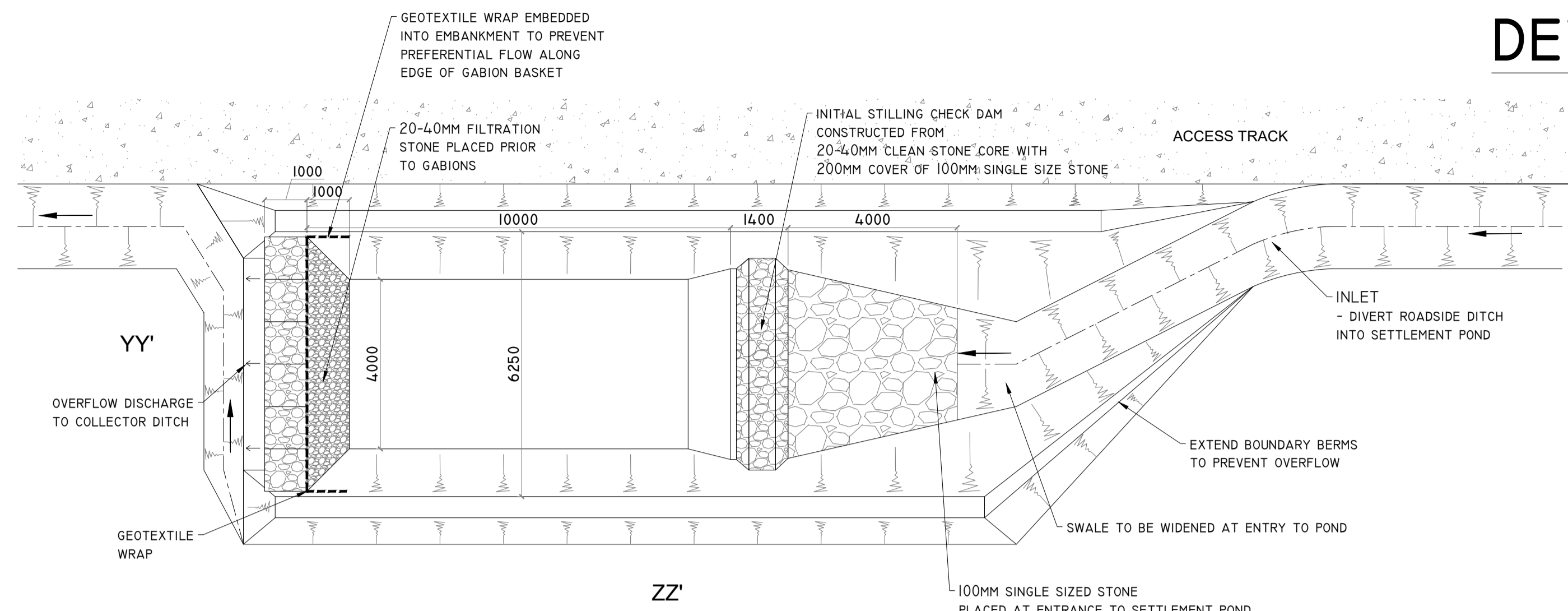
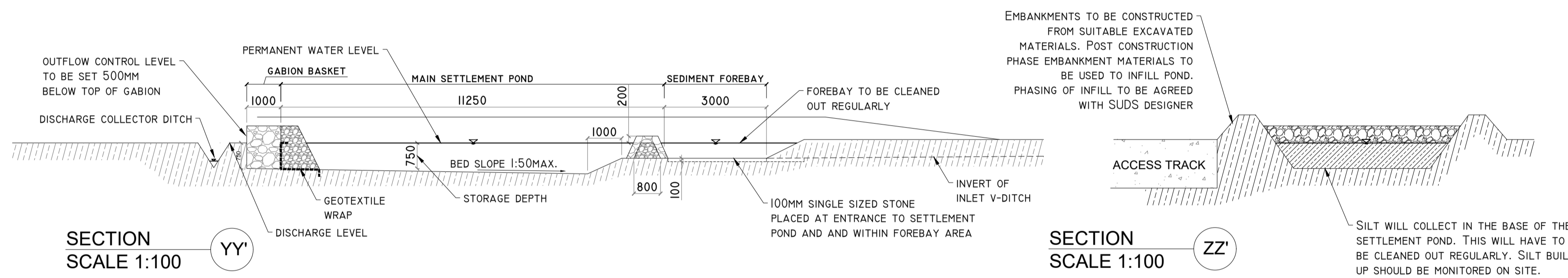


# DETAIL A1



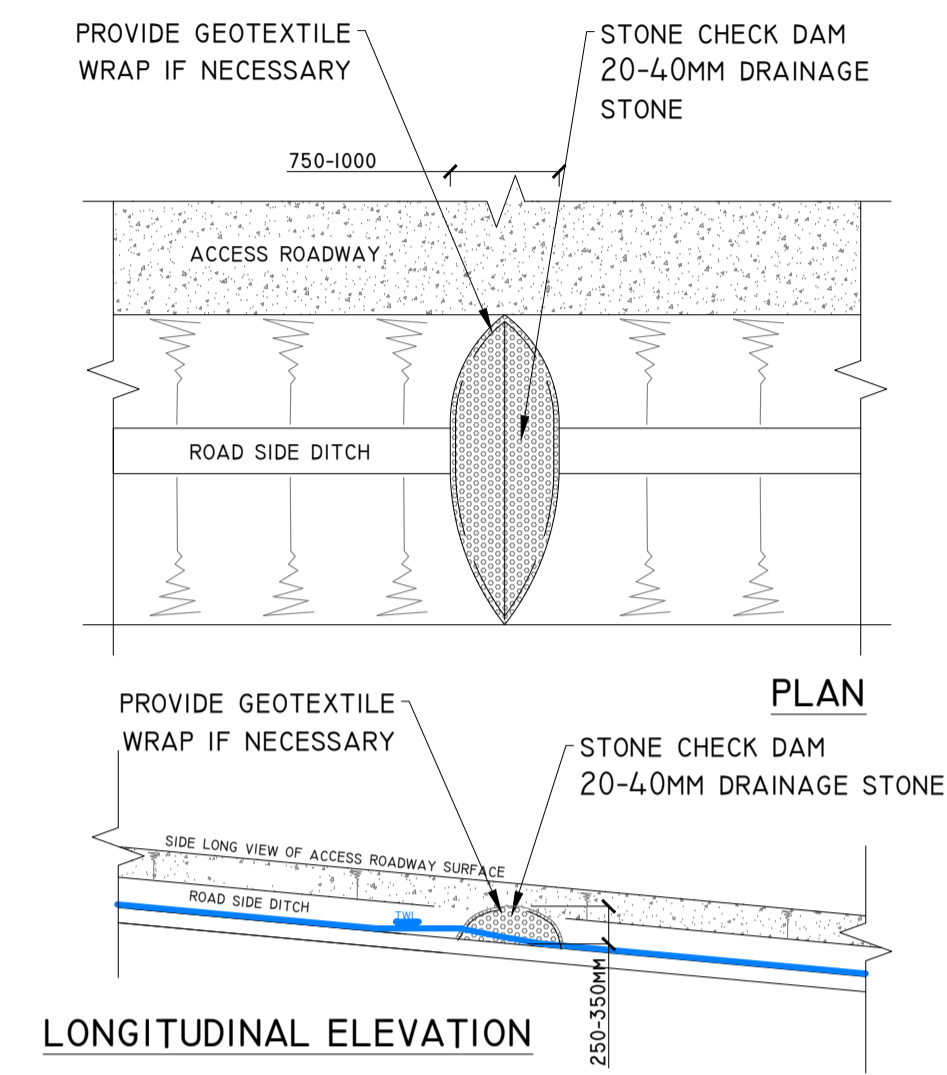
**TYPE A - TYPICAL ROAD SIDE SETTLEMENT POND DETAIL**  
SCALE 1:100 (NOTE DIMENSIONS VARY DEPENDING ON CATCHMENT SIZE - SEE ATTACHED TABLE)



**SECTION YY'**  
SCALE 1:100

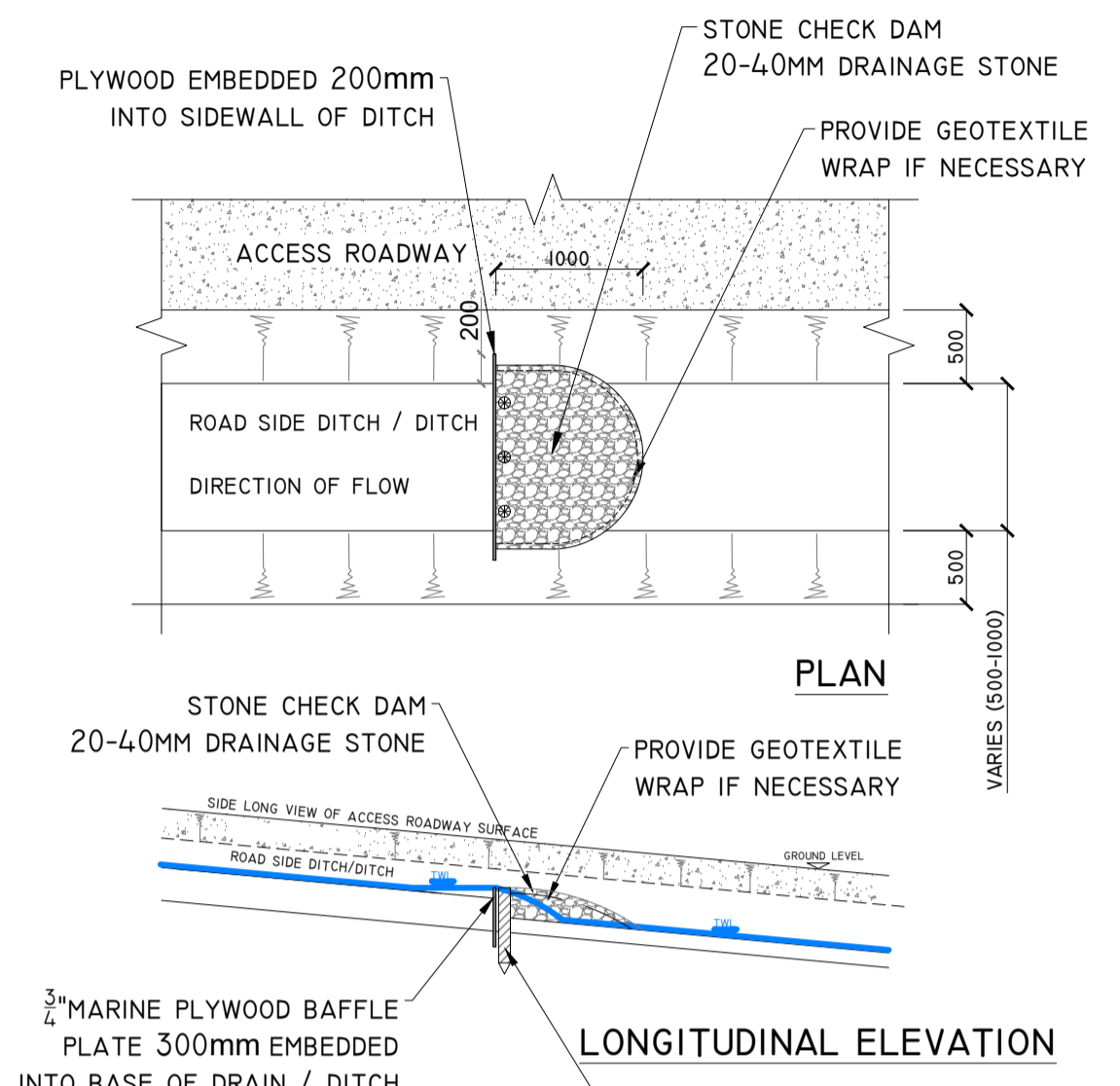
**SECTION ZZ'**  
SCALE 1:100

# DETAIL C



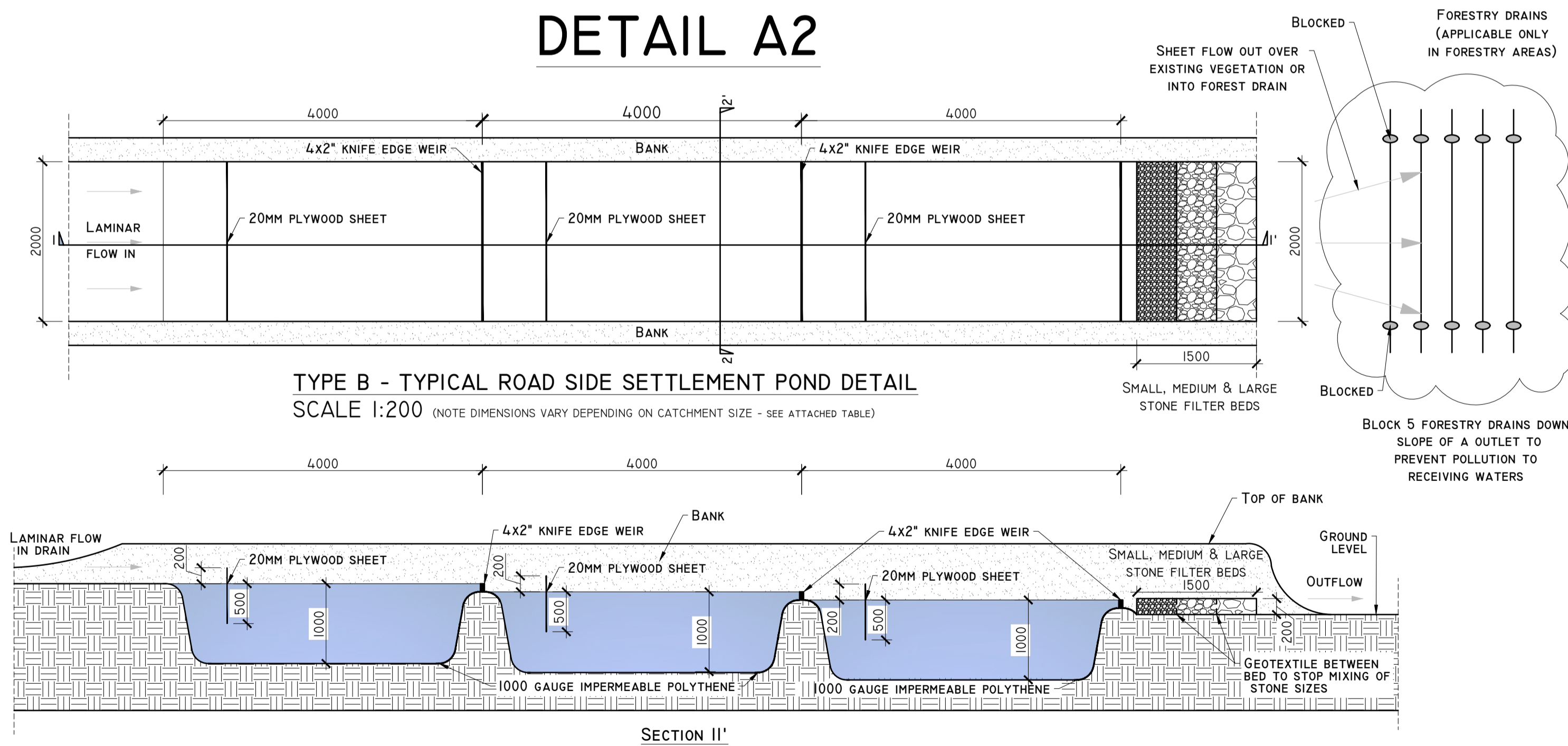
**TYPE X - CHECK DAM DETAIL**  
SCALE 1:50

# DETAIL D



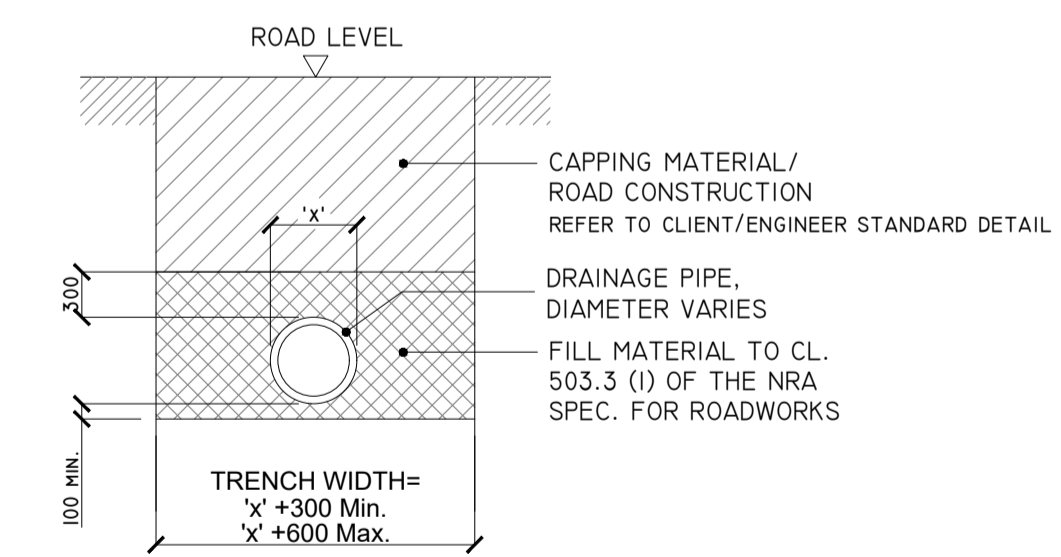
**TYPE Y - CHECK DAM DETAIL**  
SCALE 1:50

# DETAIL A2



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

# DETAIL B



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

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3. DO NOT SCALE OFF THIS DRAWING. FIGURED METRIC DIMENSIONS ONLY SHOULD BE TAKEN OFF THIS DRAWING.

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Job:

Title: **DRAINAGE DETAILS I**

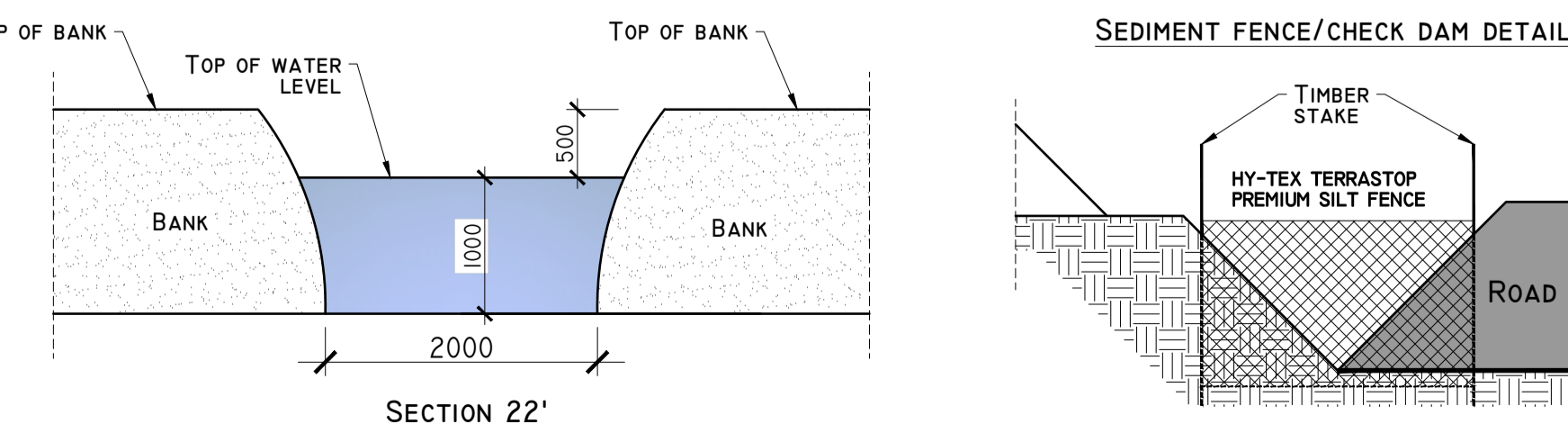
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Drawing No: P1617-1-0426-A1-D501-RevB

Sheet Size: A1 Project No.: P1617-1

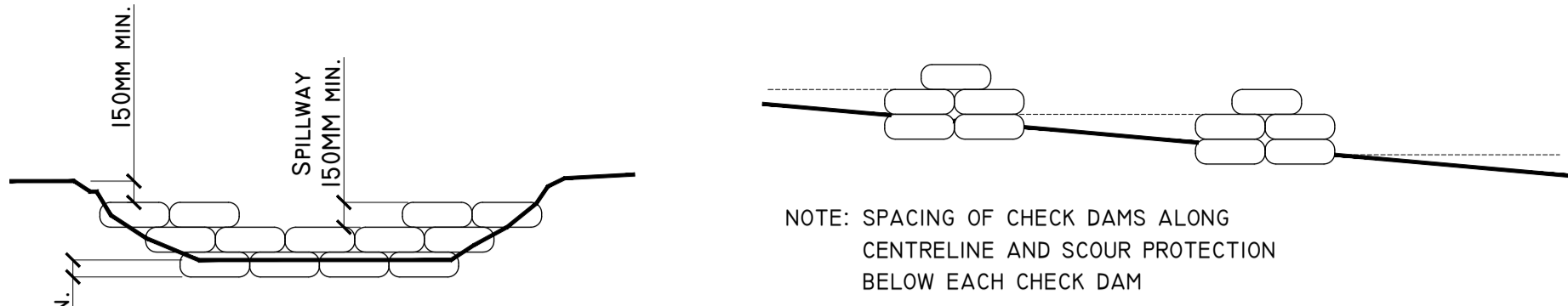
Scale: as shown (A1) Drawn By: GA

Checked By: M.G.



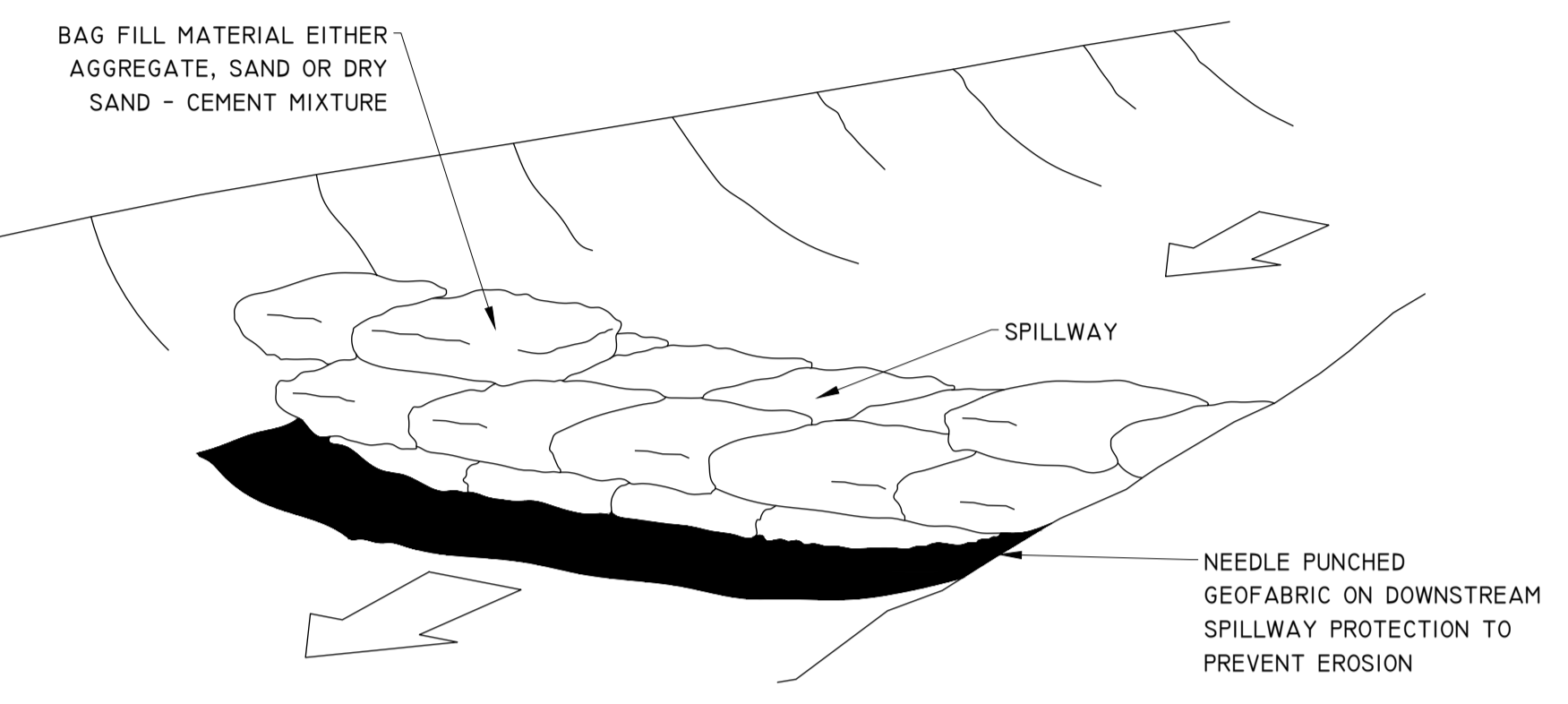
RETURN PERIOD	POND SIZE W [M] x L [M] x D [M]			CATCHMENT SIZE (M <sup>2</sup> )		
	10 YRS	STORM DURATION	500	1000	2000	
6HR RETENTION FOR COARSE SILT	6 HRS	2.6 x 7.8 x 1 M	3.6 x 11.2 x 1 M	5.1 x 15.8 x 1 M		
11HR RETENTION FOR MEDIUM SILT	11 HRS	3.8 x 12.0 x 1 M	5.5 x 16.5 x 1 M	7.7 x 23.6 x 1 M		
24HR RETENTION FOR FINE SILT	24 HRS	6.5 x 20.0 x 1 M	9.0 x 28.8 x 1 M	12.8 x 40.5 x 1 M		

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NOTE: SPACING OF CHECK DAMS ALONG CENTRELINE AND SCOUR PROTECTION BELOW EACH CHECK DAM

### DETAIL C1

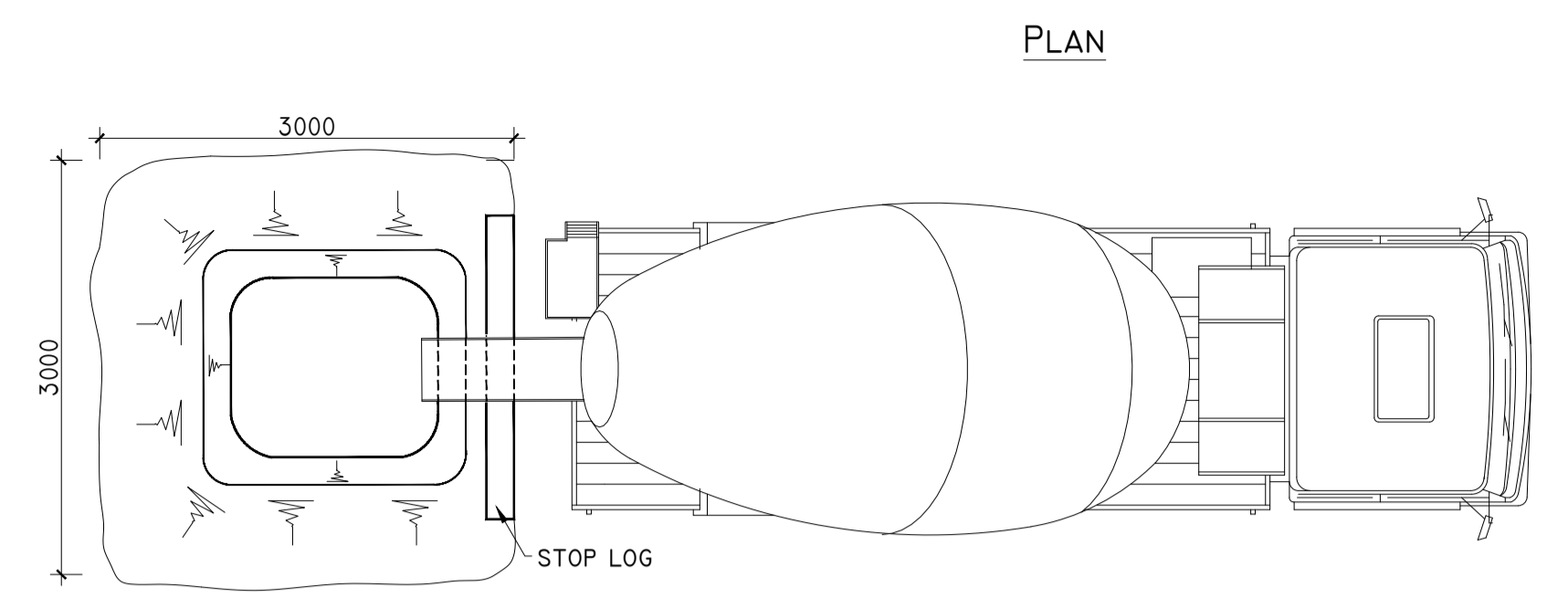


TEMPORARY CHECK DAM / SETTLEMENT POND OVERFLOW  
 SAND FILLED BAG CONSTRUCTION  
 SCHEMATIC - NOT TO SCALE

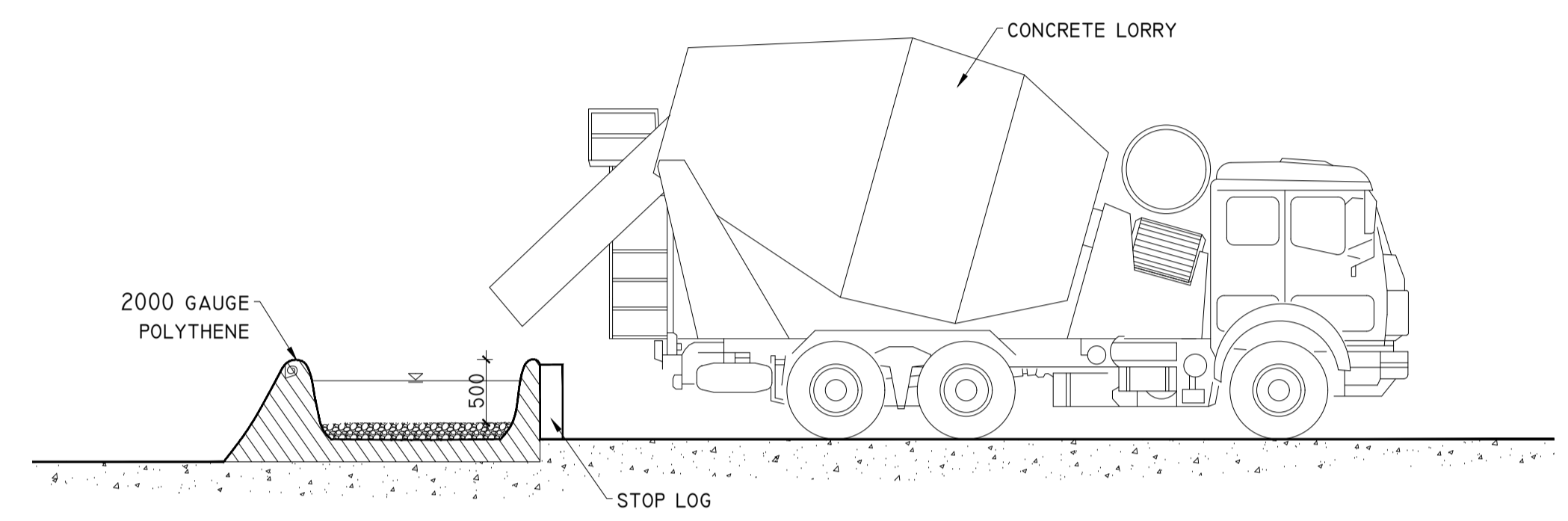
### DETAIL F

#### TEMPORARY CONCRETE WASH OUT PIT

SCALE 1:50



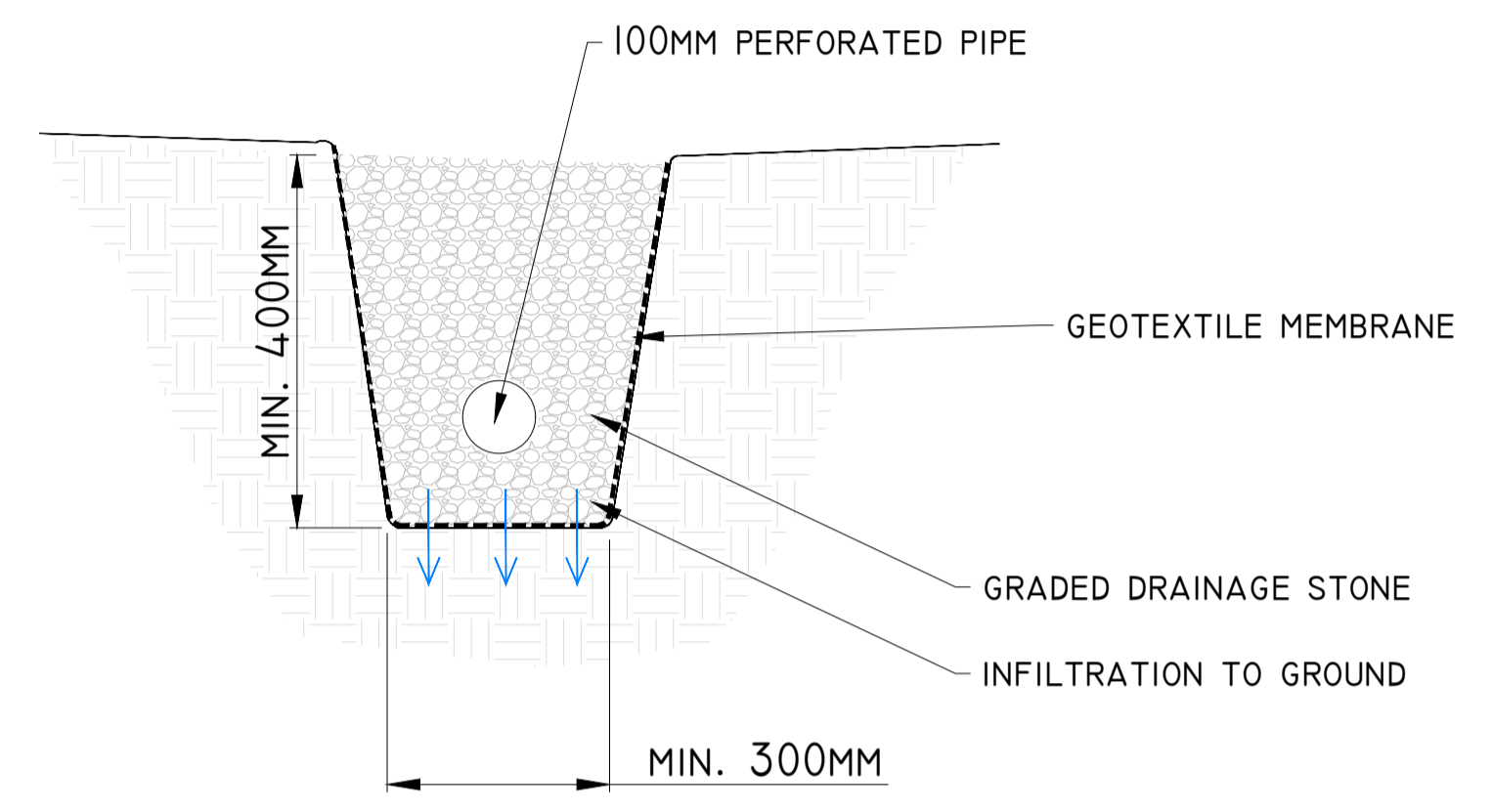
#### ELEVATION



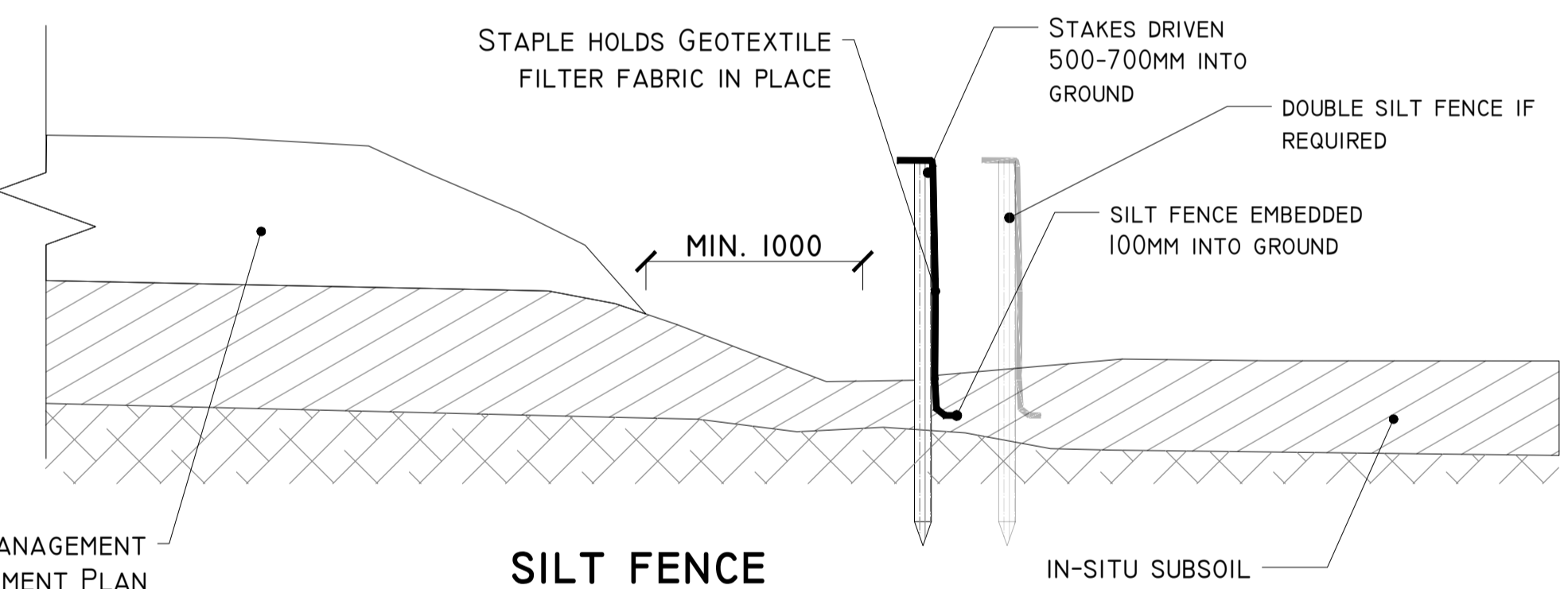
### DETAIL H

#### FILTER DRAIN DETAIL

SCALE 1:50



### DETAIL E1



#### SILT FENCE

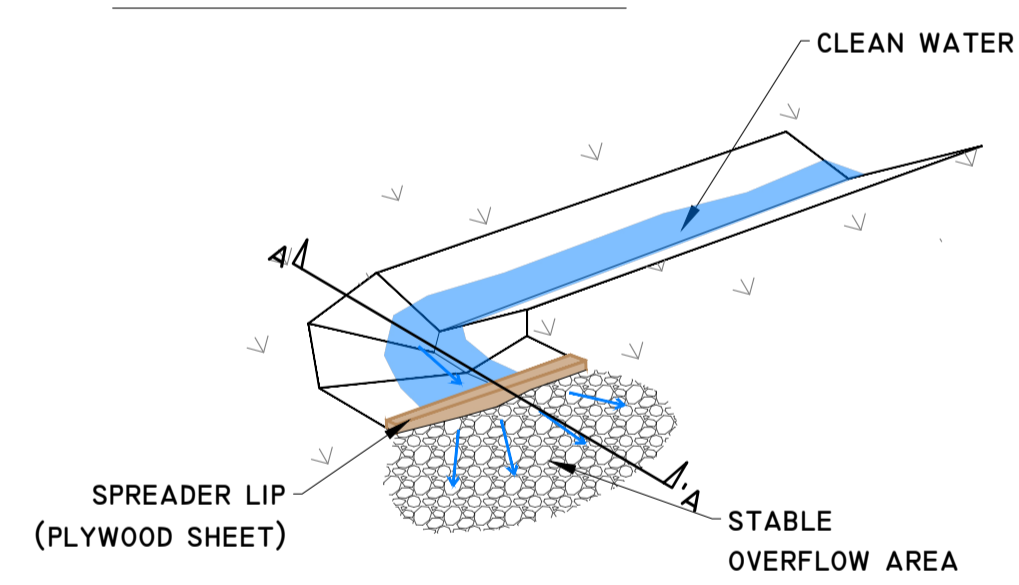
SCALE 1:25

REFER TO BIODIVERSITY MANAGEMENT AND ENHANCEMENT PLAN AND PEAT AND SPOIL MANAGEMENT PLAN FOR STOCKPILE MANAGEMENT NOTES

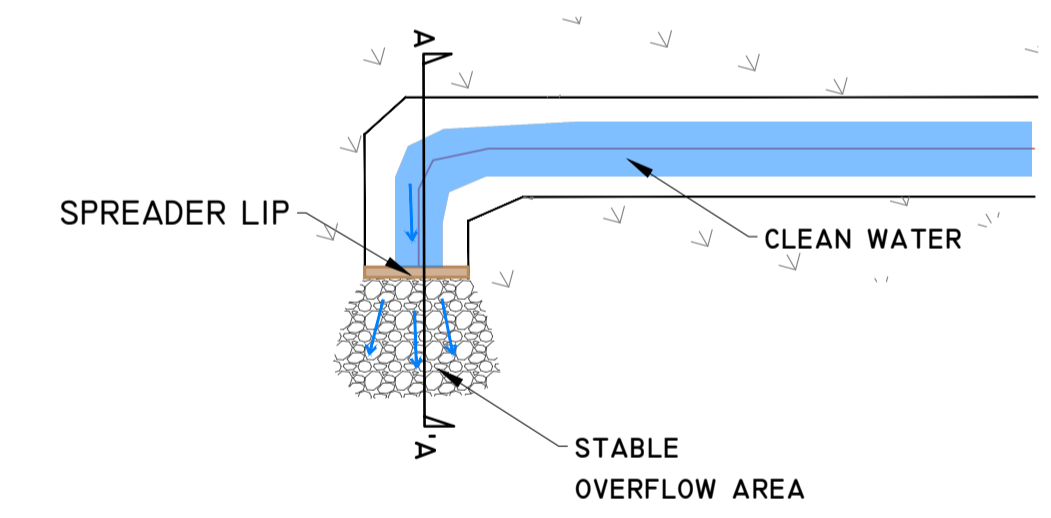
### DETAIL G1

#### LEVEL SPREADER DETAIL

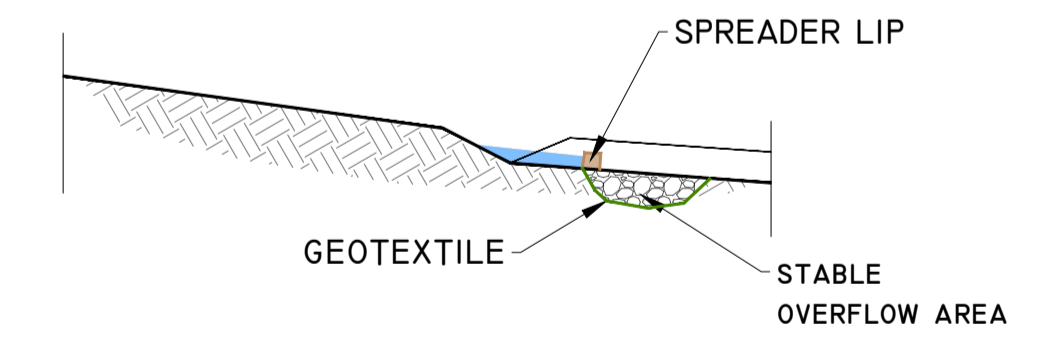
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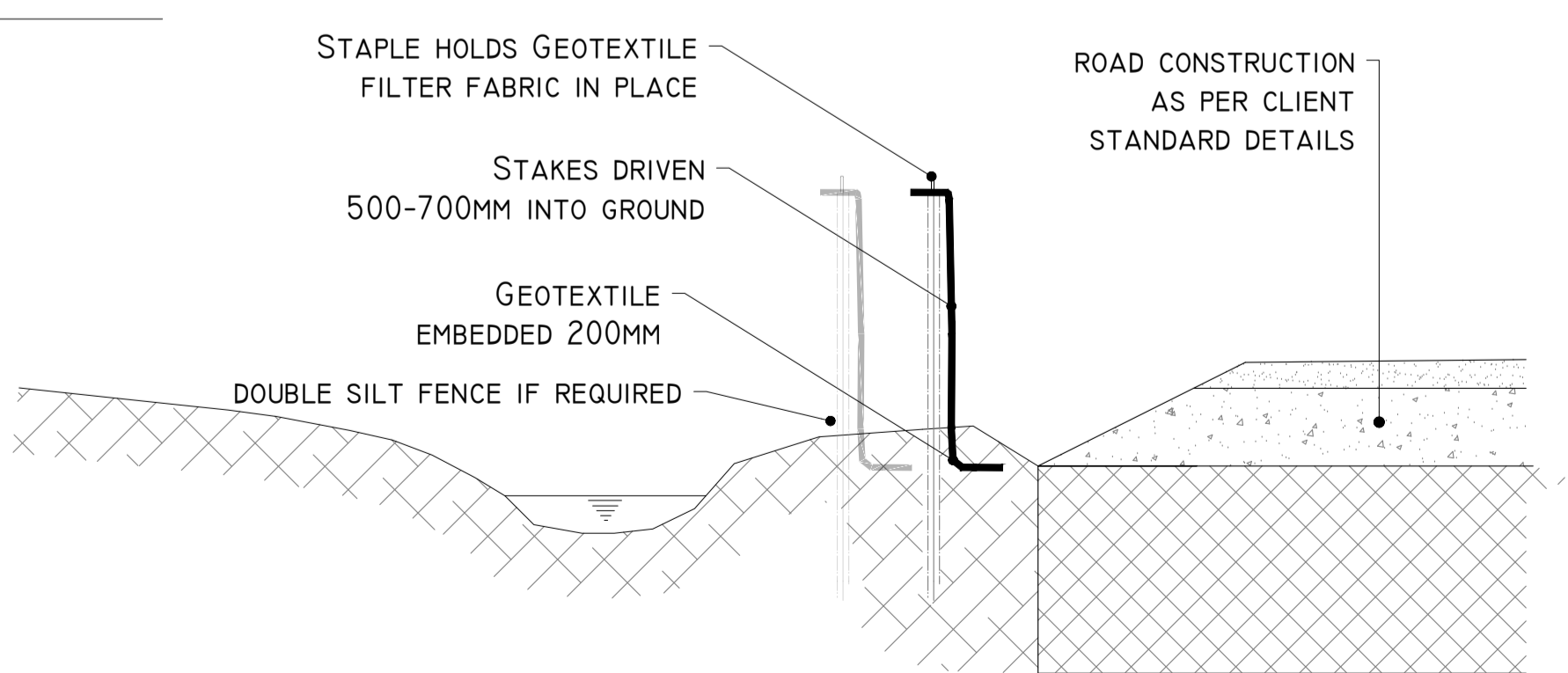
#### PLAN



#### SECTION AA'



### DETAIL E2



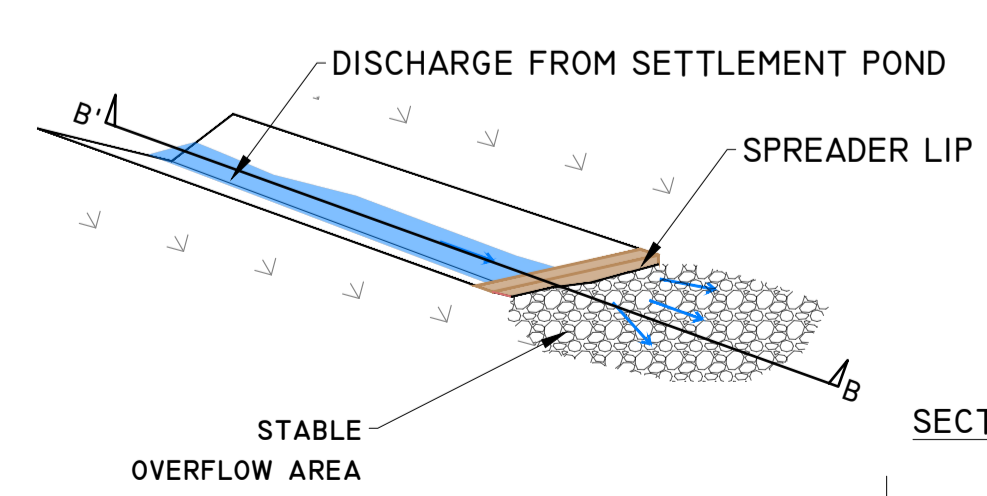
#### SILT FENCE FOR WATERCOURSE PROTECTION

SCALE 1:25

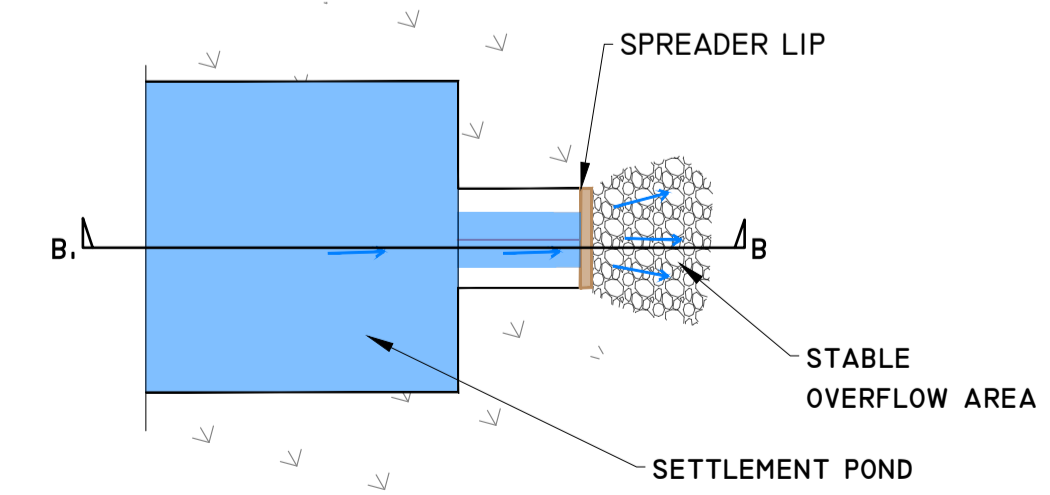
### DETAIL G2

#### LEVEL SPREADER DETAIL

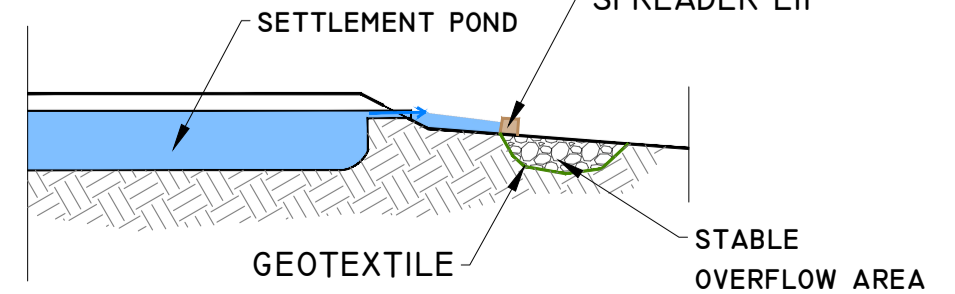
SCHEMATIC - NOT TO SCALE



#### PLAN



#### SECTION BB'



Date	Description	Chkd	Signed
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Client:

Job:

Title: DRAINAGE DETAILS 2

Figure No: D502

Drawing No: P1617-1-0426-A1-D502-RevB

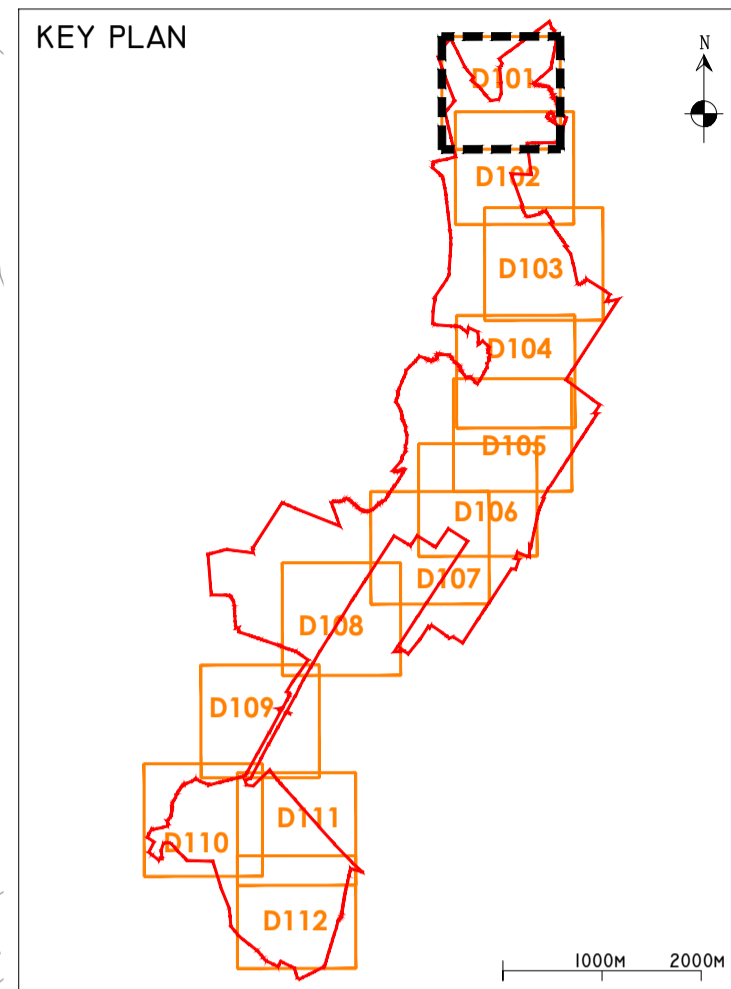
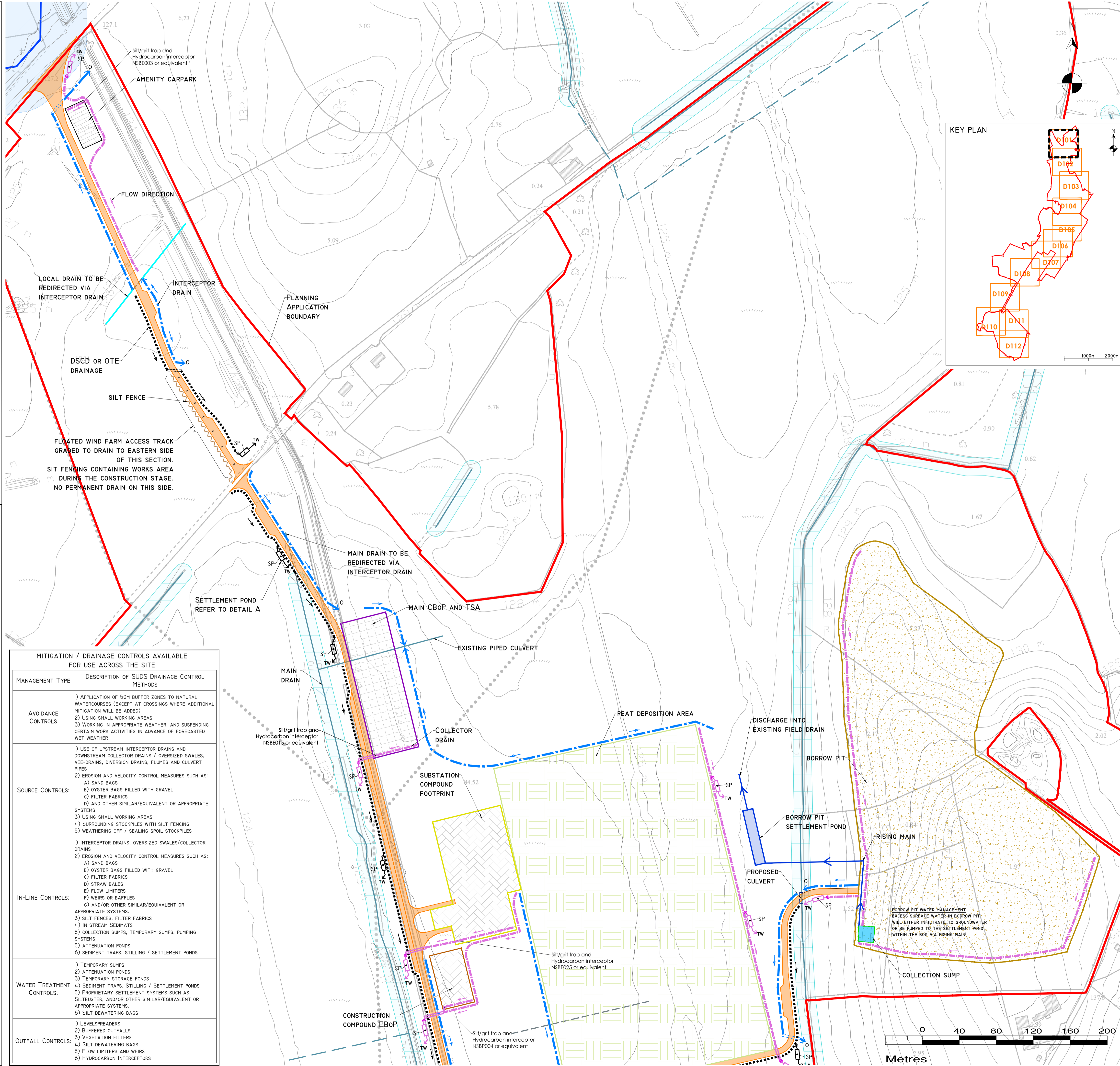
Sheet Size: A1 Project No.: P1617-1

Scale: as shown (A1) Drawn By: GA

Checked By: M.G.

**POLLUTION PREVENTION NOTES:**

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  - SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
- WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  - VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
- WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
- THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- SITE TRACKS**
- USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
  - CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING**
- REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
  - SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
- CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
- DRAINAGE NOTES:**
- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
  - SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
  - SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
  - SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
  - INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
  - DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMAL LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
  - A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/CREEK CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
  - 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 VEGETATE WITH LOCAL SPECIES.
  - TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
  - SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
  - STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
  - SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN 45M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
  - SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER ('PEAT SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
  - AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
  - CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 4.0M 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.
  - BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
  - SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDANT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
  - LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARVESTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
  - OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
  - TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



- DRAWING LEGEND :**
- WATERCOURSES
  - 50M WATERCOURSE BUFFER
  - MAPPED OPEN DRAINS
  - 10M OPEN DRAIN BUFFER
  - PIPED DRAINS
  - REDIRECTED MAIN DRAINS
  - EXISTING BNM SETTLEMENT PONDS
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
  - DSCD OR OVER THE EDGE (OTE)
  - INDICATIVE DIRECTION OF FLOW
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - WF SETTLEMENT POND
  - LEVEL SPREADER
  - OPTIONAL CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - RISING MAIN
  - BORROW PIT SETTLEMENT POND
  - COLLECTION SUMP
  - PROPOSED WC CROSSING/CULVERT
  - EXISTING WC CROSSING/CULVERT
  - INTERCEPTOR DITCH CULVERT
  - COLLECTOR DITCH CULVERT
  - OVERLAND FLOW DISCHARGE
  - TREATED WATER DISCHARGE
  - SETTLEMENT POND
  - SEM-NATURAL VEGETATION
  - SWALE / FILTER BED /SECONDARY SP
  - PUMPING SUMP
  - PLANNING APPLICATION BOUNDARY
  - EXISTING GROUND SURFACE
  - MINOR CONTOUR (1M INTERVAL)
  - EXISTING GROUND SURFACE
  - MAJOR CONTOUR (5M INTERVAL)
  - TURBINE AND TURBINE FOUNDATION
  - HARDSTAND
  - PROPOSED NEW ROADS
  - AMENITY TRACKS
  - SUBSTATION
  - TEMPORARY CONSTRUCTION COMPOUND
  - MAIN CBOp AND TSA COMPOUND
  - CONSTRUCTION COMPOUND CBOp
  - BORROW PIT
  - PEAT DEPOSITION AREAS
  - AMENITY CARPARK

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  - ALL DIMENSIONS ARE IN METRES.

**MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE**

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

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Date	Description	Chkd	Signed

Revisions

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

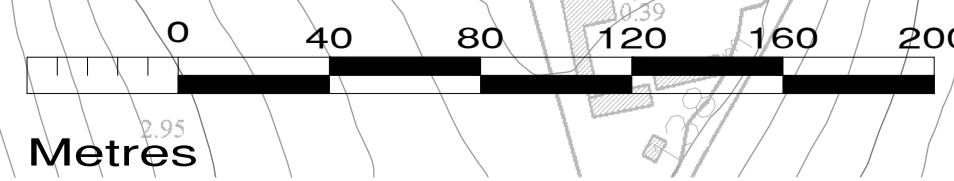
Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D101**

Drawing No: P1617-1-0426-A1-D101-00C

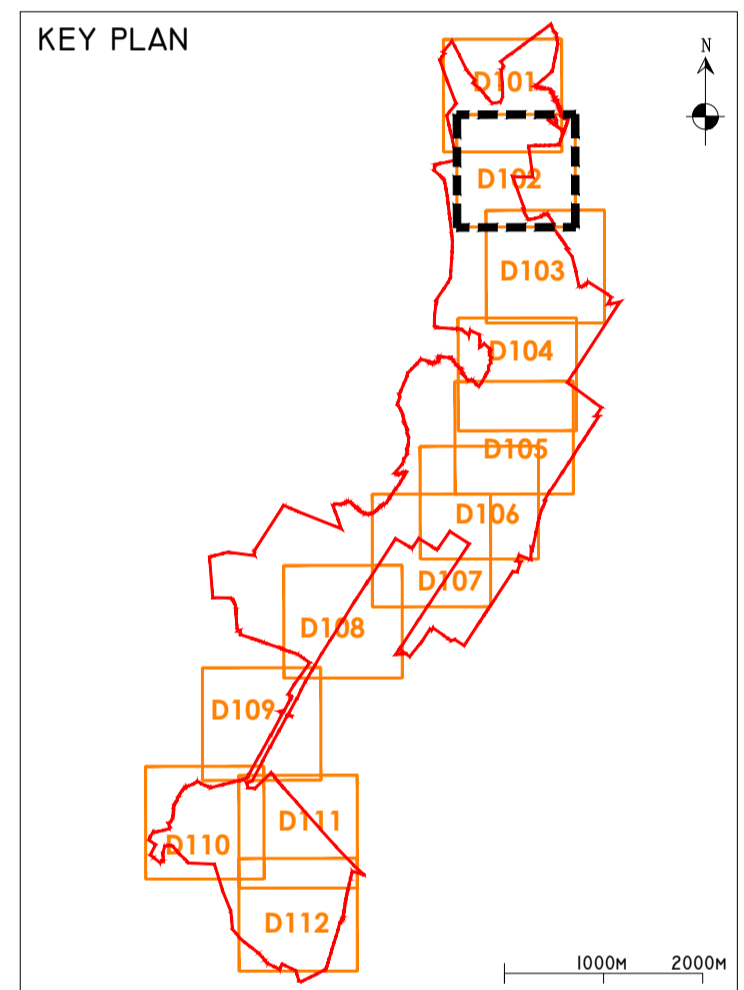
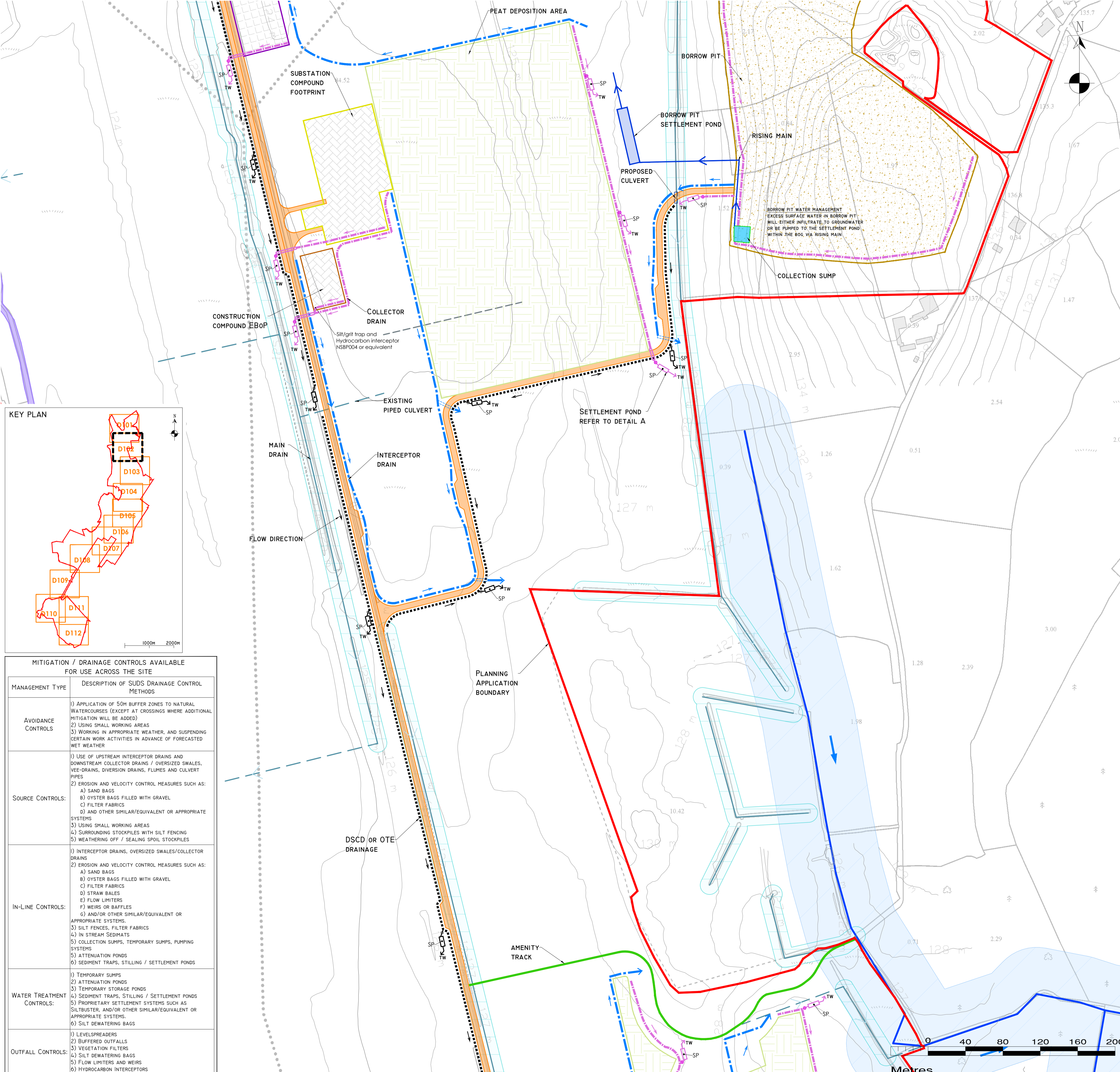
Sheet Size: A1  
Scale: 1:2,000 (A1)  
Date: 22/04/2026

Project No.: P1617-1  
Drawn By: GA  
Checked By: MG



**POLLUTION PREVENTION NOTES:**

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
9. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
10. THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- 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, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
  14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
15. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
- DRAINAGE NOTES:**
1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
  2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
  3. SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/ OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
  4. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
  5. INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
  6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMAL LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
  7. A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
  8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
  9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
  10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
  11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
  12. SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN 45M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
  13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
  14. AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
  15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
  16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
  17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDANT UPON LONGITUDINAL GRADIENT OF THE DRAIN/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 HAROUSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
  19. OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
  20. TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



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

- DRAWING LEGEND :**
- WATERCOURSES
  - 50M WATERCOURSE BUFFER
  - MAPPED OPEN DRAINS
  - 10M OPEN DRAIN BUFFER
  - PIPED DRAINS
  - REDIRECTED MAIN DRAINS
  - EXISTING BNM SETTLEMENT PONDS
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
  - DSCD OR OVER THE EDGE (OTE)
  - INDICATIVE DIRECTION OF FLOW
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - WF SETTLEMENT POND
  - LEVEL SPREADER
  - OPTIONAL CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - RISING MAIN
  - BORROW PIT SETTLEMENT POND
  - COLLECTION SUMP
  - PROPOSED WC CROSSING/CULVERT
  - EXISTING WC CROSSING/CULVERT
  - INTERCEPTOR DITCH CULVERT
  - COLLECTOR DITCH CULVERT
  - OVERLAND FLOW DISCHARGE
  - TREATED WATER DISCHARGE
  - SETTLEMENT POND
  - SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
  - PUMPING SUMP
  - PLANNING APPLICATION BOUNDARY
  - EXISTING GROUND SURFACE MINOR CONTOUR (1M INTERVAL)
  - EXISTING GROUND SURFACE MAJOR CONTOUR (5M INTERVAL)
  - TURBINE AND TURBINE FOUNDATION
  - HARDSTAND
  - PROPOSED NEW ROADS
  - AMENITY TRACKS
  - SUBSTATION
  - TEMPORARY CONSTRUCTION COMPOUND
  - MAIN CBOP AND TSA COMPOUND
  - CONSTRUCTION COMPOUND CBOP
  - BORROW PIT
  - PEAT DEPOSITION AREAS
  - AMENITY CARPARK

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4. ALL DIMENSIONS ARE IN METRES.

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Date	Description	Chkd	Signed
Revisions			

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D102**

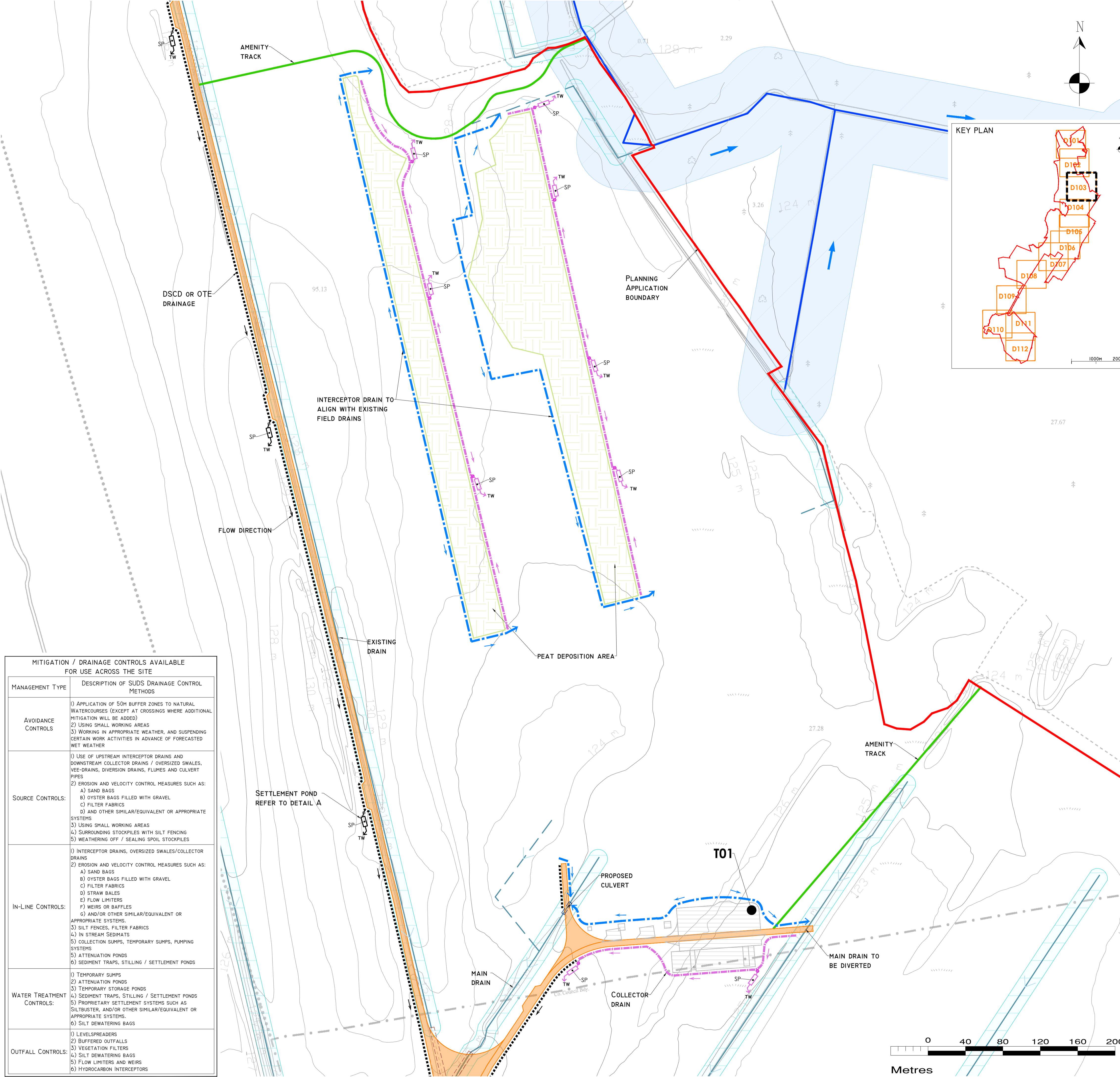
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Sheet Size: A1  
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Date: 22/04/2026

Project No.: P1617-1  
Drawn By: GA  
Checked By: MG

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  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
- WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
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- CONCRETE**
- CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
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  - A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
  - BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
  - TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAMINANT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
  - SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
  - STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
  - SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN 45M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
  - SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER ('SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
  - AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
  - CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40M 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.
  - BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
  - SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
  - LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
  - OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
  - TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



**DRAWING LEGEND :**

- WATERCOURSES
- 50M WATERCOURSE BUFFER
- MAPPED OPEN DRAINS
- 10M OPEN DRAIN BUFFER
- PIPED DRAINS
- REDIRECTED MAIN DRAINS
- EXISTING BNM SETTLEMENT PONDS
- STREAM FLOW DIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD) OR OVER THE EDGE (OTE)
- INDICATIVE DIRECTION OF FLOW
- SILT FENCES
- DOUBLE/TRIPLE SILT FENCES
- WF SETTLEMENT POND
- LEVEL SPREADER
- OPTIONAL CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- RISING MAIN
- BORROW PIT SETTLEMENT POND
- COLLECTION SUMP
- PROPOSED WC CROSSING/CULVERT
- EXISTING WC CROSSING/CULVERT
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SEMI-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
- PUMPING SUMP
- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1M INTERVAL)
- EXISTING GROUND SURFACE
- MAJOR CONTOUR (5M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARDSTAND
- PROPOSED NEW ROADS
- AMENITY TRACKS
- SUBSTATION
- TEMPORARY CONSTRUCTION COMPOUND
- MAIN CBOF AND TSA COMPOUND
- CONSTRUCTION COMPOUND CBOF
- BORROW PIT
- PEAT DEPOSITION AREAS
- AMENITY CARPARK

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- ALL DIMENSIONS ARE IN METRES.

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

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Revisions

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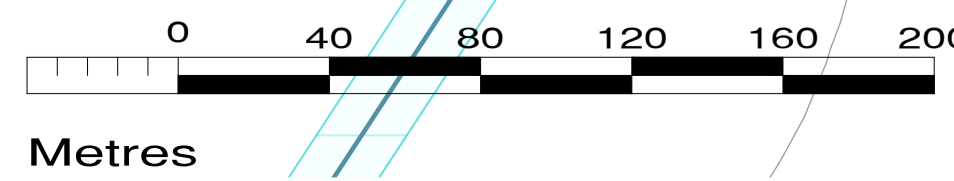
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Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D103**

Drawing No: P1617-1-0426-A1-D103-00C

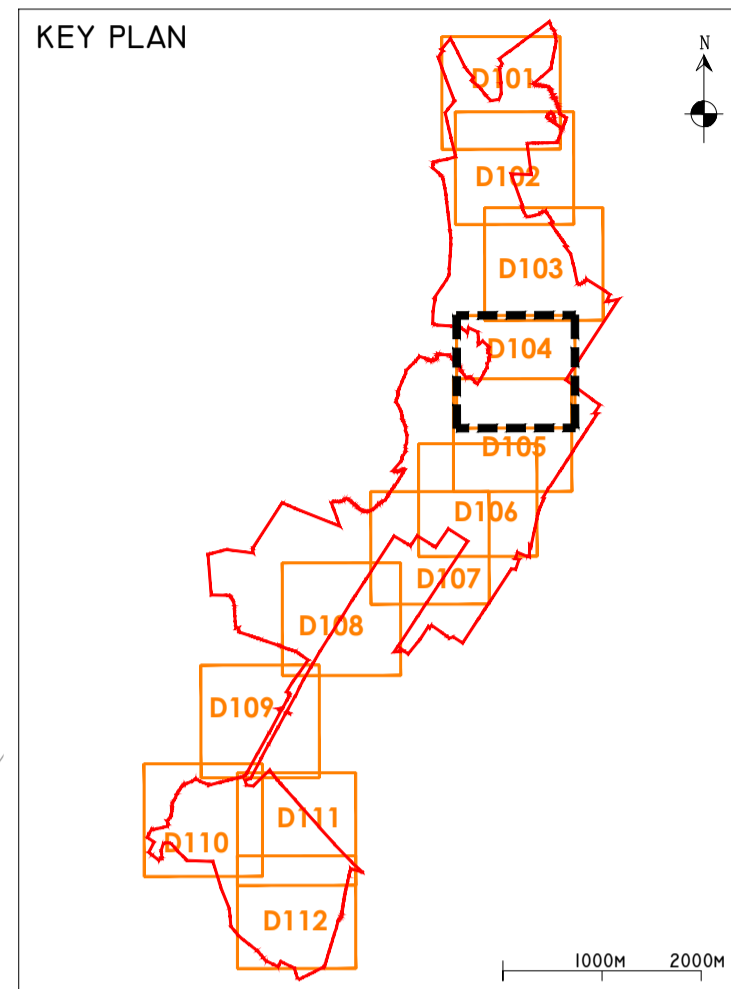
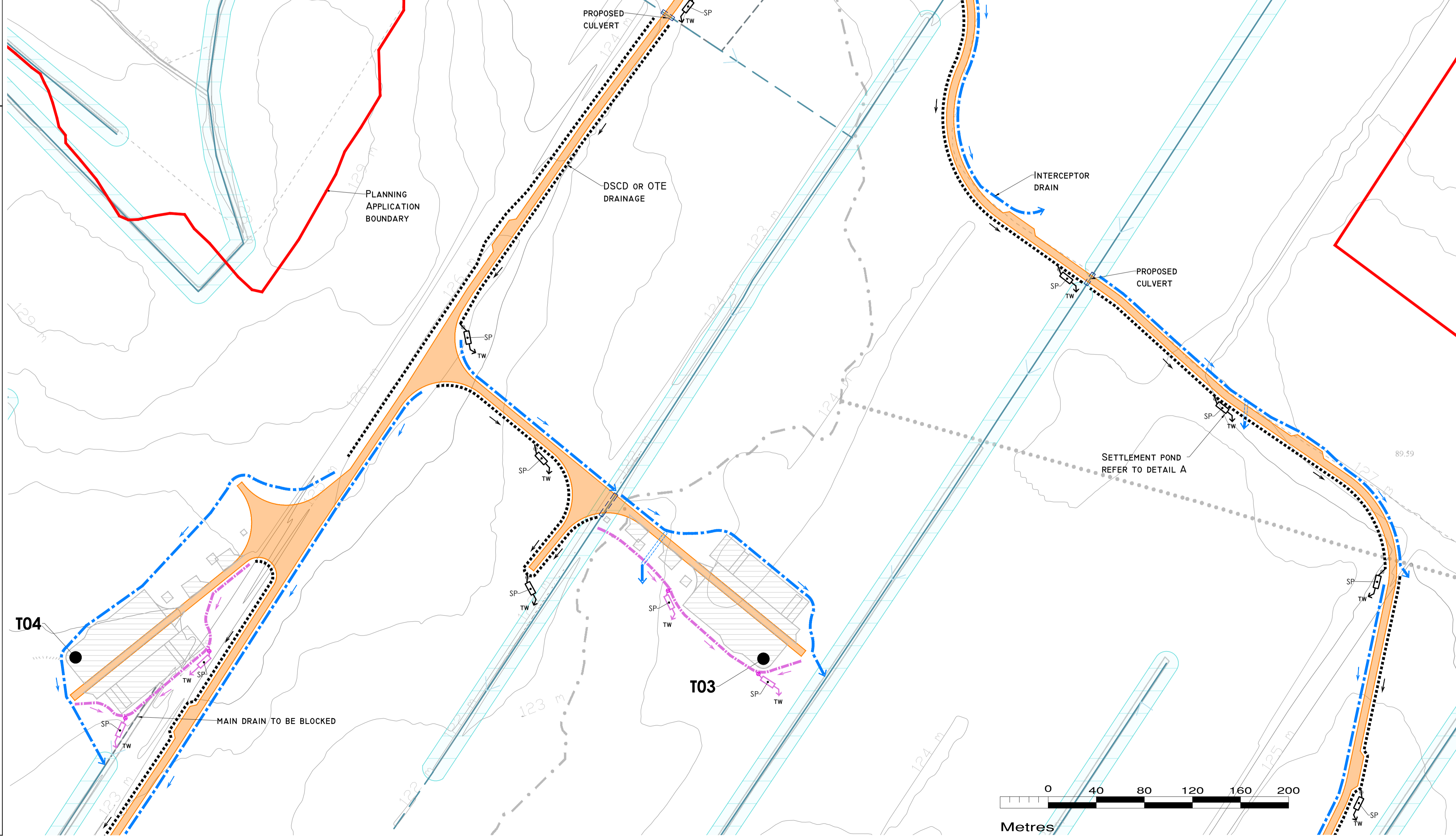
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Scale: 1:2,000 (A1)	Drawn By: GA
Date: 22/04/2026	Checked By: MG



**POLLUTION PREVENTION NOTES:**

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  - SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
- WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  - VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
- WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
- THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- SITE TRACKS**
- USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
  - CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING**
- REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS AND WATERCOURSES/WATERBODIES.
  - SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
- CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
- DRAINAGE NOTES:**
- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
  - SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
  - SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
  - SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
  - INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
  - DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMUM LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
  - A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
  - BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
  - TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
  - SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
  - STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
  - SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORK COMES WITHIN 15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
  - SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
  - AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
  - CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
  - BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
  - SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
  - LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
  - OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
  - TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED) 2) USING SMALL WORKING AREAS 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS:	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 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 STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS:	1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 6) ATTENUATION PONDS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS:	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS:	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS 6) HYDROCARBON INTERCEPTORS



**DRAWING LEGEND :**

	WATERCOURSES
	50M WATERCOURSE BUFFER
	MAPPED OPEN DRAINS
	10M OPEN DRAIN BUFFER
	PIPED DRAINS
	REDIRECTED MAIN DRAINS
	EXISTING BNM SETTLEMENT PONDS
	STREAM FLOW DIRECTION
	UPSTREAM INTERCEPTOR DRAIN
	SWALES/DOWNSTREAM COLLECTOR DRAIN (OSCD)
	DSCD OR OVER THE EDGE (OTE)
	INDICATIVE DIRECTION OF FLOW
	SILT FENCES
	DOUBLE/TRIPLE SILT FENCES
	WF SETTLEMENT POND
	LEVEL SPREADER
	OPTIONAL CHECK DAM 'TYPE A'
	CHECK DAM 'TYPE B'
	RISING MAIN
	BORROW PIT SETTLEMENT POND
	COLLECTION SUMP
	PROPOSED WC CROSSING/CULVERT
	EXISTING WC CROSSING/CULVERT
	INTERCEPTOR DITCH CULVERT
	COLLECTOR DITCH CULVERT
	OVERLAND FLOW DISCHARGE
	TREATED WATER DISCHARGE
	SETTLEMENT POND
	VS
	SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
	PUMPING SUMP
	PLANNING APPLICATION BOUNDARY
	EXISTING GROUND SURFACE
	MINOR CONTOUR (1M INTERVAL)
	EXISTING GROUND SURFACE
	MAJOR CONTOUR (5M INTERVAL)
	TURBINE AND TURBINE FOUNDATION
	HARDSTAND
	PROPOSED NEW ROADS
	AMENITY TRACKS
	SUBSTATION
	TEMPORARY CONSTRUCTION COMPOUND
	MAIN CBOP AND TSA COMPOUND
	CONSTRUCTION COMPOUND CBOP
	BORROW PIT
	PEAT DEPOSITION AREAS
	AMENITY CARPARK

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Date	Description	Chkd	Signed

Revisions

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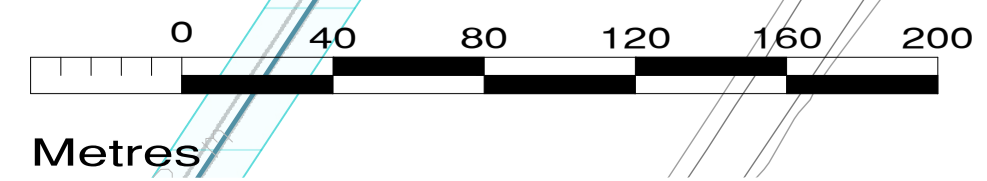
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Scale: 1:2,000 (A1)  
Date: 22/04/2026

Project No.: P1617-1  
Drawn By: GA  
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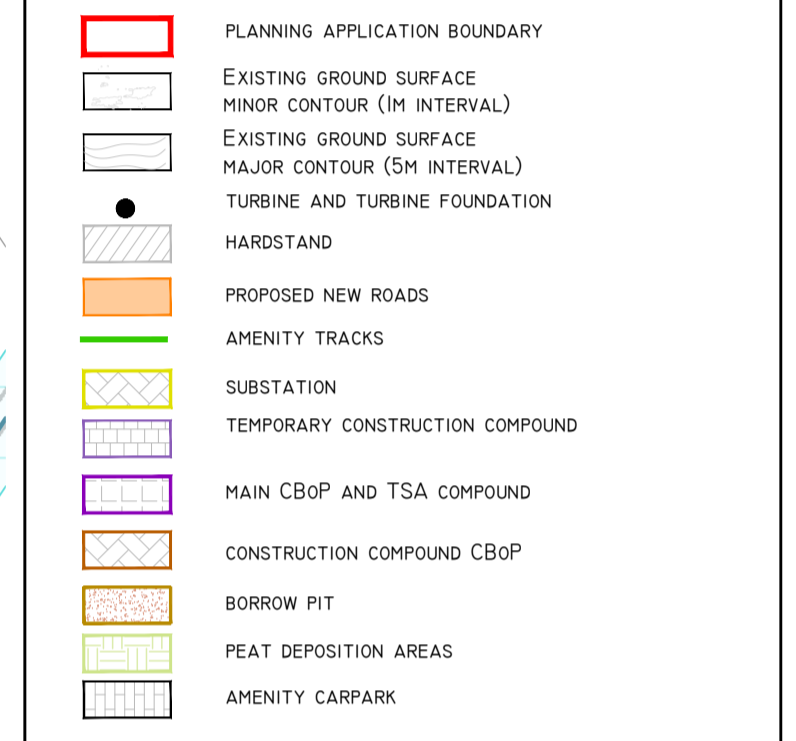
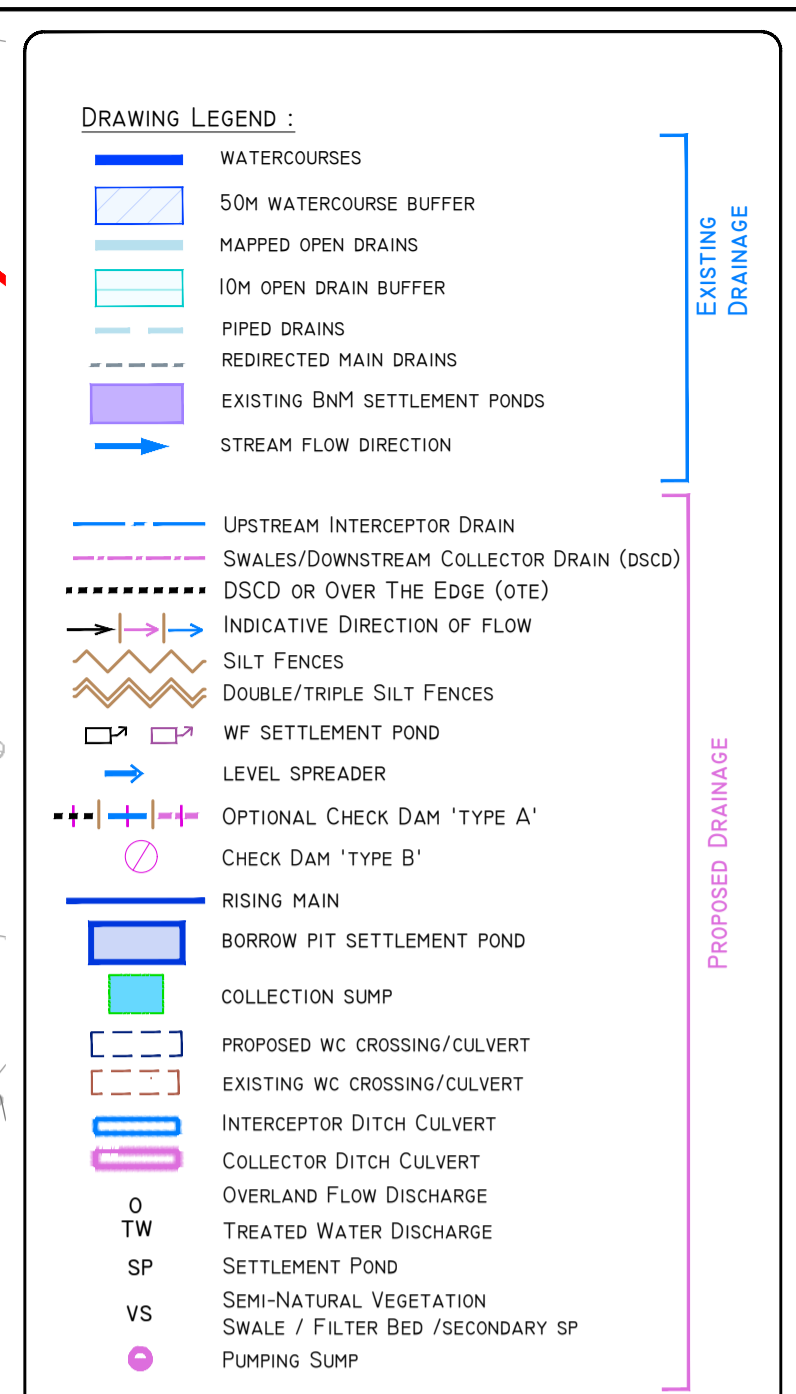
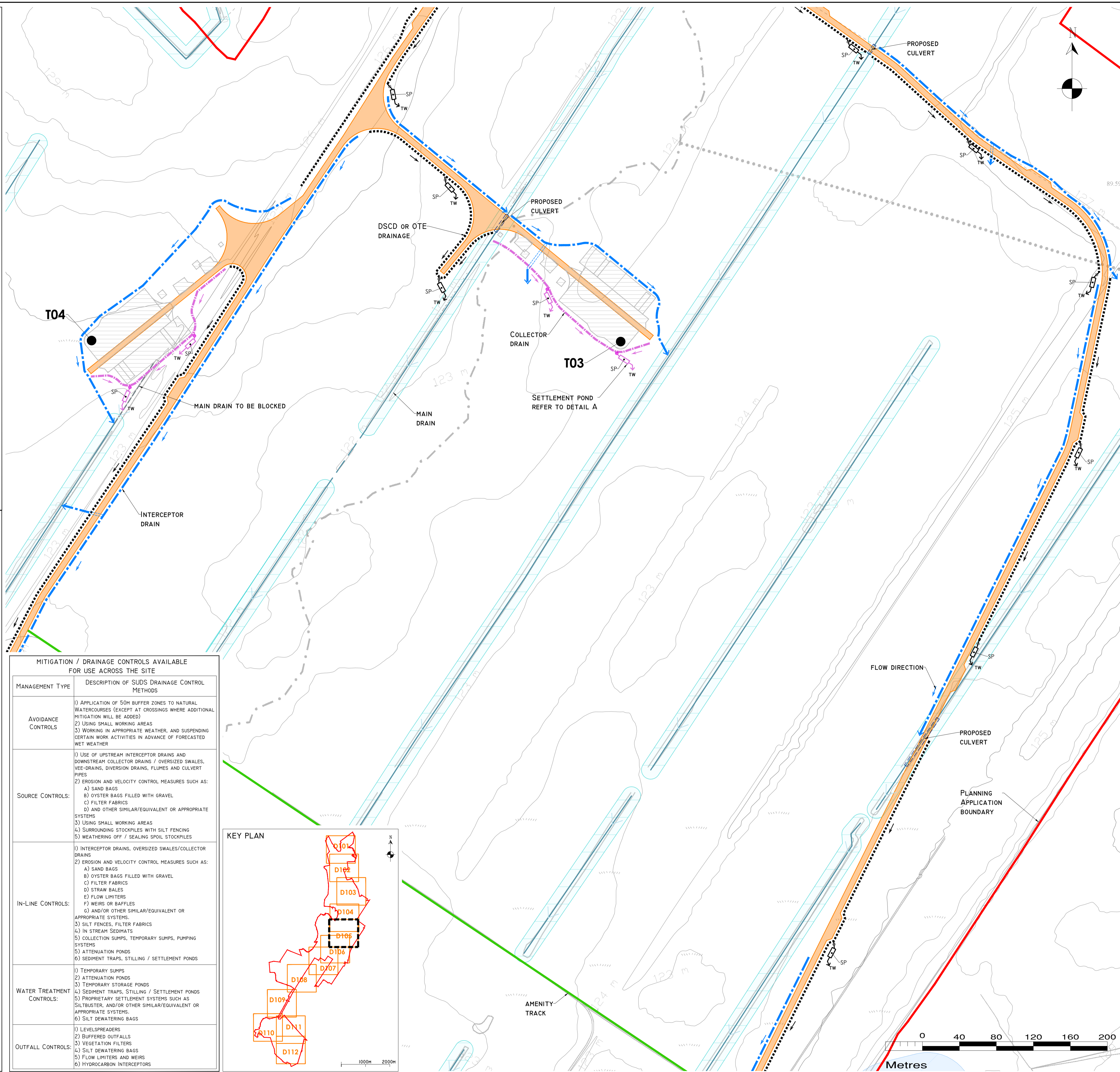


**POLLUTION PREVENTION NOTES:**

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  - SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
- WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  - VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
- WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
- THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- SITE TRACKS**
- USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
  - CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING**
- REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
  - SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
- CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.

**DRAINAGE NOTES:**

- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
- SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
- SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
- SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
- INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
- DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMUM LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
- A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
- BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
- TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS PRIOR TO DISCHARGE.
- SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
- STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
- SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN 45M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
- SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
- AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
- CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
- BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
- SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
- LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
- OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
- TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.

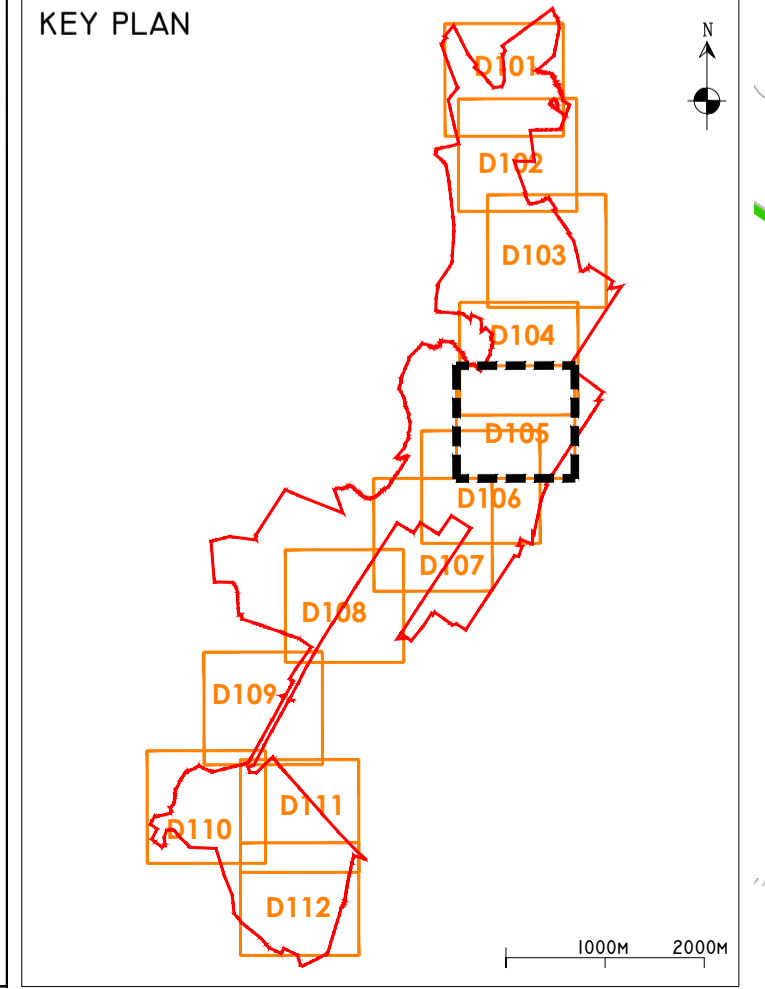


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**MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE**

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



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Date	Description	Chkd	Signed

Revisions

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D105**

Drawing No: P1617-1-0426-A1-D105-00C

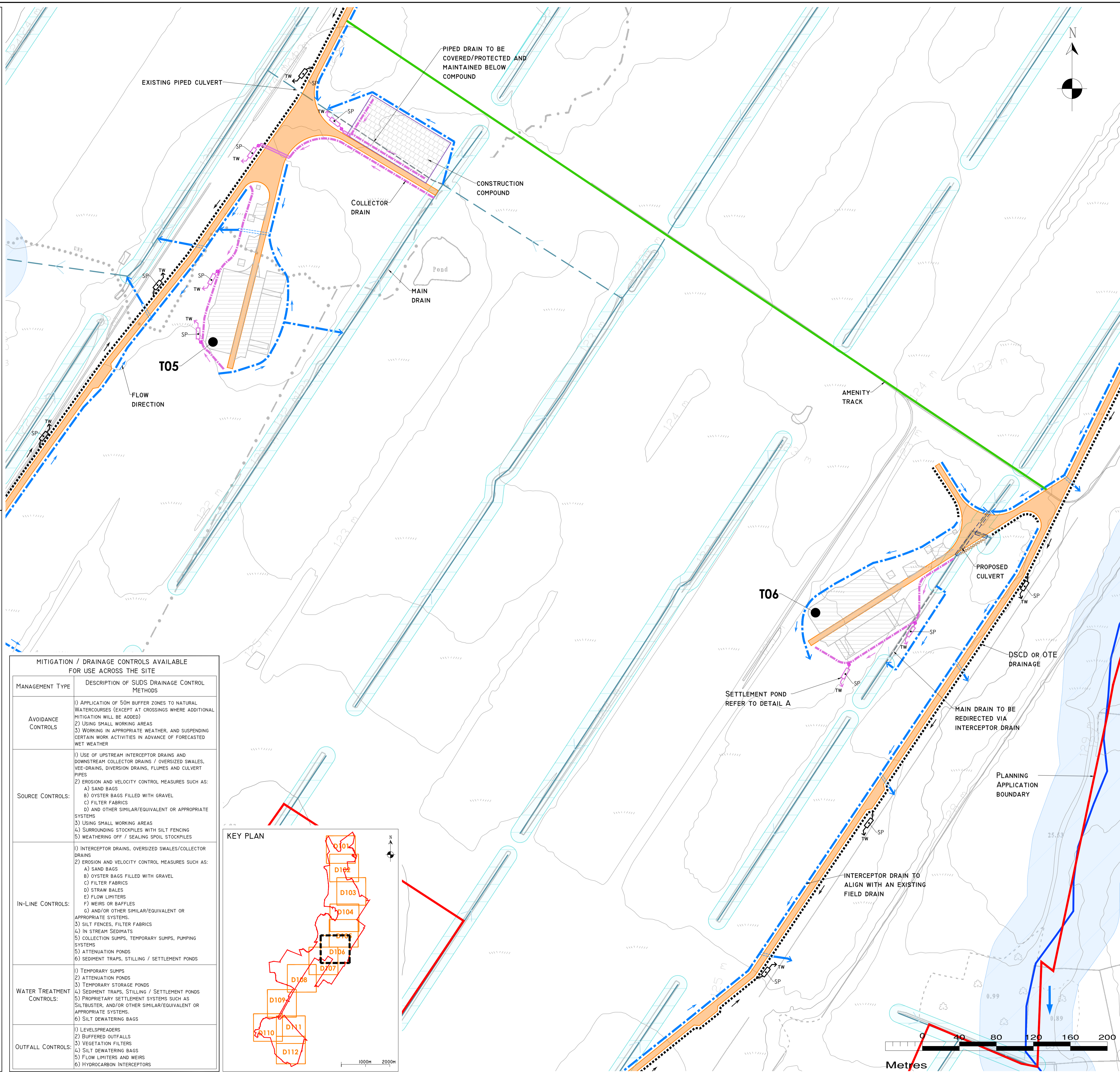
Sheet Size: A1	Project No.: P1617-1
Scale: 1:2,000 (A1)	Drawn By: GA
Date: 22/04/2026	Checked By: MG

**POLLUTION PREVENTION NOTES:**

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  - SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
- WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  - VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
- WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
- THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- SITE TRACKS**
- USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
  - CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
- REFUELLING**
- REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
  - SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
- CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.

**DRAINAGE NOTES:**

- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
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- SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORK COMES WITHIN 15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
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- TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



**DRAWING LEGEND :**

- WATERCOURSES
- 50M WATERCOURSE BUFFER
- MAPPED OPEN DRAINS
- 10M OPEN DRAIN BUFFER
- PIPED DRAINS
- REDIRECTED MAIN DRAINS
- EXISTING BNM SETTLEMENT PONDS
- STREAM FLOW DIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD) OR OVER THE EDGE (OTE)
- DSCD OR OVER THE EDGE (OTE)
- INDICATIVE DIRECTION OF FLOW
- SILT FENCES
- DOUBLE/TRIPLE SILT FENCES
- WF SETTLEMENT POND
- LEVEL SPREADER
- OPTIONAL CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- RISING MAIN
- BORROW PIT SETTLEMENT POND
- COLLECTION SUMP
- PROPOSED WC CROSSING/CULVERT
- EXISTING WC CROSSING/CULVERT
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SEMI-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
- PUMPING SUMP
- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE
- MINOR CONTOUR (1M INTERVAL)
- EXISTING GROUND SURFACE
- MAJOR CONTOUR (5M INTERVAL)
- TURBINE AND TURBINE FOUNDATION
- HARDSTAND
- PROPOSED NEW ROADS
- AMENITY TRACKS
- SUBSTATION
- TEMPORARY CONSTRUCTION COMPOUND
- MAIN CBOP AND TSA COMPOUND
- CONSTRUCTION COMPOUND CBOP
- BORROW PIT
- PEAT DEPOSITION AREAS
- AMENITY CARPARK

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D106**

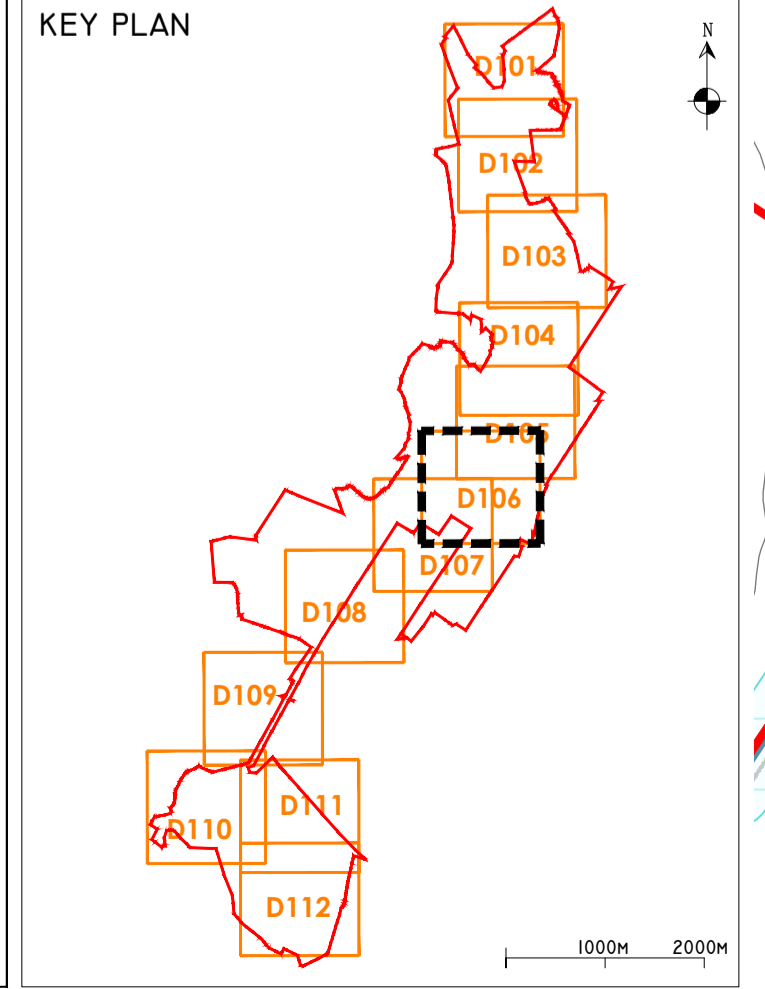
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**MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE**

MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
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SOURCE CONTROLS	<ol style="list-style-type: none"> <li>USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES</li> <li>EROSION AND VELOCITY CONTROL MEASURES SUCH AS:                     <ol style="list-style-type: none"> <li>SAND BAGS</li> <li>OYSTER BAGS FILLED WITH GRAVEL</li> <li>FILTER FABRICS</li> <li>AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS</li> </ol> </li> <li>USING SMALL WORKING AREAS</li> <li>SURROUNDING STOCKPILES WITH SILT FENCING</li> <li>WEATHERING OFF / SEALING SPOIL STOCKPILES</li> </ol>
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WATER TREATMENT CONTROLS	<ol style="list-style-type: none"> <li>TEMPORARY SLUMPS</li> <li>ATTENUATION PONDS</li> <li>TEMPORARY STORAGE PONDS</li> <li>SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS</li> <li>PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.</li> <li>SILT DEWATERING BAGS</li> </ol>
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**POLLUTION PREVENTION NOTES:**

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

**DISCHARGES**

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

**EXCAVATIONS**

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

**EXPOSED GROUND & STOCKPILES**

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

**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, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

**CONCRETE**

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

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

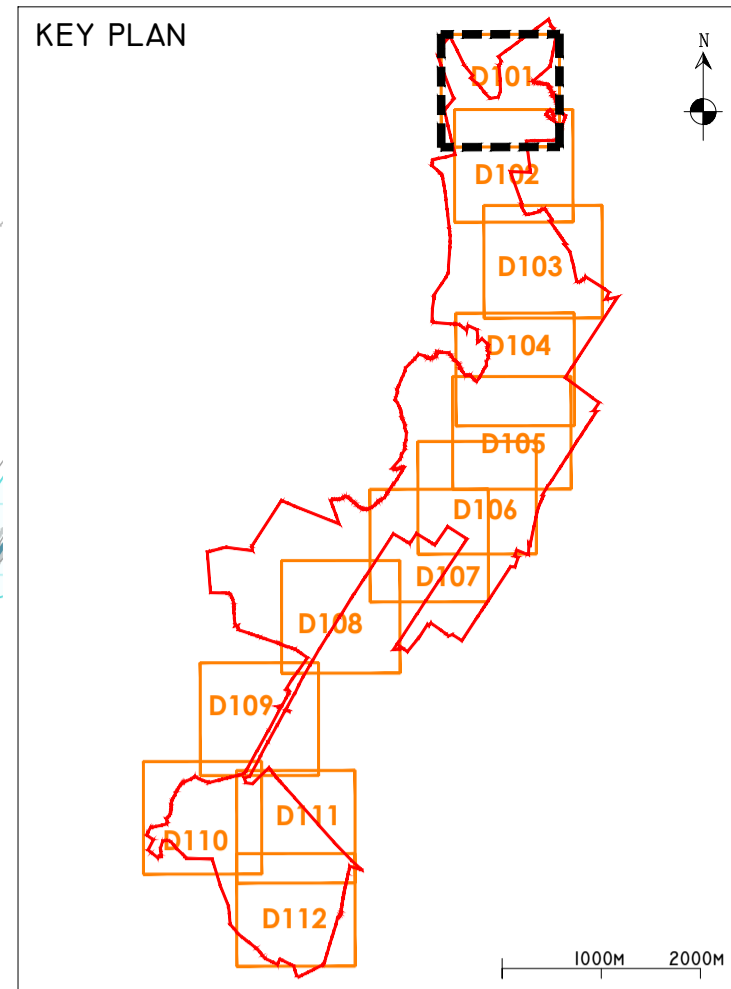
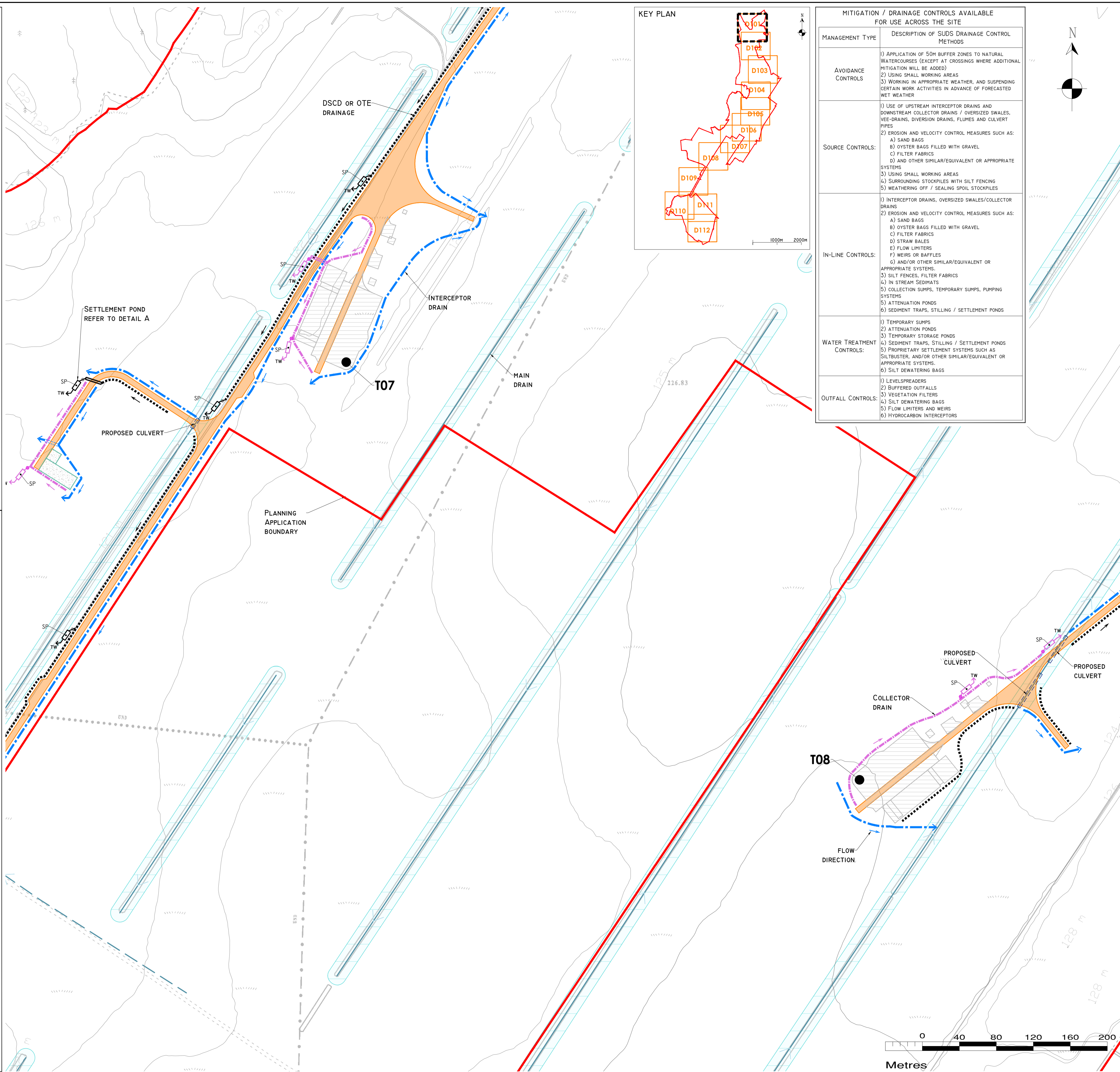
**STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

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

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

**DRAINAGE NOTES:**

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



MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED) 2) USING SMALL WORKING AREAS 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 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 STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS	1) INTERCEPTOR 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 BAFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION PONDS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS 6) HYDROCARBON INTERCEPTORS

**DRAWING LEGEND:**

	WATERCOURSES
	50M WATERCOURSE BUFFER
	MAPPED OPEN DRAINS
	10M OPEN DRAIN BUFFER
	PIPED DRAINS
	REDIRECTED MAIN DRAINS
	EXISTING BNM SETTLEMENT PONDS
	STREAM FLOW DIRECTION
	UPSTREAM INTERCEPTOR DRAIN
	SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
	DSCD OR OVER THE EDGE (OTE)
	INDICATIVE DIRECTION OF FLOW
	SILT FENCES
	DOUBLE/TRIPLE SILT FENCES
	WF SETTLEMENT POND
	LEVEL SPREADER
	OPTIONAL CHECK DAM 'TYPE A'
	CHECK DAM 'TYPE B'
	RIISING MAIN
	BORROW PIT SETTLEMENT POND
	COLLECTION SUMP
	PROPOSED WC CROSSING/CULVERT
	EXISTING WC CROSSING/CULVERT
	INTERCEPTOR DITCH CULVERT
	COLLECTOR DITCH CULVERT
	OVERLAND FLOW DISCHARGE
	TREATED WATER DISCHARGE
	SETTLEMENT POND
	SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
	PUMPING SUMP
	PLANNING APPLICATION BOUNDARY
	EXISTING GROUND SURFACE MINOR CONTOUR (1M INTERVAL)
	EXISTING GROUND SURFACE MAJOR CONTOUR (5M INTERVAL)
	TURBINE AND TURBINE FOUNDATION
	HARDSTAND
	PROPOSED NEW ROADS
	AMENITY TRACKS
	SUBSTATION
	TEMPORARY CONSTRUCTION COMPOUND
	MAIN CBOF AND TSA COMPOUND
	CONSTRUCTION COMPOUND CBOF
	BORROW PIT
	PEAT DEPOSITION AREAS
	AMENITY CARPARK

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Date	Description	Chkd	Signed

Revisions

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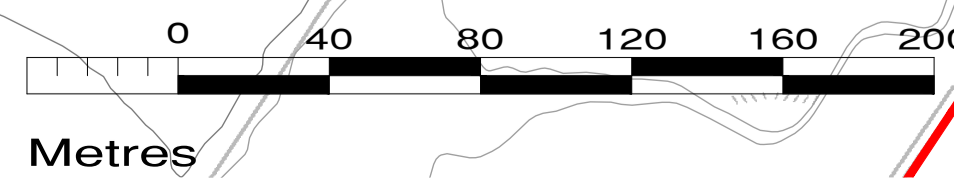
Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D107**

Drawing No: P1617-1-0426-A1-D107-00C

Sheet Size: A1  
Scale: 1:2,000 (A1)  
Date: 22/04/2026

Project No.: P1617-1  
Drawn By: GA  
Checked By: MG

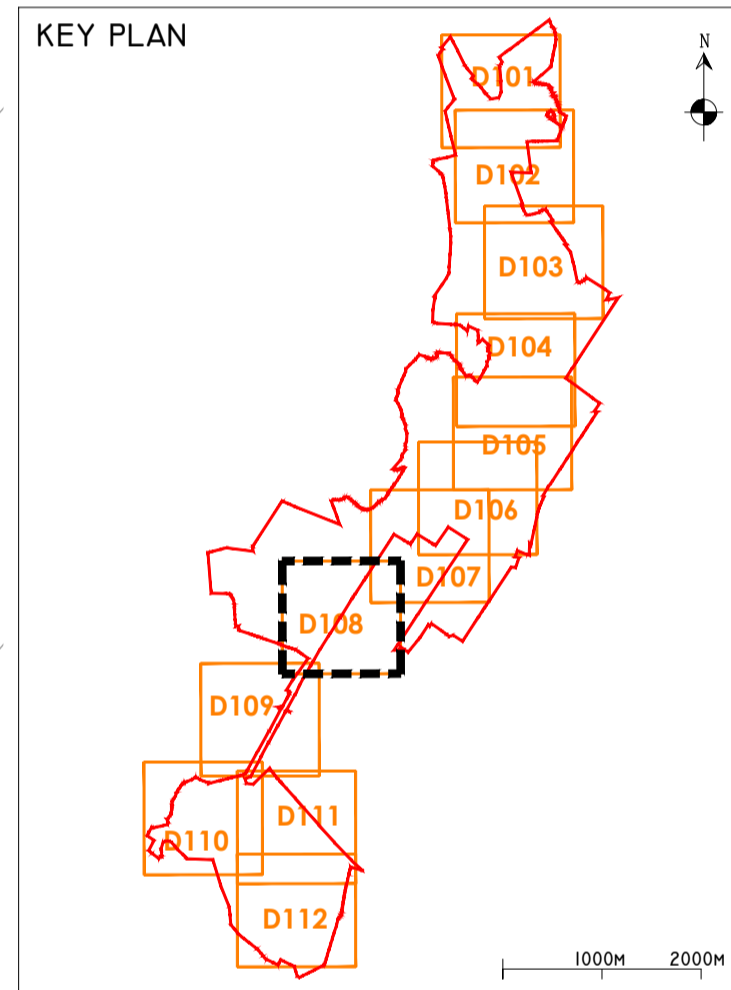
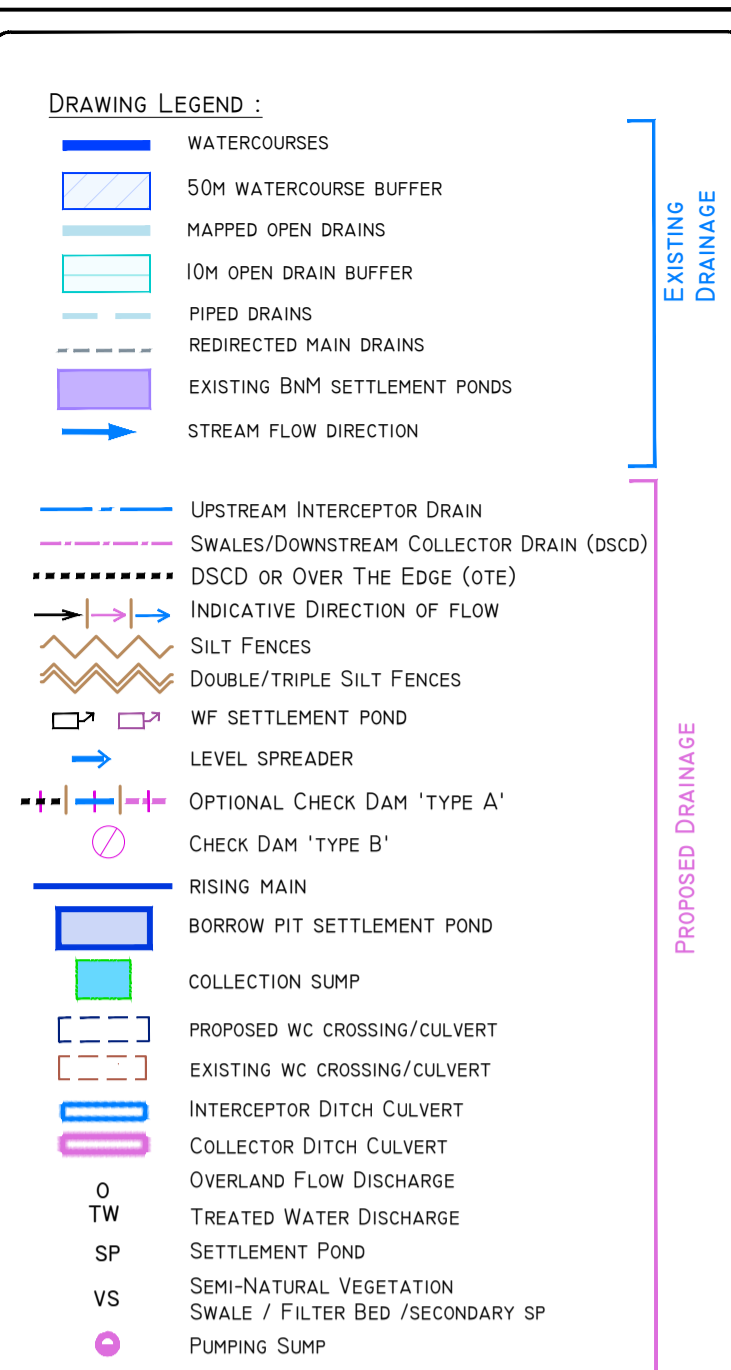
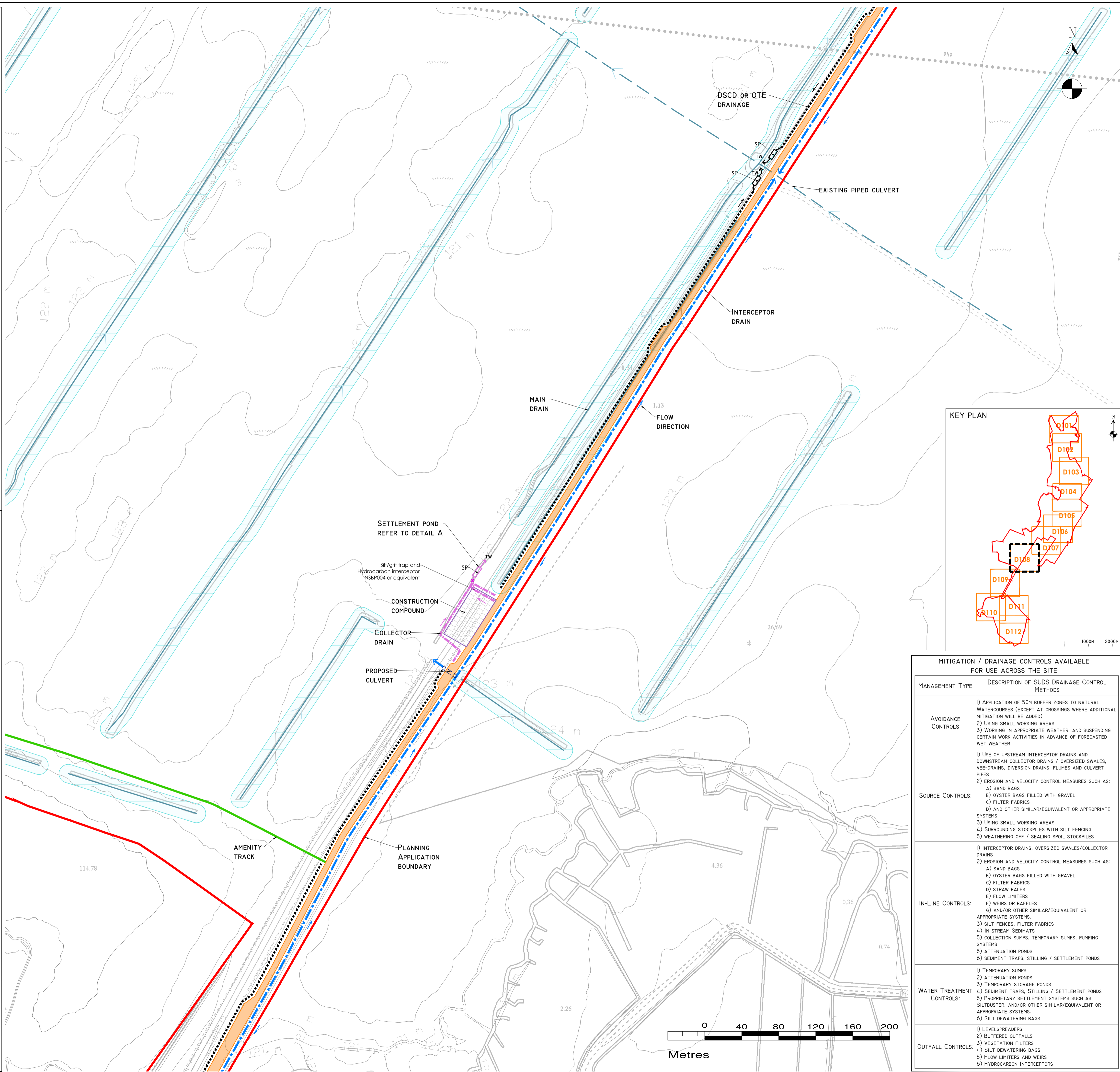


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  2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
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- DISCHARGES**
4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
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  14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
15. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.

**DRAINAGE NOTES:**

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
3. SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
4. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
5. INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMUM LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
7. A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
12. SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER ('SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 4.0M 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 DEPENDANT UPON LONGITUDINAL GRADIENT OF THE DRAIN/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 MATERIAL EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
19. OIL FUEL ONLY TO BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
20. TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



**MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE**

MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED) 2) USING SMALL WORKING AREAS 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 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 STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS	1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 6) ATTENUATION PONDS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS 6) HYDROCARBON INTERCEPTORS

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Date	Description	Chkd	Signed

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D108**

Drawing No: P1617-1-0426-A1-D108-00C

Sheet Size: A1 Project No.: P1617-1

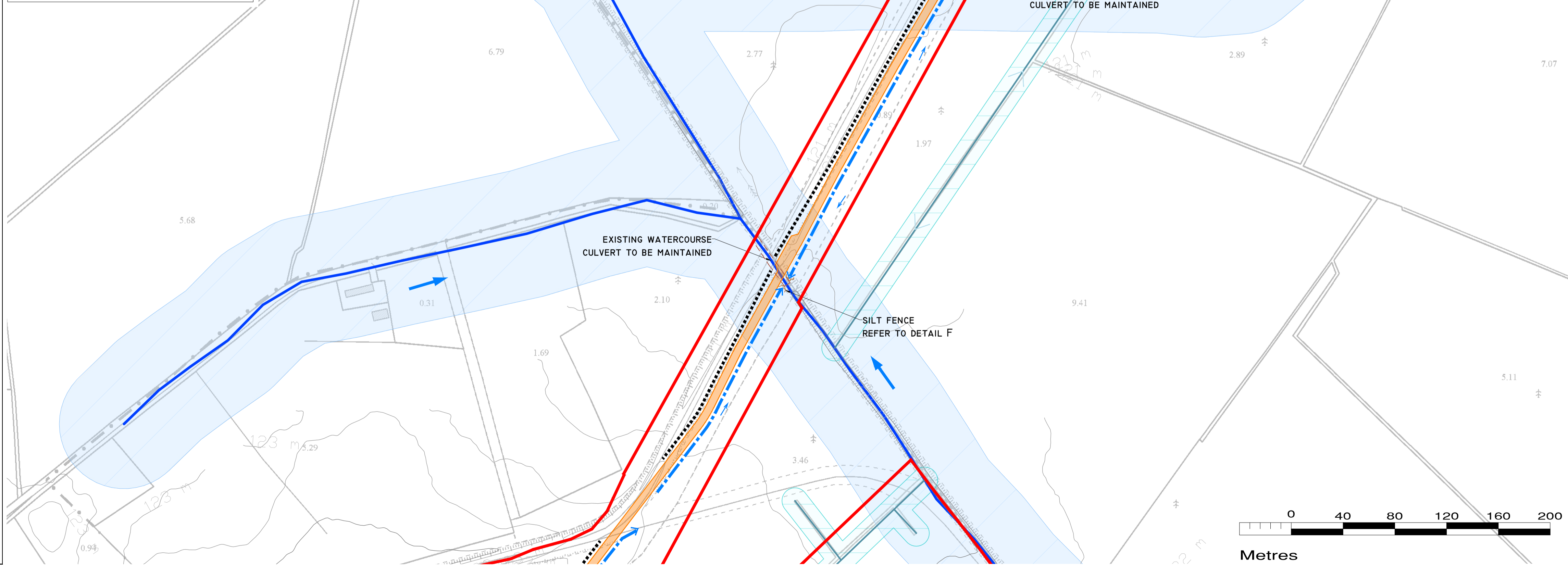
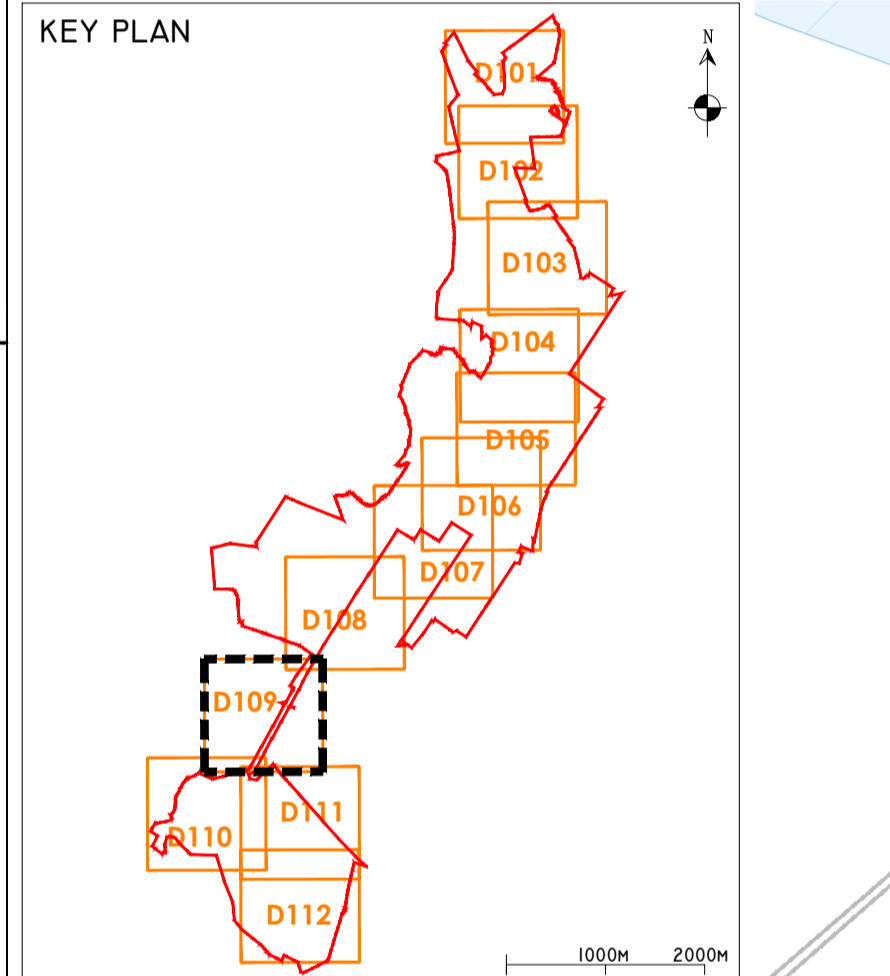
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Date: 22/04/2026 Checked By: MG

**POLLUTION PREVENTION NOTES:**

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  - SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  - SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
  - DISCHARGES
    - WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
    - NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
    - PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
    - PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
    - VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DRAINS DITCHES UNLESS ABSOLUTELY NECESSARY.
  - EXCAVATIONS
    - WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
  - EXPOSED GROUND & STOCKPILES
    - THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
  - SITE TRACKS
    - USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED.
    - CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.
  - REFUELLING
    - REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELLING AREAS ONLY, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
    - SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
  - CONCRETE
    - CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
    - CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.
- DRAINAGE NOTES:**
- SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
  - SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
  - SUDS DRAINAGE SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/ OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE.
  - SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION.
  - INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
  - DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMUM LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
  - A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. THIS BUFFER WILL NOT BE POSSIBLE AT RIVER/STREAM CROSSINGS, BUT OTHER SUITABLE CONTROLS ARE PROPOSED IN THOSE AREAS (I.E. ADDITIONAL SILT FENCING).
  - BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN 1 : 1.5 TO 1 : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.
  - TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS WILL BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.
  - SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
  - STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
  - SILT FENCES TO BE PROVIDED ALONG THE EDGE OF EXISTING WATERCOURSES WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / DRAIN / EPHEMERAL CHANNEL.
  - SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER (PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
  - AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
  - CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
  - BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.
  - SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
  - LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
  - OIL FUEL WILL ONLY BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
  - TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.

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



**DRAWING LEGEND:**

- WATERCOURSES
- 50M WATERCOURSE BUFFER
- MAPPED OPEN DRAINS
- 10M OPEN DRAIN BUFFER
- PIPED DRAINS
- REDIRECTED MAIN DRAINS
- EXISTING 60M SETTLEMENT PONDS
- STREAM FLOW DIRECTION
- UPSTREAM INTERCEPTOR DRAIN
- SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
- DSCD OR OVER THE EDGE (OTE)
- INDICATIVE DIRECTION OF FLOW
- SILT FENCES
- DOUBLE/TRIPLE SILT FENCES
- WF SETTLEMENT POND
- LEVEL SPREADER
- OPTIONAL CHECK DAM 'TYPE A'
- CHECK DAM 'TYPE B'
- RISING MAIN
- BORROW PIT SETTLEMENT POND
- COLLECTION SUMP
- PROPOSED WC CROSSING/CULVERT
- EXISTING WC CROSSING/CULVERT
- INTERCEPTOR DITCH CULVERT
- COLLECTOR DITCH CULVERT
- OVERLAND FLOW DISCHARGE
- TREATED WATER DISCHARGE
- SETTLEMENT POND
- SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
- PUMPING SUMP
- PLANNING APPLICATION BOUNDARY
- EXISTING GROUND SURFACE MINOR CONTOUR (1M INTERVAL)
- EXISTING GROUND SURFACE MAJOR CONTOUR (5M INTERVAL)
- TURBINE AND TURBINE FOUNDATION HARDSTAND
- PROPOSED NEW ROADS
- AMENITY TRACKS
- SUBSTATION
- TEMPORARY CONSTRUCTION COMPOUND
- MAIN CBO&P AND TSA COMPOUND
- CONSTRUCTION COMPOUND CBO&P
- BORROW PIT
- PEAT DEPOSITION AREAS
- AMENITY CARPARK

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Date	Description	Chkd	Signed

Revisions

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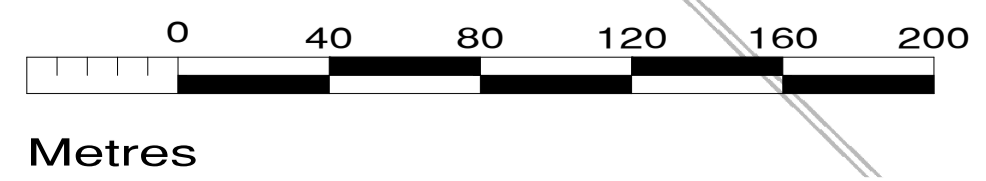
Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D109**

Drawing No: P1617-1-0426-A1-D109-00C

Sheet Size: A1	Project No.: P1617-1
Scale: 1:2,000 (A1)	Drawn By: GA
Date: 22/04/2026	Checked By: MG



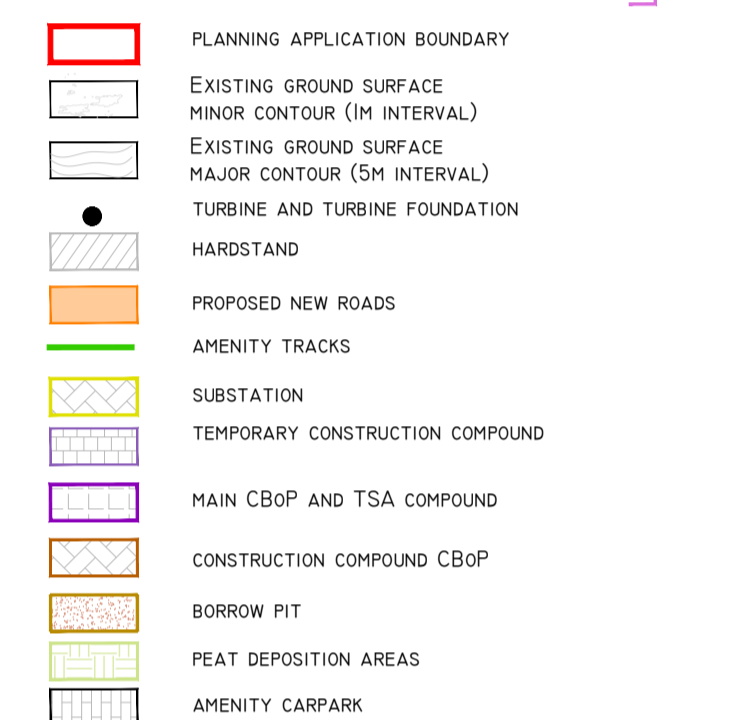
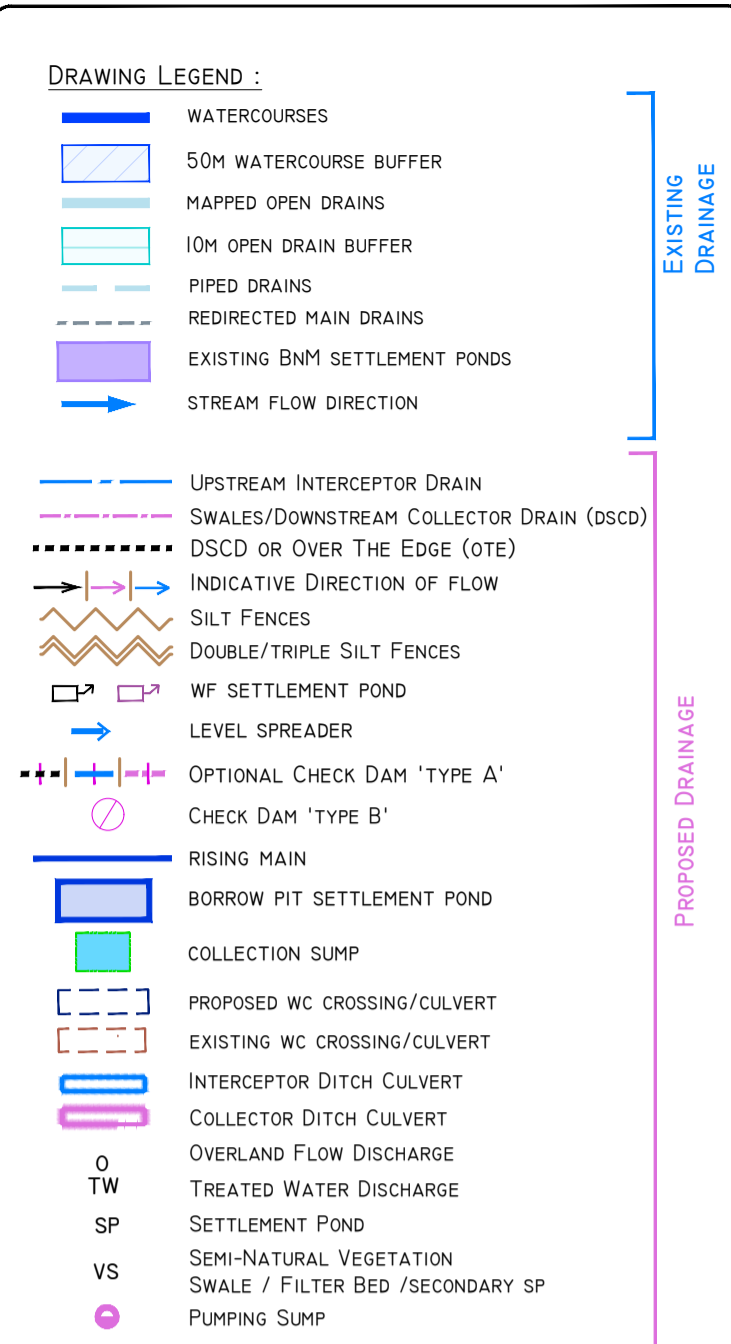
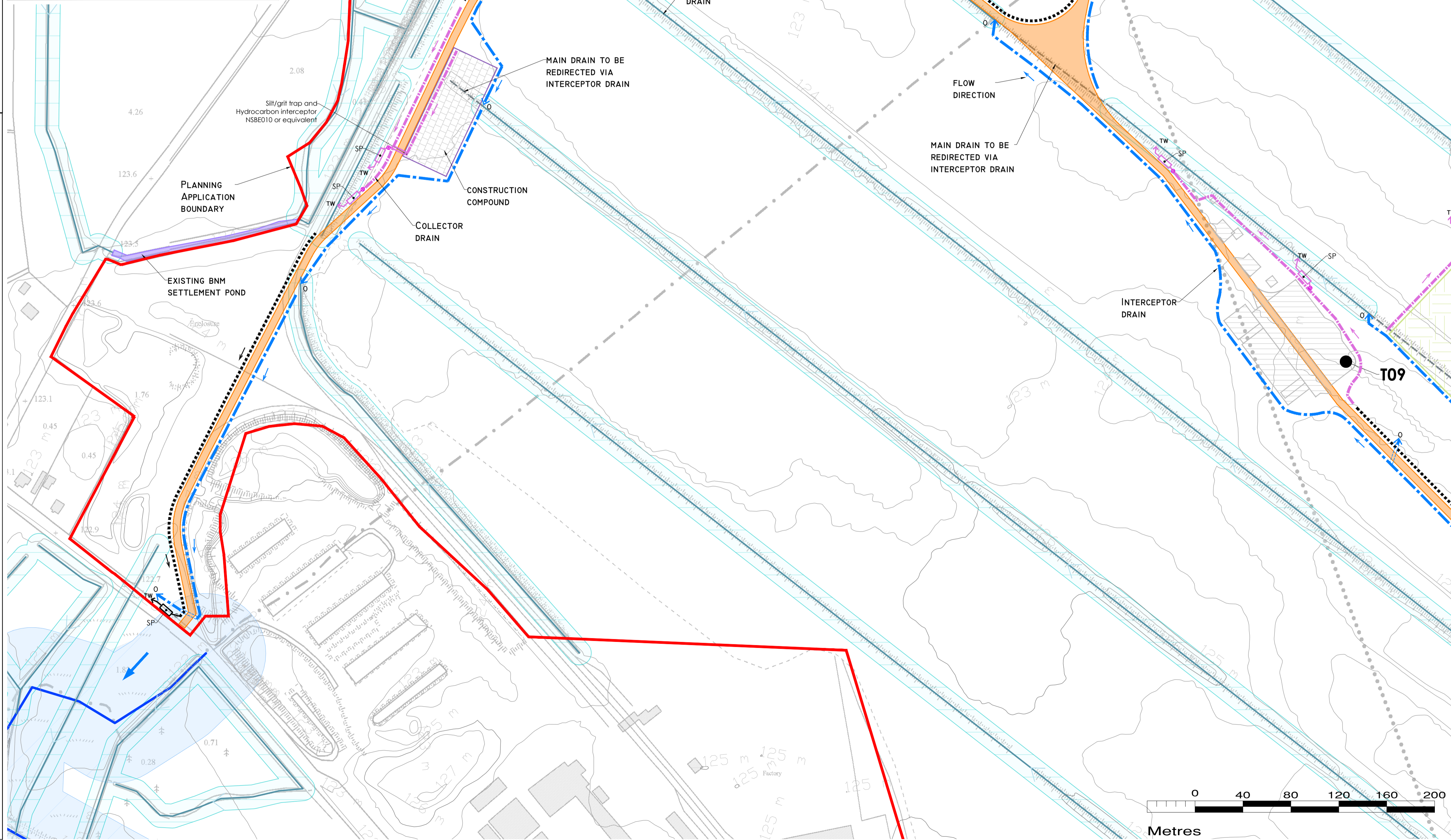
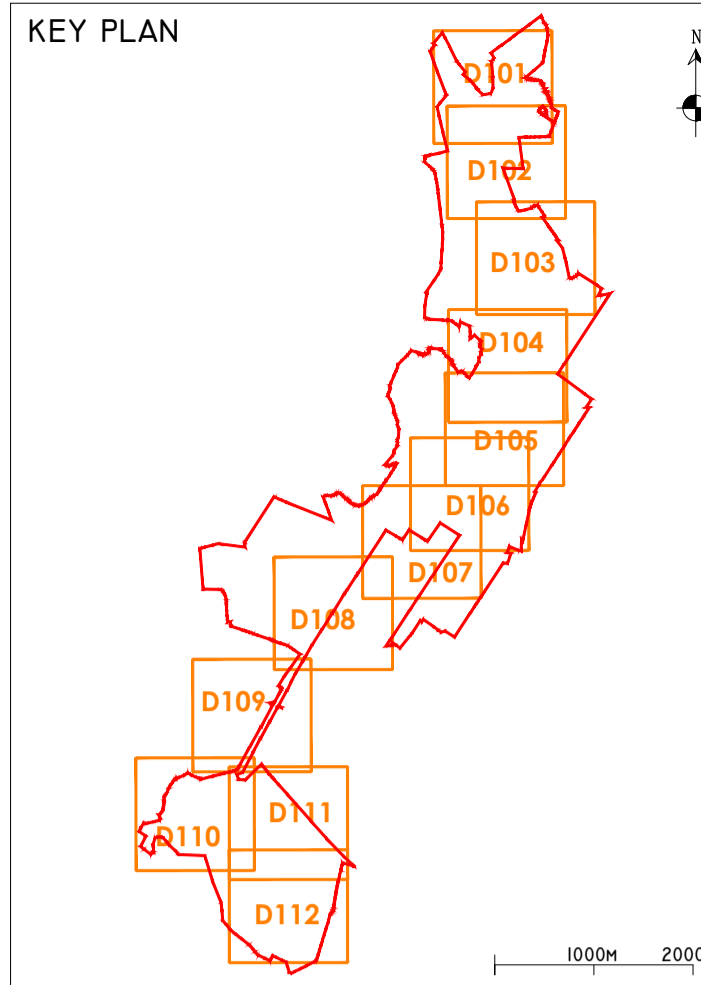
**POLLUTION PREVENTION NOTES:**

1. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION.
  2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES.
  3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.
- DISCHARGES**
4. WATER CONTAINING SILT WILL NOT BE DISCHARGED OR PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES WILL BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
  5. NO EXCAVATED MATERIAL WILL BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.
  6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO DISCHARGE TO FIELD DRAINS OR MAIN DRAINS.
  7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN FIELD DRAINS/MAIN DRAINS WILL BE COMPLETED IN A MANNER THAT WILL NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SUITABLE SPLASH PLATES, AND/OR OTHER SIMILAR DISCHARGE CONTROLS.
  8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING FIELD DRAINS/MAIN DITCHES UNLESS ABSOLUTELY NECESSARY.
- EXCAVATIONS**
9. WHERE (TEMPORARY) DEEP EXCAVATIONS ARE PROPOSED, CUT-OFF DRAINS WILL BE USED TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.
- EXPOSED GROUND & STOCKPILES**
10. THE AMOUNT OF TEMPORARY EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN/EXPOSED AT ANY TIME WILL BE MINIMISED.
- 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, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
  14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.
- CONCRETE**
15. CONCRETE POURS WILL BE MANAGED AND SUPERVISED TO ENSURE THERE WILL BE NO LEAKAGE/SEEPAGE/DISCHARGE OF CONCRETE OR CONCRETE WATER DURING THE CONSTRUCTION PHASE.
  16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE AT A LINED CONCRETE WASH OUT PIT.
- IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:**
- STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.
- CONTAIN** - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND ANY SOURCE OF POLLUTION.
- NOTIFY** - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE RECEPTORS.

**DRAINAGE NOTES:**

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

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



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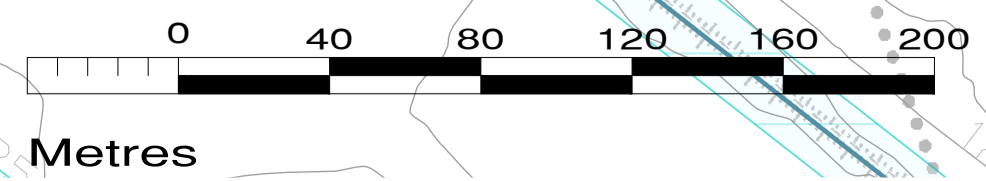
Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D110**

Drawing No: P1617-1-0426-A1-D110-00C  
Sheet Size: A1  
Scale: 1:2,000 (A1)  
Date: 22/04/2026

Project No.: P1617-1  
Drawn By: GA  
Checked By: MG



**POLLUTION PREVENTION NOTES:**

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

**DISCHARGES**

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

**EXCAVATIONS**

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

**EXPOSED GROUND & STOCKPILES**

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

**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, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

**CONCRETE**

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

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

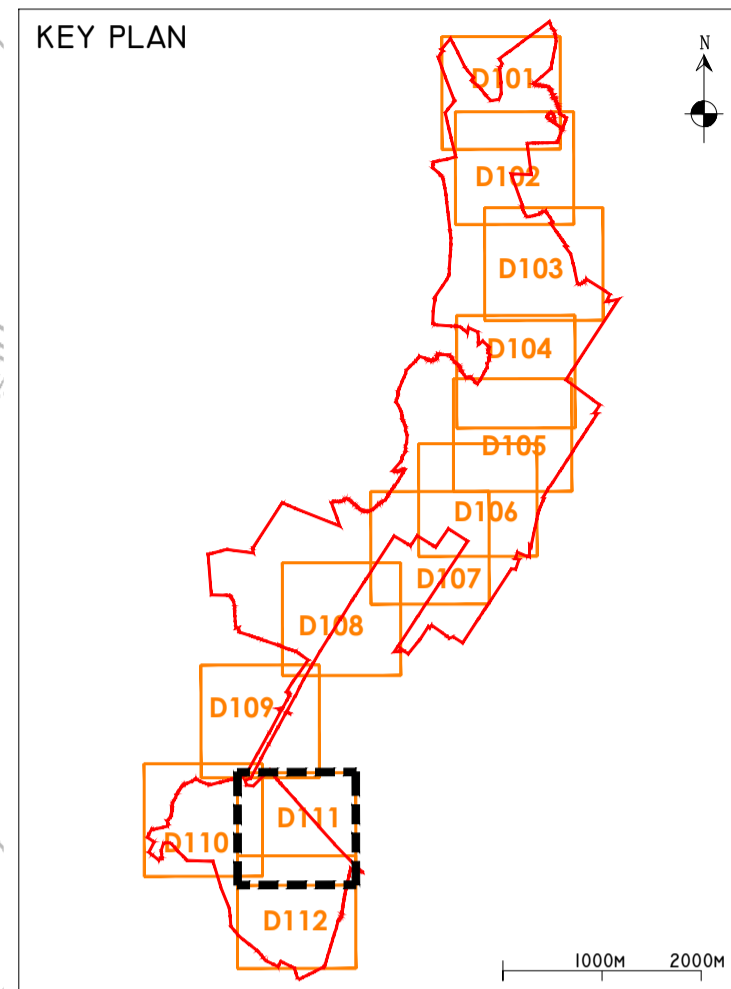
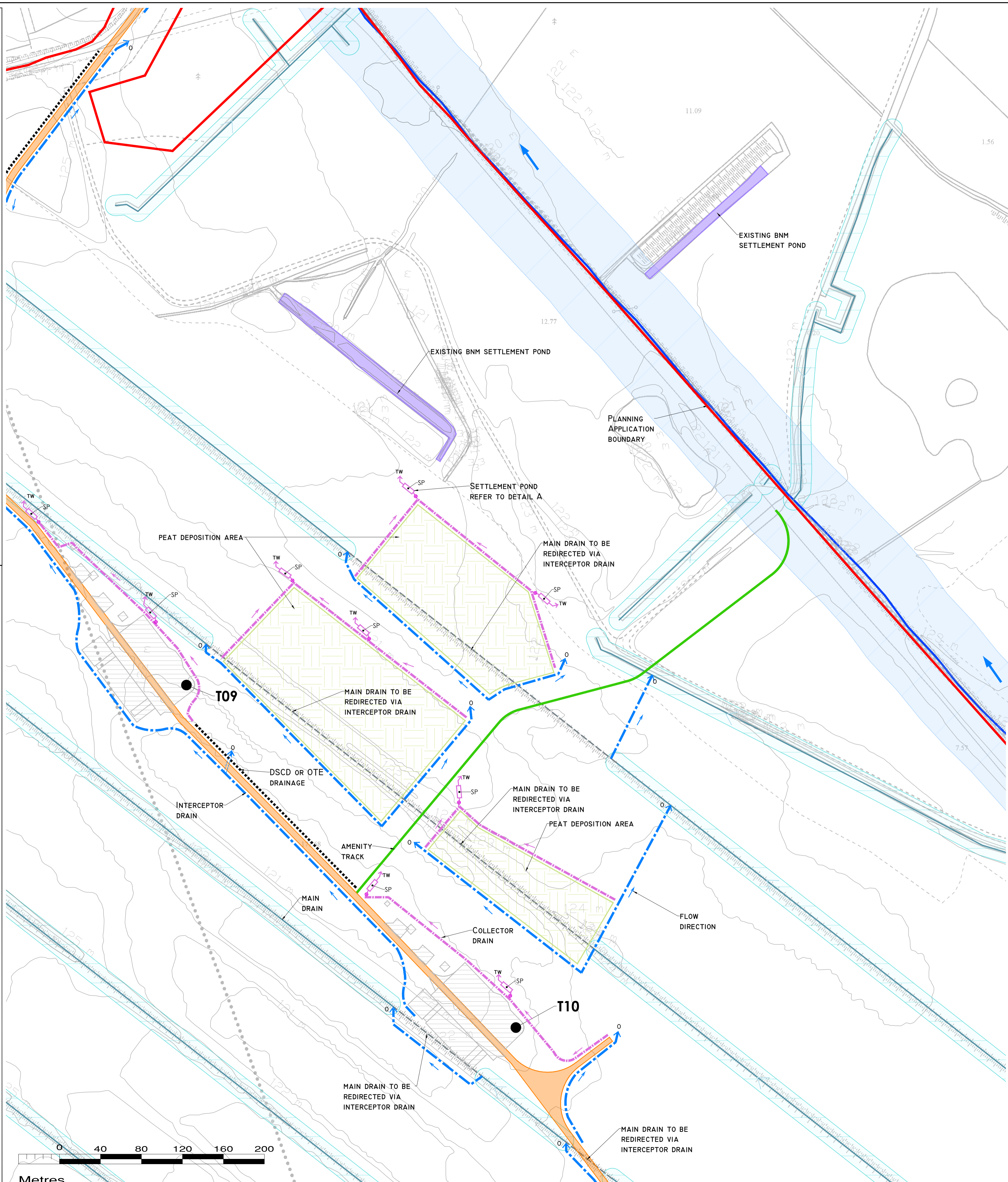
**STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

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

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

**DRAINAGE NOTES:**

1. SITE TRACKS AND ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, WILL BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.
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5. INTERCEPTOR SWALES / FIELD DRAINS WILL BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DRAINS WILL BE INSTALLED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. OPTIMUM LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO ANY EXISTING WATERCOURSES.
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10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPEND ON THE CATCHMENT AREA BEING SERVED. EXAMPLE POND SIZES FOR VARIOUS CATCHMENT AREAS SHOWN ON DRAWING D501.
11. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.
12. SILT FENCES TO BE PROVIDED ALONG EDGE OF EXISTING WATERCOURSES WHERE WORK COMES WITHIN <15M OF EDGE OF ANY DITCH / DRAIN / EPIHEMERAL CHANNEL.
13. SLOPES OF THE SWALES / DITCHES TO BE VEGETATED OR PROTECTED FROM EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER ('PEAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND USED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS.
14. AREAS STRIPPED OF VEGETATION WILL BE KEPT TO A MINIMUM.
15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20-100MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE.
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17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF THE DRAIN/SWALE.
18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND.
19. OIL FUEL ONLY WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES.
20. TEMPORARY USE OF SILT BAGS WILL BE USED ON SITE WHERE PUMPING FROM EXCAVATIONS IS REQUIRED.



- DRAWING LEGEND :**
- WATERCOURSES
  - 50M WATERCOURSE BUFFER
  - MAPPED OPEN DRAINS
  - 10M OPEN DRAIN BUFFER
  - PIPED DRAINS
  - REDIRECTED MAIN DRAINS
  - EXISTING BNM SETTLEMENT PONDS
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
  - DSCD OR OVER THE EDGE (OTE)
  - INDICATIVE DIRECTION OF FLOW
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - WF SETTLEMENT POND
  - LEVEL SPREADER
  - OPTIONAL CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - RISING MAIN
  - BORROW PIT SETTLEMENT POND
  - COLLECTION SUMP
  - PROPOSED WC CROSSING/CULVERT
  - EXISTING WC CROSSING/CULVERT
  - INTERCEPTOR DITCH CULVERT
  - COLLECTOR DITCH CULVERT
  - OVERLAND FLOW DISCHARGE
  - TREATED WATER DISCHARGE
  - SETTLEMENT POND
  - VS SEMI-NATURAL VEGETATION SWALE / FILTER BED /SECONDARY SP
  - PUMPING SUMP
  - PLANNING APPLICATION BOUNDARY
  - EXISTING GROUND SURFACE
  - MINOR CONTOUR (1M INTERVAL)
  - EXISTING GROUND SURFACE
  - MAJOR CONTOUR (5M INTERVAL)
  - TURBINE AND TURBINE FOUNDATION
  - HARDSTAND
  - PROPOSED NEW ROADS
  - AMENITY TRACKS
  - SUBSTATION
  - TEMPORARY CONSTRUCTION COMPOUND
  - MAIN CBOP AND TSA COMPOUND
  - CONSTRUCTION COMPOUND CBOP
  - BORROW PIT
  - PEAT DEPOSITION AREAS
  - AMENITY CARPARK

MITIGATION / DRAINAGE CONTROLS AVAILABLE FOR USE ACROSS THE SITE	
MANAGEMENT TYPE	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS
Avoidance Controls	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED) 2) USING SMALL WORKING AREAS 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS:	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 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
IN-LINE CONTROLS:	1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SLUMPS, PUMPING SYSTEMS 6) ATTENUATION PONDS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS:	1) TEMPORARY SLUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS:	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS 6) HYDROCARBON INTERCEPTORS

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Client: **BORD NA MÓNA POWERGEN LTD.**

Job: **LITTLETON WF, CO. TIPPERARY**

Title: **PROPOSED DRAINAGE LAYOUT**

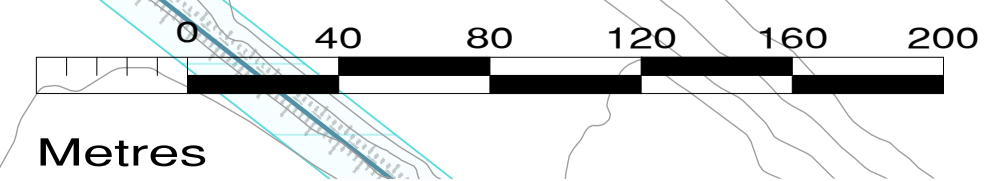
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Drawing No: **P1617-1-0426-A1-D111-00C**

Sheet Size: **A1** Project No.: **P1617-1**

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

Date: **22/04/2026** Checked By: **MG**



**POLLUTION PREVENTION NOTES:**

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3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.

**DISCHARGES**

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

**EXCAVATIONS**

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

**EXPOSED GROUND & STOCKPILES**

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

**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, ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / MAIN DRAINS DITCHES AND WATERCOURSES/WATERBODIES.
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.

**CONCRETE**

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

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

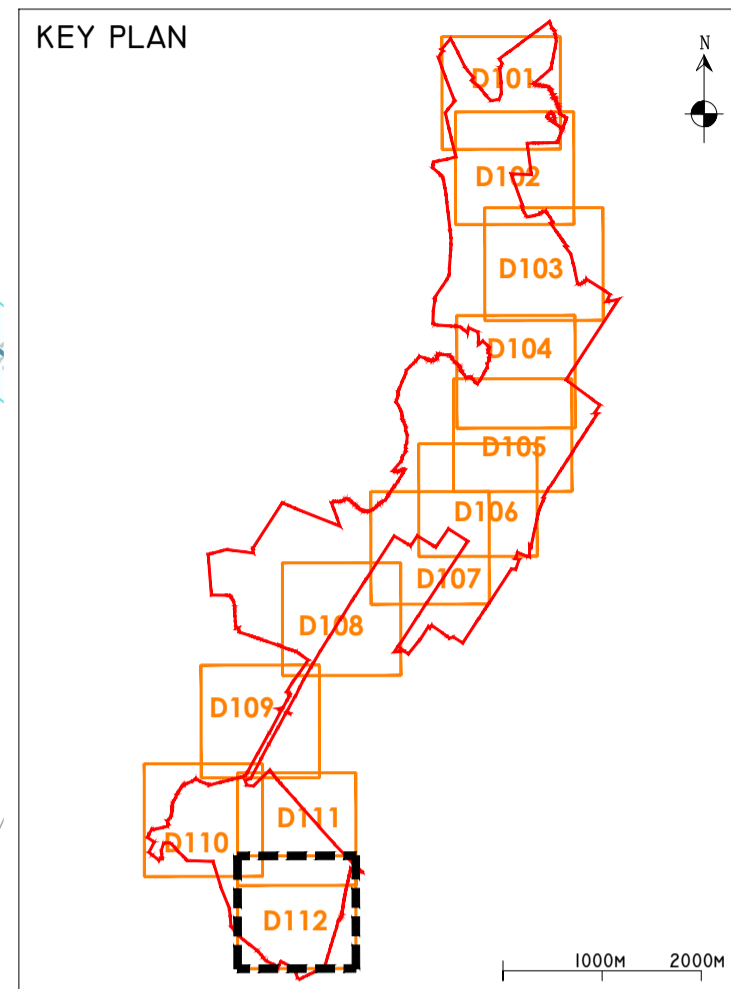
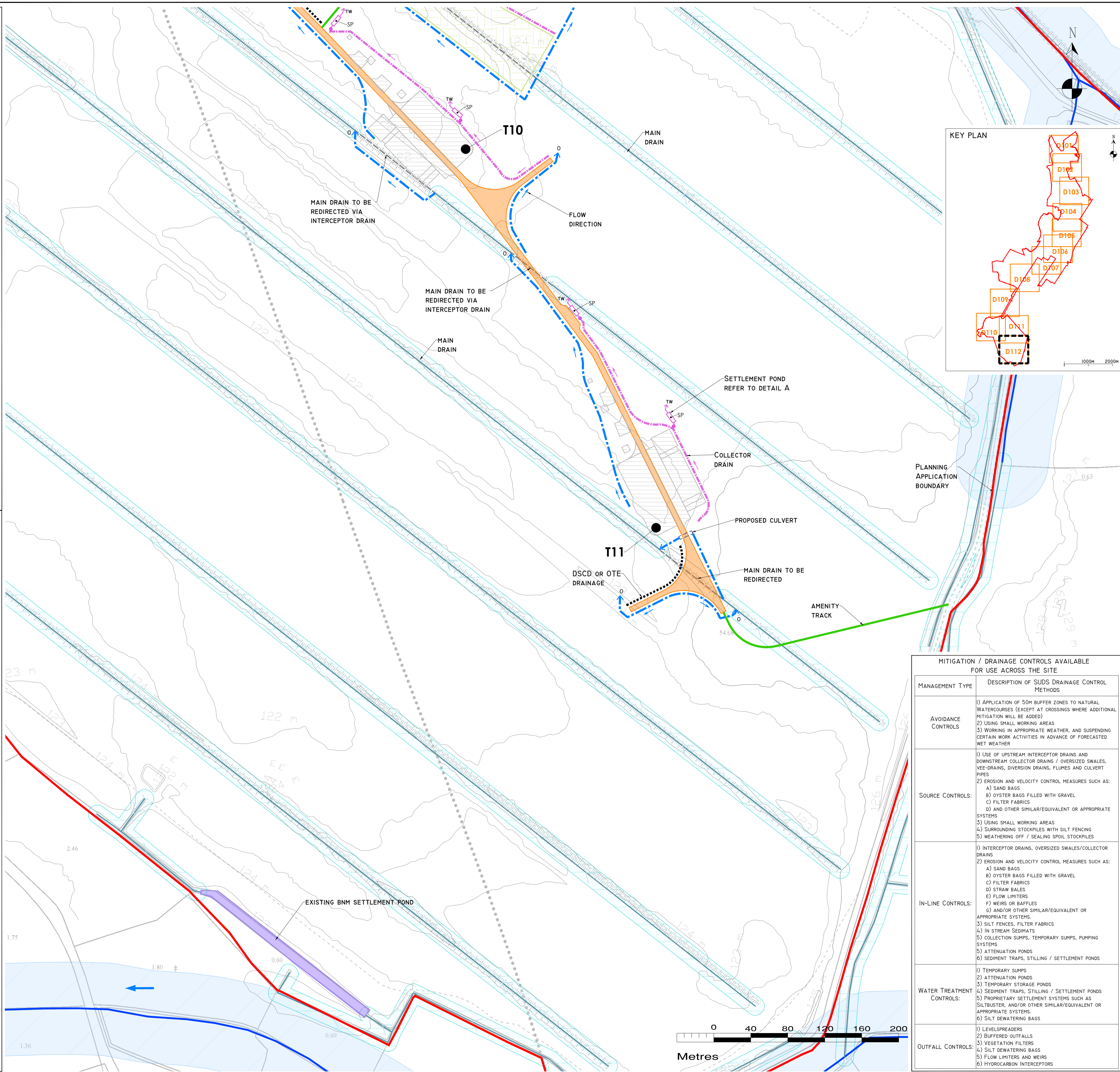
**STOP** - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED.

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

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

**DRAINAGE NOTES:**

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



- DRAWING LEGEND :**
- WATERCOURSES
  - 50M WATERCOURSE BUFFER
  - MAPPED OPEN DRAINS
  - 10M OPEN DRAIN BUFFER
  - PIPED DRAINS
  - REDIRECTED MAIN DRAINS
  - EXISTING BNM SETTLEMENT PONDS
  - STREAM FLOW DIRECTION
  - UPSTREAM INTERCEPTOR DRAIN
  - SWALES/DOWNSTREAM COLLECTOR DRAIN (DSCD)
  - DSCD OR OVER THE EDGE (OTE)
  - INDICATIVE DIRECTION OF FLOW
  - SILT FENCES
  - DOUBLE/TRIPLE SILT FENCES
  - WF SETTLEMENT POND
  - LEVEL SPREADER
  - OPTIONAL CHECK DAM 'TYPE A'
  - CHECK DAM 'TYPE B'
  - RIISING MAIN
  - BORROW PIT SETTLEMENT POND
  - COLLECTION SUMP
  - PROPOSED WC CROSSING/CULVERT
  - EXISTING WC CROSSING/CULVERT
  - INTERCEPTOR DITCH/CULVERT
  - COLLECTOR DITCH/CULVERT
  - OVERLAND FLOW DISCHARGE
  - SETTLEMENT POND
  - TREATED WATER DISCHARGE
  - SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
  - PUMPING SUMP
  - PLANNING APPLICATION BOUNDARY
  - EXISTING GROUND SURFACE
  - MINOR CONTOUR (1M INTERVAL)
  - EXISTING GROUND SURFACE
  - MAJOR CONTOUR (5M INTERVAL)
  - TURBINE AND TURBINE FOUNDATION
  - HARDSTAND
  - PROPOSED NEW ROADS
  - AMENITY TRACKS
  - SUBSTATION
  - TEMPORARY CONSTRUCTION COMPOUND
  - MAIN CBOp AND TSA COMPOUND
  - CONSTRUCTION COMPOUND CBOp
  - BORROW PIT
  - PEAT DEPOSITION AREAS
  - AMENITY CARPARK

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Title: **PROPOSED DRAINAGE LAYOUT**

Figure No: **D112**

Drawing No: P1617-1-0426-A1-D112-00C

Sheet Size: A1 Project No.: P1617-1

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

Date: 22/04/2026 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 (EXCEPT AT CROSSINGS WHERE ADDITIONAL MITIGATION WILL BE ADDED) 2) USING SMALL WORKING AREAS 3) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER
SOURCE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES 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 STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING SPOIL STOCKPILES
IN-LINE CONTROLS	1) INTERCEPTOR DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMENTS 5) COLLECTION SUMPS, TEMPORARY SLUMPS, PUMPING SYSTEMS 6) ATTENUATION PONDS 7) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	1) TEMPORARY SLUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE PONDS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS
OUTFALL CONTROLS	1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS 6) HYDROCARBON INTERCEPTORS

