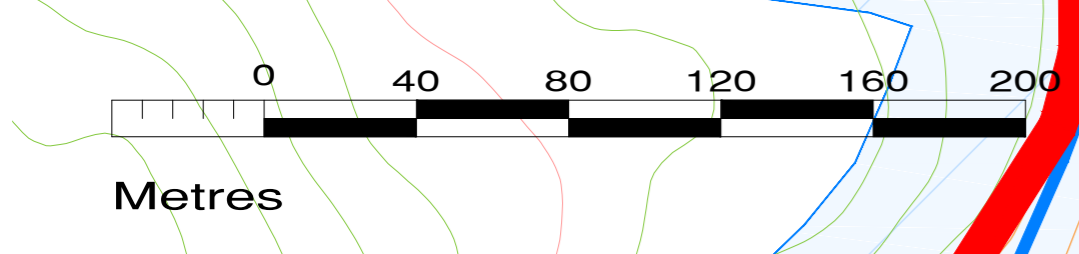
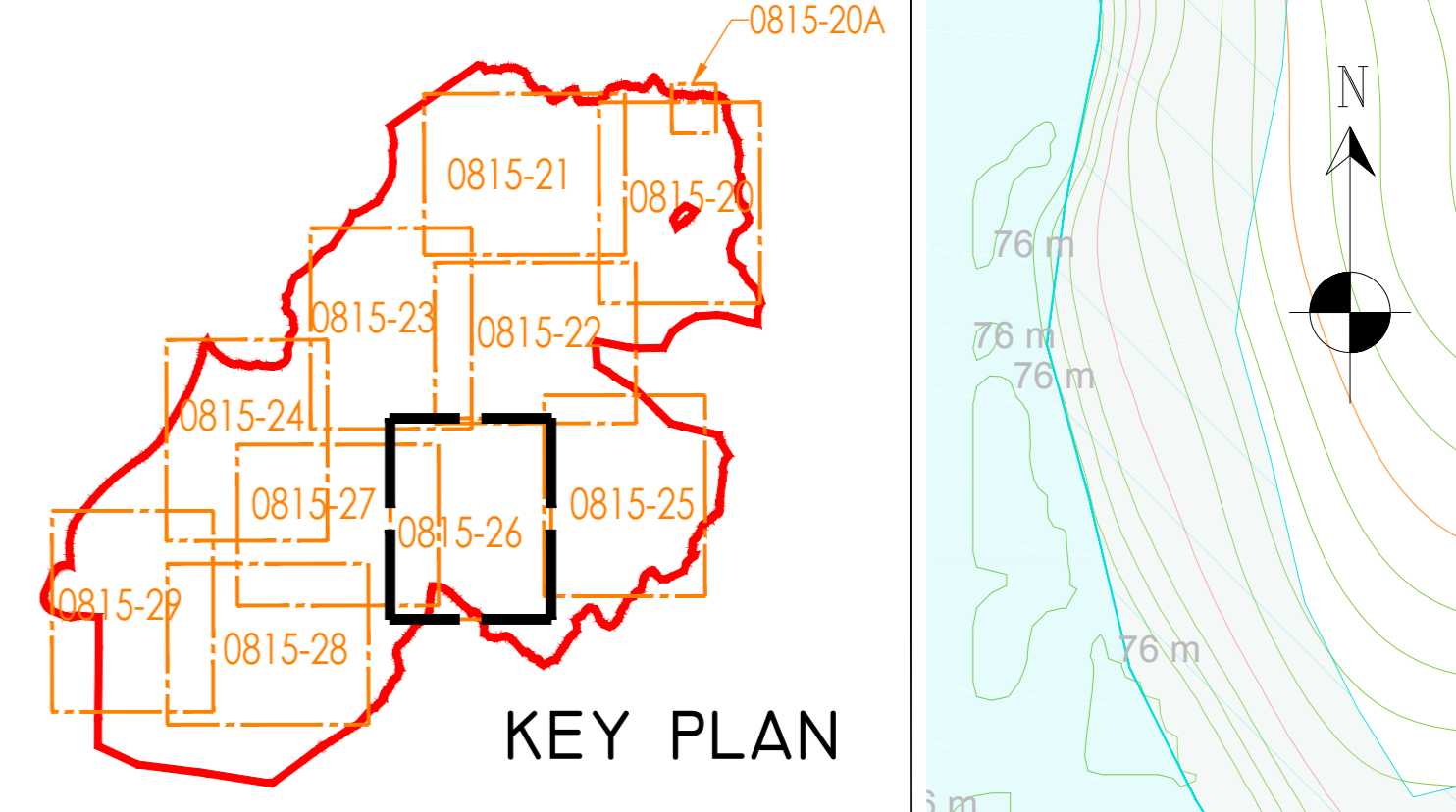


**DRAINAGE DESIGN NOTES**

1. ALL DRAINAGE SUBJECT TO MICRO-SITING AND OPTIMISATION ON SITE.
2. THE LOCATIONS OF THE INTERCEPTOR DRAINS, CHECK DAMS, CULVERTS, SWALES, STILLING PONDS AND LEVEL SPREADERS ARE SHOWN AS INDICATIVE, AND MAY BE CHANGED TO SUIT THE REQUIREMENTS OF THE LOCAL TOPOGRAPHY.
3. SUPERVISING HYDROLOGIST OR ENVIRONMENTAL CLERK OF WORKS (ENVIRONMENTAL SCIENTIST) TO OVERSEE INSTALLATION OF DRAINAGE FEATURES FOLLOWING DETAILED DRAINAGE DESIGN.
4. DRAINAGE MEASURES TO BE INSTALLED PRIOR TO, OR AT THE SAME TIME AS THE WORKS AREAS THEY ARE INTENDED TO DRAIN.
5. DESIGN ELEVATION OF THE WATER SURFACE ALONG THE ROUTE OF THE INTERCEPTOR DRAINS OR SWALES WILL NOT BE LOWER THEN THE DESIGN ELEVATION OF THE WATER SURFACE IN THE OUTLET AT THE LEVEL SPREADER OR STILLING POND.
6. THE SPACING AND FREQUENCY OF THE CHECK DAMS WILL BE DEPENDANT ON THE GRADIENT OF THE INTERCEPTOR DRAIN OR SWALE IN WHICH THEY ARE BEING INSTALLED.
7. CHECK DAM DESIGNS TO BE SELECTED BEST TO SUIT PARTICULAR TOPOGRAPHY AND HYDROLOGICAL ENVIRONMENT.
8. DOWN GRADIENT SLOPE BELOW LEVEL SPREADER ONTO WHICH THE WATER WILL DISAPATE TO HAVE A GRADE LESS THE 5%.
9. NO DIRECT DISCHARGE OR PUMPING TO WATERCOURSES WILL BE PERMITTED. ALL DISCHARGES FROM LEVEL SPREADERS OR STILLING PONDS TO BE VIA VEGETATED FILTERS. SELECTION OR SUITABLE AREAS TO USE AS VEGETATION FILTERS WILL BE DETERMINED BY THE SIZE OF THE CONTRIBUTING CATCHMENT, SLOPE AND GROUND CONDITIONS.
10. STILLING PONDS TO BE SIZED ACCORDING TO THE AREA THEY WILL BE RECEIVING WATER FROM.
11. DIVERSION OF DRAINAGE DITCHES WILL ONLY TAKE PLACE WHEN ALTERNATIVE DRAINAGE DITCH HAS BEEN INSTALLED TO HANDLE THE SAME WATER.
12. EXISTING DRAINS/DITCHES TO BE INCORPORATED OR REMOVED DURING WIND FARM CONSTRUCTION.
13. ALL DRAINAGE SYSTEM FEATURES TO BE SUBJECT OF INSPECTION AND MAINTENANCE PLAN.
14. THE LAYOUT SHOWN IS SLIGHTLY OFFSET FOR SCALE PURPOSES, AND ALL DRAINAGE WOULD BE INSTALLED AS CLOSE TO THE ROAD AS POSSIBLE.
15. DRAINAGE ASSIGNED TO FLOATING ROAD SECTIONS OF THE LAYOUT WILL BE SUBJECT TO FURTHER OPTIMISATION IN PARALLEL WITH DETAILED GEOTECHNICAL DESIGN.

Management Type	Description of SUDS Drainage Control Methods
AVOIDANCE CONTROLS	1) APPLICATION OF 50M BUFFER ZONES TO NATURAL WATERCOURSES WHERE POSSIBLE 2) APPLICATION OF 25M BUFFER ZONES TO ARTIFICIAL DRAINAGE 3) URBAN SMALL WORKING AREAS 4) WORKING IN UNFOUNDED WEATHER AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED MET WEATHER
SOURCE CONTROLS	1) USE OF UPSTREAM INTERCEPTOR DRAIN AND DOWNSTREAM COLLECTOR DRAIN / OVERLIED SWALES, VEGETATION, DIVERSION DRAINS, FILTERS AND COLLECTOR PIPES 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) DITCHES FILLED WITH GRAVEL C) OTHER SPILLAGE/EQUVALENT OR APPROPRIATE SYSTEMS 3) URBAN SMALL WORKING AREAS 4) COVERING STOOPLES 5) WEATHERING OFF / SEALING FLAT STOOPLES
IN-LINE CONTROLS	1) INTERCEPTOR DRAIN, VEGETATION, OVERLIED SWALES/COLLECTOR DRAIN 2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) DITCHES FILLED WITH GRAVEL C) FILTER FABRICS D) STRIP BARRIERS E) FLOW LIMITERS F) MOUND OR BARRIERS G) AND/OR OTHER SPILLAGE/EQUVALENT OR APPROPRIATE SYSTEMS 3) SILT FENCES, FILTER FABRICS 4) IN STREAM STRUCTURES 5) COLLECTION SUPPS, TEMPORARY SUPPS, PUMPING SYSTEMS 6) ATTENUATION LEADING 7) SEGMENT TRAPS, STILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	1) TEMPORARY SUPPS 2) ATTENUATION PONDS 3) TEMPORARY STORAGE LEASONS 4) SEGMENT TRAPS, STILLING / SETTLEMENT PONDS 5) PRIMARY SETTLEMENT SYSTEMS SUCH AS SILENTERS, AND/OR OTHER SPILLAGE/EQUVALENT OR APPROPRIATE SYSTEMS. 6) SALT DRAINAGE BASINS
OUTFALL CONTROLS	1) LEVEL SPREADERS 2) BARRIERS OFFFALLS 3) VEGETATION FILTERS 4) SALT DRAINAGE BASINS 5) FLOW LIMITERS AND WEIRS



**DRAWING LEGEND :**

	RIVERS/STREAMS		PROPOSED CULVERTS/BRIDGES
	LAKES		INTERCEPTOR DITCH CULVERT
	RIVERS/STREAMS 50M BUFFER		COLLECTOR DITCH CULVERT
	LAKES 50M BUFFER		OVERLAND FLOW DISCHARGE
	EXISTING CULVERTS/BRIDGES		TREATED WATER DISCHARGE
	UPSTREAM INTERCEPTOR DRAIN		SETTLEMENT POND
	SWALES/DOWNSTREAM COLLECTOR DRAIN		SEMI-NATURAL VEGETATION SWALE / FILTER BED / SECONDARY SP
	DIRECTION OF FLOW		PUMPING SUMP
	SILT FENCES		SITE BOUNDARY
	DOUBLE/TRIPLE SILT FENCES		EXISTING GROUND SURFACE MAJOR CONTOUR (10 M INTERVAL)
	SETTLEMENT POND - LEVEL SPREADER		EXISTING GROUND SURFACE INTERMEDIATE CONTOUR (5 M INTERVAL)
	SETTLEMENT POND - VEGETATION FILTER		EXISTING GROUND SURFACE MINOR CONTOUR (1 M INTERVAL)
	LEVEL SPREADER		TURBINE AND SWEEP AREA
	CHECK DAM 'TYPE A'		EXISTING ROAD
	CHECK DAM 'TYPE B'		EXISTING ROAD TO BE UPGRADED

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7. LAYOUT PLANS SHOW TYPICAL TURBINE ROTOR DIAMETER AS PER TURBINE DRAWING.

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Title: **DRAINAGE LAYOUT SHEET 7 OF 10**

Figure No: **0815-26**

Drawing No: P1227-8-1118-A1-0815-26-00A

Sheet Size: A1	Project No.: P1227-8
Scale: 1:2,000 (A1)	Drawn By: GD
Date: 21/11/2018	Checked By: MG