



## **APPENDIX 2**

***Drainage Design Drawings***





POLLUTION PREVENTION NOTES:

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

DISCHARGES

4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT POND AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
9. ALL WIND FARM DRAINAGE OUTFALLS TO BE LOCATED OUTSIDE OF 30M POTENTIAL ENCLOSED DEPRESSION BUFFER

EXCAVATIONS

10. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.

EXPOSED GROUND & STOCKPILES

11. THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.

SITE TRACKS

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

REFUELLING

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

CONCRETE

16. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
17. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.

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

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

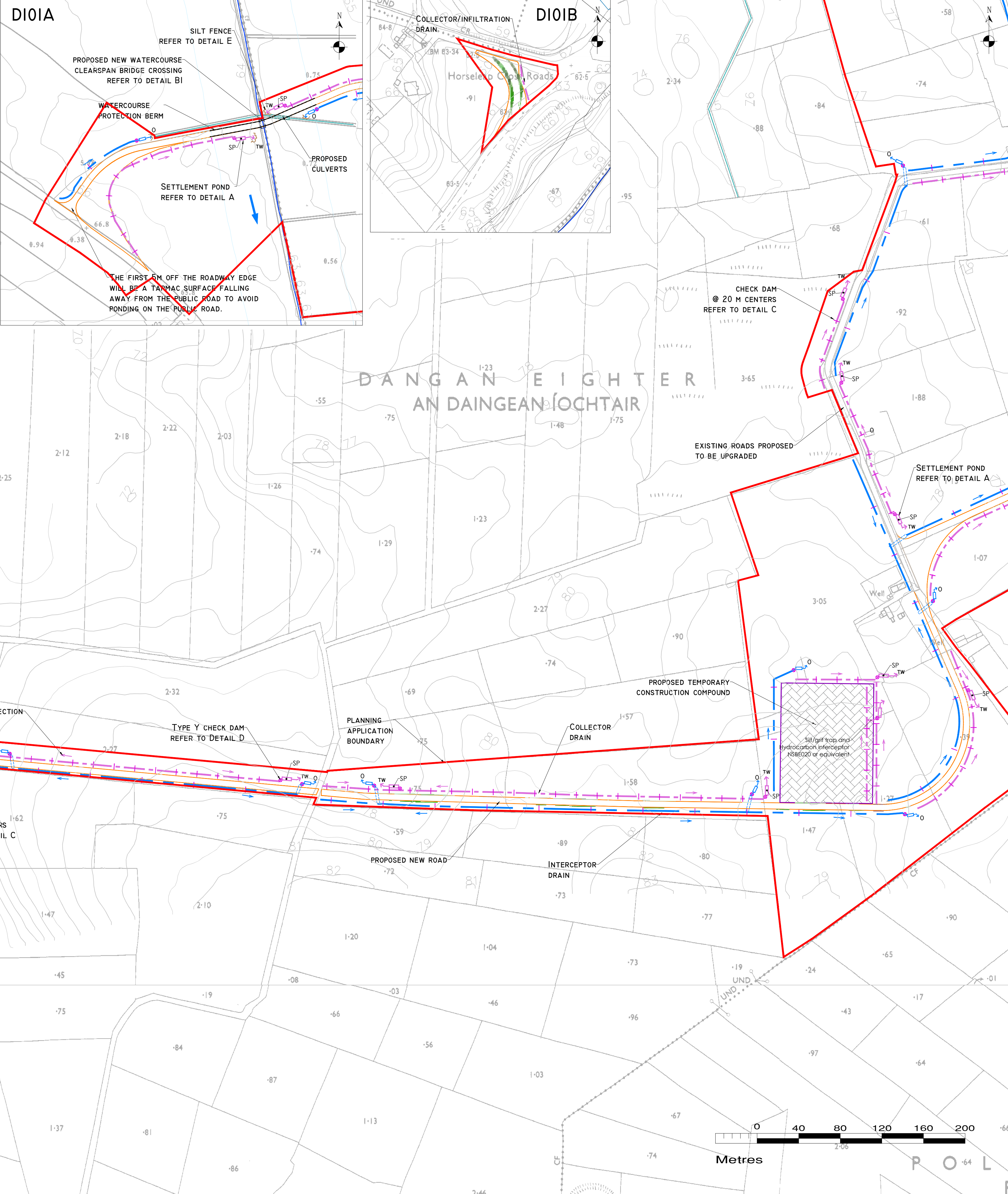
**CONTAIN** – THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.

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

DRAINAGE NOTES:

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

| 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 (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED)<br>2) USING SMALL WORKING AREAS<br>3) 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<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS<br>3) USING SMALL WORKING AREAS<br>4) SURROUNDING STOCKPILES WITH SILT FENCING<br>5) WEATHERING OFF / SEALING SPOIL, STOCKPILES                                         |
| In-Line Controls                                                 | 1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) STRAW BALES<br>E) FLOW LIMITERS<br>F) WEIRS OR BAFFLES<br>G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.<br>3) SILT FENCES, FILTER FABRICS<br>4) IN STREAM SEDIMENTS<br>5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS<br>6) ATTENUATION PONDS<br>7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS |
| Water Treatment Controls                                         | 1) TEMPORARY SUMPS<br>2) ATTENUATION PONDS<br>3) TEMPORARY STORAGE PONDS<br>4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS<br>5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.<br>6) SILT DEWATERING BAGS                                                                                                                                                                                                                                            |
| Outfall Controls                                                 | 1) LEVELSPREADERS<br>2) BUFFERED OUTFALLS<br>3) VEGETATION FILTERS<br>4) SILT DEWATERING BAGS<br>5) FLOW LIMITERS AND WEIRS<br>6) HYDROCARBON INTERCEPTORS                                                                                                                                                                                                                                                                                                                                                        |



**DRAWING LEGEND:**

- WATERCOURSES
- WATERCOURSE 50M BUFFER
- DRAINS
- DRAINS TO BE REMOVED/BLOCKED
- DRAIN REDIRECTION
- STREAM FLOW DIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SETTLEMENT POND - LEVEL SPREADER
- UNDER ROAD DRAINAGE (FLOATING ROAD)
- SILT FENCES
- DOUBLE/TRIPLE SILT FENCES
- CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- PROPOSED CULVERT CROSSING
- PROPOSED WC CROSSING
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TW TREATED WATER DISCHARGE
- SP SETTLEMENT POND
- VS SEMI-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
- PUMPING SUMP
- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARDSTAND
- PROPOSED NEW ROADS
- PROPOSED FLOATING ROADS
- EXISTING ROADS PROPOSED TO BE UPGRADED
- PROPOSED 110KV ONSITE SUBSTATION AND BATTERY STORAGE COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND
- SPOIL REPOSITORY AREAS
- PEAT REPOSITORY AREAS
- MET MAST
- CUT AREA
- FILL AREA
- 30M POTENTIAL ENCLOSED DEPRESSION BUFFER

**KEY PLAN**



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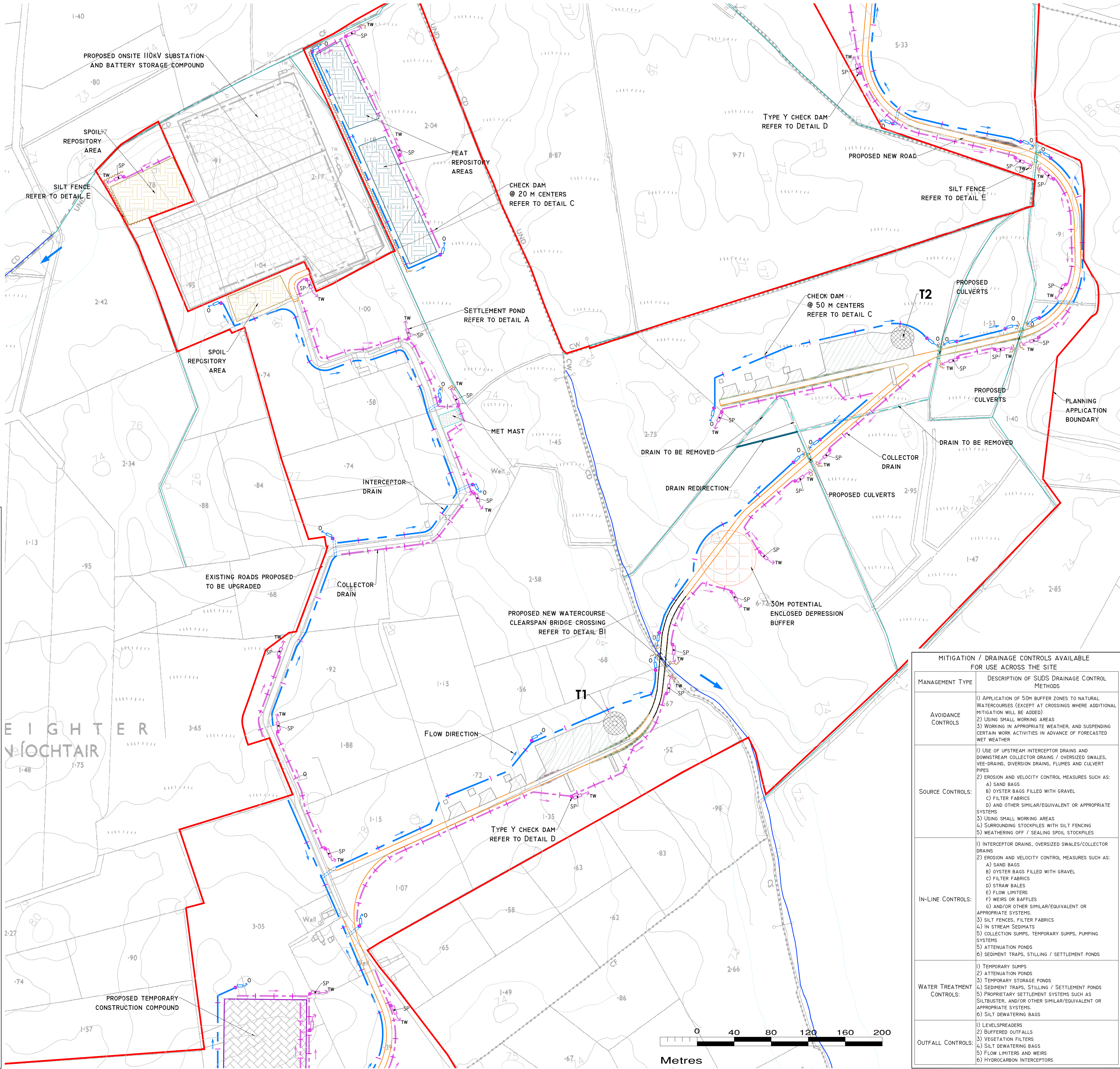
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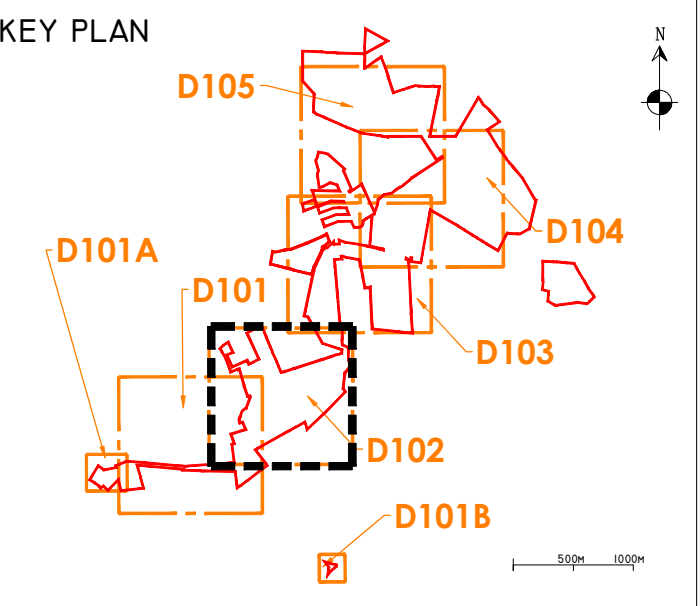
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- DRAWING LEGEND :**
- WATERCOURSES
  - WATERCOURSE 50M BUFFER
  - DRAINS
  - DRAINS TO BE REMOVED/BLOCKED
  - DRAIN REDIRECTION
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN
  - DIRECTION OF FLOW
  - SETTLEMENT POND - LEVEL SPREADER
  - UNDER ROAD DRAINAGE (FLOATING ROAD)
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - PROPOSED CULVERT CROSSING
  - PROPOSED WC CROSSING
  - INTERCEPTOR DITCH CULVERT
  - COLLECTOR DITCH CULVERT
  - OVERLAND FLOW DISCHARGE
  - TREATED WATER DISCHARGE
  - SETTLEMENT POND
  - SEMI-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
  - PUMPING SUMP

- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARDSTAND
- PROPOSED NEW ROADS
- PROPOSED FLOATING ROADS
- EXISTING ROADS PROPOSED TO BE UPGRADED
- PROPOSED 110kV ONSITE SUBSTATION AND BATTERY STORAGE COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND
- SPOIL REPOSITORY AREAS
- FEAT REPOSITORY AREAS
- MET MAST
- CUT AREA
- FILL AREA
- 30M POTENTIAL ENCLOSED DEPRESSION BUFFER



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3. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.
4. ALL DIMENSIONS ARE IN METRES.

| 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 (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED)<br>2) USING SMALL WORKING AREAS<br>3) 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<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS<br>3) USING SMALL WORKING AREAS<br>4) SURROUNDING STOCKPILES WITH SILT FENCING<br>5) WEATHERING OFF / SEALING SPOIL STOCKPILES                                         |
| IN-LINE CONTROLS:                                                | 1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) STRAW BALES<br>E) FLOW LIMITERS<br>F) WEIRS OR BAFFLES<br>G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS<br>3) SILT FENCES, FILTER FABRICS<br>4) IN STREAM SEDIMENTS<br>5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS<br>6) ATTENUATION PONDS<br>7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS |
| WATER TREATMENT CONTROLS:                                        | 1) TEMPORARY SUMPS<br>2) ATTENUATION PONDS<br>3) TEMPORARY STORAGE PONDS<br>4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS<br>5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.<br>6) SILT DEWATERING BAGS                                                                                                                                                                                                                                           |
| OUTFALL CONTROLS:                                                | 1) LEVELSPREADERS<br>2) BUFFERED OUTFALLS<br>3) VEGETATION FILTERS<br>4) SILT DEWATERING BAGS<br>5) FLOW LIMITERS AND WEIRS<br>6) HYDROCARBON INTERCEPTORS                                                                                                                                                                                                                                                                                                                                                       |

|                                                                                                                                                                                                                             |             |                              |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------|--------|
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| Date                                                                                                                                                                                                                        | Description | Chkd                         | Signed |
| Revisions                                                                                                                                                                                                                   |             |                              |        |
| <b>HYDRO ENVIRONMENTAL SERVICES</b><br>22 Lower Main St<br>Dungarvan<br>Co. Waterford<br>Ireland<br>tel: +353 (0) 58-44122<br>tel: +353 (0) 58-44244<br>email: info@hydroenvironmental.ie<br>web: www.hydroenvironmental.ie |             |                              |        |
| Client:                                                                                                                                                                                                                     |             | MKO                          |        |
| Job:                                                                                                                                                                                                                        |             | COOLOO WIND FARM, Co. GALWAY |        |
| Title:                                                                                                                                                                                                                      |             | PROPOSED DRAINAGE LAYOUT     |        |
| Figure No:                                                                                                                                                                                                                  |             | DI02                         |        |
| Drawing No: P1611-0-0925-A1-DI02-00B                                                                                                                                                                                        |             |                              |        |
| Sheet Size: A1                                                                                                                                                                                                              |             | Project No.: P1611-0         |        |
| Scale: 1:2,000 (A1)                                                                                                                                                                                                         |             | Drawn By: GA                 |        |
| Date: 24/09/2025                                                                                                                                                                                                            |             | Checked By: MG               |        |



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

4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY ON ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN DITCHES OR EXISTING FIELD DRAINAGE SYSTEMS WITH A MINIMUM OF 20' FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. ALL DRAINAGE WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT Ponds AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CREAMS/WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE EROSION OR EXPOSURE OF THE POINT OF RELEASE/DISCHARGE TO BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SLIP PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
9. ALL WIND FAN DRAINAGE OUTFALLS TO BE LOCATED OUTSIDE OF 30m POTENTIAL ENCLOSED DEPRESSION BUFFER.

10. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS

II. THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.

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

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

16. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
17. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.

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

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

1. TRAFFIC STRIPS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO MEET SPECIFICATION (SEE 1.6 BY OTHERS).

2. STRAW BALES / OR SIMILAR OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL SLOTTED OR OTHER PROPER AREA, A MOBILE SILT TRUSTER SYSTEM TO BE AVAILABLE ON SITE FOR USE AS REQUIRED ALSO.

3. SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/ SILT FENCING/ OR SIMILAR APPROVED METHOD OR ADDITIONAL SLOTTED OR OTHER PROPER AREA, A MOBILE SILT TRUSTER SYSTEM TO BE AVAILABLE ON SITE FOR USE AS REQUIRED ALSO. IT MUST PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.

5. INTERCEPTOR SWALES / DITCHES WILL BE USED TO COLLECT SURFACE SURF RUNOFFS. REGULAR CROSS DRAINING / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.

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

7. A BUFFER ZONE 20 FT. ADJACENT TO EXISTING WATERCOURSE WILL BE REQUIRED WITHIN WHICH LAND DISPOSITIONS AND DISCHARGE FROM ACCESS TRACKS SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE AREAS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).

8. BUILT UP SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 21 DEPENDING UPON DEPTH OF SWALE/DITCH AND BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.

9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO PREVENT SCOURING AND PROVIDE SLOPE CONTROL. SILT SETTLEMENT, THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.

10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE SITE. SETTLEMENT POND SIZES WILL BE BASED ON THE CATCHMENT AREA BEING SERVED. SAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.

11. STRAW BALES / OR SIMILAR AND SILT FENCING TO BE USED ALSO AROUND SPILL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED AFTER CONSTRUCTION OF SPILL HEAPS.

12. SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COME WITHIN 75CM OF EDGE OF ANY DITCH / DRAIN / EPIHEMERAL CHANNEL.

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

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

15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR CONSTRUCTION OF CHECK DAMS TO BE 100MM TO 150MM. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 400MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.

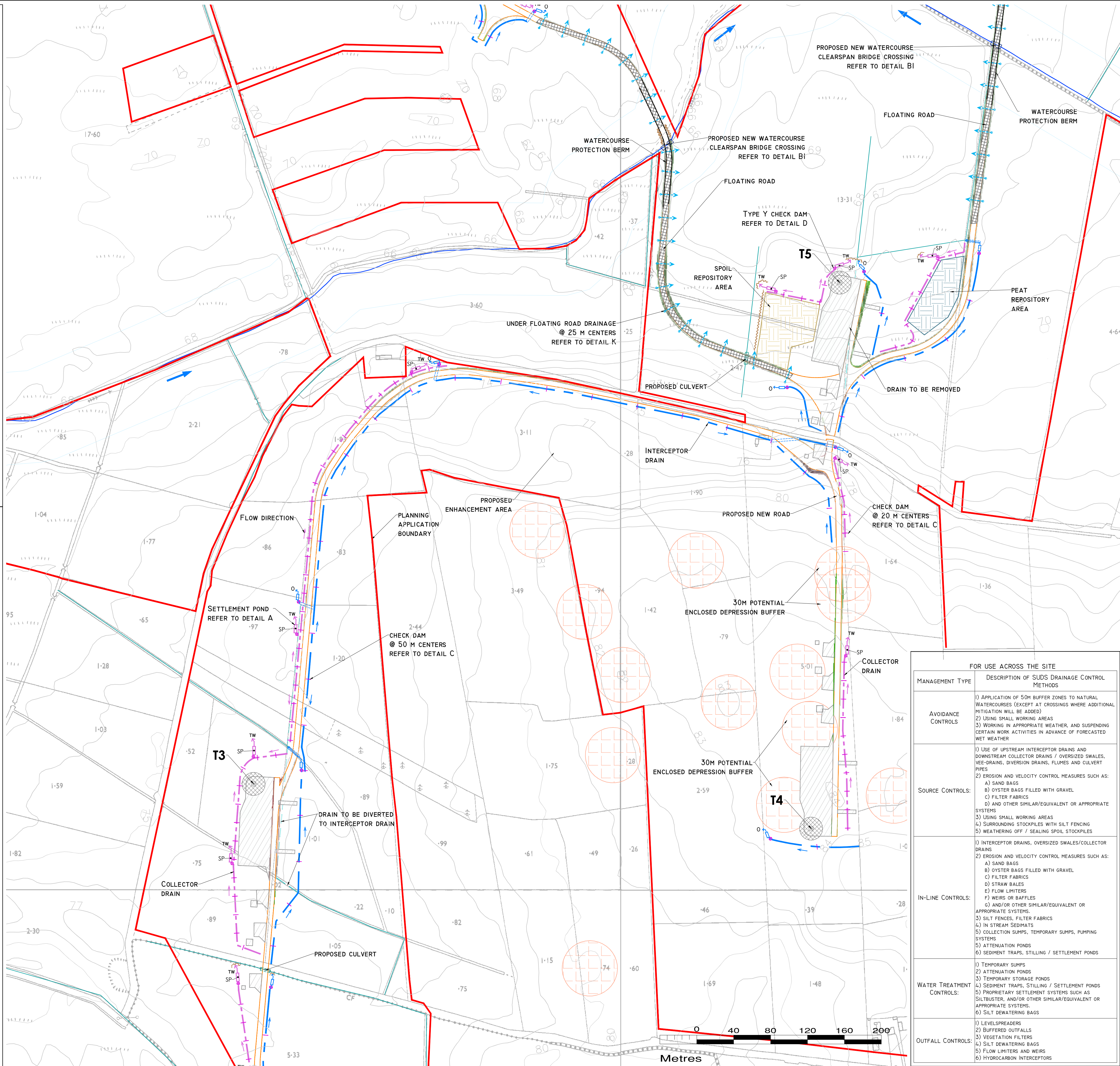
16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISCHARGE TO FIELD DITCHES / DRAINS. CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED WITH SLOTTED OR OTHER PROPER AREA, A MOBILE SILT TRUSTER SYSTEM.

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

18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER TO PREVENT SUDS FROM ENTERING THE POND. TO BE CONSTRUCTION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.

19. OIL FUEL WILL ONLY BE STORED WITHIN BOUNDARY CONTAINMENT STRUCTURE.

20. TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



- | DRAWING LEGEND :                                                                    |                                     | EXISTING DRAINAGE | PROPOSED DRAINAGE |
|-------------------------------------------------------------------------------------|-------------------------------------|-------------------|-------------------|
|    | WATERCOURSES                        |                   |                   |
|  | WATERCOURSE 5.0M BUFFER             |                   |                   |
|  | DRAINS                              |                   |                   |
|  | DRAINS TO BE REMOVED/BLOCKED        |                   |                   |
|  | DRAIN REDIRECTION                   |                   |                   |
|  | STREAM FLOW DIRECTION               |                   |                   |
|  | UPSTREAM INTERCEPTOR DRAIN          |                   |                   |
|  | SWALES/DOWNSTREAM CATCHMENT DRAIN   |                   |                   |
|  | DITCHES OF FLOW                     |                   |                   |
|  | SETTLEMENT POND - LEVEL SPREADER    |                   |                   |
|  | UNDER ROAD DRAINAGE (FLOATING ROAD) |                   |                   |
|  | SILT FENCES                         |                   |                   |
|  | DOUBLE/TRIPLE SILT FENCES           |                   |                   |
|  | CHECK DAM 'TYPE A'                  |                   |                   |
|  | CHECK DAM 'TYPE B'                  |                   |                   |
|  | PROPOSED CULVERT CROSSING           |                   |                   |
|  | PROPOSED WC CROSSING                |                   |                   |
|  | INTERCEPTOR DITCH CULVERT           |                   |                   |
|  | COLLECTOR DITCH CULVERT             |                   |                   |
|  | OVERLAND FLOW DISCHARGE             |                   |                   |
|  | TREATED WATER DISCHARGE             |                   |                   |
|  | SP                                  |                   |                   |
|  | SETTLEMENT POND                     |                   |                   |
|  | SH-NATURAL VEGETATION               |                   |                   |
|  | SWALE / FILTER BED / SECONDARY SP   |                   |                   |
|  | PUMPING SUM                         |                   |                   |

- |  |                                                                 |
|--|-----------------------------------------------------------------|
|  | PLANNING APPLICATION BOUNDARY                                   |
|  | EXISTING GROUND SURFACE<br>MINOR CONTOUR (1M INTERVAL)          |
|  | TURBINE AND TURBINE FOUNDATION                                  |
|  | HARDSTAND                                                       |
|  | PROPOSED NEW ROADS                                              |
|  | PROPOSED FLOATING ROADS                                         |
|  | EXISTING ROADS PROPOSED<br>TO BE UPGRADED                       |
|  | PROPOSED 10kV ONSITE SUBSTATION<br>AND BATTERY STORAGE COMPOUND |
|  | TEMPORARY CONSTRUCTION<br>COMPOUND                              |
|  | SPOIL REPOSITORY AREAS                                          |
|  | PEAT REPOSITORY AREAS                                           |
|  | MET MAST                                                        |
|  | CUT AREA                                                        |
|  | FILL AREA                                                       |
|  | 30M POTENTIAL<br>WIND SPEED REDUCTION                           |

The map shows the study area with various sites labeled: D101, D102, D103, D104, D105, D101A, and D101B. A scale bar indicates distances up to 1000m, and a north arrow is present in the top right corner.

**DRAWING NOTES**

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4. ALL DIMENSIONS ARE IN METRES.

| FOR USE ACROSS THE SITE   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MANAGEMENT TYPE           | DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| AVOIDANCE CONTROLS        | <ol style="list-style-type: none"> <li>1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED)</li> <li>2) USING SMALL WORKING AREAS</li> <li>3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER</li> </ol>                                                                                                                                                                                                                                                                                                                                                               |
| SOURCE CONTROLS:          | <ol style="list-style-type: none"> <li>1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES</li> <li>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:               <ol style="list-style-type: none"> <li>A) SAND BAGS</li> <li>B) OYSTER BAGS FILLED WITH GRAVEL</li> <li>C) FILTER FABRICS</li> <li>D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS</li> </ol> </li> <li>3) USING SMALL WORKING AREAS</li> <li>4) SURROUNDING STOCKPILES WITH SILT FENCING</li> <li>5) WEATHERING OFF / SEALING SPOIL STOCKPILES</li> </ol>                                                                       |
| IN-LINE CONTROLS:         | <ol style="list-style-type: none"> <li>1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS</li> <li>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:               <ol style="list-style-type: none"> <li>A) SAND BAGS</li> <li>B) OYSTER BAGS FILLED WITH GRAVEL</li> <li>C) FILTER FABRICS</li> <li>D) STRAW BALES</li> <li>E) FLOW LIMITERS</li> <li>F) WEIRS OR BAFFLES</li> <li>G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS</li> </ol> </li> <li>3) SILT FENCES, FILTER FABRICS</li> <li>4) IN STREAM SEDIMENTS</li> <li>5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS</li> <li>5) ATTENUATION PONDS</li> <li>6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS</li> </ol> |
| WATER TREATMENT CONTROLS: | <ol style="list-style-type: none"> <li>1) TEMPORARY SUMPS</li> <li>2) ATTENUATION PONDS</li> <li>3) TEMPORARY STORAGE PONDS</li> <li>4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS</li> <li>5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.</li> <li>6) SILT DEWATERING BAGS</li> </ol>                                                                                                                                                                                                                                                                                                                                                   |
| OUTFALL CONTROLS:         | <ol style="list-style-type: none"> <li>1) LEVELSPREADERS</li> <li>2) BUFFERED OUTFALLS</li> <li>3) VEGETATION FILTERS</li> <li>4) SILT DEWATERING BAGS</li> <li>5) FLOW LIMITERS AND WEIRS</li> <li>6) HYDROCARBON INTERCEPTORS</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| Date      | Description | Chkd | Signed |
|-----------|-------------|------|--------|
| Revisions |             |      |        |



Client: MKO

Job: COOLLOO WIND FARM, CO. GALWAY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: DI03

Drawing No: P1611-0-0925-A1-D103-00B

|                |                      |
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| Sheet Size: A1 | Project No.: P1611-0 |
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| Scale: 1:2,000 (A1) | Drawn By: GA |
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POLLUTION PREVENTION NOTES:

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

DISCHARGES

4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
9. ALL WIND FARM DRAINAGE OUTFALLS TO BE LOCATED OUTSIDE OF 30M POTENTIAL ENCLOSED DEPRESSION BUFFER

EXCAVATIONS

10. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.

EXPOSED GROUND & STOCKPILES

11. THE AMOUNT OF TEMPORARILY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.

SITE TRACKS

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

REFUELLING

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

CONCRETE

16. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
17. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.

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

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

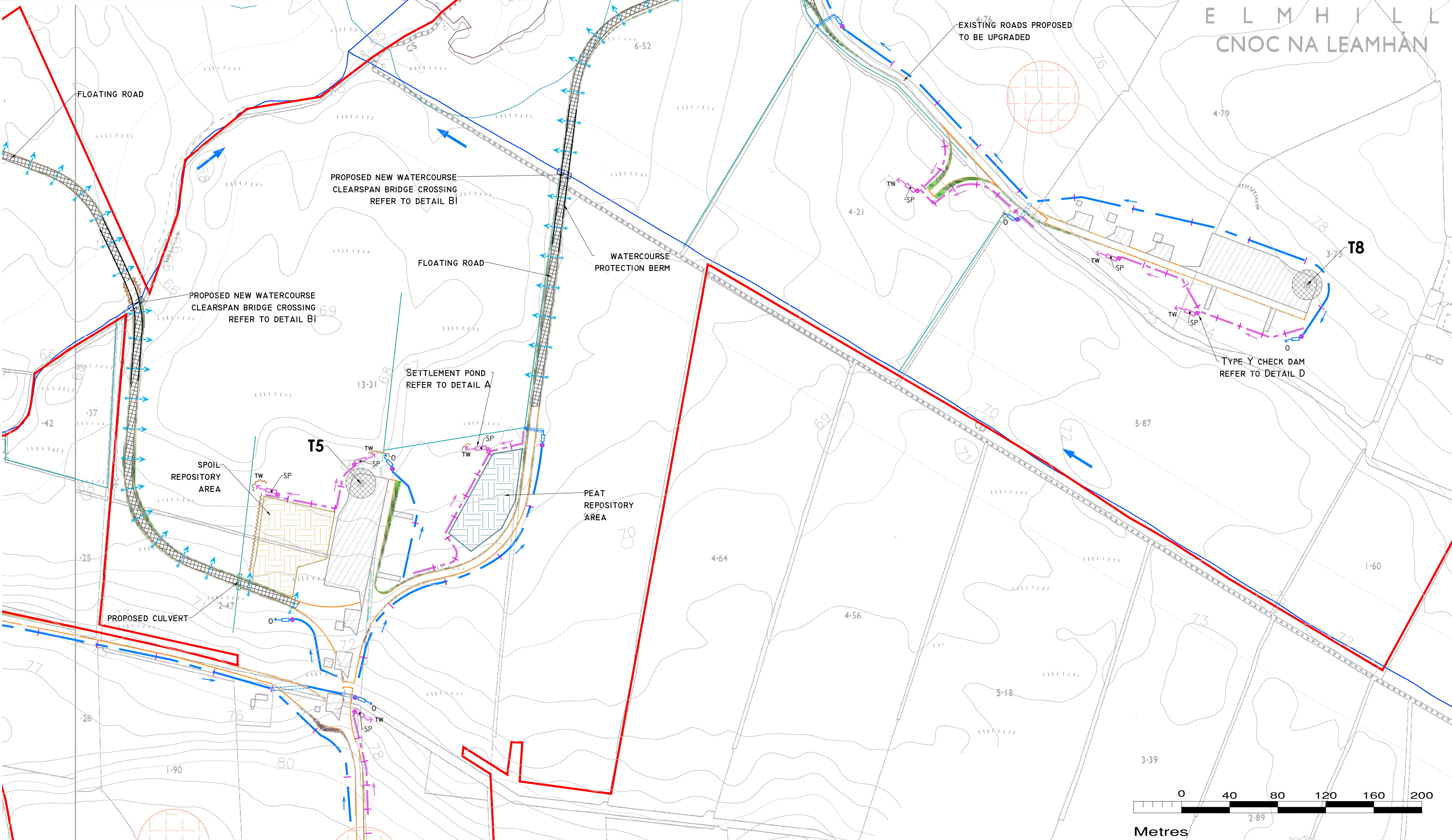
**CONTAIN** – THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.

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

DRAINAGE NOTES:

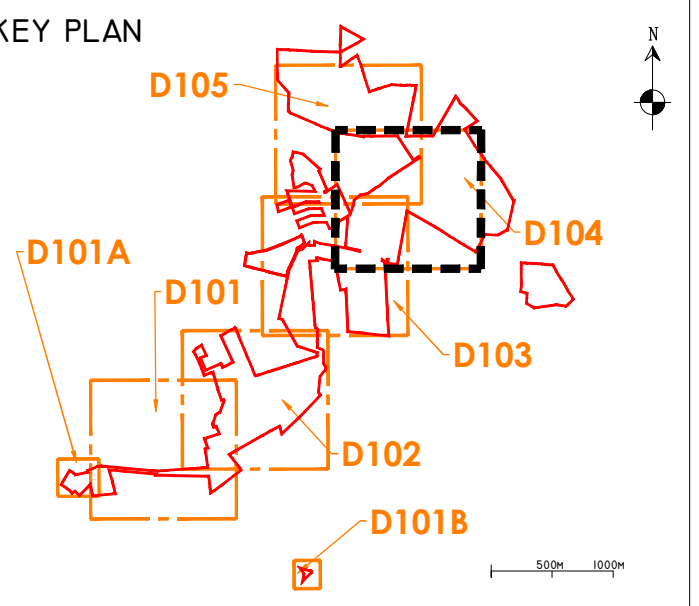
1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY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

| 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 (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED)<br>2) USING SMALL WORKING AREAS<br>3) 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<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS<br>3) USING SMALL WORKING AREAS<br>4) SURROUNDING STOCKPILES WITH SILT FENCING<br>5) WEATHERING OFF / SEALING SPOIL STOCKPILES                                          |
| IN-LINE CONTROLS:                                                | 1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS<br>2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:<br>A) SAND BAGS<br>B) OYSTER BAGS FILLED WITH GRAVEL<br>C) FILTER FABRICS<br>D) STRAW BALES<br>E) FLOW LIMITERS<br>F) WEIRS OR BAFFLES<br>G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.<br>3) SILT FENCES, FILTER FABRICS<br>4) IN STREAM SEDIMENTS<br>5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS<br>6) ATTENUATION PONDS<br>7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS |
| WATER TREATMENT CONTROLS:                                        | 1) TEMPORARY SUMPS<br>2) ATTENUATION PONDS<br>3) TEMPORARY STORAGE PONDS<br>4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS<br>5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.<br>6) SILT DEWATERING BAGS                                                                                                                                                                                                                                            |
| OUTFALL CONTROLS:                                                | 1) LEVELSPREADERS<br>2) BUFFERED OUTFALLS<br>3) VEGETATION FILTERS<br>4) SILT DEWATERING BAGS<br>5) FLOW LIMITERS AND WEIRS<br>6) HYDROCARBON INTERCEPTORS                                                                                                                                                                                                                                                                                                                                                        |



- DRAWING LEGEND :**
- WATERCOURSES
  - WATERCOURSE 50M BUFFER
  - DRAINS
  - DRAINS TO BE REMOVED/BLOCKED
  - DRAIN REDIRECTION
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN
  - DIRECTION OF FLOW
  - SETTLEMENT POND - LEVEL SPREADER
  - UNDER ROAD DRAINAGE (FLOATING ROAD)
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - PROPOSED CULVERT CROSSING
  - PROPOSED WC CROSSING
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- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARSTAND
- PROPOSED NEW ROADS
- PROPOSED FLOATING ROADS
- EXISTING ROADS PROPOSED TO BE UPGRADED
- PROPOSED 110KV ONSITE SUBSTATION AND BATTERY STORAGE COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND
- SPOIL REPOSITORY AREAS
- PEAT REPOSITORY AREAS
- MET MAST
- CUT AREA
- FILL AREA
- 30M POTENTIAL ENCLOSED DEPRESSION BUFFER



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  4. ALL DIMENSIONS ARE IN METRES.

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Client: MKO

Job: COOLLOO WIND FARM, Co. GALWAY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D104

Drawing No: P1611-0-0925-A1-D104-00B

Sheet Size: A1 Project No.: P1611-0

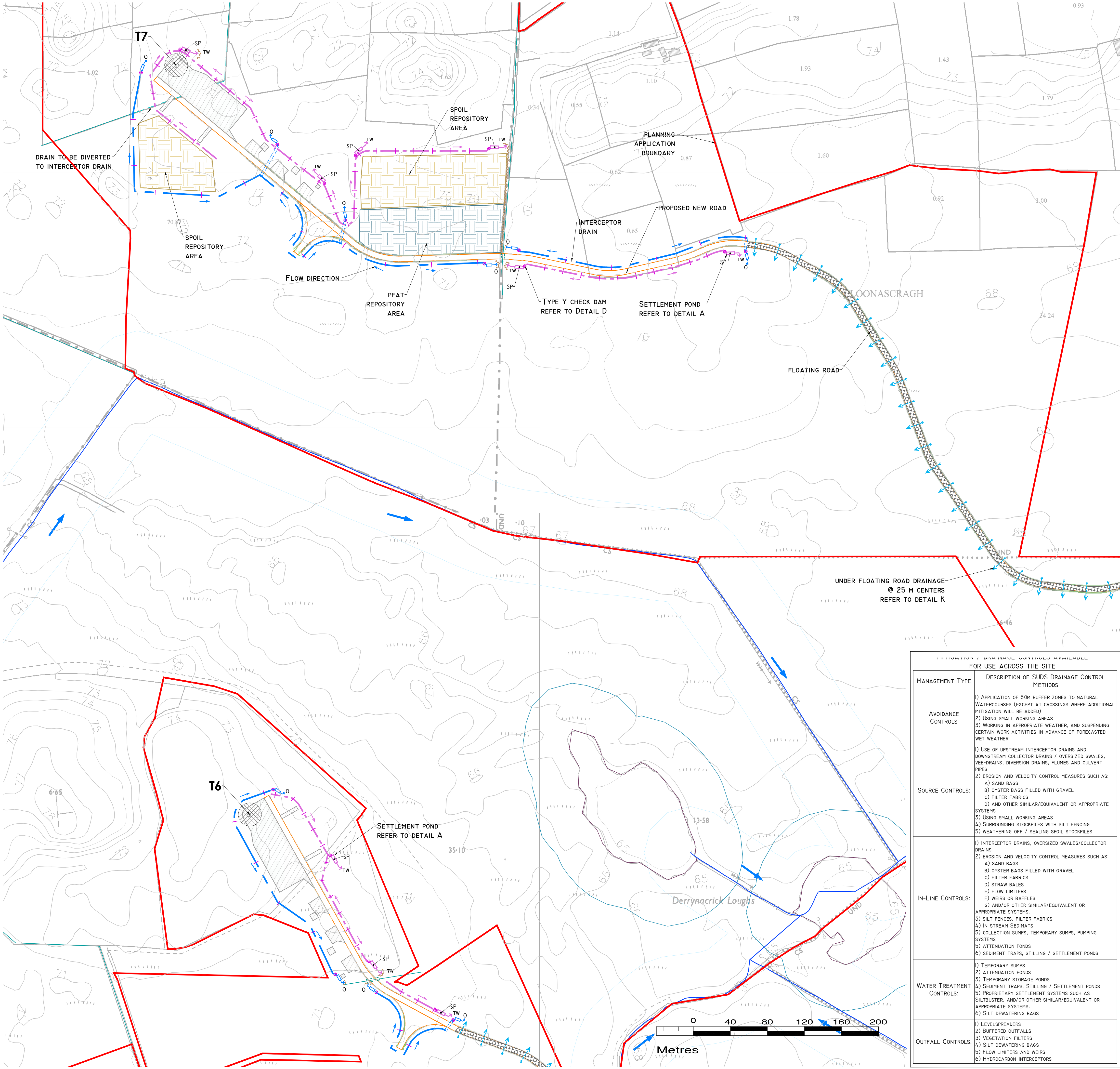
Scale: 1:2,000 (A1) Drawn By: GA

Date: 24/09/2025 Checked By: MG



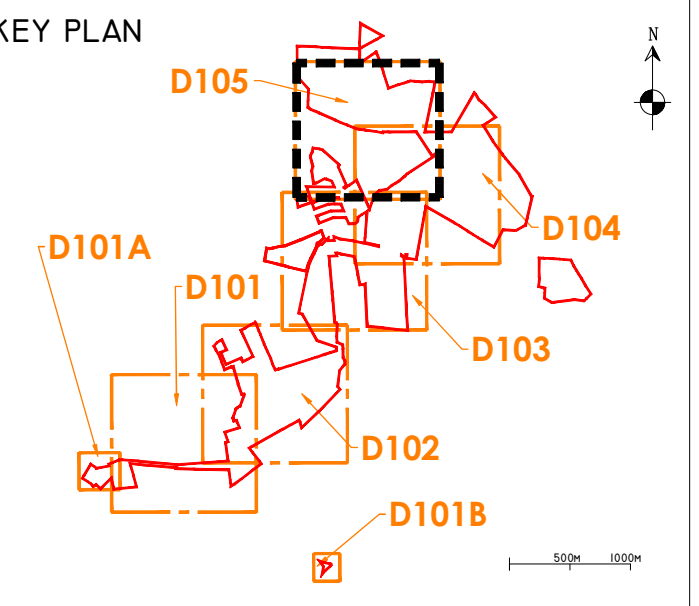
POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES
4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT POND AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
9. ALL WIND FARM DRAINAGE OUTFALLS TO BE LOCATED OUTSIDE OF 30M POTENTIAL ENCLOSED DEPRESSION BUFFER
- EXCAVATIONS
10. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES
11. THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- SITE TRACKS
12. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REQUIRE SILT IN RUNOFF WATER AS REQUIRED.
13. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING
14. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES/WATERBODIES.
15. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE
16. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
17. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:
- STOP – WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN – THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY – THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
- DRAINAGE NOTES:
1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
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4. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
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8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
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11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
12. SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
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17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARD STAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
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- DRAWING LEGEND :
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  - WATERCOURSE 50M BUFFER
  - DRAINS
  - DRAINS TO BE REMOVED/BLOCKED
  - DRAIN REDIRECTION
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN
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| MANAGEMENT TYPE           |  | DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS                                                                                                                                                                                     |
|---------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AVOIDANCE CONTROLS        |  | 1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED)                                                                                                       |
|                           |  | 2) USING SMALL WORKING AREAS                                                                                                                                                                                                     |
| SOURCE CONTROLS:          |  | 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER                                                                                                                   |
|                           |  | 4) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES                                                                                 |
| IN-LINE CONTROLS:         |  | 5) 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                                                        |
|                           |  | 6) SURROUNDING STOCKPILES WITH SILT FENCING 7) WEATHERING OFF / SEALING SPOIL STOCKPILES                                                                                                                                         |
| WATER TREATMENT CONTROLS: |  | 8) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS                                                                                                                                                                         |
|                           |  | 9) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS |
| OUTFALL CONTROLS:         |  | 10) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS                                                                                                                                                                                  |
|                           |  | 11) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS                                                                                                                    |

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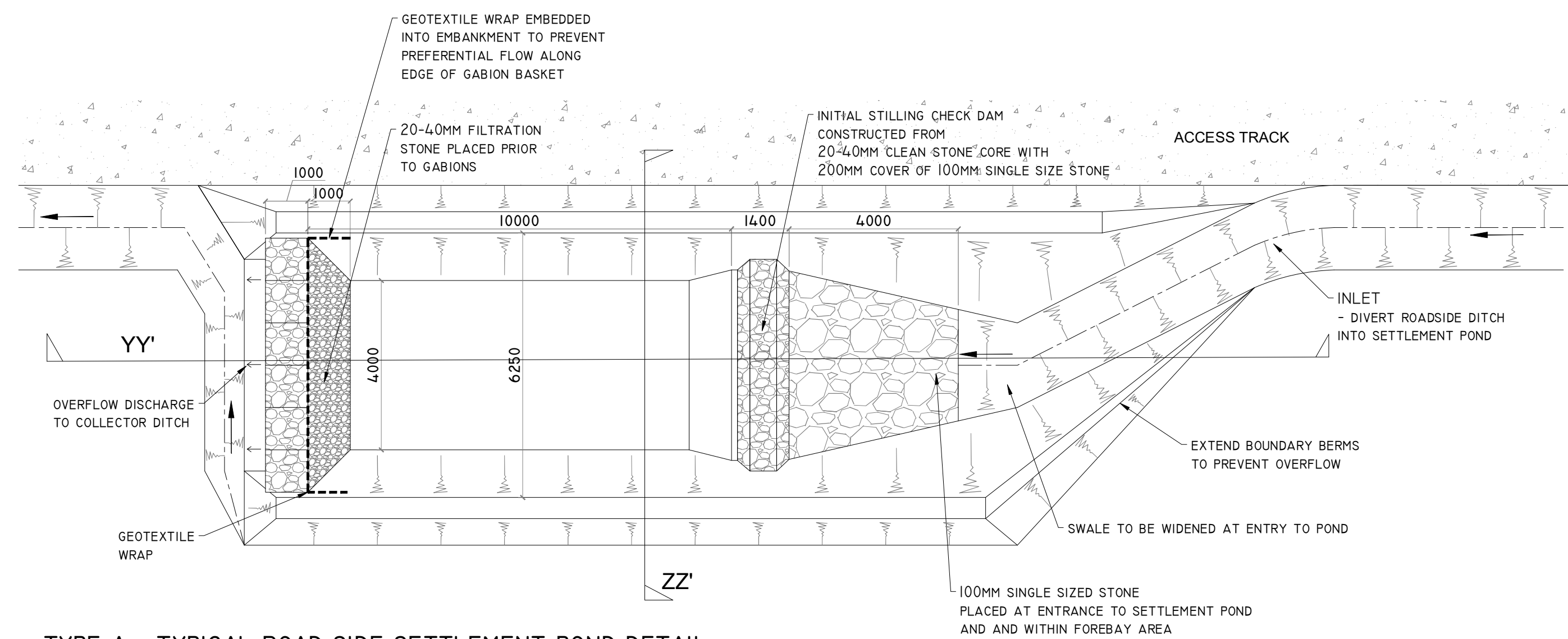
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Revisions

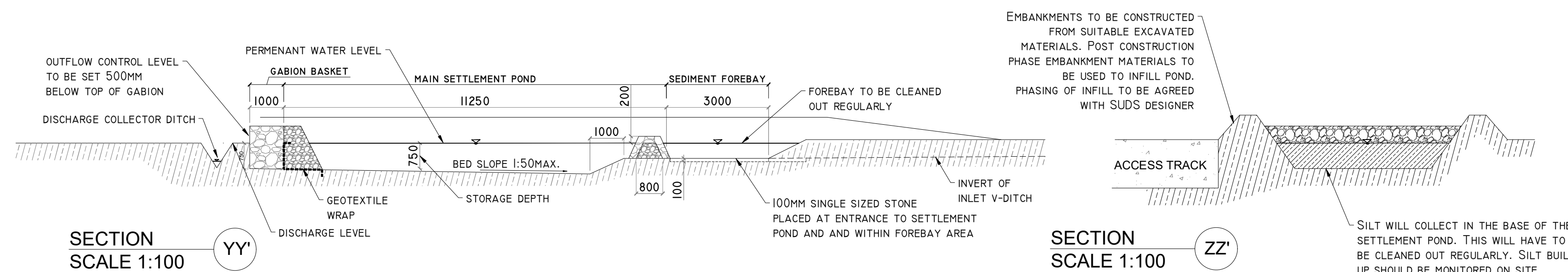
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| Client:      | MKO                           |
| Job:         | COOLLOO WIND FARM, Co. GALWAY |
| Title:       | PROPOSED DRAINAGE LAYOUT      |
| Figure No:   | DI05                          |
| Drawing No:  | P1611-0-0925-A1-DI05-00B      |
| Sheet Size:  | A1                            |
| Scale:       | 1:2,000 (A1)                  |
| Date:        | 24/09/2025                    |
| Project No.: | P1611-0                       |
| Drawn By:    | GA                            |
| Checked By:  | MG                            |



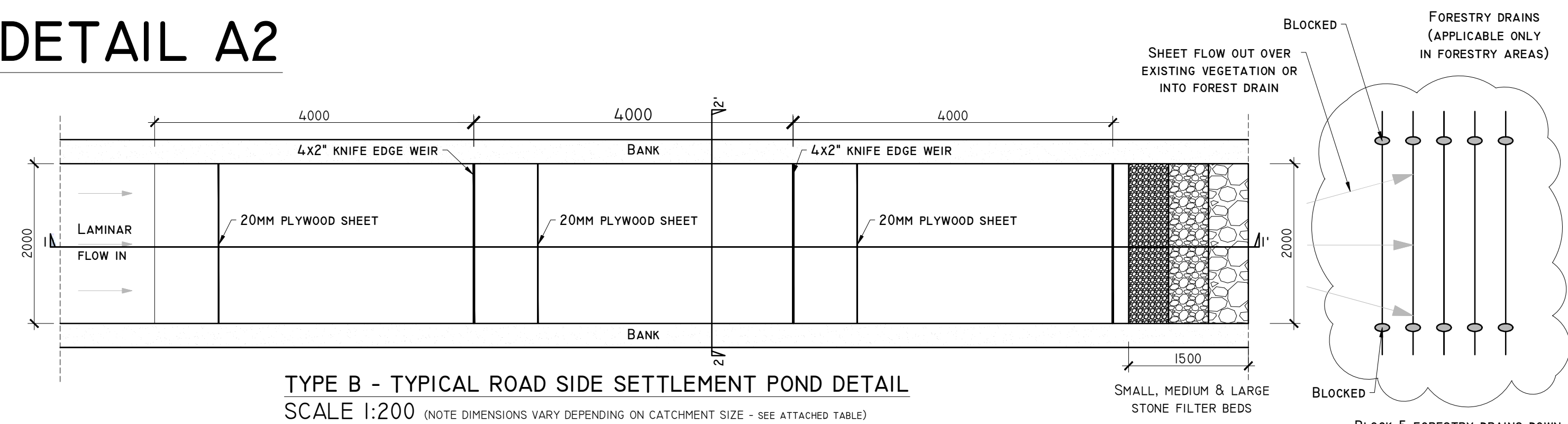
## DETAIL AI



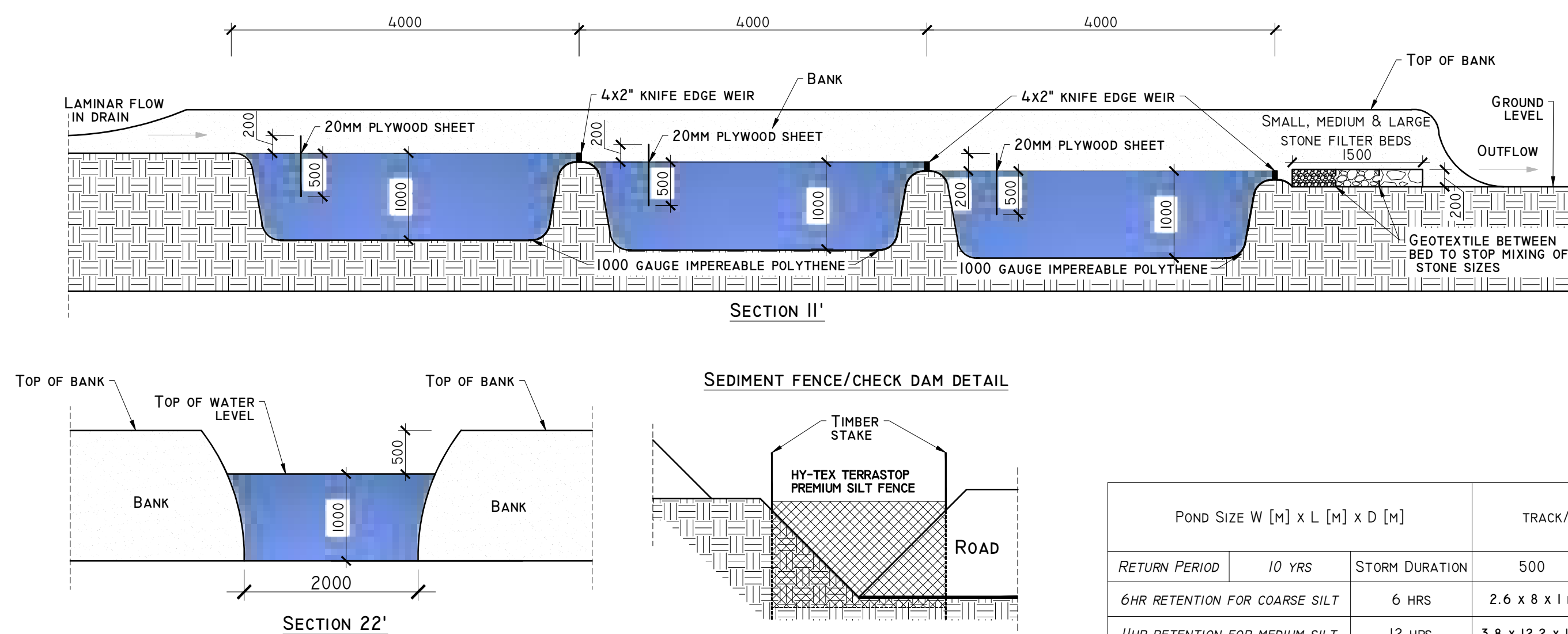
TYPE A - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL  
SCALE 1:100 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



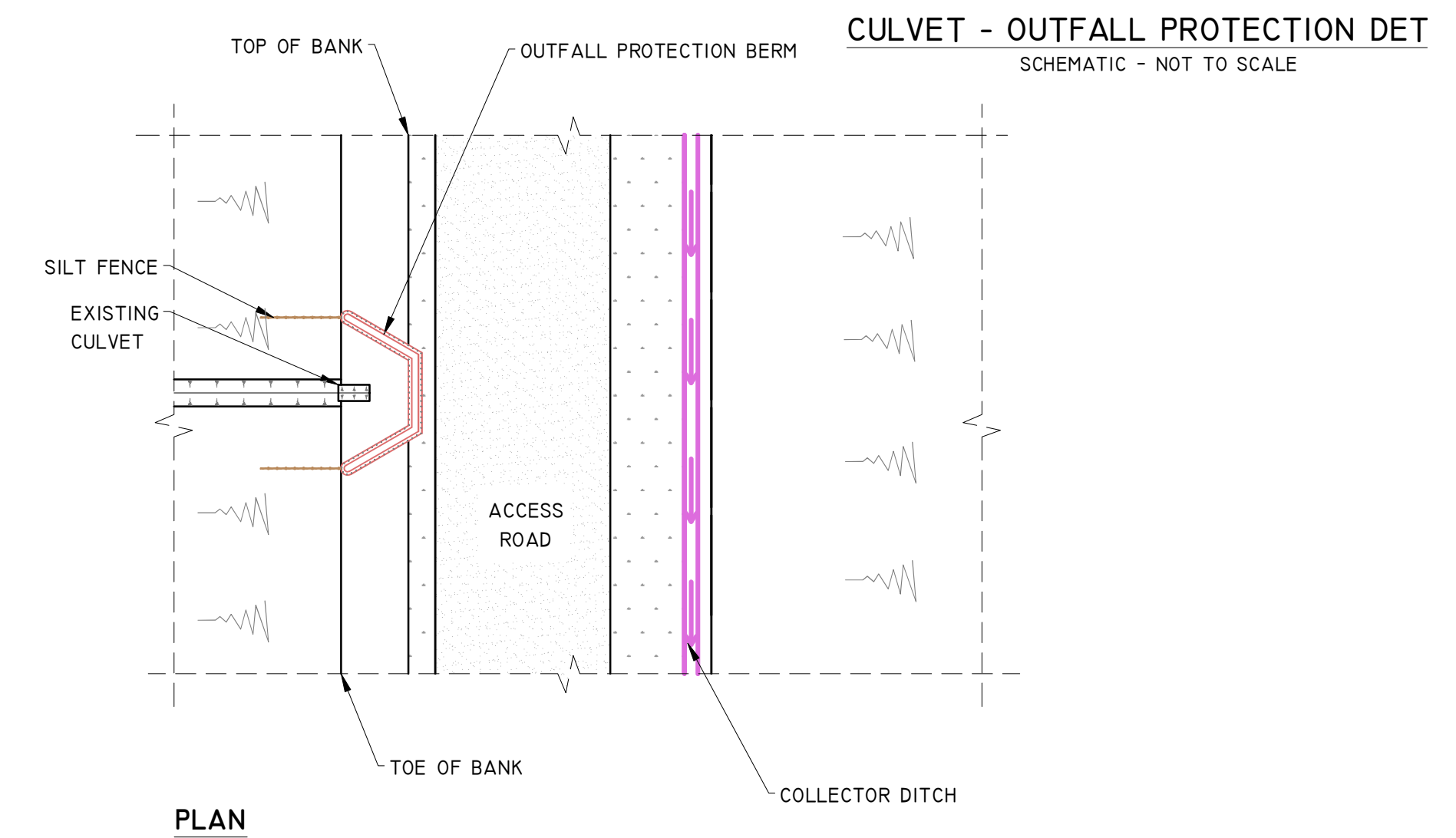
## DETAIL A2



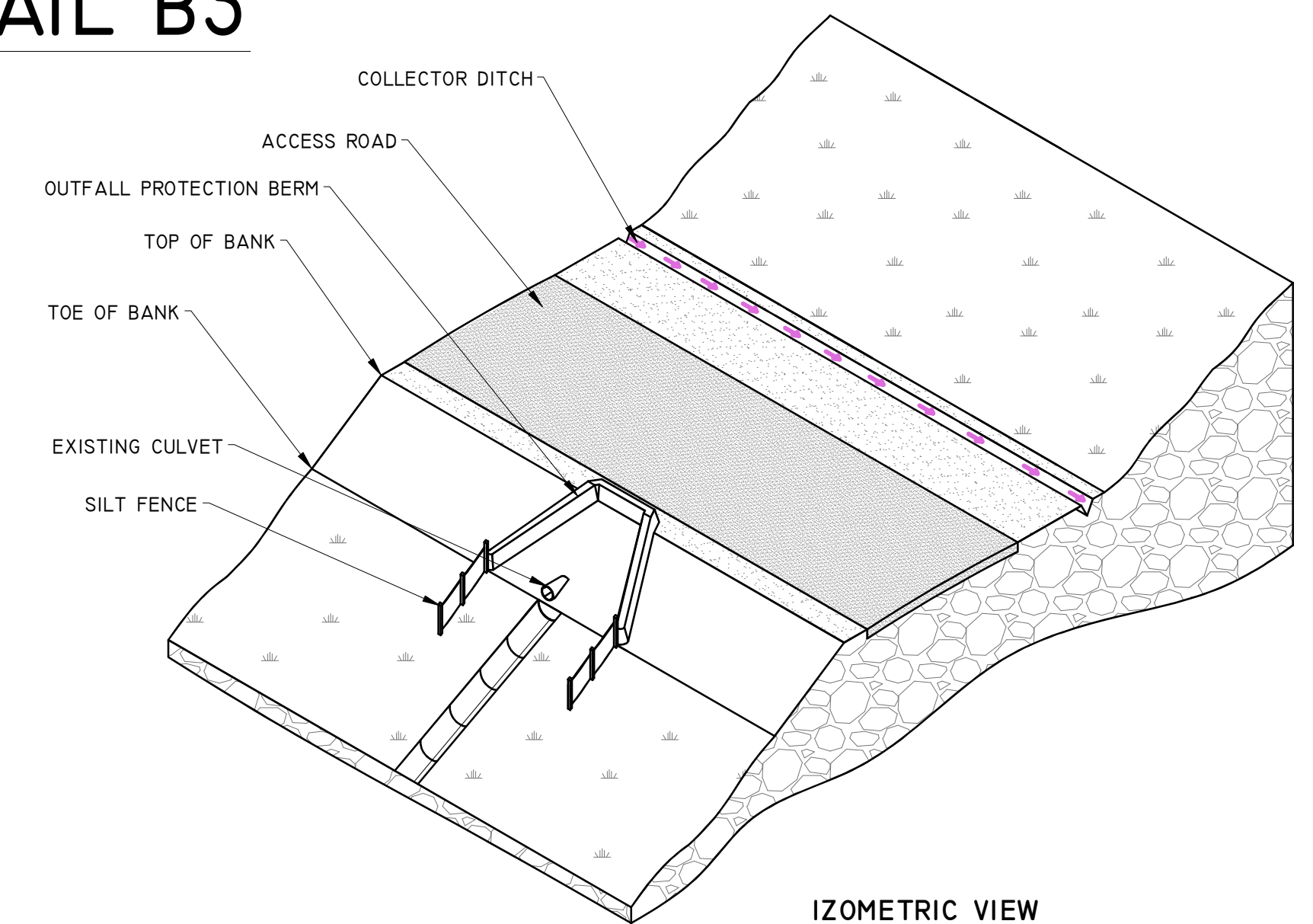
TYPE B - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL  
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



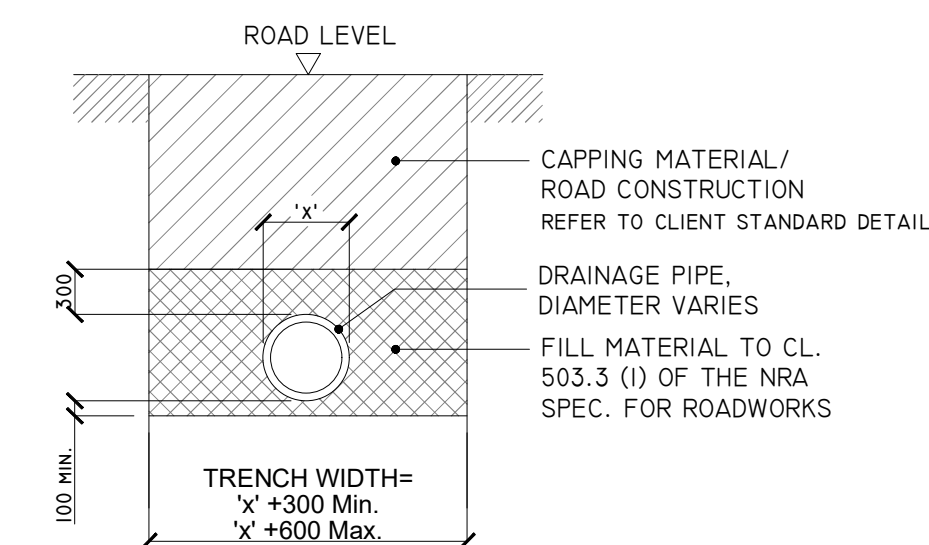
| POND SIZE W [m] x L [m] x D [m] |        |                | TRACK/HARDSTAND CATCHMENT SIZE (H <sup>2</sup> ) |                  |                   |
|---------------------------------|--------|----------------|--------------------------------------------------|------------------|-------------------|
| RETURN PERIOD                   | 10 YRS | STORM DURATION | 500                                              | 1000             | 2000              |
| 6HR RETENTION FOR COARSE SILT   |        | 6 HRS          | 2.6 x 8 x 1 m                                    | 3.7 x 11.2 x 1 m | 5.2 x 15.8 x 1 m  |
| 1HR RETENTION FOR MEDIUM SILT   |        | 12 HRS         | 3.8 x 12.2 x 1 m                                 | 5.5 x 16.9 x 1 m | 7.8 x 23.8 x 1 m  |
| 24HR RETENTION FOR FINE SILT    |        | 24 HRS         | 6.5 x 20.4 x 1 m                                 | 9.2 x 28.8 x 1 m | 13.2 x 40.2 x 1 m |



### DETAIL B3



## DETAIL B2



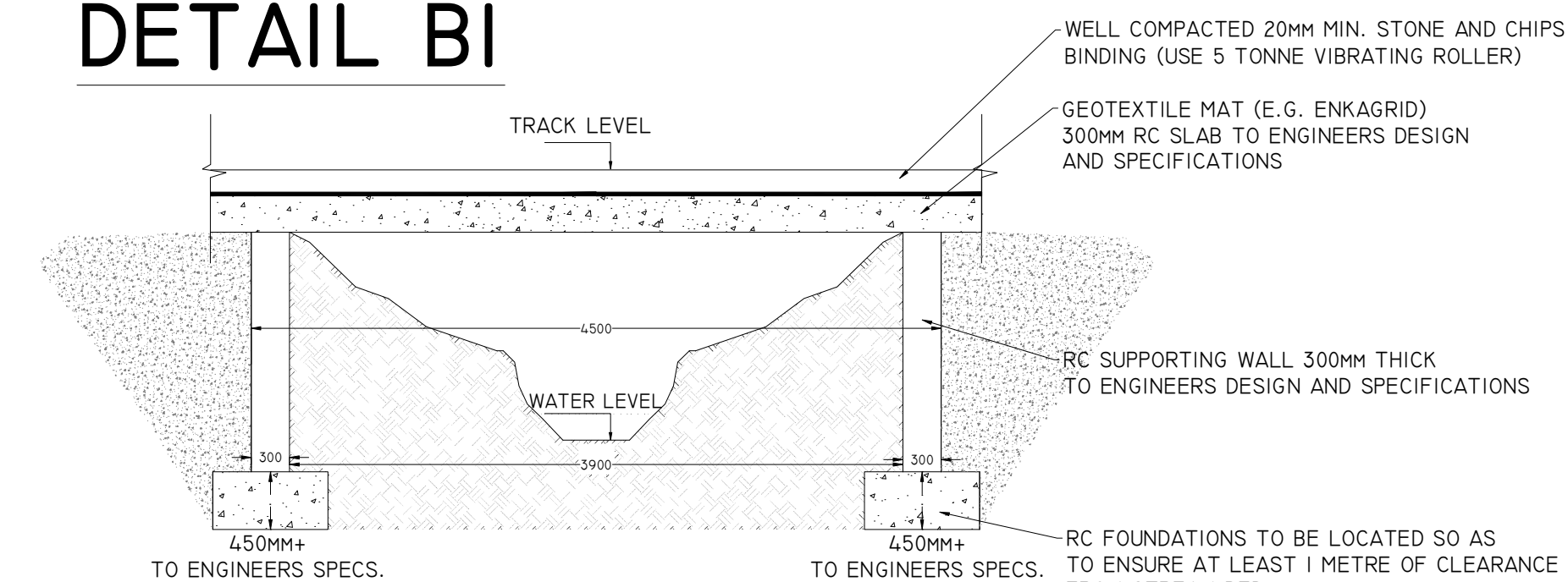
'TYPE B' CULVERT - DRAINAGE CROSSING  
BENEATH EXCAVATED ROAD

SCALE 1:50

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## DETAIL BI



'TYPE A' TYPICAL SECTION OF CLEARSPAN BRIDGE (WHERE APPLICABLE)

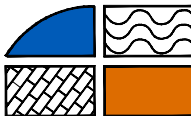
SCALE 1:50

**CULVET - OUTFALL PROTECTION DET**  
SCHEMATIC - NOT TO SCALE

SCHEMATIC - NOT TO SCALE

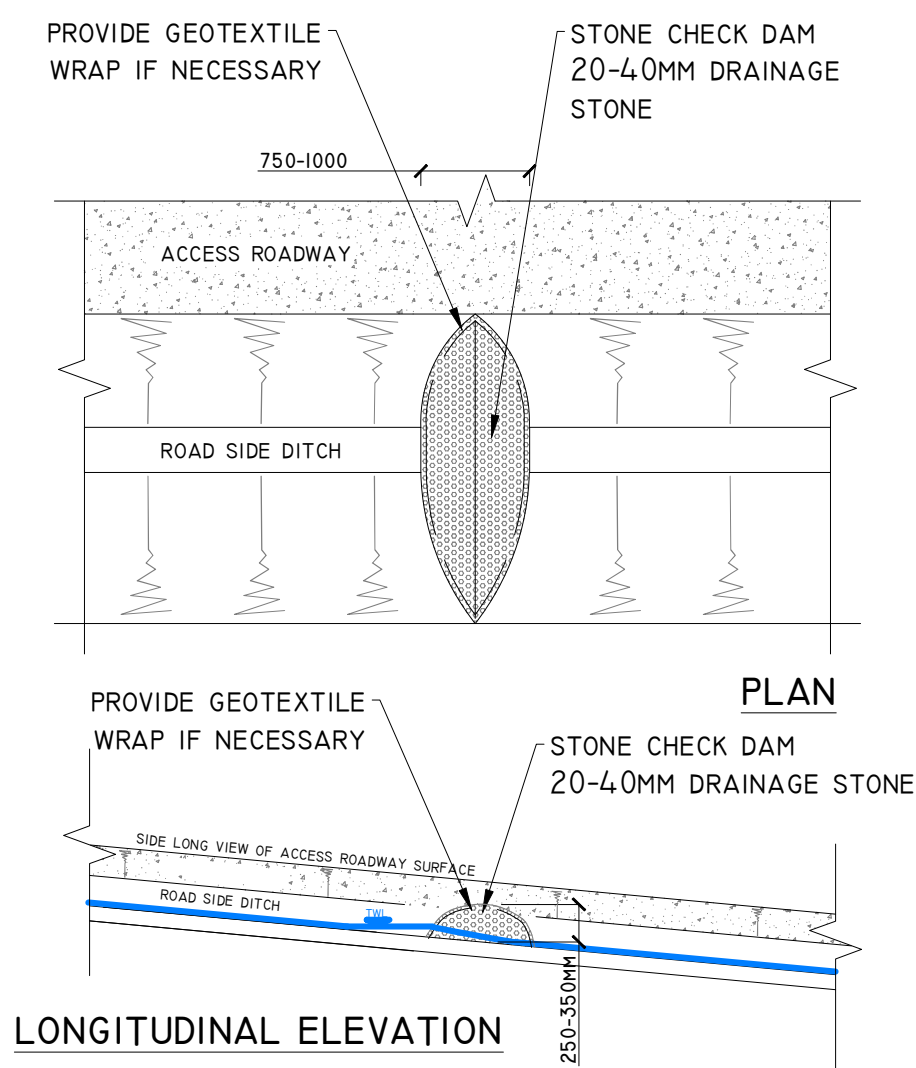
IZOMETRIC VIEW

|           |             |      |        |
|-----------|-------------|------|--------|
|           |             |      |        |
|           |             |      |        |
|           |             |      |        |
|           |             |      |        |
| Date      | Description | Chkd | Signed |
| Revisions |             |      |        |

|                                                                                       |                                                                                                                                                                                                                        |  |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <h1>HYDRO ENVIRONMENTAL SERVICES</h1>                                                                                                                                                                                  |  |
|                                                                                       | 22 Lower Main St<br>Dunganah<br>Co. Waterford<br>Ireland                                                                                                                                                               |  |
|                                                                                       | tel: +353 (0) 36-44122<br>tel: +353 (0) 36-44244<br>email: <a href="mailto:info@hydroenvironmental.ie">info@hydroenvironmental.ie</a><br>web: <a href="http://www.hydroenvironmental.ie">www.hydroenvironmental.ie</a> |  |
|                                                                                       |                                                                                                                                                                                                                        |  |
| Client:                                                                               |                                                                                                                                                                                                                        |  |
| MKO                                                                                   |                                                                                                                                                                                                                        |  |
| Job:                                                                                  |                                                                                                                                                                                                                        |  |
| COOL00 WIND FARM, CO. GALWAY                                                          |                                                                                                                                                                                                                        |  |
| Title:                                                                                |                                                                                                                                                                                                                        |  |
| DRAINAGE DETAILS I                                                                    |                                                                                                                                                                                                                        |  |
| Figure No:                                                                            |                                                                                                                                                                                                                        |  |
| D50I                                                                                  |                                                                                                                                                                                                                        |  |
| Drawing No: P1611-0-0925-A1-D50I-00B                                                  |                                                                                                                                                                                                                        |  |
| Sheet Size: A1                                                                        | Project No.: P1611-0                                                                                                                                                                                                   |  |
| Scale: as shown (A1)                                                                  | Drawn By: GA                                                                                                                                                                                                           |  |
| Date: 24/09/2025                                                                      | Checked By: MG                                                                                                                                                                                                         |  |

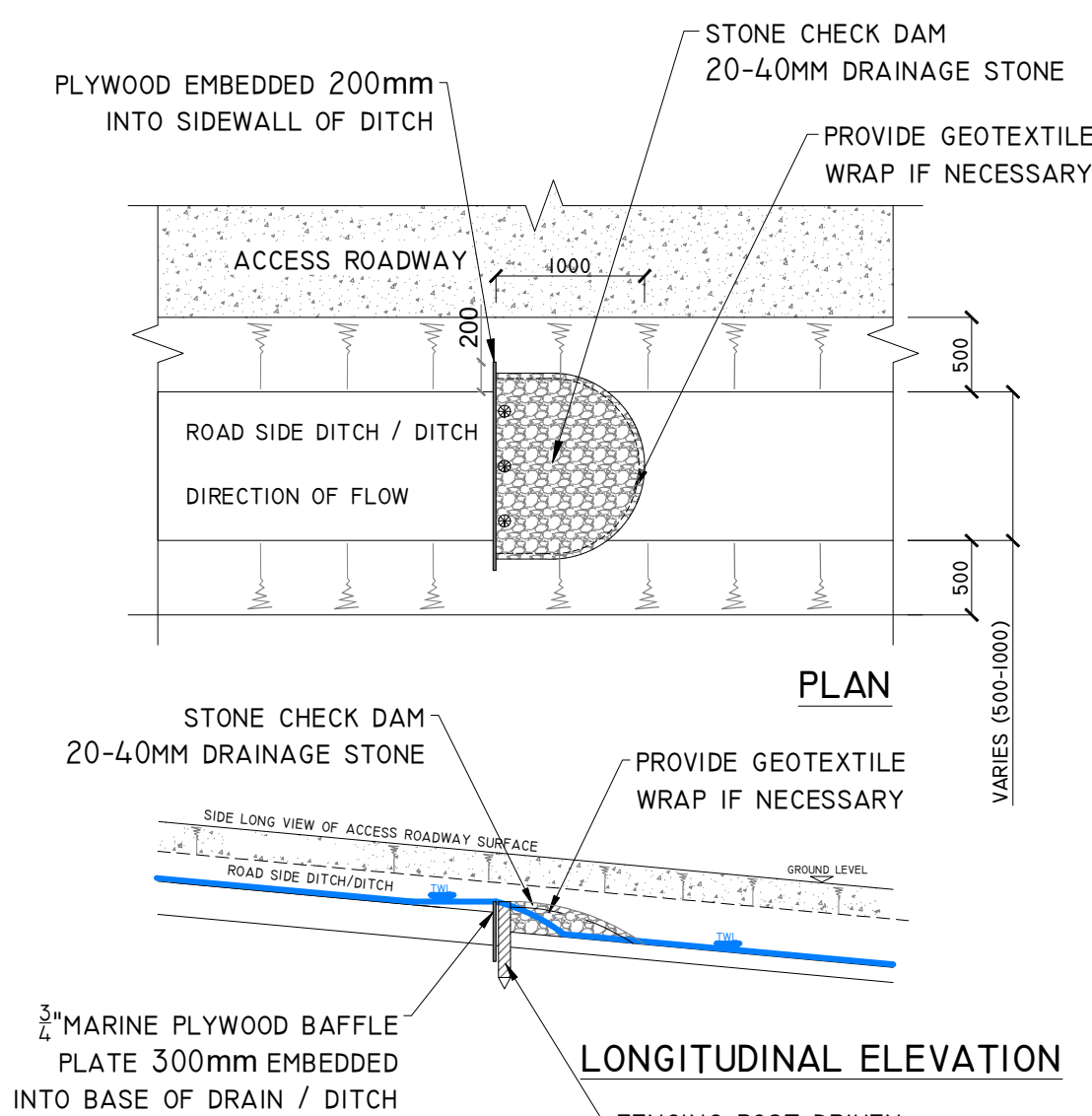


DETAIL C

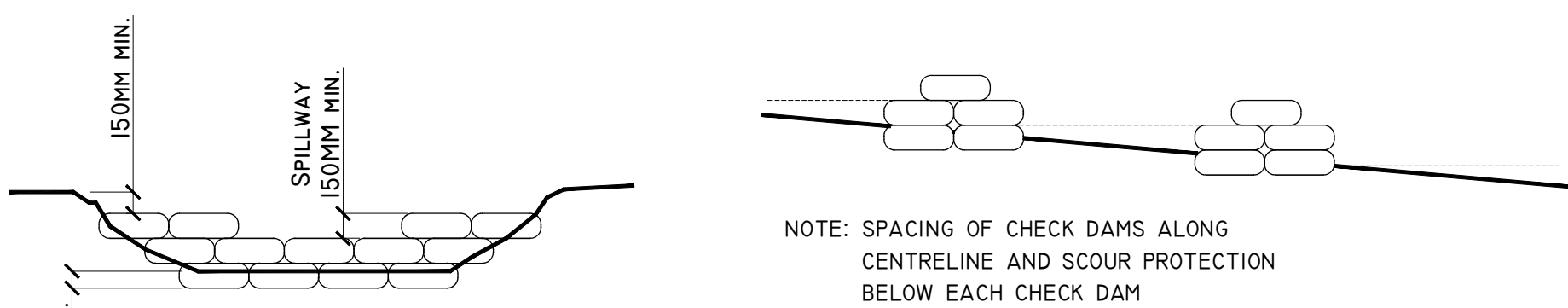


TYPE X - CHECK DAM DETAIL  
SCALE 1:50

DETAIL D

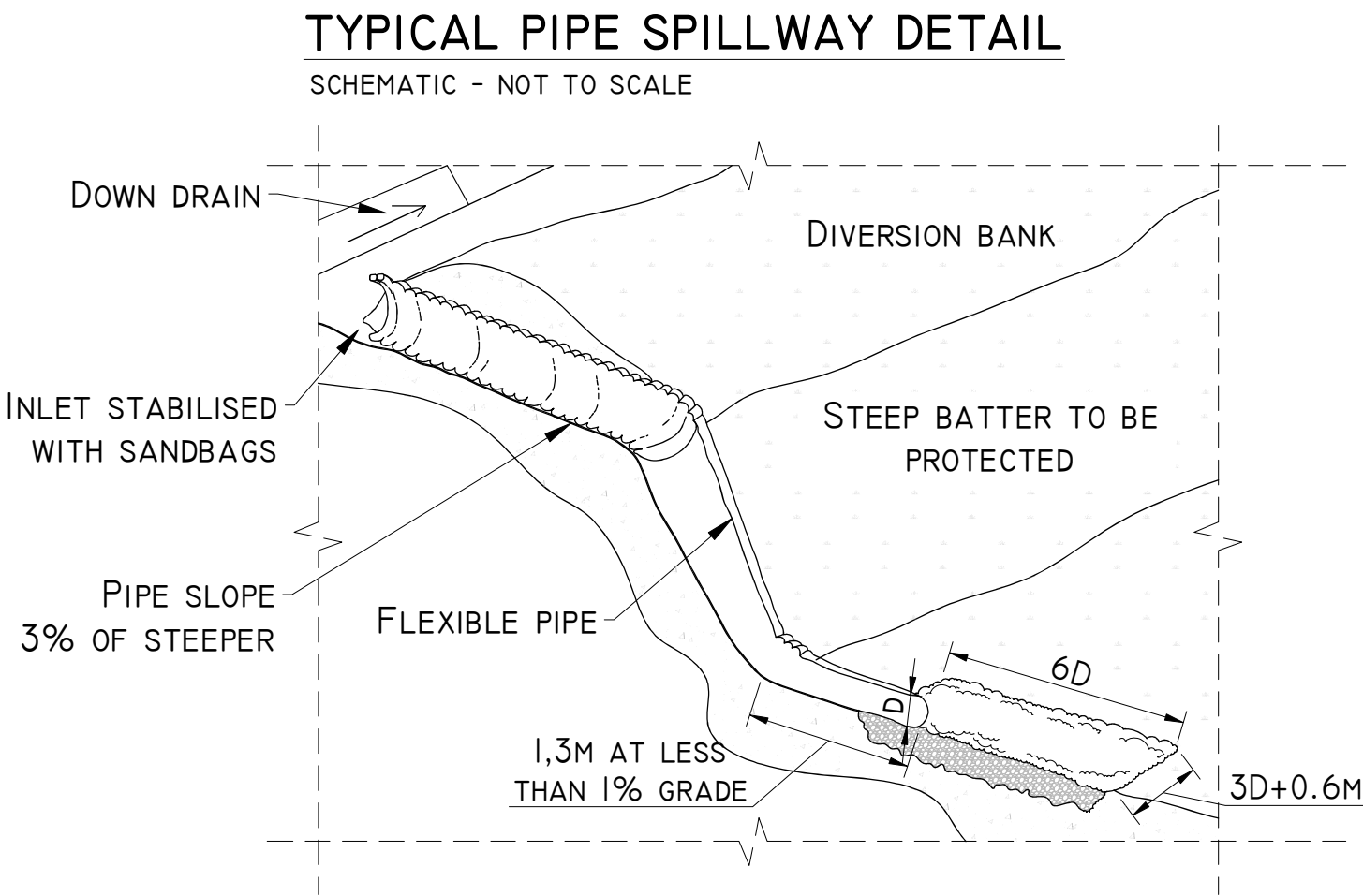


TYPE Y - CHECK DAM DETAIL  
SCALE 1:100



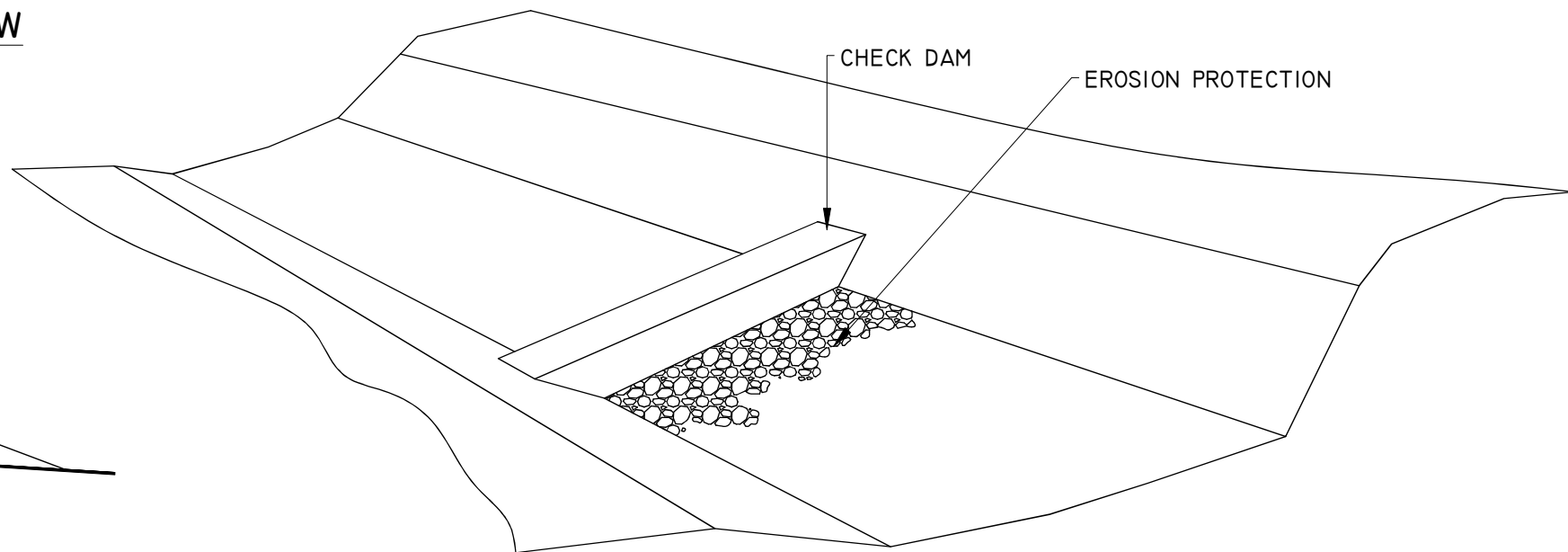
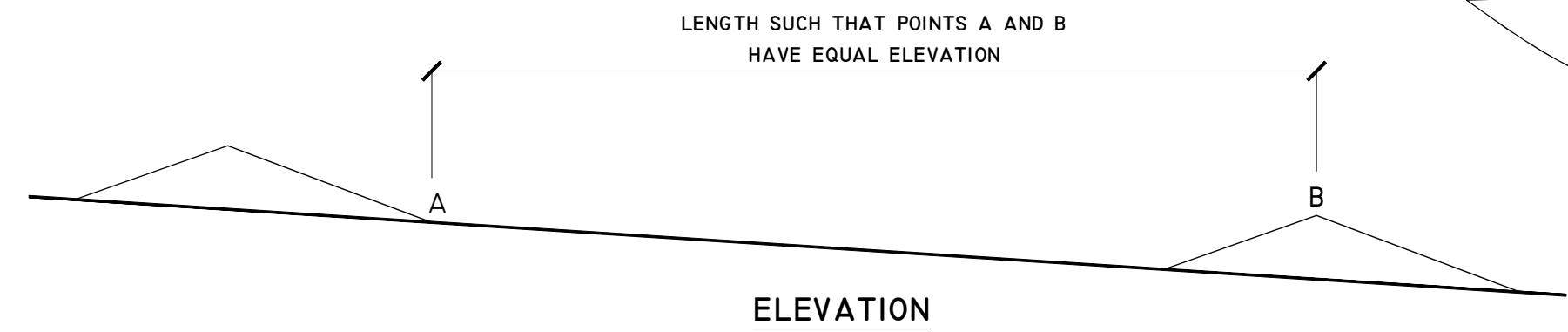
TEMPORARY CHECK DAM / SETTLEMENT POND OVERFLOW  
SAND FILLED BAG CONSTRUCTION  
SCHEMATIC - NOT TO SCALE

DETAIL E

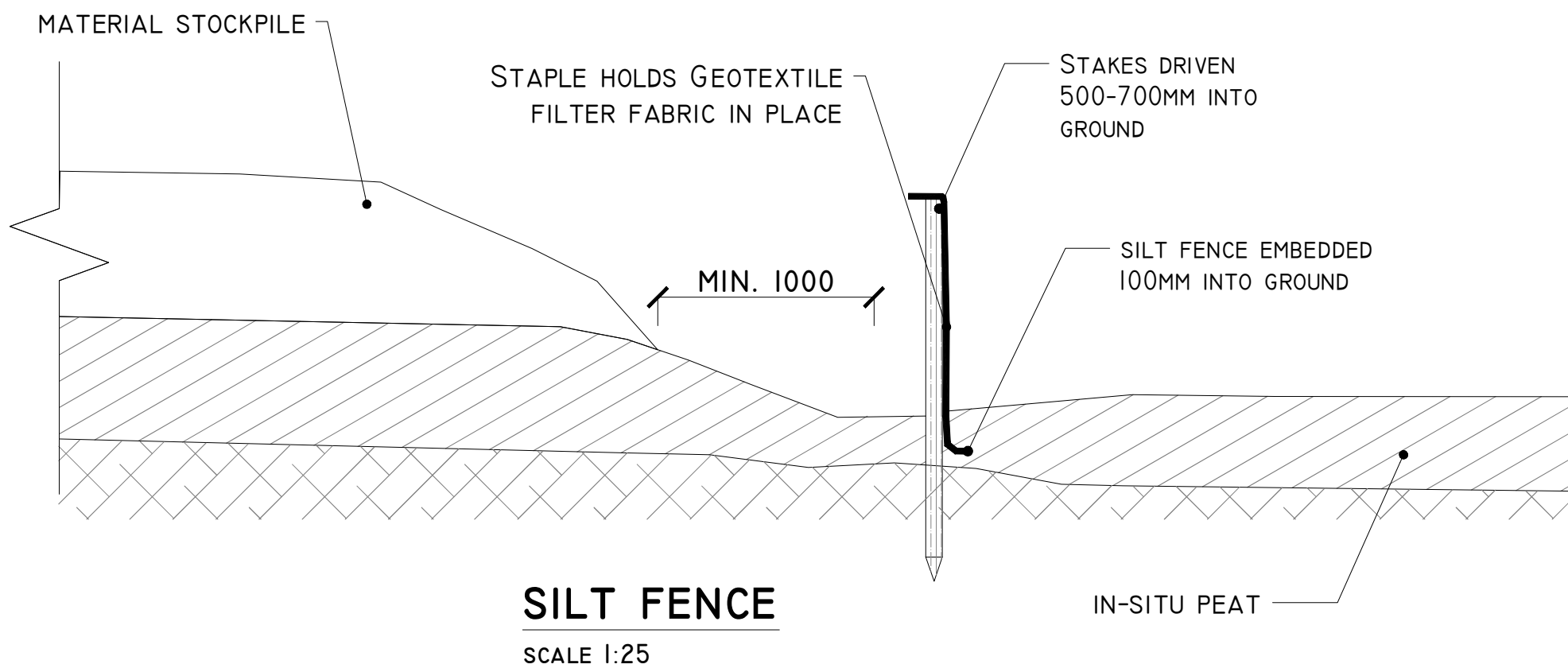


DETAIL C2

TEMPORARY CHECK DAM / SETTLEMENT POND OVERFLOW  
SCHEMATIC - NOT TO SCALE

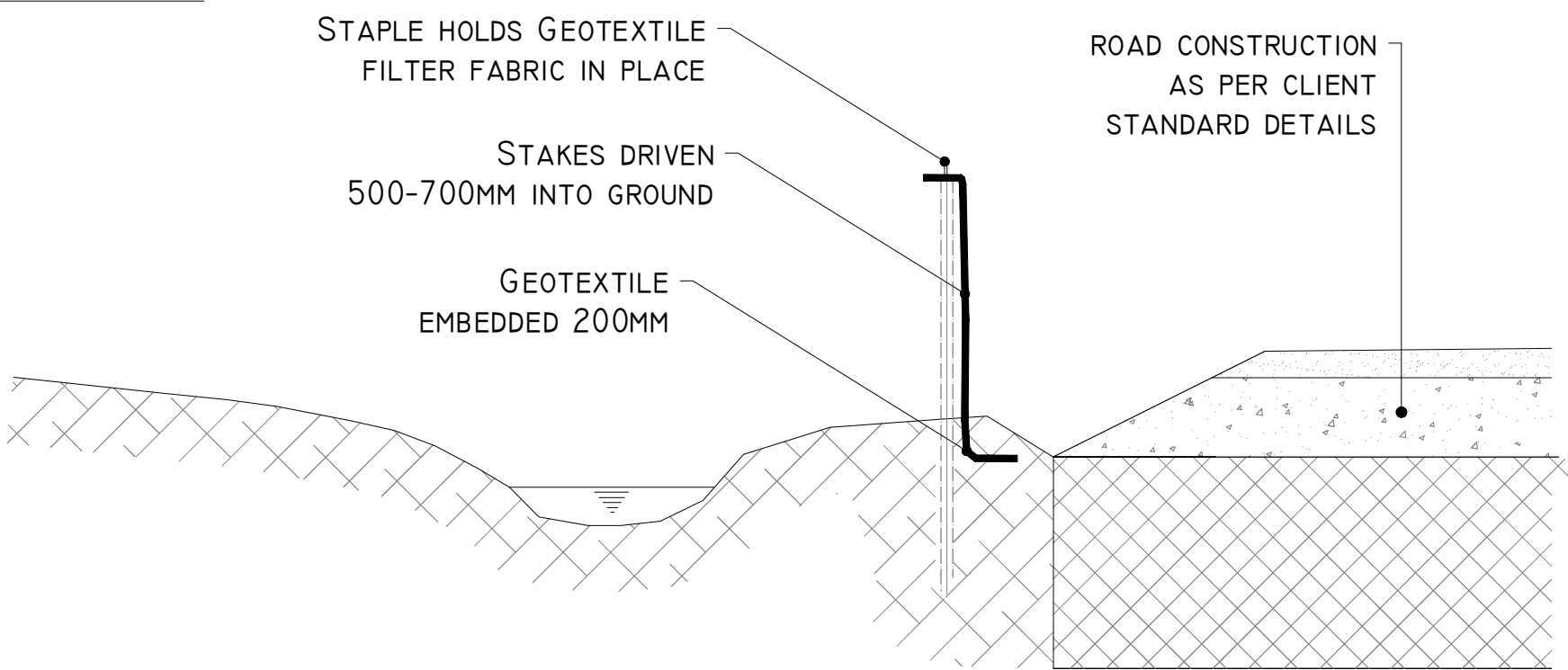


DETAIL F-I



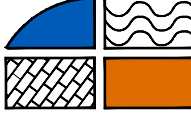
SILT FENCE  
SCALE 1:25

DETAIL F-II



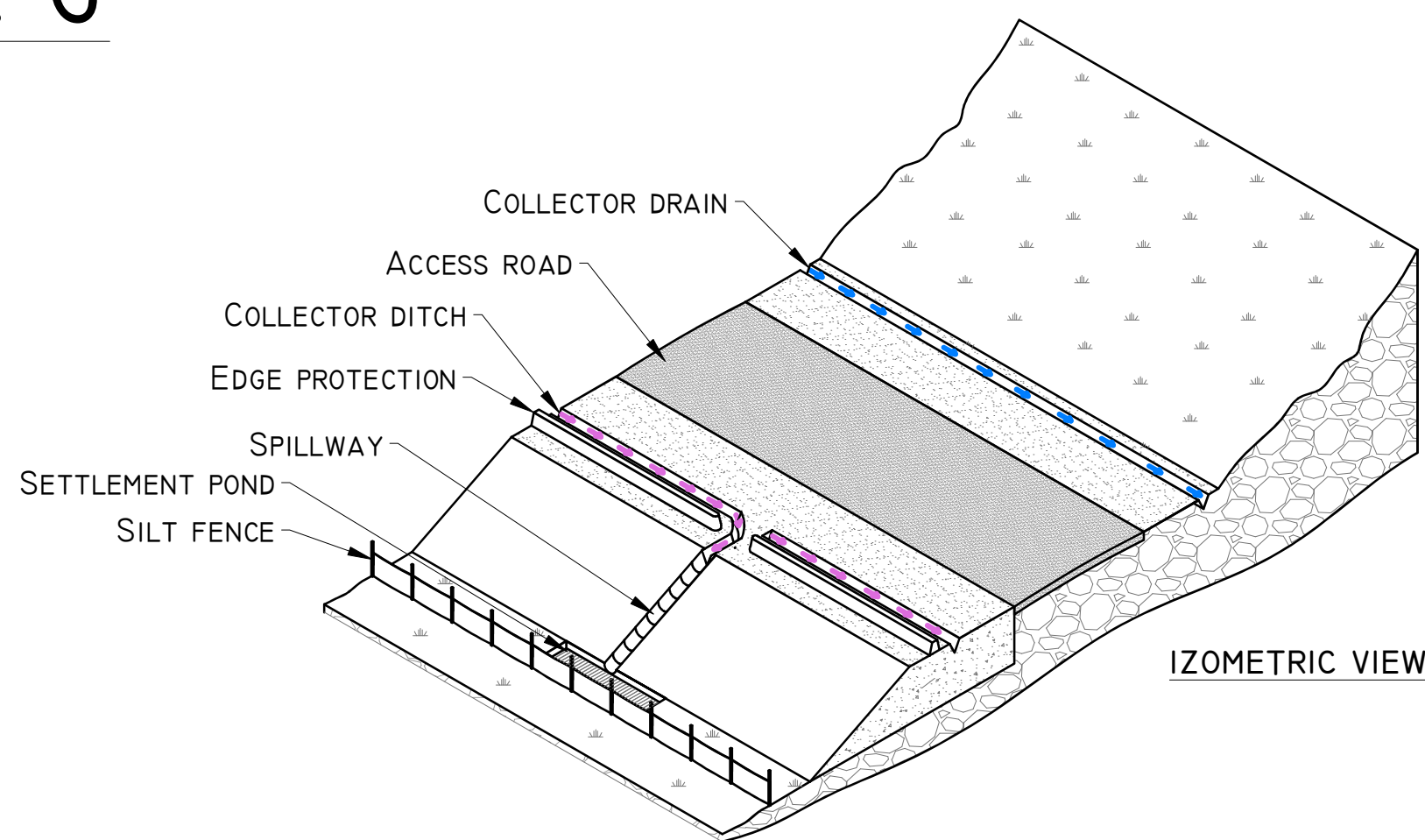
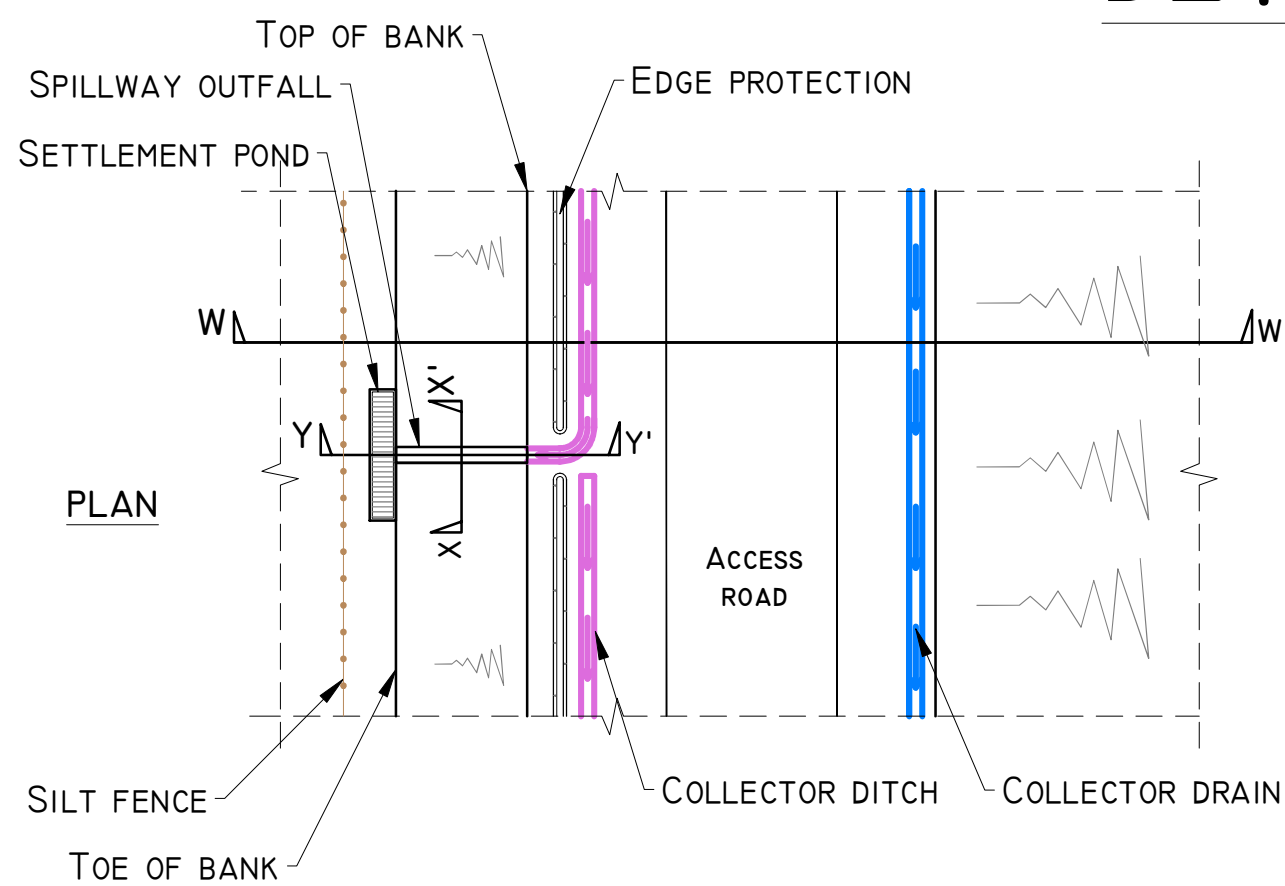
SILT FENCE FOR WATERCOURSE PROTECTION  
SCALE 1:25

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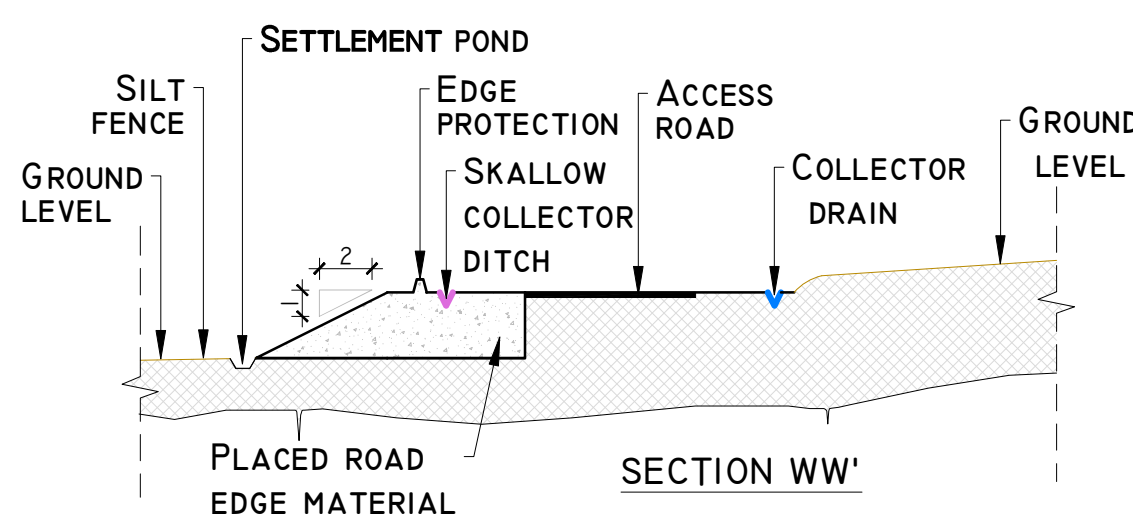
|                                                                                                                                                                                                                                                                                                                                                                                                          |             |                               |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                          |             |                               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                          |             |                               |        |
| Date                                                                                                                                                                                                                                                                                                                                                                                                     | Description | Chkd                          | Signed |
| Revisions                                                                                                                                                                                                                                                                                                                                                                                                |             |                               |        |
| <div><div><div><div>22 Lower Main St<br/>Dungarvan<br/>Co. Waterford<br/>Ireland</div><div>tel: +353 (0) 58-44122<br/>tel: +353 (0) 58-44244<br/>email: info@hydroenvironmental.ie<br/>web: www.hydroenvironmental.ie</div></div></div><div><div>HYDRO</div><div>ENVIRONMENTAL</div><div>SERVICES</div></div></div> |             |                               |        |
| Client:                                                                                                                                                                                                                                                                                                                                                                                                  |             | MKO                           |        |
| Job:                                                                                                                                                                                                                                                                                                                                                                                                     |             | COOLLOO WIND FARM, Co. GALWAY |        |
| Title:                                                                                                                                                                                                                                                                                                                                                                                                   |             | DRAINAGE DETAILS 2            |        |
| Figure No:                                                                                                                                                                                                                                                                                                                                                                                               |             | D502                          |        |
| Drawing No: P1611-0-0925-A1-D502-00B                                                                                                                                                                                                                                                                                                                                                                     |             |                               |        |
| Sheet Size: A1                                                                                                                                                                                                                                                                                                                                                                                           |             | Project No.: P1611-0          |        |
| Scale: as shown (A1)                                                                                                                                                                                                                                                                                                                                                                                     |             | Drawn By: GA                  |        |
| Date: 24/09/2025                                                                                                                                                                                                                                                                                                                                                                                         |             | Checked By: MG                |        |



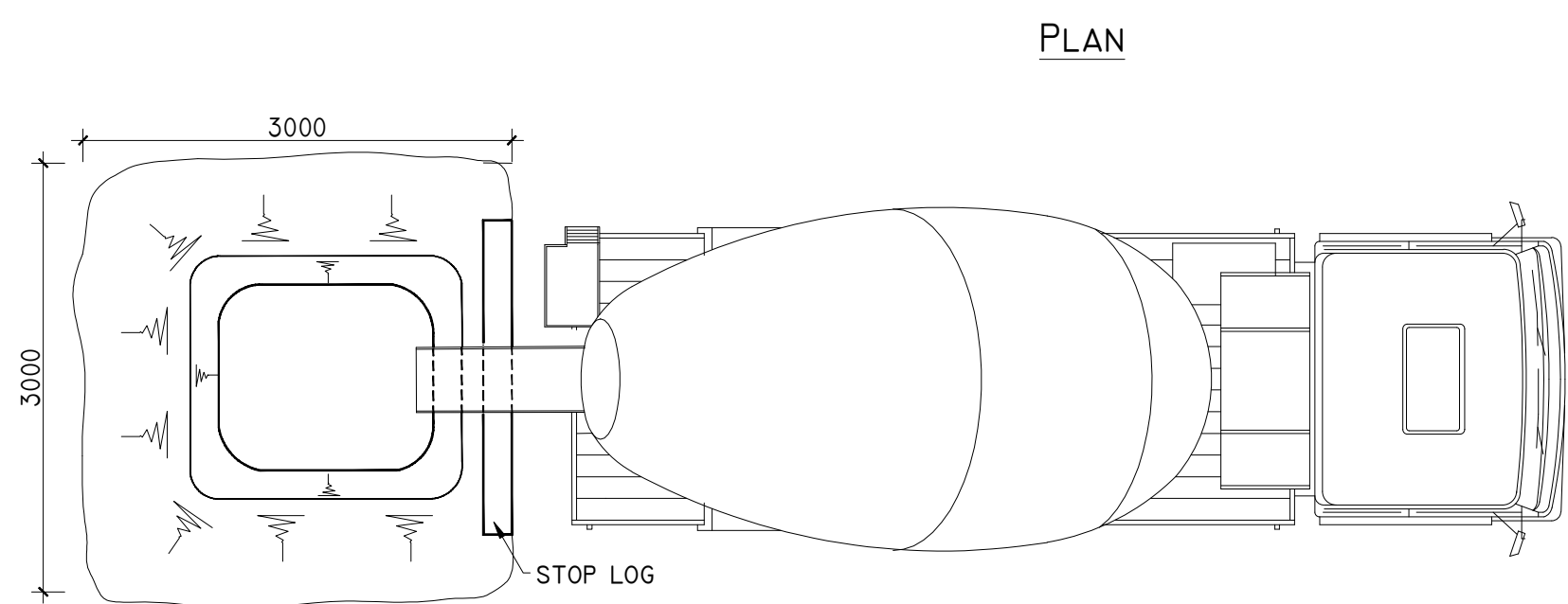
DETAIL G



SPILLWAY OUTFALL PLAN  
SCHEMATIC - NOT TO SCALE

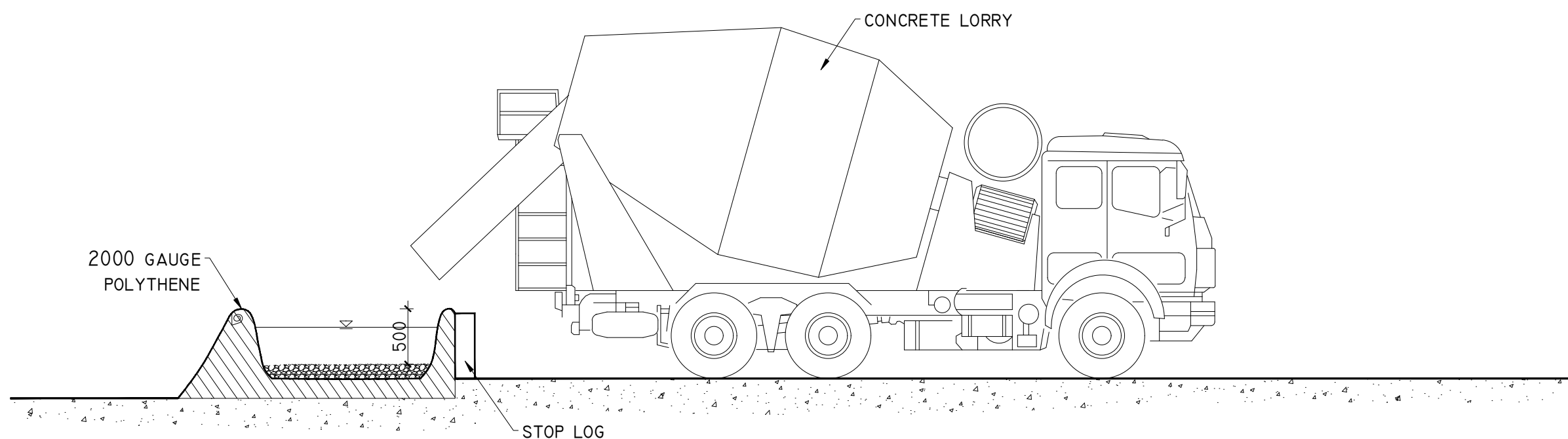


TEMPORARY CONCRETE WASH OUT PIT  
SCALE 1:50



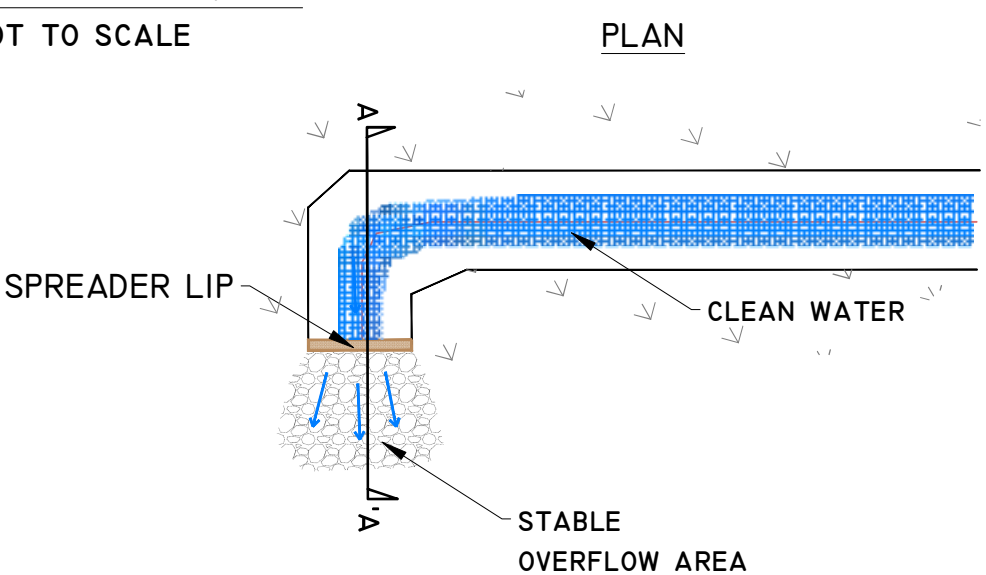
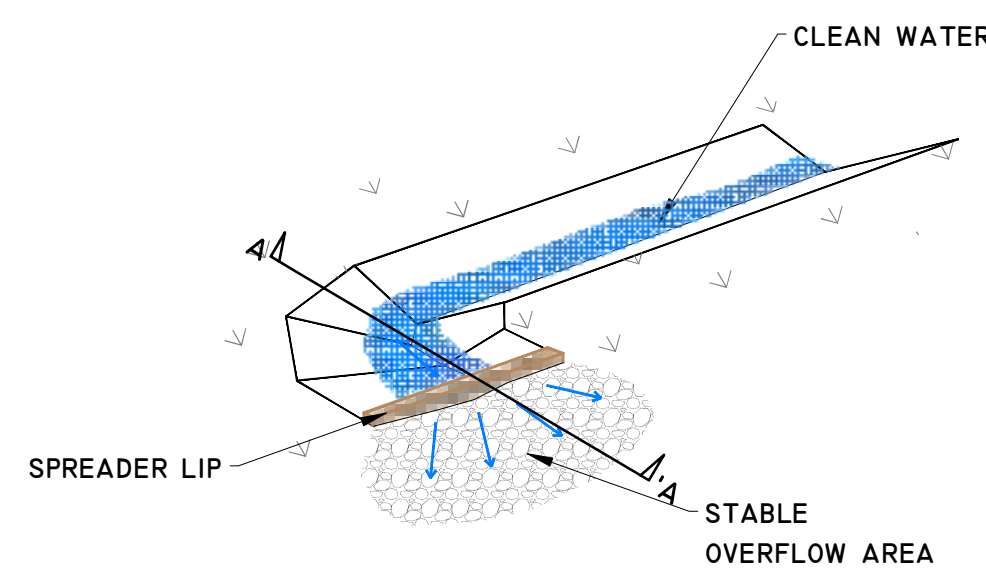
ELEVATION

DETAIL H



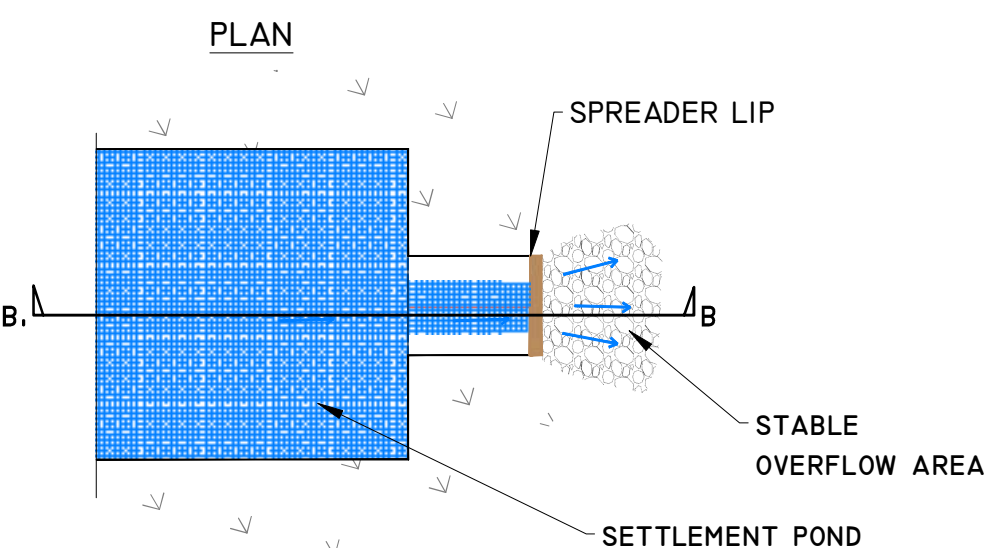
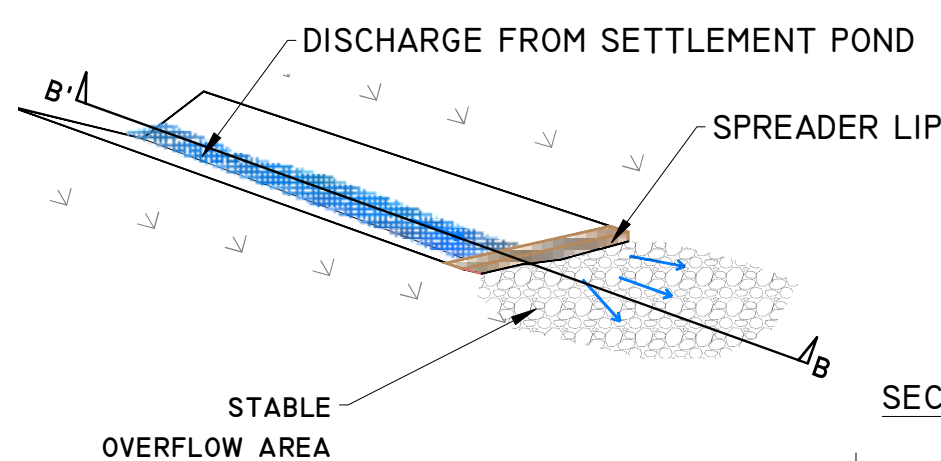
DETAIL J-1

LEVEL SPREADER DETAIL  
SCHEMATIC - NOT TO SCALE



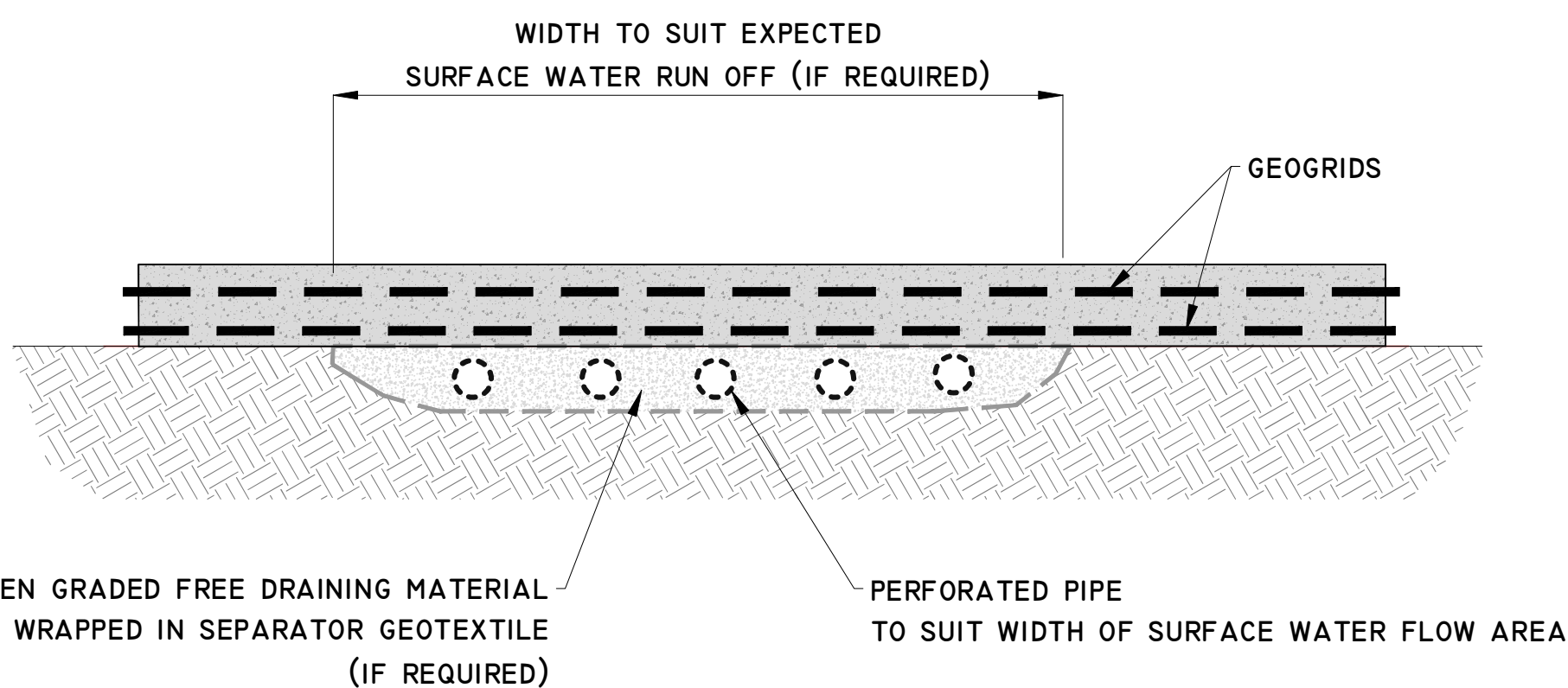
DETAIL J-2

LEVEL SPREADER DETAIL  
SCHEMATIC - NOT TO SCALE



DETAIL K

UNDER FLOATING ROAD DRAINAGE DETAIL  
SCHEMATIC - NOT TO SCALE



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| Date      | Description | Chkd | Signed |
|-----------|-------------|------|--------|
|           |             |      |        |
| Revisions |             |      |        |

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web: www.hydroenvironmental.ie

|         |     |
|---------|-----|
| Client: | MKO |
|---------|-----|

|      |                               |
|------|-------------------------------|
| Job: | COOLLOO WIND FARM, Co. GALWAY |
|------|-------------------------------|

|        |                    |
|--------|--------------------|
| Title: | DRAINAGE DETAILS 3 |
|--------|--------------------|

|            |      |
|------------|------|
| Figure No: | D503 |
|------------|------|

|              |                          |
|--------------|--------------------------|
| Drawing No:  | P1611-0-0925-A1-D503-00B |
| Sheet Size:  | A1                       |
| Scale:       | as shown (A1)            |
| Date:        | 24/09/2025               |
| Project No.: | P1611-0                  |
| Drawn By:    | GA                       |
| Checked By:  | MG                       |