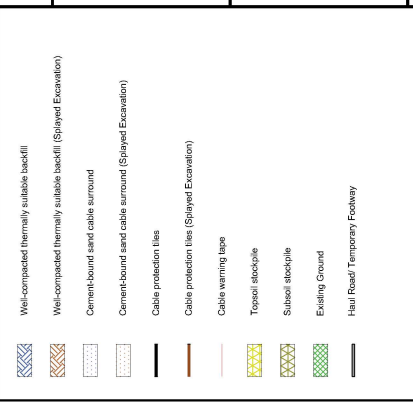


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- Notes**
- This drawing is for development purposes only and should not be used for construction.
 - Do not scale any items or information from this drawing.
 - Drawing is showing typical indicative cable installation arrangement. Dimensions and materials are to be confirmed through the detailed design. No cable design has been undertaken at this stage of the project.
 - Cables installation is shown as one trench arrangement. Alternative arrangement may be considered which would involve installing cables in individual cable trenches 1.5m apart.
 - Cable construction swathe may reduce in width subject to site constraints. At these locations, the cable construction swathe may be subject to site constraints. At these locations, the cable construction swathe may be subject to site constraints. At these locations, the cable construction swathe may be subject to site constraints. At these locations, the cable construction swathe may be subject to site constraints. At these locations, the cable construction swathe may be subject to site constraints.
 - Drainage ditches shown indicatively, requirements subject to field and stakeholder consultation methodology.
 - Particular//in flood zone areas where signs with burds may be required.
 - Cable construction swathe and permanent cable easement widths may increase at later stage of design.



Typical HVDC Construction Easement - One Trench
Scale 1:100

Rev	Description	Created	Drawn	Checked	Approved
PO2	Updated following receipt of comments	LS	JW	PM	01/03/21
PO1	First Issue	KL	PM	JW	22/01/21

nationalgrid

Master Scheme No: [] Site Scheme No: [] Site: []
Scheme Name: []
Document Title: []

Eastern Link 2
Typical Direct Buried Cable Cross
Section and Construction Easement

Created by: [] Drawn by: [] Checked by: [] Approved by: [] Date: []
K-Lee P-McLaughlin 20/01/2021 J-Weeks 20/01/2021
Investment Eng Document Type Score Forecast Rev
A-Admin DING As Shown A1 Sheets 4
PDD
PDD-100822-LAY-030
FEED Document Number:
421631-MMD-00-XX-DR-C-0030

NOTES

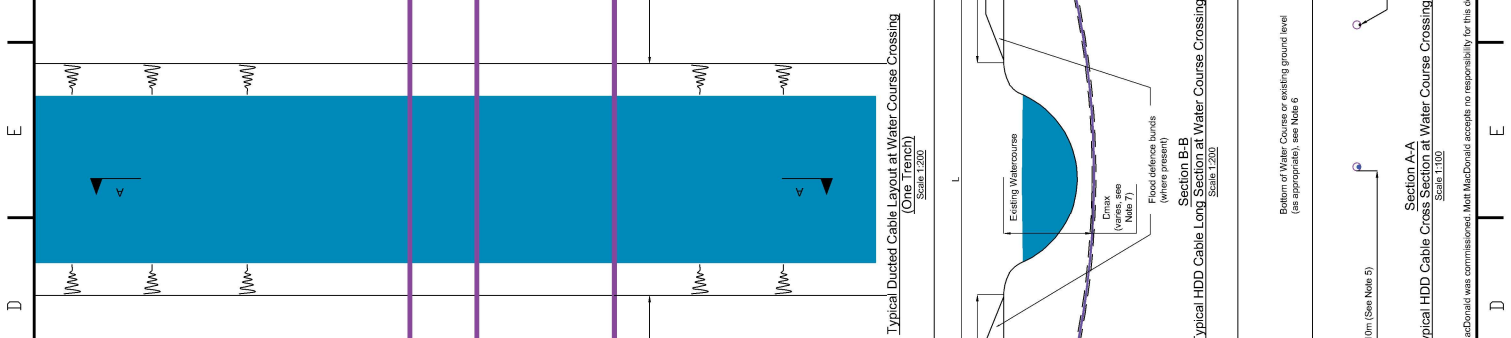
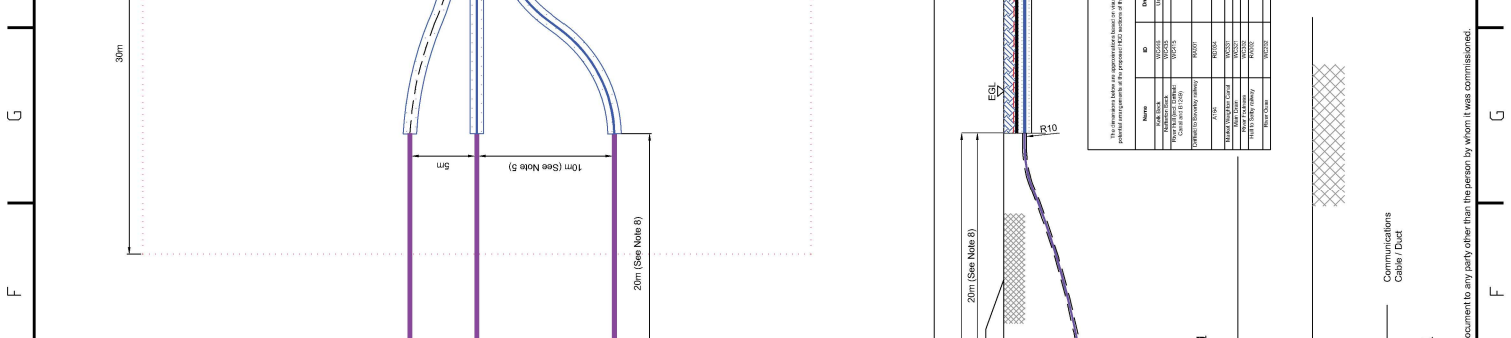
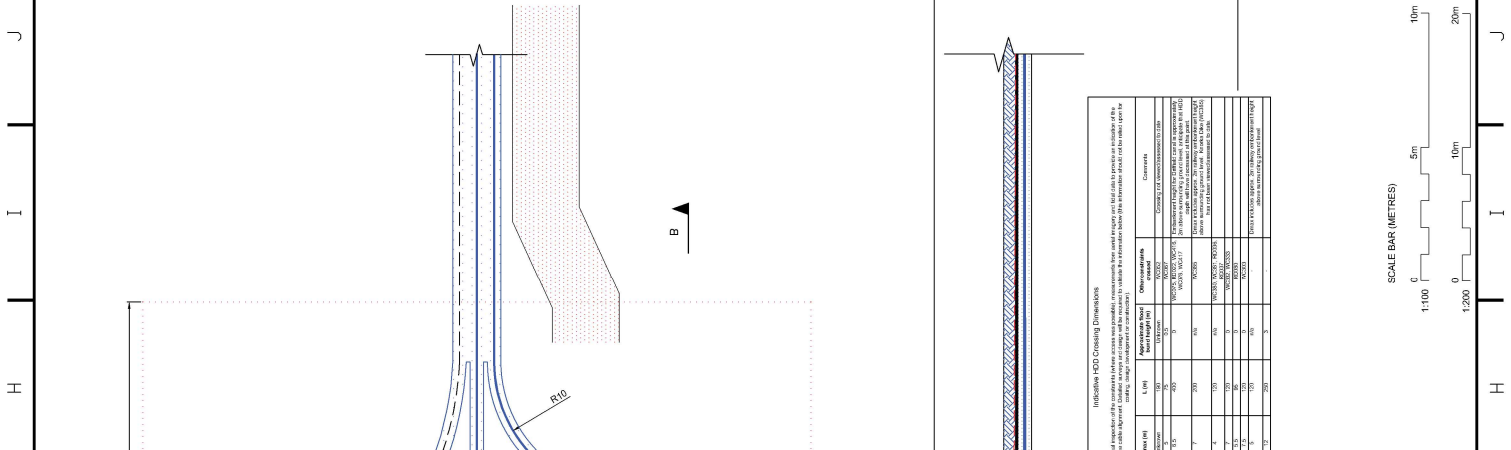
- This is a 1:4.2 drawing and is for development purpose only.
- All dimensions are in millimetres unless otherwise stated.
- Proposed dimensions are for development purpose only. Dimensions and design may vary depending on site and installation conditions.
- Spacing between cables should be based on 10m separation. Spacing may increase/decrease at later stages of design.
- This drawing is shown as a watercourse crossing, however the drawing applies equally to crossings of other constraints, including railways, or to crossings of multiple watercourses.
- Depth between existing surface level or bottom of ditch (as appropriate) and top of HDD to be agreed with relevant stakeholders. Increase in depth may impact overall length of the cable.
- A thorough HDD design will need to be undertaken at a later design stage to determine the overall length and angle of entry based on existing ground conditions and the number, size and arrangement of constraints to be crossed by the relevant HDD.
- Refer to drawing 421631-MMD-00-XX-DR-C-0030 for typical direct buried cable installation and construction swaths.
- Refer to drawing 421631-MMD-00-XX-DR-C-0035 for typical HDD construction compound area.
- Arrangement shown is for HDD sections of the cable alignment. HVAC HDDs will require a separate design and construction details. The size of the compound areas and the length over which the cable trenches slope may need to increase accordingly.
- Communications cable duct currently shown indicatively. Exact location to be agreed at later stage of design.

DRAFT - For review and comment
The Designer is aware of elements of this drawing that require update in subsequent revisions.

KEY

- Indicative HDD Construction Compound (See Note 10)
- Well-compacted thermally suitable backfill
- Cement-bound Sand (CBS)
- Concrete
- Cable protection tiles
- HVDC Cable
- Existing Watercourse
- HDD Duct
- Cable Warning Tape
- Temporary Haul Road
- Existing Ground
- Communications Cable Duct

REV	DATE	DESCRIPTION
01	14 JUN 2020	Issue for Development
02	14 JUN 2020	Issue for Development
03	14 JUN 2020	Issue for Development
04	14 JUN 2020	Issue for Development
05	14 JUN 2020	Issue for Development
06	14 JUN 2020	Issue for Development
07	14 JUN 2020	Issue for Development
08	14 JUN 2020	Issue for Development
09	14 JUN 2020	Issue for Development
10	14 JUN 2020	Issue for Development
11	14 JUN 2020	Issue for Development
12	14 JUN 2020	Issue for Development



INDICATIVE HDD CROSSING DIMENSIONS

The information below is an indicative guide only and is not intended to be used for construction purposes. It is intended to provide a general overview of the dimensions and materials used in the design. The designer is responsible for ensuring that the design meets the requirements of the relevant standards and specifications.

Item	Material	Thickness / Diameter	Notes
1	Concrete	100mm	For HDD duct
2	Concrete	100mm	For HDD duct
3	Concrete	100mm	For HDD duct
4	Concrete	100mm	For HDD duct
5	Concrete	100mm	For HDD duct
6	Concrete	100mm	For HDD duct
7	Concrete	100mm	For HDD duct
8	Concrete	100mm	For HDD duct
9	Concrete	100mm	For HDD duct
10	Concrete	100mm	For HDD duct
11	Concrete	100mm	For HDD duct
12	Concrete	100mm	For HDD duct

SCALE BAR (METRES)

1:100 0 5m 10m

1:200 0 10m 20m

SECTION A-A

Typical HDD Cable Cross Section at Water Course Crossing
Scale 1:100

Bottom of Water Course or existing ground level (as appropriate), see Note 6

10m (See Note 5)

Communications Cable / Duct

SECTION B-B

Typical HDD Cable Long Section at Water Course Crossing
Scale 1:200

Fixed reference bunds (where present)

Existing Watercourse

EGL

R10

Bottom of Water Course or existing ground level (as appropriate), see Note 6

Notes

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- All dimensions are in millimetres unless otherwise stated.
- Dimensions are shown for construction purposes only. Dimensions and design may vary depending on site and installation conditions. No cable design has been undertaken at this stage of the project.
- Refer to drawing 421631-MMD-00-XX-DR-C-0001 for typical direct buried cable installation and construction details.
- Duct length to extend by approximately 2m beyond top of bank. Final dimension to be agreed in a later stage of design.
- Refer to drawing 421631-MMD-00-XX-DR-C-0000 for typical direct buried cable installation and construction details.
- Subject to agreement with the contractor, a 1m wide gravel surround may be provided to the ducts. This gravel surround shall be laid in a later stage of design.
- Concrete slabs/duct currently shown in trench cross section. Exact location to be agreed in a later stage of design.
- Refer to drawing 421631-MMD-00-XX-DR-C-0001 for typical direct buried cable arrangement of the trenches and the cables within each trench will be as shown in drawing 421631-MMD-00-XX-DR-C-0001. Overhead cable design remains applicable for either HVAC or HVDC watercourse crossings.

Key

- HVDC Cable
- Cable Duct
- Temporary Haul Road
- Water course
- Concrete
- Green-Bound Sand (GBS)
- Well compacted thermally suitable backfill
- Granular Material
- Cable Warning Tape
- Cable Protection Tiles
- Fence

DRAFT - For review and comment
The Designer is aware of elements of this drawing that require update in subsequent revisions.

Rev	Issue	Rev	Issue
01	Final Issue	01	Final Issue
	Local Desc Approval		Local Desc Approval

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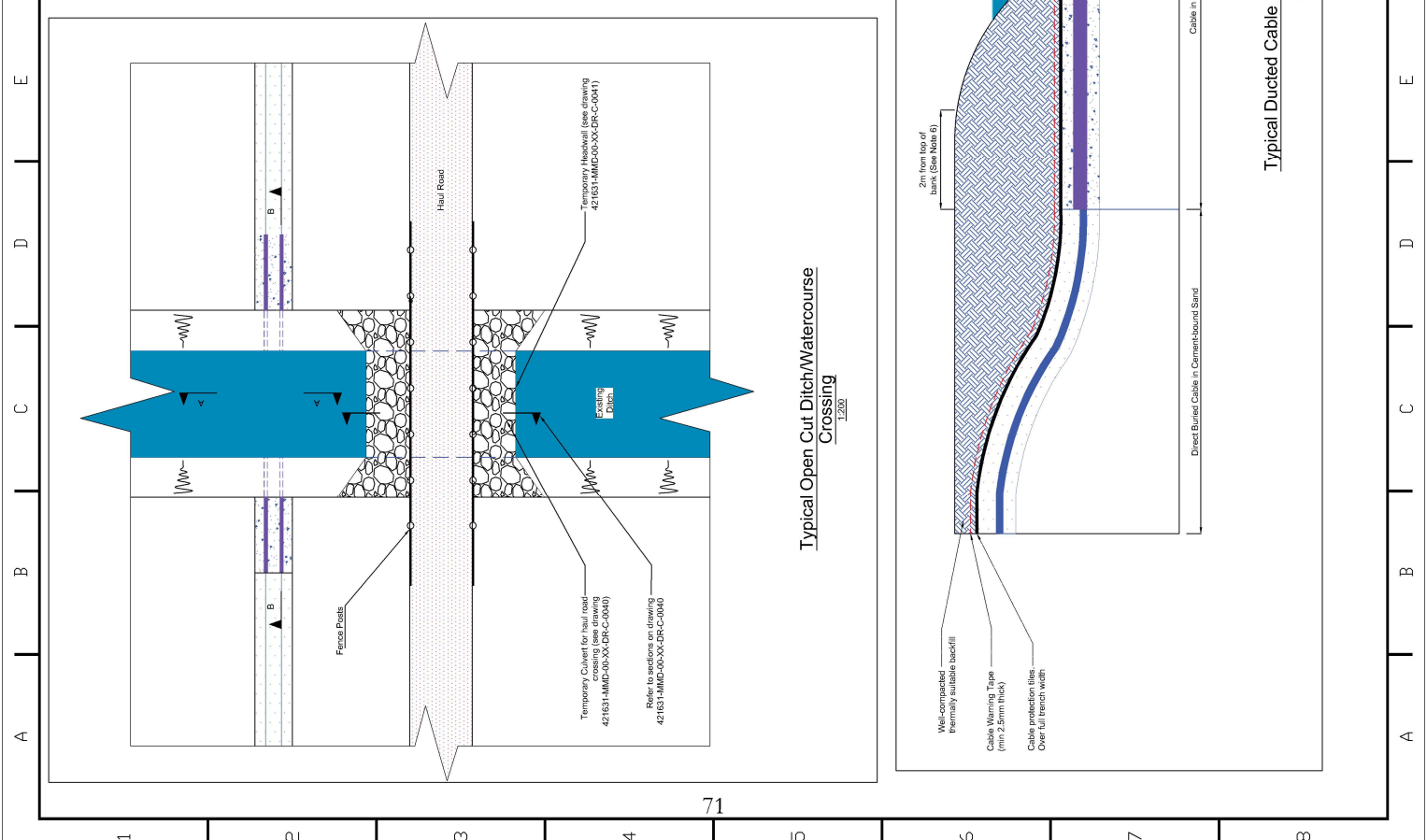
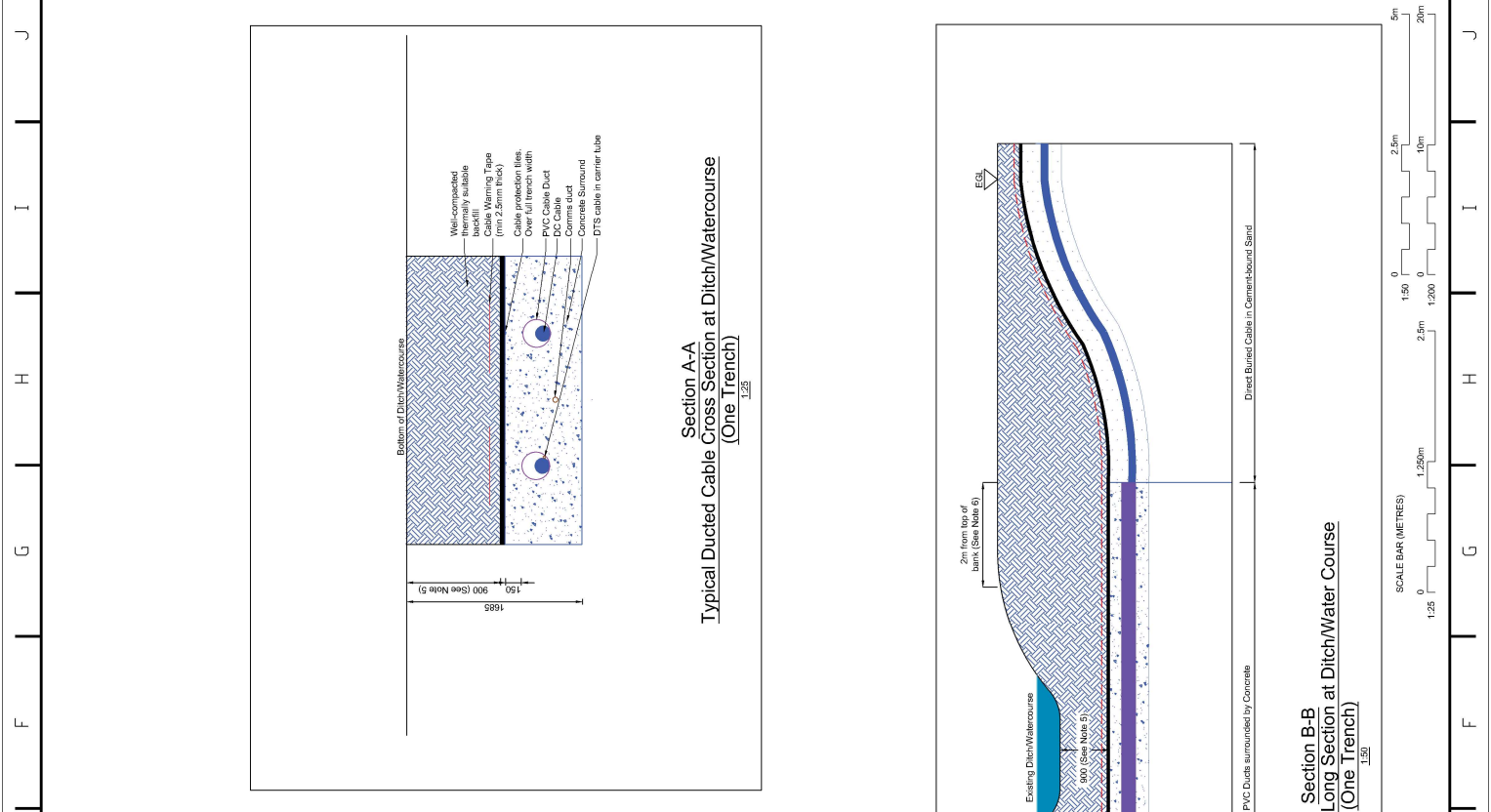
Project Scheme No: [] Site: []
Scheme Name: []

Document Title
Eastern Link 2
Typical Ducted Ditch/Watercourse Crossing

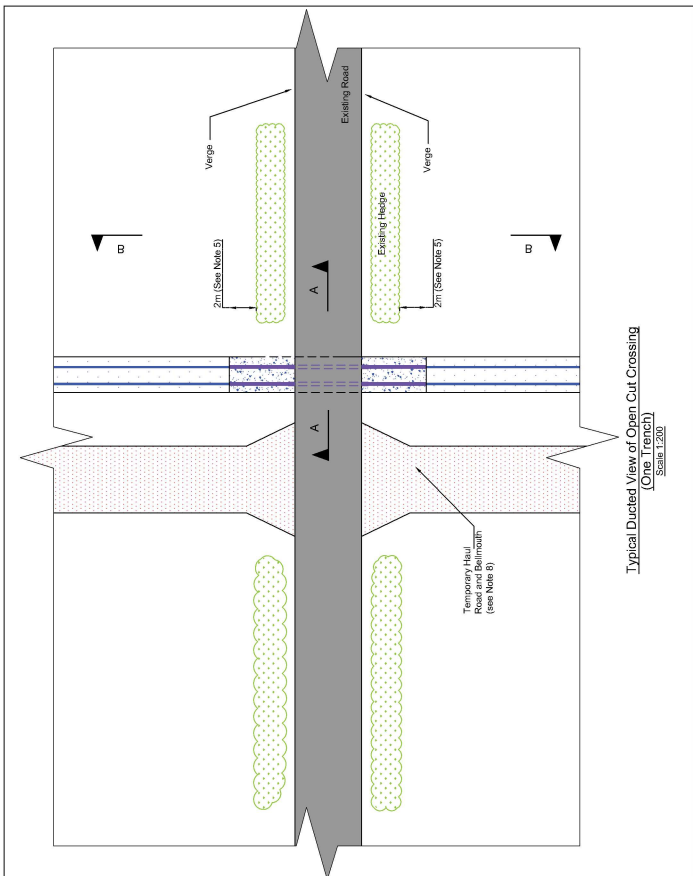
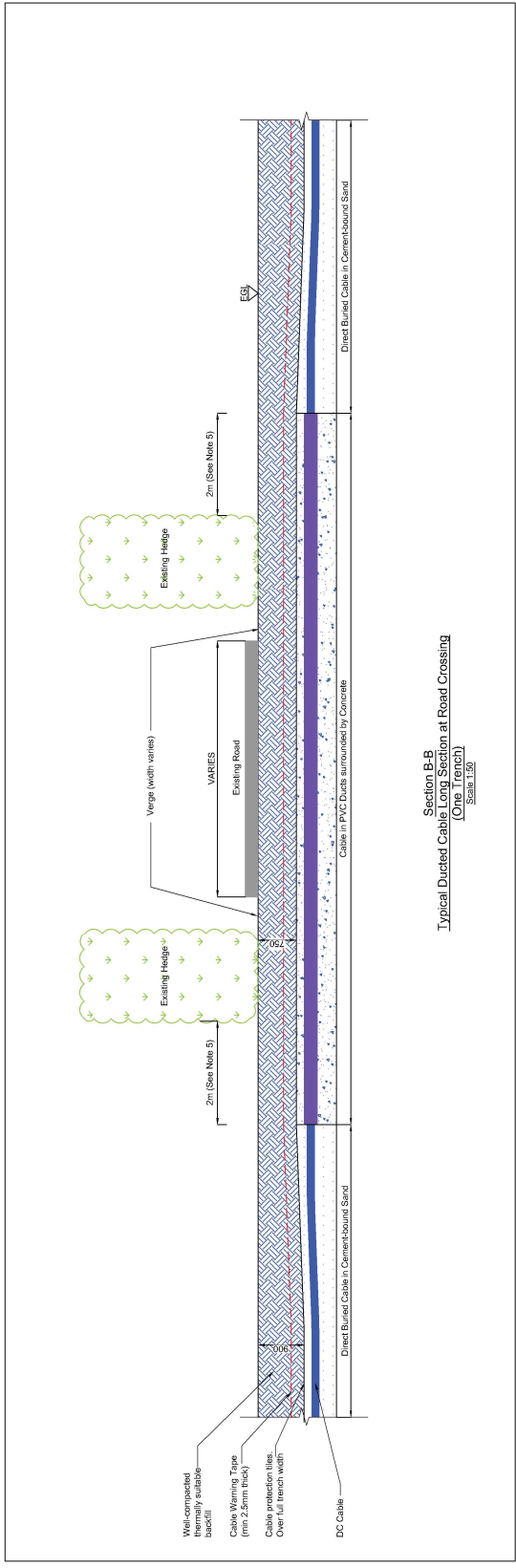
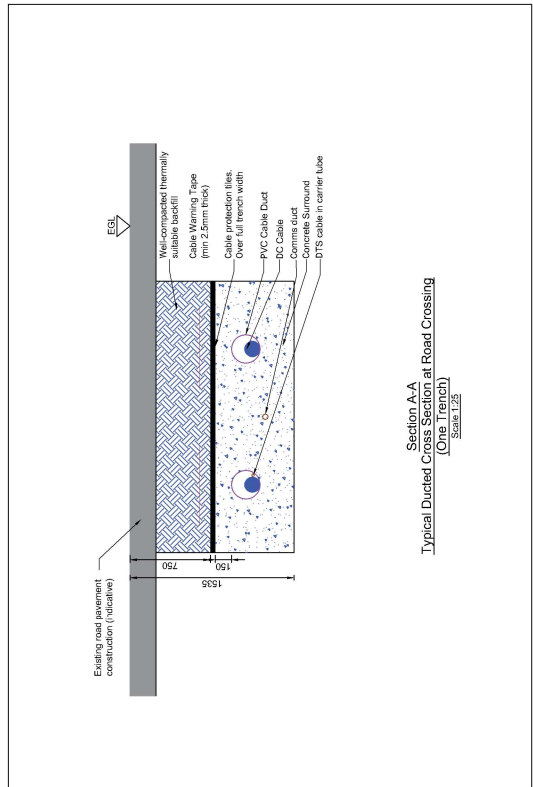
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Checked by: [] Date: []
Approved by: [] Date: []
Author: []
Drawing No: []
Form: A1
As Shown: []
Revision: []
Project: []

Network ID Document Number
PDD-100822-LAY-031

FEED Document Number
421631-MMD-00-XX-DR-C-0031



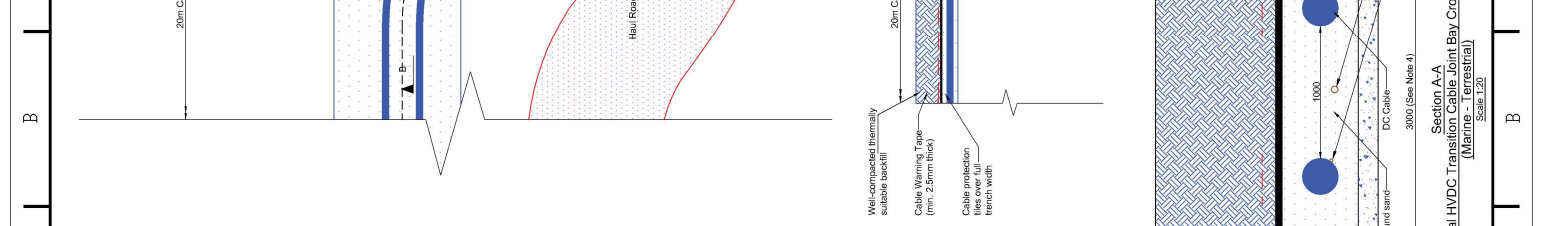
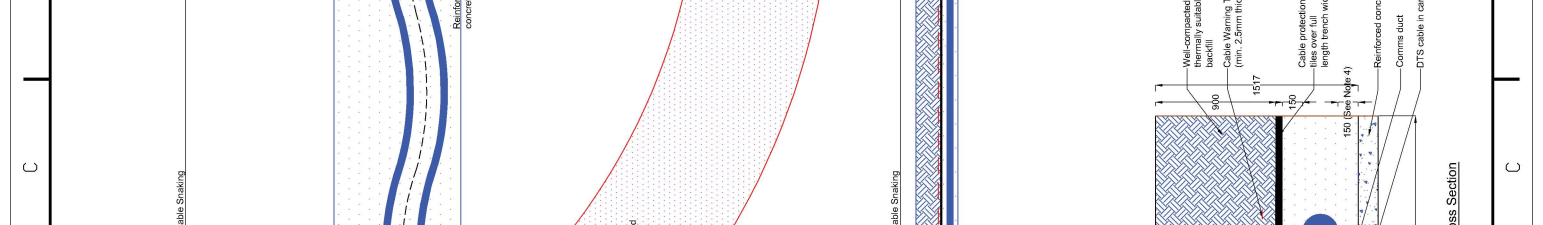
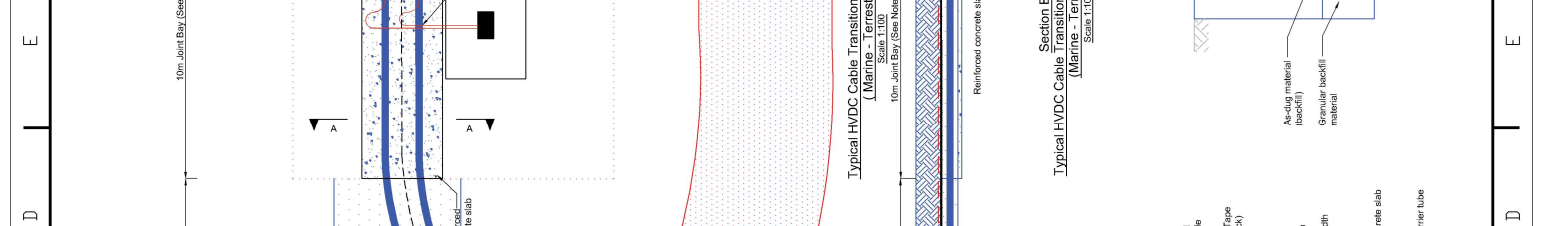
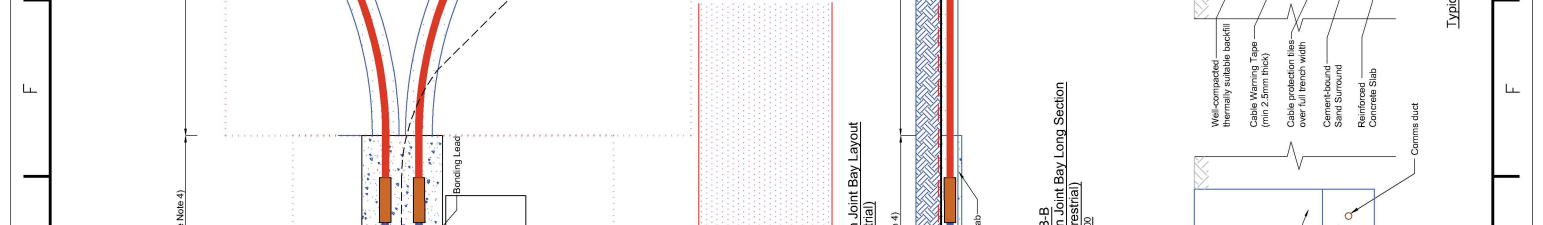
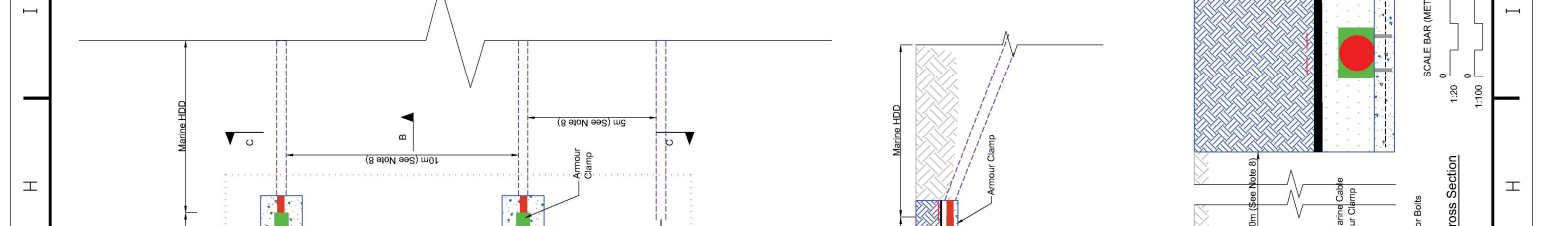
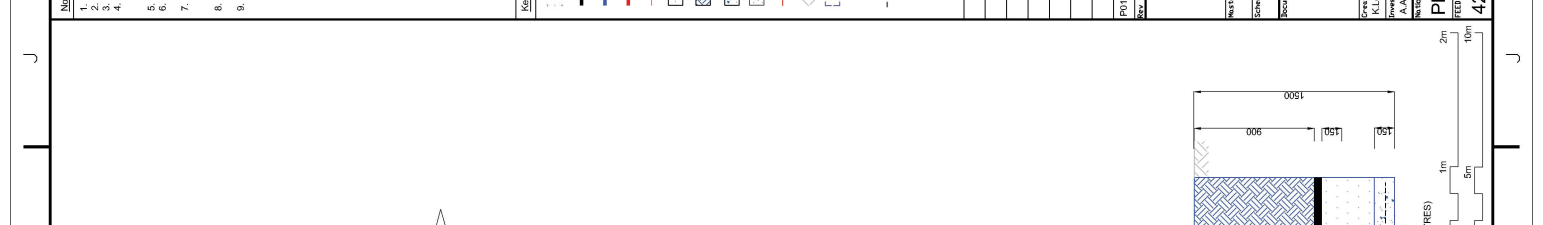
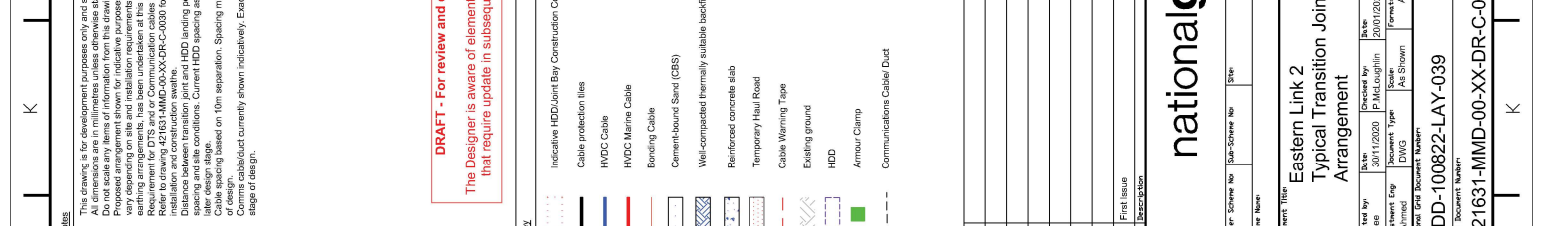
1	2	3	4	5	6	7	8
<p>Notes</p> <ol style="list-style-type: none"> This drawing is for development purposes only and should not be used for construction. All dimensions are in millimetres unless otherwise stated. Do not scale any items of information from this drawing. Dimensions and design may vary depending on site and installation conditions. No cable design has been undertaken at this stage of the project. Where present, hedge to be removed and reinstated once cable ducts have been installed. Duct length to extend by approximately 2m beyond road, or hedge boundary if present. Refer to drawing 421631-MMD-00-XX-DR-C-0030 for typical direct buried cable. Where required, e.g.: due to topography or for visibility, the haul road may be offset from the cable crossing. Vegetation clearance and other highway alterations may also be required to meet the requirements of the local highway authority and/or design standards. Comms cable/duct currently shown indicatively in trench cross section. Exact location to be confirmed by the contractor. The crossing arrangement shown applies to HVDC sections of the cable alignment. HVAC sections will comprise an additional trench, with three cables per trench. The arrangement of the trench and the cables within each trench will be as shown in drawing 421631-MMD-00-XX-DR-C-0030. The trench and cable alignment will be adjusted to accommodate a second trench. Otherwise this outline design remains applicable for either HVAC or HVDC road crossings. 							
<p>Key</p> <ul style="list-style-type: none"> Well-compacted thermally suitable backfill Cement-Bound Sand (CBS) Concrete Cable protection fillets Cable warning tape Temporary Haul Road HVDC Cable Cable Duct 							
<p>DRAFT - For review and comment The Designer is aware of elements of this drawing that require update in subsequent revisions.</p>							
<p>Project: nationalgrid</p> <p>Project Title: Eastern Link 2 Typical Ducted Road Crossing</p> <p>Revision: RL PM JN 22/01/21</p> <p>Local Chgd Descr: Issue</p>							
<p>Created by: SA/11/2020 Checked by: SA/11/2020 Approved by: SA/11/2020</p> <p>Drawn: SA/11/2020 Project: SA/11/2020 Form: A1</p> <p>Scale: As Shown DWG: As Shown Form: A1 Project: PO1</p> <p>Network ID: PDD-100822-LAY-032</p> <p>FEED Document Number: 421631-MMD-00-XX-DR-C-0032</p>							



1	2	3	4	5	6	7	8
<p>SCALE BAR (METRES)</p> <p>0 2.5m 5m 10m 15m 20m</p> <p>1:25 0 2.5m 5m 10m 15m 20m</p> <p>1:50 0 2.5m 5m 10m 15m 20m</p> <p>1:200 0 2.5m 5m 10m 15m 20m</p>							
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Notes

- This drawing is for development purposes only and should not be used for construction.
- All dimensions are in millimetres unless otherwise stated.
- Dimensions are shown for development purposes only. Dimensions and design may vary depending on site and installation requirements. No cable design, including for bedding arrangements, has been undertaken at this stage of the project.
- Proposed arrangement shown for indicative purposes only.
- Refer to drawing 421631-MMD-00-XX-DR-C-0039 for typical direct buried cable installation and construction details.
- Refer to drawing 421631-MMD-00-XX-DR-C-0039 for typical direct buried cable spacing and site conditions. Current HDD spacing assumed at 10m. To be assessed at a later design stage.
- HDD spacing may increase/decrease at later stages of design.
- Current HDD spacing shown indicatively. Exact location to be agreed at a later stage of design.



Key

- Indicative HDD/Joint Bay Construction Compound Area
- Cable protection tiles
- HVDC Cable
- HVDC Marine Cable
- Bonding Cable
- Cement-bound sand (CBS)
- Well-compacted thermally suitable backfill
- Reinforced concrete slab
- Temporary Haul Road
- Cable Warning Tape
- Existing ground
- HDD
- Armour Clamp
- Communications Cable Duct

DRAFT - For review and comment
The Designer is aware of elements of this drawing that require update in subsequent revisions.

nationalgrid

Project Title: Eastern Link 2 Typical Transition Joint Bay Arrangement

Drawn By: K.L. (20/10/2020) | Checked By: J.H. (20/10/2021) | Approved By: J.H. (20/10/2021)

Client: National Grid | Project: Eastern Link 2 | Drawing: Typical Transition Joint Bay Arrangement | Version: A1 | Date: 20/10/2021

Project Reference: PDD-100822-LAY-039

Scale: 1:100 (Plan), 1:20 (Sections)

