

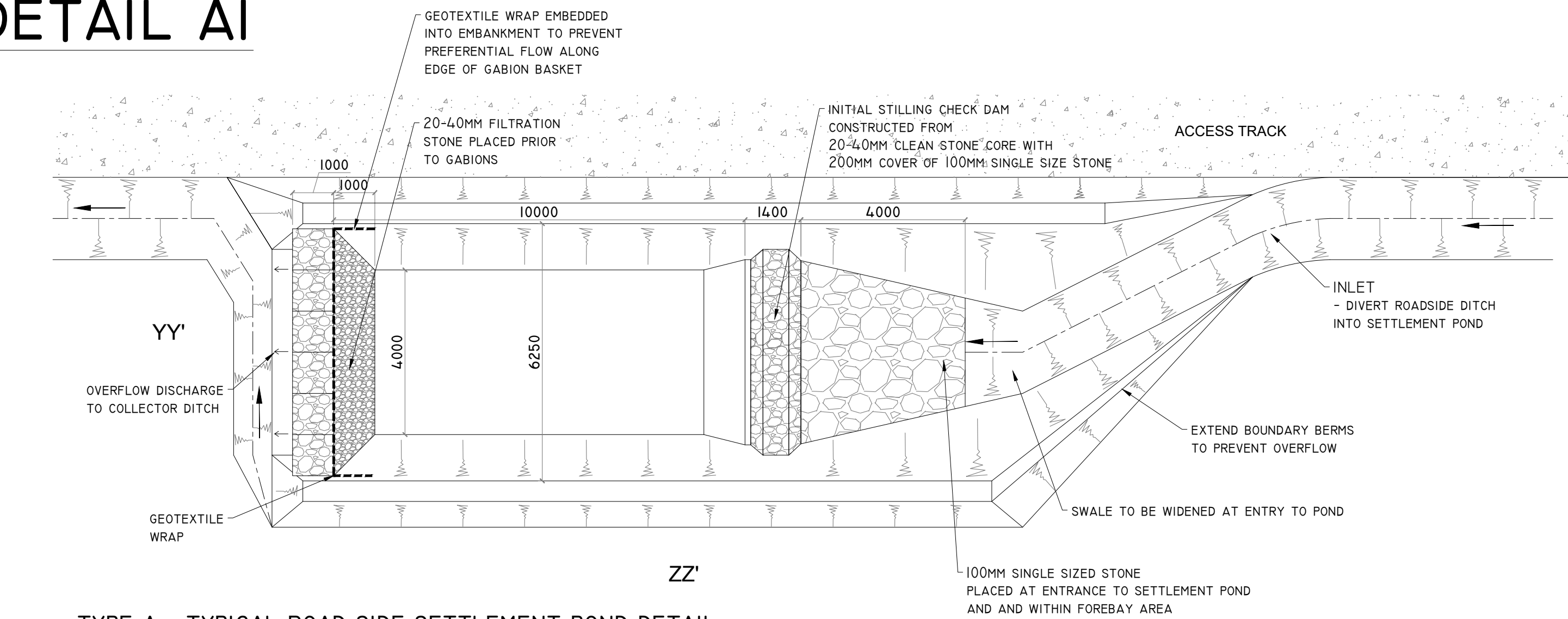
RECEIVED: 07/05/2024



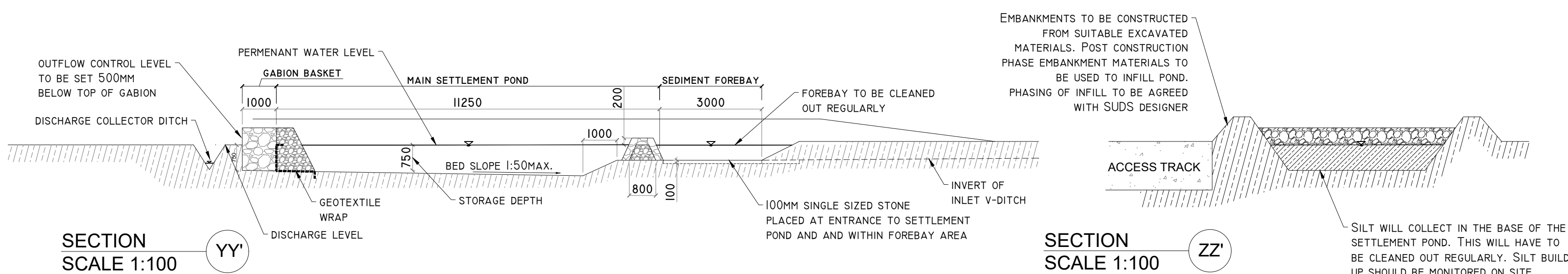
APPENDIX 9-1

DRAINAGE DESIGN DRAWINGS

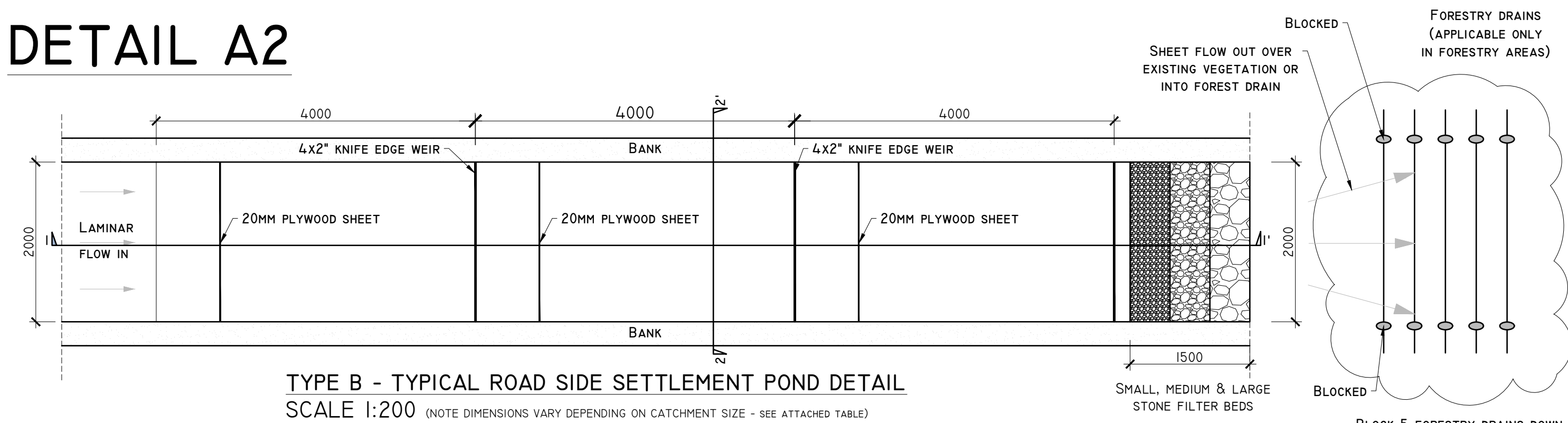
DETAIL A1



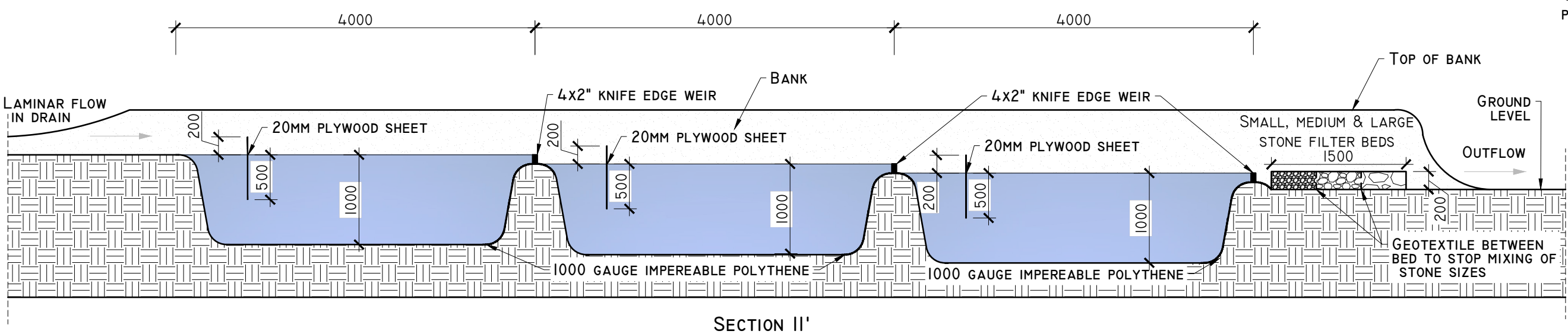
TYPE A - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



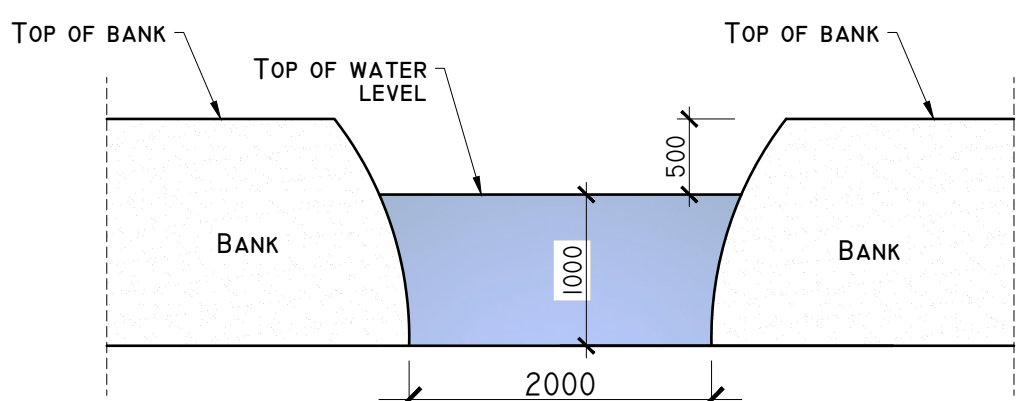
DETAIL A2



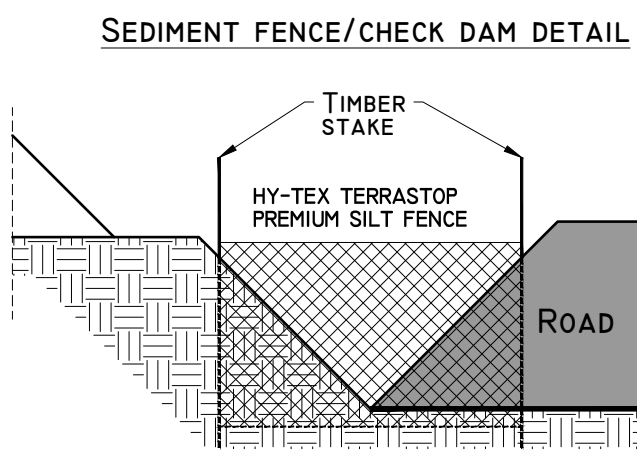
TYPE B - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



SECTION II'



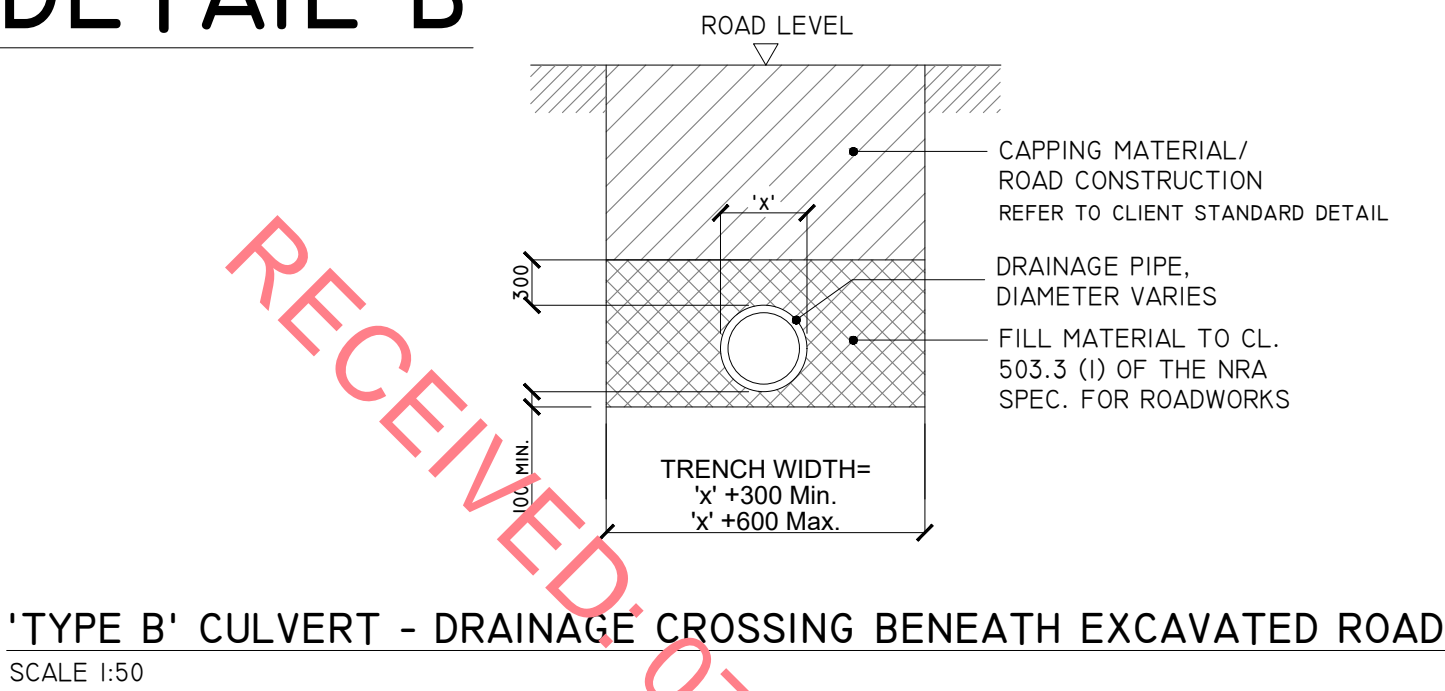
SECTION 22'



SEDIMENT FENCE/CHECK DAM DETAIL

POND SIZE W [m] x L [m] x D [m]			TRACK/HARDSTAND CATCHMENT SIZE (m²)		
RETURN PERIOD	10 YRS	STORM DURATION	500	1000	2000
6HR RETENTION FOR COARSE SILT	6 HRS	3.3 x 10.2 x 1 m	4.5 x 14.8 x 1 m	6.5 x 20.5 x 1 m	
11HR RETENTION FOR MEDIUM SILT	12 HRS	3.7 x 11.5 x 1 m	5.2 x 16.2 x 1 m	7.5 x 22.5 x 1 m	
24HR RETENTION FOR FINE SILT	24 HRS	4 x 13.3 x 1 m	5.8 x 18.5 x 1 m	8.5 x 25.2 x 1 m	

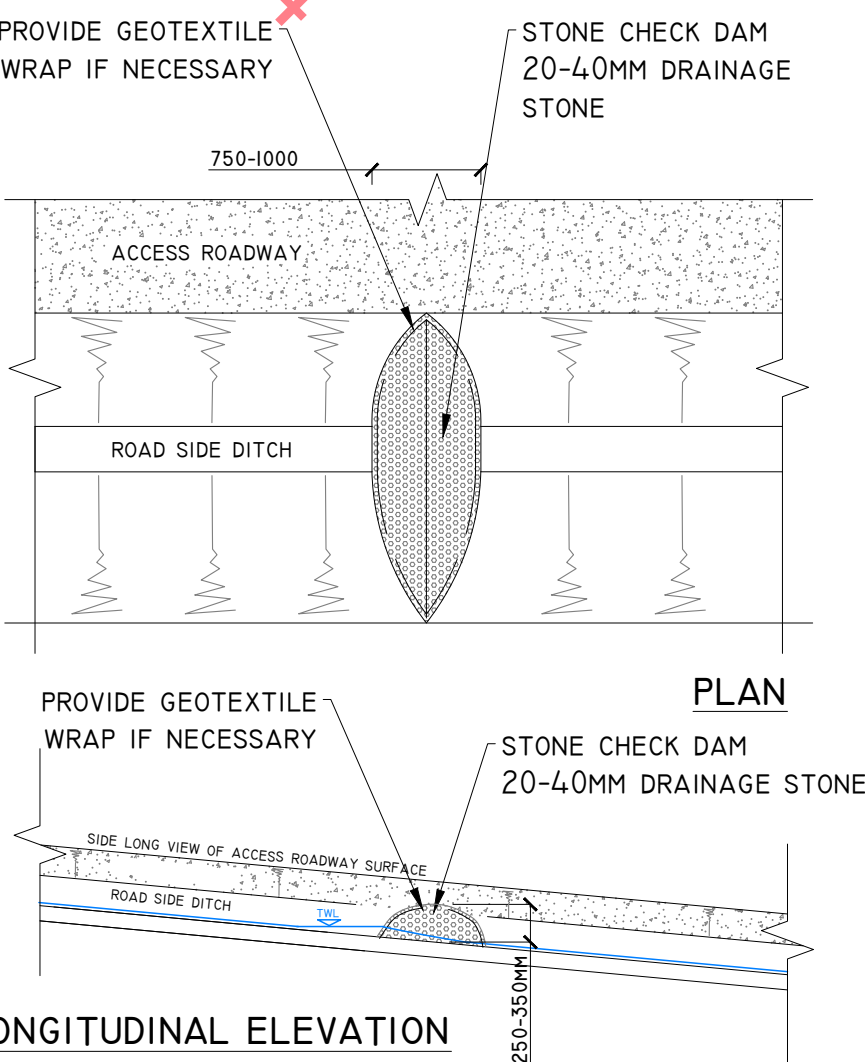
DETAIL B



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

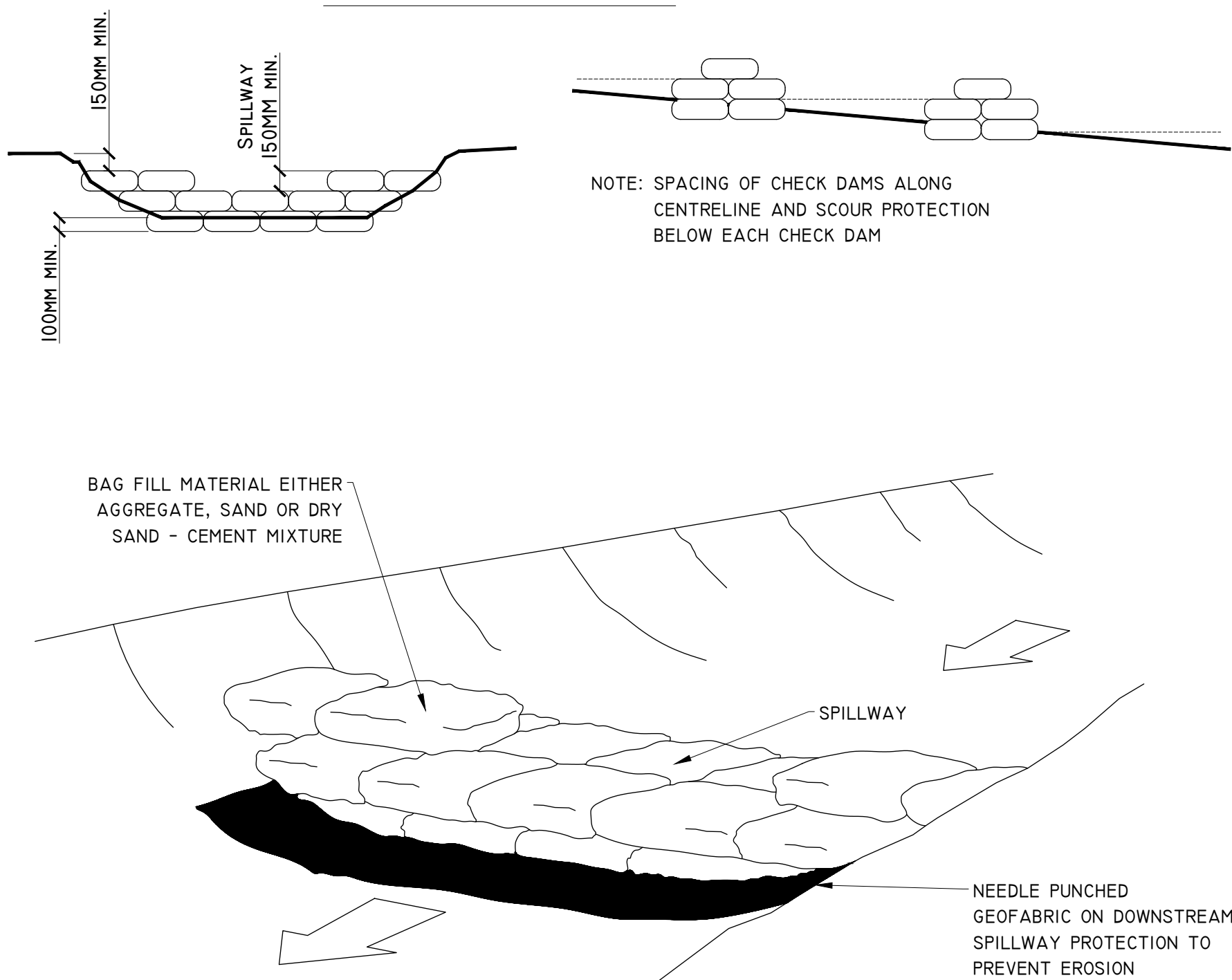
RECEIVED 07/05/2024

DETAIL C



TYPE X - CHECK DAM DETAIL
SCALE 1:50

DETAIL C1



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

01/05/24

Planning

MG

MG

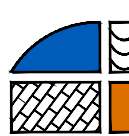
Date

Description

Chkd

Signed

Revisions

**HYDRO ENVIRONMENTAL SERVICES**
22 Lower Main St
Dungannon
Co. Waterford
Ireland

tel: +353 (0) 58 44122
tel: +353 (0) 58 44244
email: info@hydroenvironmental.ie
web: www.hydroenvironmental.ie

Client:

EDF RENEWABLES IRELAND LTD.

Job:

SESKIN WIND FARM,
Co. CARLOW/Co. KILKENNY

Title:

DRAINAGE DETAILS I

Figure No:

D501

Drawing No:

P1599-0-0524-A1-D501-00A

Sheet Size:

A1

Scale:

as shown (A1)

Date:

01/05/2024

Project No.:

P1599-0

Drawn By:

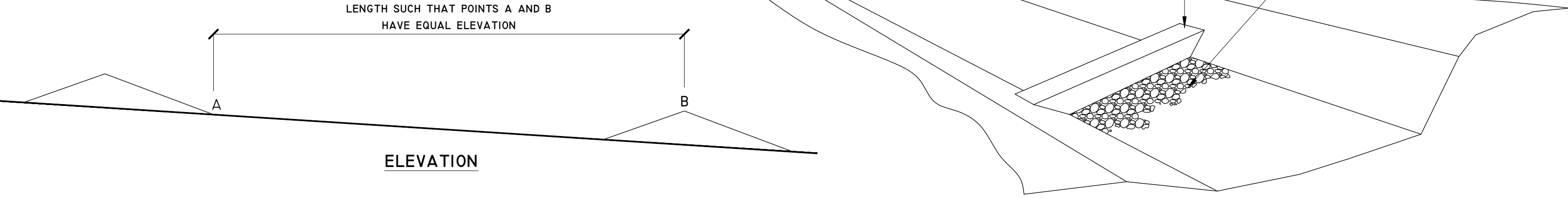
MG/GA

Checked By:

MG

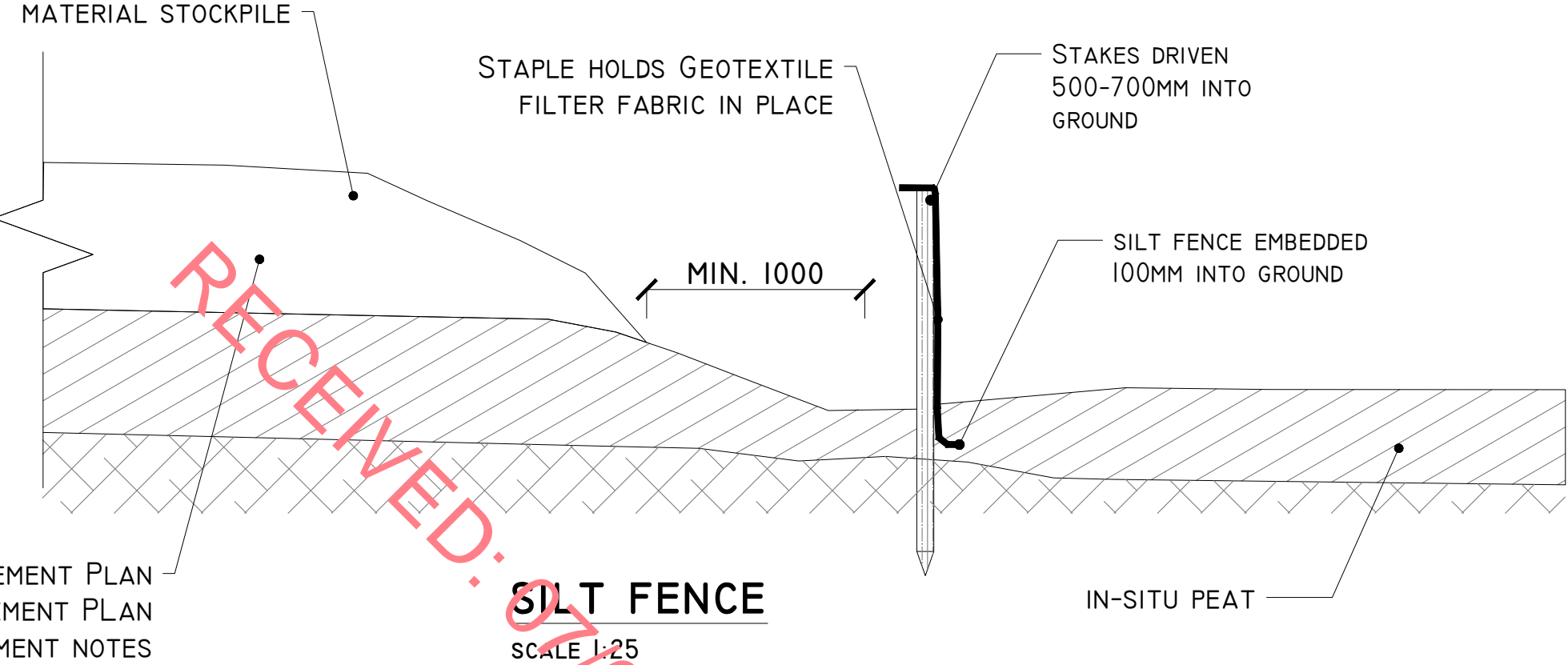
DETAIL C2

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

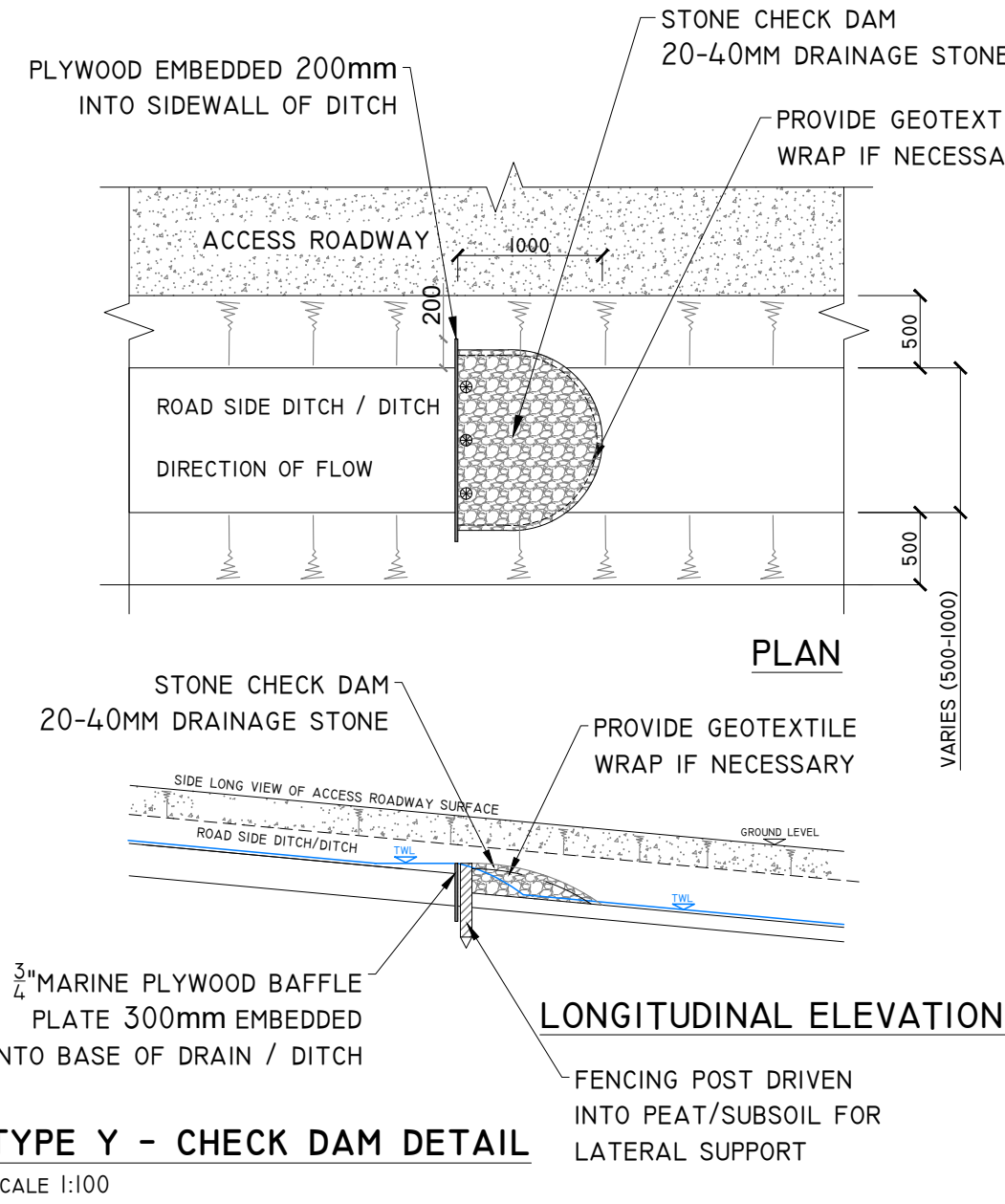


DETAIL F-I

REFER TO HABITAT MANAGEMENT PLAN
AND PEAT MANAGEMENT PLAN
FOR STOCKPILE MANAGEMENT NOTES

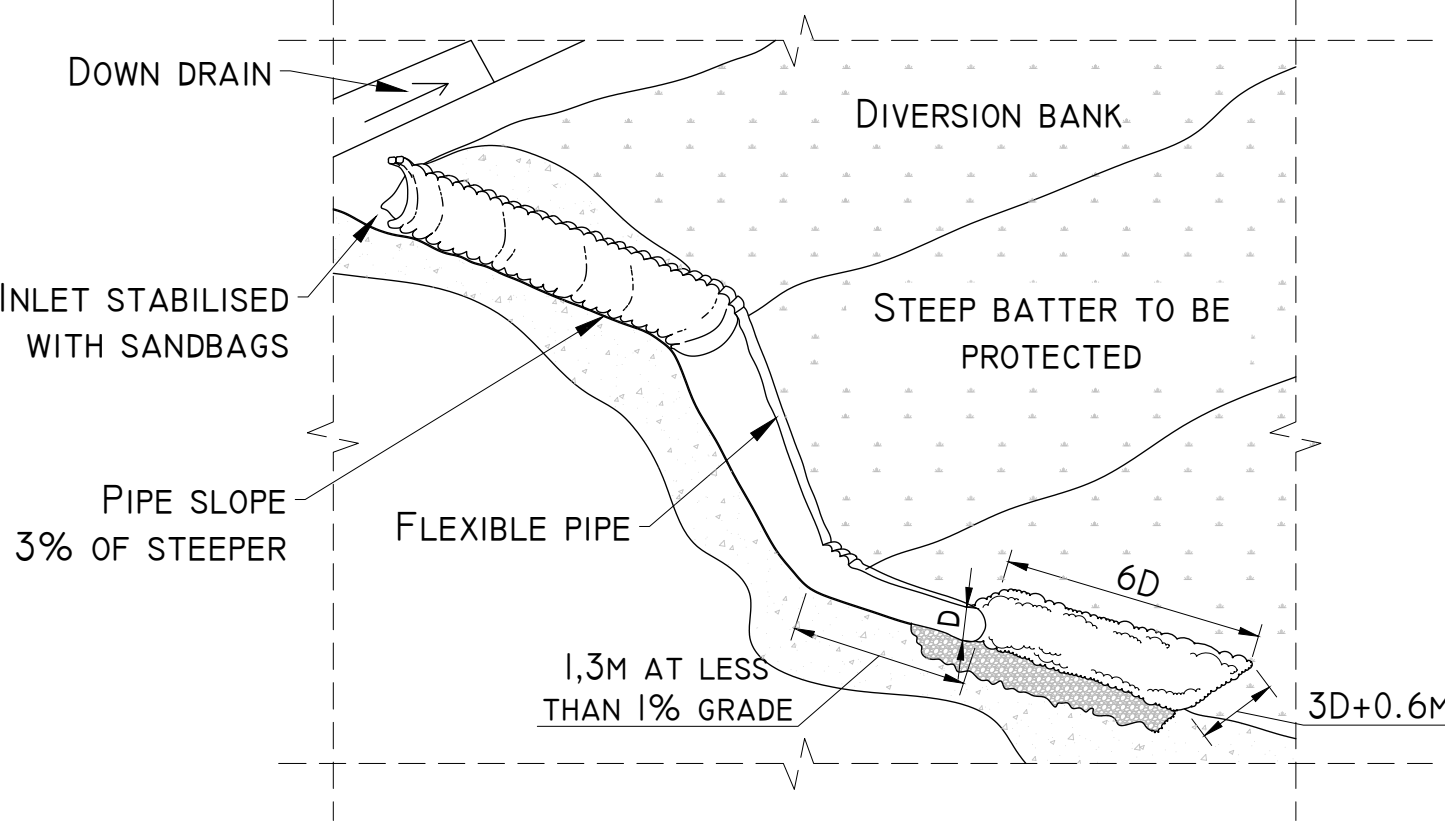


DETAIL D

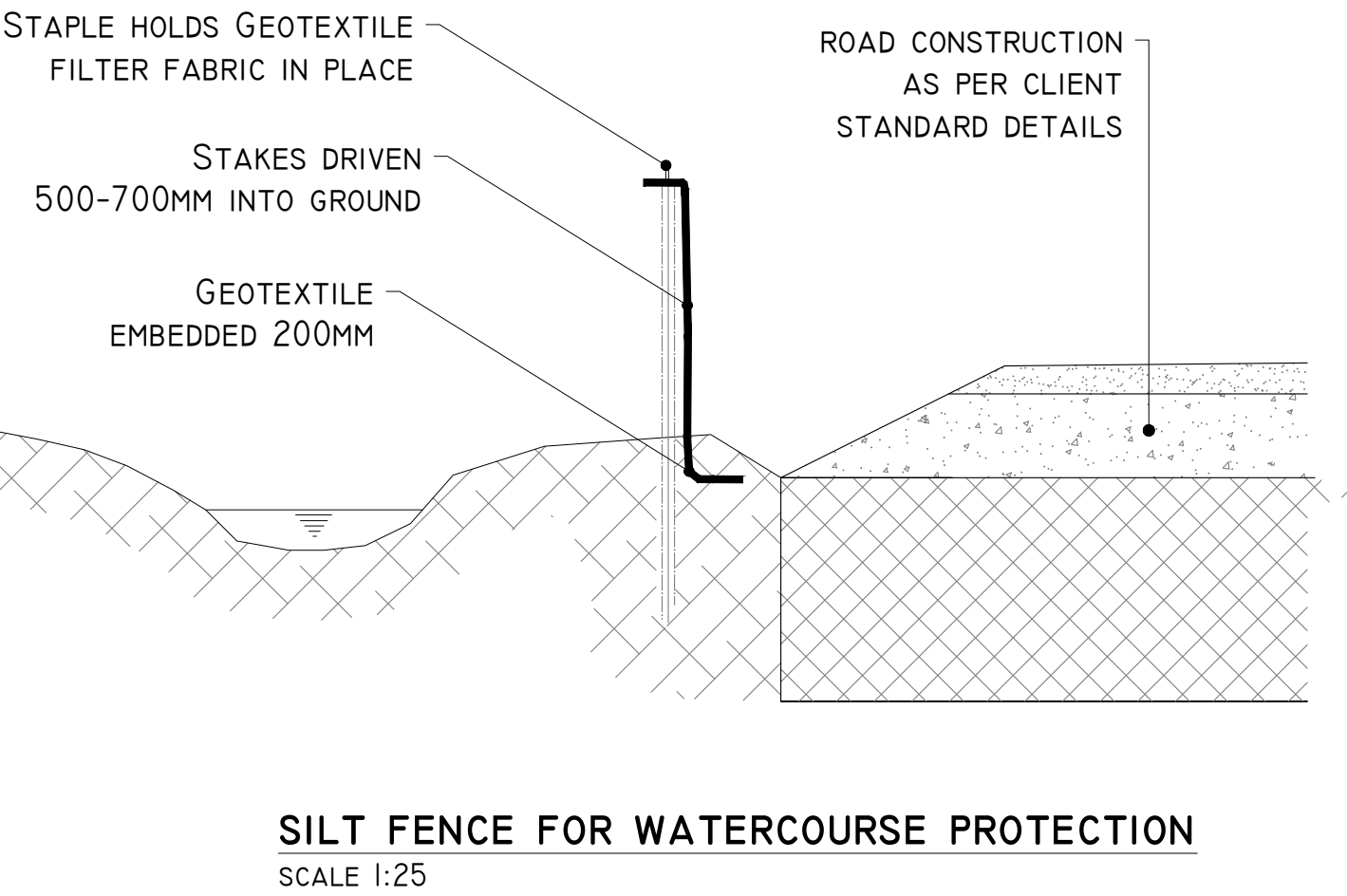


DETAIL G

TYPICAL PIPE SPILLWAY DETAIL
SCHEMATIC - NOT TO SCALE



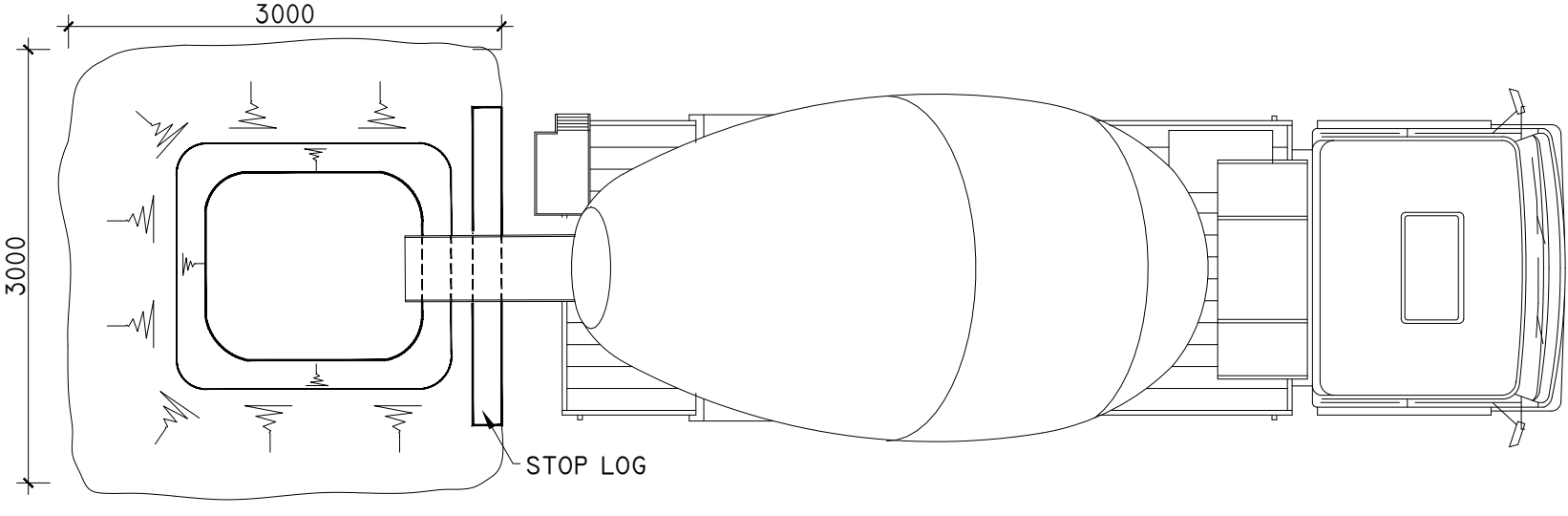
DETAIL F-II



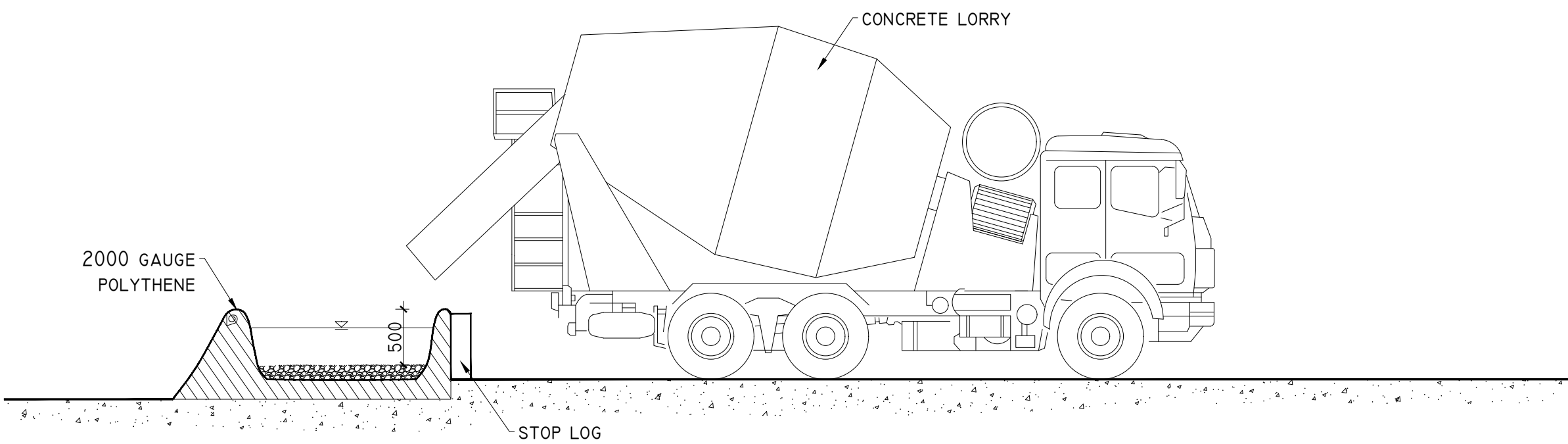
DETAIL I

TEMPORARY CONCRETE WASH OUT PIT
SCALE 1:50

PLAN

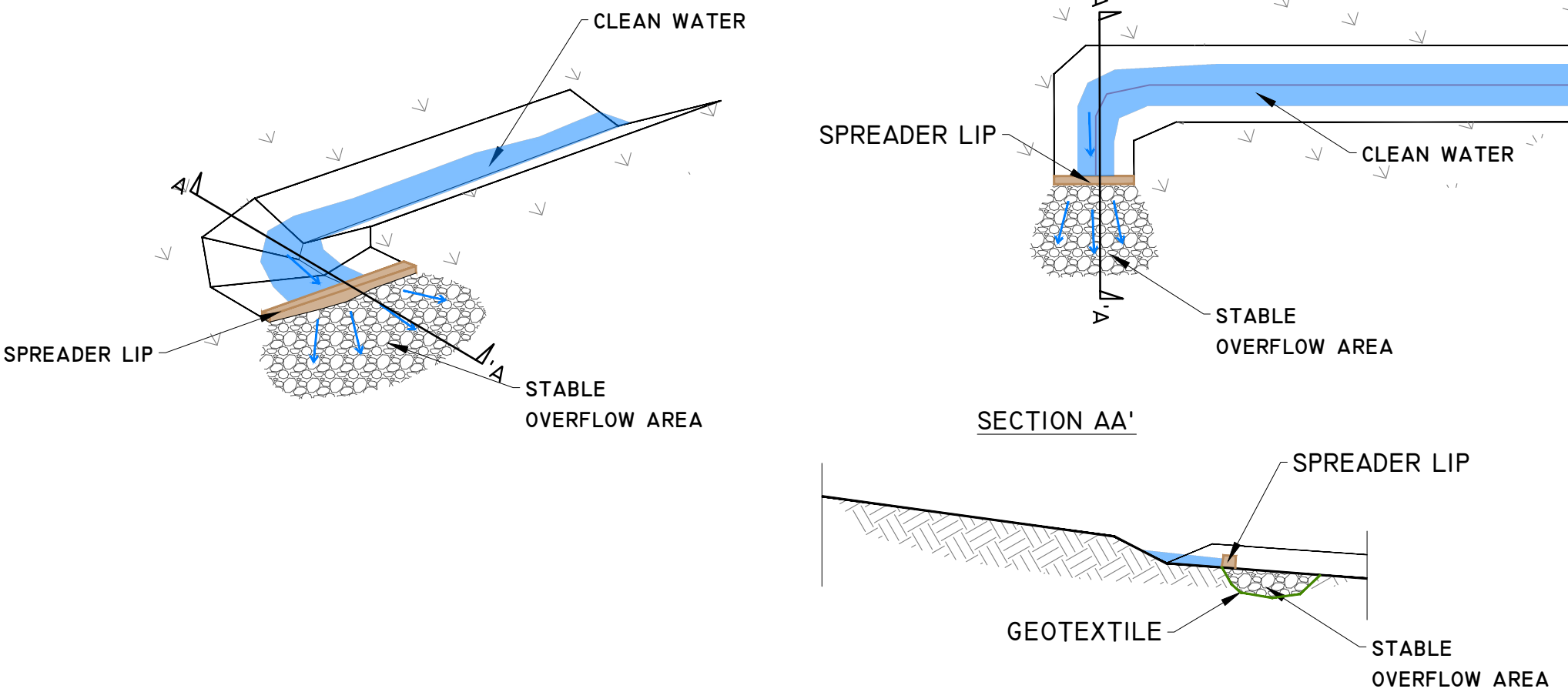


ELEVATION



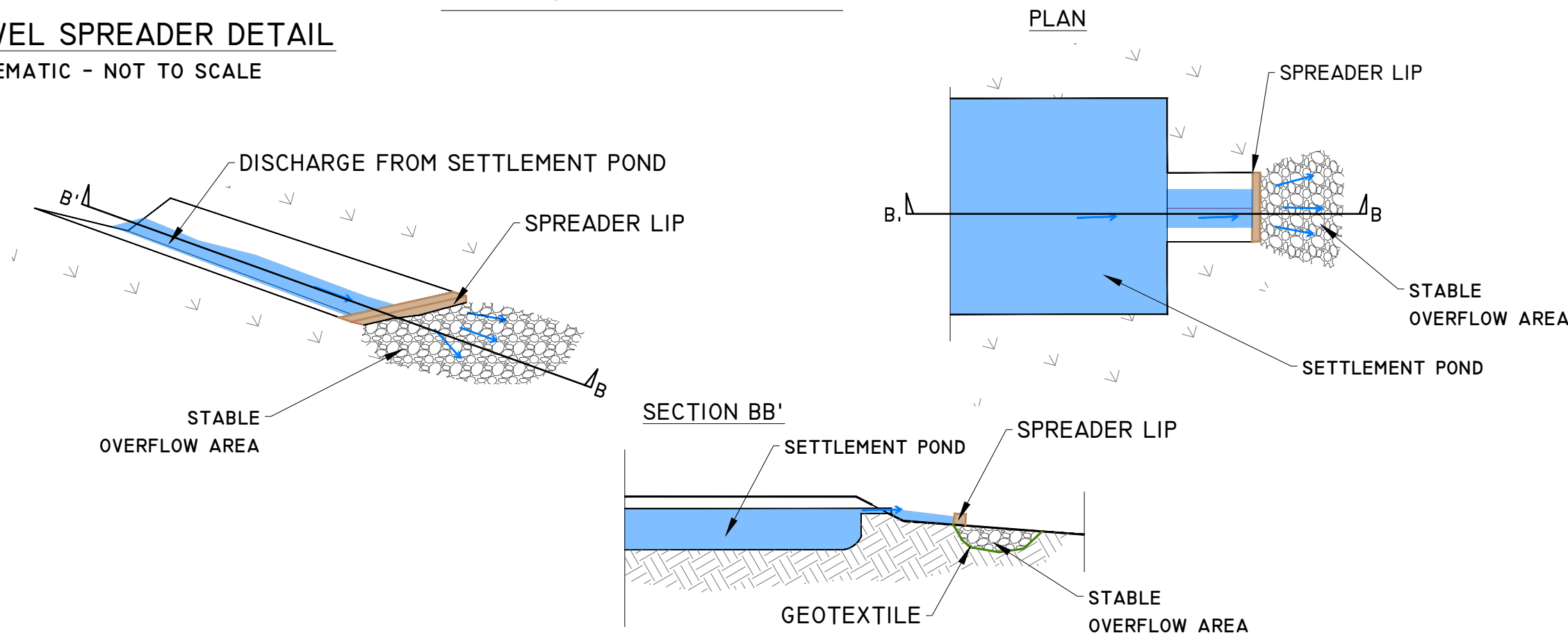
DETAIL J-I

LEVEL SPREADER DETAIL
SCHEMATIC - NOT TO SCALE



DETAIL J-2

LEVEL SPREADER DETAIL
SCHEMATIC - NOT TO SCALE



PROJECT DESIGN DRAWING NOTES
1. DRAWINGS ISSUED ARE FOR PLANNING STAGE ONLY.
2. COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
3. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.

01/05/24	Planning	MG	MG
Date	Description	Chkd	Signed
Revisions			

**HYDRO ENVIRONMENTAL SERVICES**
22 Lower Main St
Dungarvan
Co. Waterford
Ireland
tel: +353 (0) 58-44122
tel: +353 (0) 58-44244
email: info@hydroenvironmental.ie
web: www.hydroenvironmental.ie

Client: EDF RENEWABLES IRELAND LTD.

Job: SESKIN WIND FARM,
Co. CARLOW/Co. KILKENNY

Title: DRAINAGE DETAILS 2

Figure No: D502

Drawing No: P1599-0524-A1-D502-00A	
Sheet Size: A1	Project No.: P1599-0
Scale: as shown (A1)	Drawn By: MG/GA
Date: 01/05/2024	Checked By: MG

POLLUTION PREVENTION NOTES:

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

DISCHARGES

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

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

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

REFUELLING

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

CONCRETE

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

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

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

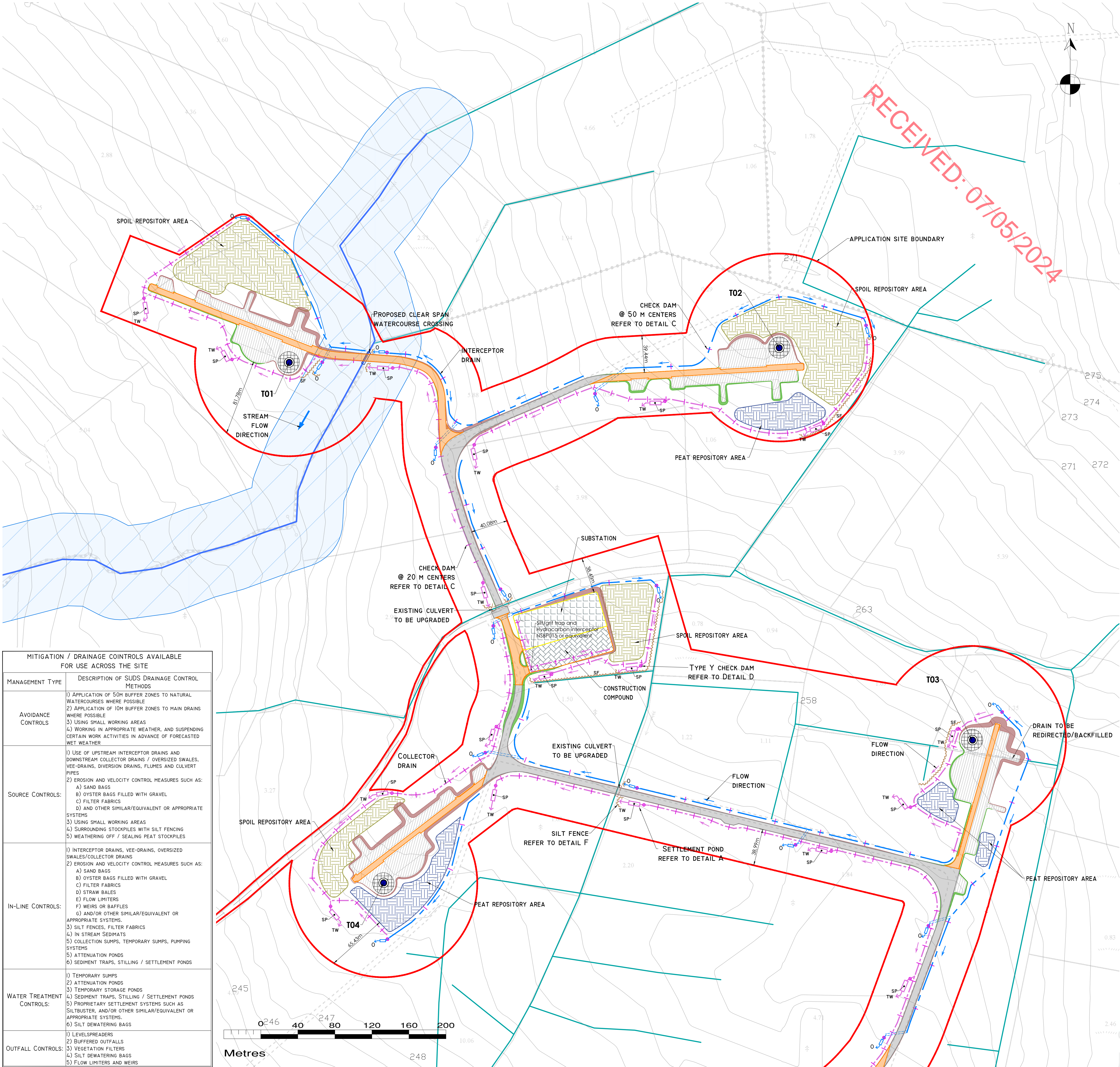
CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE STOPPED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.

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

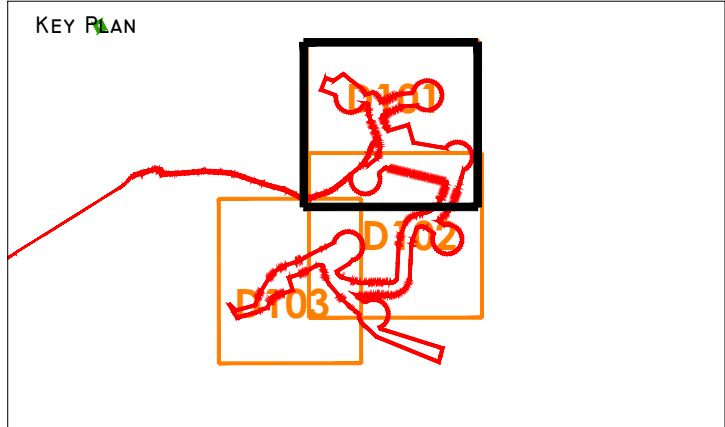
DRAINAGE NOTES:

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

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE
	2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE
SOURCE CONTROLS:	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES
	2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
IN-LINE CONTROLS:	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS
	2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
WATER TREATMENT CONTROLS:	1) TEMPORARY SUMP
	2) ATTENUATION PONDS
OUTFALL CONTROLS:	1) TEMPORARY STORAGE PONDS
	2) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
	3) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	4) SILT DEWATERING BAGS
	5) LEVELSPREADERS
	6) BUFFERED OUTFALLS
	7) VEGETATION FILTERS
	8) SILT DEWATERING BAGS
	9) FLOW LIMITERS AND WEIRS



DRAWING LEGEND :	
	RIVERS/STREAMS (WC - WATERCOURSE)
	EXISTING DRAINS
	RIVERS/STREAMS 50M BUFFER
	STREAM FLOW DIRECTION
	REDIRECTED DRAINS
	UPSTREAM INTERCEPTOR DRAIN
	SWALES/DOWNSTREAM COLLECTOR DRAIN
	DIRECTION OF FLOW
	SILT FENCES
	DOUBLE/TRIPLE SILT FENCES
	SETTLEMENT POND - LEVEL SPREADER
	CHECK DAM 'TYPE A'
	CHECK DAM 'TYPE B'
	PROPOSED WC CROSSING
	EXISTING 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
	APPLICATION SITE BOUNDARY (CARLOW COUNTY COUNCIL)
	APPLICATION SITE BOUNDARY (KILKENNY COUNTY COUNCIL)
	EXISTING GROUND SURFACE
	MINOR CONTOUR (1 M INTERVAL)
	TURBINE AND TURBINE FOUNDATION
	HARDSTAND
	PROPOSED NEW ROADS
	EXISTING ROADS PROPOSED TO BE UPGRADED
	SUBSTATION
	CONSTRUCTION COMPOUND
	MET MAST
	SPOIL REPOSITORY AREA
	PEAT REPOSITORY AREA
	TEMPORARY ACCESS ROAD/PROPOSED JUNCTION ACCOMMODATION AREA
	GRID CONNECTION ROUTE
	CUT AREA
	FILL AREA



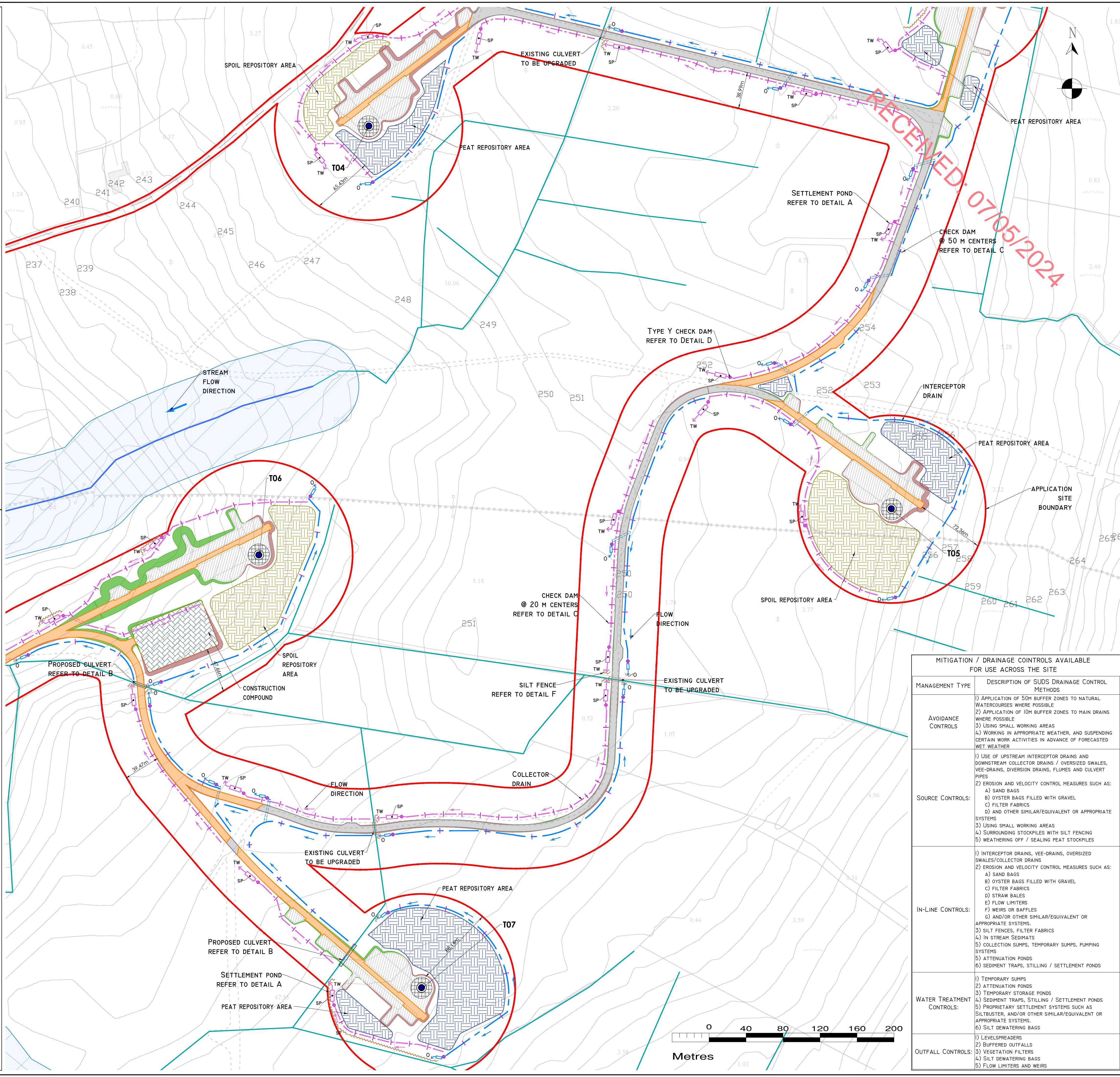
DRAWING NOTES

1. DRAWINGS ISSUED ARE FOR PLANNING APPLICATION PURPOSES ONLY.
2. COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
3. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.
4. ALL DIMENSIONS ARE IN METRES.

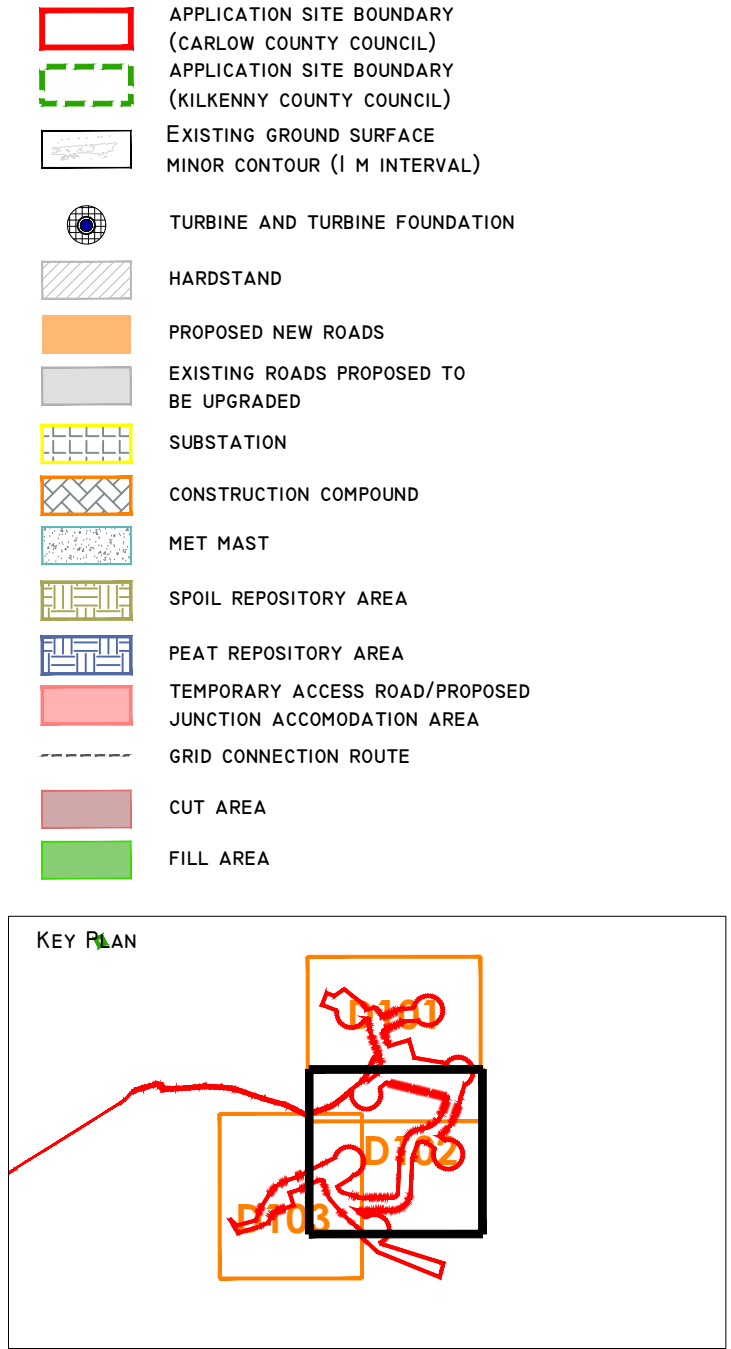
Ordnance Survey Ireland Licence No. EN 0044724 © Ordnance Survey Ireland/Government of Ireland			
Date	Description	Chkd	Signed
Revisions			
22 Lower Main St Dungarvan Co. Waterford Ireland			
tel: +353 (0) 58 44122 tel: +353 (0) 58 44244 email: info@hydroenvironmental.ie web: www.hydroenvironmental.ie			
Client: EDF RENEWABLES IRELAND LTD.			
Job: SESKIN WIND FARM, CO. CARLOW/CO. KILKENNY			
Title: PROPOSED DRAINAGE LAYOUT			
Figure No: DI01			
Drawing No: P1599-0-0524-A1-DI01-00A			
Sheet Size: A1		Project No.: P1599-0	
Scale: 1:2,000 (A1)		Drawn By: GA	
Date: 01/05/2024		Checked By: MG	

POLLUTION PREVENTION NOTES:

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




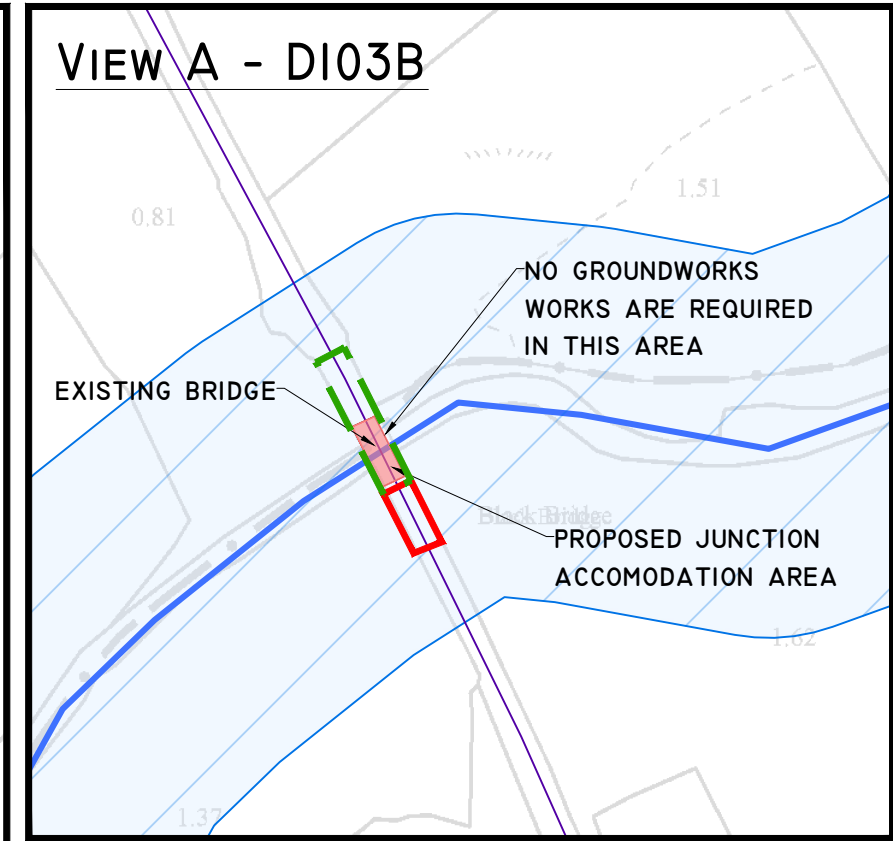
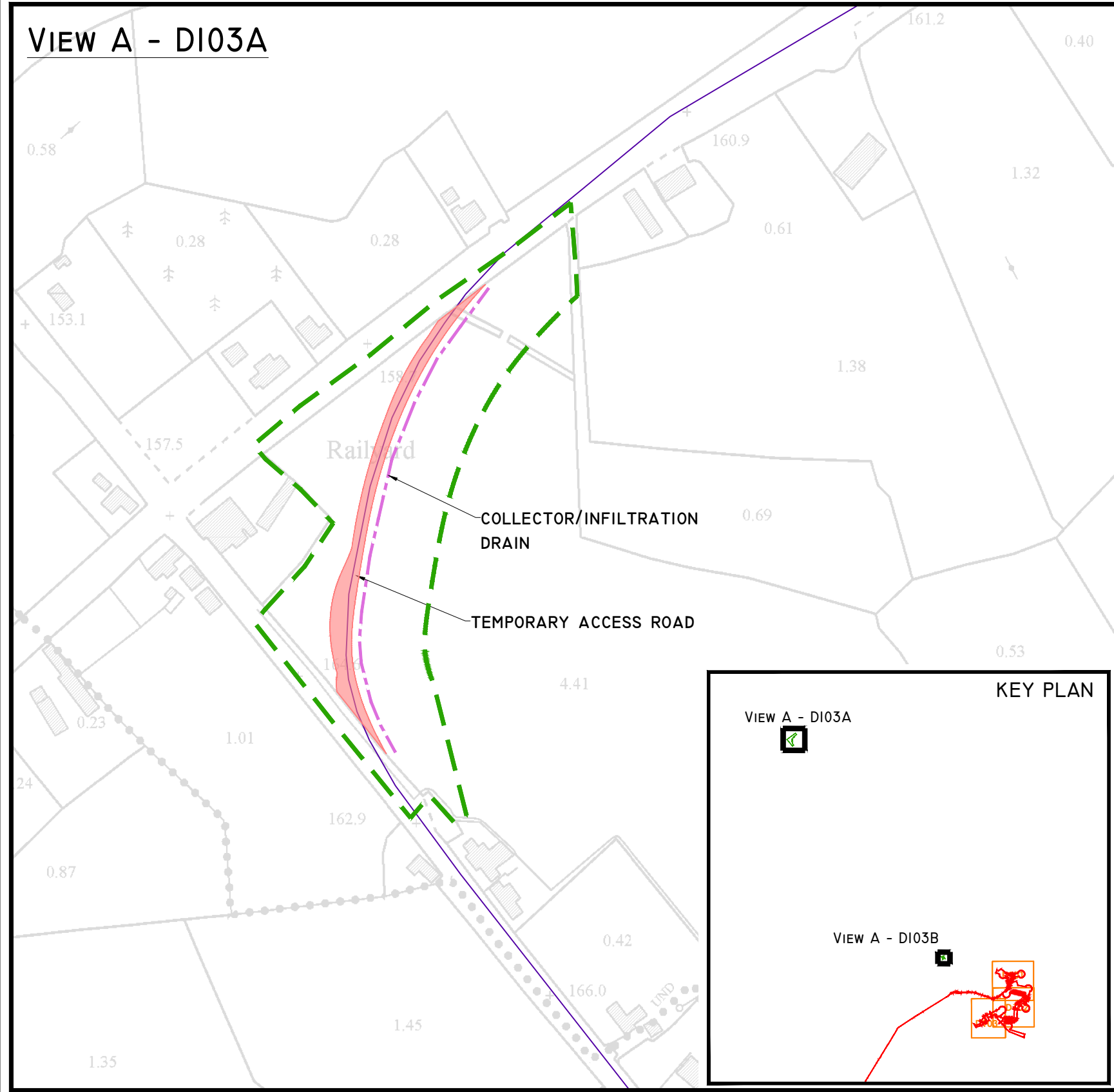
- DRAWING LEGEND :
- RIVERS/STREAMS (WC - WATERCOURSE)
 - EXISTING DRAINS
 - RIVERS/STREAMS 50M BUFFER
 - STREAM FLOW DIRECTION
 - REDIRECTED DRAINS
 - UPSTREAM INTERCEPTOR DRAIN
 - SWALES/DOWNSTREAM COLLECTOR DRAIN
 - DIRECTION OF FLOW
 - SILT FENCES
 - DOUBLE/TRIPLE SILT FENCES
 - SETTLEMENT POND - LEVEL SPREADER
 - CHECK DAM 'TYPE A'
 - CHECK DAM 'TYPE B'
 - PROPOSED WC CROSSING
 - EXISTING 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
 - APPLICATION SITE BOUNDARY (CARLOW COUNTY COUNCIL)
 - APPLICATION SITE BOUNDARY (KILKENNY COUNTY COUNCIL)
 - EXISTING GROUND SURFACE
 - MINOR CONTOUR (1 M INTERVAL)
 - TURBINE AND TURBINE FOUNDATION
 - HARDSTAND
 - PROPOSED NEW ROADS
 - EXISTING ROADS PROPOSED TO BE UPGRADED
 - SUBSTATION
 - CONSTRUCTION COMPOUND
 - MET MAST
 - SPOIL REPOSITORY AREA
 - PEAT REPOSITORY AREA
 - TEMPORARY ACCESS ROAD/PROPOSED JUNCTION ACCOMMODATION AREA
 - GRID CONNECTION ROUTE
 - CUT AREA
 - FILL AREA



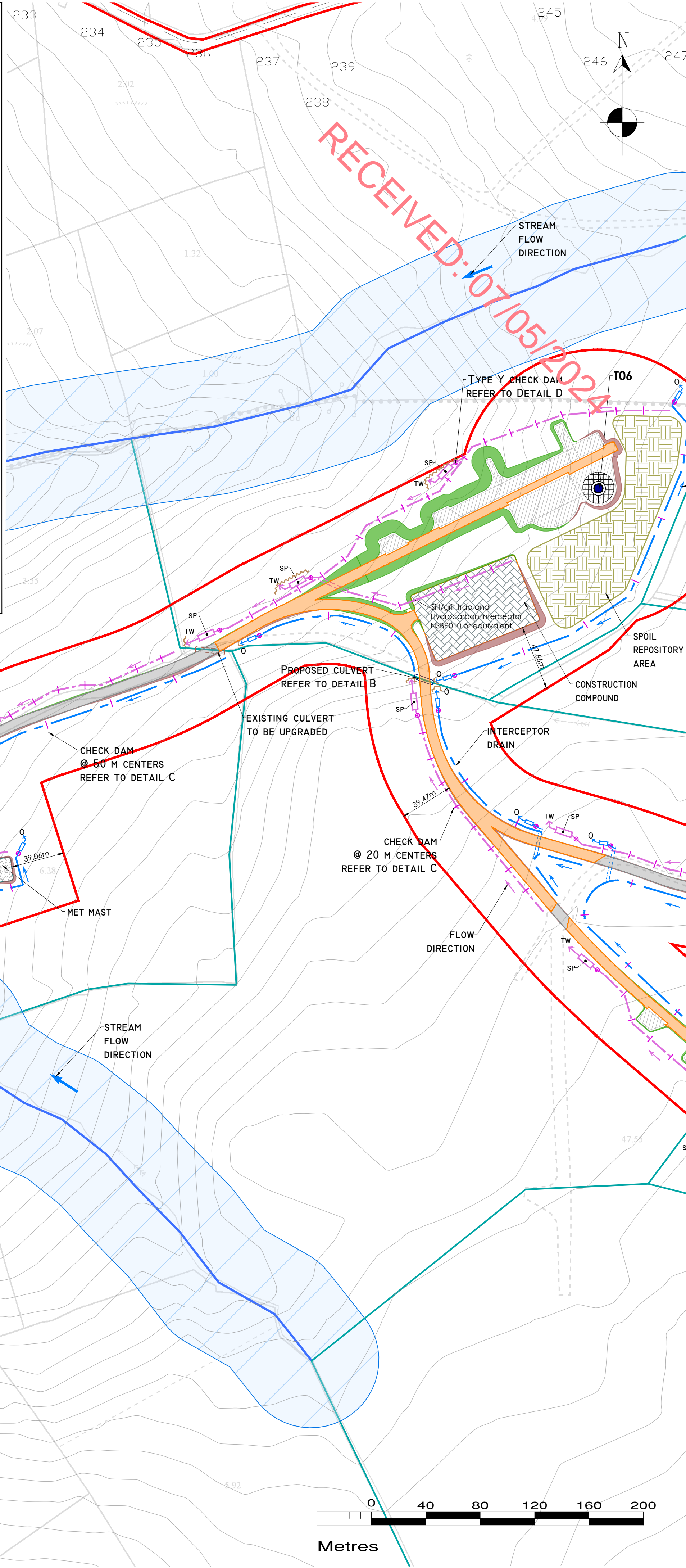
- DRAWING NOTES
1. DRAWINGS ISSUED ARE FOR PLANNING APPLICATION PURPOSES ONLY.
2. COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
3. DO NOT SCALE OFF 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 WHERE POSSIBLE
	2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE
SOURCE CONTROLS:	3) USING SMALL WORKING AREAS
	4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
IN-LINE CONTROLS:	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES
	2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
WATER TREATMENT CONTROLS:	3) USING SMALL WORKING AREAS
	4) SURROUNDING STOCKPILES WITH SILT FENCING
OUTFALL CONTROLS:	5) WEATHERING OFF / SEALING PEAT STOCKPILES
	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS
	2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR Baffles G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.
	3) SILT FENCES, FILTER FABRICS
	4) IN STREAM SEDIMENTS
	5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS
	6) ATTENUATION PONDS
	7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
	1) TEMPORARY SUMPS
	2) ATTENUATION PONDS
	3) TEMPORARY STORAGE PONDS
	4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
	5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	6) SILT DEWATERING BAGS
	1) LEVELSPREADERS
	2) BUFFERED OUTFALLS
	3) VEGETATION FILTERS
	4) SILT DEWATERING BAGS
	5) FLOW LIMITERS AND WEIRS

Ordnance Survey Ireland Licence No. EN 0044724 © Ordnance Survey Ireland/Government of Ireland			
Date	Description	Chkd	Signed
Revisions			
 HYDRO ENVIRONMENTAL SERVICES			
22 Lower Main St Dungarvan Co. Waterford Ireland		tel: +353 (0) 58-44122 tel: +353 (0) 58-44244 email: info@hydroenvironmental.ie web: www.hydroenvironmental.ie	
Client: EDF RENEWABLES IRELAND LTD.			
Job: SESkin WIND FARM, Co. CARLOW/Co. KILKENNY			
Title: PROPOSED DRAINAGE LAYOUT			
Figure No: D102			
Drawing No: P1599-0-0224-A1-D102-00A			
Sheet Size: A1		Project No.: P1599-0	
Scale: 1:2,000 (A1)		Drawn By: GA	
Date: 01/05/2024		Checked By: MG	



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



DRAWING LEGEND :

- RIVERS/STREAMS (WC - WATERCOURSE)
- EXISTING DRAINS
- RIVERS/STREAMS 50M BUFFER
- STREAM FLOW DIRECTION
- REDIRECTED DRAINS
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SILT FENCES
- DOUBLE/TRIPLE SILT FENCES
- SETTLEMENT POND - LEVEL SPREADER
- CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- PROPOSED WC CROSSING
- EXISTING WC CROSSING
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- SETTLEMENT POND
- TREATED WATER DISCHARGE
- SEMI-NATURAL VEGETATION
- SWALE / FILTER BED / SECONDARY SP
- PUMPING SUMP
- APPLICATION SITE BOUNDARY (CARLOW COUNTY COUNCIL)
- APPLICATION SITE BOUNDARY (KILKENNY COUNTY COUNCIL)
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1 M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARDSTAND
- PROPOSED NEW ROADS
- EXISTING ROADS PROPOSED TO BE UPGRADED
- SUBSTATION
- CONSTRUCTION COMPOUND
- MET MAST
- SPOIL REPOSITORY AREA
- PEAT REPOSITORY AREA
- TEMPORARY ACCESS ROAD/PROPOSED JUNCTION ACCOMMODATION AREA
- GRID CONNECTION ROUTE
- CUT AREA
- FILL AREA

KEY PLAN

DRAWING NOTES

- DRAWINGS ISSUED ARE FOR PLANNING APPLICATION PURPOSES ONLY.
- COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
- DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.
- ALL DIMENSIONS ARE IN METRES.

Ordnance Survey Ireland Licence No. EN 0044724
© Ordnance Survey Ireland/Government of Ireland

Date	Description	Chkd	Signed

Revisions

HYDRO ENVIRONMENTAL SERVICES

22 Lower Main St
Dungarvan
Co. Waterford
Ireland

tel: +353 (0) 58-44122
tel: +353 (0) 58-44244
email: info@hydroenvironmental.ie
web: www.hydroenvironmental.ie

Client: **EDF RENEWABLES IRELAND LTD.**

Job: **SESKIN WIND FARM, CO. CARLOW/CO. KILKENNY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **DI03**

Drawing No: P1599-0-0224-A1-DI03-00A

Sheet Size: A1

Scale: 1:2,000 (A1)

Date: 01/05/2024

Project No.: P1599-0

Drawn By: GA

Checked By: MG

DRAINAGE NOTES:

- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
- SARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
- SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/ OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
- SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
- INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
- DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.
- WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.
- 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.
- TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAMINANT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
- SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON THE CATCHMENT AREA BEING SERVED. SAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
- 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.
- SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNELS.
- 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.
- AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
- 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 100MM STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
- 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.
- SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
- 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.
- OIL FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
- SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.

POLLUTION PREVENTION NOTES:

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
- SUITABLE DRAINAGE CONTROL MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
- 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

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

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

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

REFUELLING

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

CONCRETE

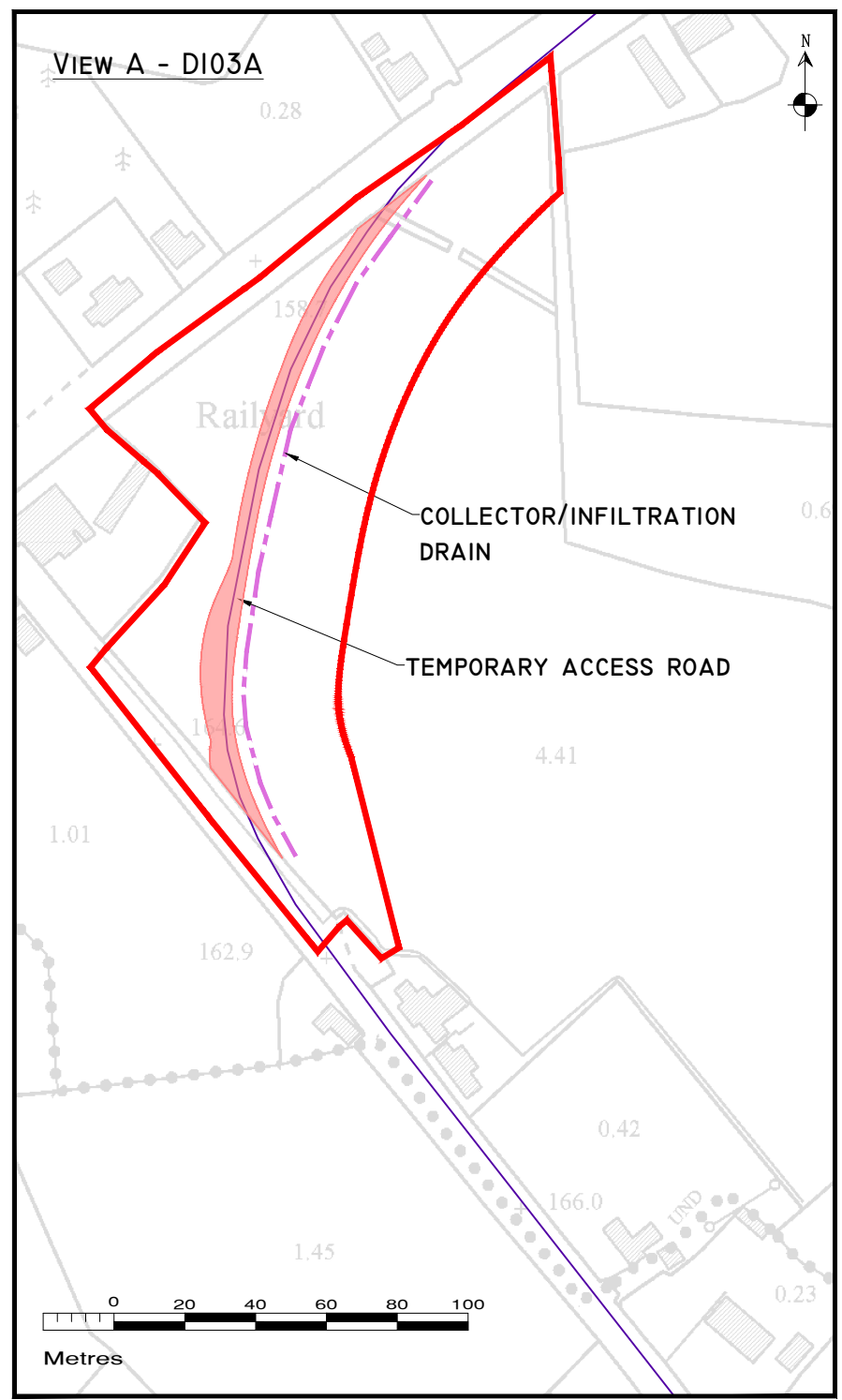
- CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
- CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.

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

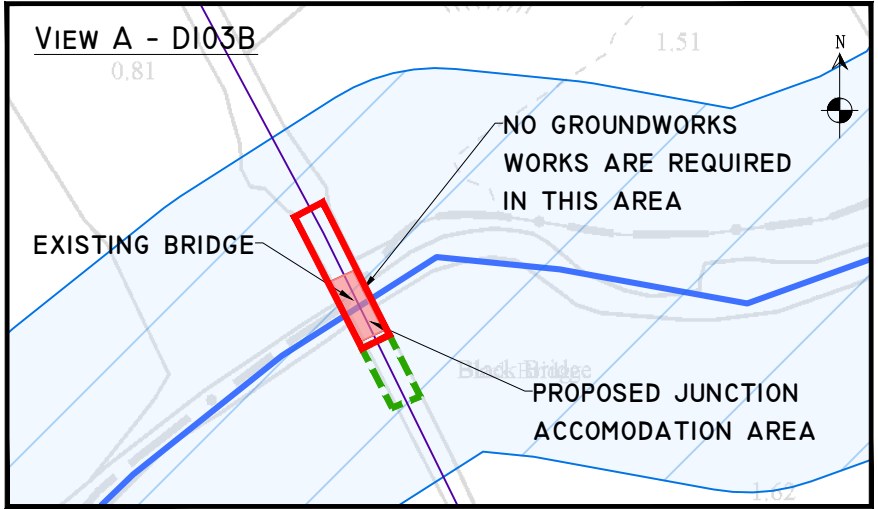
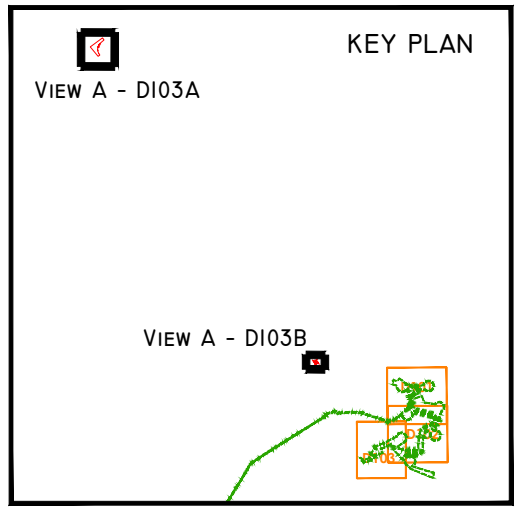
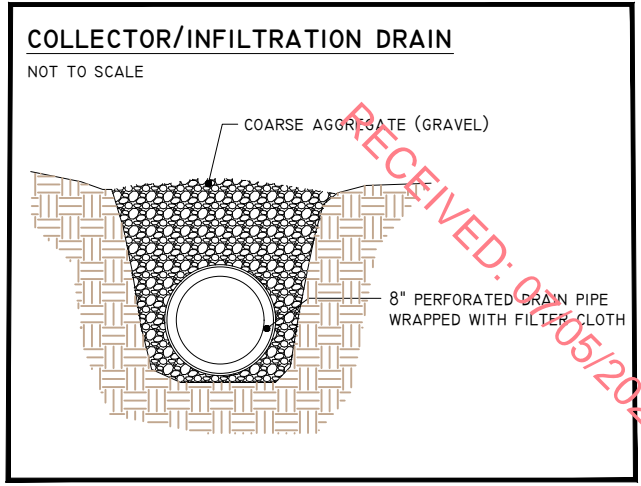
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

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

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



- DRAINAGE NOTES:**
1. THE JUNCTION ACCOMMODATION AREAS TRACK SURFACING DESIGN AND CONSTRUCTION WILL BE COMPLETED TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
 2. SUDS SYSTEMS, COMPRISING OF A DOWNGRADIENT COLLECTOR / INFILTRATION DRAIN, TO BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF THE TRACK. SUITABLE PREVENTION MEASURES SHOULD BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
 3. THE WORKS AREA IS REMOTE FROM ANY WATERCOURSE AND THERE WILL BE NO DISCHARGE TO SURFACE WATERS.
 4. DRAINAGE RUNOFF WILL BE COLLECTED IN THE INFILTRATION DRAIN WHICH WILL ATTENUATE AND STORE WATER AND WILL PROMOTE INFILTRATION TO GROUND.



DRAWING LEGEND :

- APPLICATION SITE BOUNDARY (KILKENNY COUNTY COUNCIL)
- APPLICATION SITE BOUNDARY (CARLOW COUNTY COUNCIL)
- TEMPORARY ACCESS ROAD/PROPOSED JUNCTION ACCOMMODATION AREA
- GRID CONNECTION ROUTE
- COLLECTOR DRAIN/INFILTRATION DRAIN
- RIVERS/STREAMS (WC - WATERCOURSE)
- RIVERS/STREAMS 50M BUFFER

DRAWING NOTES

1. DRAWINGS ISSUED ARE FOR PLANNING APPLICATION PURPOSES ONLY.
2. COPYRIGHT, ALL RIGHTS RESERVED. NO PART HERE WITH MAY BE COPIED OR REPRODUCED PARTIALLY OR WHOLLY IN ANY FORM WHATSOEVER WITHOUT THE PRIOR NOTICE OF THE COPYRIGHT OWNER HYDRO-ENVIRONMENTAL SERVICES.
3. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.
4. ALL DIMENSIONS ARE IN METRES.

Ordnance Survey Ireland Licence No. EN 0044724
© Ordnance Survey Ireland/Government of Ireland

Date	Description	Chkd	Signed
Revisions			

HYDRO ENVIRONMENTAL SERVICES

22 Lower Main St
Dungarvan
Co. Waterford
Ireland

tel: +353 (0) 58 44122
tel: +353 (0) 58 44244
email: info@hydroenvironmental.ie
web: www.hydroenvironmental.ie

Client:
EDF RENEWABLES IRELAND LTD.

Job:
SESKIN WIND FARM,
Co. CARLOW/Co. KILKENNY

Title:
PROPOSED DRAINAGE LAYOUT

Figure No:
DI03A

Drawing No: P1599-0-0524-A4-DI03A-00A
Sheet Size: A4 **Project No.:** P1599-0
Scale: 1:2,000 (A4) **Drawn By:** GA
Date: 01/05/2024 **Checked By:** MG