NOTES:

GENERAL
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2. All locations of suds features identified are approximate and to be refined on an observational basis dependant on local topography and track alignment / micrositing.
3. Additional temporary drainage / mitigation will be provided during the construction phase on an observational basis.
4. All drainage management features shown should be read in conjunction with relevant typical detail drawings.

POLLUTION PREVENTION
5. Temporary or permanent drainage / silt management features including settlement features and drainage crossings should be installed prior to or in parallel with construction of new access roads / hardstanding to prevent the conveyance of silts to receiving watercourses.
6. Interim measures to be employed in all instances where work carried out is likely to cause adverse environmental impacts through increased silt loadings being generated during the construction phase.
7. Oil fuel should be stored within containment and cement should be mixed within compound / containment, tools washed in the same area and water recycled (in the cement mix).
8. Direct discharge of untreated track drainage to watercourses shall not be permitted.
9. DO NOT pump water direct to watercourses.
10. DO NOT strip vegetation from existing ditches unless absolutely necessary.
11. If water pollution is identified the following steps should be adhered to:
STOP - Work in the immediate area should be stopped and the source of the pollution identified
CONTAIN - The source of the pollution should be bunded using a suitable method. Natural watercourses should be temporarily diverted around the source of pollution.
NOTIFY - The relevant authorities and Client/Developer should be notified immediately to ensure that measures can be implemented downstream to protect fish habitat and other sensitive areas.

TRACK / INFRASTRUCTURE DRAINAGE
12. Temporary upslope cutoff / diversion drainage to be installed in advance of main earthworks in areas indicated in order to minimise surface water ingress to excavations
13. Settlement/attenuation ponds are retained following completion of construction activities.
14. Batters of swales to have dimensions as per separately issued typical detail drawing. Swale to be re-vegetated with local species.
15. Slopes of swales to be vegetated or protected from erosion until vegetation has been established. Stripped vegetative layer from excavations to be stored locally and used to line slopes and base of swale. Vegetative layer to be placed into swale after construction of the swale.
16. Clean stone check dams to be installed in all drainage channels in order to promote settlement of suspended solids and control flow rates. Check dams generally to be locally won well graded stone. Aggregate size for stone check dams to be typically 5-40mm clean stone. On steep sections small stone to be anchored through the placement of 100mm stone on the downhill face of the check dam
17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
19. All HDPE pipes shall be twinwall type, BBA HAPAS approved.
20. All watercourse crossings to be installed min. 0.15m below existing bed level and to suit existing stream channel gradients.
21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
22. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed through use of silt fences / constructed settlement features.
23. Build-up of silt levels at check dams to be removed and disposed of. Silt levels at check dams to be visually inspected as part of an ongoing maintenance programme during the construction phase. Where check dams become clogged with silt or vegetation, stone check dam to be removed and replaced subsequent to the removal of silt.

| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 1 | Attenuated discharge overland by level spreader | 1022 | 2 | 14 | 6 x 3 x 0.8 |

574100 574200 574300 574400 574500 574600 574700

789800 789700 789600 789500 789400

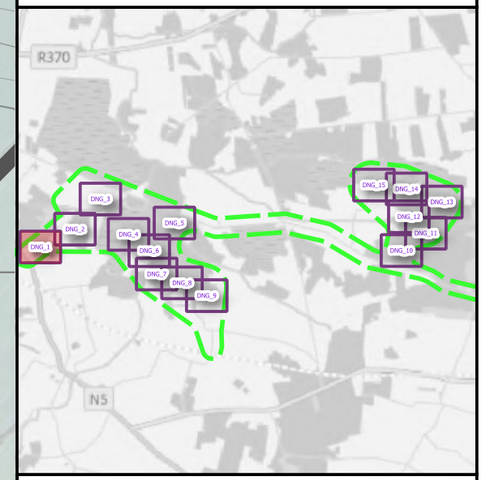
N

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 1

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

### Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

### Hydrology Features & Constraints

#### Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

#### Permanent Drainage Features
- Dirty Track Drainage Pipe
- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 1

**PROJECT / FIGURE NO.** M02232-01_DNG_1

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

574700 574800 574900 575000 575100 575200 575300

790100 790000 789900 789800 789700

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5. Temporary or permanent drainage / silt management features including settlement features and drainage crossings should be installed prior to or in parallel with construction of new access roads / hardstanding to prevent the conveyance of silts to receiving watercourses.
6. Interim measures to be employed in all instances where work carried out is likely to cause adverse environmental impacts through increased silt loadings being generated during the construction phase.
7. Oil fuel should be stored within containment and cement should be mixed within compound / containment, tools washed in the same area and water recycled (in the cement mix).
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17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
19. All HDPE pipes shall be twinwall type, BBA HAPAS approved.
20. All watercourse crossings to be installed min. 0.15m below existing bed level and to suit existing stream channel gradients.
21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
22. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed through use of silt fences / constructed settlement features.
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 2 | Attenuated discharge to watercourse | 7072 | 6.2 | 126 | 21 x 5 x 1.2 |
| 3 | Attenuated discharge to watercourse | 224 | 2 | 2 | 2 x 1.5 x 0.6 |

N

REGULAR CROSS DRAINAGE CULVERTS TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

T02

Basin 2

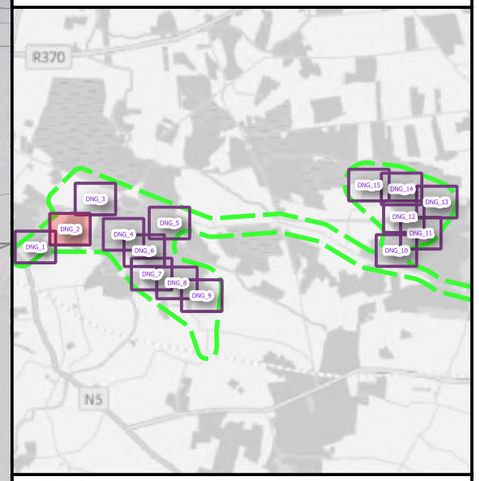
Basin 3

WX01

NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features
- Dirty Track Drainage Pipe
- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX01 | 66.72 | Clear span bridge or bottomless culvert |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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 2

**PROJECT / FIGURE NO.** M02232-01_DNG_2

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

575100 575200 575300 575400 575500 575600 575700

790600 790500 790400 790300 790200

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WATERCOURSE & TRACK DRAINAGE CROSSINGS
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 4 | Attenuated discharge to watercourse | 152 | 2 | 1 | 2 x 1 x 0.6 |
| 5 | Attenuated discharge to watercourse | 234 | 2 | 2 | 2 x 1.5 x 0.6 |
| 6 | Attenuated discharge to watercourse | 5165 | 4.5 | 96 | 16 x 5 x 1.2 |

N

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

T01

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 6

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 5

WX02

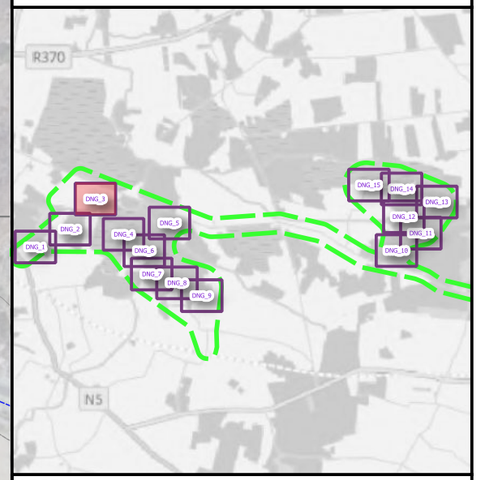
TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 4

NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure

- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints

- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features

- Dirty Track Drainage Pipe
- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX02 | 66.62 | Clear span bridge or bottomless culvert |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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 3

PROJECT / FIGURE NO.: M02232-01_DNG_3

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

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TRACK / INFRASTRUCTURE DRAINAGE
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18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
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21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 7 | Attenuated discharge overland by level spreader | 4626 | 4.1 | 84 | 14 x 5 x 1.2 |
| 8 | Attenuated discharge to watercourse | 1000 | 2 | 12 | 5 x 3 x 0.8 |
| 9 | Attenuated discharge to watercourse | 6141 | 5.4 | 114 | 19 x 5 x 1.2 |

N

575600 575700 575800 575900 576000 576100

790100 790000 789900 789800 789700 789600

T03

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 7

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 8

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 9

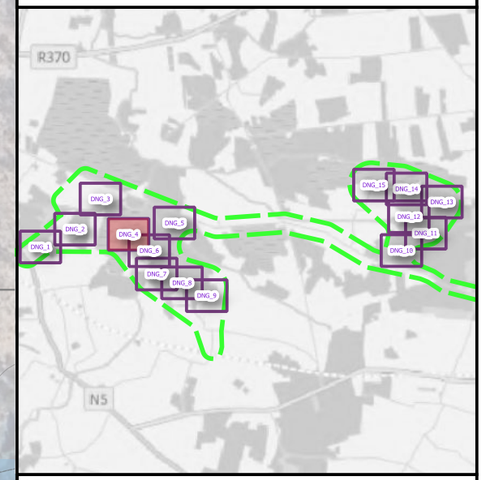
NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

WX03

T04

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

### Infrastructure

Existing Roads to be Upgraded
Proposed Floated Sections
Proposed Infrastructure
Cut
Fill

### Hydrology Features & Constraints

#### Water Feature Constraints

Major Watercourses
Minor Watercourses
Other Ephemeral / Minor Drainage
Watercourse Buffers

#### Permanent Drainage Features

Dirty Track Drainage Pipe
Clean Drainage Pipes
Swale / Track Drainage with Check Dams & Breakouts
Attenuation Basin
Flow Control with Outlet to Watercourse
Flow Control with Outlet to Level Spreader (Discharge Overland)
Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX03 | 66 | Clear span bridge or bottomless culvert |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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 5

**PROJECT / FIGURE NO.** M02232-01_DNG_4

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

576300 576400 576500 576600 576700 576800 576900

790200 790100 790000 789900 789800

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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 10 | Attenuated discharge overland by level spreader | 681 | 2 | 6 | 4 x 2 x 0.8 |

N

Basin 10

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

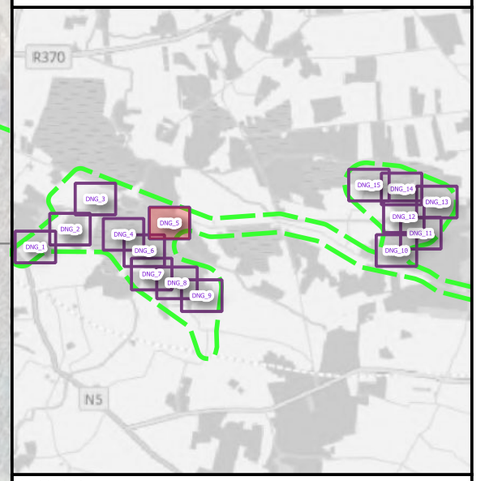
REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

WX04

NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features
- Dirty Track Drainage Pipe
- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX04 | 65.8 | Clear span bridge or bottomless culvert |

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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 6

PROJECT / FIGURE NO.: M02232-01_DNG_5

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

575900 576000 576100 576200 576300 576400 576500

789800 789700 789600 789500 789400

NOTES:

GENERAL
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2. All locations of suds features identified are approximate and to be refined on an observational basis dependant on local topography and track alignment / micrositing.
3. Additional temporary drainage / mitigation will be provided during the construction phase on an observational basis.
4. All drainage management features shown should be read in conjunction with relevant typical detail drawings.

POLLUTION PREVENTION
5. Temporary or permanent drainage / silt management features including settlement features and drainage crossings should be installed prior to or in parallel with construction of new access roads / hardstanding to prevent the conveyance of silts to receiving watercourses.
6. Interim measures to be employed in all instances where work carried out is likely to cause adverse environmental impacts through increased silt loadings being generated during the construction phase.
7. Oil fuel should be stored within containment and cement should be mixed within compound / containment, tools washed in the same area and water recycled (in the cement mix).
8. Direct discharge of untreated track drainage to watercourses shall not be permitted.
9. DO NOT pump water direct to watercourses.
10. DO NOT strip vegetation from existing ditches unless absolutely necessary.
11. If water pollution is identified the following steps should be adhered to:
STOP - Work in the immediate area should be stopped and the source of the pollution identified
CONTAIN - The source of the pollution should be bunded using a suitable method. Natural watercourses should be temporarily diverted around the source of pollution.
NOTIFY - The relevant authorities and Client/Developer should be notified immediately to ensure that measures can be implemented downstream to protect fish habitat and other sensitive areas.

TRACK / INFRASTRUCTURE DRAINAGE
12. Temporary upslope cutoff / diversion drainage to be installed in advance of main earthworks in areas indicated in order to minimise surface water ingress to excavations
13. Settlement/attenuation ponds are retained following completion of construction activities.
14. Batters of swales to have dimensions as per separately issued typical detail drawing. Swale to be re-vegetated with local species.
15. Slopes of swales to be vegetated or protected from erosion until vegetation has been established. Stripped vegetative layer from excavations to be stored locally and used to line slopes and base of swale. Vegetative layer to be placed into swale after construction of the swale.
16. Clean stone check dams to be installed in all drainage channels in order to promote settlement of suspended solids and control flow rates. Check dams generally to be locally won well graded stone. Aggregate size for stone check dams to be typically 5-40mm clean stone. On steep sections small stone to be anchored through the placement of 100mm stone on the downhill face of the check dam
17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
19. All HDPE pipes shall be twinwall type, BBA HAPAS approved.
20. All watercourse crossings to be installed min. 0.15m below existing bed level and to suit existing stream channel gradients.
21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
22. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed through use of silt fences / constructed settlement features.
23. Build-up of silt levels at check dams to be removed and disposed of. Silt levels at check dams to be visually inspected as part of an ongoing maintenance programme during the construction phase. Where check dams become clogged with silt or vegetation, stone check dam to be removed and replaced subsequent to the removal of silt.

| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 8 | Attenuated discharge to watercourse | 1000 | 2 | 12 | 5 x 3 x 0.8 |
| 9 | Attenuated discharge to watercourse | 6141 | 5.4 | 114 | 19 x 5 x 1.2 |
| 11 | Attenuated discharge overland by level spreader | 6068 | 5.3 | 108 | 18 x 5 x 1.2 |

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 8

Basin 9

WATERCOURSE CROSSING TO ALLOW

WX03

WATERCOURSE CROSSING SCHEDULE

T04

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

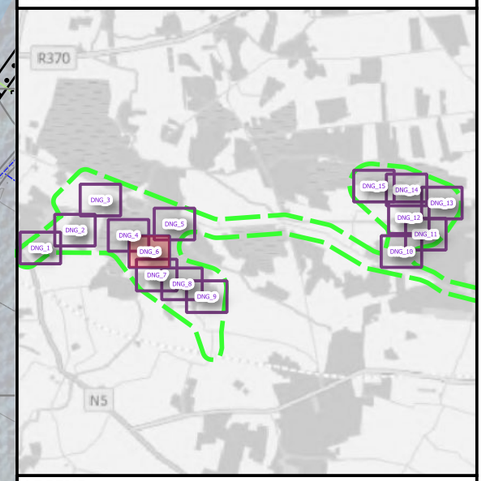
REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

Basin 11

N

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
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- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX03 | 66 | Clear span bridge or bottomless culvert |


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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 4

PROJECT / FIGURE NO.: M02232-01_DNG_6

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

576000 576100 576200 576300 576400 576500 576600

789400 789300 789200 789100 789000

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17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
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21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 11 | Attenuated discharge overland by level spreader | 6068 | 5.3 | 108 | 18 x 5 x 1.2 |

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

Basin 11

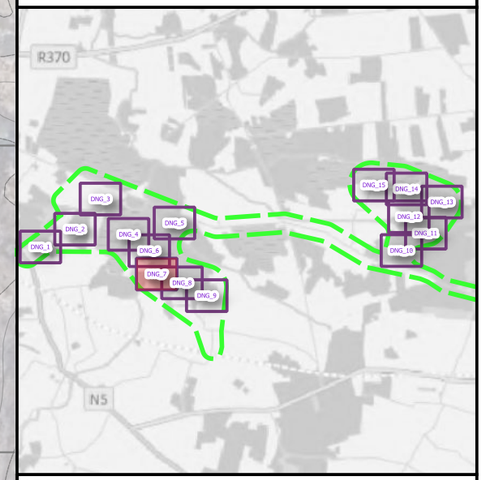
TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

T05

N

0 50 100 150 200 m

KEY PLAN




LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features
- Dirty Track Drainage Pipe
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- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 7

PROJECT / FIGURE NO.: M02232-01_DNG_7

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

576500 576600 576700 576800 576900 577000

789300 789200 789100 789000 788900 788800

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WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
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21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 12 | Attenuated discharge overland by level spreader | 5366 | 4.7 | 96 | 16 x 5 x 1.2 |
| 13 | Attenuated discharge to watercourse | 6390 | 5.6 | 114 | 19 x 5 x 1.2 |
| 14 | Attenuated discharge to watercourse | 1820 | 2 | 30 | 10 x 3 x 1 |

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

Basin 12

T06

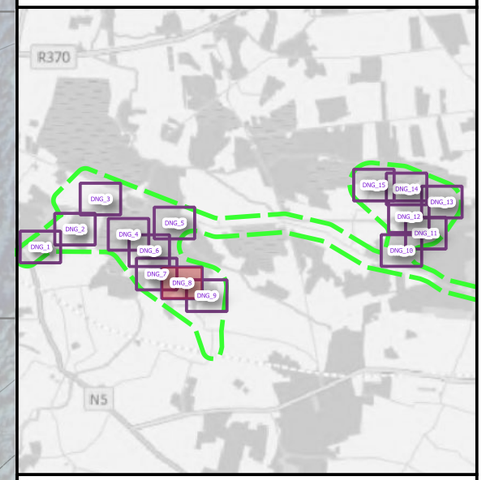
WX05

Basin 14

0 50 100 150 200 m

N

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
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- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX05 | 68.4 | Clear span bridge or bottomless culvert |

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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 8

PROJECT / FIGURE NO.: M02232-01_DNG_8

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

576900 577000 577100 577200 577300 577400

789100 789000 788900 788800 788700 788600

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REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

T07

WX05

NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

Basin 13

Basin 14

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (OBAR) EQUIVALENT RATE.

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

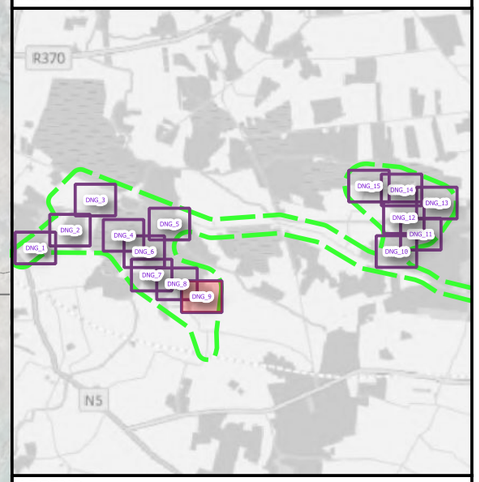
Basin 15

| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 13 | Attenuated discharge to watercourse | 6390 | 5.6 | 114 | 19 x 5 x 1.2 |
| 14 | Attenuated discharge to watercourse | 1820 | 2 | 30 | 10 x 3 x 1 |
| 15 | Attenuated discharge overland by level spreader | 333 | 2 | 2 | 2 x 1.5 x 0.8 |

N

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
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- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
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- Watercourse Buffers

Permanent Drainage Features
- Dirty Track Drainage Pipe
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- Swale / Track Drainage with Check Dams & Breakouts
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- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX05 | 68.4 | Clear span bridge or bottomless culvert |


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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 9

**PROJECT / FIGURE NO.** M02232-01_DNG_9

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

580000 580100 580200 580300 580400 580500 580600

789800 789700 789600 789500 789400

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NOTIFY - The relevant authorities and Client/Developer should be notified immediately to ensure that measures can be implemented downstream to protect fish habitat and other sensitive areas.

TRACK / INFRASTRUCTURE DRAINAGE
12. Temporary upslope cutoff / diversion drainage to be installed in advance of main earthworks in areas indicated in order to minimise surface water ingress to excavations
13. Settlement/attenuation ponds are retained following completion of construction activities.
14. Batters of swales to have dimensions as per separately issued typical detail drawing. Swale to be re-vegetated with local species.
15. Slopes of swales to be vegetated or protected from erosion until vegetation has been established. Stripped vegetative layer from excavations to be stored locally and used to line slopes and base of swale. Vegetative layer to be placed into swale after construction of the swale.
16. Clean stone check dams to be installed in all drainage channels in order to promote settlement of suspended solids and control flow rates. Check dams generally to be locally won well graded stone. Aggregate size for stone check dams to be typically 5-40mm clean stone. On steep sections small stone to be anchored through the placement of 100mm stone on the downhill face of the check dam
17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
19. All HDPE pipes shall be twinwall type, BBA HAPAS approved.
20. All watercourse crossings to be installed min. 0.15m below existing bed level and to suit existing stream channel gradients.
21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
22. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed through use of silt fences / constructed settlement features.
23. Build-up of silt levels at check dams to be removed and disposed of. Silt levels at check dams to be visually inspected as part of an ongoing maintenance programme during the construction phase. Where check dams become clogged with silt or vegetation, stone check dam to be removed and replaced subsequent to the removal of silt.

| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 16 | Attenuated discharge overland by level spreader | 717 | 2 | 8 | 4 x 2 x 1 |

N

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

SUBSTATION TO DRAIN TO MAIN DRAINAGE.

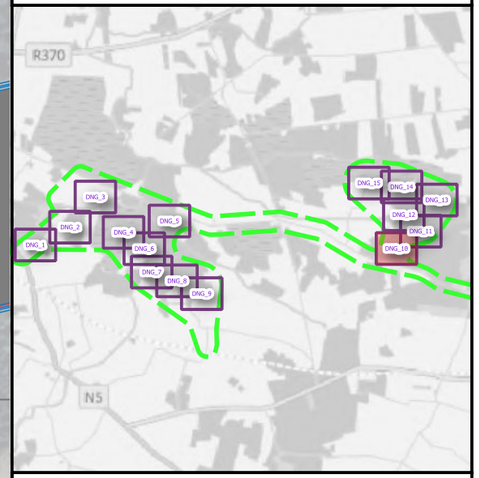
REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 16

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features
- Dirty Track Drainage Pipe
- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 10

PROJECT / FIGURE NO.: M02232-01_DNG_10

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

580400 580500 580600 580700 580800 580900 581000

790100 790000 789900 789800 789700

NOTES:

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POLLUTION PREVENTION
5. Temporary or permanent drainage / silt management features including settlement features and drainage crossings should be installed prior to or in parallel with construction of new access roads / hardstanding to prevent the conveyance of silts to receiving watercourses.
6. Interim measures to be employed in all instances where work carried out is likely to cause adverse environmental impacts through increased silt loadings being generated during the construction phase.
7. Oil fuel should be stored within containment and cement should be mixed within compound / containment, tools washed in the same area and water recycled (in the cement mix).
8. Direct discharge of untreated track drainage to watercourses shall not be permitted.
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TRACK / INFRASTRUCTURE DRAINAGE
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WATERCOURSE & TRACK DRAINAGE CROSSINGS
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MAINTENANCE
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 17 | Attenuated discharge to watercourse | 12003 | 10.5 | 221 | 23 x 8 x 1.2 |
| 18 | Attenuated discharge to watercourse | 995 | 2 | 12 | 5 x 3 x 0.8 |
| 19 | Attenuated discharge to watercourse | 6643 | 5.8 | 120 | 20 x 5 x 1.2 |

N

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 18

Basin 17

NEW WATERCOURSE CROSSING TO ALLOW FOR ACCESS TRACK. CULVERT SIZED TO OPW SECTION 50 STANDARDS. REFER TO WATERCOURSE CROSSING SCHEDULE.

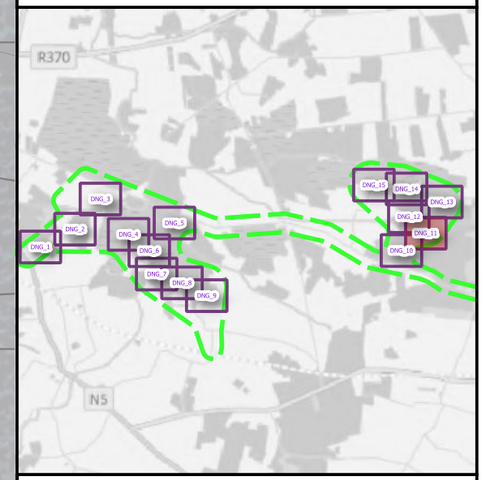
WX06

REGULAR CROSS DRAINAGE CULVERTS (EVERY C. 40 M) TO FLOATED TRACK TO PRESERVE PEAT HYROLOGY.

SUBSTATION TO DRAIN TO MAIN DRAINAGE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
- Minor Watercourses
- Other Ephemeral / Minor Drainage
- Watercourse Buffers

Permanent Drainage Features
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- Clean Drainage Pipes
- Swale / Track Drainage with Check Dams & Breakouts
- Attenuation Basin
- Flow Control with Outlet to Watercourse
- Flow Control with Outlet to Level Spreader (Discharge Overland)
- Proposed Watercourse Crossing

| Watercourse Crossing Ref | Min. Soffit (mOD) | Description |
|---|---|---|
| WX06 | 68.19 | Clear span bridge or bottomless culvert |


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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 11

**PROJECT / FIGURE NO.** M02232-01_DNG_11

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

580200 580300 580400 580500 580600 580700

790300 790200 790100 790000 789900

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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 19 | Attenuated discharge to watercourse | 6643 | 5.8 | 120 | 20 x 5 x 1.2 |

N

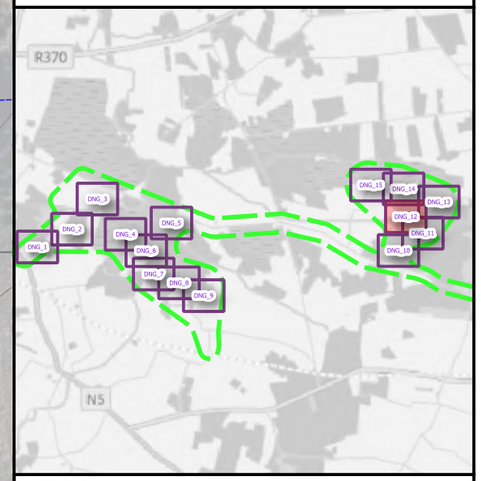
T11

Basin 19

TREATED CLEAN WATER TO BE DISCHARGED TO WATERCOURSE. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

### Infrastructure

Existing Roads to be Upgraded
Proposed Floated Sections
Proposed Infrastructure
Cut
Fill

### Hydrology Features & Constraints

#### Water Feature Constraints

Major Watercourses
Minor Watercourses
Other Ephemeral / Minor Drainage
Watercourse Buffers

### Permanent Drainage Features

Dirty Track Drainage Pipe
Clean Drainage Pipes
Swale / Track Drainage with Check Dams & Breakouts
Attenuation Basin
Flow Control with Outlet to Watercourse
Flow Control with Outlet to Level Spreader (Discharge Overland)
Proposed Watercourse Crossing

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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 12

**PROJECT / FIGURE NO.** M02232-01_DNG_12

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

580700 580800 580900 581000 581100 581200 581300

790600 790500 790400 790300 790200

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MAINTENANCE
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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 20 | Attenuated discharge overland by level spreader | 6289 | 5.5 | 114 | 19 x 5 x 1.2 |

N

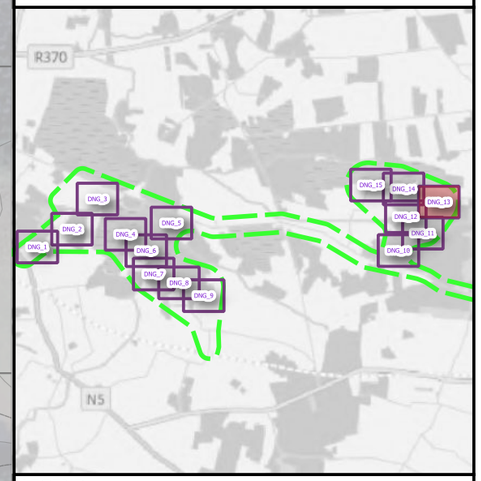
T10

Basin 20

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

0 50 100 150 200 m

## KEY PLAN




## LEGEND

EIAR Boundary

Infrastructure
- Existing Roads to be Upgraded
- Proposed Floated Sections
- Proposed Infrastructure
- Cut
- Fill

Hydrology Features & Constraints

Water Feature Constraints
- Major Watercourses
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- Watercourse Buffers

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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 13

**PROJECT / FIGURE NO.** M02232-01_DNG_13

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**

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| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 21 | Attenuated discharge overland by level spreader | 1331 | 2 | 21 | 7 x 3 x 1 |
| 22 | Attenuated discharge overland by level spreader | 6374 | 5.6 | 114 | 19 x 5 x 1.2 |

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 22

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 21

T09

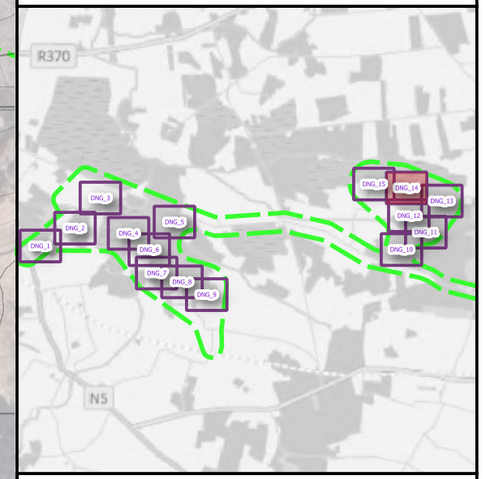
580100 580200 580300 580400 580500 580600 580700

790800 790700 790600 790500 790400

0 50 100 150 200 m

N

## KEY PLAN




## LEGEND

EIAR Boundary

### Infrastructure

Existing Roads to be Upgraded
Proposed Floated Sections
Proposed Infrastructure
Cut
Fill

### Hydrology Features & Constraints

#### Water Feature Constraints

Major Watercourses
Minor Watercourses
Other Ephemeral / Minor Drainage
Watercourse Buffers

#### Permanent Drainage Features

Dirty Track Drainage Pipe
Clean Drainage Pipes
Swale / Track Drainage with Check Dams & Breakouts
Attenuation Basin
Flow Control with Outlet to Watercourse
Flow Control with Outlet to Level Spreader (Discharge Overland)
Proposed Watercourse Crossing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DESCRIPTION: CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 14

PROJECT / FIGURE NO.: M02232-01_DNG_14

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



PLANNING DESIGN

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10. DO NOT strip vegetation from existing ditches unless absolutely necessary.
11. If water pollution is identified the following steps should be adhered to:
STOP - Work in the immediate area should be stopped and the source of the pollution identified
CONTAIN - The source of the pollution should be bunded using a suitable method. Natural watercourses should be temporarily diverted around the source of pollution.
NOTIFY - The relevant authorities and Client/Developer should be notified immediately to ensure that measures can be implemented downstream to protect fish habitat and other sensitive areas.

TRACK / INFRASTRUCTURE DRAINAGE
12. Temporary upslope cutoff / diversion drainage to be installed in advance of main earthworks in areas indicated in order to minimise surface water ingress to excavations
13. Settlement/attenuation ponds are retained following completion of construction activities.
14. Batters of swales to have dimensions as per separately issued typical detail drawing. Swale to be re-vegetated with local species.
15. Slopes of swales to be vegetated or protected from erosion until vegetation has been established. Stripped vegetative layer from excavations to be stored locally and used to line slopes and base of swale. Vegetative layer to be placed into swale after construction of the swale.
16. Clean stone check dams to be installed in all drainage channels in order to promote settlement of suspended solids and control flow rates. Check dams generally to be locally won well graded stone. Aggregate size for stone check dams to be typically 5-40mm clean stone. On steep sections small stone to be anchored through the placement of 100mm stone on the downhill face of the check dam
17. Swale breakouts to be installed at regular intervals (every c. 80m).

WATERCOURSE & TRACK DRAINAGE CROSSINGS
18. The minimum pipe diameter for any track drainage crossing shall be 450mm.
19. All HDPE pipes shall be twinwall type, BBA HAPAS approved.
20. All watercourse crossings to be installed min. 0.15m below existing bed level and to suit existing stream channel gradients.
21. Refer to Watercourse Crossing Schedule for min. soffit levels.

MAINTENANCE
22. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed through use of silt fences / constructed settlement features.
23. Build-up of silt levels at check dams to be removed and disposed of. Silt levels at check dams to be visually inspected as part of an ongoing maintenance programme during the construction phase. Where check dams become clogged with silt or vegetation, stone check dam to be removed and replaced subsequent to the removal of silt.

| Basin | Outfall | Drained Area sqm | Disch. Rate lps | Vol cu.m | Dims (LxWxD) m |
|---|---|---|---|---|---|
| 23 | Attenuated discharge overland by level spreader | 5537 | 4.9 | 102 | 17 x 5 x 1.2 |

TREATED CLEAN WATER TO BE DISCHARGED OVERLAND BY LEVEL SPREADER. ATTENUATED TO GREENFIELD (QBAR) EQUIVALENT RATE.

Basin 23

T08

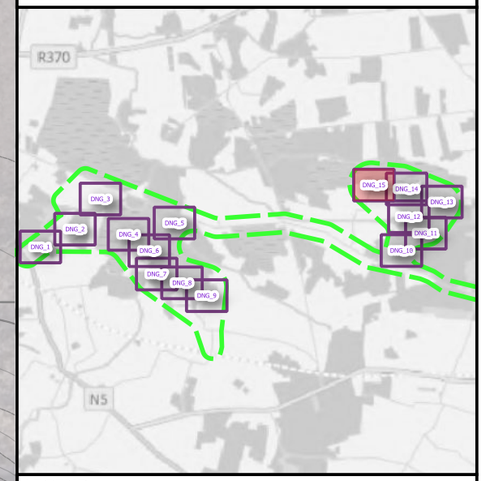
579600 579700 579800 579900 580000 580100

790900 790800 790700 790600 790500 790400

0 50 100 150 200 m

N

## KEY PLAN




## LEGEND

EIAR Boundary

### Infrastructure

Existing Roads to be Upgraded
Proposed Floated Sections
Proposed Infrastructure
Cut
Fill

### Hydrology Features & Constraints

#### Water Feature Constraints

Major Watercourses
Minor Watercourses
Other Ephemeral / Minor Drainage
Watercourse Buffers

#### Permanent Drainage Features

Dirty Track Drainage Pipe
Clean Drainage Pipes
Swale / Track Drainage with Check Dams & Breakouts
Attenuation Basin
Flow Control with Outlet to Watercourse
Flow Control with Outlet to Level Spreader (Discharge Overland)
Proposed Watercourse Crossing

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**DESCRIPTION** CARRIGEEN RENEWABLE ENERGY DEVELOPMENT - PERMANENT DRAINAGE LAYOUT SHEET 15

**PROJECT / FIGURE NO.** M02232-01_DNG_15

| DRAWN BY | SCALE | REVISION | DATE |
|---|---|---|---|
| DH | 1:2000 | 1 | 26/03/2026 |



**PLANNING DESIGN**