

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

4. WATER CONTAINING SILT WILL NOT BE 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 WITH 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.

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.

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

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.

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.

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.

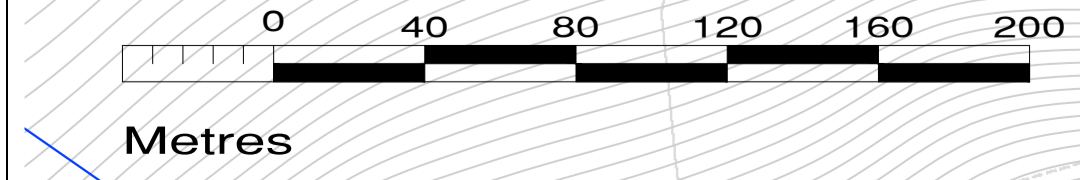
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

1. 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 SILT/ SILT 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/STUR SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.

3. SLOPE STABILIZATION AND EROSION CONTROL MEASURES TO BE TAKEN 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 EROSION ENVIRONMENTAL DAMAGE OR EXCESSIVE SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.

10. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERBODIES. SEE NOTES ON POLLUTION PREVENTION.
11. INTERCEPTOR DRAINS TO BE LOCATED UPSTREAM OF THE COLLECTION 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.
12. 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.
13. WHERE POSSIBLE, A BUFFER ZONE OF $\geq 20\text{m}$ TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVERLAND DISCHARGES ARE PROPOSED FROM ALL "PROPOSED SWALES".
14. 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.
15. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE SLOPES. TO PREVENT EROSION, ALL EXCAVATIONS AND 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.
16. SETTLEMENT POND AND SILT TRAPS TO BE CONSTRUCTED FOR SILT REMOVAL FROM TURBINE BASES AND WARD HAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501.
17. STRAW BALES / OR SIMILAR SILT FENCES TO BE USED ALONG AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
18. SILT FENCE LOCATIONS TO BE DETERMINED BY WATERCOURSE WHERE WORKS COME WITHIN $<15\text{m}$ OF EDGE OF ANY DITCH / EMBANKMENT CHANNELS.
19. SLOPES OF THE SWALES / DITCHES TO BE PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (FEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND RE-USE TO RE-VEGETATE EXCAVATION SLOPES OR PROTECTED MOUNDINGS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
20. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM.
21. 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 SLOPES OF THE DITCHES, CHECK DAMS TO BE CONSTRUCTED BY BUILDING FROM WASHING AWAY DURING THE PLACEMENT OF 100m STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
22. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY MONITORED FOR ANY DRAINING INTO THE TURBINE BASES AND HAND AREAS. DURING THE CONSTRUCTION PHASE, WHERE CHECK DAMS TO BE COVERED CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
23. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDING UPON LONGITUDINAL GRADIENT OF SWALE.
24. LOCATION OF ALL 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 HANDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
25. FUEL WILFIRE PREVENTION MEASURES TO BE INSTALLED TO PROTECT ALL SETTLEMENT POND AND SILT TRAPS FROM BURNED CONTAMINATION STRUCTURES.
26. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.



DRAWING LEGEND :

- RIVERS/STREAMS
- RIVERS/STREAMS 50M BUFFER
- LAKES
- LAKE 50M BUFFER
- STREAM FLOW DIRECTION

EXISTING DRAINAGE

- UPSTREAM INTERCEPTOR DRAIN*
- SWALES/DOWNSTREAM COLLECTOR DRAIN
- DIRECTION OF FLOW
- SILT FENCES*
- LEVEL SPREADER
- SETTLEMENT POND - VEGETATION FILTER
- LEVEL SPREADER
- CHECK DAM "TYPE A"/SILT TRAP*
- CHECK DAM "TYPE B"/SILT TRAP
- PROPOSED WC CROSSING CULVERTS/BRIDGES
- EXISTING CULVERTS PROPOSED TO BE EXTENDED
- PROPOSED NEW CULVERTS
- EXISTING CULVERTS TO BE REMOVED
- COLLECTOR DITCH CULVERT
- WATERCOURSE DRAIN PROTECTION BERM
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SP SETTLEMENT POND
- SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
- VS VS SETTLEMENT POND NUMBER
- SP-A3 SETTLMENT PUMP
- PUMPING SUMP
- GROUND SLOPE DIRECTION

**PROPOSED WF CONSTRUCTION DRAINAGE
(*COMPLETED IN ADVANCE OF ACCESS ROAD WORKS)**

- EIAR SITE BOUNDARY
- EXISTING GROUND SURFACE MINOR CONTOUR (1 M INTERVAL)
- PROPOSED ROAD UPGRADE
- PROPOSED NEW ROADS
- PROPOSED ROAD UPGRADE
- PROPOSED NEW ROADS
- EXISTING PUBLIC ROAD
- SUBSTATION
- PROPOSED BORROW PIT
- PERMITTED BORROW PIT
- BALLYVOUSKILL 220KV SUBSTATION
- KNOCKNAMORK PERMITTED LAYOUT
- CUT AREA
- FILL AREA

KEY PLAN

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Revisions

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PROPOSED SUBSTATION, UNDERGROUND CABLING, ACCESS ROADS TO KNOCKNAMORK RENEWABLE ENERGY DEVELOPMENT

Title:

PROPOSED DRAINAGE LAYOUT

Figure No:

D104

Drawing No: P1421-I-0722-A1-D104-00A

Sheet Size: A1

Scale: 1:2,000 (A1)

Date: 15/07/2022

Project No.: P1421-I

Drawn By: GD

Checked By: MG