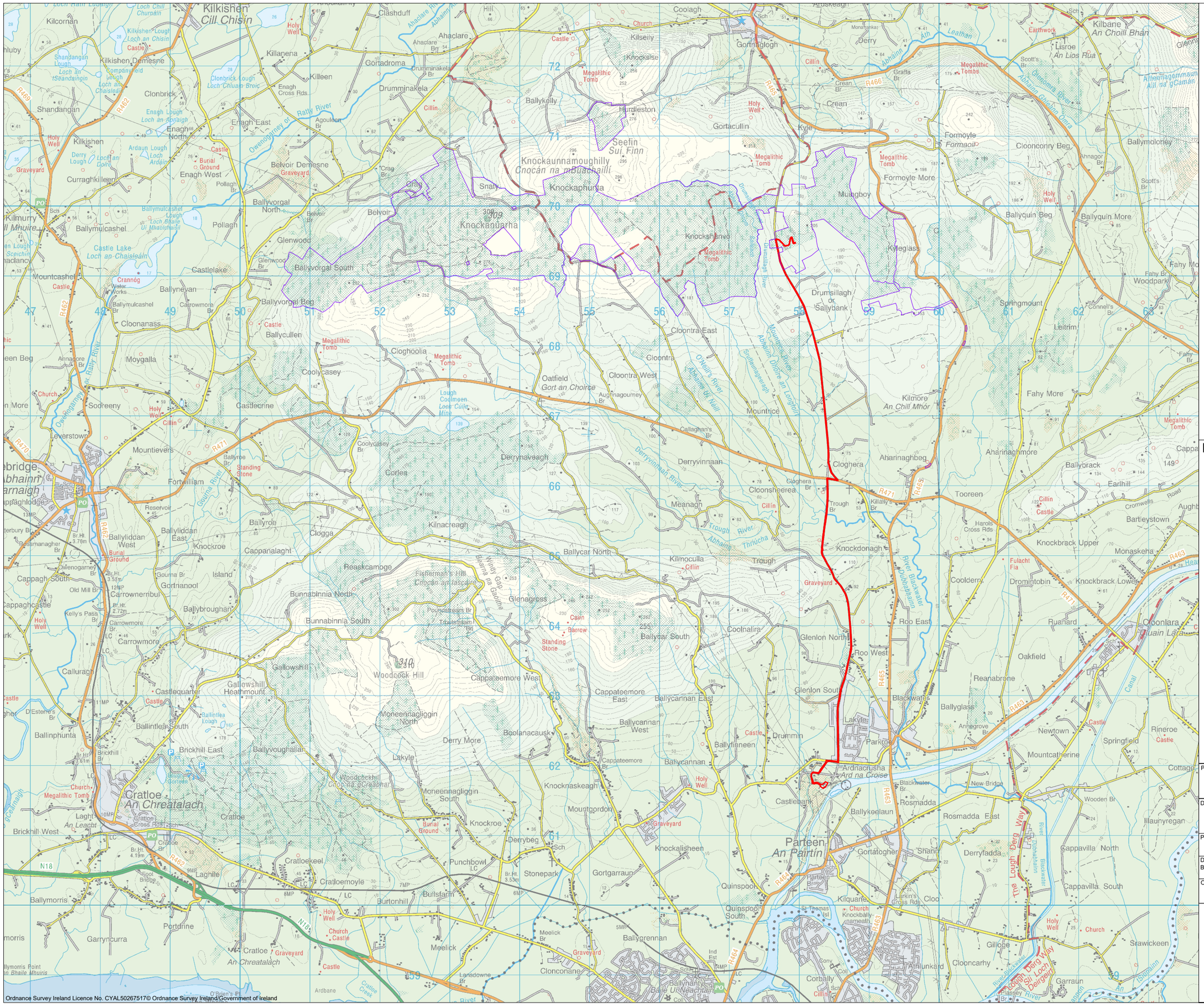
Proposed Wind Farm Development

Knockshanvo WF 110kV Grid Connection Application, Co. Clare

Planning Permission Application Drawings P01

Schedule of Drawings

Drawing No.	Drawing Title	Scale
200513 – a – 01	Location Context Map	1: 50,000 @A3
200513 – a – 02	Site Location Map (Site Notice Key Plan)	1: 20,000 @A1
200513 – a – 02a	Site Notice Location Map A	1:2,500 @A3
200513 – a – 02b	Site Notice Location Map B	1:2,500 @A3
200513 – a – 02c	Site Notice Location Map C	1:2,500 @A3
200513 – a – 02d	Site Notice Location Map D	1:2,500 @A3
200513 – a – 02e	Site Notice Location Map E	1:2,500 @A3
200513 – a – 02f	Site Notice Location Map F	1:2,500 @A3
TLI		
05783-DR-100	Site Layout Key Plan	1: 20,000 @A1
05783-DR-101	Site Layout Plan Sheet 1 of 5	1: 2,500 @A1
05783-DR-102	Site Layout Plan Sheet 2 of 5	1: 2,500 @A1
05783-DR-103	Site Layout Plan Sheet 3 of 5	1: 2,500 @A1
05783-DR-104	Site Layout Plan Sheet 4 of 5	1: 2,500 @A1
05783-DR-105	Site Layout Plan Sheet 5 of 5	1: 2,500 @A1
05783-DR-110	Ducting Through Regional / Local Roadways	1: 10 @A1
05783-DR-111	Ducting Through Forestry Road	1: 10 @A3
05783-DR-112	Ducting Through Off Road Sections	1: 10 @A3
05783-DR-113	Section Through Ducting in Flat Formation	1: 10 @A3
05783-DR-114	110kV Ducting Through Existing Floating Road in Peat	1: 25 @A1
05783-DR-115	110kV Ducting Through Section Upgraded Floating Road in Peat > 2.5m	1: 20 @A3
05783-DR-116	Trench Sections for Undercrossing Existing Culverts / Services	1:20 & 1: 50 @A1
05783-DR-117	Trench Sections for Overcrossing Under Existing Culverts / Services	1:20 & 1: 50 @A1
05783-DR-118	Trench Sections for Undercrossing Existing Watermain/Wastewater	1:20 & 1: 50 @A1
05783-DR-119	Trench Sections for Undercrossing Existing Watermain/Wastewater	1:20 & 1: 50 @A1
05783-DR-120	Bridge 1 - Proposed Crossing Details	1: 100 & 1:50 @A1
05783-DR-121	Bridge 2 - Proposed Crossing Details	1: 100 & 1:50 @A1
05783-DR-122	Forestry Access Road with Service Corridor through existing Fire Break	1: 30 @A3
05783-DR-123	Communications Chamber Details	1: 20 @A3
05783-DR-124	Earth Link Chamber Details	1: 20 @A3
05783-DR-125	Transition Chamber Details	1: 20 @A3
05783-DR-126	Joint Bay Section Detail	As Shown @A2
05783-DR-127	110kV Joint Bay General Arrangement and Details	1: 50 @A1
05783-DR-240	Proposed Culvert Crossings	N.T.S @ A2



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Drawing Legend

- Planning Application Boundary
- Knockshanvo Windfarm Boundary Line Subject to Separate Application

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Location Context Map

PROJECT No.:		DRAWING No.:	SCALE:
200513-a		200513-a-01	1:50,000 @ A3
DRAWN BY: KD	CHECKED BY: AC	DATE: 27.08.2024	REVISION.: P01

OS SHEET No.: OS1414,OS1416,OS1614,OS1614

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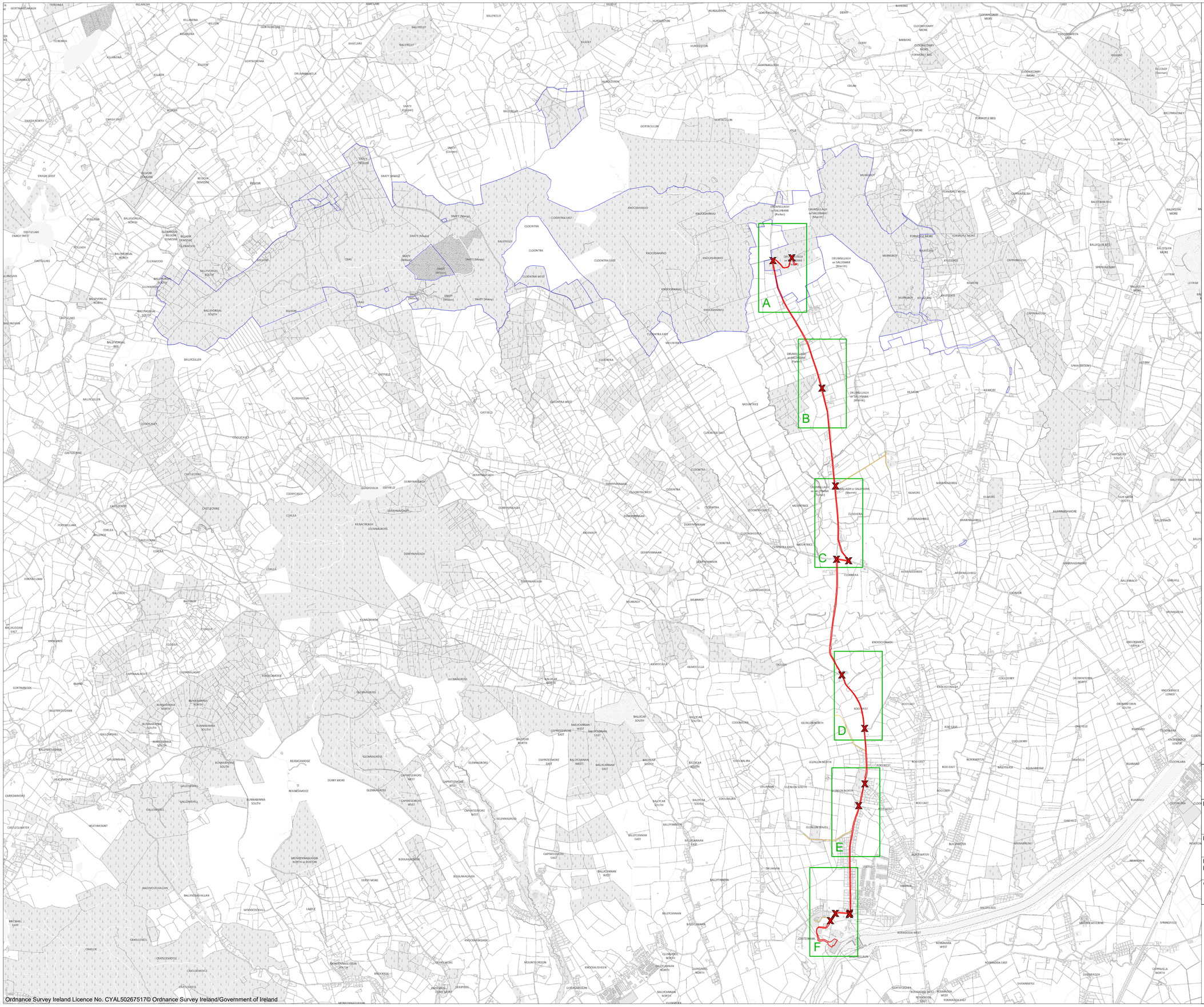

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Drawing Legend

- Planning Application Boundary
- Adjacent Landowners Boundary
- Site Notice
- Wayleave

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

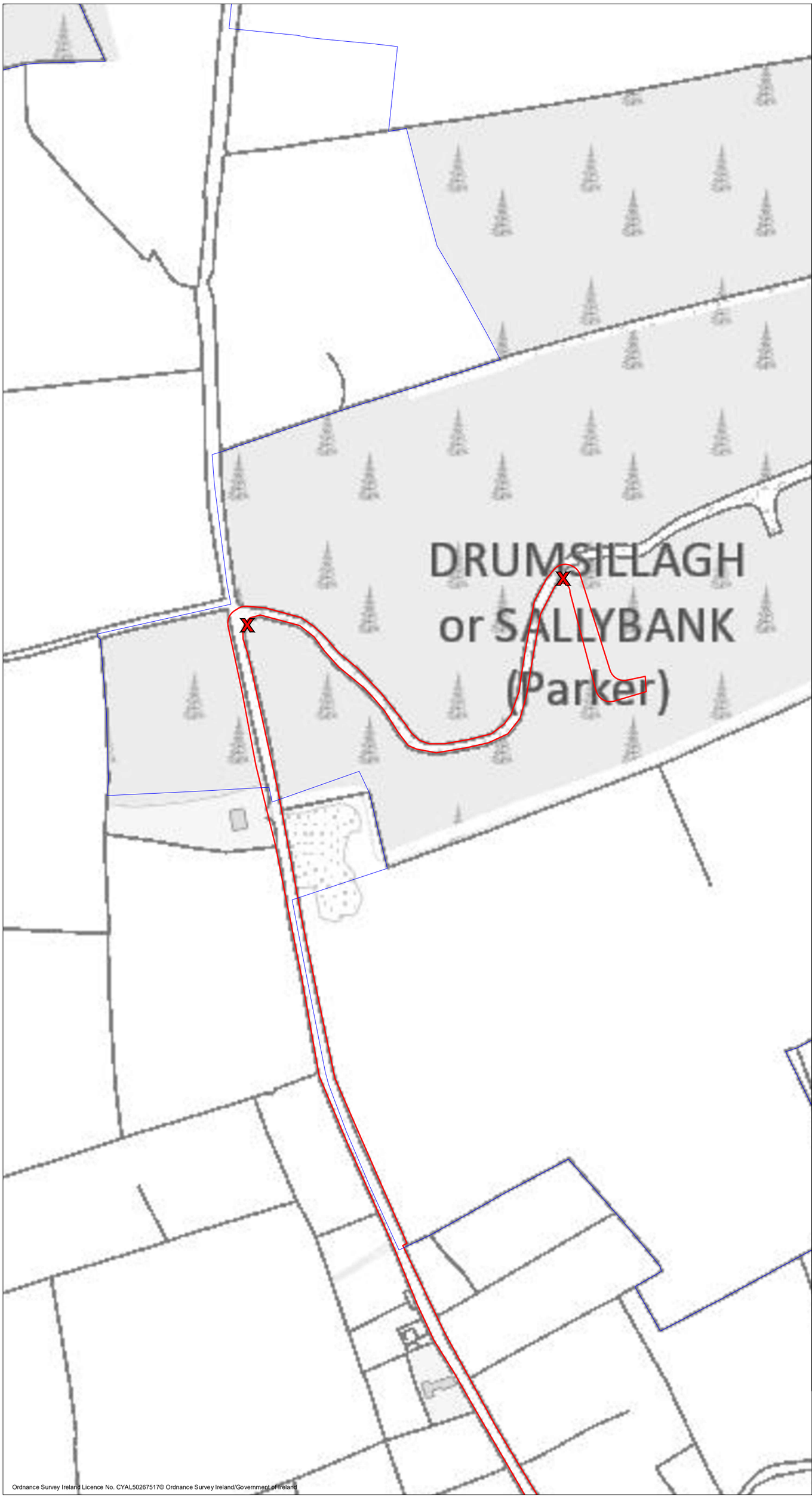
DRAWING TITLE:
Site Location Map (Site Notice Key Plan)

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	200513-a-02	1:20,000 @ A1

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

Email: info@www.mkoireland.ie /Website: www.mkoireland.ie



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Drawing Legend

- Planning Application Boundary
- Adjacent Landowners Boundary
- X Site Notice

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Site Notice Location Map Sheet A

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02a	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

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Drawing Legend

Planning Application Boundary

Site Notice

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Site Notice Location Map Sheet B

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02b	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

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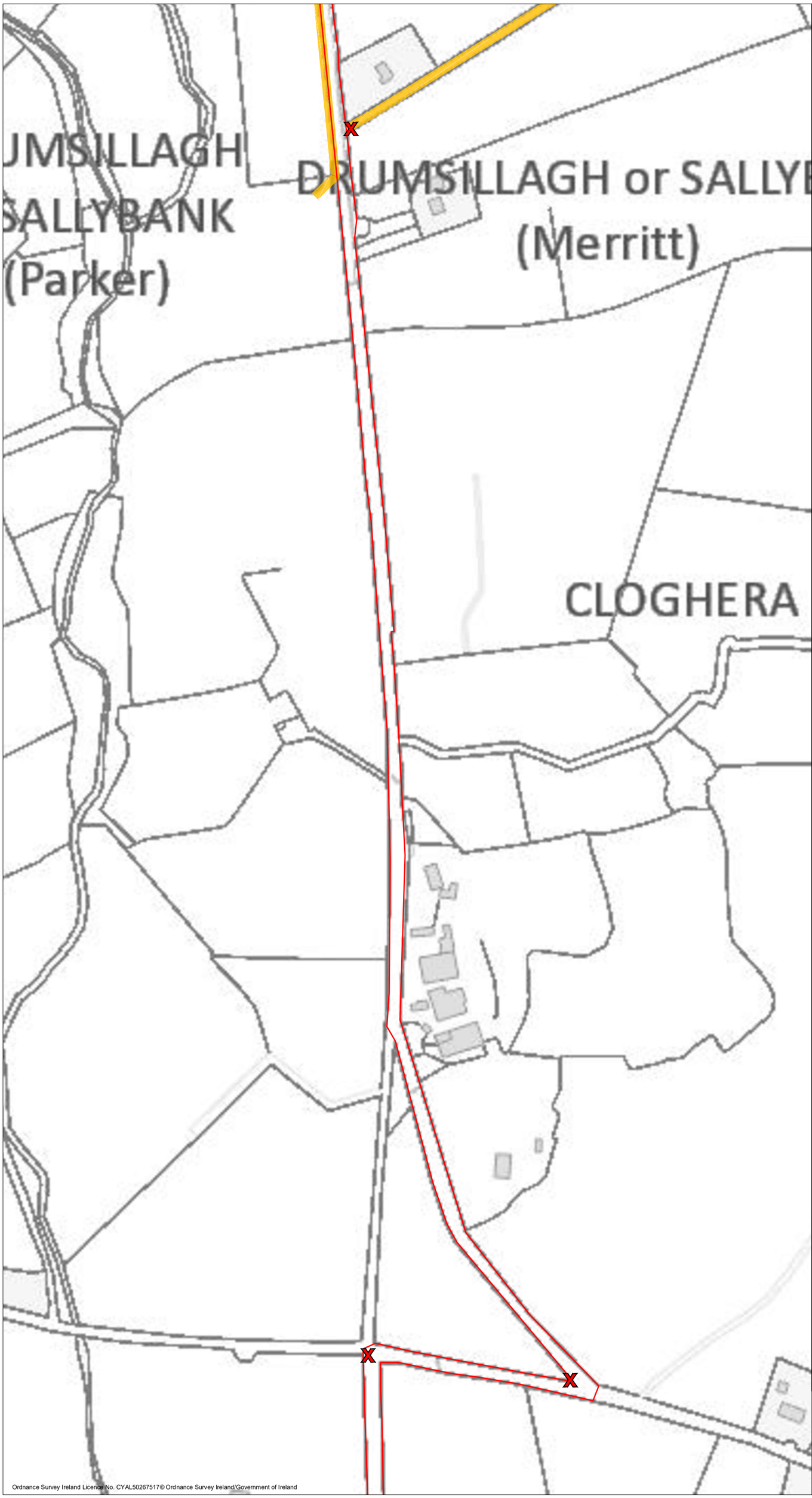

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Wayleave

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Site Notice Location Map Sheet C

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02c	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

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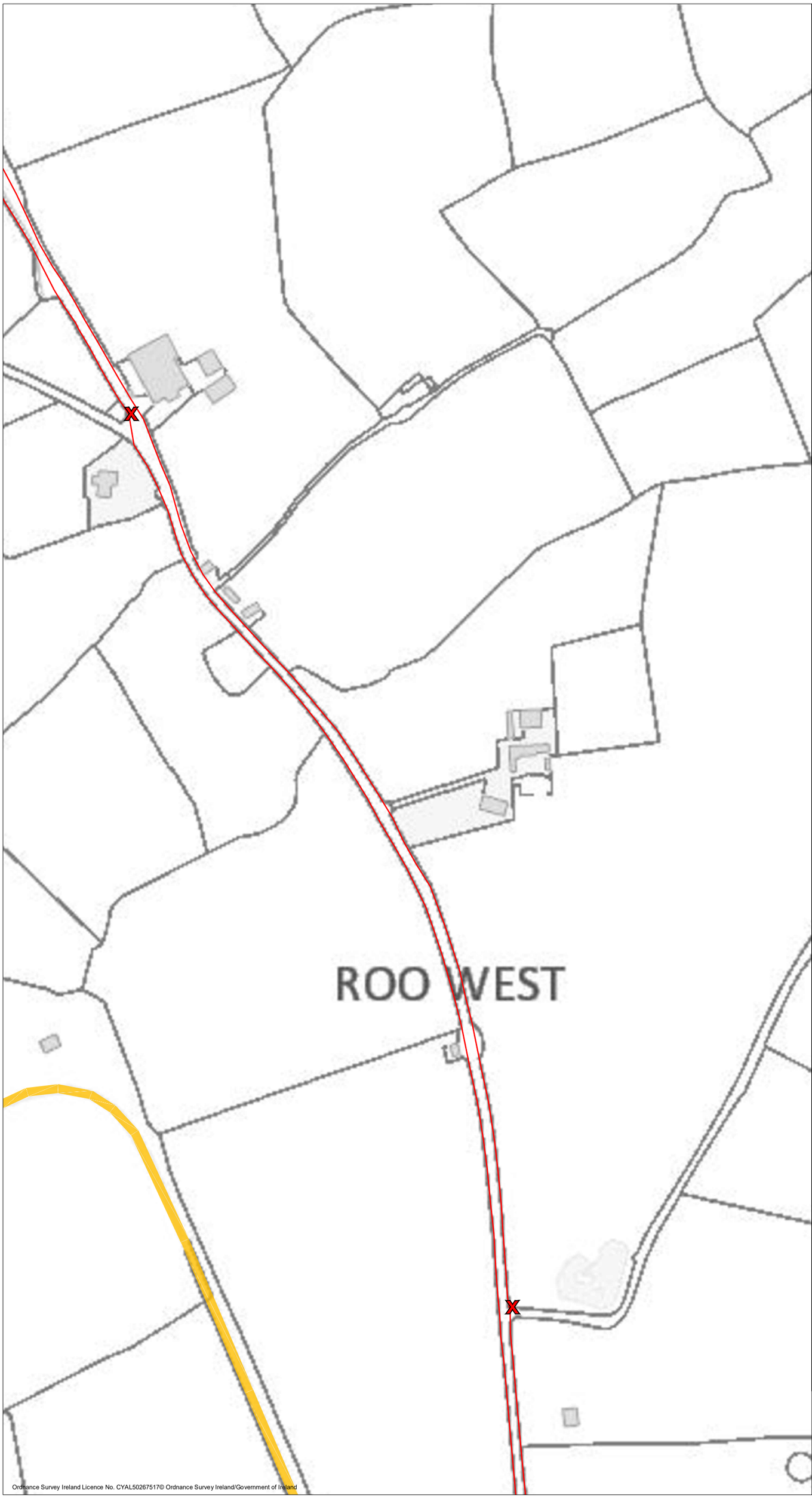

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Wayleave

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Site Notice Location Map Sheet D

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02d	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Wayleave

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

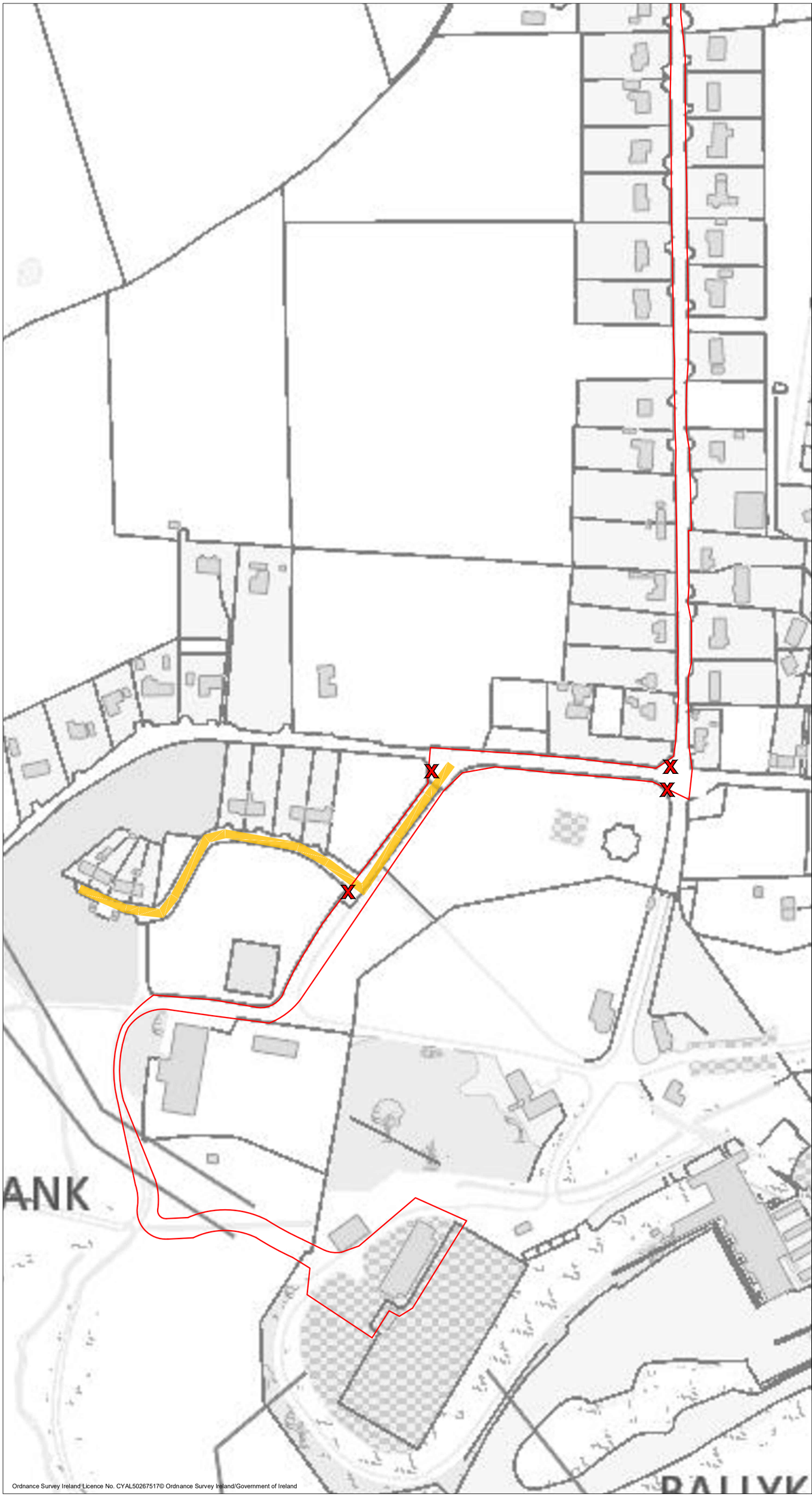
DRAWING TITLE:
Site Notice Location Map Sheet E

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02e	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

Email: info@www.mkoireland.ie /Website: www.mkoireland.ie



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Drawing Legend

- Planning Application Boundary
- Site Notice
- Wayleave

N

PROJECT TITLE:
Knockshanvo WF 110kV Grid Connection Application

DRAWING TITLE:
Site Notice Location Map Sheet F

PROJECT No.:	DRAWING No.:	SCALE:
200513-a	220310-a-02f	1:2,500 @ A3

DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
KD	AC	27.08.2024	P01

OS SHEET No.: 4384 4385 4386 4387 4388 4442 4443 4444 4445 4446 4501 4502 4503 4504 4505 4561 4562 4563 4564 4565 4620 4621 4622 4623 4624 4680 4681 4682 4683 4684

Email: info@www.mkoireland.ie /Website: www.mkoireland.ie

ISO A1 594mm x 841mm

Overall Site Location Map

Scale: 1:20,000

Project Management Initials: Designer: JC Checked: GC Approved: DB

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RG24 8UP, UK
Tel: 00 44 1256406664

PROJECT

Knockshanvo Wind Farm 110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Wind Farm Boundary shown thus. Details to be submitted under a separate planning application to An Board Pleanála
- Joint Bay Locations shown thus
- Knockshanvo WF Turbine Location. Details to be submitted under a separate planning application to An Board Pleanála (T)
- Turbine Falling Distance shown thus. (2 x Rotor Diameter) Details to be submitted under a separate planning application to An Board Pleanála

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P6	19.08.24	Issued for Planning
P5	15.08.24	Issued for Planning
P4	01.08.24	Issued for Planning
P3	13.06.24	Issued for Planning
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

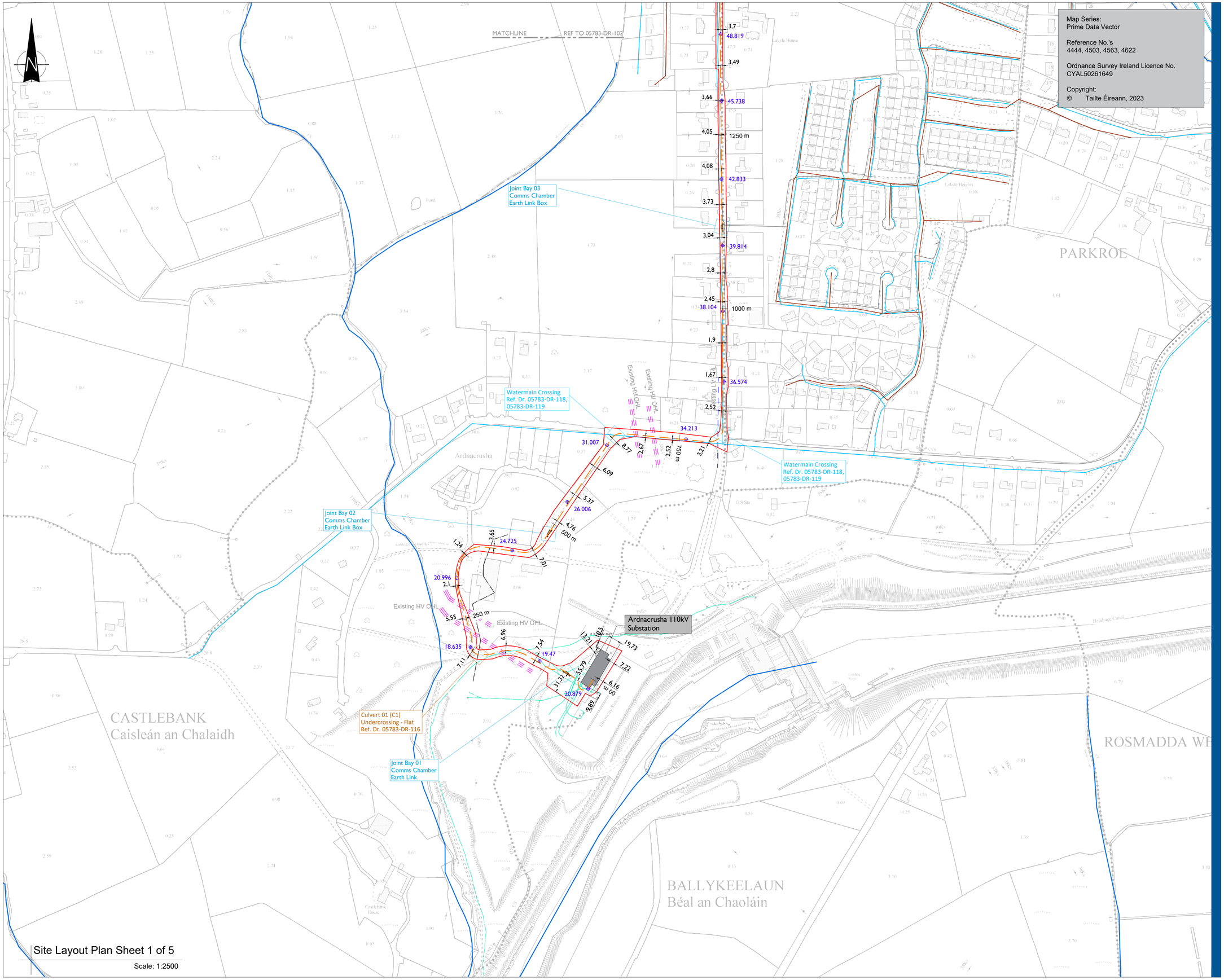
SHEET TITLE

Site Layout Keyplan

SHEET NUMBER

05783-DR-100

ISO A1 594mm x 841mm



Map Series:
Prime Data Vector

Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649

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PROJECT

Knockshanvo Wind Farm 110kV Grid Connection

CLIENT

CONSULTANTS

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Joint Bay Locations shown thus
- Culvert Locations shown thus
- Existing levels shown thus — 79.617
- Existing ESB OHL MV/LV Networks shown thus
- Existing ESB OHL HV Networks shown thus
- Existing ESB UGC HV Networks shown thus
- Existing ESB UGC MV/LV Networks shown thus
- Existing Gas Network Ireland shown thus
- Existing Rivers & Streams
- Existing Irish Water Network

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

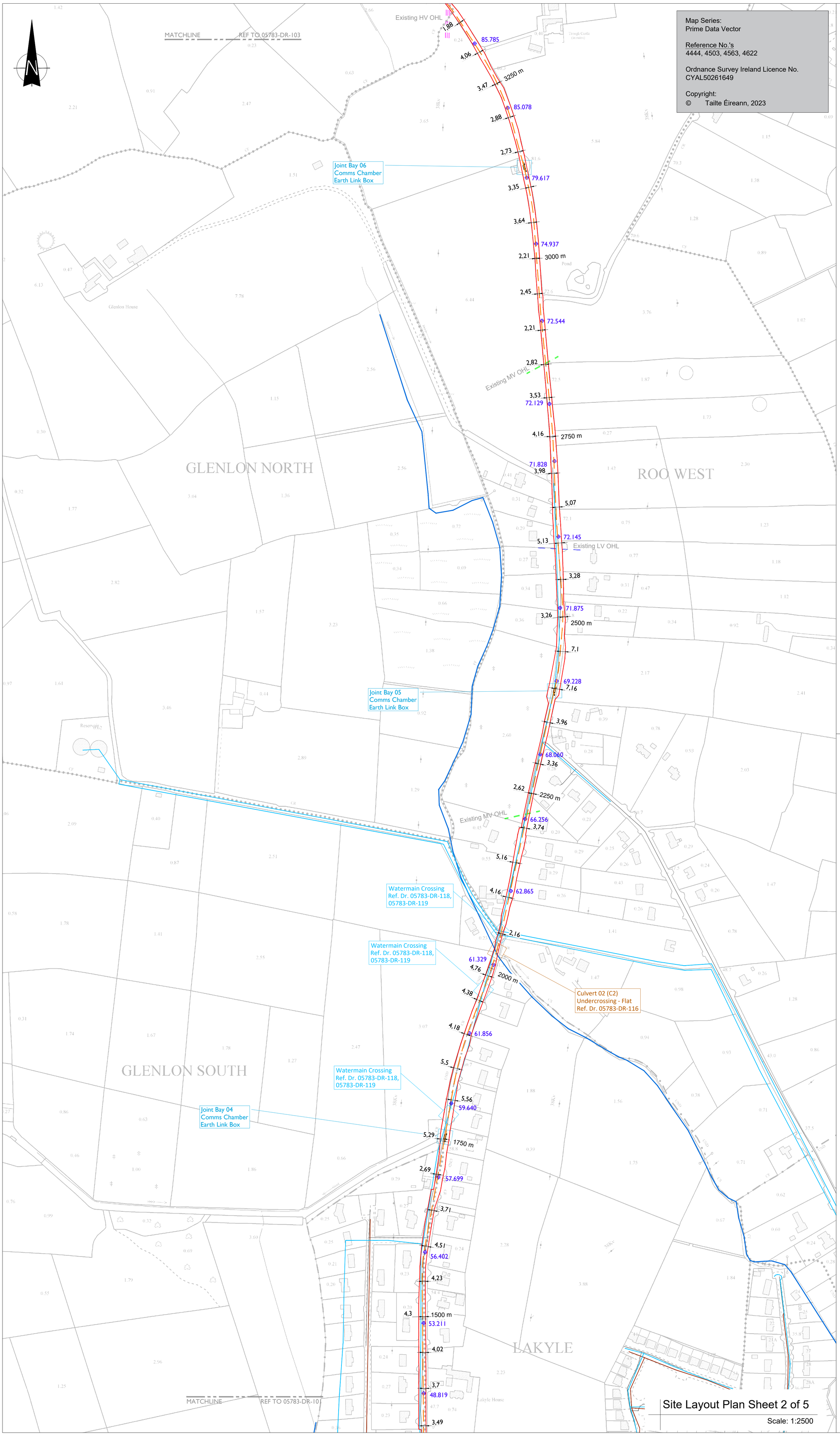
Site Layout Plan
Sheet 1 of 5

SHEET NUMBER

05783-DR-101

Project Management Initials: Designer: JC Checked: GC Approved: DB

Project Management Initials: Designer: JC Checked: GC Approved: DB



Map Series:
Prime Data Vector

Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Joint Bay Locations shown thus
- Culvert Locations shown thus
- Existing levels shown thus — 79.617
- Existing ESB OHL MV/LV Networks shown thus
- Existing ESB OHL MV/LV Networks shown thus
- Existing Gas Network Ireland shown thus
- Existing Rivers & Streams
- Existing Irish Water Network

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

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PROJECT

Knockshanvo Wind Farm 110kV Grid Connection

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

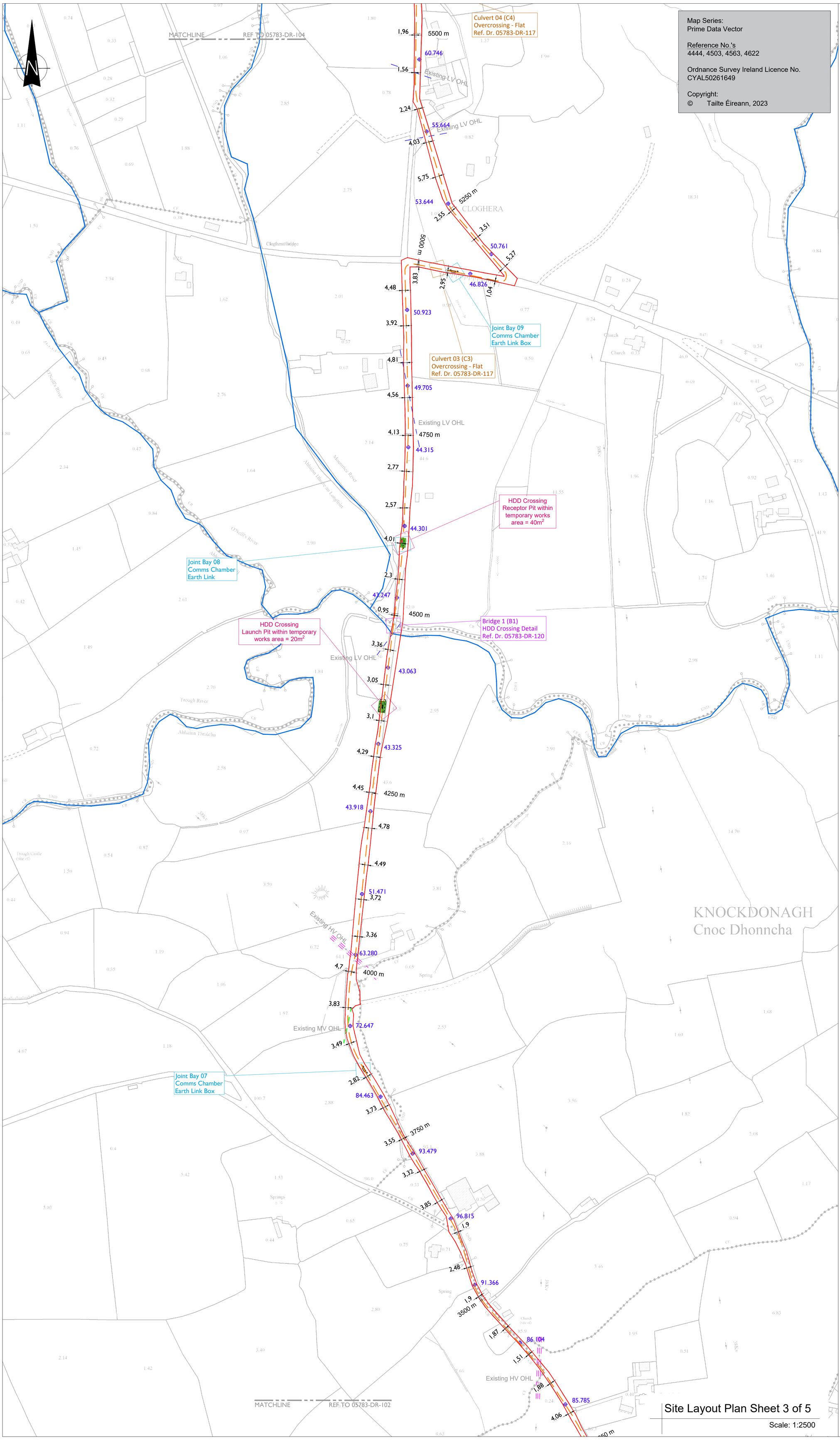
Site Layout Plan
Sheet 2 of 5

SHEET NUMBER

05783-DR-102

ISO A1 594mm x 841mm

Project Management Initials: Designer: JC Checked: GC Approved: DB



Map Series:
Prime Data Vector

Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Joint Bay Locations shown thus
- Culvert Locations shown thus
- Existing levels shown thus — 79.617
- Existing ESB OHL MV/LV Networks shown thus
- Existing ESB OHL MV/LV Networks shown thus
- Existing Rivers & Streams

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

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PROJECT

Knockshanvo Wind Farm 110kV Grid Connection

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P3	05.06.24	Issued for Planning
P2	26.03.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Site Layout Plan
Sheet 3 of 5

SHEET NUMBER

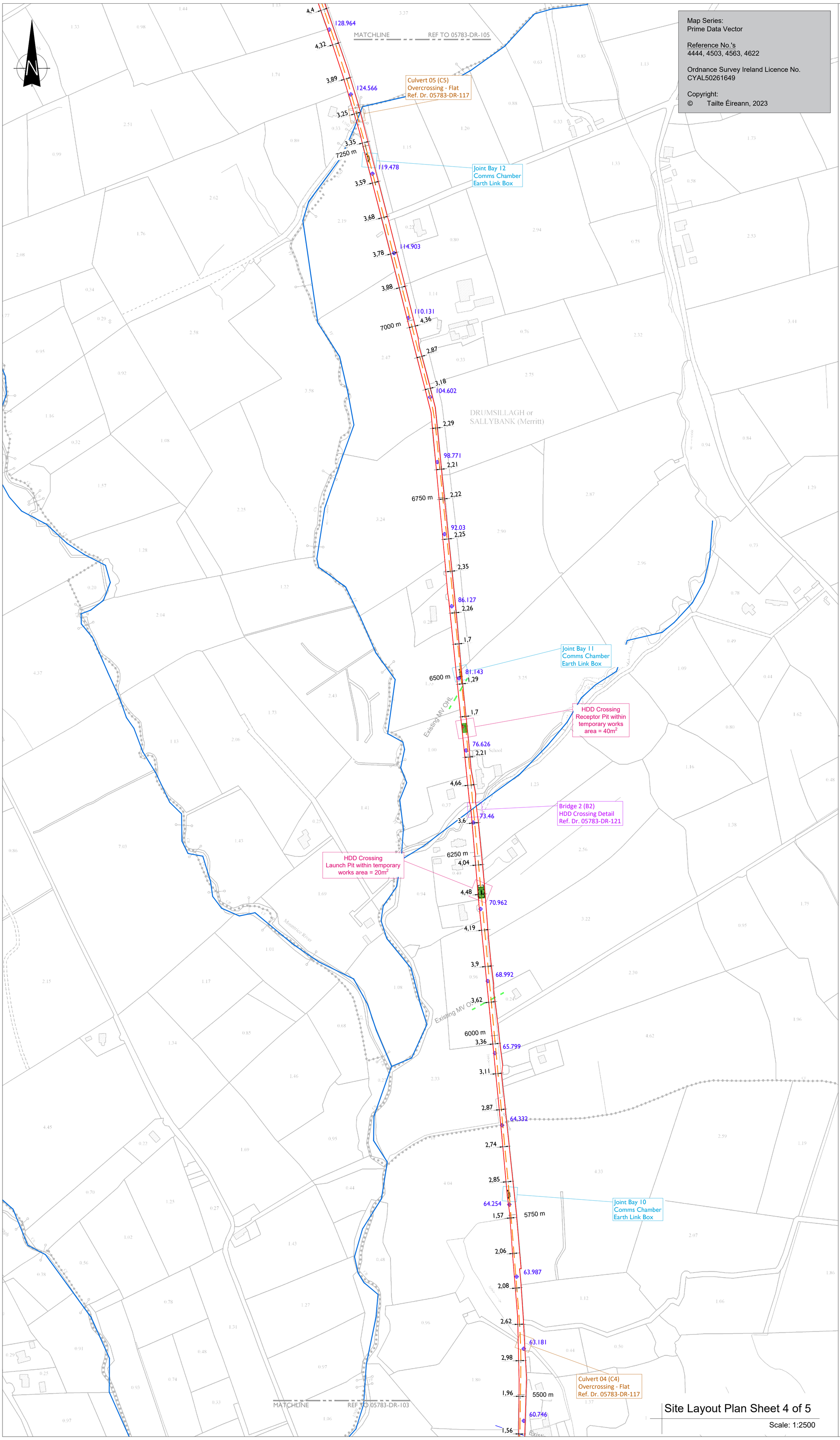
05783-DR-103

Site Layout Plan Sheet 3 of 5

Scale: 1:2500

ISO A1 594mm x 841mm

Project Management Initials: Designer: JC Checked: GC Approved: DB



Map Series:
Prime Data Vector

Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Joint Bay Locations shown thus
- Culvert Locations shown thus
- Existing levels shown thus ⊕ 79.617
- Existing ESB OHL MV/LV Networks shown thus
- Existing Rivers & Streams

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

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Tel: 00 44 1256406664

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Knockshanvo Wind Farm 110kV Grid Connection

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Site Layout Plan
Sheet 4 of 5

SHEET NUMBER

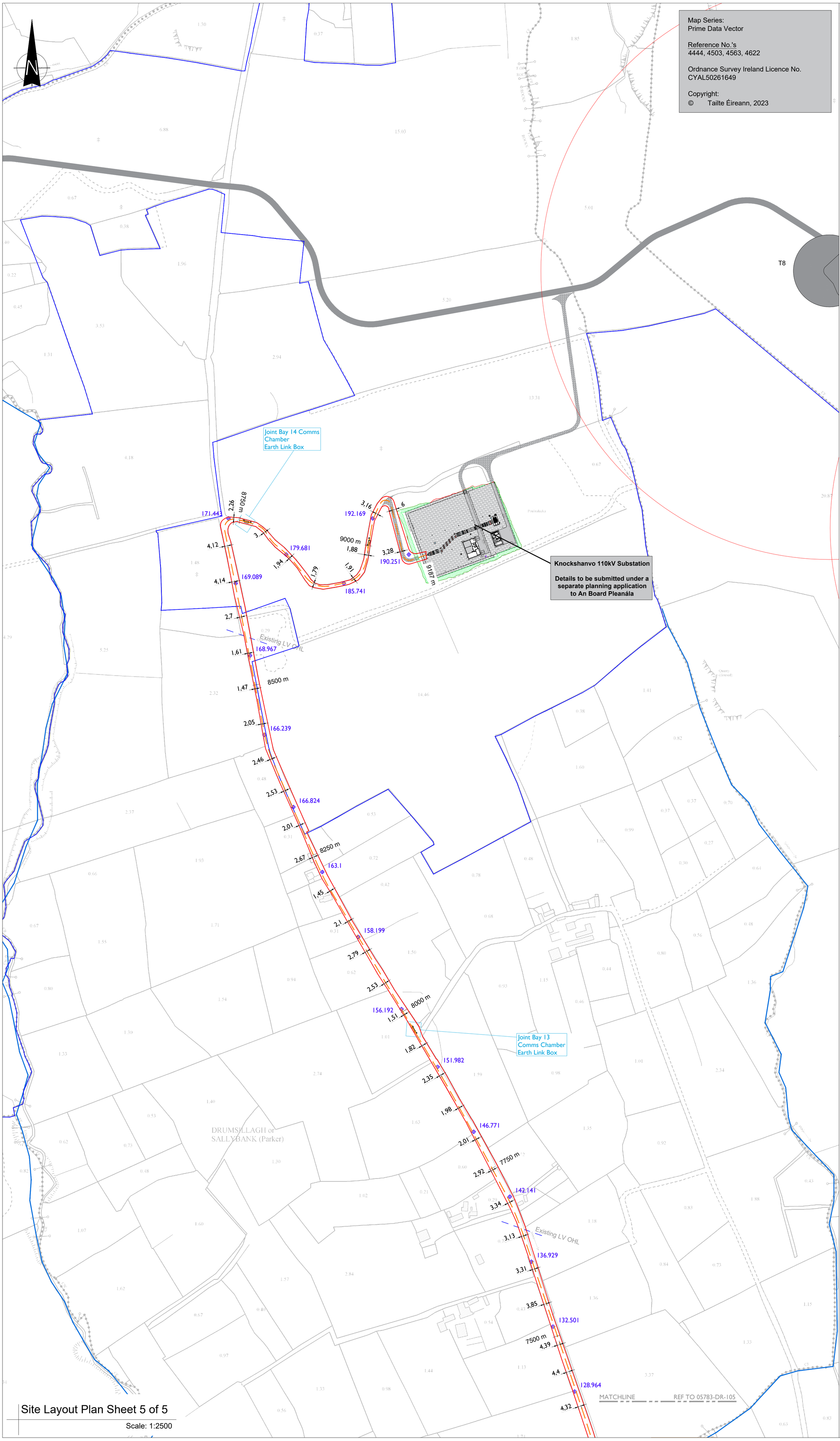
05783-DR-104

Site Layout Plan Sheet 4 of 5

Scale: 1:2500

ISO A1 594mm x 841mm

Project Management Initials: Designer: JC Checked: GC Approved: DB



Site Layout Plan Sheet 5 of 5

Scale: 1:2500

LEGEND: -

- 110kV Underground Cable Design Route
- Planning Boundary shown thus
- Wind Farm Boundary shown thus. Details to be submitted under a separate planning application to An Board Pleanála
- Joint Bay Locations shown thus
- Culvert Locations shown thus
- Existing levels shown thus (79.617)
- Existing ESB OHL MV/LV Networks shown thus
- Existing Rivers & Streams
- Knockshanvo WF Turbine Location. Details to be submitted under a separate planning application to An Board Pleanála (T)
- Turbine Falling Distance shown thus (2 x Rotor Diameter). Details to be submitted under a separate planning application to An Board Pleanála
- Wind Farm Access Track. Details to be submitted under a separate planning application to An Board Pleanála
- Cut Volume. Details to be submitted under a separate planning application to An Board Pleanála
- Fill Volume. Details to be submitted under a separate planning application to An Board Pleanála
- Access track. Details to be submitted under a separate planning application to An Board Pleanála

NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

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Tel: 00 44 1256406664

PROJECT

Knockshanvo Wind Farm 110kV Grid Connection

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P6	19.08.24	Issued for Planning
P5	15.08.24	Issued for Planning
P4	01.08.24	Issued for Planning
P3	13.06.24	Issued for Planning
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Site Layout Plan
Sheet 5 of 5

SHEET NUMBER

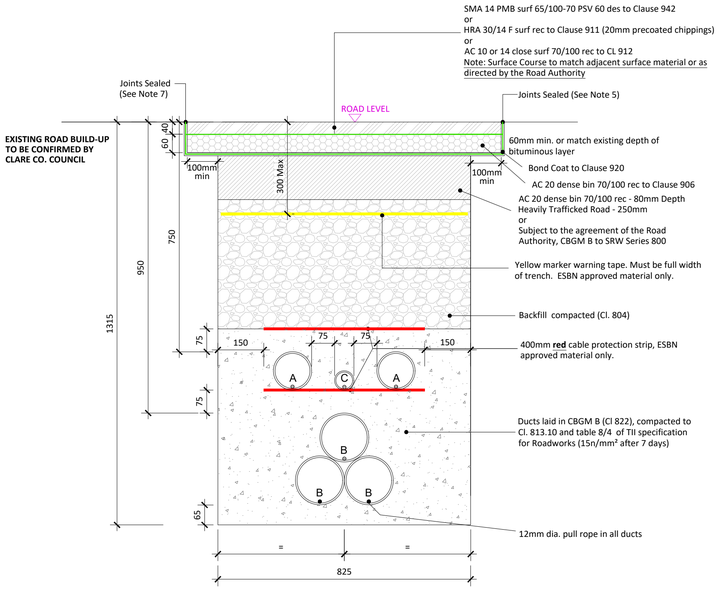
05783-DR-105

ISO A1 594mm x 841mm

ISO A1 594mm x 841mm

Permanent Reinstatement

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD4

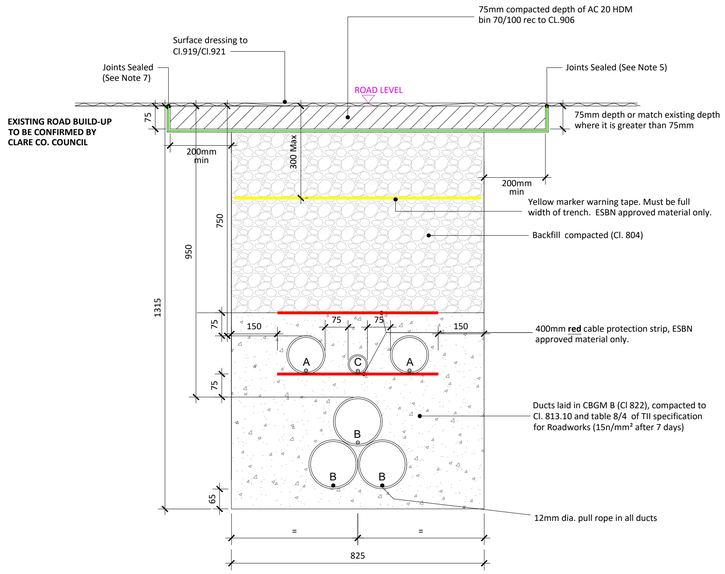


A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Permanent Reinstatement of Longitudinal Opening in Roadway

SCALE 1:10

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD5



A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Permanent Reinstatement of Longitudinal Opening in Dressed Rural Unbound Roadway

SCALE 1:10

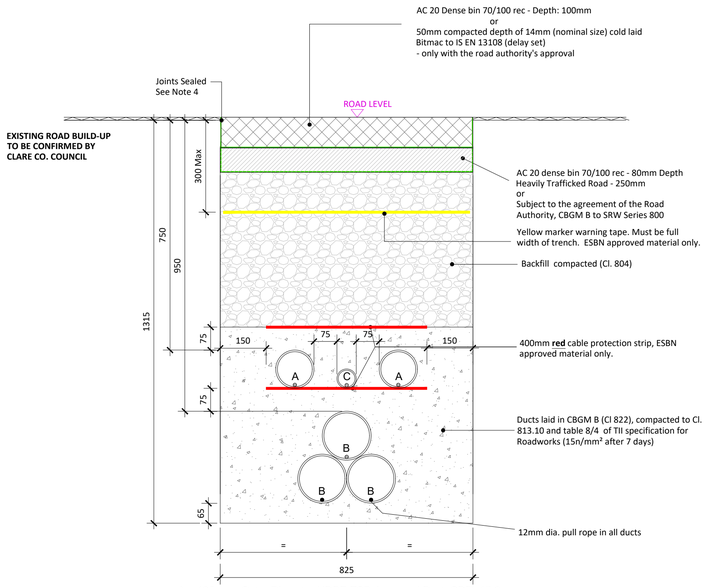
ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AREA ENGINEERS REQUIREMENTS AND GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS

Note:

1. Refer to Guidelines for managing Openings in Public Roads (Purple Book - April 2017), Chapter 6 'Specifications' for guidance on Duct type / colour and Marker Tape type / colour.
2. All bound edges shall be saw cut to expose the full vertical thickness of each layer prior to excavation. All edges shall be essentially straight, smooth and vertical.
3. Where a temporary surface has been used, material shall be planed out to the depth specified in this drawing. The new permanent surface shall be machined laid and mechanically compacted with a vibrating roller.
4. Where the trimmed edge of excavation is within 400mm* of a joint / edge, ironwork or other reinstatement, this trimmed edge shall be extended to include same and the area of reinstatement shall be extended accordingly (* increase to 800mm where this is pre-existing practice).
5. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
6. Clause 808 or Cement Bound Granular Material surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
7. Joint sealer shall be a hot 50 pen bitumen binder or cold thixtropic bitumen 50 -70 pen to be applied to all vertical cuts in accordance with B.S.594987 prior to application of bituminous materials.
8. For roads without asphalt concrete surface (e.g. may be Cl.804 with double surface dressing), the road authority may as its discretion permit the temporary reinstatement surface of asphalt concrete to be regulated in lieu of excavation and reinstatement; and subsequently surface dressed.
9. On highly trafficked roads services must have a minimum cover of 750mm.
10. Where required by the Road authority the trench may be reinstated with a Cement Bound Granular Material.

Temporary Reinstatement

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD1

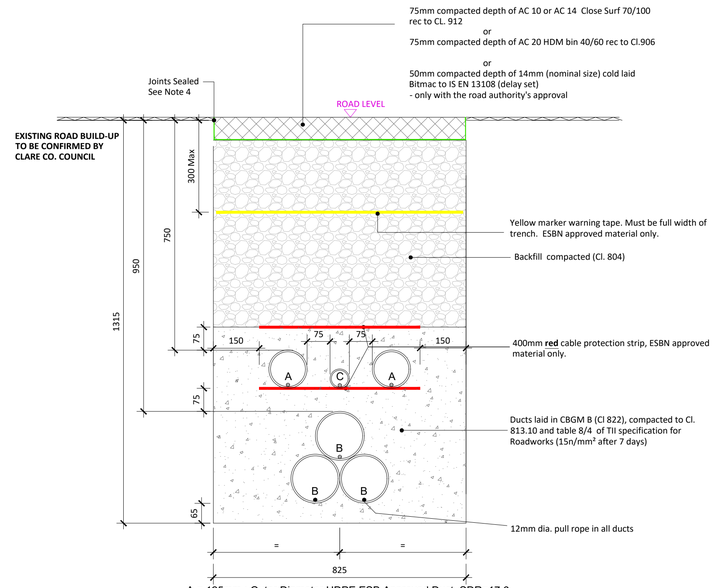


A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Temporary Reinstatement of Longitudinal Opening in Roadway

SCALE 1:10

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD2



A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Temporary Reinstatement of Longitudinal Opening in Dressed Rural Unbound Roadway

SCALE 1:10

ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AREA ENGINEERS REQUIREMENTS AND GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS

Note:

1. Refer to 'Guidelines for managing Openings in Public Roads (Purple Book - April 2017)', Chapter 6 'Specifications' for guidance on Duct type / colour and Marker Tape type / colour.
2. All bound edges shall be saw cut to expose the full vertical thickness of each layer prior to excavation. All edges shall be essentially straight, smooth and vertical.
3. Clause 808 surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
4. Joint sealer shall be a hot 50 pen bitumen binder or cold thixotropic bitumen 50-70 pen to be applied to all vertical cuts in accordance with B.S. 594987 prior to application of bituminous materials.
5. Licence holder must maintain temporary reinstatement to a safe and acceptable standard.
6. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
7. Temporary Road Surface warning signs must be used in accordance with the Traffic Signs Manual (Chaper 8 - Temporary Traffic Measures and Signs for Roadworks).
8. Refer to detail Permanent Reinstatement of Road for advice on permanent reinstatement - all permanent reinstatement shall be carried out when adequate settlement has occurred as determined by the Road Authority.

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only
- Geogrid may be implemented along the cable trench route where deemed necessary by the contractor or as required by CLARE County Council

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

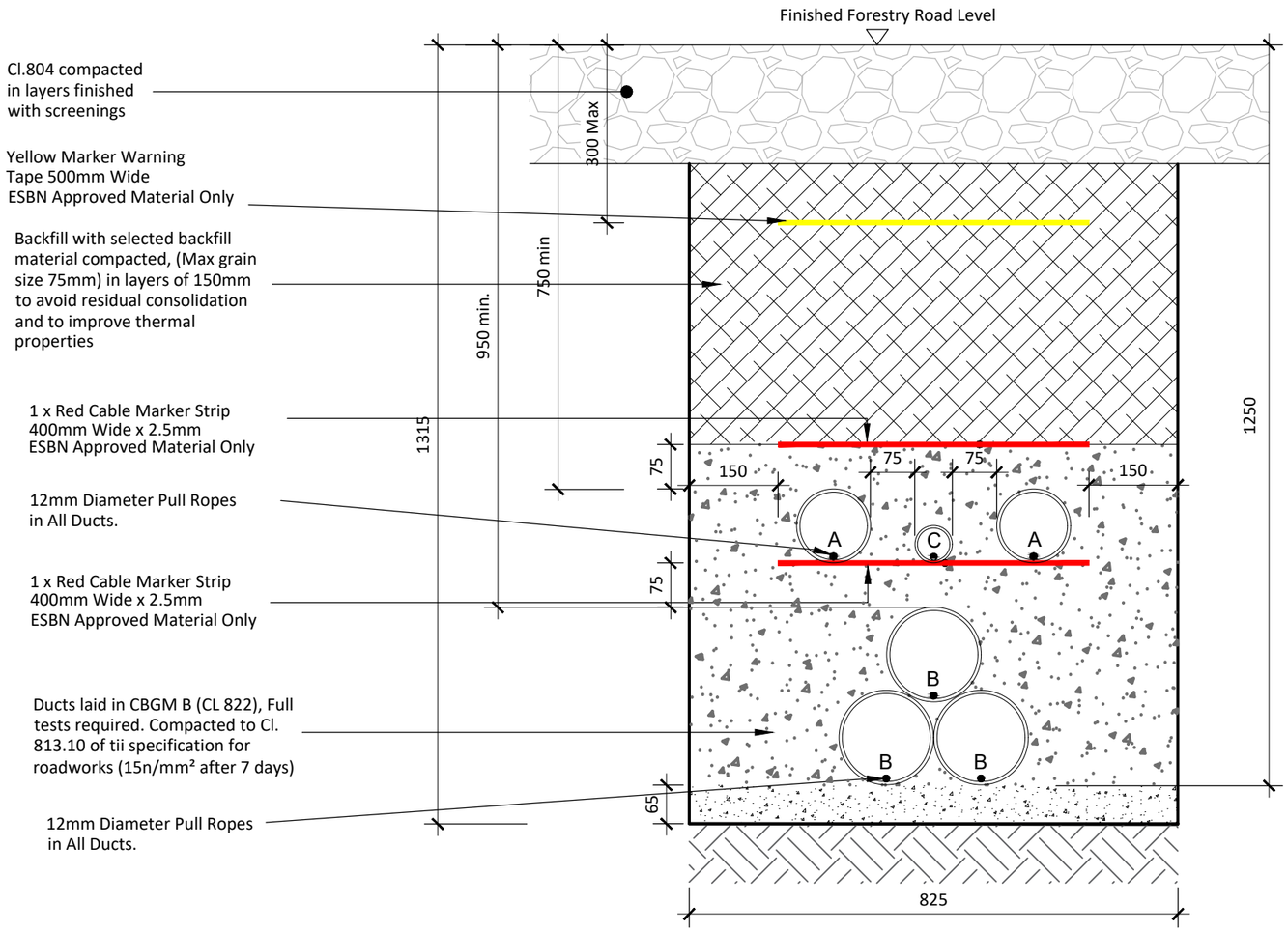
SHEET TITLE

Ducting Through
Regional / Local Roadways

SHEET NUMBER

05783-DR-110

Project Management Initials: Designer: JC Checked: GC Approved: DB



A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Forestry Road

SCALE 1:10

Note:
- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only

ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LANDOWNERS REQUIREMENTS

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PROJECT
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110 kV Grid Connection

SHEET TITLE
Ducting through Forestry Road

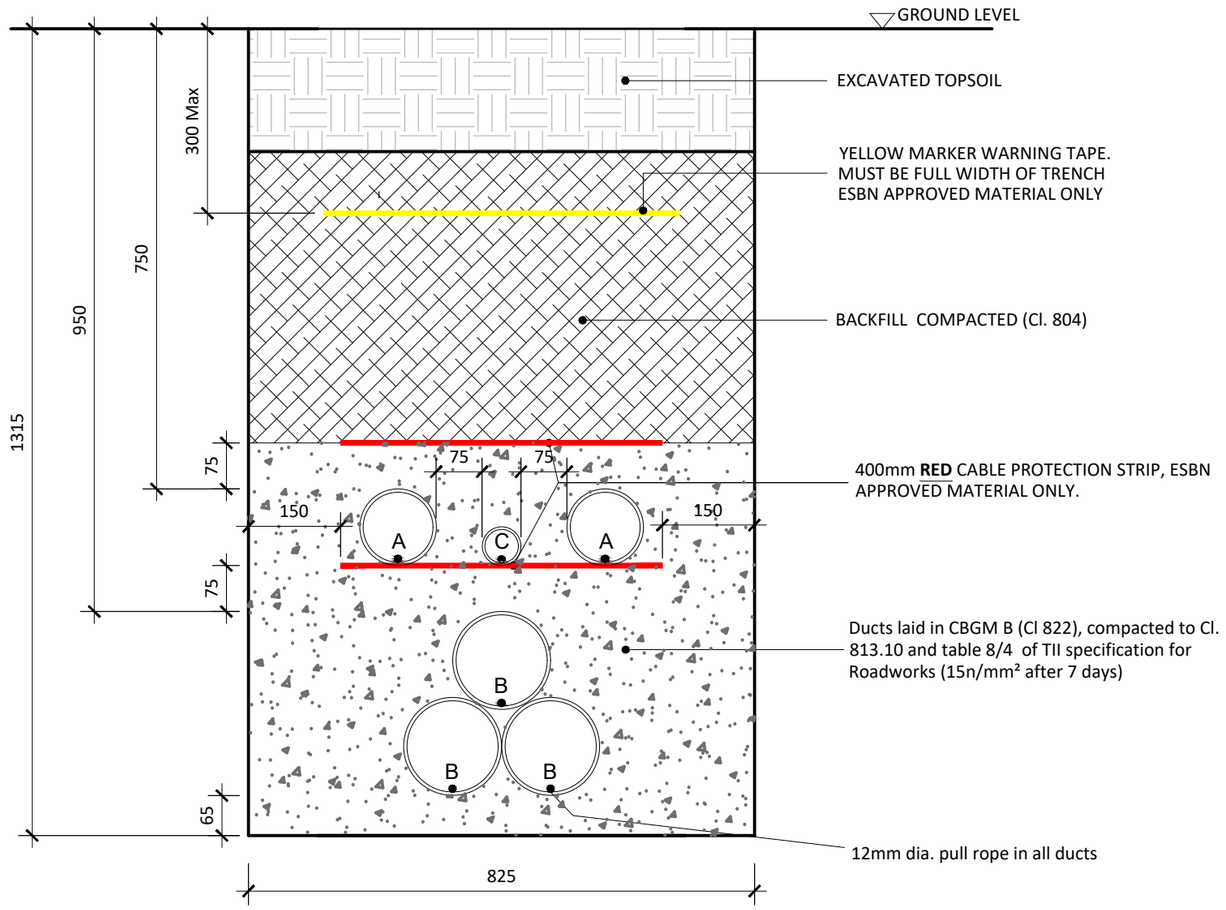
PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-111

DRAWING STATUS
For Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning



A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Private Lands

SCALE 1:10

Note:
- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only

ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LANDOWNER REQUIREMENTS

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD14

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PROJECT
Knockshanvo Wind Farm
110kV Grid Connection

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-112

SHEET TITLE
Ducting through Off Road Sections

DRAWING STATUS
For Planning

ISSUE/REVISION

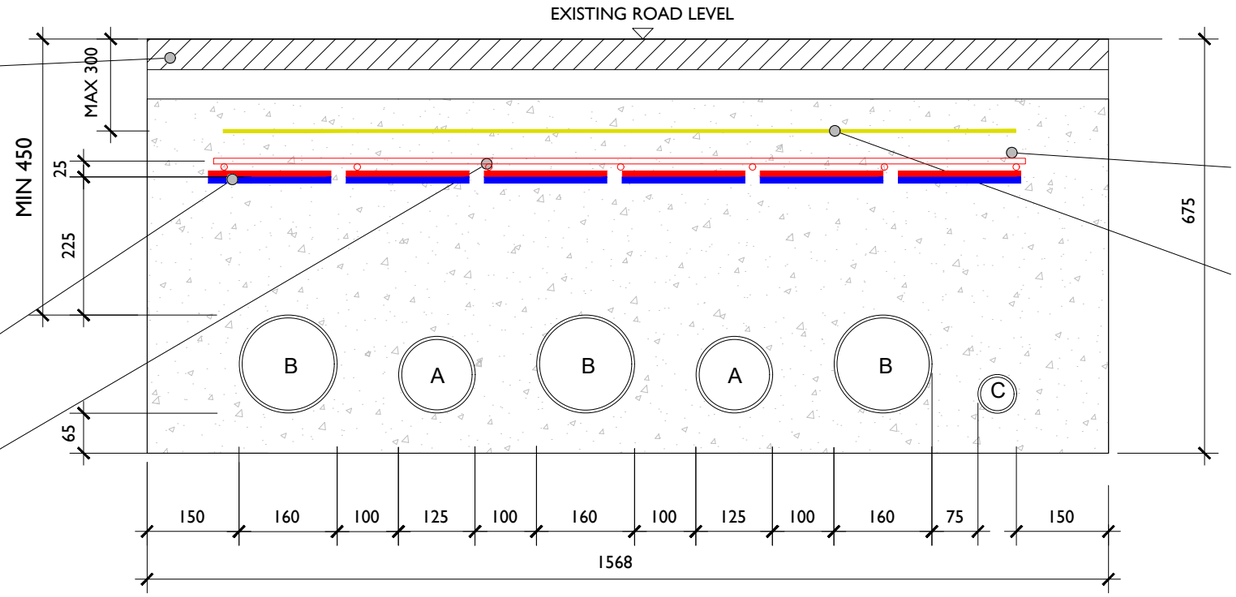
I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

Road reinstatement to be in accordance with *Guidelines for Managing Openings in Public Roads* (Purple Book - April 2017).

450mm is the minimum acceptable clearance dimension from the road surface to the top of the highest cable duct where the cable trench is in the carriageway

Heavy duty 6x200mm wide galvanized steel plates with red marker strips fixed to the top surface and to be installed until standard cover is achieved over hv ducts and communication ducts

A393 mesh to be installed until standard cover is achieved over hv ducts and communication ducts



C25/30 concrete to be in accordance with specification for road works 1000. 20mm max s of aggregate, with minimum duct spacing of 75r Min. cover to steel - 50mm.

4 X 400mm ESBN yellow warning tape across full width of trench

A = 125mm : Outer Diameter HDPE ESB Approved Duct, SDR=17.6
B = 160mm : Outer Diameter HDPE ESB Approved Duct, SDR= 21
C = 63mm : ECC Earth Continuity Conductor

Section Through Ducting in Flat Formation

SCALE 1:10

Note:
- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only

ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AREA ENGINEERS LANDOWNERS REQUIREMENTS AND GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS

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PROJECT
Knockshanvo Wind Farm
110 kV Grid Connection

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-113

SHEET TITLE
Section Through Ducting in Flat Formation

DRAWING STATUS
For Planning

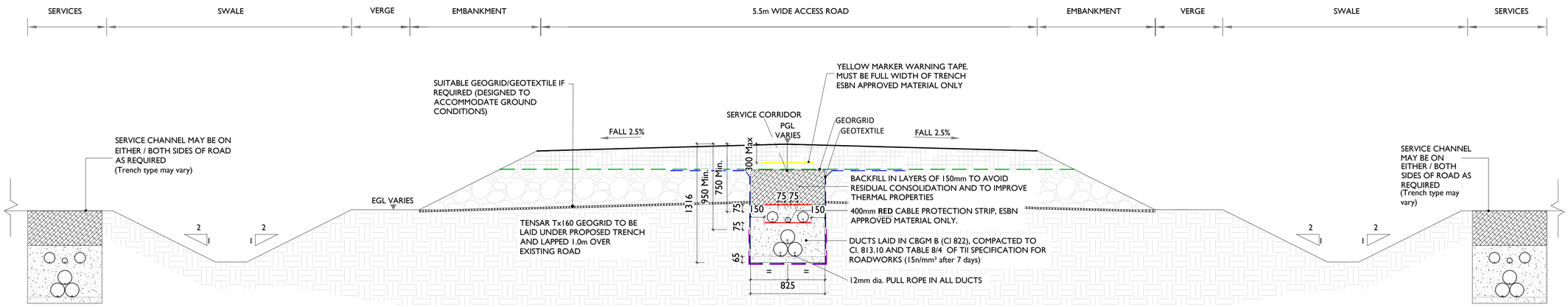
ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

ISO A1 594mm x 841mm

NOTES:
1. This drawing is to be used for EirGrid design approval only and is not to be used for construction.
2. For further information reference the latest versions of EirGrid Dr. No. XDC-CBL-STND-H-007 & Functional Specifications in addition to all other relevant documentation.
3. Dimensions are in millimeters, unless noted otherwise.
4. Drawings are not to be scaled, use figured dimensions only.
5. Road-markings to be agreed with the county council and reinstated.
6. Road surfacing build-up and tie in with non floating road sections to be agreed with the county council.

LEGEND:
- SECUGRID 40/40 GEOGRID
- TENSAR Tx160 GEOGRID
- GEOTEXTILE
- BASE WEARING COURSE
- PEAT COMPOSITION
- EXISTING MATERIAL
- NEW ROAD BUILD UP MATERIAL



A = 125mm: Outer Diameter HDPE ESB Approved Duct, SDR=17.6

B = 160mm: Outer Diameter HDPE ESB Approved Duct, SDR=21.0

CABLE TRENCH SECTION

Scale: 1:25

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PROJECT

Knockshanvo Wind Farm

110kV Grid Connection

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NOTES: -

Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions.

Other services may be encountered along the route.

This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

110kV Ducting through
Existing Floating Road in Peat

SHEET NUMBER

05783-DR-114

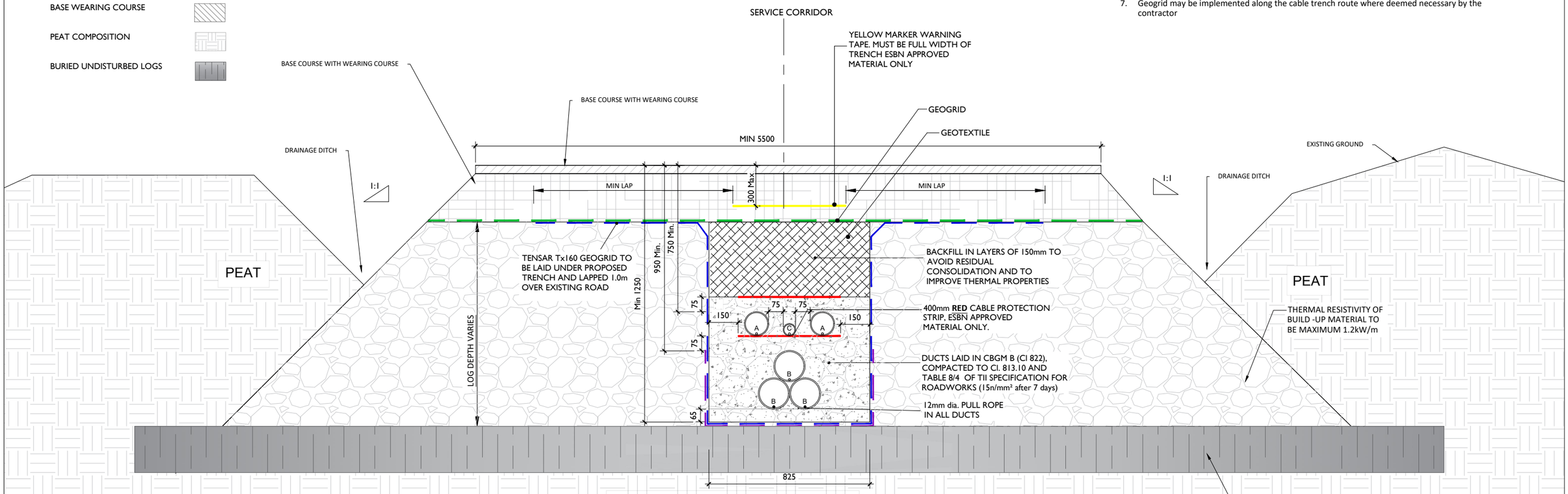
Project Management Initials: Designer: JC Checked: GC Approved: DB

LEGEND:

- SECUGRID 40/40 GEOGRID
- TENSAR Tx160 GEOGRID
- GEOTEXTILE
- BASE WEARING COURSE
- PEAT COMPOSITION
- BURIED UNDISTURBED LOGS

NOTES:

1. This drawing is to be used for EirGrid design approval only and is not to be used for construction.
2. For further information reference the latest versions of EirGrid Dr. No. XDC-CBL-STND-H-007 & Functional Specifications in addition to all other relevant documentation.
3. Dimensions are in millimeters, unless noted otherwise.
4. Drawings are not to be scaled, use figured dimensions only.
5. Base course & wearing course to be in accordance with TII (NRA) specification for roadworks series 900
6. All products & materials to be utilised during construction to comply with EirGrid Functional specification. Deep peat installatin will need to comply with **CDS-HFS-01-001**
7. Geogrid may be implemented along the cable trench route where deemed necessary by the contractor



CABLE TRENCH SECTION

Scale: 1:20

A = 125mm: Outer Diameter HDPE ESB Approved Duct, SDR=17.6

B = 160mm: Outer Diameter HDPE ESB Approved Duct, SDR=21.0

PEAT

PEAT

SECTION THROUGH UPGRADED FLOATING ROAD
PEAT DEPTH > 2.5m

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-115

SHEET TITLE

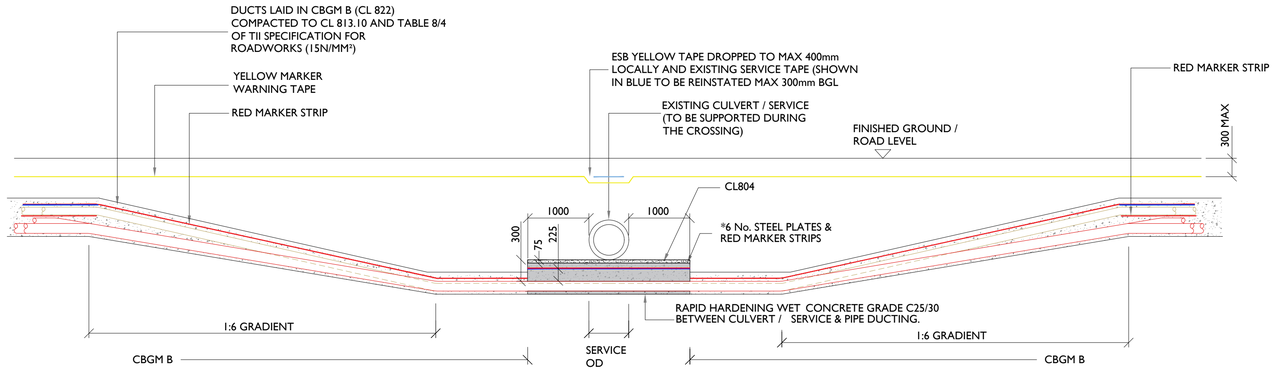
110kV Ducting through section
Upgraded Floating Road in Peat > 2.5m

DRAWING STATUS
for Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

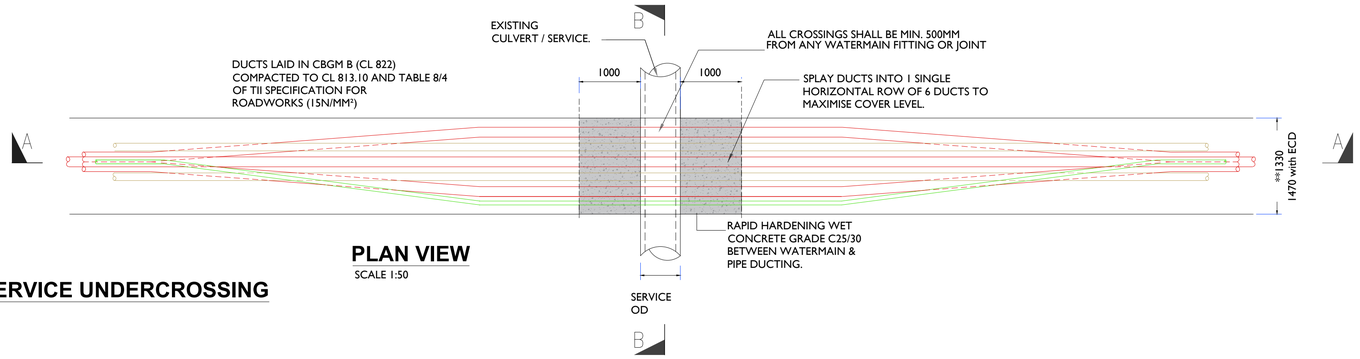
ISO A1 594mm x 841mm



SECTION A-A

SCALE 1:50

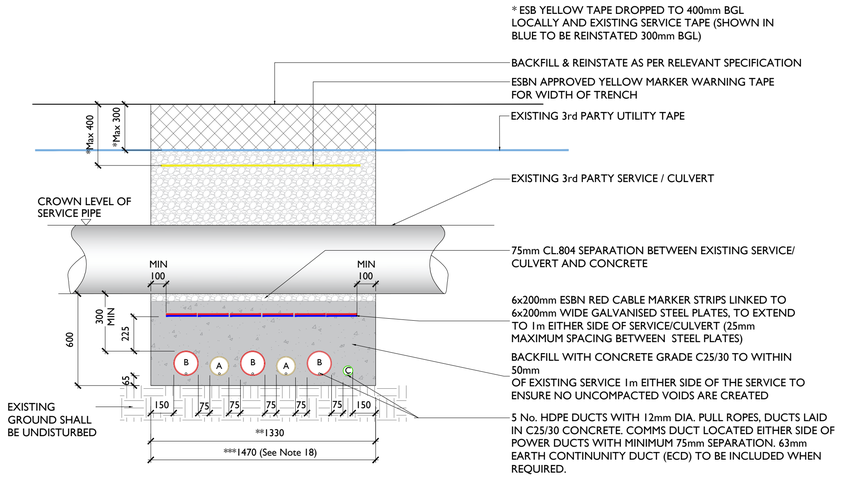
* 5X200mm STEEL PLATE & RED MARKER WHERE ECC ISN'T REQUIRED
** MIN 1330mm WHERE ECC ISN'T REQUIRED
*** SEE GENERAL NOTES, NO. 18



PLAN VIEW

SCALE 1:50

SERVICE UNDERCROSSING



SECTION B-B

SCALE: 1:20

A = 125mm OUTER DIAMETER HDPE ESB APPROVED COMMS DUCT, SDR=17.6
B = 160mm OUTER DIAMETER HDPE ESB APPROVED POWER DUCT, SDR=21
C = 63mm OUTER DIAMETER HDPE FOR EARTH CONTINUITY CONDUCTOR

GENERAL NOTES

1. This drawing is subject to ESB design approval and is not to be used for construction.
2. This drawing is to be read in conjunction with all other relevant documentation.
3. Do not scale from this drawing use only printed dimensions
4. All dimensions are in millimetres, all chainages, levels and co-ordinates are in metres unless defined otherwise.
5. No excavation shall commence until the Contractor has consulted up to date services drawings and carried out an Electromagnetic Locator (EML) Scan.
6. Hand dig only within 500mm of existing services.
7. If compacting CBGM B could cause damage to the culvert / service below, use rapid hardening cement grade C25/30 following engineers prior approval.
8. For standard trench cross section drawings and minimum horizontal separation to existing services, see 05783-DR-110 (TREFOIL) and 05783-DR-113 (FLAT).
9. Where depths exceed 2500mm to the top of duct the Contractor shall consult the cable system design engineer for phase spacing requirements.
10. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015).
11. **ESB's preference is to cross under existing services where possible.**
12. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015)
13. The Contractor is responsible for the design and construction of all temporary works. The Contractor shall appoint a temporary works designer, and submit temporary works design to PSDP for review.
14. 225mm minimum concrete over ducts where they transition from standard cross section and where they are at less than standard cover to ground level.
15. Replace existing service marker tape over ESB yellow marker tape.
16. The owner of the existing utility being crossed must be consulted in advance of works commencing as per their guidelines.
17. The Contractor shall record detailed as-built information as per the specification. At all crossing locations these records shall include photographic evidence clearly demonstrating that minimum service clearances and duct separations have been achieved.
18. Where duct for Earth Continuity Conductor (ECC) is required for single point bonded sections, attach the 63mm ECC duct to the A duct and update the trench width accordingly.

Project Management Initials: Designer: JC Checked: GC Approved: DB

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

LEGEND: -

- 160mm Ø HDPE POWER DUCT WITH 12mm DIAMTER PULL ROPE
- 125mm Ø HDPE COMMUNICATION DUCT WITH 12mm DIAMTER PULL ROPE
- 63mm Ø HDPE EARTH CONTINUITY CONDUCTOR WITH12mm DIAMTER PULL ROPE
- RED MARKER STRIP OR STEEL PLATES
- YELLOW MARKER WARNING TAPE
- 6mm GALVANISED STEEL PLATE
- EXISTING SERVICE TAPE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

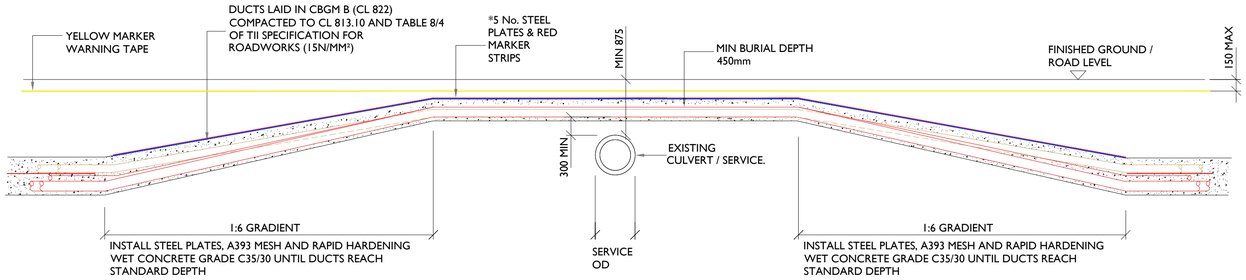
SHEET TITLE

Trench Sections For Undercrossing Existing Culverts / Services

SHEET NUMBER

05783-DR-116

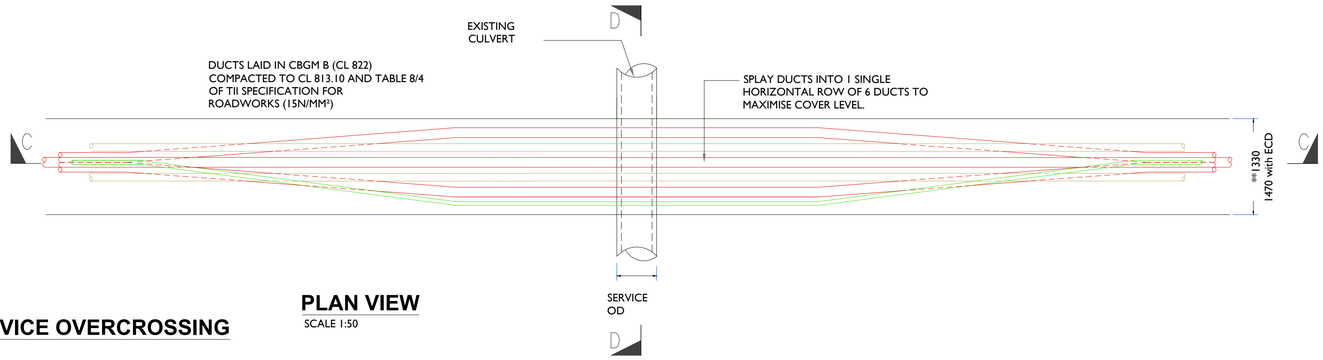
ISO A1 594mm x 841mm



SECTION C-C

SCALE 1:50

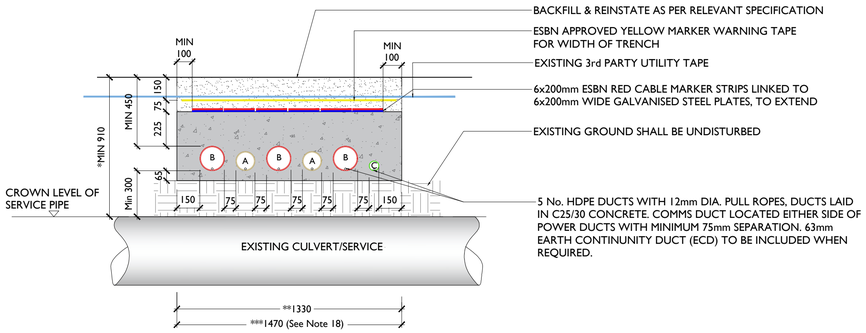
* 5X200mm STEEL PLATE & RED MARKER WHERE ECC ISN'T REQUIRED
** MIN 1330mm WHERE ECC ISN'T REQUIRED
*** SEE GENERAL NOTES, NO. 18



SERVICE OVERCROSSING

PLAN VIEW

SCALE 1:50



* ALL EXISTING SERVICES WITH COVERS LESS THAN MIN. DIMENSIONS ABOVE SHALL BE CROSSED BY UNDERCROSSING METHOD

A = 125mm OUTER DIAMETER HDPE ESB APPROVED COMMS DUCT, SDR=17.6
B = 160mm OUTER DIAMETER HDPE ESB APPROVED POWER DUCT, SDR=21
C = 63mm OUTER DIAMETER HDPE FOR EARTH CONTINUITY CONDUCTOR

SECTION D-D

SCALE: 1:20

GENERAL NOTES

1. This drawing is subject to ESB design approval and is not to be used for construction.
2. This drawing is to be read in conjunction with all other relevant documentation.
3. Do not scale from this drawing use only printed dimensions
4. All dimensions are in millimetres, all chainages, levels and co-ordinates are in metres unless defined otherwise.
5. No excavation shall commence until the Contractor has consulted up to date services drawings and carried out an Electromagnetic Locator (EML) Scan.
6. Hand dig only within 500mm of existing services.
7. If compacting CBGM B could cause damage to the culvert / service below, use rapid hardening cement grade C25/30 following engineers prior approval.
8. For standard trench cross section drawings and minimum horizontal separation to existing services, see 05783-DR-110 (TREFOIL) and 05783-DR-113 (FLAT).
9. Where depths exceed 2500mm to the top of duct the Contractor shall consult the cable system design engineer for phase spacing requirements.
10. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015).
11. **ESB's preference is to cross under existing services where possible.**
12. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015)
13. The Contractor is responsible for the design and construction of all temporary works. The Contractor shall appoint a temporary works designer, and submit temporary works design to PSDP for review.
14. 225mm minimum concrete over ducts where they transition from standard cross section and where they are at less than standard cover to ground level.
15. Replace existing service marker tape over ESB yellow marker tape.
16. The owner of the existing utility being crossed must be consulted in advance of works commencing as per their guidelines.
17. The Contractor shall record detailed as-built information as per the specification. At all crossing locations these records shall include photographic evidence clearly demonstrating that minimum service clearances and duct separations have been achieved.
18. Where duct for Earth Continuity Conductor (ECC) is required for single point bonded sections, attach the 63mm ECC duct to the A duct and update the trench width accordingly.

Project Management Initials: Designer: JC Checked: GC Approved: DB

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

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CONSULTANTS

NOTES: -

LEGEND: -

- 160mm Ø HDPE POWER DUCT WITH 12mm DIAMTER PULL ROPE
- 125mm Ø HDPE COMMUNICATION DUCT WITH 12mm DIAMTER PULL ROPE
- 63mm Ø HDPE EARTH CONTINUITY CONDUCTOR WITH12mm DIAMTER PULL ROPE
- RED MARKER STRIP OR STEEL PLATES
- YELLOW MARKER WARNING TAPE
- 6mm GALVANISED STEEL PLATE
- EXISTING SERVICE TAPE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

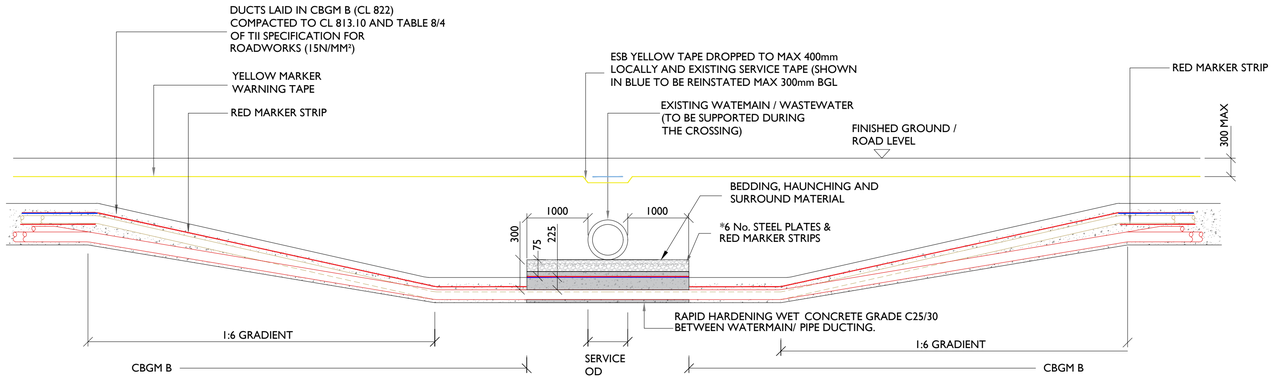
SHEET TITLE

Trench Sections For Overcrossing under Culverts/Services

SHEET NUMBER

05783-DR-117

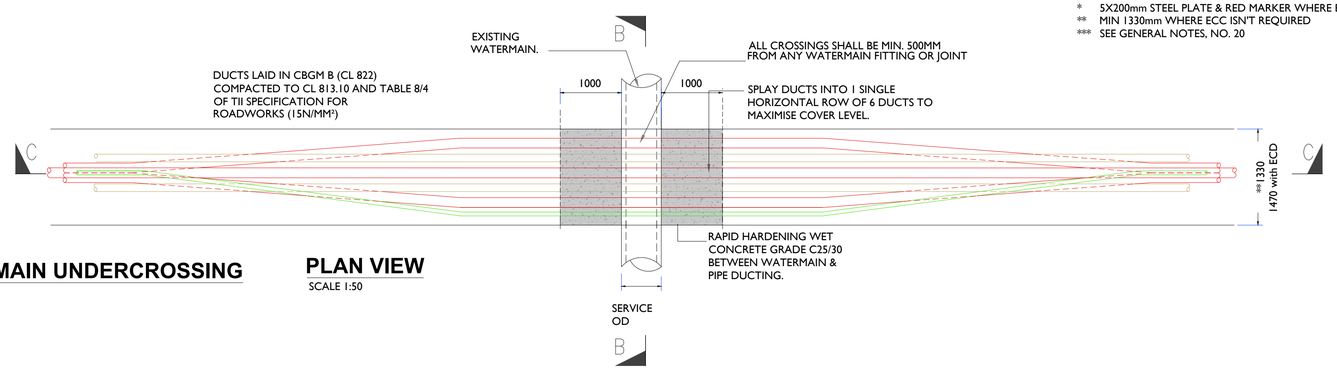
ISO A1 594mm x 841mm



SECTION A-A

SCALE 1:50

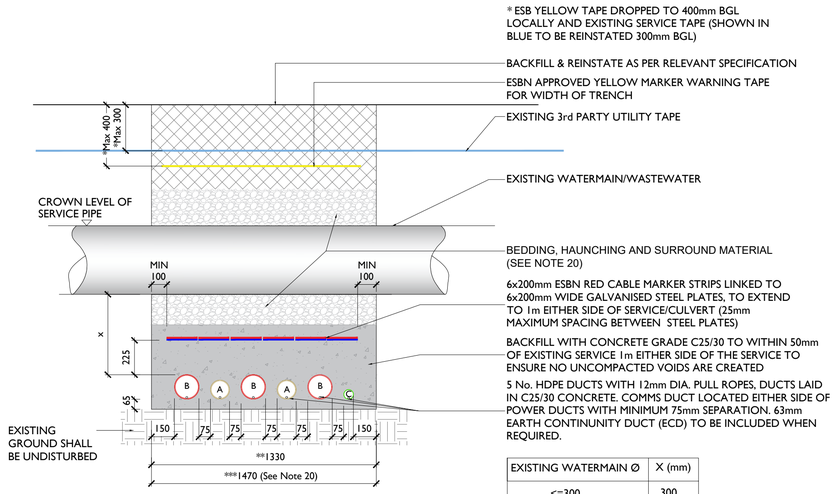
* 5X200mm STEEL PLATE & RED MARKER WHERE ECC ISN'T REQUIRED
** MIN 1330mm WHERE ECC ISN'T REQUIRED
*** SEE GENERAL NOTES, NO. 20



WATERMAIN UNDERCROSSING

PLAN VIEW

SCALE 1:50



EXISTING WATERMAIN Ø	X (mm)
<=300	300
>300	500

SECTION B-B

SCALE: 1:20

A = 125mm OUTER DIAMETER HDPE ESB APPROVED COMMS DUCT, SDR=17.6
B = 160mm OUTER DIAMETER HDPE ESB APPROVED POWER DUCT, SDR=21
C = 63mm OUTER DIAMETER HDPE FOR EARTH CONTINUITY CONDUCTOR

GENERAL NOTES

1. This drawing is subject to ESB design approval and is not to be used for construction.
2. This drawing is to be read in conjunction with all other relevant documentation.
3. Do not scale from this drawing use only printed dimensions
4. All dimensions are in millimetres, all chainages, levels and co-ordinates are in metres unless defined otherwise.
5. No excavation shall commence until the Contractor has consulted up to date services drawings and carried out an Electromagnetic Locator (EML) Scan.
6. Hand dig only within 500mm of existing services.
7. If compacting CBGM B could cause damage to the culvert / service below, use rapid hardening cement grade C25/30 following engineers prior approval.
8. For standard trench cross section drawings and minimum horizontal separation to existing services, see 05783-DR-110 (TREFOIL) and 05783-DR-113 (FLAT).
9. Where depths exceed 2500mm to the top of duct the Contractor shall consult the cable system design engineer for phase spacing requirements.
10. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015).
11. **ESB's preference is to cross under existing services where possible.**
12. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015)
13. As per WIS 4-08-02 & IGN 4-08-01 granular material shall be 14mm to 5mm graded aggregate or 10mm single sized aggregate
14. If any Watermains are damaged during construction they will be replaced in full. camera scoping will be completed before and after the works.
15. The Contractor is responsible for the design and construction of all temporary works. The Contractor shall appoint a temporary works designer, and submit temporary works design to PSDP for review.
16. 225mm minimum concrete over ducts where they transition from standard cross section and where they are at less than standard cover to ground level.
17. Replace existing service marker tape over ESB yellow marker tape.
18. The owner of the existing utility being crossed must be consulted in advance of works commencing as per their guidelines.
19. The Contractor shall record detailed as-built information as per the specification. At all crossing locations these records shall include photographic evidence clearly demonstrating that minimum service clearances and duct separations have been achieved.
20. Where duct for Earth Continuity Conductor (ECC) is required for single point bonded sections, attach the 63mm ECC duct to the A duct and update the trench width accordingly.

Project Management Initials: Designer: JC Checked: GC Approved: DB

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PROJECT

Knockshanvo Wind Farm

110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

LEGEND: -

- 160mm Ø HDPE POWER DUCT WITH 12mm DIAMTER PULL ROPE
- 125mm Ø HDPE COMMUNICATION DUCT WITH 12mm DIAMTER PULL ROPE
- 63mm Ø HDPE EARTH CONTINUITY CONDUCTOR WITH 12mm DIAMTER PULL ROPE
- RED MARKER STRIP OR STEEL PLATES
- YELLOW MARKER WARNING TAPE
- 6mm GALVANISED STEEL PLATE
- EXISTING SERVICE TAPE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

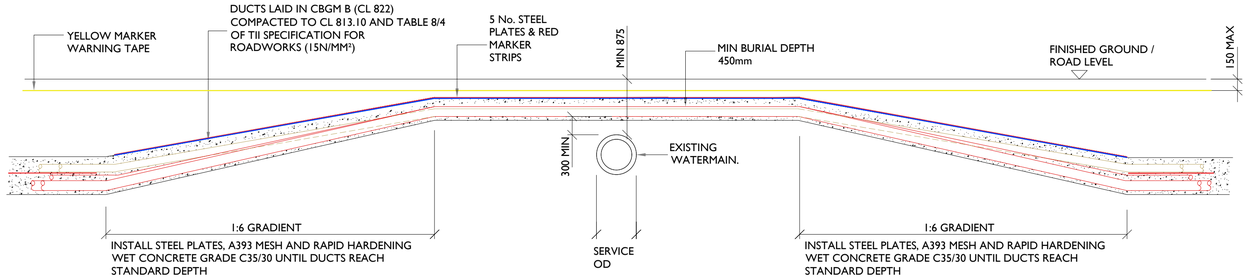
SHEET TITLE

Trench Sections For Undercrossing Existing Watermain/Wastewater

SHEET NUMBER

05783-DR-118

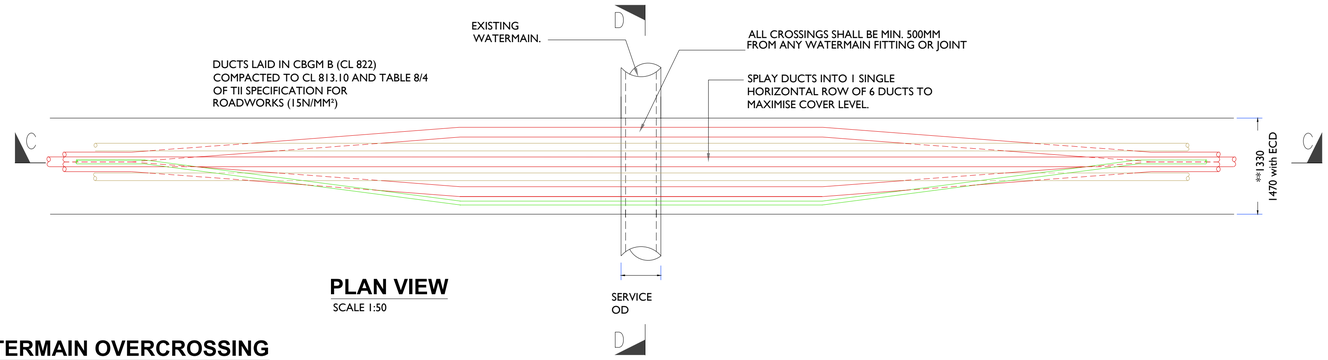
ISO A1 594mm x 841mm



SECTION C-C

SCALE 1:50

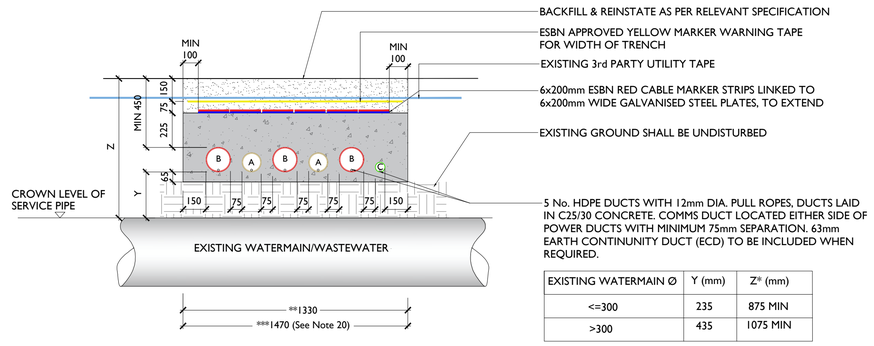
* 5X200mm STEEL PLATE & RED MARKER WHERE ECC ISN'T REQUIRED
** MIN 1330mm WHERE ECC ISN'T REQUIRED
*** SEE GENERAL NOTES, NO. 20



PLAN VIEW

SCALE 1:50

WATERMAIN OVERCROSSING



EXISTING WATERMAIN Ø	Y (mm)	Z* (mm)
<=300	235	875 MIN
>300	435	1075 MIN

* ALL EXISTING SERVICES WITH COVERS LESS THAN MIN. DIMENSIONS ABOVE SHALL BE CROSSED BY UNDERCROSSING METHOD

A = 125mm OUTER DIAMETER HDPE ESB APPROVED COMMS DUCT, SDR=17.6
B = 160mm OUTER DIAMETER HDPE ESB APPROVED POWER DUCT, SDR=21
C = 63mm OUTER DIAMETER HDPE FOR EARTH CONTINUITY CONDUCTOR

SECTION D-D

SCALE: 1:20

GENERAL NOTES

1. This drawing is subject to ESB design approval and is not to be used for construction.
2. This drawing is to be read in conjunction with all other relevant documentation.
3. Do not scale from this drawing use only printed dimensions
4. All dimensions are in millimetres, all chainages, levels and co-ordinates are in metres unless defined otherwise.
5. No excavation shall commence until the Contractor has consulted up to date services drawings and carried out an Electromagnetic Locator (EML) Scan.
6. Hand dig only within 500mm of existing services.
7. If compacting CBGM B could cause damage to the culvert / service below, use rapid hardening cement grade C25/30 following engineers prior approval.
8. For standard trench cross section drawings and minimum horizontal separation to existing services, see 05783-DR-110 (TREFOIL) and 05783-DR-113 (FLAT).
9. Where depths exceed 2500mm to the top of duct the Contractor shall consult the cable system design engineer for phase spacing requirements.
10. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015).
11. **ESB's preference is to cross under existing services where possible.**
12. Backfill as per guidelines for the opening, backfilling and reinstatement of openings in public roads (2015)
13. As per WIS 4-08-02 & IGN 4-08-01 granular material shall be 14mm to 5mm graded aggregate or 10mm single sized aggregate
14. If any Watermains are damaged during construction they will be replaced in full. camera scoping will be completed before and after the works.
15. The Contractor is responsible for the design and construction of all temporary works. The Contractor shall appoint a temporary works designer, and submit temporary works design to PSDP for review.
16. 225mm minimum concrete over ducts where they transition from standard cross section and where they are at less than standard cover to ground level.
17. Replace existing service marker tape over ESB yellow marker tape.
18. The owner of the existing utility being crossed must be consulted in advance of works commencing as per their guidelines.
19. The Contractor shall record detailed as-built information as per the specification. At all crossing locations these records shall include photographic evidence clearly demonstrating that minimum service clearances and duct separations have been achieved.
20. Where duct for Earth Continuity Conductor (ECC) is required for single point bonded sections, attach the 63mm ECC duct to the A duct and update the trench width accordingly.

Project Management Initials: Designer: JC Checked: GC Approved: DB

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

LEGEND: -

- 160mm Ø HDPE POWER DUCT WITH 12mm DIAMTER PULL ROPE
- 125mm Ø HDPE COMMUNICATION DUCT WITH 12mm DIAMTER PULL ROPE
- 63mm Ø HDPE EARTH CONTINUITY CONDUCTOR WITH12mm DIAMTER PULL ROPE
- RED MARKER STRIP OR STEEL PLATES
- YELLOW MARKER WARNING TAPE
- 6mm GALVANISED STEEL PLATE
- EXISTING SERVICE TAPE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Trench Sections For Undercrossing Existing Watermain/Wastewater

SHEET NUMBER

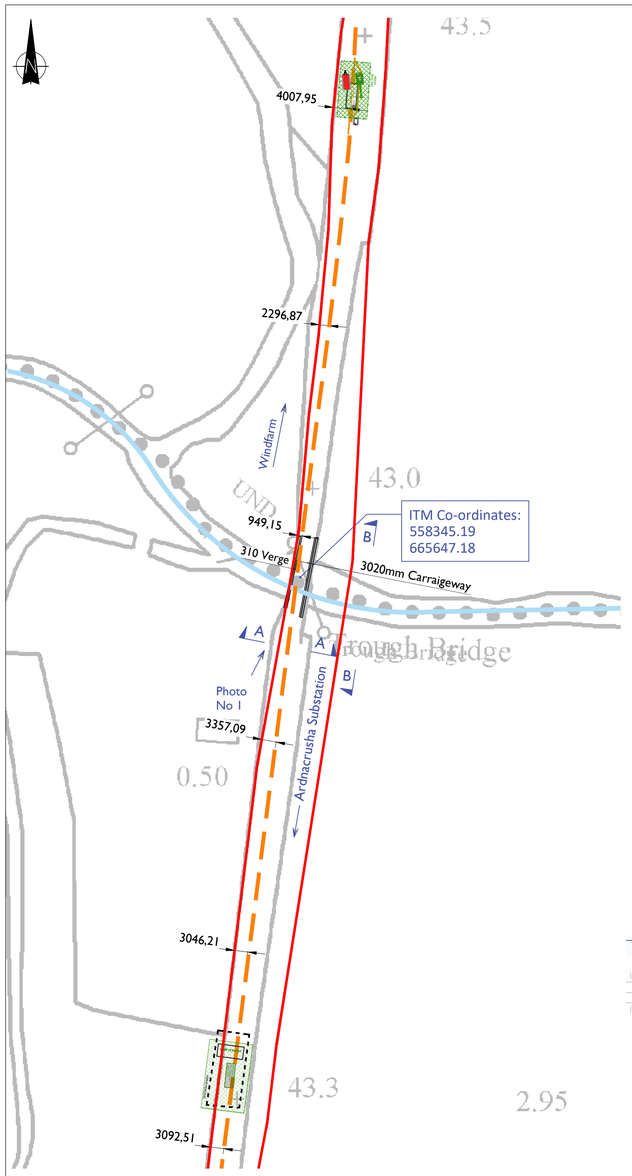
05783-DR-119

ISO A2 420mm x 594mm

Map Series:
Prime Data Vector

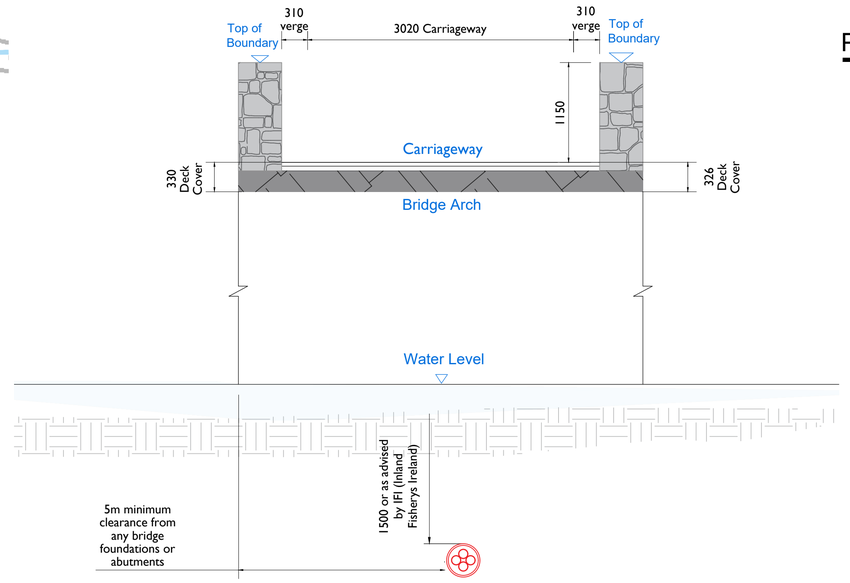
Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649



Plan View Bridge No 1

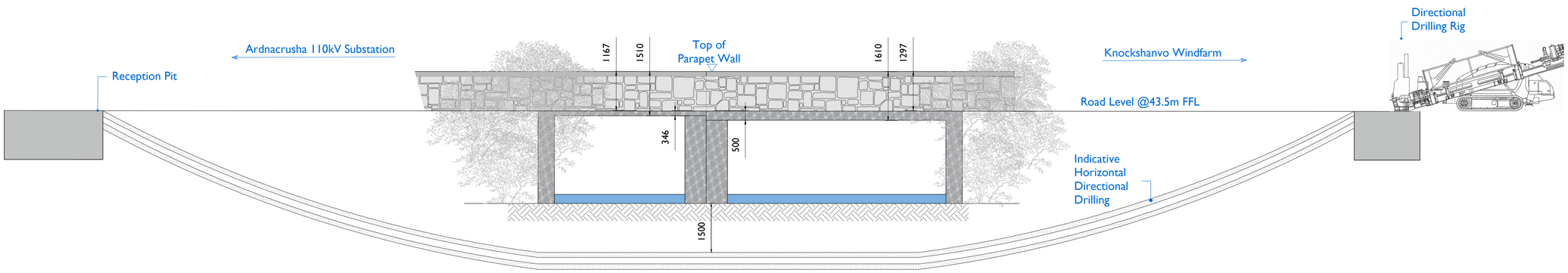
Scale : 1:1000



Section A-A

Scale : 1:50

Photo No 1



Section B-B

Scale : 1:100

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

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CONSULTANTS

NOTES: -

- No structural bridge surveys have been carried out and the proposal s are subject to detailed design.
- Bridge crossing designs will be submitted to Clare Co. Council for review.
- Drawings are in compliance with ESBN specification requirements for shallow formation, bridge crossings, etc.
- HDD launch and reception pits locations to be determined following site investigations.

LEGEND: -

110kV Underground Cable Design Route
Planning Boundary shown thus
Existing River Network denoted as
Temporary Compound Drilling Area

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

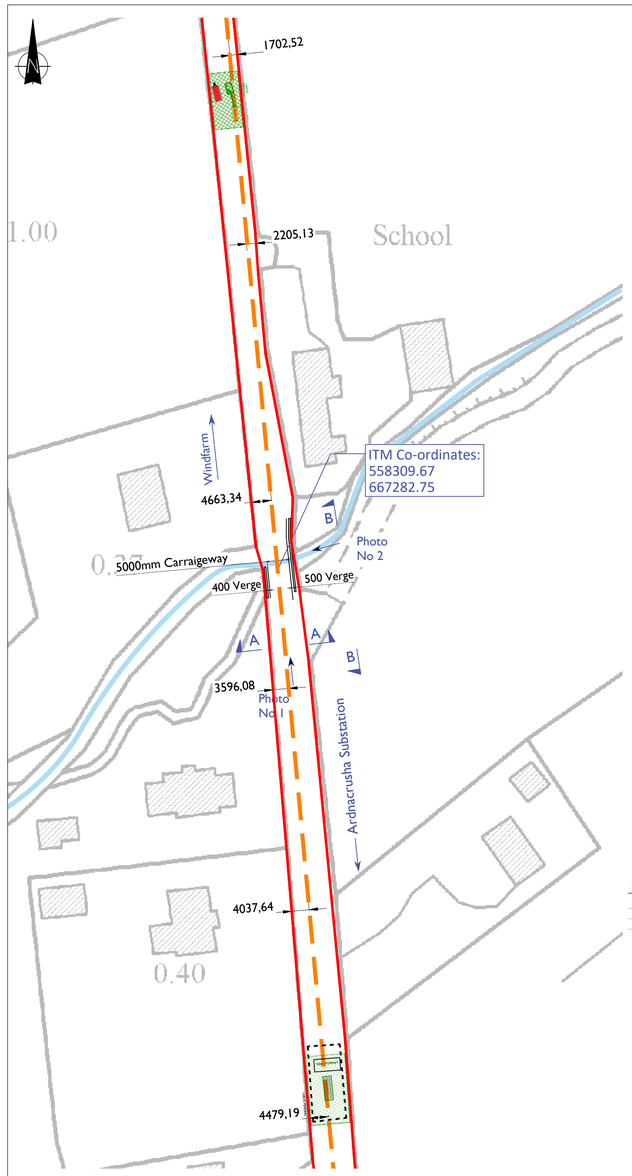
Bridge 1 - Proposed Crossing Details

SHEET NUMBER

05783-DR-120

Project Management Initials: Designer: JC Checked: GC Approved: DB

ISO A2 420mm x 594mm



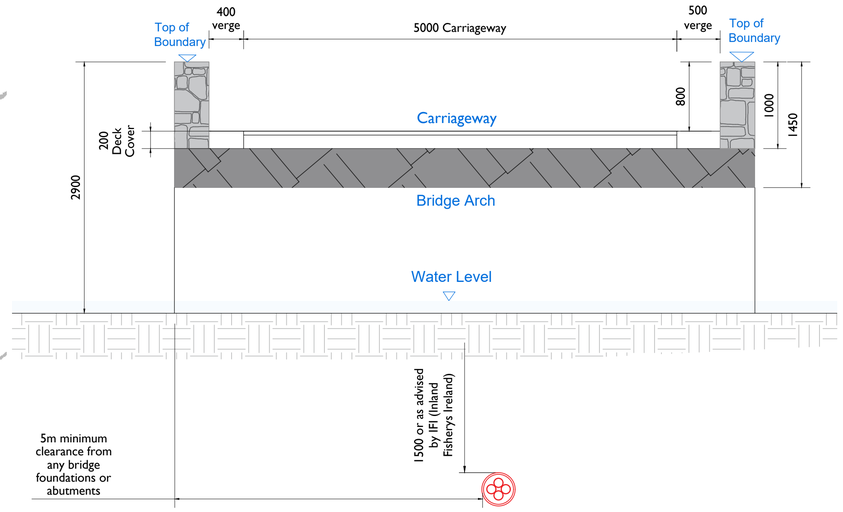
Map Series:
Prime Data Vector

Reference No.'s
4444, 4503, 4563, 4622

Ordnance Survey Ireland Licence No.
CYAL50261649

Plan View Bridge No 2

Scale : 1:1000

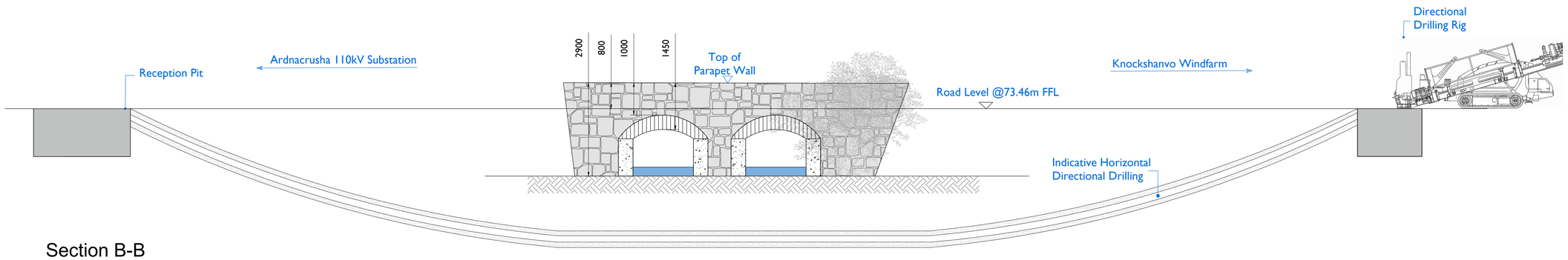


Section A-A

Scale : 1:50

Photo No 1

Photo No 2



Section B-B

Scale : 1:100

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

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CONSULTANTS

NOTES: -

- No structural bridge surveys have been carried out and the proposal s are subject to detailed design.
- Bridge crossing designs will be submitted to Clare Co. Council for review.
- Drawings are in compliance with ESBN specification requirements for shallow formation, bridge crossings, etc.
- HDD launch and reception pits locations to be determined following site investigations.

LEGEND: -

110kV Underground Cable Design Route

Planning Boundary shown thus

Existing River Network denoted as

Temporary Compound Drilling Area

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	05.06.24	Issued for Planning
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Bridge 2 - Proposed Crossing Details

SHEET NUMBER

05783-DR-121

Project Management Initials: Designer: JC Checked: GC Approved: DB

LEGEND:

SECUGRID 40/40 GEOGRID

TENSAR Tx160 GEOGRID

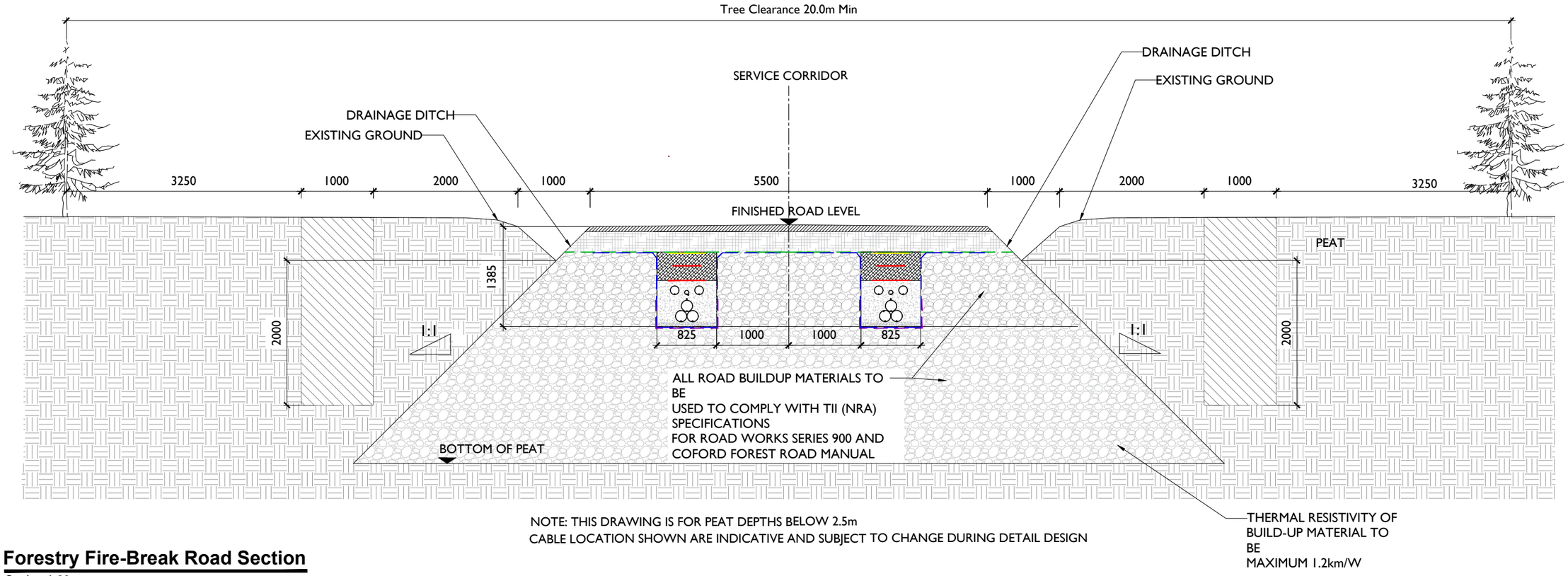
GEOTEXTILE

BASE WEARING COURSE

PEAT COMPOSITION

EXISTING MATERIAL

NEW ROAD BUILD UP MATERIAL



NOTE: THIS DRAWING IS FOR PEAT DEPTHS BELOW 2.5m
CABLE LOCATION SHOWN ARE INDICATIVE AND SUBJECT TO CHANGE DURING DETAIL DESIGN

Forestry Fire-Break Road Section

Scale : 1:30

Note:
1. This drawing is subject to planning approval and should not be used for construction.
2. This drawing is to be read in conjunction with relevant drawings, specifications and reports.
3. Dimensions are in millimeters, unless noted otherwise.
4. Drawings are not to be scaled use figured dimensions only.
5. Underground cable circuit spacing to be determined during detailed design, road layout may change during detailed design with site investigation results.

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PROJECT
Knockshanvo Wind Farm
110kV Grid Connection

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-122

SHEET TITLE
Forestry Access Road with Service Corridor through existing Fire Break

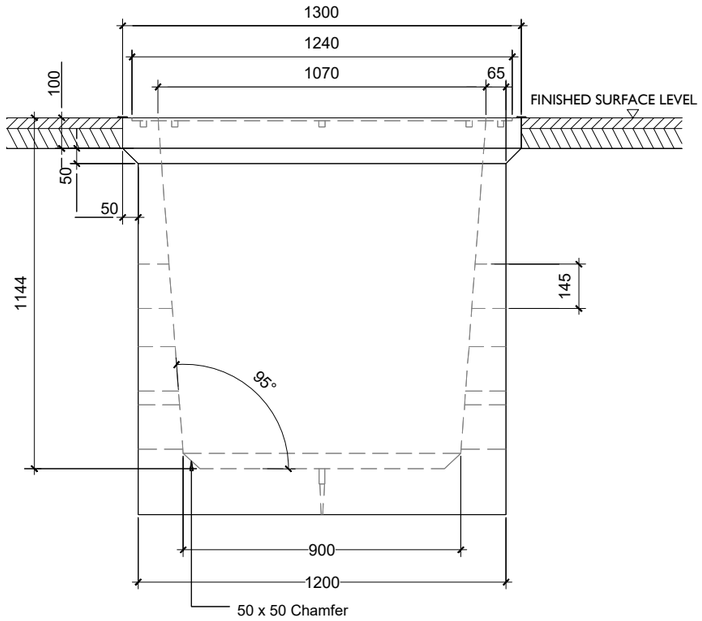
DRAWING STATUS
For Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

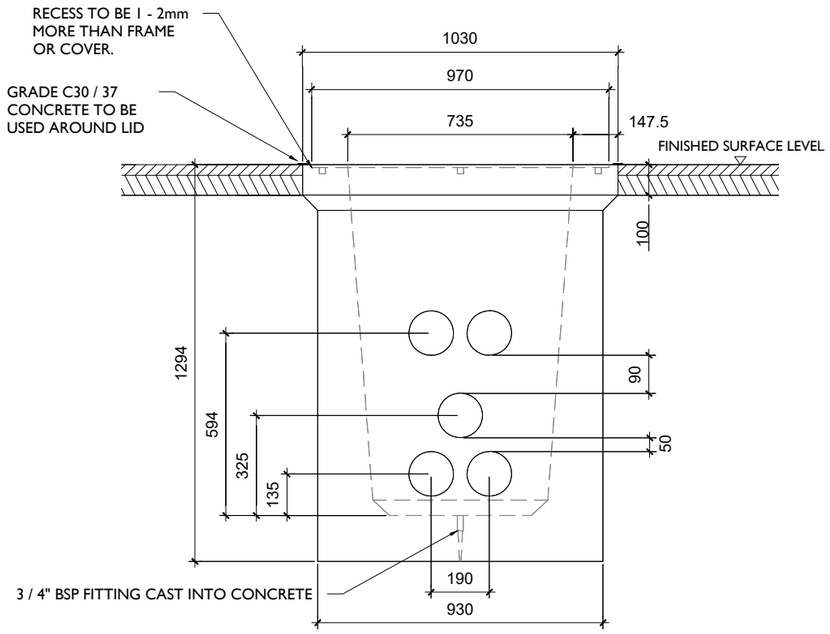
NOTES;

1. ALL DIMENSION IN MILLISMETERS UNLESS OTHERWISE STATED
2. REINSTATEMENTS TO COMPLY WITH REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY/ASSET OWNER
3. ENTRANCE AND EXIT DUCTS TO BE IN LINE
4. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH NRA/T.I.I. SPECIFICATION FOR ROADWORKS, MAY 2005 & SUBSEQUENT REVISIONS
5. REINFORCED CONCRETE TO BE MINIMUM GRADE C32 / 40, SULPHATE RESISTING CEMENT TO BE USED WHERE AGGRESSIVE SOIL CONDITIONS APPLY, REFER TO TABLE 6.1 OF THE BRITISH STANDARD 8110.
6. CARRAIGEWAY COVERS AND FRAMES TO BE TO B.S EN 124.
7. ALL COVERS SHALL HAVE "ESB" LOGO INCORPORATED IN THEM TO THE APPROVAL OF EIRGRID
8. STEP IRONS TO BE GOT DIPPED GALVANISED TO B.S 729 AND POSITIONED AS SHOWN ON ANY CHAMBER DEEPER THAN 700mm ON THE END REMOTE FROM ANY SIDE ENTRY DUCT.
9. CONCRETE PRECAST CHAMBER AND COVER TO BE TESTED THROUGH 5 POINTS, 40 TONNES VERTICAL STATIC LOADING TEST BY AN INDEPENDENT TEST COMPANY. IF REQUIRED, FURTHER DETAILS WILL BE PROVIDED BY EIRGRID.
10. FINAL POSITION OF C2 CHAMBERS SHALL BE AGREED WITH EIRGRID
11. IN A FOREST ENVIROMENT, BACKFILL WITH LEAN MIX OUTSIDE THE COVER FRAME WHERE THE ASPHALT IS SHOWN



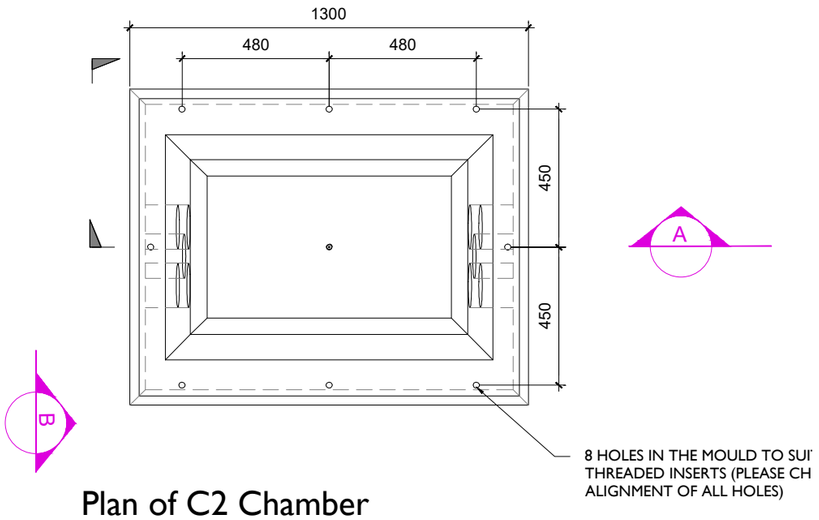
C2 Chamber Detail - Section A

SCALE 1:20



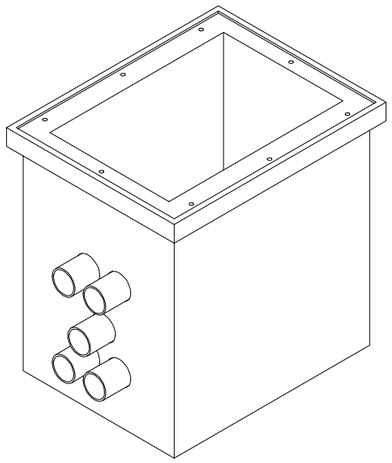
C2 Chamber Detail - Section B

SCALE 1:20



Plan of C2 Chamber

SCALE 1:20



Isometric : C2 Chamber Arrangement

SCALE 1:20

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PROJECT
Knockshanvo Wind Farm
110kV Grid Connection

SHEET TITLE
Communications
Chamber Details

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-123

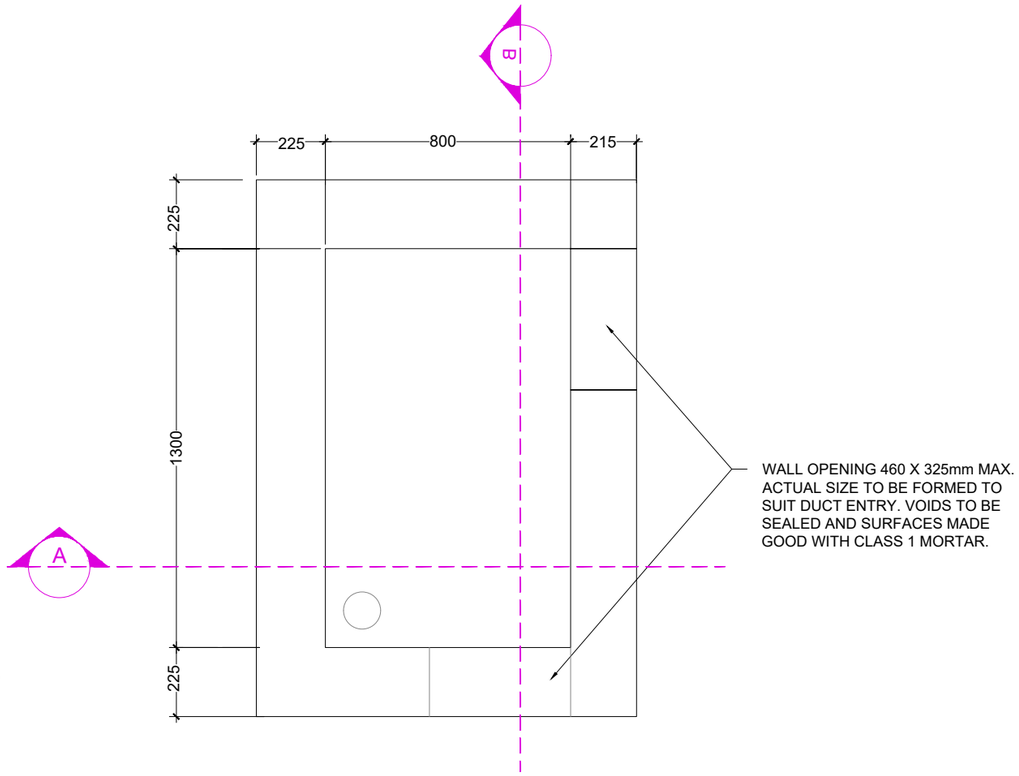
DRAWING STATUS
For Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

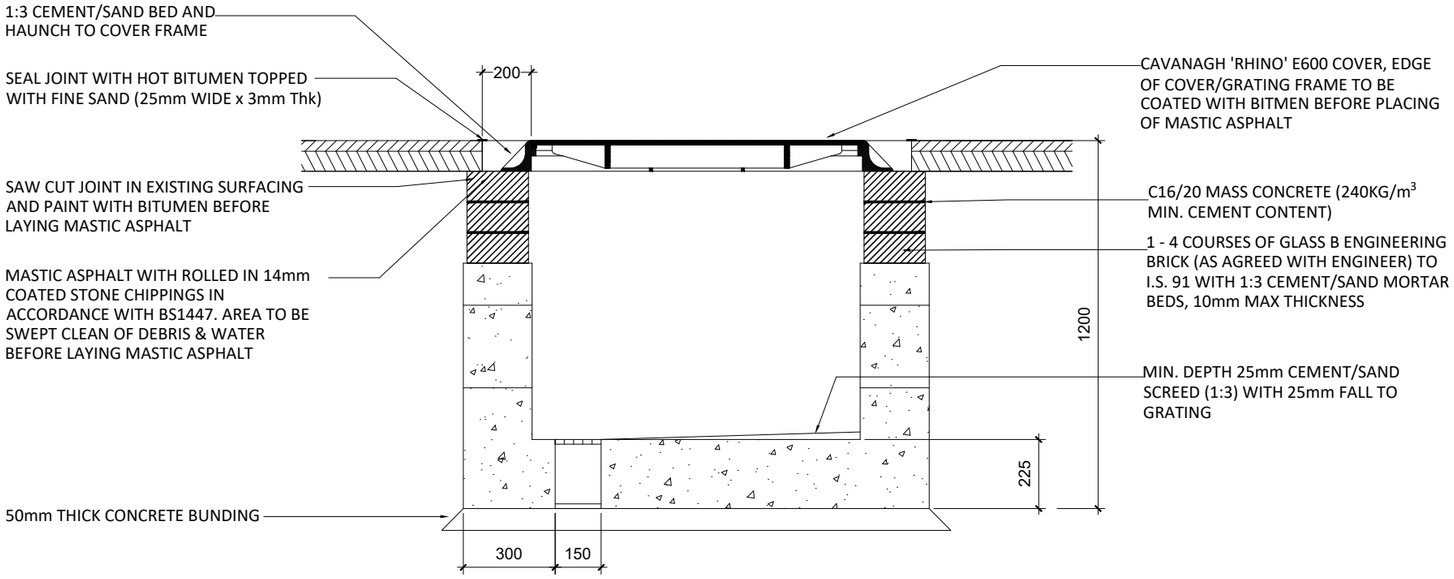
NOTES;

1. ALL DIMENSION IN MILLISMETERS UNLESS OTHERWISE STATED
2. REINSTATEMENTS TO COMPLY WITH REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY/ASSET OWNER
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH NRA/T.I.I. SPECIFICATION FOR ROADWORKS, MAY 2005 & SUBSEQUENT REVISIONS
4. REINFORCED CONCRETE TO BE MINIMUM GRADE C32 / 40, SULPHATE RESISTING CEMENT TO BE USED WHERE AGGRESSIVE SOIL CONDITIONS APPLY, REFER TO TABLE 6.1 OF THE BRITISH STANDARD 8110.
5. CARRAIGEWAY COVERS AND FRAMES TO BE TO B.S EN 124.
6. ALL COVERS SHALL HAVE "ESB" LOGO INCORPORATED IN THEM TO THE APPROVAL OF EIRGRID
7. FURTHER DETAILS WILL BE PROVIDED BY EIRGRID.
8. FINAL POSITION OF EARTH LINK CHAMBERS SHALL BE AGREED WITH EIRGRID



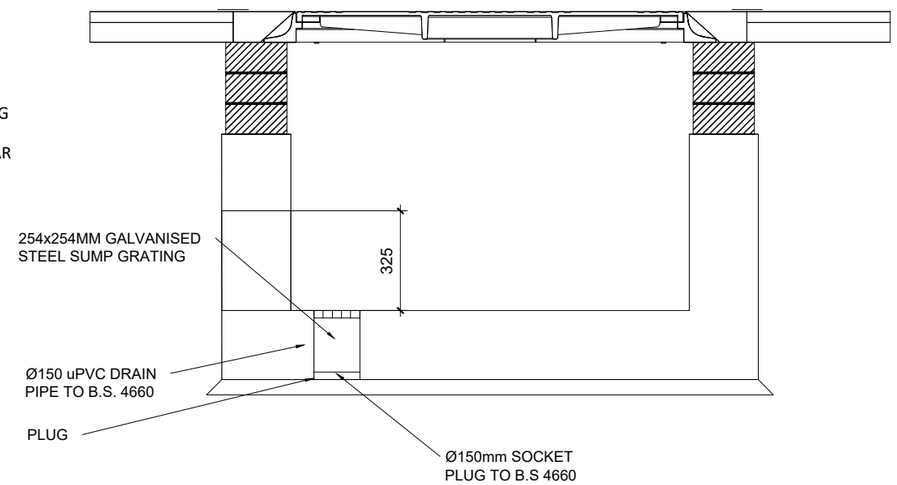
Plan of Earth Link Chamber

SCALE 1:20



Earth Link Chamber - Section A

SCALE 1:20



Earth Link Chamber - Section B

SCALE 1:20

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CLIENT

MKO

PROJECT
Knockshanvo Wind Farm
110kV Grid Connection

SHEET TITLE
Earth Link
Chamber Details

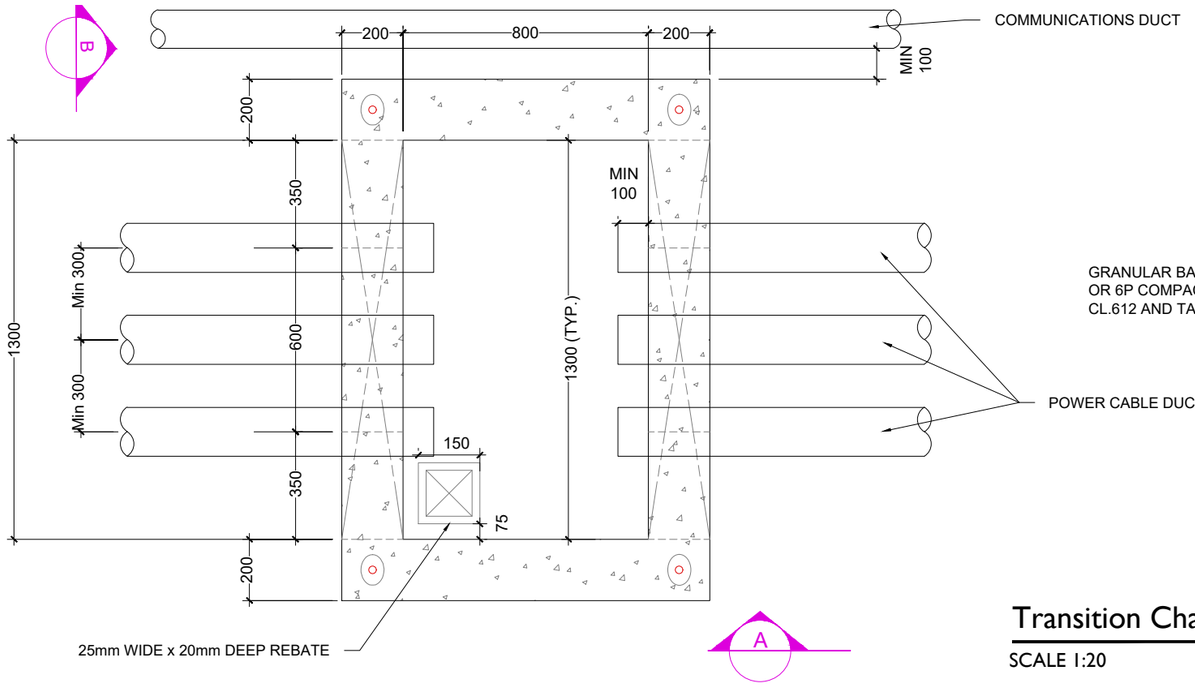
PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-124

DRAWING STATUS
For Information

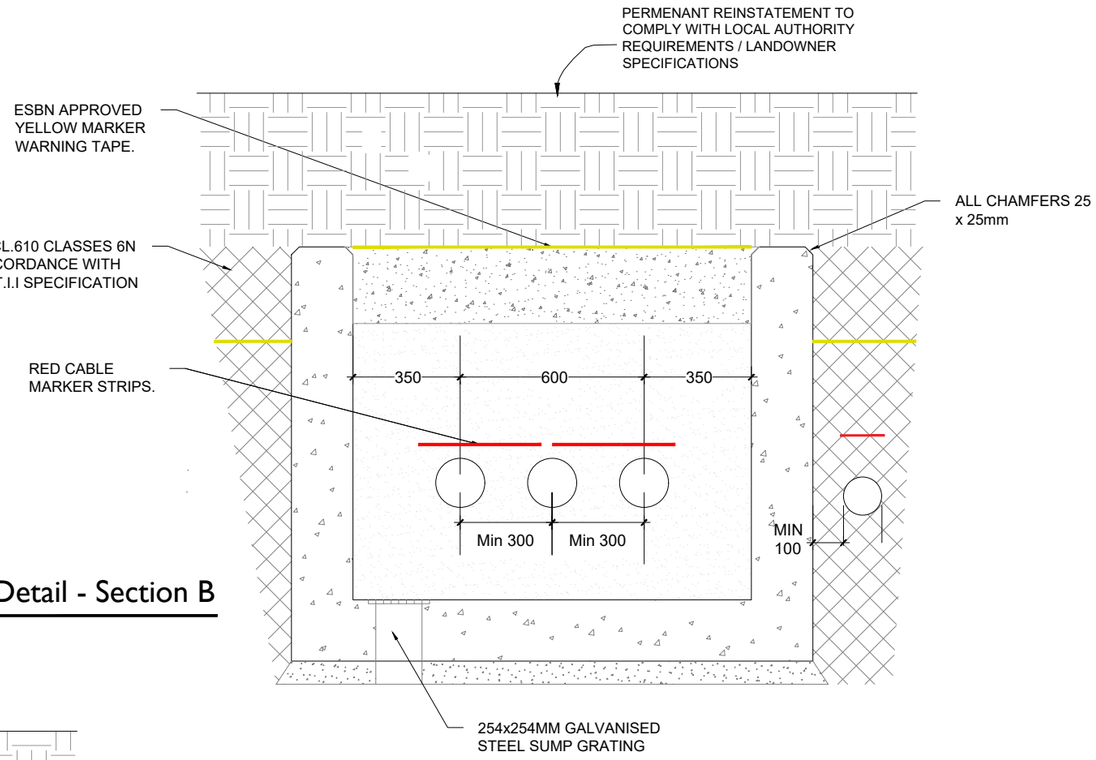
ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning



Plan of Transition Chamber

SCALE 1:20

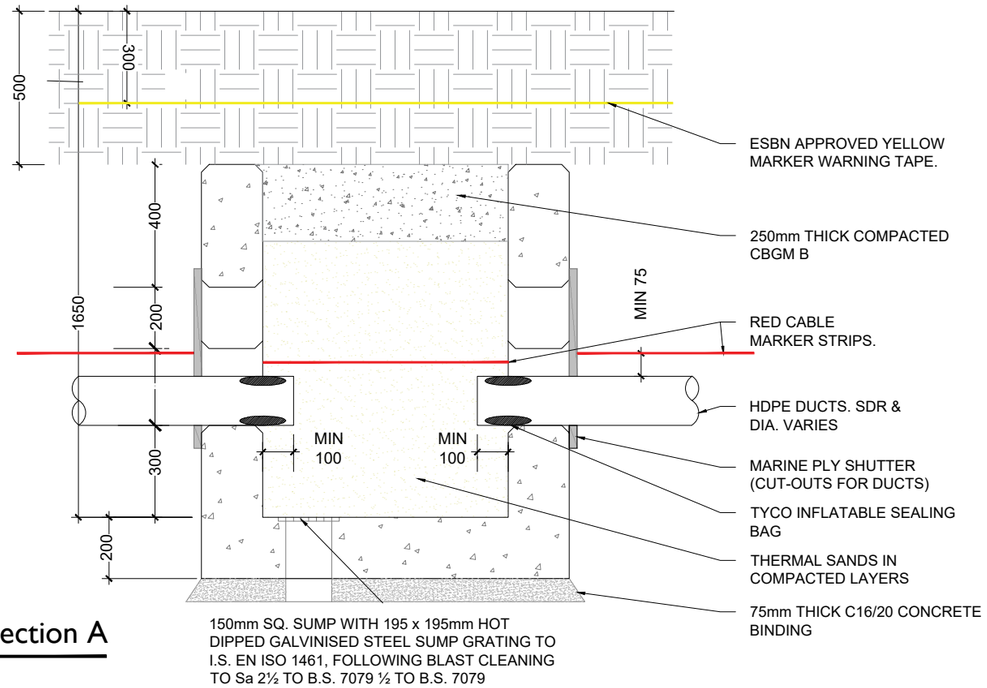


Transition Chamber Detail - Section B

SCALE 1:20

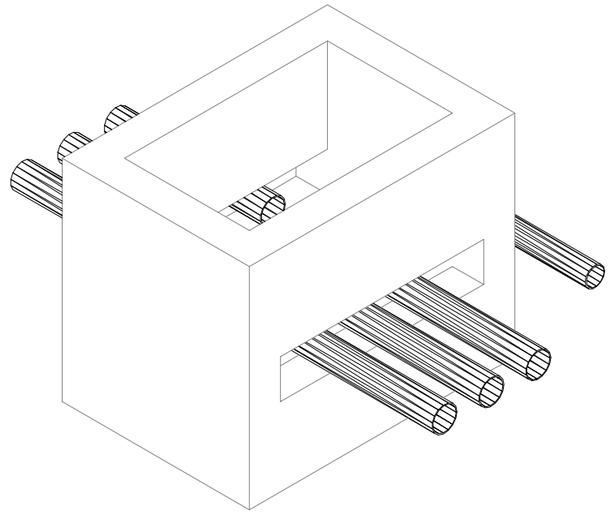
NOTES;

1. ALL DIMENSION IN MILLIMETERS UNLESS OTHERWISE STATED,
2. TELCOM DUCTS NOT TO BE ROUTED THROUGH TRANSITION CHAMBER
3. IF TRANSITION CHAMBER IS USED TO INTERFACE WITH HDD SECTION, THEN THE TELECOMS DUCT SDR 17.6 SHOULD BE CHAMFERED WHEN COUPLED WITH SDR 11 DUCTS
4. REINSTATEMENTS TO COMPLY WITH REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY/ASSET OWNER
5. TEMPORARY SUPPORTS TO THE SIDES OF THE EXCAVATION MAY BE REQUIRED DEPENDENT ON THE SUBSOIL,
6. THE CONSTRUCTION SHOWN, IS APPLICABLE ONLY WHERE THE THE SUBSOIL AT FORMATION LEVEL EXCEEDS 100kN/m BEARING CAPACITY
7. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH NRA/T.I.I. SPECIFICATION FOR ROADWORKS, MAY 2005 & SUBSEQUENT REVISIONS
8. THE CENTRE LINE OF THE DUCTS ENTERING THE CHAMBER SHALL BE ALIGNED WITH THE DUCTS ON THE OPPOSITE SIDE, SO THAT THE CABLE IS PULLED IN A STRAIGHT LINE
9. DUCTS SHALL APPROACH THE CHAMBER IN A STRAIGHT ALIGNMENT (HORIZONTAL OR VERTICAL) FOR A MINIMUM OF 3 METERS BEFORE THE WALL OPENING
10. CARRAIGEWAY COVERS AND FRAMES TO BE TO B.S EN 124.
11. THE DEPTH FROM GROUND LEVEL TO THE TOP OF WALL CONSTRUCTION SHALL BE 500mm IN CULVATED FIELDS AND GRASSED LANDS.
12. FINAL POSITION OF TRANSITION CHAMBERS SHALL BE AGREED WITH EIRGRID



Transition Chamber Detail - Section A

SCALE 1:20



Isometric : Chamber Arrangement

SCALE 1:20

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CLIENT

MKO

PROJECT
Knockshanvo Wind Farm
110kV Grid Connection

PROJECT NUMBER
05-783

SHEET NUMBER
05783-DR-125

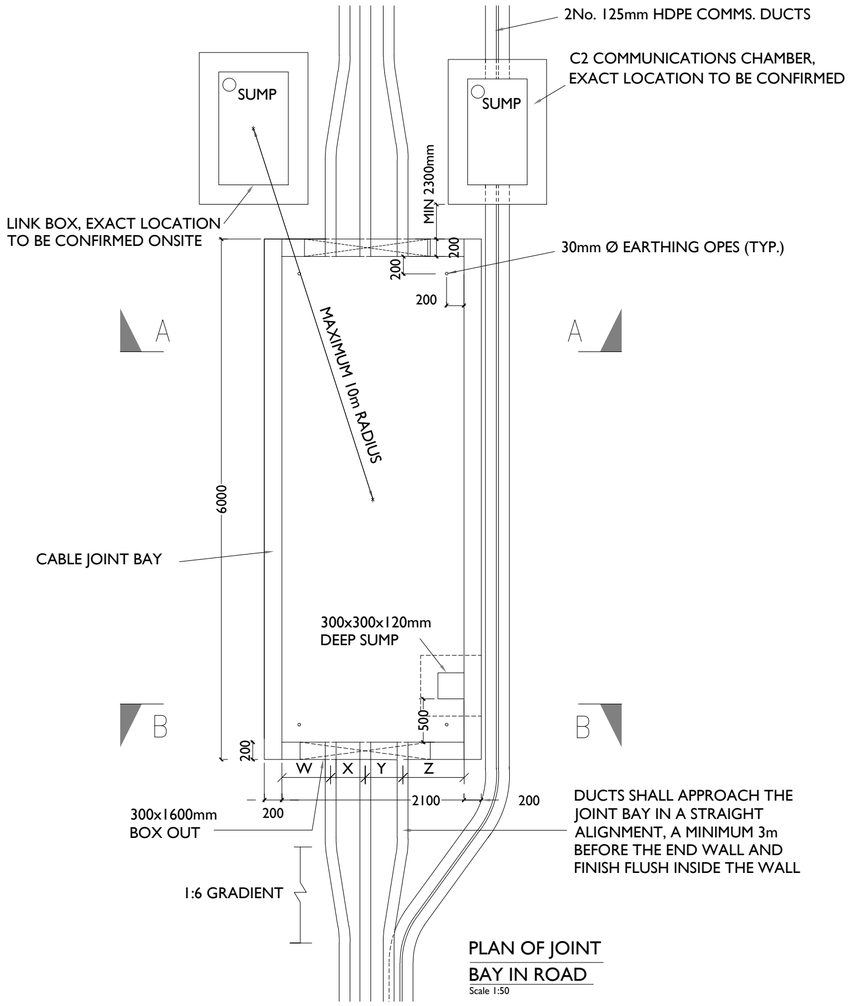
SHEET TITLE
Transition
Chamber Details

DRAWING STATUS
For Information

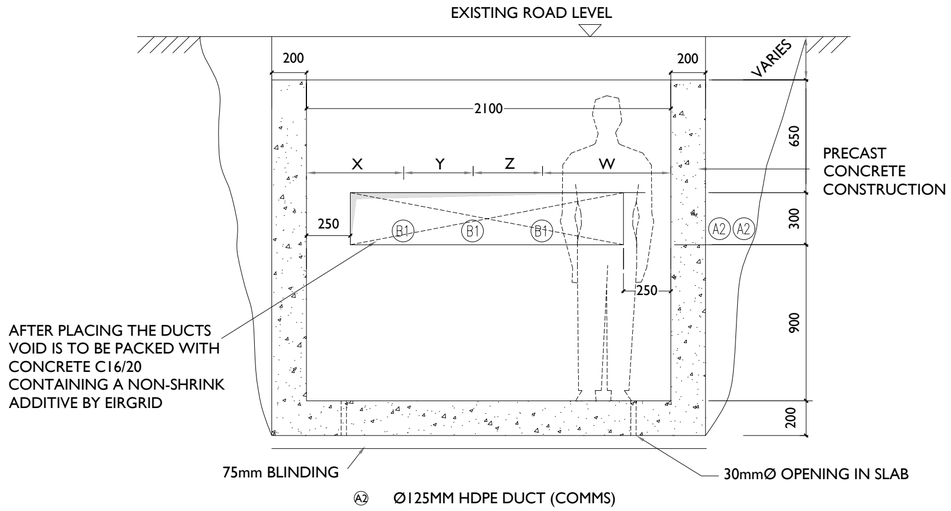
ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

ISO A2 420mm x 594mm



PLAN OF JOINT BAY IN ROAD
Scale 1:50



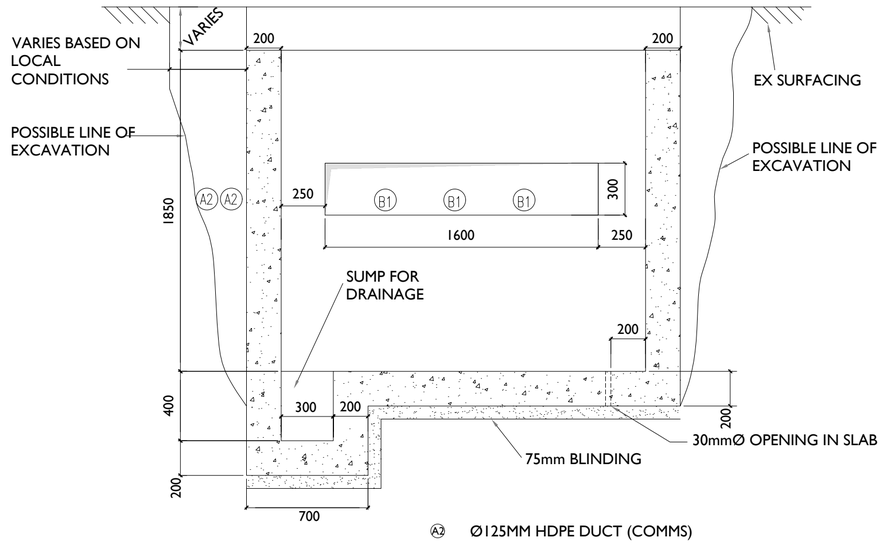
SECTION A-A
Scale 1:25

A2 Ø125MM HDPE DUCT (COMMS)

B1 Ø160MM HDPE DUCT

TABLE 1 - DUCT SEPERATION

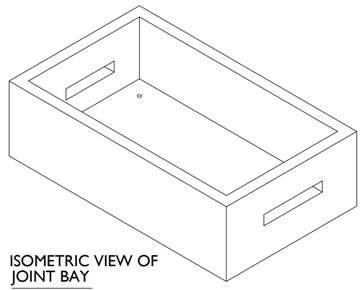
	X	Y	Z	W
110kV	560	400	400	760
220kV	375	675	675	375



A2 Ø125MM HDPE DUCT (COMMS)

B1 Ø160MM HDPE DUCT

SECTION B-B
Scale 1:25



ISOMETRIC VIEW OF JOINT BAY
N.T.S.

GENERAL NOTES:

1. THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE AND IS SUBJECT TO AMENDMENT.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT INFORMATION
3. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS DEFINED OTHERWISE.
5. STANDARD FOUNDATIONS ARE BASED ON THE FORMATION AT THE BASE OF THE EXCAVATION SHOWN BEING SUITABLE FOR A MINIMUM BEARING PRESSURE OF 100kN/m2. SUITABILITY OF STANDARD JOINT BAY FOUNDATIONS CAN ONLY BE CONFIRMED FOLLOWING GROUND INVESTIGATION. HAND VANE TESTS SHALL BE REQUIRED AS PER GI SPECIFICATION. WHERE SPECIFIED MINIMUM BEARING PRESSURE IS NOT ACHIEVABLE, AND WHERE PEAT IS ENCOUNTERED, THE CONTRACTOR SHALL REFER TO THE ENGINEER FOR GUIDANCE.
6. THE LENGTH OF BONDING LEAD LENGTH SHALL IN NO CASE EXCEED 10M. NO JOINTS IN BONDING CABLE ARE PERMITTED.
7. ALL EARTHING SHALL BE IN ACCORDANCE WITH ENA ER C55 AND EIRGRID/ESBN FUNCTIONAL SPECIFICATION
8. THE DEPTH FROM GROUND/ROAD LEVELTO THE TOP OF THE CONCRETE WALL SHALL BE
   A. 500MM - IN CULTIVATED FIELDS & GRASS LAND
   B. 300MM - IN PAVED ROADS AND GRASS VERGES
   C. 350MM - IN PAVED CITY ROADS AND GRASS VERGES
9. LINK BOX CHAMBERS TO BE POSITIONED AT THE EDGE OR OFF ROAD
10. LINK BOX CHAMBERS AND C2 COMM CHAMBERS FINAL POSITIONING TO BE AGREED WITH EIRGRID PRIOR TO INSTALLATION

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

MKO

CONSULTANTS

NOTES: -

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

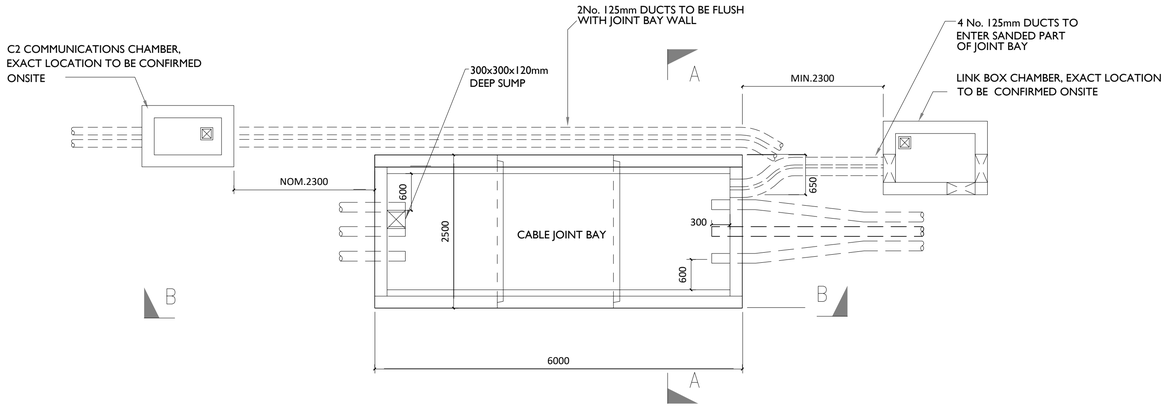
Joint Bay Section Detail

SHEET NUMBER

05783-DR-126

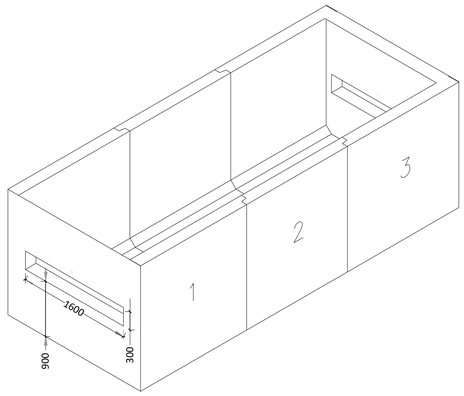
Project Management Initials: Designer: JC Checked: GC Approved: DB

ISO A1 594mm x 841mm



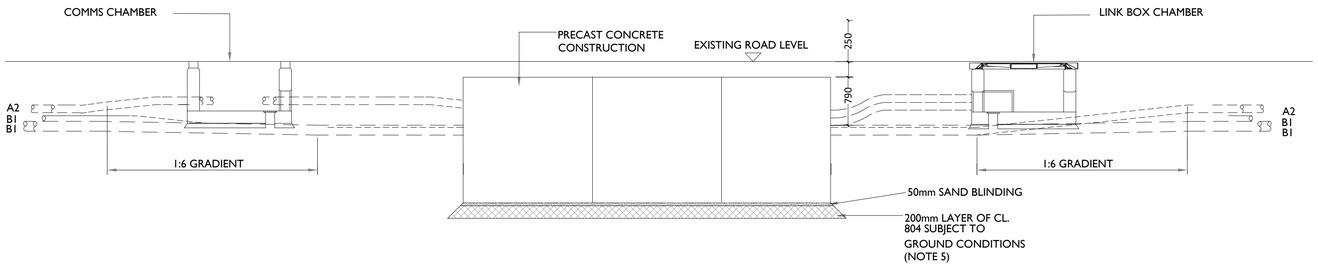
PLAN VIEW

SCALE 1:50



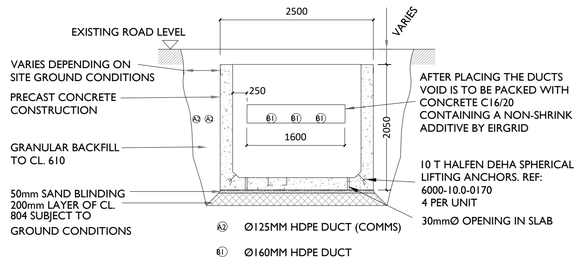
ISOMETRIC VIEW PRECAST CHAMBER

SCALE 1:50



SECTION B-B

SCALE 1:50



SECTION A-A

SCALE 1:50

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

CLIENT

CONSULTANTS

NOTES: -

See General Notes

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

110kV Joint Bay General Arrangement and Details

SHEET NUMBER

05783-DR-127

Project Management Initials: Designer: JC Checked: GC Approved: DB

ISO A2 420mm x 594mm

Culvert Crossing Schedule

Culvert No.	Dimensions (mm)	Material	Approx. Cover (mm)	Proposed Crossing Methodology	Photo
1.	350 Ø	HDPE	250	UNDERCROSSING	
2.	300 Ø	HDPE	200	UNDERCROSSING	
3.	400mm Wide x 600mm Deep	Stone	500	UNDERCROSSING	
4.	300 Ø	HDPE	500	UNDERCROSSING	
5.	300 Ø	HDPE	200	UNDERCROSSING	

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PROJECT

Knockshanvo Wind Farm
110kV Grid Connection

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NOTES: -

- No structural surveys have been carried out and the proposals are subject to detailed design.
- Crossings are in compliance with ESBN & Eirgrid specification requirements for shallow formation, min depth, etc.
- Additional culverts may be encountered on the route.

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.11.23	Issued for Planning

PROJECT NUMBER

05-783

SHEET TITLE

Proposed Culvert Crossings

SHEET NUMBER

05783-DR-240

Project Management Initials: Designer: JC Checked: GC Approved: DB