

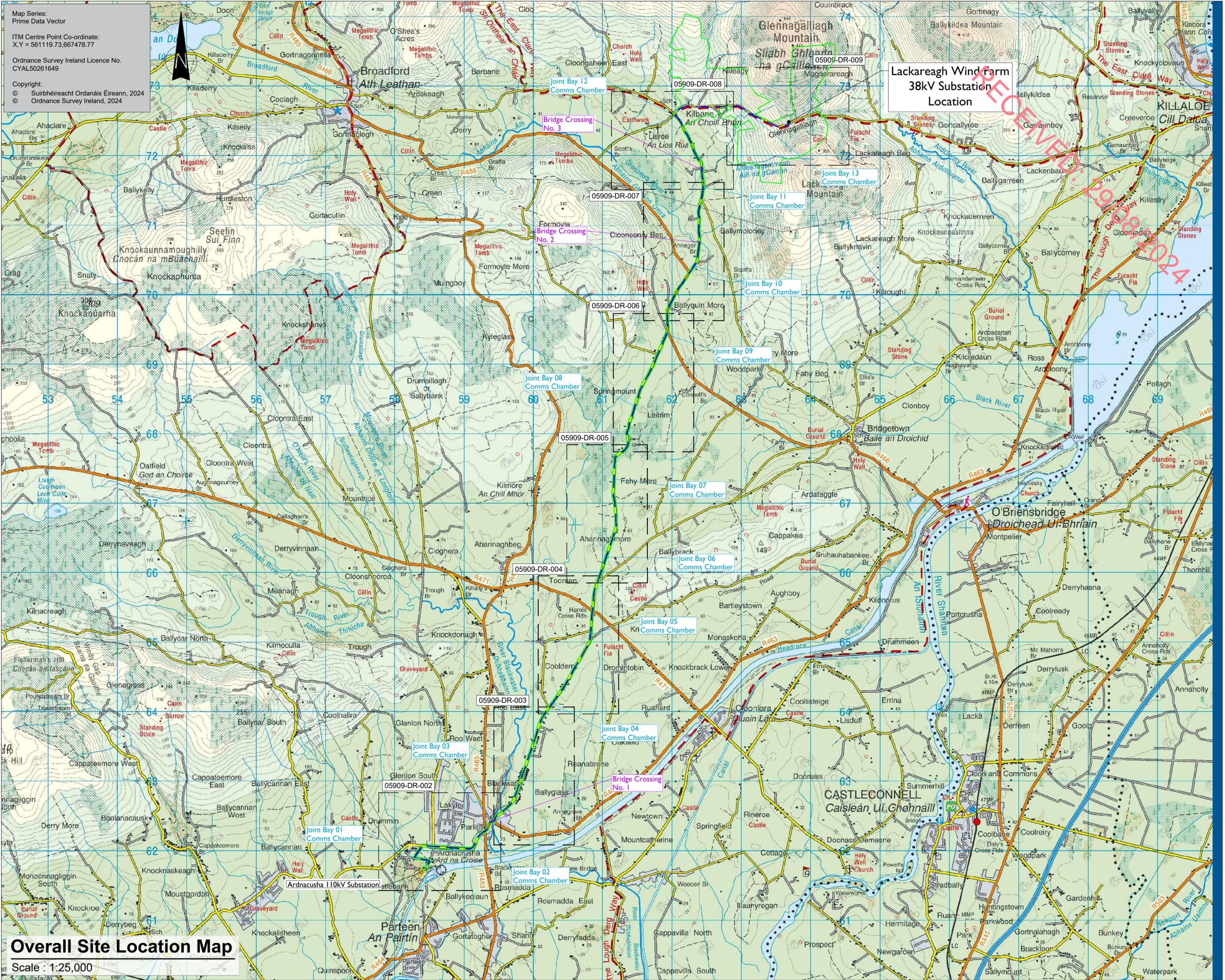
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APPENDIX 4-9

TLI GRID DRAWING PACK

ISO A1 594mm x 841mm
 Project Management Initials: Designer: RR Checked: JVP Approved: DB
 Map Series: Prime Data Vector
 ITM Centre Point Co-ordinate: X,Y = 56119.73,667478.77
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Overall Site Location Map
 Scale : 1:25,000

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PROJECT
 Lackareagh Wind Farm
 38kV Grid Connection

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NOTES: -

LEGEND: -

- Proposed UGC Route (14.7km) —
- EIA Boundary shown thus —
- Substation denoted as

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NO	DATE	DESCRIPTION
P3	13.08.24	Issued for EIA
P2	23.01.24	Issued for Planning
P1	14.07.23	Issued for Planning
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PROJECT NUMBER
 05-909

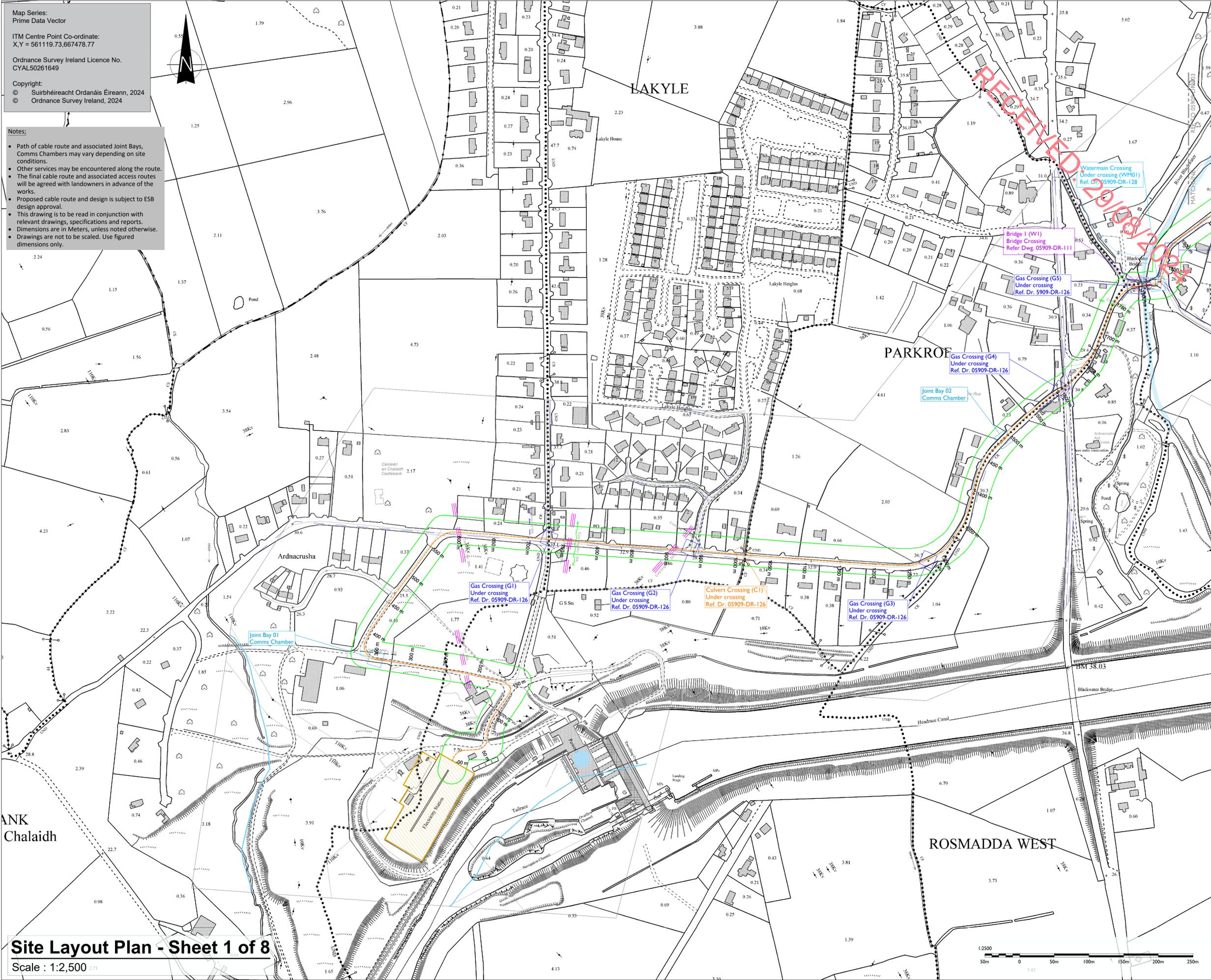
SHEET TITLE
 Overall Site Location Map

SHEET NUMBER
 05909-DR-001

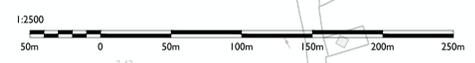
ISO A1 594mm x 841mm
 Project Management Initials: Designer: RR Checked: JvdP Approved: DB

Map Series:
 Prime Data Vector
 ITM Centre Point Co-ordinate:
 X,Y = 561119.73,667478.77
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Notes:
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 • This drawing is to be read in conjunction with relevant drawings, specifications and reports.
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 • Drawings are not to be scaled. Use figured dimensions only.



Site Layout Plan - Sheet 1 of 8
 Scale : 1:2,500



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PROJECT
 Lackareagh Wind Farm
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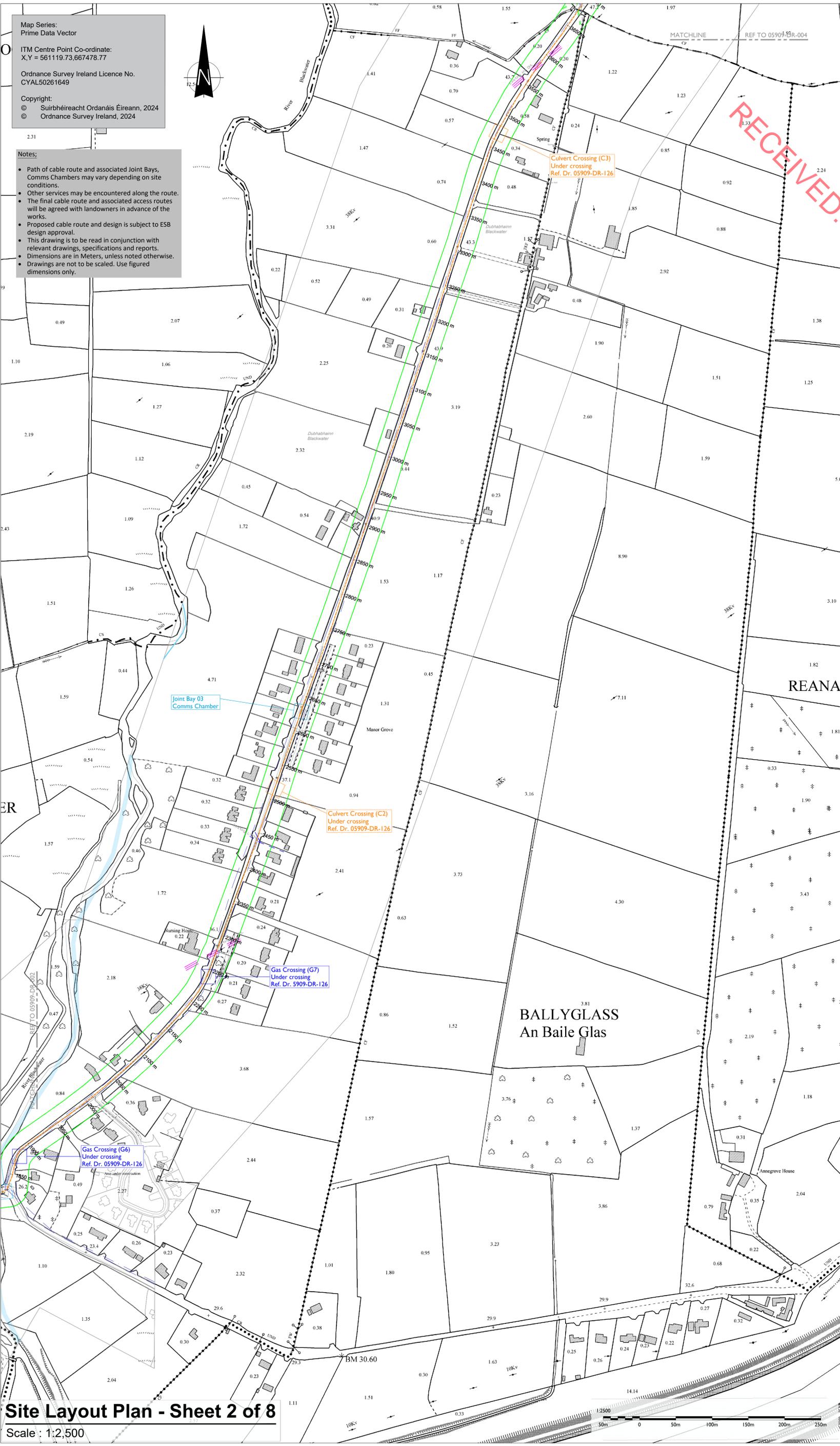
NOTES:
 See notes window

LEGEND:
 Proposed UGC Route (14.7km) ————
 Existing ESB OHL & UGC HV Network ————
 Existing ESB LV/MV Networks shown thus - - - - -
 Existing ESB LV/MV Networks shown thus - - - - -
 Existing Gas Networks Ireland ————
 Existing Rivers & Streams ————
 Recorded Architectural Heritage Building (Listed Building) shown thus ●
 Existing Irish Water Utility Network shown thus - - - - -
 EIAR Boundary shown thus ————

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P3	13.08.24	Issued for EIAR
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P1	14.07.23	Issued for Planning
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PROJECT NUMBER
 05-909
SHEET TITLE
 Site Layout Plan
 Sheet 1 of 8
SHEET NUMBER
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Map Series:
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LEGEND: -

Proposed UGC Route (14.7km)	
Existing ESB OHL & UGC HV Network	
Existing ESB LV/MV Networks shown thus	
Existing ESB UG LV/MV Networks shown thus	
Existing Gas Networks Ireland	
Existing Rivers & Streams	
Existing Irish Water Utility Network shown thus	
EIAR Boundary shown thus	

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SHEET TITLE
Site Layout Plan Sheet 2 of 8

SHEET NUMBER
05909-DR-003

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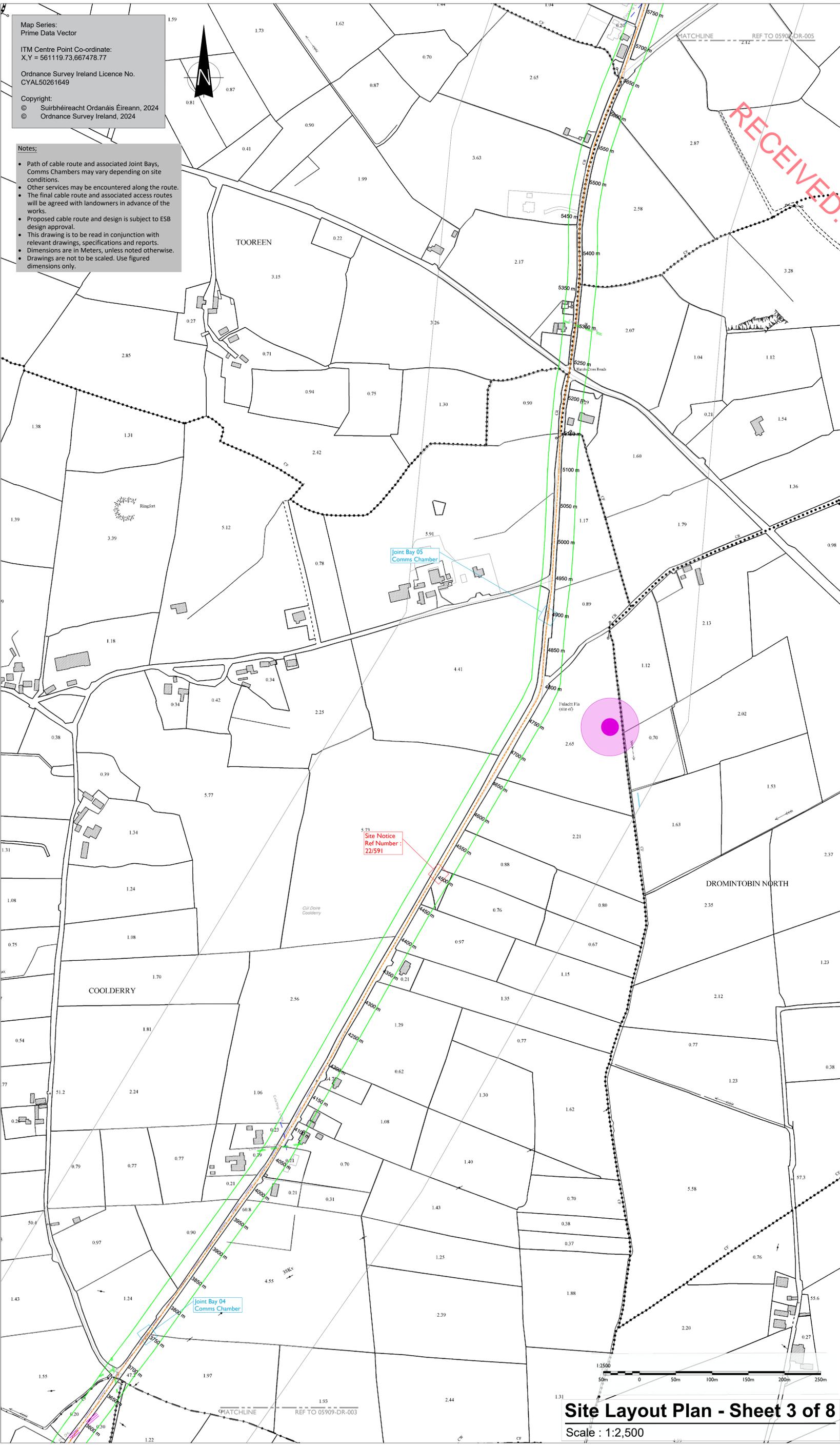
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- Notes:
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- LEGEND: -
- Proposed UGC Route (14.7km)
 - Existing ESB OHL & UGC HV Network
 - Existing ESB LV/MV Networks shown thus
 - Existing ESB UG LV/MV Networks shown thus
 - Existing Rivers & Streams
 - Recorded Monuments & associated Zone of Notification denoted thus
 - Existing Irish Water Utility Network shown thus
 - EIAR Boundary shown thus

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PROJECT
**Lackareagh Wind Farm
38kV Grid Connection**

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SHEET TITLE
**Site Layout Plan
Sheet 3 of 8**

SHEET NUMBER
05909-DR-004

Site Layout Plan - Sheet 3 of 8
Scale : 1:2,500

Map Series:
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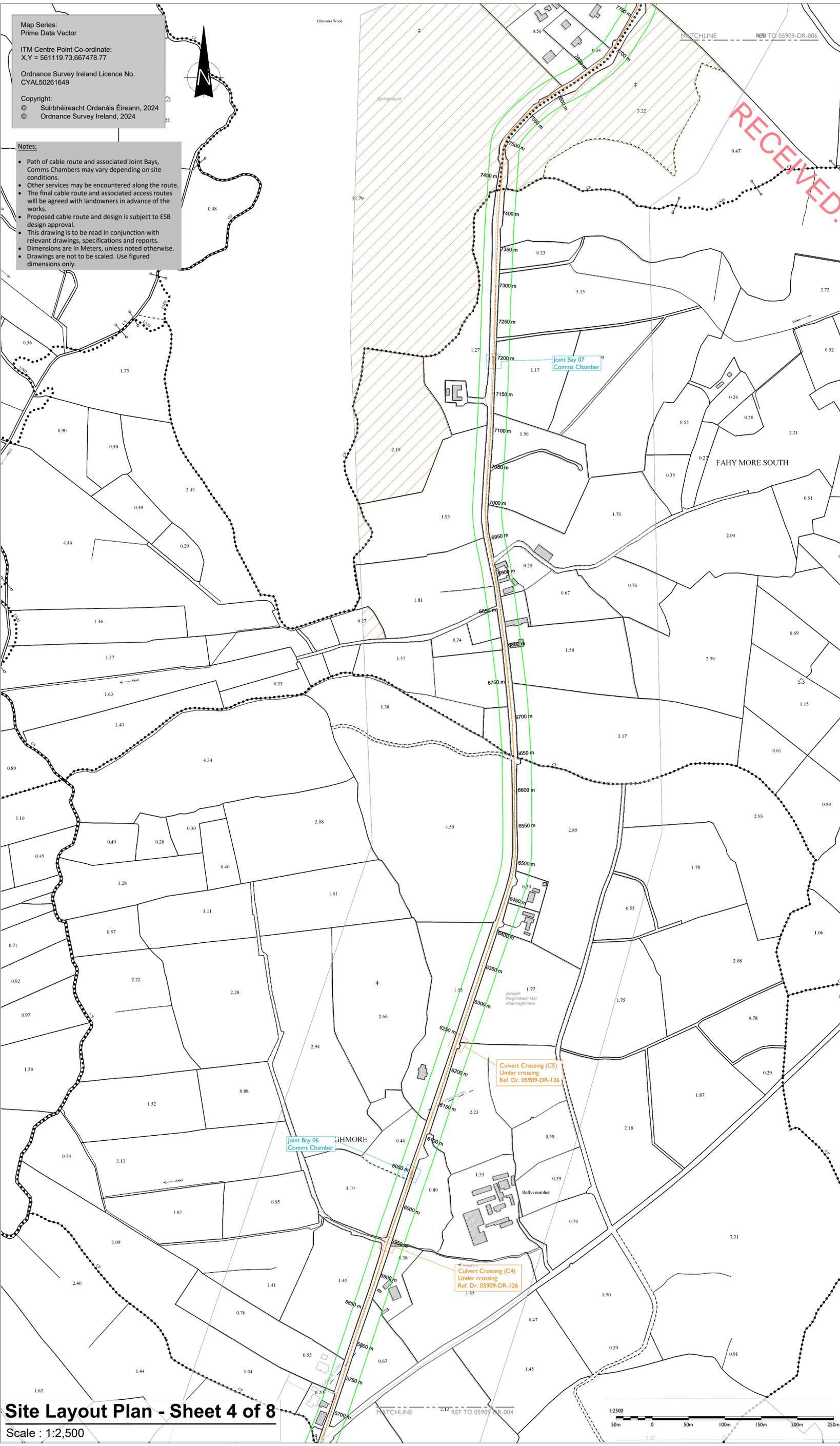
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- LEGEND: -
- Proposed UGC Route (14.7km)
 - Existing ESB LV/MV Networks shown thus
 - Existing ESB UG LV/MV Networks shown thus
 - Existing Rivers & Streams
 - Special Area of Conservation
 - EIAR Boundary shown thus

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PROJECT
**Lackareagh Wind Farm
38kV Grid Connection**

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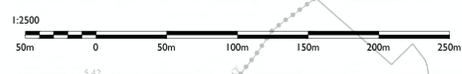
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P1	14.07.23	Issued for Planning

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SHEET TITLE
**Site Layout Plan
Sheet 4 of 8**

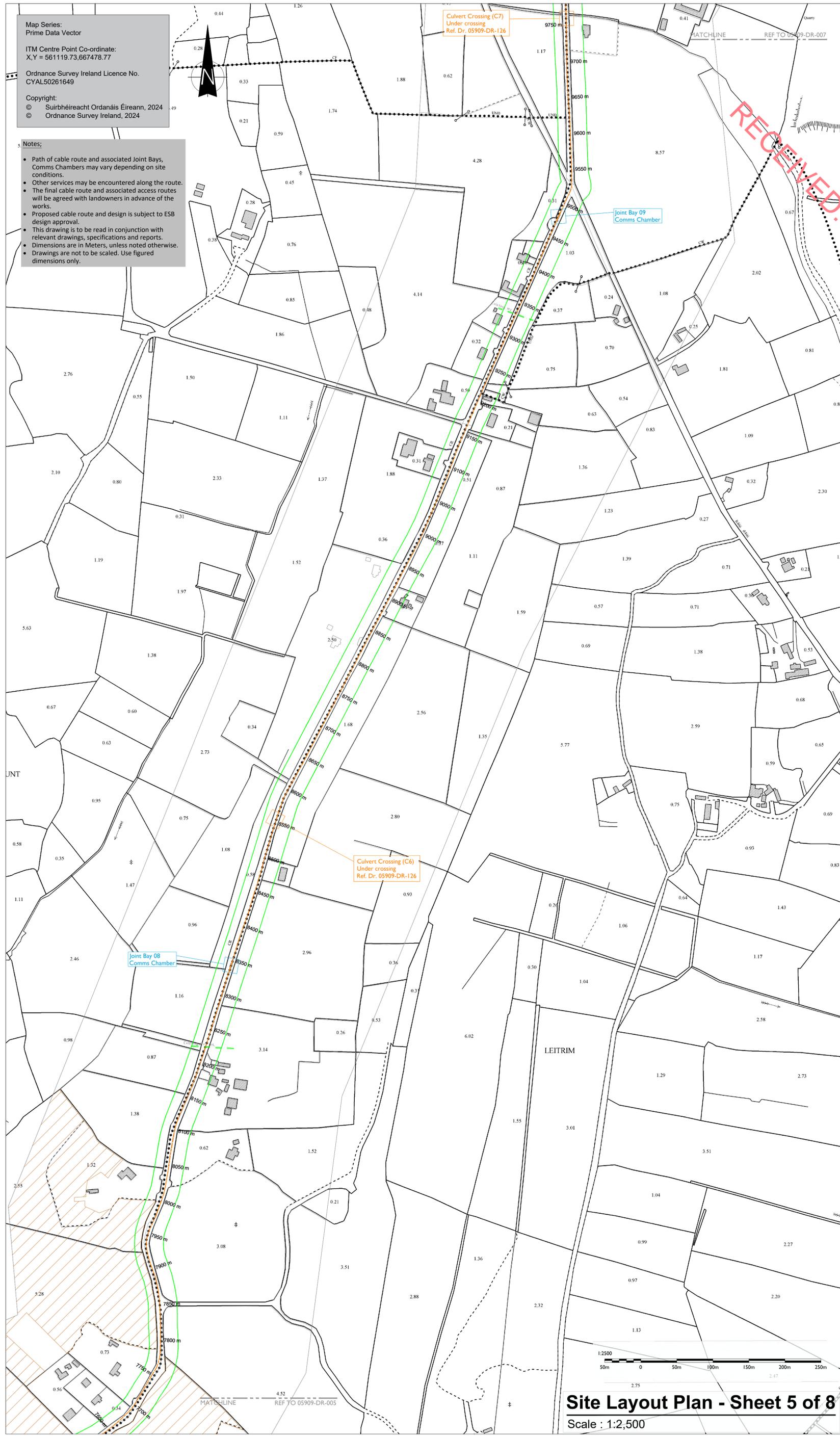
SHEET NUMBER
05909-DR-005

Site Layout Plan - Sheet 4 of 8
Scale : 1:2,500



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LEGEND: -

Proposed UGC Route (14.7km)	
Existing ESB LV/MV Networks shown thus	
Existing ESB UG LV/MV Networks shown thus	
Existing Gas Networks Ireland	
Existing Rivers & Streams	
Special Area of Conservation	
EIAR Boundary shown thus	

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PROJECT
Lackareagh Wind Farm 38kV Grid Connection

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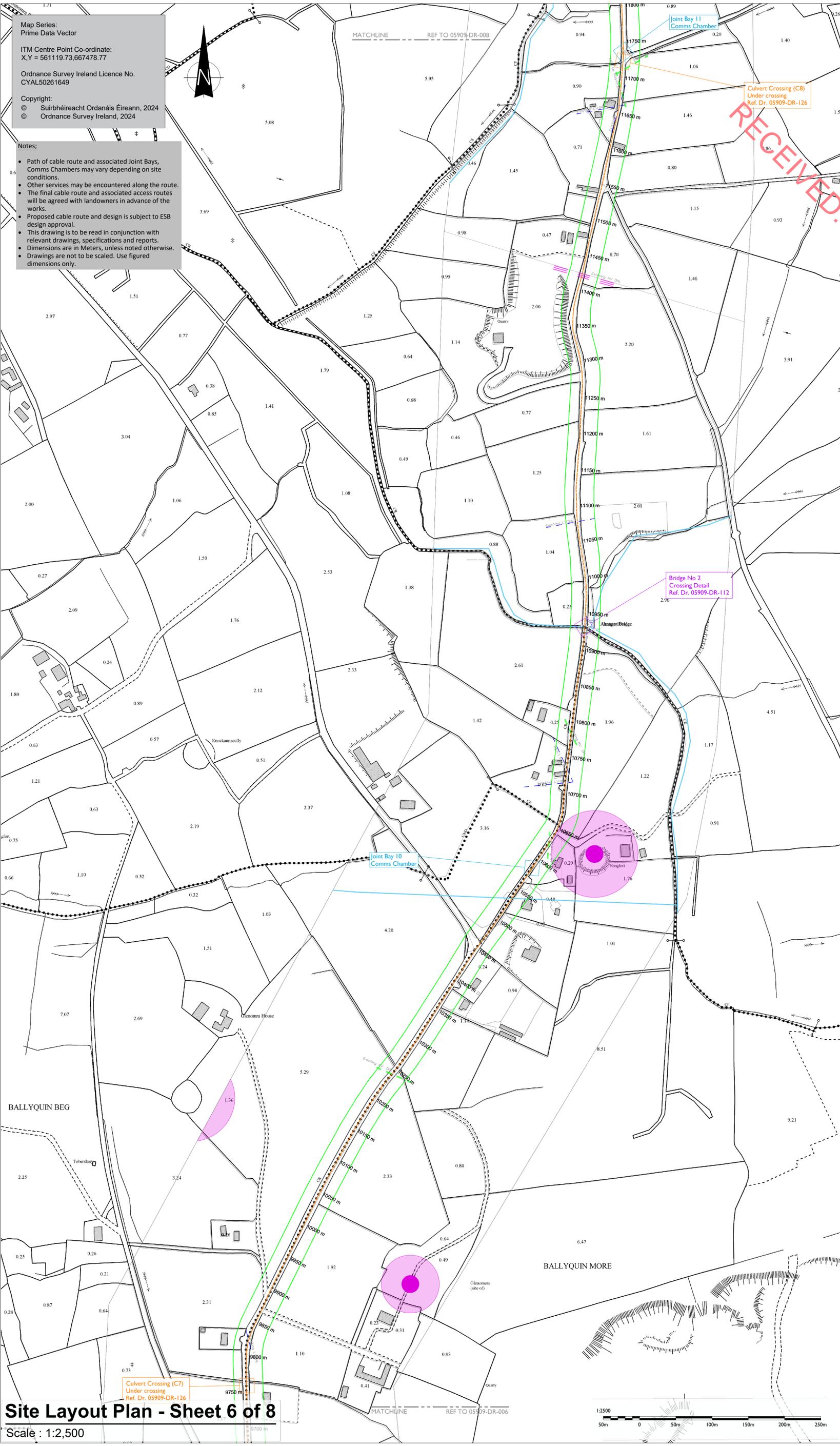
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P1	14.07.23	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER
05-909

SHEET TITLE
Site Layout Plan
Sheet 5 of 8

SHEET NUMBER
05909-DR-006

Site Layout Plan - Sheet 5 of 8
Scale : 1:2,500



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 - Drawings are not to be scaled. Use figured dimensions only.

LEGEND: -

Proposed UGC Route (14.7km)	
Existing ESB OHL & UGC HV Network	
Existing ESB LV/MV Networks shown thus	
Existing ESB UG LV/MV Networks shown thus	
Existing Rivers & Streams	
Recorded Monuments & associated Zone of Notification denoted thus	
EIAR Boundary shown thus	

NOTES: -
See notes window

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PROJECT
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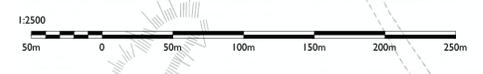
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P1	14.07.23	Issued for Planning
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PROJECT NUMBER
05-909

SHEET TITLE
Site Layout Plan Sheet 6 of 8

SHEET NUMBER
05909-DR-007

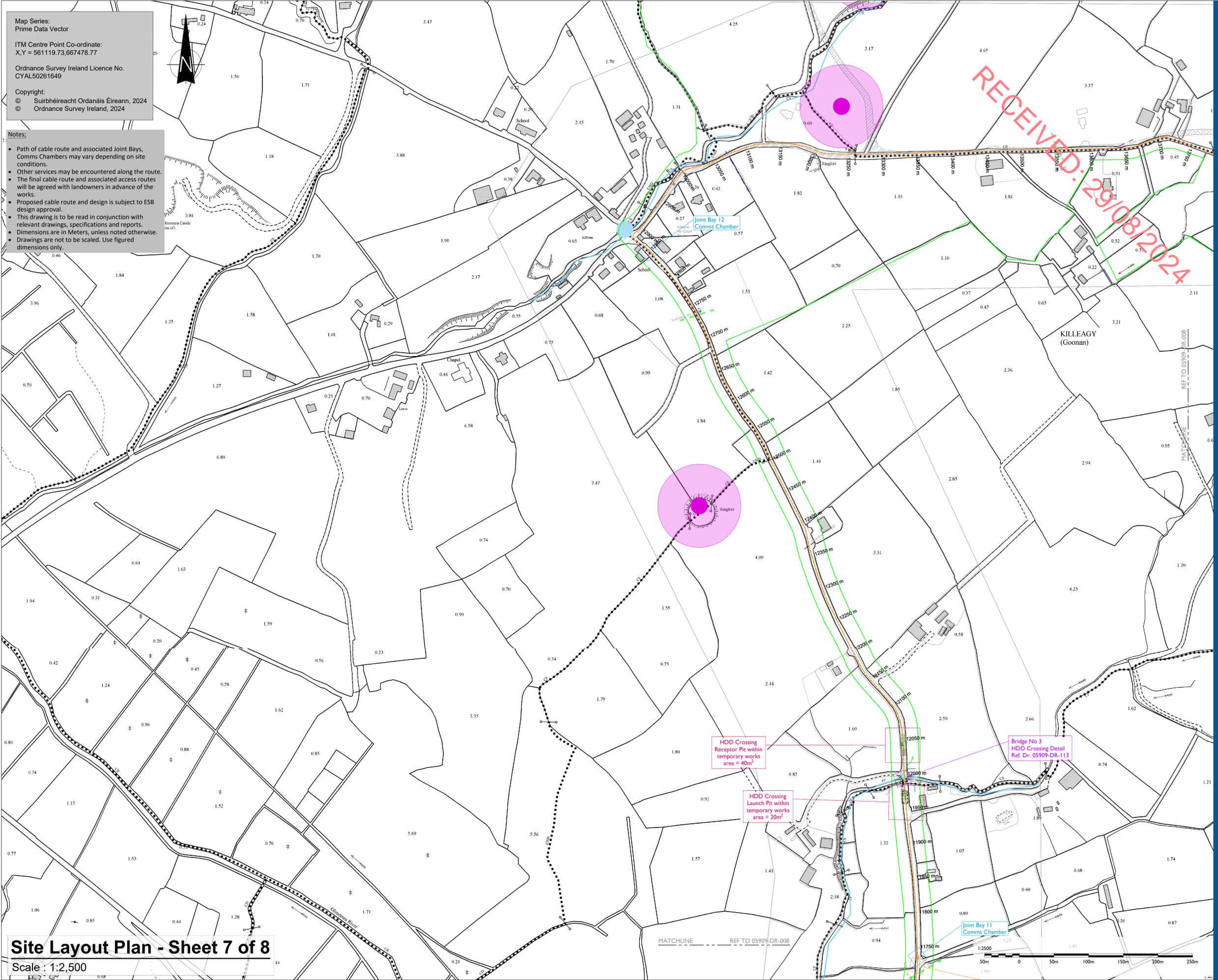


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Project Management Initials: Designer: RR Checked: JvdP Approved: DB

Map Series:
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ITM Centre Point Co-ordinate:
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Site Layout Plan - Sheet 7 of 8
Scale: 1:2,500

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PROJECT
**Lackareagh Wind Farm
38kV Grid Connection**

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NOTES: -
See notes window

LEGEND: -
Proposed UGC Route (14.7km) ———
Existing ESB LV/MV Networks shown thus - - - - -
Existing ESB UG LV/MV Networks shown thus - - - - -
Existing Gas Networks Ireland shown thus - - - - -
Existing Rivers & Streams ———
Recorded Monuments & associated Zone of Notification denoted thus (circle with cross)
Recorded Architectural Heritage Building (Listed Building) shown thus (circle with dot)
EIAR Boundary shown thus (dotted line)
Proposed New Road Layout shown thus (hatched pattern)
Proposed Update to Existing Roads shown thus (hatched pattern)

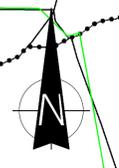
ISSUE/REVISION

NO.	DATE	DESCRIPTION
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P2	23.01.24	Issued for Planning
P1	14.07.23	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER
05-909
SHEET TITLE
**Site Layout Plan
Sheet 7 of 8**
SHEET NUMBER
05909-DR-008

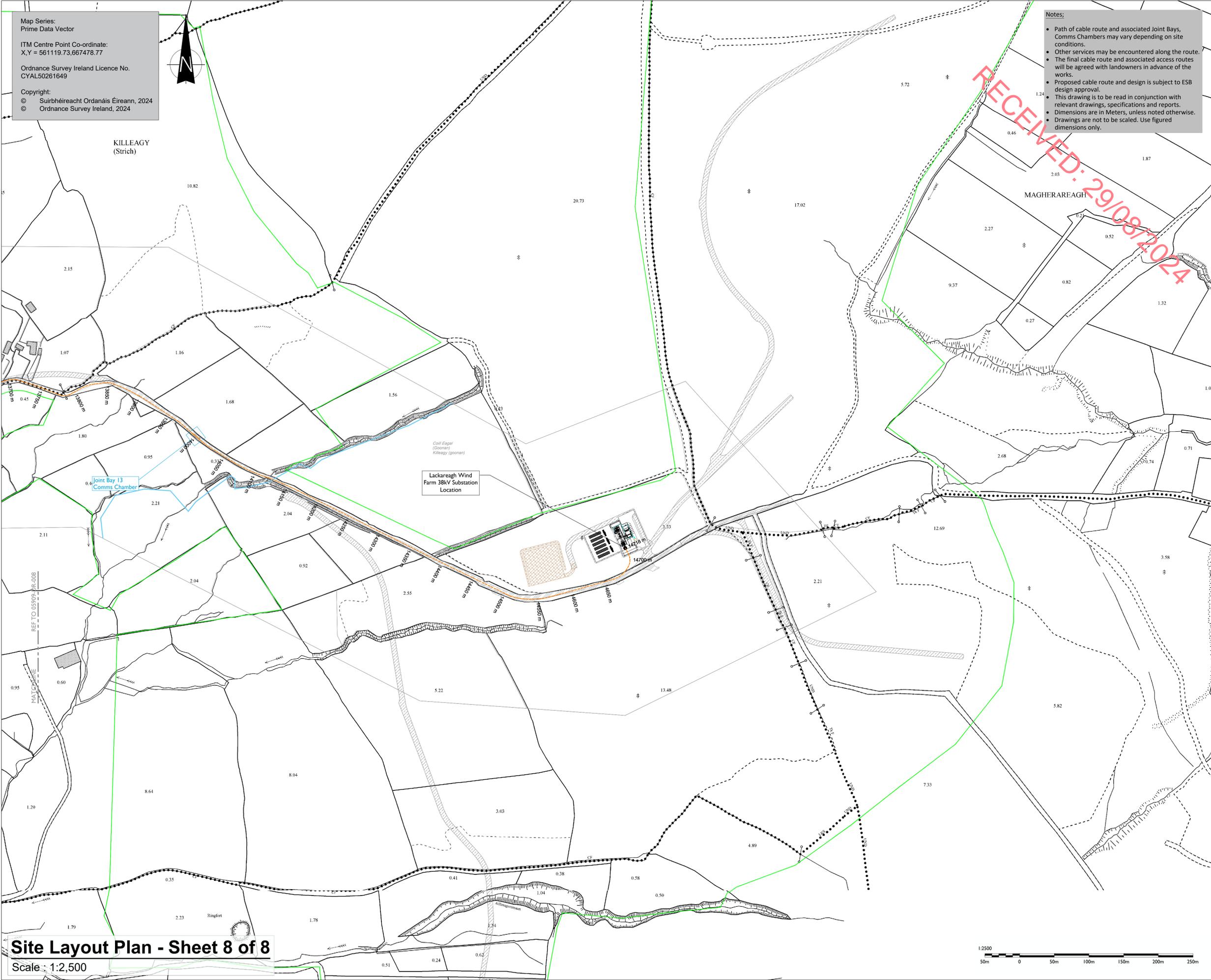
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PROJECT
**Lackareagh Wind Farm
38kV Grid Connection**

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NOTES: -
See notes window

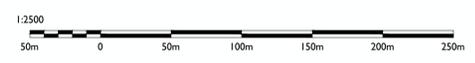
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Proposed UGC Route (14.7km) [Orange dashed line]
Existing Rivers & Streams [Blue line]
EIAR Boundary shown thus [Green line]
Proposed New Road Layout shown thus [Hatched area]
Proposed Update to Existing Roads shown thus [Hatched area]
Proposed Borrow Pit shown thus [Cross-hatched area]

ISSUE/REVISION

NO.	DATE	DESCRIPTION
P4	13.08.24	Issued for EIAR
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PROJECT NUMBER
05-909
SHEET TITLE
**Site Layout Plan
Sheet 8 of 8**
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05909-DR-009

Site Layout Plan - Sheet 8 of 8
Scale: 1:2,500



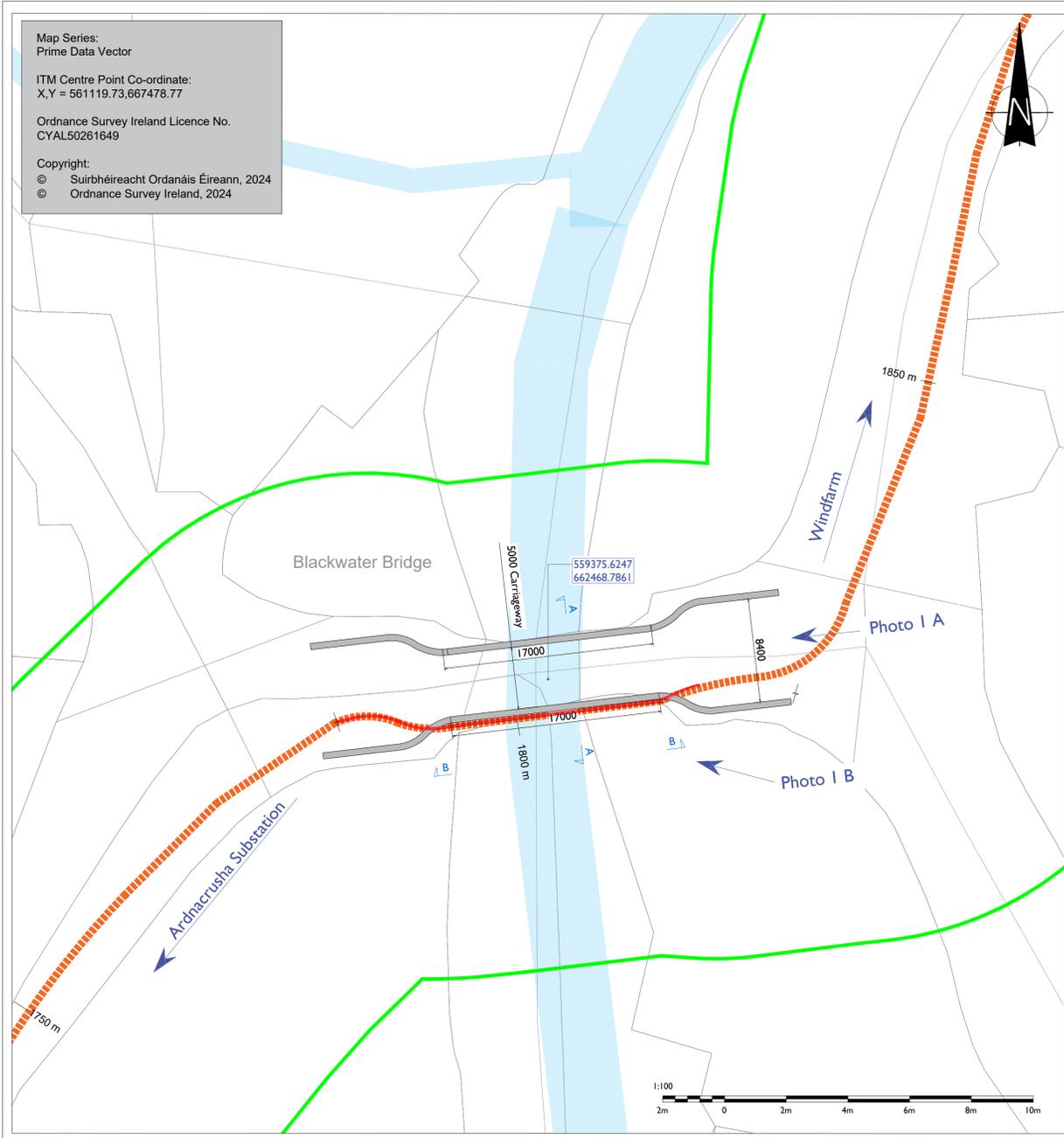
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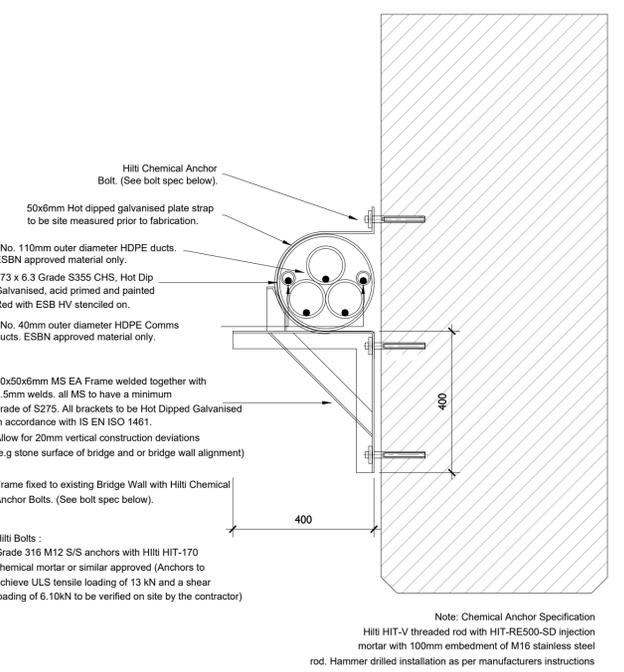
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Scale : 1:100



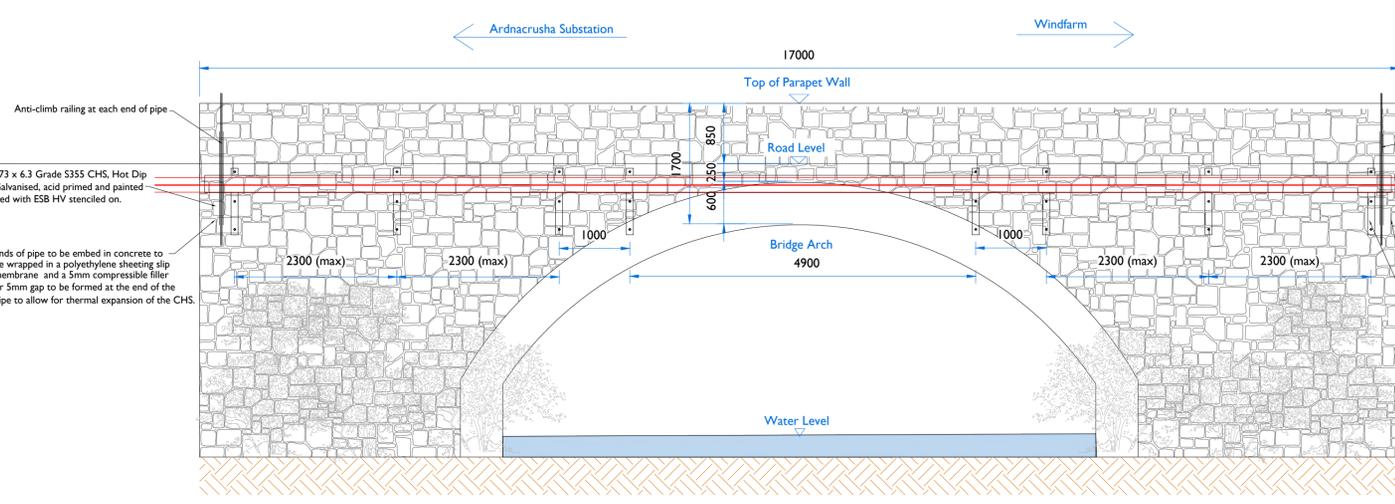
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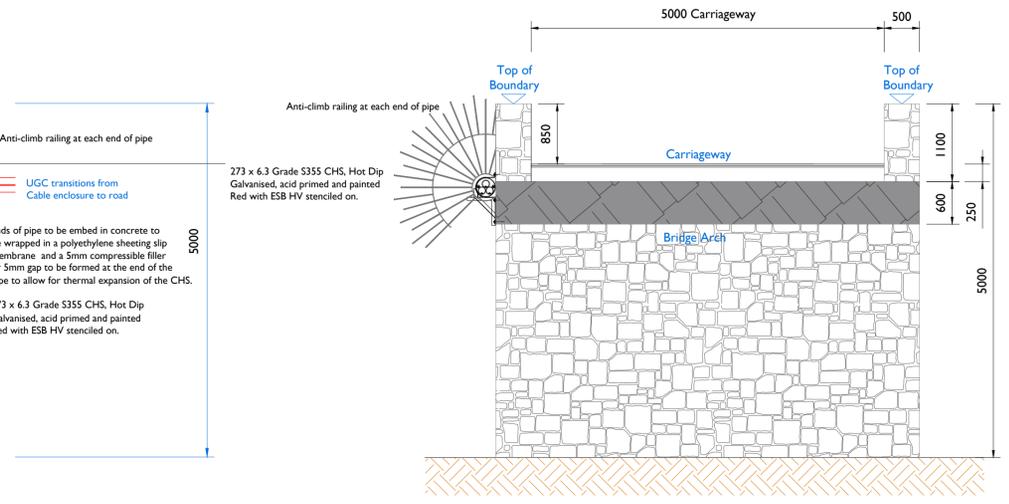
Photo No 1 B



Typical Parapet Detail
Scale : 1:10



Section B-B
Scale : 1:50



Section A-A
Scale : 1:50



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RG24 8UP, UK
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PROJECT

**Lackareagh Wind Farm
38kV Grid Connection**

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NOTES:-

- Principal bridge inspection surveys have been carried out and the proposals are subject to detailed design. Please refer to document BR286-01-Blackwater Br PI for details.
- Bridge crossing designs have been submitted to Clare Co. Council for review.
- Drawings are in compliance with ESBN specification requirements for shallow formation, bridge crossings, etc.

LEGEND:-

Proposed UGC Route (14.7km) —

Existing Rivers & Streams —

EIAR Boundary shown thus —

ISSUE/REVISION

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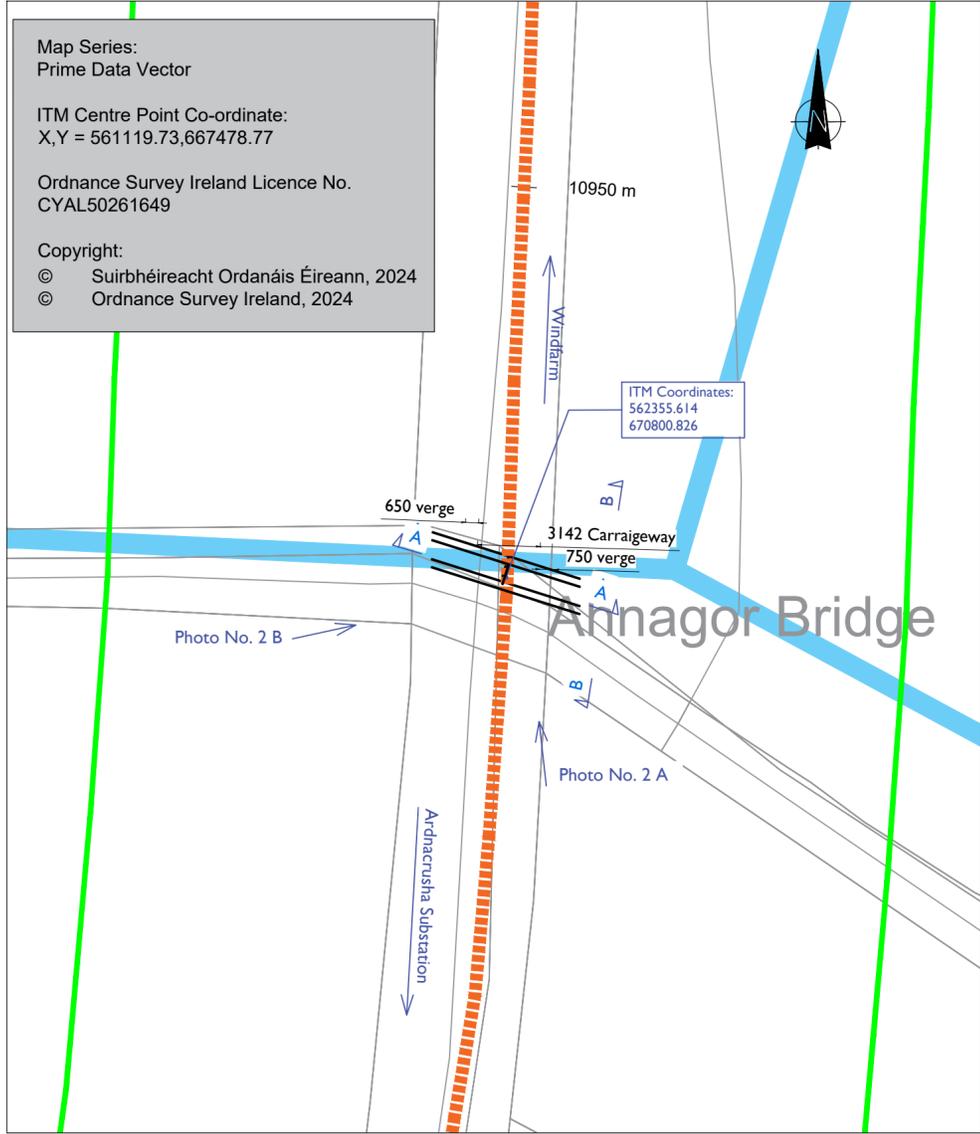
SHEET TITLE
Bridge I
Proposed Crossing Details

SHEET NUMBER
05909-DR-1 | 1

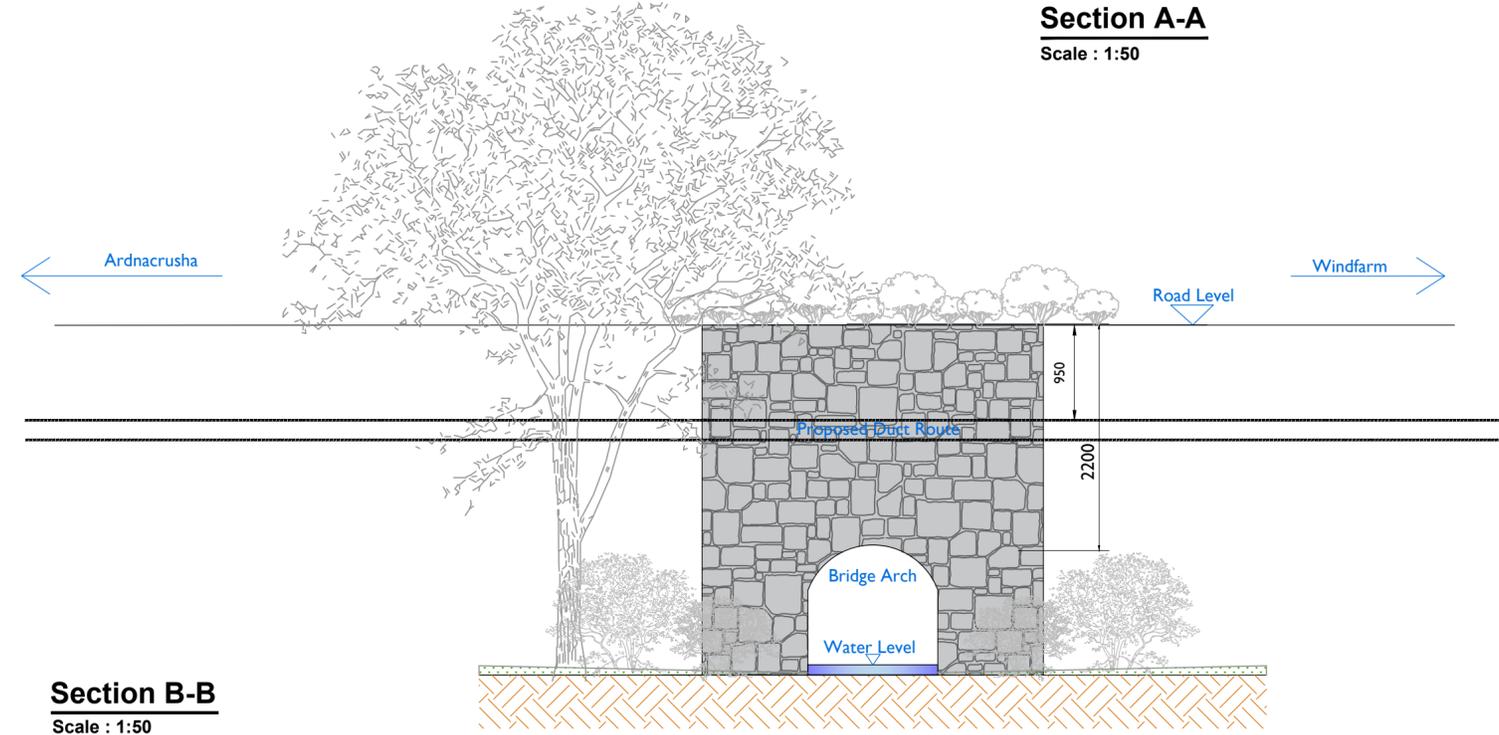
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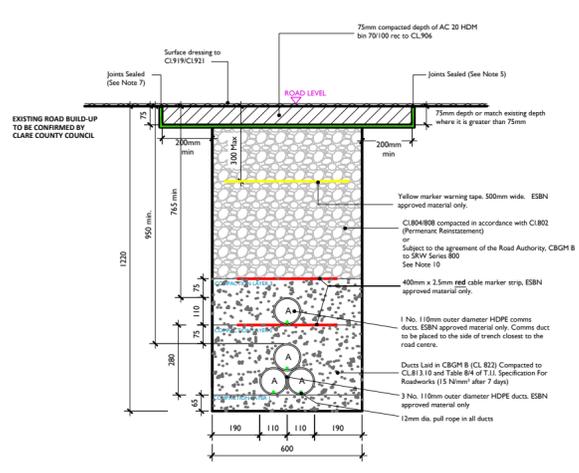
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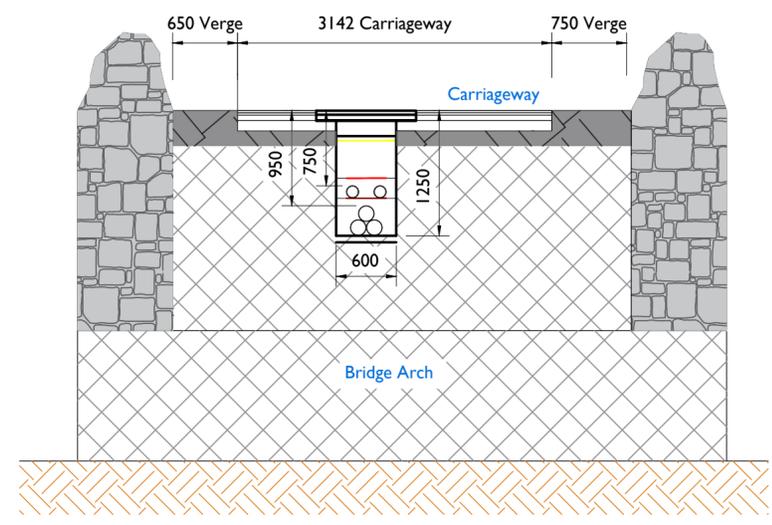
Plan View Bridge No 2
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Section B-B
Scale : 1:50



Typical Section Through Permanent Reinstatement of Longitudinal Opening in Dressed Rural Unbound Roadway
Scale : 1:20



Section A-A
Scale : 1:50

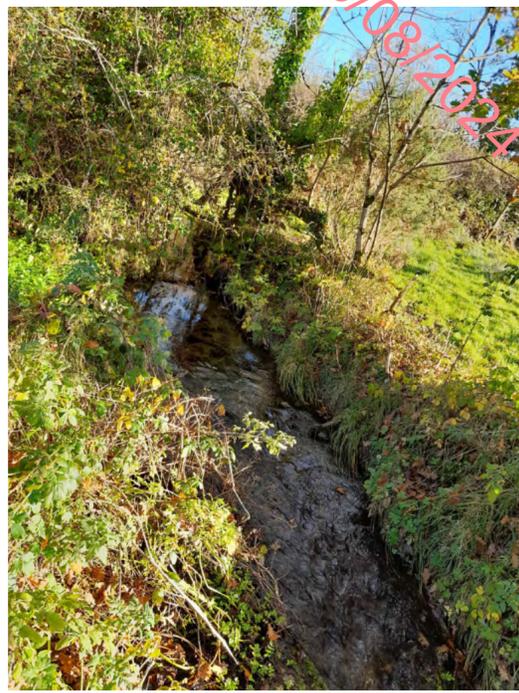


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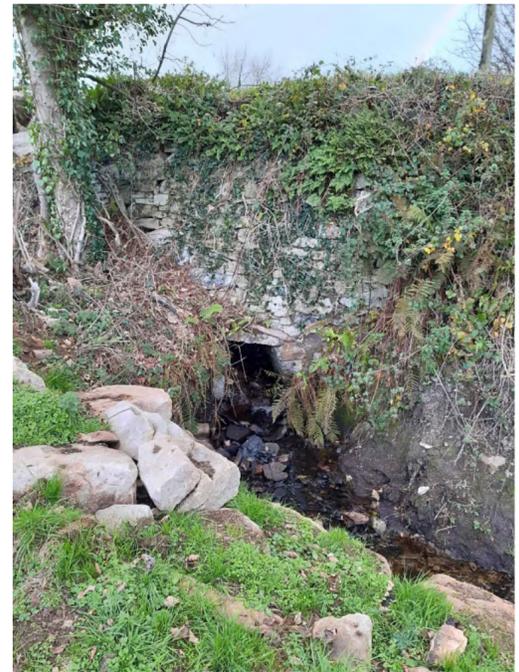
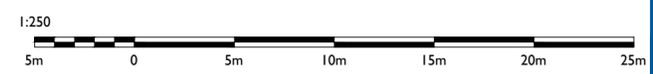


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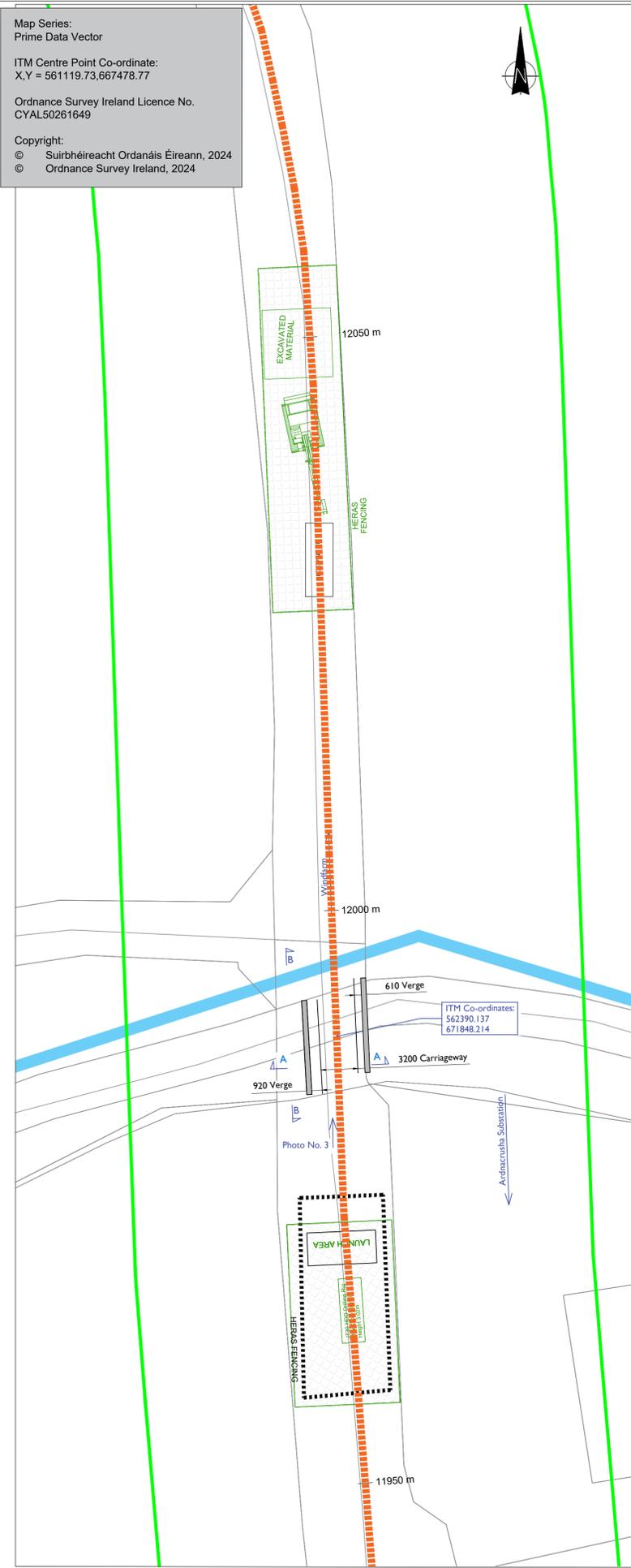
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Map Series:
Prime Data Vector

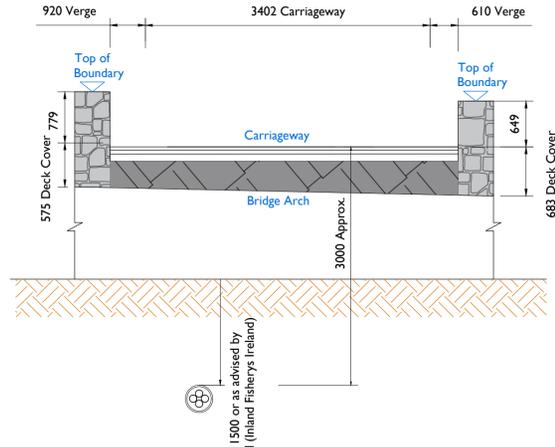
ITM Centre Point Co-ordinate:
X,Y = 561119.73,667478.77

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CYAL50261649

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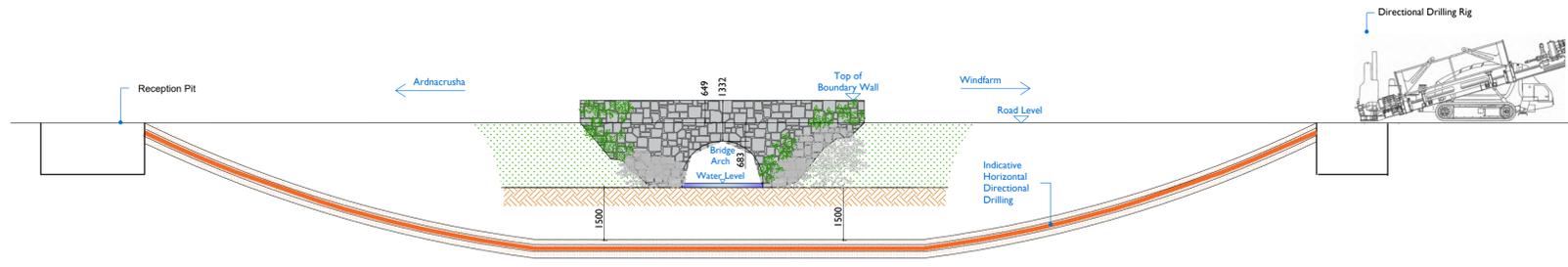
Plan View Bridge No 3
Scale : 1:250



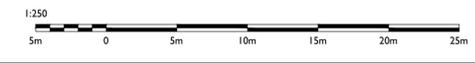
Section A-A
Scale : 1:50



Photo No. 3



Section B-B
Scale : 1:100



tli GROUP

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PROJECT

**Lackareagh Wind Farm
38kV Grid Connection**

CLIENT

edf renewables

CONSULTANTS

MKO

NOTES: -

- No structural bridge surveys have been carried out and the proposals 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: -

- Proposed UGC Route (14.7km) —
- Existing Rivers & Streams —
- Existing ESB LV/MV Networks shown thus - - -
- EIAR Boundary shown thus —

ISSUE/REVISION

NO	DATE	DESCRIPTION
P3	13.08.24	Issued for EIAR
P2	23.01.24	Issued for Planning
P1	14.07.23	Issued for Planning
I/R	DATE	DESCRIPTION

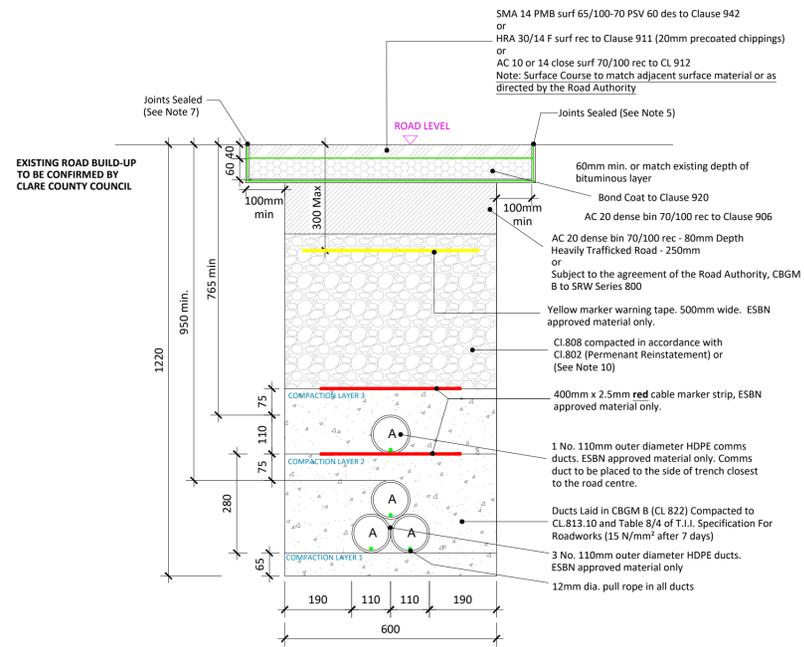
PROJECT NUMBER
05-909

SHEET TITLE
Bridge 3
Proposed Crossing Details

SHEET NUMBER
05909-DR-113

Permanent Reinstatement

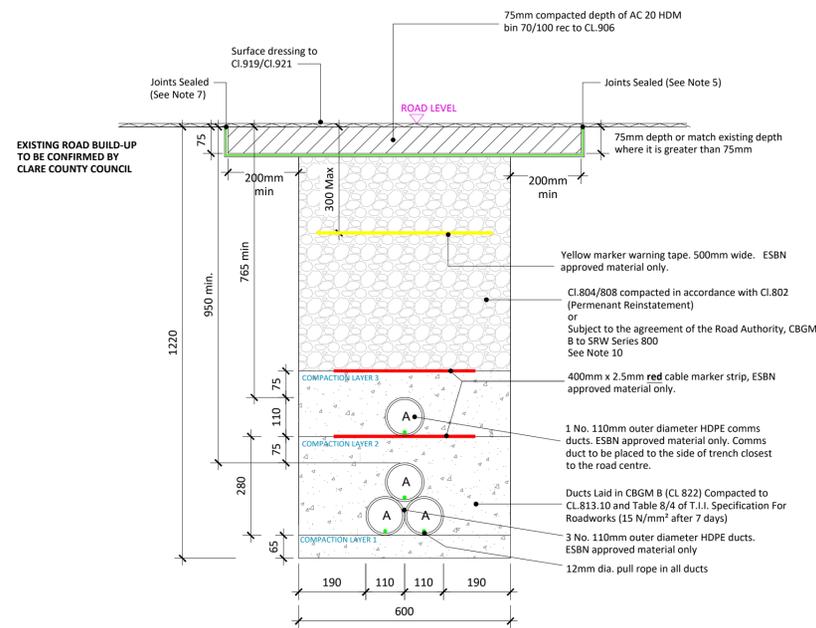
Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD4



Typical Section Through Permanent Reinstatement of Longitudinal Opening in Roadway

SCALE 1:10

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



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

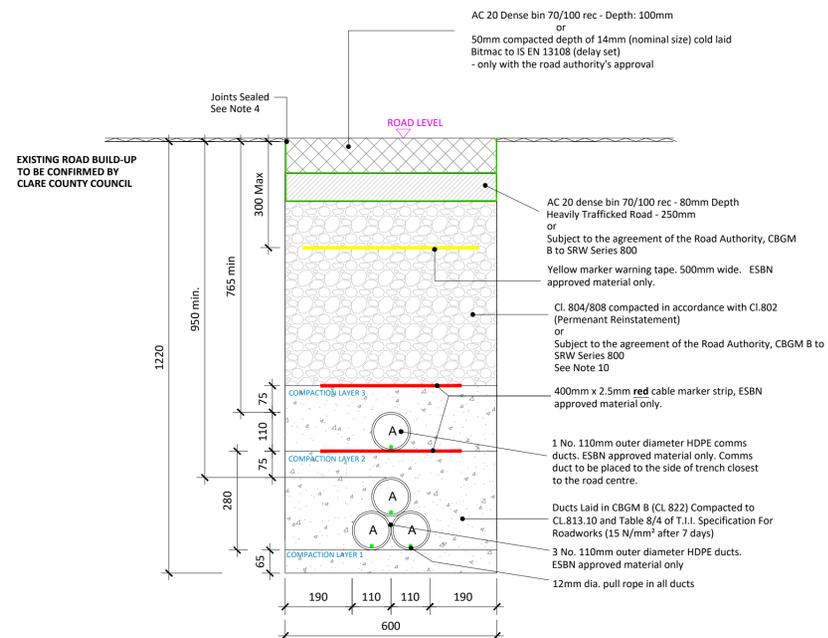
SCALE 1:10

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

- Note:
- 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.
 - 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.
 - Where a temporary surface has been used, material shall be mowed out to the depth specified in this drawing. The new permanent surface shall be machined laid and mechanically compacted with a vibrating roller.
 - 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).
 - Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
 - Clause 808 or Cement Bound Granular Material surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
 - 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.
 - For roads without asphalt concrete surface (e.g. may be CI.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.
 - On highly trafficked roads services must have a minimum cover of 750mm.
 - Where required by the Road authority the trench may be reinstated with a Cement Bound Granular Material.

Temporary Reinstatement

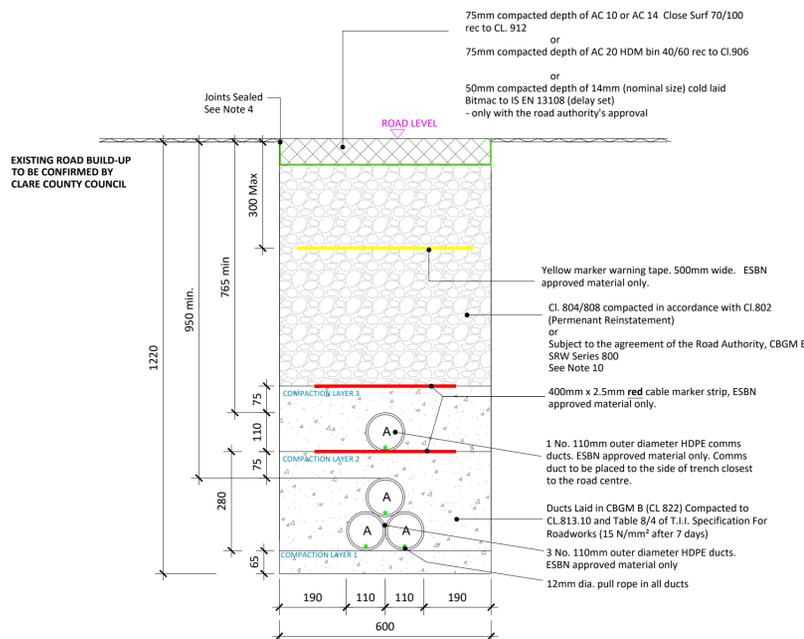
Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD1



Typical Section Through Temporary Reinstatement of Longitudinal Opening in Roadway

SCALE 1:10

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



Typical 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:
- 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.
 - 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.
 - Clause 808 surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
 - 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.
 - Licence holder must maintain temporary reinstatement to a safe and acceptable standard.
 - Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
 - Temporary Road Surface warning signs must be used in accordance with the Traffic Signs Manual (Chaper 8 - Temporary Traffic Measures and Signs for Roadworks).
 - 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.

PROJECT

**Lackareagh Wind Farm
 38kV Grid Connection**

CLIENT



CONSULTANTS



NOTES: -

- This design is subject to ESB approval and should not be used for construction.
- 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.
- Existing road build up and reinstatement requirements to be confirmed with Clare County Co.

LEGEND: -

ISSUE/REVISION

NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

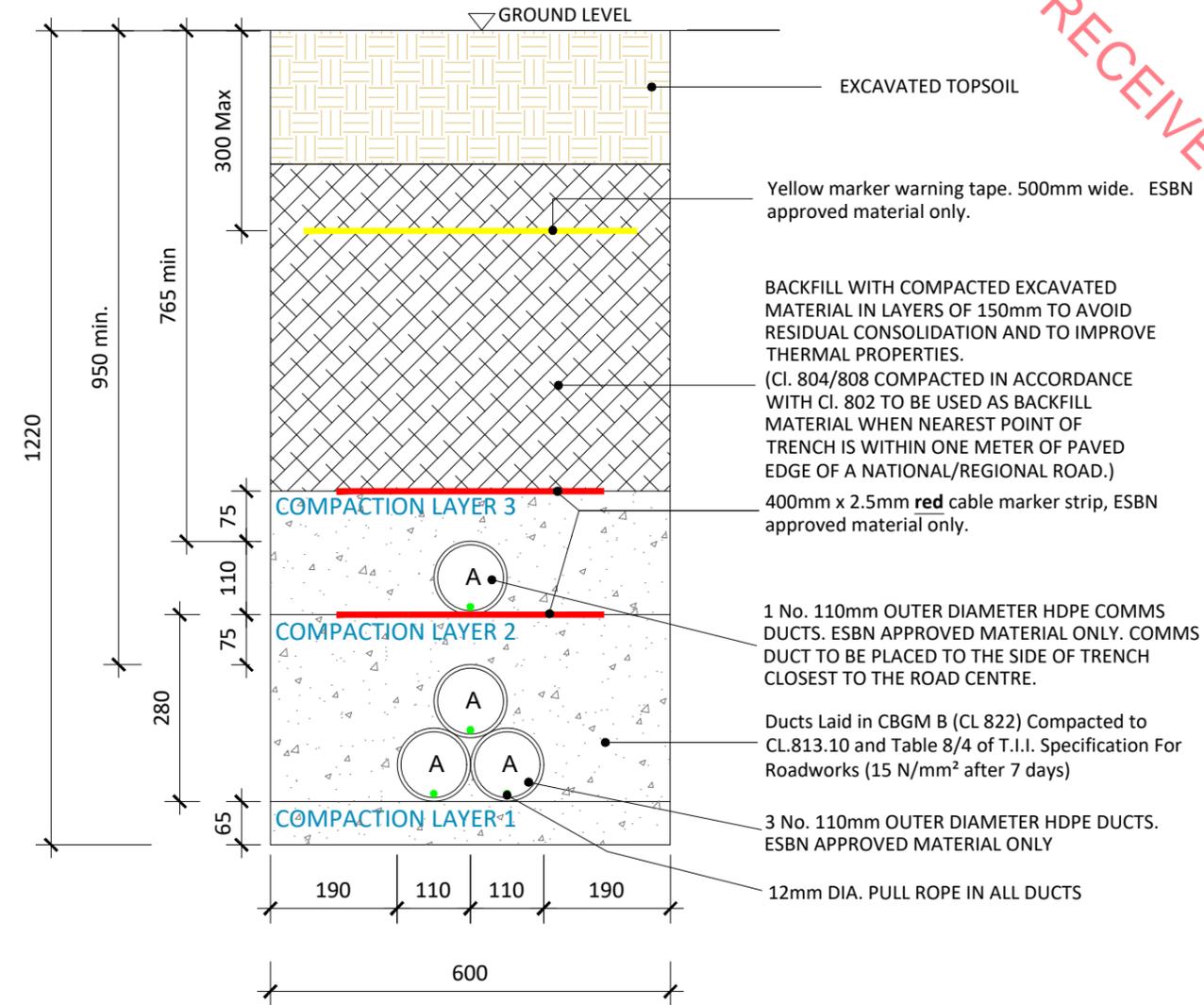
05-909

SHEET TITLE

Ducting Through
 Regional / Local Roadways

SHEET NUMBER

05909-DR-120



RECEIVED: 29/08/2024

Typical Section Through Off Road / Grassland

SCALE 1:10

Note:

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- Drawings are not to be scaled use figured dimensions only

ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LANDOWNERS/CLARE Co.Co REQUIREMENTS



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PROJECT

Lackareagh Wind Farm
 38kV Grid Connection

PROJECT NUMBER
 05-909

SHEET NUMBER
 05909-DR-121

SHEET TITLE

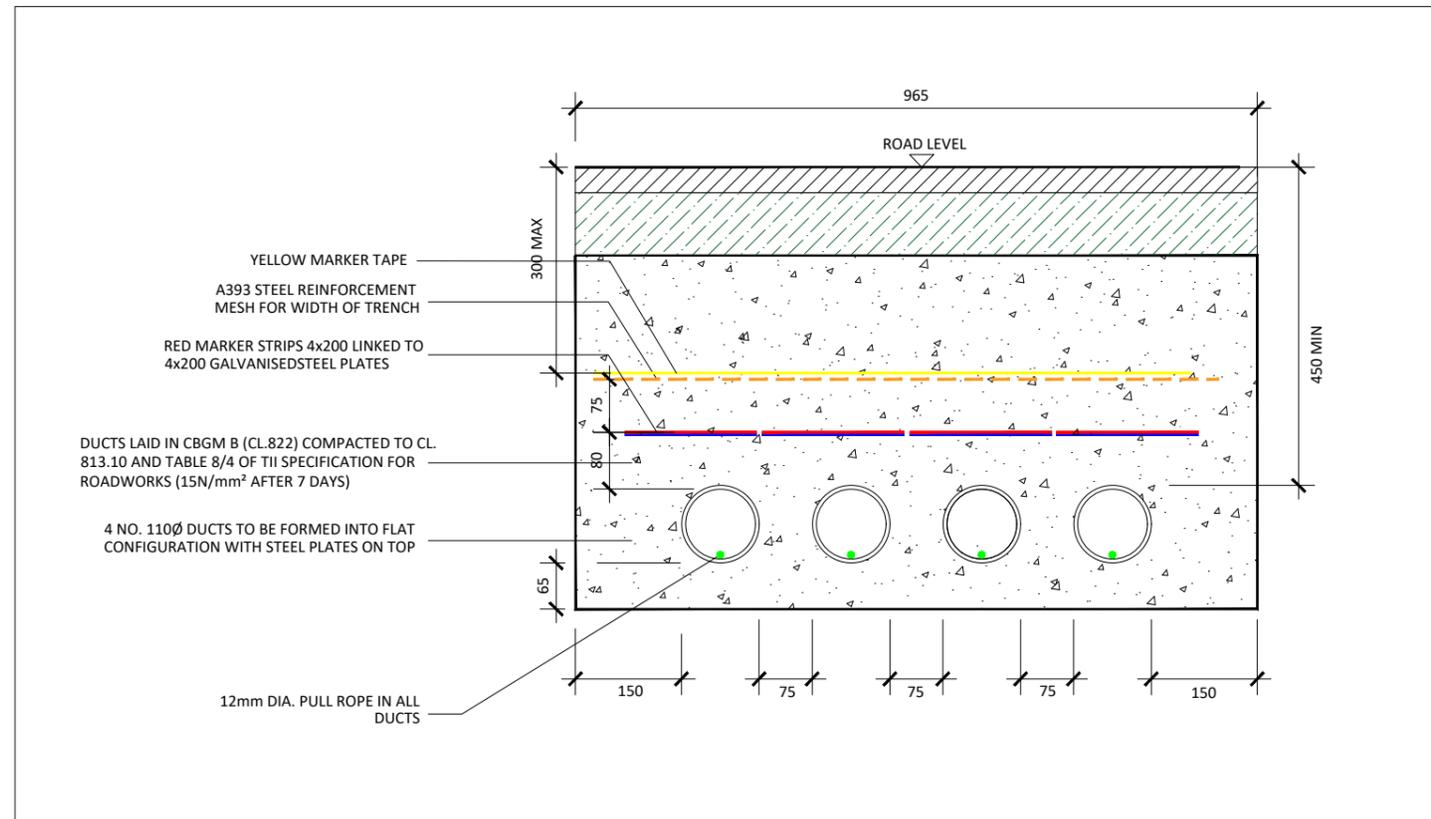
Ducting through Off Road /
 Grassland Section

DRAWING STATUS
 For Planning

ISSUE/REVISION

ISSUE/REVISION	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
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Typical Ducting Detail in Flat Formation

SCALE - 1:10



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PROJECT

Lackareagh Wind Farm
 38kV Grid Connection

PROJECT NUMBER
 05-909

SHEET NUMBER
 05909-DR-122

SHEET TITLE

Ducting Detail in Flat Formation

DRAWING STATUS
 For Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning

PROJECT

Lackareagh Wind Farm
 38kV Grid Connection

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NOTES: -

- See notes in drawing window

LEGEND: -

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I/R	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
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PROJECT NUMBER

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SHEET TITLE

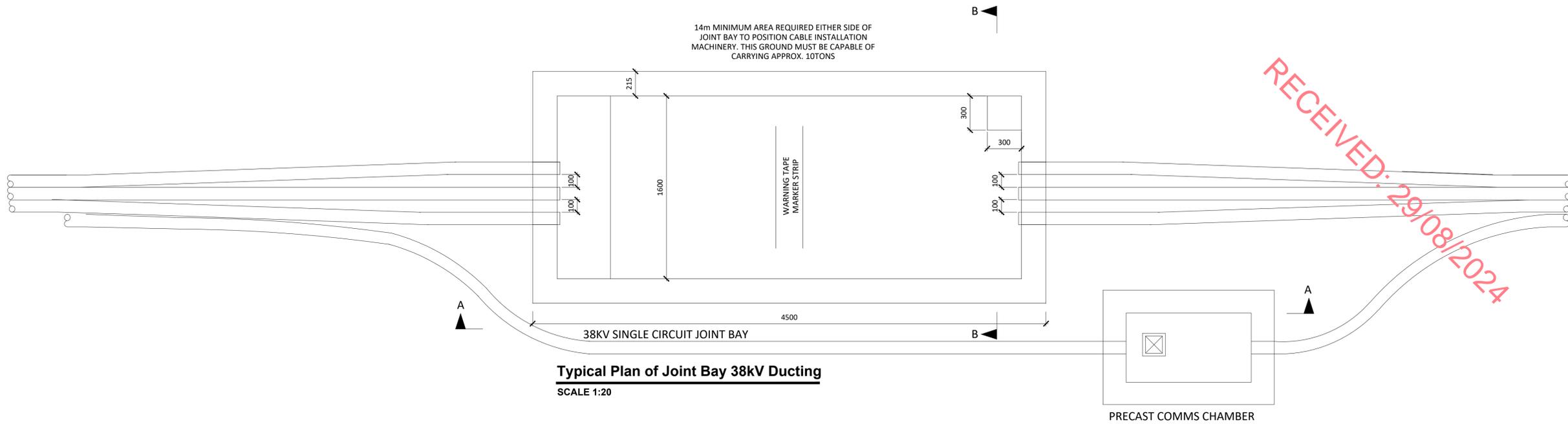
38kV Single Circuit
 Joint Bay General Arrangement

SHEET NUMBER

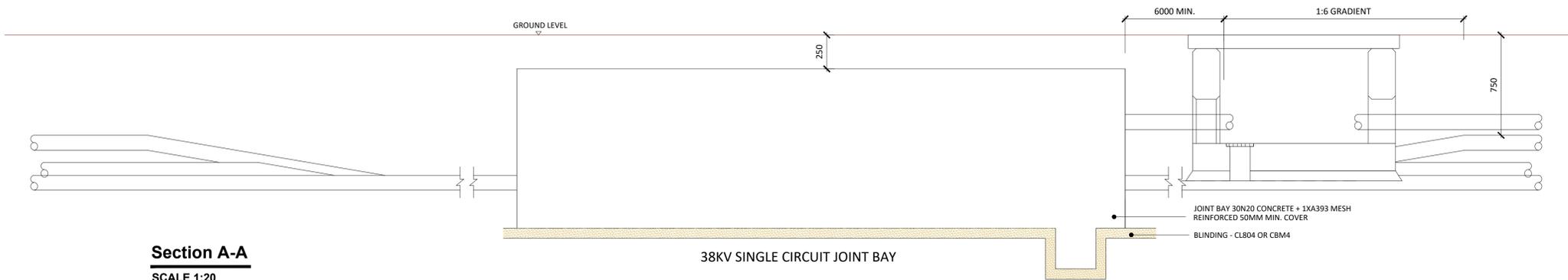
05909-DR-123

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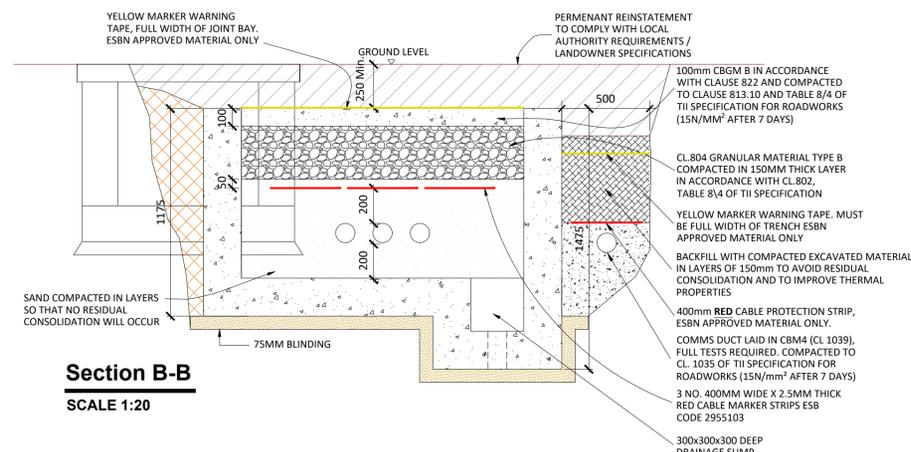
14m MINIMUM AREA REQUIRED EITHER SIDE OF JOINT BAY TO POSITION CABLE INSTALLATION MACHINERY. THIS GROUND MUST BE CAPABLE OF CARRYING APPROX. 10TONS



Typical Plan of Joint Bay 38kV Ducting
 SCALE 1:20



Section A-A
 SCALE 1:20

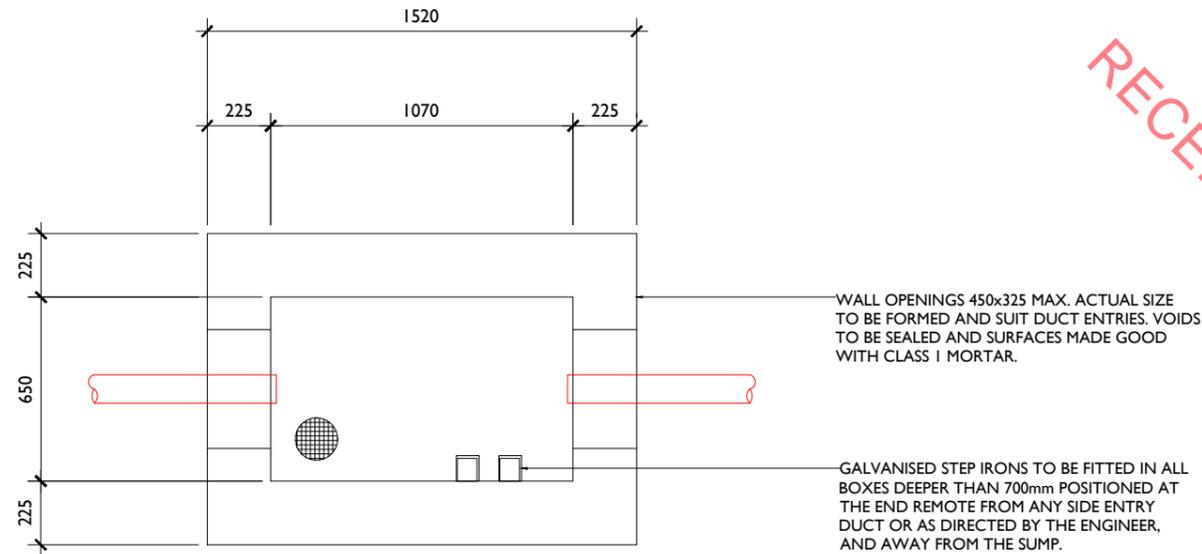


Section B-B
 SCALE 1:20

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- This drawing is subject to ESB approval and should be used for planning purposes only.
 - 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
 - Suitability of standard joint bay foundations can only be confirmed following ground investigation. Standard foundations are based on the formation at the base of the excavation shown being suitable for a minimum bearing pressure of 100N/m2. Where this is not achievable and where peat is encountered, the contractor shall refer to the Engineer for guidance.

NOTES:

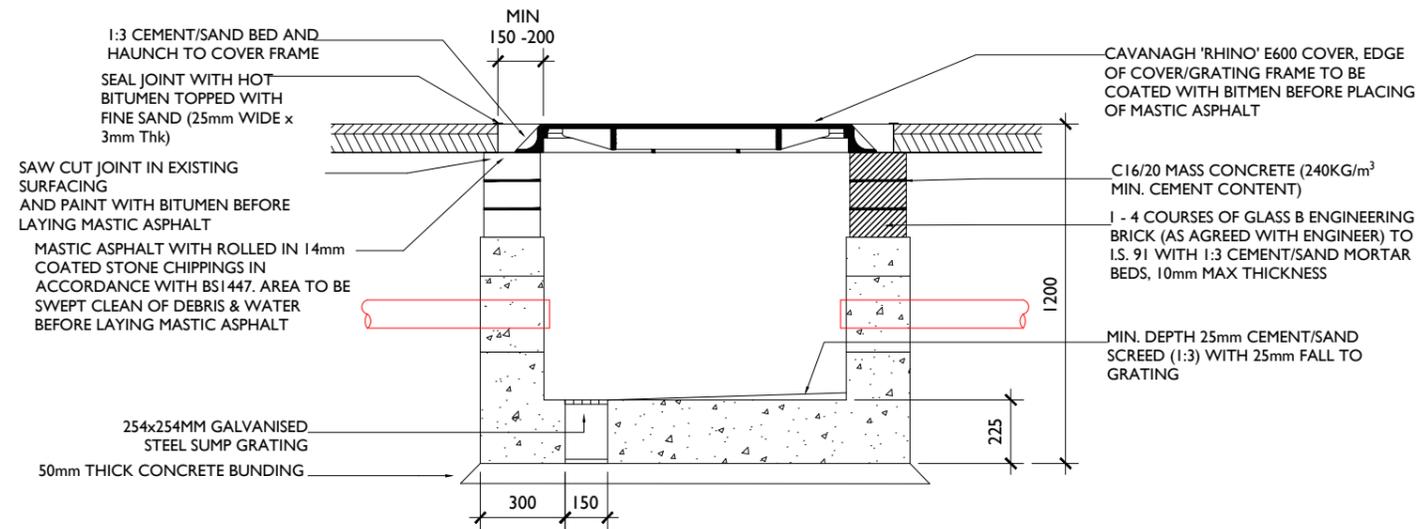
- This design is subject to ESB approval and should not be used for construction.
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- Dimensions are in millimetres, unless noted otherwise.
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Plan View - Typical Communications Chamber

SCALE 1:20



Section Through Typical Communications Chamber

SCALE 1:20



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PROJECT

Lackareagh Wind Farm
38kV Grid Connection

PROJECT NUMBER
05-909

SHEET NUMBER
05909-DR-124

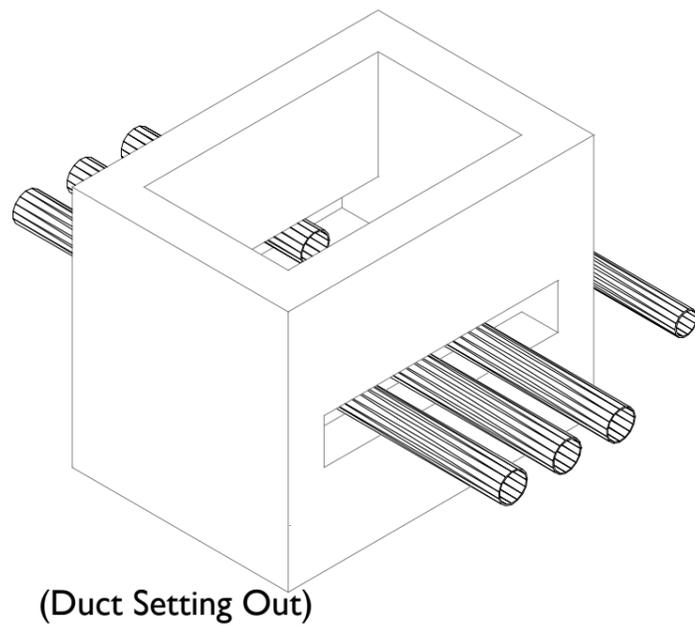
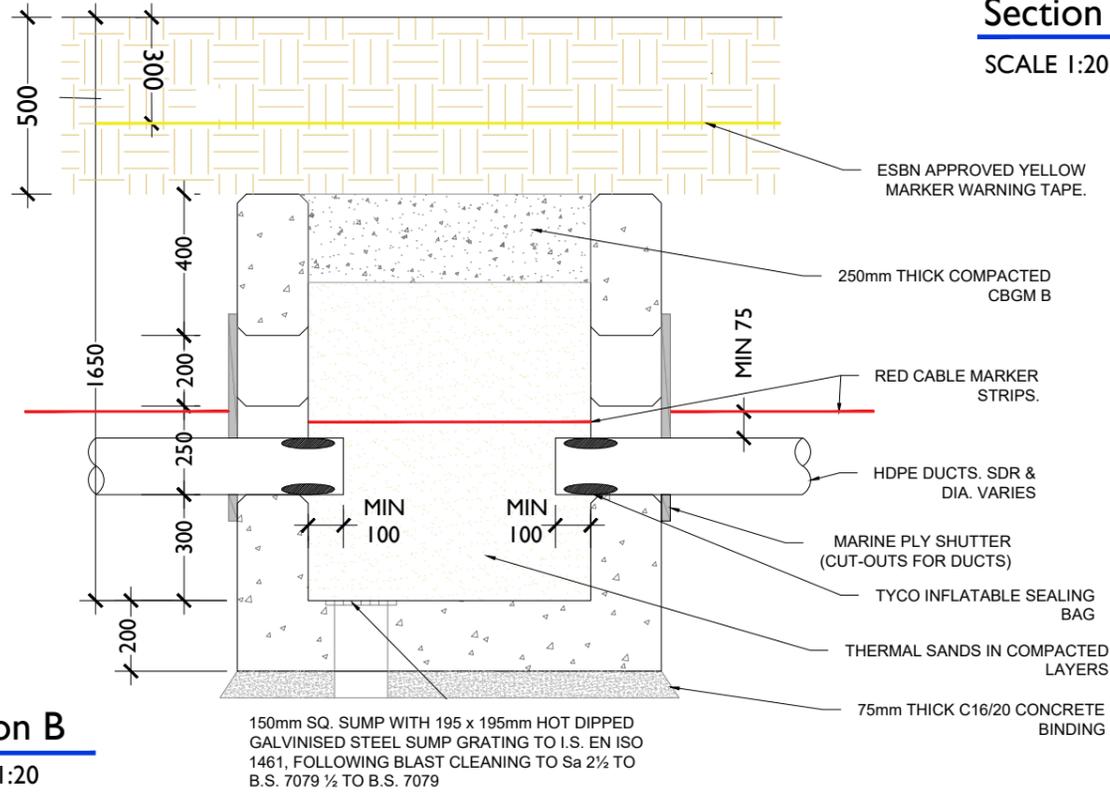
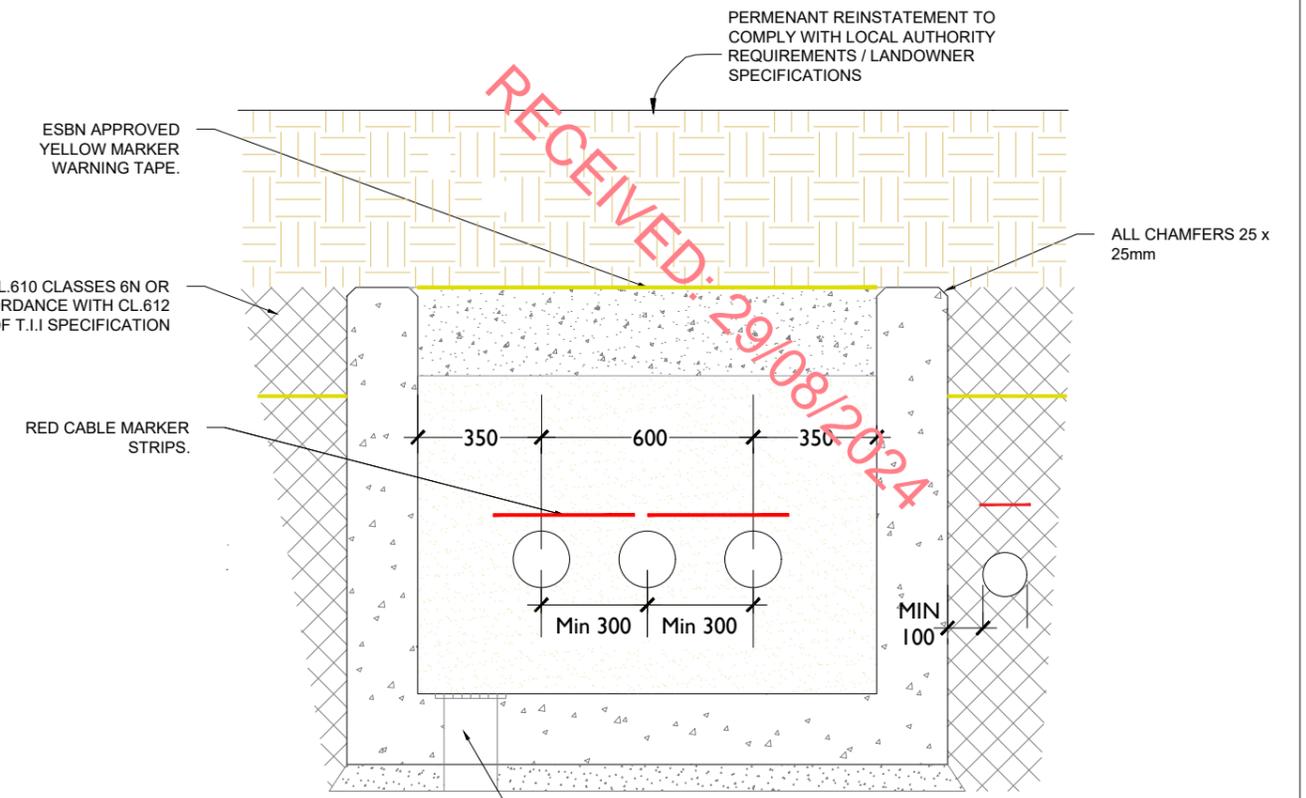
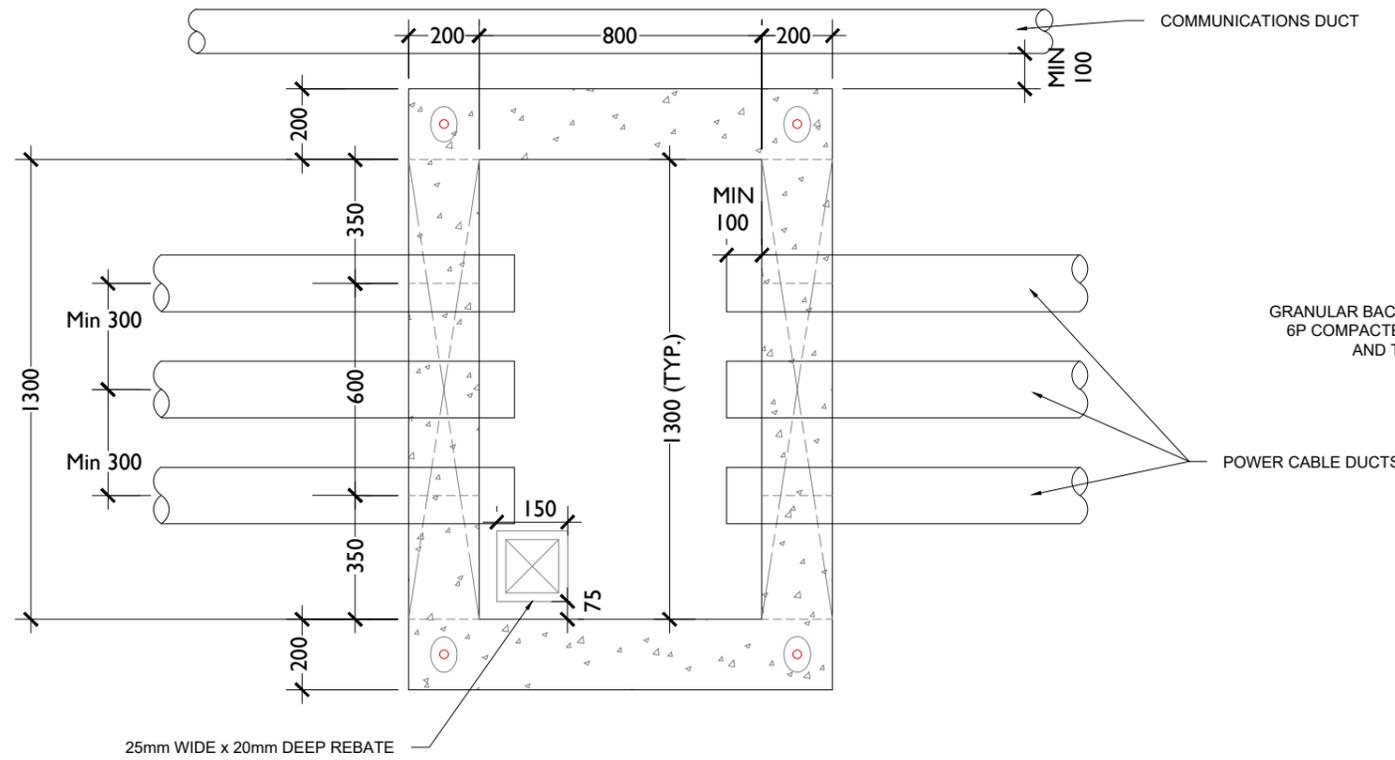
SHEET TITLE

Typical 38kV Communications
Chamber Details

DRAWING STATUS
For Planning

ISSUE/REVISION

ISSUE/REVISION	DATE	DESCRIPTION
P2	13.08.24	issued For EIAR
P1	14.07.23	Issued For Planning
I/R	DATE	DESCRIPTION

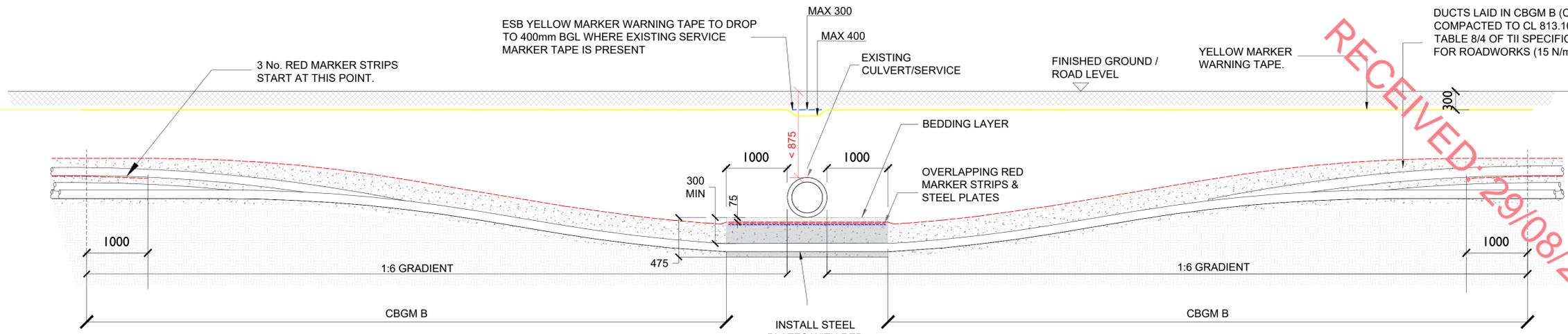


- NOTES:**
1. This drawing is to be read in conjunction with relevant drawings, specifications and reports.
 2. Dimensions are in millimetres, unless noted otherwise.
 3. Drawings are not to be scaled use figured dimensions only.
 4. Telecommunication ducts not to be routed through Transition chamber
 5. If Transition chamber is used to interface with a HDD section, Then the telecoms duct SDR 17.6 should be chamfered when coupled with SDR 11 ducts

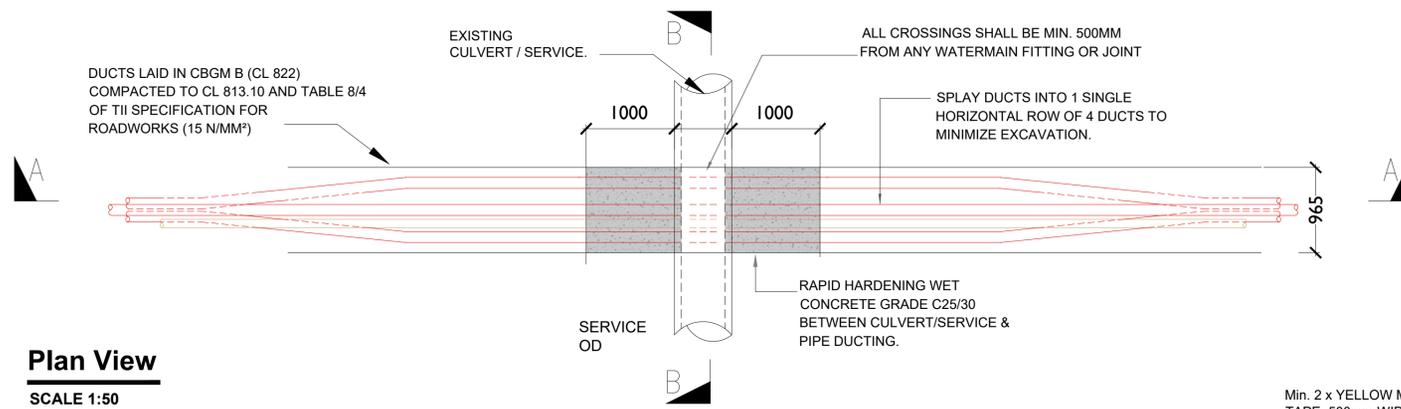
ISSUE/REVISION		
I/R	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning

NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning
I/R	DATE	DESCRIPTION

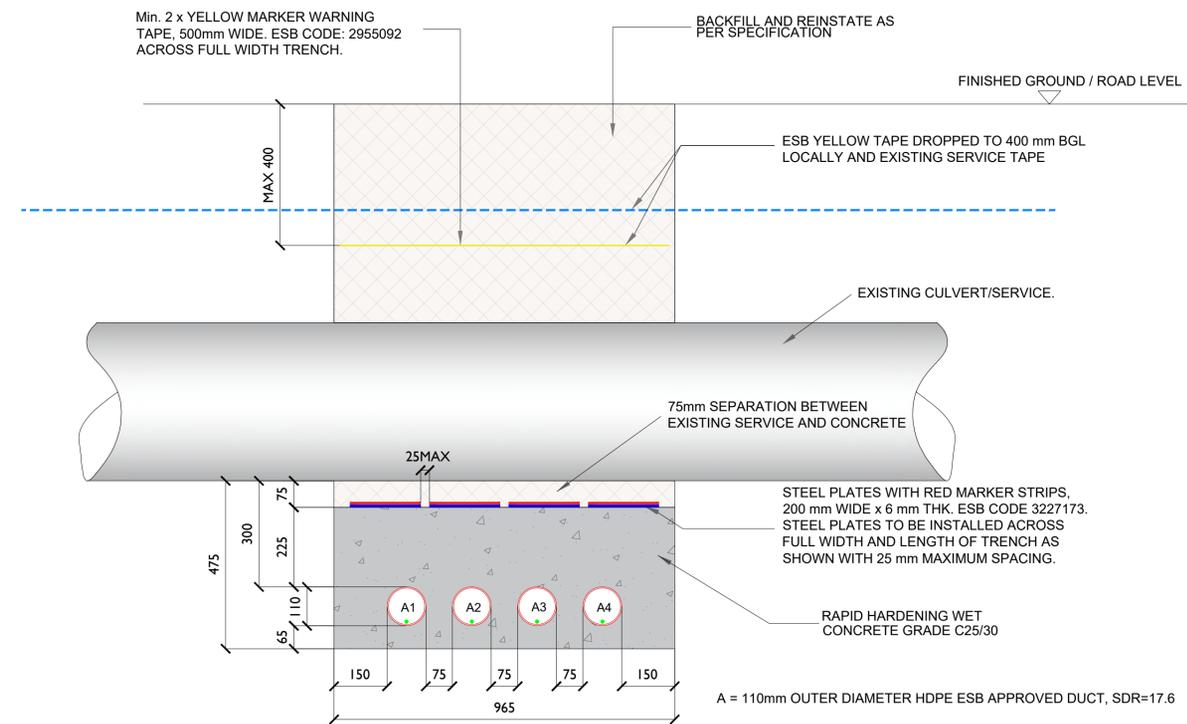
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Section A - A
 SCALE 1:50



Plan View
 SCALE 1:50



Section B - B
 SCALE 1:10

NOTES:

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- NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
- HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
- IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE CULVERT / SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
- FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE 05909-DR-120
- WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER
- BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
- FOR WATERMAIN CROSSINGS SEE 05909-DR-128 & 05909-DR-129.
- THE PROPOSED DESIGN IS SUBJECT TO ESB APPROVAL AND SHOULD NOT BE USED FOR CONSTRUCTION
- ESB'S PREFERENCE IS TO CROSS UNDER ALL SERVICES WHERE IT IS NOT POSSIBLE TO MAINTAIN STANDARD COVER WHEN CROSSING OVER THE SERVICE
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS REQUIRED. THE CONTRACTOR WILL APPOINT AN APPROVED TEMPORARY WORKS DESIGNER AND SUBMIT PROPOSED TEMPORARY WORKS DESIGNS TO THE PSDP.

PROJECT

Lackareagh Wind Farm
 38kV Grid Connection

CLIENT



CONSULTANTS



NOTES: -

- See notes in drawing window

LEGEND: -

- 110mm Ø HDPE DUCT WITH 12mm DIAMETER PULL ROPE
- RED MARKER STRIP WITH STEEL PLATES
- YELLOW MARKER WARNING TAPE
- A393 MESH REINFORCEMENT

ISSUE/REVISION

NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-909

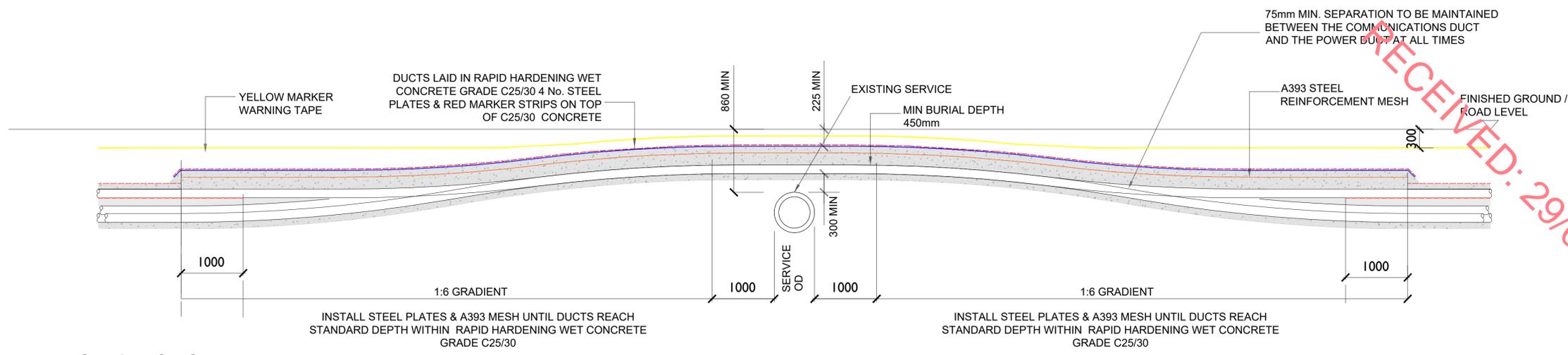
SHEET TITLE

38kV Service/Culvert
 Over Crossing Detail

SHEET NUMBER

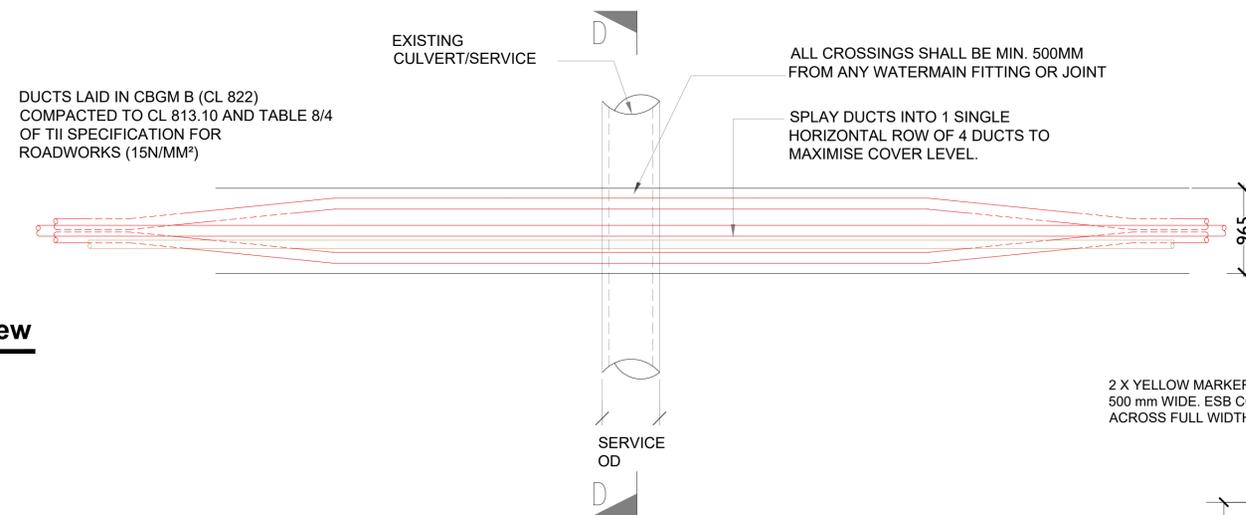
05909-DR-127

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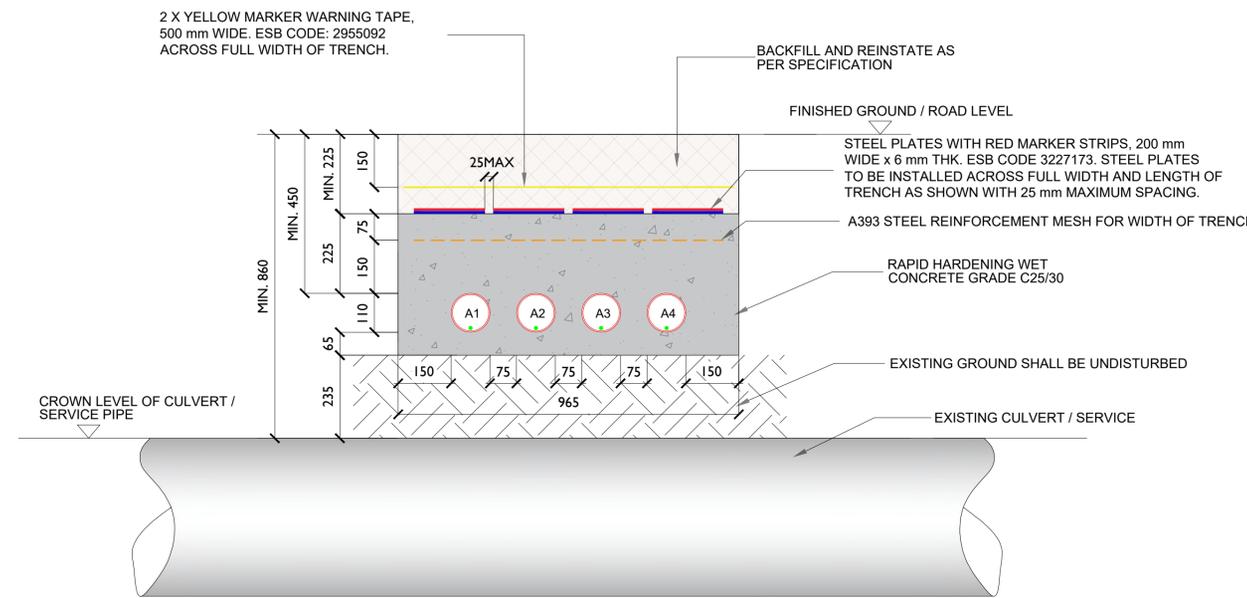
Section C - C

SCALE 1:50



Plan View

SCALE 1:50



Section D - D

SCALE 1:10

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- HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
- IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE CULVERT / SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
- FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE 05909-DR-120
- WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER
- BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
- FOR WATERMAIN CROSSINGS SEE 05909-DR-128 & 05909-DR-129.
- THE PROPOSED DESIGN IS SUBJECT TO ESB APPROVAL AND SHOULD NOT BE USED FOR CONSTRUCTION
- ESB'S PREFERENCE IS TO CROSS UNDER ALL SERVICES WHERE IT IS NOT POSSIBLE TO MAINTAIN STANDARD COVER WHEN CROSSING OVER THE SERVICE
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS REQUIRED. THE CONTRACTOR WILL APPOINT AN APPROVED TEMPORARY WORKS DESIGNER AND SUBMIT PROPOSED TEMPORARY WORKS DESIGNS TO THE PSDP.

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

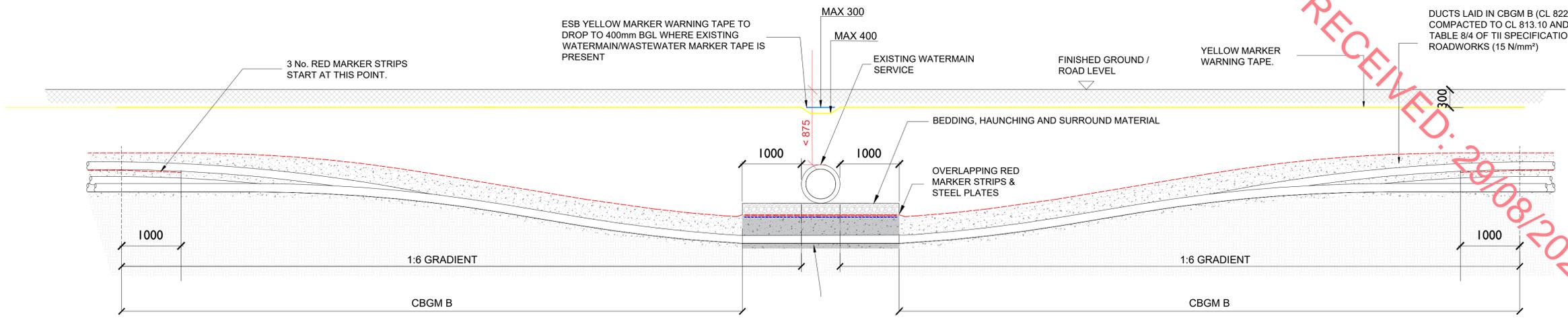
A = 110mm OUTER DIAMETER HDPE ESB APPROVED DUCT, SDR=17.6



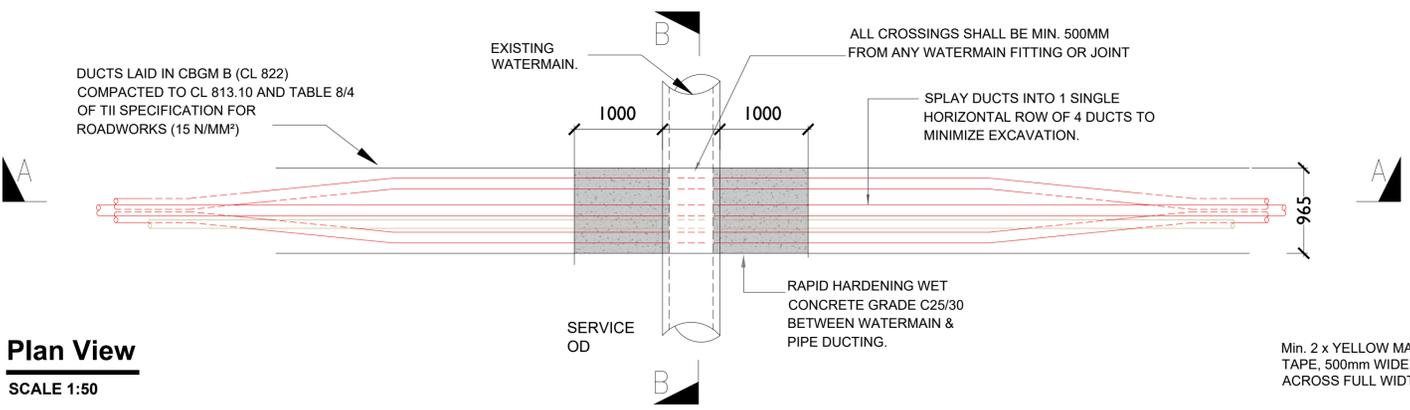
- 110mm Ø HDPE DUCT WITH 12mm DIAMETER PULL ROPE
- RED MARKER STRIP WITH STEEL PLATES
- YELLOW MARKER WARNING TAPE
- EXISTING SERVICES MARKER TAPE

NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
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I/R	DATE	DESCRIPTION

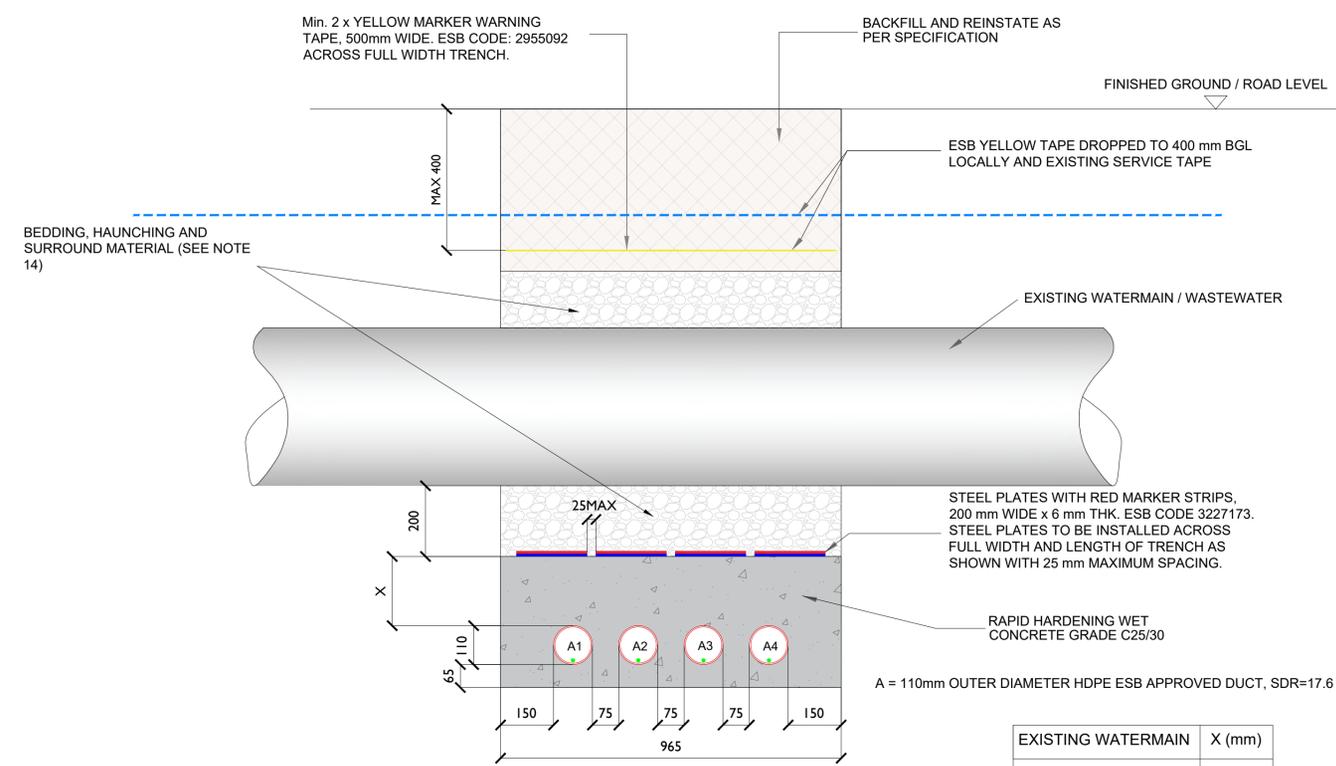
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Section A - A
 SCALE 1:50



Plan View
 SCALE 1:50



Section B - B
 SCALE 1:10

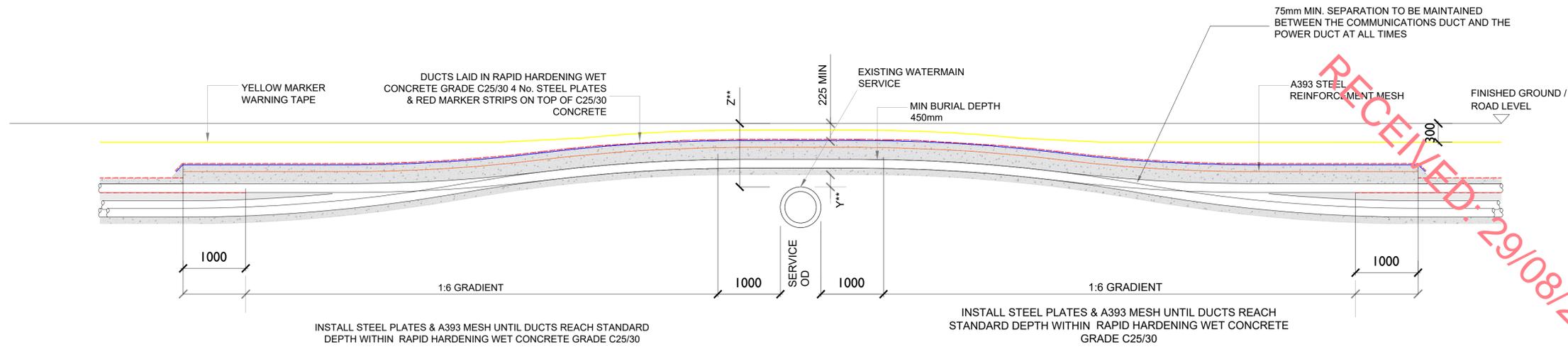
EXISTING WATERMAIN	X (mm)
<=300	200
>300	300

- NOTES:**
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 - NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
 - HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
 - IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE WATERMAIN SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
 - FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE 05909-DR-120.
 - WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER FOR PHASE SPACING REQUIREMENTS.
 - BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
 - THE PROPOSED DESIGN IS SUBJECT TO ESB APPROVAL AND SHOULD NOT BE USED FOR CONSTRUCTION
 - ESB'S PREFERENCE IS TO CROSS UNDER ALL SERVICES WHERE IT IS NOT POSSIBLE TO MAINTAIN STANDARD COVER WHEN CROSSING OVER THE SERVICE
 - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS REQUIRED. THE CONTRACTOR WILL APPOINT AN APPROVED TEMPORARY WORKS DESIGNER AND SUBMIT PROPOSED TEMPORARY WORKS DESIGNS TO THE PSDP.
 - AS PER WIS 4-08-02 & IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14MM TO 5MM GARDED AGGREGATE OR 10MM SINGLE SIZED AGGREGATE.
 - IF ANY WATERMAINS ARE DAMAGED DURING CONSTRUCTION THEY WILL BE REPLACED IN FULL. CAMERA SCOPING WILL BE COMPLETED BEFORE AND AFTER THE WORKS.

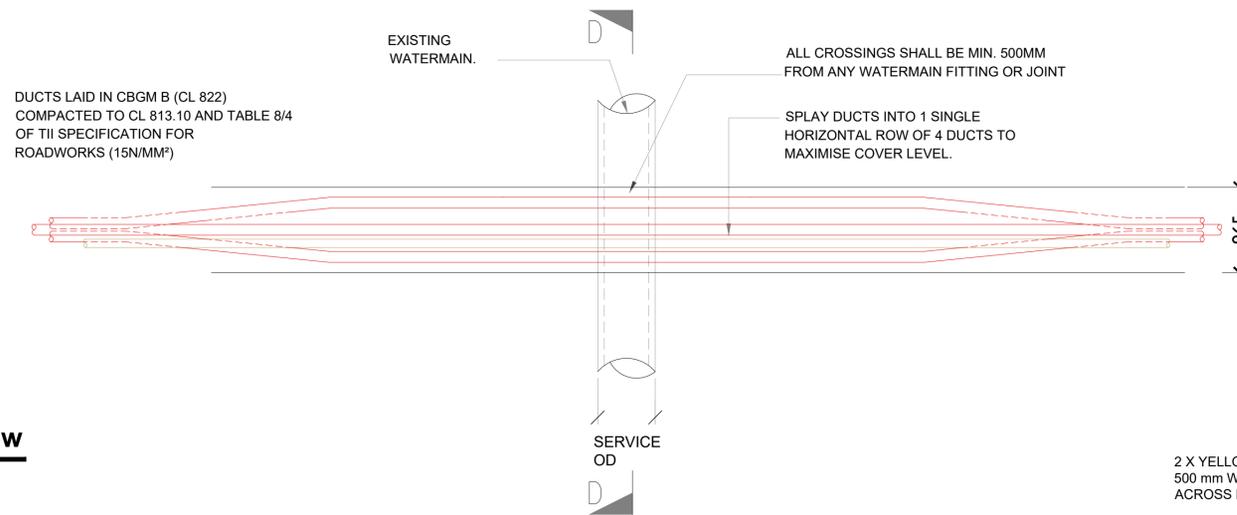


- 110mm Ø HDPE DUCT WITH 12mm DIAMETER PULL ROPE
- RED MARKER STRIP WITH STEEL PLATES
- YELLOW MARKER WARNING TAPE
- A393 REINFORCEMENT MESH

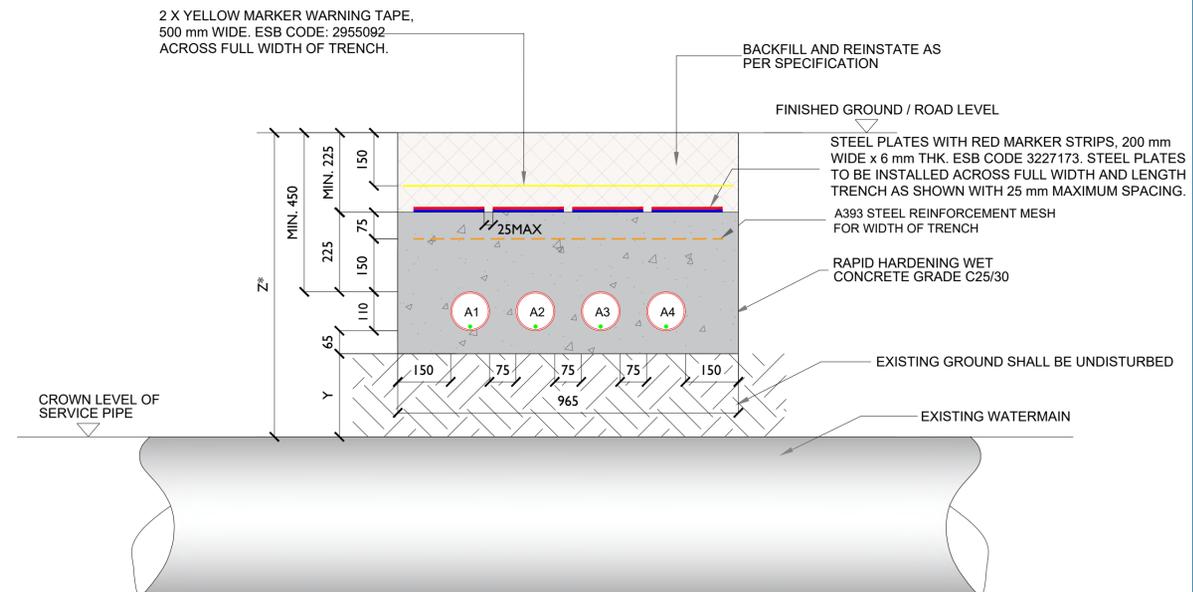
NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
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I/R	DATE	DESCRIPTION



Section C - C
 SCALE 1:50



Plan View
 SCALE 1:50



Section D - D
 SCALE 1:10

A = 110mm OUTER DIAMETER HDPE ESB APPROVED DUCT, SDR=17.6

EXISTING WATERMAIN	Y (mm)	Z' (mm)
<=300	235	885 MIN
>300	435	1085 MIN

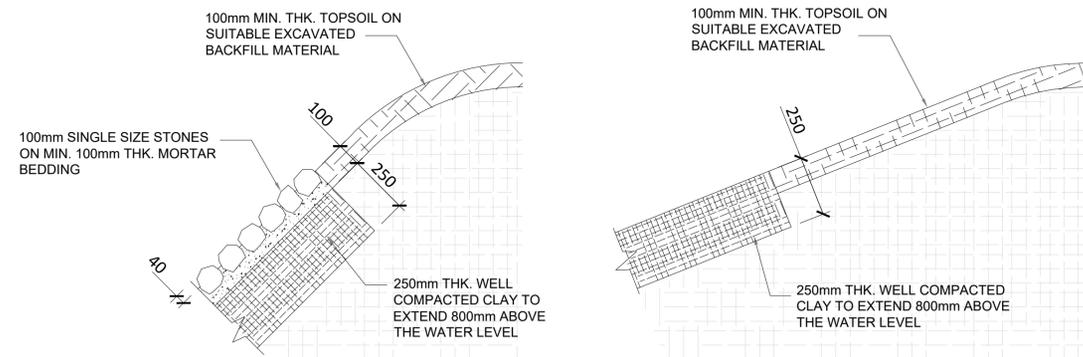
- NOTES:
- THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE AND IS SUBJECT TO AMENDMENT.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT INFORMATION AND DOCUMENTATION.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY PRINTED DIMENSIONS.
 - ALL DIMENSIONS ARE IN MILLIMETRES. ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
 - NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
 - HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
 - IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE WATERMAIN SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
 - FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE 05909-DR-120. WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER FOR PHASE SPACING REQUIREMENTS.
 - BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
 - THE PROPOSED DESIGN IS SUBJECT TO ESB APPROVAL AND SHOULD NOT BE USED FOR CONSTRUCTION
 - ESB'S PREFERENCE IS TO CROSS UNDER ALL SERVICES WHERE IT IS NOT POSSIBLE TO MAINTAIN STANDARD COVER WHEN CROSSING OVER THE SERVICE
 - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS REQUIRED. THE CONTRACTOR WILL APPOINT AN APPROVED TEMPORARY WORKS DESIGNER AND SUBMIT PROPOSED TEMPORARY WORKS DESIGNS TO THE PSDP.
 - AS PER WIS 4-08-02 & IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14MM TO 5MM GARDER AGGREGATE OR 10MM SINGLE SIZED AGGREGATE.
 - IF ANY WATERMAINS ARE DAMAGED DURING CONSTRUCTION THEY WILL BE REPLACED IN FULL. CAMERA SCOPING WILL BE COMPLETED BEFORE AND AFTER THE WORKS.



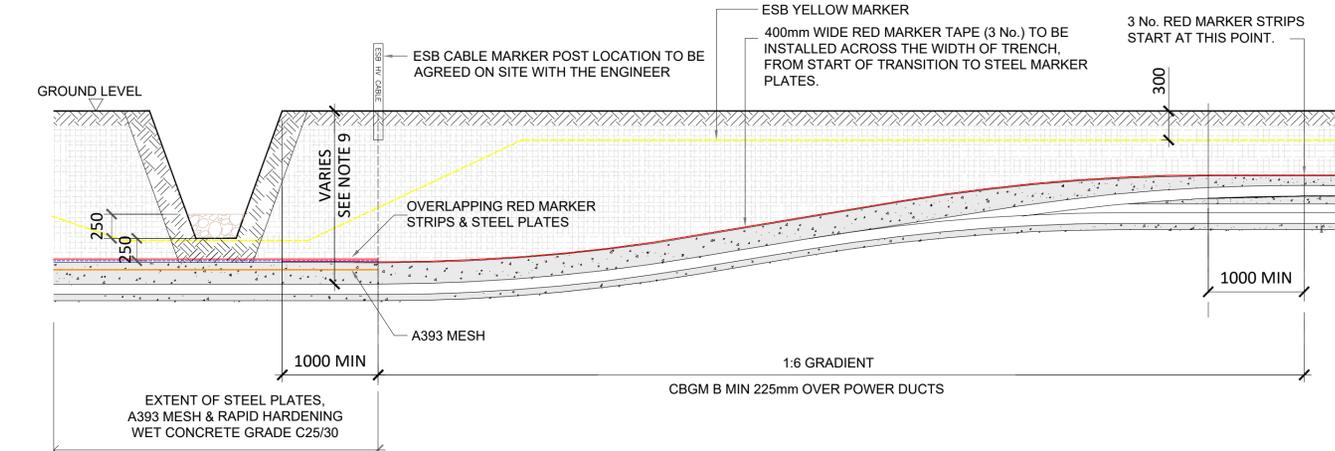
NO.	DATE	DESCRIPTION
P2	13.08.24	Issued For EIAR
P1	14.07.23	Issued For Planning
I/R	DATE	DESCRIPTION

- NOTES:
- NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
 - HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS. THE CONTRACTOR SHALL APPOINT A COMPETENT TEMPORARY WORKS DESIGNER, AND SUBMIT TEMPORARY WORKS DESIGN TO PSD FOR REVIEW.
 - FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE CS908-DR-120-P1
 - WHERE DUCT FOR EARTH CONTINUITY CONDUCTOR (ECC) IS REQUIRED, ATTACH THE 63mm DUCT TO POWER DUCT.
 - THE PROPOSED DESIGN IS SUBJECT TO ESB APPROVAL AND SHOULD NOT BE USED FOR CONSTRUCTION
 - CONTRACTOR SHALL RECORD DETAILED AS-BUILT INFORMATION AS PER THE SPECIFICATION. AT ALL CROSSING LOCATIONS THESE RECORDS SHALL INCLUDE PHOTOGRAPHIC EVIDENCE CLEARLY DEMONSTRATING THE MINIMUM SERVICE CLEARANCES AND DUCT SEPARATIONS HAVE BEEN ACHIEVED.
 - FOR RIVER, STREAM CROSSINGS, THE DUCTS LAYOUT AND CROSSING DETAILS ARE THE SAME TO THE DRAINAGE DITCH CROSSING.
 - SEPARATION BETWEEN POWER CABLE DUCTS TO BE DETERMINED BY CABLE RATING CALCULATIONS BASED ON THE MAXIMUM DEPTH OF COVER TO THE DUCTS.

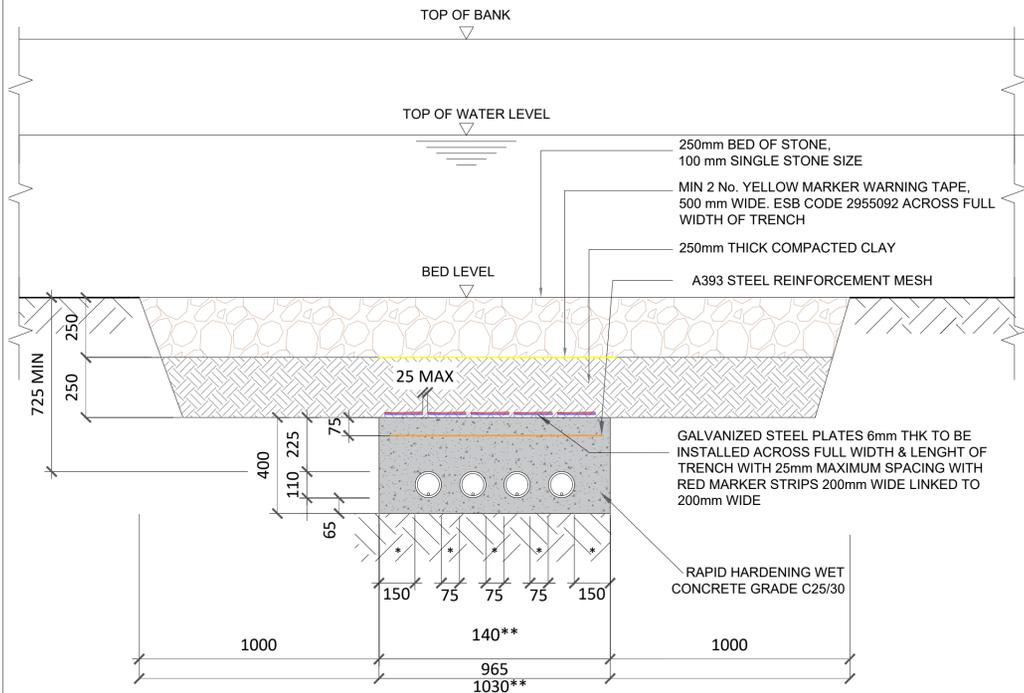
REVISED: 29/08/2024



Bank Details
 Scale 1:20

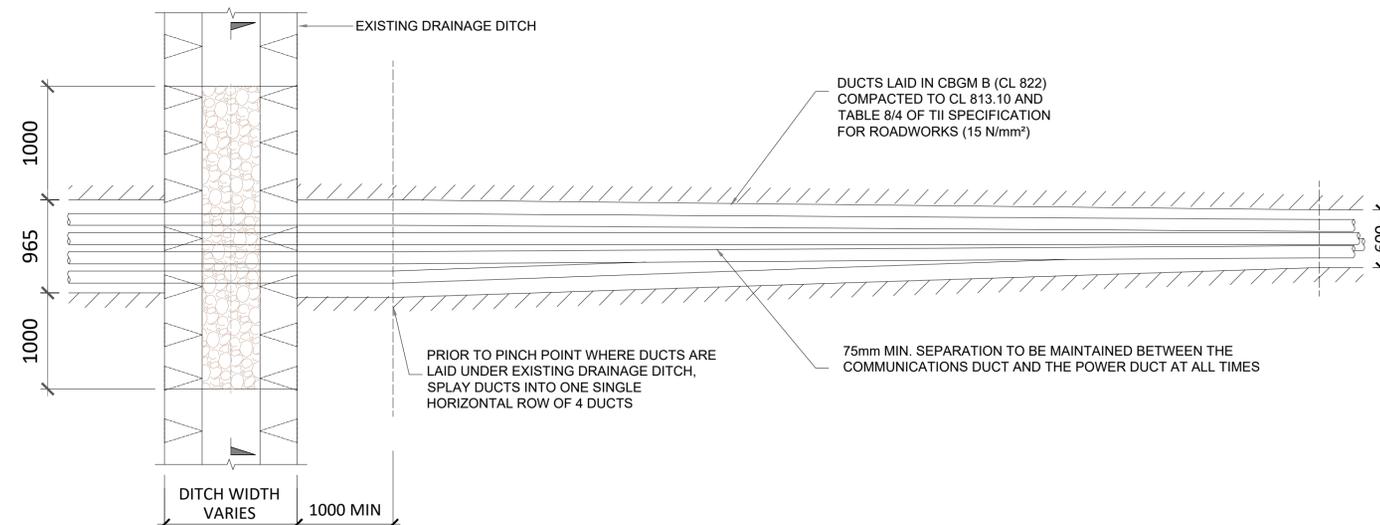


Typical Longitudinal Section - Crossing Under Drainage Ditch
 Scale 1:50



Typical Cross Section
 Scale 1:20

- A = 110mm OUTER DIAMETER HDPE ESB APPROVED DUCT, SDR=17.6
- * MIN. 75mm DUCT SPACING TO BE CONFIRMED BY CABLE RATING CALCULATIONS AT EACH CROSSING, REFER TO NOTE 9
 - ** MIN. 140mm DUCT SPACING, REFER TO NOTE 6.



Typical Plan
 Scale 1:50