Proposed Wind Farm Development

Coole Wind Farm, Co. Westmeath

Planning Permission Application Drawings

Schedule of Drawings

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P1320-2-0221-A1-D106-00A	Drainage Layout Sheet 6 of 7	1: 2,000	A1
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Continued →



Drawing Legend

Planning Application Boundary

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DRAWING TITLE:

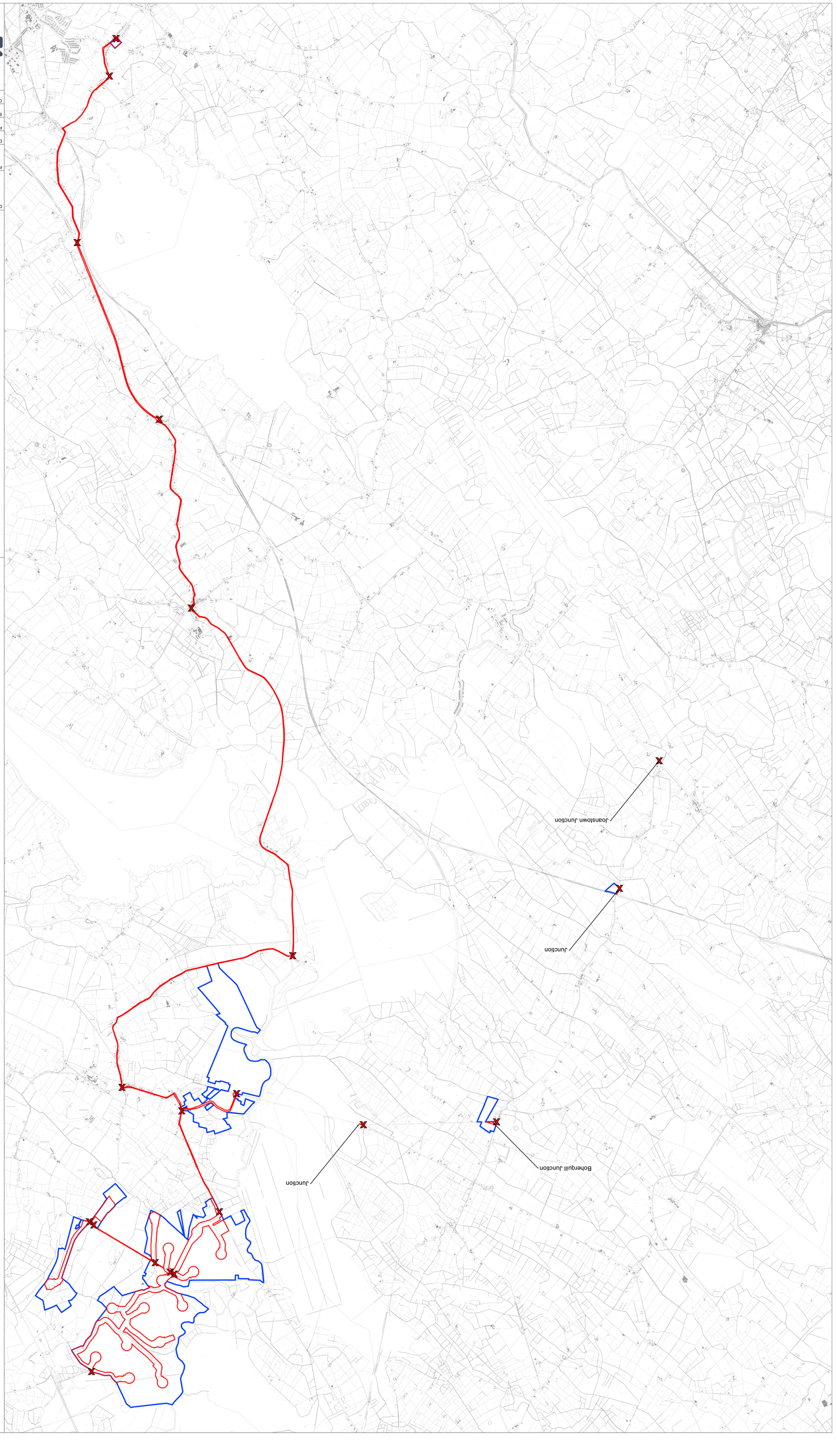
Location Context Map

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 01
SCALE: 1:60,000 @A3	DATE: 15.03.2021
OS SHEET No.: OS2226, OS2426	

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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Bounday
- Landowners Bounday
- Site Notice

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N

DRAWING TITLE:

Site Location Map

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	**Michael Watson**
PROJECT No.	DRAWING No.
200445	**200445 - 02**
SCALE:	DATE:
1:30,000 @ A3	**15.03.2021**

OS SHEET No.
3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275,

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Boherquill Junction

Junction

Junction

Johnstown Junction

1
2
3
4
5
6
7
8
9

Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Borrow Pit
- Temporary Construction Compound
- Indicative Internal Electrical Cabling
- Indicative Grid Connection Route
- Wind Farm Substation
- Existing Mullingar Substation

N

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DRAWING TITLE:

Site Location Key Plan

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 03
SCALE: 1:30,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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T01
ITM 640852, 777346
Level - 63.5m O.D.

T02
ITM 641419, 777267
Level - 64m O.D.

T03
ITM 641463, 776708
Level - 66m O.D.

T04
ITM 641994, 776908
Level - 64.5m O.D.

T05
ITM 641716, 776074
Level - 62.5m O.D.

T06
ITM 641168, 776069
Level - 64.5m O.D.

T07
ITM 640893, 776651
Level - 64.5m O.D.

T08
ITM 640511, 776034
Level - 61.5m O.D.

T09
ITM 640862, 775599
Level - 66m O.D.

T10
ITM 640322, 775448
Level - 68m O.D.

T11
ITM 639849, 775149
Level - 67m O.D.

T12
ITM 640263, 774772
Level - 68.5m O.D.

T13
ITM 640750, 775050
Level - 68m O.D.

T15
ITM. 642772, 775661
Level - 63m O.D.

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Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Proposed New Crossing
- Existing Crossing for Upgrade
- Passing Bays
- Unbound Hardcore Surface
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Temporary Construction Compound
- Indicative Internal Electrical Cabling
- Wind Farm Substation
- River/Stream
- Lakes

N

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DRAWING TITLE:
Site Location Plan
Sheet 1 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 04
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2226, 2227, 2228, 2229, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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

T12
ITM 640263, 774772
Level - 68.5m O.D.

T14
ITM. 640986, 774516
Level - 67m O.D.

Refer to DWG No. 200445 - 38 & 39

Refer to DWG No. 200445 - 40

WATER CROSSING 0.1
JOINT BAY 1
WATER CROSSING 0.2
JOINT BAY 2
WATER CROSSING 1
JOINT BAY 3
JOINT BAY 4
JOINT BAY 5
JOINT BAY 6

MONKTOWN
COOLE
MULLAGH
TURBOTSTOWN
Coole Lower
Coole Upper
Bog

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Proposed New Crossing
- Passing Bays
- Unbound Hardcore Surface
- Crossing Point for Landowners
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Borrow Pit
- Indicative Internal Electrical Cabling
- Indicative Grid Connection Route
- Wind Farm Substation
- Indicative Joint Bay
- Watercrossing
- River/Stream

N

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DRAWING TITLE:
Site Location Plan Sheet 2 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 05
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Website: www.mkoireland.ie

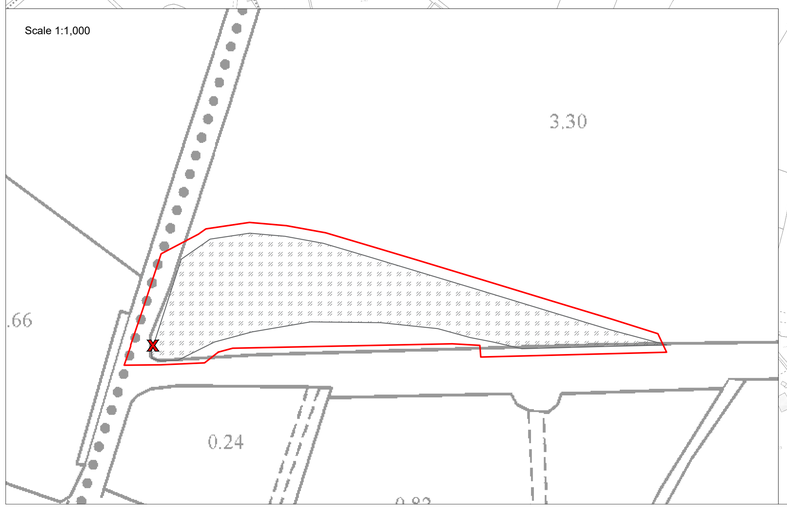
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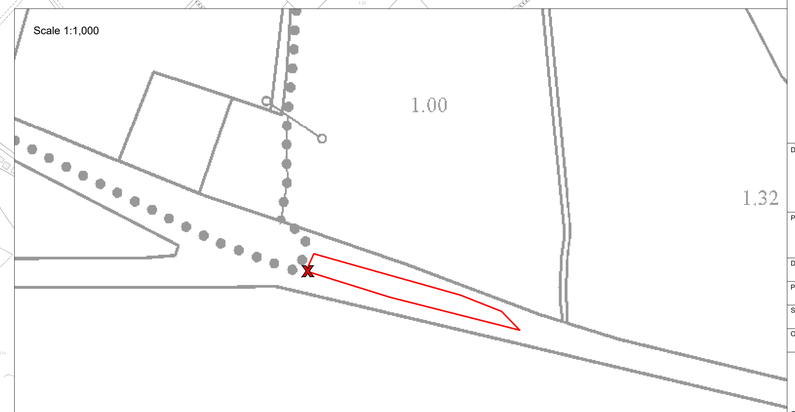
Drawing Legend

- Planning Application Boundary
- Unbound Hardcore Surface
- Site Notice

Scale 1:1,000



Scale 1:1,000



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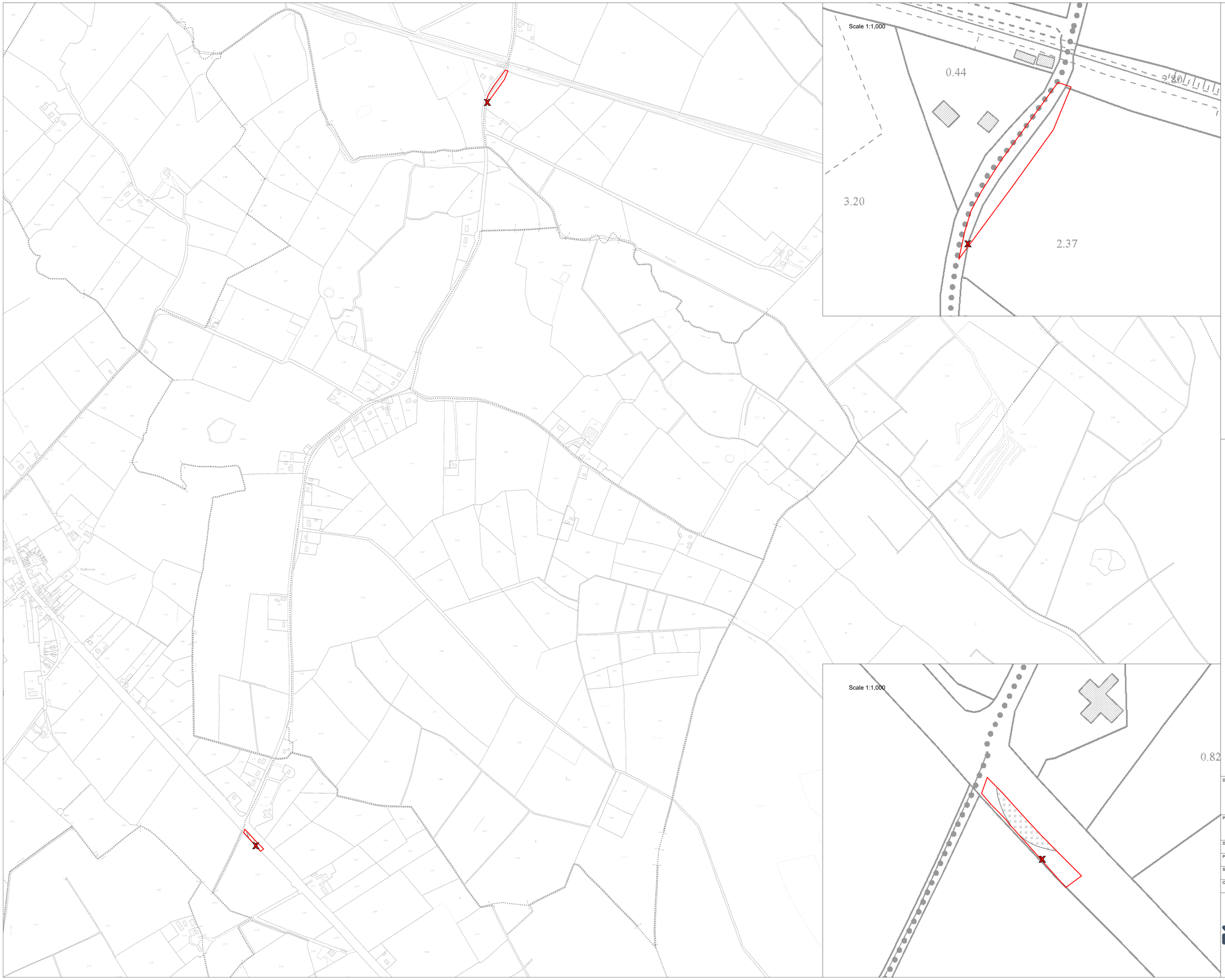
DRAWING TITLE:
Site Location Plan Sheet 3 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 06
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Scale 1:1,000

Scale 1:1,000

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Drawing Legend

- Planning Application Boundary
- Unbound Hardcore Surface
- Site Notice

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N

DRAWING TITLE:

Site Location Plan Sheet 4 of 9

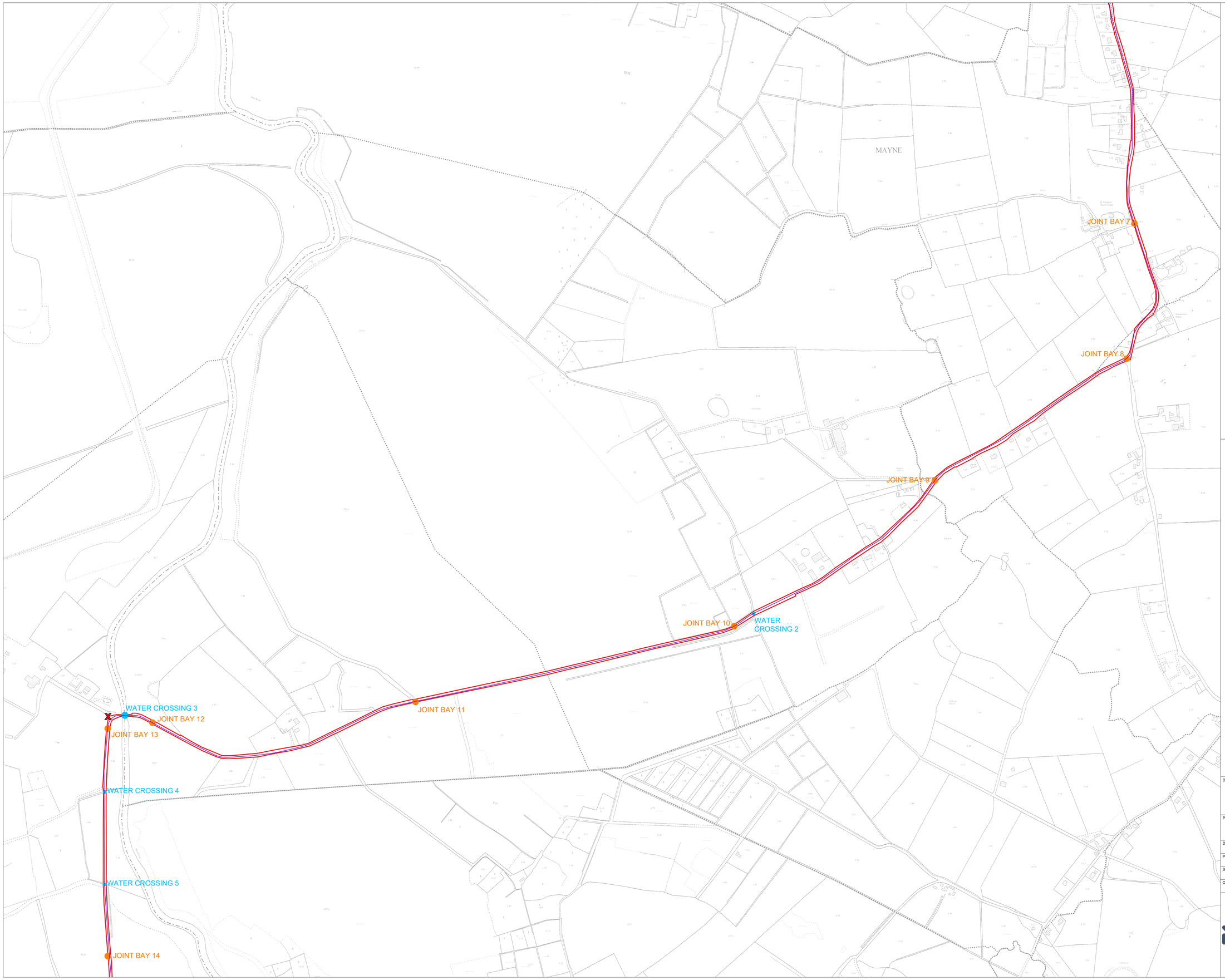
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 07
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

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N

DRAWING TITLE:
Site Location Plan Sheet 5 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 08
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2226, 2227, 2228, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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JOINT BAY 14

WATER CROSSING 6

WATER CROSSING 7

JOINT BAY 15

WATER CROSSING 8

JOINT BAY 16

JOINT BAY 17

WATER CROSSING 9

JOINT BAY 18

WATER CROSSING 10

JOINT BAY 19

WATER CROSSING 11

WATER CROSSING 12

JOINT BAY 20

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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

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N

DRAWING TITLE:
Site Location Plan Sheet 6 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No: 200445	DRAWING No: 200445 - 09
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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

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JOINT BAY 21
WATER CROSSING 13
JOINT BAY 22
JOINT BAY 23
WATER CROSSING 14
JOINT BAY 24
JOINT BAY 25
JOINT BAY 25
ABBEYLAND
MULTYFARNHAM
FROGHANSTO

Drawing Legend

- Planning Application Boundary
- Site Notice
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

N

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DRAWING TITLE:
Site Location Plan
Sheet 7 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 10
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2235, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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JOINT BAY 25

JOINT BAY 26

WATER CROSSING 15

JOINT BAY 27

JOINT BAY 28

JOINT BAY 29

JOINT BAY 30

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Drawing Legend

- Planning Application Boundary
- Site Notice
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

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N

DRAWING TITLE:

Site Location Plan Sheet 8 of 9

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 11
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

JOINT BAY 30
JOINT BAY 31
JOINT BAY 32
WATER CROSSING 16
JOINT BAY 33
JOINT BAY 34
JOINT BAY 35
JOINT BAY 36
FARRANISTICK
TULLAGHAN
IRISHTOWN
BALLYGL
WALSHESTOWN NORTH
(Part of)

Drawing Legend

- Planning Application Boundary
- Site Notice
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing
- Existing Mullingar Substation

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DRAWING TITLE:
Site Location Plan Sheet 9 of 9

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No: 200445	DRAWING No: 200445 - 12
SCALE: 1:5,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Borrow Pit
- Temporary Construction Compound
- Indicative Internal Electrical Cabling
- Indicative Grid Connection Route
- Wind Farm Substation
- Existing Mullingar Substation

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DRAWING TITLE:

Site Layout Key Plan B

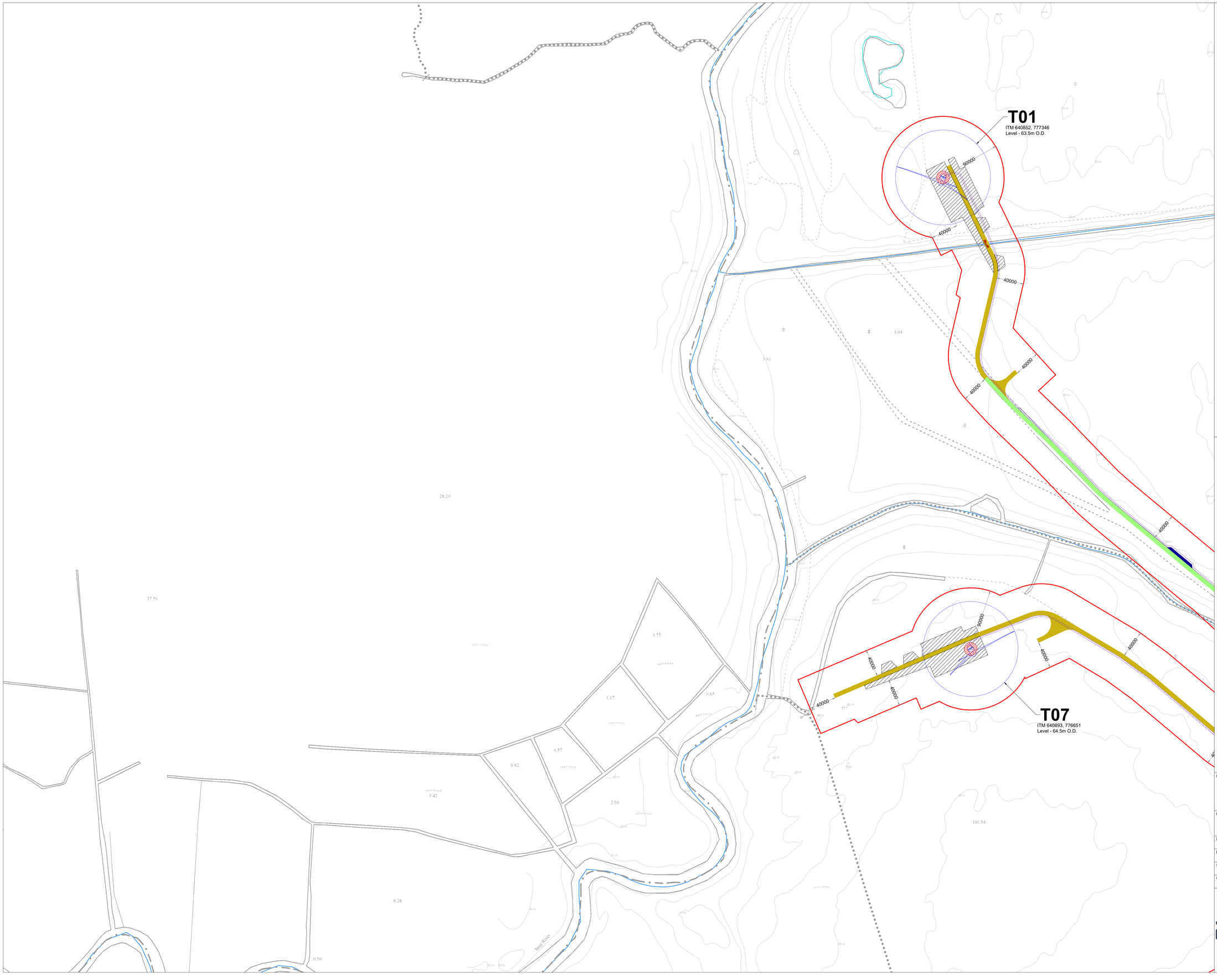
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 13
SCALE: 1:30,000 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Proposed Road
- Proposed New Crossing
- Passing Bays
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Indicative Internal Electrical Cabling
- River/Stream

N

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DRAWING TITLE:

Site Layout Plan
Sheet 1 of 24

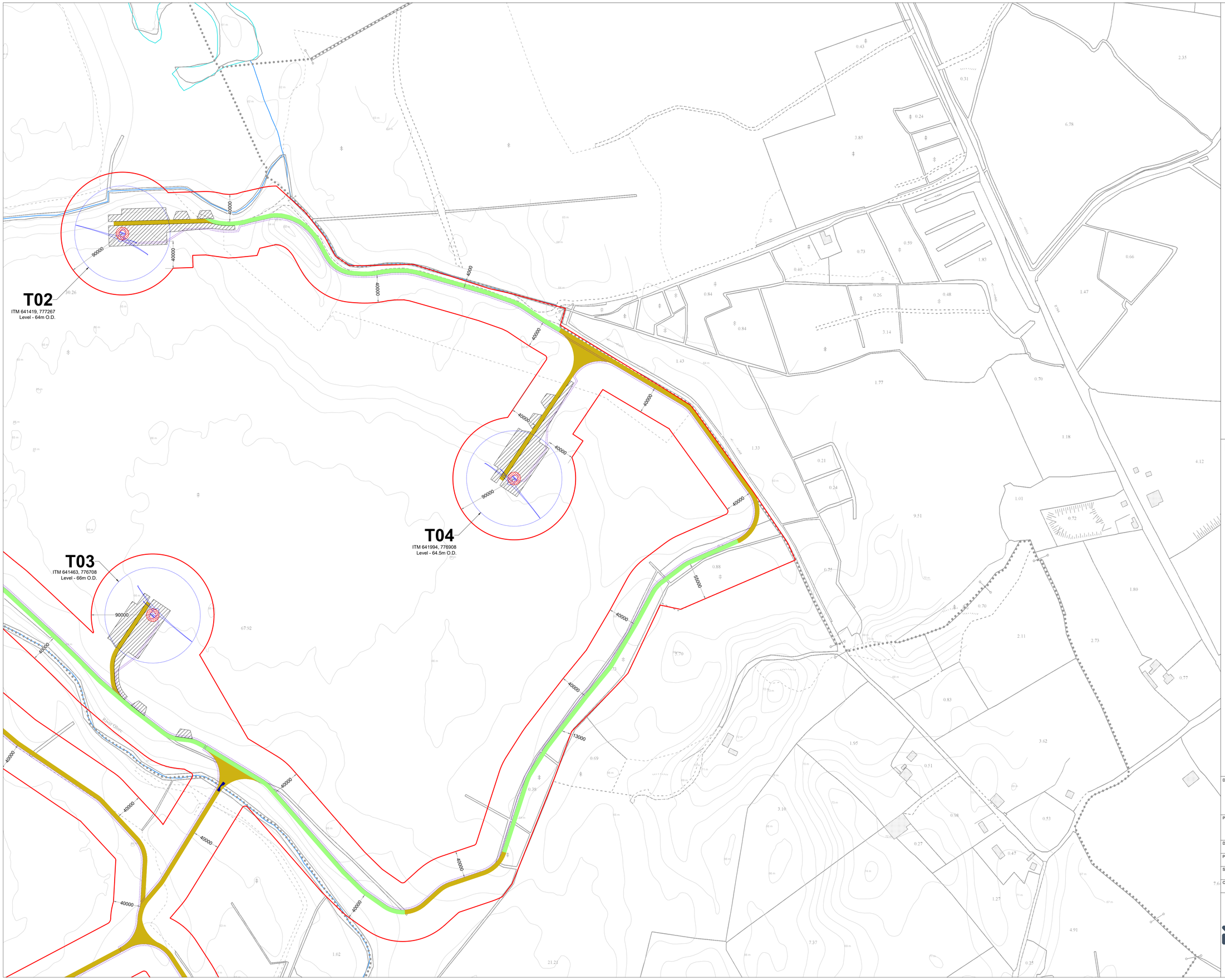
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 14
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Proposed Road
- Existing Crossing for Upgrade
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Indicative Internal Electrical Cabling
- River/Stream
- Lakes

N

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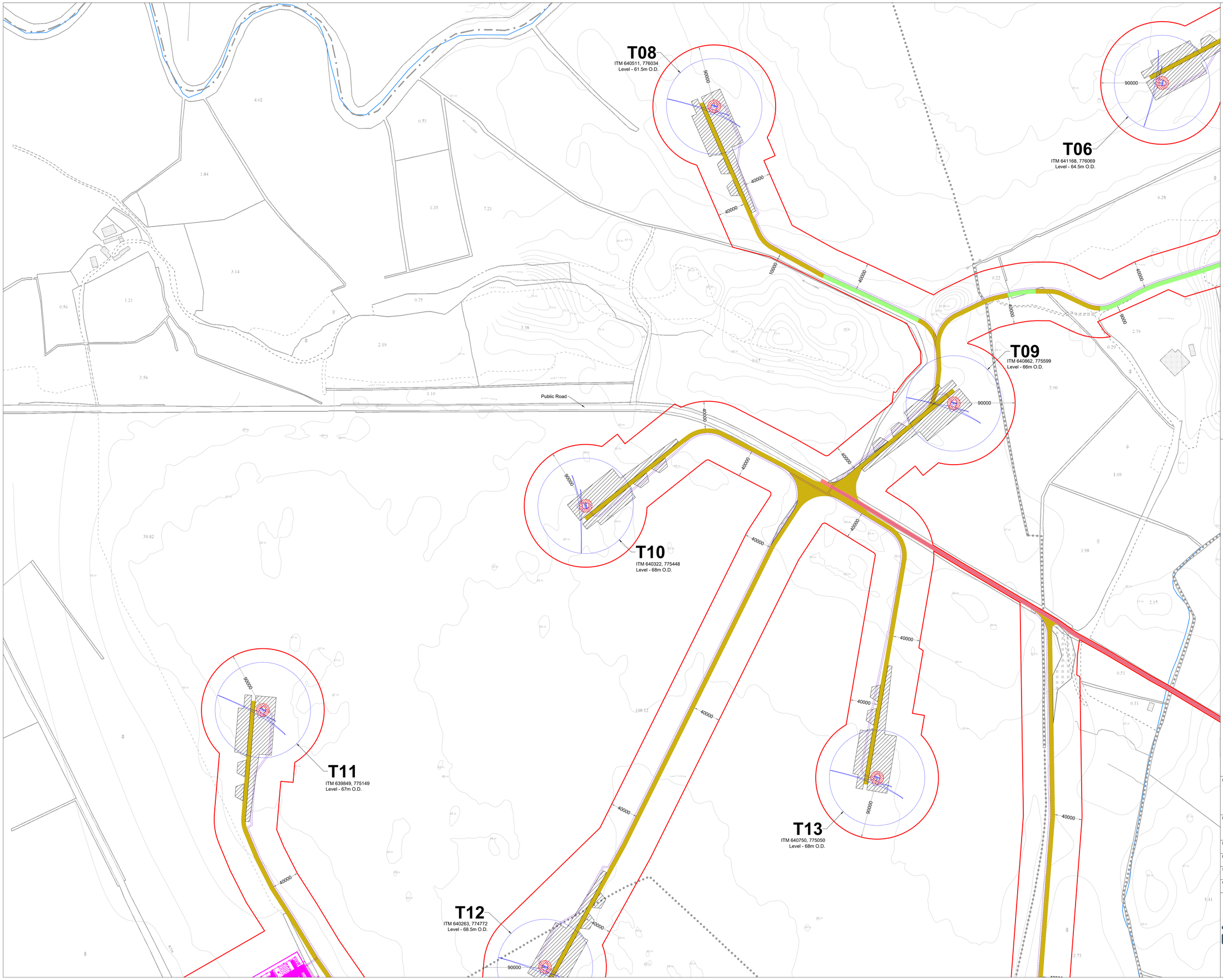
DRAWING TITLE:
Site Layout Plan Sheet 2 of 24

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 15
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Existing Crossing for Upgrade
- Unbound Hardcore Surface
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Indicative Internal Electrical Cabling
- Wind Farm Substation
- River/Stream

N

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DRAWING TITLE:

Site Layout Plan
Sheet 3 of 24

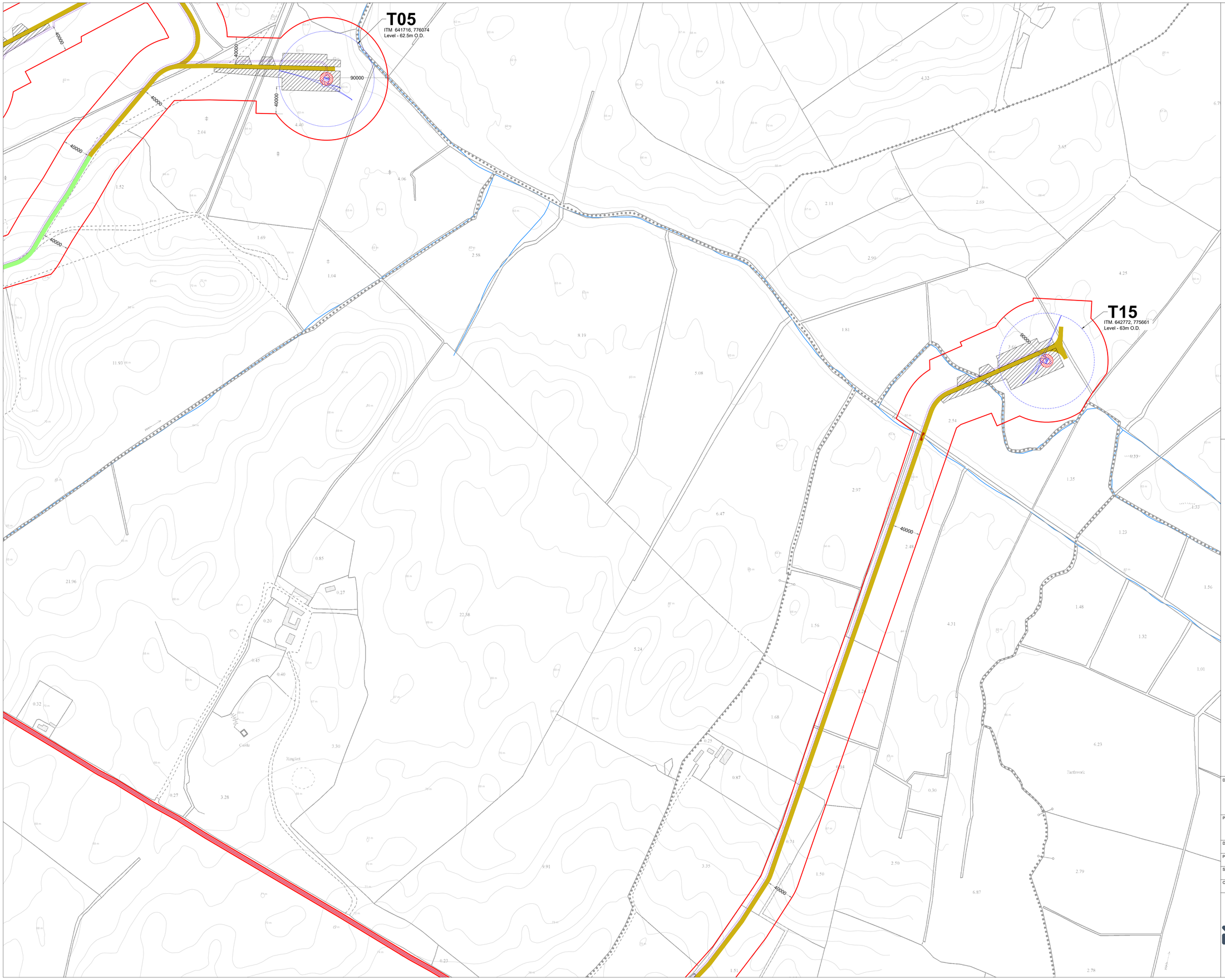
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 16
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Proposed New Crossing
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Indicative Internal Electrical Cabling
- Wind Farm Substation
- River/Stream

N

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DRAWING TITLE:

Site Layout Plan
Sheet 4 of 24

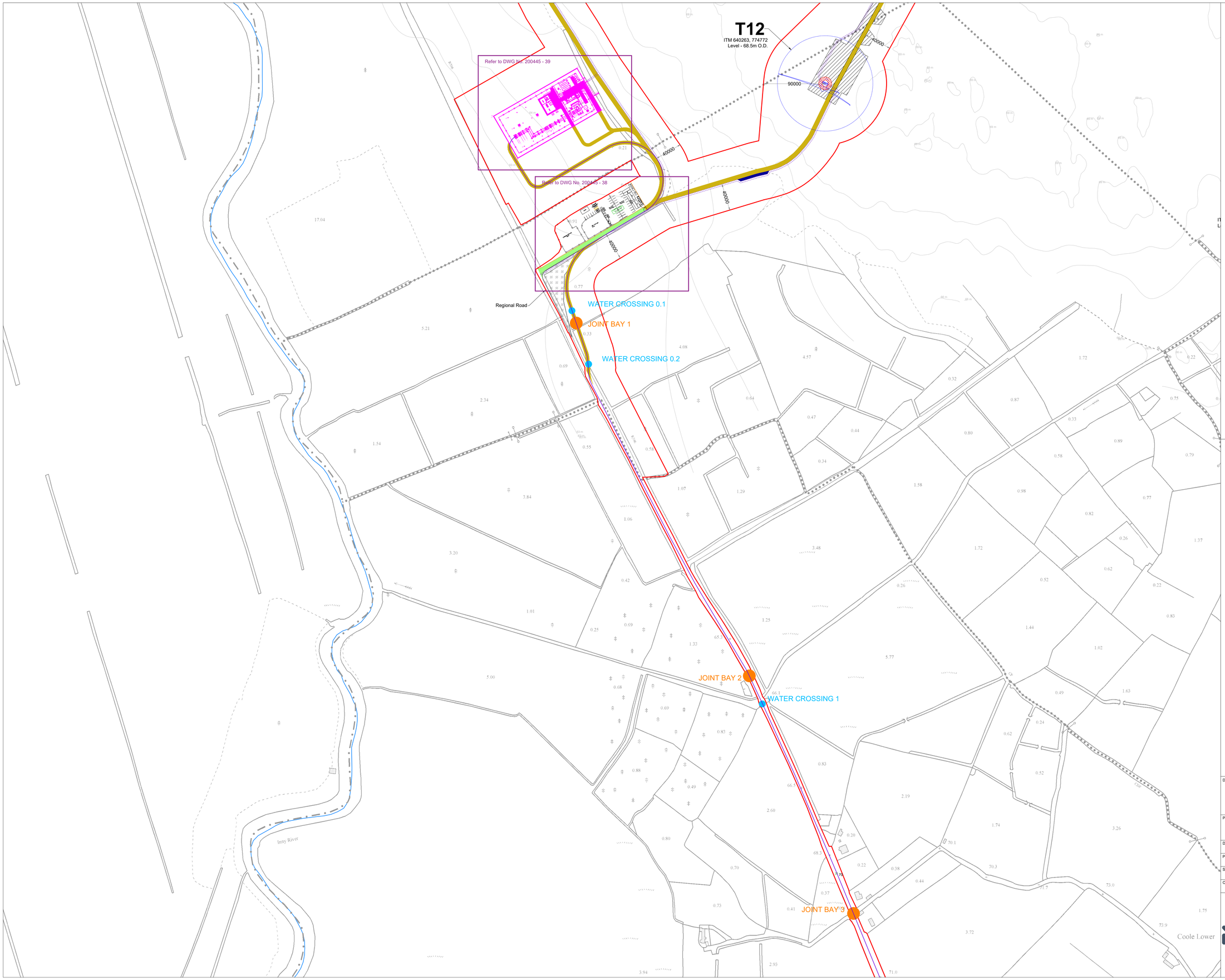
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 17
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Existing Internal Road to be Upgraded
- Existing External Road to be Upgraded
- Proposed Road
- Unbound Hardcore Surface
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Temporary Construction Compound
- Indicative Internal Electrical Cabling
- Indicative Grid Connection Route
- Wind Farm Substation
- X Spot Height
- Indicative Joint Bay
- Watercrossing
- River/Stream

N

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DRAWING TITLE:

Site Layout Plan
Sheet 5 of 24

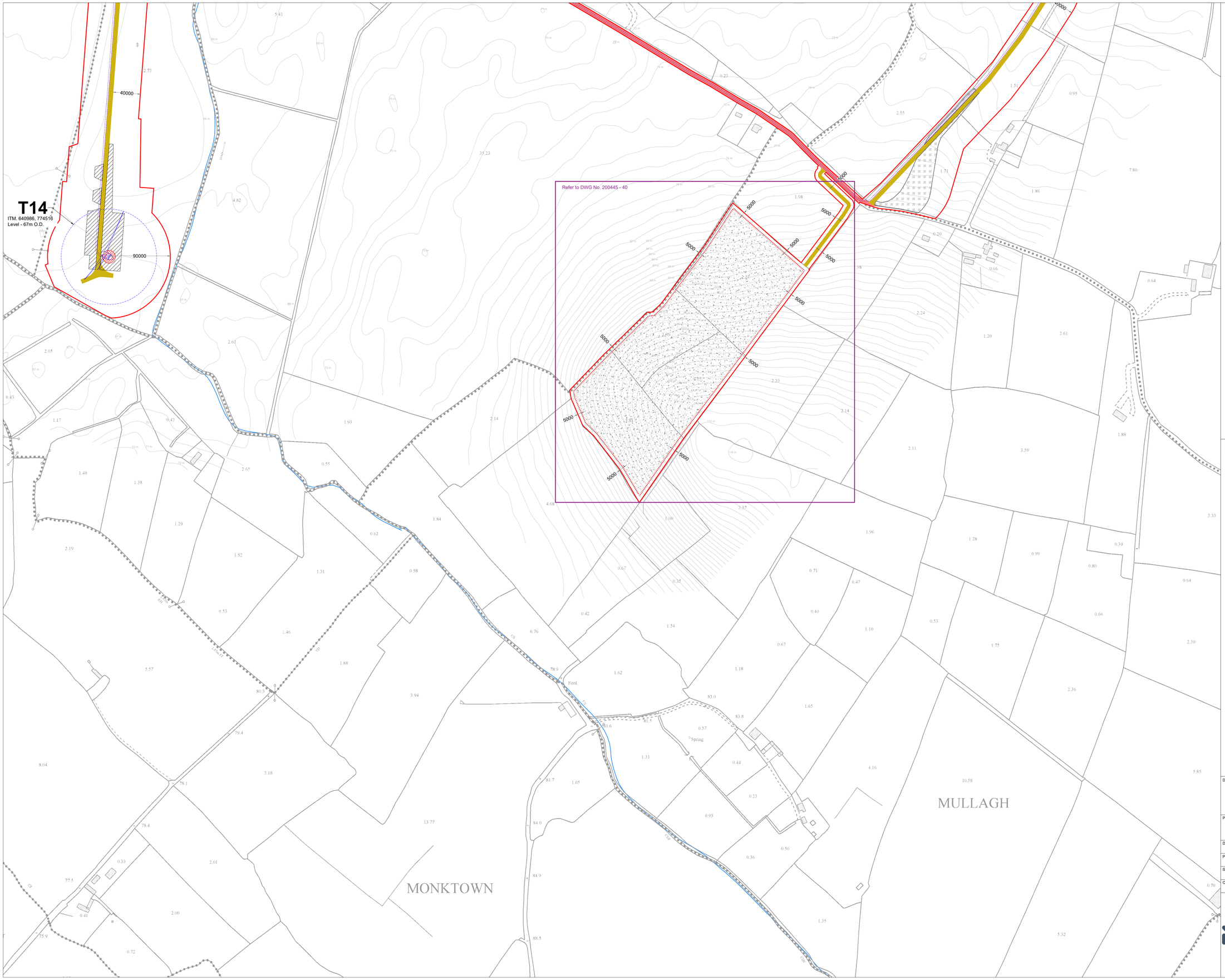
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 18
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Existing External Road to be Upgraded
- Proposed Road
- Unbound Hardcore Surface
- Crane Pad Hardstanding Area
- Turbine Foundation
- Turbine Sweep Area
- Borrow Pit
- Indicative Internal Electrical Cabling
- River/Stream

N

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DRAWING TITLE:

Site Layout Plan
Sheet 6 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 19
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Proposed Road
- Unbound Hardcore Surface
- Crossing Point for Landowners
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay
- River/Stream

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N

DRAWING TITLE:

Site Layout Plan
Sheet 7 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 20
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay

N

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DRAWING TITLE:

Site Layout Plan
Sheet 8 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 21
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Ringfort

Earthwork

Scale 1:1,000

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Drawing Legend

Planning Application Boundary

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N

DRAWING TITLE:
Site Layout Plan
Sheet 9 of 24

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 22
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2224, 2227, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

Planning Application Boundary

Unbound Hardcore Surface

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N

Scale 1:1,000

DRAWING TITLE:

Site Layout Plan
Sheet 10 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 23
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

Planning Application Boundary

Scale 1:1,000

N

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DRAWING TITLE:

Site Layout Plan
Sheet 11 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 24
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2625, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Scale 1:1,000

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Drawing Legend

Planning Application Boundary

Unbound Hardcore Surface

N

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DRAWING TITLE:

Site Layout Plan
Sheet 12 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 25
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2226, 2227, 2228, 2229, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay

N

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DRAWING TITLE:

Site Layout Plan
Sheet 13 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 26
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay
- Watercrossing

N

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DRAWING TITLE:

Site Layout Plan
Sheet 14 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 27
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay
- Watercrossing

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DRAWING TITLE:

Site Layout Plan
Sheet 15 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 28
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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JOINT BAY 14

WATER CROSSING 6

WATER CROSSING 7

JOINT BAY 15

WATER CROSSING 8

JOINT BAY 16

JOINT BAY 17

WATER CROSSING 9

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay
- Watercrossing

N

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DRAWING TITLE:

Site Layout Plan
Sheet 16 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 29
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

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DRAWING TITLE:

Site Layout Plan
Sheet 17 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 30
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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JOINT BAY 21

WATER CROSSING 13

JOINT BAY 22

SOHO

Earthwork (Site of)

School

Ringfort

Cattle (Site Of)

Ringfort

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- Indicative Joint Bay
- Watercrossing

N

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DRAWING TITLE:

Site Layout Plan
Sheet 18 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 31
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay

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DRAWING TITLE:

Site Layout Plan
Sheet 19 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 32
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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WATER CROSSING 14

JOINT BAY 24

JOINT BAY 25

JOINT BAY 25

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Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay
- Watercrossing

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N

DRAWING TITLE:

Site Layout Plan
Sheet 20 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.:	DRAWING No.:
200445	200445 - 33
SCALE:	DATE:
1:2,500 @ A1	15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Planning and Environmental Consultants
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Ireland, H91 VW84
+353 (0) 91 735611
email: info@www.mkoireland.ie
Website: www.mkoireland.ie


JOINT BAY 25
JOINT BAY 26
WATER CROSSING 15
JOINT BAY 27
Ballynafid
Ballynafid Lake
School
Ringfort
Tobraadrin
Ringfort
Ringfort
Ringfort
Ringfort
Ringfort
Abbey
Grave Yard
Earthwork
Portnashangan
Ringfort
Ringfort
Ringfort
Ringfort
Ringfort

JOINT BAY 28

JOINT BAY 29

JOINT BAY 30

Ringfort

Scragh Bog

Project Design Drawing Notes

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5. All contractors, whether main or sub-contractors, must visit the site and are responsible for taking and checking any and all dimensions and levels that relate to the works.
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 typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay

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DRAWING TITLE:

Site Layout Plan
Sheet 22 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No. 200445	DRAWING No. 200445 - 35
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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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 typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

JOINT BAY 30

JOINT BAY 31

JOINT BAY 32

Church

Burial Ground

Earthwork

Ringfort

Gallow

Royal Canal Supply

Fulacht Fia

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- X Spot Height
- Indicative Joint Bay

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N

DRAWING TITLE:

Site Layout Plan
Sheet 23 of 24

PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 36
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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4. Do not scale off this drawing. Figured metric dimensions only should be taken off this drawing.
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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 typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.
9. Exact location of cable/joint bay in the road corridor to be subject to ESB specifications and agreement with Westmeath County Council

WATER CROSSING 16

JOINT BAY 33

JOINT BAY 34

JOINT BAY 35

JOINT BAY 36

FARRANISTICK

IRISHTOWN

IRISHTOWN

BALLYGL

Castlemitchel

Levington Park

College Hill

Pond

Pond

Met Station

Fullacht Fia

Level Cross

Date of photography: 13/3

Drawing Legend

- Planning Application Boundary
- Indicative Grid Connection Route
- Existing Mullingar Substation
- X Spot Height
- Indicative Joint Bay
- Watercrossing

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N

DRAWING TITLE:

Site Layout Plan
Sheet 24 of 24

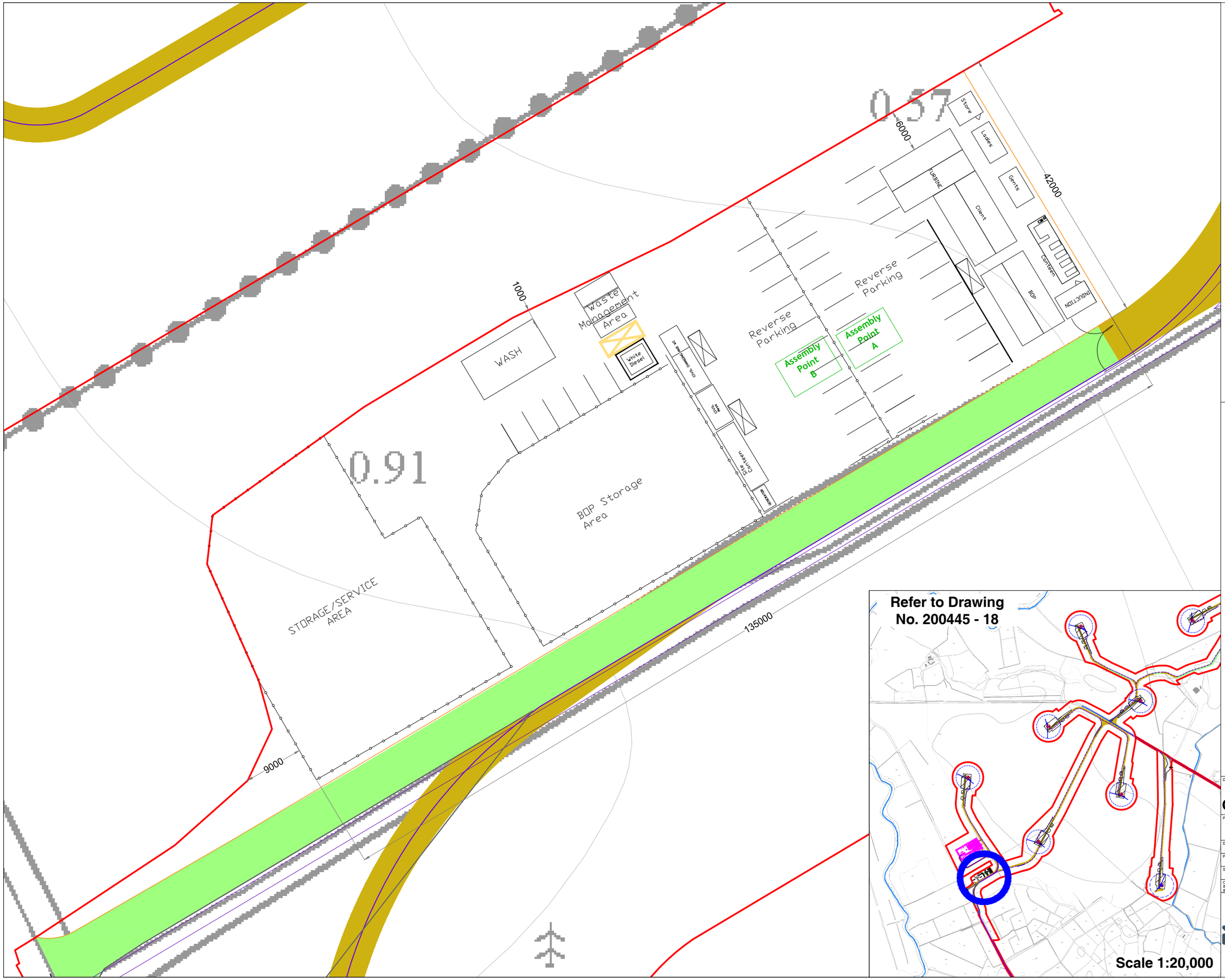
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 37
SCALE: 1:2,500 @ A1	DATE: 15.03.2021

OS SHEET No.: 2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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0.57
0.91
6000
42000
1000
9000
135000
WASH
Waste Management Area
White Diesel
Reverse Parking
Reverse Parking
Assembly Point B
Assembly Point A
Store
Ladies
Gents
TURBINE
Client
Canteen
BOP
INDUCTION
BOP Storage Area
Site Office
Site Office
Site Office

Drawing Notes

1. Layout and arrangements of substation buildings and electrical equipment is shown indicatively and for illustration purposes only as final specifications of buildings and electrical equipment is to be dictated by Eirgrid/ESB networks requirements.



Drawing Legend

- Planning Application Boundary
- Proposed Road
- Indicative Internal Electrical Cabling
- Indicative Grid Connection Route

N

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DRAWING TITLE:

Substation Layout

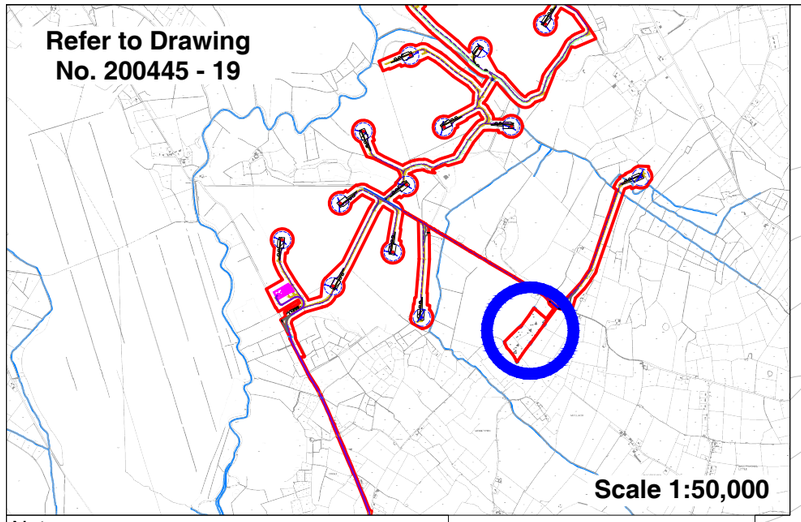
PROJECT TITLE:

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 39
SCALE: 1:500 @A3	DATE: 15.03.2021

OS SHEET No.:
2236, 2237, 2238, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Website: www.mkoireland.ie



Notes:

1. 5m buffer to be maintained around borrow pit edge
2. Topsoil and overburden to be used for borrow pit reinstatement following extraction.
3. Borrow pit access location off local road to be gated post - construction.

Drawing Legend

- Planning Application Boundary
- Proposed Road
- Grassed Area Following Reinstatement
- Grassed Sloped Area
- Existing Hedgerow to be Retained
- Borrow Pit Fence

Local Road

A

A1

1

1

N

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DRAWING TITLE:
Borrow Pit Reinstatement

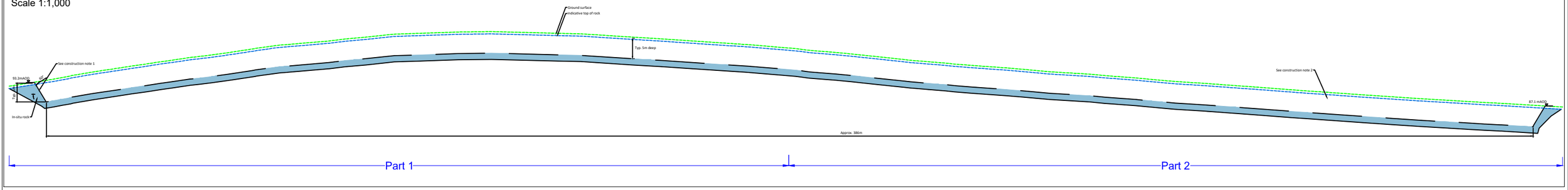
PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 40
SCALE: 1:2,000 @A3	DATE: 15.03.2021

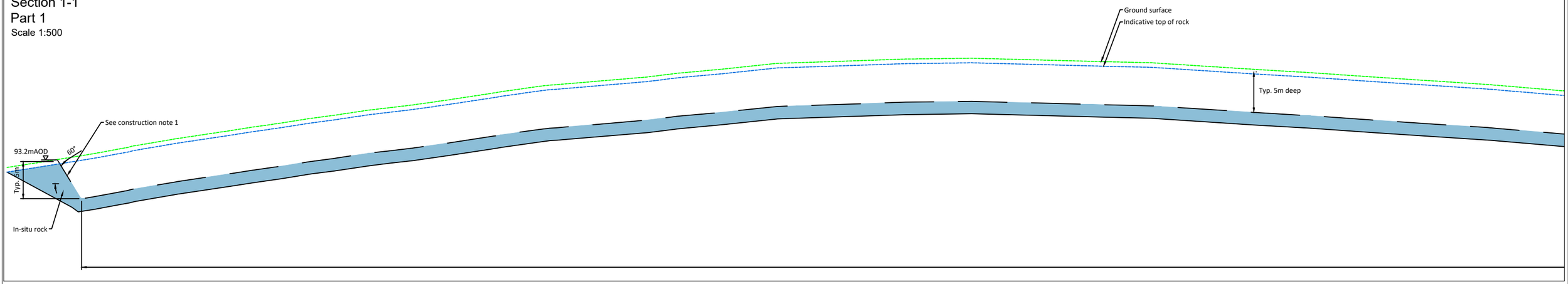
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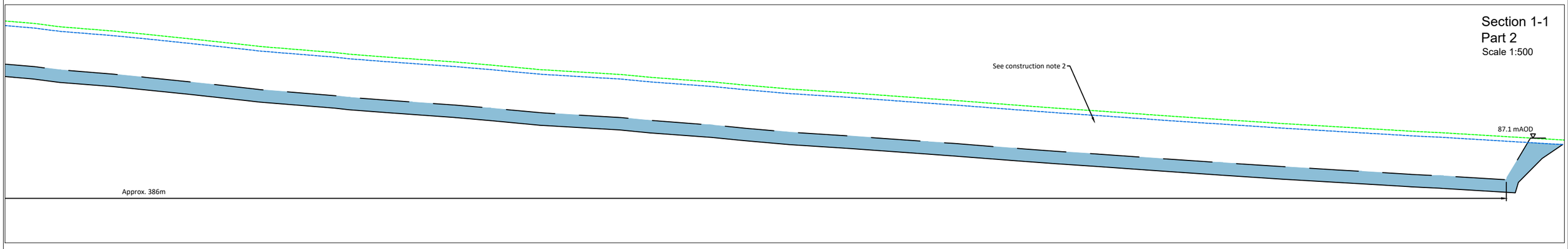
Section 1-1
Scale 1:1,000



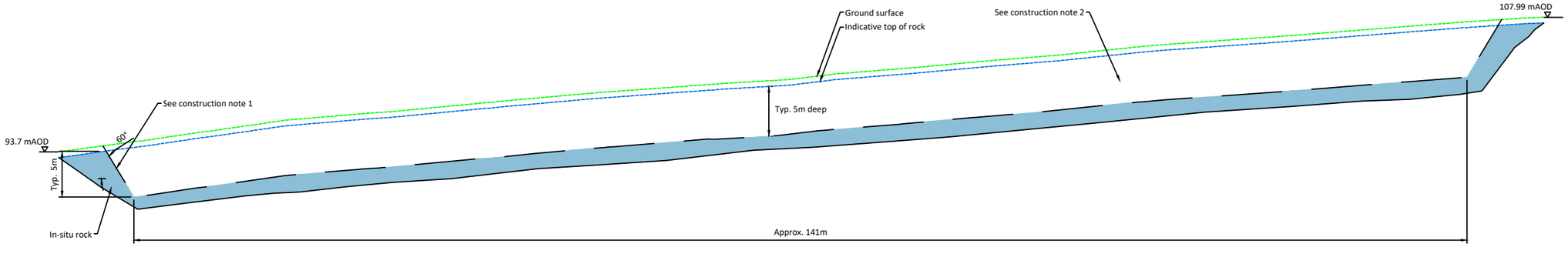
Section 1-1
Part 1
Scale 1:500



Section 1-1
Part 2
Scale 1:500



Section A-A
Part 1
Scale 1:500

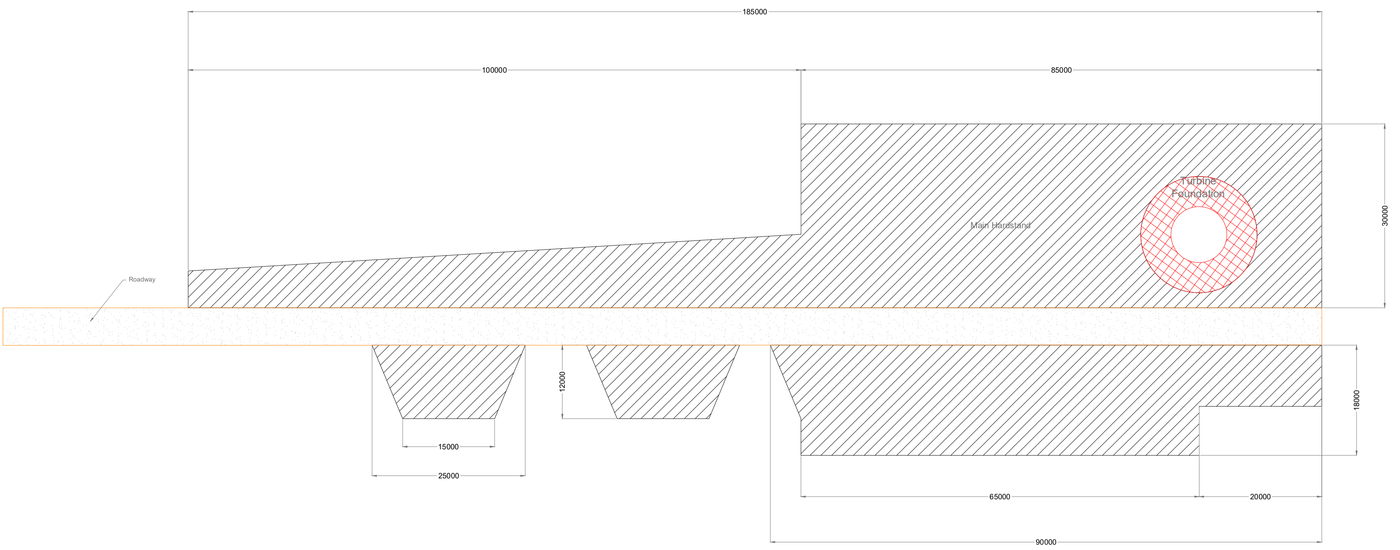


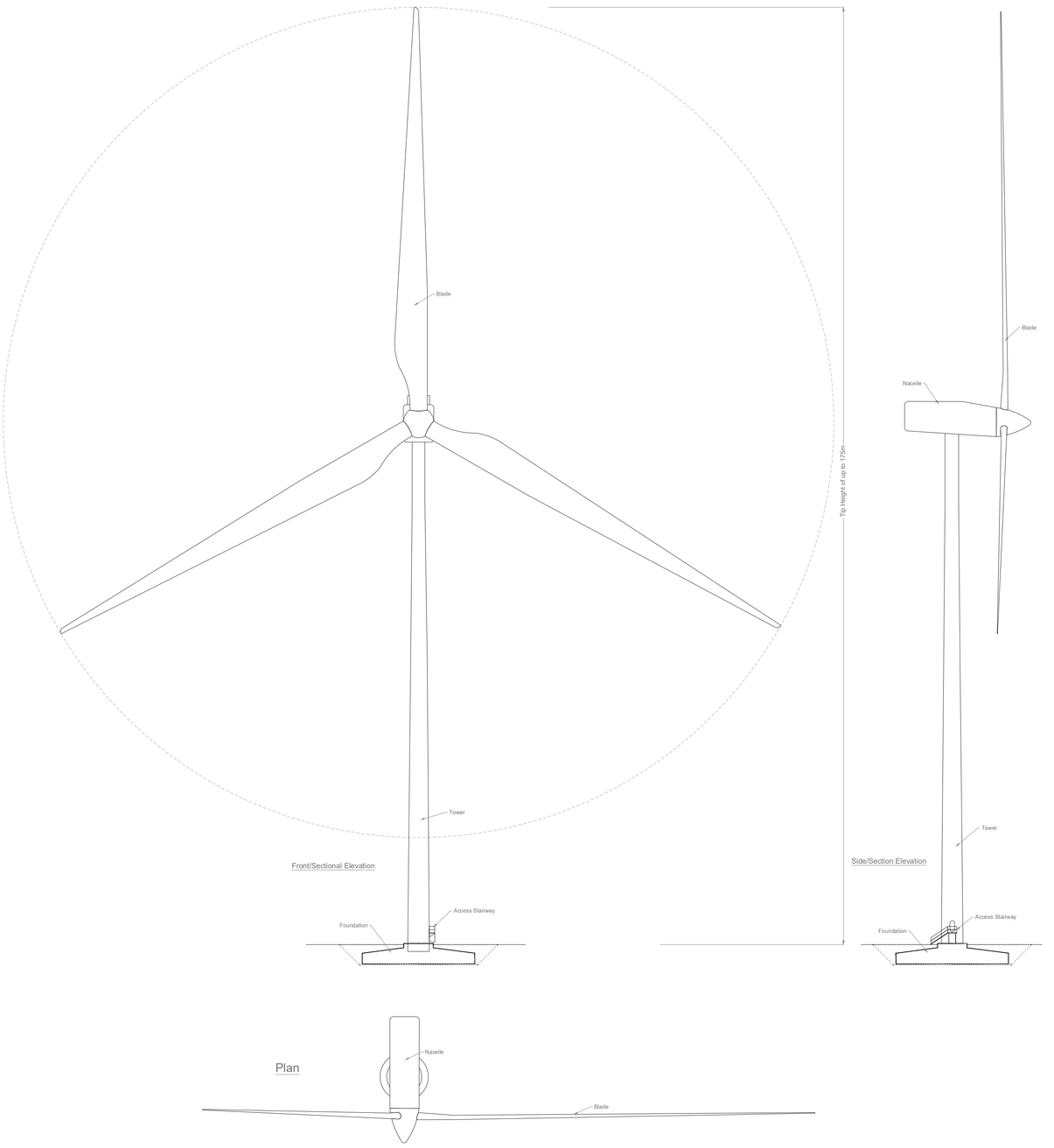
DRAWING TITLE:
Borrow Pit Sections

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
POR	IH
PROJECT No.: 200445	DRAWING No.: 200445 - 41
SCALE: As Shown @ A3	DATE: 15.03.2021
OS SHEET No.:	

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Drawing Notes

1. Proposed wind turbines to have a tip height of up to 175m.
2. Exact make and model of the turbine to be dictated by a competitive tender process.
3. Installed wind turbine not to exceed maximum size envelope set out above in any blade length and hub-height configuration.

DRAWING TITLE:

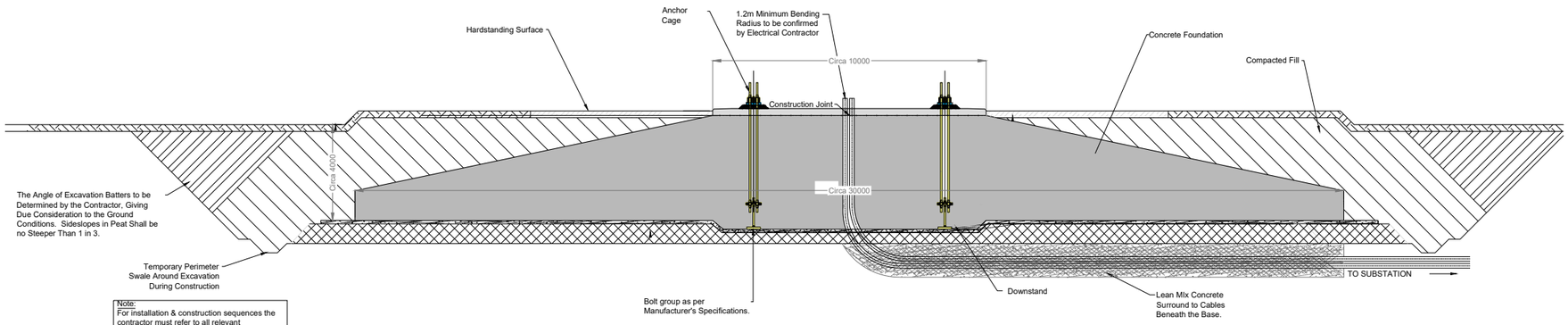
Typical Wind Turbine Hardstanding & Elevations

PROJECT TITLE:

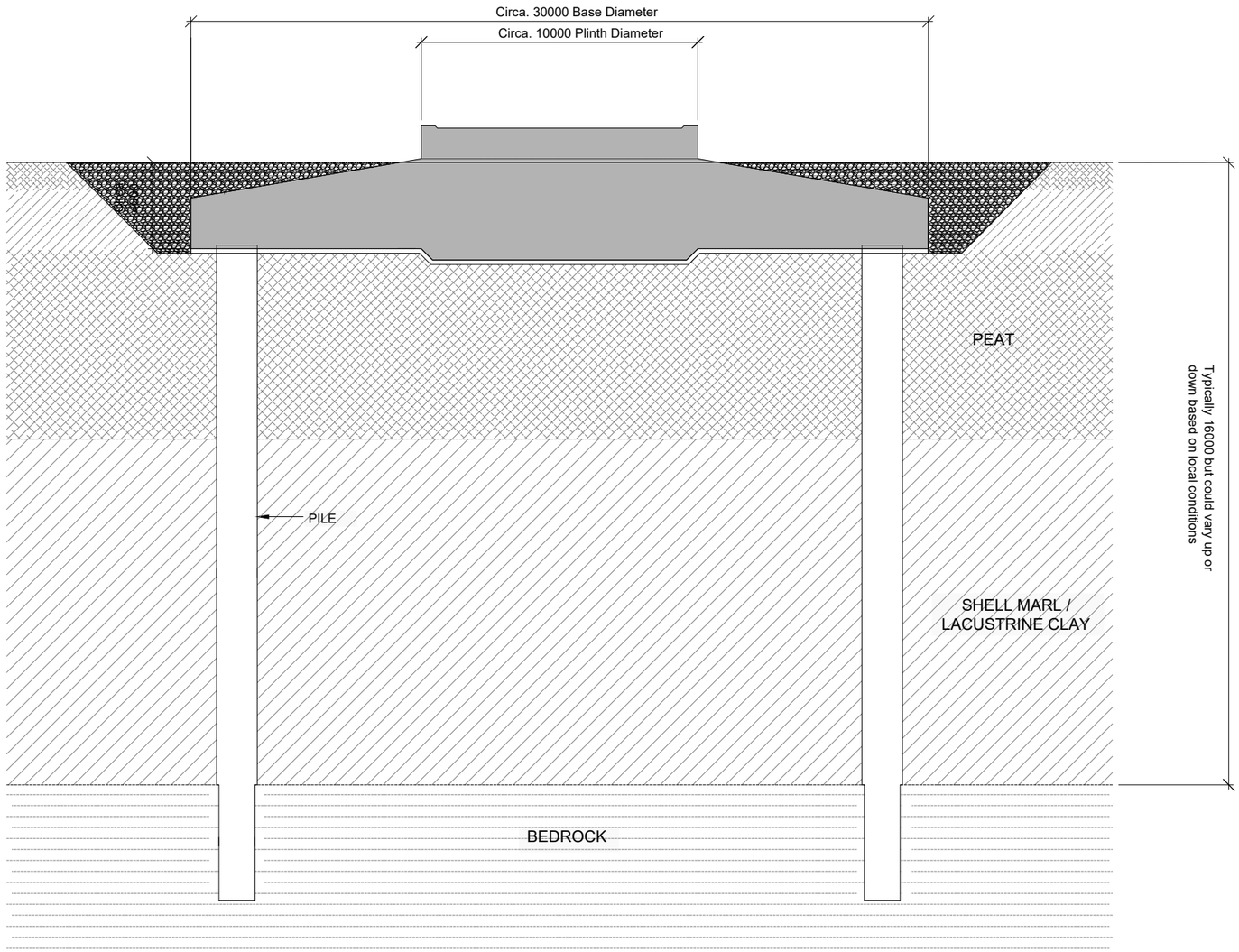
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 42
SCALE: 1:500 @A1	DATE: 15.03.2021

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Website: www.mkoireland.ie



Typical Section of an Excavated Foundation
Scale 1:200



Typical Section of a Piled a Foundation
Scale 1:200

Note
Details/dimensions are provided for indicative purposes and will be subject to detailed design by the appointed contractor

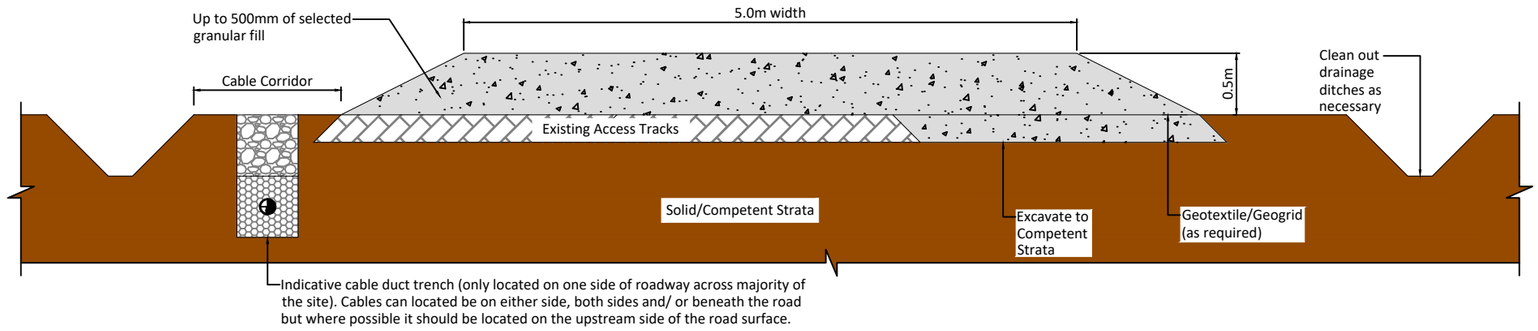
DRAWING TITLE:
Indicative Turbine Foundation Standard Detail

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

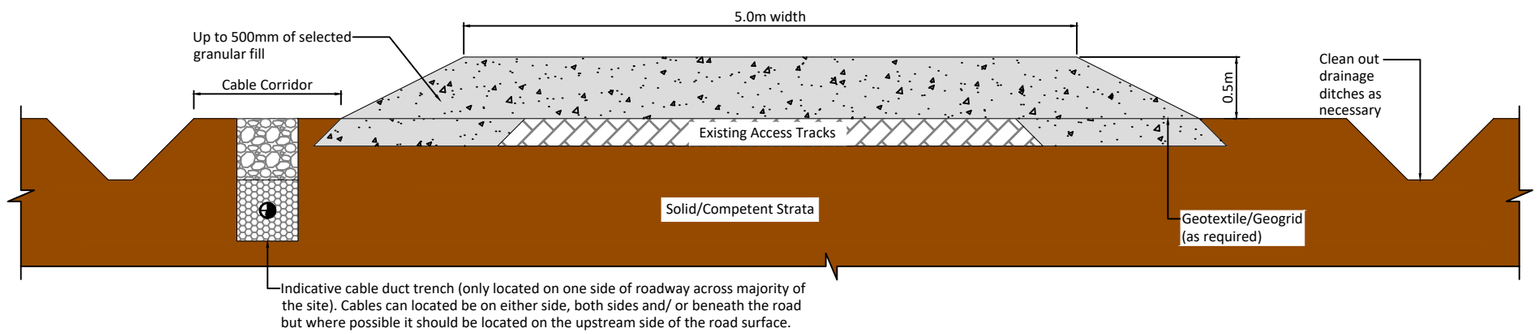
DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 43
SCALE: 1:200@A3	DATE: 15.03.2021

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Website: www.mkoireland.ie

surface but where possible it should be located on the upstream side of the road surface.



Upgrade of Existing Track on Sidelong Ground



Upgrade of Existing Track on Flat Ground

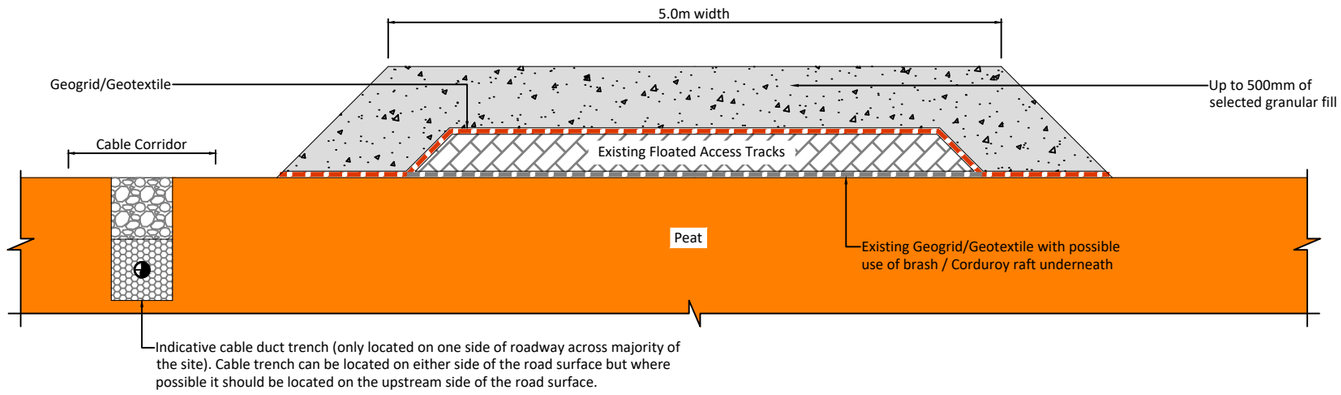
DRAWING TITLE:
Type A Upgrade of Existing Excavated Access Tracks

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

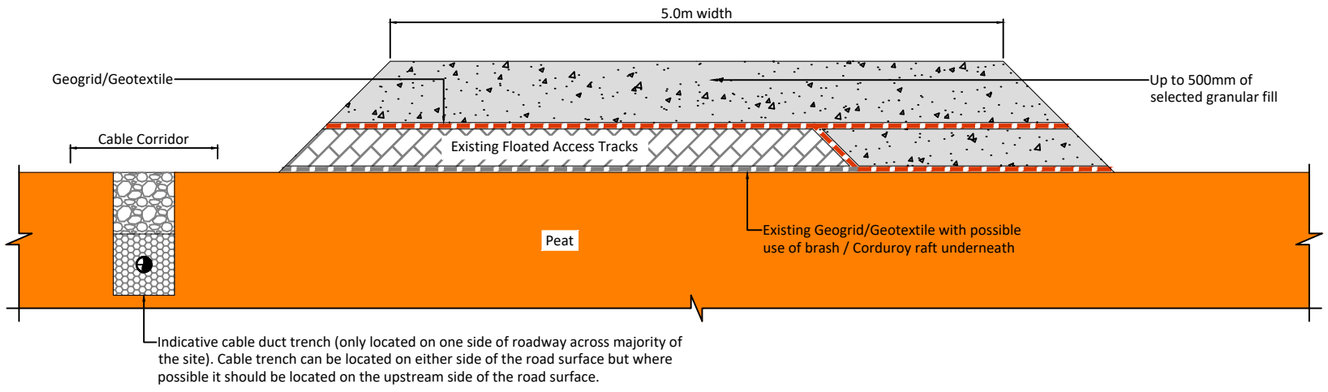
DRAWING BY: POR	CHECKED BY: IH
PROJECT No.: 200445	DRAWING No.: 200445 - 44
SCALE: 1:50 @ A3	DATE: 15.03.2021

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Upgrade of Existing Track on Flat Ground



Upgrade of Existing Track on Flat Ground



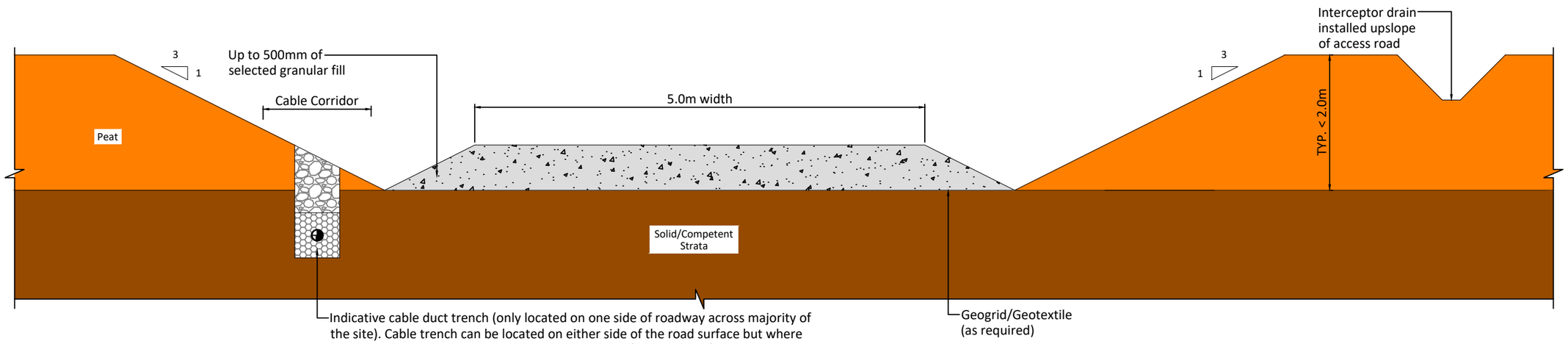
Upgrade of Existing Track on Sidelong Ground

DRAWING TITLE:
Type B Upgrade of Existing Floated Access Tracks

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
POR	IH
PROJECT No.: 200445	DRAWING No.: 200445 - 45
SCALE: 1:50 @ A3	DATE: 15.03.2021

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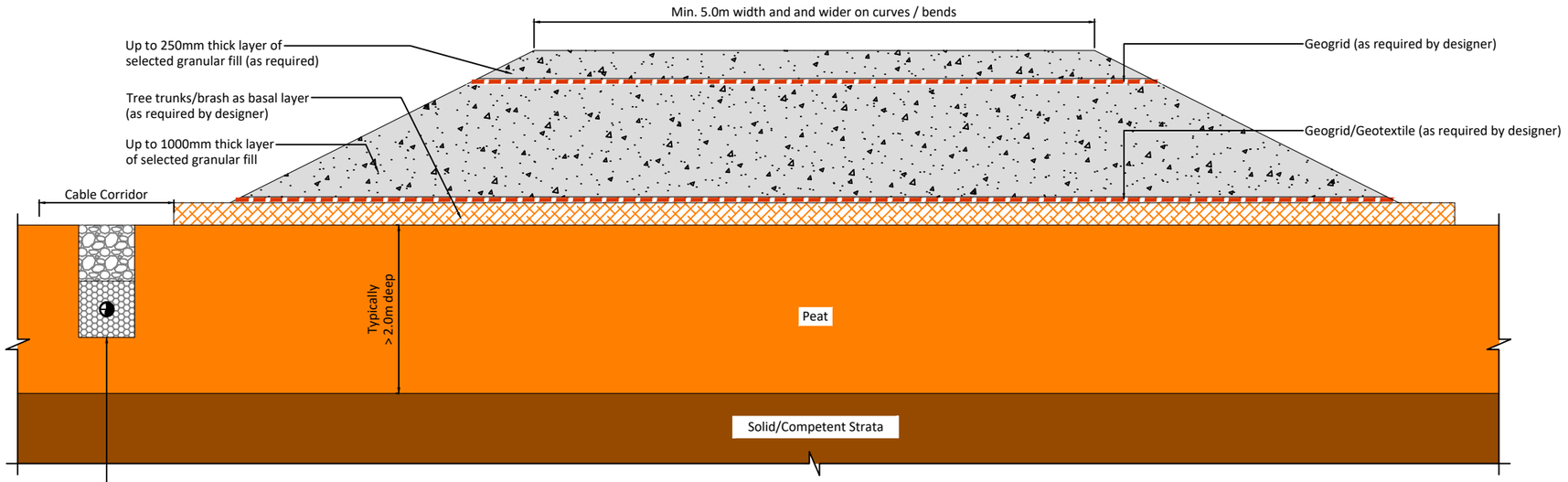


DRAWING TITLE:
Type C New Excavate and Replace Access Road

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY: POR	CHECKED BY: IH
PROJECT No.: 200445	DRAWING No.: 200445 - 46
SCALE: 1:50 @ A3	DATE: 15.03.2021
OS SHEET No.:	

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DRAWING TITLE:
Type D New Floated Access Road

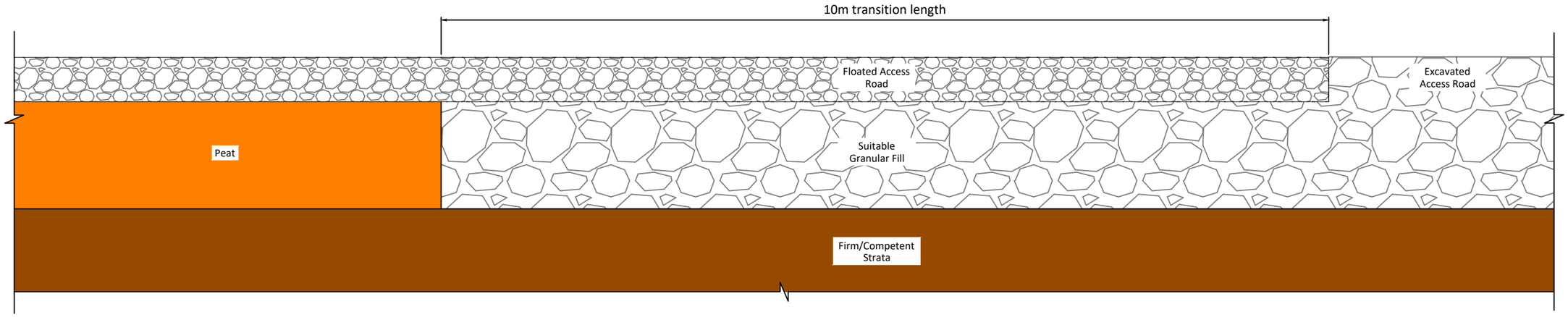
PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY: POR	CHECKED BY: IH
PROJECT No.: 200445	DRAWING No.: 200445 - 47
SCALE: 1:50 @ A3	DATE: 15.03.2021
OS SHEET No.:	

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Notes:

1) Floated access road detail may comprise 500 to 750mm stone fill, layer of geotextile & 1 to 2 layers of geogrid.
2) Excavated access road detail may comprise up to 500mm stone & layer of geotextile (depending on ground conditions encountered).

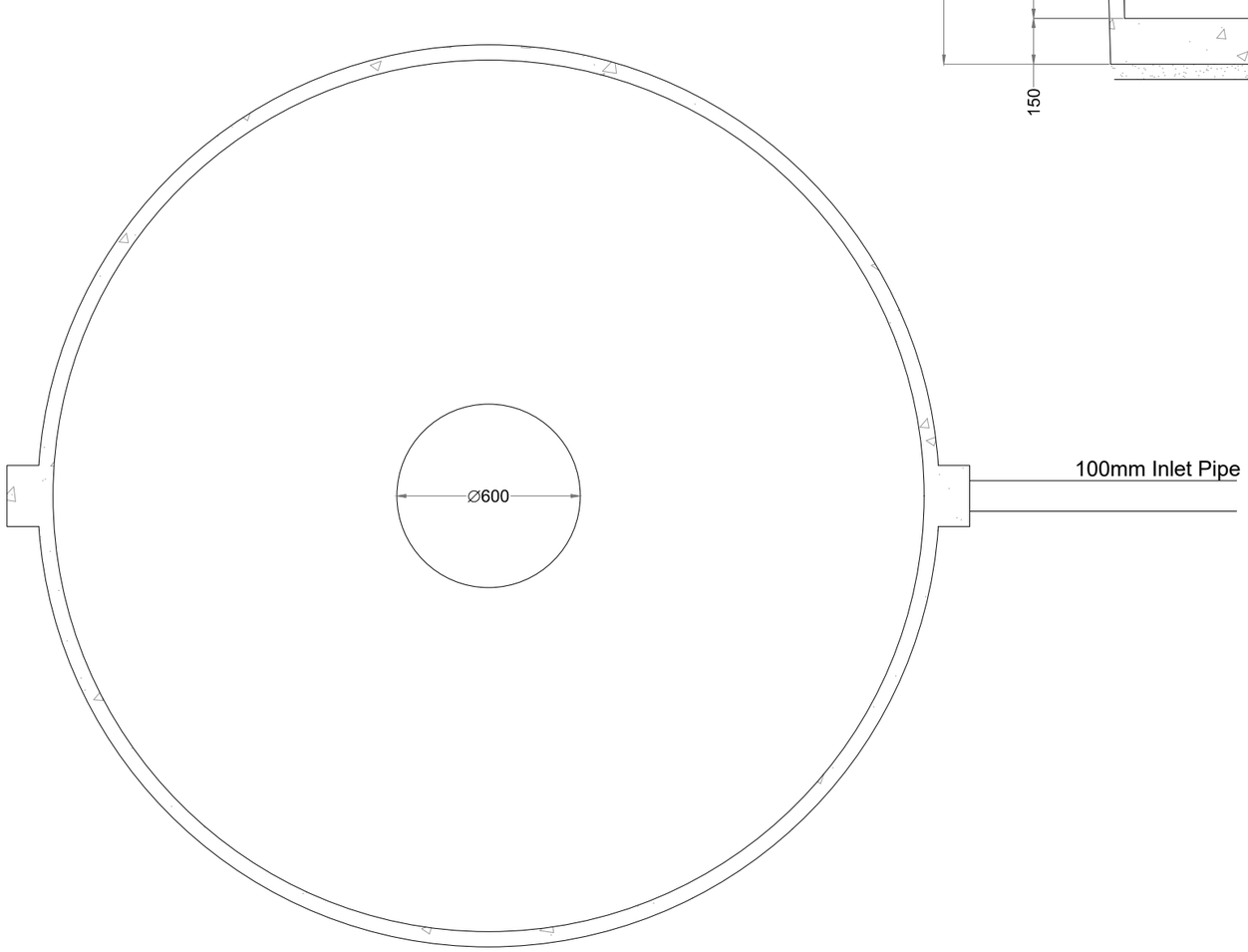


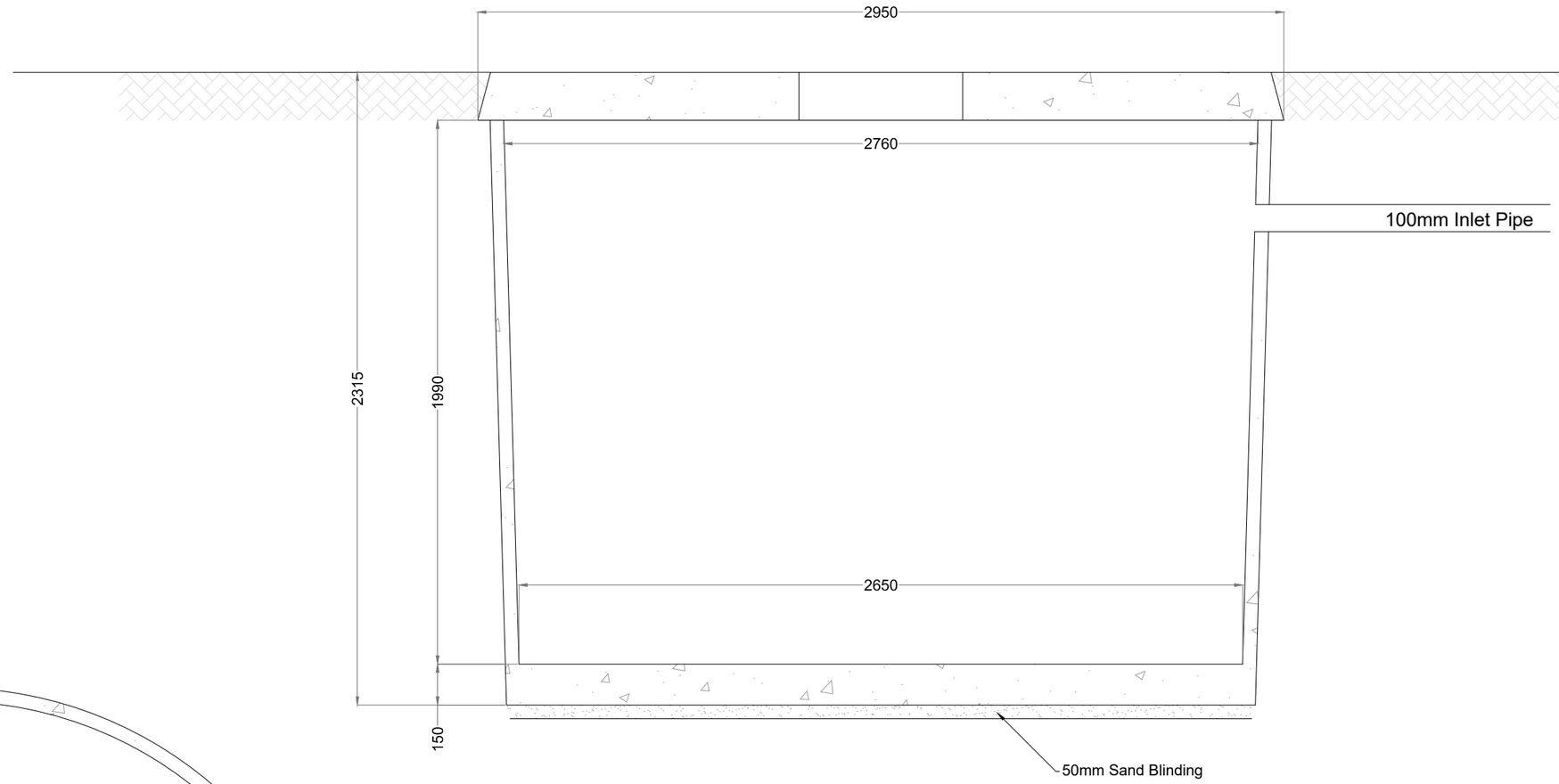
DRAWING TITLE:
Transition Detail for Floated and Excavated Access Road

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
POR	IH
PROJECT No.: 200445	DRAWING No.: 200445 - 48
SCALE: 1:50 @ A3	DATE: 15.03.2021
OS SHEET No.:	

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DRAWING TITLE:
Wastewater Holding Tank Typical Details

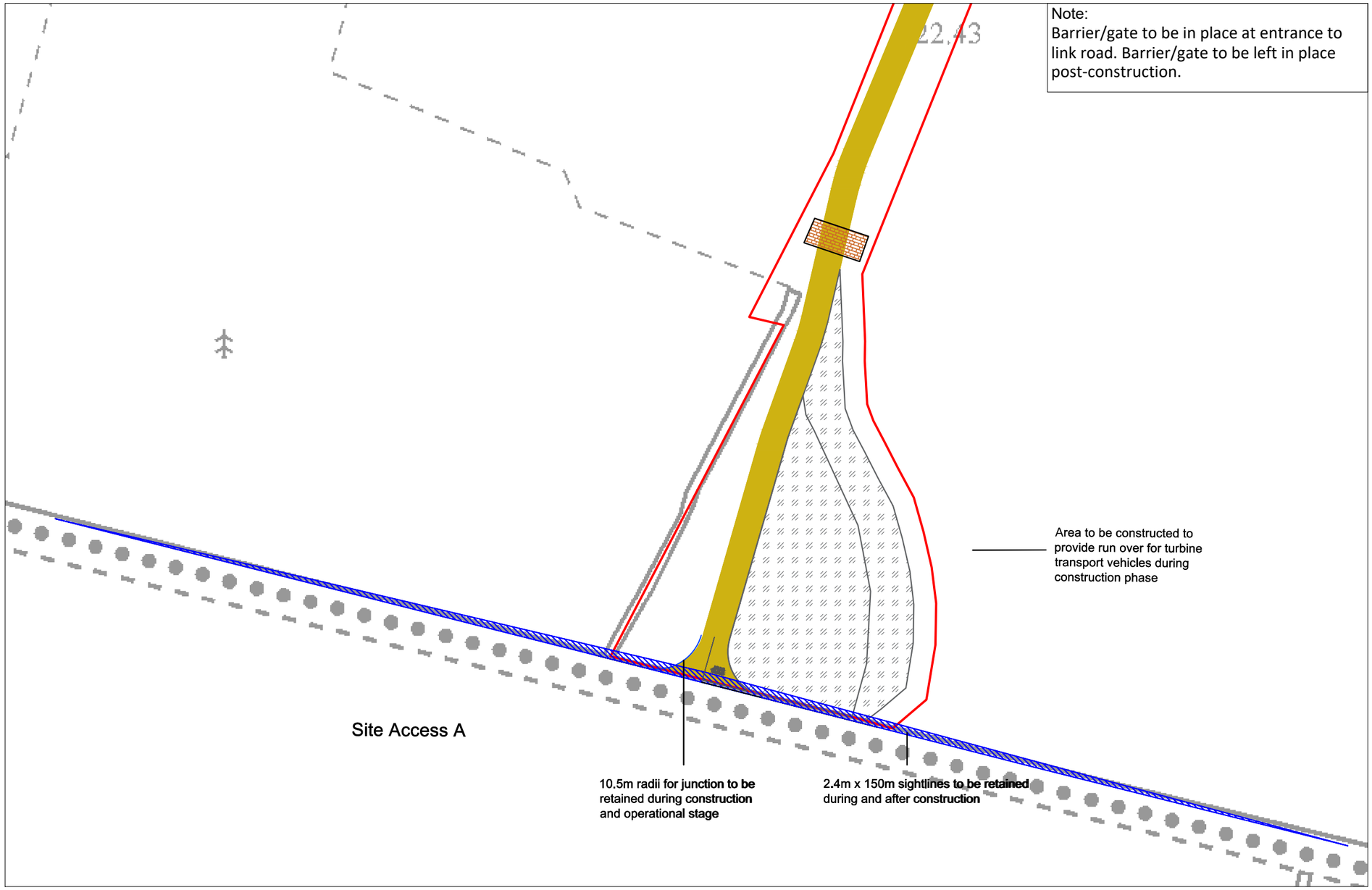
PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 49
SCALE: 1:20 @A3	DATE: 15.03.2021

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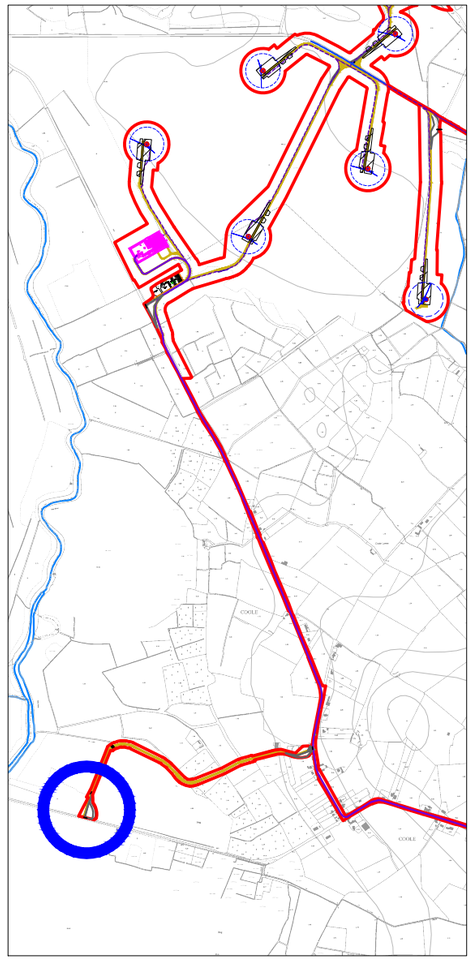
Drawing Legend

- Proposed Road
- Unbound Hardcore Surface
- Crossing Point for Landowners
- Sight Line



Note:
Barrier/gate to be in place at entrance to link road. Barrier/gate to be left in place post-construction.

1:25,000 Location on Context Map



1:25,000 Location on Context Map

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N

DRAWING TITLE:
Proposed Site Access A

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 50
SCALE: 1:1,000 @A3	DATE: 15.03.2021

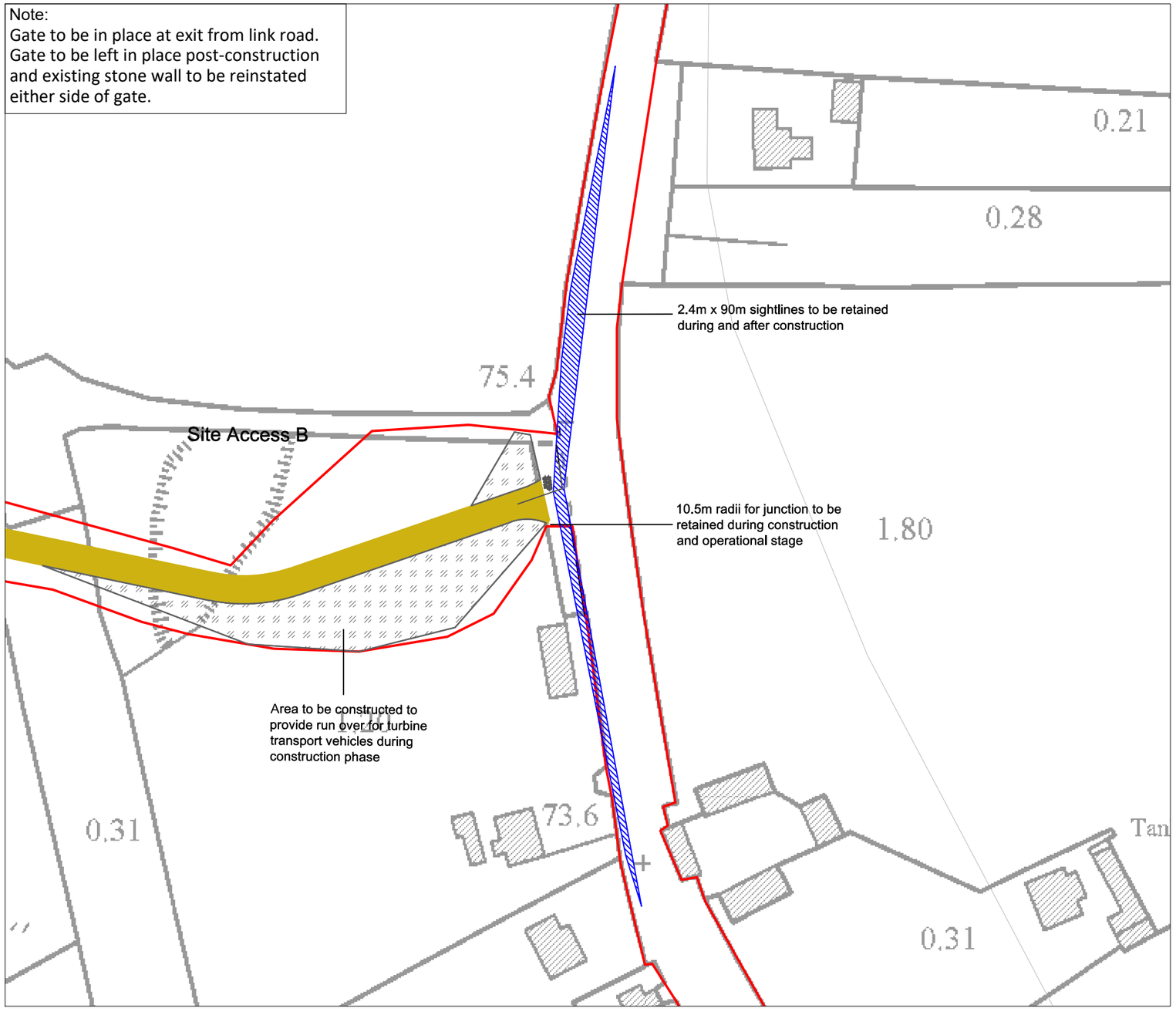
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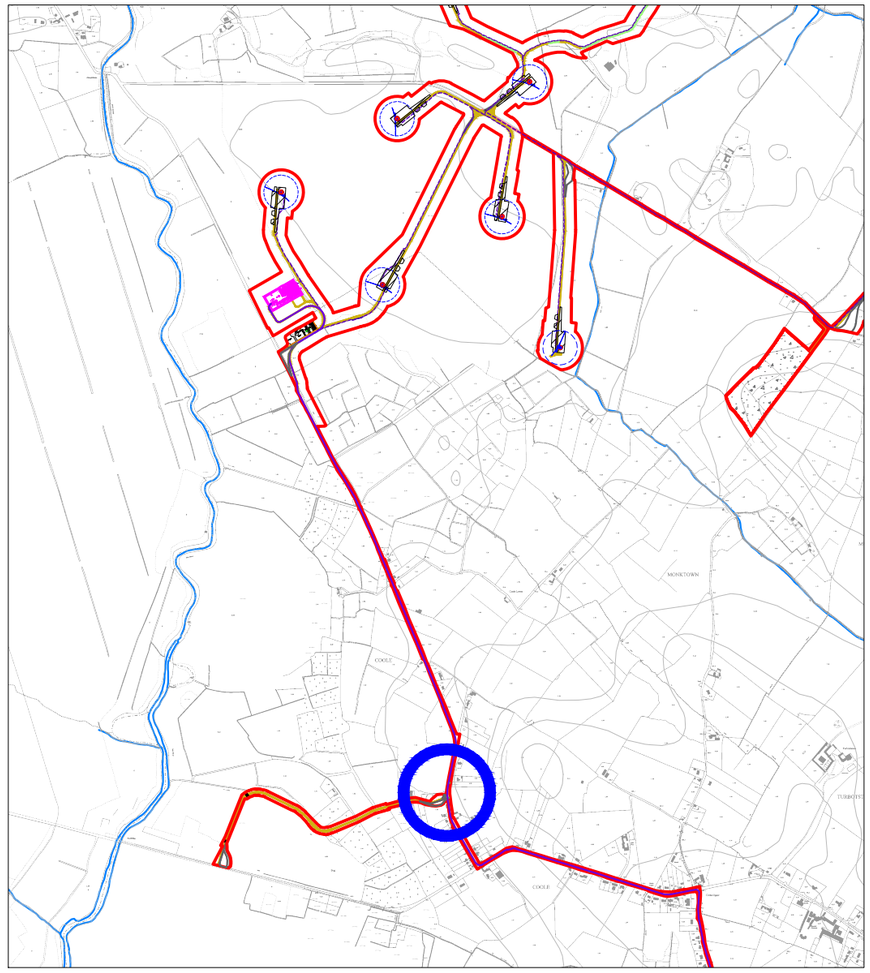
MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email: info@www.mkoireland.ie
Website: www.mkoireland.ie

Drawing Legend

- Proposed Road
- Unbound Hardcore Surface
- Sight Line

Note:
Gate to be in place at exit from link road.
Gate to be left in place post-construction and existing stone wall to be reinstated either side of gate.





1:25,000 Location on Context Map

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N

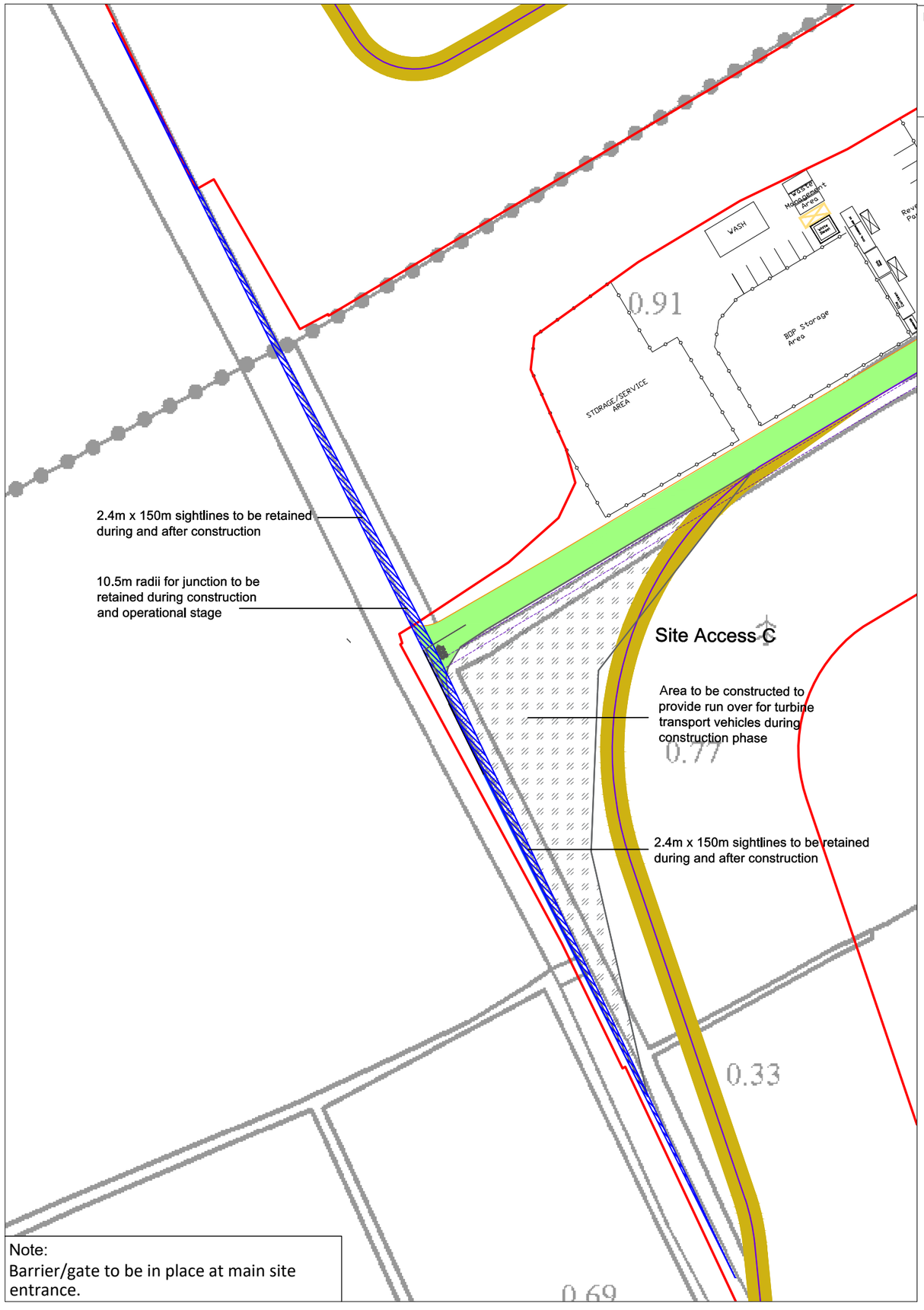
DRAWING TITLE:
Proposed Site Access B

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 51
SCALE: 1:1,000 @A3	DATE: 15.03.2021

OS SHEET No.: 2226, 2227, 2228, 2239, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

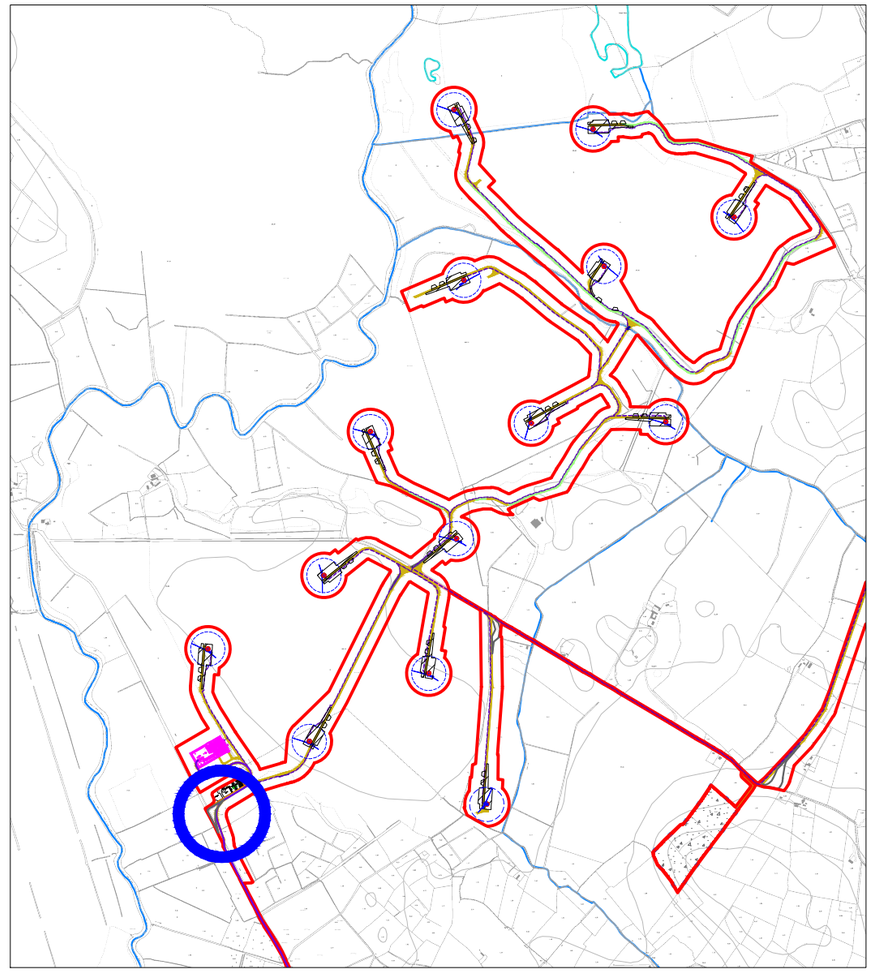
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Planning and Environmental Consultants
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Ireland, H91 VW84
+353 (0) 91 735611
email: info@www.mkoireland.ie
Website: www.mkoireland.ie



Drawing Legend

- Existing Internal Road to be Upgraded
- Proposed Road
- Unbound Hardcore Surface
- Sight Line

Note:
Barrier/gate to be in place at main site entrance.



1:25,000 Location on Context Map

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N

DRAWING TITLE:
Proposed Site Access C

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

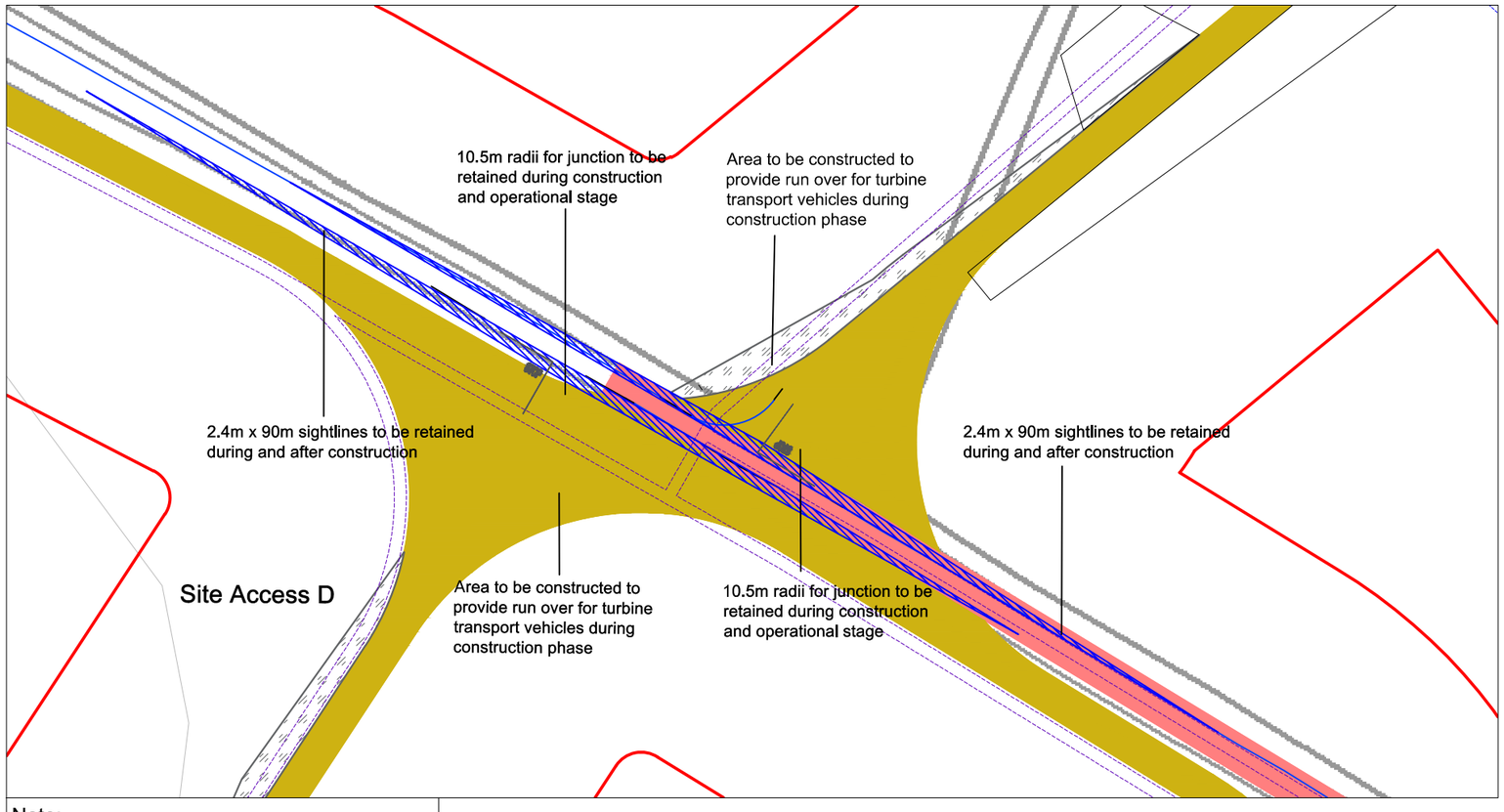
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Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 52
SCALE: 1:1,000 @A3	DATE: 15.03.2021

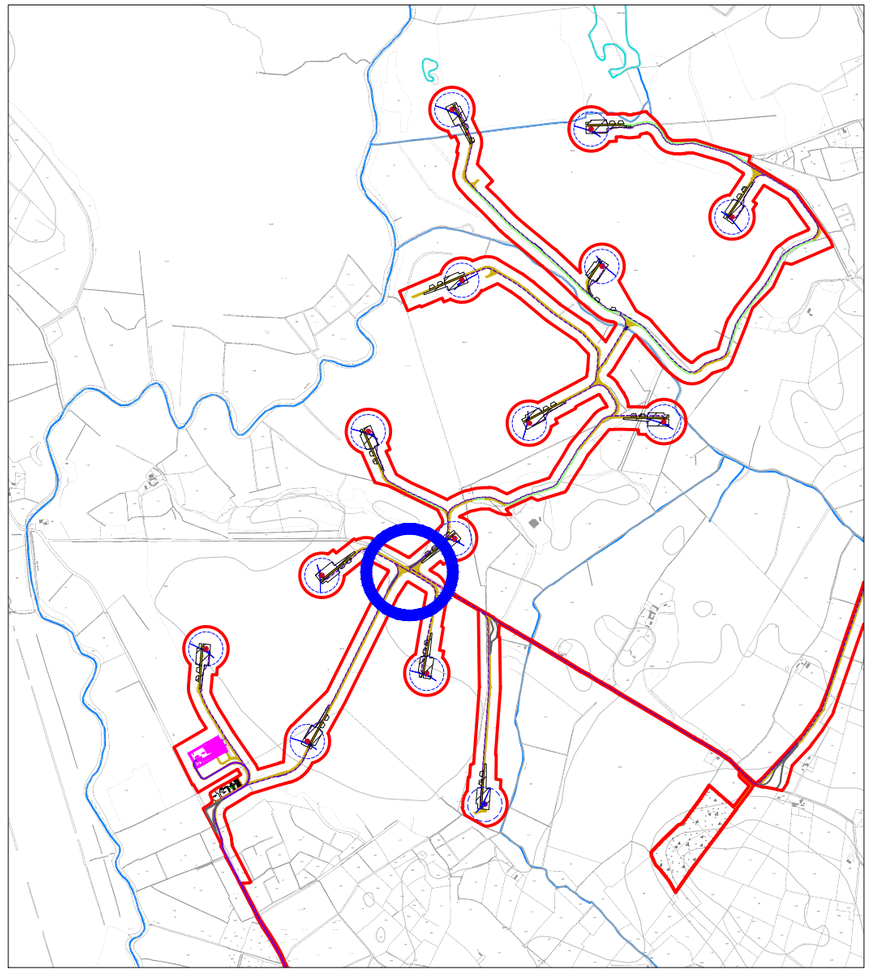
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Drawing Legend

- Proposed Road
- Existing External Road to be Upgraded
- Unbound Hardcore Surface
- Sight Line





1:25,000 Location on Context Map

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N

Note:
Barrier/gate to be in place at site access/egress points off local road.

DRAWING TITLE:
Proposed Site Access D

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

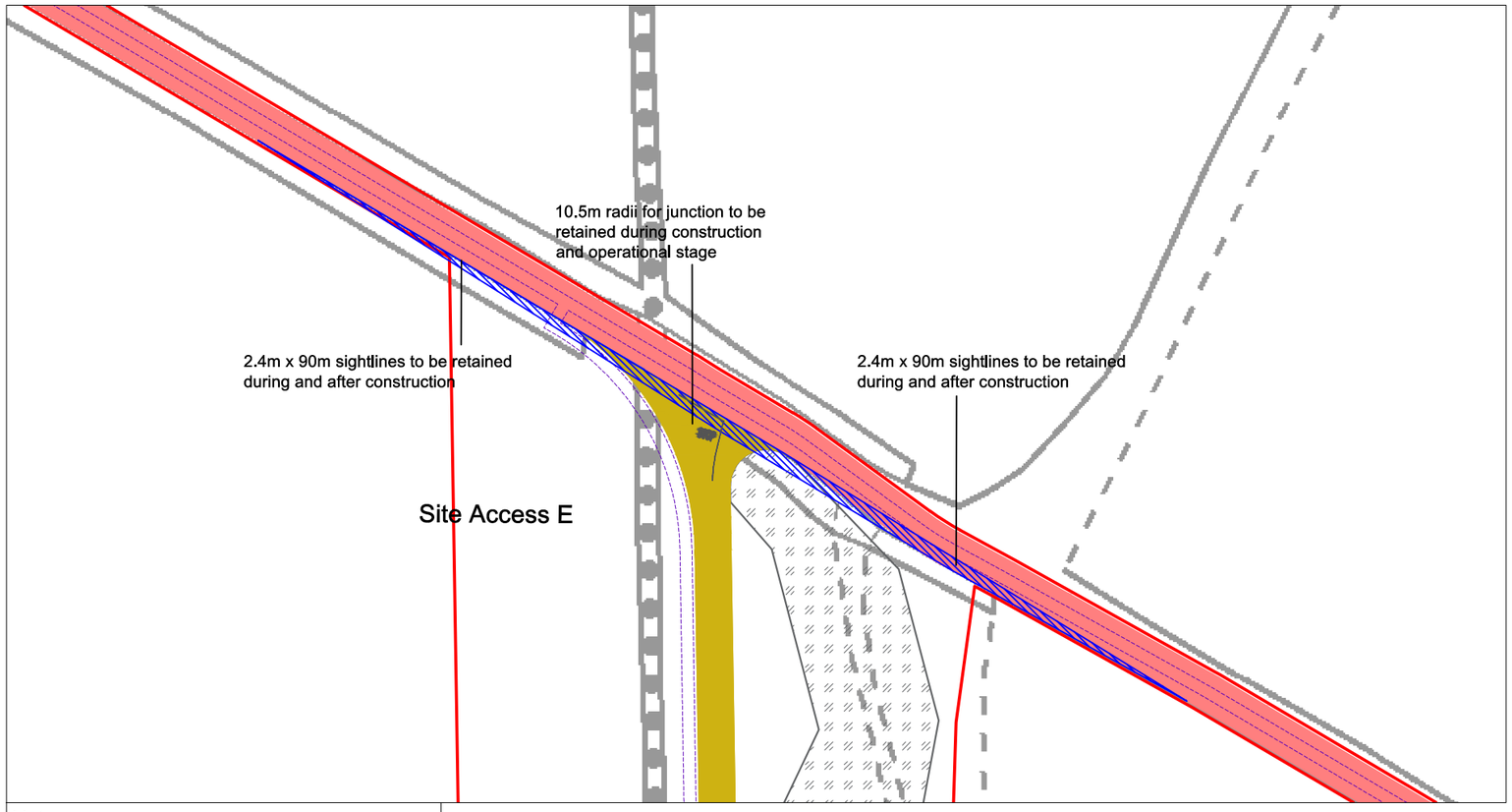
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Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 53
SCALE: 1:1,000 @A3	DATE: 15.03.2021

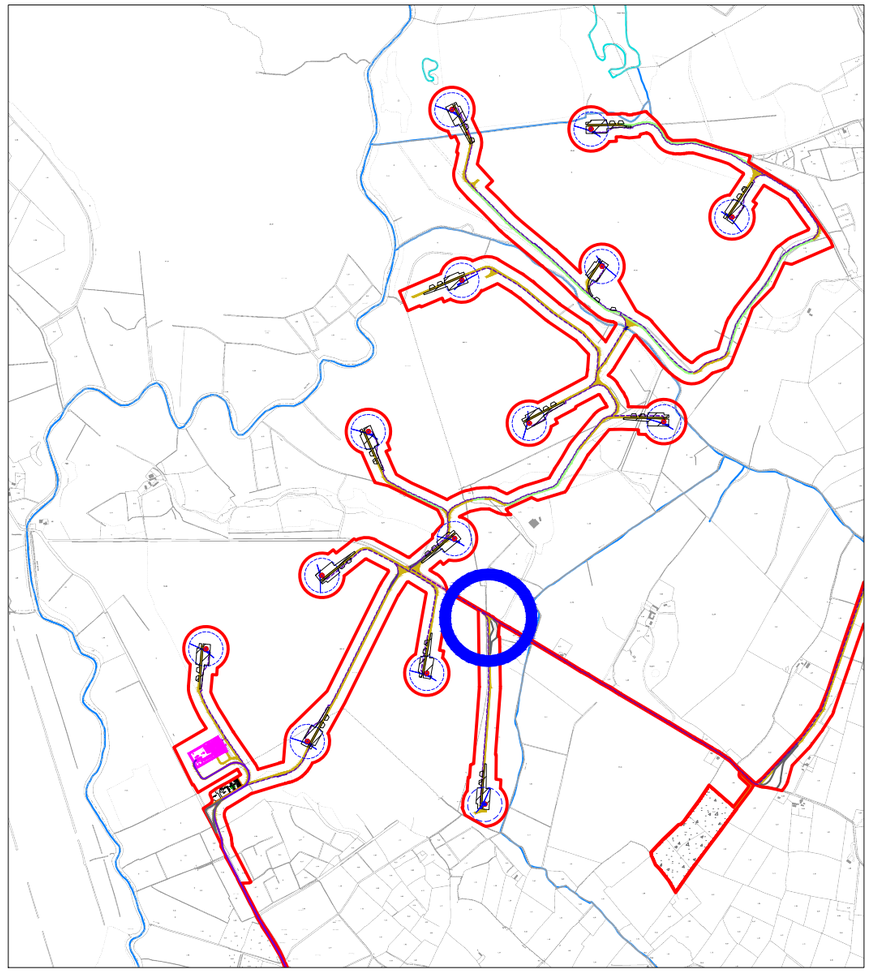
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email: info@www.mkoireland.ie
Website: www.mkoireland.ie

Drawing Legend

- Proposed Road
- Existing External Road to be Upgraded
- Unbound Hardcore Surface
- Sight Line





1:25,000 Location on Context Map

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N

Note:
Barrier/gate to be in place at site access/egress points off local road.

DRAWING TITLE:
Proposed Site Access E

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 54
SCALE: 1:1,000 @A3	DATE: 15.03.2021

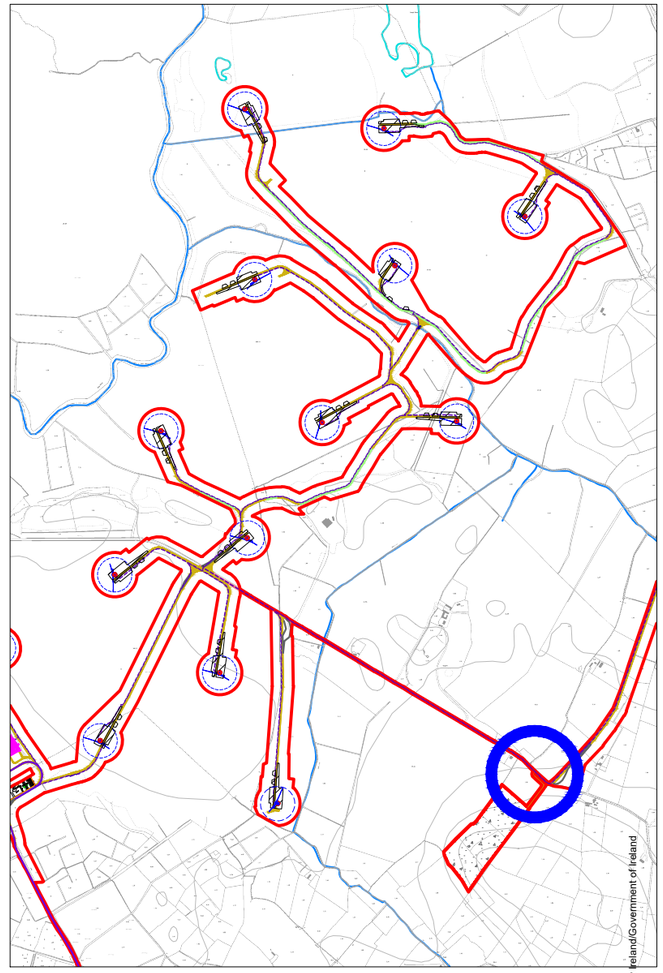
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email: info@www.mkoireland.ie
Website: www.mkoireland.ie

Drawing Legend

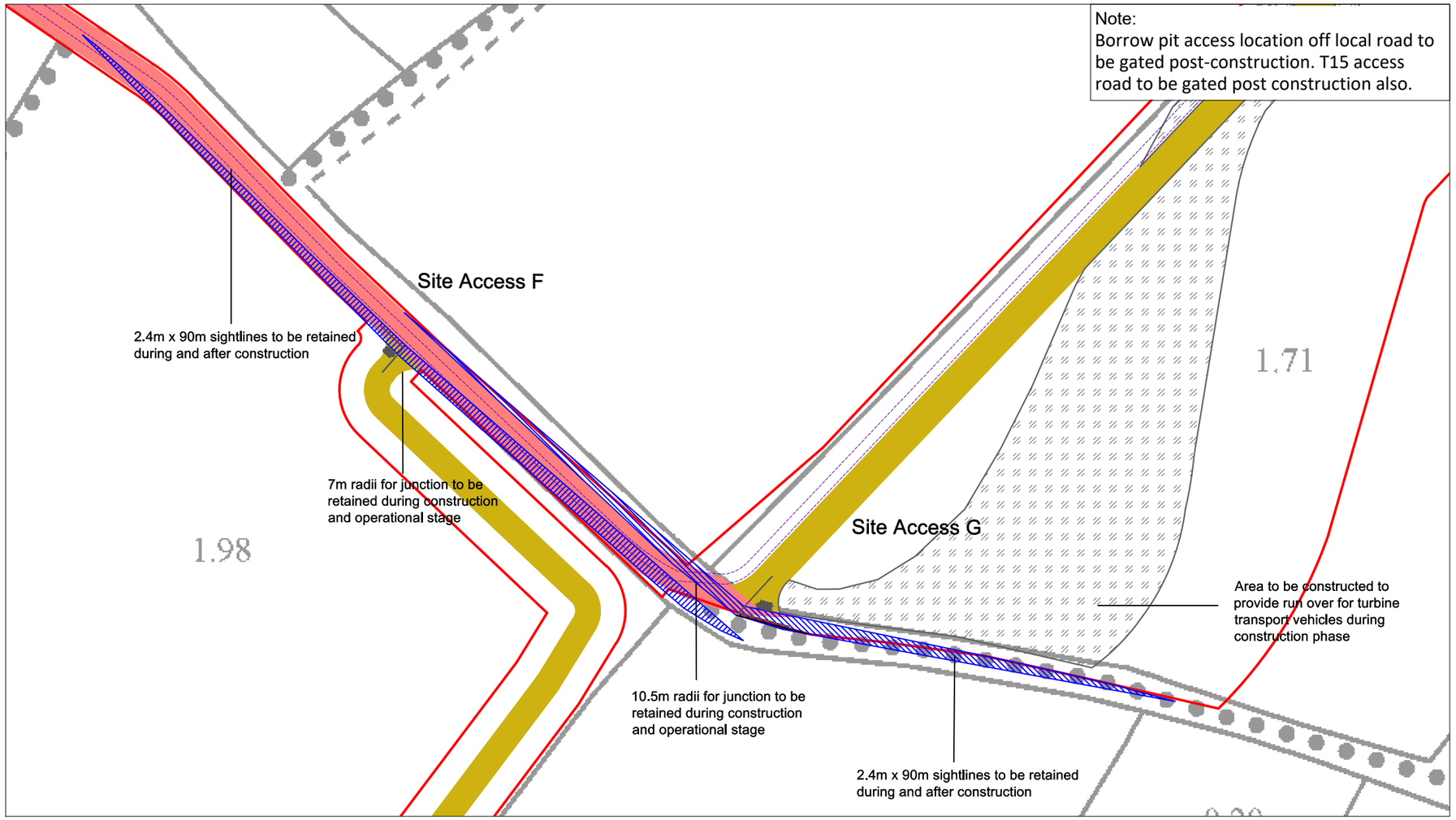
- Proposed Road
- Existing External Road to be Upgraded
- Unbound Hardcore Surface
- Sight Line

Note:
Borrow pit access location off local road to be gated post-construction. T15 access road to be gated post construction also.



1:25,000 Location on Context Map

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N

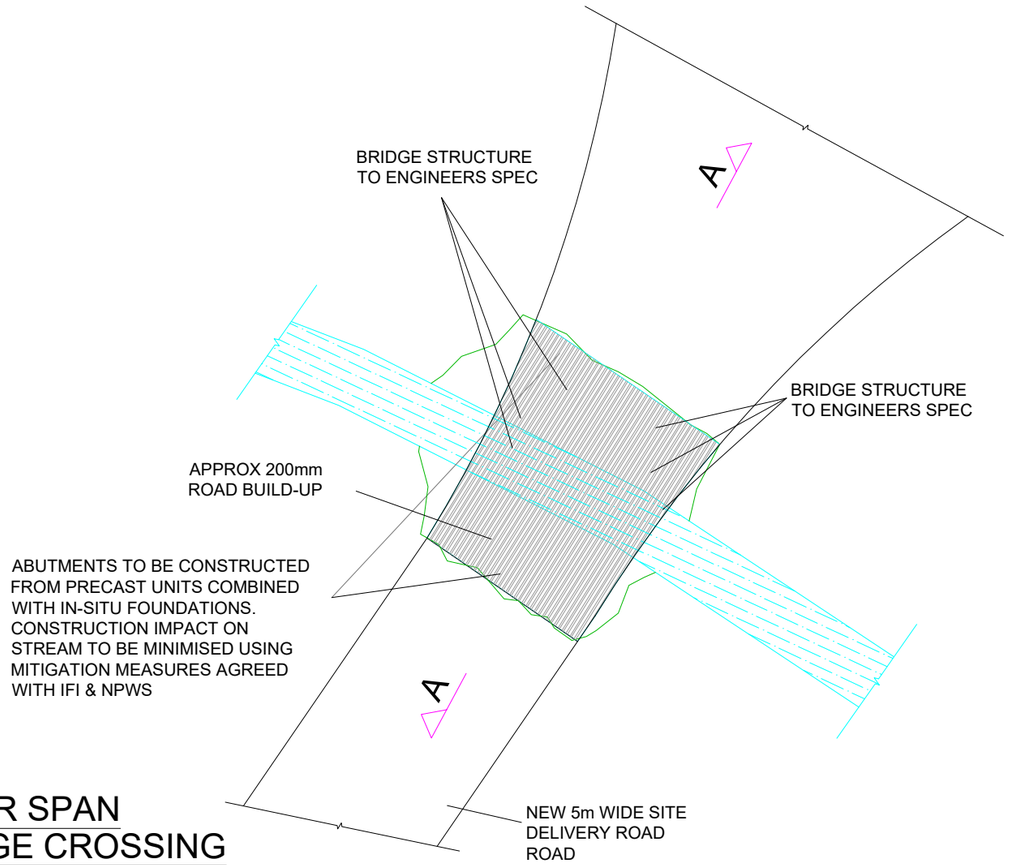
DRAWING TITLE:
Proposed Site Access F & G

PROJECT TITLE:
Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 55
SCALE: 1:1,000 @A3	DATE: 15.03.2021

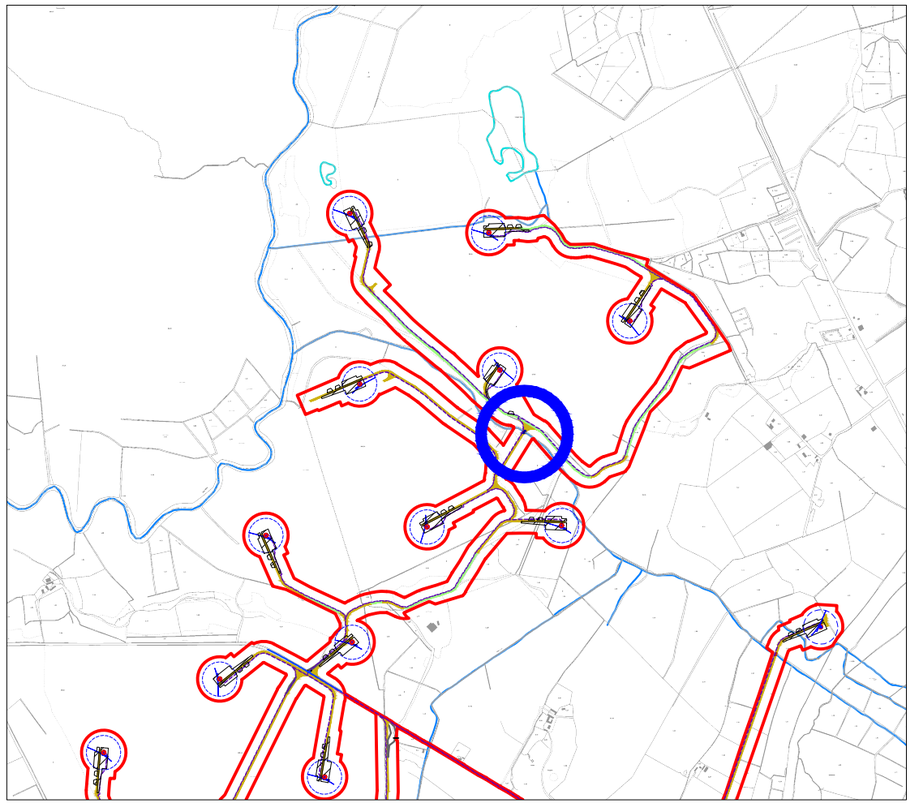
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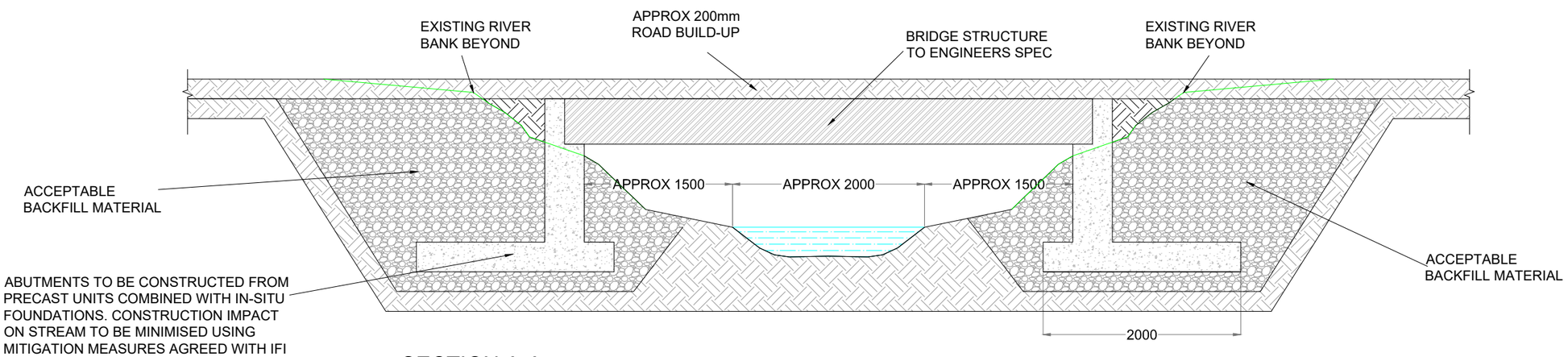


CLEAR SPAN BRIDGE CROSSING PLAN

Scale 1:200



1:25,000 Location on Context Map



SECTION A-A Scale 1:50

N

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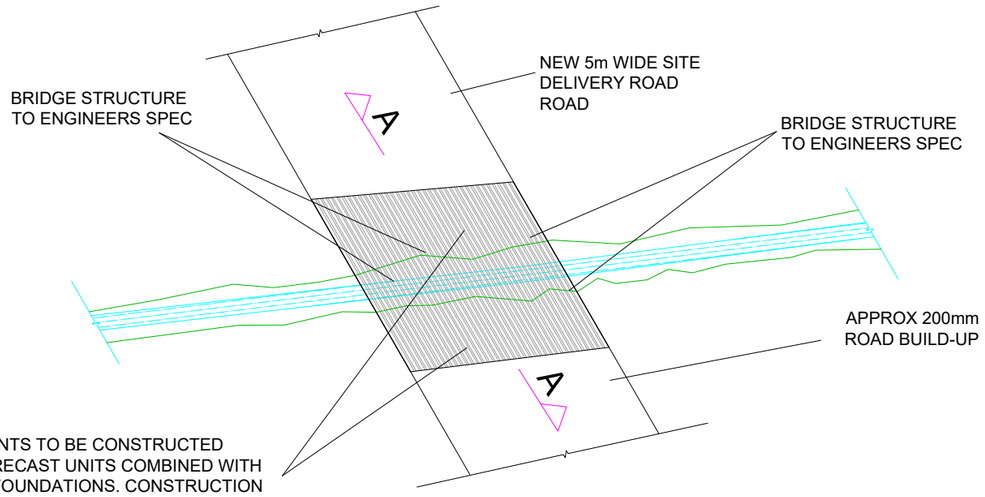
DRAWING TITLE:
Typical Clear Span Bridge (Crossing 1)

Coole Wind Farm, Co. Westmeath

DRAWING BY:	CHECKED BY:
Joseph O Brien	Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 56
SCALE: As Shown @A3	DATE: 15.03.2021

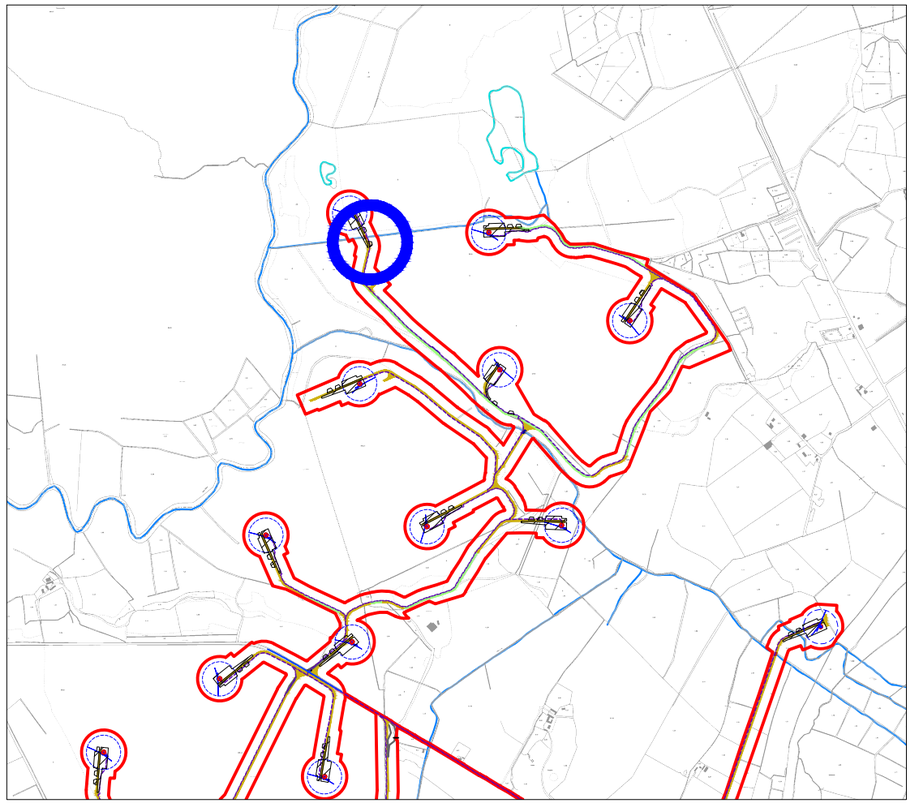
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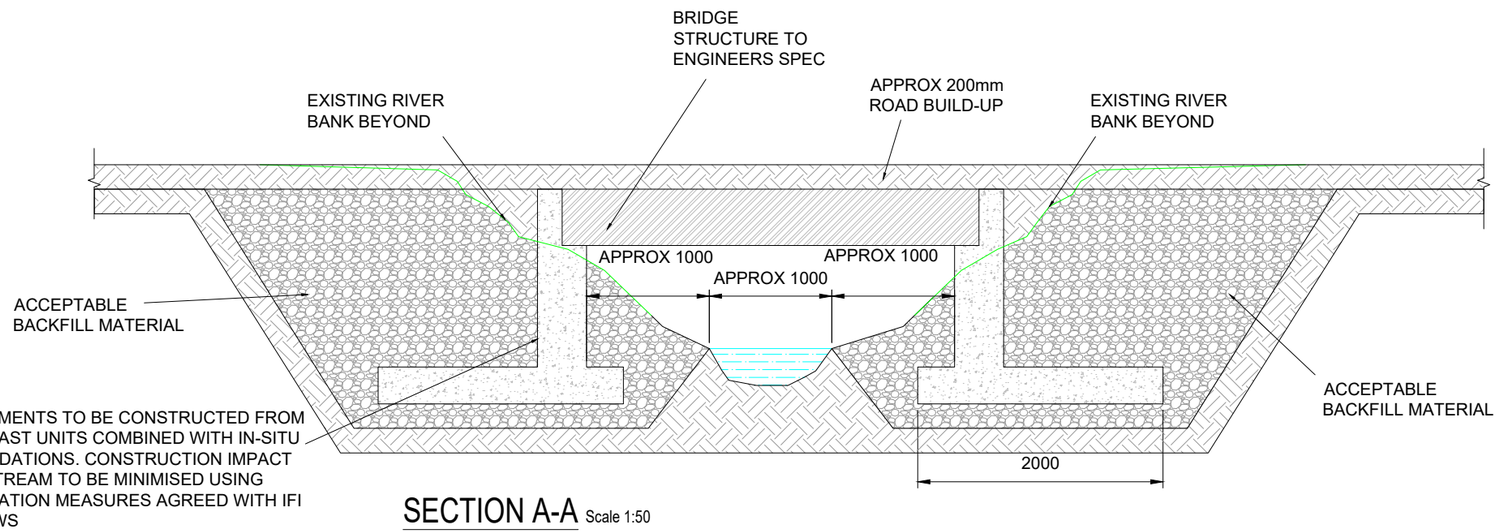


CLEAR SPAN BRIDGE CROSSING PLAN

Scale 1:200



1:25,000 Location on Context Map



SECTION A-A Scale 1:50

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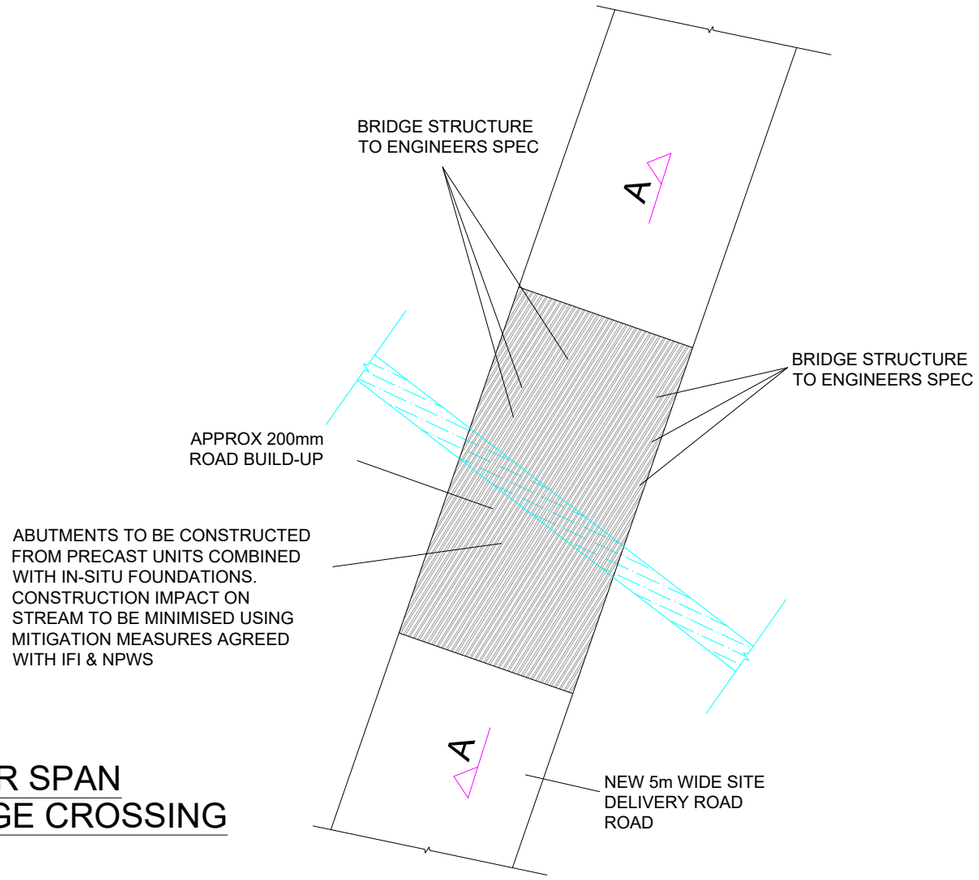
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DRAWING TITLE:
Typical Clear Span Bridge (Crossing 2)

Coole Wind Farm, Co. Westmeath

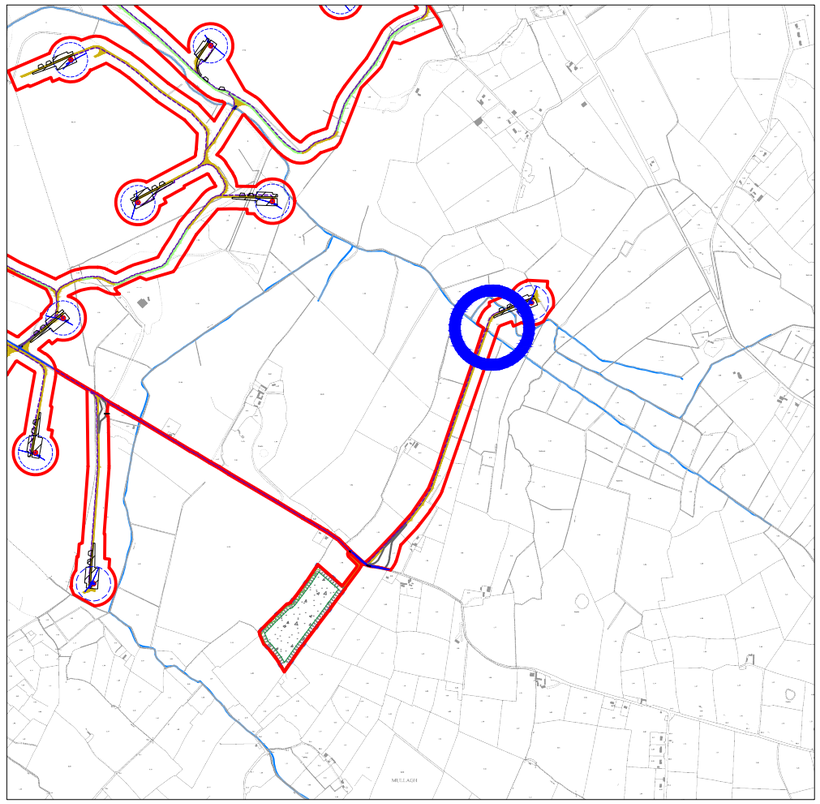
DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 57
SCALE: As Shown @A3	DATE: 15.03.2021
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email: info@www.mkoireland.ie
Website: www.mkoireland.ie

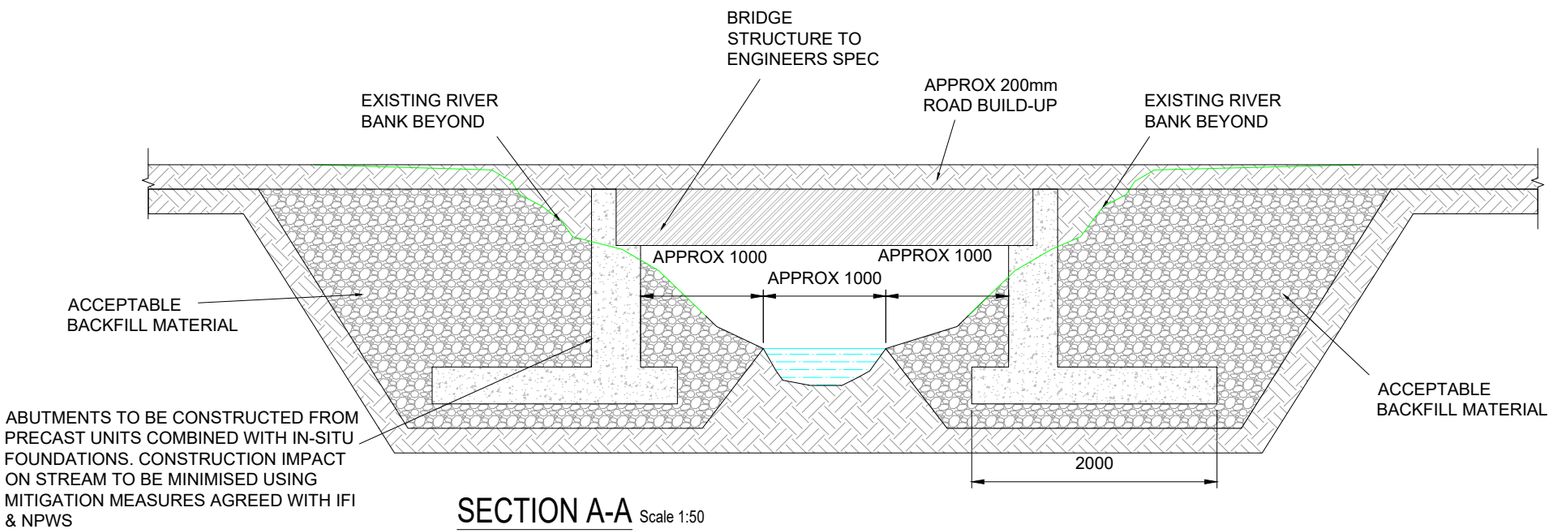


CLEAR SPAN BRIDGE CROSSING PLAN

Scale 1:200



1:25,000 Location on Context Map



SECTION A-A Scale 1:50

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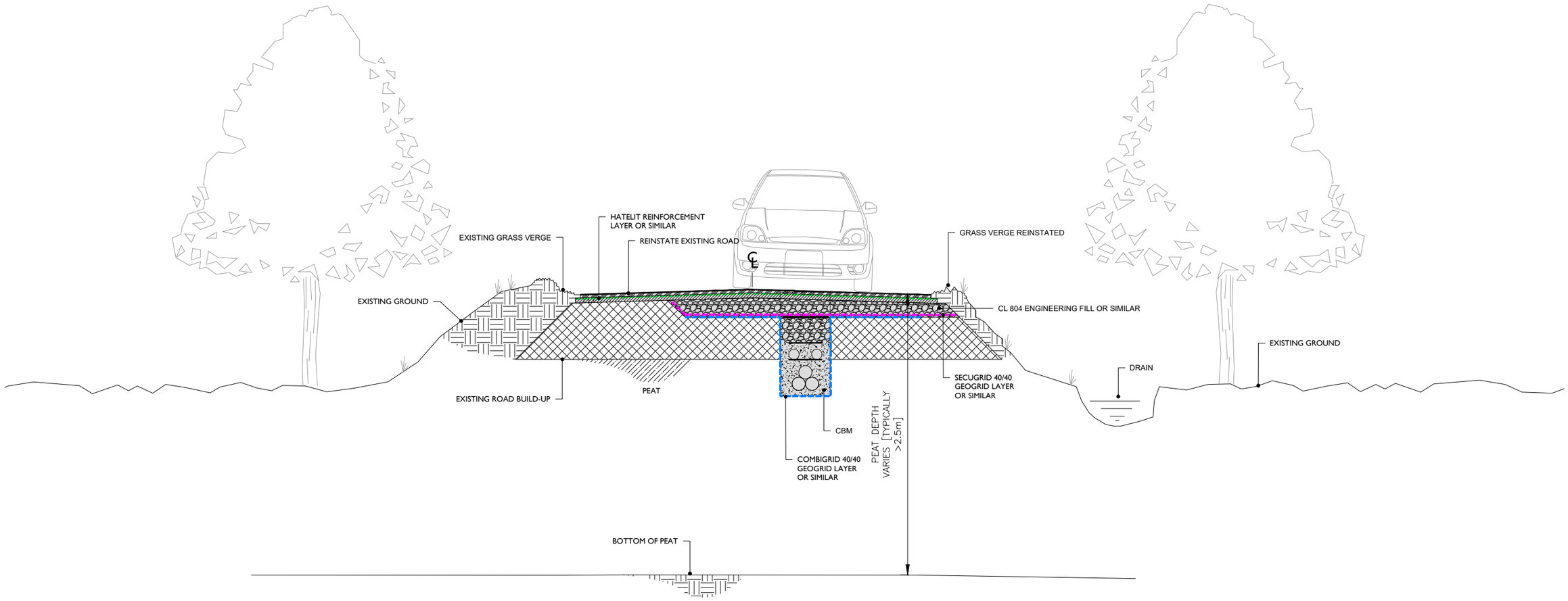
DRAWING TITLE:
Typical Clear Span Bridge (Crossing 3)

Coole Wind Farm, Co. Westmeath

DRAWING BY: Joseph O Brien	CHECKED BY: Michael Watson
PROJECT No.: 200445	DRAWING No.: 200445 - 58
SCALE: As Shown @A3	DATE: 15.03.2021

OS SHEET No.: 2296, 2297, 2298, 2299, 2300, 2301,2302, 2303, 2363, 2364, 2365, 2366, 2425, 2426, 2427, 2428, 2493, 2494, 2495, 2496, 2562, 2563, 2564, 2565, 2629, 2630, 2631, 2632, 2699, 2700, 2701, 2702,2768, 2769, 2770, 2771

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Website: www.mkoireland.ie



TYPICAL SECTION THROUGH FLOATING ROAD
[>2.5M TO BASE OF PEAT]

SCALE 1:50

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NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	24.01.2020	MB	JS	NOTES UPDATED
A	10.12.2019	M.B.	J.S.	FIRST ISSUE

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IONIC CONSULTING
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CLIENT

DRAWN BY: M. BROWNE	DATE: 09/12/2019	PAPER SIZE: A3	SCALE: 1:50
CHECKED AND APPROVED: J. SHANAHAN	DATE: 09/12/2019	STATUS: DRAFT	

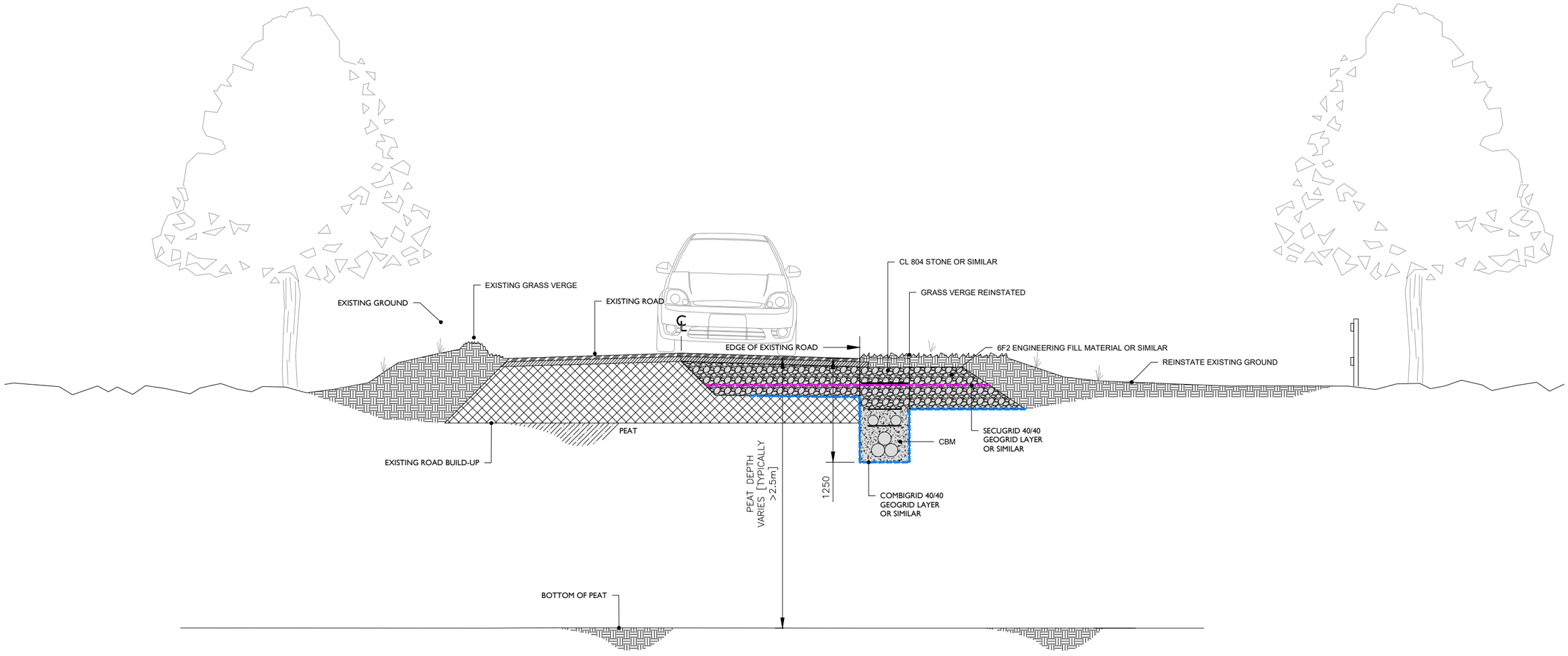
PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE A

REVISION: B

DRAWING NUMBER: COLE d005.2.1

Plotted - 24/01/2020 14:30:41
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TYPICAL SECTION THROUGH FLOATING ROAD TRENCH IN VERGE [TYPICALLY >2.5M TO BASE OF PEAT]

SCALE 1:50

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NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	24.01.2020	M.B.	J.S.	NOTES UPDATED
A	10.12.2019	M.B.	J.S.	FIRST ISSUE

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DRAWN BY: M. BROWNE	DATE: 09/12/2019	PAPER SIZE: A3	SCALE: 1:50
CHECKED AND APPROVED: J. SHANAHAN	DATE: 09/12/2019	STATUS: DRAFT	

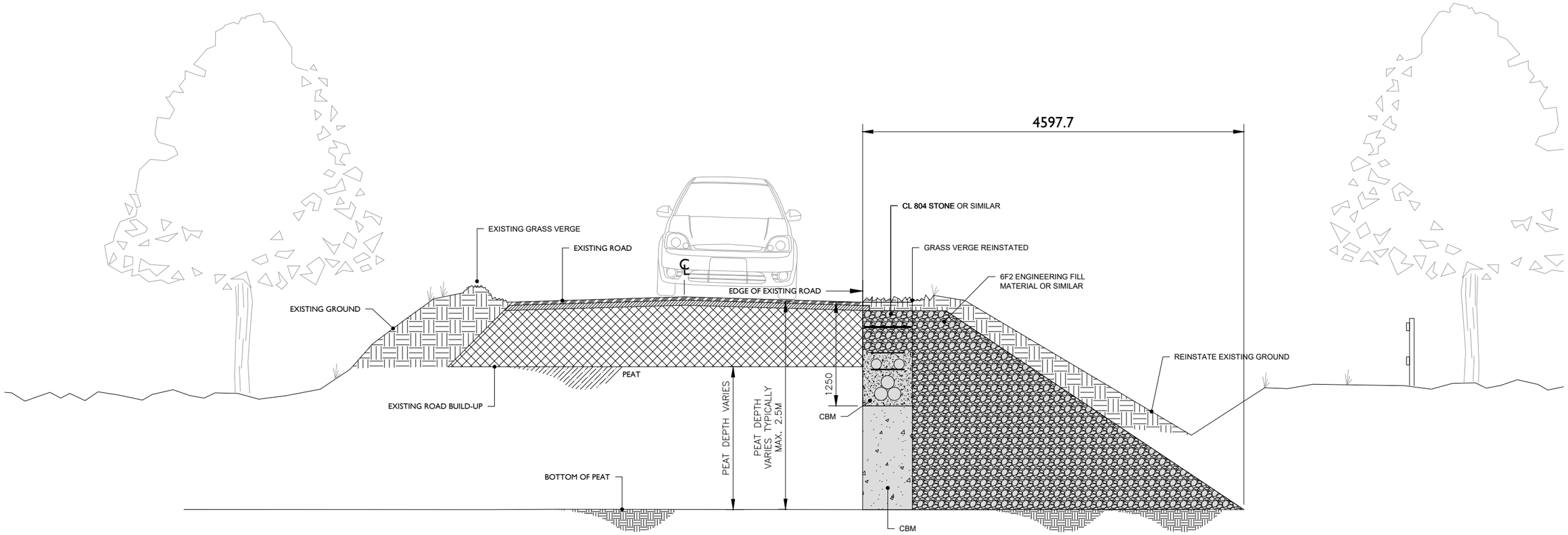
PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
TYPICAL DETAILS
ROAD SECTION TYPE B

REVISION
B

DRAWING NUMBER
COLE d005.2.2

Plotted : 24/01/2020 14:37:50
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TYPICAL SECTION THROUGH FLOATING ROAD TRENCH IN VERGE [<2.5M TO BASE OF PEAT]

SCALE 1:50

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NOTES

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B	24.01.2020	NOTES UPDATED		
A	10.12.2019	M.B.	J.S.	FIRST ISSUE

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CLIENT

PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE C

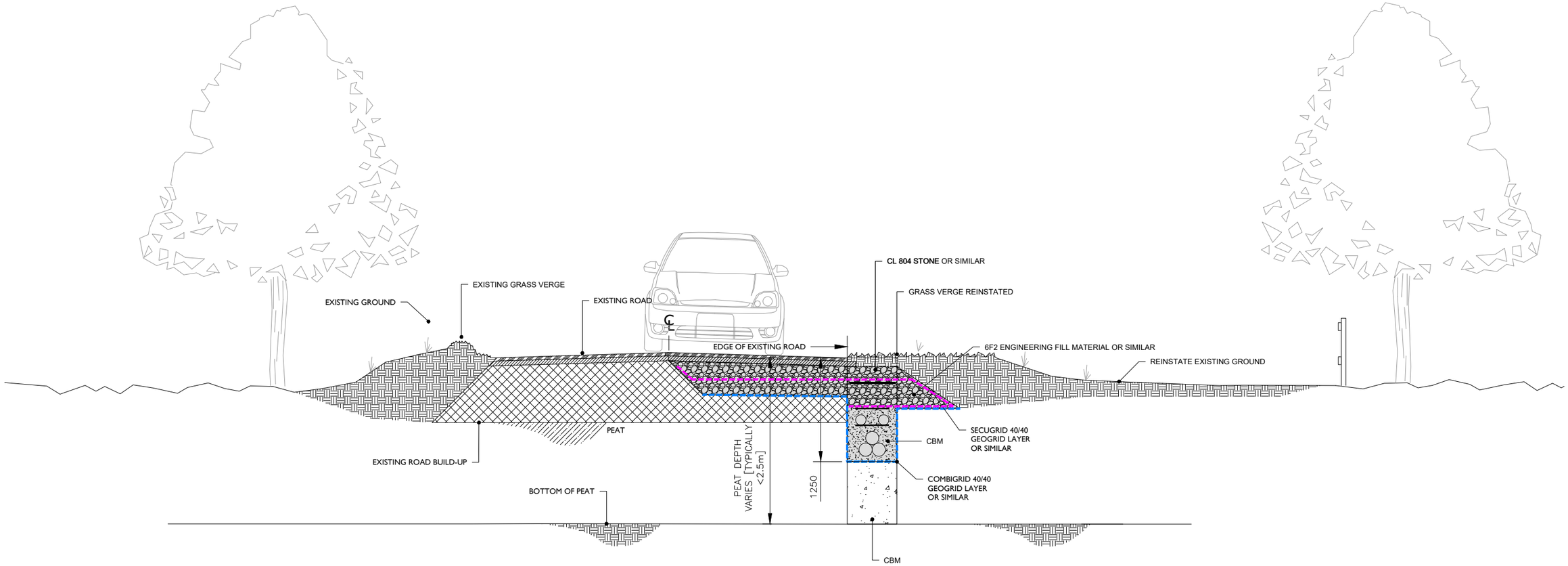
REVISION: B

DRAWN BY	DATE	PAPER SIZE	SCALE
M. BROWNE	09/12/2019	A3	1:50

CHECKED AND APPROVED	DATE	STATUS
J. SHANAHAN	09/12/2019	DRAFT

DRAWING NUMBER: COLE d005.2.3

Plotted - 24/01/2020 14:37:03
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TYPICAL SECTION THROUGH FLOATING ROAD
TRENCH IN VERGE [<2.5M TO BASE OF PEAT]

SCALE 1:50

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REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	24.01.2020	MB	JS	NOTES UPDATED
A	20.12.2019	M.B.	J.S.	FIRST ISSUE

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W. www.ionicconsulting.ie
Formerly known as WIND PROSPECT IRELAND

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DRAWN BY: M. BROWNE	DATE: 09/12/2019	PAPER SIZE: A3	SCALE: 1:50
CHECKED AND APPROVED: J. SHANAHAN	DATE: 09/12/2019	STATUS: DRAFT	

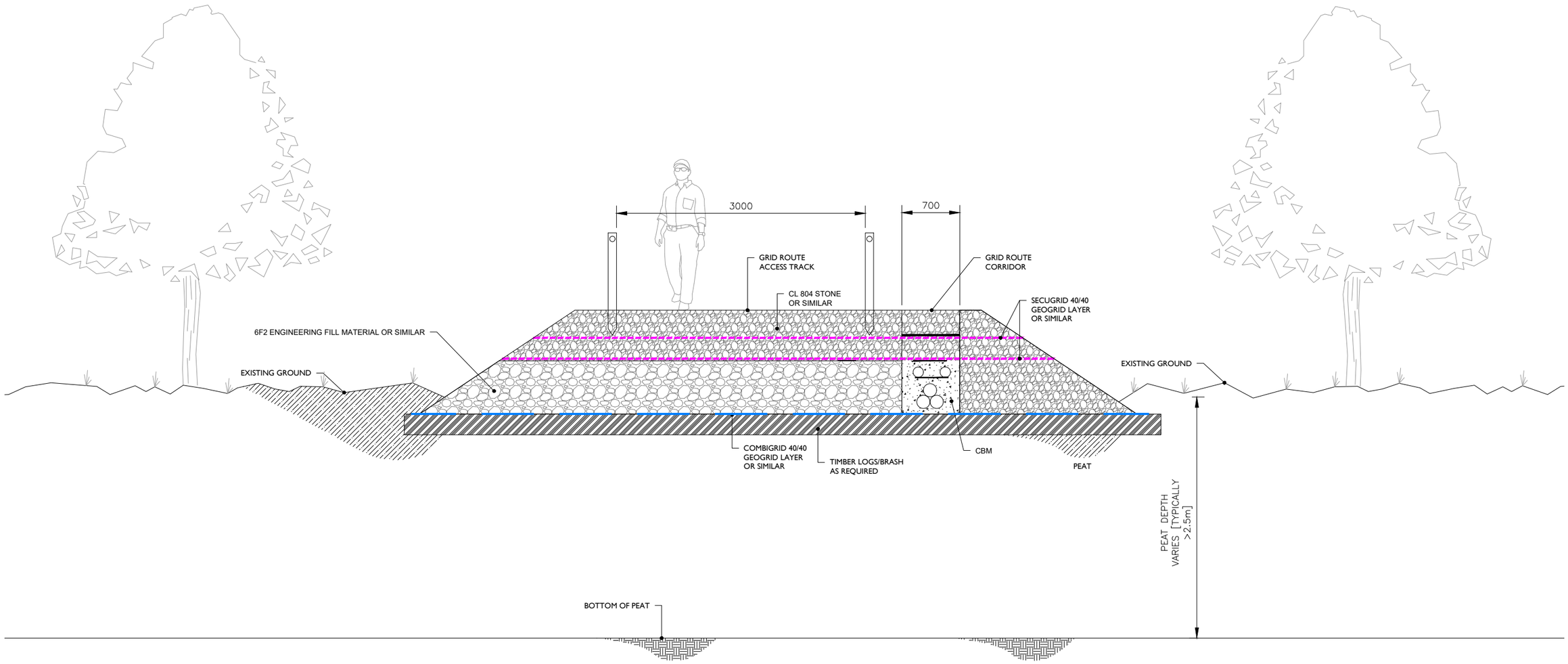
PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE D

REVISION: B

DRAWING NUMBER: COLE d005.2.4

Plotted - 24/01/2020 14:40:27
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TYPICAL SECTION THROUGH FLOATING GRID ROUTE TRACK

Scale 1:50

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NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	24.01.2020	MB	JS	NOTES UPDATED
A	20.12.2019	M.B.	J.S.	FIRST ISSUE

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CHECKED AND APPROVED: J. SHANAHAN	DATE: 09/12/2019	STATUS: DRAFT	

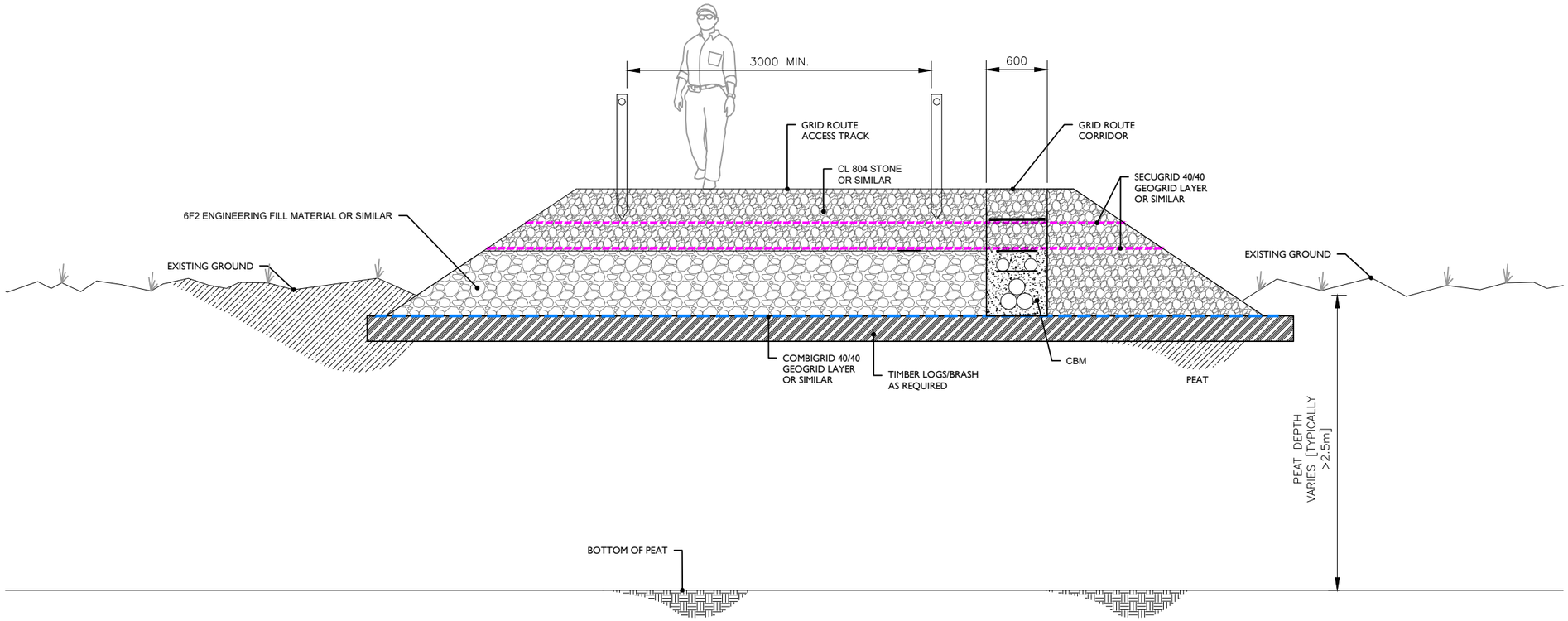
PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE E

REVISION: B

DRAWING NUMBER: COLE d005.2.5

Plotted - 24/01/2020 14:42:41
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TYPICAL SECTION THROUGH FLOATING GRID ROUTE TRACK

Scale 1:50

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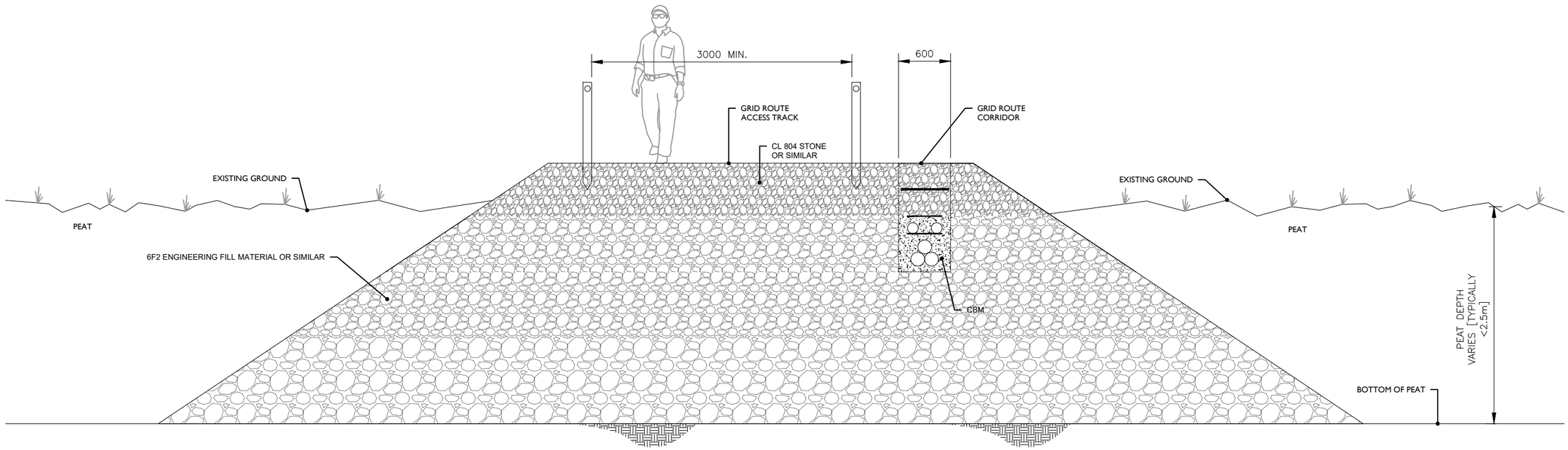
PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE E1

REVISION: B

DRAWING NUMBER: COLE d005.2.5

Plotted - 06/03/2020 15:01:55
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TYPICAL SECTION THROUGH SOLID GRID ROUTE TRACK

Scale 1:50

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PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: TYPICAL DETAILS ROAD SECTION TYPE E2

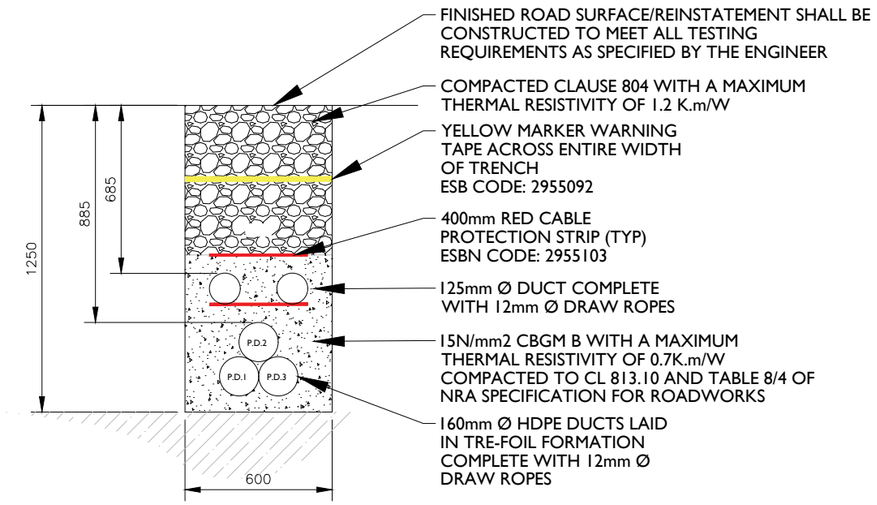
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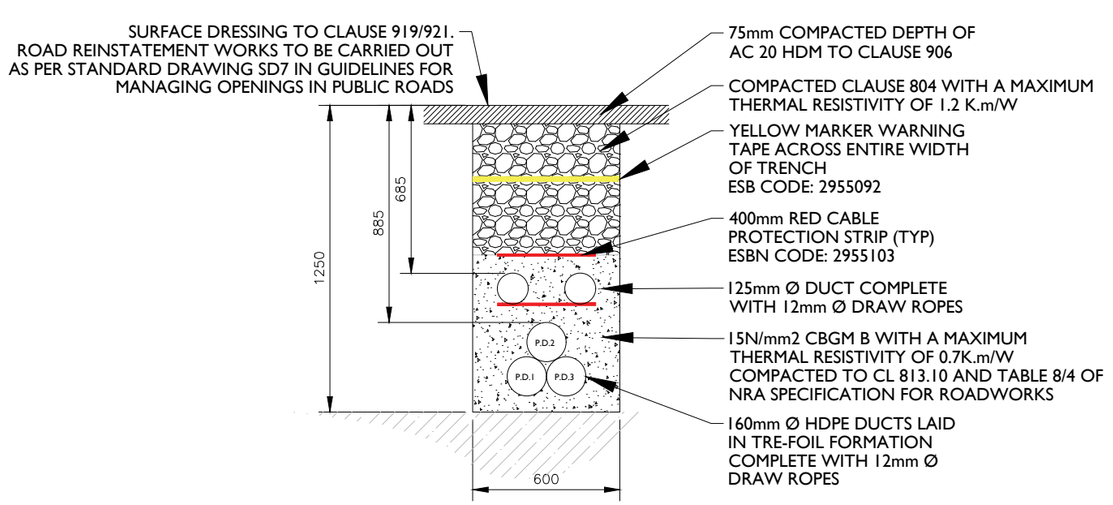
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J. SHANAHAN	19/01/2020	

DRAWING NUMBER: COLE d005.2.4

Plotted : 06/03/2020 15:00:12
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TYPICAL TRENCH DETAIL - PRIVATE ROAD



TYPICAL TRENCH DETAIL - PUBLIC ROAD

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PROJECT
COOLE WIND FARM
GRID ROUTE

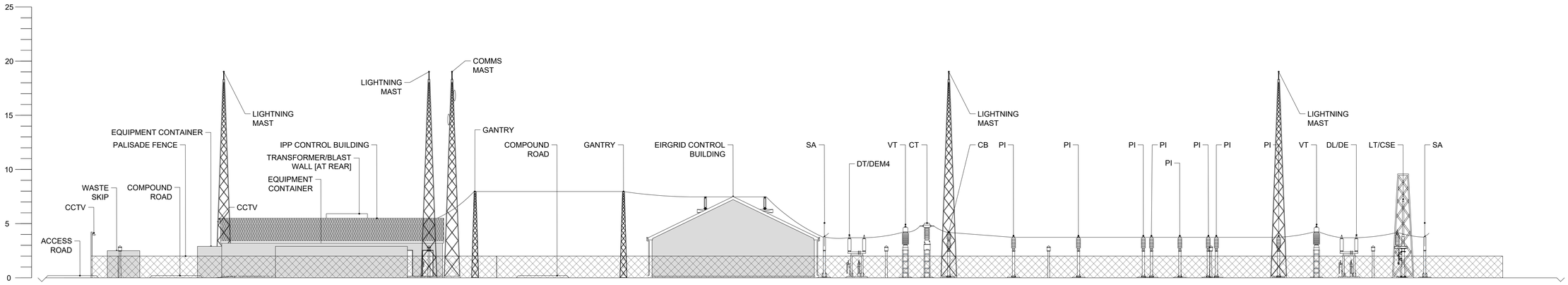
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TITLE
GRID ROUTE TRENCH
TYPICAL DETAILS

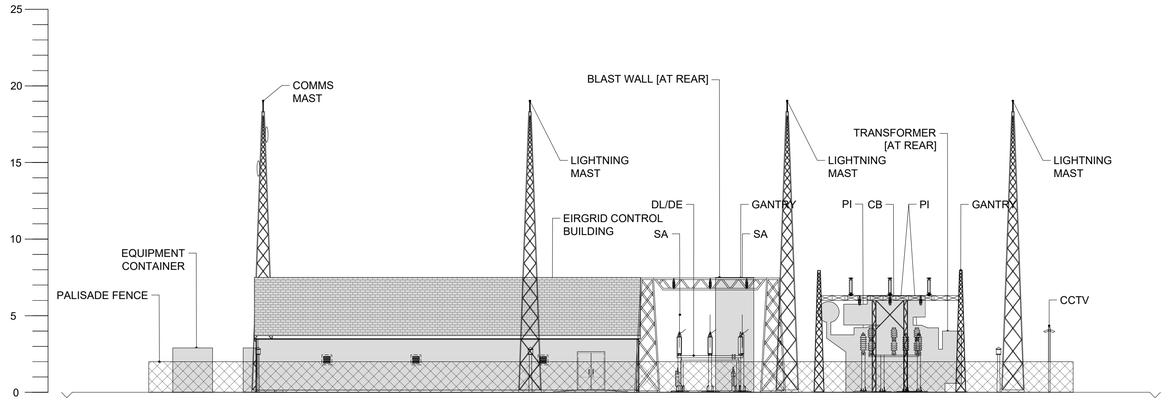
REVISION
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DRAWING NUMBER
COLE d005.4.2

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SIDE ELEVATION



END ELEVATION

NOTES

1. LAYOUT AND ARRANGEMENT OF SUBSTATION CONTROL BUILDING AND ELECTRICAL EQUIPMENT WITHIN COMPOUND IS SHOWN INDICATIVELY AND FOR ILLUSTRATION PURPOSES ONLY. DETAILS ARE BASED ON CURRENTLY ANTICIPATED EIRGRID/ESBN SPECIFICATIONS. FINAL LAYOUT AND ELECTRICAL EQUIPMENT DETAILS WILL BE CONFIRMED DURING DETAILED DESIGN WHEN EIRGRID/ESBN FINAL SPECIFICATIONS ARE CONFIRMED.
2. FINAL SPECIFICATIONS OF BUILDINGS AND ELECTRICAL EQUIPMENT WILL BE AS PER EIRGRID AND ESB SPECIFICATIONS.
3. POSITION AND NUMBER OF LIGHTNING MASTS TO BE CONFIRMED IN FINAL DESIGN.
4. INTERNAL SUBSTATION DUCTING OMITTED FOR CLARITY.

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	16/01/2020	JS	PK	FIRST ISSUE

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PROJECT: COOLE WIND FARM

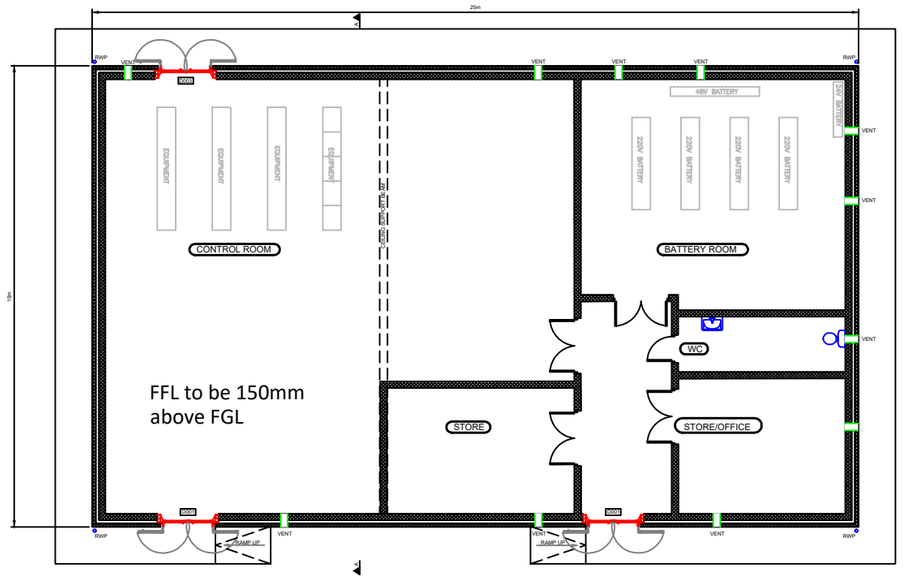
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REVISION: A

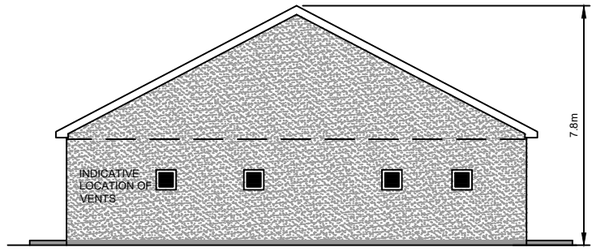
DRAWN BY: J. SHANAHAN	DATE: 16/01/2020	PAPER SIZE: A1	SCALE: 1:200
CHECKED AND APPROVED: P. KING	DATE: 16/01/2020	STATUS: DRAFT	

DRAWING NUMBER: COLE d007.2

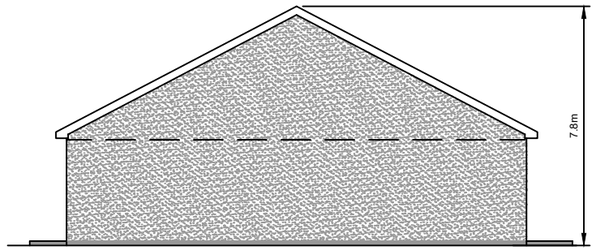
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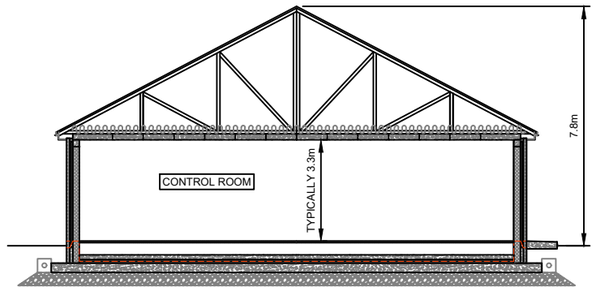
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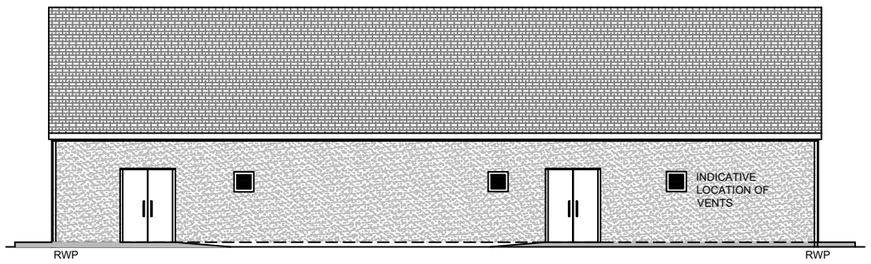
ELEVATION ON SIDE FACE



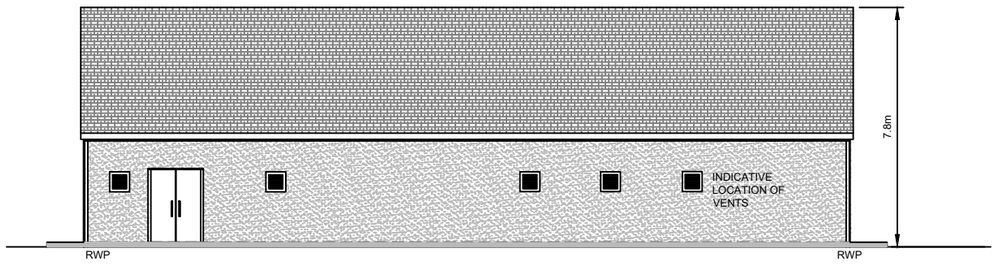
ELEVATION ON SIDE FACE



SECTION A-A



ELEVATION ON FRONT FACE



ELEVATION ON REAR FACE

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	11/05/2020	MJS	JS	FIRST ISSUE

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CLIENT

PROJECT: COOLE WIND FARM

TITLE: CONTROL BUILDING: TYPICAL PLAN AND ELEVATIONS

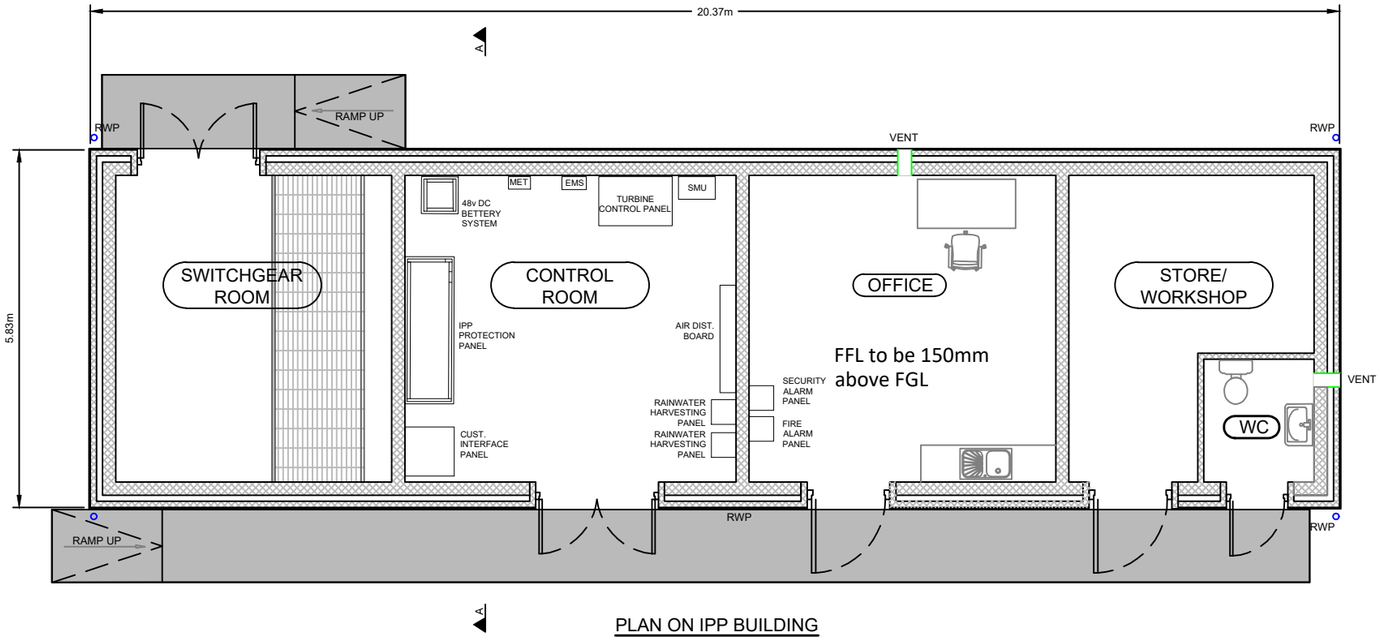
REVISION: A

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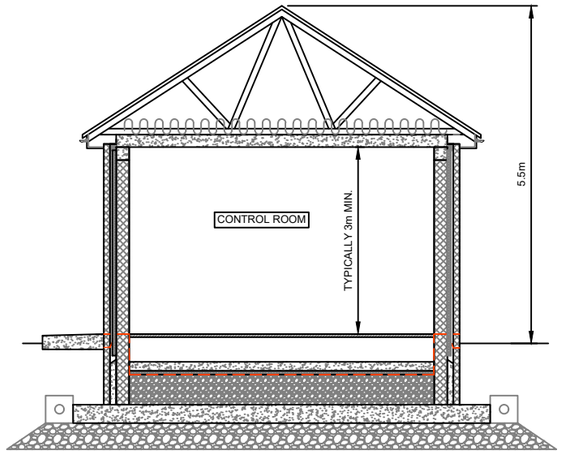
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J SHANAHAN	09/05/2020	

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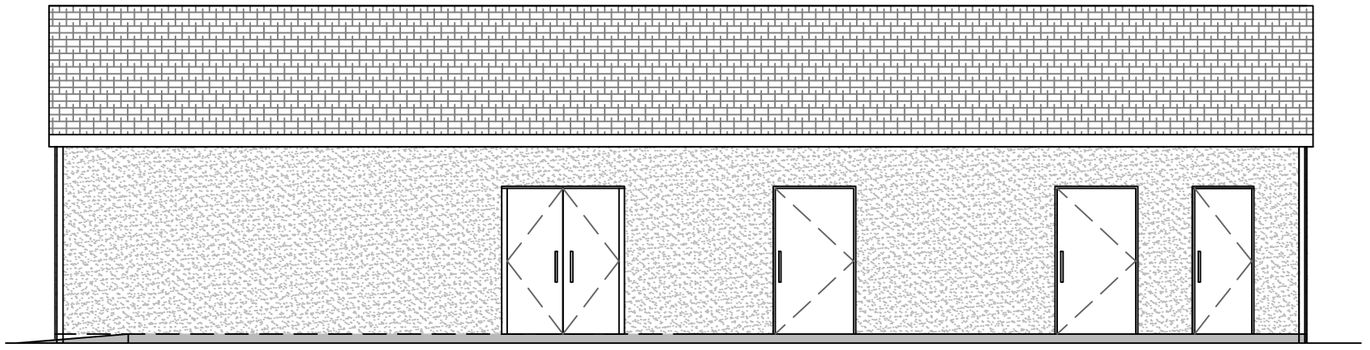
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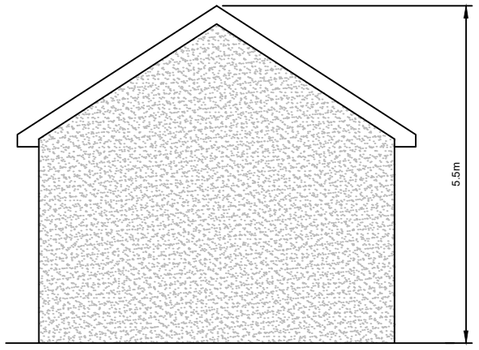
PLAN ON IPP BUILDING



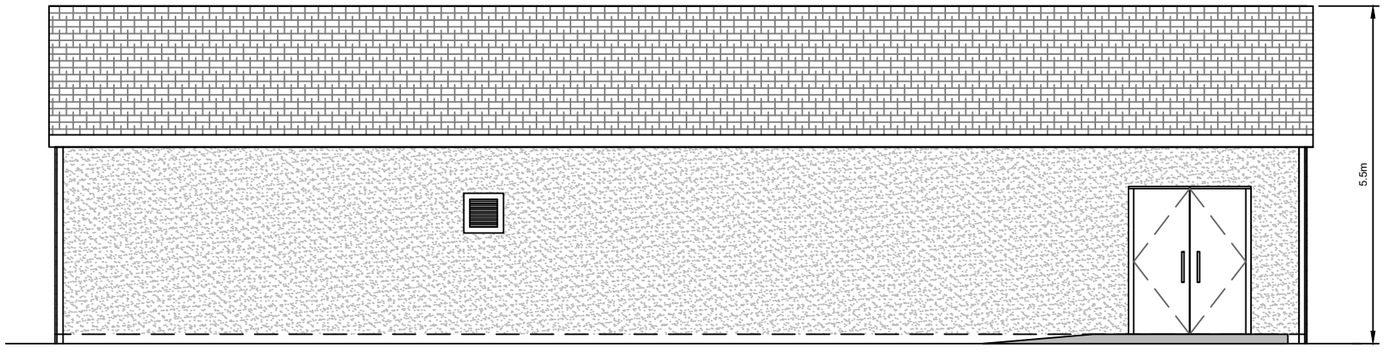
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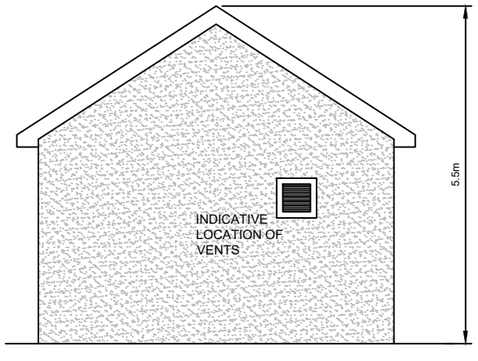
ELEVATION ON FRONT FACE



ELEVATION ON SIDE FACE



ELEVATION ON FRONT FACE



ELEVATION ON SIDE FACE

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REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	11/05/2020	MJS	JS	FIRST ISSUE

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PROJECT: COOLE WIND FARM

TITLE: IPP BUILDING: TYPICAL PLAN AND ELEVATIONS

REVISION: A

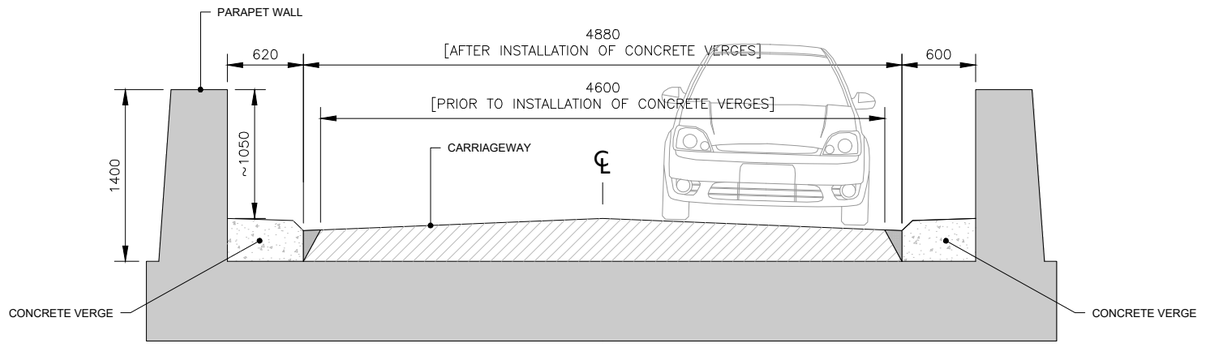
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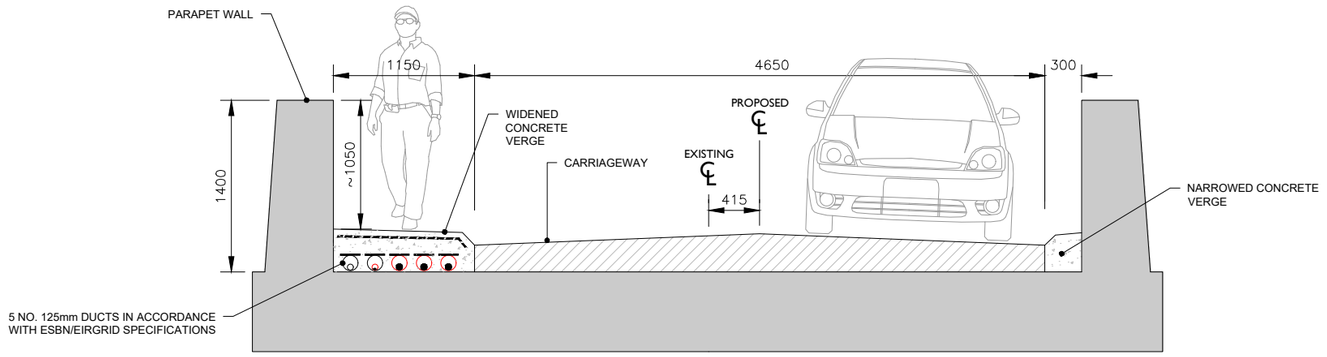
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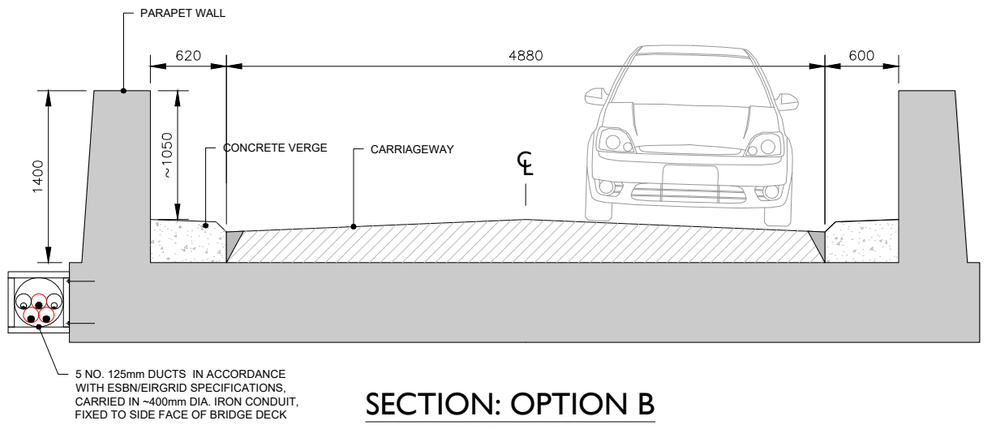




SECTION: EXISTING BRIDGE
SCALE 1:50



SECTION: OPTION A
SCALE 1:50



SECTION: OPTION B
SCALE 1:50

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B	17.01.2020	M.B.	J.S.	DUCT NOTE & PLAN UPDATED
A	10.12.2019	M.B.	J.S.	FIRST ISSUE

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PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
BRIDGE CROSSINGS
WH-L1825-001.00

REVISION
B

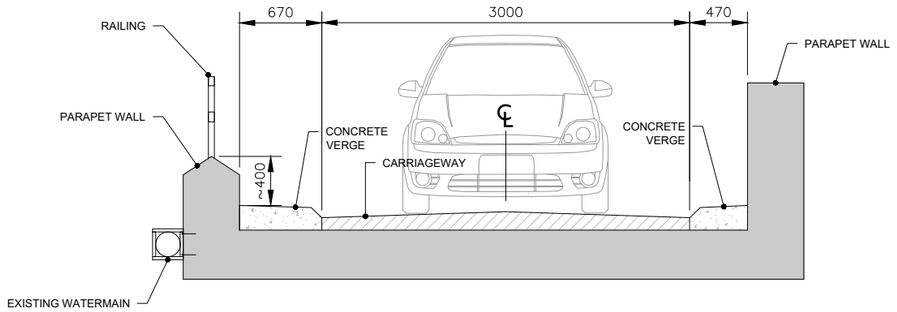
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DRAWING NUMBER
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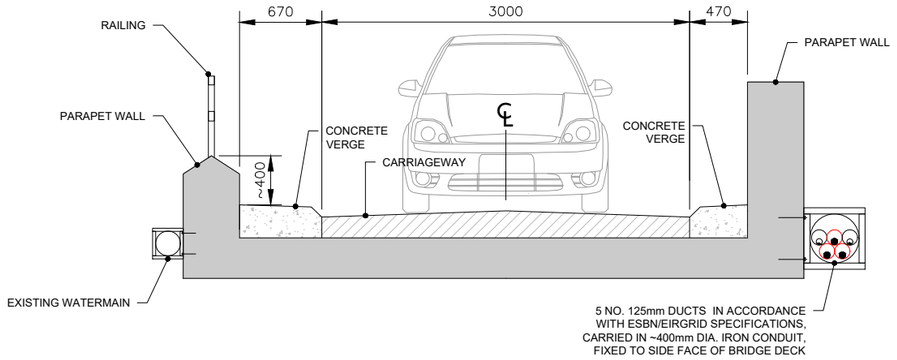
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SECTION: EXISTING BRIDGE

SCALE 1:50



SECTION: OPTION A

SCALE 1:50

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PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
BRIDGE CROSSINGS
WH-L1825-002.00

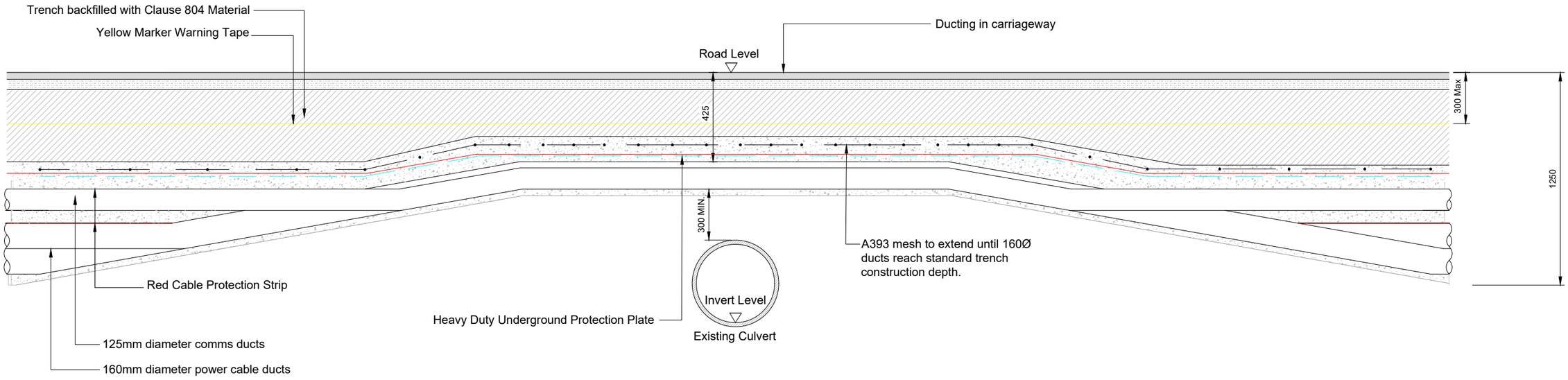
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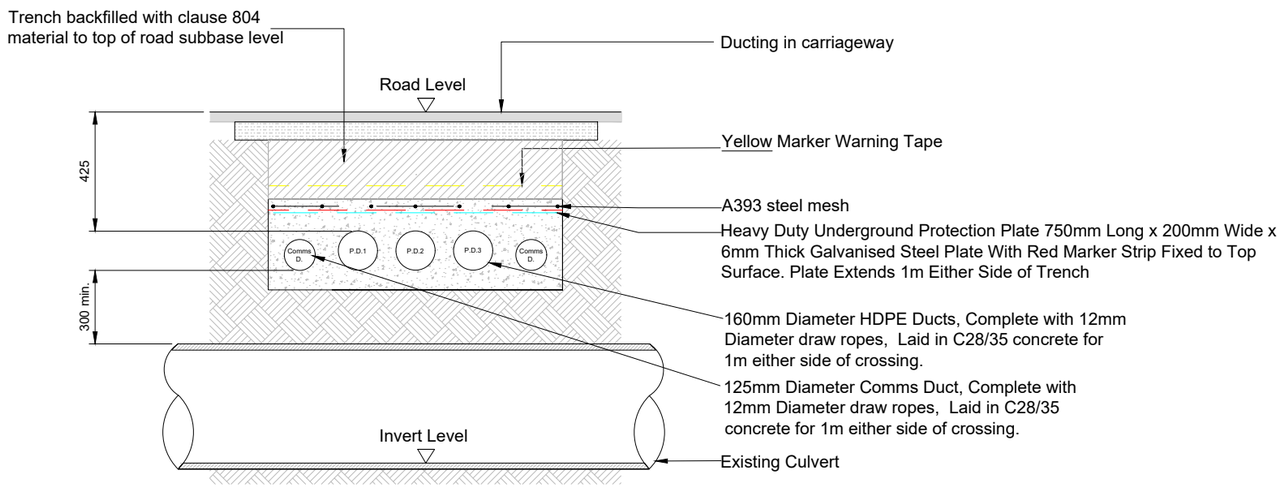
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SECTION
SCALE 1:25



SECTION
SCALE 1:25

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CLIENT

PROJECT: COOLE WIND FARM GRID ROUTE

TITLE: WATER CROSSINGS TYPICAL DETAIL - OVER

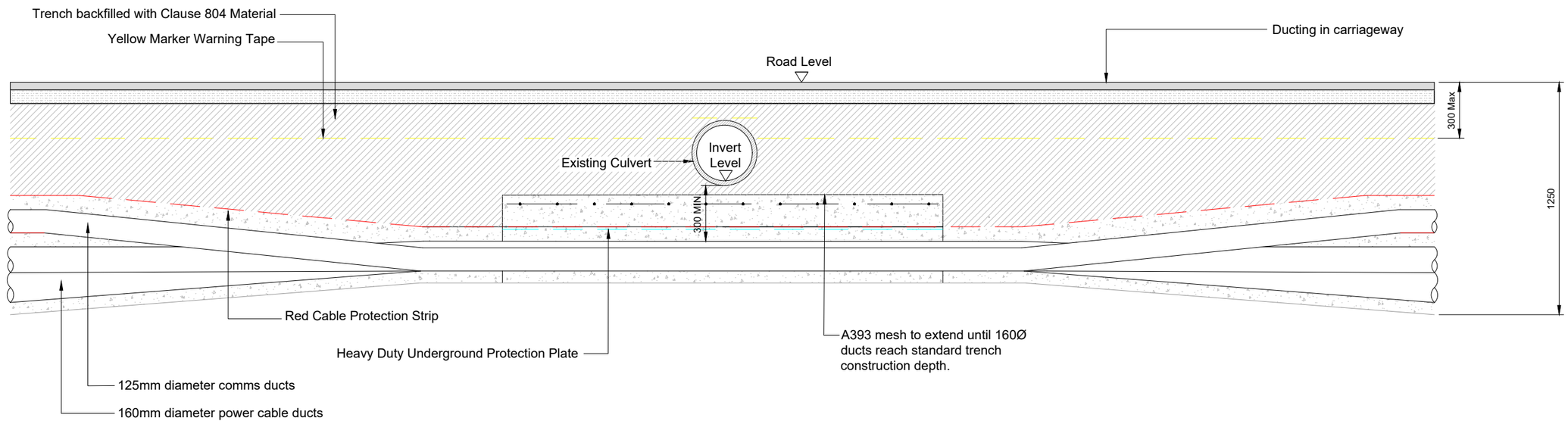
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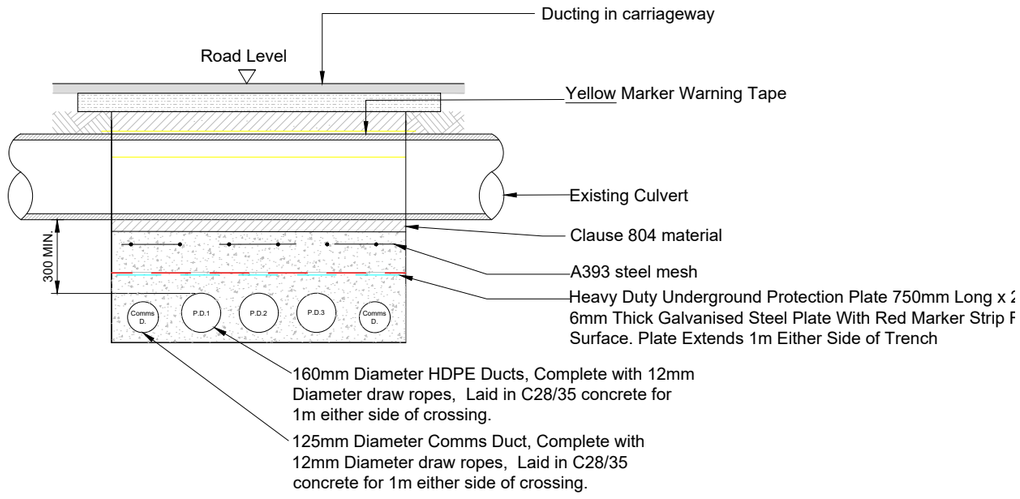
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SECTION
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PROJECT: COOLE WIND FARM GRID ROUTE

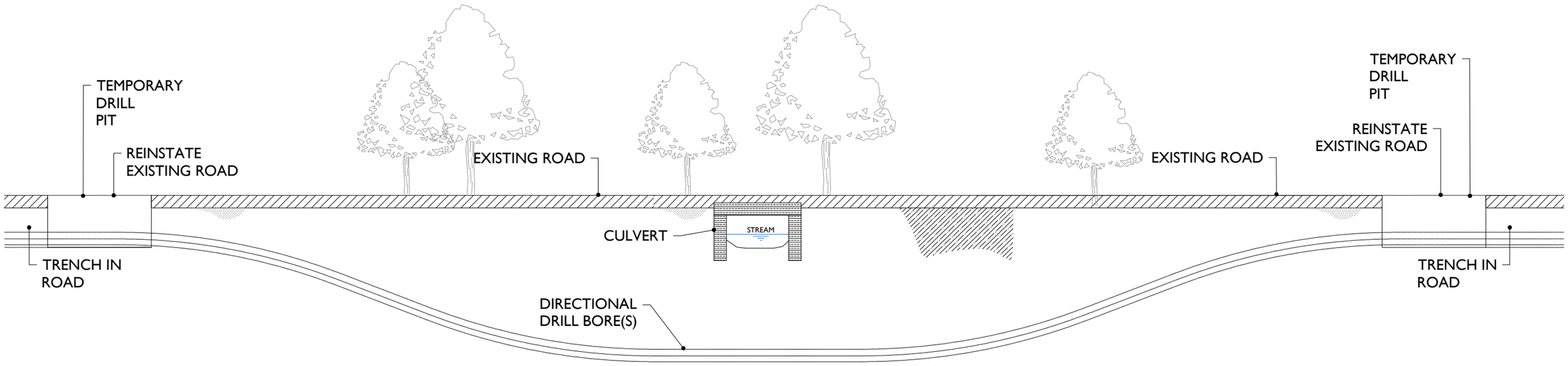
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REVISION: A

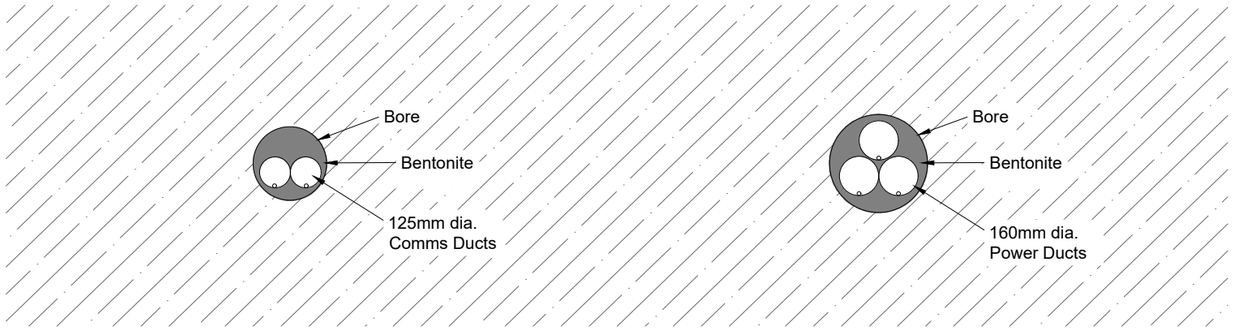
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CHECKED AND APPROVED: J. SHANAHAN	DATE: 19/01/2020	STATUS: DRAFT	

DRAWING NUMBER: COLE d005.4.4

Plotted - 20/01/2020 12:10:18
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SECTION
SCALE 1:100



SECTION
SCALE 1:25

NOTE: No. and diameter of bores to be confirmed at detailed design.

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NOTES

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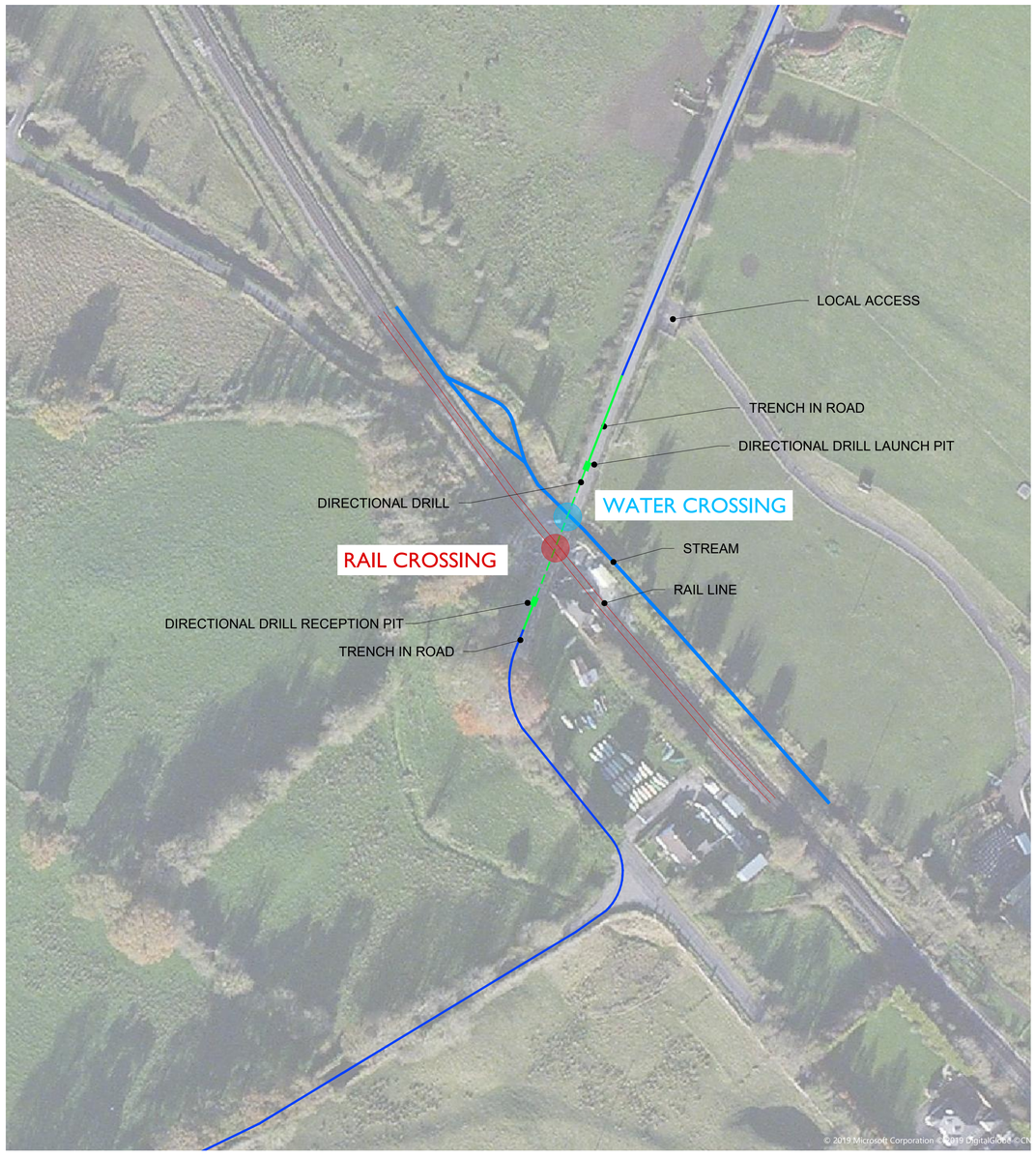
PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
WATER CROSSINGS
TYPICAL DETAIL - DIRECTIONAL DRILL

REVISION
A

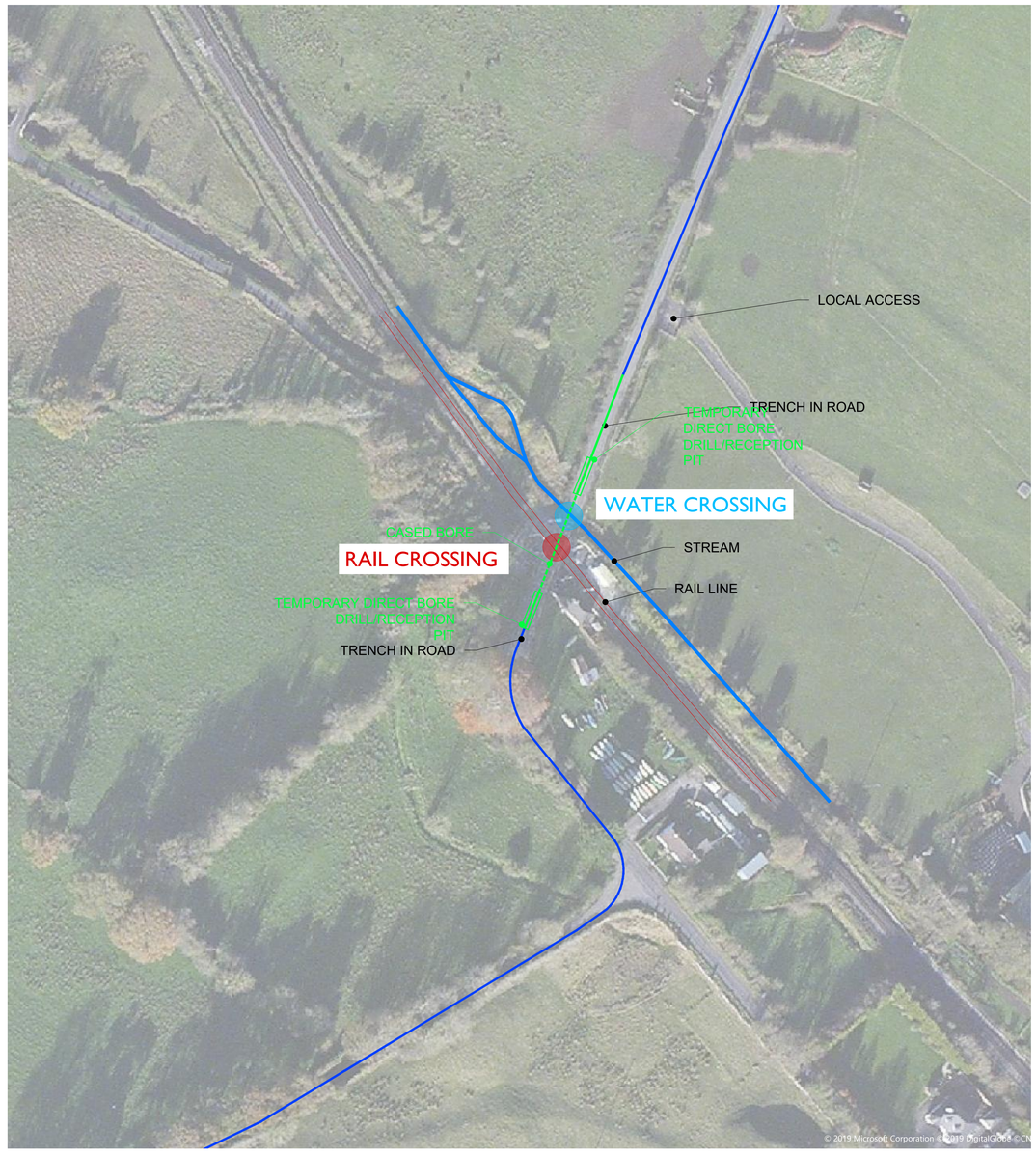
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OPTION 1 DIRECTIONAL DRILL - ILLUSTRATIVE PLAN AT RAIL CROSSING

Scale 1:50



OPTION 2 CASED BORE - ILLUSTRATIVE PLAN AT RAIL CROSSING

Scale 1:50

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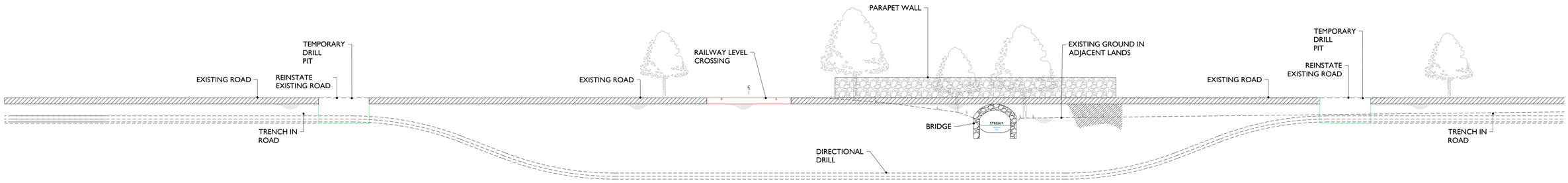
PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
RAILWAY CROSSING
ILLUSTRATIVE OPTIONS

REVISION
A

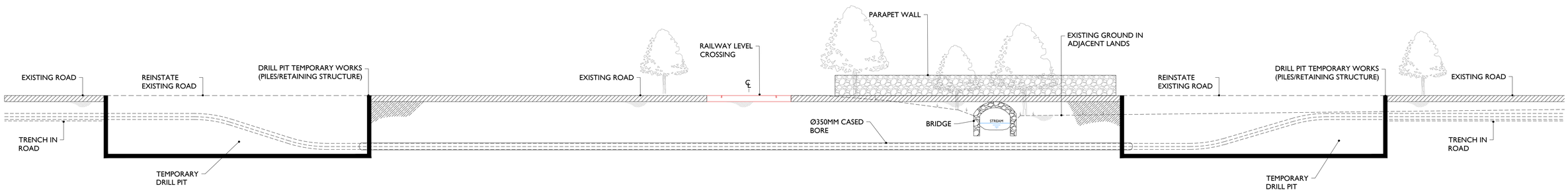
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OPTION 1 DIRECTIONAL DRILL - ILLUSTRATIVE SECTION THROUGH RAIL CROSSING

Scale 1:50



OPTION 2 CASED BORE - ILLUSTRATIVE SECTION THROUGH RAIL CROSSING

Scale 1:100

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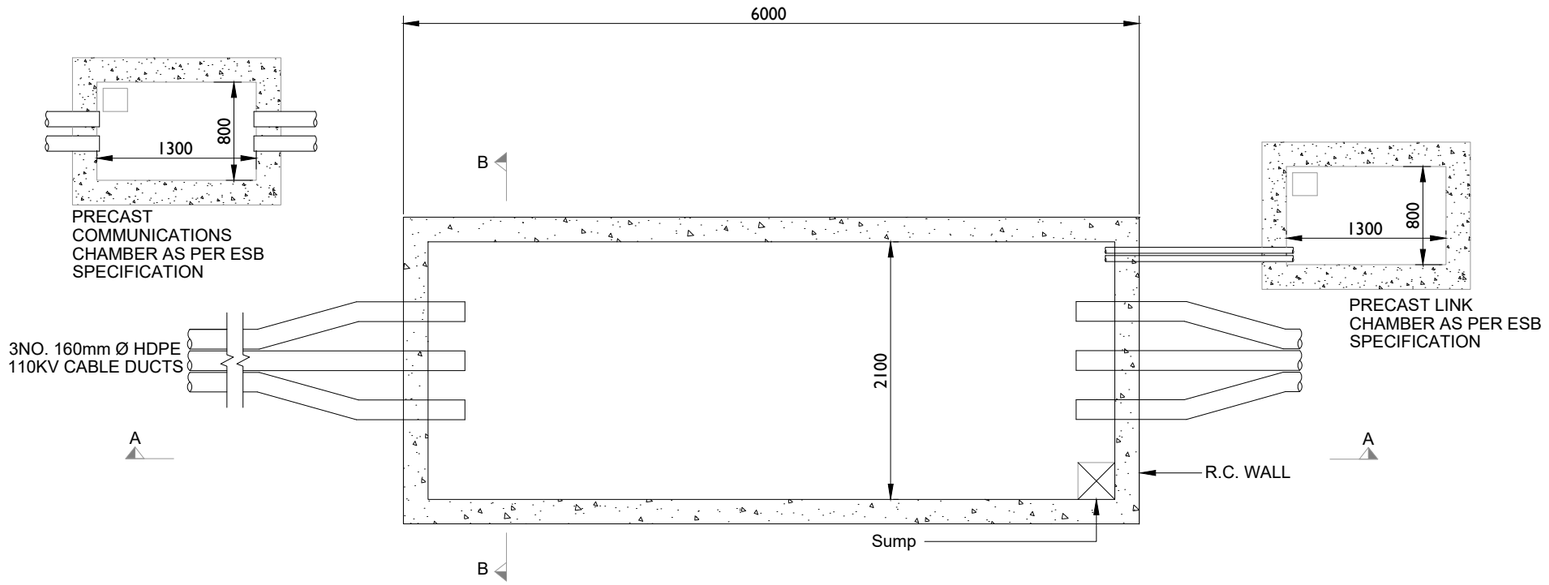
PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
RAILWAY CROSSING
ILLUSTRATIVE OPTIONS

REVISION
A

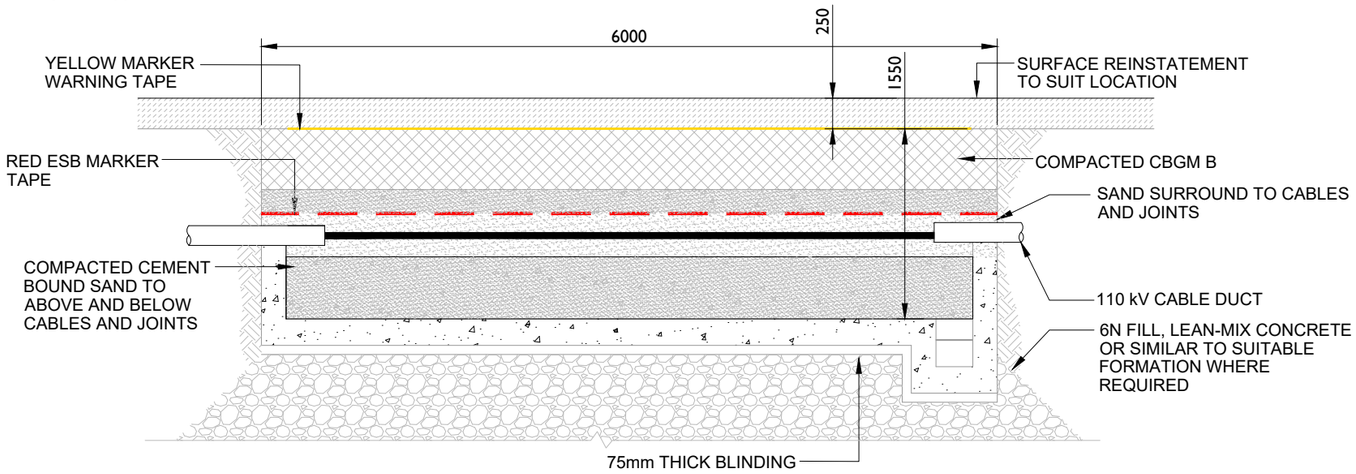
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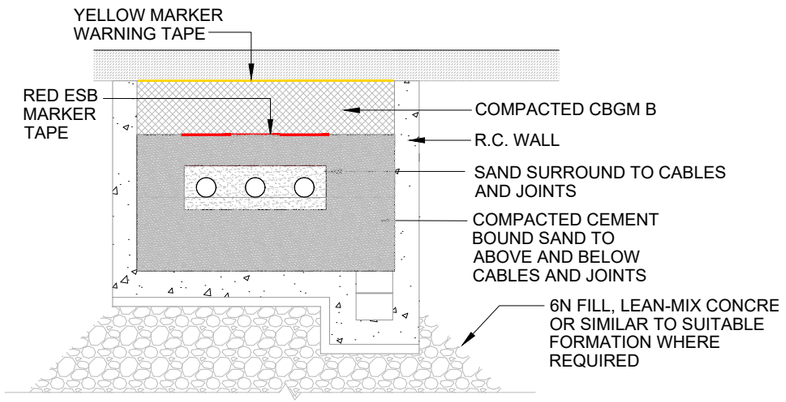
PLAN OF TYPICAL JOINT BAY WITH LINK & COMMUNICATIONS CHAMBERS

SCALE 1:50



TYPICAL SECTION A-A: PERMANENT REINSTATEMENT WORKS

SCALE 1:50



TYPICAL SECTION B-B: PERMANENT REINSTATEMENT WORKS

SCALE 1:50

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A	24.01.2020	M.B.	J.S.	FIRST ISSUE

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PROJECT: COOLE WIND FARM GRID ROUTE

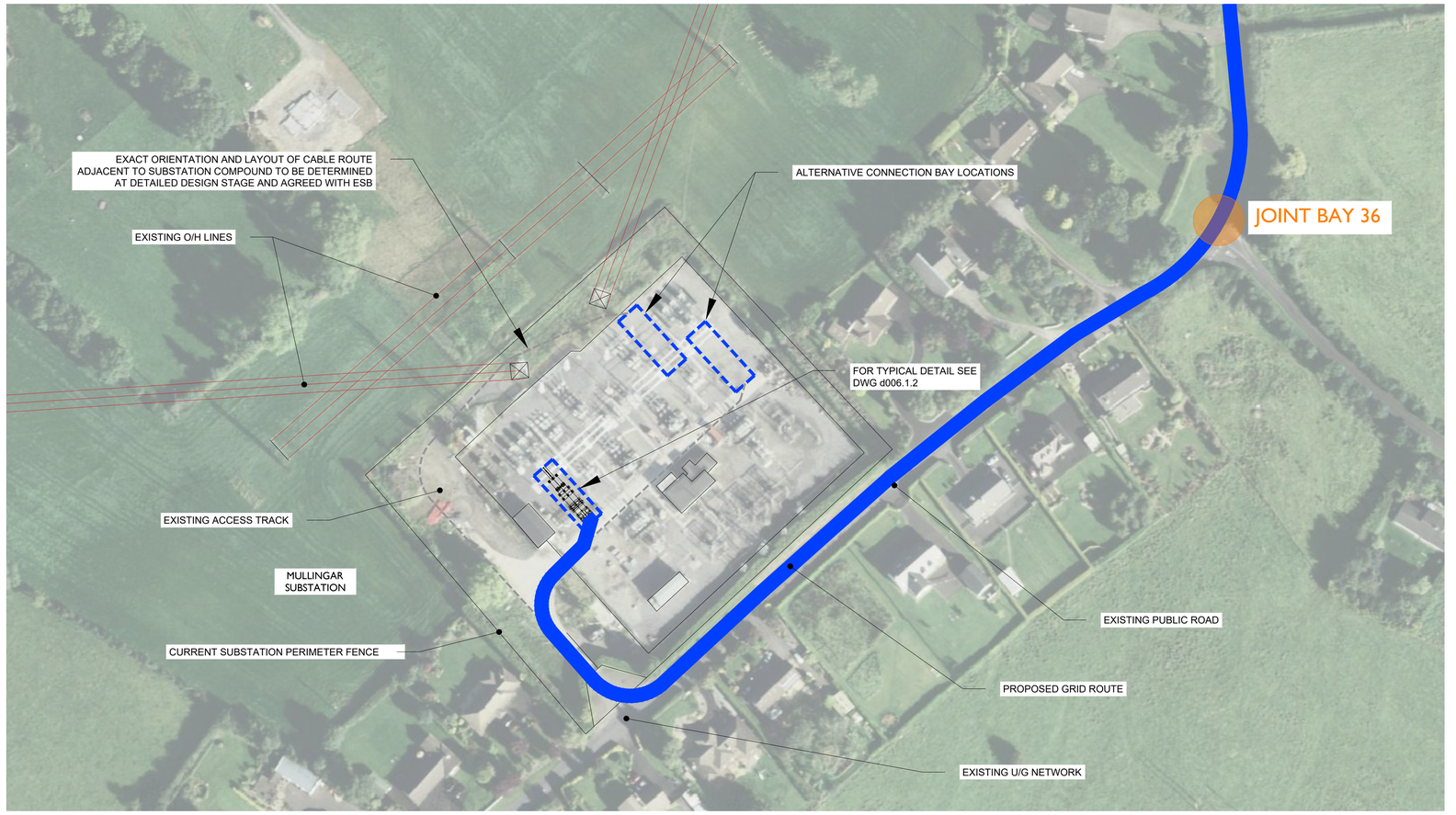
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REVISION: A

DRAWN BY: M. BROWNE	DATE: 19/01/2020	PAPER SIZE: A3	SCALE: 1:50
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DRAWING NUMBER: COLE d005.4.1

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MULLINGAR SUBSTATION - ILLUSTRATIVE PLAN

Scale 1:50

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B	20.03.2020	MS	JS	BAY LOCATIONS MOVED
A	16.01.2020	M.B.	J.S.	FIRST ISSUE

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PROJECT
COOLE WIND FARM
GRID ROUTE

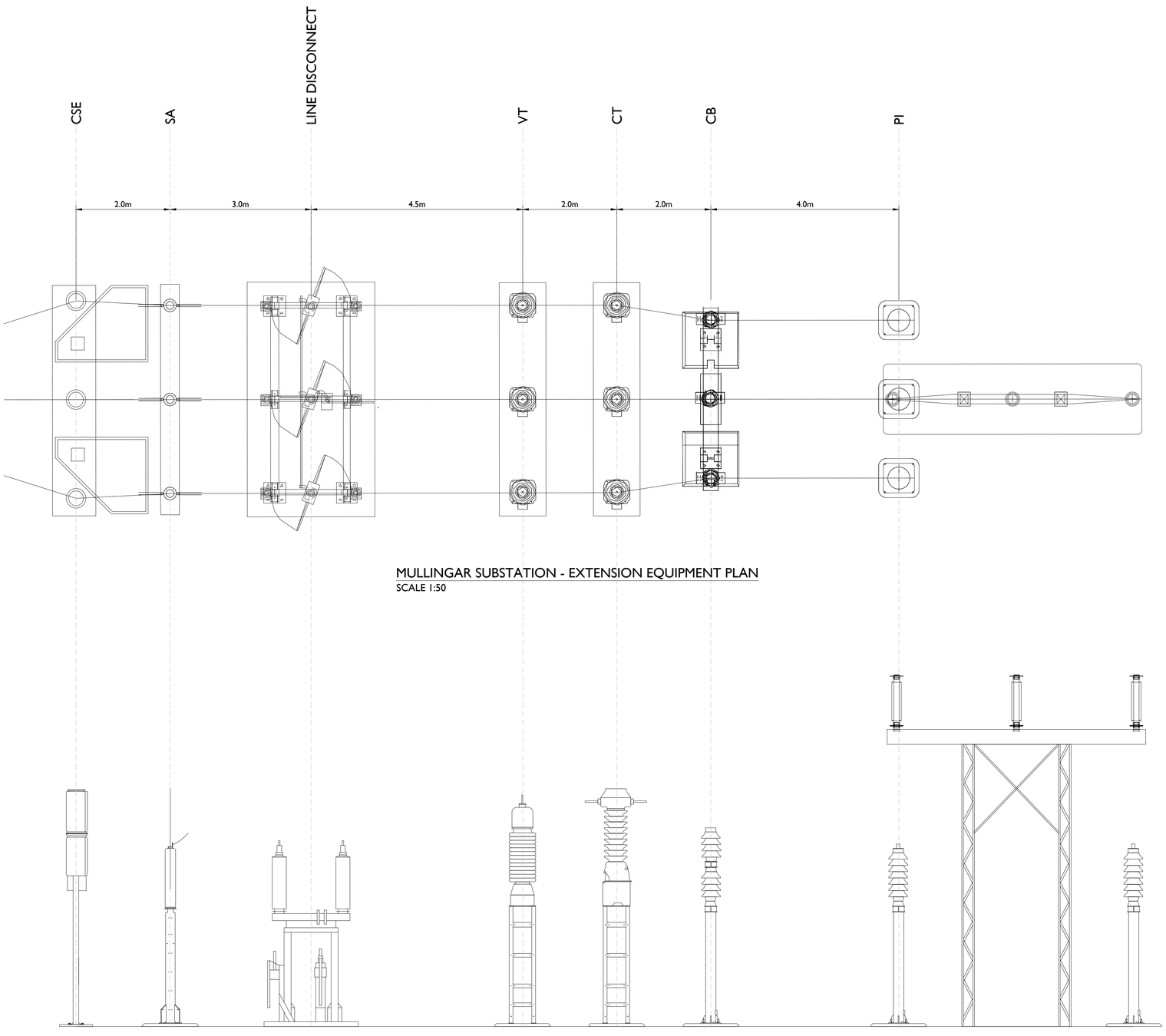
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STATUS	DRAFT		

TITLE
MULLINGAR SUBSTATION
ILLUSTRATIVE PLAN

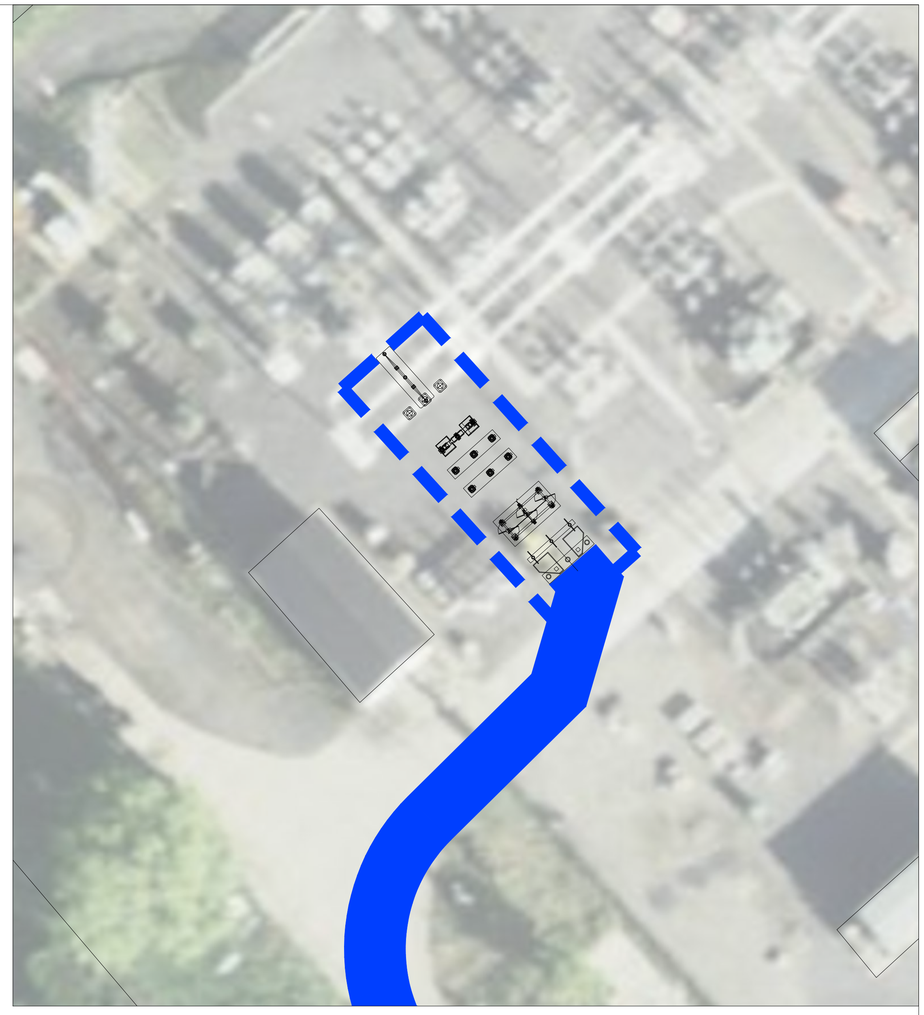
REVISION
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DRAWING NUMBER
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MULLINGAR SUBSTATION - EXTENSION EQUIPMENT PLAN
SCALE 1:50



MULLINGAR SUBSTATION - EXTENSION EQUIPMENT LOCATION
SCALE 1:250

MULLINGAR SUBSTATION - EXTENSION EQUIPMENT ELEVATIONS
SCALE 1:50

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PROJECT
COOLE WIND FARM
GRID ROUTE

TITLE
MULLINGAR SUBSTATION
EXTENSION EQUIPMENT DETAILS

REVISION
B

DRAWN BY	M. BROWNE	DATE	16/01/2020
CHECKED AND APPROVED	J. SHANAHAN	DATE	16/01/2020
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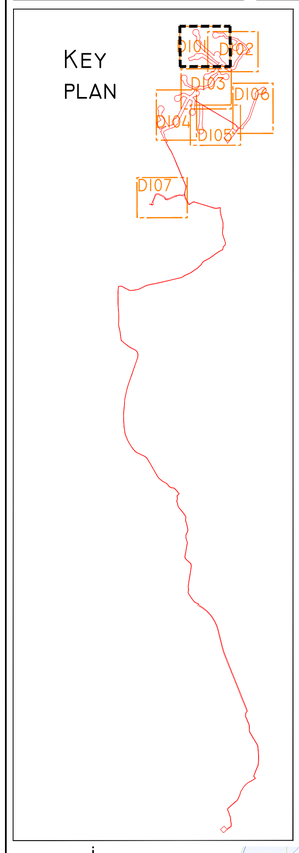
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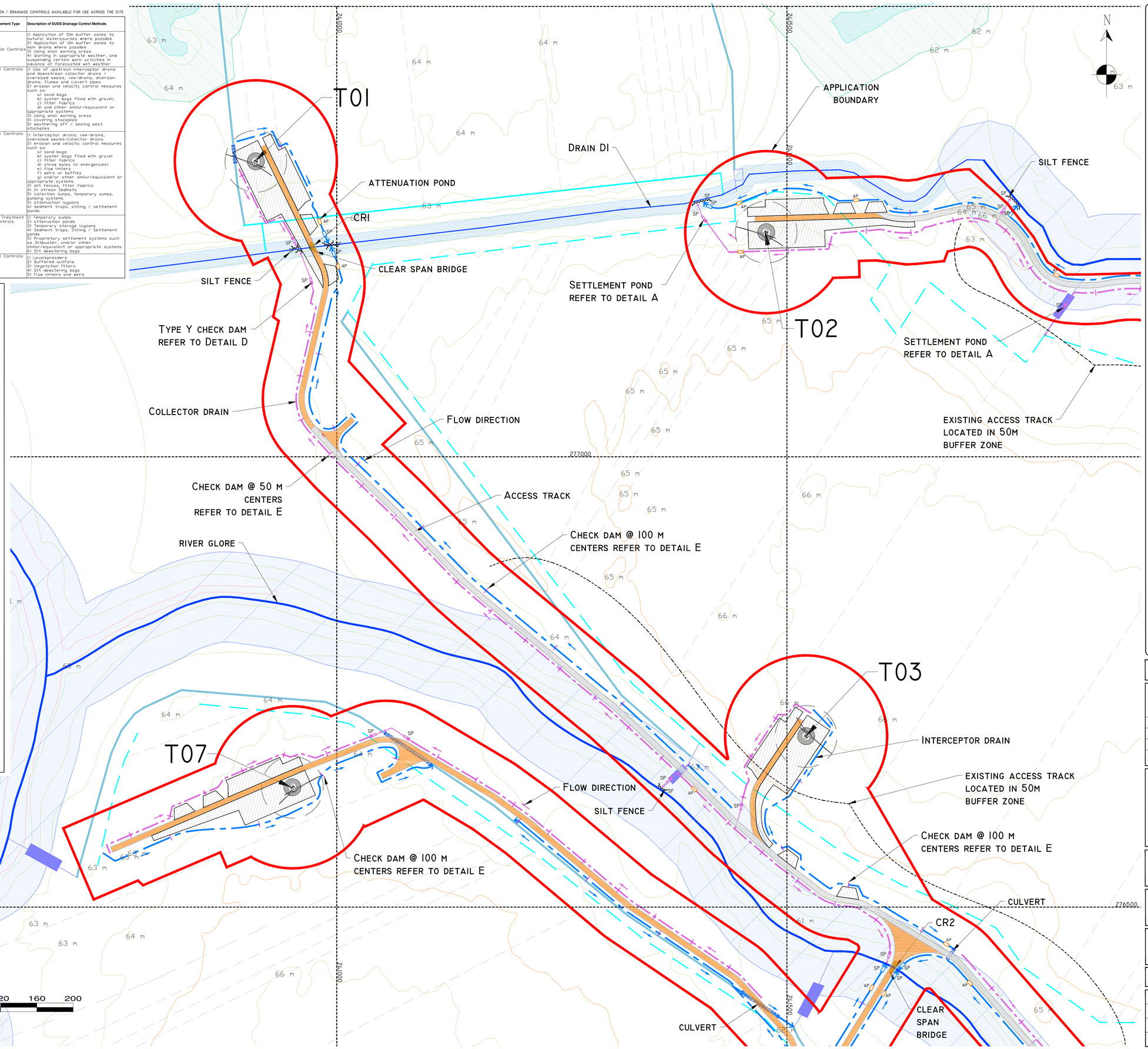
Drainage Design Notes

1. All drainage subject to micro-siting and optimisation on site.
2. The locations of the interceptor drains, check dams, culverts, swales, stilling ponds and level spreaders are shown as indicative, and may be changed to suit the requirements of the local topography.
3. Supervising hydrologist or environmental clerk of works (environmental scientist) to oversee installation of drainage features following detailed drainage design.
4. Drainage measures to be installed prior to, or at the same time as the works areas they are intended to drain.
5. Design elevation of the water surface along the route of the interceptor drains or swales will not be lower then the design elevation of the water surface in the outlet at the level spreader or stilling pond.
6. The spacing and frequency of the check dams will be dependant on the gradient of the interceptor drain or swale in which they are being installed.
7. Check dam designs to be selected best to suit particular topography and hydrological environment.
8. Down gradient slope below level spreader onto which the water will dissipate to have a grade less the 6%.
9. No direct discharge or pumping to watercourses will be permitted. All discharges from level spreaders or stilling ponds to be via vegetated filters. Selection or suitable areas to use as vegetation filters will be determined by the size of the contributing catchment, slope and ground conditions.
10. Stilling ponds to be sized according to the area they will be receiving water from.
11. Diversion of drainage ditches will only take place when alternative drainage ditch has been installed to handle the same water.
12. Existing drains/ditches to be incorporated or removed during wind farm construction.
13. All drainage system features to be subject of inspection and maintenance plan.
14. The layout shown is slightly offset for scale purposes, and all drainage would be installed as close to the road as possible, and within the planning boundary for the development.

Mitigation / Drainage Cointrols 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) covering stockpiles 5) weathering off / sealing peat 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 (in emergencies) e) flow inters f) weirs or baffles g) and/or other similar/equivalent or appropriate systems. 3) silt fences, filter fabrics 4) In stream Sedimats 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 inters and weirs





Drawing Legend :

- Upstream Interceptor Ditches
- Direction of Flow
- Downstream Collector Ditches
- Settlement Pond (SP)
- Attenuation Pond (AP)
- culvert
- silt fence (SF)
- headland drain
- field drain
- CR - new stream/river crossing location
- clear span bridge
- existing settlement pond

Proposed Drainage

- application boundary
- Existing ground surface majour contour (5 m interval)
- Existing ground surface minor contour (1 m interval)
- rivers/streams
- Lakes
- natural rivers/streams 50m buffer
- drain 10m buffer
- Lake 50m buffer
- turbine and swept area
- turbine foundation
- regional road
- local road
- proposed road
- existing road to be upgraded
- passing bay
- crane platform
- borrow pit

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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.

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Revisions			

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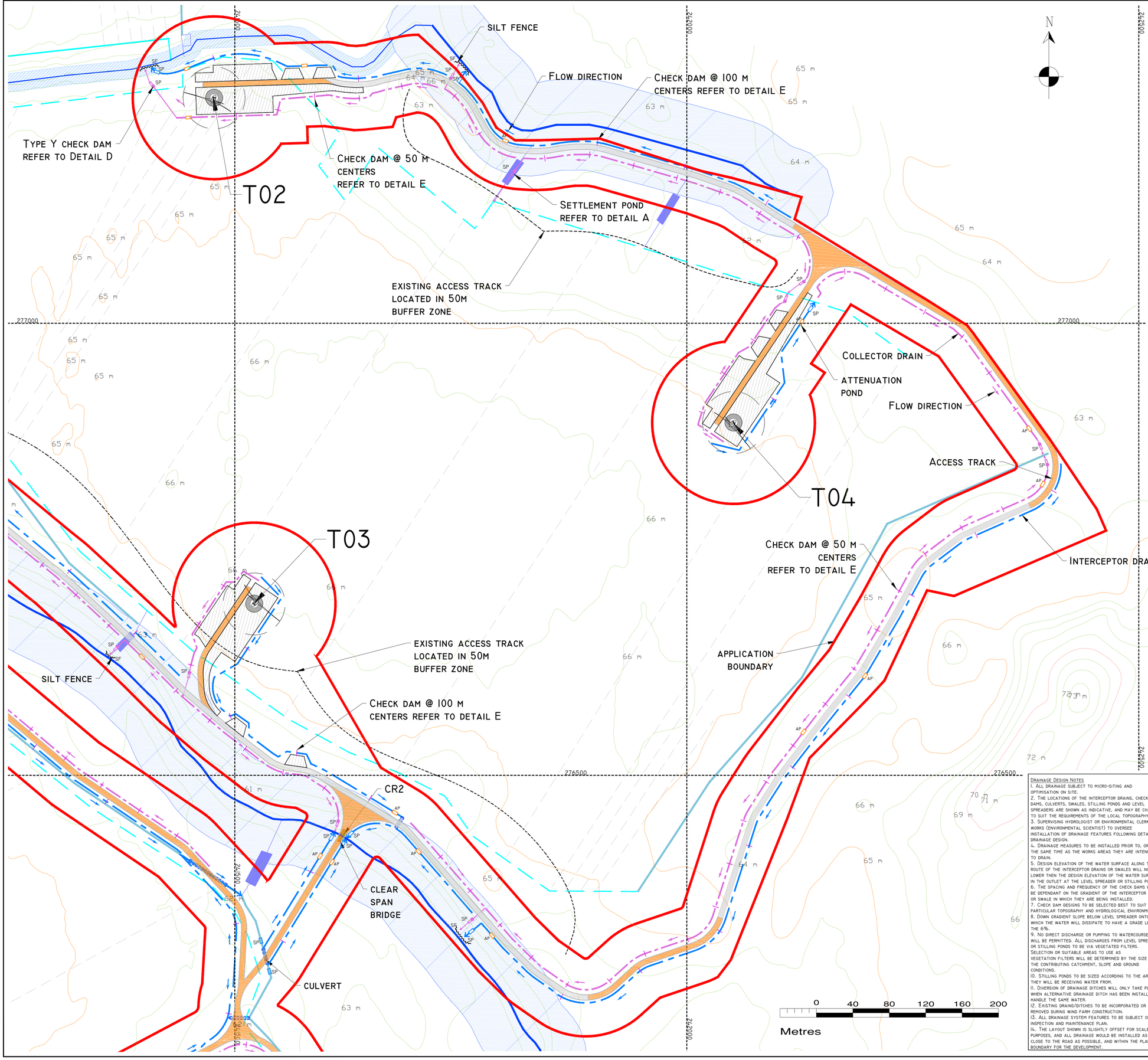
Client: MKO

Job: Coole WF, Co. Westmeath

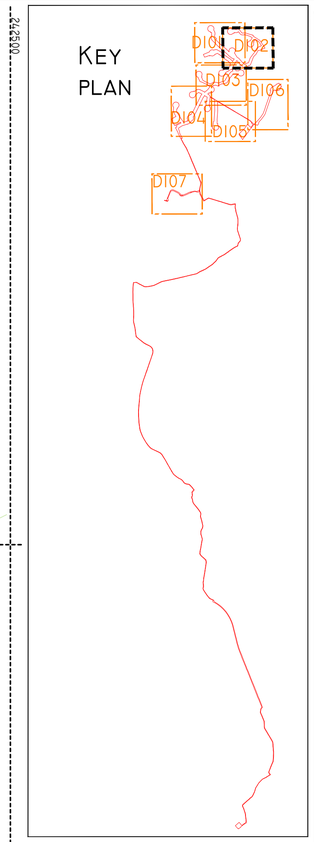
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Figure No: D101

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Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG



KEY PLAN



DRAWING LEGEND :

PROPOSED DRAINAGE

- UPSTREAM INTERCEPTOR DITCHES
- DIRECTION OF FLOW
- DOWNSTREAM COLLECTOR DITCHES
- SETTLEMENT POND (SP)
- ATTENUATION POND (AP)
- CULVERT
- SILT FENCE (SF)
- HEADLAND DRAIN
- FIELD DRAIN
- CR - NEW STREAM/RIVER CROSSING LOCATION
- CLEAR SPAN BRIDGE
- EXISTING SETTLEMENT POND

- APPLICATION BOUNDARY
- EXISTING GROUND SURFACE MAJOUR CONTOUR (5 M INTERVAL)
- EXISTING GROUND SURFACE MINOR CONTOUR (1 M INTERVAL)
- RIVERS/STREAMS
- LAKES
- NATURAL RIVERS/STREAMS 50M BUFFER
- DRAIN 10M BUFFER
- LAKE 50M BUFFER
- TURBINE AND SWEPT AREA
- TURBINE FOUNDATION
- REGIONAL ROAD
- LOCAL ROAD
- PROPOSED ROAD
- EXISTING ROAD TO BE UPGRADED
- PASSING BAY
- CRANE PLATFORM
- BORROW PIT

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Revisions

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Client: MKO

Job: COOLE WF, CO. WESTMEATH

Title: DRAINAGE LAYOUT SHEET 2 OF 7

Figure No: D102

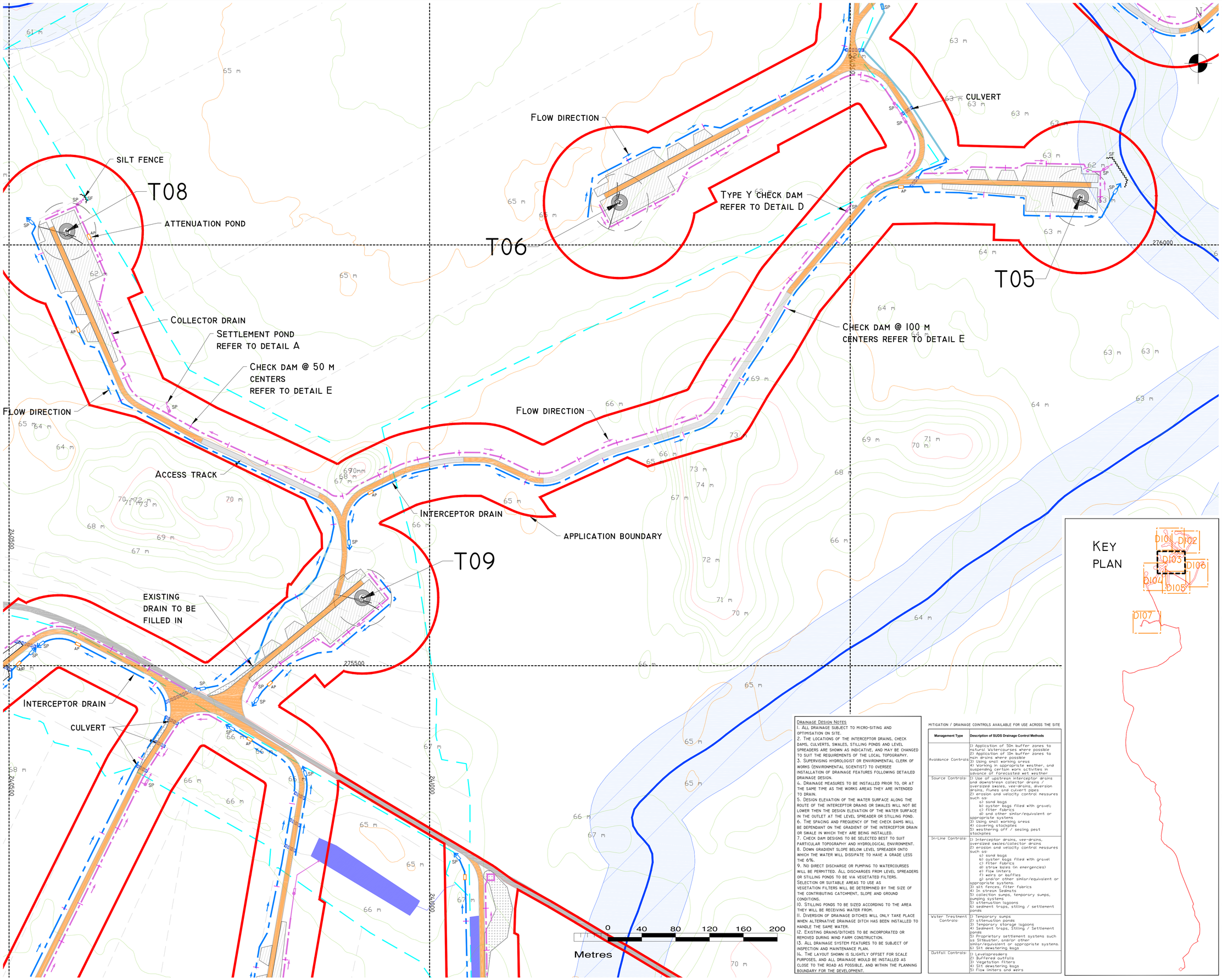
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Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG

DRAINAGE DESIGN NOTES

1. ALL DRAINAGE SUBJECT TO MICRO-SITING AND OPTIMISATION ON SITE.
2. THE LOCATIONS OF THE INTERCEPTOR DRAINS, CHECK DAMS, CULVERTS, SWALES, STILLING PONDS AND LEVEL SPREADERS ARE SHOWN AS INDICATIVE, AND MAY BE CHANGED TO SUIT THE REQUIREMENTS OF THE LOCAL TOPOGRAPHY.
3. SUPERVISING HYDROLOGIST OR ENVIRONMENTAL CLERK OF WORKS (ENVIRONMENTAL SCIENTIST) TO OVERSEE INSTALLATION OF DRAINAGE FEATURES FOLLOWING DETAILED DRAINAGE DESIGN.
4. DRAINAGE MEASURES TO BE INSTALLED PRIOR TO, OR AT THE SAME TIME AS THE WORKS AREAS THEY ARE INTENDED TO DRAIN.
5. DESIGN ELEVATION OF THE WATER SURFACE ALONG THE ROUTE OF THE INTERCEPTOR DRAINS OR SWALES WILL NOT BE LOWER THEN THE DESIGN ELEVATION OF THE WATER SURFACE IN THE OUTLET AT THE LEVEL SPREADER OR STILLING POND.
6. THE SPACING AND FREQUENCY OF THE CHECK DAMS WILL BE DEPENDANT ON THE GRADIENT OF THE INTERCEPTOR DRAIN OR SWALE IN WHICH THEY ARE BEING INSTALLED.
7. CHECK DAM DESIGNS TO BE SELECTED BEST TO SUIT PARTICULAR TOPOGRAPHY AND HYDROLOGICAL ENVIRONMENT.
8. DOWN GRADIENT SLOPE BELOW LEVEL SPREADER ONTO WHICH THE WATER WILL DISSIPATE TO HAVE A GRADE LESS THE 6%.
9. NO DIRECT DISCHARGE OR PUMPING TO WATERCOURSES WILL BE PERMITTED. ALL DISCHARGES FROM LEVEL SPREADERS OR STILLING PONDS TO BE VIA VEGETATED FILTERS. SELECTION OR SUITABLE AREAS TO USE AS VEGETATION FILTERS WILL BE DETERMINED BY THE SIZE OF THE CONTRIBUTING CATCHMENT, SLOPE AND GROUND CONDITIONS.
10. STILLING PONDS TO BE SIZED ACCORDING TO THE AREA THEY WILL BE RECEIVING WATER FROM.
11. DIVERSION OF DRAINAGE DITCHES WILL ONLY TAKE PLACE WHEN ALTERNATIVE DRAINAGE DITCH HAS BEEN INSTALLED TO HANDLE THE SAME WATER.
12. EXISTING DRAINS/DITCHES TO BE INCORPORATED OR REMOVED DURING WIND FARM CONSTRUCTION.
13. ALL DRAINAGE SYSTEM FEATURES TO BE SUBJECT OF INSPECTION AND MAINTENANCE PLAN.
14. THE LAYOUT SHOWN IS SLIGHTLY OFFSET FOR SCALE PURPOSES, AND ALL DRAINAGE WOLD BE INSTALLED AS CLOSE TO THE ROAD AS POSSIBLE, AND WITHIN THE PLANNING BOUNDARY FOR THE DEVELOPMENT.

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) covering stockpiles 5) weathering off / sealing peat 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 (in emergencies) e) flow limiters f) weirs or baffles g) and/or other similar/equivalent or appropriate systems 3) silt fences, filter fabrics 4) In stream Sedmats 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



Drawing Legend :

- Upstream Interceptor Ditches
- Direction of Flow
- Downstream Collector Ditches
- Settlement Pond (SP)
- Attenuation Pond (AP)
- culvert
- silt fence (SF)
- headland drain
- field drain
- CR - new stream/river crossing location
- clear span bridge
- existing settlement pond

Proposed Drainage

- application boundary
- Existing ground surface majour contour (5 m interval)
- Existing ground surface minor contour (1 m interval)
- rivers/streams
- Lakes
- natural rivers/streams 50m buffer
- drain 10m buffer
- Lake 50m buffer
- turbine and swept area
- turbine foundation
- regional road
- local road
- proposed road
- existing road to be upgraded
- passing bay
- crane platform
- borrow pit

Project Design Drawing Notes

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5. All contractors, weather main or sub-contractors, must visit the site and are responsible for taking and checking any and all dimensions and levels that relate to the works.
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 typical Turbine rotor diameter as per turbine drawing.

Drainage Design Notes

1. All drainage subject to micro-siting and optimisation on site.
2. The locations of the interceptor drains, check dams, culverts, swales, stilling ponds and level spreaders are shown as indicative, and may be changed to suit the requirements of the local topography.
3. Supervising hydrologist or environmental clerk of works (environmental scientist) to oversee installation of drainage features following detailed drainage design.
4. Drainage measures to be installed prior to, or at the same time as the works areas they are intended to drain.
5. Design elevation of the water surface along the route of the interceptor drains or swales will not be lower then the design elevation of the water surface in the outlet at the level spreader or stilling pond.
6. The spacing and frequency of the check dams will be dependant on the gradient of the interceptor drain or swale in which they are being installed.
7. Check dam designs to be selected best to suit particular topography and hydrological environment.
8. Down gradient slope below level spreader onto which the water will dissipate to have a grade less the 6%.
9. No direct discharge or pumping to watercourses will be permitted. All discharges from level spreaders or stilling ponds to be via vegetated filters. Selection or suitable areas to use as vegetation filters will be determined by the size of the contributing catchment, slope and ground conditions.
10. Stilling ponds to be sized according to the area they will be receiving water from.
11. Diversion of drainage ditches will only take place when alternative drainage ditch has been installed to handle the same water.
12. Existing drains/ditches to be incorporated or removed during wind farm construction.
13. All drainage system features to be subject of inspection and maintenance plan.
14. The layout shown is slightly offset for scale purposes, and all drainage would be installed as close to the road as possible, and within the planning boundary for the development.

Mitigation / Drainage Cointrols 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) covering stockpiles 5) weathering off / sealing peat 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 (in emergencies) e) flow limiters f) weirs or baffles g) and/or other similar/equivalent or appropriate systems. 3) silt fences, filter fabrics 4) In stream Sedimats 5) collection sumps, temporary sumps, pumping systems 5) attenuation lagoons 6) sediment traps, stilling / settlement ponds
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Outfall Controls:	1) Levelspreaders 2) Buffered outfalls 3) Vegetation filters 4) Silt dewatering bags 5) Flow limiters and weirs

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Client: MKO

Job: Coole WF, Co. Westmeath

Title: Drainage Layout Sheet 3 of 7

Figure No: DI03

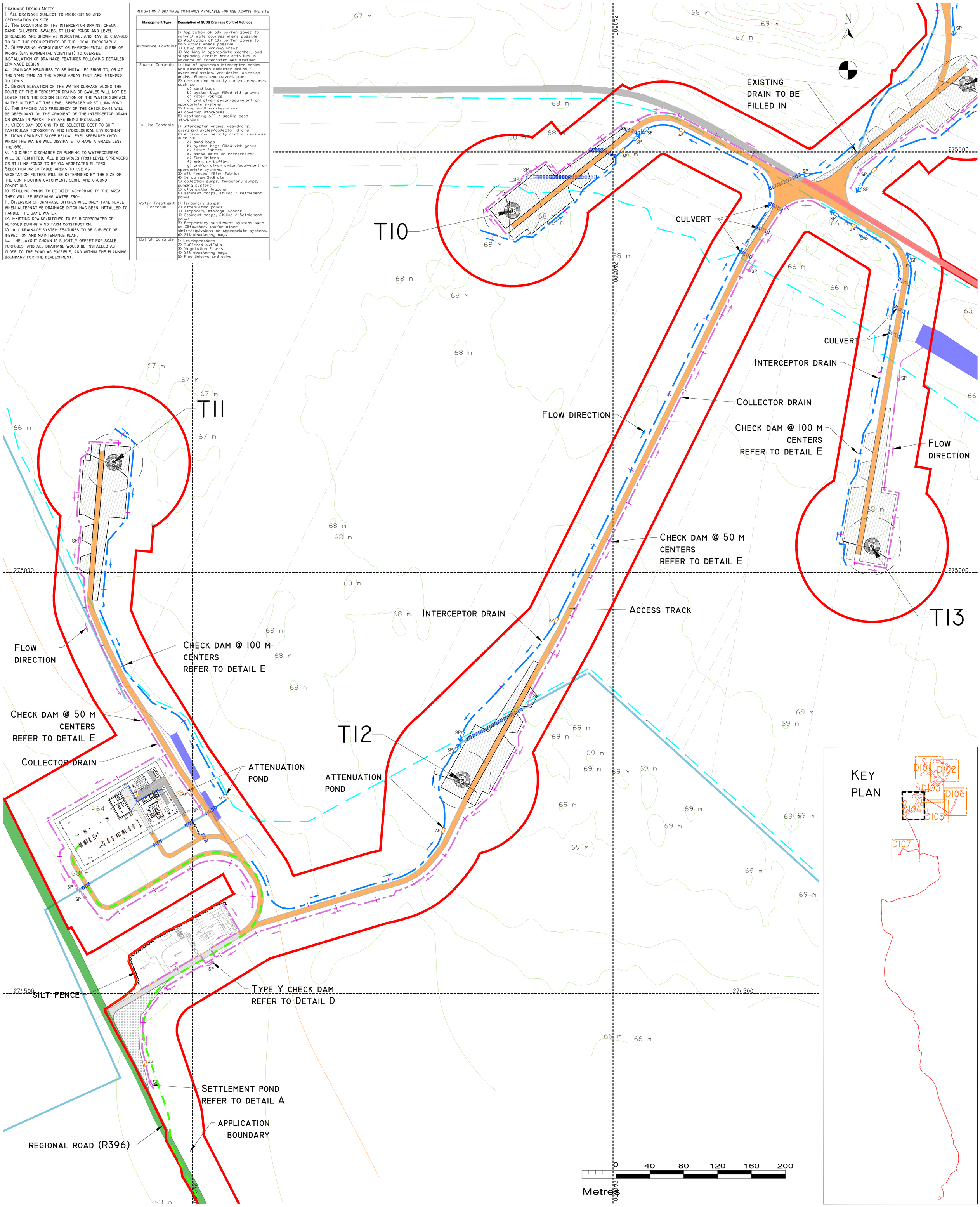
Drawing No: P1320-2-0221-A1-D103-00A	
Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG

Drainage Design Notes

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Mitigation / Drainage Cointrols available for use across the site

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Outfall Controls:	1) Levelspreaders 2) Buffered outfalls 3) Vegetation filters 4) Silt dewatering bags 5) Flow limiters and weirs



Drawing Legend :

Proposed Drainage
- Upstream Interceptor Ditches
- Direction of Flow
- Downstream Collector Ditches
- Settlement Pond (SP)
- Attenuation Pond (AP)
- Culvert
- Silt Fence (SF)
- Headland Drain
- Field Drain
- CR - New Stream/River Crossing Location
- Clear Span Bridge
- Existing Settlement Pond

- Application Boundary
- Existing ground surface majour contour (5 m interval)
- Existing ground surface minor contour (1 m interval)
- Rivers/Streams
- Lakes
- Natural Rivers/Streams 50m buffer
- Drain 10m buffer
- Lake 50m buffer
- Turbine and swept area
- Turbine foundation

- Regional Road
- Local Road
- Proposed Road
- Internal existing road to be upgraded
- External existing road to be upgraded
- Passing Bay
- Crane Platform
- Borrow Pit

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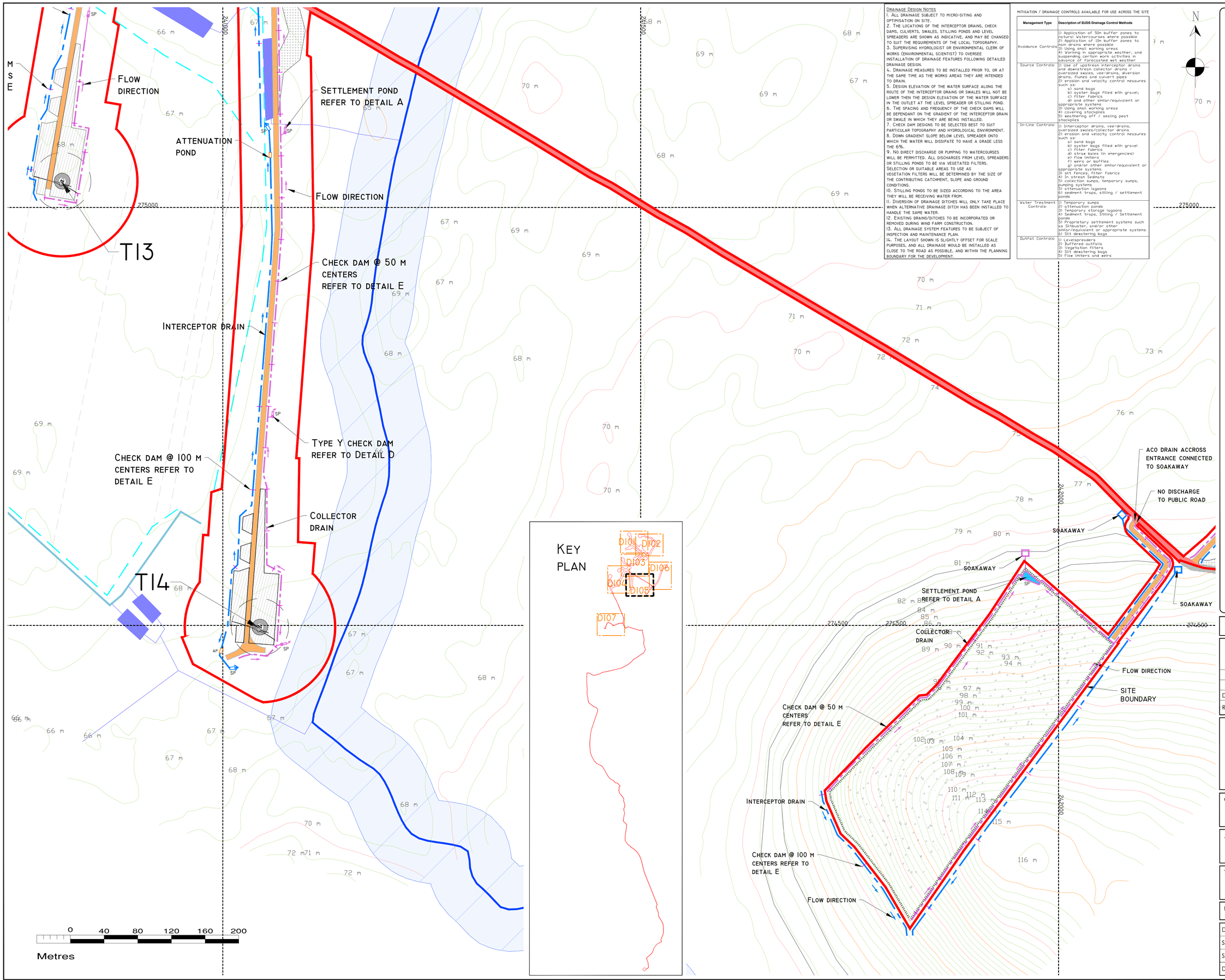
Client: MKO

Job: Coole WF, Co. Westmeath

Title: Drainage Layout Sheet 4 of 7

Figure No: D104

Drawing No: P1320-2-0221-A1-D104-00A	
Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG



Drainage Design Notes

1. All drainage subject to micro-siting and optimisation on site.
2. The locations of the interceptor drains, check dams, culverts, swales, stilling ponds and level spreaders are shown as indicative, and may be changed to suit the requirements of the local topography.
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Mitigation / Drainage Cointrols 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) covering stockpiles 5) weathering off / sealing pest 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 (in emergencies) 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
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Outfall Controls:	1) Levelspreaders 2) Buffered outfalls 3) Vegetation filters 4) Silt dewatering bags 5) Flow limiters and weirs

Drawing Legend :

- Upstream Interceptor Ditches
- Direction of Flow
- Downstream Collector Ditches
- Settlement Pond (SP)
- Attenuation Pond (AP)
- Culvert
- Silt Fence (SF)
- Headland Drain
- Field Drain
- CR - New Stream/River Crossing Location
- Clear Span Bridge
- Existing Settlement Pond

Proposed Drainage

- Application Boundary
- Existing Ground Surface Majour Contour (5 m Interval)
- Existing Ground Surface Minor Contour (1 m Interval)
- Rivers/Streams
- Lakes
- Natural Rivers/Streams 50m Buffer
- Drain 10m Buffer
- Lake 50m Buffer
- Turbine and Swept Area
- Turbine Foundation
- Regional Road
- Local Road
- Proposed Road
- Internal Existing Road to be Upgraded
- External Existing Road to be Upgraded
- Passing Bay
- Crane Platform
- Borrow Pit

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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.

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Date	Description	Chkd	Signed

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web: www.hydroenvironmental.ie

Client: MKO

Job: Coole WF, Co. Westmeath

Title: Drainage Layout Sheet 5 of 7

Figure No: DI05

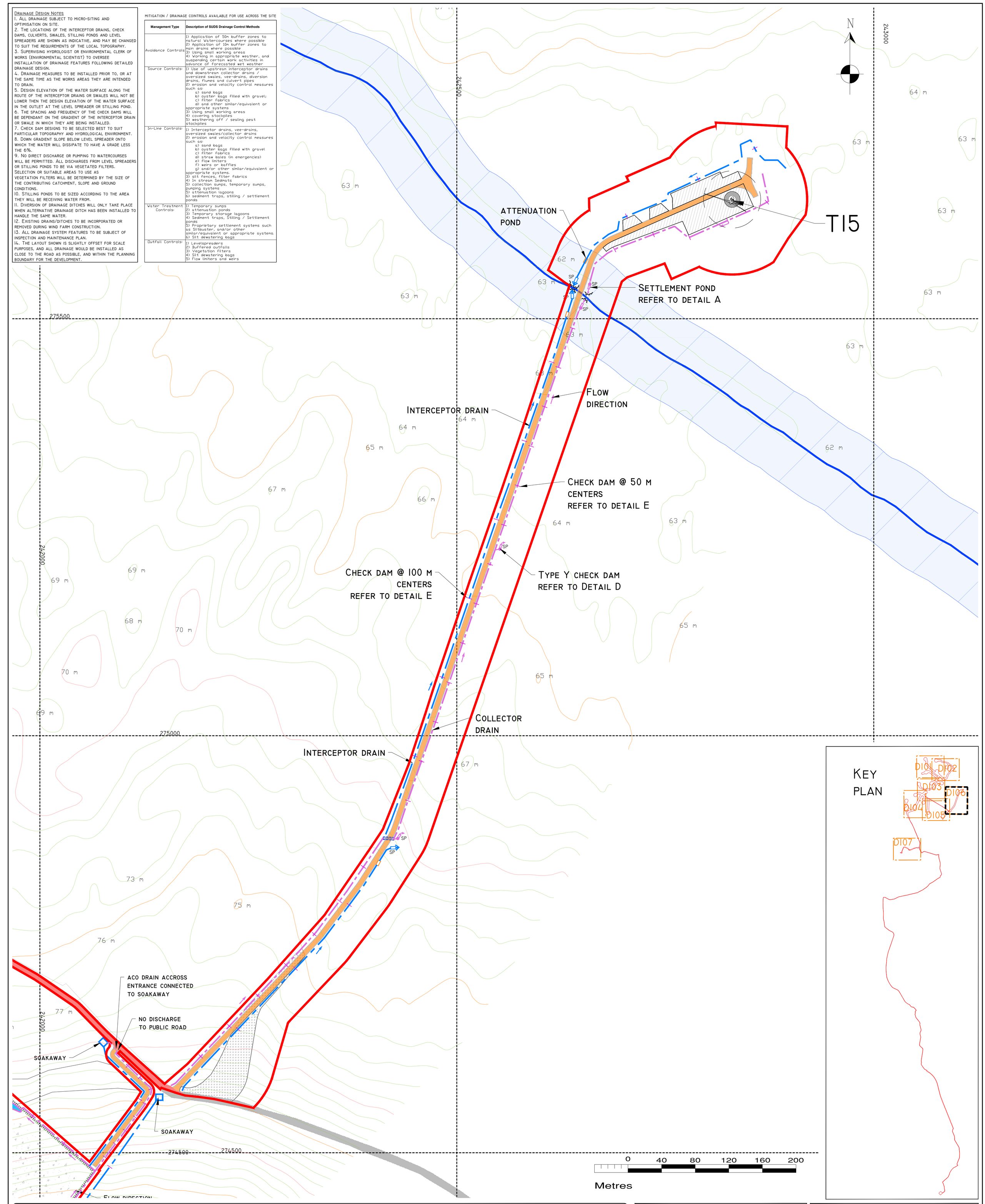
Drawing No: P1320-2-0221-A1-D105-00A	
Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG

Drainage Design Notes

1. All drainage subject to micro-siting and optimisation on site.
2. The locations of the interceptor drains, check dams, culverts, swales, stilling ponds and level spreaders are shown as indicative, and may be changed to suit the requirements of the local topography.
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Mitigation / drainage cointrols 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
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Outfall Controls:	1) Levelspreaders 2) Buffered outfalls 3) Vegetation filters 4) Silt dewatering bags 5) Flow limiters and weirs



Key plan

0 40 80 120 160 200

Metres

Drawing Legend :

- Upstream Interceptor Ditches
- Direction of Flow
- Downstream Collector Ditches
- Settlement Pond (SP)
- Attenuation Pond (AP)
- culvert
- silt fence (SF)
- headland drain
- field drain
- CR - new stream/river crossing location
- clear span bridge
- existing settlement pond

Proposed Drainage

- application boundary
- Existing ground surface majour contour (5 m interval)
- Existing ground surface minor contour (1 m interval)
- rivers/streams
- Lakes
- natural rivers/streams 50m buffer
- drain 10m buffer
- Lake 50m buffer
- turbine and swept area
- turbine foundation
- regional road
- local road
- proposed road
- internal existing road to be upgraded
- external existing road to be upgraded
- passing bay
- crane platform
- borrow pit

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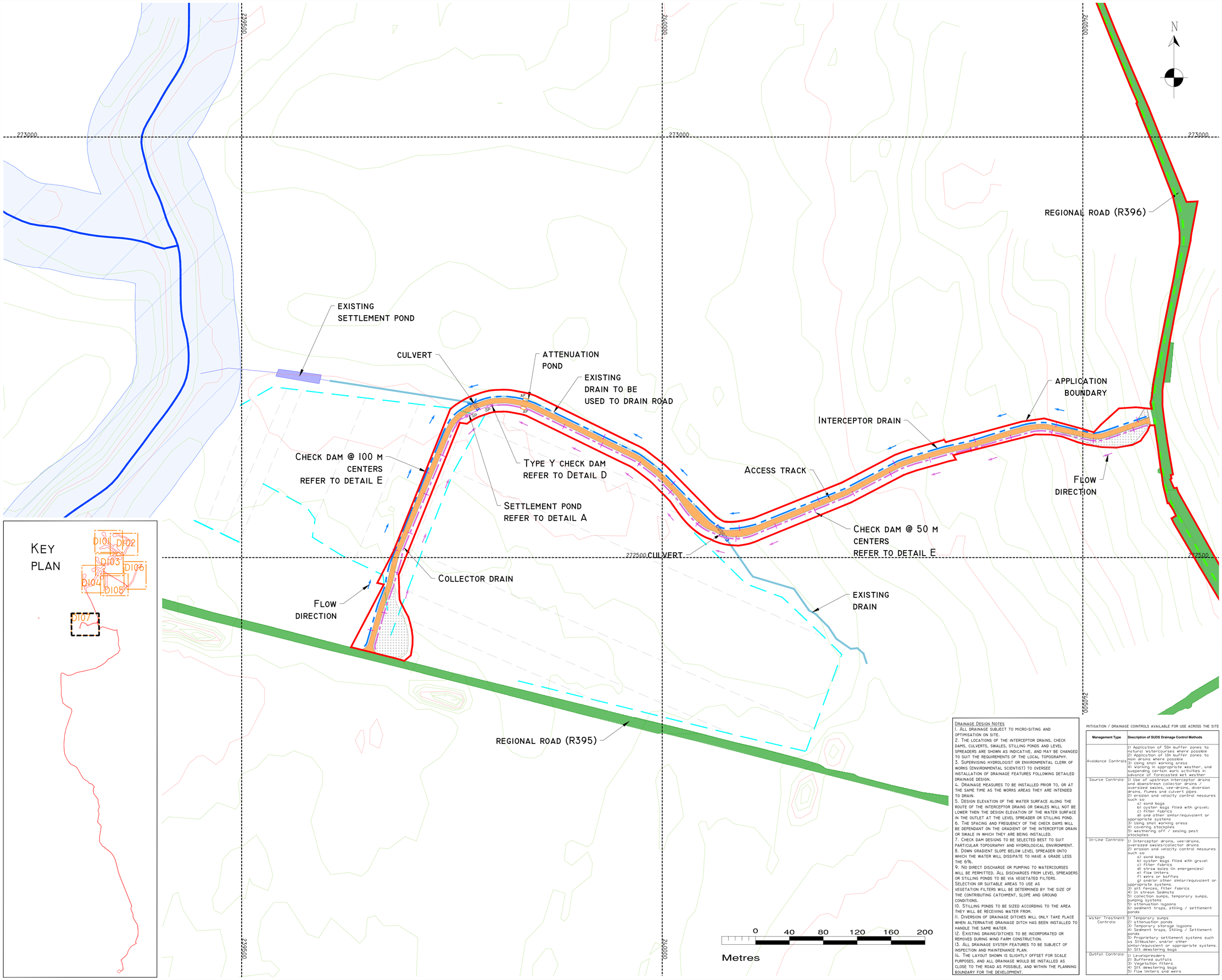
Client: MKO

Job: Coole WF, Co. Westmeath

Title: Drainage Layout Sheet 6 of 7

Figure No: D106

Drawing No: P1320-2-0221-A1-D106-00A	
Sheet Size: A1	Project No.: P1320-2
Scale: 1:2,000 (A1)	Drawn By: MG/GD
Date: 17/02/2021	Checked By: MG



KEY PLAN

DRAWING LEGEND :

PROPOSED DRAINAGE
- UPSTREAM INTERCEPTOR DITCHES
- DIRECTION OF FLOW
- DOWNSTREAM COLLECTOR DITCHES
- SETTLEMENT POND (SP)
- ATTENUATION POND (AP)
- CULVERT
- SILT FENCE (SF)
- HEADLAND DRAIN
- FIELD DRAIN
- CR - NEW STREAM/RIVER CROSSING LOCATION
- CLEAR SPAN BRIDGE
- EXISTING SETTLEMENT POND

- APPLICATION BOUNDARY
- EXISTING GROUND SURFACE MAJOUR CONTOUR (5 M INTERVAL)
- EXISTING GROUND SURFACE MINOR CONTOUR (1 M INTERVAL)
- RIVERS/STREAMS
- LAKES
- NATURAL RIVERS/STREAMS 50M BUFFER
- DRAIN 10M BUFFER
- LAKE 50M BUFFER
- TURBINE AND SWEPT AREA
- TURBINE FOUNDATION
- REGIONAL ROAD
- LOCAL ROAD
- PROPOSED ROAD
- INTERNAL EXISTING ROAD TO BE UPGRADED
- EXTERNAL EXISTING ROAD TO BE UPGRADED
- PASSING BAY
- CRANE PLATFORM
- BORROW PIT

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7. LAYOUT PLANS SHOW TYPICAL TURBINE ROTOR DIAMETER AS PER TURBINE DRAWING.

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Date	Description	Chkd	Signed

Revisions

DRAINAGE DESIGN NOTES

1. ALL DRAINAGE SUBJECT TO MICRO-SITING AND OPTIMISATION ON SITE.
2. THE LOCATIONS OF THE INTERCEPTOR DRAINS, CHECK DAMS, CULVERTS, SWALES, STILLING PONDS AND LEVEL SPREADERS ARE SHOWN AS INDICATIVE, AND MAY BE CHANGED TO SUIT THE REQUIREMENTS OF THE LOCAL TOPOGRAPHY.
3. SUPERVISING HYDROLOGIST OR ENVIRONMENTAL CLERK OF WORKS (ENVIRONMENTAL SCIENTIST) TO OVERSEE INSTALLATION OF DRAINAGE FEATURES FOLLOWING DETAILED DRAINAGE DESIGN.
4. DRAINAGE MEASURES TO BE INSTALLED PRIOR TO, OR AT THE SAME TIME AS THE WORKS AREAS THEY ARE INTENDED TO DRAIN.
5. DESIGN ELEVATION OF THE WATER SURFACE ALONG THE ROUTE OF THE INTERCEPTOR DRAINS OR SWALES WILL NOT BE LOWER THEN THE DESIGN ELEVATION OF THE WATER SURFACE IN THE OUTLET AT THE LEVEL SPREADER OR STILLING POND.
6. THE SPACING AND FREQUENCY OF THE CHECK DAMS WILL BE DEPENDANT ON THE GRADIENT OF THE INTERCEPTOR DRAIN OR SWALE IN WHICH THEY ARE BEING INSTALLED.
7. CHECK DAM DESIGNS TO BE SELECTED BEST TO SUIT PARTICULAR TOPOGRAPHY AND HYDROLOGICAL ENVIRONMENT.
8. DOWN GRADIENT SLOPE BELOW LEVEL SPREADER ONTO WHICH THE WATER WILL DISSIPATE TO HAVE A GRADE LESS THE 6%.
9. NO DIRECT DISCHARGE OR PUMPING TO WATERCOURSES WILL BE PERMITTED. ALL DISCHARGES FROM LEVEL SPREADERS OR STILLING PONDS TO BE VIA VEGETATED FILTERS. SELECTION OR SUITABLE AREAS TO USE AS VEGETATION FILTERS WILL BE DETERMINED BY THE SIZE OF THE CONTRIBUTING CATCHMENT, SLOPE AND GROUND CONDITIONS.
10. STILLING PONDS TO BE SIZED ACCORDING TO THE AREA THEY WILL BE RECEIVING WATER FROM.
11. DIVERSION OF DRAINAGE DITCHES WILL ONLY TAKE PLACE WHEN ALTERNATIVE DRAINAGE DITCH HAS BEEN INSTALLED TO HANDLE THE SAME WATER.
12. EXISTING DRAINS/DITCHES TO BE INCORPORATED OR REMOVED DURING WIND FARM CONSTRUCTION.
13. ALL DRAINAGE SYSTEM FEATURES TO BE SUBJECT OF INSPECTION AND MAINTENANCE PLAN.
14. THE LAYOUT SHOWN IS SLIGHTLY OFFSET FOR SCALE PURPOSES, AND ALL DRAINAGE WOULD BE INSTALLED AS CLOSE TO THE ROAD AS POSSIBLE, AND WITHIN THE PLANNING BOUNDARY FOR THE DEVELOPMENT.

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) covering stockpiles 5) weathering off / sealing peat 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 (in emergencies) e) flow inters f) weirs or baffles g) and/or other similar/equivalent or appropriate systems. 3) silt fences, filter fabrics 4) In stream Sedmats 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

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Client: MKO

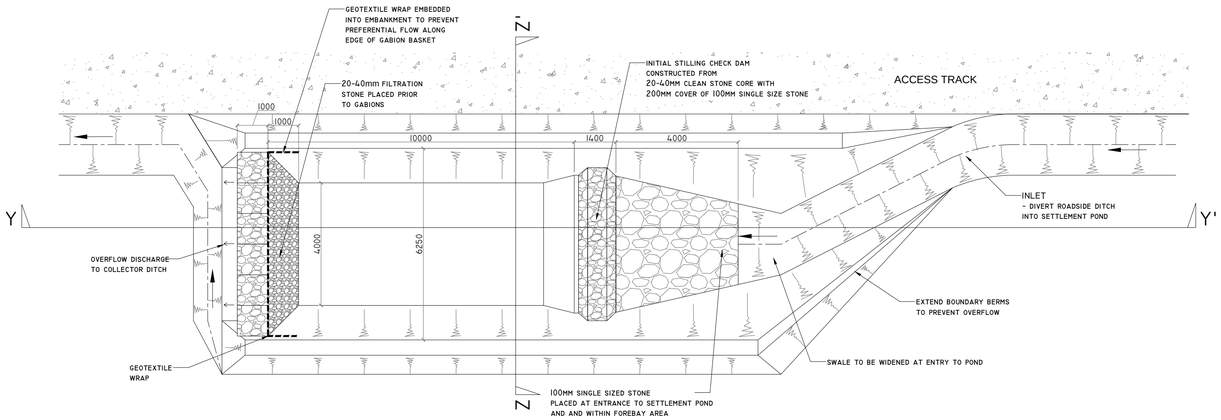
Job: COOLE WF, CO. WESTMEATH

Title: DRAINAGE LAYOUT SHEET 7 OF 7

Figure No: DI07

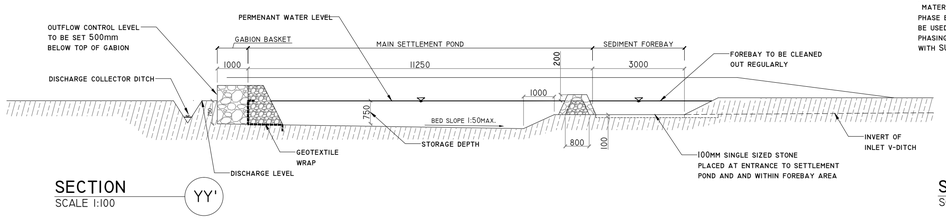
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Date: 17/02/2021	Checked By: MG

DETAIL A



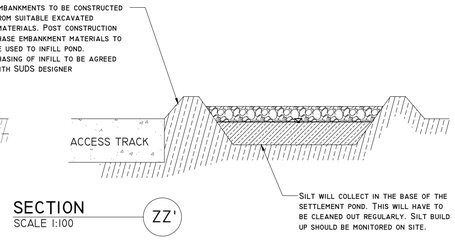
TYPICAL ROAD SIDE SETTLEMENT POND DETAIL

SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE)



SECTION YY'

SCALE 1:100



SECTION ZZ'

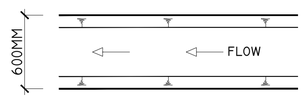
SCALE 1:100

DETAIL B

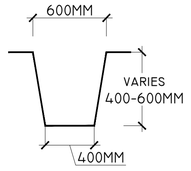
PEAT DITCH SILT TRAP

SCALE 1:25

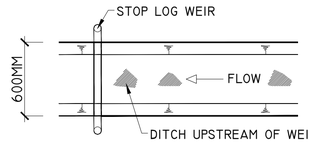
PLAN - EXISTING PEAT DITCH



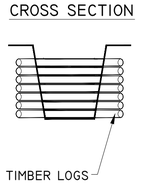
CROSS SECTION



PLAN - PEAT DITCH SILT TRAP



CROSS SECTION

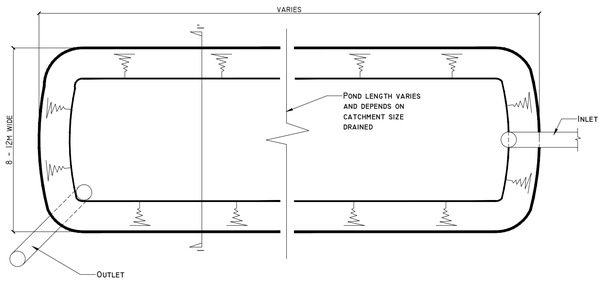


DETAIL C

TYPICAL PEATLAND SITE SETTLEMENT POND DETAIL

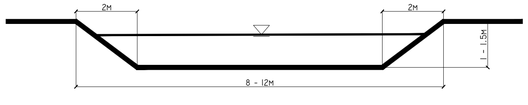
SCALE 1:200

PLAN



SECTION II'

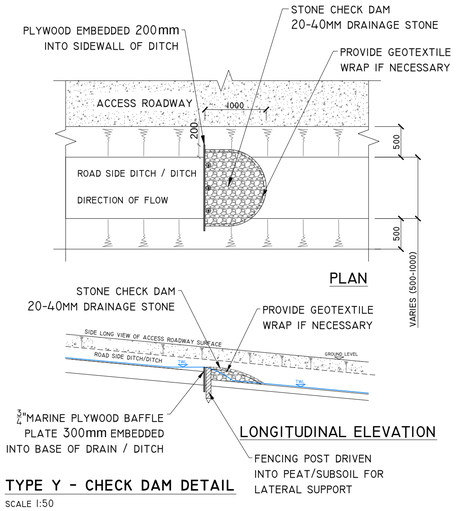
SCALE 1:100



NOTES-

- ALL SETTLEMENT PONDS OPERATE TO LICENCE REQUIREMENTS OF IPPC LICENCE REG No. P0914-01 AND P0974-01.
- SIZING LIKELY BASED ON ACCUMULATION OF 100 M^3/HA/YEAR SILT
- PONDS TYPICALLY CLEANED MINIMUM TWICE A YEAR (I.E. SILT DESIGN CAPACITY OF LAGOONS, MIN 50 M^3 PER NET HA OF BOG SERVICED), ONCE BEFORE DITCHING AND ONCE BEFORE HARVESTING, OR AS INSPECTIONS MAY DICTATE
- GENERALLY - 8 - 12 M WIDE, AND 1 - 1.5 M DEEP
- LIKELY VELOCITY THRESHOLD OF 0.1 M/SEC

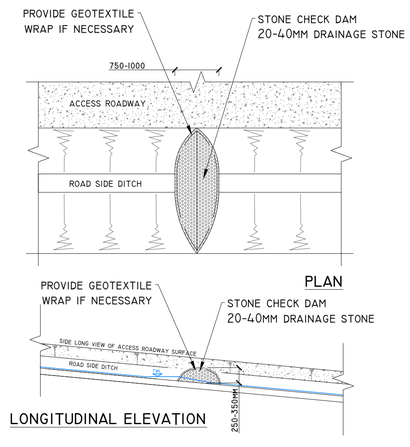
DETAIL D



TYPE Y - CHECK DAM DETAIL

SCALE 1:50

DETAIL E



TYPE X - CHECK DAM DETAIL

SCALE 1:50

PROJECT DESIGN DRAWING NOTES

1. DRAWINGS ISSUED ARE FOR PLANNING APPLICATION PURPOSES ONLY. PLEASE NOTE THIS DRAWING IS FOR PLANNING PURPOSES ONLY, AND FURTHUR DETAILED SPECIFICATION WILL BE REQUIRED FOR THE COMPLETION OF THE WORKS TO ENSURE THEY MEET REQUIRED DESIGN STANDARDS, AND PLANNING CONDITIONS.
2. DRAWINGS NOT TO BE USED FOR CONSTRUCTION /CONTRACT CONDITIONS.
3. COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
4. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.
5. ALL CONTRACTORS, WHETHER MAIN OR SUB-CONTRACTORS, MUST VISIT THE SITE AND ARE RESPONSIBLE FOR TAKING AND CHECKING ANY AND ALL DIMENSIONS AND LEVELS THAT RELATE TO THE WORKS.
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. DRAINAGE SYSTEMS ARE OFFSET AT A DISTANCE APPROPRIATE TO THE SCALE OF THIS DRAWING. ALL DRAINAGE WILL BE LOCATED ADJACENT TO INFRASTRUCTURE, AS APPROPRIATE ACROSS THE SITE.

DRAINAGE DESIGN NOTES

1. ALL DRAINAGE SUBJECT TO MICRO-SITING AND OPTIMISATION ON SITE.
2. THE LOCATIONS OF THE INTERCEPTOR DRAINS, CHECK DAMS, CULVERTS, SWALES, SETTLEMENT PONDS AND LEVEL SPREADERS ARE SHOWN AS INDICATIVE, AND MAY BE CHANGED TO SUIT THE REQUIREMENTS OF THE LOCAL TOPOGRAPHY.
3. SUPERVISING HYDROLOGIST OR ENVIRONMENTAL CLERK OF WORKS (ENVIRONMENTAL SCIENTIST) TO OVERSEE INSTALLATION OF DRAINAGE FEATURES FOLLOWING DETAILED DRAINAGE DESIGN.
4. DRAINAGE MEASURES TO BE INSTALLED PRIOR TO, OR AT THE SAME TIME AS THE WORKS AREAS THEY ARE INTENDED TO DRAIN.
5. DESIGN ELEVATION OF THE WATER SURFACE ALONG THE ROUTE OF THE INTERCEPTOR DRAINS OR SWALES WILL NOT BE LOWER THEN THE DESIGN ELEVATION OF THE WATER SURFACE IN THE OUTLET AT THE LEVEL SPREADER OR SETTLEMENT POND.
6. THE SPACING AND FREQUENCY OF THE CHECK DAMS WILL BE DEPENDANT ON THE GRADIENT OF THE INTERCEPTOR DRAIN OR SWALE IN WHICH THEY ARE BEING INSTALLED.
7. CHECK DAM DESIGNS TO BE SELECTED BEST TO SUIT PARTICULAR TOPOGRAPHY AND HYDROLOGICAL ENVIRONMENT.
8. DOWN GRADIENT SLOPE BELOW LEVEL SPREADER ONTO WHICH THE WATER WILL DISSIPATE TO HAVE A GRADE <6%.
9. NO DIRECT DISCHARGE OR PUMPING TO WATERCOURSES WILL BE PERMITTED. ALL DISCHARGES FROM LEVEL SPREADERS OR STILLING PONDS TO BE VIA VEGETATED FILTERS. SELECTION OF SUITABLE AREAS TO USE AS VEGETATION FILTERS WILL BE DETERMINED BY THE SIZE OF THE CONTRIBUTING CATCHMENT, SLOPE AND GROUND CONDITIONS.
10. SETTLEMENT PONDS TO BE SIZED ACCORDING TO THE CATCHMENT AREA THEY WILL BE RECEIVING WATER FROM.
11. DIVERSION OF DRAINAGE DITCHES WILL ONLY TAKE PLACE WHEN ALTERNATIVE DRAINAGE DITCH HAS BEEN INSTALLED TO HANDLE THE SAME WATER.
12. EXISTING DRAINS/DITCHES TO BE INCONPORATED OR REMOVED DURING WIND FARM CONSTRUCTION.
13. ALL DRAINAGE SYSTEM FEATURES TO BE SUBJECT OF INSPECTION AND MAINTENANCE PLAN.
14. THE LAYOUT SHOWN IS SLIGHTLY OFFSET FOR SCALE PURPOSES, AND ALL DRAINAGE WILL BE INSTALLED AS CLOSE TO ACCESS TRACKS/ROADS AS POSSIBLE.

Date	Description	Chkd	Signed
08.02.21	Planning - Rev A	M.G.	M.Gill

Revisions

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Client: MKO

Job: COOLE WF, CO. WESTMEATH

Title: DRAINAGE DETAILS I

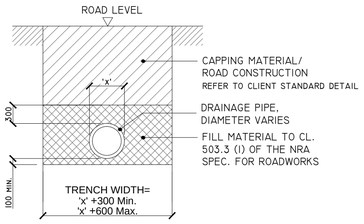
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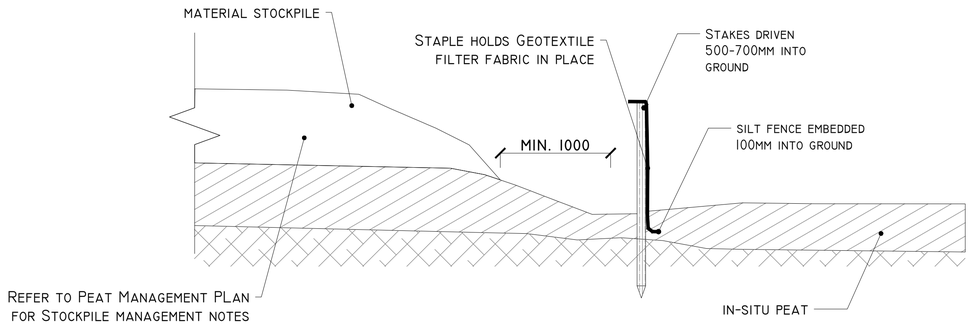
DETAIL F

'TYPE B' CULVERT - DRAINAGE CROSSING BENEATH EXCAVATED ROAD

SCALE 1:50



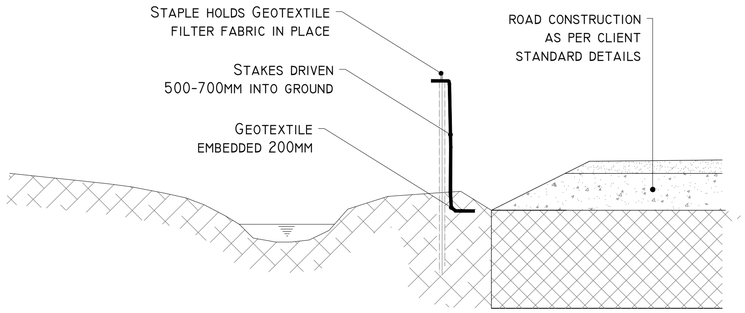
DETAIL G-I



SILT FENCE

SCALE 1:25

DETAIL G-II



SILT FENCE FOR WATERCOURSE PROTECTION

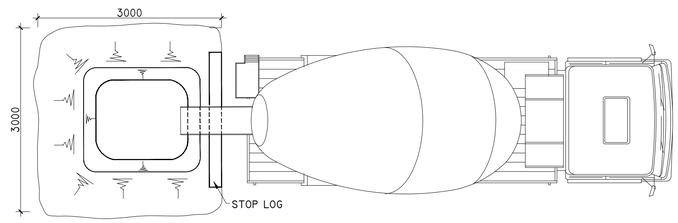
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DETAIL I

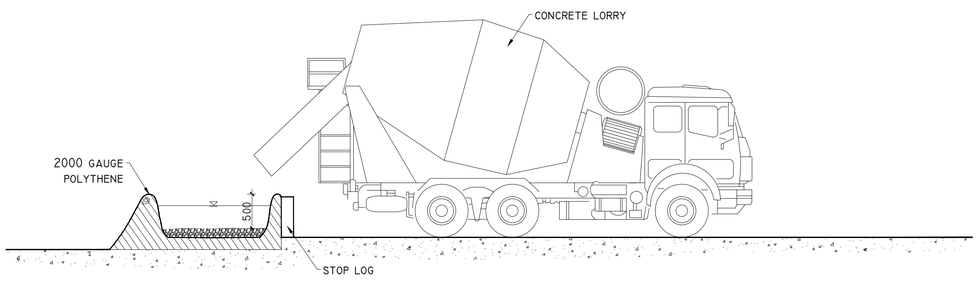
TEMPORARY CONCRETE WASH OUT PIT

SCALE 1:25

PLAN



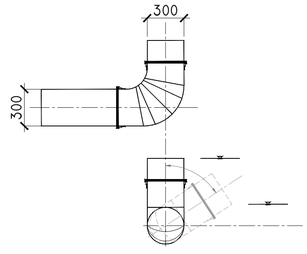
ELEVATION



DETAIL H

90° U BEND AND WATER LEVEL CONTROL MECHANISM

SCALE 1:25



Project Design Drawing Notes

1. Drawings issued are for planning application purposes only. Please note this drawing is for planning purposes only, and further detailed specification will be required for the completion of the works to ensure they meet required design standards, and planning conditions.
2. Drawings not to be used for construction /contract conditions.
3. Copyright, all rights reserved. No part here with may be copied or reproduced partially or wholly in any form whatsoever without the prior notice of the copyright owner Hydro-Environmental Services.
4. Do not scale off this drawing. Figured metric dimensions only should be taken off this drawing.
5. All contractors, whether main or sub-contractors, must visit the site and are responsible for taking and checking any and all dimensions and levels that relate to the works.
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. Drainage systems are offset at a distance appropriate to the scale of this drawing. All drainage will be located adjacent to infrastructure, as appropriate across the site.

Drainage Design Notes

1. All drainage subject to micro-siting and optimisation on site.
2. The locations of the interceptor drains, check dams, culverts, swales, settlement ponds and level spreaders are shown as indicative, and may be changed to suit the requirements of the local topography.
3. Supervising hydrologist or environmental clerk of works (environmental scientist) to oversee installation of drainage features following detailed drainage design.
4. Drainage measures to be installed prior to, or at the same time as the works areas they are intended to drain.
5. Design elevation of the water surface along the route of the interceptor drains or swales will not be lower then the design elevation of the water surface in the outlet at the level spreader or settlement pond.
6. The spacing and frequency of the check dams will be dependant on the gradient of the interceptor drain or swale in which they are being installed.
7. Check dam designs to be selected best to suit particular topography and hydrological environment.
8. Down gradient slope below level spreader onto which the water will dissipate to have a grade <6%.
9. No direct discharge or pumping to watercourses will be permitted. All discharges from level spreaders or stilling ponds to be via vegetated filters. Selection or suitable areas to use as vegetation filters will be determined by the size of the contributing catchment, slope and ground conditions.
10. Settlement ponds to be sized according to the catchment area they will be receiving water from.
11. Diversion of drainage ditches will only take place when alternative drainage ditch has been installed to handle the same water.
12. Existing drains/ditches to be incorporated or removed during wind farm construction.
13. All drainage system features to be subject of inspection and maintenance plan.
14. The layout shown is slightly offset for scale purposes, and all drainage will be installed as close to access tracks/roads as possible.

Date	Description	Chkd	Signed
08.02.21	Planning - Rev A	M.G.	M.Gill

Revisions

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Client: MKO

Job: Colle WF, Co. Westmeath

Title: Drainage Details 2

Figure No: 502

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Sheet Size: A1	Project No.: P1320-2
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Date: 17/02/21	Checked By: M.G.