

Knocknamork Grid Connection Infrastructure, An Bord Pleanala

Planning Permission Application Drawings





Schedule of Drawings

Drawing No.	Drawing Title	Scale	Size
210732 - 01	Location Context Map	1: 50,000	@ A3
210732 - 02	Site Location Map	1: 40,000	@ A3
210732 - 02A	Site Location Map Sheet A	1: 5,000	@ A3
210732 - 02 B	Site Location Map Sheet B	1: 5,000	@ A3
210732 - 03	Site Layout Overview	1: 40,000	@ A3
210732 - 04	Site Layout Keyplan	1: 40,000	@ A3
210732 - 05	Site Layout Sheet 1 of 4	1: 2,500	@ A3
210732 - 06	Site Layout Sheet 2 of 4	1: 2,500	@ A3
210732 - 07	Site Layout Sheet 3 of 4	1: 2,500	@ A3
210732 - 08	Site Layout Sheet 4 of 4	1: 2,500	@ A3
210732 - 09	Substation Compound Layout	1: 500	@ A3
210732 - 10	Substation Compound Elevations	1: 200	@ A1
210732 - 11	Substation Compound Sections	1: 200	@ A1
210732 - 12	Control Building 1 Plan	1: 100	@ A3
210732 - 13	Control Building 1 Elevations & Section	1: 100	@ A3
210732 - 14	Control Building 2 Plan	1: 100	@ A3
210732 - 15	Control Building 2 Elevations & Section	1: 100	@ A3
210732 - 16	Borrow Pit	1: 1,000	@ A3
210732 - 17	Borrow Pit Sections	1: 500	@ A3
210732 - 18	Joint Bay Location Map	1: 40,000	@ A3
210732 - 19	Joint Bay Location Map (1:10,000)	1: 40,000	@ A3
210732 - 20	Option A – Cross Section – 110kV	1:20	@ A3
210732 - 21	Option B – Flat Bed Under Existing Pipe – 110kV	As Shown	@ A3
210732 - 22	Option C – Flat Bed Over Existing Pipe – 110kV	As Shown	@ A3
210732 - 23	Option D – Typical Horizontal Directional Drill – Cross Section	1: 200	@ A3
210732 - 24	Option E – Clear Span – 110kV	1: 50	@ A3
210732 - 25	Option F – Pipe Crossing – 110kV	1:20	@ A3
210732 - 26	Option F – Pipe Crossing – 110kV	1:20	@ A3
210732 - 27	Option G – Corrugated Steel Arch Culvert Crossing	1: 100	@ A3
210732 - 28	Proposed 110kV Road Detail	1:50	@ A3
210732 - 29	Plan of Joint Bay	1:25	@ A3
210732 - 30	Joint Bay Sections	1:25	@ A3
210732 - 31	Upgrade of Existing Excavated Access Roads	1: 30	@ A3
210732 - 32	New Excavate and Replace Access Road	1: 50	@ A3

Drawing No.	Drainage Drawing Title	Scale	Sizo
Diawing Pro.	Proposed Drainage Layout	1·2.000	@ A1
D102	Proposed Drainage Layout	1:2,000	@ A1
D103	Proposed Drainage Layout	1:2,000	@ A1
D104	Proposed Drainage Layout	1:2,000	@ A1
D105	Proposed Drainage Layout	1:2,000	@ A1
D106	Proposed Drainage Layout	1:2,000	@ A1
D107	Proposed Drainage Layout	1:2,000	@ A1
D108	Proposed Drainage Layout	1:2,000	@ A1
D109	Proposed Drainage Layout	1:2,000	@ A1
D110	Proposed Drainage Layout	1:2,000	@ A1
D111	Proposed Drainage Layout	1:2,000	@ A1
D501	Drainage Details 1	As Shown	@ A1
D502	Drainage Details 2	As Shown	@ A1
D503	Drainage Details 3	As Shown	@ A1
D504	Drainage Details 4	As Shown	@ A1

























SOUTH ELEVATION

Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkoireland.ie Website: www.mkoireland.ie

Control Building 1 Plan Knocknamork Grid Connection Infrastructure, An Bord Pleanala Joseph O Brien Meabhann Crow 210732 - 12 26.07.2022 [™]210732 1:100 @ A3

Planning anu Environmental Consultants Tuam Road, Galvay Ireland, H91 VW84 +335 (0) 91 735611 email: Info@www.mkoireland.ie Website: www.mkoireland.ie

Control Building 2 Plan Knocknamork Grid Connection Infrastructure, An Bord Pleanala Joseph O Brien Meabhann Crow 210732 - 14 26.07.2022 210732 1:100 @ A3

Planning arw Environmental Consultants Tram Road, Calway Ireland, H91 VW84 +353 (0) 91 735611 email: hrfo@www.mkoireland.ie Website: www.mkoireland.ie

Level

SECTION C-C

SECTION B-B

Borrow P	t Sections	
PROJECT TITLE: Knocknamork Grid Connection Infrastructure, An Bord Pleanala		
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe	
PROJECT No.: 210732	DRAWING No.: 210732 - 17	
SCALE: 1:500 @ A3	DATE: 26.07.2022	
	MKO Planning and Environmental Consultants	

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Option A - Cross section - 110kV

SCALE 1:20

Option A - Cross section - 110kV

SCALE 1:20

Note:

All dimensions are in millimetres, unless noted otherwise.

All dimensions to be checked on site and any discrepancy to be reported to the engineer.

Figured dimensions only to be used, drawings not to be scaled. If in doubt ask.

For illustration purposes only. Exact size and appearance of unit subject to manufacturer selection.

Option A Section	A - Cross - 110kV
^{PROJECT TITLE} Knocknamork (Infrastructure, A	Grid Connection n Bord Pleanala
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe
PROJECT No.: 210732	DRAWING No.: 210732 - 20
SCALE: 1:20 @ A3	DATE: 26.07.2022
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 \checkmark

ESBN red cable marker strips Galvanised steel plate arrangement CBGMB Clause 822 material

Option B - Flat bed under existing pipe - 110kV SCALE 1:50

Note:

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Option B - Flat bed under existing pipe - 110kV

SCALE 1:20

with clause 804 material

Yellow Marker Warning Tape. across full width of trench

Clause 804 material to be used and compacted in accordance with NRA guidelines in layers not more than 300mm.

Galvanised steel plate arrangement

CBGMB Clause 822 material

160mm Dia Power Ducts, Complete with 12mm Diameter draw ropes

Competent Stratum

Option B - Flat Bed Under Existing Pipe - 110kV

Infrastructure, An Bord Pleanala		
Joseph O Brien	CHECKED BY: Meabhann Crowe	
PROJECT No.: 210732	DRAWING No.: 210732 - 21	
As Shown @ A3	DATE: 26.07.2022	

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Option C - Flat bed over existing pipe - 110kV

SCALE 1:20

Competent Stratum

Note:

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Option D - Typical Horizontal Directional Drill - Cross Section

SCALE: 1:200

Note:

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Option D - Typical Horizontal Directional Drill - Cross Section		
PROJECT TITLE Knocknamork Grid Connection Infrastructure, An Bord Pleanala		
Joseph O Brien	CHECKED BY: Meabhann Crowe	
PROJECT No.: 210732	DRAWING No.: 210732 - 23	
SCALE: 1:200 @ A3	DATE: 26.07.2022	
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DRAWING TITI

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Note:

All dimensions are in millimetres, unless noted otherwise.

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Option E - Clear Span - 110kV		
PROJECT TITLE Knocknamork Grid Connection Infrastructure, An Bord Pleanala		
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe	
PROJECT No.: 210732	DRAWING No.: 210732 - 24	
SCALE: 1:50 @ A3	DATE: 26.07.2022	
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email: info@www.mkoireland.ie Website: www.mkoireland.ie

V

Option F - Pipe crossing - 110kV SCALE 1:20

Note:

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Option Crossing	F - Pipe g - 110kV
^{PROJECT TITLE:} Knocknamork (Infrastructure, A	Grid Connection In Bord Pleanala
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe
PROJECT No.: 210732	DRAWING No.: 210732 - 25
SCALE: 1:20 @ A3	DATE: 26.07.2022
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Option F - Pipe crossing - 110kV SCALE 1:20

Note:

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For illustration purposes only. Exact size and appearance of unit subject to manufacturer selection.

Option Crossing	F - Pipe g - 110kV
^{PROJECT TITLE} Knocknamork (Infrastructure, A	Grid Connection n Bord Pleanala
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe
PROJECT No.: 210732	DRAWING No.: 210732 - 26
SCALE: 1:20 @ A3	DATE: 26.07.2022
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Note:

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Option G - Corrugated Steel Arch Culvert Crossing

Knocknamork Grid Connection Infrastructure, An Bord Pleanala

Joseph O Brien	Meabhann Crowe
PROJECT No.: 210732	DRAWING No.: 210732 - 27
scale: 1:100 @ A3	DATE: 26.07.2022

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Proposed 110kV Track Detail SCALE 1:50

Note:

All dimensions are in millimetres, unless noted otherwise.

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DRAWING TITLE:	
Propose Road	ed 110kV Detail
ROJECT TITLE Knocknamork	Grid Connection
Infrastructure, A	n Bord Pleanala
Joseph O Brien	CHECKED BY: Meabhann Crowe
PROJECT No.: 210732	DRAWING No.: 210732 - 28
SCALE: 1:50 @ A3	DATE: 26.07.2022
	MKO Planning and

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MKO>

V

SCALE 1:25

Note:

All dimensions are in millimetres, unless noted otherwise.

All dimensions to be checked on site and any discrepancy to be reported to the engineer.

Figured dimensions only to be used, drawings not to be scaled. If in doubt ask.

For illustration purposes only. Exact size and appearance of unit subject to manufacturer selection.

DRAWING TITLE:		
Plan of Typic	cal Joint Bay	
PROJECT TITLE Knocknamork Grid Connection Infrastructure, An Bord Pleanala		
DRAWING BY: Joseph O Brien	CHECKED BY: Meabhann Crowe	
PROJECT No.: 210732	DRAWING No.: 210732 - 29	
scale: 1:25 @ A3	DATE: 26.07.2022	
мкô	MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 W94 +353 (0) 917 35611 email: Infd@www.mkoireland.ie Website: www.mkoireland.ie	

For illustration purposes only. Exact size and appearance of unit subject to manufacturer selection.

Note:

otherwise.

DRAWING TITLE:				
Joint Bay	Sections			
^{PROJECT TITLE} Knocknamork (Infrastructure, A	Grid Connection n Bord Pleanala			
DRAWING BY: Joseph O Brien Meabhann Crow				
PROJECT No.: 210732	DRAWING No.: 210732 - 30			
scale: 1:25 @ A3	DATE: 26.07.2022			
MKO	MKO Planning and Environmental Consultants Tuam Read Galway			

Ireland, H91 VW84 +353 (0) 91 735611 email: info@www.mkoir land ie Website: www.mkoireland.ie

110 kV underground cabling substation access

New Excavate and Replace Access Road				
DRAWING BY: CHECKED BY: IH				
PROJECT No.: 210732	DRAWING No.: 210732 - 32			
SCALE: 1:50 @ A3	DATE: 26.07.2022			
OS SHEET No.:				
	Cork Dublin Carlow			

POLLUTION PREVENTION NOTES: I. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION	MITIGATION	N / DRAINAGE COINTROLS AVAILABLE FOR USE ACROSS THE SITE	
AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION. 2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	
 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 	Avoidance Controls	 APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE USING SMALL WORKING AREAS WORKING IN APPROPRIATE WEATHER AND SUSPENDING 	
 <u>Discharges</u> Water containing silt will not be pumped directly to any natural watercourse. All discharges to be made over open ground or into existing field drain with silt trap at a minimum of 20m from nearest watercourse unless otherwise stated. No excavated material is to be stored within any surface water buffer zone. Pumped water will be directed into track side ditches and treated in settlement ponds and vegetation swales prior to overland discharge. Pumping of clean water from excavations / or over-pumping in drains/ditches/streams will be completed in a manner that does not cause scour or erosion at the point of release/discharge. This was provided by performent. 	SOURCE CONTROLS:	CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER I) 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	
 WHE BE DONE BY REDUCTION THE FLOW VELOCITIES ON BY ODE OF STEAST PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS. 8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY. <u>EXCAVATIONS</u> 9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USE TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS. <u>EXPOSED GROUND & STOCKPILES</u> 10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE. <u>SITE TRACKS</u> 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. 	IN-LINE CONTROLS:	 5) WEATHERING OFF / SEALING PEAT STOCKPILES I) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMATS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 	
 IS. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. I4. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED. <u>CONCRETE</u> I5. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR. I6. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE. IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING 	WATER TREATMENT CONTROLS: OUTFALL CONTROLS:	 I) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 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 I) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 	
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STORED AND THE SOURCE		5) FLOW LIMITERS AND WEIRS	
OF THE POLLUTION IDENTIFIED.			
SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION. <u>NOTIFY</u> - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS / LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS. DRAINAGE NOTES:			0.58
 SPECIFICATION (I.E. BY OTHERS). 2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. 3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE. 4. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION. 	+		
 S. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. 6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO DEVENTS FOR THE SACE WATER OF THE FUNCTION. 		TEMPORARY ACCESS ROAD	REFER TO DETAIL J
SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES.			OLD N22 ROAD
 WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN I : 1.5 TO I : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF 		ACO DRAIN NO RUN OFF ONTO THE N22 ROAD	ACO DRAIN NO RUN OF ONTO THE OLD N22 ROA
 SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE. IO. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501. II. 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. I2. SILT FENCES TO BE PROVIDE ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS. I3. SLOPES OF THE SWALES / DITCHES TO BE 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. I4. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM. I5. 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. I6. 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. I7. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE. I8. 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. 		0.41 0.35 0.25 0 40 80 120 10 S 0.45	
19. UIL FUEL WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES. 20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.	*		

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

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

 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.

REFUELING

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

Concrete

- 15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.
- I6. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE.

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

 \underline{STOP} - work in the immediate area should be stopped and the source of the pollution identified.

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

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

DRAINAGE NOTES:

I. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).

2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE

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10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES 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.
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2) ATTENUATION PONDS

APPROPRIATE SYSTEMS.

) LEVELSPREADERS

OUTFALL CONTROLS: 3) VEGETATION FILTERS

2) BUFFERED OUTFALLS

6) SILT DEWATERING BAGS

4) SILT DEWATERING BAGS

5) FLOW LIMITERS AND WEIRS

CONTROLS:

3) TEMPORARY STORAGE LAGOONS

5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS

SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR

WATER TREATMENT 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS

- SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND FROSION 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.

ISCHARGES

- WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.
- NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFFR ZONE.
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EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

0. The amount of exposed ground and temporary stockpiles open at ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.

SITE TRACKS

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

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

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BETWEEN I : 1.5 TO I : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES. 9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE

GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.

EXISTING CULVERT

Metres

TO BE REMOVED

40 80 120 160 200

10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501. II. 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 PROVIDE ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / EPHEMERAL

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14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM. 15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE. 16. Build up of silt levels at check dams to be removed and DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME during the construction phase. Where check dams become clogged

WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT. 17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.

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19. OIL FUEL WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES. 20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.

EIAR SITE-BÓUNDÁRY

44	N T		LEGEND : RIVERS/STREAMS RIVERS/STREAMS LAKES LAKE 50M BUFFE STREAM FLOW DI	5 50m buffer Er Irection	XISTING URAINAGE
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			EXISTING PUBLIC SUBSTATION PROPOSED BORRO PERMITTED BORRO BALLYVOUSKILL & KNOCKNAMORK P CUT AREA FILL AREA	ROAD W PIT OW PIT 220KV SUBSTATION PERMITTED LAYOUT	
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ent Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	Or ©	dnance Survey Ir Ordnance Survey	eland Licence No. EN 00 y Ireland/Government of I	44722 reland
DANCE ROLS	 APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE USING SMALL WORKING AREAS WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED 				
CONTROLS:	 WET WEATHER I) 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 E) WEATHERNON OF A DEST OF CONTROL MEASURES 	Date Dese Revisions	Cription H EI S er Main St te	YDRO NVIRONA ERVICES el: +353 (0) 58-44122	Chkd Signed
CONTROLS:	 I) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES 	Client:	Ingarvan te laterford e Ireland w KNOCH	el: +353 (0) 58-44244 mail: info@hydroenviro veb: www.hydroenviro KNAMORK LTD	nmental.ie onmental.ie
	 G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMATS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION LAGOONS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 	Job: PR CABL F	OPOSED SUB ING, ACCESS ENEWABLE	BSTATION, UNDERG S ROADS TO KNOC ENERGY DEVELOP	GROUND CKNAMORK MENT
REATMENT ROLS:	 TEMPORARY SUMPS ATTENUATION PONDS TEMPORARY STORAGE LAGOONS SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR 	Figure No:	ткороsed	DRAINAGE LAYOU	1
	APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS 1) LEVELSPREADERS 2) BUFFERED OUTFALLS	Drawing No: Sheet Size: A	P1421-1-072	22-A1-D104-00A Project No.: P142	1-1
CONTROLS:	3) VEGETATION FILTERS4) SILT DEWATERING BAGS5) FLOW LIMITERS AND WEIRS	Scale: 1:2,00 Date: 15/07/	0 (A1) 2022	Drawn By: GD Checked Bv: MG	

- 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. 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
- Discharges

AND DITCHES.

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

EXCAVATIONS

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

EXPOSED GROUND & STOCKPILES

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

SITE TRACKS

 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.

REFUELING

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

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

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

 \underline{STOP} - work in the immediate area should be stopped and the source of the pollution identified.

<u>CONTAIN</u> - the source of the pollution should be bunded using a suitable method. Natural watercourses should be temporarily diverted around the source of pollution.

 \underline{NOTIFY} - The relevant authorities (Site Manager / Fisheries / NPWS / Local Authority etc.) should be notified immediately to ensure that measures can be implemented downstream to protect fisheries and other sensitive areas.

DRAINAGE NOTES:

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· · ·	DESCRIPTION OF SUDS DRAINAGE CONTROL		Ordnance Surve	y Ireland Licence No. EN	0044722
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	WATERCOURSES WHERE POSSIBLE				
DANCE	2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE				
ROLS	5) USING SMALL WORKING AREAS4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING				
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	4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING PEAT STOCKPILES	22 Low	ver Main St	tel: +353 (0) 58-441	22
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	6) SILT DEWATERING BAGS	Drawing No	o: P1421-1-(0/22-A1-D105-00A	
	1) LEVELSPREADERS 2) BUFFERED OUTFALLS	Sheet Size:	A1	Project No.: P14	21-1
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POLLUTION PREVENTION NOTES: I. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION	MITIGATION	/ DRAINAGE COINTROLS AVAILABLE	
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	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS I) APPLICATION OF 50M BUFFER ZONES TO NATURAL	
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.	Avoidance Controls	WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE 3) USING SMALL WORKING AREAS 4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED	
 DISCHARGES WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER 		WET WEATHER I) 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:	
 BUFFER ZONE. 6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE. 7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DISCHARGE (OTDEANON WILL DE COMPLETED IN A MANYED THAT DOED 	SOURCE CONTROLS:	 A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 	
NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS. 8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.		 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING PEAT STOCKPILES 1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED 	
Excavations 9. Where deep excavations are proposed cut-off drains will be use to reduce the amount of surface water entering the excavation. This will be the case around turbine base excavations.		2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES	
EXPOSED GROUND & STOCKPILES 10. THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.	IN-LINE CONTROLS:	 E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 	
 II. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED. I2. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY. REFUELING 		 4) IN STREAM SEDIMATS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION LAGOONS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 	
 IS. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. I4. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED. 	WATER TREATMENT CONTROLS:	 TEMPORARY SUMPS ATTENUATION PONDS TEMPORARY STORAGE LAGOONS SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SULTBUSTER, AND/OR OTHER SIMIL AR/EQUIVALENT OR 	
 15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR. 16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE. 		APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS 1) LEVELSPREADERS 2) BUFFERED OUTFALLS	
IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:	OUTFALL CONTROLS:	3) VEGETATION FILTERS 4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS	
STOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE OF THE POLLUTION IDENTIFIED. <u>CONTAIN</u> - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORABLY DIVERTED.			
AROUND THE SOURCE OF POLLUTION. <u>NOTIFY</u> - The relevant authorities (Site Manager / Fisheries / NPWS / Local Authority etc.) should be notified immediately to ensure that			
MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS. DRAINAGE NOTES: I. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S			PROPOSED ROAD
2. Spare straw bales/silt fencing/ or similar, to be stored on site. The level of silt in runoff during construction is to be monitored visually and excessive silt levels in any area to be temporarily managed by placing silt fences, straw bales / or		COLLECTOR DRAIN	PROPOSED NEW CL
SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. 3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL	CHECK DAM C	@ 40 M ENTERS	
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	REFER TO DE	ETAIL C CHECK DAM @	50 M
PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION. 5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE		REFER TO DET	AIL C
WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. 6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE			
ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES. 7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.			
8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN I : I.5 TO I : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.			CLYDAGHROE
9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE			CLYĐAGHROE
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POLLUTION PREVENTION NOTES: I. Site management proposals are intended to ensure protection	MITIGATION	I / DRAINAGE COINTROLS AVAILABLE FOR USE ACROSS THE SITE	
AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION. 2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	
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 <u>DISCHARGES</u> WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDICING THE FLOW VELOCITIES OR BY USE OF SPLASH 	SOURCE CONTROLS:	WET WEATHER I) 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	
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REFUELING 13. REFUELING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. 14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED. CONCRETE 15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR	WATER TREATMENT Controls:	 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS 5) PROPRIETARY SETTLEMENT SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS 	
 I6. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE. IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO: 	OUTFALL CONTROLS:	 LEVELSPREADERS BUFFERED OUTFALLS VEGETATION FILTERS SILT DEWATERING BAGS FLOW LIMITERS AND WEIRS 	
$\frac{STOP}{of the pollution identified}$ $\frac{STOP}{of the pollution identified}$ $\frac{CONTAIN}{of the source of the pollution should be bunded using a suitable method. Natural watercourses should be temporarily diverted around the source of pollution.$ $\frac{NOTIFY}{of the relevant authorities} (Site Manager / Fisheries / NPWS / Local Authority etc.) should be notified immediately to ensure that$			
MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.			
 I. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). 2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. 		LEVEL SPREADER REFER TO DETAIL J	SP-MH TW
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 Roadway Suffacing design and construction to Engineer's Specification (i.e. by others). Space straw Bales/silt Fencing/ or similar, to be stored on site. The Level of silt in runoff During construction is to be monitored visually and excessive silt Levels in any area to be theroparality managed by Placing silt fences, straw Bales / or similar or additional check dams at the problem areas. Mobile siltsubstres system to be available on-site for use as required also. SUDS system to be available on-site for use as required also. SUDS system to be construction for on at the same time as the access tracks. Interim Measures such as the placement of straw Bales/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 or significant volumes of silt to receiving watercolores. See notes on pollution prevention. Interceptor swales / ditches to be used to collect upstream surface water flows. Regular cross drains / discharge surface water in interceptor brains to suitable field dail outfall points. Drankoef swales / ditches to be exceated allong access tracks to prevent excessive volumes of water collecting in the access tracks. Regular cross drains to be acceted with the engineer is i. Storace water will, not be allowed to discharge theroprese will be required where over land disclarge built will watercourse will be required where over land disclarges are provosed preduce to the swales / ditches. Batters of all proposed swales / ditches. Drankoef swales / ditches to be shallow with moderate gradet		LEVEL SPREADER REFER TO DETAIL J	SP-MT TW FLOW DIRECTION
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OLLUTION PREVENTION NOTES: SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION	MITIGATION	I / DRAINAGE COINTROLS AVAILABLE FOR USE ACROSS THE SITE	
AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	4.84
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	Avoidance Controls	 APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE USING SMALL WORKING AREAS WORKING IN APPROPRIATE WEATHER AND SUSPENDING 	*
AND DITCHES. SCHARGES WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS	SOURCE CONTROLS:	 4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER I) 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 (.) SUBPONDING STOCKEL ES WITH SUT EENCING 	
WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY. <u>(CAVATIONS)</u> WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USE TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS. <u>(POSED GROUND & STOCKPILES</u>) . THE AMOUNT OF EXPOSED GROUND AND TEMPORARY STOCKPILES OPEN AT ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE. <u>TE TRACKS</u> 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. EFUELING	IN-LINE CONTROLS:	 5) WEATHERING OFF / SEALING PEAT STOCKPILES 1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMATS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION LAGOONS 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 	
 REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED. <u>NNCRETE</u> CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.	WATER TREATMENT CONTROLS:	 TEMPORARY SUMPS ATTENUATION PONDS TEMPORARY STORAGE LAGOONS SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. SILT DEWATERING BAGS 	114 81
. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE. WATER POLLUTION IS IDENTIFIED THE FOLLOWING TEPS WOULD BE ADDERED TO:	OUTFALL CONTROLS:	 LEVELSPREADERS BUFFERED OUTFALLS VEGETATION FILTERS SILT DEWATERING BAGS FLOW LIMITERS AND WEIRS 	
TOP - WORK IN THE IMMEDIATE AREA SHOULD BE STOPPED AND THE SOURCE			
ONTAIN - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A DITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED ROUND THE SOURCE OF POLLUTION.			
DTIFY - THE RELEVANT AUTHORITIES (SITE MANAGER / FISHERIES / NPWS LOCAL AUTHORITY ETC.) SHOULD BE NOTIFIED IMMEDIATELY TO ENSURE THAT ASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER NITIVE AREAS. ALINAGE NOTES: ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S 'ECIFICATION (I.E. BY OTHERS). SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON TE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE INITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE MPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR MILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE TBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME : THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF RAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL IECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE DRK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE VERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS ING GENERATED DURING THE CONSTRUCTION PHASE. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO EVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING STERCOURSES. SEE NOTES ON POLLUTION PREVENTION. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM IRFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD THES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE ATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. DRAINAGE SWALES / DITCHES TO BE USCATA DAJACENT TO THE CRESS TRACKS. REGULAR CROSS DRAINS TO BE AGREED WITH THE IGINEER ANS SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE AGREED WITH THE IGINEER ON SITE. SURFACE WATER WILL NOT DE ALLOWED TO DISCHARGE RECTLY INTO EXISTING WATERCOURES. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING ATTERSO FALL PROPOSED SWALES / D			SILT FENCE REFER TO DETAIL F SP-O1 Tw PROPOSED WC CROSSI CULVERT REFER TO DETAIL B EXISTING SMALL CHANNEL TO BE INTERCEPTOR DR
Distring bases and thard stand areas. FUND SIZES DEPENDS ON ITCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501. STRAW BALES / OR SIMILAR AND SILT FENCES TO BE USED ALSO ROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE MOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED. . SILT FENCES TO BE PROVIDE ALONG EDGE OF EXISTING WATERCOURSE HERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / EPHEMERAL IANNELS. . SLOPES OF THE SWALES / DITCHES TO BE PROTECTED FROM EROSION ITIL VEGETATION HAS BEEN ESTABLISHED. STRIPPED VEGETATIVE LAYER EAT 'SOD' OR 'SCRAW') FROM EXCAVATIONS TO BE STORED LOCALLY AND ED TO LINE SLOPES AND BASE OF SWALES / DITCHES OR LONGITUDINAL DUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS. . AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM. . CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY DN / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR TONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING CITIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED YOM WASHING AWAY THROUGH THE PLACEMENT OF IOOM STONE ON THE WINHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE. . BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND SPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS BE COME CLOGGED TH SILT OR VEGETATION PHASE. WHERE CHECK DAMS BE CROMED AND PLACED SUBSEQUENT TO THE REMOVAL OF SILT. . SPACING AND FREQUENCY OF CHECK DAM TO BE REMOVED AND PLACED SUBSEQUENT TO THE REMOVAL OF SILT. . SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON NGITUDINAL GRADIENT OF SWALE. . LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED I SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A ANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST MPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY IITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM .RT OF THE EMBANKMENT AROUND THE POND. . OIL FUE WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES. . SILT BA	Metres		

POLLUTION PREVENTION NOTES: I. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION	MITIGATION	V / DRAINAGE COINTROLS AVAILABLE FOR USE ACROSS THE SITE	
AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION. 2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	
 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 	Avoidance Controls	 APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE APPLICATION OF IOM BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE USING SMALL WORKING AREAS 	
AND DITCHES. DISCHARGES		4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER	
 4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED. 5. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUEFER ZONE 		 I) 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: 	
 PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE 	SOURCE CONTROLS:	A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS	
 PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES 		D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING PEAT STOCKPILES 1) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED	
UNLESS ABSOLUTELY NECESSARY. <u>Excavations</u> 9. Where deep excavations are proposed cut-off drains will be use to reduce the amount of surface water entering the excavation. This will be the case around turbine base excavations. <u>Exposed Ground & Stockpiles</u>		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 T) WENDER OF STREETS	*
 10. The amount of exposed ground and temporary stockpiles open at any one time will be minimised, as far as practicable. <u>Site tracks</u> II. Use of track side swales with check dams, and/or filtration check dams will reduce silt in runoff water as required. I2. Check dams to be inspected and cleaned regularly. 		 F) WEIRS OR BAFFLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS. 3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMATS 5) COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING SYSTEMS 5) ATTENUATION LAGOONS 	
REFUELING I3. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. I4. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED. <u>CONCRETE</u>	WATER TREATMENT CONTROLS:	 6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 1) TEMPORARY SUMPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR 	
 15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR. 16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED APPROPRIATELY ON SITE. 	OUTFALL CONTROLS	APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS 1) LEVELSPREADERS 2) BUFFERED OUTFALLS 3) VEGETATION FILTERS	
IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:		4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS	
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 APOLIND THE SOURCE OF POLLUTION			
NOTIFY - The relevant authorities (Site Manager / Fisheries / NPWS / Local Authority etc.) should be notified immediately to ensure that measures can be implemented downstream to protect fisheries and other sensitive areas.			SP-R1-b
DRAINAGE NOTES: I. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS).			TYPE Y CHECK DAM REFER TO DETAIL D
2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO.			
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.			SUBSTATION
 4. SUITABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO RECEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION. 5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE TO FIELD 			
DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. 6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE			APPLICATION BOUNDARY
ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES. 7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES.			
 BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN I : 1.5 TO I : 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 		SP-Ph TW	0
GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE INSTALLED TO REDUCE FLOW VELOCITIES AND PROVIDE SOURCE CONTROL OF SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO DISCHARGE.		0.95	EXISTING CULV TO BE REMO
 10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT TURBINE BASES AND HARD STAND AREAS. POND SIZES DEPENDS ON CATCHMENT AREA SERVED. SAMPLE POND SIZES 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 	SP-O4	TW	EXISTING CULVERT TO BE REMOVED
REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED. 12. SILT FENCES TO BE PROVIDE ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / EPHEMERAL CHANNELS.		PROPOSED WC CROS	SING
I3. SLOPES OF THE SWALES / DITCHES TO BE 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		T FENCE CULVERT ETAIL F REFER TO DETAIL E	
MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS. 14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM. 15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING			
SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE DOWNHILL FACE OF THE CHECK DAM AND BY WRAPPING IN GEOTEXTILE. 16. BUILD UP OF SILT LEVELS AT CHECK DAMS TO BE REMOVED AND			
DISPOSED OF APPROPRIATELY. SILT LEVELS AT CHECK DAMS TO BE VISUALLY INSPECTED AS PART OF AN ONGOING DRAINAGE MAINTENANCE PROGRAMME DURING THE CONSTRUCTION PHASE. WHERE CHECK DAMS BECOME CLOGGED WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT. 17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.			
18. LOCATION OF FILTRATION CHECK DAMS (IF REQUIRED) TO BE AGREED ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY			0 200
SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM PART OF THE EMBANKMENT AROUND THE POND. 19. OIL FUEL WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES. 20. SILT BAGS WILL BE USED ON SITE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.	Metre	S 1+	

POLLUTION PREVENTION NOTES:	MITIGATION	I / DRAINAGE COINTROLS AVAILABLE	and the C.
 SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND EROSION. 		DESCRIPTION OF SUDS DRAINAGE CONTROL	
2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE		METHODS I) APPLICATION OF 50M BUFFER ZONES TO NATURAL	
RECEIVING WATERCOURSES. 3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, EROSION OF EXPOSED/DISTURBED GROUND TEMPORARY STOCKPULES PLANT AND WHEEL	Avoidance	WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS WHERE POSSIBLE	
WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS AND DITCHES.	Controls	3) USING SMALL WORKING AREAS4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDIN	G
DISCHARGES 4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL		CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED	-
WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM		 USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERSIZED SWALES, VEE-DRAINS. DIVERSION DRAINS. FLUMES AND CULVERT 	
NEAREST WATERCOURSE UNLESS OTHERWISE STATED. 5. NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE.		PIPES 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS	
 6. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND 	SOURCE CONTROLS:	A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS	-
DISCHARGE. 7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES		D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIAT	E
NOT CAUSE SCOUR OR EROSION AT THE POINT OF RELEASE/DISCHARGE. THIS WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH		 3) USING SMALL WORKING AREAS 4) SURROUNDING STOCKPILES WITH SILT FENCING 5) WEATHERING OFF / SEALING PEAT STOCKPILES 	R.
PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS. 8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.		I) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED	
EXCAVATIONS		SWALES/COLLECTOR DRAINS 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS A) SAND RAGS	
9. WHERE DEEP EXCAVATIONS ARE PROPOSED CUT-OFF DRAINS WILL BE USE TO REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.		B) OYSTER BAGS FILLED WITH GRAVELC) FILTER FABRICS	
EXPOSED GROUND & STOCKPILES	IN-LINE CONTROLS:	D) STRAW BALES E) FLOW LIMITERS F) WEIRS OR BAFFLES	
ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.		G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.	
SITE TRACKS II. USE OF TRACK SIDE SWALES WITH CHECK DAMS, AND/OR FILTRATION CHECK		 SILT FENCES, FILTER FABRICS IN STREAM SEDIMATS COLLECTION SUMPS, TEMPORARY SUMPS, PUMPING 	
12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.		SYSTEMS 5) ATTENUATION LAGOONS	
REFUELING I3. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED REFUELING AREAS ONLY PREFERABLY ON AN IMPERMEABLE SURFACE AND		6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS1) TEMPORARY SUMPS	
AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES. 14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS		2) ATTENUATION PONDS 3) TEMPORARY STORAGE LAGOONS	
REQUIRED.	CONTROLS:	5) PROPRIETARY SETTLEMENT SYSTEMS SUCH ASSILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR	
15. CARE WILL BE TAKEN WHEN COMPLETING CONCRETE WORKS ON SITE TO ENSURE NO DISCHARGES OCCUR.		APPROPRIATE SYSTEMS. 6) SILT DEWATERING BAGS	
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IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING STEPS WOULD BE ADHERED TO:		4) SILT DEWATERING BAGS 5) FLOW LIMITERS AND WEIRS	
\underline{STOP} - work in the immediate area should be stopped and the source			A
OF THE POLLUTION IDENTIFIED.			
SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED AROUND THE SOURCE OF POLLUTION.			
\underline{NOTIFY} - The relevant authorities (Site Manager / Fisheries / NPWS / Local Authority etc.) should be notified immediately to ensure that			
MEASURES CAN BE IMPLEMENTED DOWNSTREAM TO PROTECT FISHERIES AND OTHER SENSITIVE AREAS.			
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DRAINAGE NOTES: I. ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (LE. DY OTHERS)			
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 DKAINAGE TOLES: RODWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OS ILT 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 DANGS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DAMS AND SILT FENCES TO BE EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LINELY 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 PRAVENTION. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS / DISCHARGE SURFACE WATER TIN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. DRAIMAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO REVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES. WHERE VOSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE WYER LAND DESCHARGE DIRECTLY INTO EXISTING WATERCOURSES. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO REVENT S	O O O O O O O O O O O O O O O O O O O	EXISTING CUL TO BE REM SP-U1 SILT FENCE REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C TW SP-U3 EIAR SITE BOUNDARY
 DKAINAGE NOTES: ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVELG SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCINS/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 POLUTION PREVENTION. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS. REGULAR CROSS DRAINS TO BE LOCATED ALDNA CACESS TRACKS MATES / DITCHES TO BE SCAVATED ADJACENT TO THE ACCESS TRACKS. ROULLAR CROSS DRAINS TO BE LOCATED ALDNA CACESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES TO BE COAVATED ADJACENT TO THE ACCESS TRACKS. MALELY / DITCHES TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES. TARCKS. REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES TO BAXE SHOULD AD MULL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES. STALTERS OF ALLES / DITCHES TO BE AREAS CHECK DAMS SHOULD BE INSTALLES / DITCHES TO BE CONSTRUCTED FOR SILT RE	O O C C C C C C C C C C C C C C C C C C	EXISTING CUL TO BE REM SP-U1 SILT FENCE SP-U2 REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C TW SP-U3 EIAR SITE BOUNDARY
 DKAINAGE MOLES: ROAWY SUFFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DANS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE AVAILABLE ON-SITE FOR USE AS REQUIRED ALSO. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF STRAW BALES/SILT FENCINS/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK DANS 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 / DITCHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER (DURY AREF / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO BE USED TO COLLECTING SIMFACES. DRAINAGE SWALES / DITCHES TO BE LOCATED ALONG ACCESS TRACKS. REGULAR CROSS DRAINS TO BE ACREED WITH THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE ACREED WITH THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE ACREED WITH THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE ALLOWED TO DISCHARGE DIRECTLY INTO EXISTING WATERCOURSES. WHERE PONSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING WATERCOURSE VILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FORM ACCESSIS TRACK SWALES / DITCHES. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF BETWEEN I: 1.5 TO 1: 2 DEFENDING UPON DEFTH OF SMALE/DUTCH AND WILL BE LEFT AS CUT TO REVEGETATION EVER LAND DISCHARGES ANE PROPOSED	O O O O O O O O O O O O O O O O O O O	EXISTING CUL TO BE REM SP-U1 SILT FENCE SP-U2 REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C FIAR SITE BOUNDARY
 Dikalinage noise and construction to Engineer's Specification (i.e. by others). Space straw bales/silt fencing/ or similar, to be stored on site. The level of silt in Rumorf 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 Laso. SUDS system to be available on-site for use as required Laso. SUDS system to be constructed prior to, or at the same time as the access tracks. Interim MEASURES such as the Placement of Straw bales/silt fences to be employed between details of additional check dams and silt fences to be employed between additional check dams and silt fences to be employed between additional check dams and silt fences to be employed between additional check dams and silt fences to be employed between additional check dams. Silt fences to be used to additional check dams and silt fences to be used to additional check dams. Suitable prevention MEASURES will be in Place at all times to prevent the conversance of significant volumes of silt to receiving watercourses. See notes on pollution prevention. Interceptor shales / bitches to be used to collect upstream sufface water flows. Regular cross drains / discharge to prister water flows. Regular cross drains / discharge to priste. Diches/drains will be required to sit so additional corts of dams. Dirches/drains will be required water will not be allowed to discharge built the swales / dirches. Locations of cross drains to be laced and additional corts of dams. There prostem texcessive volumes of water collecting in the swales / dirches. Locations of cross drains to be laced and additional corts of dams. There prostem texcessive volumes of water colacet and dom dams. There prosted water will be th	O O O O O O O O O O O O O O O O O O O	EXISTING CUL TO BE REM SP-U1 SILT FENCE REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C TW SP-U3 EIAR SITE BOUNDARY
 Dirkaliyade NUTES: Rodway Suffacing Design and construction to Engineer's Specification (i.e. by others). Spare straw Bales/silt Fencing/ or similar, to be stored on site. The Level of silt in Runoff During Construction is to be Monitored visually and Excessive silt Levels in any area to be temporarity Manaded by Placing Silt Tences, straw Bales / or similar of additional check bans at the problem areas. Mobile siltbuster system to be constructed prior to, or at the same time as the access tracks. Interim MEASURES SUCH as the Placement of or similar on additional check bans and the problem areas. Mobile Siltbuster System to be constructed prior to, or at the same time as the access tracks. Interim MEASURES SUCH as the Placement of straw Bales/silt Fences to be Emeloyed 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. Suitale Prevention MEASURES will be in Place at all times to prevent the converyance or significant volumes of silt to receiving watercourses. See notes on pollution prevention. Interceptor Swales / Ditches to be used to collect upstream sufface water ninterceptor Drains to suitable field Drain of the soft adverse to balacent to the access tracks. Regular cross Drains / Discharge to priors. Dirches/Dearins will be Requires to the access tracks. Regular cross Drains to be acceave with the excessive volumes of watter collections in the swales / Ditches to be asked with the same time system of the converse with the toxing wattercourse will be stracks. Suce Solaris to be access with the excessive volumes of watter collections in the swales / Ditches to see stracks. Regular cross Drains to be access that to the access tracks. Regular cross Drains to be accessed with the excessive volumes of the access. Where possible, a buffer Zone Solaris to be acced with the excess	O O O O O O O O O O O O O O O O O O O	EXISTING CUL TO BE REM SP-U1 SILT FENCE SP-U2 REFER TO DETAIL F	CHECK DAM @ 50 M CENTERS REFER TO DETAIL C EIAR SITE BOUNDARY
 DixAlimAGE NUTES: ROADWAY SURFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (LE. BY OTHERS). SPARE STRAW BALES/SILT FENCING/ OR SIMILAR. TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFP 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 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 LINELY 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 POLUTION PREVENTION. INTERCEPTOR SWALES / DICHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER FLOWS, REGULAR CROSS DRAINS / DISCHARGE TO FIELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE TO THELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE TO THELD DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE TO THELD DITCHES/DRAINS WILL BE REQUIRED VERLED DAJACENT TO THE ACCESS TRACKS. TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECT UNS THERM SUFFACE WATER CONSTRUCTIONS OF CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COLLECT UNG IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO PREVENT EXCESSIVE VOLUMES OF WATER COULECT ING IN THE SWALES / DITCHES TO BE SHALLOW DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES TO HAVE A SLOPE OF BETWEENT I.IS. TO I: Z DEPENDINO UND DRAINTO DUSCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES TO HAVE A SLOPE OF DISCHARG	O O O O O O O O O O O O O O O O O O O	EXISTING CUL TO BE REM SP-U1 SILT FENCE SP-U2 REFER TO DETAIL F	VERT OVED
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 DIAXINAGE NOTES: Robust SUFFACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). SPAGE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVELS BY A CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORATILY MANAGE DE VALCING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE SILTBUSTER SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS INTERM 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 THE PLACEMENT OF STRAW BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK STAWS BALES/SILT FENCING/OR SIMILAR APPROVED METHOD OR ADDITIONAL CHECK STOBE E EMPLOYED IN ALL INSTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIROMENTAL EFFECTS THROUGH INCREASED SILT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE. SUTABLE 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. NITERCEPTOR SWALES / OTCHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER IN INTERCEPTOR OPAINS TO SUITABLE FIELD DAIN OUTFALL POINTS. DITCHES/DRAINS TO SUITABLE FIELD BAIN OUTFALL POINTS. DRAINGE SWALES / DITCHES TO BE EXCAVATED AUDACCENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE ALLOWED TO TICHS THACKS. WHERE YORS DRAINS TO SUITABLE FIELD BAIN OUTFALL POINTS. DRAING SWALES / DITCHES TO BE ALLOWED TO DISCHARGE SURFACE WATER IN INTERCEPTORS DRAINS TO BE ALLOWED TO DISCHARGES. WHERE YORS COMPARE COURSES DRAINS TO BE AGREED WITH MOERSES AND HARD ON STAR COLLECTION FOR COUNTS. MACKS / DITCHES TO BE SHALOW WITH MODERATE GRADIENTS TO PREVENT SOLUMERS OUT DRAIN TO BE ALLOWED TO DISCHARGE SURFACE. M		EXISTING CUL TO BE REM SP-U1 SILT FENCE REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C V V SP-U3
 I. ROAWY SUFRACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). SPARE STRAW BALES/SULT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SULT IN RUNOFP 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 CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERM 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 ELH OLADINGS BEING GENERATED DURING THE CONSTRUCTION PHASE. SULTABLE PREVENTION MEASURES WILL BE IN PLACE AT ALL TIMES TO PREVENT THE CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS THROUGH INCREASED SILT D ACCEIVING WATERCOURSES. SEE NOTES ON POLLUTION PREVENTION. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER FLOWS, REGULAR CROSS DRAINS / DISCHARGE SURFACE WATER IN INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER FLOWS, REGULAR CROSS DRAINS / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS. INTERCEPTOR SWALES / DITCHES TO BE WALED ALONG ACCESS TRACKS, REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS, REGULAR CROSS DRAINS TO BE ALLOWED TO DISCHARGE DIRCTLY INTO EXISTING WATERCOURSES. WHERE MOSSIBLE, A BUFFER ZONE OF X20M TO ANY EXISTING WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES TO HAVE A SLOPE OF BITWEEN I: J.5 TO I: 2 DEFENDING ON SUCE CONTROL ON SITUATES. JOLING SUCE ONSTRUCTED FOR SWALEFOINTH THE ENGINEER ON SITE. SUFFACE WATER WILL NOT BE ALLOWED TO DISCHARGE BURCELY INTO EXISTING WALES / DITCHES TO BE SHALLOW WITH MODERATE GRADEDITS TO PREVENT SOUTHER TOWES SUNCE ON THE ADVILL BE LEFT AS CUT OR EVECETIONS DE CROSS ARE PR		EXISTING CUL TO BE REM SP-UI SILT FENCE SP-U2 REFER TO DETAIL F	LEIAR SITE BOUNDARY
Distantage Non-Weight System 1. Roadward SUFRACING DESIGN AND CONSTRUCTION TO ENGINEER'S SPECIFICATION (I.E. BY OTHERS). 2. SPARE STAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAWS AT THE PROBLEM AREAS. MOBILE SILTBUISTER 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 CHEUPLOYED IN ALLI INISTANCES WHERE WORK CARRIED OUT TO CONSTRUCT THE ACCESS TRACKS IS LIKELY TO CAUSE ADVERSE SUMPONIMENTIAL EFFECTS THROUGH INCREASED SULT LOADINGS BEING GENERATED DURING THE CONSTRUCTION PRASE: 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 REVENTION. 5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SUFFACE WATER FLOWS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO REQUERD TRANSFER / JOICHAST DO ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO REQUERD CATER WILL NOT BE ALLOWED TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO REVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE ACREED WITH THE ENGINEER ON SITE. SUFFACE WATER WILL NOT BE ALLOWED TO THE ACCESS TRACKS. MEEDING ONO DETH OF SWALE/ATION THE SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE ADJACENT TO THE ACCESS TRACKS TRACK SWALES / DITCHES TO BE ADJACENT TO THE SWALES /		EXISTING CUL TO BE REM SP-UI SILT FENCE SP-U2 REFER TO DETAIL F	VERT OVED CHECK DAM @ 50 M CENTERS REFER TO DETAIL C EIAR SITE BOUNDARY

19. OIL FU 20. SILT B LOCATIONS, AS NECESSARY. - PL

POLITION PREVENTION NOTES	MITIGATION	/ DRAINAGE COINTROLS AVAILABLE	7
I. SITE MANAGEMENT PROPOSALS ARE INTENDED TO ENSURE PROTECTION AGAINST SURFACE WATER AND GROUNDWATER POLLUTION, SILTATION AND	F	OR USE ACROSS THE SITE	1
EROSION. 2. SUITABLE DRAINAGE CONTROL MEASURES WILL BE IN PLACE AT ALL TIMES	Management Type	DESCRIPTION OF SUDS DRAINAGE CONTROL METHODS	
TO PREVENT CONVEYANCE OF SIGNIFICANT VOLUMES OF SILT TO OFF SITE RECEIVING WATERCOURSES. 3. SILTY WATER CAN ARISE FROM DEWATERING EXCAVATIONS, FROSION OF		 APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE APPLICATION OF 10M BUFFER ZONES TO MAIN DRAINS 	andreas
EXPOSED/DISTURBED GROUND, TEMPORARY STOCKPILES, PLANT AND WHEEL WASH, SITE ROADS/TRACKS, AND DISTURBANCE OF EXISTING FIELD DRAINS	AVOIDANCE CONTROLS	WHERE POSSIBLE 3) Using small working areas	
AND DITCHES.		4) WORKING IN APPROPRIATE WEATHER, AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED WET WEATHER	
4. WATER CONTAINING SILT WILL NOT BE PUMPED DIRECTLY TO ANY NATURAL WATERCOURSE. ALL DISCHARGES TO BE MADE OVER OPEN GROUND OR INTO		I) USE OF UPSTREAM INTERCEPTOR DRAINS AND	and the
EXISTING FIELD DRAIN WITH SILT TRAP AT A MINIMUM OF 20M FROM NEAREST WATERCOURSE UNLESS OTHERWISE STATED.		VEE-DRAINS, DIVERSION DRAINS, FLUMES AND CULVERT PIPES	- etc. *
 NO EXCAVATED MATERIAL IS TO BE STORED WITHIN ANY SURFACE WATER BUFFER ZONE. PUMPED WATER WILL BE DIRECTED INTO TRACK SIDE DITCHES AND TREATED. 		2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:A) SAND BAGS	
IN SETTLEMENT PONDS AND VEGETATION SWALES PRIOR TO OVERLAND DISCHARGE.	SOURCE CONTROLS:	 B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND OTHER SIMILAR/EQUIVALENT OR APPROPRIATE 	148 8 8 8 1 N
7. PUMPING OF CLEAN WATER FROM EXCAVATIONS / OR OVER-PUMPING IN DRAINS/DITCHES/STREAMS WILL BE COMPLETED IN A MANNER THAT DOES		SYSTEMS 3) USING SMALL WORKING AREAS	
WILL BE DONE BY REDUCING THE FLOW VELOCITIES OR BY USE OF SPLASH PLATES, AND OTHER SIMILAR DISCHARGE CONTROLS.		4) SURROUNDING STOCKPILES WITH SILT FENCING5) WEATHERING OFF / SEALING PEAT STOCKPILES	м. Мартика Ма
8. VEGETATION WILL NOT BE STRIPPED FROM EXISTING DRAINS/DITCHES UNLESS ABSOLUTELY NECESSARY.		I) INTERCEPTOR DRAINS, VEE-DRAINS, OVERSIZED	
EXCAVATIONS Q WHERE DEED EXCAVATIONS ARE PROPOSED CUT-DEE DRAINS WILL BE USE TO		2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS:A) SAND BAGS	
REDUCE THE AMOUNT OF SURFACE WATER ENTERING THE EXCAVATION. THIS WILL BE THE CASE AROUND TURBINE BASE EXCAVATIONS.		B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS	
EXPOSED GROUND & STOCKPILES	IN-LINE CONTROLS:	E) FLOW LIMITERS F) WEIRS OR BAFFLES	
ANY ONE TIME WILL BE MINIMISED, AS FAR AS PRACTICABLE.		G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.	
$\frac{\text{Site tracks}}{\text{II.}}$ Use of track side swales with check dams, and/or filtration check		3) SILT FENCES, FILTER FABRICS 4) IN STREAM SEDIMATS 5) COLLECTION SUMPORT TEMPORARY SUMPORT PUMPING	
DAMS WILL REDUCE SILT IN RUNOFF WATER AS REQUIRED. 12. CHECK DAMS TO BE INSPECTED AND CLEANED REGULARLY.		SYSTEMS 5) ATTENUATION LAGOONS	
REFUELING I3. REFUELLING OF MOBILE PLANT WILL BE COMPLETED IN DESIGNATED		6) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS	
REFUELING AREAS ONLY, PREFERABLY ON AN IMPERMEABLE SURFACE AND AWAY FROM FIELD DRAINS / DITCHES AND WATERCOURSES / WATERBODIES.		 TEMPORARY SUMPS ATTENUATION PONDS TEMPORARY STORAGE LACCOMS 	
14. SPILL KITS AND DRIP TRAYS WILL BE AVAILABLE ON SITE FOR USE AS REQUIRED.	WATER TREATMENT CONTROLS:	 4) SEDIMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS 	
Concrete 15. Care will be taken when completing concrete works on site to		SILTBUSTER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS.	
ENSURE NO DISCHARGES OCCUR. 16. CONCRETE WASH WATER, AND WASTE CONCRETE WILL BE MANAGED ABBROOPLATELY ON SITE		0) SILT DEWATERING BAGS 1) LEVELSPREADERS	
IF WATER POLLUTION IS IDENTIFIED THE FOLLOWING	OUTFALL CONTROLS:	2) BUFFERED OUTFALLS 3) VEGETATION FILTERS 4) SILT DEWATERING BAGS	
STEPS WOULD BE ADHERED TO:		5) FLOW LIMITERS AND WEIRS	
\underline{STOP} - work in the immediate area should be stopped and the source of the pollution identified.			
<u>CONTAIN</u> - THE SOURCE OF THE POLLUTION SHOULD BE BUNDED USING A SUITABLE METHOD. NATURAL WATERCOURSES SHOULD BE TEMPORARILY DIVERTED			
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 APEAS			
DRAINAGE NOTES:			
SPECIFICATION (I.E. BY OTHERS). 2. SPARE STRAW BALES/SILT FENCING/ OR SIMILAR, TO BE STORED ON	N/UNITED		mun
SITE. THE LEVEL OF SILT IN RUNOFF DURING CONSTRUCTION IS TO BE MONITORED VISUALLY AND EXCESSIVE SILT LEVELS IN ANY AREA TO BE			N xxxxx
TEMPORARILY MANAGED BY PLACING SILT FENCES, STRAW BALES / OR SIMILAR OR ADDITIONAL CHECK DAMS AT THE PROBLEM AREAS. MOBILE			
3. SUDS SYSTEM TO BE CONSTRUCTED PRIOR TO, OR AT THE SAME TIME AS THE ACCESS TRACKS. INTERIM MEASURES SUCH AS THE PLACEMENT OF		MM MINING WITH THE	
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		TW	
5. INTERCEPTOR SWALES / DITCHES TO BE USED TO COLLECT UPSTREAM SURFACE WATER FLOWS, REGULAR CROSS DRAINS / DISCHARGE TO FIELD		SP-W2	UNUN
DITCHES/DRAINS WILL BE REQUIRED TO TRANSFER / DISCHARGE SURFACE WATER IN INTERCEPTOR DRAINS TO SUITABLE FIELD DRAIN OUTFALL POINTS.			
6. DRAINAGE SWALES / DITCHES TO BE EXCAVATED ADJACENT TO THE ACCESS TRACKS. REGULAR CROSS DRAINS TO BE LOCATED ALONG ACCESS TRACKS TO BEVENT EXCESSIVE VOLUMES OF WATER COLLECTING IN THE	H	Нин	A A A A A A A A A A A A A A A A A A A
SWALES / DITCHES. LOCATIONS OF CROSS DRAINS TO BE AGREED WITH THE ENGINEER ON SITE. SURFACE WATER WILL NOT BE ALLOWED TO DISCHARGE			
DIRECTLY INTO EXISTING WATERCOURSES. 7. WHERE POSSIBLE, A BUFFER ZONE OF >20M TO ANY EXISTING] ///////////////////////////////////
WATERCOURSE WILL BE REQUIRED WHERE OVER LAND DISCHARGES ARE PROPOSED FROM ACCESS TRACK SWALES / DITCHES. 8. BATTERS OF ALL PROPOSED SWALES / DITCHES TO HAVE A SLOPE OF			
BETWEEN I : 1.5 TO I : 2 DEPENDING UPON DEPTH OF SWALE/DITCH AND WILL BE LEFT AS CUT TO RE-VEGETATE WITH LOCAL SPECIES.			
9. TRACK SIDE SWALES / DITCHES TO BE SHALLOW WITH MODERATE GRADIENTS TO PREVENT SCOURING. IN STEEP AREAS CHECK DAMS SHOULD BE	3		
SILT CONTAINMENT. WHERE NECESSARY THESE HAVE BEEN DESIGNATED IN CONJUNCTION WITH SETTLEMENT PONDS AND SILT TRAPS, PRIOR TO			
DISCHARGE. 10. SETTLEMENT PONDS TO BE CONSTRUCTED FOR SILT REMOVAL AT	AA		
CATCHMENT AREA SERVED. SAMPLE POND SIZES SHOWN ON DRAWING D501.	H		_//////////////////////////////////////
AROUND SPOIL HEAPS TO MITIGATE SILT RUNOFF. SILT FENCES MAY BE REMOVED WHEN SUITABLE VEGETATION COVER IS ESTABLISHED.	H.K.	HTTHITT	
12. SILT FENCES TO BE PROVIDE ALONG EDGE OF EXISTING WATERCOURSE WHERE WORKS COMES WITHIN <15M OF EDGE OF ANY DITCH / EPHEMERAL	-A	A A A A A A A A A A A A A A A A A A A	
I3. SLOPES OF THE SWALES / DITCHES TO BE 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	ZHP.	77 - 2	
MOUNDS OF VEGETATION SWALES AT FIELD DRAIN DISCHARGE POINTS. 14. AREAS STRIPPED OF VEGETATION SHOULD BE KEPT TO A MINIMUM. 15. CLEAN STONE FLOW CONTROL CHECK DAMS TO BE MADE OF LOCALLY			
WON / GEOLOGICALLY SIMILAR WELL GRADED STONE. AGGREGATE SIZE FOR STONE CHECK DAMS TO BE TYPICALLY 20- 40MM CLEAN STONE. ON SLOPING	- uutillur		
SECTIONS OF THE ACCESS TRACKS, 40MM CHECK DAMS TO BE PROTECTED FROM WASHING AWAY THROUGH THE PLACEMENT OF 100M STONE ON THE			
DUWNHILL 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	111		/ www.
WITH SILT OR VEGETATION, STONE CHECK DAM TO BE REMOVED AND REPLACED SUBSEQUENT TO THE REMOVAL OF SILT.			//////
17. SPACING AND FREQUENCY OF CHECK DAMS WILL BE DEPENDENT UPON LONGITUDINAL GRADIENT OF SWALE.			
ON SITE WITH ENGINEER. SETTLEMENT PONDS TO BE CONSTRUCTED IN A MANNER WHERE THEY MAY BE EASILY INFILLED AT A LATER DATE (POST			60 200
COMPLETION OF THE TURBINE BASE AND HARDSTAND CONSTRUCTION). ONLY SUITABLE MATERIALS EXCAVATED FROM THE POND TO BE USED TO FORM	Motros		/////
PART OF THE EMBANKMENT AROUND THE POND. 19. OIL FUEL WILL BE STORED WITHIN BUNDED CONTAINMENT STRUCTURES. 20. SILT BAGS WILL BE USED ON SITE AT FIFTH DRAWN DISCURDED.	wettes		
LO. SILI DAGS WILL BE USED ON SILE AT FIELD DRAIN DISCHARGE LOCATIONS, AS NECESSARY.			

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CHMENT SIZE (M ²)					
1000	2000				
4 x 3 x M	5.7 x l8 x l m				
4.5 x 4 x M	6.4 x 20 x I M				
5 х 16 х 1 м	7 x 22 x I m				

	l			1			
05/07/22	Planning		MG	MG			
Date	Description		Chkd	Signed			
Revisions							
22 Lower Main St tel: +353 (0) 58-44122 Dungarvan tel: +353 (0) 58-44244 Co. Waterford ireland Ireland web: www.hydroenvironmental.ie							
Client: Kocknamork Ltd							
Job: Proposed Substation, Underground Cabling, Access Roads to Knocknamork Renewable Energy Development							
Title: Drainage Details I							
Figure No: D50I							
Drawing No: P1421-1-0722-A1-D501-00A							
Sheet Size	Sheet Size: A1 Project No.: P1421-1						
Scale: as	Scale: as shown (A1) Drawn By: MG/GD						
Date: 05/07/2022 Checked By: M.G.							

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CLEAN WATER

SPREADER LIP

STABLE

STABLE OVERFLOW AREA

- SETTLEMENT POND

05/07/22	Planning		MG	MG		
Date	Description		Chkd	Signed		
Revisions						
22 Lower Main St Dungarvan Co. Waterford Ireland Line web: www.hydroenvironmental.ie						
Client:						
Kocknamork Ltd						
Job: Proposed Substation, Underground Cabling, Access Roads to Knocknamork Renewable Energy Development						
Title: Drainage Details 4						
Figure No	o:	D504				
Drawing No: P1421-1-0722-A1-D504-00A						
Sheet Size	e: Al	Project No.: P1421-1				
Scale: as	shown (A1)	Drawn By: MG/C	GD			
Date: 05/	07/2022	Checked By: M.G.				