



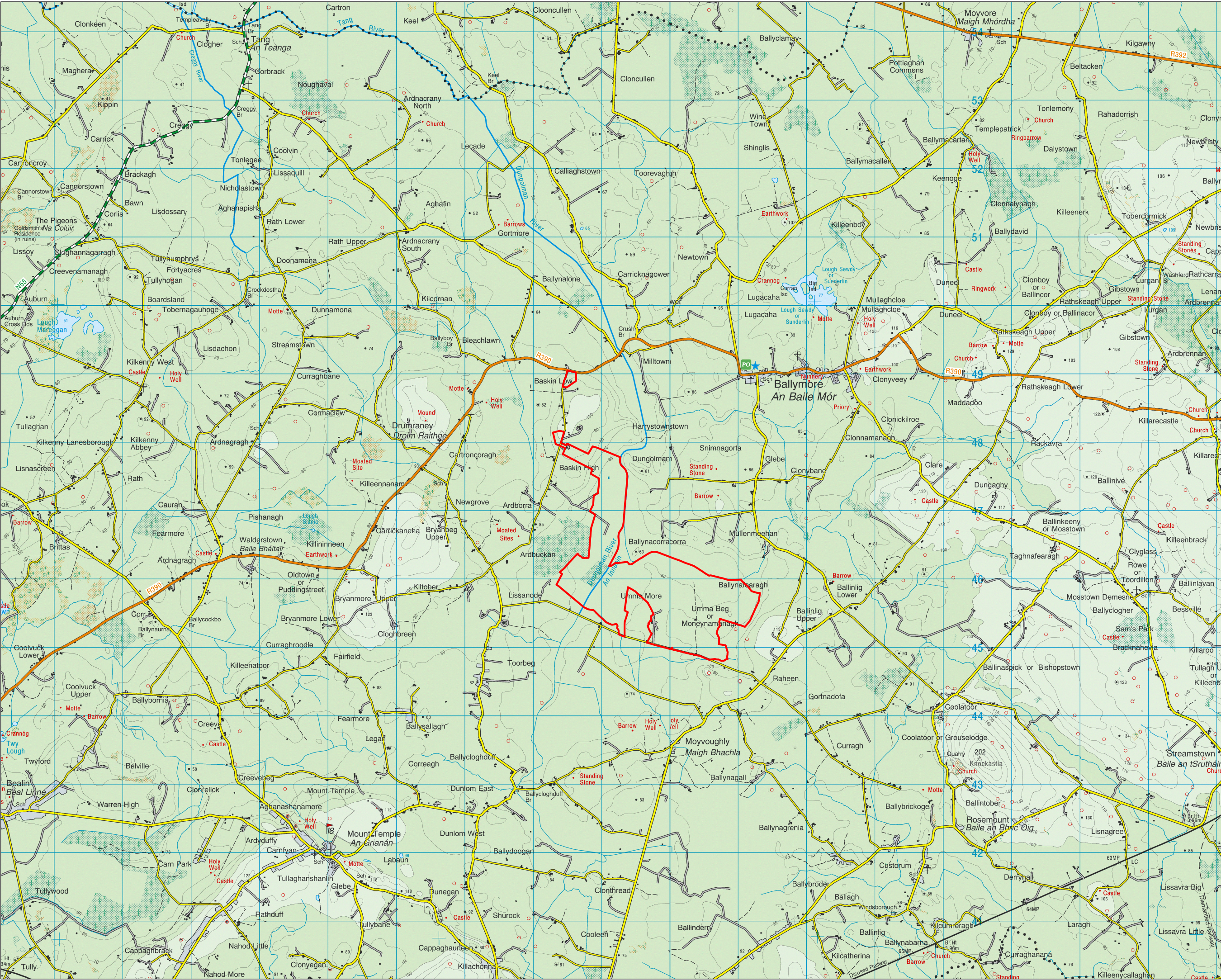
**Umma More Renewable Energy Development,
Co. Westmeath
Planning Permission Application Drawings**





Schedule of Drawings

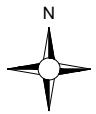
Drawing No.	Drawing Title	Scale	Page Size
201050 – 01	Location Context Map	1: 50,000	A3
201050 – 02	Site Location Map	1: 20,000	A3
201050 – 02A	Site Notice Location Map A	1:2,500	A3
201050 – 02B	Site Notice Location Map B	1:2,500	A3
201050 – 02C	Site Notice Location Map C	1:2,500	A3
201050 – 02D	Site Notice Location Map D	1:2,500	A3
201050 – 02E	Site Notice Location Map E	1:2,500	A3
201050 – 02F	Site Notice Location Map F	1:2,500	A3
201050 – 02G	Site Notice Location Map G	1:2,500	A3
201050 – 02H	Site Notice Location Map H	1:2,500	A3
201050 – 03	Site Layout Key Plan (1:5,000)	1: 10,000	A1
201050 – 04	Site Layout 1:5,000 Sheet 1 of 2	1: 5,000	A1
201050 – 05	Site Layout 1:5,000 Sheet 2 of 2	1: 5,000	A1
201050 – 06	Site Layout Key Plan (1:2,500)	1: 10,000	A1
201050 – 07	Site Layout 1:2,500 Sheet 1 of 6	1:2,500	A1
201050 – 08	Site Layout 1:2,500 Sheet 2 of 6	1:2,500	A1
201050 – 09	Site Layout 1:2,500 Sheet 3 of 6	1:2,500	A1
201050 – 10	Site Layout 1:2,500 Sheet 4 of 6	1:2,500	A1
201050 – 11	Site Layout 1:2,500 Sheet 5 of 6	1:2,500	A1
201050 – 12	Site Layout 1:2,500 Sheet 6 of 6	1:2,500	A1
201050 – 13	Turbine 1 Layout	1:500	A3
201050 – 14	Turbine 2 Layout	1:500	A3
201050 – 15	Turbine 3 Layout	1:500	A3
201050 – 16	Turbine 4 Layout	1:500	A3
201050 – 17	Turbine 5 Layout	1:500	A3
201050 – 18	Turbine 6 Layout	1:500	A3
201050 – 19	Turbine 7 Layout	1:500	A3
201050 – 20	Turbine 8 Layout	1:500	A3
201050 – 21	Turbine 9 Layout	1:500	A3
201050 – 22	Temporary Construction Compound	1:500	A3
201050 – 23	Met Mast	As Shown	A3
201050 – 24	Wind Turbine Elevations & Plan	1:500	A1
201050 – 25	Existing Road for Upgrade Excavated Road Section	1:50	A3
201050 – 26	Proposed New Excavated Road Section	1:50	A3
201050 – 27	Excavated road section in Site-Specific Flood Modelled Zones	1:50	A3
201050 – 28	Site Signage	1:20	A3
201050 – 29	Field Gate Detail	1:20	A3
201050 – 30	Site Office & Staff Facilities Detail	1:100	A3
201050 – 31	Clear Span Bridge Crossing	As Shown	A3
201050 – 32	33kV Cable Trench Sections	1:10	A3
Drawing No.	HES Drawings	Scale	Page Size
D101	Proposed Drainage Layout	1: 2,000	A1
D102	Proposed Drainage Layout	1: 2,000	A1
D103	Proposed Drainage Layout	1: 2,000	A1
D104	Proposed Drainage Layout	1: 2,000	A1
D105	Proposed Drainage Layout	1: 2,000	A1
D501	Drainage Details 1	As Shown	A1
D502	Drainage Details 2	As Shown	A1
D503	Drainage Details 3	As Shown	A1



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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

Planning Application Boundary

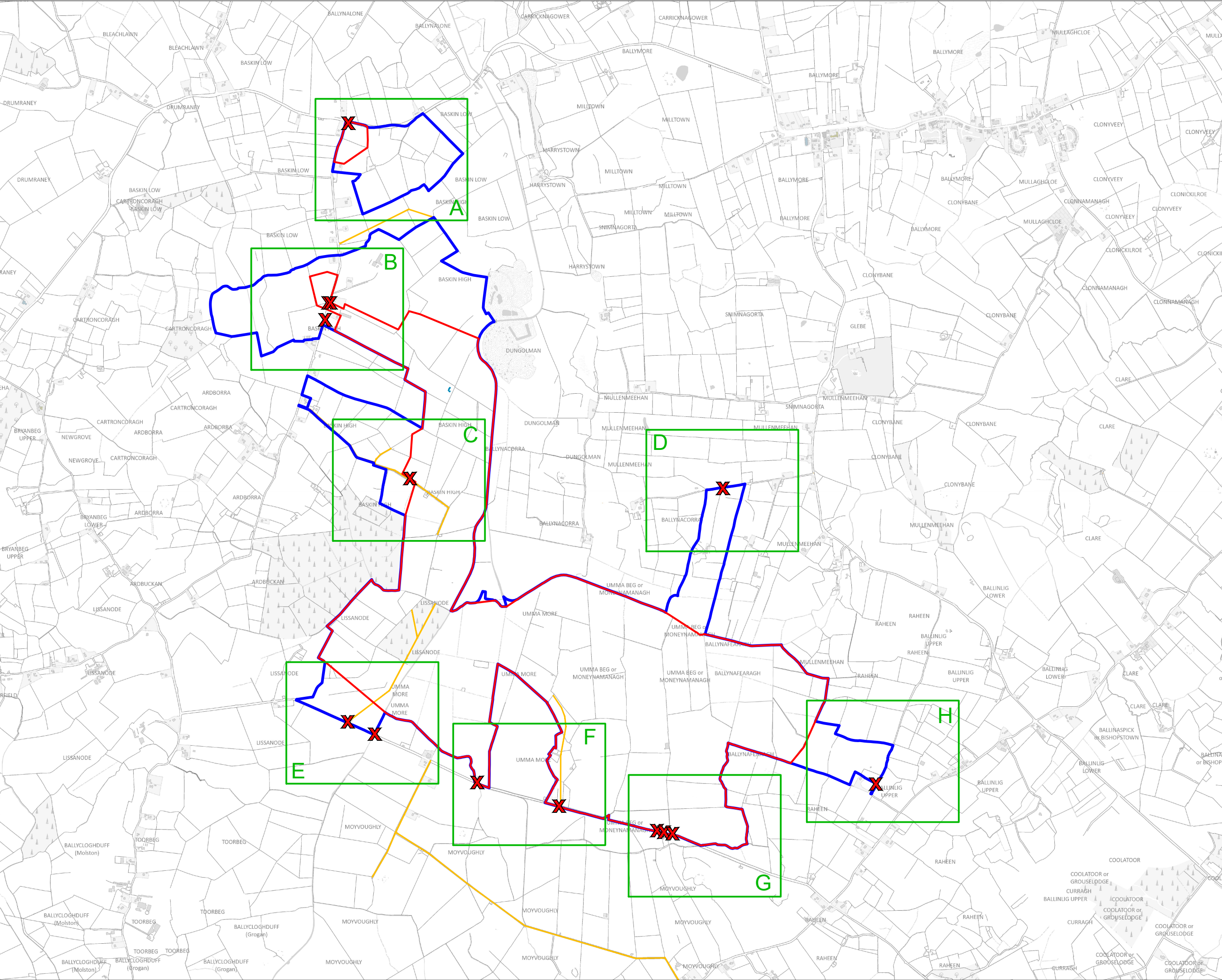


Location Context Map

PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath			
DRAWING BY: Joseph O'Brien		CHECKED BY: Ellen Costello	
PROJECT No.: 201050		DRAWING No.: 201050 - 01	
SCALE: 1:50,000 @ A3		DATE: 02.03.2023	
OS SHEET No.: OS2024, OS2224			



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Drawing Legend


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



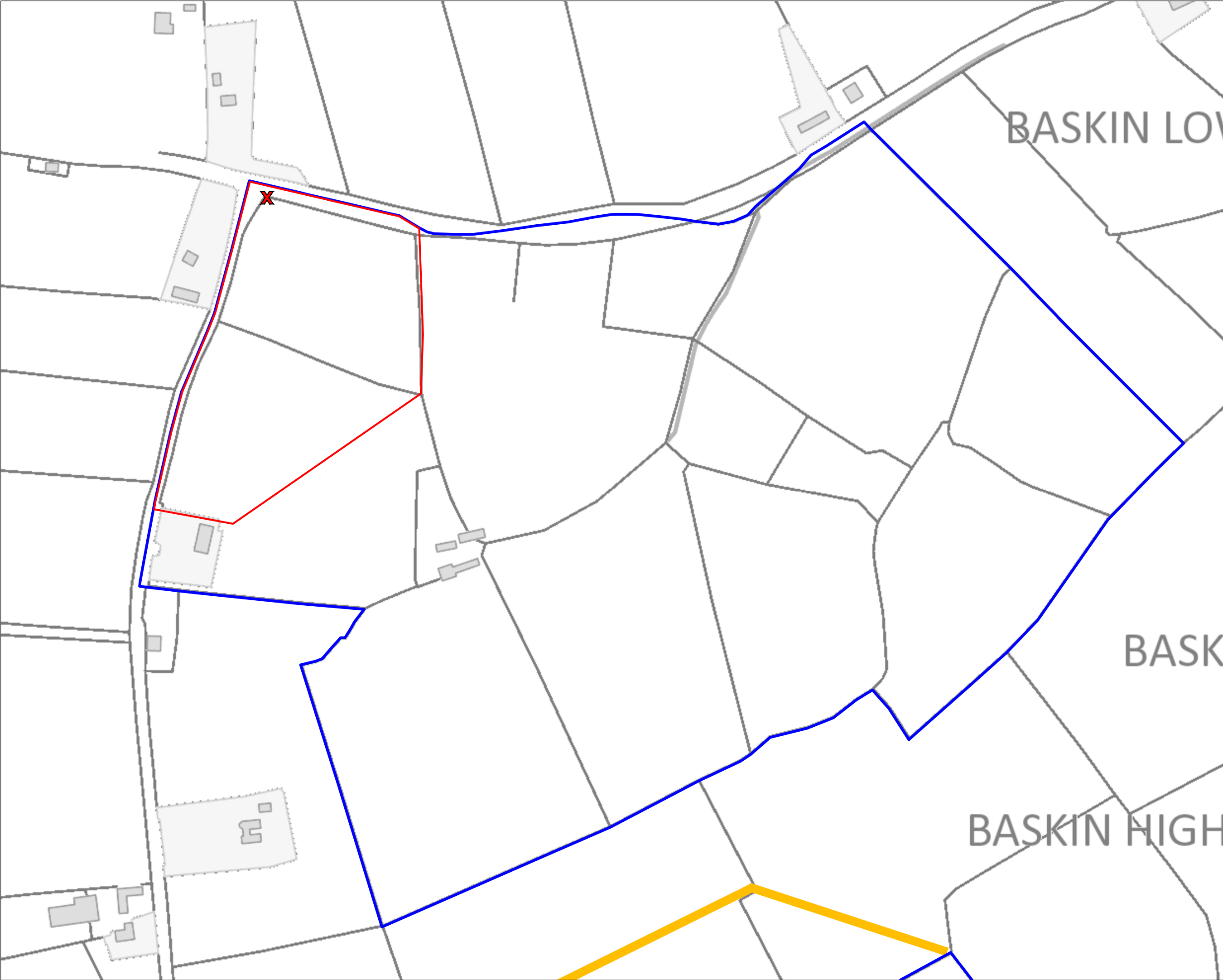
Site Location Map

PROJECT TITLE
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02
SCALE: 1:20,000 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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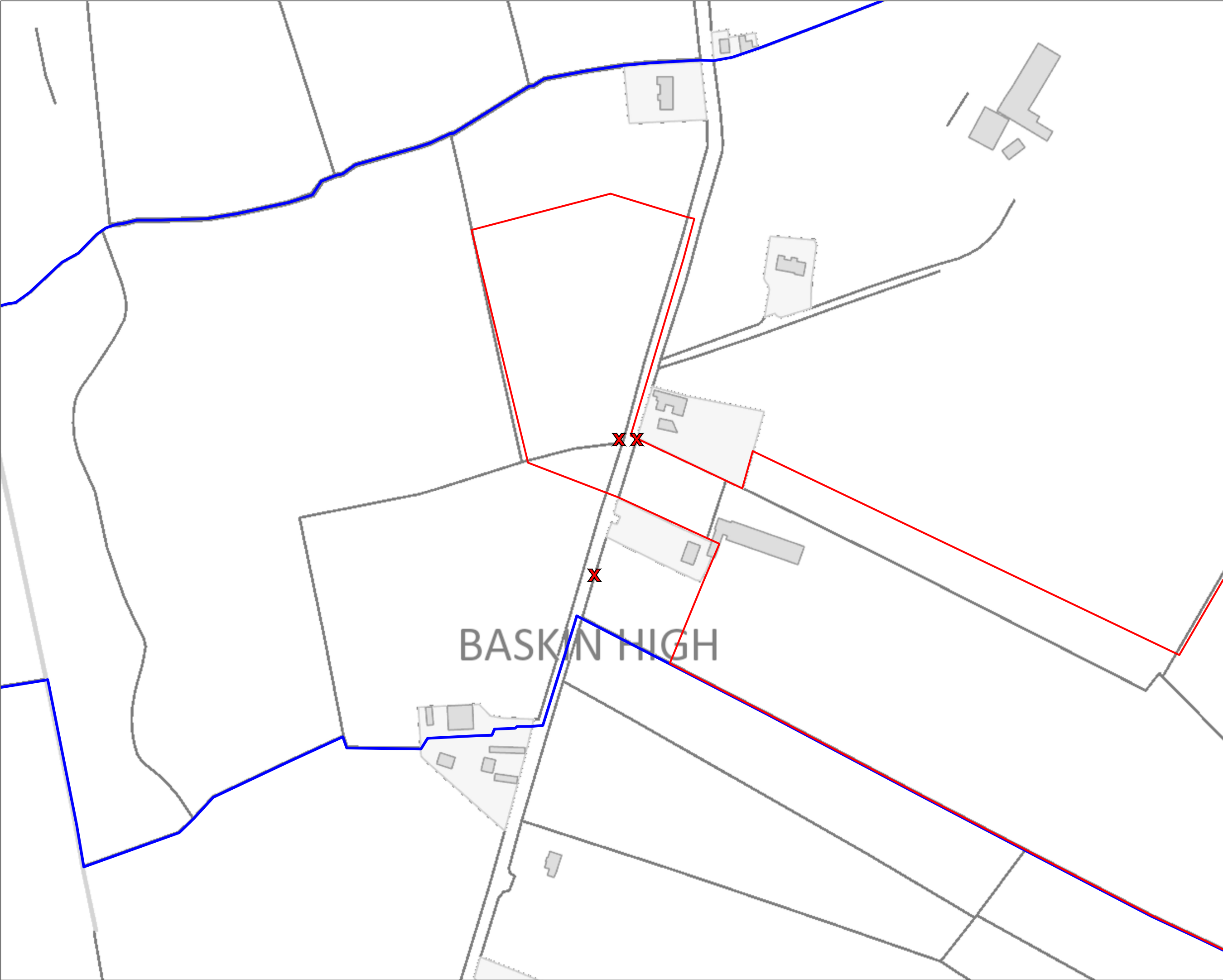
Drawing Legend

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



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DRAWING TITLE: Site Location Map Sheet A	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02A
SCALE: 1:2,500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	
<div><div>MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie</div></div>	



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 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Landowners Boundary
- X Site Notice



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DRAWING TITLE:

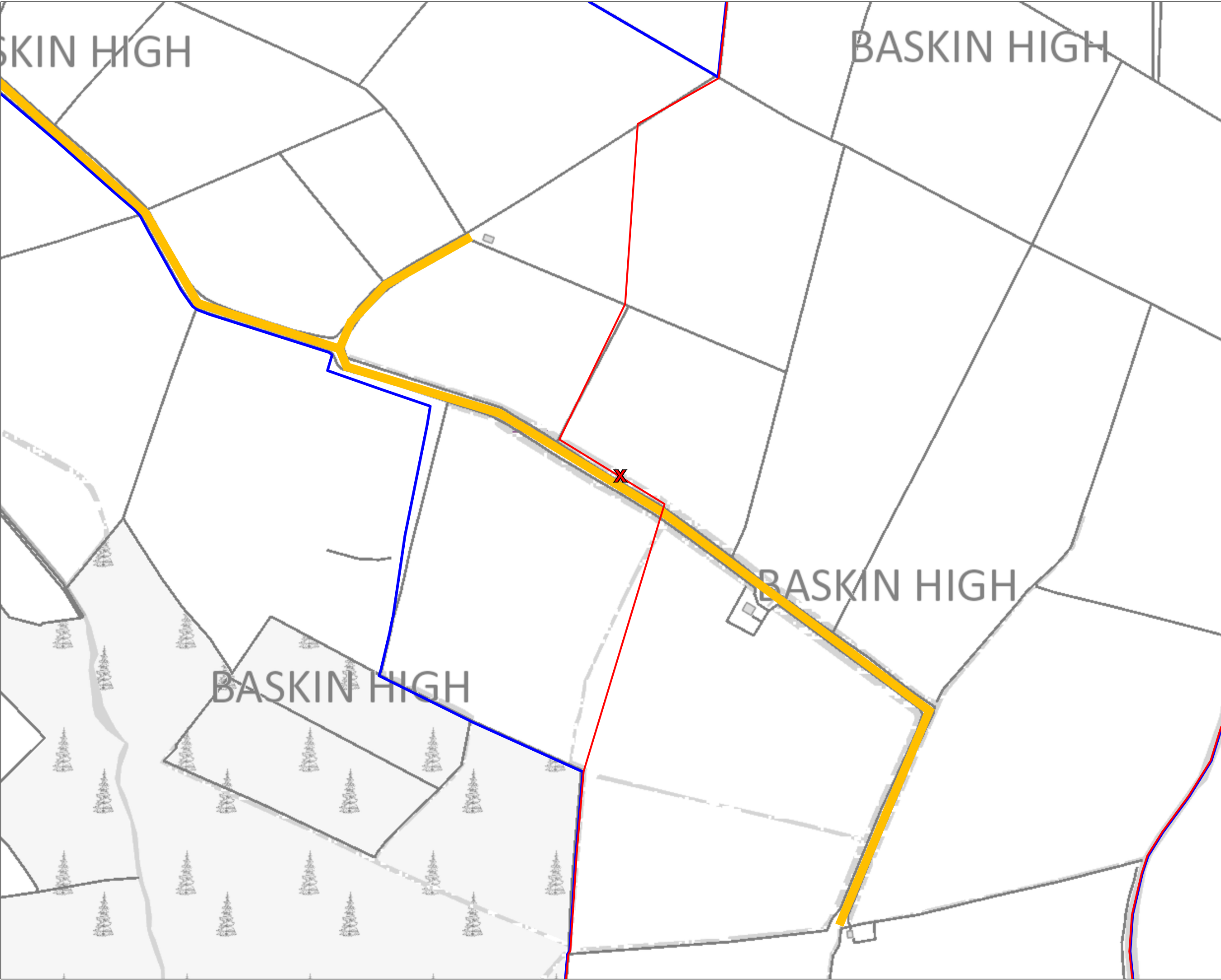
Site Location Map Sheet B

PROJECT TITLE:

**Umma More Renewable Energy
Development, Co. Westmeath**

DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT No.:	DRAWING No.:
201050	201050 - 02B
SCALE:	DATE:
1:2,500 @ A3	02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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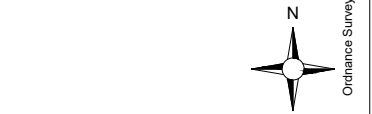


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7. Layout plans show Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.

Drawing Legend

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




Site Location Map Sheet C

PROJECT TITLE
Umma More Renewable Energy Development, Co. Westmeath

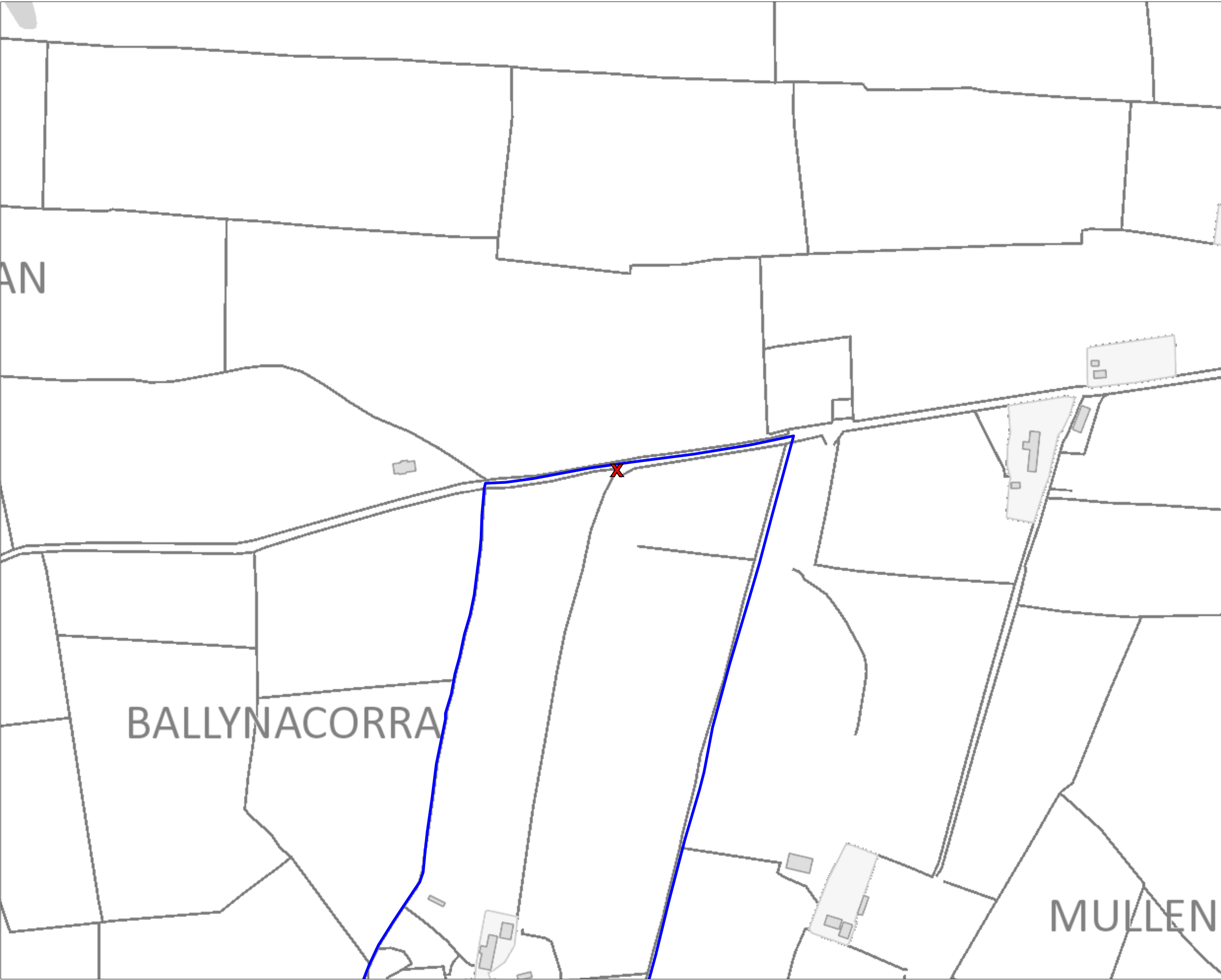
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02C
SCALE: 1:2,500 @ A3	DATE: 02.03.2023

OS SHEET No.: 2900, 2901, 2969, 2970



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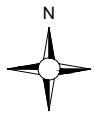
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 8. Final levels may vary depending on local ground conditions.

Drawing Legend

Landowners Boundary

X

Site Notice



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DRAWING TITLE:

Site Location Map
Sheet D

PROJECT TITLE:

Umma More Renewable Energy
Development, Co. Westmeath

DRAWING BY:

Joseph O'Brien

CHECKED BY:

Ellen Costello

PROJECT No.:

201050

DRAWING No.:

201050 - 02D

SCALE:


1:2,500 @ A3

DATE:

02.03.2023

OS SHEET No.:

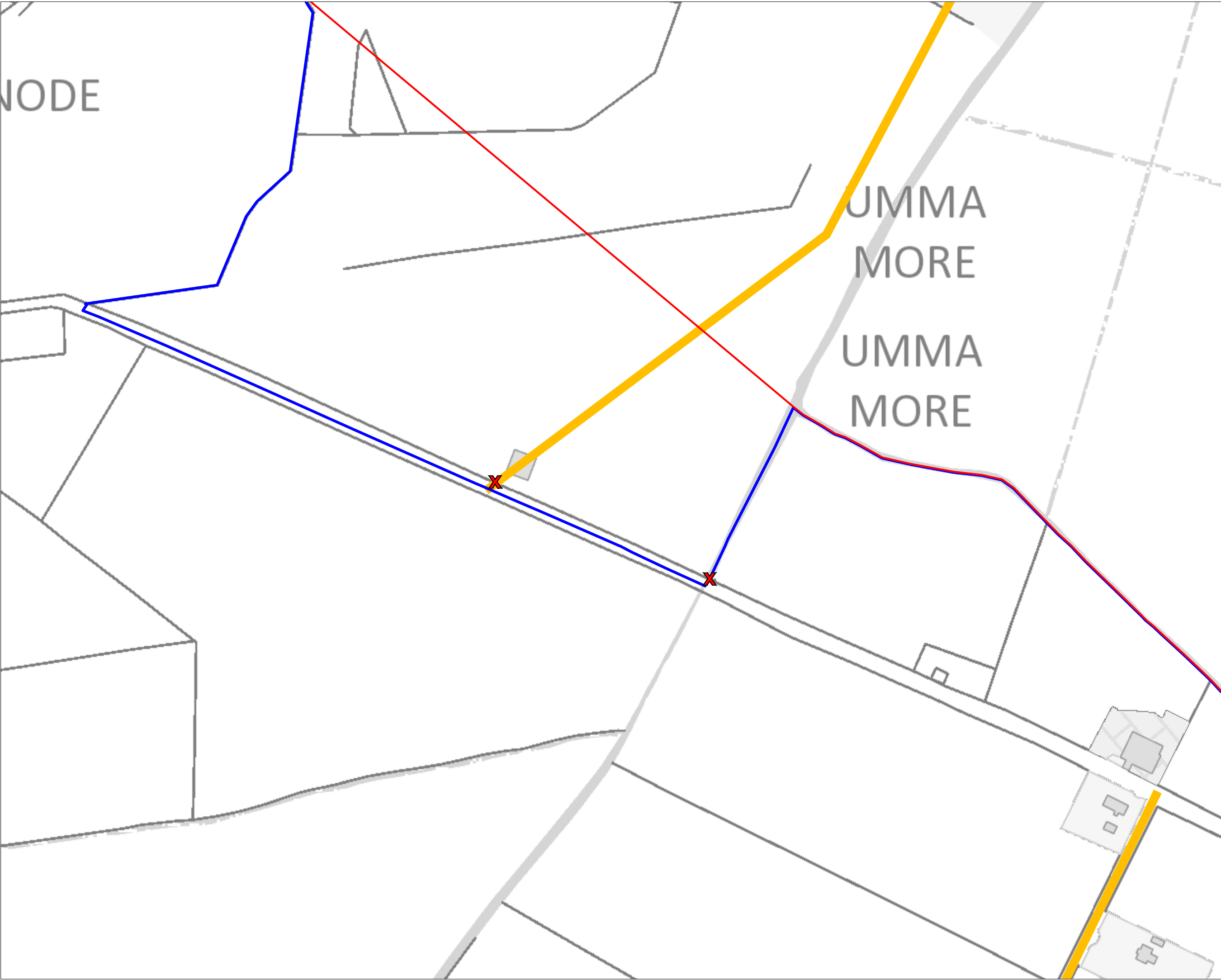
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Drawing Legend


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



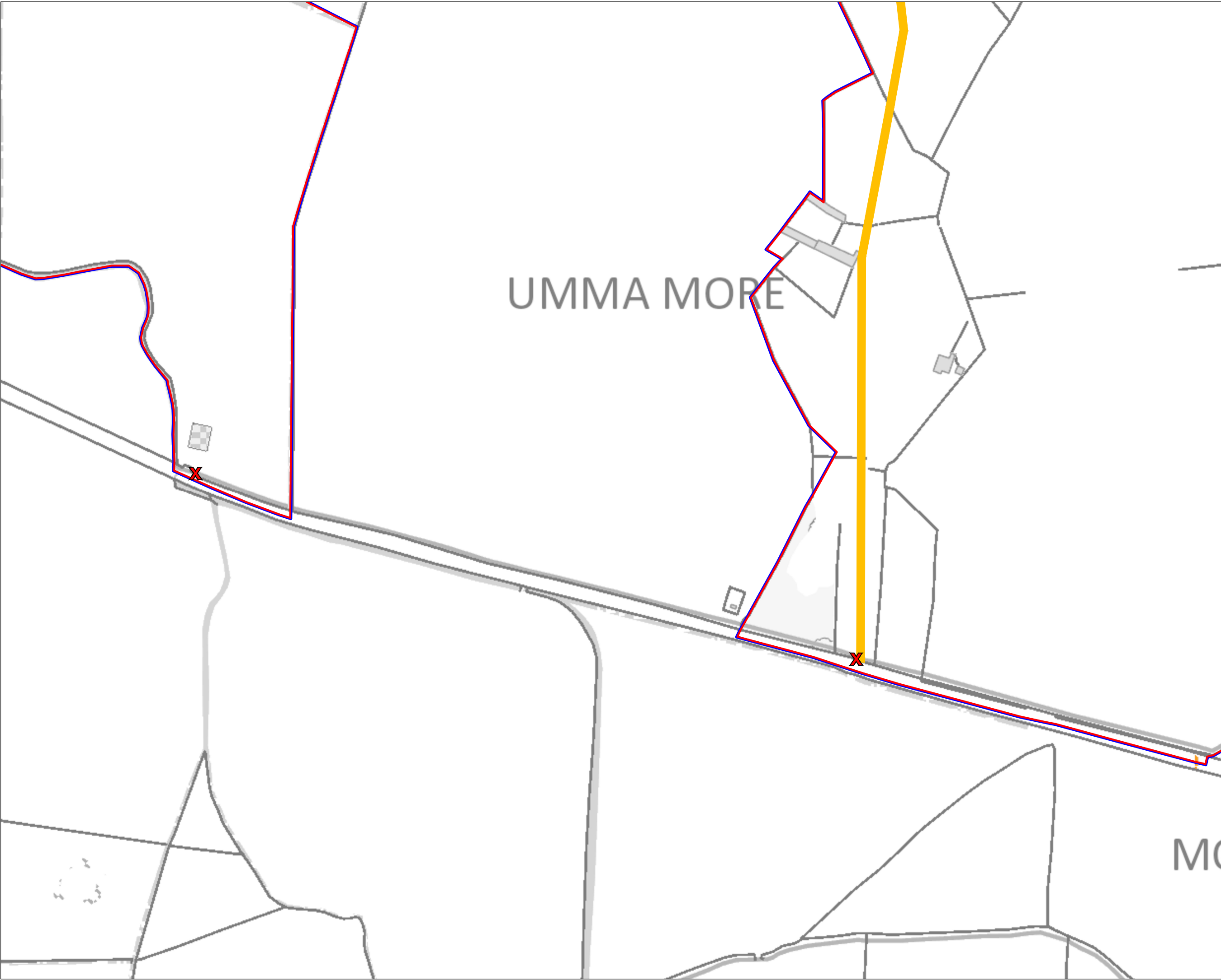
Site Location Map Sheet E

Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02E
SCALE: 1:2,500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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Drawing Legend


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



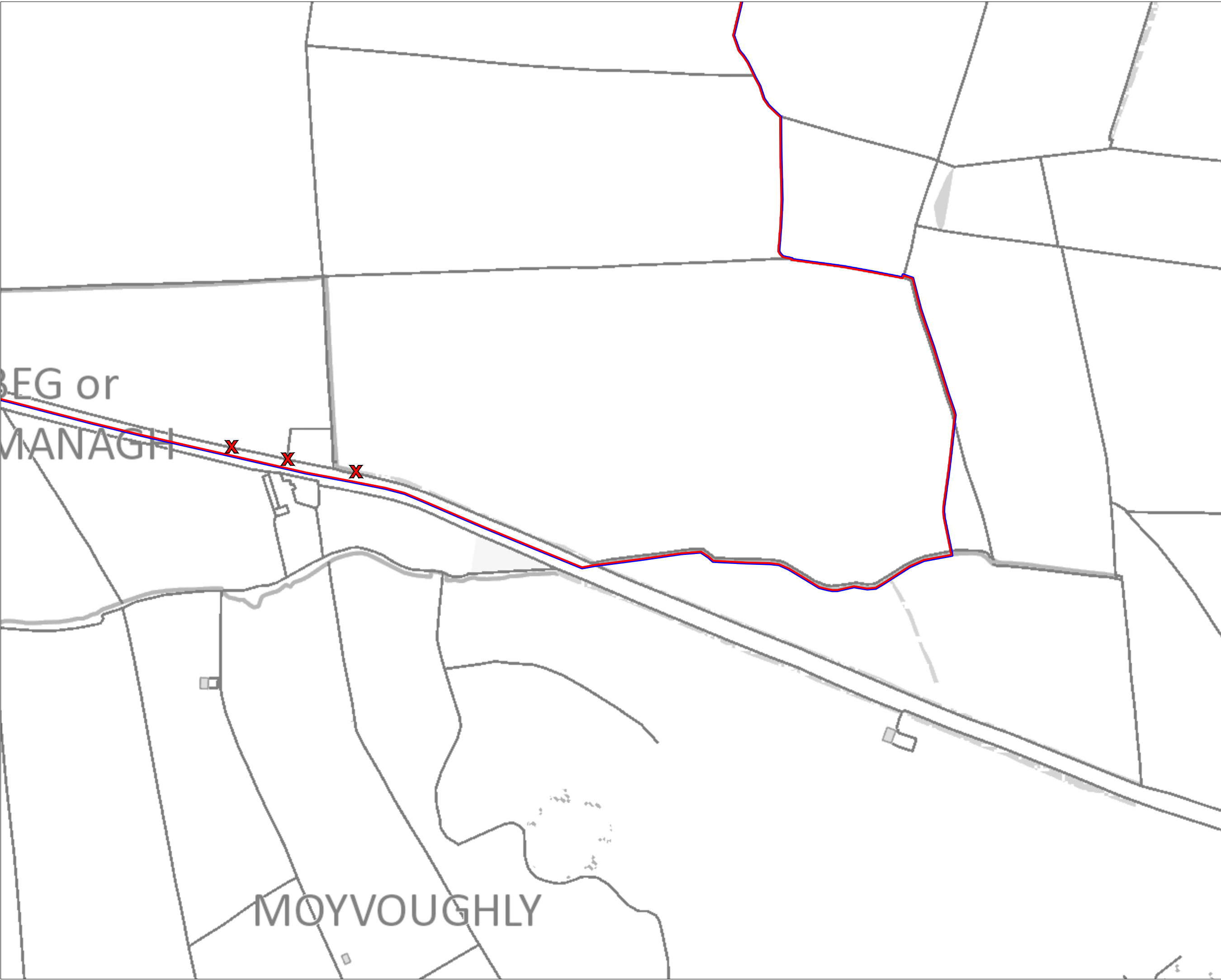
Site Location Map Sheet F

PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02F
SCALE: 1:2,500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



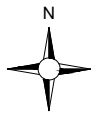
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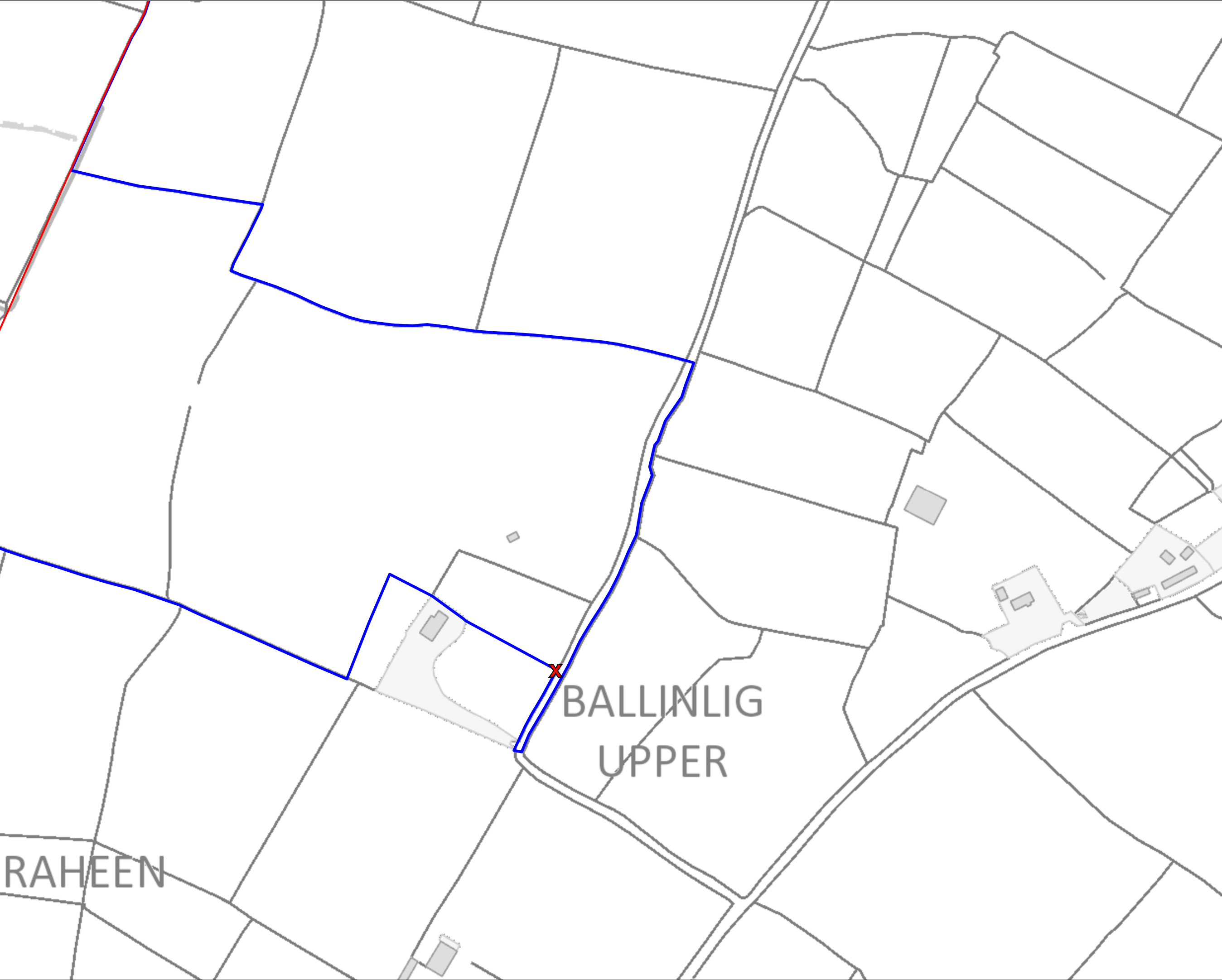
Drawing Legend

- Planning Application Boundary
- Landowners Boundary
- X Site Notice



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DRAWING TITLE: Site Location Map Sheet G	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02G
SCALE: 1:2,500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	
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Drawing Legend

- Planning Application Boundary
- Landowners Boundary
- X Site Notice

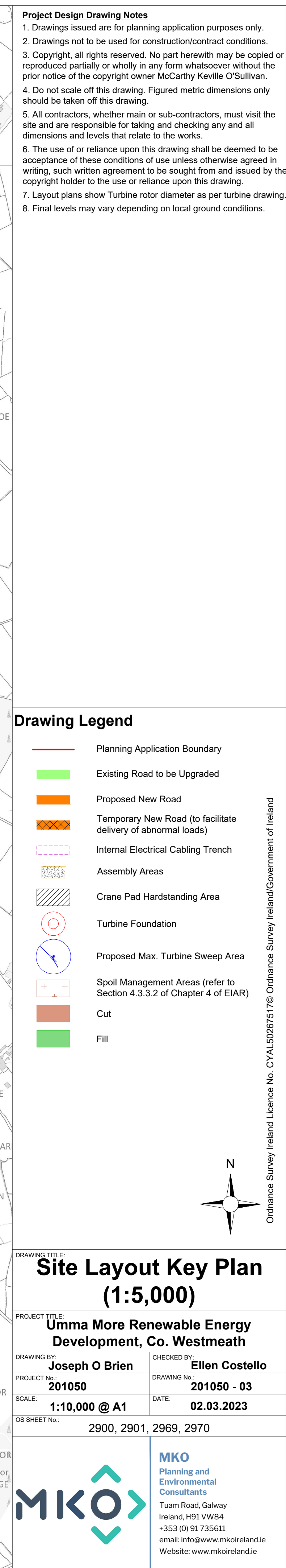


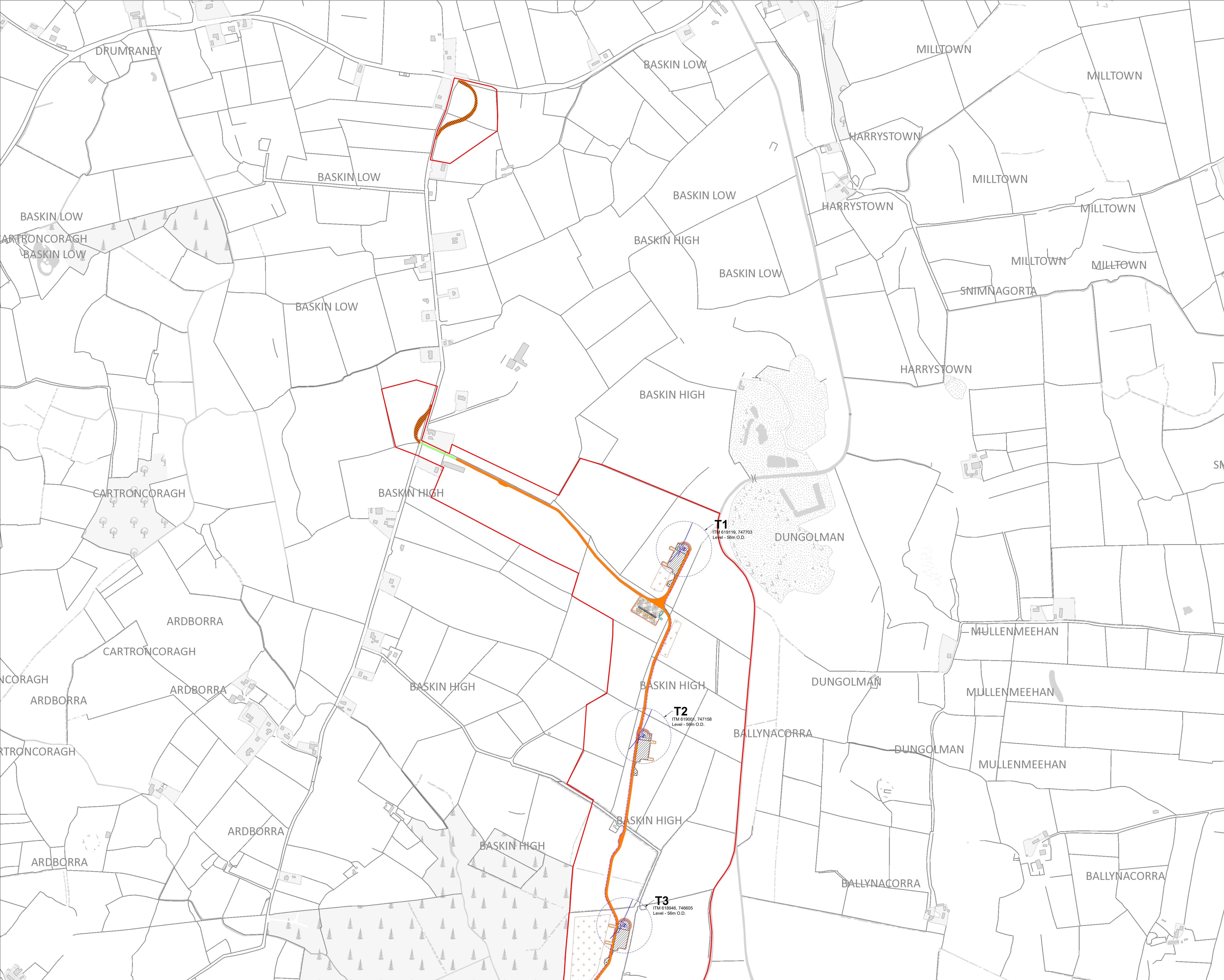
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DRAWING TITLE: Site Location Map Sheet H	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 02H
SCALE: 1:2,500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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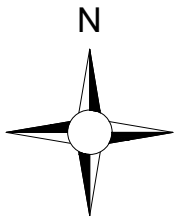


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Drawing Legend

- Planning Application Boundary
- Existing Road to be Upgraded
- Proposed New Road
- Temporary New Road (to facilitate delivery of abnormal loads)
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Cut
- Fill



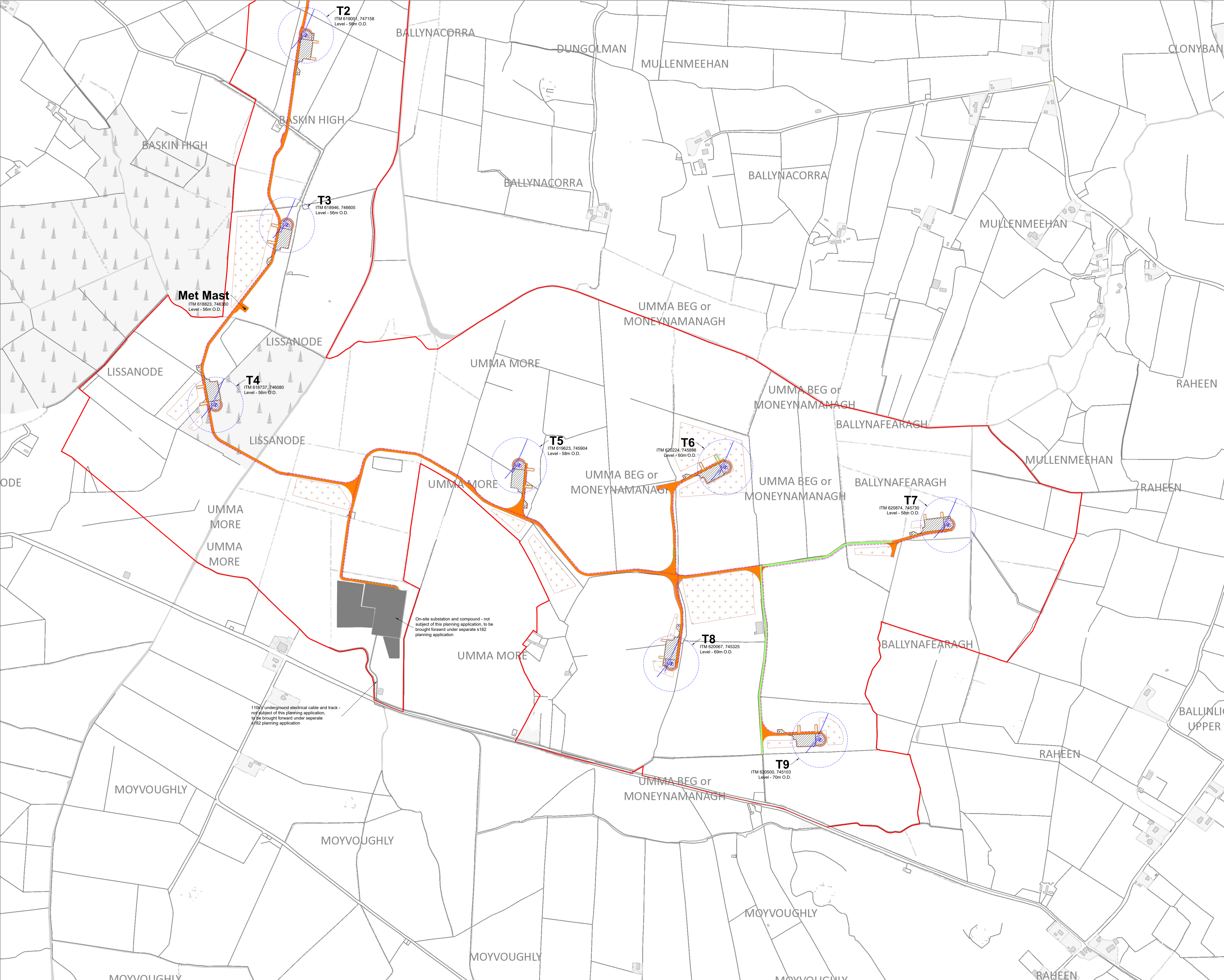
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DRAWING TITLE:
**Site Layout 1:5,000
Sheet 1 of 2**

PROJECT TITLE:
**Umma More Renewable Energy
Development, Co. Westmeath**

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 04
SCALE: 1:5,000 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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Drawing Legend

- Planning Application Boundary
- Existing Road to be Upgraded
- Proposed New Road
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Cut
- Fill

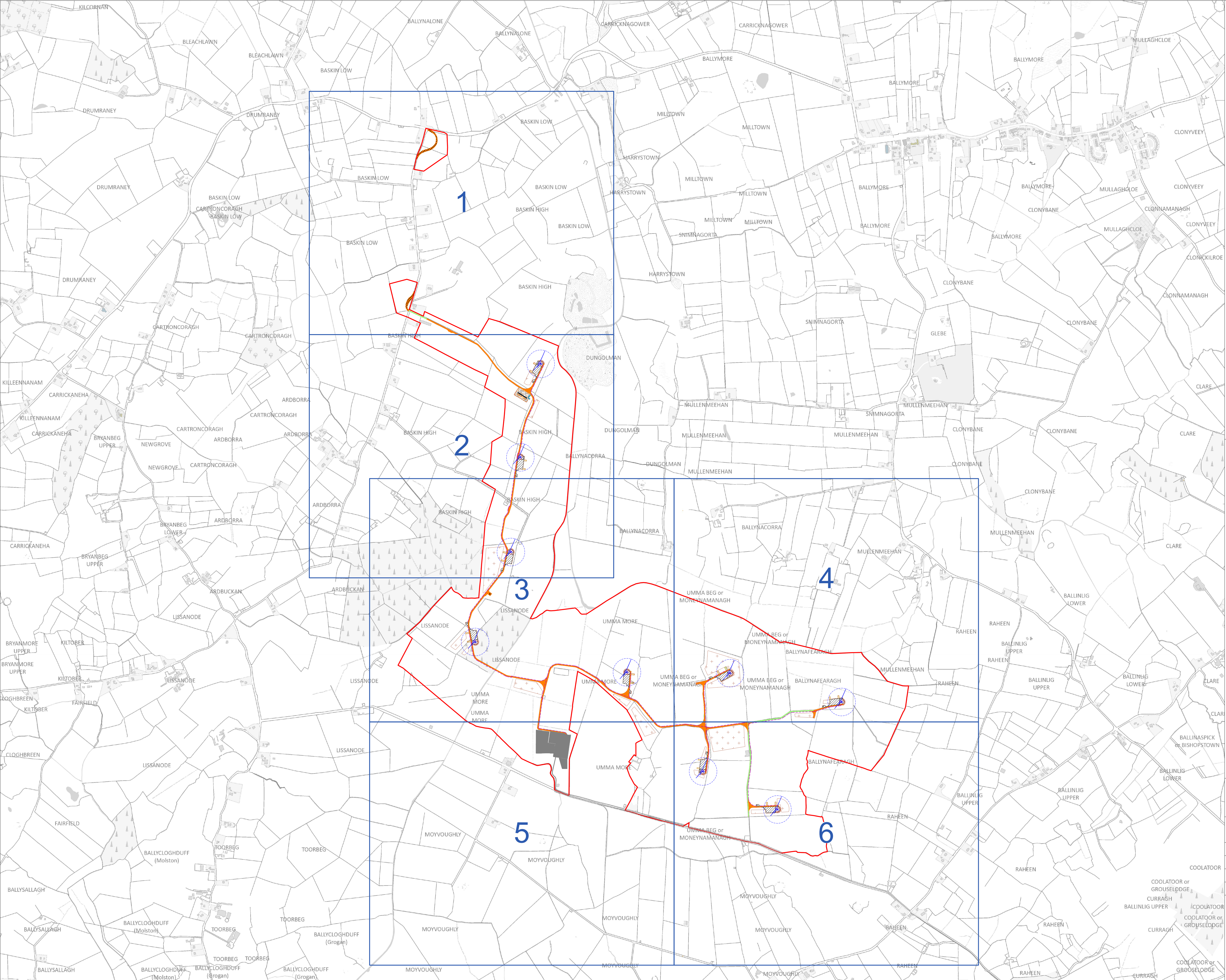
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Site Layout 1:5,000
Sheet 2 of 2

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 05
SCALE: 1:5,000 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

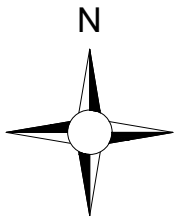
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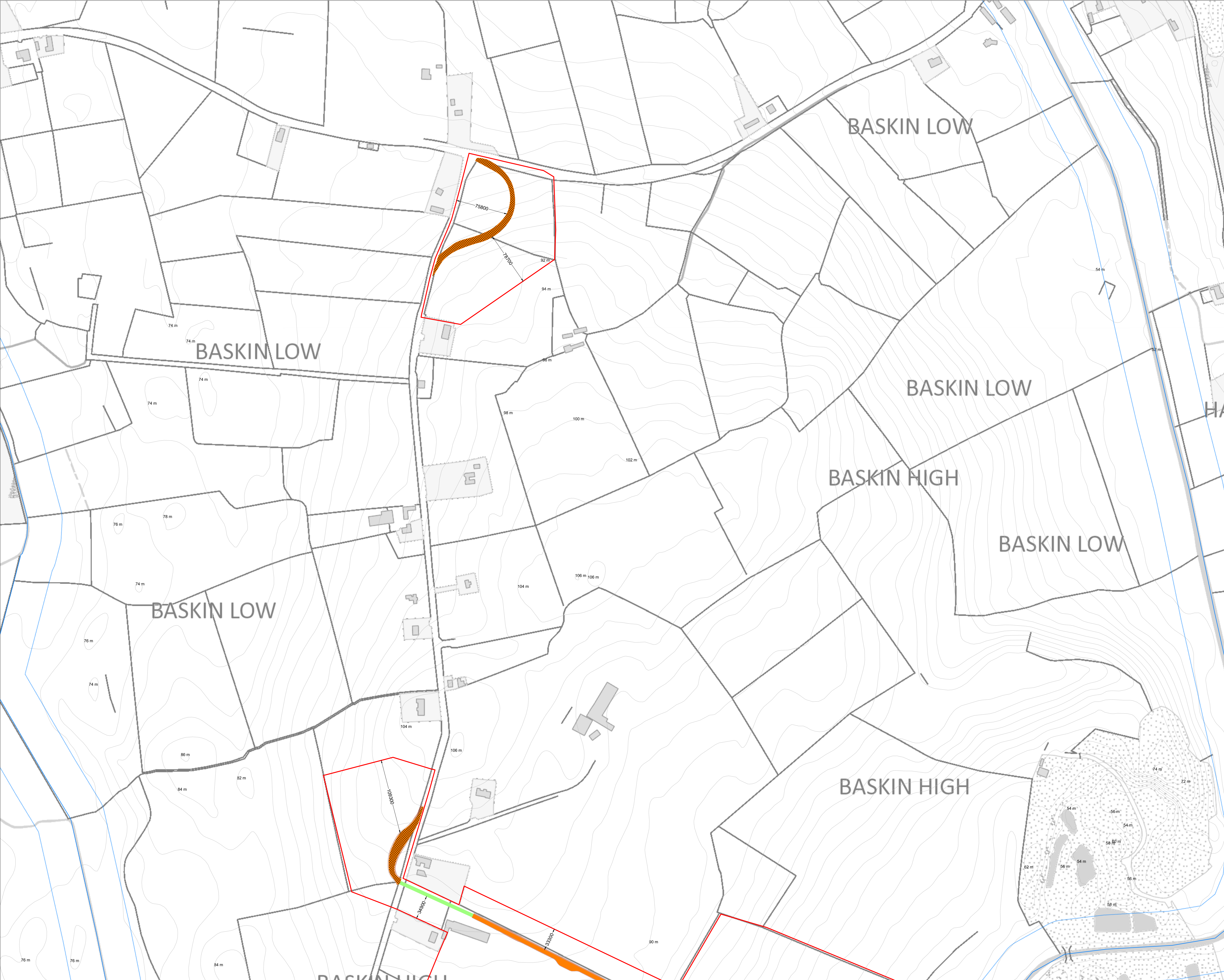
- Planning Application Boundary
- Existing Road to be Upgraded
- Proposed New Road
- Temporary New Road (to facilitate delivery of abnormal loads)
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Cut
- Fill

DRAWING TITLE: Site Layout Key Plan (1:2,500)	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 06
SCALE: 1:10,000 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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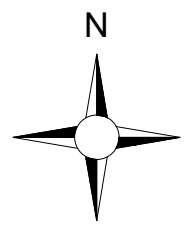


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7. Layout plans show Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Existing Road to be Upgraded
- Proposed New Road
- Temporary New Road (to facilitate delivery of abnormal loads)
- Watercourse
- Watercourse 50m Buffer
- Cut
- Fill

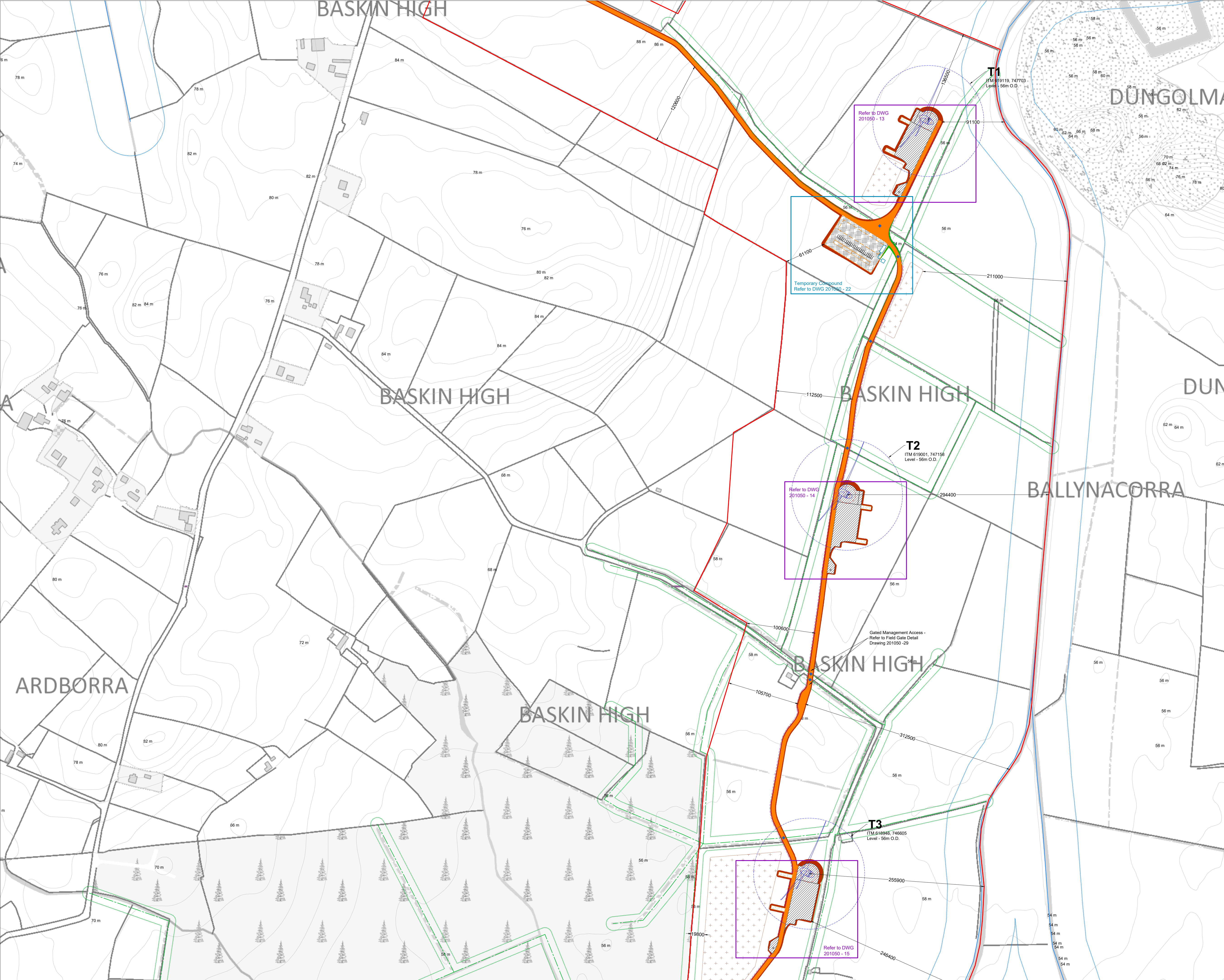


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DRAWING TITLE: Site Layout 1:2,500 Sheet 1 of 6	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 07
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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7. Layout plans show Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Proposed New Road
- Internal Electrical Cabling Trench
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Culvert Crossing (Refer to HES Drawings)
- Watercourse
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill

Site Layout 1:2,500
Sheet 2 of 6

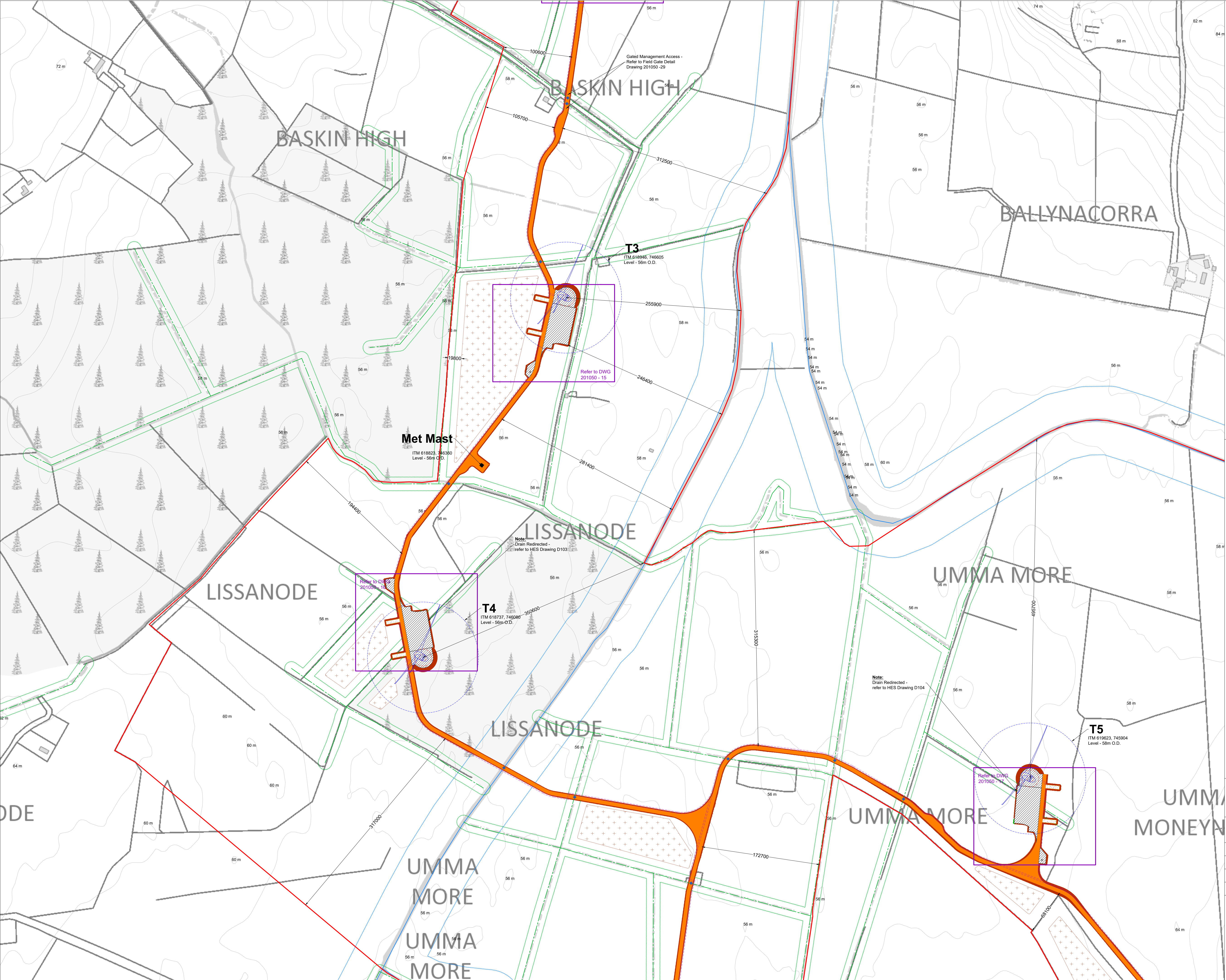
PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 08
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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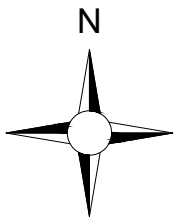
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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

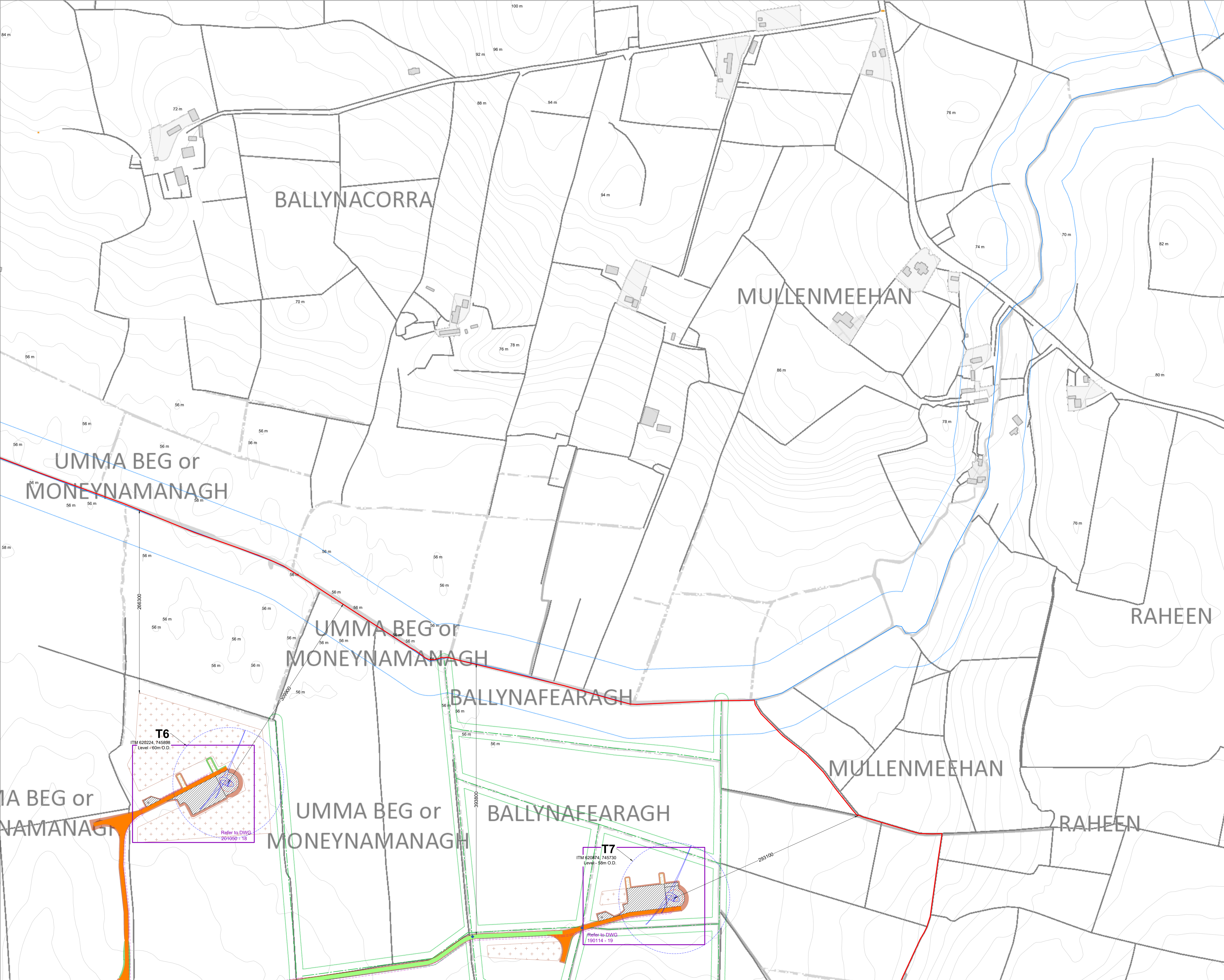
- Planning Application Boundary
- Proposed New Road
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Culvert Crossing (Refer to HES Drawings)
- Watercourse
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill



DRAWING TITLE: Site Layout 1:2,500 Sheet 3 of 6	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 09
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



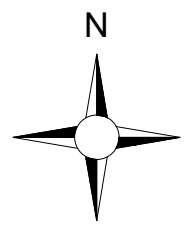
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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Proposed New Road
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Culvert Crossing (Refer to HES Drawings)
- Watercourse
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill



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DRAWING TITLE:

Site Layout 1:2,500

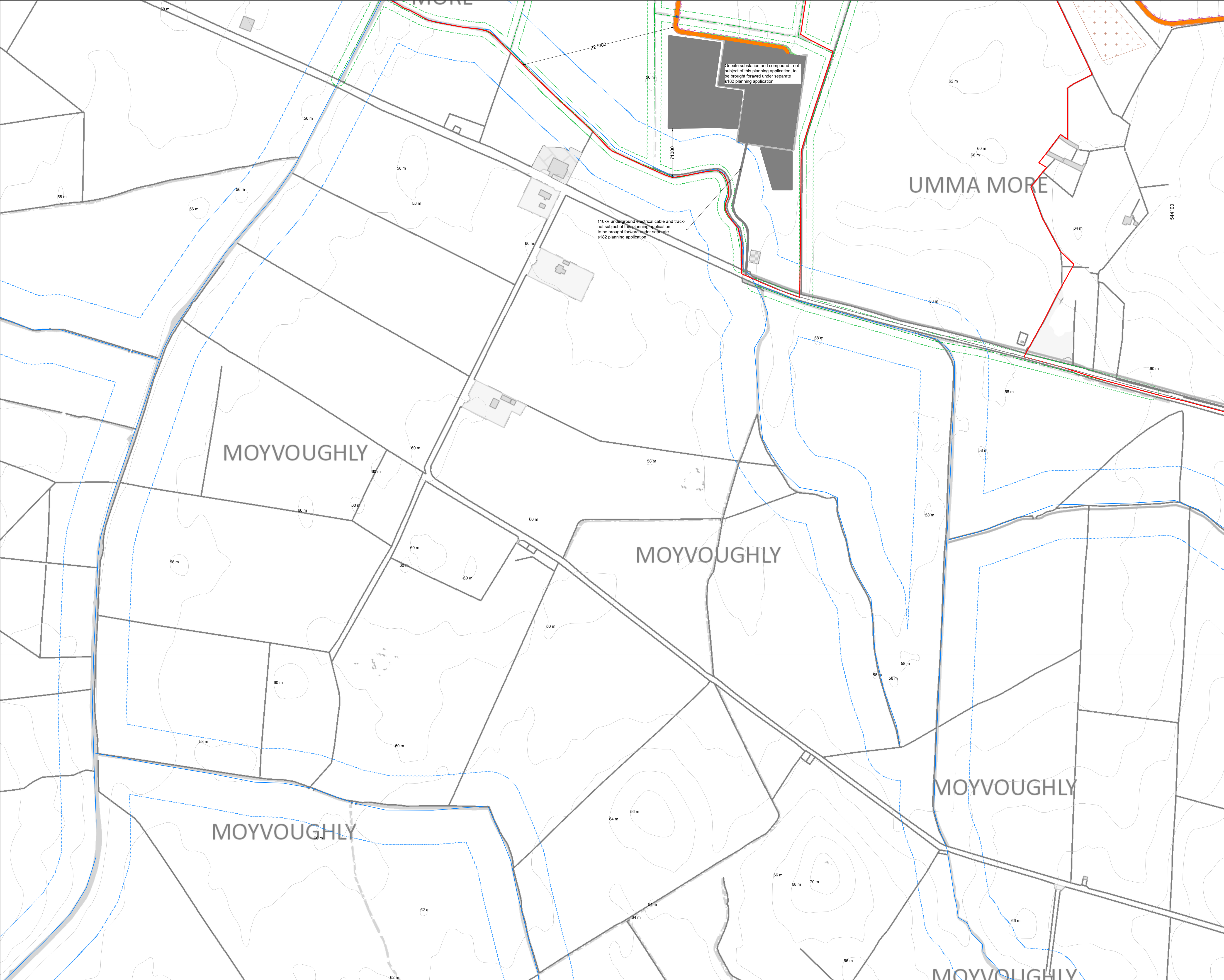
Sheet 4 of 6

PROJECT TITLE:

Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 10
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

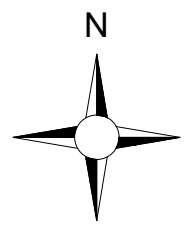
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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Proposed New Road
- Internal Electrical Cabling Trench
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Culvert Crossing (Refer to HES Drawings)
- Watercourse
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill



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DRAWING TITLE:

Site Layout 1:2,500

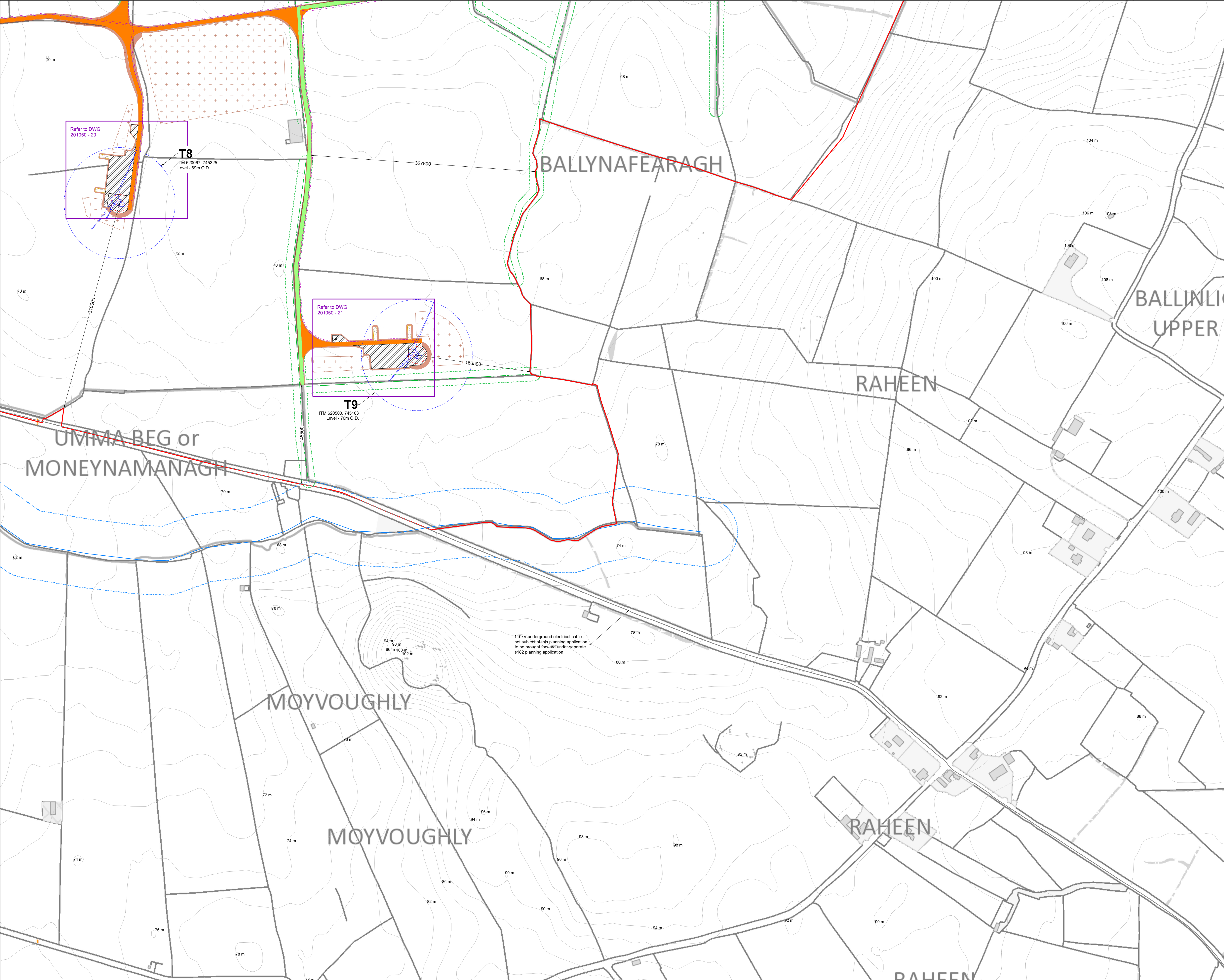
Sheet 5 of 6

PROJECT TITLE:

Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 11
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

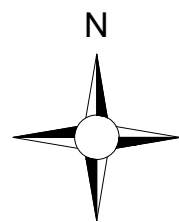
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 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Planning Application Boundary
- Existing Road to be Upgraded
- Proposed New Road
- Internal Electrical Cabling Trench
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Watercourse
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill




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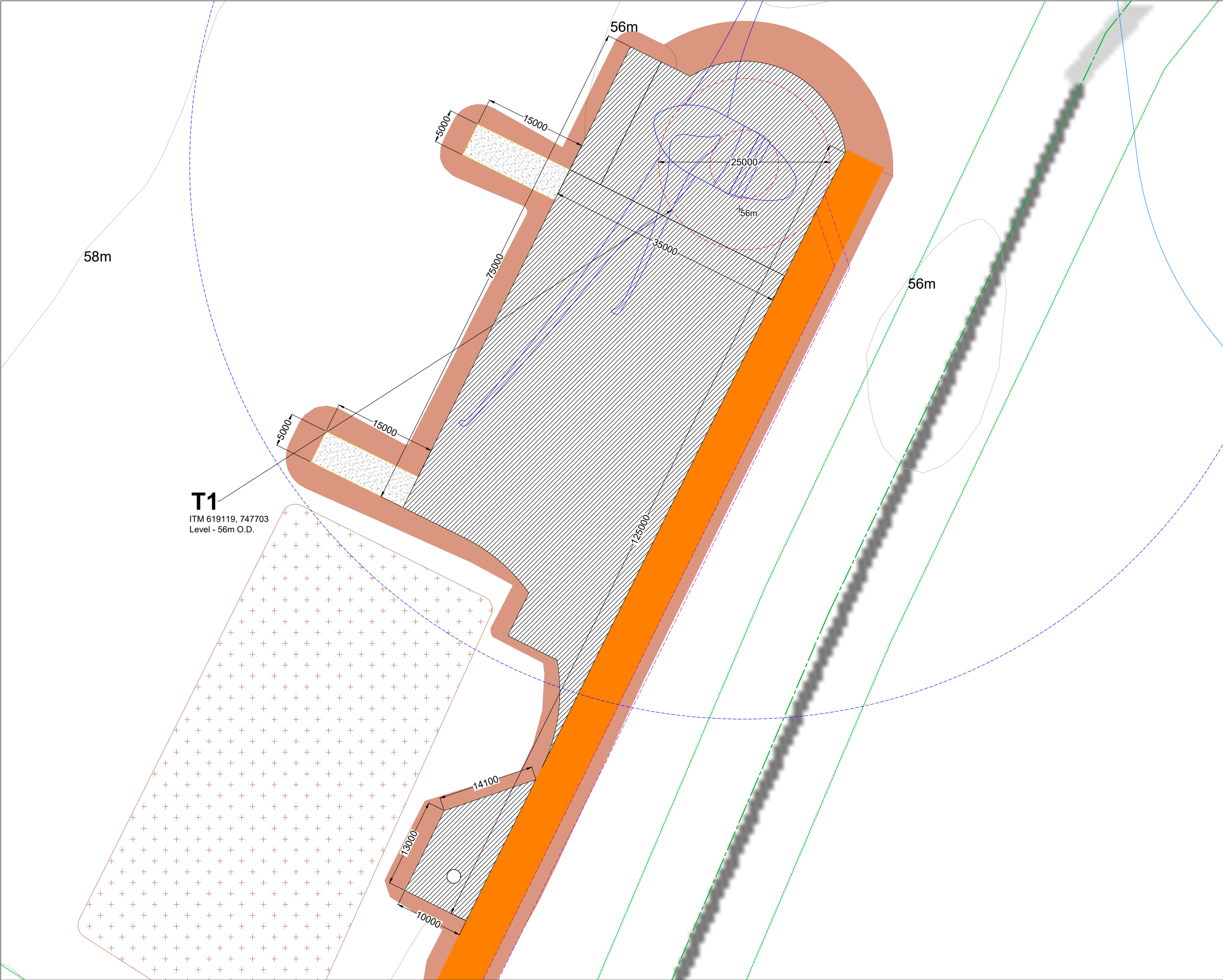
DRAWING TITLE:
Site Layout 1:2,500
Sheet 6 of 6

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 12
SCALE: 1:2,500 @ A1	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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T1
ITM 619119, 747703
Level - 56m O.D.

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 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Internal Electrical Cabling Trench
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Watercourse 50m Buffer
- Drains
- Drain 10m Buffer
- Cut
- Fill



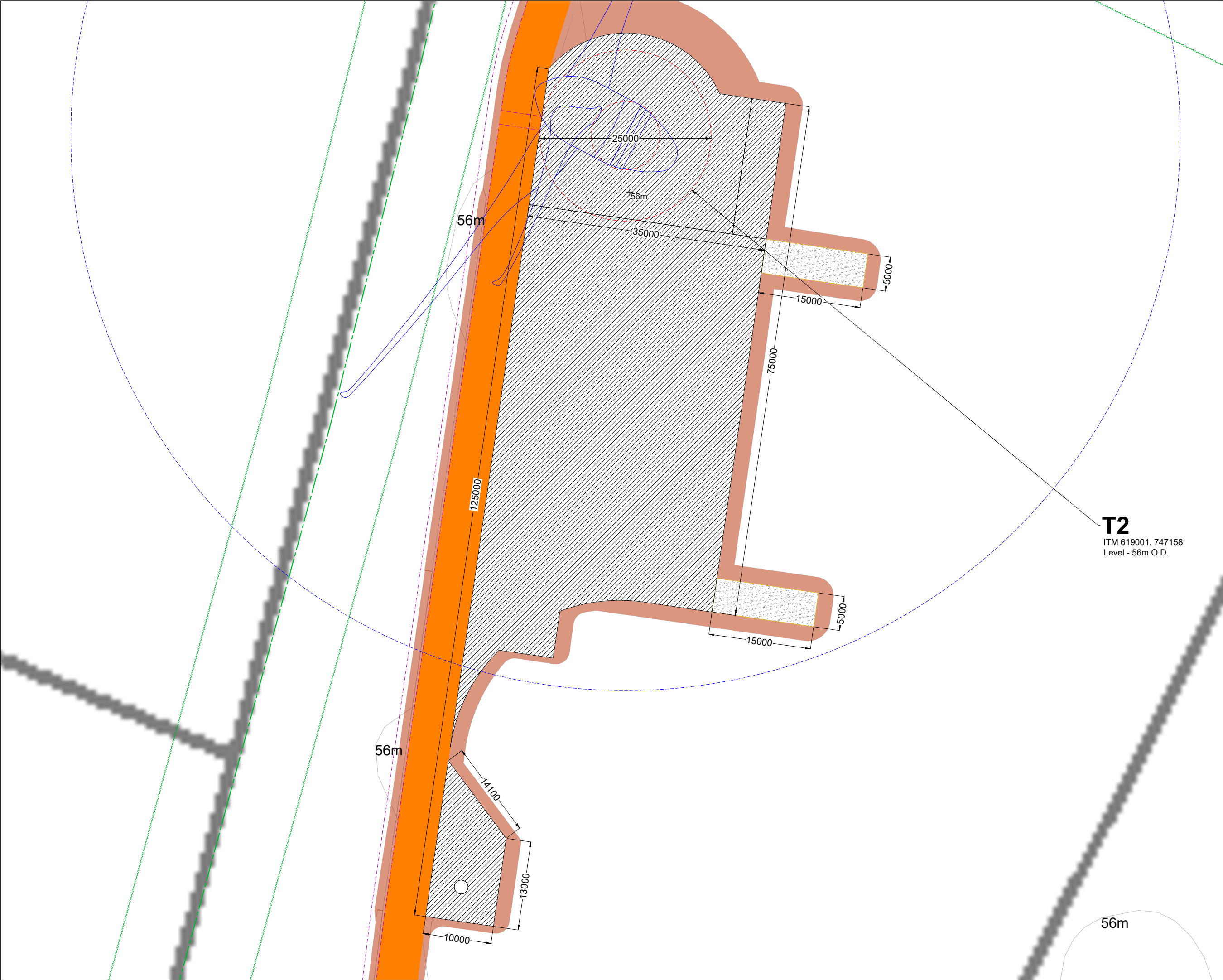
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DRAWING TITLE:
Turbine 1 Layout

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 13
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Internal Electrical Cabling Trench
- Drains
- Drain 10m Buffer
- Cut
- Fill



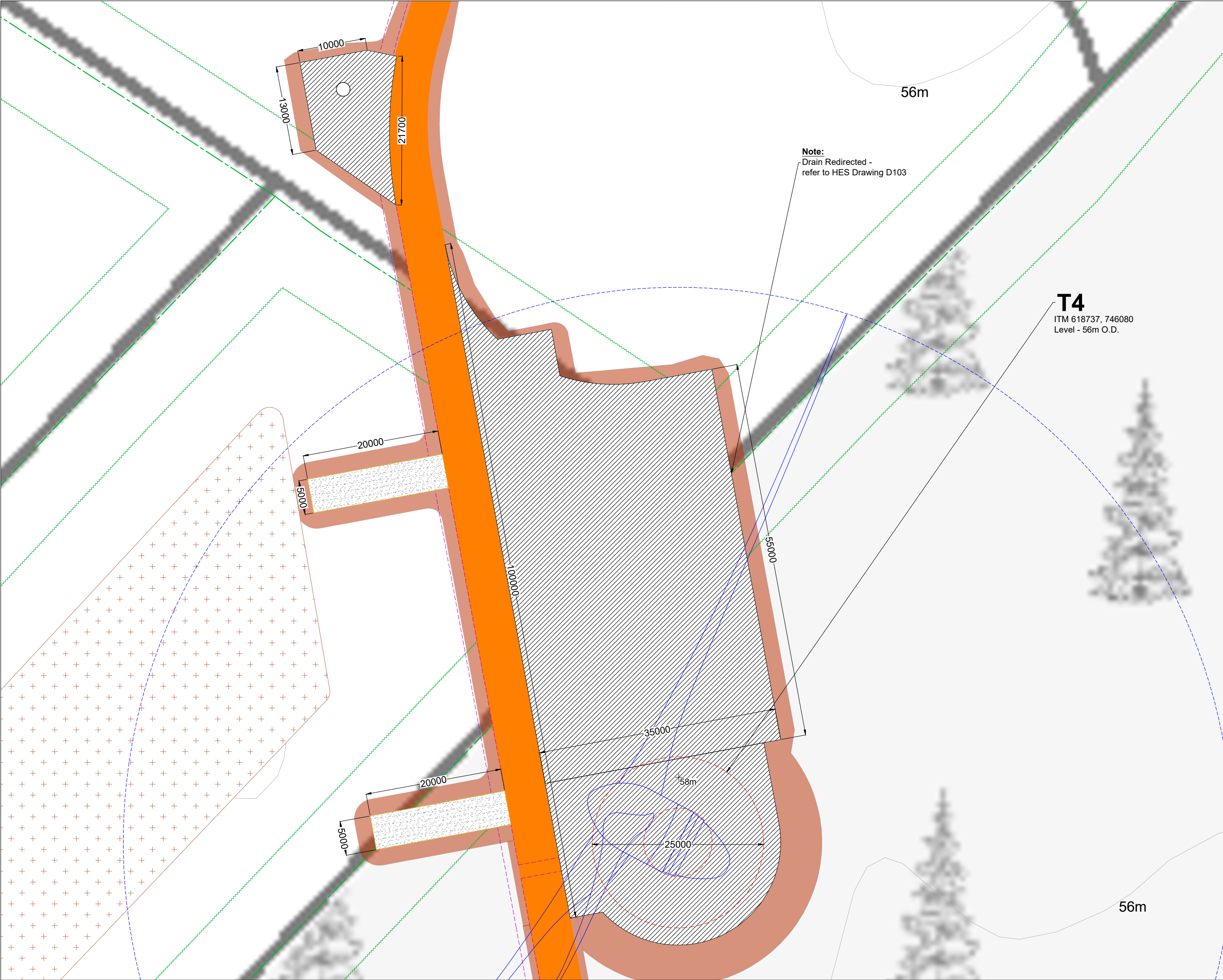
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Turbine 2 Layout

PROJECT TITLE: **Umma More Renewable Energy Development, Co. Westmeath**

DRAWING BY: Joseph O Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 14
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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Note:
Drain Redirected -
refer to HES Drawing D103

T4
ITM 618737, 746080
Level - 56m O.D.

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 - 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 - 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Internal Electrical Cabling Trench
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Drains
- Drain 10m Buffer
- Cut
- Fill



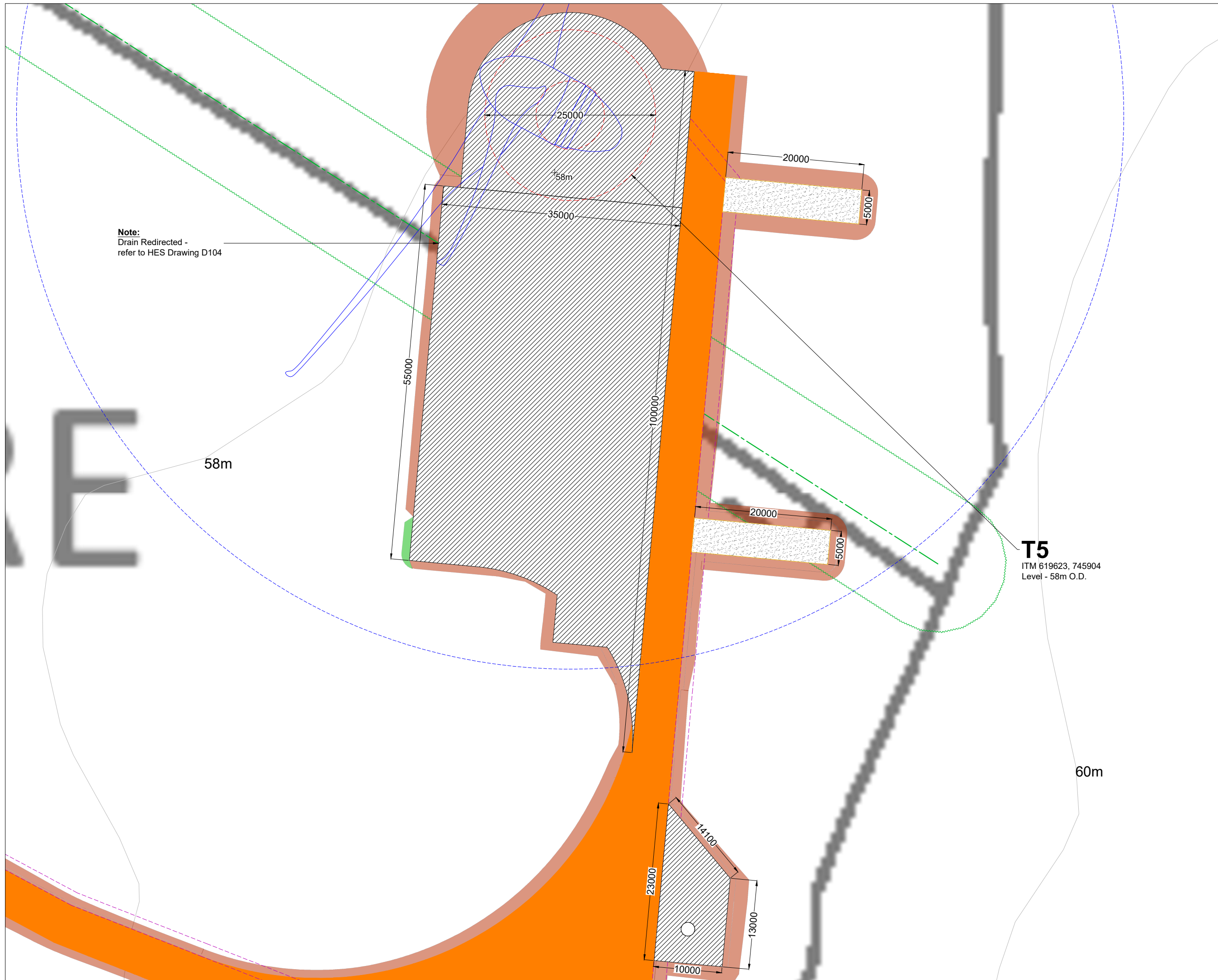
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DRAWING TITLE:
Turbine 4 Layout

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 16
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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8. Final levels may vary depending on local ground conditions.

Drawing Legend

-
- | | |
|--|------------------------------------|
| | Proposed New Road |
| | Assembly Areas |
| | Crane Pad Hardstanding Area |
| | Turbine Foundation |
| | Proposed Max. Turbine Sweep Area |
| | Internal Electrical Cabling Trench |
| | Drains |
| | Drain 10m Buffer |
| | Cut |
| | Fill |

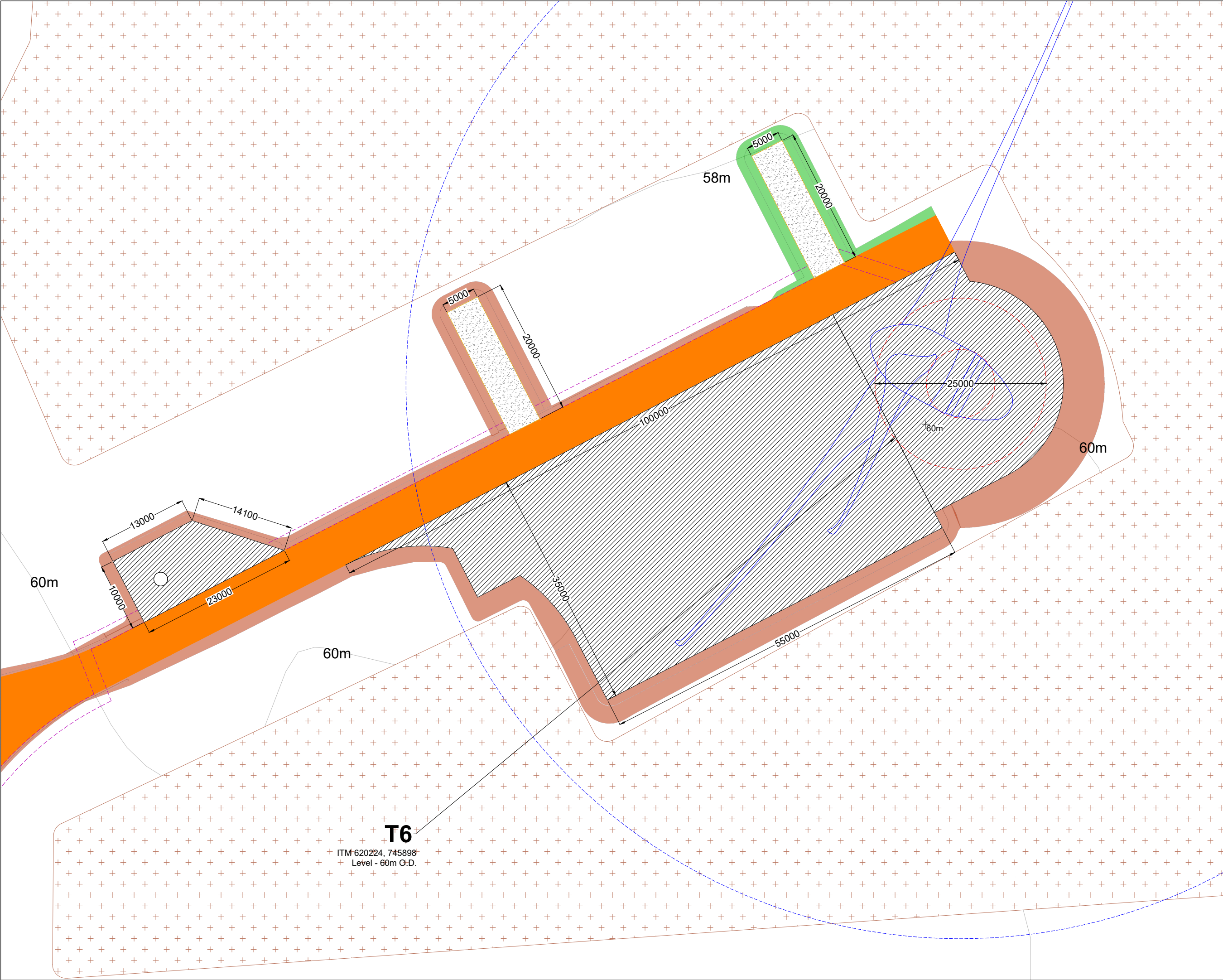


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DRAWING TITLE:	
<h1>Turbine 5 Layout</h1>	
PROJECT TITLE:	
Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT:	DRAWING NO:
201050	201050 - 17
SCALE:	DATE:
1:500 @ A3	02.03.2023
AS SHEET No:	
2900, 2901, 2969, 2970	



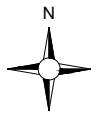
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- Drawing Legend**
- Proposed New Road
 - Assembly Areas
 - Crane Pad Hardstanding Area
 - Turbine Foundation
 - Proposed Max. Turbine Sweep Area
 - Internal Electrical Cabling Trench
 - Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
 - Cut
 - Fill



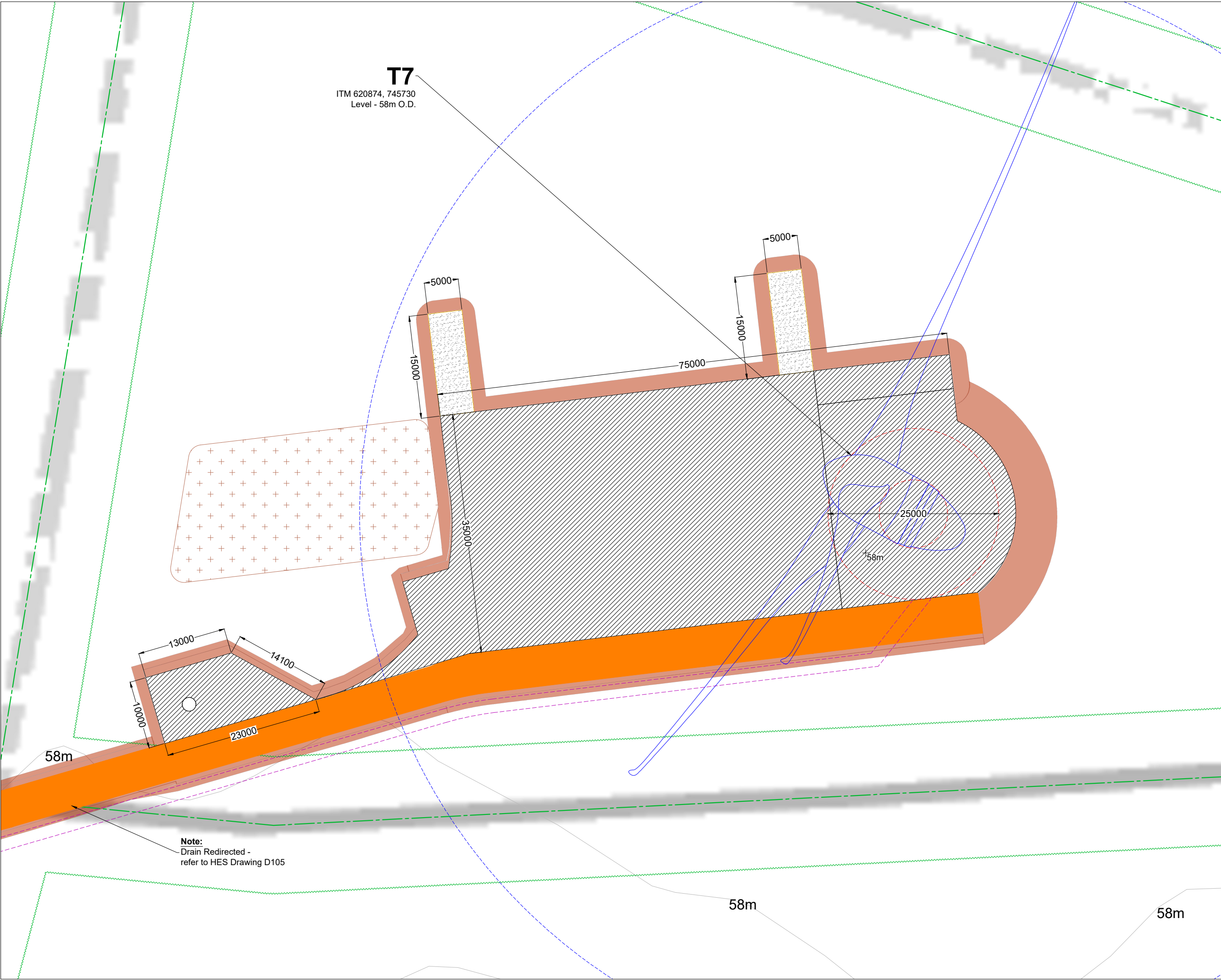
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DRAWING TITLE:
Turbine 6 Layout

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 18
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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T7
ITM 620874, 745730
Level - 58m O.D.

Note:
Drain Redirected -
refer to HES Drawing D105

- Project Design Drawing Notes**
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 6. The use of or reliance upon this drawing shall be deemed to be acceptance of these conditions of use unless otherwise agreed in writing, such written agreement to be sought from and issued by the copyright holder to the use or reliance upon this drawing.
 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Internal Electrical Cabling Trench
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Drains
- Drain 10m Buffer
- Cut
- Fill



Turbine 7 Layout

PROJECT TITLE: **Umma More Renewable Energy Development, Co. Westmeath**

DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 19
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

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email: info@www.mkofireland.ie
Website: www.mkofireland.ie



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6. The use of or reliance upon this drawing shall be deemed to be acceptance of these conditions of use unless otherwise agreed in writing, such written agreement to be sought from and issued by the copyright holder to the use or reliance upon this drawing.
7. Layout plans show Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.

- Drawing Legend**
- Proposed New Road
 - Assembly Areas
 - Crane Pad Hardstanding Area
 - Turbine Foundation
 - Proposed Max. Turbine Sweep Area
 - Internal Electrical Cabling Trench
 - Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
 - Cut
 - Fill




DRAWING TITLE:

Turbine 8 Layout

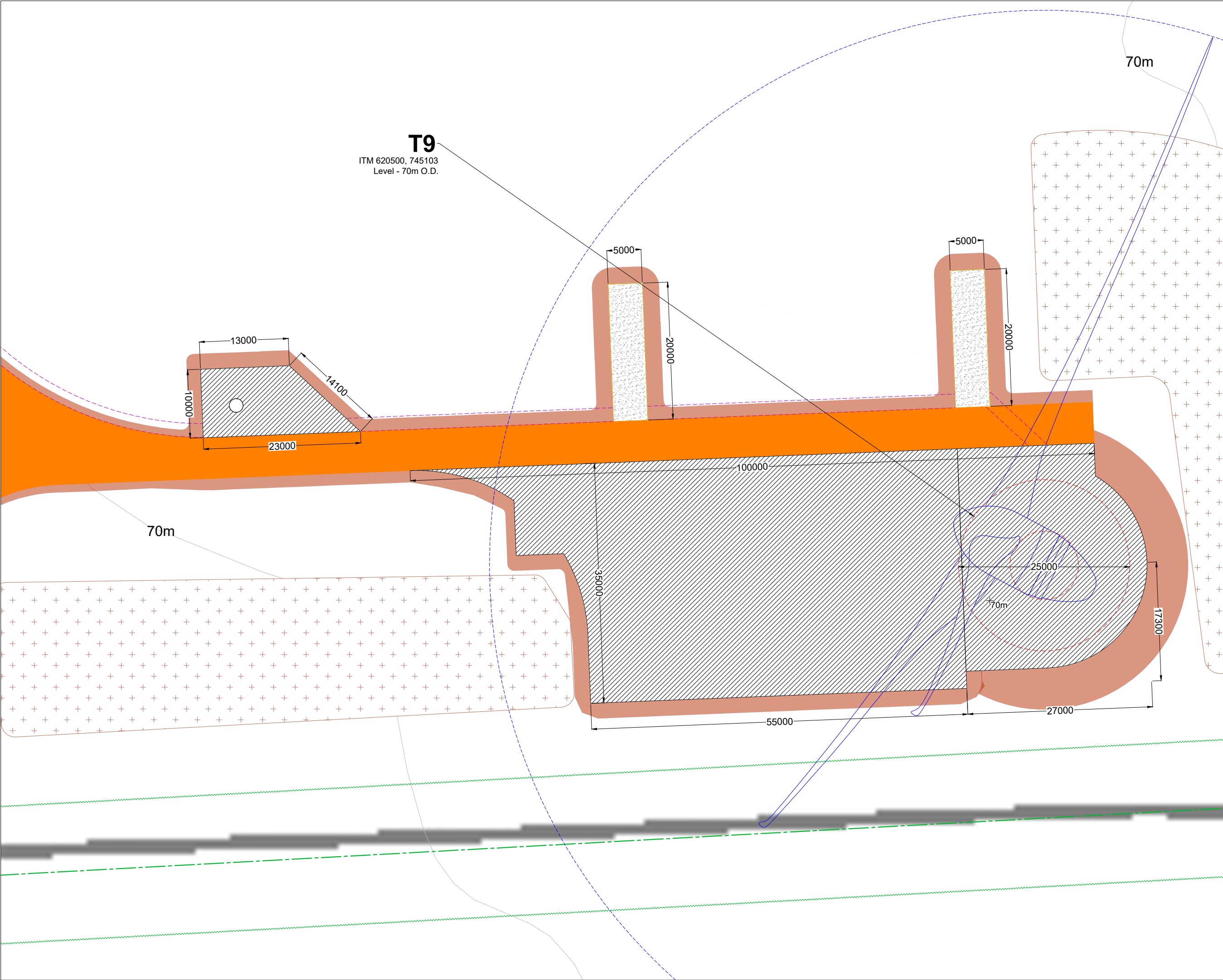
PROJECT TITLE:

Umma More Renewable Energy Development, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT No.:	DRAWING No.:
201050	201050 - 20
SCALE:	DATE:
1:500 @ A3	02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	



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T9
ITM 620500, 745103
Level - 70m O.D.

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 6. The use of or reliance upon this drawing shall be deemed to be acceptance of these conditions of use unless otherwise agreed in writing, such written agreement to be sought from and issued by the copyright holder to the use or reliance upon this drawing.
 7. Layout plans show Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Assembly Areas
- Crane Pad Hardstanding Area
- Turbine Foundation
- Proposed Max. Turbine Sweep Area
- Internal Electrical Cabling Trench
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Drains
- Drain 10m Buffer
- Cut
- Fill




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DRAWING TITLE:
Turbine 9 Layout

PROJECT TITLE:
Umma More Renewable Energy Development, Co. Westmeath

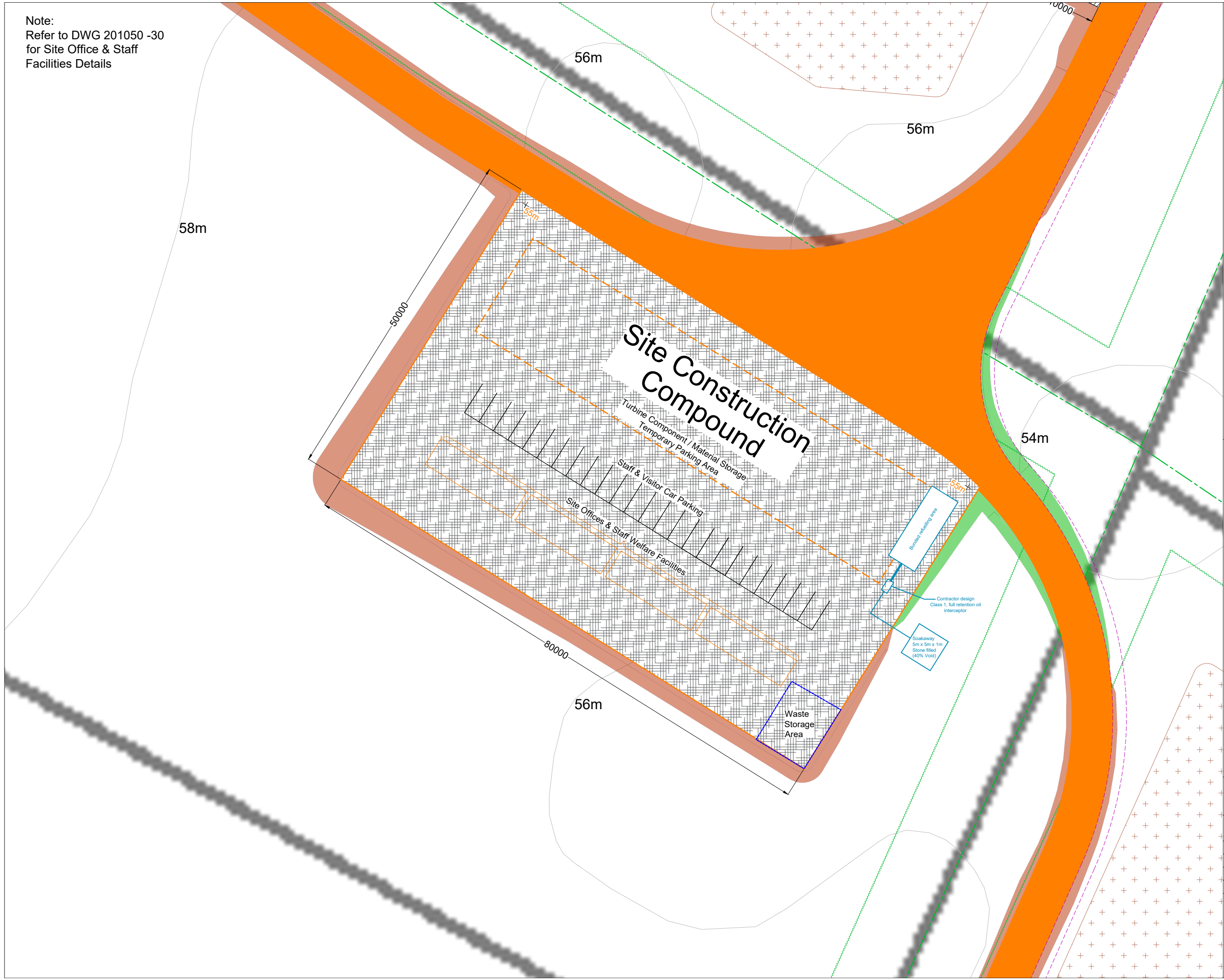
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 21
SCALE: 1:500 @ A3	DATE: 02.03.2023

OS SHEET No.: 2900, 2901, 2969, 2970



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Website: www.mkofireland.ie

Note:
Refer to DWG 201050 -30
for Site Office & Staff
Facilities Details



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 6. The use of or reliance upon this drawing shall be deemed to be acceptance of these conditions of use unless otherwise agreed in writing, such written agreement to be sought from and issued by the copyright holder to the use or reliance upon this drawing.
 7. Final levels may vary depending on local ground conditions.

Drawing Legend

- Proposed New Road
- Internal Electrical Cabling Trench
- Drains
- Drain 10m Buffer
- Spoil Management Areas (refer to Section 4.3.3.2 of Chapter 4 of EIAR)
- Cut
- Fill

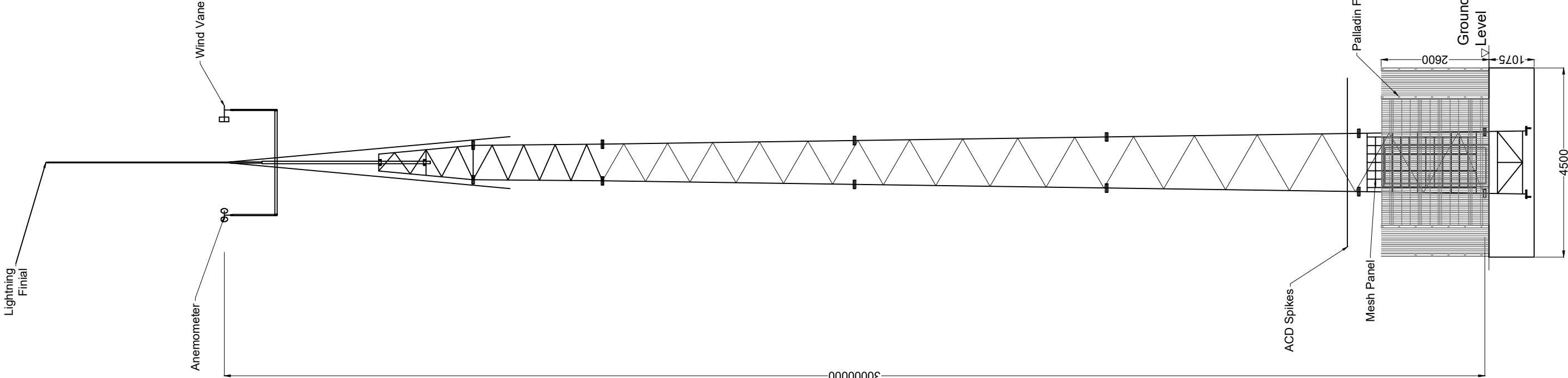


DRAWING TITLE: Temporary Construction Compound	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 22
SCALE: 1:500 @ A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	

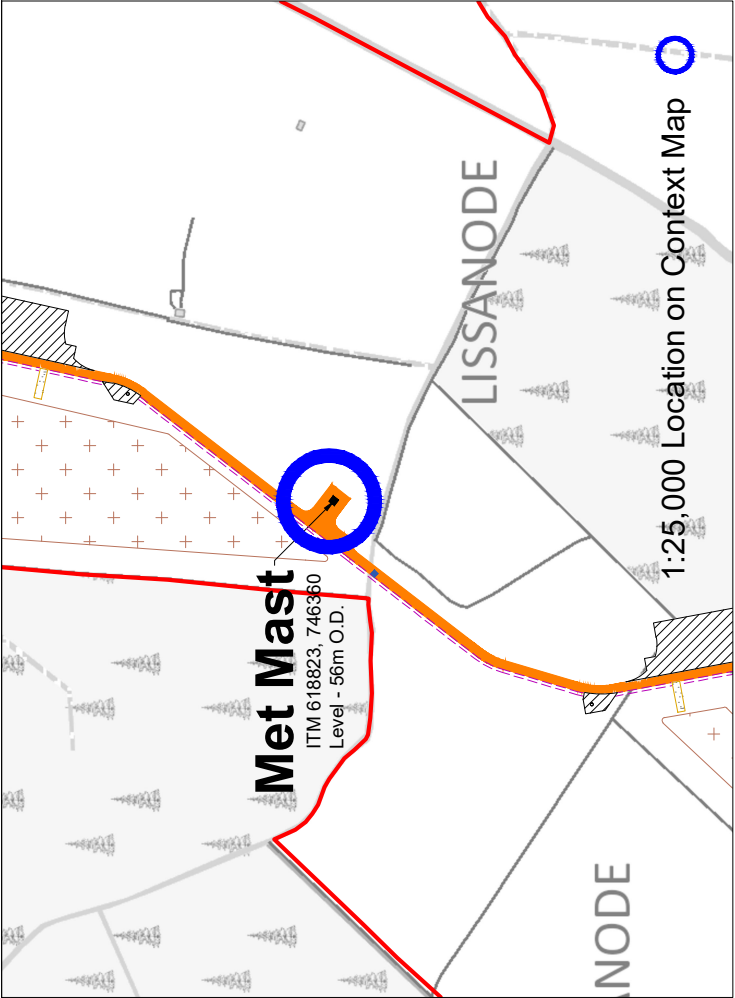


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Website: www.mkoireland.ie

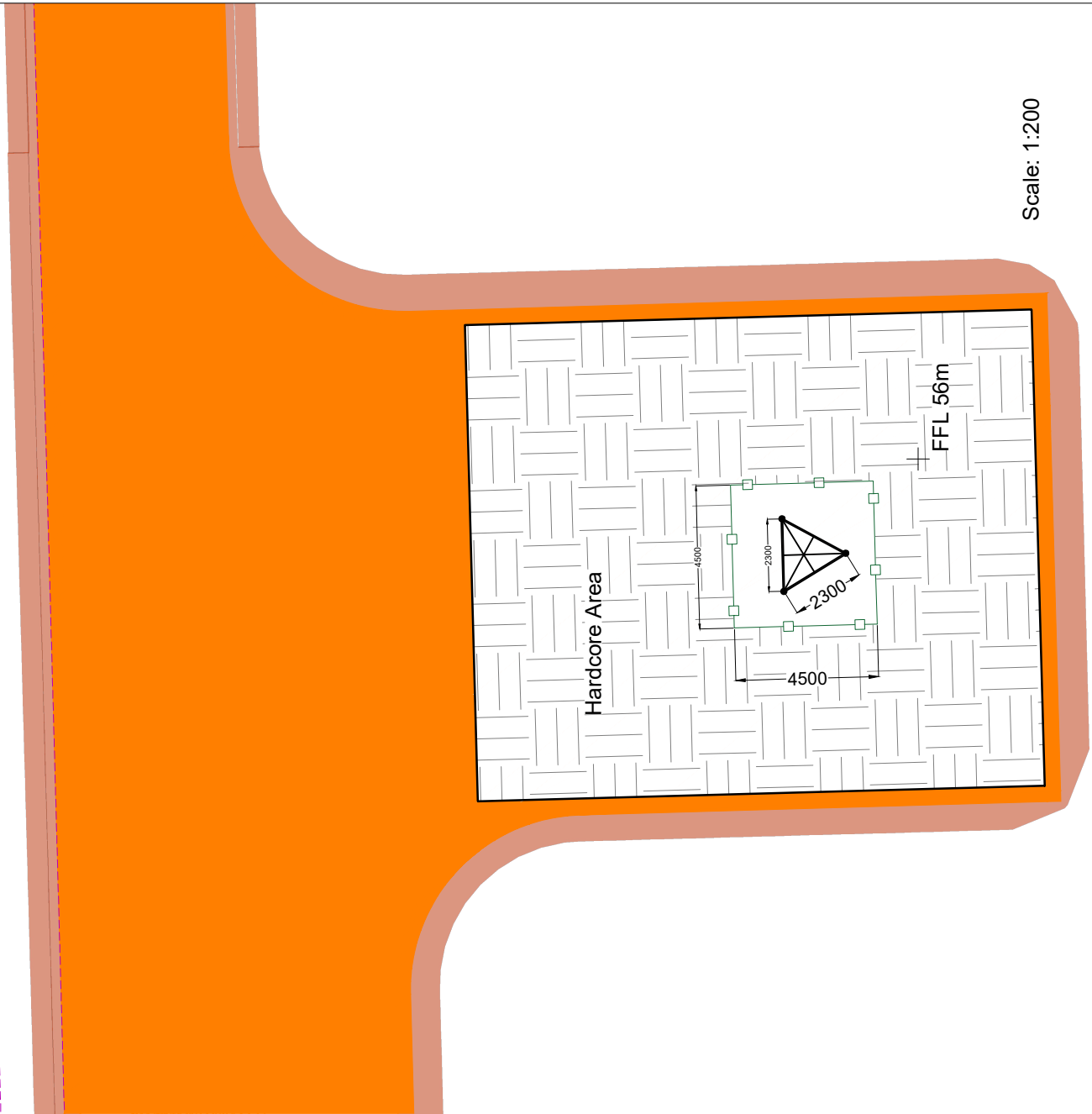
Scale: 1:100



Mast Elevation



1:25,000 Location on Context Map



Hardcore Area

Scale: 1:200

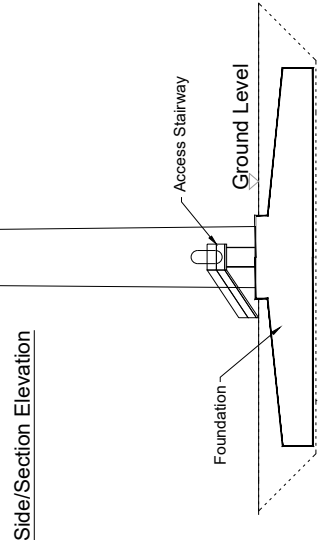
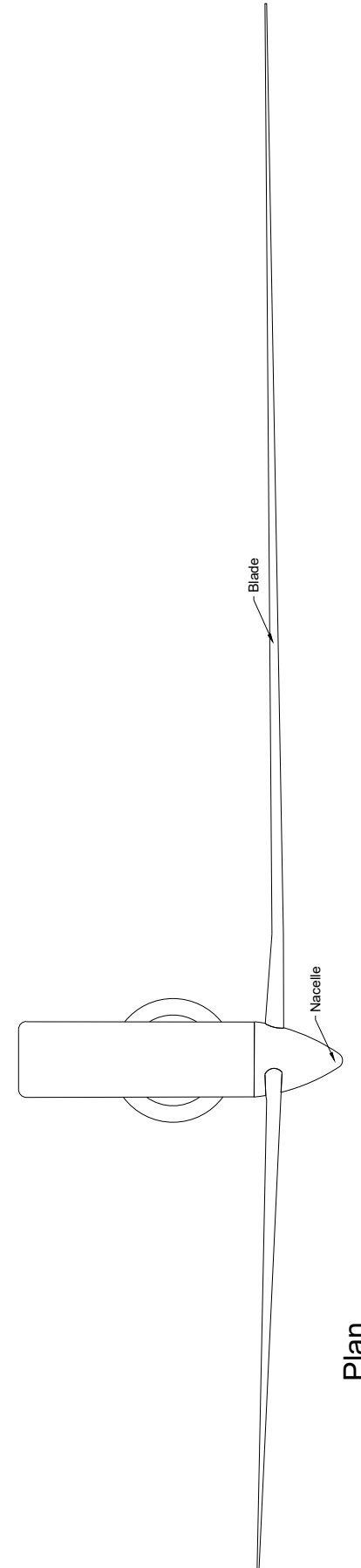
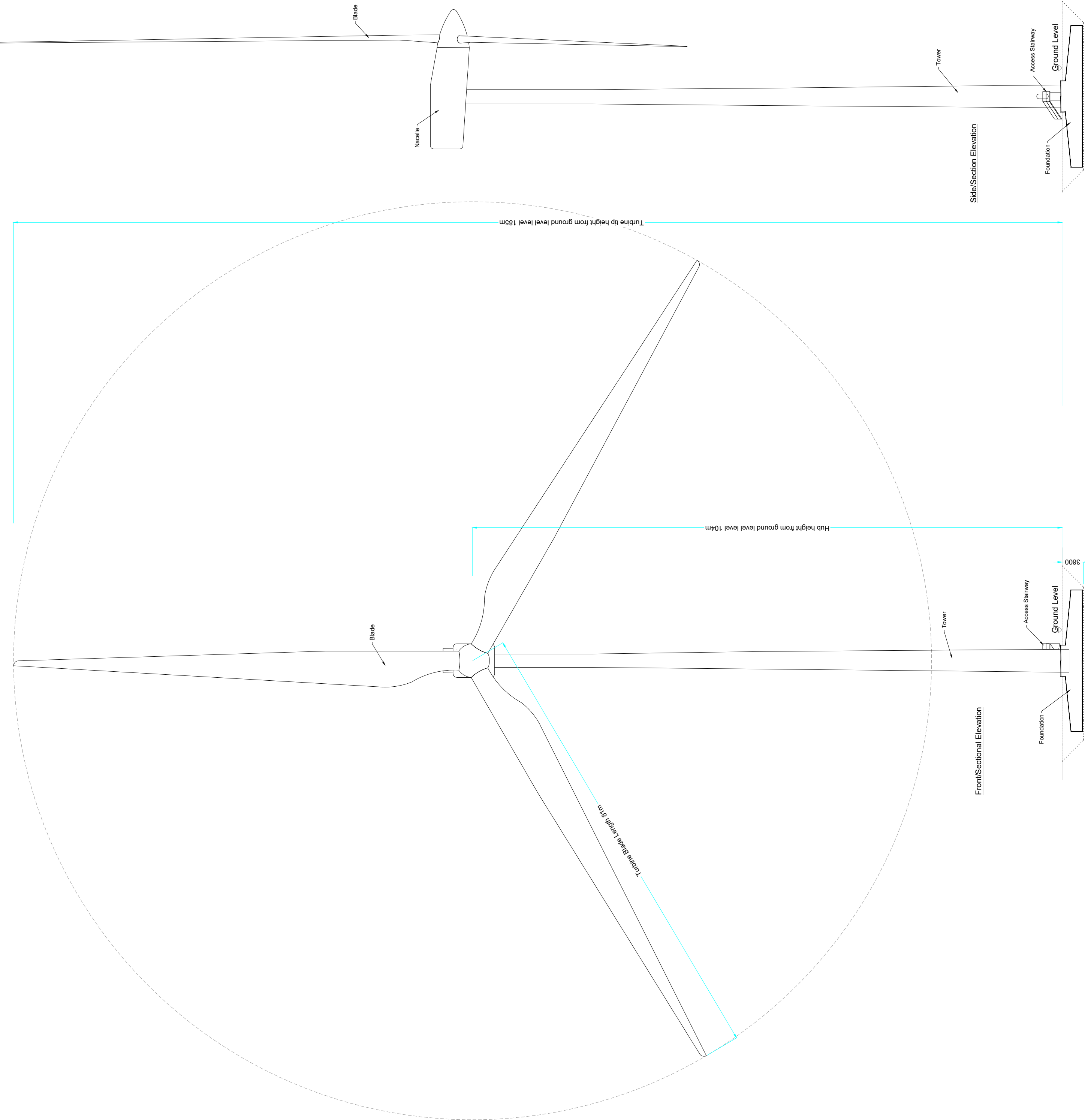


Note:

1. Met Mast exact detail may differ depending on the selected manufacturer.
2. Finished level of the mast to match ground conditions.
3. Mast/foundation orientation to be confirmed with met mast supplier.
4. Earthing and ducting requirements to be confirmed with met mast supplier and forwarded to foundation designer

Met Mast

DRAWING TITLE:	
PROJECT TITLE:	Umma More Renewable Energy Development, Co. Westmeath
DRAWING BY:	Joseph O Brien
PROJECT No:	201050
CHECKED BY:	Eileen Costello
DRAWING No:	201050 - 23
SCALE:	As shown @ A3
DATE:	02.03.2023
MKO Planning and Environmental Consultants Tullam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email info@www.mkofireland.ie Website: www.mkofireland.ie	

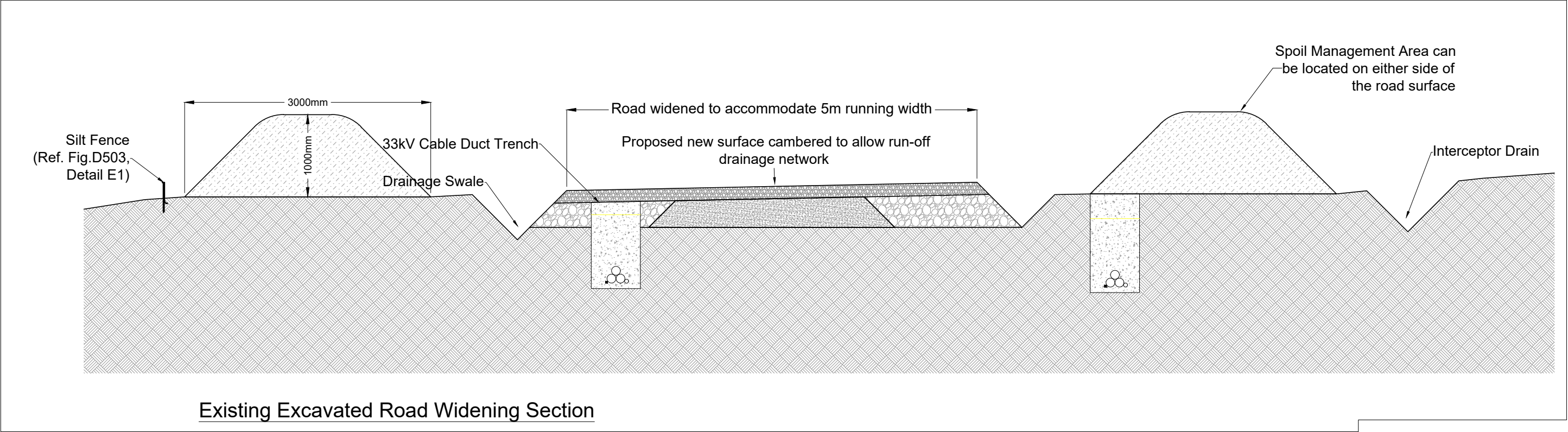


- Drawing Notes**
- Proposed wind turbines to have a maximum ground to blade tip height of 185m, blade length of 81m and hub height of 104m
 - Ground level represents the top of turbine foundation.


DRAWING TITLE: Wind Turbine Elevations & Plan	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Eileen Costello
PROJECT NO: 201050	DRAWING NO: 201050 - 24
SCALE: 1:500 @A1	DATE: 02.03.2023
<div><div></div><div> Tum Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkoireland.ie Website: www.mkoireland.ie</div></div>	

Drawing Notes

- 1. Widening can occur to either side of existing roads dependent on site conditions.
- 2. Depths of road fill to vary dependent on site conditions.

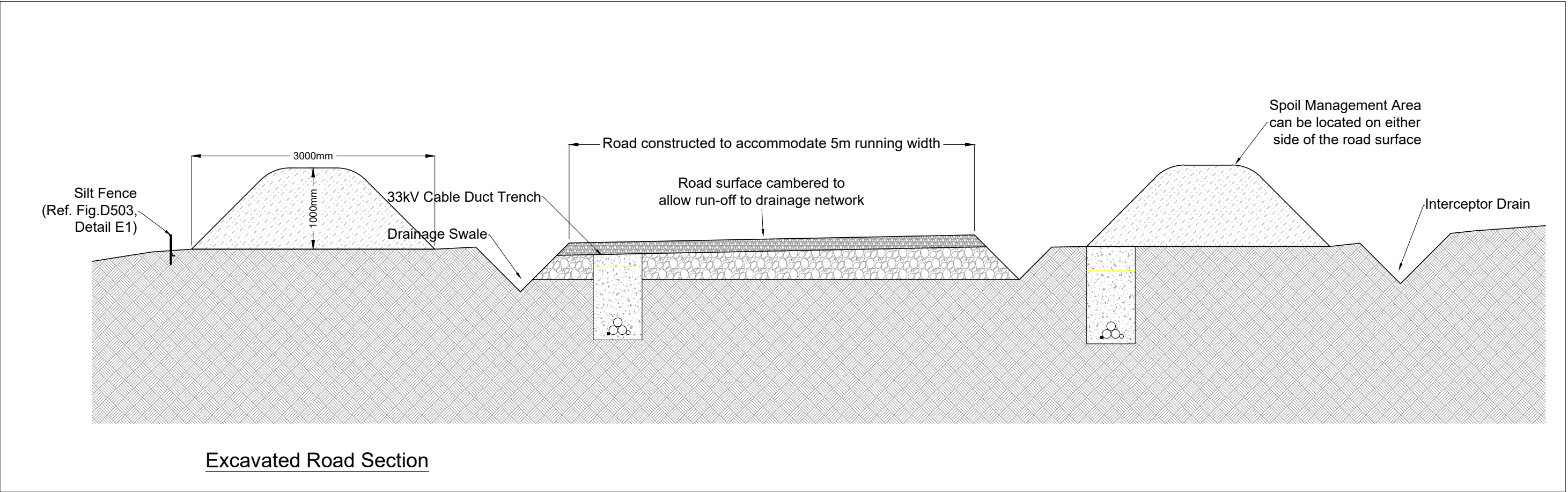


The cabling may be placed on either side of the roads, on both sides of the road or within the road. The exact configuration of the underground cabling will be set by the requirements of the electrical designers at detailed design stage.


DRAWING TITLE: Existing Road for Upgrade Excavated Road Section	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 25
SCALE: 1:50@A3	DATE: 02.03.2023
<div><div>MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie</div></div>	

Drawing Notes

1. Widening can occur to either side of existing roads dependent on site conditions.
2. Depths of road fill to vary dependent on site conditions.

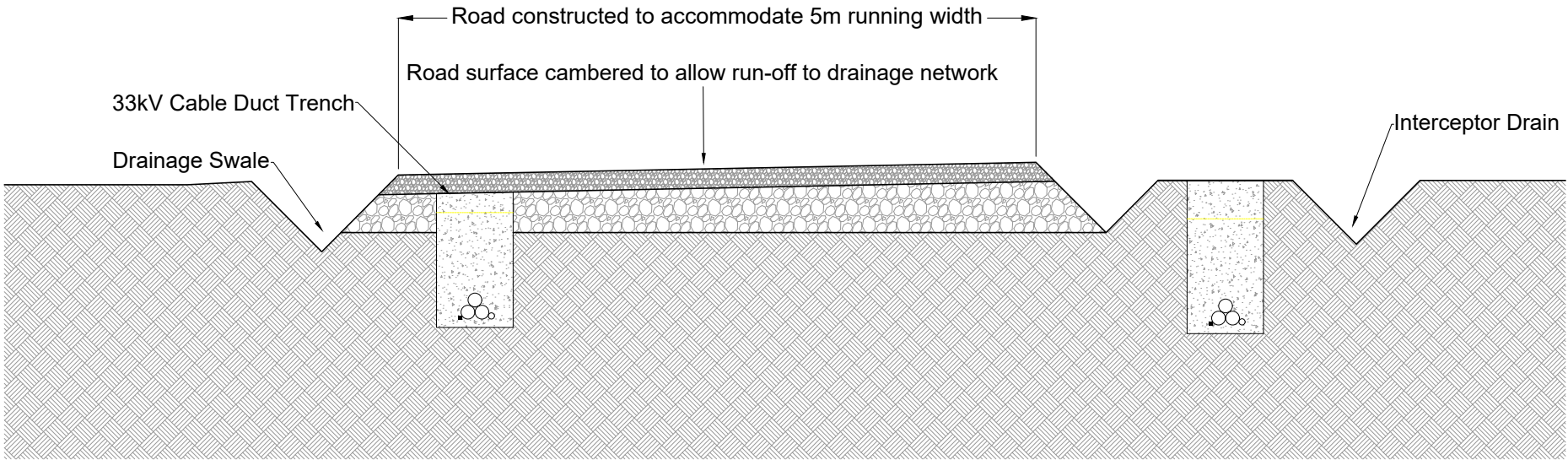


The cabling may be placed on either side of the roads, on both sides of the road or within the road. The exact configuration of the underground cabling will be set by the requirements of the electrical designers at detailed design stage.

DRAWING TITLE: Proposed New Excavated Road Section	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 26
SCALE: 1:50@A3	DATE: 02.03.2023
<div><div></div><div><div>MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie</div></div></div>	

Drawing Notes

1. Widening can occur to either side of existing roads dependent on site conditions.
2. Depths of road fill to vary dependent on site conditions.



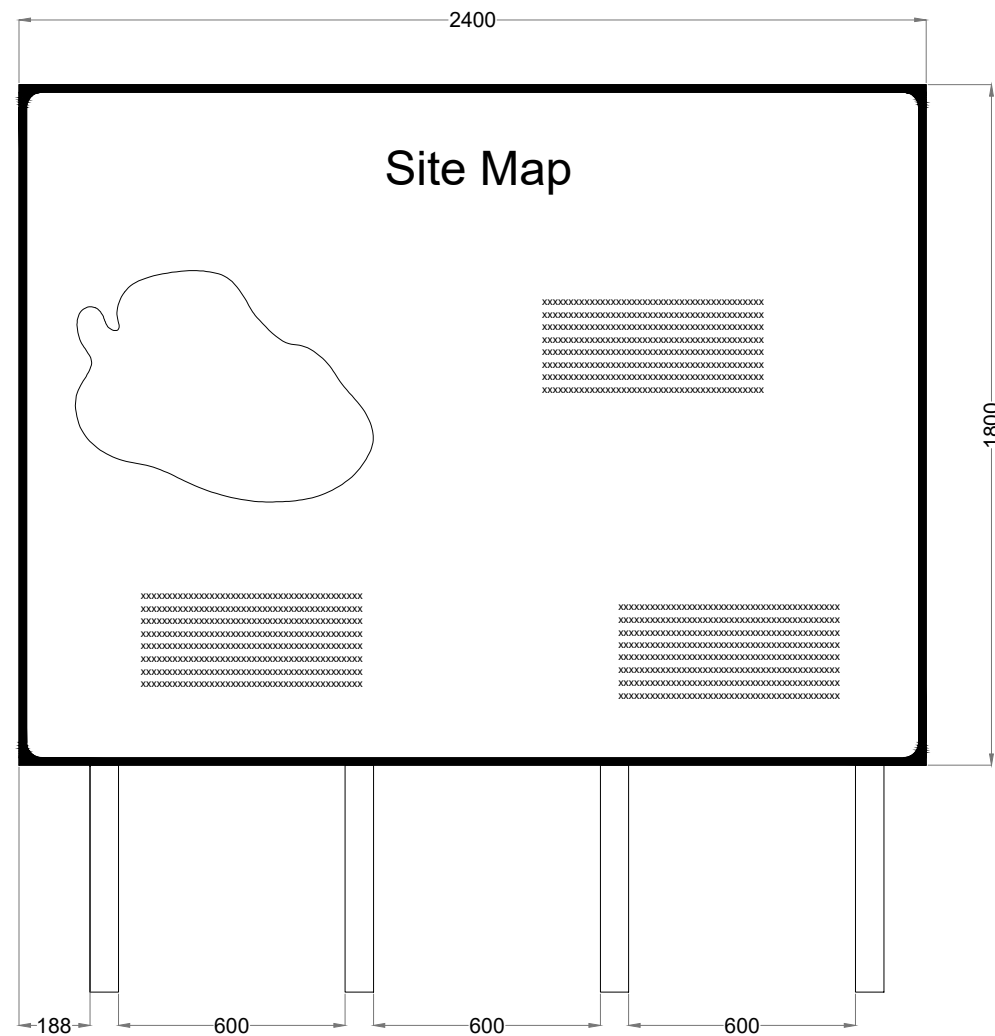
Excavated Road Section - Within Modelled Flood Zones

The surface of the excavated access roads will be overlaid with approximately 500mm of selected granular fill which will be at least 500mm above the modelled 100-yr and 100-yr flood elevation (100-yr event - 55.86 mOD, 1000-yr event - 56 mOD).

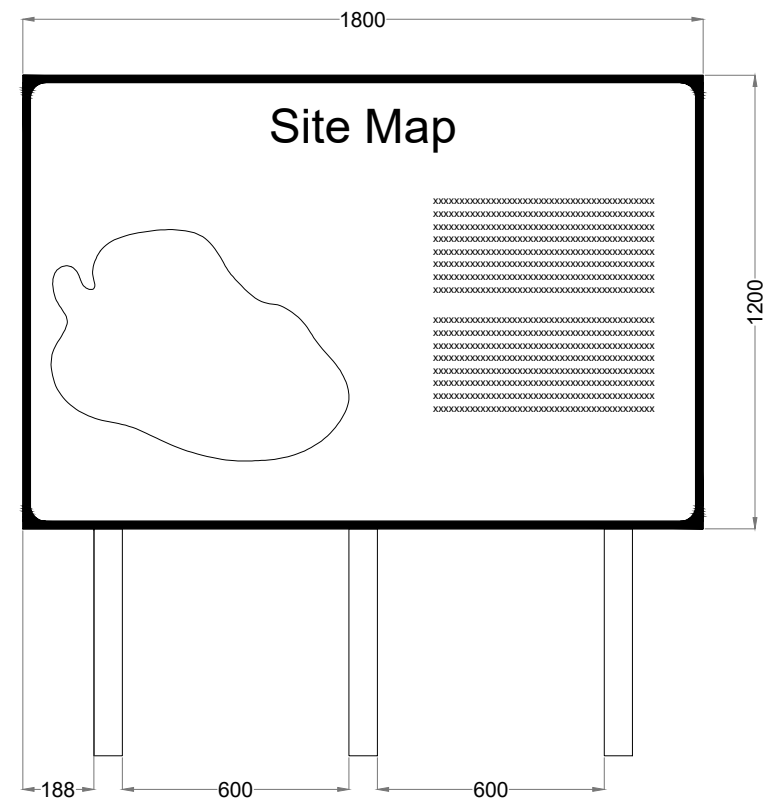
The cabling may be placed on either side of the roads, on both sides of the road or within the road. The exact configuration of the underground cabling will be set by the requirements of the electrical designers at detailed design stage.

DRAWING TITLE: Excavated road section in Site-Specific Flood Modelled Zones	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 27
SCALE: 1:50@A3	DATE: 02.03.2023
<div><div>MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie</div></div>	

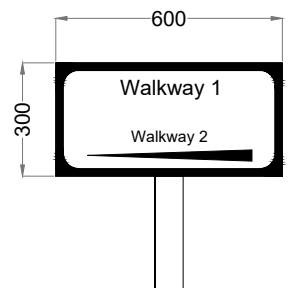
Note
For illustrative purposes only
exact details to be confirmed



Signage Type A - Waypoint Map Signage

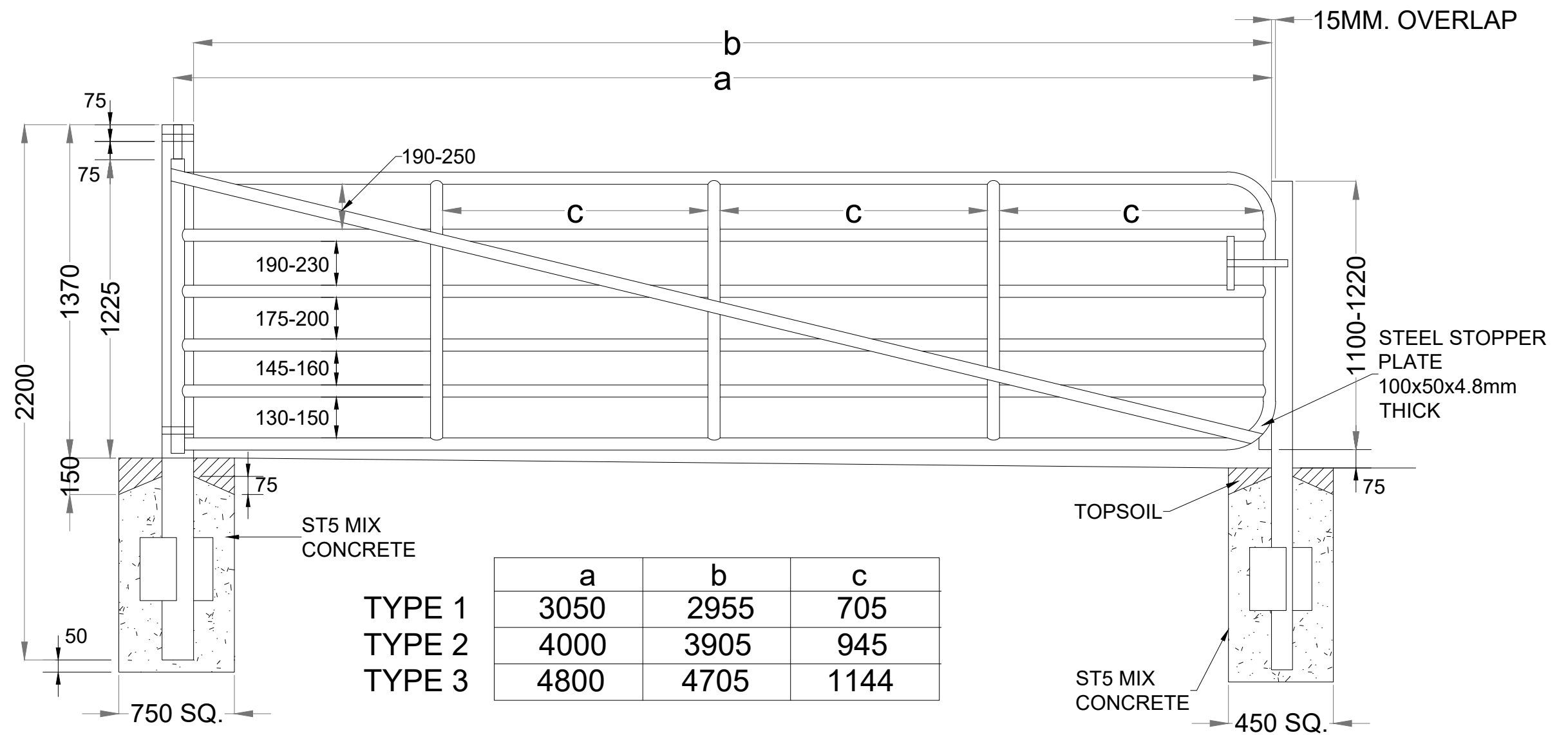



Signage Type B - Entry Point Signage



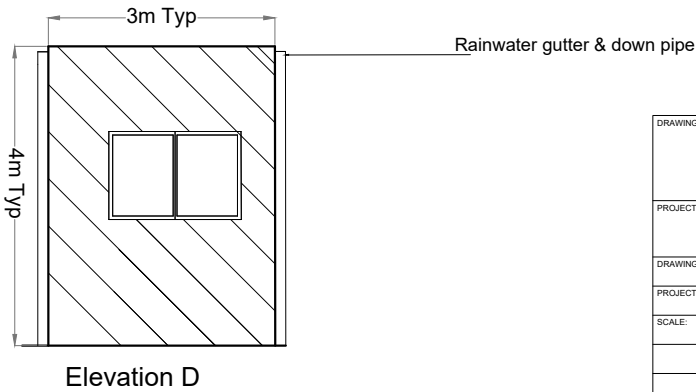
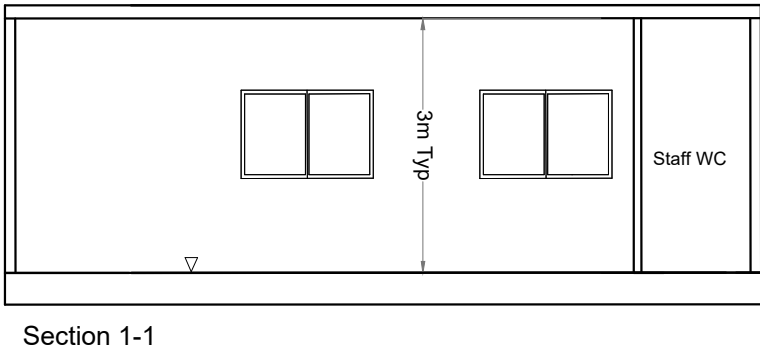
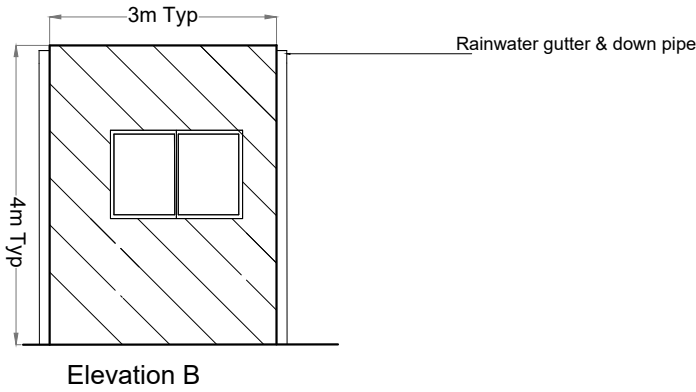
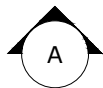
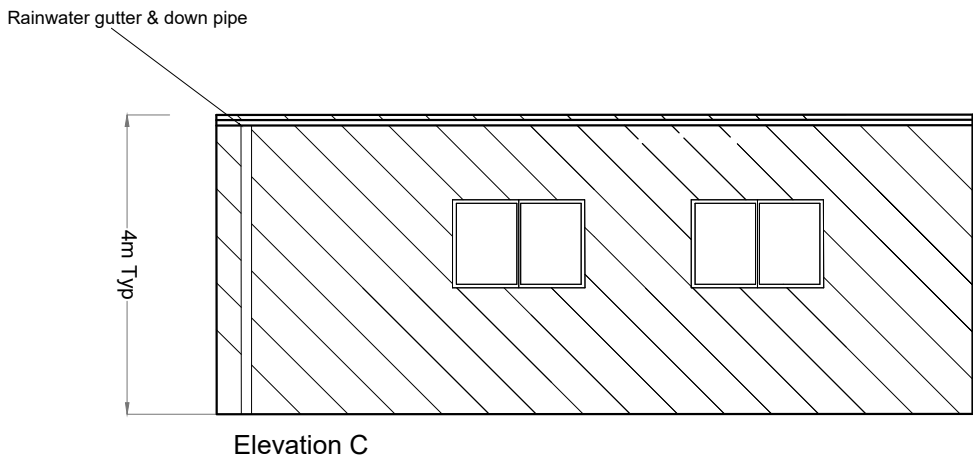
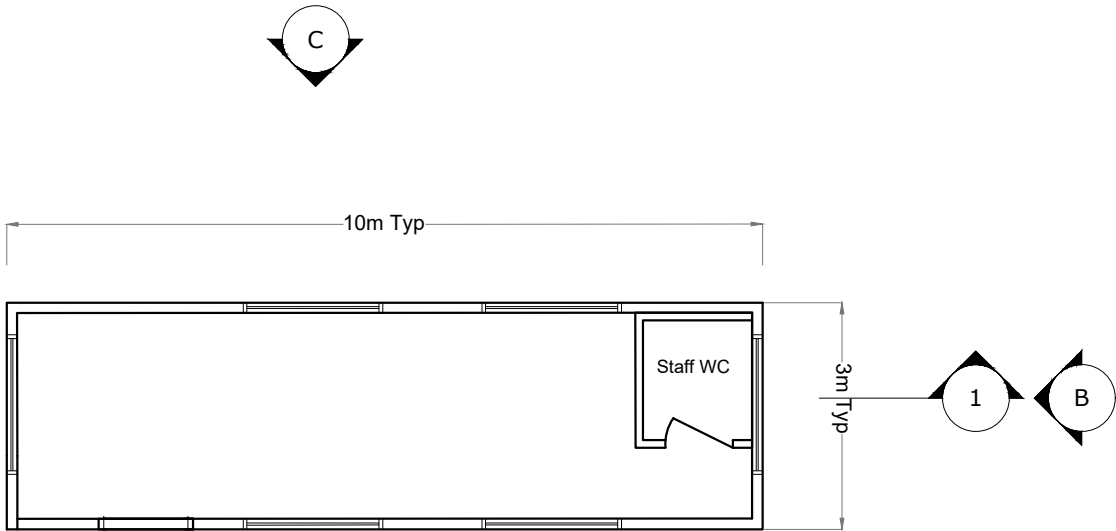
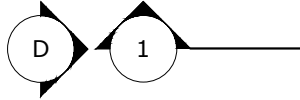
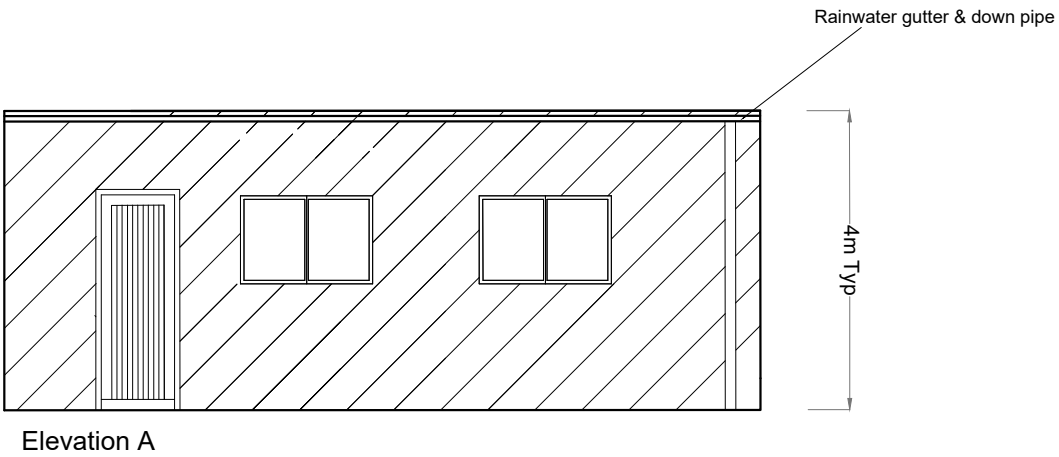
Signage Type C - Way Point Direction Signage


DRAWING TITLE:	
<h1>Site Signage</h1>	
PROJECT TITLE:	
<h2>Umma More Renewable Energy Development, Co. Westmeath</h2>	
DRAWING BY:	CHECKED BY:
Joseph O'Brien	Eileen Costello
PROJECT No.:	DRAWING No.:
201050	201050 - 28
SCALE:	DATE:
1:20 @A3	02.03.2023
<div style="display: flex; align-items: center;">  <div> <p>MKO</p> <p>Planning and Environmental Consultants</p> <p>Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@mmoireland.ie Website: www.mkoireland.ie</p> </div> </div>	

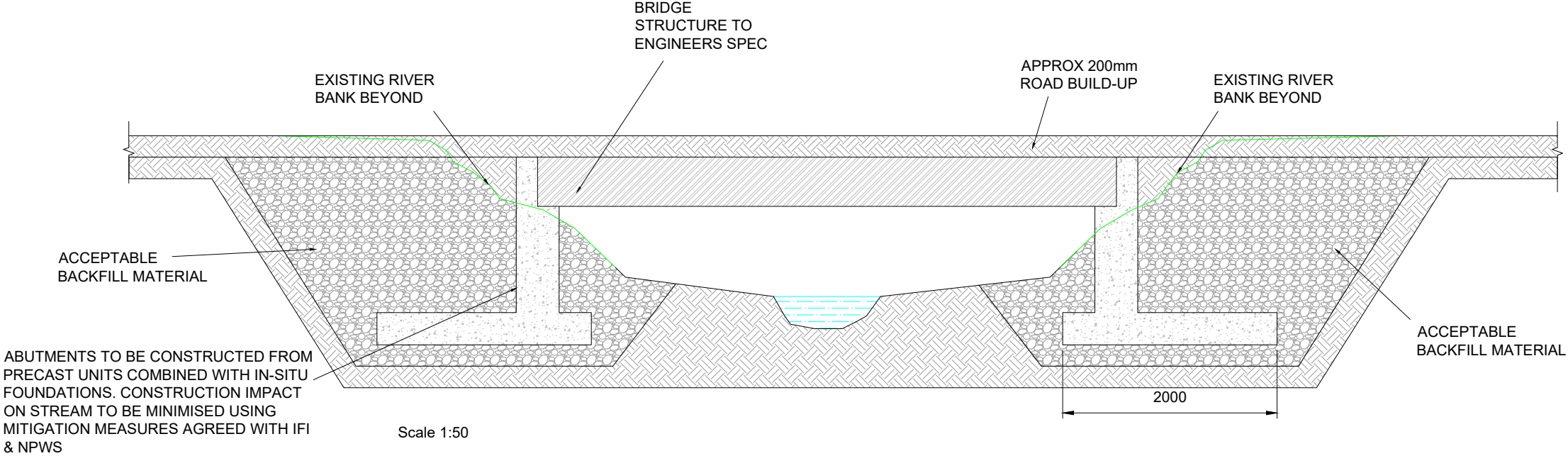
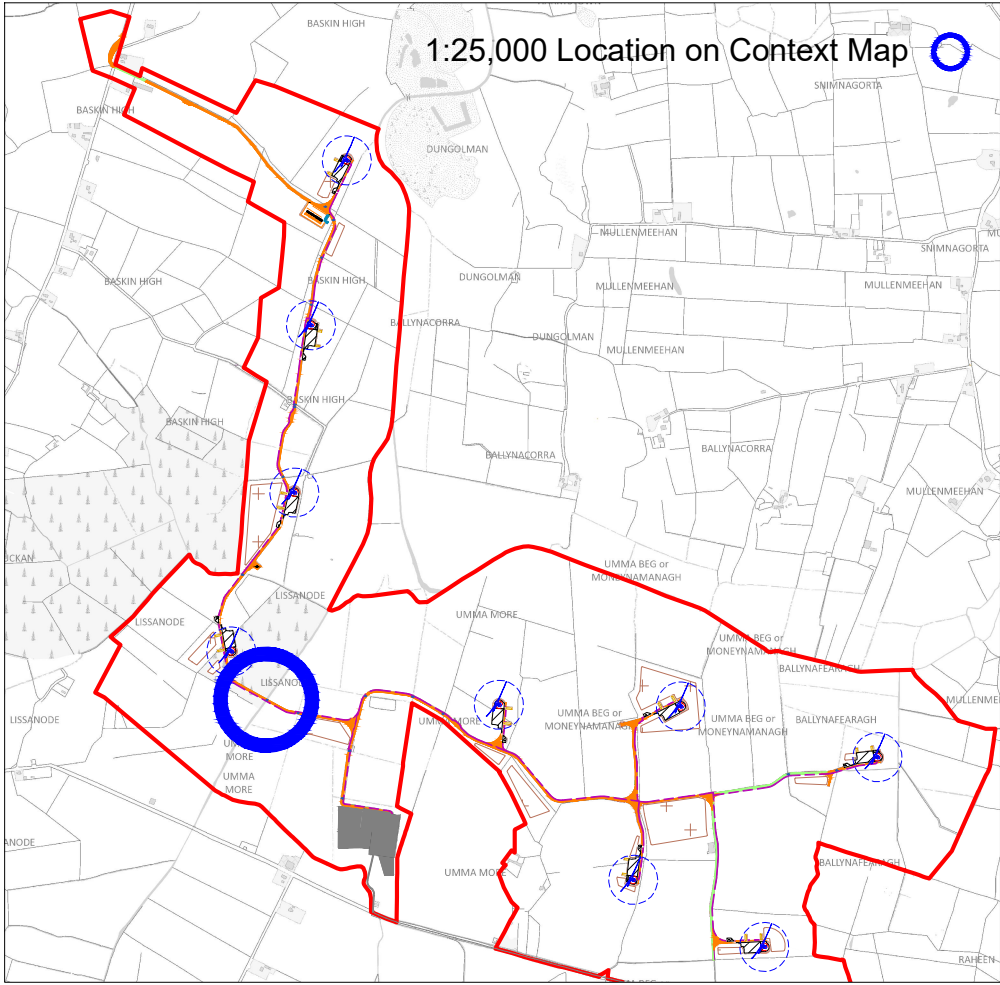



DRAWING TITLE:	
Field Gate Detail	
PROJECT TITLE:	
Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY:	CHECKED BY:
Joseph O'Brien	Ellen Costello
PROJECT No.:	DRAWING No.:
201050	201050 - 29
SCALE:	DATE:
1:20 @A3	02.03.2023
	
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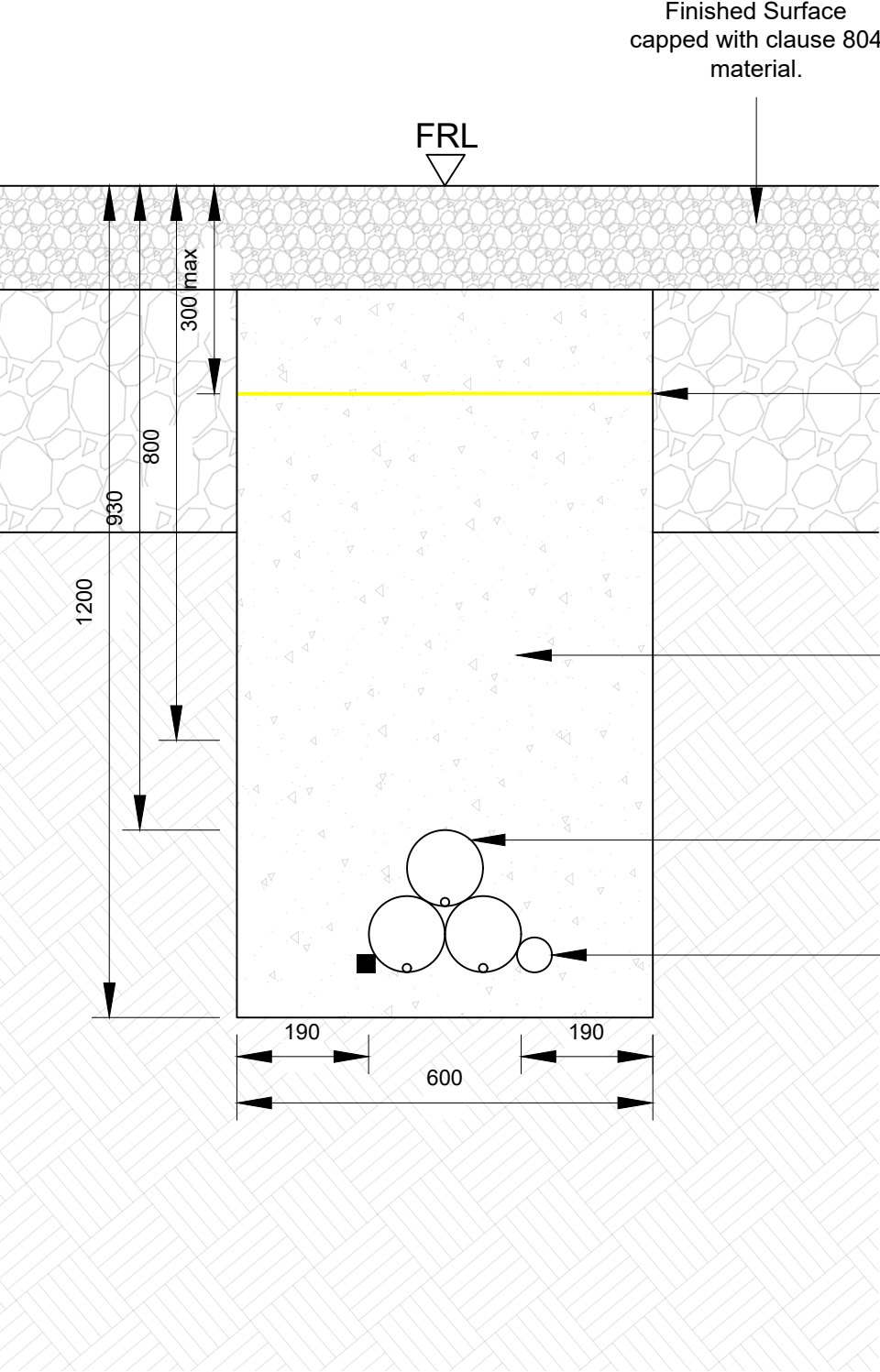
Note:
To be located in Temporary
Compound - refer to DWG
201050 - 22



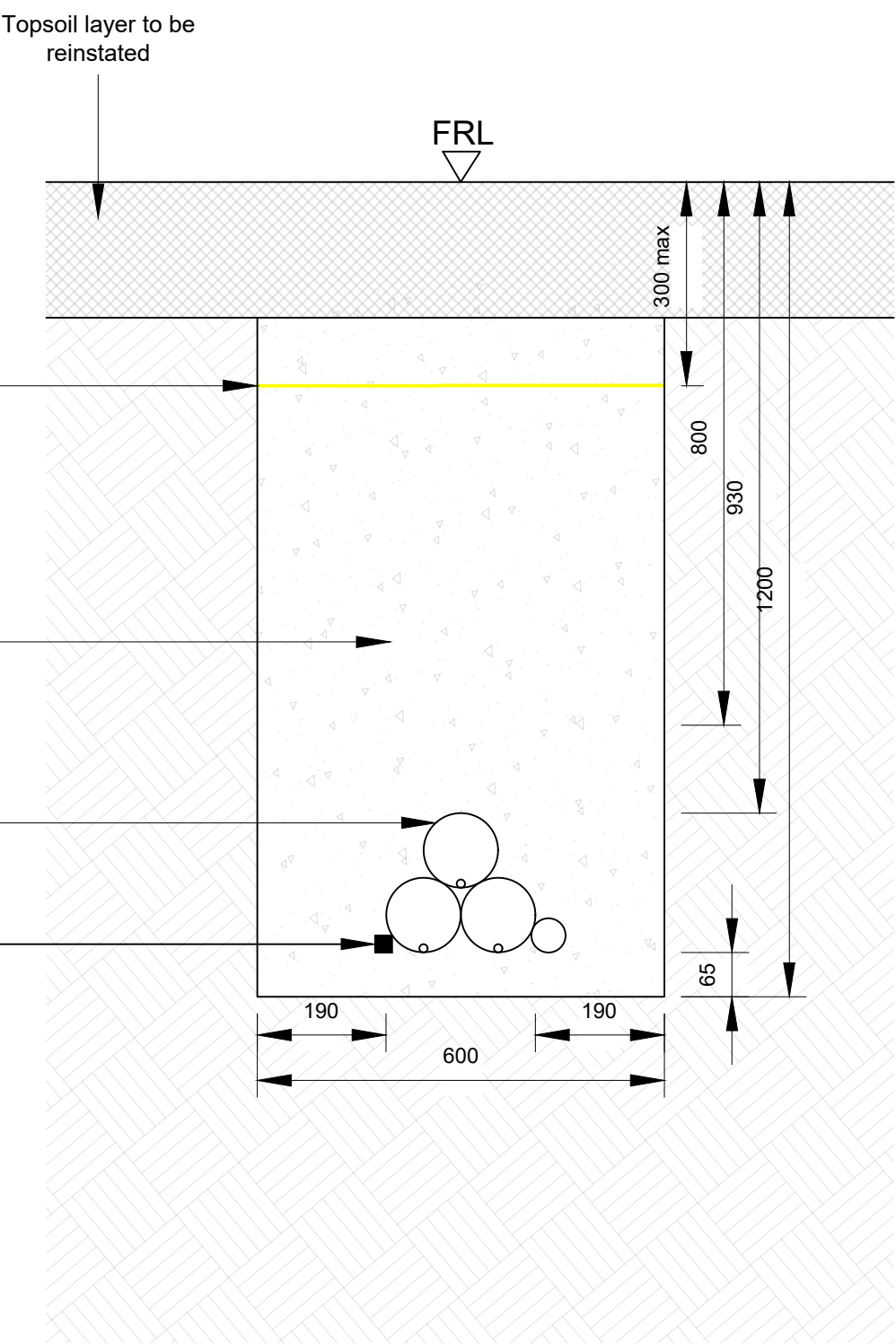
DRAWING TITLE: Site Office & Staff Facilities Detail	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 30
SCALE: 1:100 @ A3	DATE: 02.03.2023
	
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DRAWING TITLE: Clear Span Bridge Crossing	
Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 31
SCALE: As Shown @A3	DATE: 02.03.2023
OS SHEET No.: 2900, 2901, 2969, 2970	
 MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie	



33kV Cable - On Road Trench Detail - Cross Section



33kV Cable - Off Road Trench Detail - Cross Section

DRAWING TITLE: 33kV Cable Trench Sections	
PROJECT TITLE: Umma More Renewable Energy Development, Co. Westmeath	
DRAWING BY: Joseph O'Brien	CHECKED BY: Ellen Costello
PROJECT No.: 201050	DRAWING No.: 201050 - 32
SCALE: 1:10 @ A3	DATE: 02.03.2023
	
MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkofireland.ie Website: www.mkofireland.ie	

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
2. SUITABLE DRAINAGE CONTROL MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.

DISCHARGES

4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAINS WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.

EXCAVATIONS

9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USE TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.

EXPOSED GROUND & STOCKPILES

10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.

SITE TRACKS

11. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.

REFUELLING

13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES.
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

CONCRETE

15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.

IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:

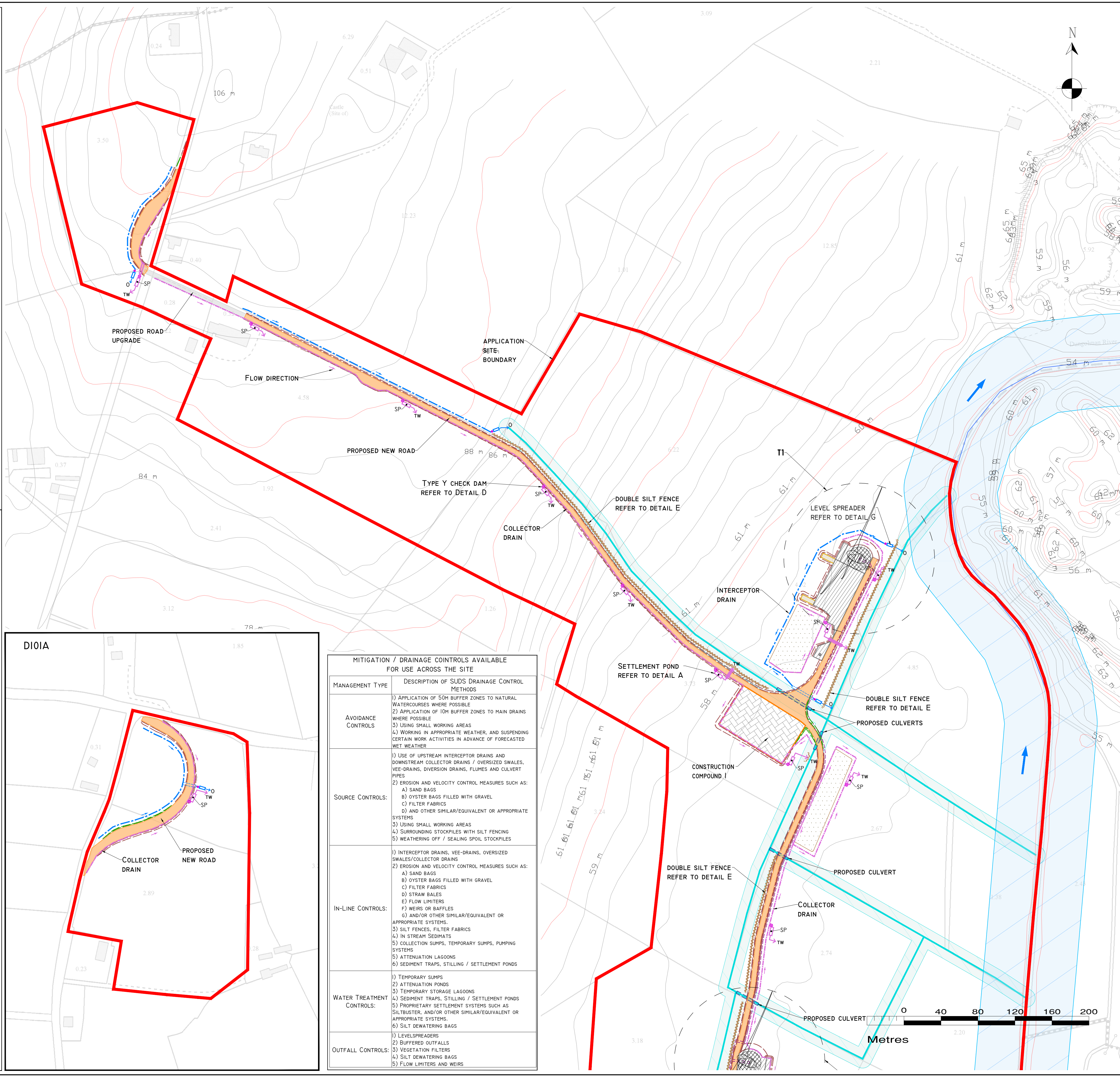
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.

NOTIFY - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.

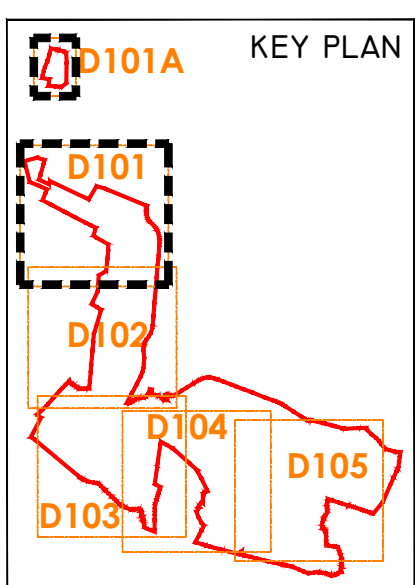
DRAINAGE NOTES:

1. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
4. SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.
7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.
8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
9. TRACK SIDE SWALES / DITCHES TO BE SHALL WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501.
11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL STOCKPILES TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
12. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN 10M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER FROM EXCAVATIONS TO BE STORED LOCALLY AND REED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20 - 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
19. OIL/FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.



- DRAWING LEGEND :**
- RIVERS/STREAMS
 - RIVERS/STREAMS 50M BUFFER
 - STREAM FLOW DIRECTION
 - DRAINS
 - DRAINS 10M BUFFER
 - DRAINS TO BE REMOVED
 - DRAIN REDIRECTION
 - DRAIN REDIRECTION 10M BUFFER
 - UPSTREAM INTERCEPTOR DRAIN
 - SWALES/DOWNSTREAM COLLECTOR DRAIN
 - DIRECTION OF FLOW
 - SILT FENCES
 - DOUBLE SILT FENCES
 - SETTLEMENT POND - LEVEL SPREADER
 - SETTLEMENT POND - VEGETATION FILTER
 - LEVEL SPREADER
 - CHECK DAM 'TYPE A'
 - CHECK DAM 'TYPE B'
 - PROPOSED CULVERTS/BRIDGES
 - INTERCEPTOR DITCH CULVERT
 - COLLECTOR DITCH CULVERT
 - OVERLAND FLOW DISCHARGE
 - TREATED WATER DISCHARGE
 - SETTLEMENT POND
 - SEMI-NATURAL VEGETATION
 - SWALE / FILTER BED / SECONDARY SP
 - GROUND SLOPE DIRECTION
 - EDGE PROTECTION

- PLANNING APPLICATION**
- EXISTING GROUND SURFACE
 - INTERMEDIATE CONTOUR (2M INTERVALS)
 - EXISTING GROUND SURFACE
 - MAJOR CONTOUR (10M INTERVALS)
 - PROPOSED TURBINE AND SWEEP AREA
 - PROPOSED TURBINE FOUNDATION
 - PROPOSED CRANE PLATFORM
 - PROPOSED NEW ACCESS ROAD
 - EXISTING ACCESS ROAD
 - PROPOSED TO BE UPGRADED
 - SUBSTATION
 - TEMPORARY CONSTRUCTION COMPOUND
 - SPOIL MANAGEMENT AREAS
 - MET MAST
 - CUT AREA
 - FILL AREA



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Revisions			

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Client: **UMMA MORE LTD**

Job: **UMMA MORE RENEWABLE ENERGY DEVELOPMENT**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D101**

Drawing No: **P1553-0-0223-A1-D101-Rev A**

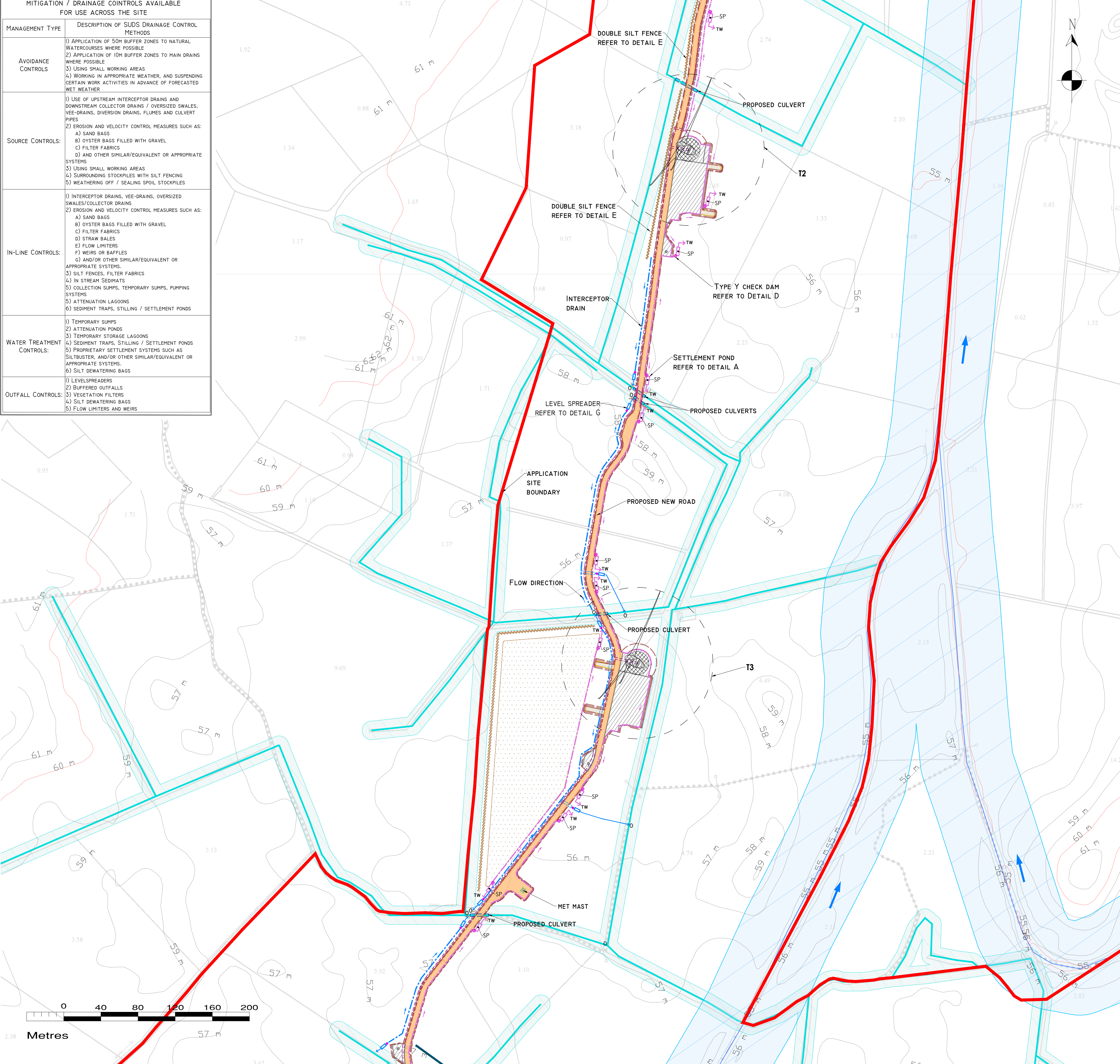
Sheet Size: A1	Project No.: P1553-0
Scale: 1:2,000 (A1)	Drawn By: GD
Date: 09/02/2023	Checked By: MG

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION LAGOONS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
 2. SUITABLE DRAINAGE CONTROL MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
 3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES
4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAINS WITH SILT TRAP AT A MINIMUM OF 20m FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
 5. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
 6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
 7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
 8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS
9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES
10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.
- SITE TRACKS
11. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
 12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING
13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES.
 14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE
15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
 16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:
- STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.
- NOTIFY - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.
- DRAINAGE NOTES:
1. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
 2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
 3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
 4. SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
 5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
 6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.
 7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.
 8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
 9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
 10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501.
 11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL STOCKPILES TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
 12. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN 10M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS.
 13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES / BASES OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
 14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
 15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
 16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
 17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
 18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
 19. OIL/FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
 20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
SOURCE CONTROLS:	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 6) ATTENUATION LAGOONS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
IN-LINE CONTROLS:	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
WATER TREATMENT CONTROLS:	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS
OUTFALL CONTROLS:	



DRAWING LEGEND :

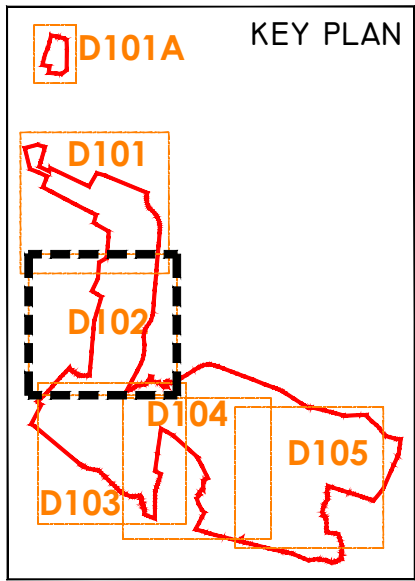
- RIVERS/STREAMS
- RIVERS/STREAMS 50M BUFFER
- STREAM FLOW DIRECTION
- DRAINS
- DRAINS 10M BUFFER
- DRAINS TO BE REMOVED
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- DRAIN REDIRECTION 10M BUFFER

EXISTING DRAINAGE

- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SILT FENCES
- DOUBLE SILT FENCES
- SETTLEMENT POND - LEVEL SPREADER
- SETTLEMENT POND - VEGETATION FILTER
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- CHECK DAM 'TYPE A'
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- SETTLEMENT POND
- SEMI-NATURAL VEGETATION
- SWALE / FILTER BED / SECONDARY SP
- GROUND SLOPE DIRECTION
- EDGE PROTECTION

PROPOSED DRAINAGE

- PLANNING APPLICATION
- EXISTING GROUND SURFACE
- INTERMEDIATE CONTOUR (2M INTERVALS)
- EXISTING GROUND SURFACE
- MAJOR CONTOUR (10M INTERVALS)
- PROPOSED TURBINE AND SWEEP AREA
- PROPOSED TURBINE FOUNDATION
- PROPOSED CRANE PLATFORM
- PROPOSED NEW ACCESS ROAD
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- PROPOSED TO BE UPGRADED
- SUBSTATION
- TEMPORARY CONSTRUCTION COMPOUND
- SPOIL MANAGEMENT AREAS
- MET MAST
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- FILL AREA



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Date	Description	Chkd	Signed
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Revisions

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Client: **UMMA MORE LTD**

Job: **UMMA MORE RENEWABLE ENERGY DEVELOPMENT**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D102**

Drawing No: P1553-0-0223-A1-D102-RevA

Sheet Size: A1	Project No.: P1553-0
Scale: 1:2,000 (A1)	Drawn By: GD
Date: 09/02/2023	Checked By: MG

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
2. SUITABLE DRAINAGE CONTROL MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.

DISCHARGES

4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAINS WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
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EXPOSED GROUND & STOCKPILES

10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.

SITE TRACKS

11. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.

REFUELLING

13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES.
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

CONCRETE

15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.

IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:

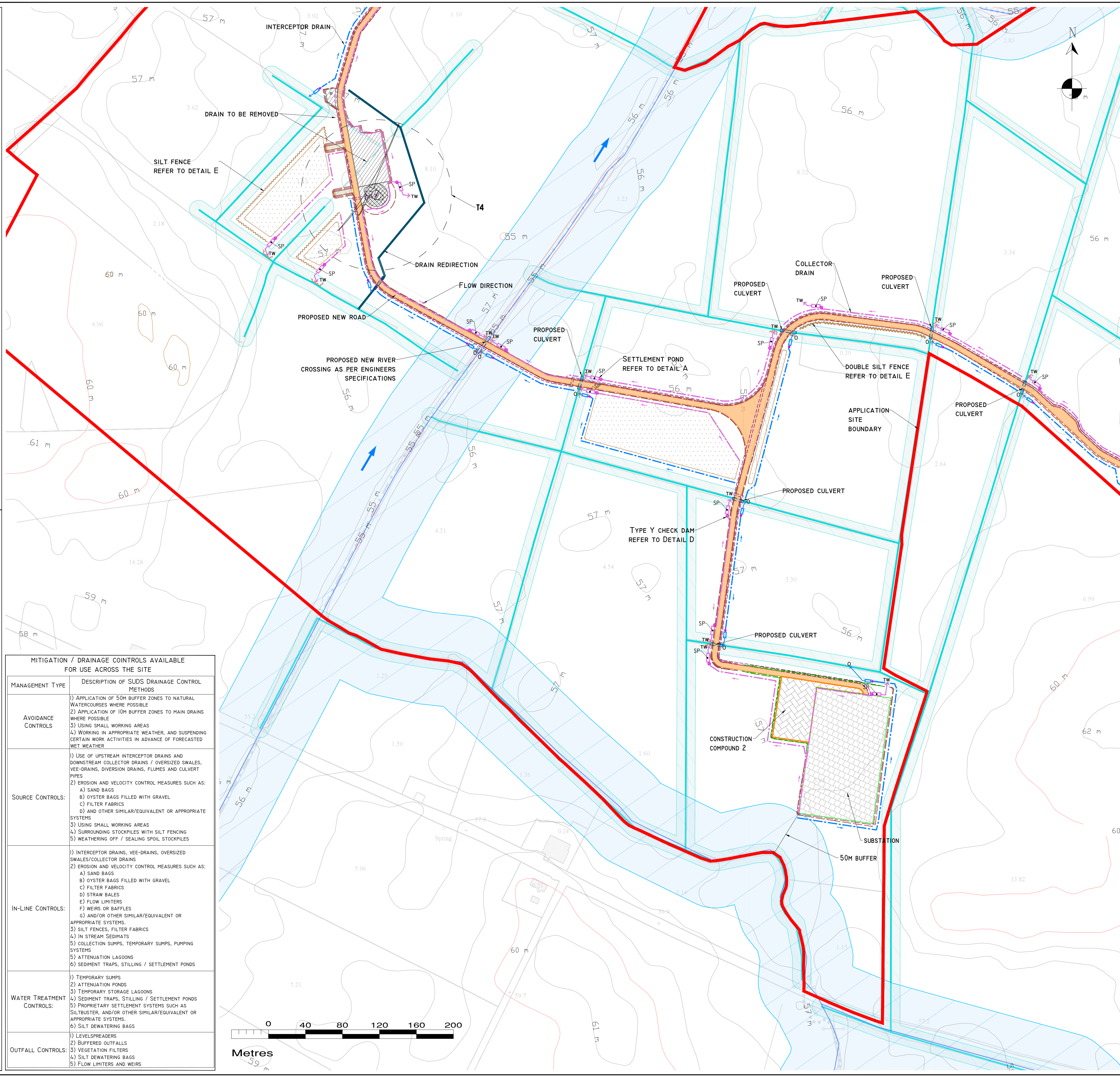
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.

NOTIFY - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.

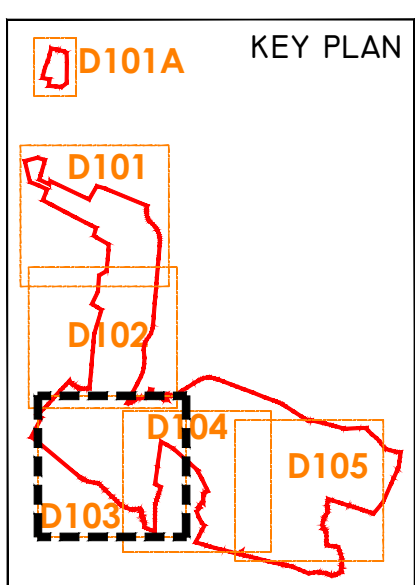
DRAINAGE NOTES:

1. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
4. SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.
7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.
8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
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12. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN 10M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
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19. OIL/FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
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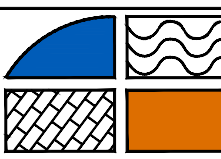


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Date	Description	Chkd	Signed
Revisions			
 HYDRO ENVIRONMENTAL SERVICES 22 Lower Main St Dungarvan Co. Waterford Ireland tel: +353 (0) 58-44122 tel: +353 (0) 58-44244 email: info@hydroenvironmental.ie web: www.hydroenvironmental.ie			
Client: UMMA MORE LTD			
Job: UMMA MORE RENEWABLE ENERGY DEVELOPMENT			
Title: PROPOSED DRAINAGE LAYOUT			
Figure No: D103			
Drawing No: P1553-0-0223-A1-D103-RevA			
Sheet Size: A1		Project No.: P1553-0	
Scale: 1:2,000 (A1)		Drawn By: GD	
Date: 09/02/2023		Checked By: MG	

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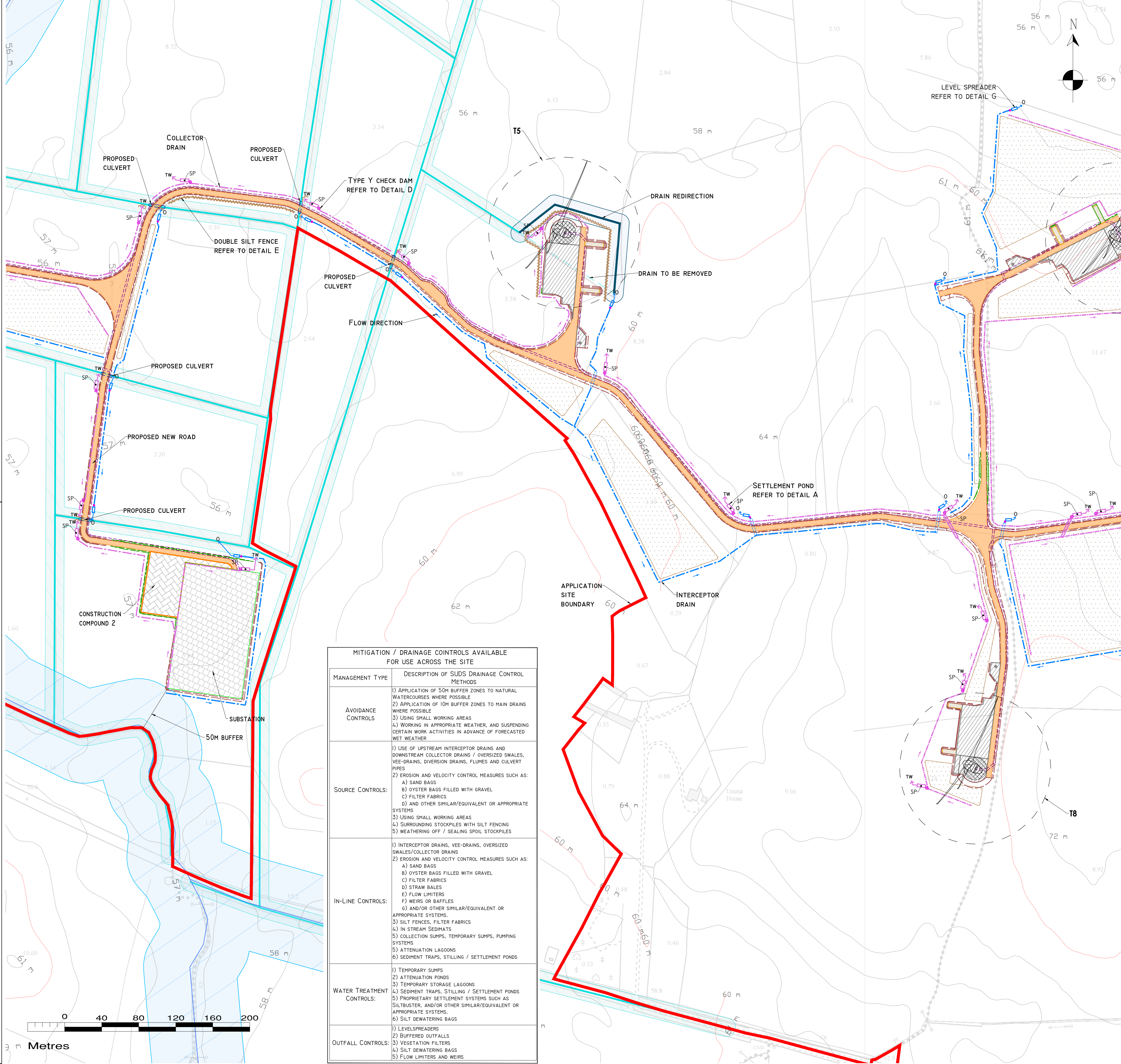
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KEY PLAN

D101A

D101

D102

D103

D104

D105

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Date	Description	Chkd	Signed

Revisions

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Client: **UMMA MORE LTD**

Job: **UMMA MORE RENEWABLE ENERGY DEVELOPMENT**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D104**

Drawing No: P1553-0-0223-A1-D104-RevA

Sheet Size: A1	Project No.: P1553-0
Scale: 1:2,000 (A1)	Drawn By: GD
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10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.

SITE TRACKS

11. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.

12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.

REFUELLING

13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES.

14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

CONCRETE

15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.

16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.

IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:

STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.

NOTIFY - THE RELEVANT AUTHORITIES (Site Manager / Fisheries / NPWS / Local Authority ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.

DRAINAGE NOTES:

1. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).

2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.

3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.

4. SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.

5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.

6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.

7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.

8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.

9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.

10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501.

11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL STOCKPILES TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.

12. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN 10M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS.

13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.

14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.

15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20 - 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.

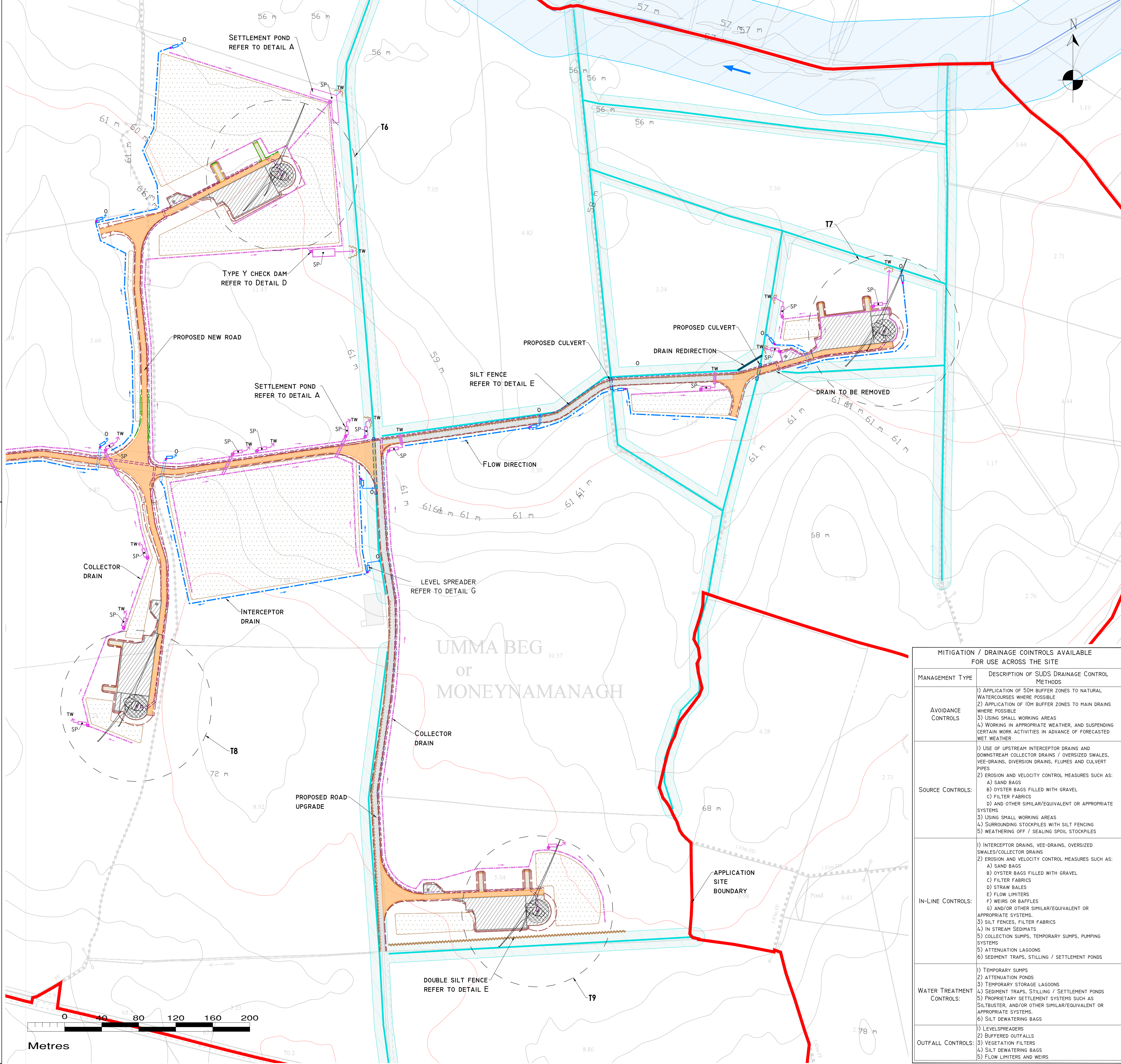
16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.

17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.

18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.

19. OIL/FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.

20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.



DRAWING LEGEND:

- RIVERS/STREAMS
- RIVERS/STREAMS 50M BUFFER
- STREAM FLOW DIRECTION
- DRAINS
- DRAINS 10M BUFFER
- DRAINS TO BE REMOVED
- DRAIN REDIRECTION
- DRAIN REDIRECTION 10M BUFFER

EXISTING DRAINAGE

- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SILT FENCES
- DOUBLE SILT FENCES
- SETTLEMENT POND - LEVEL SPREADER
- SETTLEMENT POND - VEGETATION FILTER
- LEVEL SPREADER
- CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- PROPOSED CULVERTS/BRIDGES
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- SETTLEMENT POND
- SP
- TW
- VS
- SEMI-NATURAL VEGETATION
- SWALE / FILTER BED / SECONDARY SP
- GROUND SLOPE DIRECTION
- EDGE PROTECTION

PROPOSED DRAINAGE

- PLANNING APPLICATION
- EXISTING GROUND SURFACE
- INTERMEDIATE CONTOUR (2M INTERVALS)
- EXISTING GROUND SURFACE
- MAJOR CONTOUR (10M INTERVALS)
- PROPOSED TURBINE AND SWEEP AREA
- PROPOSED TURBINE FOUNDATION
- PROPOSED CRANE PLATFORM
- PROPOSED NEW ACCESS ROAD
- EXISTING ACCESS ROAD
- PROPOSED TO BE UPGRADED
- SUBSTATION
- TEMPORARY CONSTRUCTION COMPOUND
- SPOIL MANAGEMENT AREAS
- MET MAST
- CUT AREA
- FILL AREA

KEY PLAN

D101A

D101

D102

D103

D104

D105

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Date	Description	Chkd	Signed

Revisions

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Client: **UMMA MORE LTD**

Job: **UMMA MORE RENEWABLE ENERGY DEVELOPMENT**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D105**

Drawing No: **P1553-0-0223-A1-D105-RevA**

Sheet Size: **A1**

Scale: **1:2,000 (A1)**

Date: **09/02/2023**

Project No.: **P1553-0**

Drawn By: **GD**

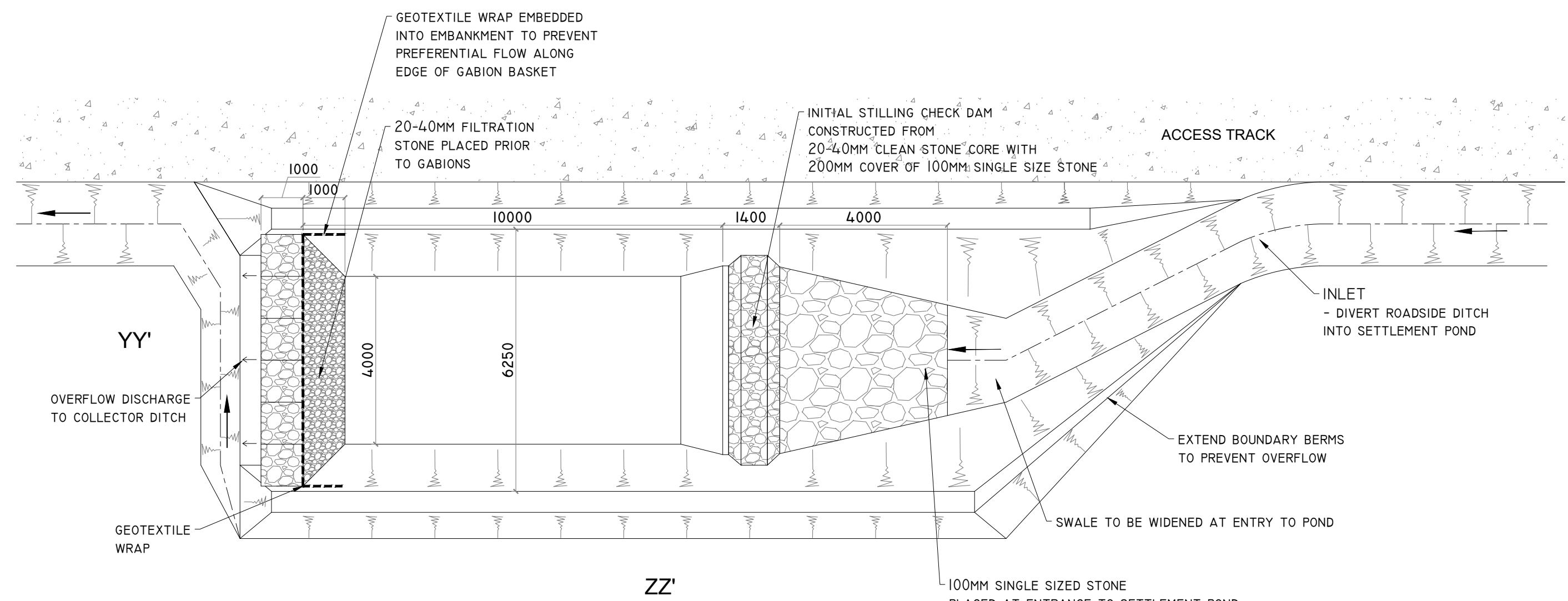
Checked By: **MG**

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE

MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS:	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS:	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 6) ATTENUATION LAGOONS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS:	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS:	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS

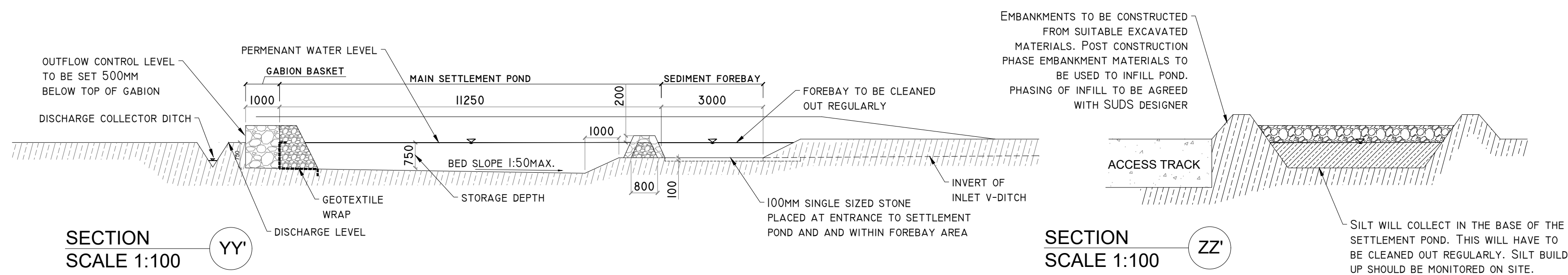
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DETAIL A1



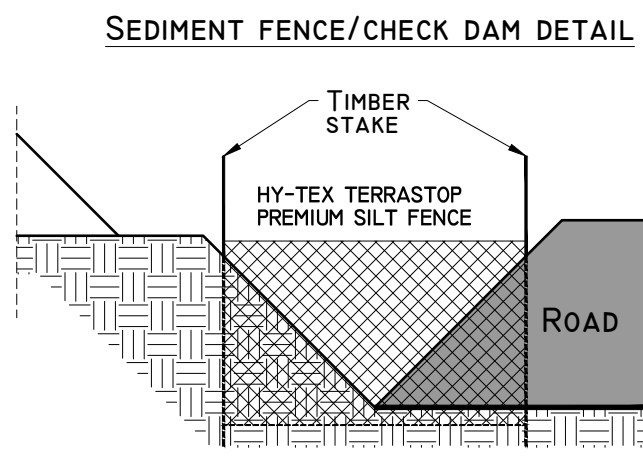
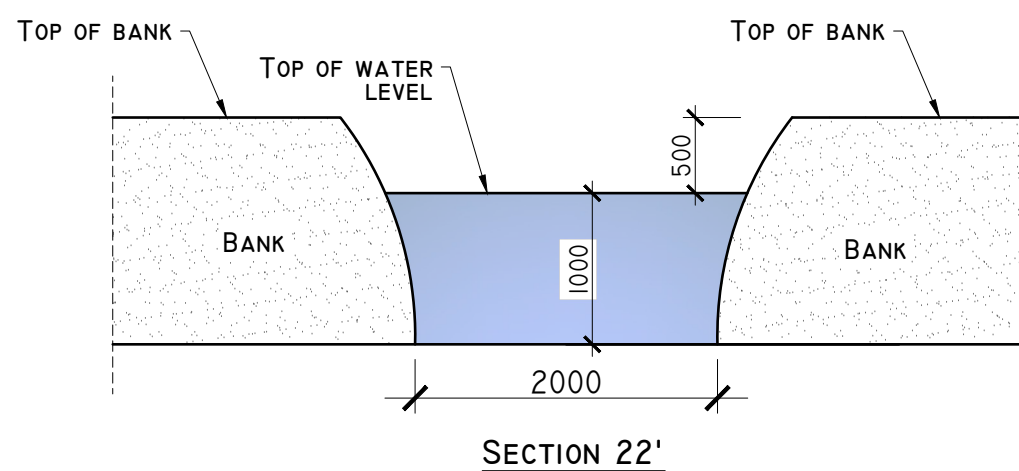
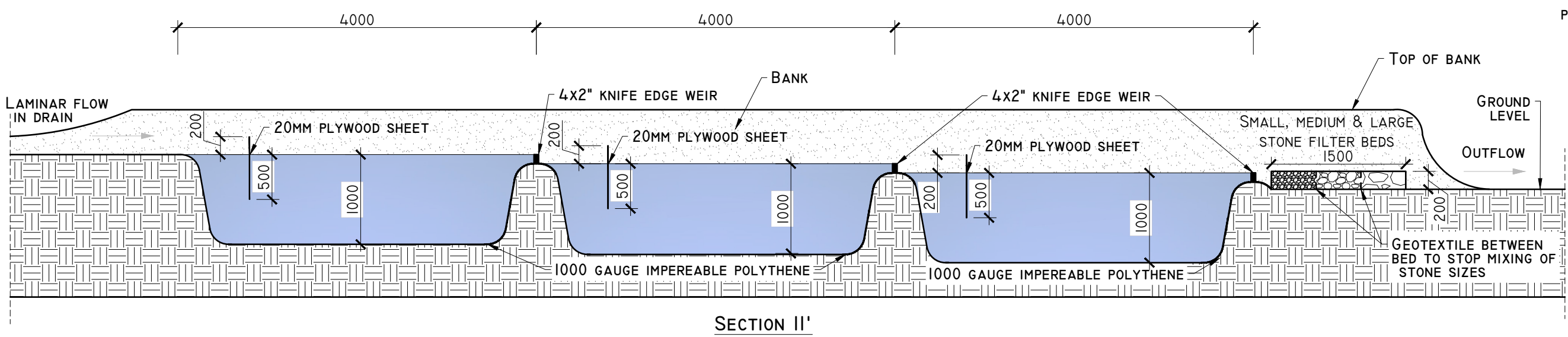
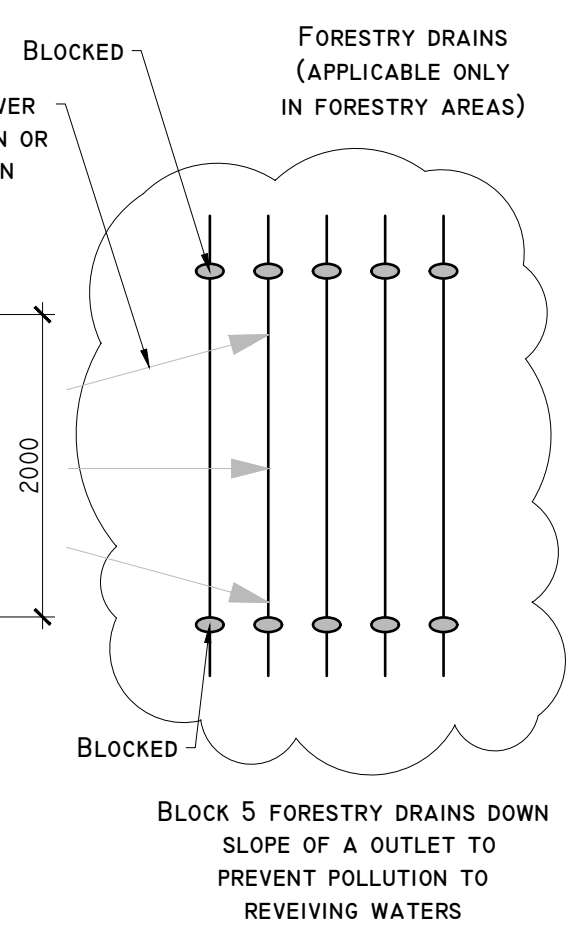
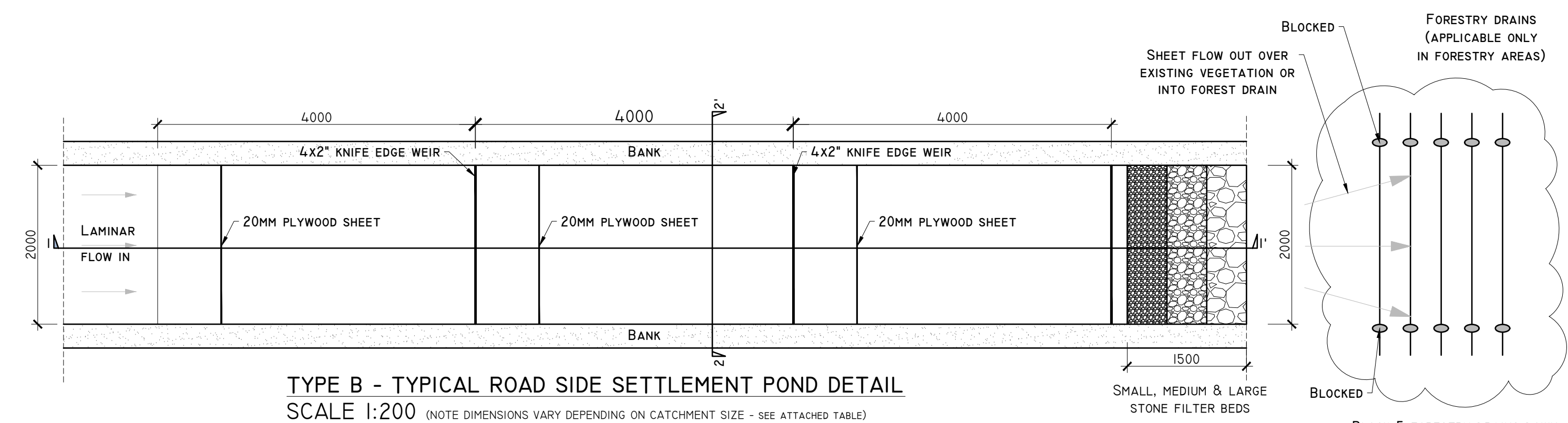
TYPE A - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)

POND SIZE W [M] x L [M] x D [M]			CATCHMENT SIZE (M ²)		
RETURN PERIOD	10 YRS	STORM DURATION	500	1000	2000
6HR RETENTION FOR COARSE SILT	6 HRS		1.0 x 3.5 x 1 M	1.25x 3.75 x 1 M	2.0 x 6.25 x 1 M
11HR RETENTION FOR MEDIUM SILT	11 HRS		1.5 x 4.5 x 1 M	2.0 x 6.0 x 1 M	2.75x 8.25x 1 M
24HR RETENTION FOR FINE SILT	24 HRS		2.25x 6.75x 1 M	3.0 x 9.0 x 1 M	4.0 x 13.0 x 1 M



SECTION
SCALE 1:100

SECTION
SCALE 1:100



DETAIL A2

09/02/23	Planning	MG	MG
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Client: **UMMA MORE LTD**

Job: **UMMA MORE RENEWABLE ENERGY DEVELOPMENT**

Title: **DRAINAGE DETAILS I**

Figure No: **D501**

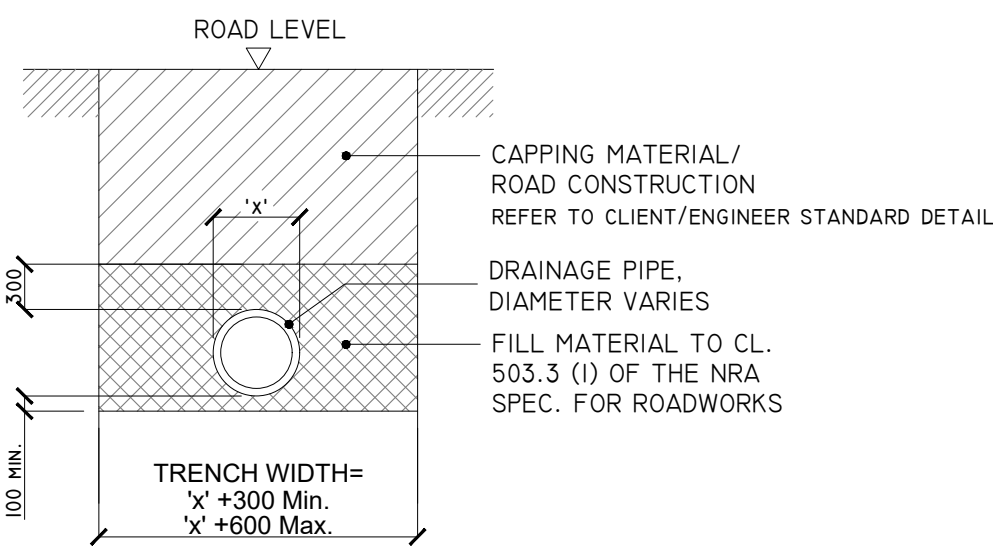
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Sheet Size: **A1** Project No.: **P1553-0**

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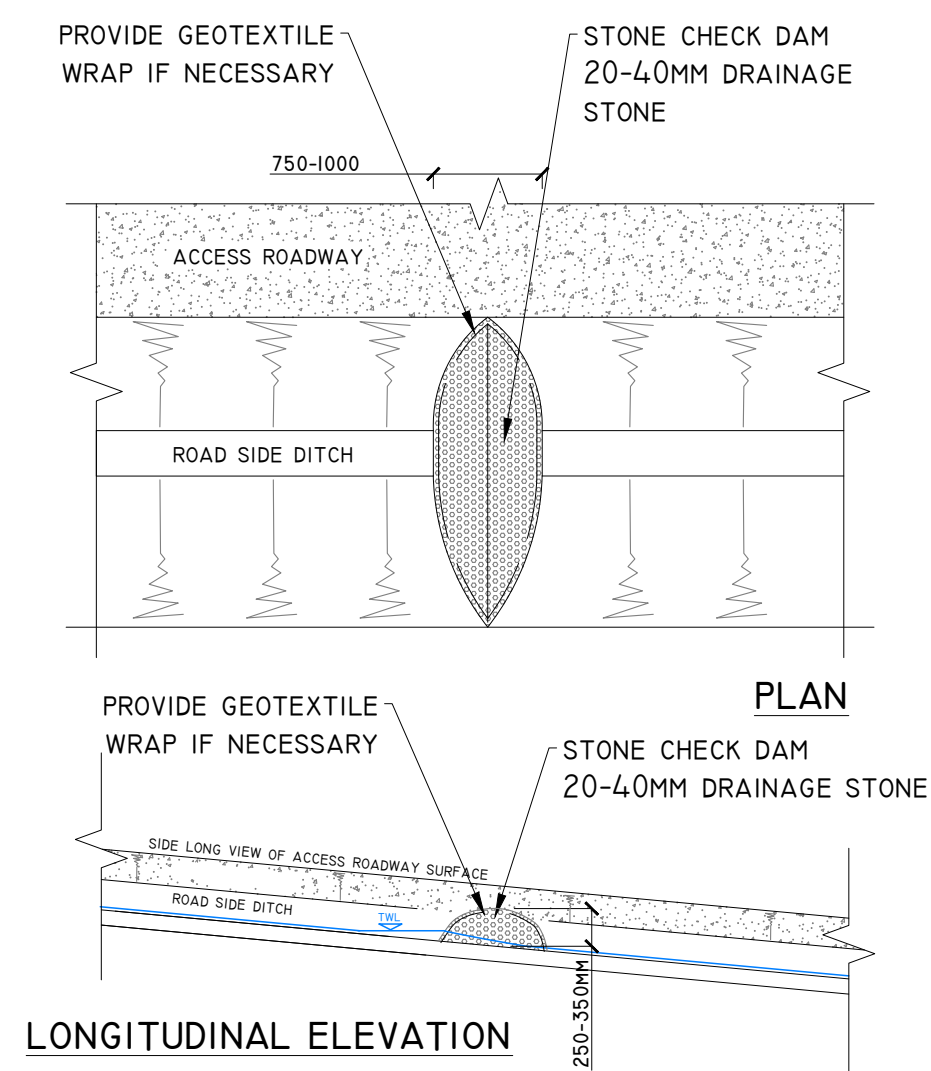
Date: **09/02/2023** Checked By: **M.G.**

DETAIL B



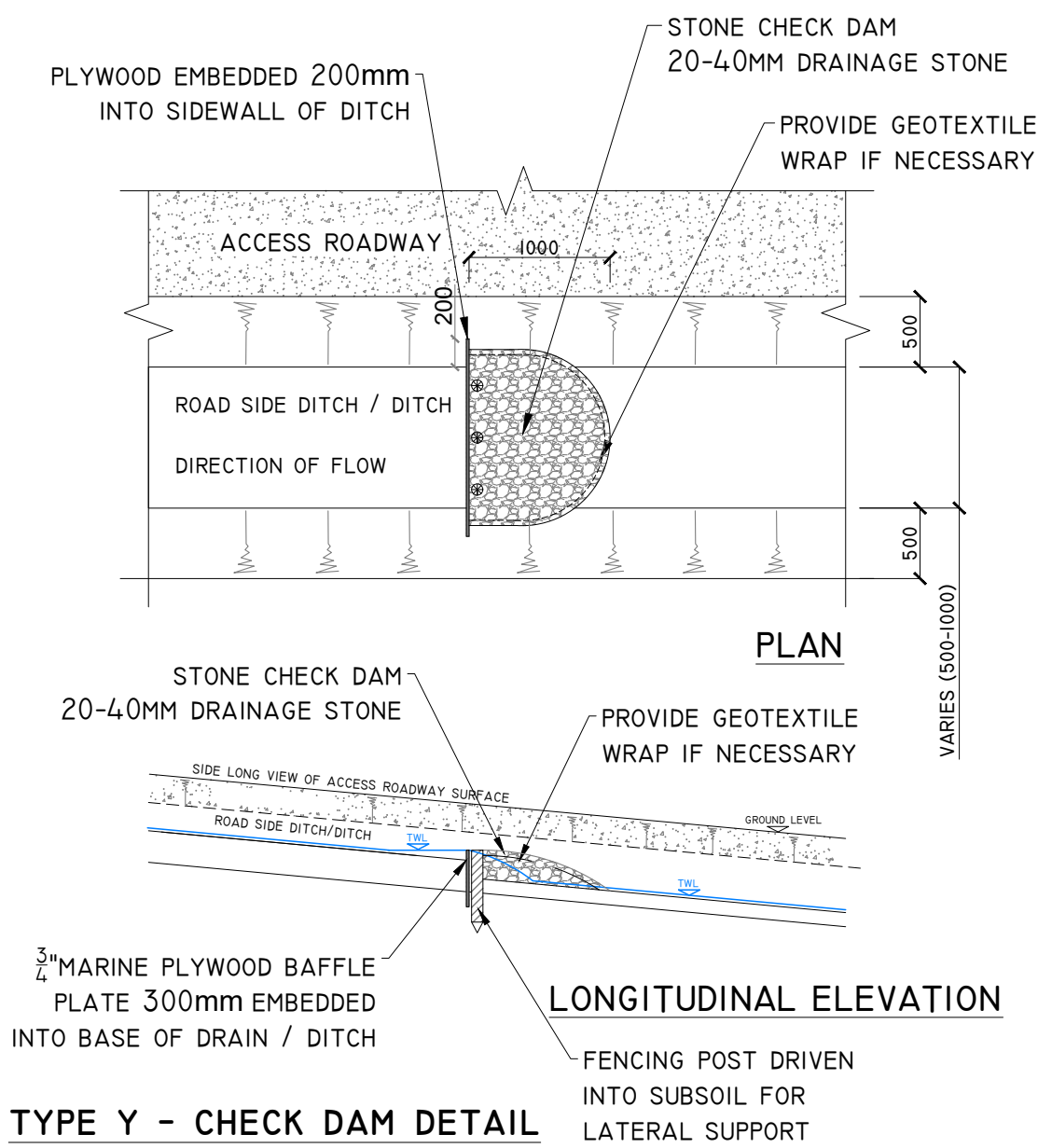
'TYPE B' CULVERT - DRAINAGE CROSSING BENEATH EXCAVATED ROAD
SCALE 1:50

DETAIL C

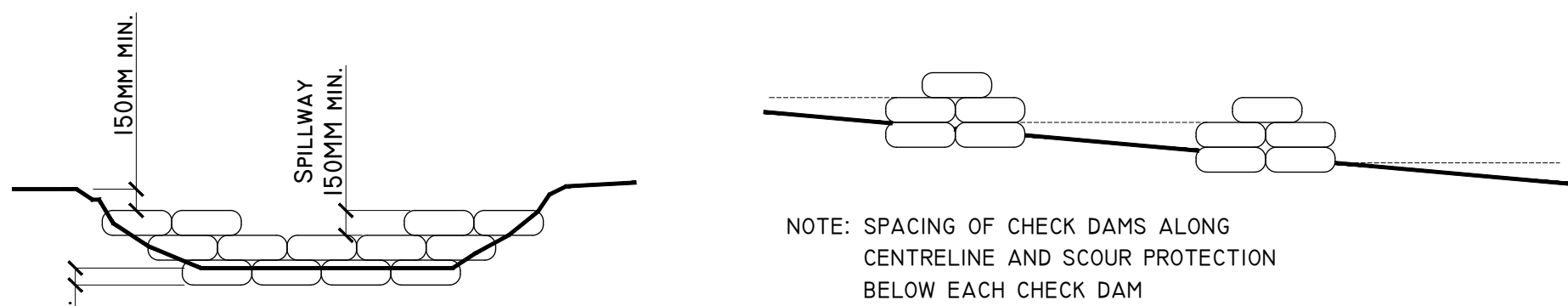


TYPE X - CHECK DAM DETAIL
SCALE 1:50

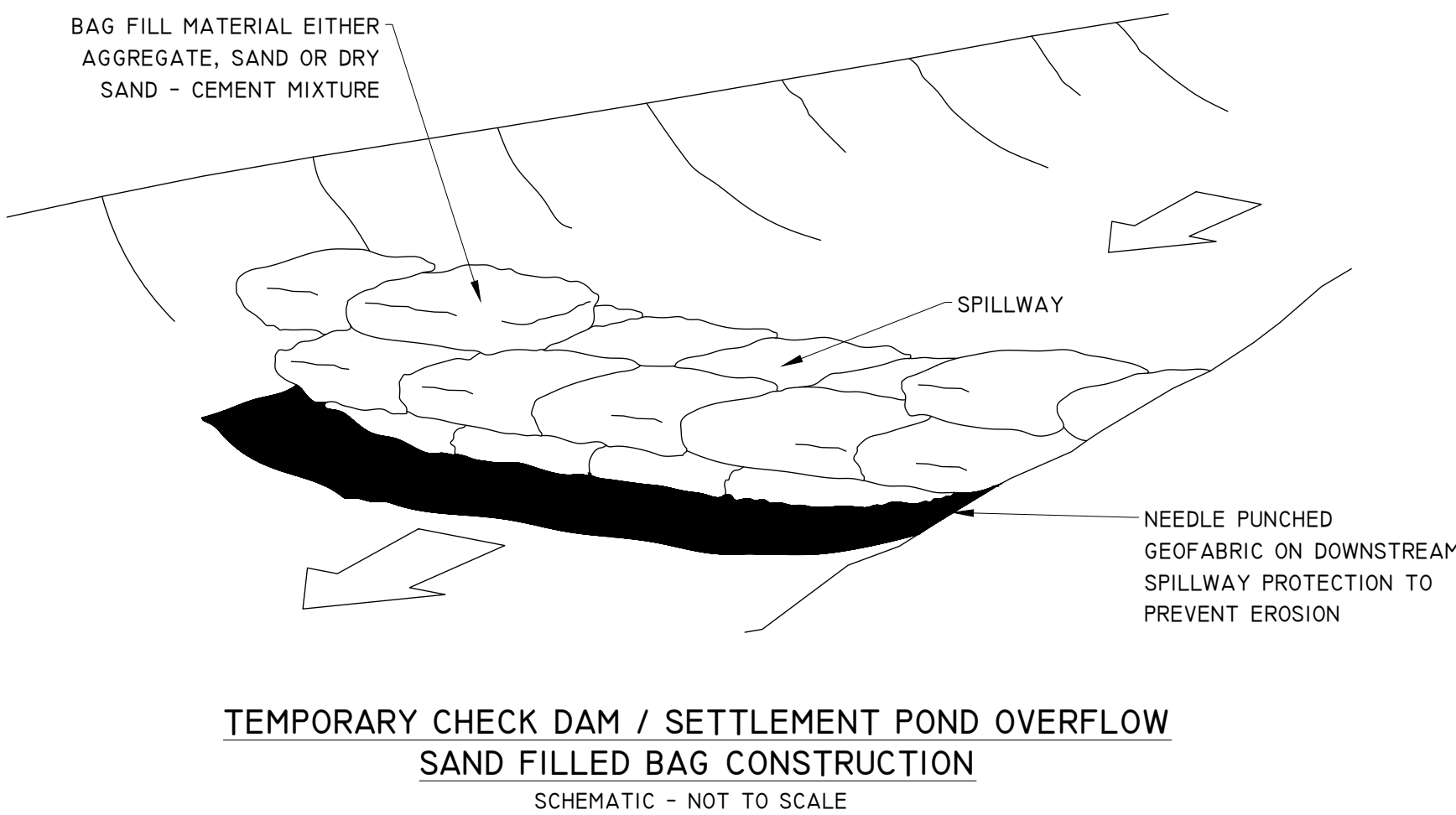
DETAIL D



TYPE Y - CHECK DAM DETAIL
SCALE 1:100



DETAIL CI



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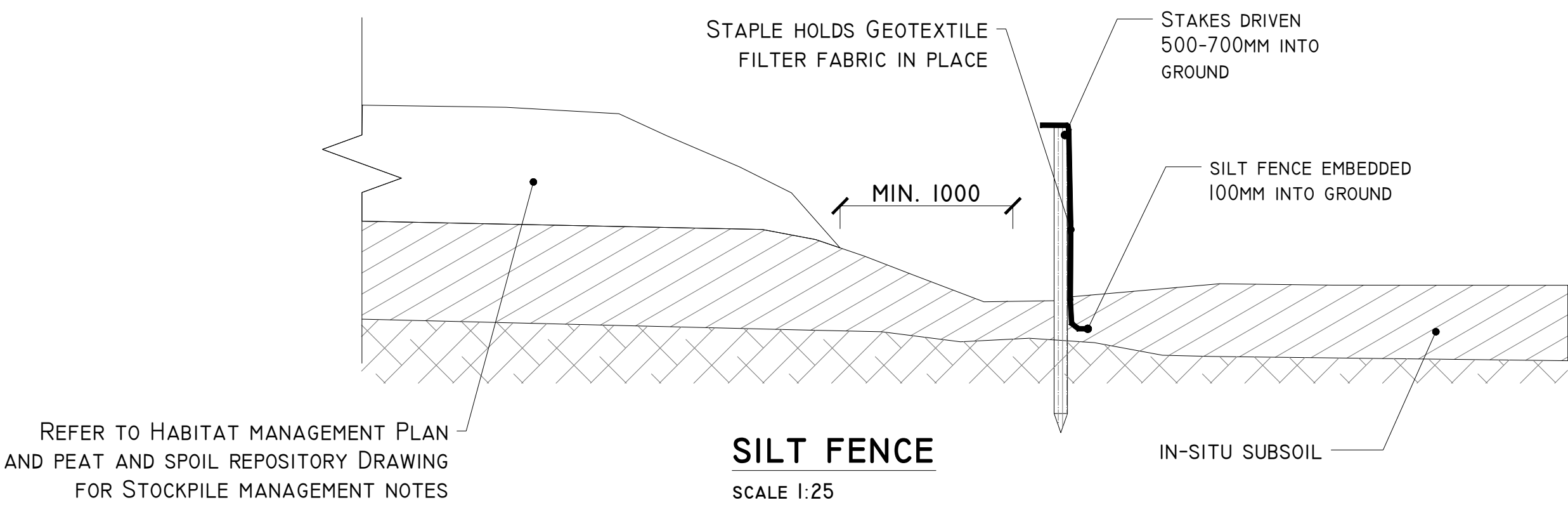
Job:
UMMA MORE RENEWABLE ENERGY DEVELOPMENT

Title:
DRAINAGE DETAILS 2

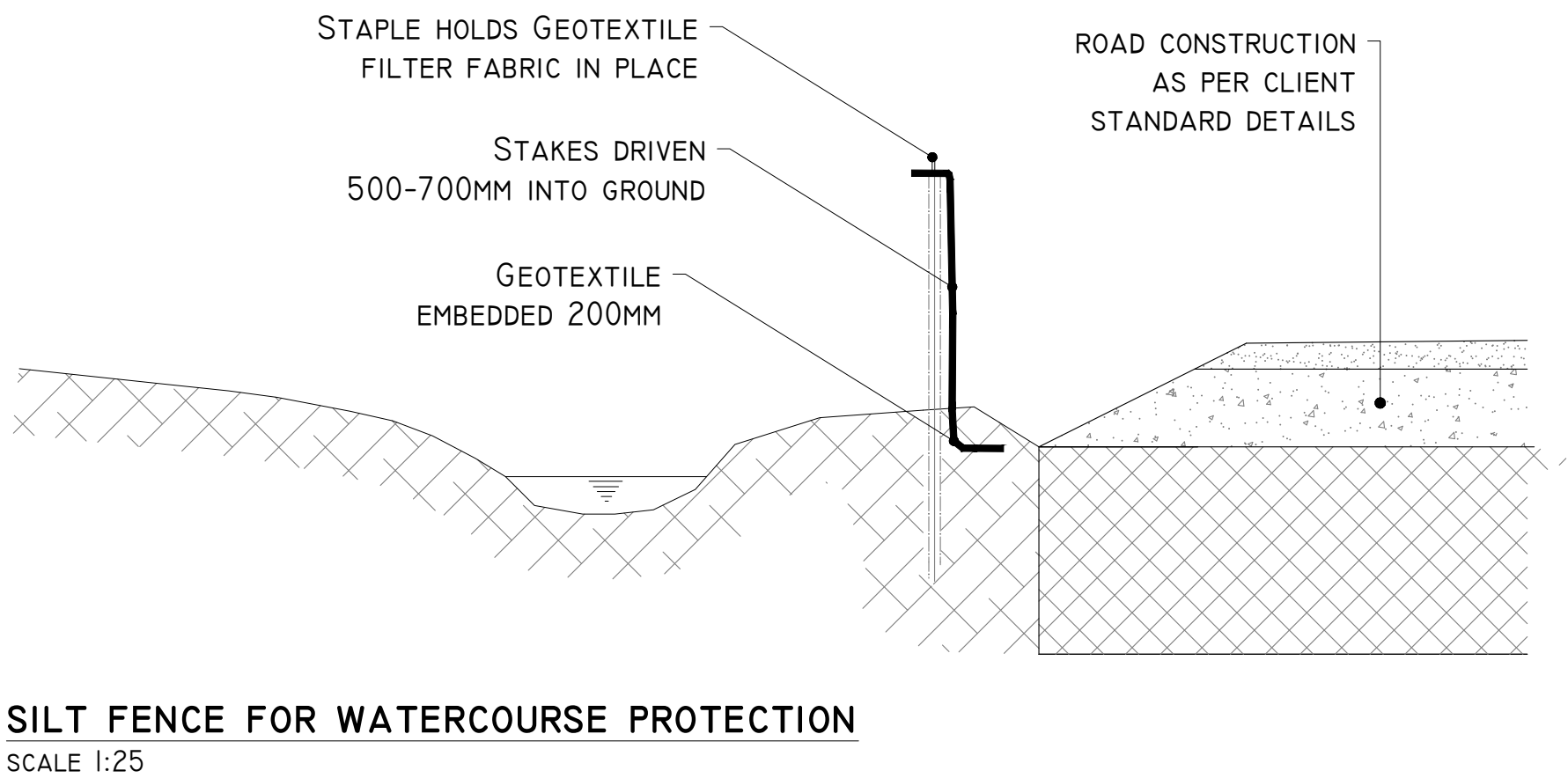
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Date: 09/02/2023	Checked By: M.G.

DETAIL EI

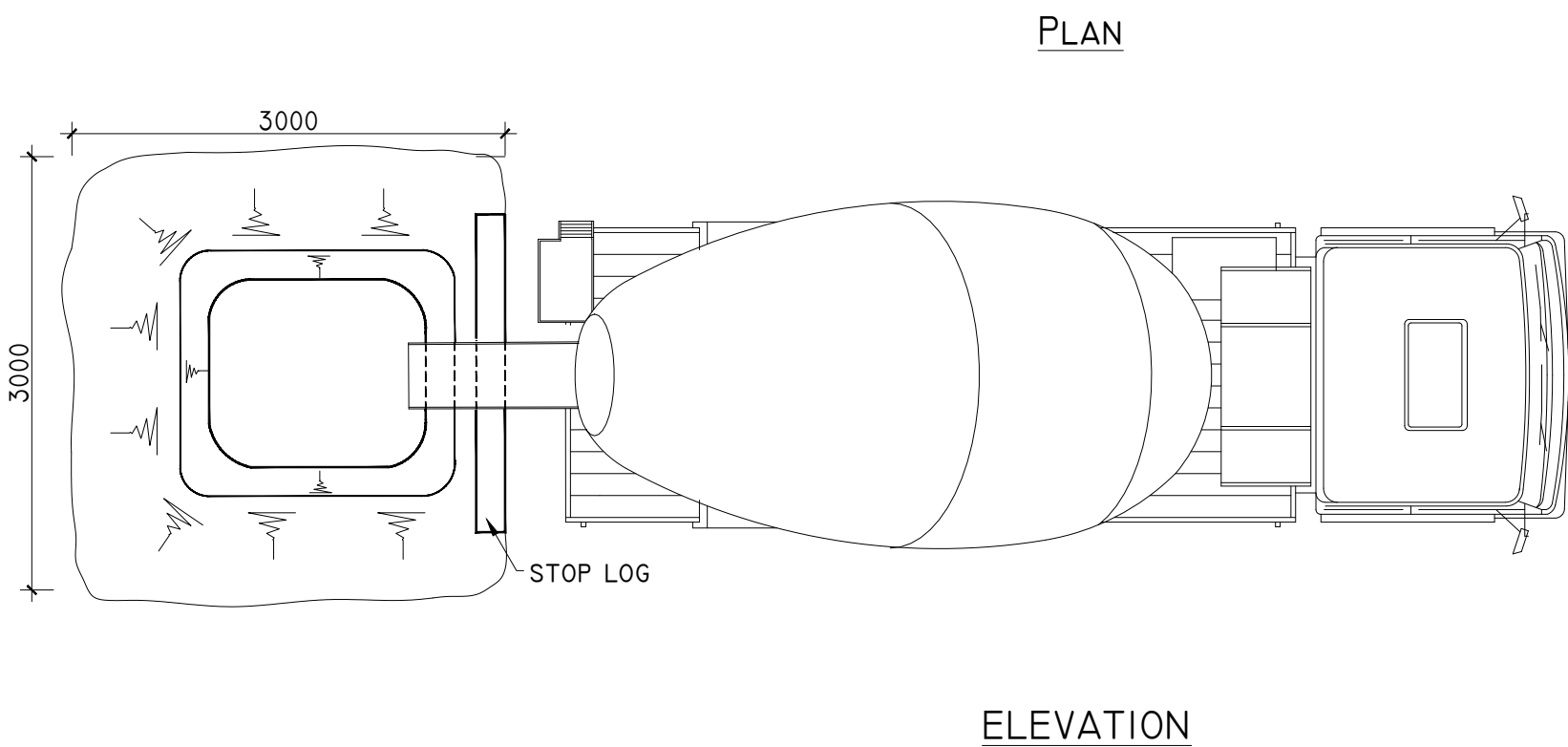


DETAIL E2

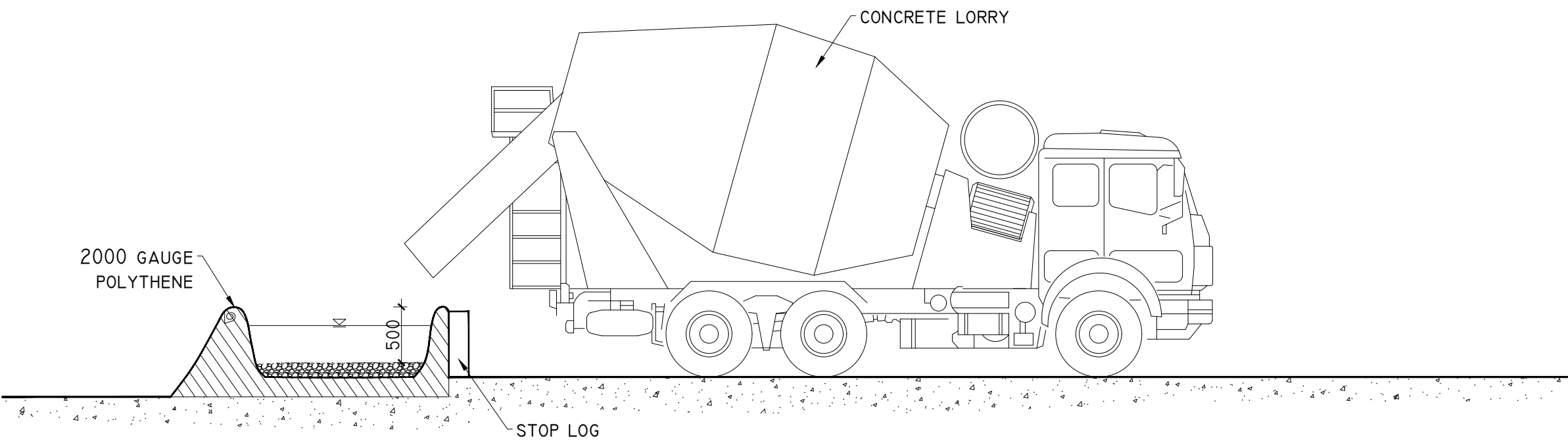


TEMPORARY CONCRETE WASH OUT PIT

SCALE 1:50



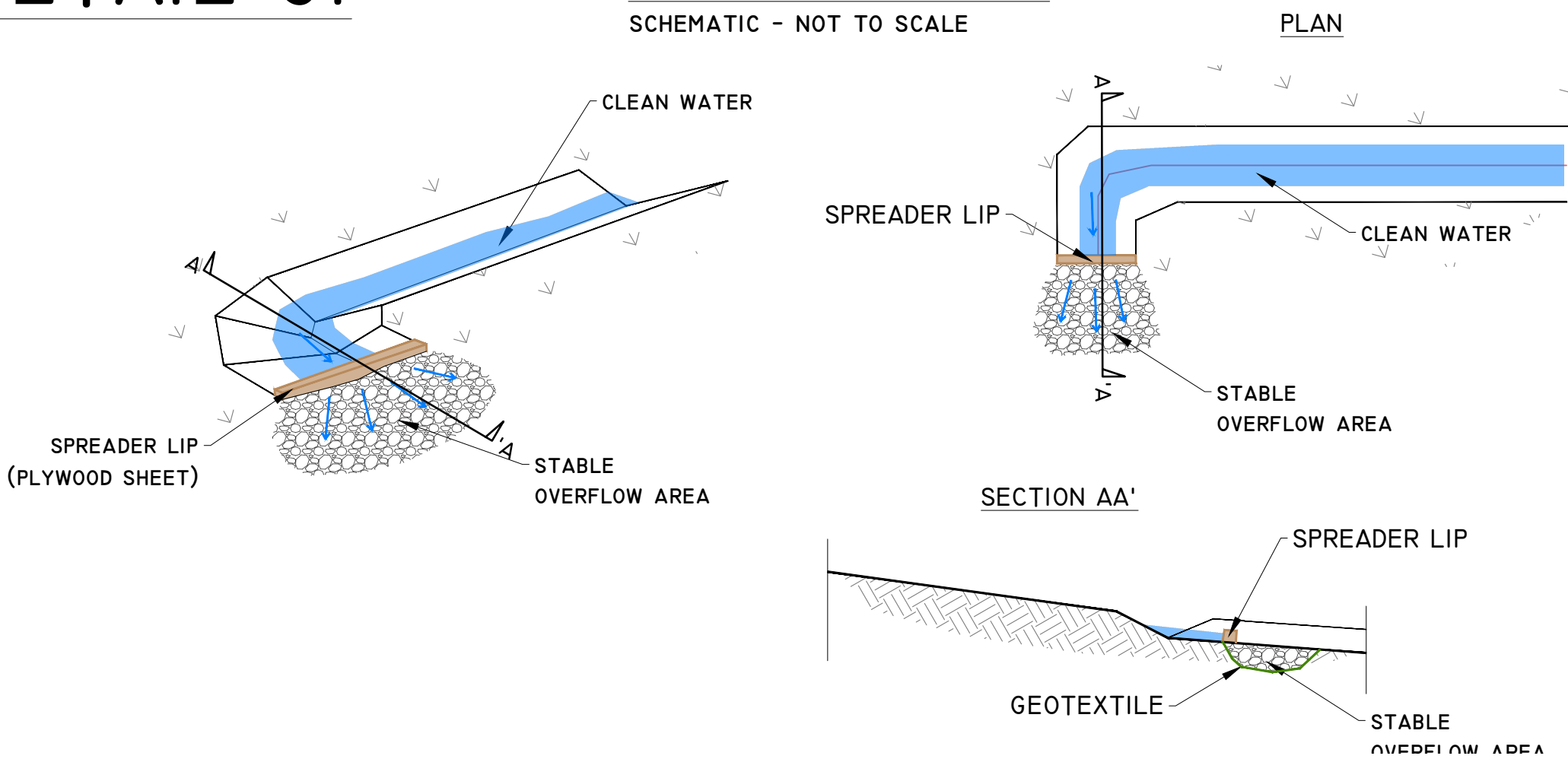
DETAIL F



DETAIL G1

LEVEL SPREADER DETAIL

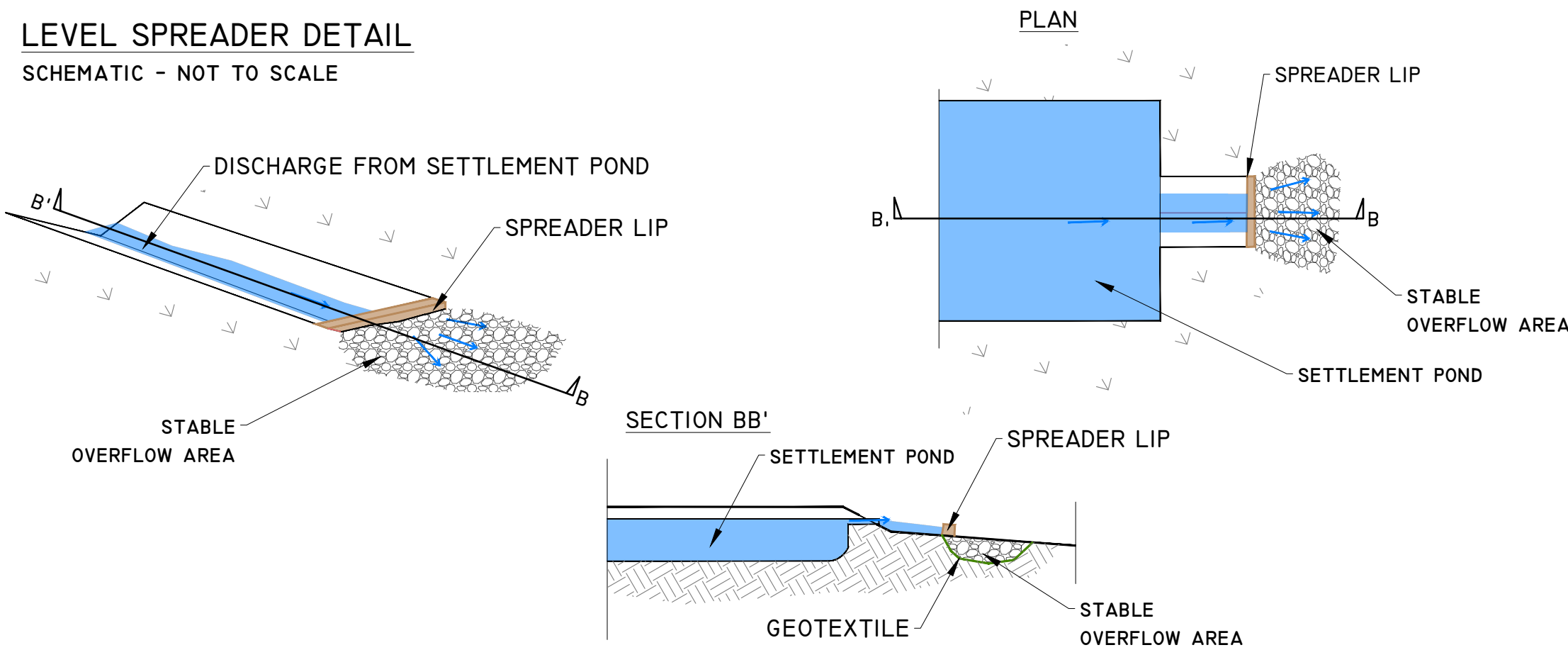
SCHEMATIC - NOT TO SCALE



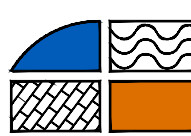
DETAIL G2

LEVEL SPREADER DETAIL

SCHEMATIC - NOT TO SCALE



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Client:	UMMA MORE LTD
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Job:	UMMA MORE RENEWABLE ENERGY DEVELOPMENT
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Title:	DRAINAGE DETAILS 3
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Figure No:	D503
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Drawing No:	P1553-0-0223-A1-D503-RevA
Sheet Size:	A1
Scale:	as shown (A1)
Date:	09/02/2023
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Checked By:	M.G.