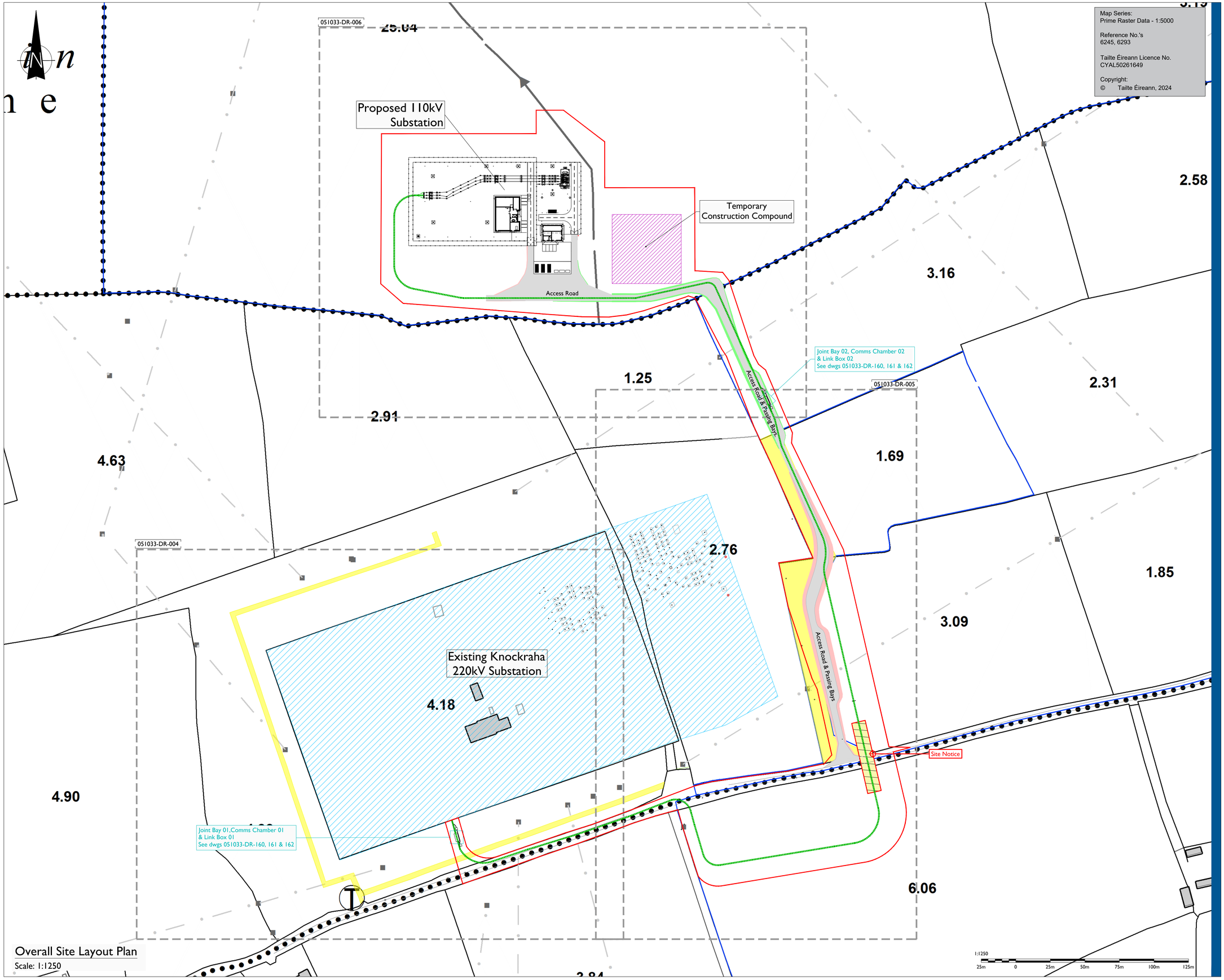
ISO A1 594mm x 841mm



Overall Site Layout Plan
Scale: 1:1250

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- All proposed routes shown are indicative only at this stage and are subject to further assessment.
- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

- Proposed 110kV Grid Connection UGC (1.09km) shown thus
- Planning Application Boundary (5.2 hectares) shown thus
- Lands in Ownership of Application shown thus
- Existing Wayleaves shown thus
- Proposed 110kV Substation Access Road & Passing Bays shown thus
- Proposed 110kV UGC Joint Bays shown thus
- Proposed 110kV Substation shown thus
- Knockraha 220kV Substation shown thus
- Proposed Temporary Construction Compound shown thus
- HDD under Celtic Interconnector and Public Road shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N2	04.06.24	Issued for Information
P1	14.05.24	Issued for Planning
N1	10.05.24	Issued for Information

PROJECT NUMBER

05-1033

SHEET TITLE

Overall Site Layout Plan

SHEET NUMBER

051033-DR-001

ISO A1 594mm x 841mm

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

Tailte Éireann Licence No.
CYAL50261649

Baile an Ghogánaigh
Goggánstown

Cnoc Rátha Thiar
Knockraha West

Cnoc Rátha Thoir
Knockraha East

An Lisín Rua
Lisheenroe

Baile na mBreatnach Thiar
Ballynabrannagh West

Achadh Dubh
Aghaduff

Baile na mBreatnach Thiar
Ballynabrannagh West

Baile an Chondúnaigh
Condonstown

Ard Abhainn
Ard Abhainn

Knockraha
Cnoc Rátha

Baile Lóchláin
Ballylóohane

Cnocán an Choluir
Pigeonhill

Baile na Coille
Ballynakilla

An Cluainín
Cloneen

Proposed 110kV Substation

Temporary Construction Compound

Existing Knockraha 220kV Substation

Site Notice

1:5000
100m 0 100m 200m 300m 400m 500m

Overall Site Location Map

Scale: 1:5000

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- All proposed routes shown are indicative only at this stage and are subject to further assessment.
- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

- Proposed 110kV Grid Connection UGC (1.09km) shown thus
- Planning Application Boundary (5.2 hectares) shown thus
- Lands in Ownership of Application shown thus
- Existing Wayleaves shown thus
- Knockraha 220kV Substation shown thus
- Proposed 110kV Substation shown thus
- Proposed Temporary Construction Compound shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued For Information
P1	14.05.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Overall Site Location Map

SHEET NUMBER

051033-DR-002

ISO A1 594mm x 841mm

Approved: GH
Checked: KC
Designer: GD
Project Management Initials:

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

Tailte Éireann Licence No.
CYAL50261649

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

Tha Thiar
Tha West

Cnoc Rátha Thoir
Knockraha East

Baile Lóchán
Ballylohane

Aghaduff

051033-DR-001

Proposed 110kV Substation

Temporary Construction Compound

Existing Knockraha 220kV Substation

Site Notice

Site Location Map

Scale: 1:2500

1:2500
50m 0 50m 100m 150m 200m 250m

NOTES: -

- All proposed routes shown are indicative only at this stage and are subject to further assessment.
- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.

LEGEND: -

- Proposed 110kV Grid Connection UGC (1.09km) shown thus
- Planning Application Boundary (5.2 hectares) shown thus
- Lands in Ownership of Application shown thus
- Existing Wayleaves shown thus
- Proposed 110kV Substation Access Road & Passing Bays shown thus
- Proposed Temporary Compound shown thus
- HDD under Celtic Interconnector and Public Road shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued for Information
P1	14.05.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Site Location Map

SHEET NUMBER

051033-DR-003

ISO A1 594mm x 841mm

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

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Existing Knockraha
220kV Substation

4.18

4.33

MAYCHLINE

REF TO 051033-DR-003

ESB UGC MV
Crossing

Joint Bay 01,Comms Chamber 01
& Link Box 01
See dwgs 051033-DR-160, 161 & 162

ESB OHL HV
Crossing

ESB OHL HV
Crossing

ESB OHL HV
Crossing

ESB OHL HV
Crossing

4.36m

3.3m

1.57m

2.25m

152.54

151.96

151.42

1:500
10m 0 10m 20m 30m 40m 50m

Site Layout Plan (Sheet 1 of 3)
Scale: 1:500

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.
- Position of underground cable and location of joint bays, links boxes and comms chambers may vary depending on site conditions.
- Position of link boxes and comms chambers is to be agreed onsite with EirGrid/ESB.
- Other services may be encountered on the route.

LEGEND: -

- 110kV Grid Connection Cable shown thus (1.09km)
- Planning Boundary shown thus
- Existing ESB Underground MV cable shown thus
- Existing ESB Underground HV cable shown thus
- Existing ESB OHL LV Networks shown thus
- Existing ESB OHL HV Networks
- Spot Heights shown thus 46.525m
- Existing 110kV Substation Equipment shown thus
- 110kV Jointbay, Comms Chamber & Link Box shown thus

ISSUE/REVISION

P2	02.07.24	Issued for Planning
N1	04.06.24	Issued for Information
P1	14.05.24	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

SHEET TITLE

Site Layout Plan -
Sheet 1 of 3.

SHEET NUMBER

051033-DR-004

Project Management Initials: Designer: GD Checked: KC Approved: GH

Joint Bay 02, Comms Chamber 02 & Link Box 02
See dwgs 051033-DR-160, 161 & 162

MATCHLINE REF TO 051033-DR-004

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

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1.69

2.76

Existing Knockraha
220kV Substation

MATCHLINE REF TO 051033-DR-002

Position of existing ESB Pole Structure.

Position of existing ESB Pylon.

Position of existing ESB Pole Structure.

ESB OHL HV Crossing

ESB OHL HV Crossing

ESB OHL HV Crossing

ESB OHL HV Crossing

Celtic interconnector Crossing
See dwg 051033-DR-170

Site Notice

Equipment required:
1 No. 20T Excavator

HERAS FENCING

RECEPTOR PIT

EXCAVATED MATERIAL

TRANSITION COUPLER

LAUNCH AREA

DRILL RIG

HERAS FENCING

8.5m
7.87m
4.5m
9.45m
17.41m
8.5m
19.79m
3.62m
4.36m
8.44m
15m

+154.14
+153.50
+154.10
+154.03
+153.07
152.83
152.80
152.72
152.71

LEGEND: -

- 110kV Grid Connection Cable shown thus (1.09km)
- Planning Boundary shown thus
- Existing ESB Underground MV cable shown thus
- Existing ESB Underground HV cable shown thus
- Existing ESB OHL LV Networks shown thus
- Existing ESB OHL HV Networks
- Spot Heights shown thus + 46.53m
- 110kV Jointbay, Comms Chamber & Link Box shown thus
- Ground Contours shown thus 14.00
- Temporary Compound Drilling Area
- HDD under Celtic Interconnector and Public Road shown thus

NOTES: -

- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.
- Position of underground cable and location of joint bays, links boxes and comms chambers may vary depending on site conditions.
- Position of link boxes and comms chambers is to be agreed onsite with EirGrid/ESB.
- Other services may be encountered on the route.
- Position of HDD launch/reception shown points are indicative only and will be subject to site investigation works and detailed design.

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued For Information
P1	14.05.24	Issued For Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Site Layout Plan -
Sheet 2 of 3.

SHEET NUMBER

051033-DR-005

6

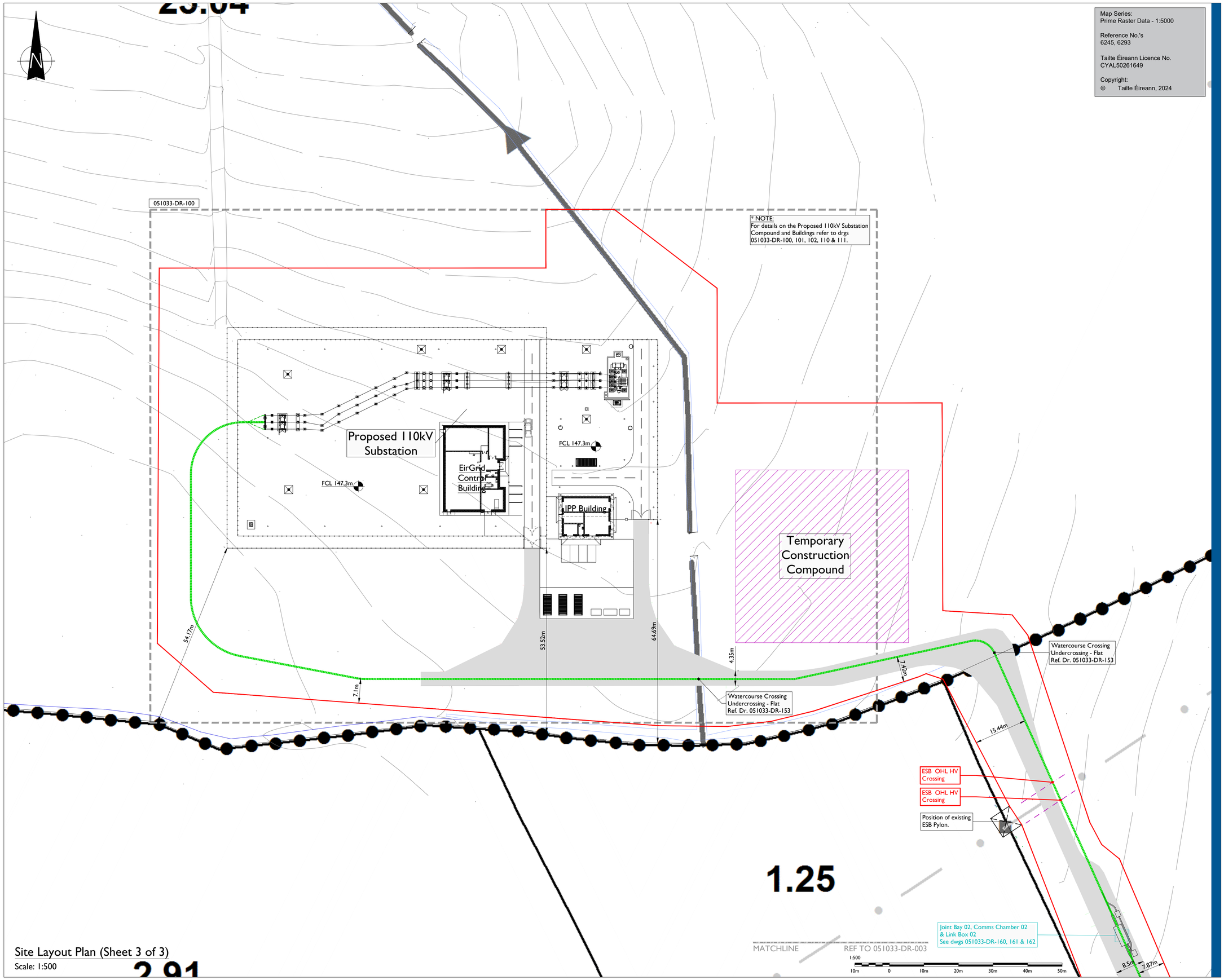
Site Layout Plan (Sheet 2 of 3)

Scale: 1:500

1:500
10m 0 10m 20m 30m 40m 50m

ISO A1 594mm x 841mm

ISO A1 594mm x 841mm



Site Layout Plan (Sheet 3 of 3)
Scale: 1:500

Project Management Initials: Designer: GD Checked: KC Approved: GH

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

Tailte Éireann Licence No.
CYAL50261649

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.
- Position of underground cable and location of joint bays, links boxes and comms chambers may vary depending on site conditions.
- Position of link boxes and comms chambers is to be agreed onsite with EirGrid/ESB.
- Other services may be encountered on the route.

LEGEND: -

- 110kV Grid Connection Cable shown thus (1.09km)
- Planning Boundary shown thus
- Existing ESB Underground MV cable shown thus
- Existing ESB Underground HV cable shown thus
- Existing ESB OHL LV Networks shown thus
- Existing ESB OHL HV Networks
- Spot Heights shown thus — 46.53m
- 110kV Jointbay, Comms Chamber & Link Box shown thus
- Ground Contours shown thus — 14.00
- Proposed Temporary Construction Compound shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued For Information
P1	14.05.24	Issued For Planning

PROJECT NUMBER

05-1033

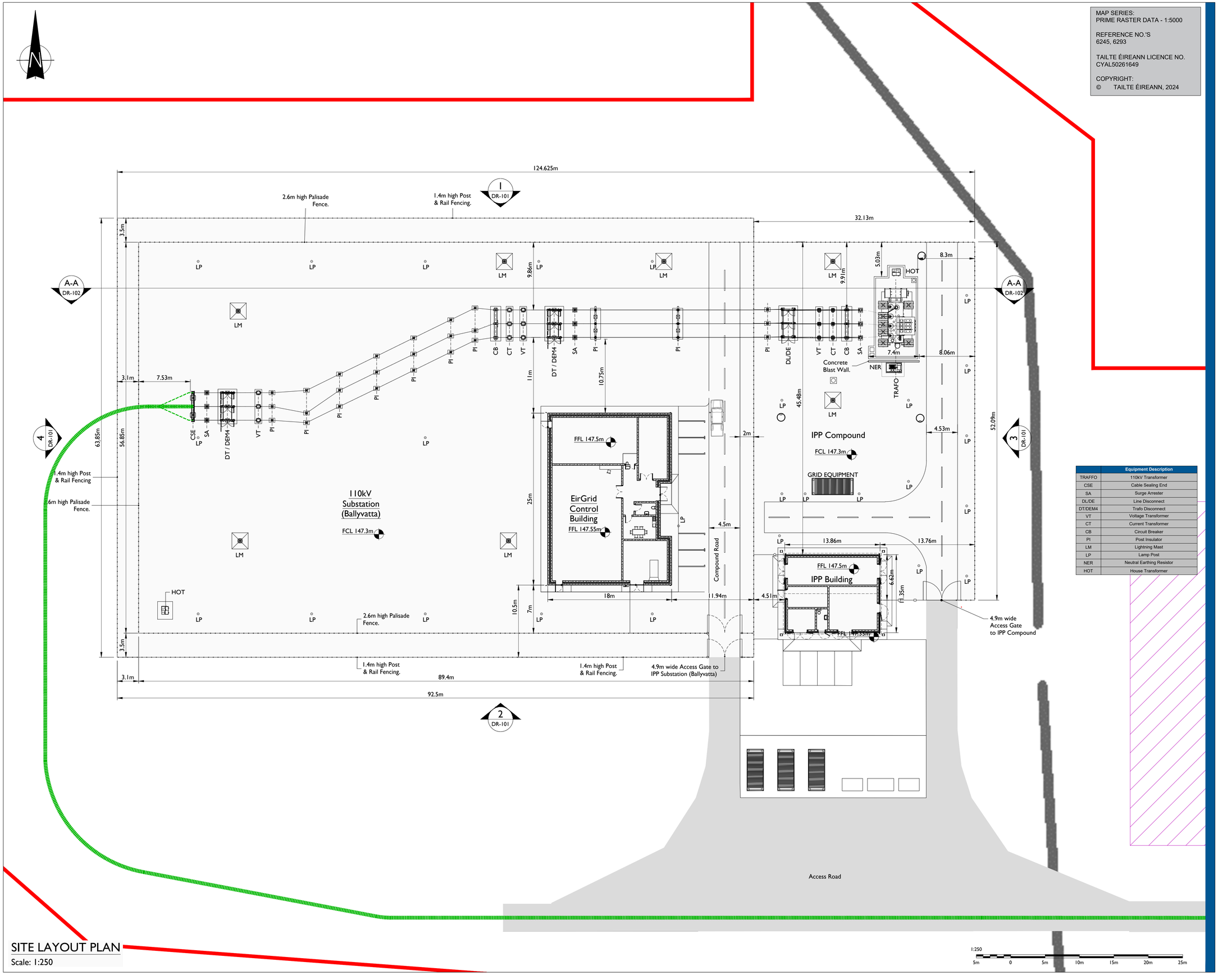
SHEET TITLE

Site Layout Plan - Sheet 3 of 3.

SHEET NUMBER

051033-DR-006

ISO A1 594mm x 841mm



MAP SERIES:
PRIME RASTER DATA - 1:5000

REFERENCE NO.'S
6245, 6293

TAILTE ÉIREANN LICENCE NO.
CYAL50261649

Equipment Description	
TRAFFO	110kV Transformer
CSE	Cable Sealing End
SA	Surge Arrester
DL/DE	Line Disconnect
DT/DEM4	Trafo Disconnect
VT	Voltage Transformer
CT	Current Transformer
CB	Circuit Breaker
PI	Post Insulator
LM	Lightning Mast
LP	Lamp Post
NER	Neutral Earthing Resistor
HOT	House Transformer

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is for Planning Application purposes only.
- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
- Dimensions are in Meters, unless noted otherwise.
- Drawings are not to be scaled. Use figured dimensions only.

LEGEND: -

Proposed 110kV Grid Connection UGC (1.09km) shown thus

Planning Boundary shown thus

Proposed 110kV Substation shown thus

Proposed Compound Levels shown thus — FCL ##.###m

Proposed Finished Floor Levels shown thus — FFL ##.###m

Proposed Temporary Construction Compound shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued for Information
P2	10.05.24	Issued for Planning
P1	03.05.24	Issued for Information

PROJECT NUMBER

05-1033

SHEET TITLE

Proposed 110kV Substation - Site Layout Plan

SHEET NUMBER

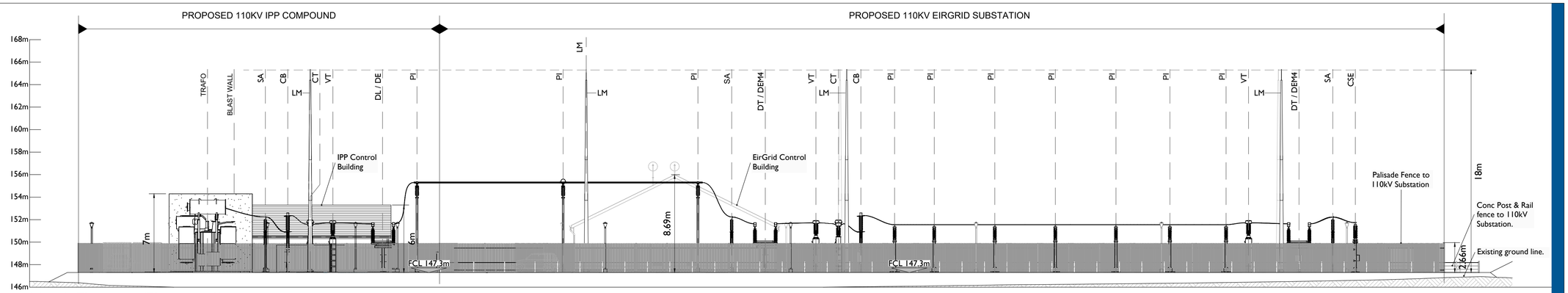
051033-DR-100

Project Management Initials: Designer: GD Checked: KC Approved: GH

SITE LAYOUT PLAN

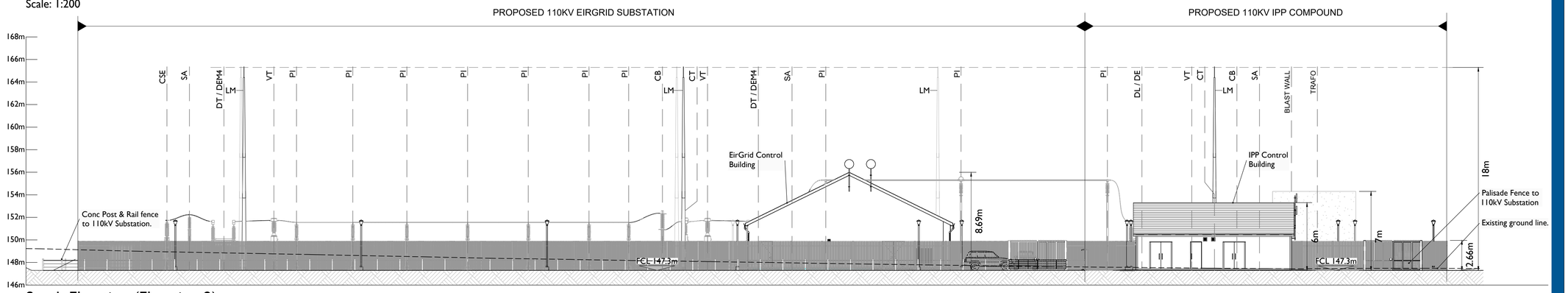
Scale: 1:250

ISO A1 594mm x 841mm



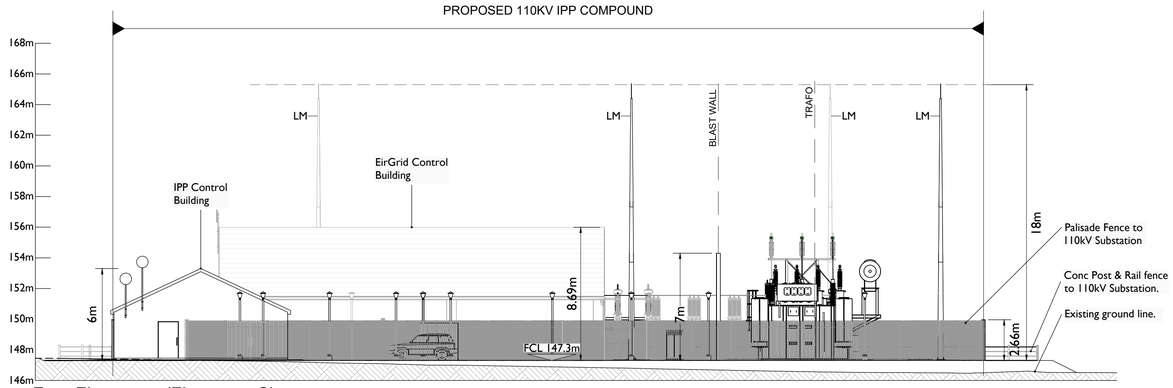
North Elevation (Elevation 1)

Scale: 1:200



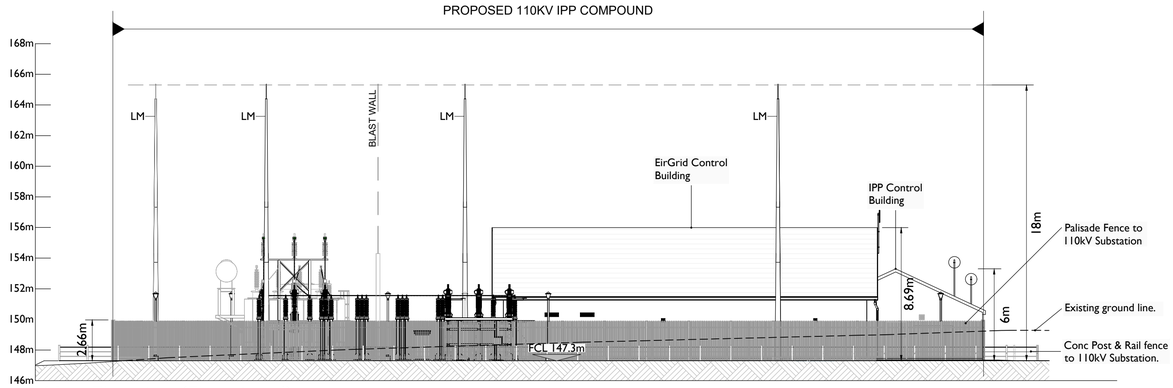
South Elevation (Elevation 2)

Scale: 1:200



East Elevation (Elevation 3)

Scale: 1:200



West Elevation (Elevation 4)

Scale: 1:200

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.
- Position of underground cable and location of joint bays, links boxes and comms chambers may vary depending on site conditions.
- Position of link boxes and comms chambers is to be agreed onsite with EirGrid/ESB.
- Other services may be encountered on the route.
- Position of HDD launch/reception shown points are indicative only and will be subject to site investigation works and detailed design.

LEGEND: -

	Equipment Description
TRAFFO	110kV Transformer
CSE	Cable Sealing End
SA	Surge Arrester
DL/DE	Line Disconnect
DT/DEM4	Trafo Disconnect
VT	Voltage Transformer
CT	Current Transformer
CB	Circuit Breaker
PI	Post Insulator
LM	Lightning Mast
LP	Lamp Post

Proposed Compound Levels shown thus FCL 147.3m

ISSUE/REVISION

P2	02.07.24	Issued for Planning
N2	04.06.24	Issued For Information
P1	10.05.24	Issued for Planning
N1	03.05.24	Issued for Information
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

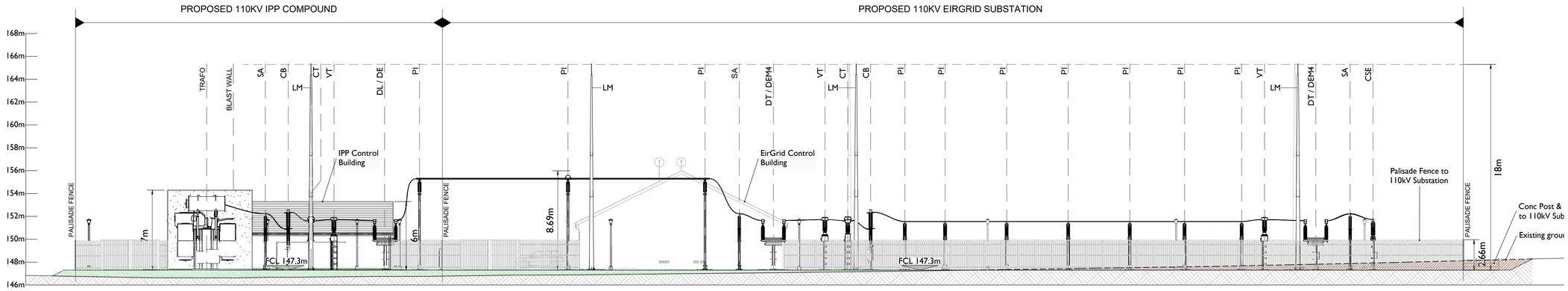
SHEET TITLE

Proposed 110kV Substation - Elevations

SHEET NUMBER

051033-DR-101

ISO A1 594mm x 841mm



Section A-A

Scale: 1:200

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PROJECT

Ballyvatta Solar Farm 110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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- Other services may be encountered on the route.
- Position of HDD launch/reception shown points are indicative only and will be subject to site investigation works and detailed design.

LEGEND: -

	Equipment Description
TRAFFO	110kV Transformer
CSE	Cable Sealing End
SA	Surge Arrester
DI/DE	Line Disconnect
DT/DEM4	Trafo Disconnect
VT	Voltage Transformer
CT	Current Transformer
CB	Circuit Breaker
PI	Post Insulator
LM	Lightning Mast
LP	Lamp Post

Proposed Compound Levels shown thus FCL 147.3m

Proposed Site Cut Areas shown thus

Proposed Site Fill Areas shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	02.07.24	Issued for Planning
N1	04.06.24	Issued For Information
P1	10.05.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

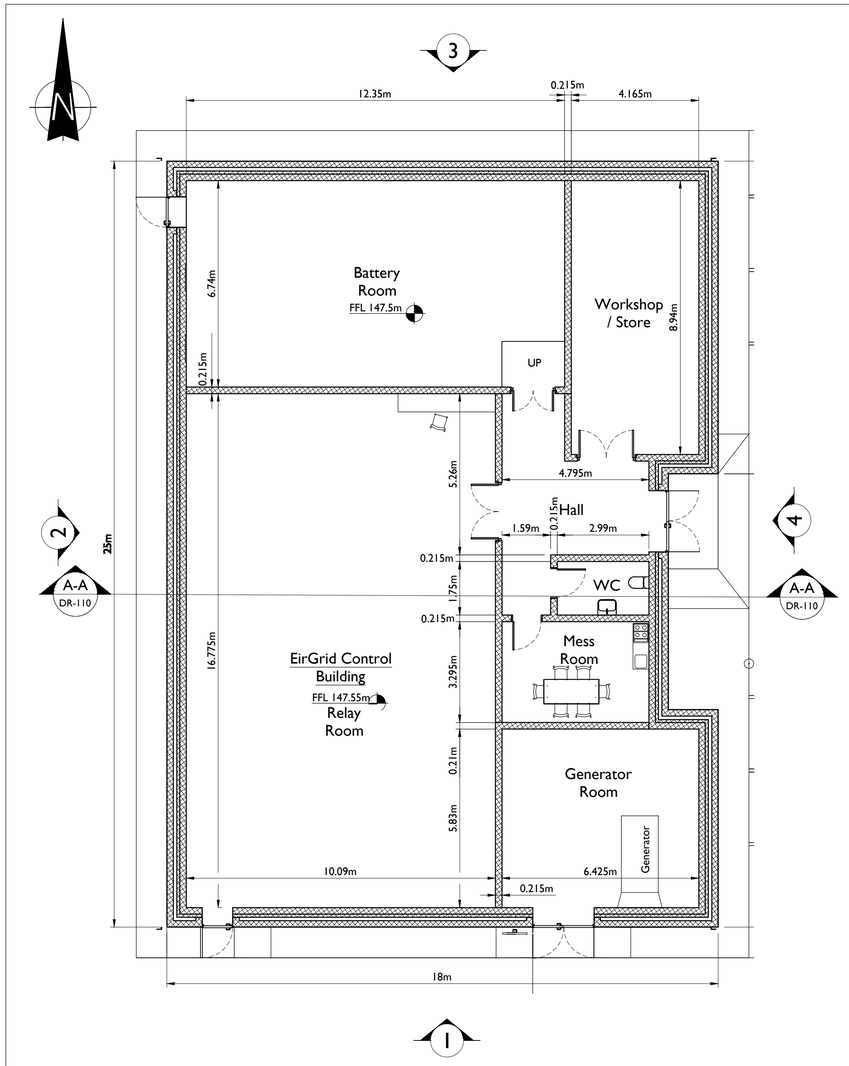
Proposed 110kV Substation - Section A-A

SHEET NUMBER

051033-DR-102

Project Management Initials: Designer: GD Checked: KC Approved: GH

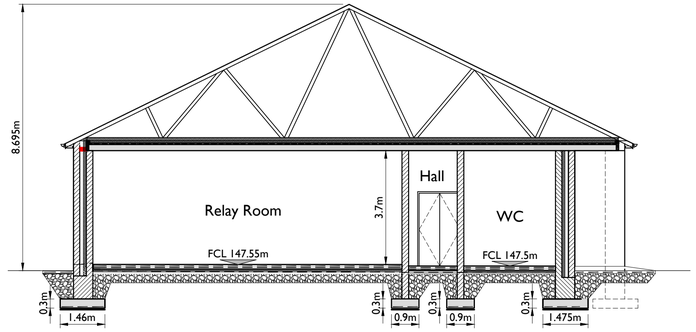
ISO A1 594mm x 841mm



Plan View

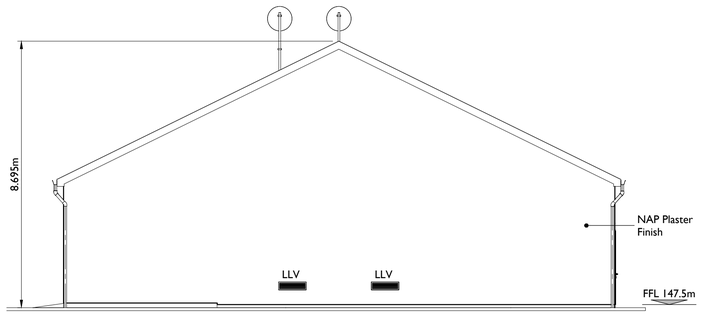
Scale: 1:100

EirGrid Building	
Total Floor Area	382.5m²



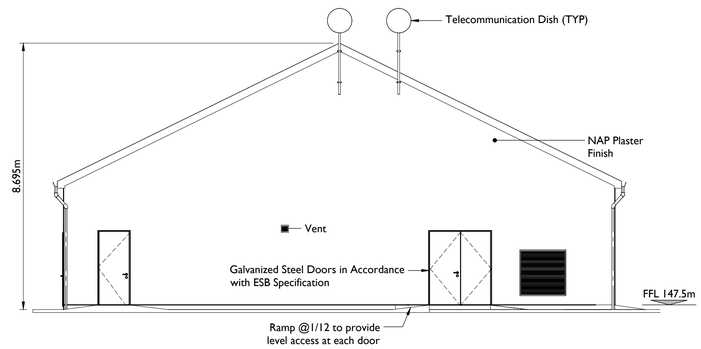
Section A-A

Scale: 1:100



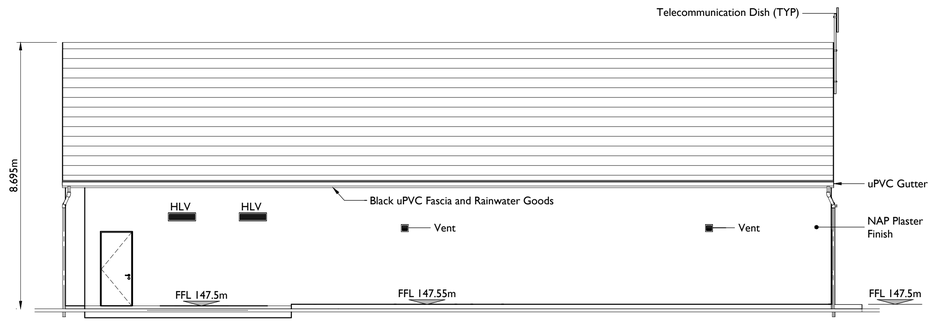
Elevation 3 (North)

Scale: 1:100



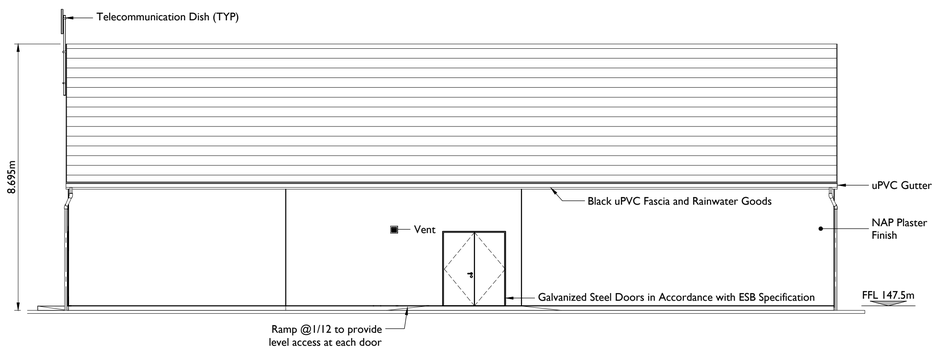
Elevation 1 (South)

Scale: 1:100



Elevation 2 (West)

Scale: 1:100



Elevation 4 (East)

Scale: 1:100

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PROJECT

Ballyvatta Solar Farm 110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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- Dimensions are in Meters, unless noted otherwise.
- Drawings are not to be scaled. Use figured dimensions only.

LEGEND: -

Proposed Finished Floor Levels shown thus. FFL ##.###m FFL ##.###m

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.05.24	Issued For Planning

PROJECT NUMBER

05-1033

SHEET TITLE

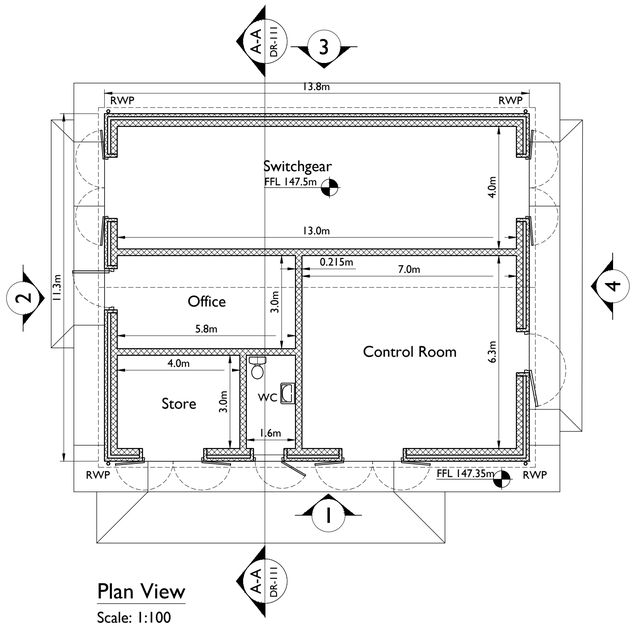
110 kV Substation - EirGrid Control Building

SHEET NUMBER

051033-DR-110

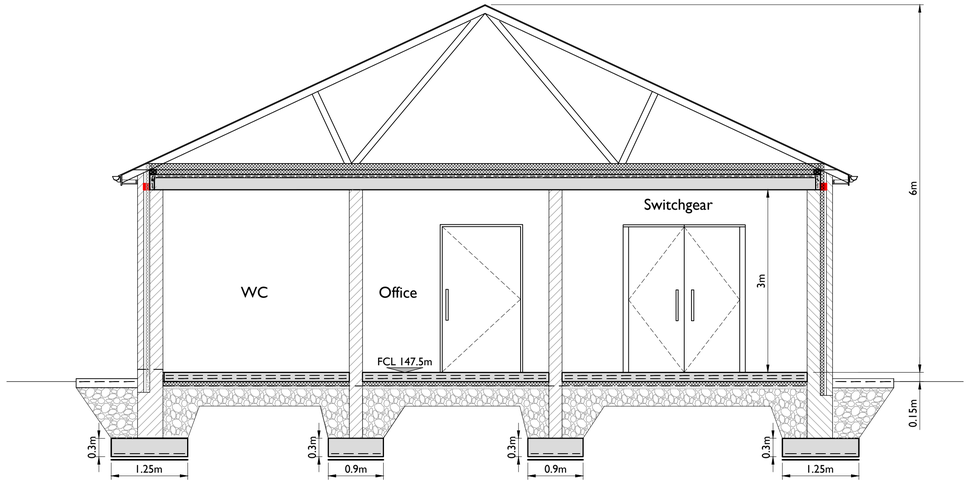
Project Management Initials: Designer: GD Checked: KC Approved: GH

ISO A1 594mm x 841mm

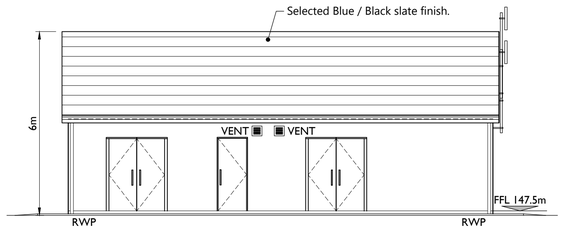


Plan View
Scale: 1:100

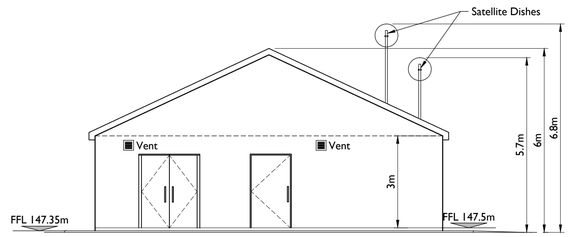
IPP Building	
Total Floor Area	137.0m²



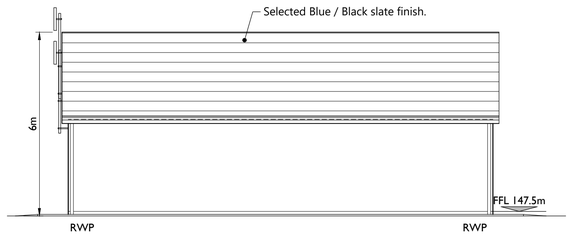
Section A-A
Scale: 1:50



Elevation 1 (South)
Scale: 1:100



Elevation 2 (West)
Scale: 1:100



Elevation 3 (North)
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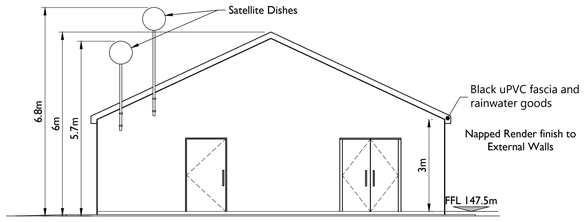

Elevation 4 (East)
Scale: 1:100

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is for Planning Application purposes only.
- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
- Dimensions are in Meters, unless noted otherwise.
- Drawings are not to be scaled. Use figured dimensions only.

LEGEND: -

Proposed Finished Floor Levels shown thus. FFL ##.###m FFL ##.###m

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.05.24	Issued For Planning

PROJECT NUMBER

05-1033

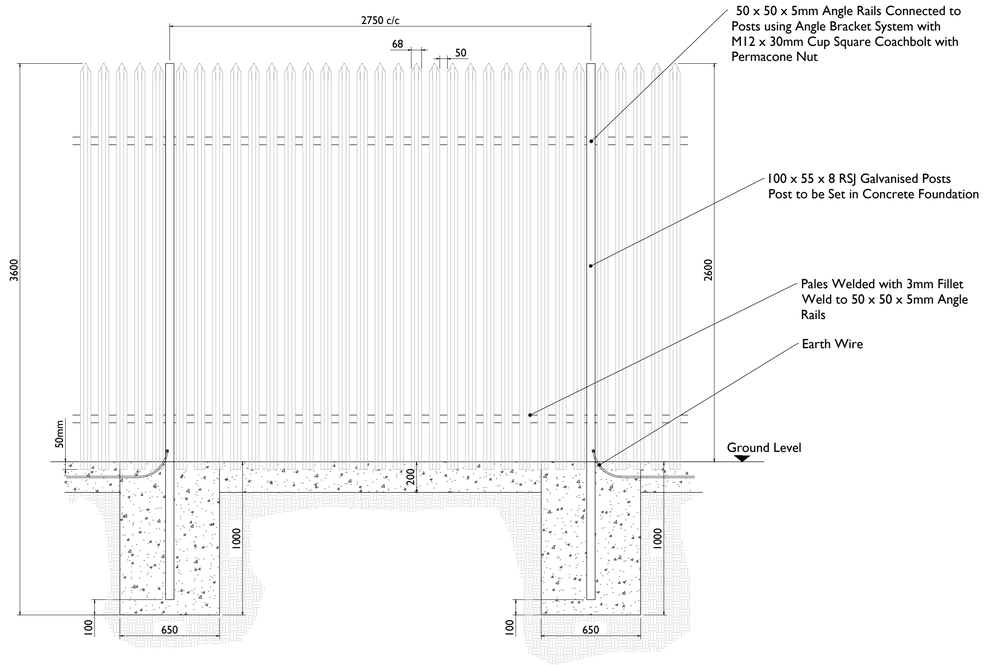
SHEET TITLE

110 kV Substation -
IPP Control Building

SHEET NUMBER

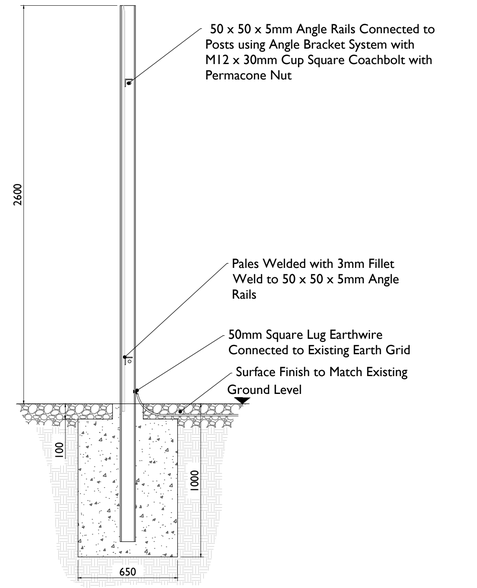
051033-DR-111

ISO A1 594mm x 841mm



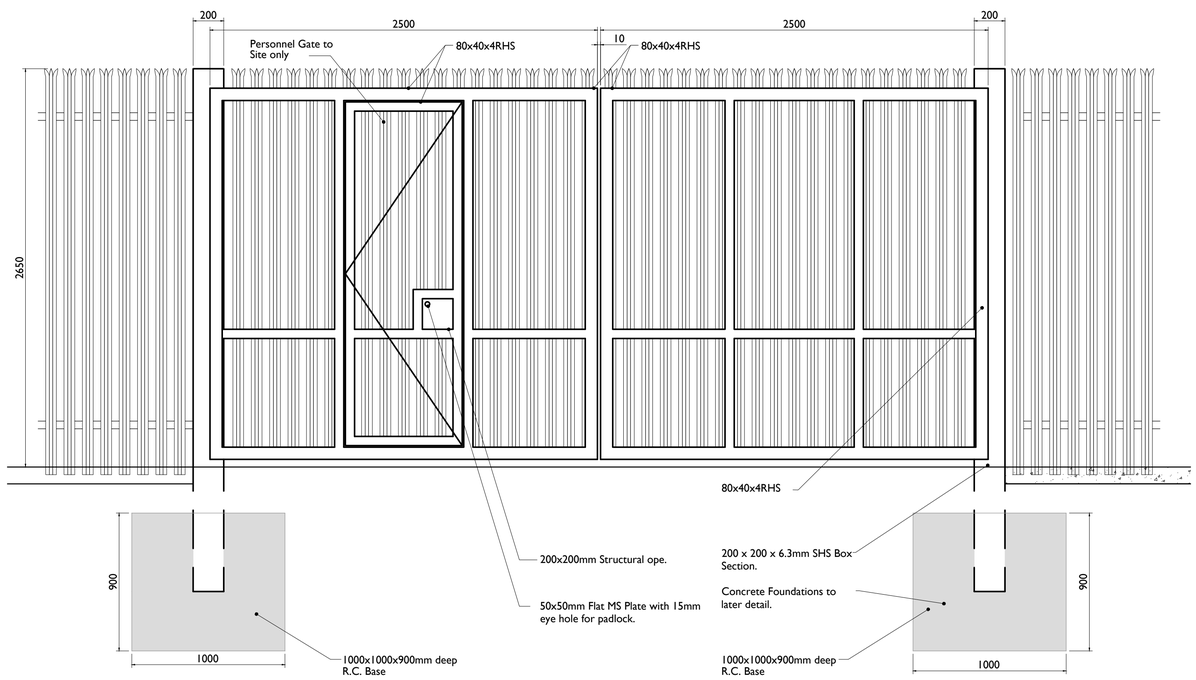
PALISADE FENCING DETAILS - ELEVATION

SCALE 1:20



PALISADE FENCING DETAILS - SECTION

SCALE 1:20



PALISADE FENCING DETAILS - ELEVATION

SCALE 1:20

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.05.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

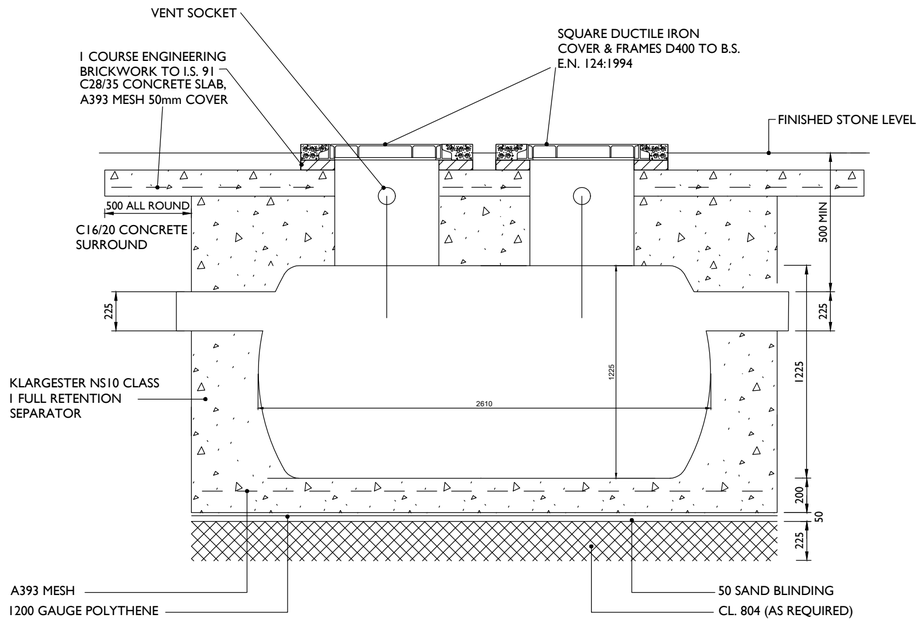
Proposed 110 kV Substation - Gate and Fencing Details

SHEET NUMBER

051033-DR-120

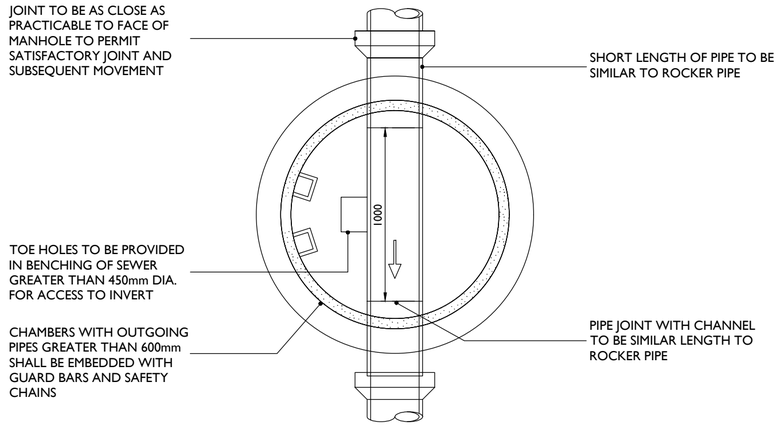
Project Management Initials: Designer: GD Checked: KC Approved: GH

ISO A2 420mm x 594mm



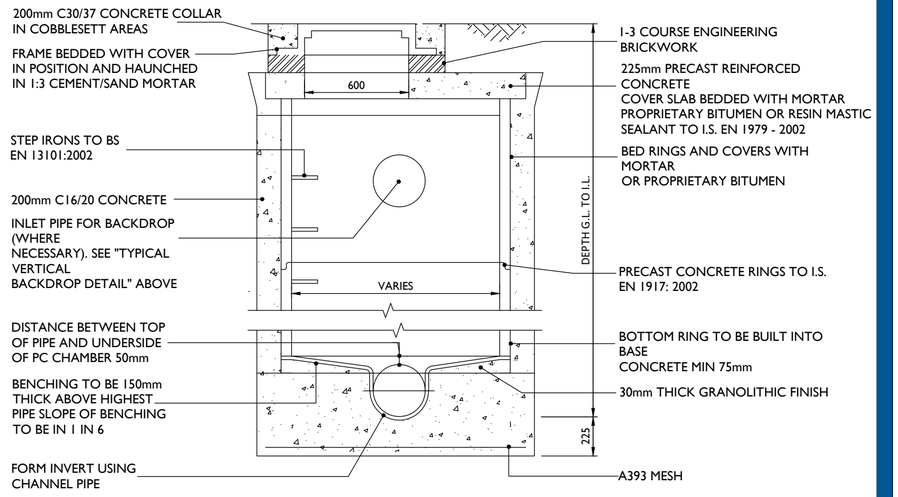
SECTION THROUGH CLASS 1 FULL RETENTION SEPERATOR

SCALE 1:25



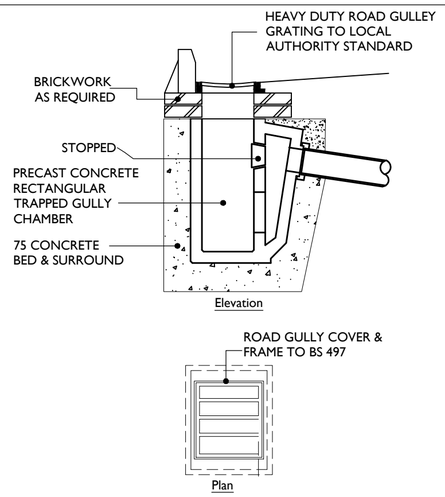
PRECAST RING MANHOLE - PLAN

SCALE 1:25



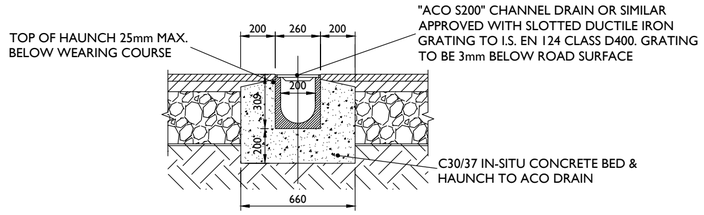
PRECAST RING MANHOLE -SECTION

SCALE 1:25



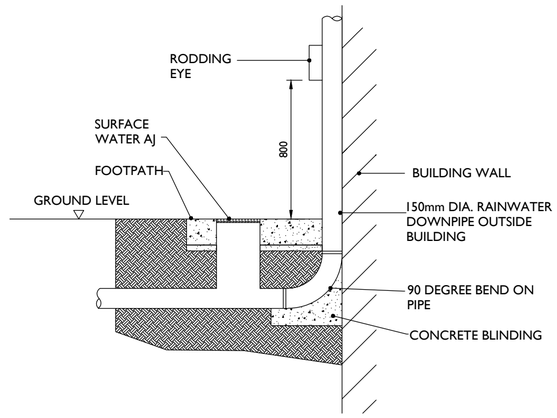
ROAD GULLEY DETAIL

SCALE 1:25



CHANNEL DRAIN DETAIL

SCALE 1:25



RAINWATER DOWNPIPE DETAIL

SCALE 1:25

Project Management Initials: Designer: GD Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.05.24	Issued for Planning

PROJECT NUMBER

05-1033

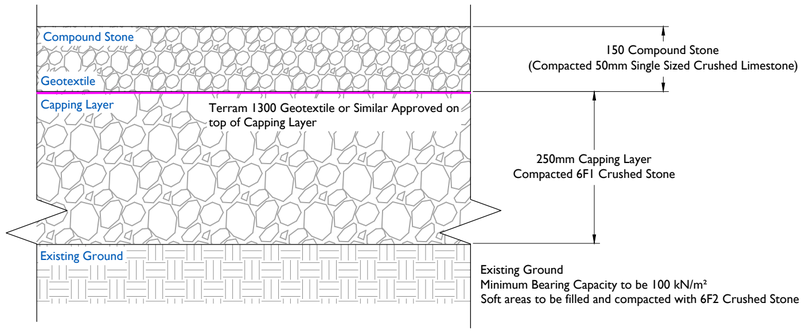
SHEET TITLE

Proposed 110 kV Substation - Drainage Details

SHEET NUMBER

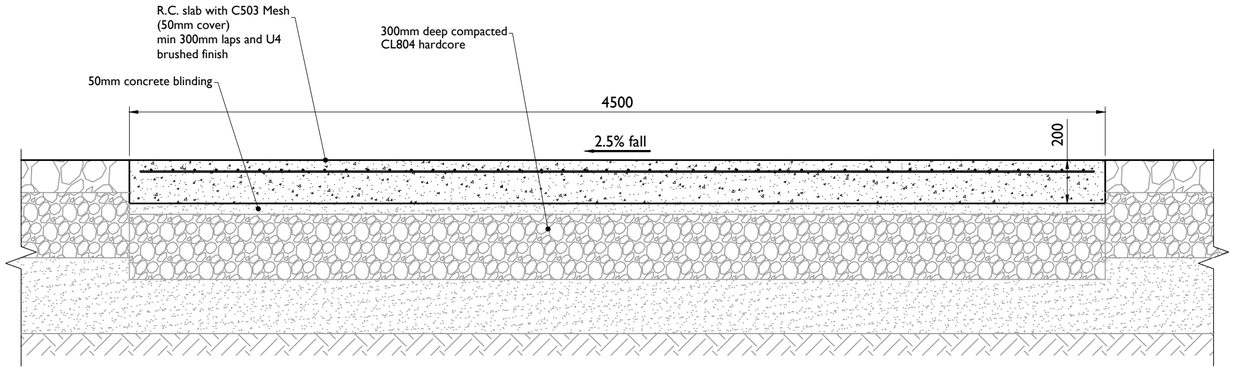
051033-DR-121

ISO A2 420mm x 594mm



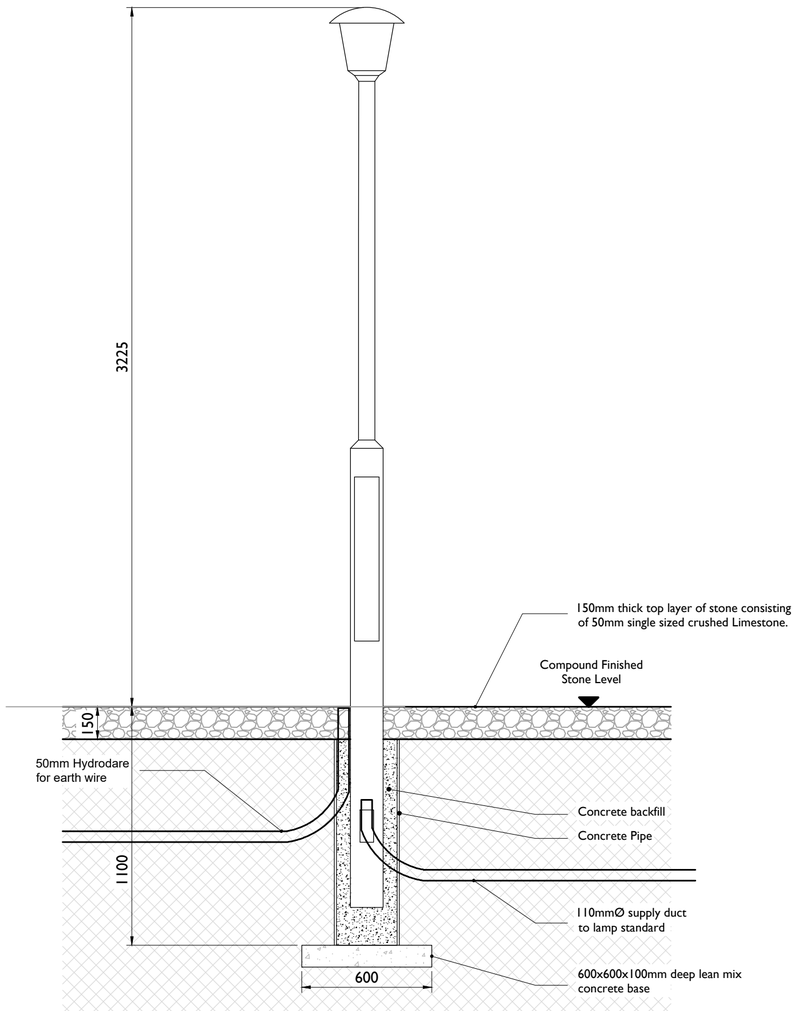
TYPICAL COMPOUND DETAIL

SCALE 1:10



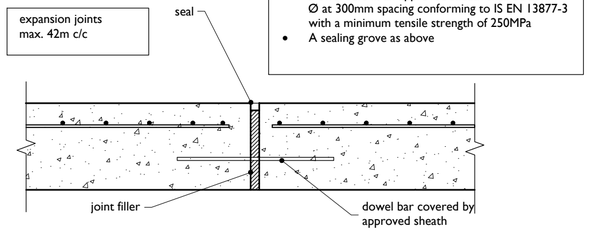
TYPICAL SECTION - CONCRETE ACCESS ROAD

SCALE 1:20



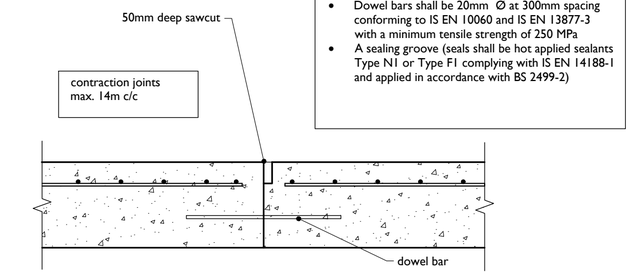
LAMP POST & SURROUND DETAIL

SCALE 1:20



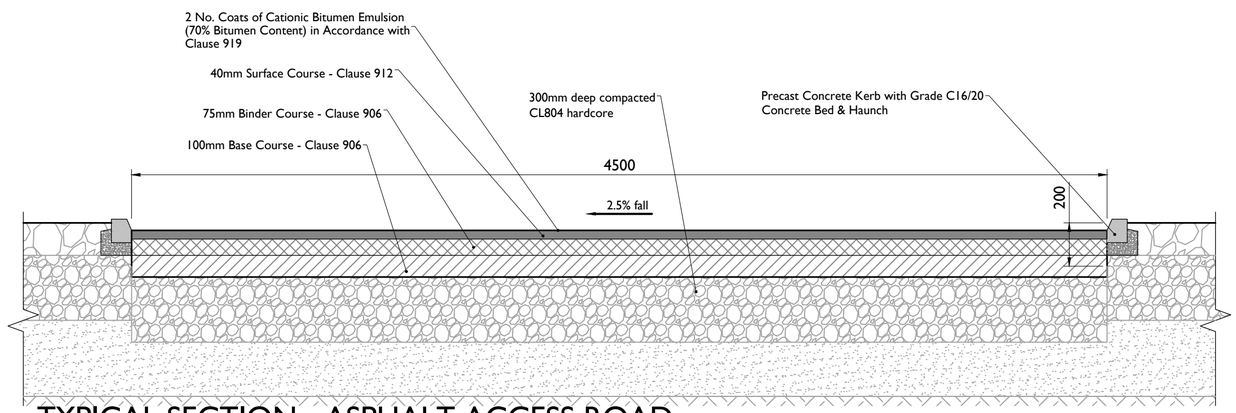
Concrete Access Road Expansion Joint

SCALE 1:10



Concrete Access Road Contraction Joint

SCALE 1:10



TYPICAL SECTION - ASPHALT ACCESS ROAD

SCALE 1:20

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	10.05.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

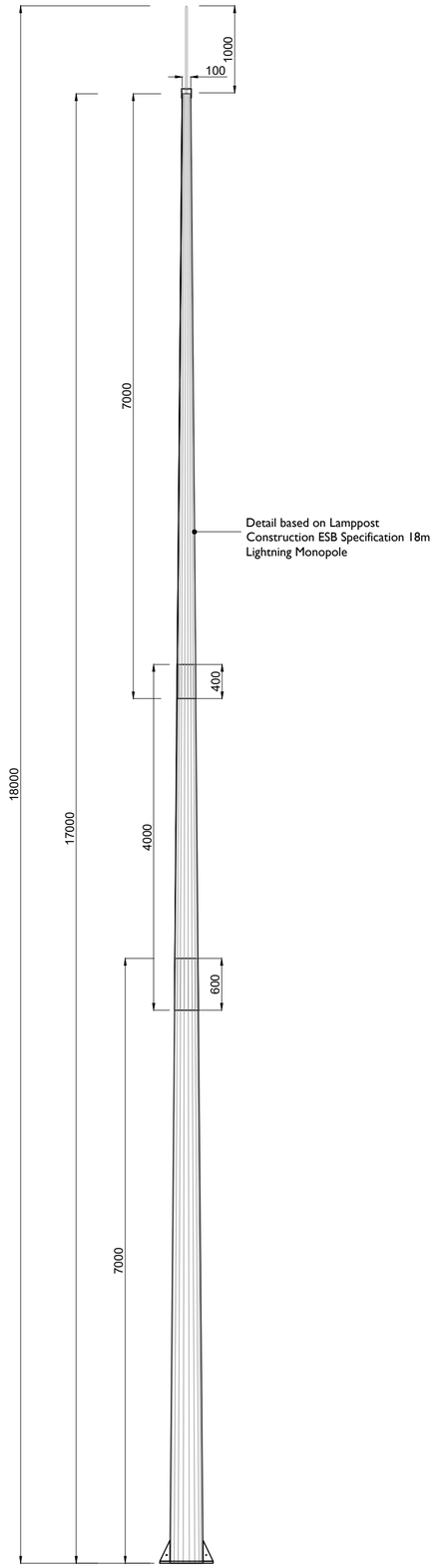
Proposed 110 kV Substation
- Site Compound Details

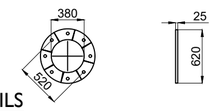
SHEET NUMBER

051033-DR-122

Project Management Initials: Designer: GD Checked: KC Approved: GH

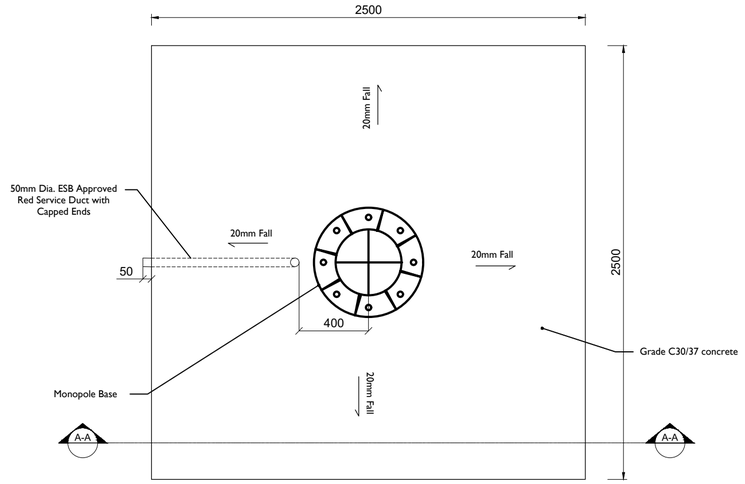
ISO A2 420mm x 594mm





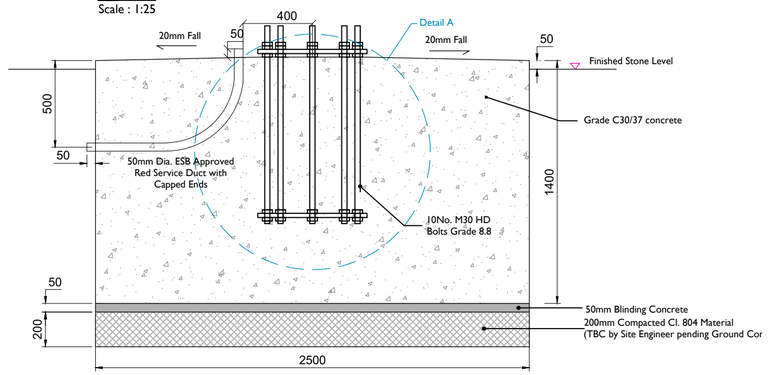
MONOPOLE DETAILS

Scale : 1:50



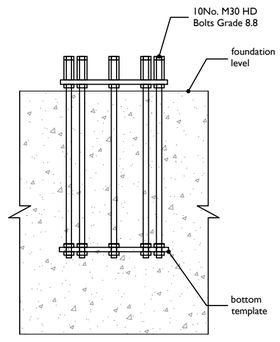
PLAN

Scale : 1:25



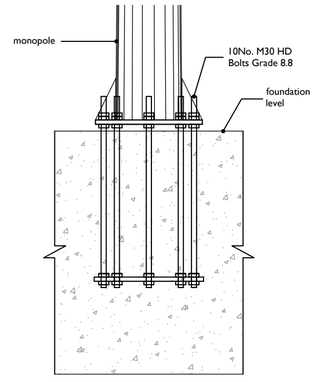
SECTION A-A: FOUNDATION DETAIL

Scale : 1:25



DETAIL A

Scale : 1:25



MONOPOLE BASE PLATE
TO HDB CONNECTION

Scale : 1:25

GENERAL NOTES:

1. ALL drawings to be read in conjunction with the Specification and all Engineers and Architects Drawings.
2. All concrete to be in accordance with I.S. EN 206-1:2002 with the Mix Designs shown in Table 1
3. Concrete finishes to be in accordance with Table 6.1 of the ESBI Specification CS17-SO1-005.
4. ALL Reinforcement shall be in accordance with BS4449 and scheduled in accordance with BS.8666. 300mm Laps for A142 Mesh 600mm Min Laps for A393 Mesh.
5. Refer always to relevant Earth Grid drawing prior to excavations & concrete pours.
6. Geometrical tolerances to be in accordance with Table 6.2 of ESBI Specification CS17-S01-005

FOUNDATION NOTES:

7. Ground to have a minimum Bearing Capacity of 100 kN/m².
8. Formation level and Foundations to be inspected and approved by the Engineer prior to any Concrete being poured.
9. All Foundations are to be blinded immediately after excavation with 50mm of C16/20 Concrete Blinding.
10. Refer always to the relevant Earth Work Drawings prior to Excavations & Concrete pours.

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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

LEGEND: -

ISSUE/REVISION

P1	10.05.24	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

SHEET TITLE

Proposed 110 kV Substation - Lightning Monopole Details - 18m Mast

SHEET NUMBER

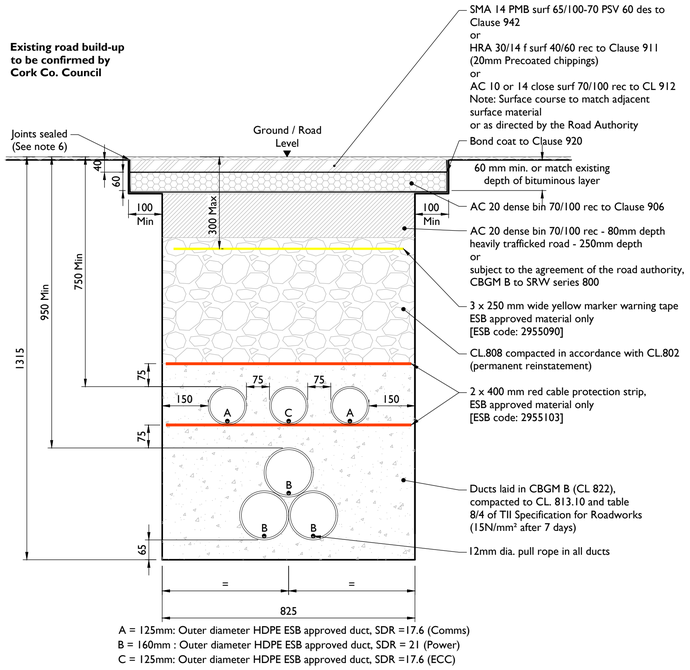
051033-DR-123

Project Management Initials: Designer: GD Checked: KC Approved: GH

ISO A1 594mm x 841mm

Permanent Reinstatement

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

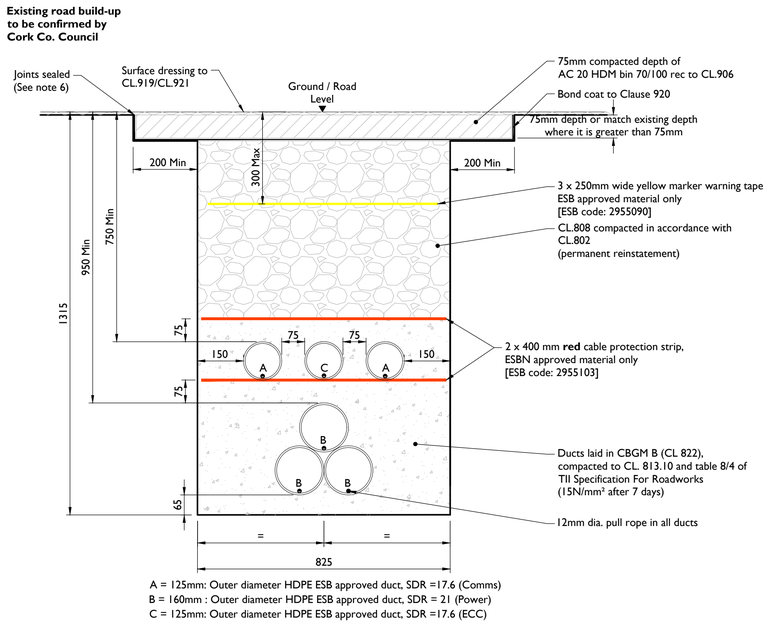


A = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (Comms)
B = 160mm : Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (ECC)

Section Through Permanent Reinstatement of Longitudinal Opening in Roadway with ECC

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 (Comms)
B = 160mm : Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (ECC)

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

Scale: 1:10

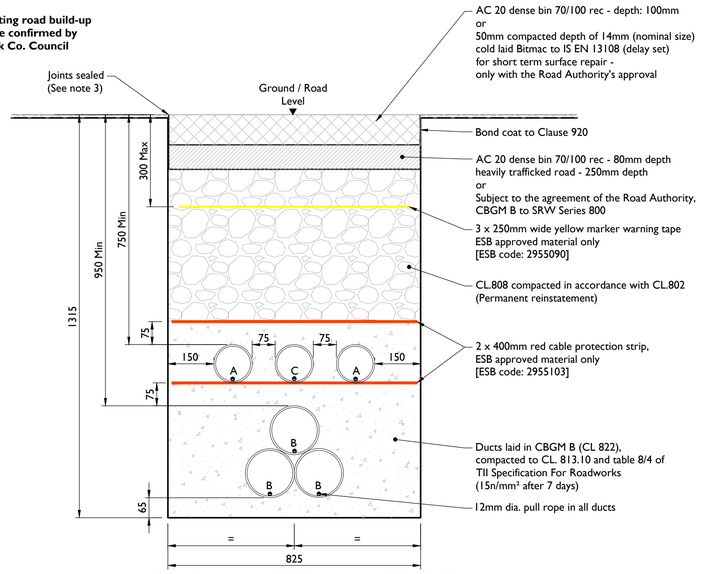
All reinstatement works are to be in accordance with Guidelines for Managing Openings in Public Roads (April 2017) and local area engineers requirements

NOTES: -

1. 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.
2. 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.
3. 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).
4. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
5. Clause 808 or cement bound granular material surface to be sprayed per Clause 920 prior to application of asphalt concrete layer.
6. Joint sealer shall be a hot 50 pen bitumen binder or cold thixtropic bitumen 40/60 pen to be applied to all vertical cuts in accordance with B.S.594987 prior to application of bituminous materials.
7. 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.
8. 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

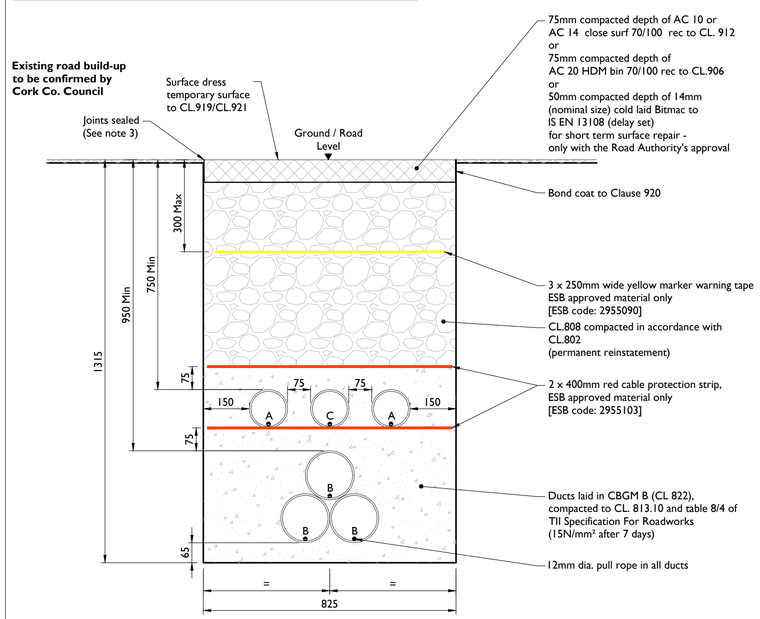


A = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (Comms)
B = 160mm : Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (ECC)

Section Through Temporary Reinstatement of Longitudinal Opening in Roadway With ECC

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 (Comms)
B = 160mm : Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (ECC)

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

Scale: 1:10

All reinstatement works are to be in accordance with Guidelines for Managing Openings in Public Roads (April 2017) and local area engineers requirements

NOTES: -

1. 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.
2. Clause 808 surface to be sprayed per Clause 920 prior to application of asphalt concrete layer.
3. Joint sealer shall be a hot 50 pen bitumen binder or cold thixotropic bitumen 40/60 pen to be applied to all vertical cuts in accordance with B.S. 594987 prior to application of bituminous materials.
4. Licence holder must maintain temporary reinstatement to a safe and acceptable standard.
5. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
6. Temporary road surface warning signs must be used in accordance with the Traffic Signs Manual (Chapter 8 - Temporary Traffic Measures and Signs for Roadworks).
7. 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 Management Initials: Designer: PW Checked: KC Approved: GH

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Tel: 00 44 1256406664

PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- The following design is subject to Planning 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.
- Existing road build up and reinstatement requirements to be confirmed with Cork County Council
- Geogrid may be implemented along the cable trench route where deemed necessary by the contractor or as required by Cork County Council.

LEGEND: -

ISSUE/REVISION

P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

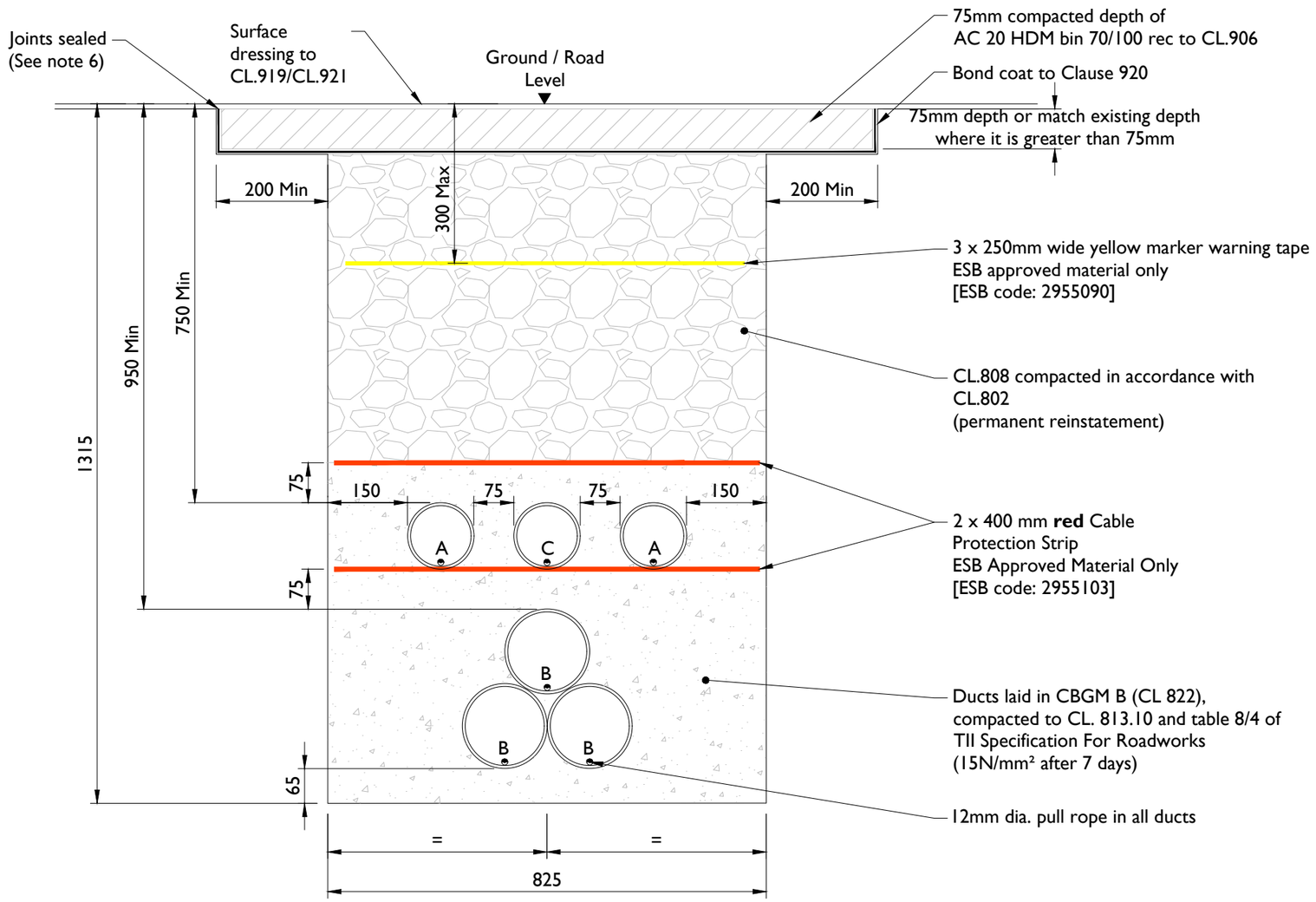
05-1033

SHEET TITLE

110kV Ducting Through Regional / Local Roadways and Public Road Reinstatement With ECC

SHEET NUMBER

051033-DR-150



A = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (Comms)
B = 160mm : Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR =17.6 (ECC)

NOTES: -

1. 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.
2. 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.
3. 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).
4. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
5. Clause 808 or cement bound granular material surface to be sprayed per Clause 920 prior to application of asphalt concrete layer.
6. Joint sealer shall be a hot 50 pen bitumen binder or cold thixtropic bitumen 40/60 pen to be applied to all vertical cuts in accordance with B.S.594987 prior to application of bituminous materials.
7. 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.
8. Where required by the road authority the trench may be reinstated with a cement bound granular material.

110kV Ducting in Access Track (with ECC duct)

Scale: 1:10

GENERAL NOTES:-

- The drawing is subject to ESB and EirGrid design 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.

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CLIENT
Ballyvatta Solar Farm Limited

PROJECT
Ballyvatta Solar Farm
110kV Grid Connection

PROJECT NUMBER
05-1033

SHEET NUMBER
051033-DR-151

SHEET TITLE
110kV Ducting in Access Track
With ECC Duct

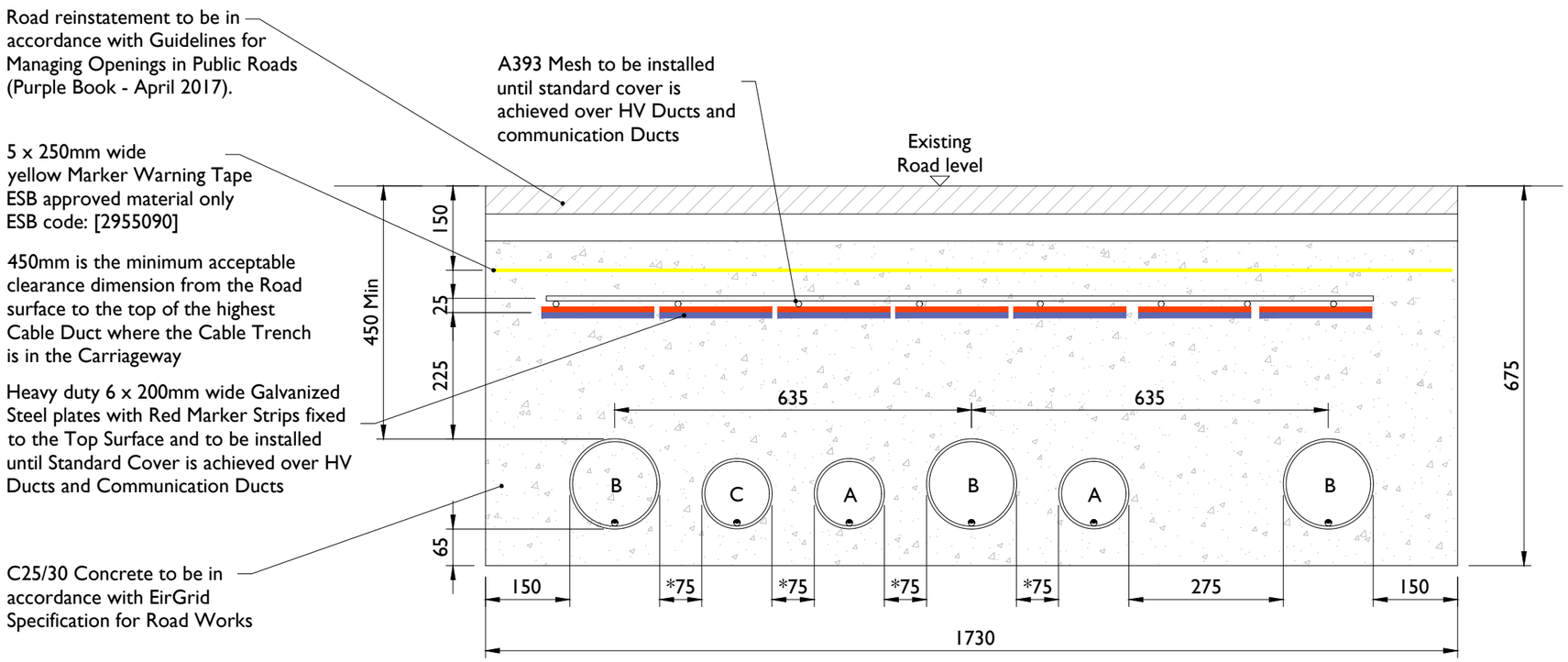
DRAWING STATUS
Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning

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

All Reinstatement Works are to be in accordance with Cork County Council / Landowner requirements



A = 125mm: Outer diameter HDPE ESB approved duct, SDR = 17.6 (Comms)
B = 160mm: Outer diameter HDPE ESB approved duct, SDR = 21 (Power)
C = 125mm: Outer diameter HDPE ESB approved duct, SDR = 17.6 (ECC)

110kV Ducting in Flat Formation (with ECC duct)

Scale: 1:10

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.
- Existing Road build up and reinstatement requirements to be confirmed with Cork County Council
- Geogrid may be implemented along the Cable Trench Route where deemed necessary by the Contractor or as required by Cork County Council.
- The following design is subject to planning approval and should not be used for construction

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CLIENT
Ballyvatta Solar Farm Limited

PROJECT
Ballyvatta Solar Farm
110kV Grid Connection

PROJECT NUMBER
05-1033

SHEET NUMBER
051033-DR-152

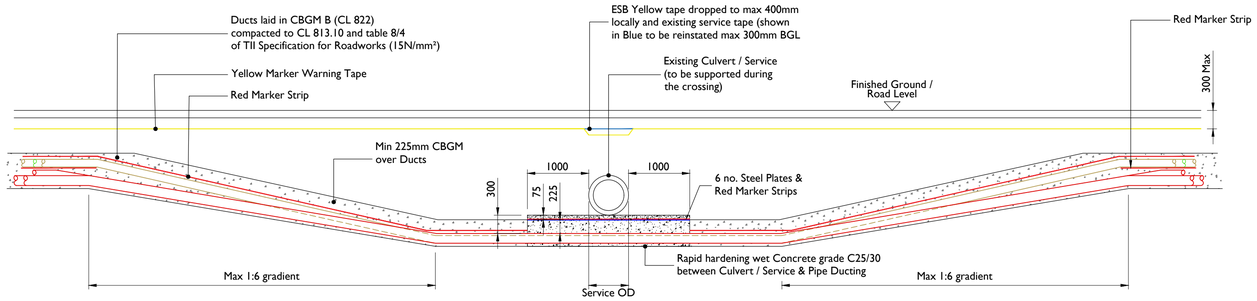
SHEET TITLE
110kV Ducting in Flat Formation With ECC Duct

DRAWING STATUS
Planning

ISSUE/REVISION

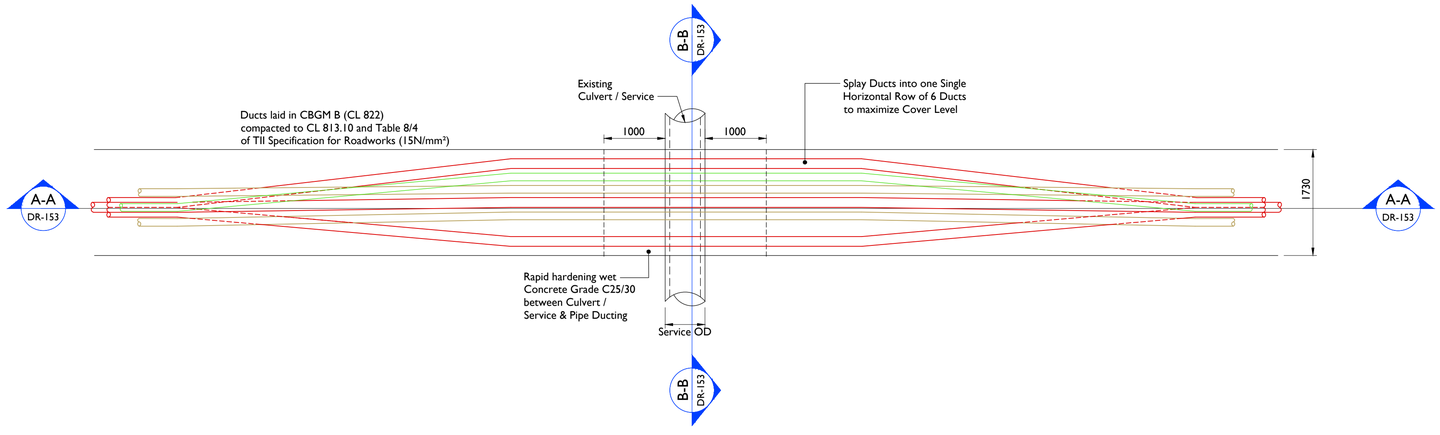
I/R	DATE	DESCRIPTION
P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning

ISO A1 594mm x 841mm



Section A-A

Scale: 1:50



Plan View

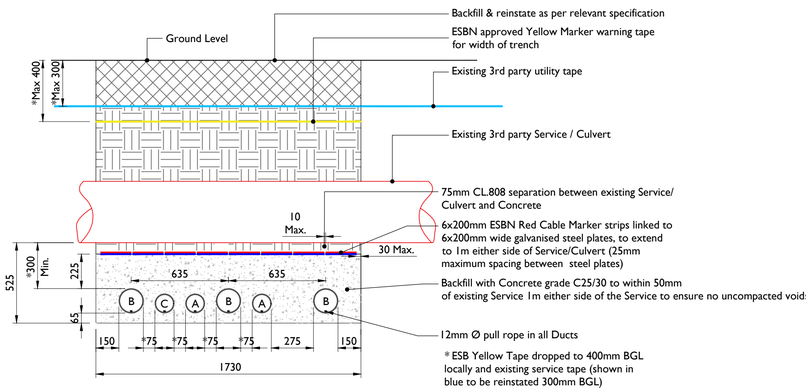
Scale: 1:50

GENERAL NOTES: -

1. This drawing is subject to EirGrid 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 051033-DR-150 (trefoil with ECC) and 051033-DR-152 (flat with ECC).
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 managing openings in public Roads - guidelines for the opening, backfilling and reinstatement of openings in public roads (2017).
11. **EirGrid's preference is to cross under existing services where possible.**
12. 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.
13. 225 mm minimum Concrete over ducts where they transition from standard cross section and where they are at less than standard cover to ground level.
14. The owner of the existing utility being crossed must be consulted in advance of works commencing as per their guidelines.
15. Replace existing service marker tape over ESB Yellow Marker Tape.
16. 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.

LEGEND

- 160mm ø HDPE Power Duct with 12mm Diameter Pull Rope
- 125mm ø HDPE Communication Duct with 12mm Diameter Pull Rope
- 125mm ø HDPE Earth Continuity Conductor duct with 12mm Diameter Pull Rope
- Red Marker Strip or Steel Plates
- Yellow Marker Warning Tape
- 6mm Galvanised Steel Plate
- Existing Service Tape



A = 125mm outer diameter HDPE ESB approved Comms Duct, SDR=17.6
B = 160mm outer diameter HDPE ESB approved Power Duct, SDR=21
C = 125mm outer diameter HDPE ESB approved ECC Duct, SDR=17.6

Section B-B

Scale: 1:20

Project Management Initials: Designer: PW Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm

110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
- Dimensions are in millimeters, unless noted otherwise.

LEGEND: -

ISSUE/REVISION

P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

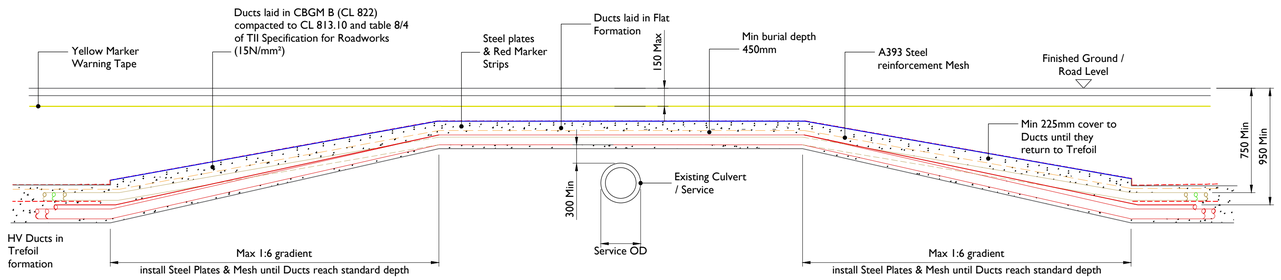
SHEET TITLE

Trench Sections for Crossing Existing Culverts / Services Undercrossing

SHEET NUMBER

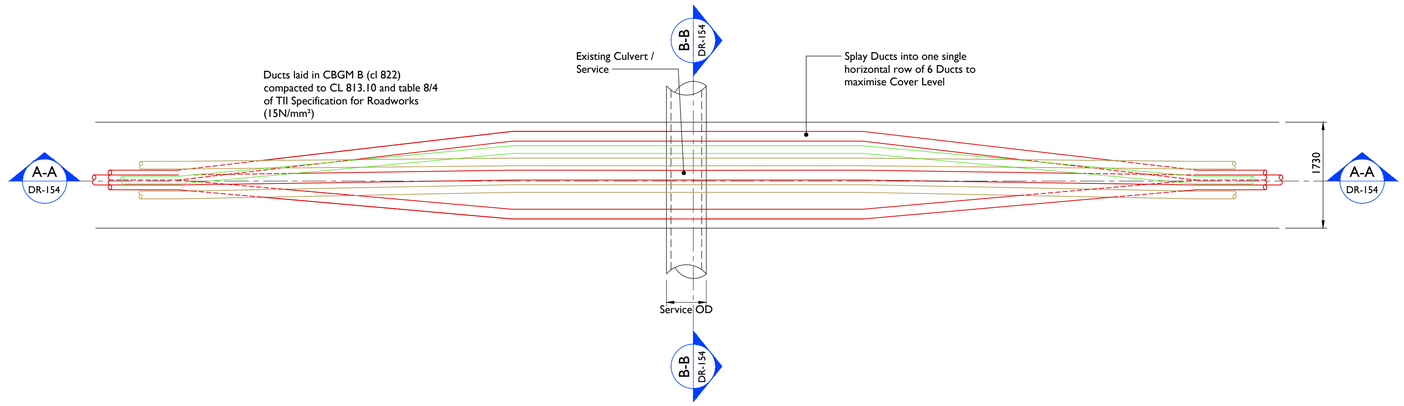
051033-DR-153

ISO A1 594mm x 841mm



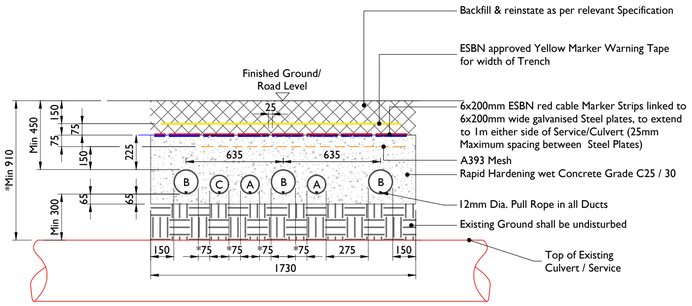
Section A-A

Scale: 1:50



Plan View

Scale: 1:50



A = 125mm outer diameter HDPE ESB approved Comms Duct, SDR=17.6
B = 160mm outer diameter HDPE ESB approved Power Duct, SDR=21
C = 125mm outer diameter HDPE ESB approved ECC Duct, SDR=17.6

Section B-B

Scale: 1:20

GENERAL NOTES: -

1. This drawing is subject to EirGrid 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. 300mm minimum vertical and horizontal clearances to be observed between cable Ducts and 3rd party Services (e.g. Gas Pipes, Water mains, Culverts etc.). greater clearances may be required in proximity to high pressure mains. Designer to consult with 3rd party Service owners for guidance.
9. For standard Trench Cross Section drawings and minimum horizontal separation to Existing Services, see 051033-DR-150 (Trefoil with ECC) and 051033-DR-152 (Flat with ECC).
10. Backfill as per guidelines for managing openings in Public Roads - guidelines for the Opening, Backfilling and reinstatement of Openings in Public Roads (2017).
11. **EirGrid's preference is to cross under Existing Services where possible.**
12. 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.
13. 225 mm minimum Concrete over Ducts where they transition from standard cross section and where they are at less than Standard Cover to Ground Level.
14. The Owner of the Existing Utility being crossed must be consulted in advance of works commencing as per their guidelines.
15. Replace Existing Service Marker Tape over ESB Yellow Marker Tape.
16. 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.

LEGEND: -

- 160mm ø HDPE Power Duct with 12mm diameter Pull Rope
- 125mm ø HDPE Communication Duct with 12mm diameter Pull Rope
- 125mm ø HDPE ECC Duct with 12mm diameter Pull Rope
- Red Marker Strip
- Yellow Marker Warning Tape
- A393 Steel Reinforcemnet Mesh
- 6mm Galvanised Steel Plate

Project Management Initials: Designer: PW Checked: KC Approved: GH

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PROJECT

Ballyvatta Solar Farm

110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
- Dimensions are in millimeters, unless noted otherwise.

LEGEND: -

ISSUE/REVISION

P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

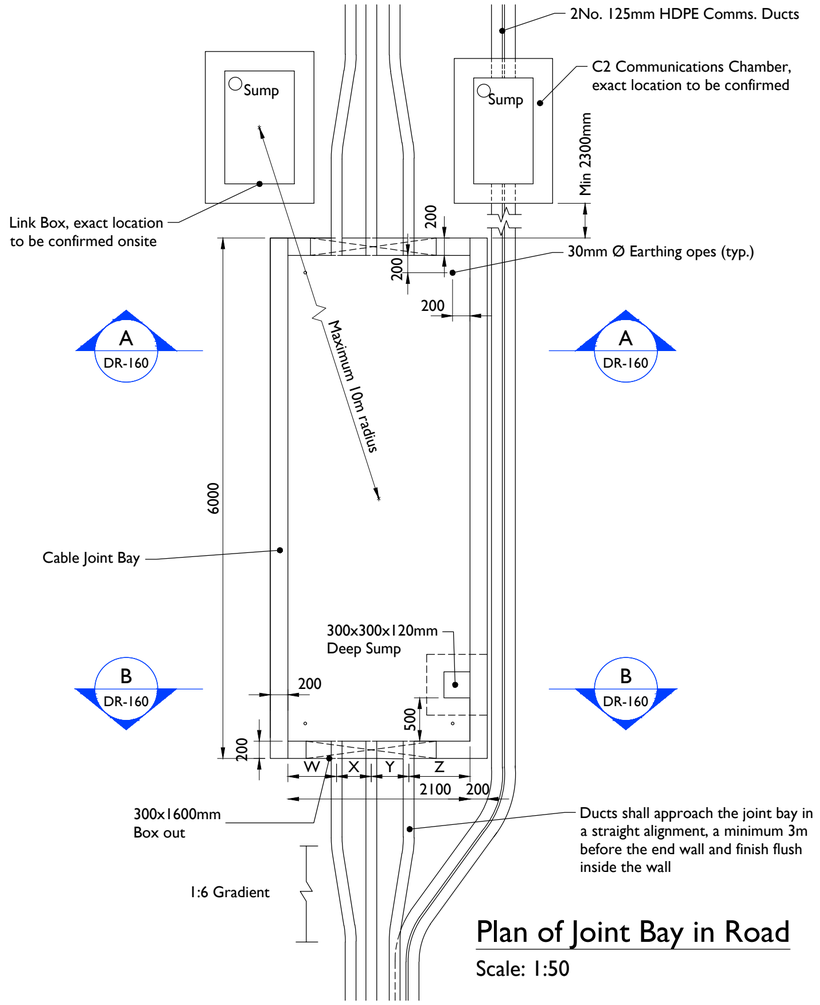
SHEET TITLE

Trench Sections for Crossing Existing Culverts / Services Overcrossing

SHEET NUMBER

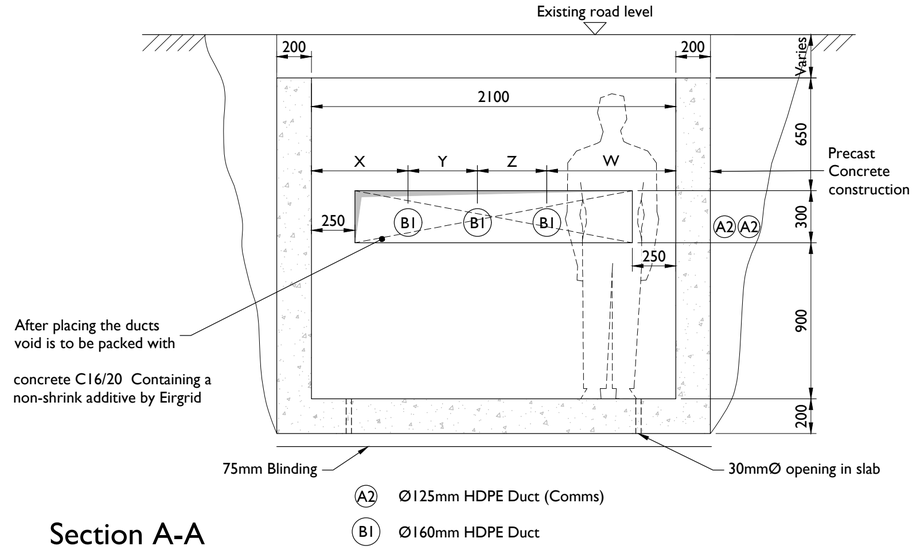
051033-DR-154

ISO A2 420mm x 594mm



Plan of Joint Bay in Road

Scale: 1:50

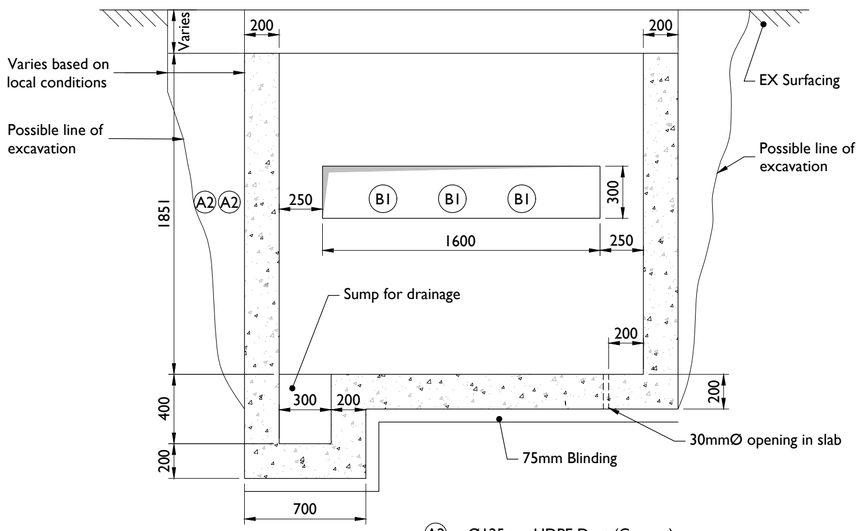


Section A-A

Scale: 1:25

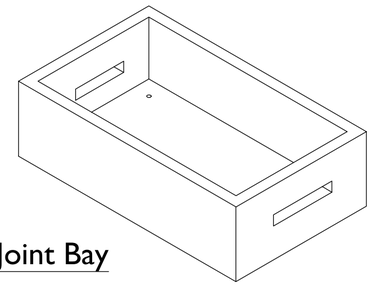
TABLE 1 - Duct Separation

	X	Y	Z	W
110kV	560	400	400	760



Section B-B

Scale: 1:25



Isometric View of Joint Bay

Scale: N.T.S

GENERAL NOTES: -

1. The following design is subject to planning approval and should not be used for construction
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 level to 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.

Project Management Initials: Designer: PW Checked: DB Approved: RG

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PROJECT

Ballyvatta Solar Farm
110kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

LEGEND: -

ISSUE/REVISION

P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

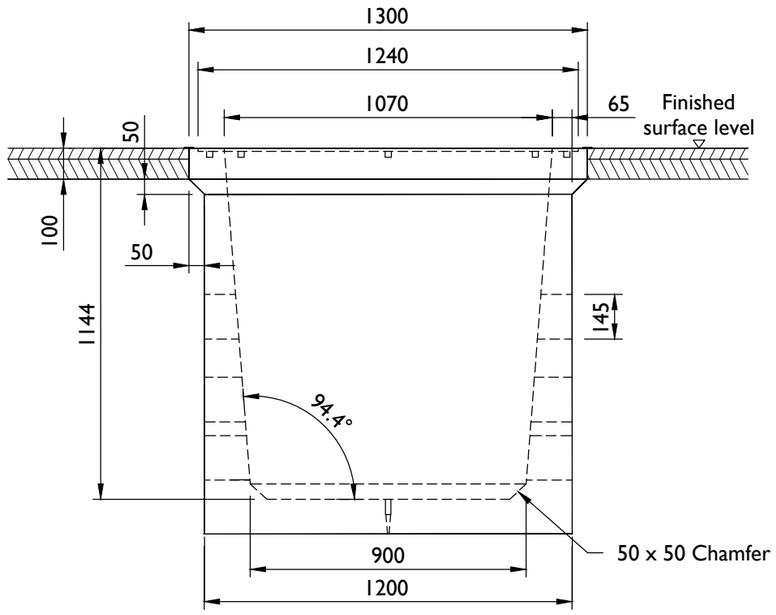
SHEET TITLE

Joint Bay Section Detail

SHEET NUMBER

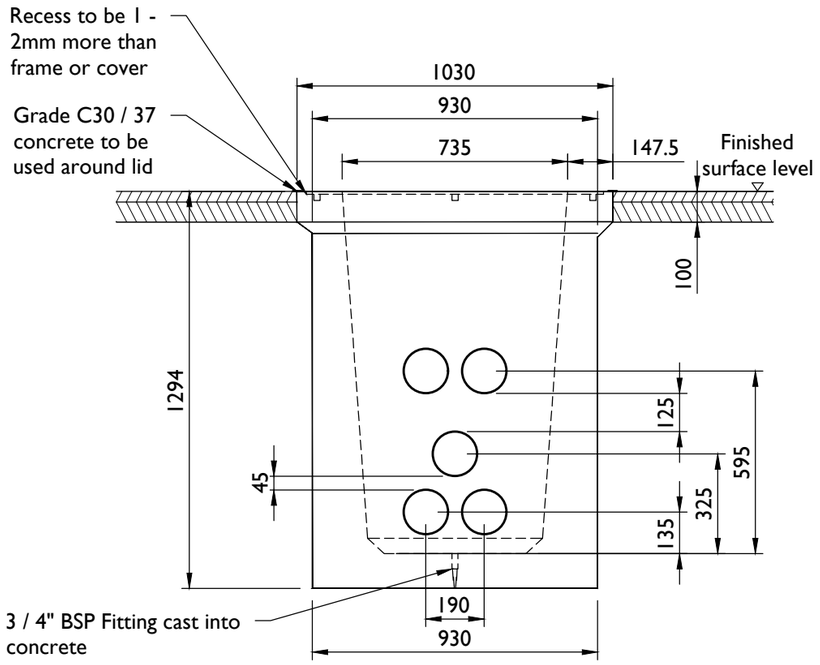
051033-DR-160

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. Reinstatement to comply with requirements of the relevant local Authority/Asset owner
5. Entrance & Exit ducts to be in line
6. All material and workmanship to be in accordance with the NRA./TII specification for Roadworks, May 2005 and subsequent revisions
7. Reinforced concrete to be a minimum grade C32/40, Sulphate resisting cement to be used where aggressive soil conditions apply, refer to table 6.1 of B.S. 8110.
8. Carraigeway covers and frames to be to B.S. 124.
9. All covers to have ESB logo incorporated in them to the approval of Eirgrid
10. Step irons to be hot dipped glvanised to B.S. 729 and positioned as shown on any chamber deeper than 700mm on the end remote from any side entry duct.
11. Concrete precast chamber and cover should be tested through a 5 point 40 tonnes vertical static loading test by an independent test company, if required, further details will be provided by Eirgrid.
12. Final position of C2 chambers shall be agreed with Eirgrid.
13. In a forest environment backfill with lean mix outside the cover frame.
14. This drawing is subject to Eirgrid design approval.



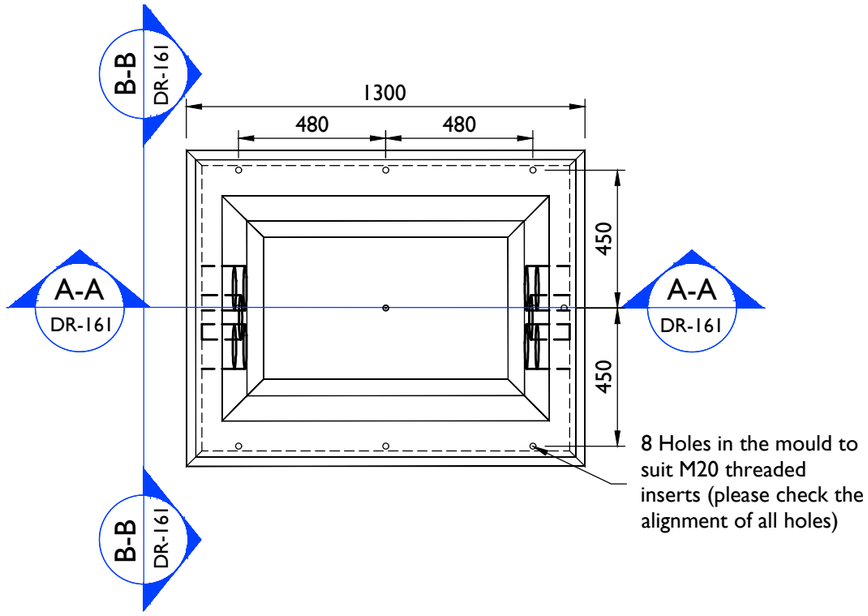
C2 Chamber Detail - Section A-A

Scale: 1:20



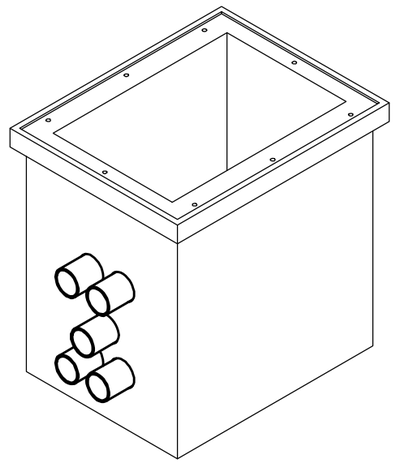
C2 Chamber Detail - Section B-B

Scale: 1:20



Typical Plan of Chamber

Scale: 1:20



Isometric - C2 Chamber Arrangement

Scale: 1:20

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CLIENT
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PROJECT
Ballyvatta Solar Farm
110kV Grid Connection

PROJECT NUMBER
05-1033

SHEET NUMBER
051033-DR-161

SHEET TITLE
C2 Chamber Details

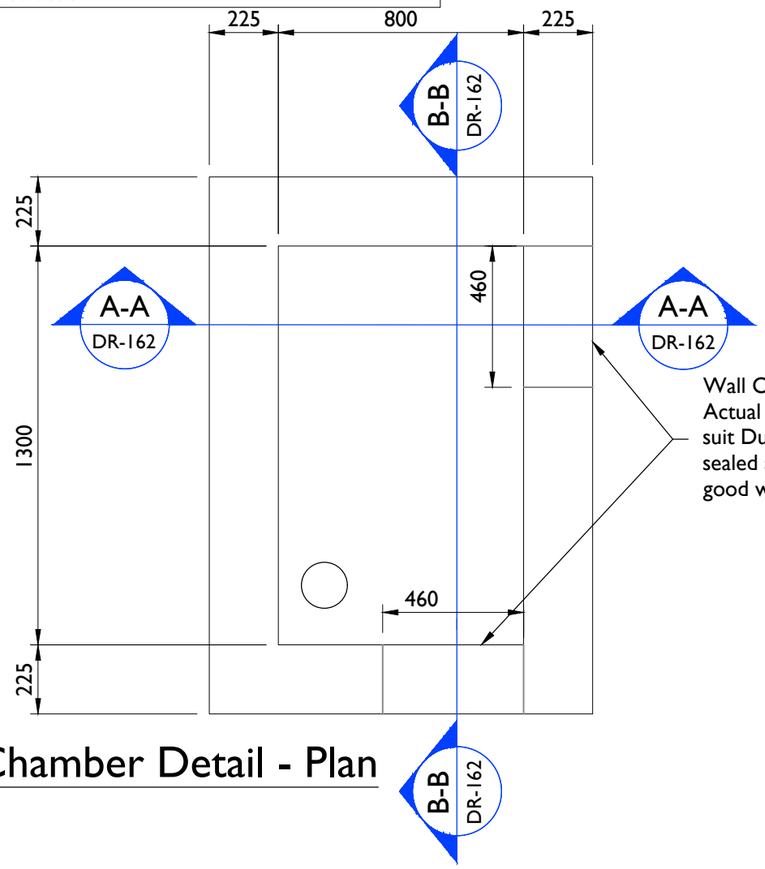
DRAWING STATUS
Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning

NOTES

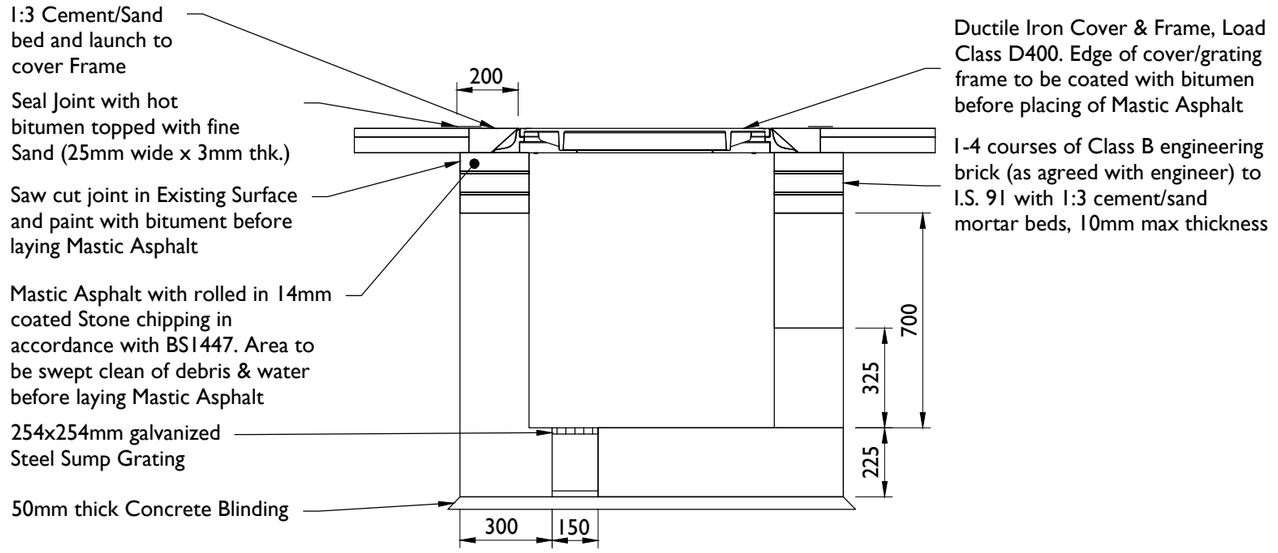
1. This drawing is to be read in conjunction with relevant drawings, specifications and reports.
2. Dimensions are in millimeters, unless noted otherwise.
3. Drawings are not to be scaled use figured dimensions only.
4. All material and workmanship to be in accordance with the NRA./TII specification for Roadworks, May 2005 and subsequent revisions.
5. Reinforced concrete to be a minimum grade C32/40, Sulphate resisting cement to be used where aggressive soil conditions apply.
6. Carriageway covers and frames to be to B.S. 124.
7. All covers to have ESB logo incorporated in them to the approval of Eirgrid.
8. Brickwork to be class B Engineering, beds and Joints to be class 1 mortar.
9. Final position of Link Box to be agreed with Eirgrid prior to installation.
10. The following design is subject to planning approval and should not be used for construction



Wall Opening 460 x 325 max Actual Size to be formed to suit Duct Entries. Voids to be sealed and Surfaces made good with Class 1 Mortar

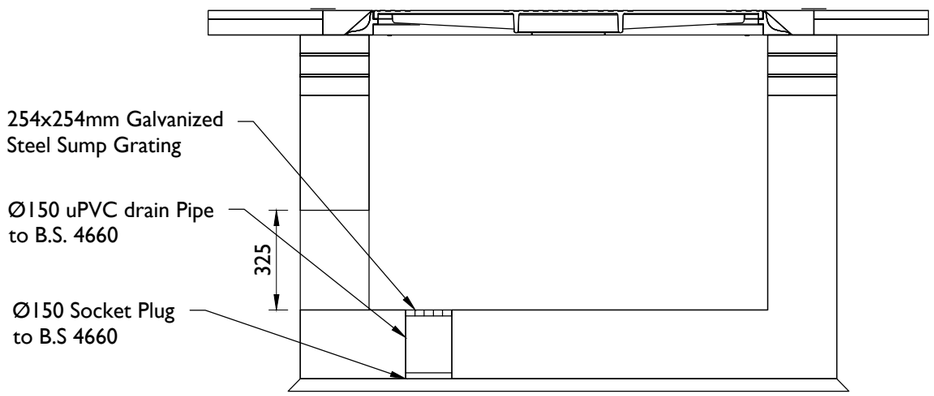
Link Box Chamber Detail - Plan

Scale: 1:20



Link Box Chamber Detail - Section A-A

Scale: 1:20



Link Box Chamber Detail - Section B-B

Scale: 1:20

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PROJECT
Ballyvatta Solar Farm
110kV Grid Connection

PROJECT NUMBER
05-1033

SHEET NUMBER
051033-DR-162

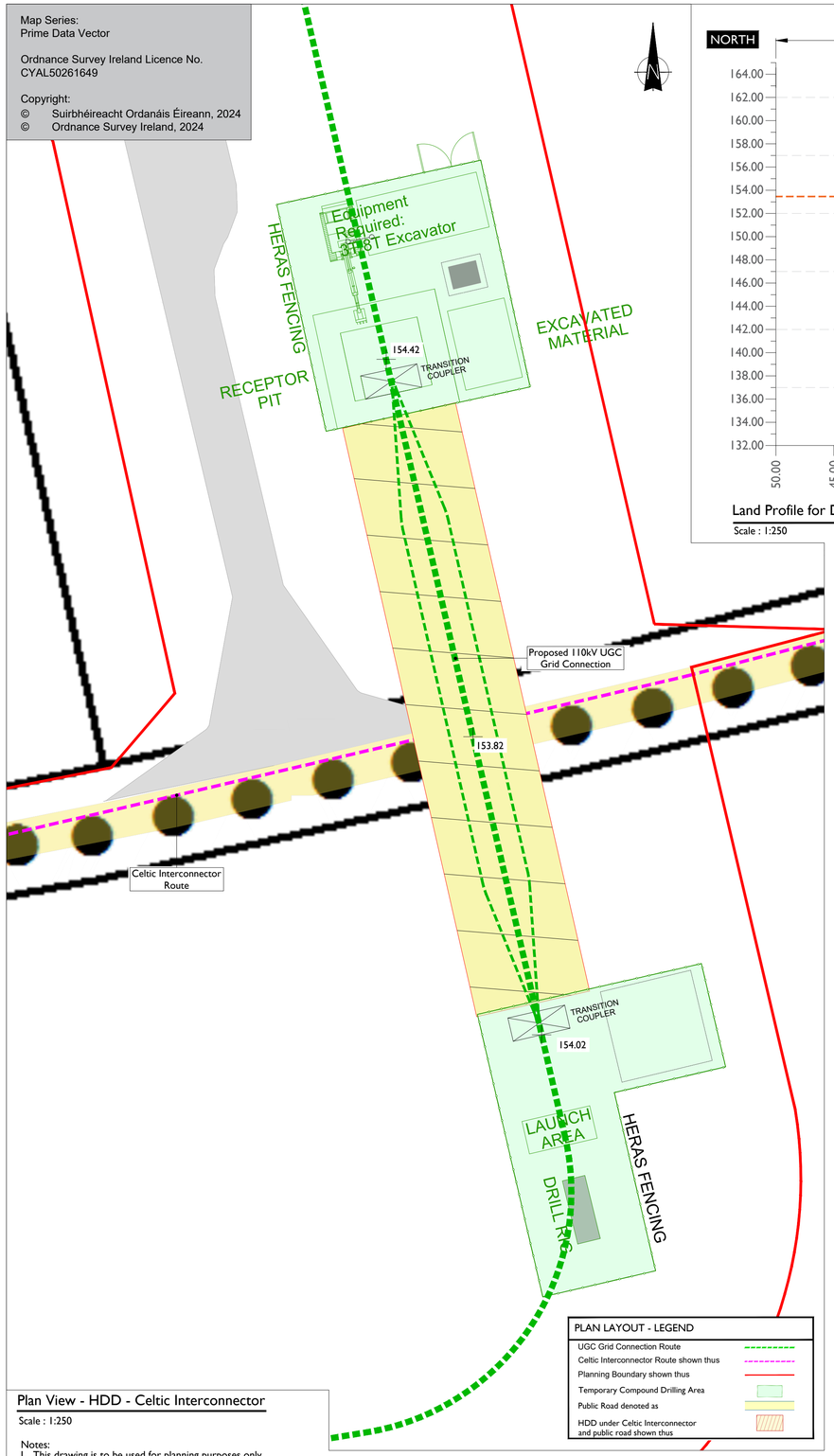
SHEET TITLE
Typical Link Box Chamber Details

DRAWING STATUS
Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P2	10.05.24	Issued For Planning
P1	25.04.24	Issued For Planning

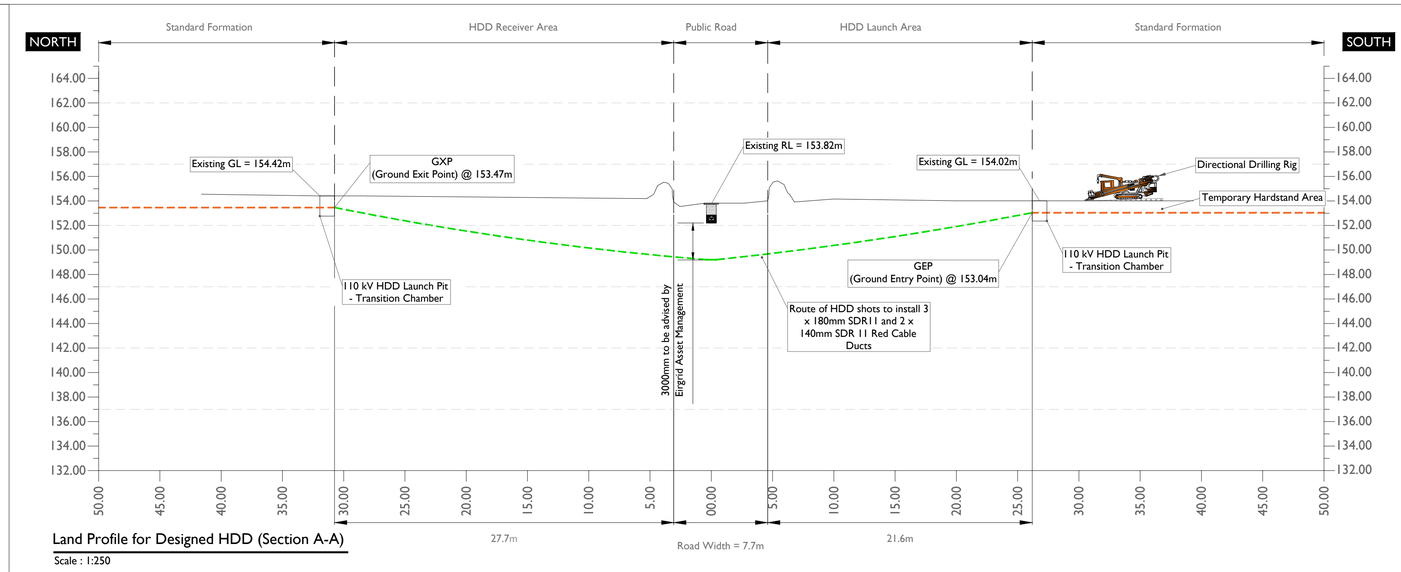
ISO A1 594mm x 841mm



Plan View - HDD - Celtic Interconnector

Scale : 1:250

Notes:
1. This drawing is to be used for planning purposes only
2. This drawing is to be read in conjunction with all other relevant information.
3. All dimensions are in millimetres unless noted otherwise.
4. All co-ordinates are referenced to ITM.
5. All works should be complete
6. The Contractor is responsible for the design and construction of any temporary work required. The contractors shall appoint a temporary works designer, and submit temporary works design to PSDP for review.
7. HDD launch and reception pit location to be determined following site investigations works.
8. Final HDD design to be completed by Specialist Drilling Contractor in conjunction with the Cable Designer.
9. 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 service clearances and duct separations have been achieved.



Land Profile for Designed HDD (Section A-A)

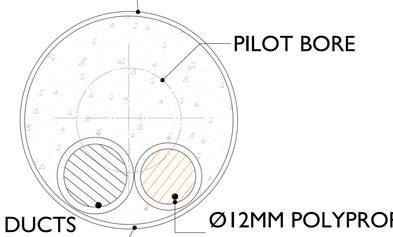
Scale : 1:250

Typical Launch Pit

Typical Horizontal Directional Drilling Rig

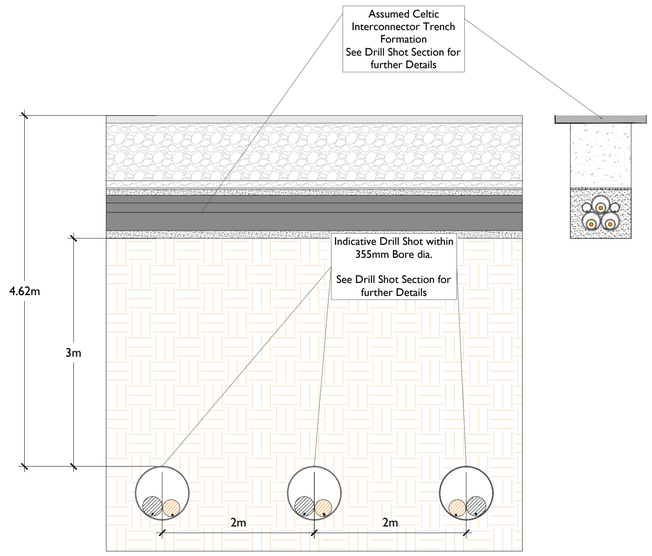
355MM (14") CUT TO ACCOMMODATE 1 NR. 180MM & 1 NR. 140MM SDR11 HDPE RED ELECTRIC CABLE DUCTS (ESB SPEC)

BORE DETAIL



Drill Shot Section

Scale : 1:100



Section B-B

Scale : 1:50

Designer: GD Checked: KC Approved: GH
Project Management Initials:

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Regional Office
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Hampshire,
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Tel: 00 44 1256406664

PROJECT

Ballyvatta Solar Farm
110 kV Grid Connection

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be used only for the purpose of the planning application and is subject to detailed design.
- Position of HDD launch/reception points will be selected following site investigations and detailed design.

LEGEND: -

ISSUE/REVISION

P2	02.07.24	Issued for Planning
P1	17.05.24	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

SHEET TITLE

HDD - Celtic Interconnector Crossing

SHEET NUMBER

051033-DR-170

ISO A1 594mm x 841mm

Project Management Initials: Designer: BM Checked: DT Approved: RG

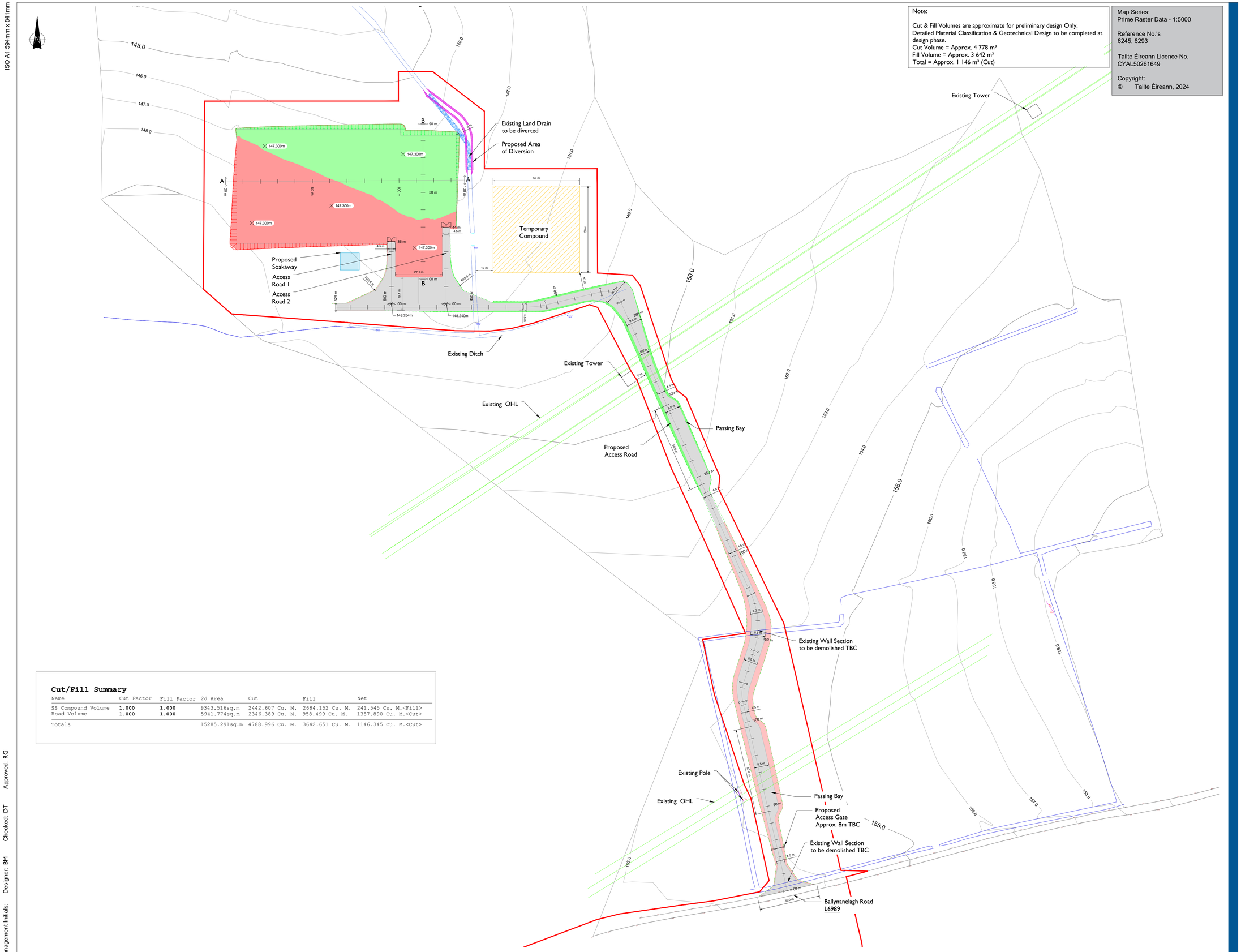
Note:

Cut & Fill Volumes are approximate for preliminary design Only.
Detailed Material Classification & Geotechnical Design to be completed at design phase.
Cut Volume = Approx. 4 778 m³
Fill Volume = Approx. 3 642 m³
Total = Approx. 1 146 m³ (Cut)

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

Tailte Éireann Licence No.
CYAL50261649



Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
SS Compound Volume	1.000	1.000	9343.516sq.m	2442.607 Cu. M.	2684.152 Cu. M.	241.545 Cu. M.<Fill>
Road Volume	1.000	1.000	5941.774sq.m	2346.389 Cu. M.	958.499 Cu. M.	1387.890 Cu. M.<Cut>
Totals			15285.291sq.m	4788.996 Cu. M.	3642.651 Cu. M.	1146.345 Cu. M.<Cut>

Cut & Fill Volume - Site Layout Plan

Scale: 1:1000

tli GROUP

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

- This drawing is to be read in conjuction with relevant drawings, specifications and reports
- Dimensions are in millimetres, unless noted otherwise
- Drawings are not to be scaled, use figured dimensions only
- Local datum: Malin Head

LEGEND: -

- Cut Volume = Approx. 4 778 m³
- Fill Volume = Approx. 3 642 m³
- Sod & Stone Wall shown thus
- Ditch shown thus
- Electrical Conductor shown thus
- Land Drain Area to be diverted shown thus
- Proposed Area of diversion shown thus
- Site Boundary shown thus
- Temporary Compound shown thus
- Proposed Soakaway shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Cut & Fill Volume
Site Layout Plan

SHEET NUMBER

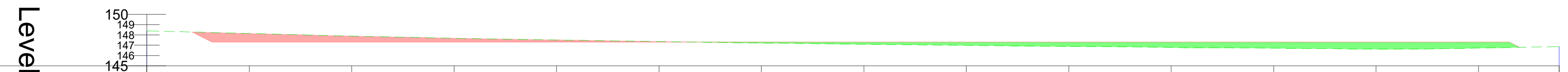
051033-DR-300

ISO A1 594mm x 841mm

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

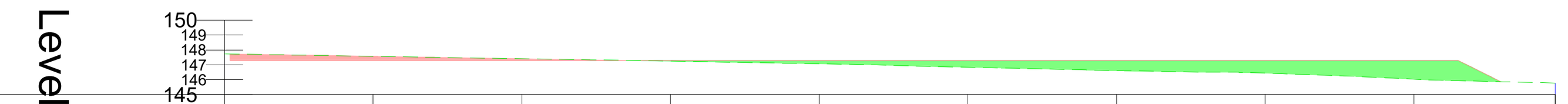
Tailte Éireann Licence No.
CYAL50261649



Chainage	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	137.880
Existing Levels	148.387	148.139	147.891	147.680	147.510	147.355	147.210	147.089	146.979	146.879	146.781	146.710	146.633	146.724	146.867
Proposed Levels		147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	
Level Difference		-0.839	-0.591	-0.380	-0.210	-0.055	0.090	0.211	0.321	0.421	0.519 0.522	0.590	0.667	0.576	

Section A-A

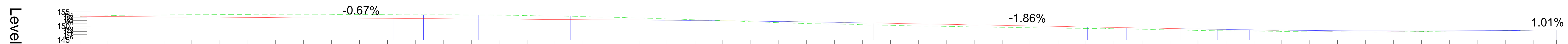
Scale: 1:500



Chainage	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	89.500
Existing Levels	147.730	147.573	147.413	147.247	147.067	146.833	146.615	146.438	146.031	145.776
Proposed Levels		147.300	147.300	147.300	147.300	147.300	147.300	147.300	147.300	
Level Difference		-0.273	-0.113	0.053	0.233	0.467	0.685	0.862	1.269	

Section B-B

Scale: 1:500



Chainage	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000
Existing Levels	153.475	153.707	153.895	154.005	154.076	154.137	154.185	154.207	154.208	154.186	154.148	154.090	154.039	154.054	153.967	153.876	153.751	153.597
Proposed Levels	153.475	153.408	153.340	153.273	153.206	153.138	153.071	153.003	152.936	152.869	152.801	152.734	152.667	152.599	152.532	152.465	152.397	152.330

Chainage	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000
Existing Levels	153.389	153.148	152.874	152.581	152.254	151.911	151.548	151.186	150.895	150.712	150.474	150.232	150.040	149.863	149.697	149.543	149.389	149.229
Proposed Levels	152.263	152.195	152.128	152.055	151.968	151.866	151.750	151.620	151.476	151.317	151.144	150.960	150.774	150.588	150.402	150.216	150.030	149.845

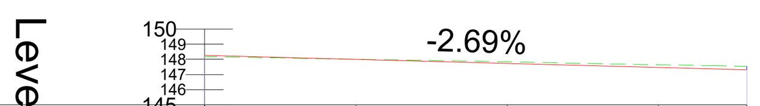
Chainage	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	450.000	460.000	470.000	480.000	490.000	500.000	510.000	520.000	528.323
Existing Levels	149.145	149.033	148.827	148.608	148.410	148.298	148.180	148.043	147.913	147.800	147.850	147.885	147.994	148.154	148.268	148.368	148.497	148.546
Proposed Levels	149.659	149.473	149.287	149.101	148.920	148.759	148.620	148.504	148.410	148.338	148.289	148.262	148.257	148.275	148.315	148.378	148.463	148.546

Horizontal Geometry: L =111.974 | R: 20.000 L: 10.935 | L =19.592 | R: 45.000 L: 33.077 | L =184.962 | R: 10.000 L: 13.823 | L =32.563 | R: 50.000 L: 11.494 | L =109.902

Vertical Geometry: G =-0.674% L =201.138 | R =6992.363 K =69.924 L =82.842 | G =-1.858% L =109.901 | R =4475.163 K =44.752 L =128.182 | G =1.006% L =6.259

Access Road Longsection

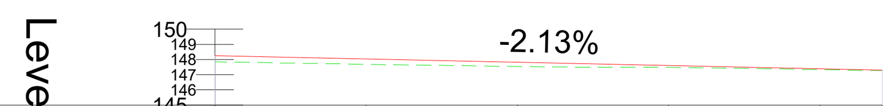
Scale: 1:1000



Chainage	0.000	10.000	20.000	30.000	35.836
Existing Levels	148.182	148.005	147.837	147.644	147.535
Proposed Levels	148.264	147.995	147.727	147.458	147.302
Vertical Geometry	G =-2.686% L =35.836				
Horizontal Geometry	L =35.836				

Access Road 1 Longsection

Scale: 1:500



Chainage	0.000	10.000	20.000	30.000	40.000	44.111
Existing Levels	147.839	147.685	147.532	147.486	147.329	147.266
Proposed Levels	148.240	148.027	147.814	147.601	147.388	147.300
Vertical Geometry	G =-2.131% L =44.111					
Horizontal Geometry	L =44.111					

Access Road 2 Longsection

Scale: 1:500

Note:

Cut & Fill Volumes are approximate for preliminary design Only.
Detailed Material Classification & Geotechnical Design to be completed at design phase.
Cut Volume = Approx. 4 778 m³
Fill Volume = Approx. 3 642 m³
Total = Approx. 1 146 m³ (Cut)

Project Management Initials: Designer: BM Checked: DT Approved: RG

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PROJECT

Ballyvatta Solar Farm
110kV Substation

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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LEGEND: -

Cut Volume = Approx. 4 778 m³
Fill Volume = Approx. 3 642 m³

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

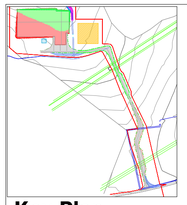
SHEET TITLE

Cut & Fill Volume Sections

SHEET NUMBER

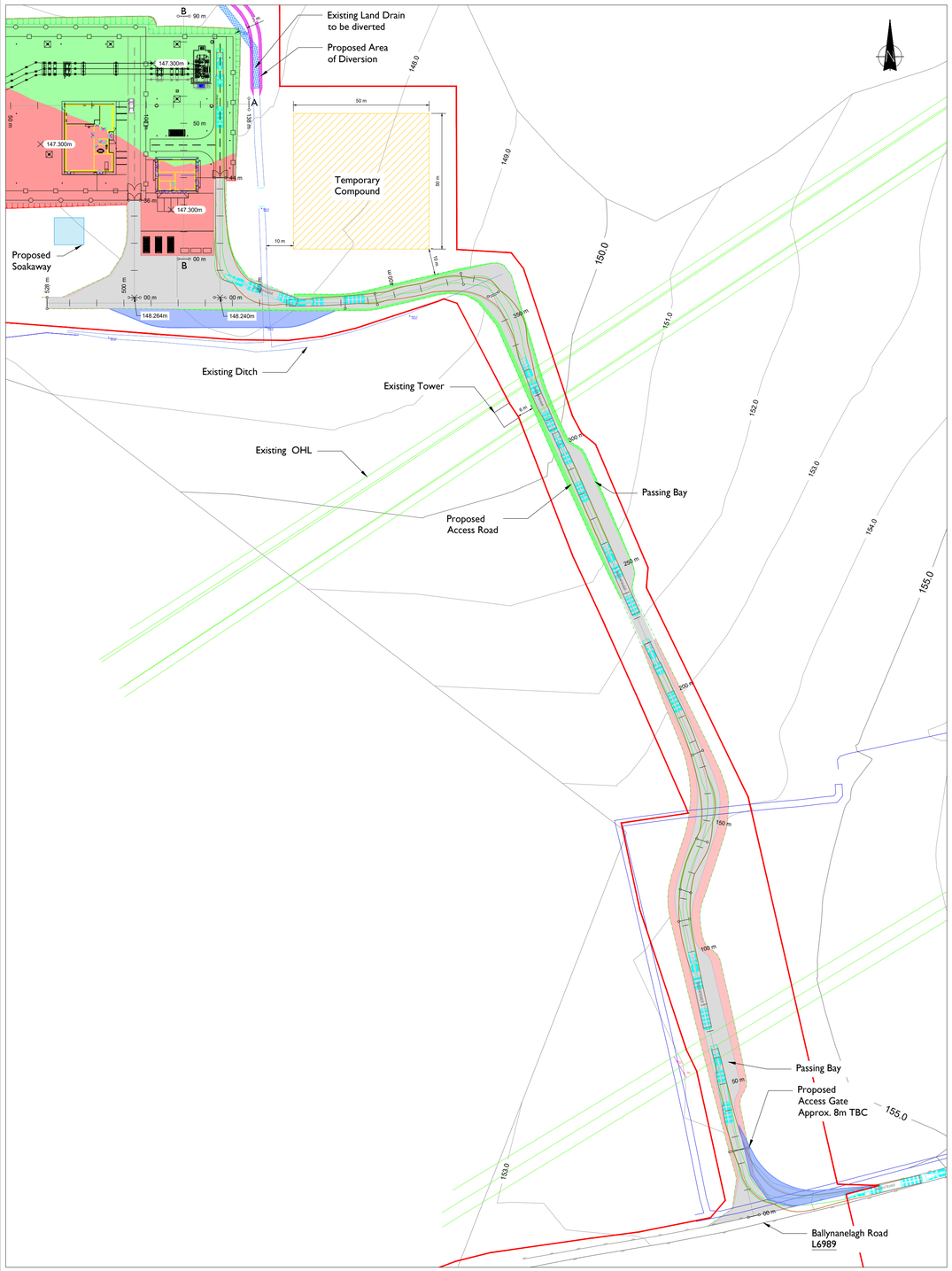
051033-DR-301

ISO A1 594mm x 841mm



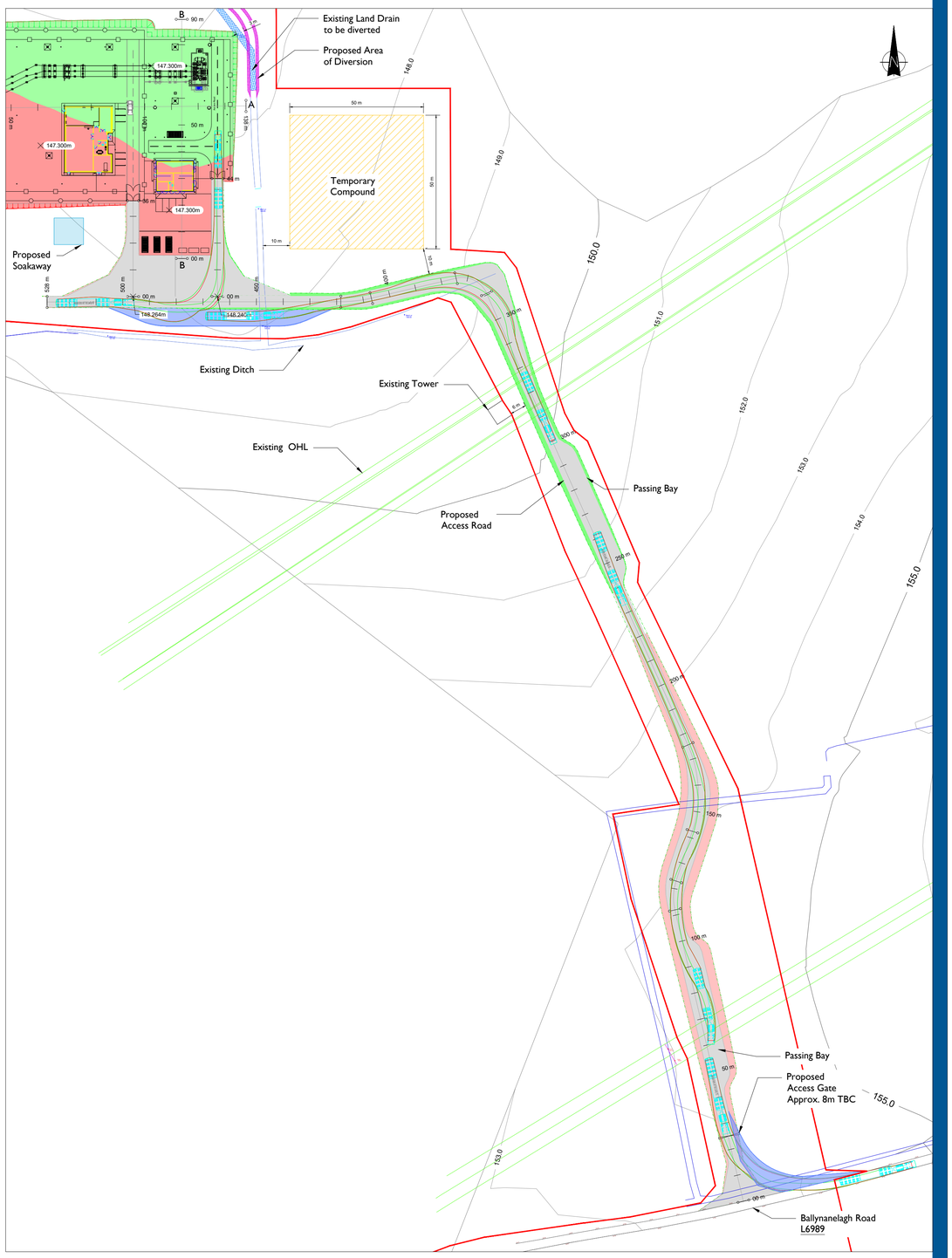
Key Plan

NTS



Swept Path Analysis - Transformer Delivery Truck - Going In

Scale: 1:1000



Swept Path Analysis - Transformer Delivery Truck - Going Out

Scale: 1:1000

1:1000

20m 0 20m 40m 60m 80m 100m

Project Management Initials: Designer: BM Checked: DT Approved: RG

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

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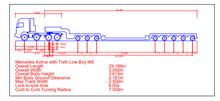
- Drawings are not to be scaled, use figured dimensions only
- Local datum: Malin Head

LEGEND: -

- Transformer Delivery Truck Details TBC



Temporary Access Road Area for Transformer Delivery Truck shown thus
Cut Volume shown thus
Fill Volume shown thus
Sod & Stone Wall shown thus
Ditch shown thus
Electrical Conductor shown thus
Land Drain Area to be diverted shown thus
Proposed Area of diversion shown thus
Site Boundary shown thus
Temporary Compound shown thus
Proposed Soakaway shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

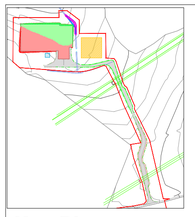
SHEET TITLE

Swept Path Analysis
Transformer Delivery Truck

SHEET NUMBER

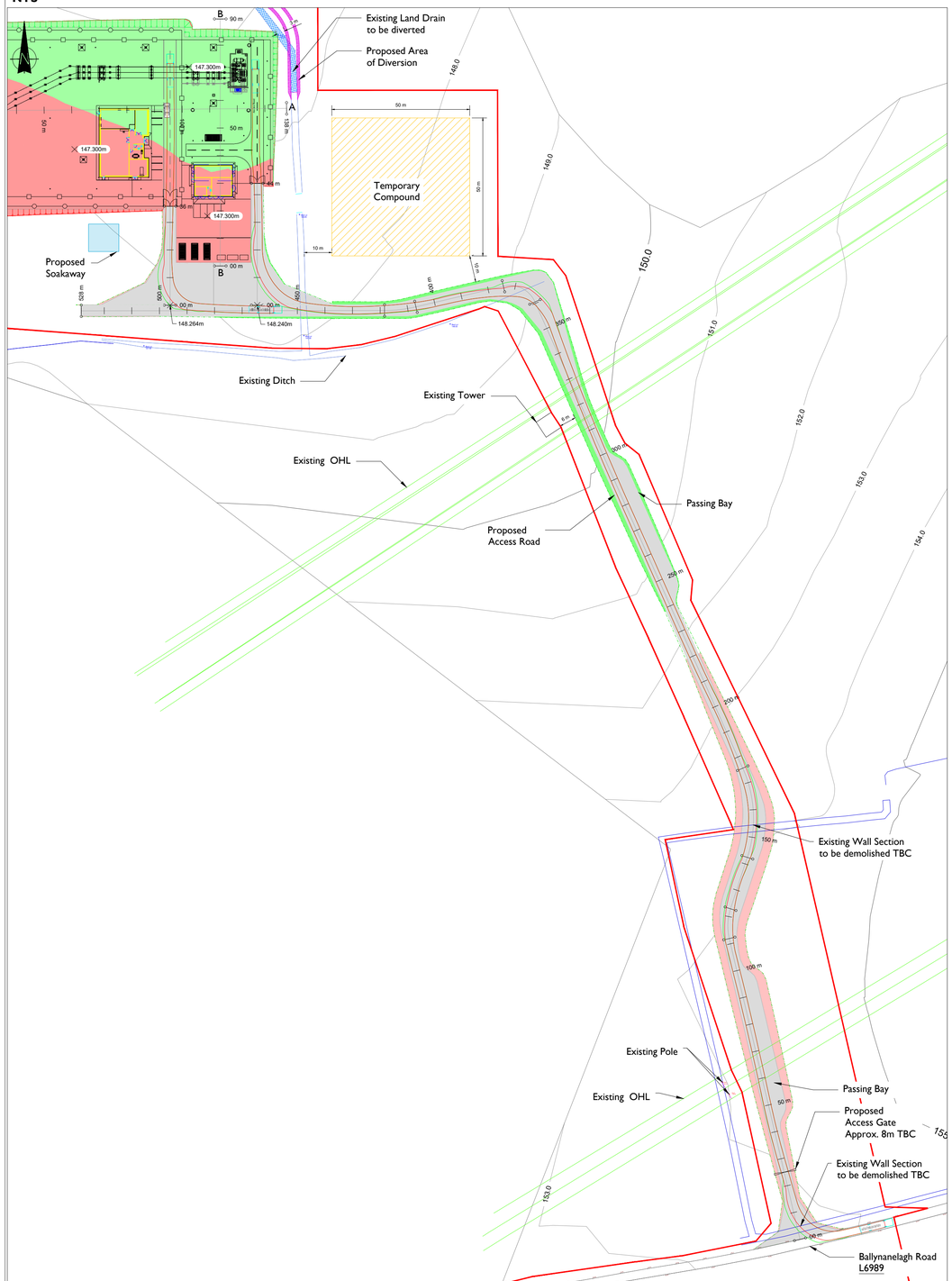
051033-DR-305

ISO A1 594mm x 841mm



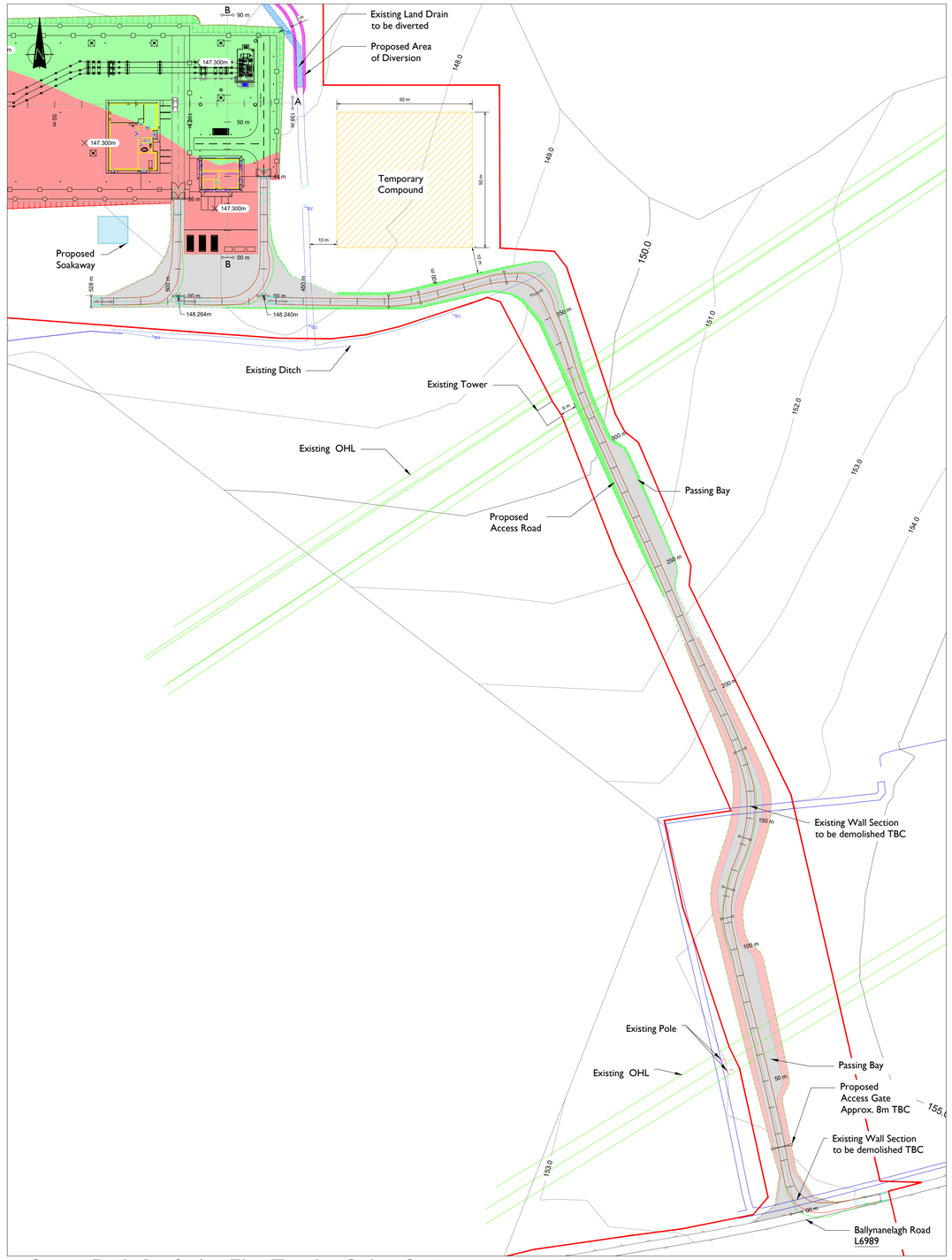
Key Plan

NTS



Swept Path Analysis - Fire Truck - Going In

Scale: 1:1000



Swept Path Analysis - Fire Truck - Going Out

Scale: 1:1000

1:1000
20m 0 20m 40m 60m 80m 100m

Project Management Initials: Designer: BM Checked: DT Approved: RG

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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- Drawings are not to be scaled, use figured dimensions only
- Local datum: Malin Head

LEGEND: -

- Fire Truck Details TBC

Cut Volume shown thus
Fill Volume shown thus
Sod & Stone Wall shown thus
Ditch shown thus
Electrical Conductor shown thus
Land Drain Area to be diverted shown thus
Proposed Area of diversion shown thus
Site Boundary shown thus
Temporary Compound shown thus
Proposed Soakaway shown thus

ISSUE/REVISION

P1	02.07.24	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

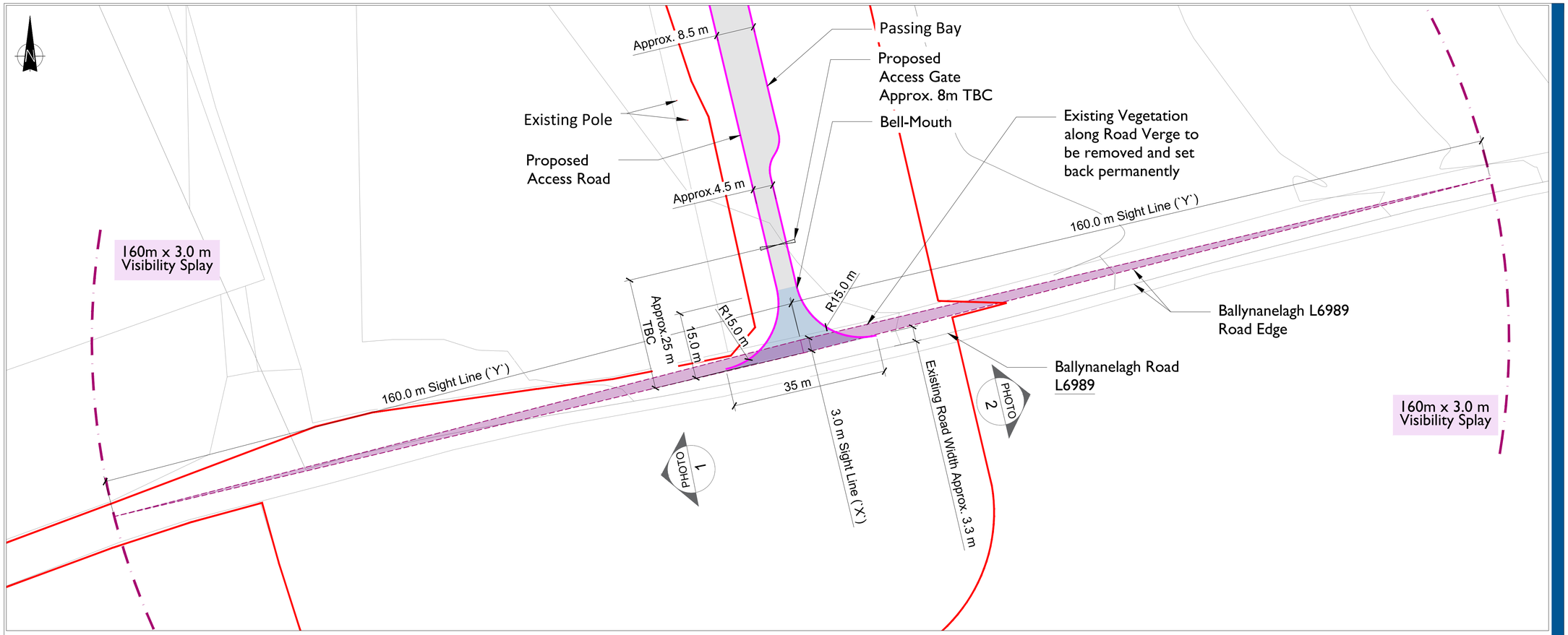
SHEET TITLE

Swept Path Analysis
Fire Truck

SHEET NUMBER

051033-DR-306

ISO A1 594mm x 841mm



Site Entrance Sight Lines

Scale: 1:500

1:500

10m 0 10m 20m 30m 40m 50m

Photo 1

Photo 2

Sight Line Design:

- In Accordance with "TII Publication DN-GEO-03060"
- From this document Design Speed of 85 km is to be applied
- Sight Line (`Y`) = 160.0m
- Distance from road edge (`X`) = 3.0m

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

NOTES: -

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LEGEND: -

Sight Line Area of Vision shown thus

Visibility Splay shown thus

Proposed Access Road shown thus

Bell-Mouth shown thus

Site Boundary shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Site Entrance Sight Lines

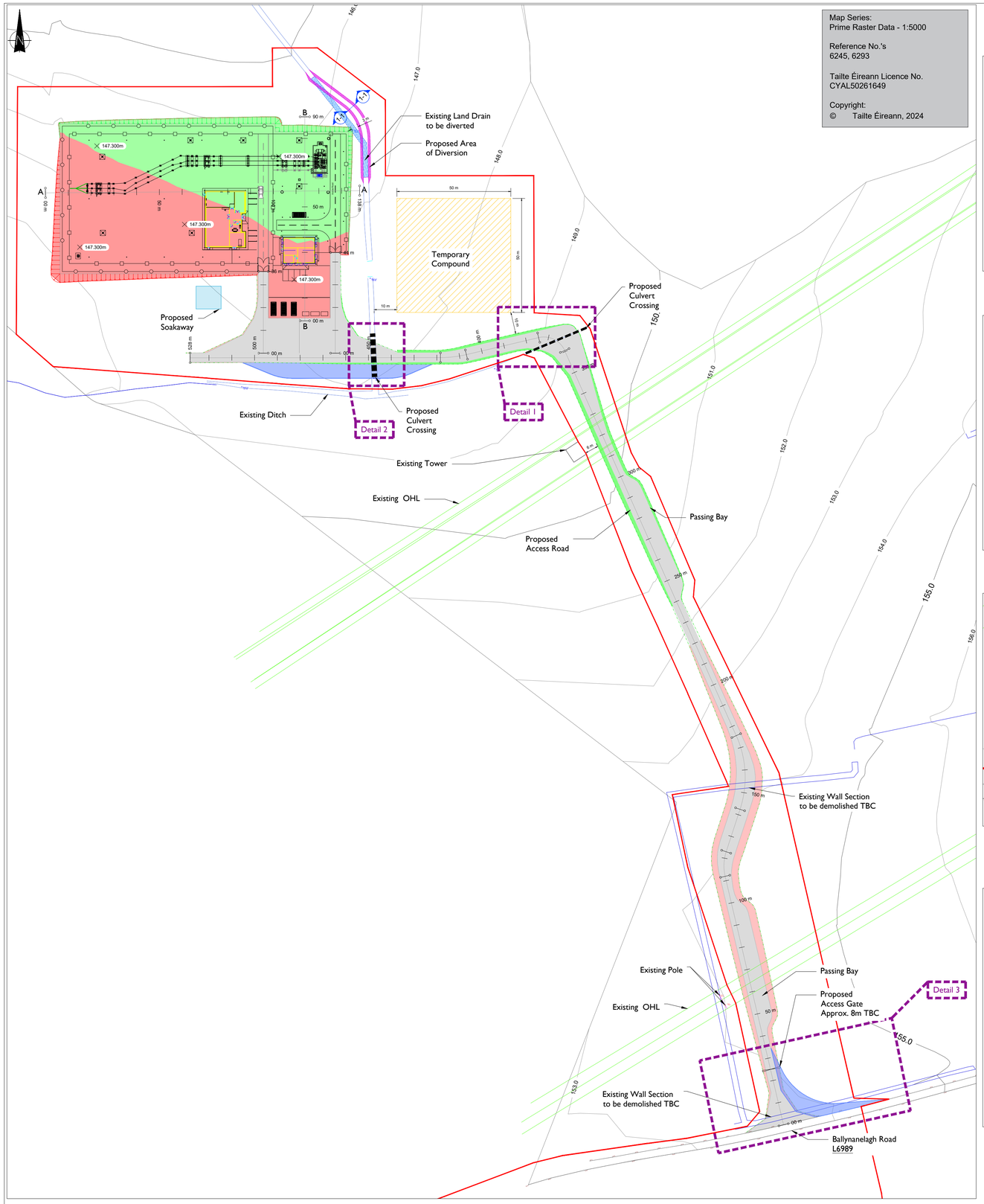
SHEET NUMBER

051033-DR-310

Project Management Initials: Designer: BM Checked: DT Approved: RG

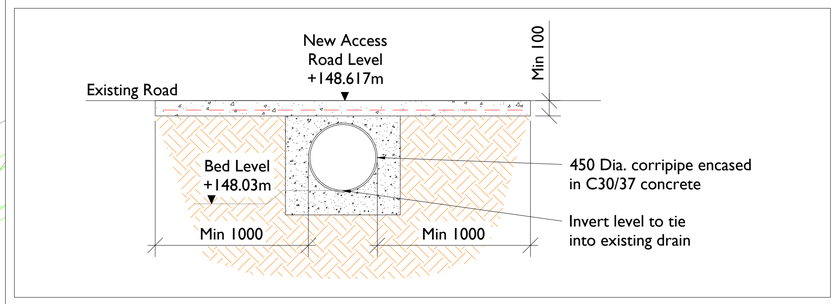
ISO A1 594mm x 841mm

Project Management Initials: Designer: BM Checked: DT Approved: RG



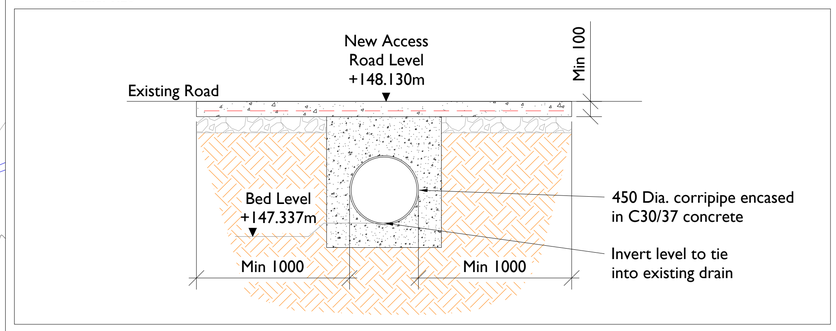
Site Layout Plan

Scale: 1:1000



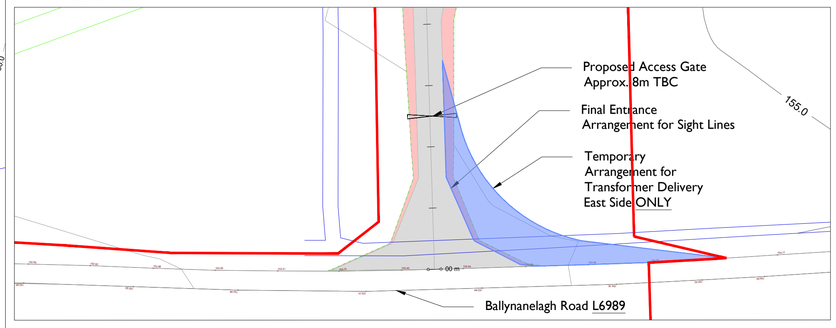
Culvert Crossing - Detail 1

Scale: 1:20



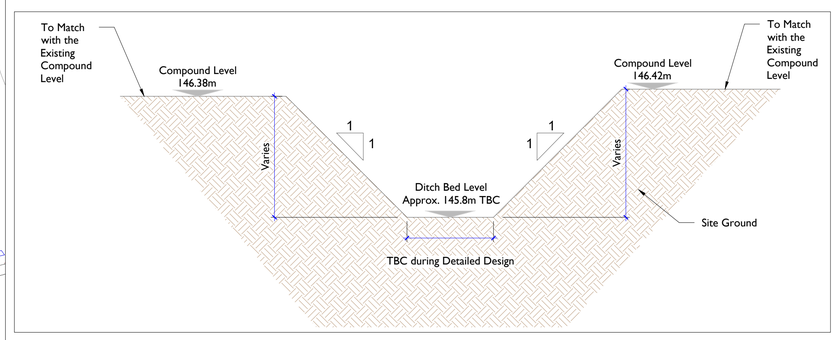
Culvert Crossing - Detail 2

Scale: 1:20



Entrance Detail - Detail 3

Scale: 1:20



Section 1-1

Scale: 1:20

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

Ballyvatta Solar Farm Limited

CONSULTANTS

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- Local datum: Malin Head

LEGEND: -

- Cut Volume shown thus
- Fill Volume shown thus
- Sod & Stone Wall shown thus
- Ditch shown thus
- Electrical Conductor shown thus
- Culvert Crossing shown thus
- Temporary Access Road Area for Transformer Delivery Truck shown thus
- Land Drain Area to be diverted shown thus
- Proposed Area of diversion shown thus
- Site Boundary shown thus
- Temporary Compound shown thus
- Proposed Soakaway shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

SHEET TITLE

Typical Culvert Crossings

SHEET NUMBER

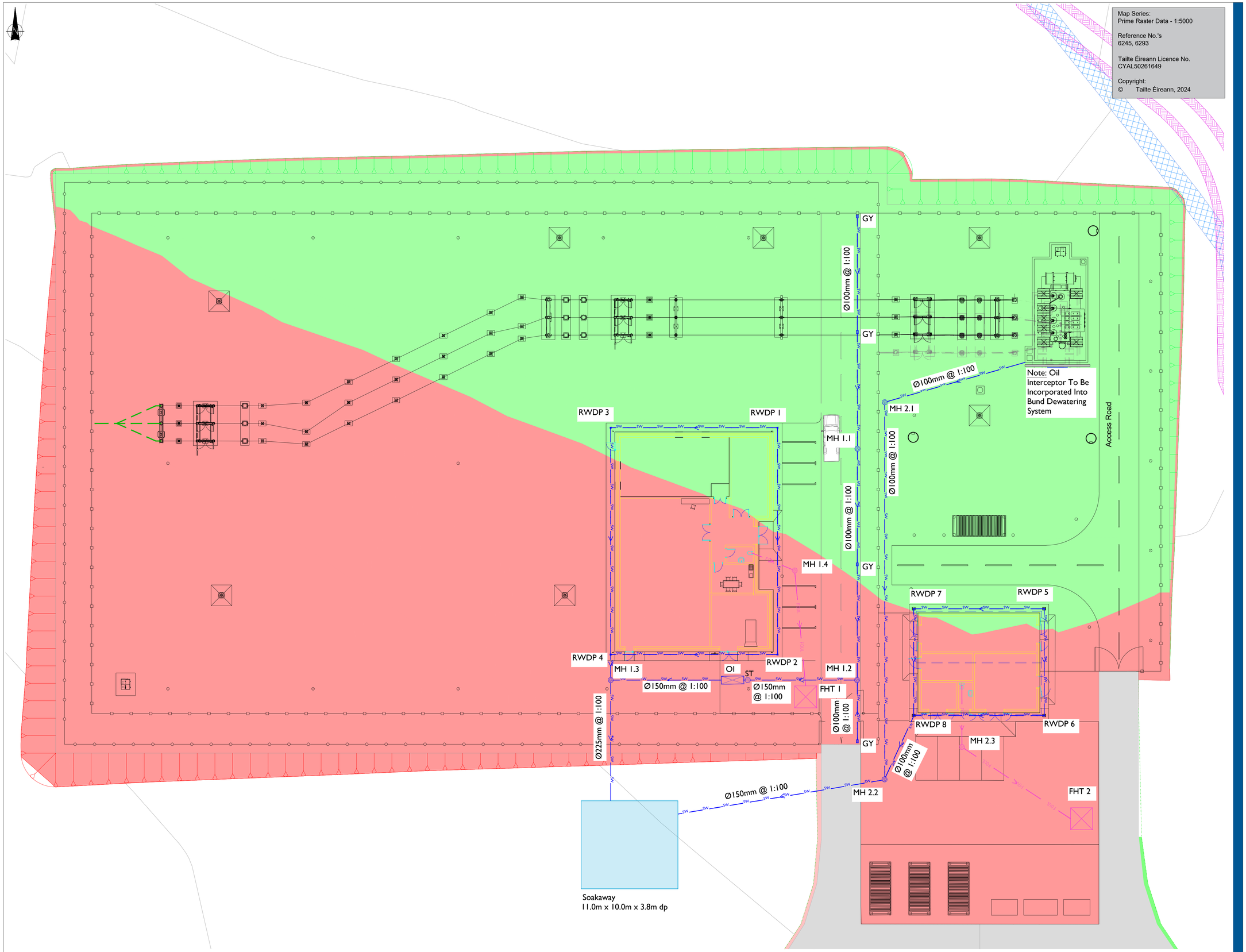
051033-DR-315

ISO A1 594mm x 841mm

Map Series:
Prime Raster Data - 1:5000

Reference No.'s
6245, 6293

Tailte Éireann Licence No.
CYAL50261649



Drainage Layout Plan

Scale: 1:200

1:200
4m 0 4m 8m 12m 16m 20m

Project Management Initials: Designer: BM Checked: DT Approved: RG

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PROJECT

Ballyvatta Solar Farm

110kV Substation

CLIENT

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CONSULTANTS

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- Local datum: Malin Head

LEGEND: -

Soakaway shown thus	
Manhole shown thus	
Oil Interceptor shown thus	OI
Silt Trap shown thus	ST
Foul Water Holding Tank Shown thus	FHT
Gully shown thus	GY
Rainwater Down Pipe shown thus	RWDP
Foul Sewer shown thus	FOUL
Storm Water shown thus	SW
Land Drain Area to be diverted shown thus	
Proposed Area of diversion shown thus	
Cut Volume shown thus	
Fill Volume shown thus	
Access Road shown thus	

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

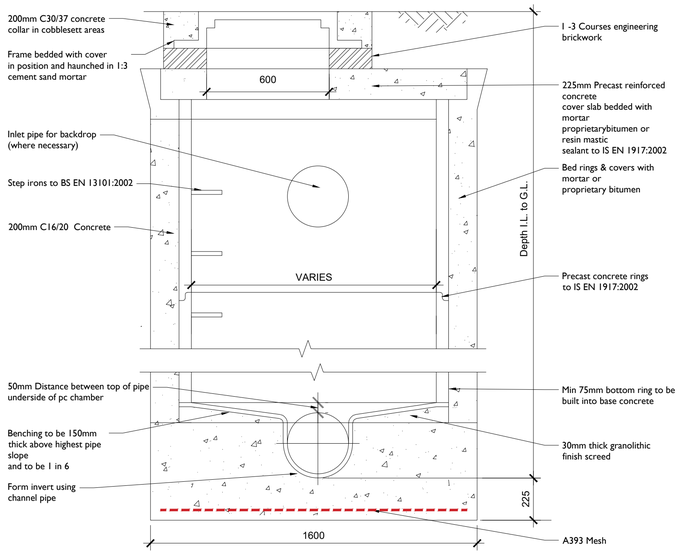
SHEET TITLE

Drainage Layout Plan

SHEET NUMBER

051033-DR-330

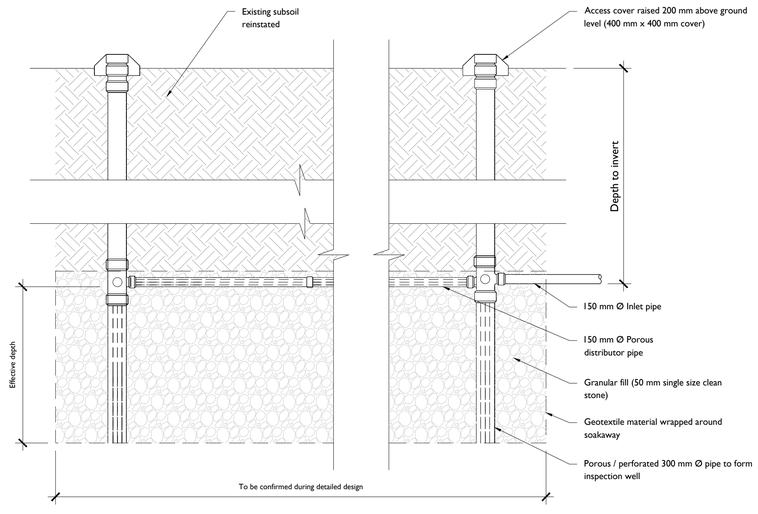
ISO A1 594mm x 841mm



	PIPE DIAMETER						
DEPTH GL TO IL	150	225	300	375	450	600	900
0-1 m	1050	1050	1050	1350	1350	1500	1800
1-3 m	1200	1200	1200	1350	1350	1500	1800

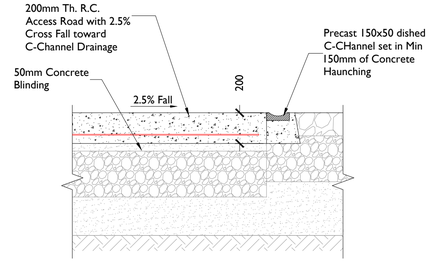
TYPICAL PRECAST RING MANHOLE

SCALE : 1:25



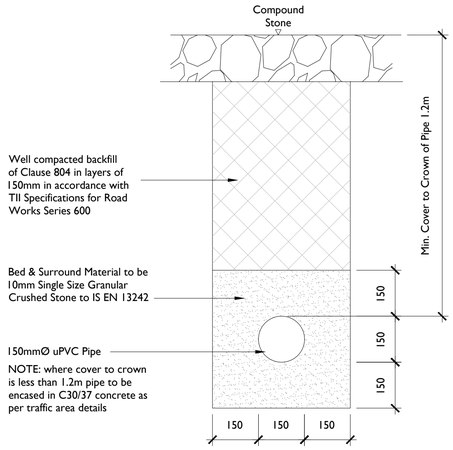
TYPICAL SOAKAWAY DETAIL

NTS



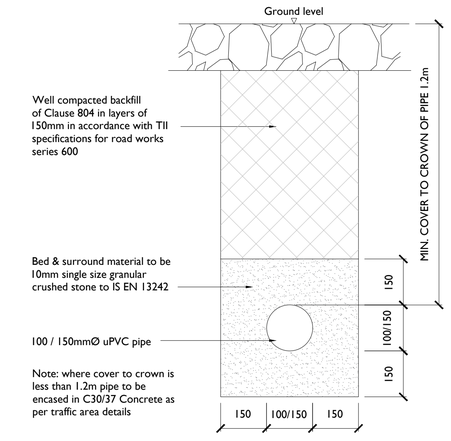
TYPICAL ROAD DRAINAGE CHANNEL DETAIL

SCALE 1:20



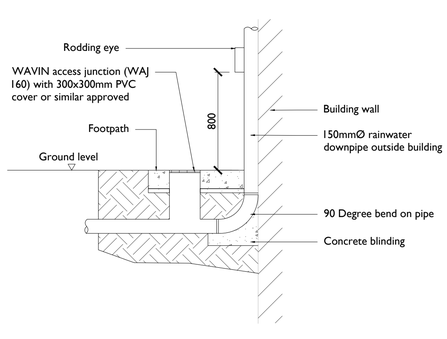
SECTION THROUGH SURFACE WATER PIPE - NON TRAFFICKED AREA (COVER >1.2m)

SCALE 1:10



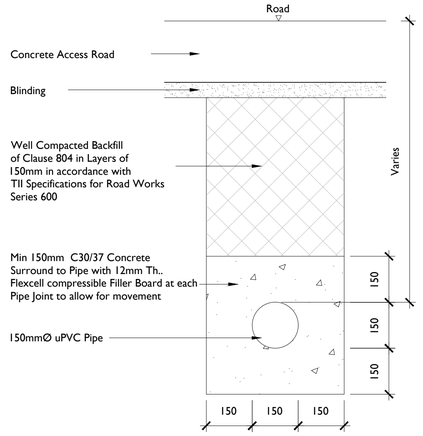
TYPICAL SECTION THROUGH FOUL / SURFACE WATER SEWER

SCALE 1:10



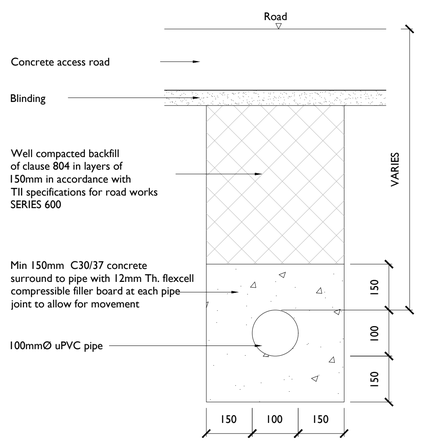
TYPICAL RAINWATER DOWNPIPE ELEVATION DETAIL

SCALE 1:25



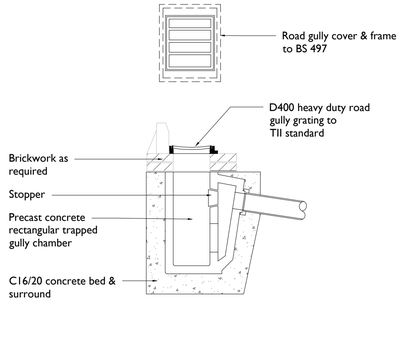
SECTION THROUGH SURFACE WATER PIPE - TRAFFICKED AREA

SCALE 1:10



SECTION THROUGH FOUL WATER PIPE - TRAFFICKED AREA

SCALE 1:10



TYPICAL ROAD GULLY

SCALE 1:25

Project Management Initials: Designer: GS Checked: BM Approved: DT

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PROJECT

Ballyvatta Solar Farm

110 kV Substation

CLIENT

Ballyvatta Solar Farm Limited

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
- Refer to EirGrid specification XDS-GFS-13-001-R2 for drainage testing requirements.

LEGEND: -

ISSUE/REVISION

P1	02.07.24	Issued for Planning
I/R	DATE	DESCRIPTION

PROJECT NUMBER

05-1033

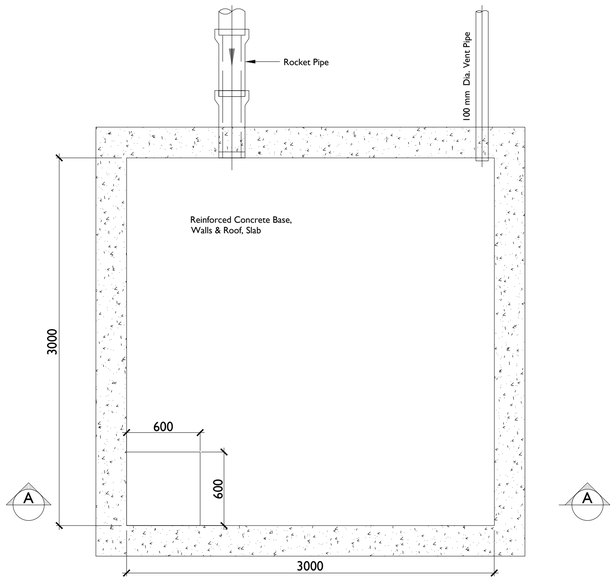
SHEET TITLE

Drainage Details
Sheet 1 of 2

SHEET NUMBER

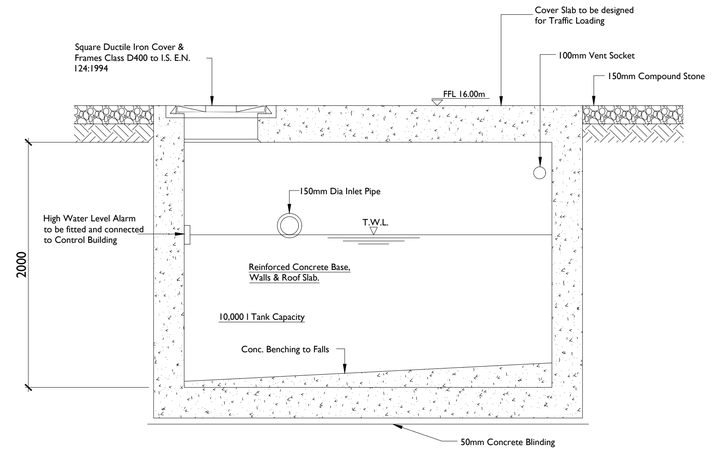
051033-DR-331

ISO A1 594mm x 841mm



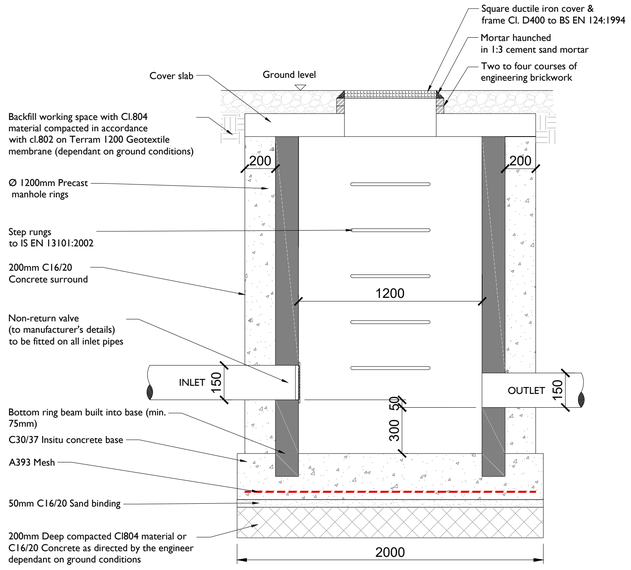
TYPICAL FOUL WATER HOLDING TANK

SCALE 1:25



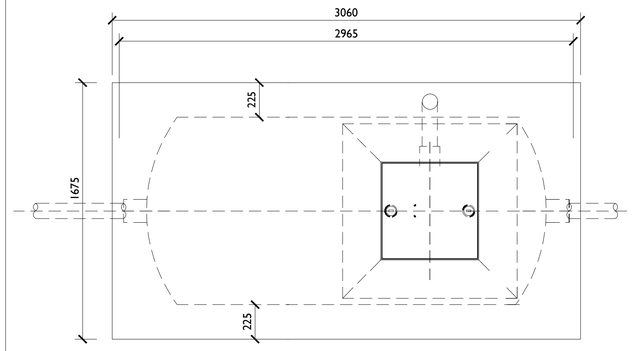
TYPICAL FOUL WATER HOLDING TANK - SECTION A-A

SCALE 1:25



SILT TRENCH ELEVATION DETAIL

SCALE 1:20



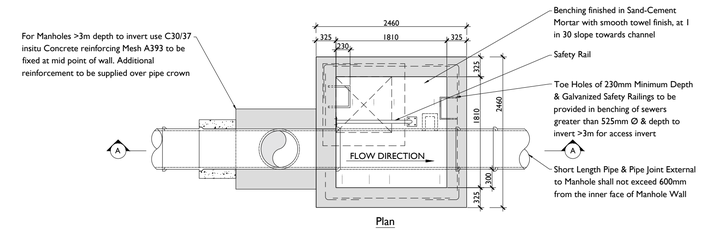
OIL INTERCEPTOR DETAIL - PLAN VIEW

SCALE 1:20

UNIT REF NO.	NOMINAL FLOW	DIM L (mm)	APPROX. EMPTY WEIGHT (kg)	FALL ACROSS UNIT
NSFA010	10 L/s	2610	130	50

Construction notes:

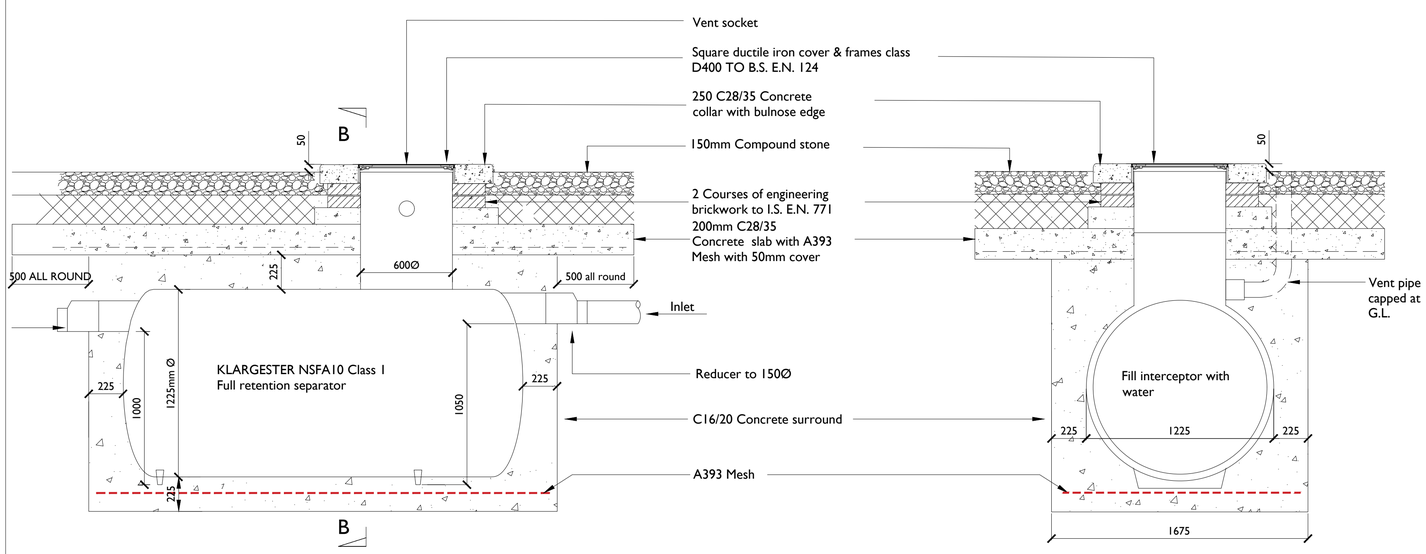
1. Fill separator with water after installation and before backfilling.
2. Follow manufacturers installation instructions.
3. First two pipes on each run to have flexible joints.
4. Separator to be vented & fitted with cap at ground level.



Inlet Dia. mm	Drop Dia. mm
225	300

BACKDROP MANHOLE - TYPICAL DETAIL

SCALE 1:50



OIL INTERCEPTOR DETAIL - SECTION A-A

SCALE 1:20

OIL INTERCEPTOR DETAIL - SECTION B-B

SCALE 1:20

Project Management Initials: Designer: GS Checked: BM Approved: DT

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PROJECT

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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
- Refer to EirGrid specification XDS-GFS-13-001-R2 for drainage testing requirements.
- Oil separator and foul holding tank to be fitted with an alarm.

LEGEND: -

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P1	02.07.24	Issued for Planning

PROJECT NUMBER

05-1033

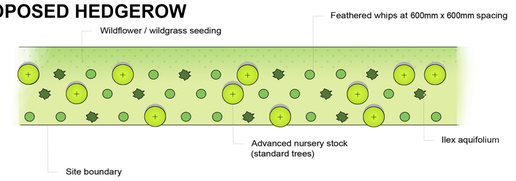
SHEET TITLE

Drainage Details
Sheet 2 of 2

SHEET NUMBER

051033-DR-332

PROPOSED HEDGEROW



Typical section of proposed type 2 hedgerow (at implementation)

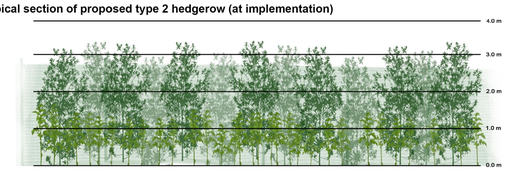
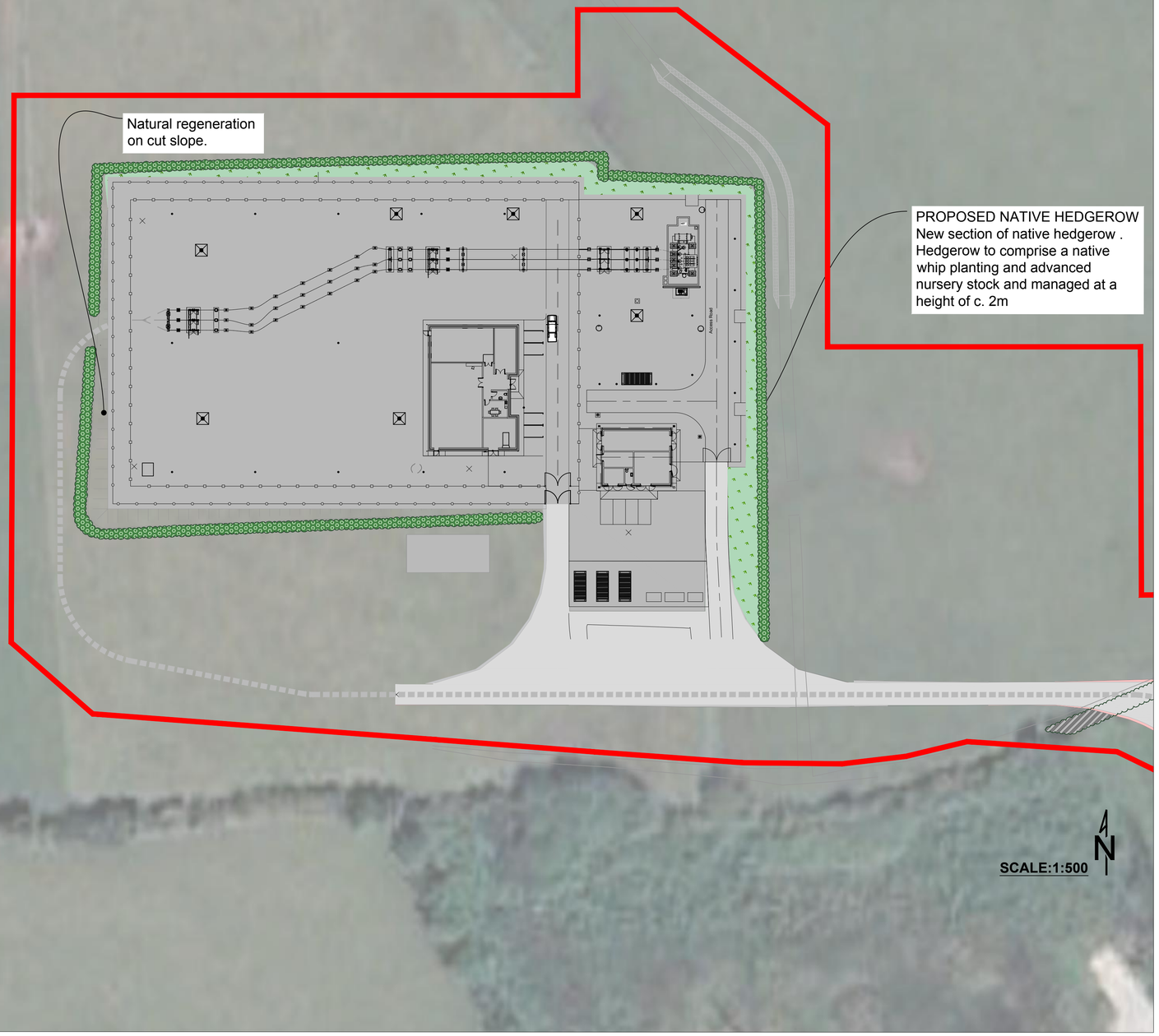


Figure LMP1.2 - Typical section of proposed mitigation screen planting of advanced nursery stock.

NATIVE HEDGEROW SPECIES :

Botanical name	Common name	Size	%
Primary structure;			
Crataegus monogyna	Hawthorn	80-100cm / 10-12cm girth 3m br standard trees	60%
Secondary structure;			
Prunus spinosa	Blackthorn	80-100cm	15%
Ilex aquifolium	Holly	80-100cm	15%
Shrub species structure;			
Salix cinerea	Grey willow	40-60cm	2.5%
Viburnum opulus	Guelder rose	40-60cm	2.5%
Rosa canina	Dog-rose	40-60cm	2.5%
Lonicera periclymenum	Honeysuckle	40-60cm	2.5%



macroworks APEM Group

Registered Landscape Architect

Legend:

- PROPOSED HEDGEROW
- REMOVED HEDGEROW
- REMOVED TREES/PARKLAND
- GRASSLAND/MEADOW MANAGEMENT
- SITE BOUNDARY

Notes:

The function of the proposed mitigation planting is primarily for screening, but it will also enhance the ecological corridors that area already present within the surrounding trees lines and hedgerows.

It is imperative to use native Irish species in so far as possible as they are adapted to Irish conditions and therefore more likely to thrive compared to imported stock. Selected species should also represent woodland and hedgerows in the surrounding environs although non-native species are not to be used, unless otherwise agreed with the Planning Authority.

All plants supplied shall be exactly true to name as shown in the plant schedules. Varieties with variegated and/or coloured leaves will not be accepted, and any plant found to be of this type upon leafing-out shall be replaced by the contractor. Bundles of plants shall be marked in conformity with BS3936: Part 1: 1965 and BS3936: part 4: 1966. The nursery supplier shall replace any plants which, on leafing out, are found not to conform to the labels.

Hedgerows

Mitigation screen planting shall consist of a mixture of native hedgerow species that are prevalent in the immediate area. Planting to consist of feathered whips (of various sizes) and advanced nursery stock (where necessary) in staggered rows at a spacing of 600mm.

All native species will be planted as whips, with the primary and secondary structure species to be of a minimum height of 80-100cm and the other shrub species to be of a minimum height of 40-60cm.

New sections of hedgerow to be planted and bolstered as per diagram LMP1.2 and maintained at a height of 2m unless otherwise specified.

Field Margins/Grassland Management

Field margins to be planted and/or managed in accordance with the BRIDE project EIP techniques. A minimum width of 2m from the base of the hedgerow is recommended. It will be important to flail these margins every year during the period of September 15th to February 28th. A full management regime in accordance with best practice will be adhered to, ensuring that the species will thrive through natural regeneration. Field margin management techniques and wildflowers have been shown to increase biodiversit with numbers of pollinators clearly benefiting from these food sources and an increased presence of other animals in these margins being evident as well when compared to improved grassland margins managed more intensely.

Species mix to be finalised in conjunction with the project ecologist.

Landscape Figures

Hedgerow Removal- c. 353 linear meters
Tree/parkland removal- c. 2660 square meters
New Hedgerow- c. 383 linear meters

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Prepared for:
Ballyvatta Solar Farm Limited

Site location:
COUNTY CORK

Drawing Title:
LANDSCAPE MITIGATION PLAN

Project:
BALLYVATTA 110kV SUBSTATION

Drawn by: RAH
Checked by: RC

Drawing Ref:
LD.KNCKRH 1.0

Scale:
1:500 @ A1
1:1500 @ A1

Date:
AUGUST 2024

DRAFT