



APPENDIX 4-4

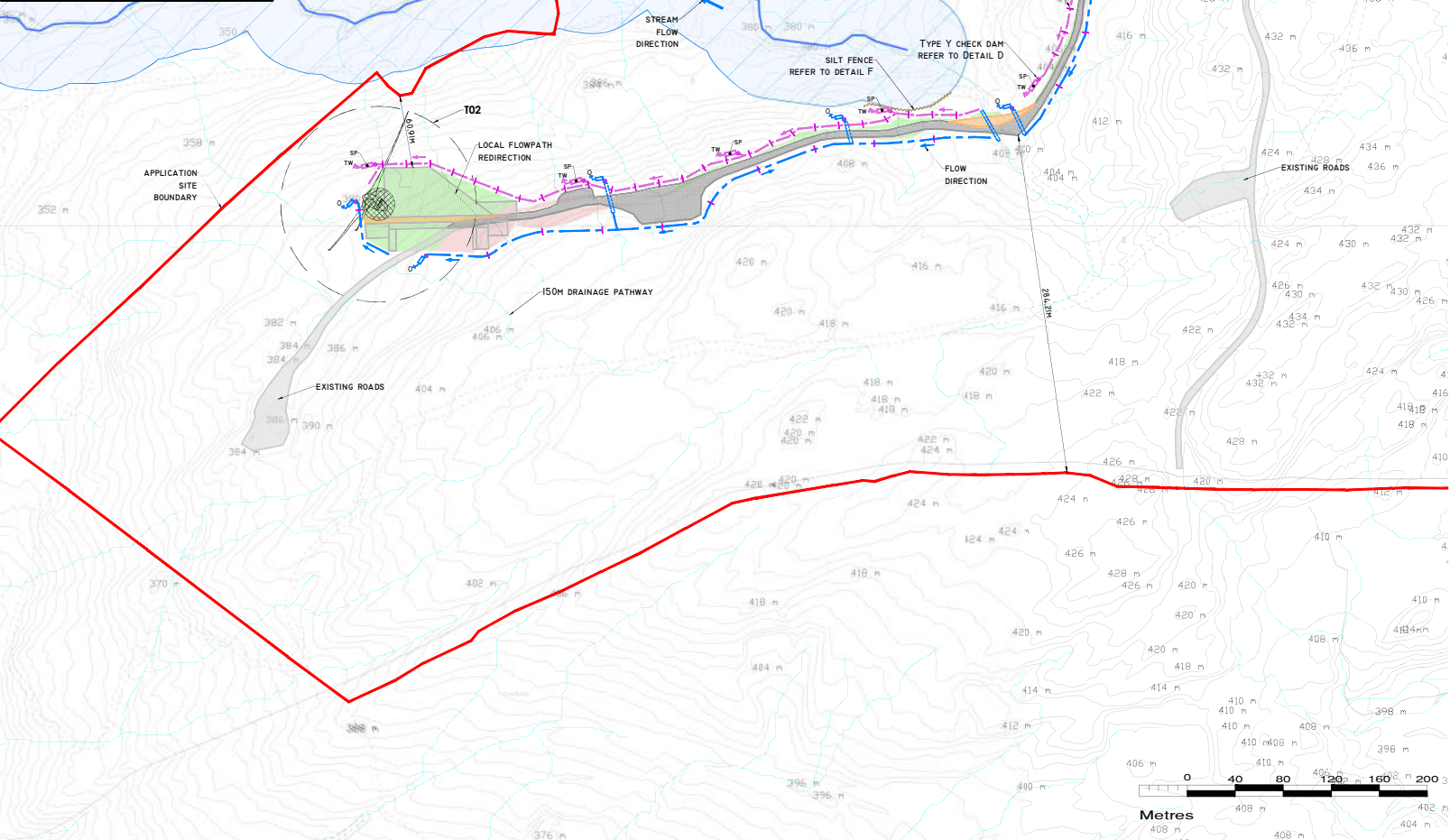
DRAINAGE DESIGN DRAWINGS

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
2. SUTABLE 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 DENATURING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROAD/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 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 DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITY OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS
9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES
10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.
- SITE TRACKS
11. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RAINWATER 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 BUNDLED USING A SUTABLE 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. GRADE 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 SILTTRUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SLODS 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 UNLIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
4. SUTABLE 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 SUTABLE 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 POND AND SILT TRAPS, PRIOR TO DISCHARGE.
10. SETTLEMENT POND TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZE 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 SUTABLE 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 / EPIHEMAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM IRONON UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT '500' OR '1000') FROM DISCAVATIONS 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 UP LOCALLY WORK / GEOLOGICALLY SIMILAR WALL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, LOW 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 POND 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 SUTABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE PERMANENT 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.

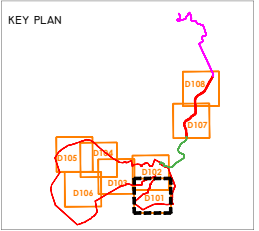
MITIGATION / DRAINAGE CONTROLS AVAILA FOR USE ACROSS THE SITE

MANAGEMENT TYPE	DESCRIPTION OF SLODS DRAINAGE METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO WATERCOURSES WHERE POSSIBLE
	2) APPLICATION OF 10M BUFFER ZONES TO WHERE POSSIBLE
SOURCE CONTROLS	1) USING SHAL, WORKING AREAS
	2) WORKING IN APPROPRIATE WEATHER, AN CERTAIN WORK ACTIVITIES IN ADVANCE OF 1 MET. WEATHER
IN-LINE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAIN DOWNSTREAM COLLECTOR DRAINS / OVERSIZ VEE-DRAINS, DIVERSION DRAINS, FLOPES AN PIPES
	2) EROSION AND VELOCITY CONTROL MEASU BUFFER ZONE
WATER TREATMENT CONTROLS	1) SAND BAGS
	2) OYSTER BAGS FILLED WITH GRAVEL
OUTFALL CONTROLS	1) FILTER FABRICS
	2) AND OTHER SIMILAR/EQUIVALENT OR SYSTEMS
	1) USING SHAL, WORKING AREAS
	2) SUBROUNDING STOCKPILES WITH SILT FEI
	1) WEATHERING OFF / SEALING PEAT STOC
	2) INTERCEPTOR DRAINS, VEE-DRAINS, OVER SWALES/COLLECTOR DRAINS
	1) EROSION AND VELOCITY CONTROL MEASU
	2) SAND BAGS
	1) OYSTER BAGS FILLED WITH GRAVEL
	2) FILTER FABRICS
	1) STRAW BALES
	2) FLOW LIMITERS
	1) WEIRS OR BATTLES
	2) AND/OR OTHER SIMILAR/EQUIVALENT APPROPRIATE SYSTEMS
	1) SILT FENCES, FILTER FABRICS
	2) IN STREAM SEDIMENTS
	1) COLLECTION SUPPS, TEMPORARY SUPPS, SYSTEMS
	2) ATTENUATION PONDS
	1) SEGMENT TRAPS, STILLING / SETTLED
	2) TEMPORARY SUPPS
	1) ATTENUATION PONDS
	2) TEMPORARY STORAGE PONDS
	1) SEGMENT TRAPS, STILLING / SETTLEME
	2) PROPRIETARY SETTLEMENT SYSTEMS SU SLTTRUSTER, AND/OR OTHER SIMILAR/EQUIV APPROPRIATE SYSTEMS
	1) LEVELSPREADERS
	2) SIFTERED OUTFALLS
	1) VEGETATION FILTERS
	2) SILT DOWATERING BAGS
	1) SILT DOWATERING BAGS
	2) FLOW LIMITERS AND WEIRS



DRAWING LEGEND:

- RIVERS/STREAMS (INC. WATERCOURSE)
- RIVERS/STREAMS 50M BUFFER
- LAKES
- LAKES 50M BUFFER
- STREAM FLOW DIRECTION
- DRAINAGE FLOW PATHWAYS (100m LIMIT)
- LOCAL FLOWPATH REDIRECTION
- 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 IFC CROSSING
- INTERCEPTOR DRAIN
- COLLECTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SEMI-NATURAL VEGETATION
- SWALE / FILTER BED SECONDARY SP
- TEMPORARY PUMPING GUMP
- USE AT TURBINE BASES (CONSTRUCTION PHASE)
- APPLICATION SITE BOUNDARY
- EXISTING LEASE BOUQUETTE BOUNDARY
- EXISTING ROW COLLEGE BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (2 m INTERVAL)
- TURBINE AND SHEET AREA
- PROPOSED HARDCORED AREAS
- EXISTING ROADS PROPOSED TO BE UPGRADED
- EXISTING ROADS
- HARDSTAND
- SUBSTATION
- CONSTRUCTION COMPOUND
- BORROW PIT
- CUT AREA
- FILL AREA



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Client: ØRSTED

Job: PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D101

Drawing No: P1585-0-0524-A1-D101-00C

Sheet Size: A1 Project No: P1585-0

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

Date: 07/05/2024 Checked By: MG

1	SITE MANAGEMENT PROPOSALS ARE INTEND 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 CONCENTRATION OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE
3	TO PREVENT EROSION OF EXPOSED SOILS.
4	SILT WATER CAN ARISE FROM DRAINAGE EXCAVATIONS, EROSION OF UNSTABILISED GROUND, TEMPORARY STOCKPILES, PILE AND WHEEL WASH, SITE ROAD/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINING AND DITCHES.
5	DISCHARGES
6	WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL DRAINAGE COURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM THE DRAINAGE COURSE.
7	NO EXCAVATED MATERIAL IS TO BE STORED IN ANY SURFACE WATER BUFFER ZONE.
8	WATER WILL BE DIRECTED TO TRUCK STOP DITCHES AND TREATED IN SETTLEMENT POND AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.
9	PURPOSE 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 RATE AT THE POINT OF RELEASE/DISCHARGE, AND OTHER SIMILAR DISCHARGE CONTROLS.
10	WATER WILL NOT BE DISCHARGED FROM EXISTING DRAINAGE DITCHES UNLESS ABSOLUTELY NECESSARY.

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

- REFUELING**
13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING 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.

- APPROPRIATELY ON SITE.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:

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

- 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

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

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 INTERCEPT DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE

7. WHERE POSSIBLE, A BUFFER ZONE OF $>20\text{m}$ 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 1:3 DEPENDING ON THE MATERIAL OF SWALE / DITCH AND THE

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

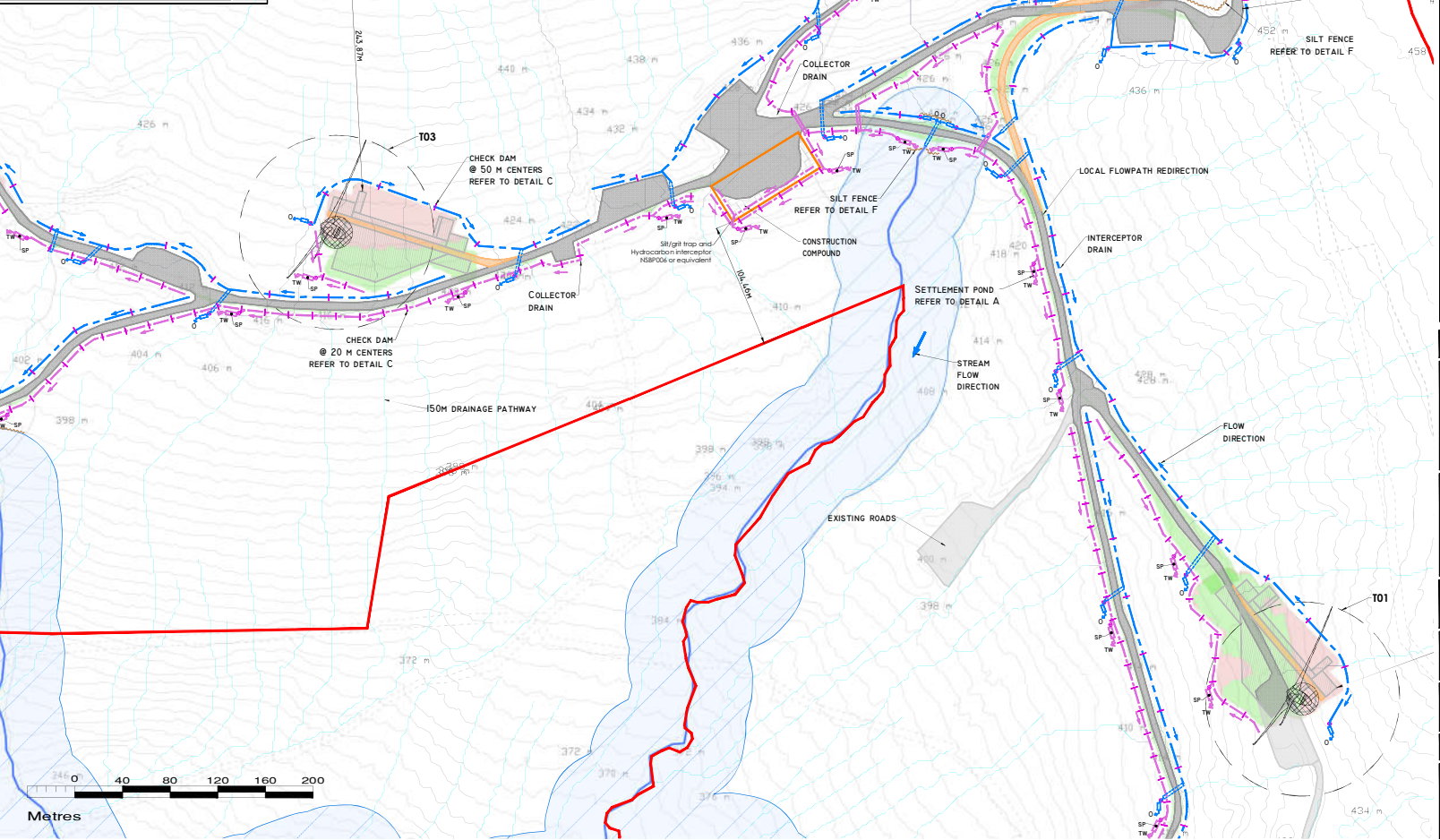
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE

- 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

18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SPECIAL DRAINAGE TO BE CONSIDERED AS A MAJOR

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.

MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL MATRICOSSES WHERE POSSIBLE
AVOIDANCE CONTROLS	2) APPLICATION OF 10M BUFFER ZONES TO MAIN RAINS WHERE POSSIBLE 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUDS THINGS CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECAST WEATHER 5) USE OF UPSTREAM INTERCEPTOR DRAIN AND DOWNSTREAM COLLECTION DRAIN / OVERSIZED SWALE, VEGETATION, DIVERSION DRAIN, FLUMES AND COLLECT PIPES
SOURCE CONTROLS:	2) EROSION AND VELOCITY CONTROL, MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) USING SMALL WORKING AREAS 4) SURROUNDING STOOPCHOLS WITH SILT FENCING 5) WEATHERING OFF / SEALING PEAT STOOPCHOLS 6) INTERCEPTOR DRAIN, VEGETATION, OVERSIZED SWALE/COLLECTION DRAIN 7) EROSION AND VELOCITY CONTROL, MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) SALT BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 8) SILT FENCES, FILTER FABRICS 9) IN STREAM SEDIMENTATION 10) COLLECTION SUMPS, TEMPORARY SUMPS, PUMP-OUT SYSTEMS 11) ATTENUATION PONDS 12) SEDIMENT TRAPS, STILLING / SETTLEMENT POND 13) TEMPORARY SUMPS 14) ATTENUATION PONDS 15) TEMPORARY STORAGE PONDS 16) SEDIMENT TRAP, STILLING / SETTLEMENT POND 17) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SALTSTRUT, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 18) SILT DETERATING BAGS 19) LEVELLEDRAILERS 20) BUFFERED OUTFALLS 21) VEGETATION FILTERS 22) SILT DETERATING BAGS 23) FLOW LIMITERS AND WEIRS
IN-LINE CONTROLS:	
WATER TREATMENT CONTROLS:	
OUTFALL CONTROLS:	



- DRAWING LEGEND**

	RIVERS/STREAMS INC. (WATERCOURSE)	EXISTING DRAINAGE
	RIVERS/STREAMS 50m BUFFER	
	LAKES	
	LAKES 50m BUFFER	
	STREAM FLOW DIRECTION	PROPOSED DRAINAGE
	LOCAL FLOW PATHWAYS (100m LARGER)	
	LOCAL FLOWPATH REDIRECTION	
	UPSTREAM INTERCEPTOR DRAIN	
	SHOULDER/STREAM/COULVERT DRAIN	PROPOSED DRAINAGE
	DIRECTION OF FLOW	
	SILT FENCES	
	DOUBLE/TRENCH SILT FENCES	
	SETTLEMENT POND - LEVEL SPREADER	
	CHECK DAM TYPE 'A'	
	CHECK DAM TYPE 'B'	
	PROPOSED MC CROSSING	
	EXISTING MC CROSSING	
	INTERCEPTOR DITCH/CULVERT	
	COLLECTOR DITCH/CULVERT	PROPOSED DRAINAGE
	OVERFLOW FLOW DISCHARGE	
	TREATED WATER DISCHARGE	
	SETTLEMENT POND	
	SP	
	50m-NATURAL VEGETATION	
	SHAWL / FILTER BED (SECONDARY SP)	
	TEMPORARY PUMPING SLUMP	
	SP (100m Buffer from Natural Vegetation)	
	APPLICATION SITE BOUNDARY	
	EXISTING LEASE BOUQUETTE BOUNDARY	PROPOSED DRAINAGE
	EXISTING ROW COLLUTE BOUNDARY	
	EXISTING GROUND SURFACE	
	MINOR CONTOUR (2 m INTERVAL)	
	TURBINE AND SHEET AREA	
	PROPOSED HARDCOURED AREAS	
	EXISTING ROADS PROPOSED TO BE UPGRADED	
	EXISTING ROADS	
	HARDSTAND	
	SUBSTATION	
	CONSTRUCTION COMPOUND	
	ROBOTT PIT	PROPOSED DRAINAGE
	CUT AREA	
	FILL AREA	

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Client: ØRSTED

Job: PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D102	
Drawing No: P1585-0-0524-A1-D102-00C	
Sheet Size: A1	Project No.: P1585-0

Scale: 1:2,000 (A1)	Drawn By: GA
Date: 07/05/2024	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 DRAIN/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 VELOCITY OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROL.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.

EXCAVATION

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

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

REFUELLING

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

CONCRETE

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

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

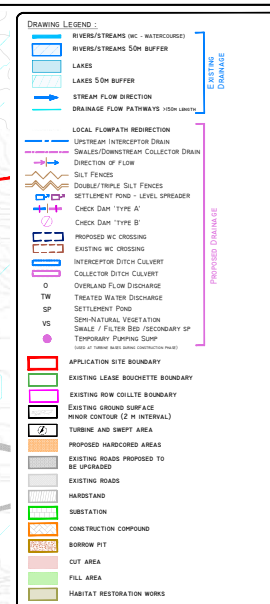
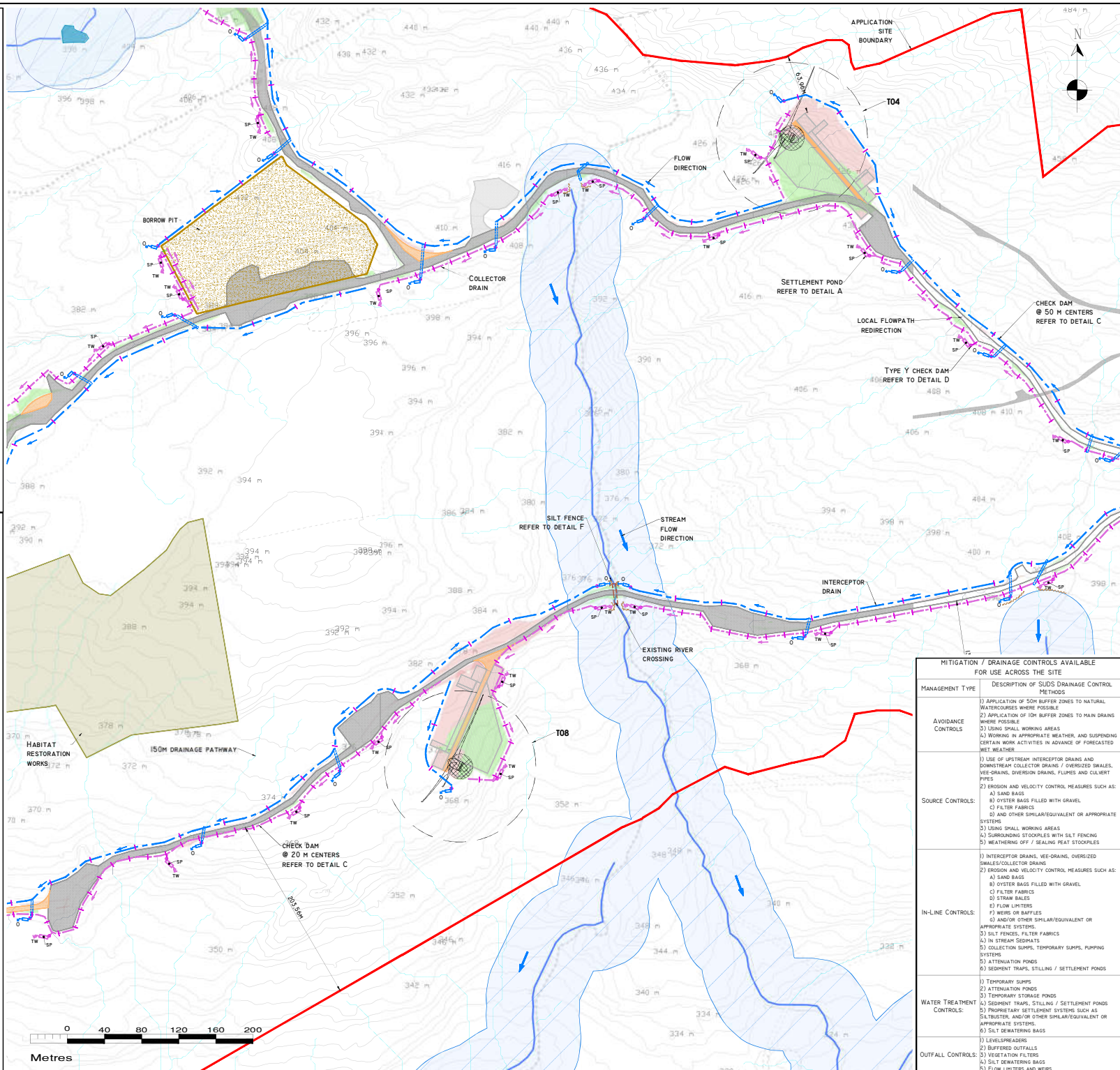
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

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

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

DRAINAGE NOTES:

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. STRAW BALE/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 SILT TRAP 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 DRAINS / 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 DRAIN 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 DISCHARGE. 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 / EPIHEMAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (REAT "SOO" OR "SOO") FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASES OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE UP OF LOCALLY WORN / 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, LOW 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 DAMS 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 HARDSTAND 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.



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4. ALL DIMENSIONS ARE IN METRES.

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Revisions

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Client: ØRSTED

Job: PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D103

Drawing No: P1585-0-0524-A1-D103-000

Sheet Size: A1 Project No: P1585-0

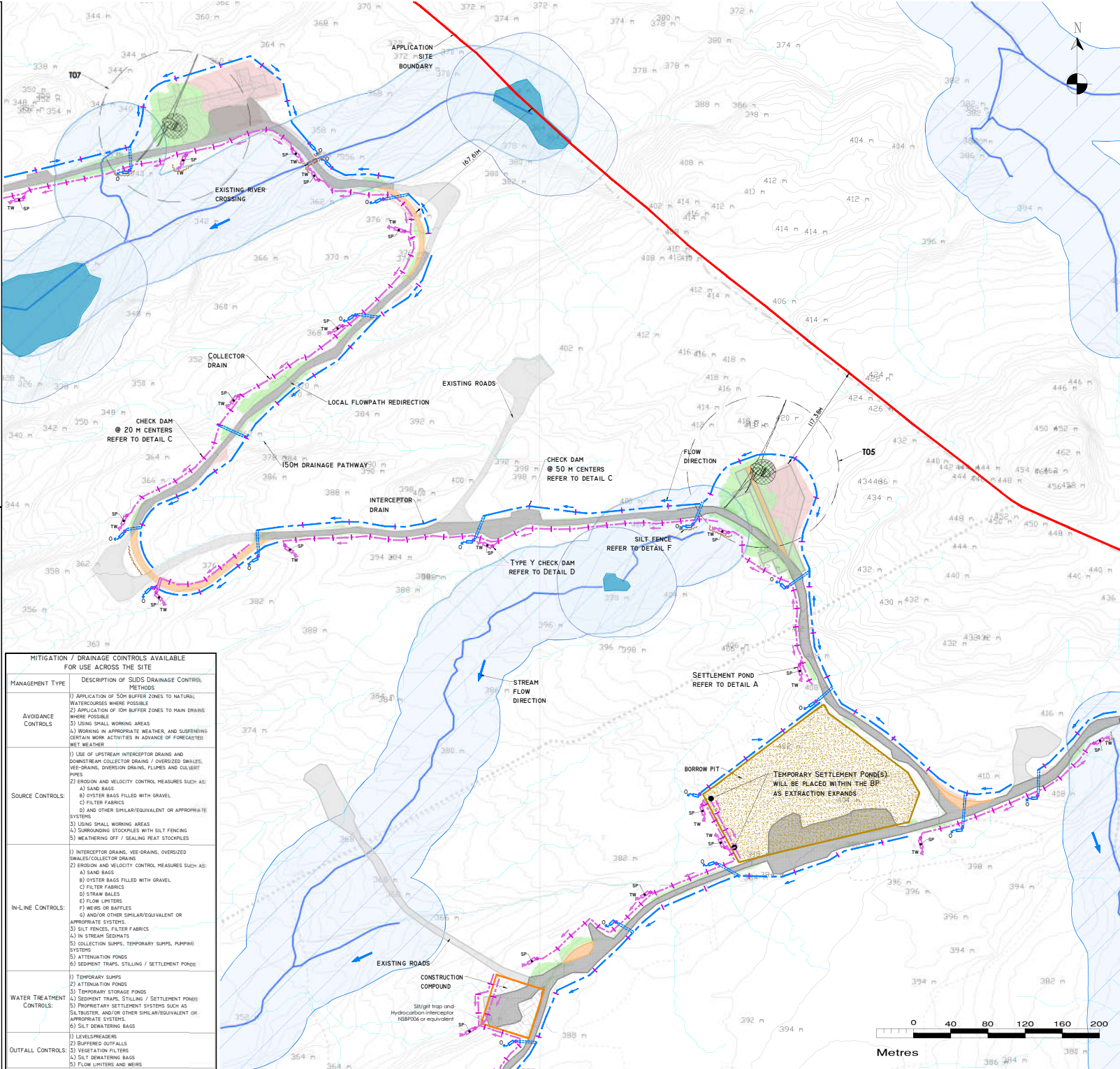
Scale: 1:2,000 (A1) Drawn By: GA

Date: 07/05/2024 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	1) USING SMALL WORKING AREAS
	2) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHERS
IN-LINE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTION DRAINS / OVERSIZED SWALES, VEE-DRAINS, OVERFLOW 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	1) USING SMALL WORKING AREAS
	2) SURROUNDING STOCKPILES WITH SILT FENCING
OUTFALL CONTROLS	1) WEATHERING OFF / SEALING FEET STOCKPILES
	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) SALT FENCING, FILTER FABRICS
	4) IN STREAM SEDIMENT
	5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS
	6) ATTENUATION PONDS
	7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
	8) TEMPORARY SUDS
	9) TEMPORARY STORAGE PONDS
	10) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
	11) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILT TRAP, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	12) SALT Dewatering BAGS
	13) LEVEL/WEIR
	14) BUFFERED OUTFALLS
	15) VEGETATION FILTERS
	16) SALT Dewatering BAGS
	17) FLOW LIMITERS AND WEIRS
	18) FLOW LIMITERS AND WEIRS

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, EROSION 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 DENATURING 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 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 DRAINAGE 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 VELOCITY OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.
11. 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.
14. REFUELLING
15. 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.
16. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
17. CONCRETE
18. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
19. CONCRETE WASH WATER AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.
20. IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:
21. STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
22. CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.
23. 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.
24. DRAINAGE NOTES:
25. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
26. STRAW 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 SILTSTRIP SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
27. SLODS 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 CANNOT WAIT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
28. 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.
29. 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.
30. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAIN 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.
31. 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.
32. 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 REVEGETATE WITH LOCAL SPECIES.
33. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS TO 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.
34. 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.
35. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPILL HEAPS TO MINIMISE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
36. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COME WITHIN 15M OF EDGE OF ANY DITCH / DRAIN / EPIHEMAL CHANNELS.
37. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER GREAT "SOO" OR "SOO" 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.
38. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
39. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE UP LOCALLY FROM / GEOLOGICALLY SIMILAR WALL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SLOPES OF THE ACCESS TRACKS, LONG CHECK DAMS TO BE REJECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
40. 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 DAMS TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
41. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
42. 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 PISTED OUT AT A LATER DATE PRIOR TO COMPLETION OF THE TURBINE BASE AND HANDSTAND CONSTRUCTION. ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE PERMANENT AROUND THE POND.
43. OIL FUEL SHOULD BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
44. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.



DRAWING LEGEND:

- RIVERS/STREAMS (INC. WATERCOURSE)
- RIVERS/STREAMS 50M BUFFER
- LAKES
- LAKES 50M BUFFER
- STREAM FLOW DIRECTION
- DRAINAGE FLOW PATHWAYS (10M LINE)
- LOCAL FLOWPATH REDIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/CONCRETE DRAIN DRAIN
- DIRECTION OF FLOW
- SILT FENCES
- DITCHES/TEMP. SILT FENCES
- SETTLEMENT POND - LEVEL SPREADER
- CHECK DAM TYPE 'A'
- CHECK DAM TYPE 'B'
- PROPOSED WC CROSSING
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SEM-NATURAL VEGETATION
- SWALE / FILTER BED (SECONDARY SP)
- TEMPORARY PUMPING SUMP
- USE AT TURBINE BASE (SEE CONSTRUCTION PLAN)

KEY PLAN

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Client: ØRSTED

Job: PROPOSED REFORMING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D104

Drawing No: P1585-0-0524-A1-D104-00C

Sheet Size: A1 Project No: P1585-0

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

Date: 07/05/2024 Checked By: MG

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, EROSION 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 DENATURING 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 DRAIN/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SILT TRACKS

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

REFUELLING

13. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREA 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.

17. IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS SHOULD BE ADHERED TO:

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

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

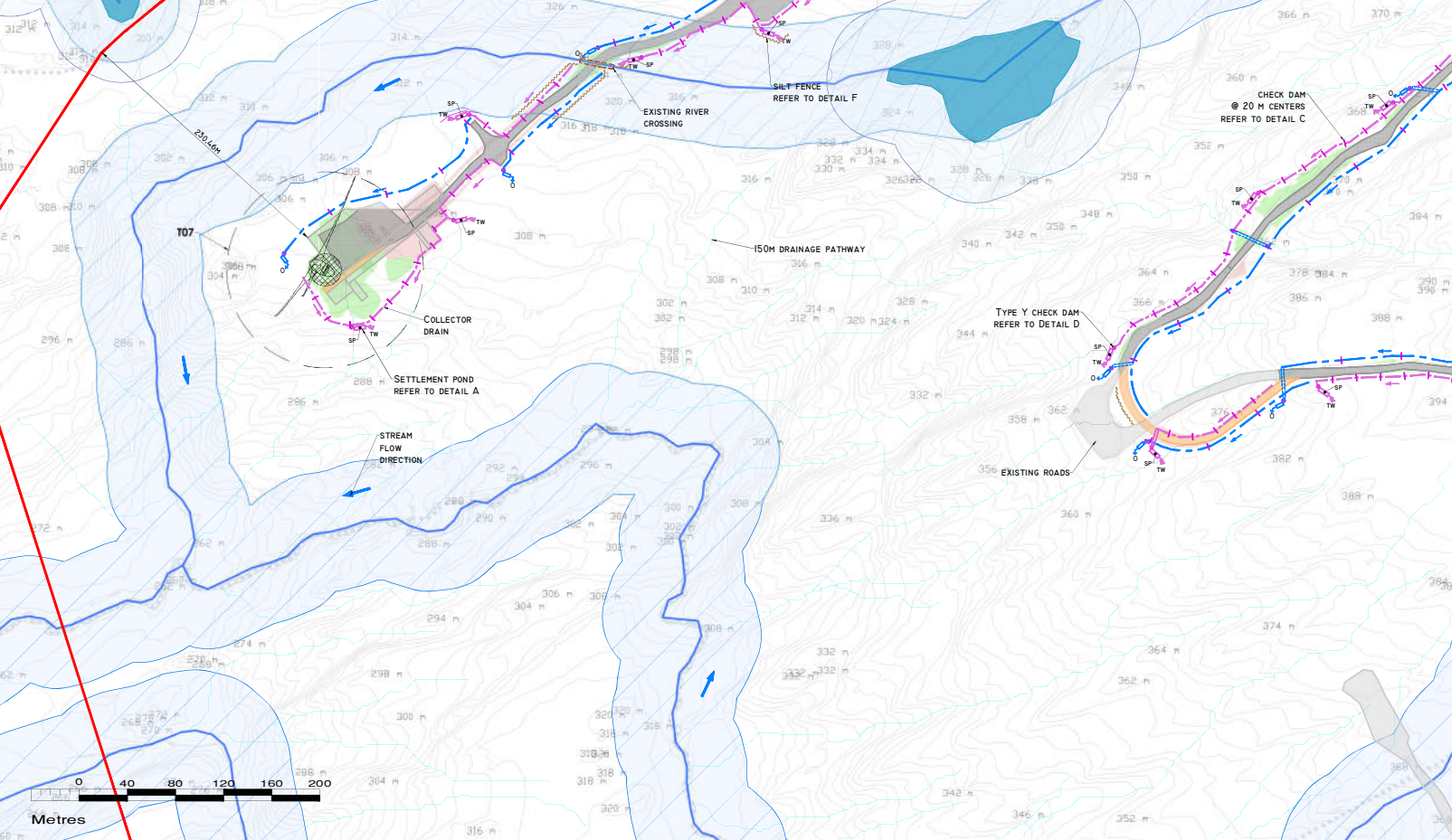
20. NOTIFY - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.

DRAINAGE NOTES:

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. STRAW STRAW BALES/SILT FENCES/ 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 SILT TRAP SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SILT 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 FENCES/ 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 TRANSPORT / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTLET POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAIN TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF / DITCHES/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 BE RE-VEGETATED 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 CONSULTATION 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 HEARS 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 WORK COMES WITHIN 15M OF EDGE OF ANY DITCH / DRAIN / EPIHEMAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM IRONON UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (REAT 100g / OR 100g/m²) FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASES OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE UP LOCALLY WORK / GEOLOGICALLY SIMILAR WALL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, LOW 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 INFILTRATED 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 HARDSTAND AROUND THE POND.
19. OIL FUEL WILL 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 SILT DRAINAGE CONTROL METHOD
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) USING SHALLOWS WORKING AREAS
	2) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED MET. 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	1) USING SHALLOWS WORKING AREAS
	2) SURROUNDING STOCKPILES WITH SILT FENCING
OUTFALL CONTROLS	1) WEATHERING OFF / SEALING PEAT STOCKPILES
	2) 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 BATTERIES
	3) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	4) SILT FENCES, FILTER FABRICS
	5) IN STREAM SEDIMENTS
	6) COLLECTION Sumps, TEMPORARY Sumps, PUMPING SYSTEMS
	7) ATTENUATION PONDS
	8) SEGMENT TRAPS, STILLING / SETTLEMENT PONDS
	9) TEMPORARY Sumps
	10) ATTENUATION PONDS
	11) TEMPORARY STORAGE PONDS
	12) SEGMENT TRAPS, STILLING / SETTLEMENT PONDS
	13) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SLTGRISTERS, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	14) SILT DRAINAGE BAGS
	15) LEVELSPREADERS
	16) BUFFERED OUTFALLS
	17) VEGETATION FILTERS
	18) SILT DRAINAGE BAGS
	19) FLOW LIMITERS AND WEIRS



DRAWING LEGEND:

- RIVERS/STREAMS (INC. WATERCOURSE)
- RIVERS/STREAMS 50M BUFFER
- LAKES
- LAKES 50M BUFFER
- STREAM FLOW DIRECTION
- DRAINAGE FLOW PATHWAYS (100M LINEAR)
- LOCAL FLOWPATH REDIRECTION
- 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 I/C CROSSING
- EXISTING I/C CROSSING
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SP
- SEN-NATURAL VEGETATION SWALE / FILTER BED (SECONDARY SP)
- TEMPORARY PUMPING DAM
- USE AT TURBINE BASE (CONSTRUCTION PHASE)
- APPLICATION SITE BOUNDARY
- EXISTING LEASE BOUQUETTE BOUNDARY
- EXISTING ROW COLLECT BOUNDARY
- EXISTING GROUND SURFACE
- WHITE CONTOUR (2 M INTERVAL)
- TURBINE AND SHEET AREA
- PROPOSED HARDCORE AREA
- EXISTING ROADS PROPOSED TO BE UPGRADED
- EXISTING ROADS
- HARDSTAND
- SUBSTATION
- CONSTRUCTION COMPOUND
- BORROW PIT
- CUT AREA
- FILL AREA

KEY PLAN

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Client: ØRSTED

Job: PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D105

Drawing No: P1585-0-0524-A1-D105-00C

Sheet Size: A1 Project No: P1585-0

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

Date: 07/05/2024 Checked By: MG

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
2. SUSTAINABLE DRAINAGE CONTROL MEASURES SHOULD BE IN PLACE AT ALL TIMES TO MAINTAIN PREVALENCE OF SIGNIFICANT VOLUMES OF WATER IN RECEIVING WATERCOURSES.
3. SILTY WATER CAN ARISE FROM DISTURBANCES, EROSION OF EXPOSED SOILS AND TEMPORARY STOCKPILING OF MATERIAL AND WHEEL WASH, SITE ROAD TRUCKS, AND OUTSTANDING OF EXISTING FIELD DRAIN AND RIVER.
- DISCHARGES
4. WATER CONTAINING SILT MUST NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO A DRAIN WITH A MINIMUM FLOW OF 10 LITRES PER SECOND OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
5. NO EXCAVATED MATERIAL IS TO BE STORED WITH ANY SURFACE WATER.
6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED BY A SILENTLY OPERATING PUMP TO THE NEAREST WATERCOURSE OR DISCHARGE.
7. PUMPED 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 RATE BY THE USE OF SPILL PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION MUST NOT BE STEPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS
9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-UP DRAINS WILL BE USED TO REMOVE EXCESS OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURNING BACE 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:

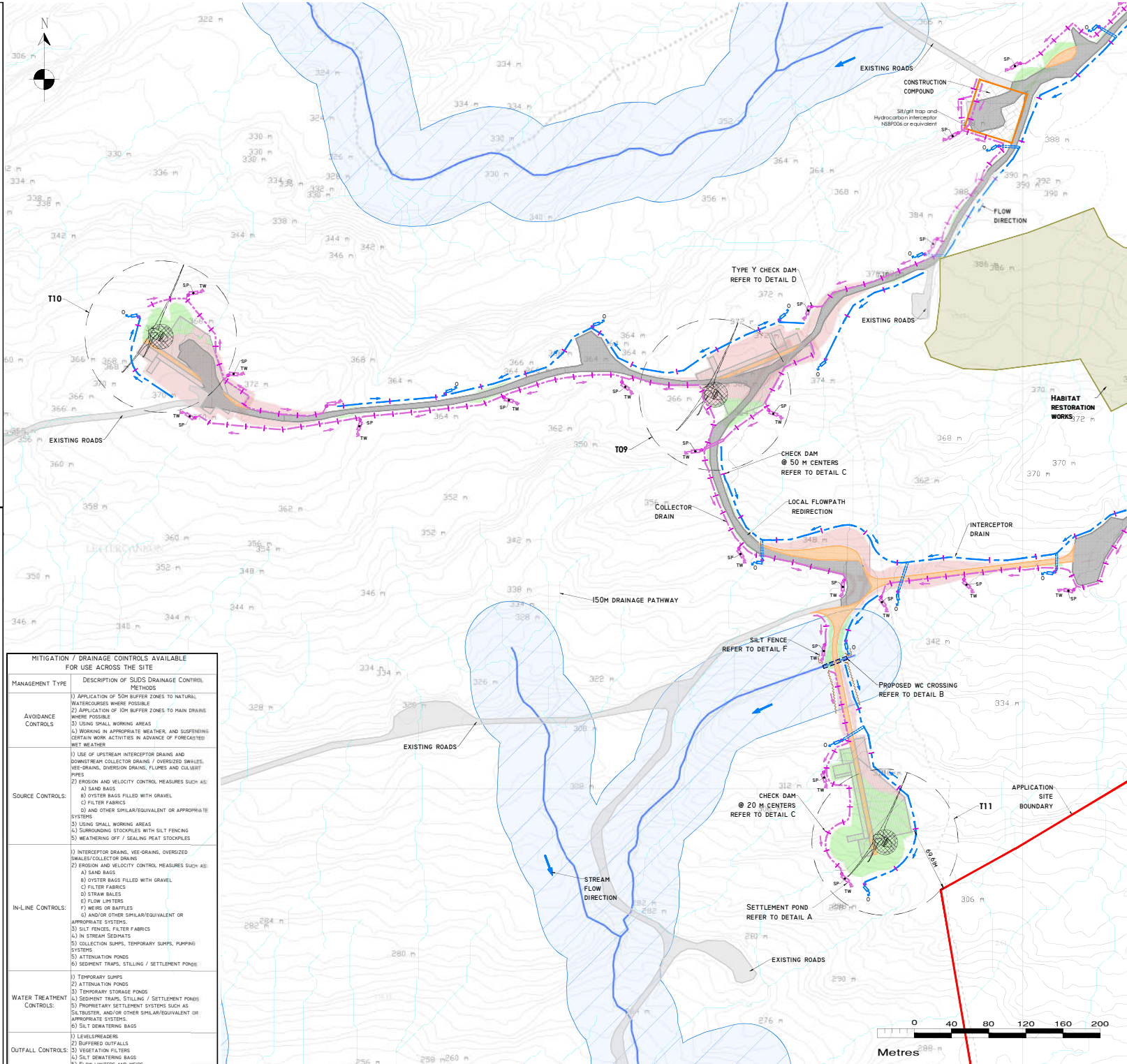
1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. STORMWATER BASEFLOWS TO BE ESTIMATED AND, IF NECESSARY, TO BE STORED ON SITE. THE LEVEL OF SLT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SLT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SLT FENCES, STRAW BARRIERS, OR SIMILAR OR ADDITIONAL MEASURES TO PREVENT EXCESSIVE FLOODING. FLOOD CONTROL SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SLODS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BARRIERS, FENCING, OR OTHER MEASURES TO BE USED TO PREVENT CHECK DAMS AND SLT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVISORY MEASURES TO BE REQUIRED TO PREVENT INCREASED SLT 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 DIRECTOR ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.

7. WHERE POSSIBLE, A BUFFER ZONE OF $\geq 20m$ TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROMOTED BY EXISTING TRUCK SPALLS.
8. BATTERS OF ALL PROPOSED SLOPES / DITCHES TO HAVE A SLOPE OF BETWEEN 1:1.5 TO 1:2 DEPENDING UPON DEPTH OF SNALE/DITCH AND WILL BE LEFT TO REVEGETATE.
9. TRACK SIDE SLOPES / DITCHES TO BE SHALLOW WITH MODERATE BATTERS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO PREVENT SCOURING AND TO PREVENT SILT FROM ENTERING SILT CONTAINMENT. WHERE NECESSARY THESE ARE BEING DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
10. SILT TRAPS AND POND SIZES TO BE DETERMINED FOR EACH OF THE AT TURBINE BASES AND HAND STAND AREAS. POND SIZES DEPEND ON THE COEFFICIENT AND THE SETTING SPEED. POND SIZES FOR VARIOUS CATCHMENT AREAS ARE SHOWN IN DRAWING D50.
11. STRAIN BARRS / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN STABLE VEGETATION HAS ESTABLISHED.
12. SILT FENCES TO BE PROVIDED ALONG ANY EXISTING WATERCOURSE WHERE THERE ARE DISCHARGES WITHIN $\leq 150m$ OF EDGE OF ANY DITCH / DRAIN / EMBANKMENT CHANNEL.

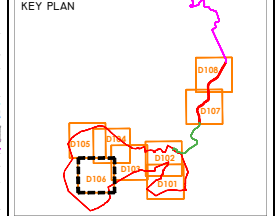
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT "SOD" OR "SCRAM") FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATIVE SWALES 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 AVAILABLE LOGICALLY 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 APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY MONITORED FOR AN INDICATION OF ANCHORING OF DAMS TO BE MAINTAINED DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAMS TO BE REMOVED AND REPLACED SUBSEQUENT TO THE CONSTRUCTION PHASE.
17. LONGITUDINAL PROGRESSION OF CHECK DAMS WILL BE DEPENDENT UPON SLOPE OF THE SLOPE.
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 FILLED AT A LATER DATE (POST CONSTRUCTION) WITH THE SAND AND GRAVEL REMOVED FROM THE SLOPE. THE SAND AND GRAVEL MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
19. OIL FUEL SHOULD BE STORED WITHIN BUNDLED CONTAINMENT STRUCTURES.
20. SITE BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.



- | DRAWINGS LEGEND: | |
|------------------|---------------------------------------|
| | RIVERS/STREAMS (INC. - WATERCOURSE) |
| | RIVERS/STREAMS SLOW BUFFER |
| | LAKES |
| | LAKES SLOW BUFFER |
| | STREAM FLOW DIRECTION |
| | DRAINAGE FLOW PATHTWAYS (DOWN SLOPE) |
| | LOCAL FLOODPLAIN REDIRECTION |
| | UPSTREAM INTERCEPTOR FLOW |
| | SHOULDER/CONSTRAINT/CORRIDOR DRAIN |
| | DIRECTION OF FLOW |
| | SILT FENCES |
| | DOVE/STRIPE SILT FENCES |
| | SETTLEMENT POND - LEVEL SPREADER |
| | CHECK DAM TYPE A |
| | CHECK DAM TYPE B |
| | PROPOSED MC CROSSING |
| | EXISTING MC CROSSING |
| | INTERCEPTOR DITCH CULVERT |
| | COLLECTOR DITCH CULVERT |
| | OUTLET AND FLOW DISCHARGE |
| | TREATED WATER DISCHARGE |
| | SETTLEMENT FUND |
| | SEMI-NATURAL VEGETATION |
| | SKALD / FILTER BED / RECREATORY SP |
| | TEMPORARY PAVING SLAB |
| | ROAD / DRIVE / DRIVEWAY / ROAD |
| | APPLICATION SITE BOUNDARY |
| | EXISTING LEASE BOUQUETTE BOUNDARY |
| | EXISTING ROW COLLECTOR BOUNDARY |
| | EXISTING GROUND SURFACE |
| | GROUND CONTOUR (2' IN INTERVAL) |
| | TURBINE AND SUMP AREA |
| | PROPOSED HARDCORED AREAS |
| | EXISTING ROADS PROPOSED TO BE UNPAVED |
| | EXISTING ROADS |
| | HARDSTAND |
| | SUBSTATION |
| | CONSTRUCTION COMPOUND |
| | BORROW PIT |
| | CUT AREA |
| | FILL AREA |
| | HABITAT RESTORATION WORKS |

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Revisions			



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Client:	ØRSTED
Job:	PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: DI06	
Drawing No: P1585-0-0524-A1-DI06-00D	
Sheet Size: A1	Project No.: P1585-0
Scale: 1:2,000 (A1)	Drawn By: GA
Date: 07/05/2024	Checked By: MC

POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, EROSION 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 DENATURING 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 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 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 DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

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

REFUELLING

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

CONCRETE

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

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

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

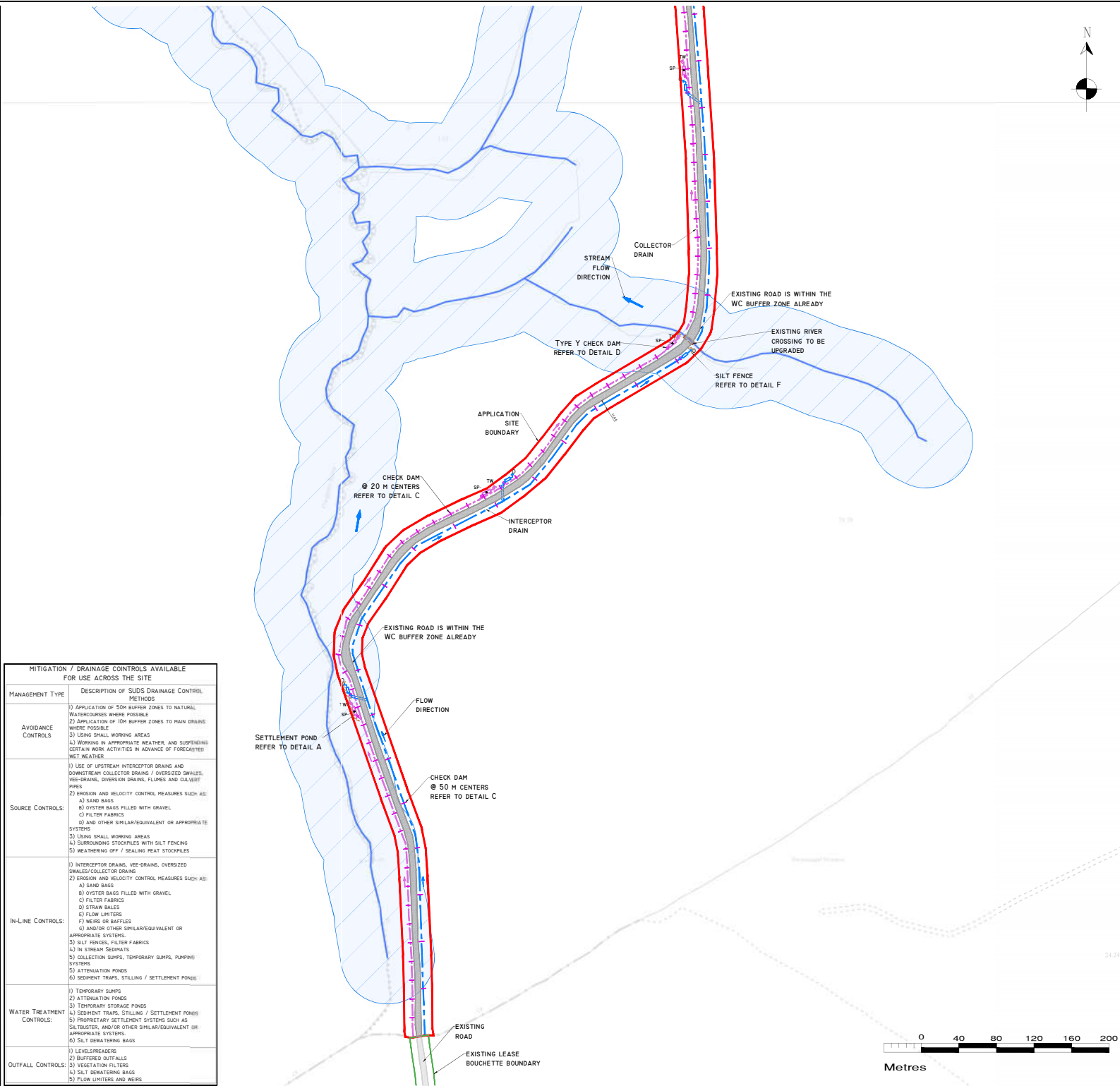
CONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDLED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.

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.

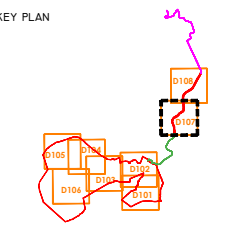
DRAINAGE NOTES:

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. STRAW BALE/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 SILTTRUSTER 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 DRAIN 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. SLOPES 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 POND 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 / EPIHEMAL CHANNELS.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER GREAT "SOO" OR "SOOBY" 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 UP OF LOCALLY WORK / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-100MM CLEAN STONE. ON SLOPING SITUATIONS OF THE ACCESS TRACKS, LONG 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 EXISTING 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 WASHED OUT AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDESTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE PERMANENT 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:	3) USING SMALL WORKING AREAS
	4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER.
IN-LINE CONTROLS:	5) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, OVERSIZED DRAINS, FLUMES AND DISCHARGE PIPES
	6) 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:	7) USING SMALL WORKING AREAS
	8) SURROUNDING STOCKPILES WITH SILT FENCING
OUTFALL CONTROLS:	9) 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 RAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	3) SILT FENCES, FILTER FABRICS
	4) IN STREAM SEDIMENTS
	5) COLLECTION SUPPS, TEMPORARY SUPPS, PUMPHO SYSTEMS
	6) ATTENUATION PONDS
	7) SEDIMENT TRAPS, STILLING / SETTLEMENT POND
	8) TEMPORARY SUPPS
	9) ATTENUATION PONDS
	10) TEMPORARY STORAGE PONDS
	11) SEDIMENT TRAPS, STILLING / SETTLEMENT POND
	12) PROPERLY SETTLEMENT SYSTEMS SUCH AS SILTTRUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS
	13) SILT DRAINING BAGS
	1) LEVELHEADERS
	2) BUFFERED OUTFALLS
	3) VEGETATION FILTERS
	4) SILT DRAINING BAGS
	5) FLOW LIMITERS AND WEIRS



- DRAWING LEGEND:
- RIVERS/STREAMS (INC. WATERCOURSE)
 - RIVERS/STREAMS 50M BUFFER
 - STREAM FLOW DIRECTION
 - UPSTREAM INTERCEPTOR DRAIN
 - SWALES/DOWNSTREAM COLLECTOR DRAIN
 - DIRECTION OF FLOW
 - SILT FENCES
 - SETTLEMENT POND - LEVEL SPREADER
 - CHECK DAM TYPE 'A'
 - CHECK DAM TYPE 'B'
 - EXISTING 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 SUPPLY
 - APPLICATION SITE BOUNDARY
 - EXISTING LEASE BOUQUETTE BOUNDARY
 - EXISTING ROW COLLIE BOUNDARY
 - EXISTING ROADS
 - EXISTING ROADS PROPOSED TO BE UPGRADED



POLLUTION PREVENTION NOTES:

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, EROSION 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 DENATURING 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 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 USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.

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

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

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

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

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

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

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

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

DRAINAGE NOTES:

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. GRADE 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 SILTTRUSTER 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 DRAIN TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAIN TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.
7. 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.
8. 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.
9. 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.
10. 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.
11. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COME WITHIN 15M OF EDGE OF ANY DITCH / DRAIN / EPIHEMAL CHANNELS.
12. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOO' OR '100MM') 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.
13. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
14. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WORK / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SITUATIONS OF THE ACCESS TRACKS, LONG 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.
15. 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.
16. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.
17. 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 VISIT POST CONSTRUCTION (POST COMPLETION OF THE TURBINE BASE AND HANDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
18. OIL FUEL SHOULD BE STORED WITHIN BUNDED CONTAMINANT STRUCTURES.
19. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE

MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE. 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE. 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUSTAINING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER. 5) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTION DRAINS / OVERSIZED SWALES, VEE-DRAINS, OVERFLOW DRAINS, FLUMES AND CULVERT PIPES 6) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OVERTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 7) USING SMALL WORKING AREAS 8) SURROUNDING STOCKPILES WITH SILT FENCING 9) WEATHERING OFF / SEALING PEAT STOCKPILES
SOURCE CONTROLS	1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OVERTER 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 SUPPS, TEMPORARY SUPPS, PUMP (H) SYSTEMS 6) ATTENUATION PONDS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT POND (H)
IN-LINE CONTROLS	1) TEMPORARY SUPPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT POND (H) 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTTRUSTER, SDO/ OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DENATURING BAGS 7) LEVELHEADERS 8) BUFFERED OUTFALLS 9) VEGETATION FILTERS 10) SILT DENATURING BAGS 11) FLOW LIMITERS AND WEIRS
WATER TREATMENT CONTROLS	
OUTFALL CONTROLS	

SETTLEMENT POND REFER TO DETAIL - A

CHECK DAM @ 50 M CENTERS REFER TO DETAIL C

CHECK DAM @ 20 M CENTERS REFER TO DETAIL C

TYPE Y CHECK DAM REFER TO DETAIL D

EXISTING ROW

COILLTE BOUNDARY

EXISTING ROAD

COLLECTOR DRAIN

EXISTING ROAD IS WITHIN THE WC BUFFER ZONE ALREADY

EXISTING RIVER CROSSING TO BE UPGRADED

EXISTING ROAD IS WITHIN THE WC BUFFER ZONE ALREADY

EXISTING RIVER CROSSING TO BE UPGRADED

STREAM FLOW DIRECTION

SILT FENCE REFER TO DETAIL F

INTERCEPTOR DRAIN

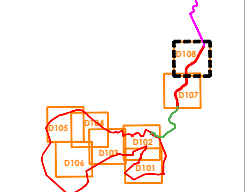
FLOW DIRECTION



DRAWING LEGEND:

- RIVERS/STREAMS (INC. WATERCOURSES)
- RIVERS/STREAMS 50M BUFFER
- STREAM FLOW DIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SILT FENCES
- SETTLEMENT POND - LEVEL SPREADER
- CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- EXISTING WC CROSSING
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- 50M-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
- PUMPING SUPP
- APPLICATION SITE BOUNDARY
- EXISTING LEASE BOUNDARY
- EXISTING ROW COILLTE BOUNDARY
- EXISTING ROADS
- EXISTING ROADS PROPOSED TO BE UPGRADED

KEY PLAN



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Client: ØRSTED

Job: PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY

Title: PROPOSED DRAINAGE LAYOUT

Figure No: D108

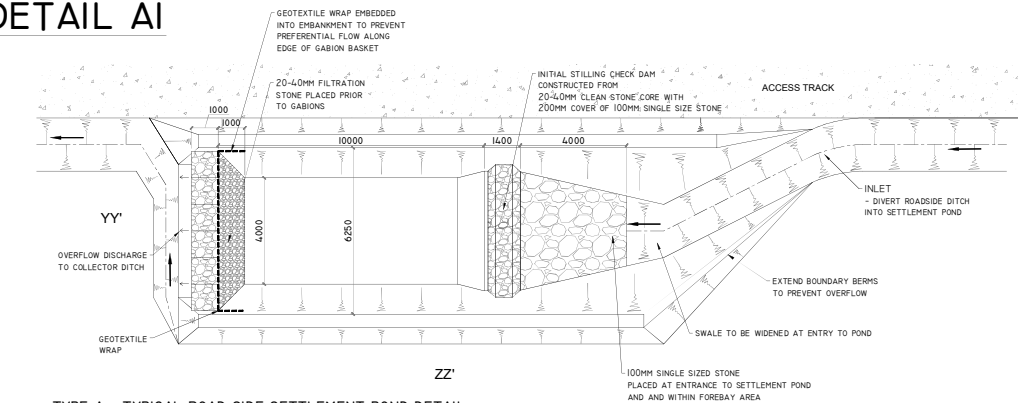
Drawing No: P1585-0-0524-A1-D108-00C

Sheet Size: A1 Project No: P1585-0

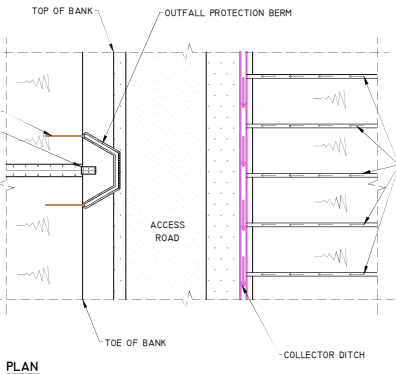
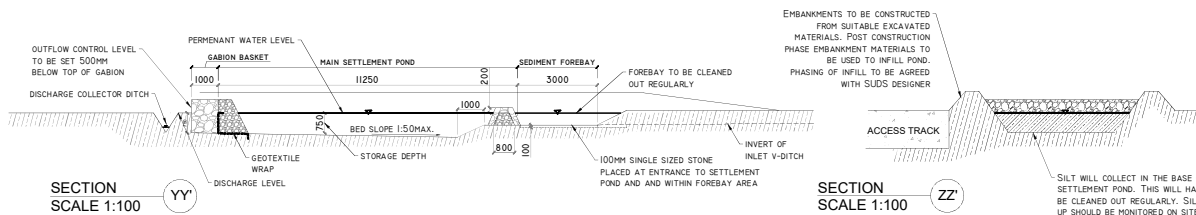
Scale: 1:2,000 (A1) Drawn By: GA

Date: 07/05/2024 Checked By: MG

DETAIL A1

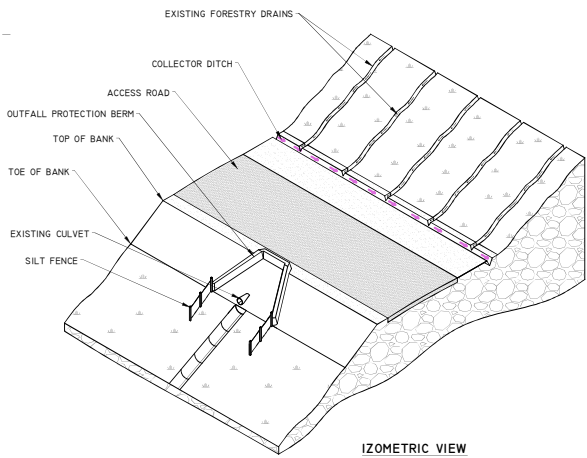


TYPE A - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



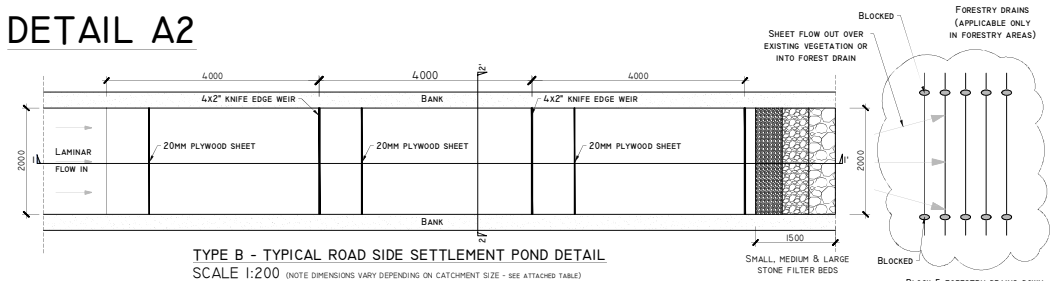
DETAIL B1

CULVERT - OUTFALL PROTECTION DETAIL

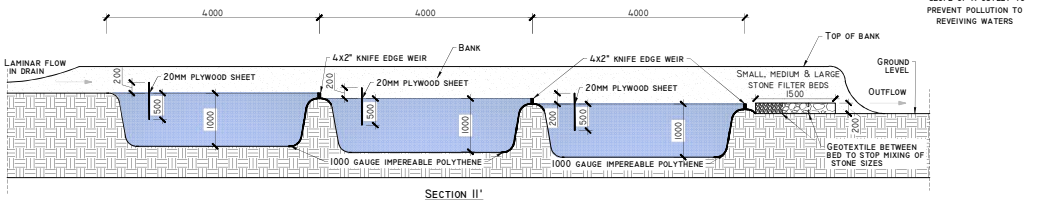


SCHEMATIC - NOT TO SCALE

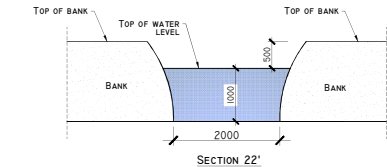
DETAIL A2



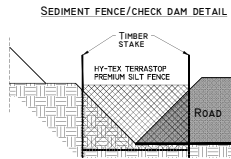
TYPE B - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL
SCALE 1:200 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



SECTION II'

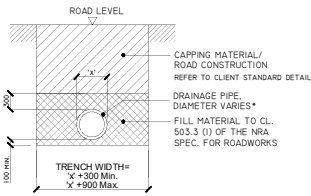


SECTION 22'



SEDIMENT FENCE/CHECK DAM DETAIL

DETAIL B



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

*WHERE SECTION 50 APPLIES, MINIMUM PIPE DIA WILL BE 900MM, WITH MIN 300MM PIPE EMBEDMENT

POND SIZE W [m] x L [m] x D [m]				TRACK/HARDSTAND CATCHMENT SIZE (m²)			BORROW PIT (m³)*
RETURN PERIOD	10 YRS	STORM DURATION		500	1000	2000	22609
6HR RETENTION FOR COARSE SILT	6 HRS	3.8 x 12.0 x 1 m	5.5 x 16.5 x 1 m	7.5 x 24.5 x 1 m	N/A		
12HR RETENTION FOR MEDIUM SILT	12 HRS	4.5 x 14.0 x 1 m	6.5 x 19.2 x 1 m	8.5 x 29.5 x 1 m	N/A		
24HR RETENTION FOR FINE SILT	24 HRS	5.2 x 16.5 x 1 m	7.5 x 23 x 1 m	10 x 34.5 x 1 m	50 x 175 x 1 m**		

*INCLUDES O/W INFLOW
**COMBINATIONS OF 2 OR 3 SMALLER POND MAY BE USED

27/02/24 Planning

Date Description


Revisions

MG

Chkd

MG

Signed



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ØRSTED

Job:

PROPOSED REPOWERING OF KILGARVAN
WIND FARM, CO. KERRY

Title:

DRAINAGE DETAILS I

Figure No:

D50I

Drawing No:

P1585-0-0224-A1-D50I-00A

Sheet Size:

A1

Project No.:

P1585-0

Scale:

as shown (A1)

Drawn By:

MG/GA

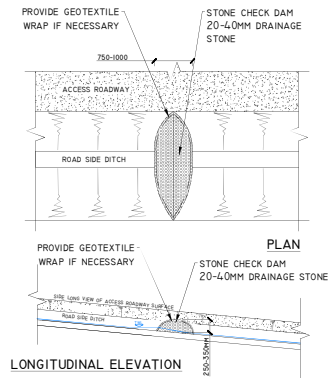
Date:

07/02/2024

Checked By:

MG

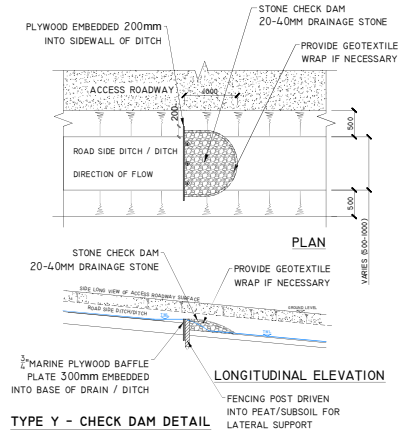
DETAIL C



TYPE X - CHECK DAM DETAIL

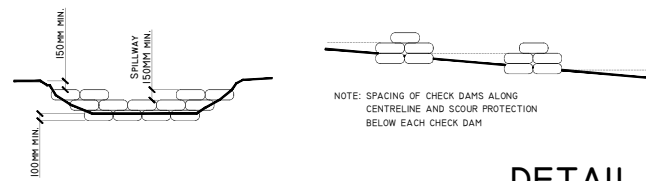
SCALE 1:50

DETAIL D

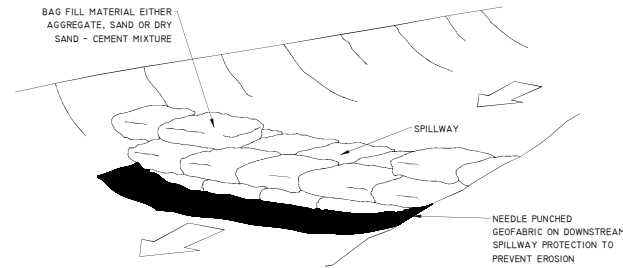


TYPE Y - CHECK DAM DETAIL

SCALE 1:100



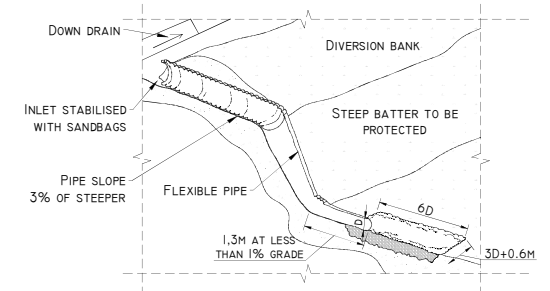
DETAIL CI



DETAIL G

TYPICAL PIPE SPILLWAY DETAIL

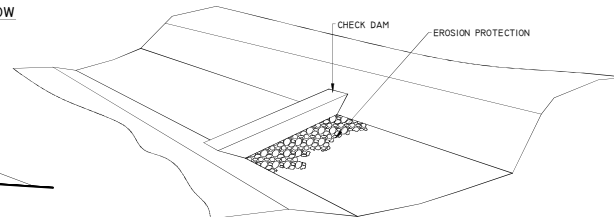
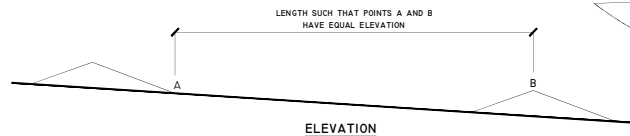
SCHEMATIC - NOT TO SCALE



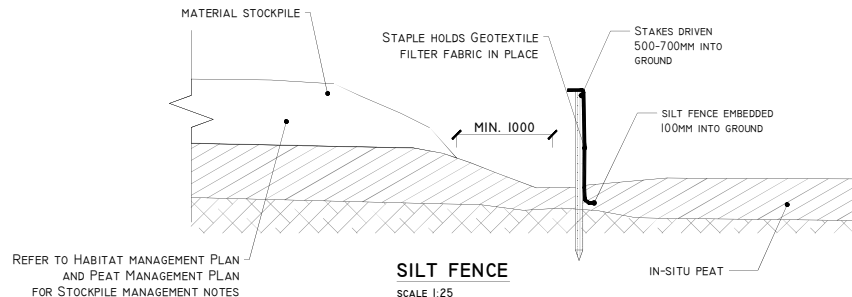
DETAIL C2

TEMPORARY CHECK DAM / SETTLEMENT POND OVERFLOW

SCHEMATIC - NOT TO SCALE



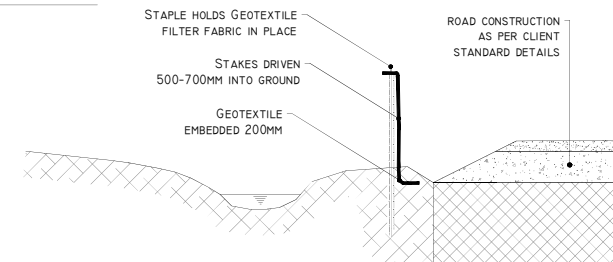
DETAIL F-I



SILT FENCE

SCALE 1:25


DETAIL F-II



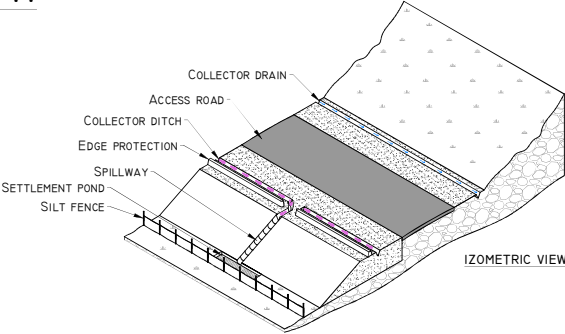
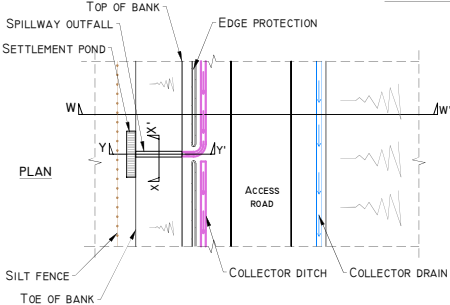
SILT FENCE FOR WATERCOURSE PROTECTION

SCALE 1:25

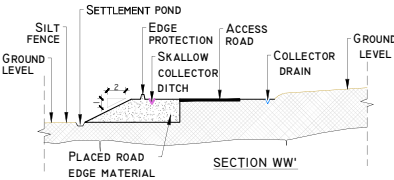
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Date	Description	Chkd	Signed
Revisions			
 22 Lower Main St Dungarvan Co. Waterford Ireland tel: +353 (0) 58 44122 tel: +353 (0) 58 44244 email: info@hydroenvironmental.ie web: www.hydroenvironmental.ie			
Client:	ØRSTED		
Job:	PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY		
Title:	DRAINAGE DETAILS 2		
Figure No:	D502		
Drawing No:	P15850-0224-A1-D502-00A		
Sheet Size:	A1	Project No.:	P1585-0
Scale:	as shown (A1)	Drawn By:	MG/GA
Date:	07/02/2024	Checked By:	MG

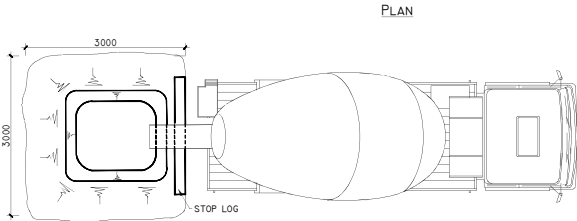
DETAIL H



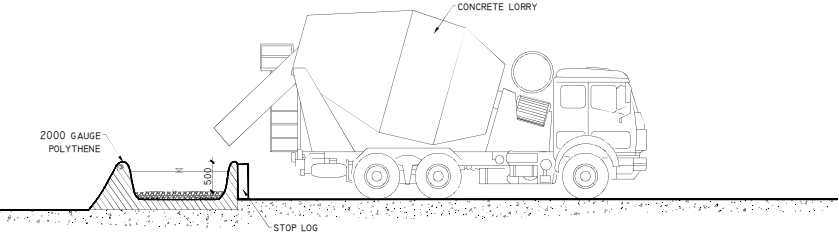
SPILLWAY OUTFALL PLAN
SCHEMATIC - NOT TO SCALE



TEMPORARY CONCRETE WASH OUT PIT
SCALE 1:50



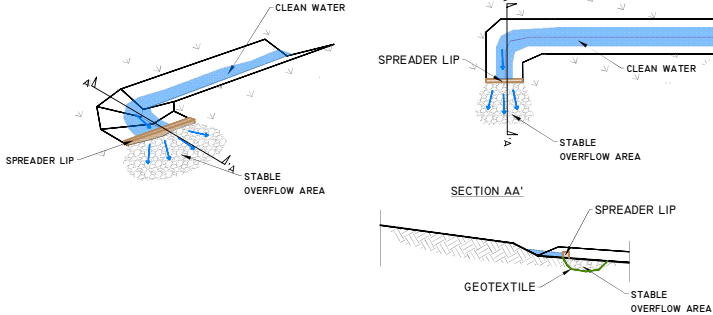
ELEVATION



DETAIL I

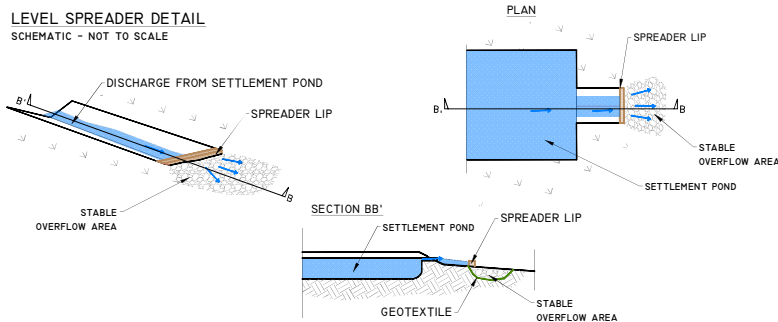
DETAIL J-1

LEVEL SPREADER DETAIL
SCHEMATIC - NOT TO SCALE



DETAIL J-2

LEVEL SPREADER DETAIL
SCHEMATIC - NOT TO SCALE



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27/02/24	Planning	MG	MG
Date	Description	Chkd	Signed
Revisions			



Client:	ØRSTED
Job:	PROPOSED REPOWERING OF KILGARVAN WIND FARM, CO. KERRY
Title:	DRAINAGE DETAILS 3
Figure No:	D503
Drawing No:	P1585-0-0124-A1-D503-00A
Sheet Size:	A1
Scale:	as shown (A1)
Date:	07/02/2024
Drawn By:	MG/GA
Checked By:	MG