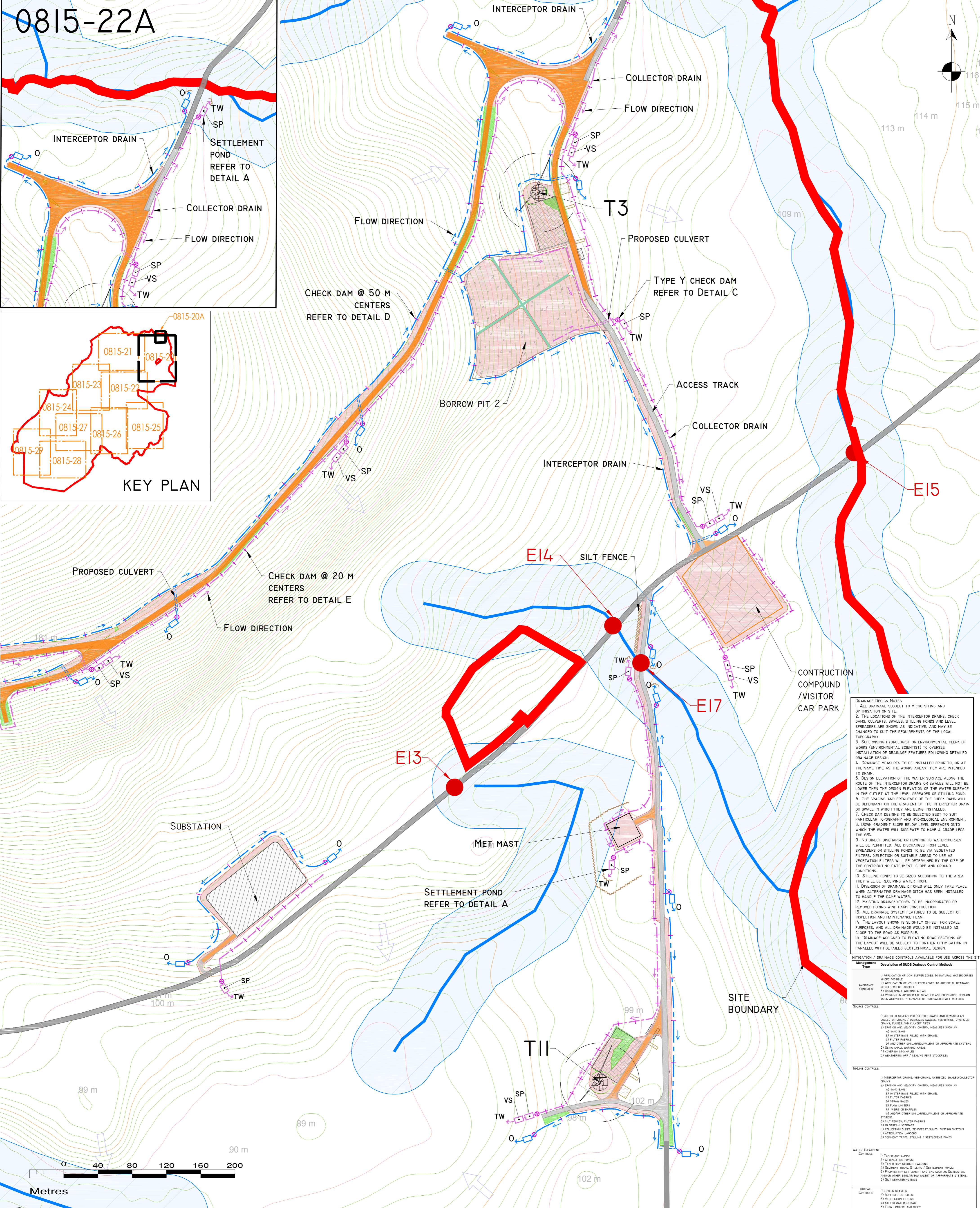
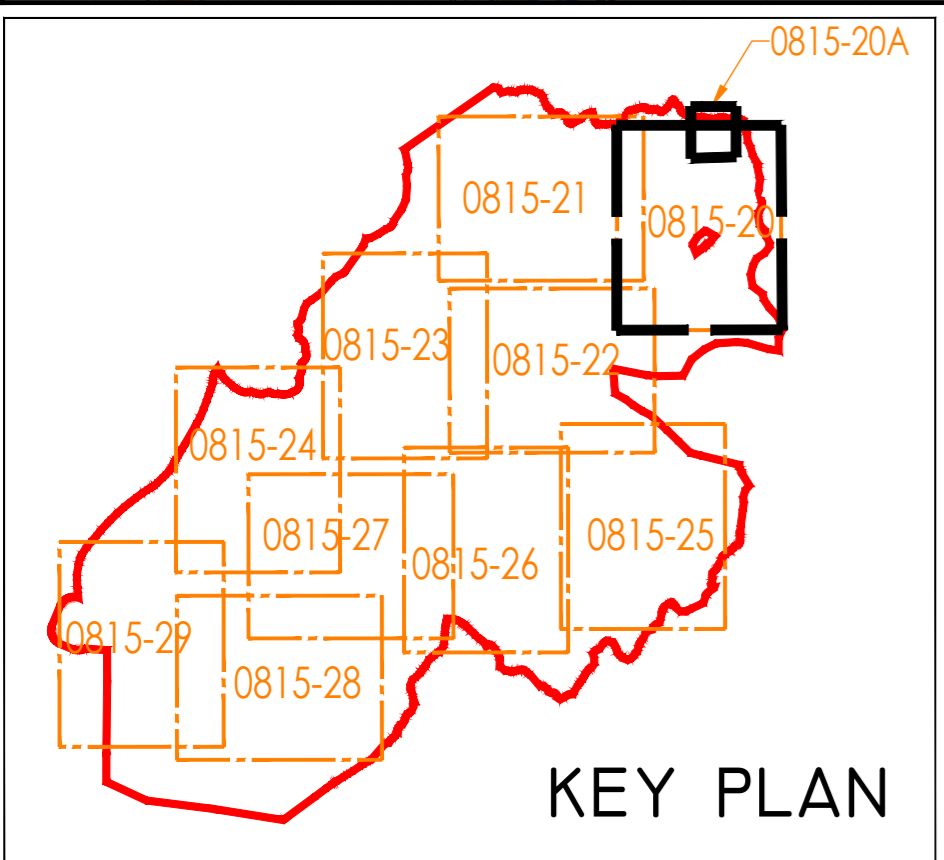
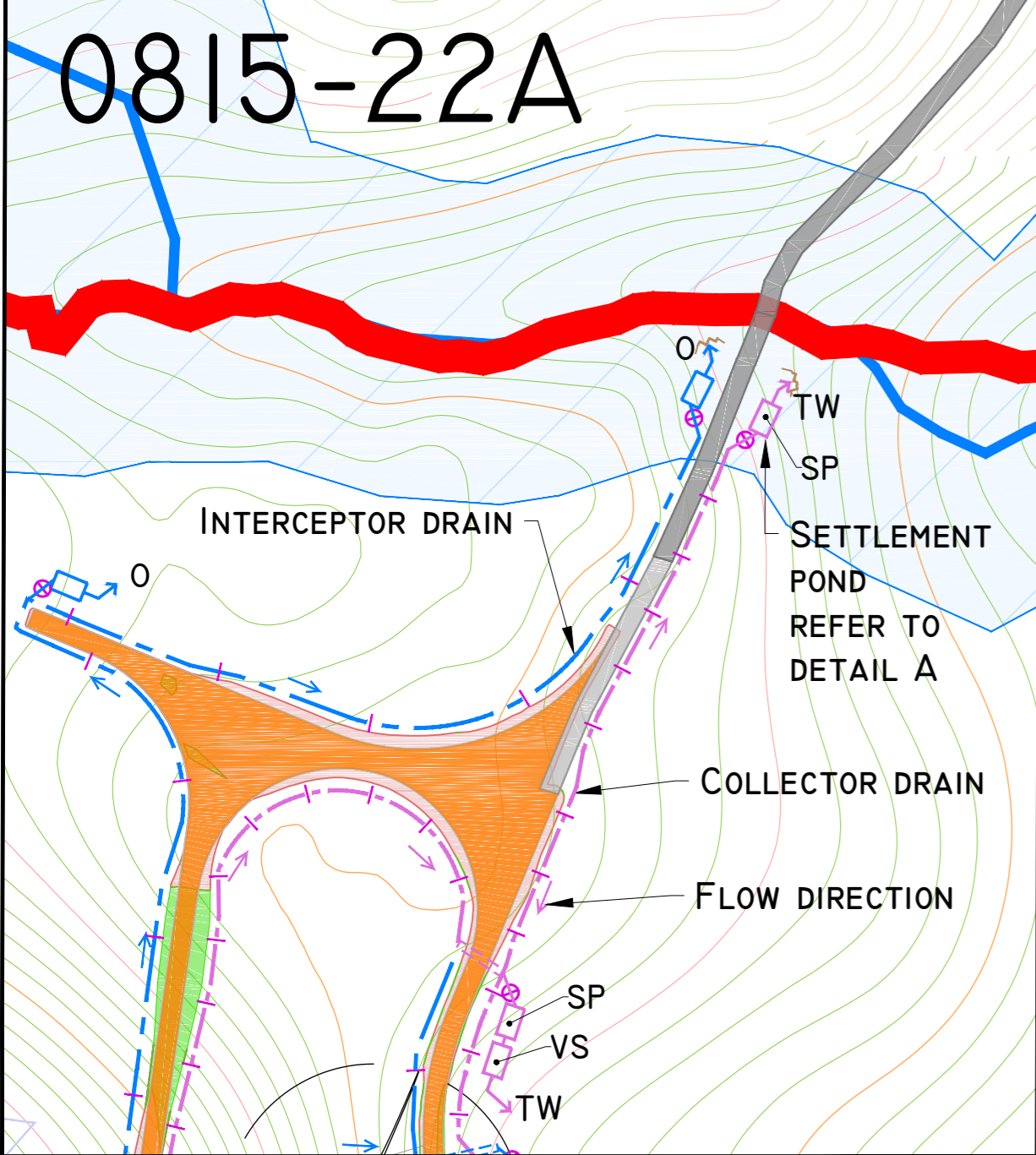


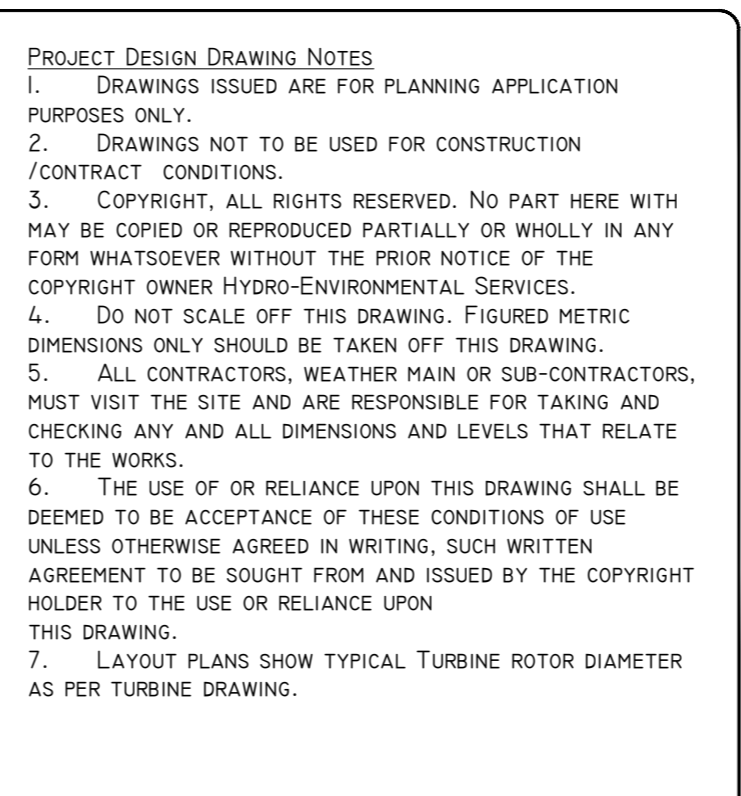
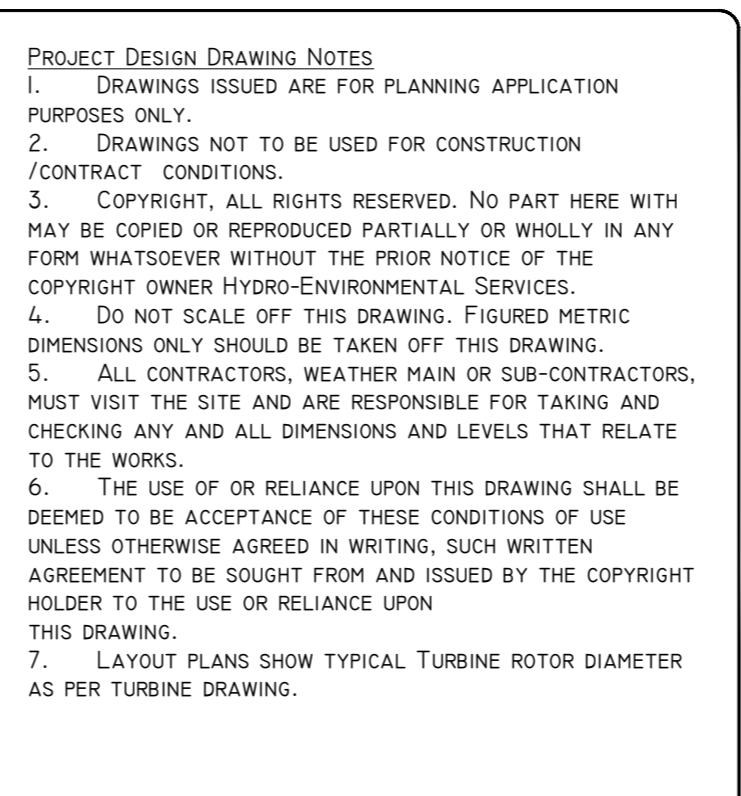
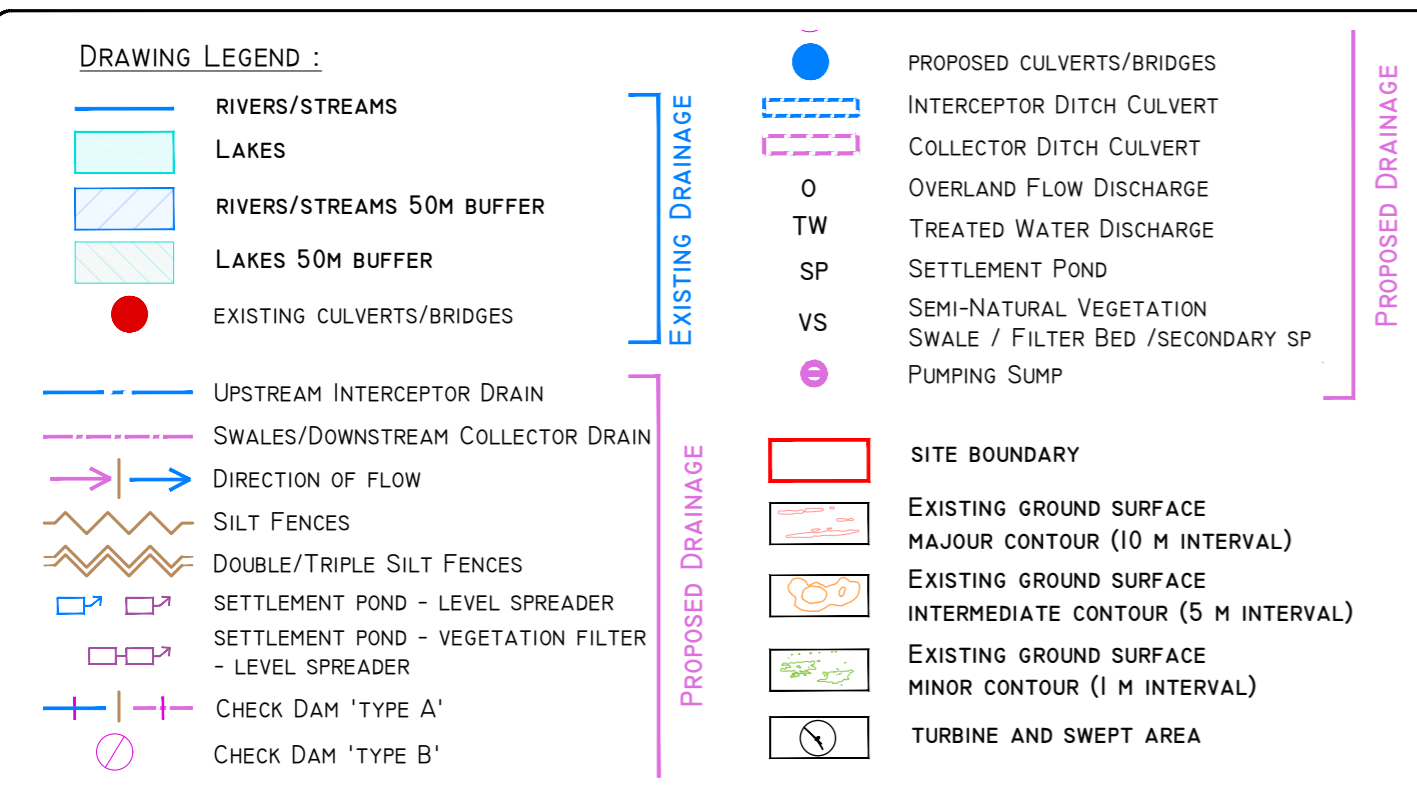
0815-22A



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 THAN 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 DISPERSE TO HAVE A GRADE LESS THAN 6%.
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 OF SUITABLE AREAS TO USE AS VEGETATED 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) DIVERSION OF 25M BUFFER ZONES TO ARTIFICIAL DRAINAGE DITCHES WHERE POSSIBLE (3) LIMIT SMALL WORKING AREAS (4) WORKING IN APPROPRIATE WEATHER AND SUSPENDING CERTAIN WORK ACTIVITIES IN ADVANCE OF FORECASTED MET WEATHER
SOURCE CONTROLS	(1) USE OF UPSTREAM INTERCEPTOR DRAINS AND DOWNSTREAM COLLECTOR DRAINS / OVERZEEDED SWALES, VE-DRAINS, DIVERSION DRAINS, PUMPS AND CULVERTS (2) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS (3) SILT FENCES, FILTER FABRICS (4) IN STREAM SEDIMENTS (5) COLLECTION TRAPS, TEMPORARY SUMP, PUMPING SYSTEMS (6) ATTENUATION LAGOONS (7) SEDIMENT TRAPS, SILLING / SETTLEMENT PONDS
IN-LINE CONTROLS	(1) INTERCEPTOR DRAIN, VE-DRAIN, OVERZEEDED SWALES/COLLECTOR DRAINS (2) ATTENUATION PONDS (3) EROSION AND VELOCITY CONTROL MEASURES SUCH AS: A) SAND BAGS B) OYSTER BAGS FILLED WITH GRAVEL C) FILTER FABRICS D) STRAW BALES E) FLOW UPSTERS F) WEBS OR BAPLES G) AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS (4) SILT FENCES, FILTER FABRICS (5) IN STREAM SEDIMENTS (6) COLLECTION TRAPS, TEMPORARY SUMP, PUMPING SYSTEMS (7) ATTENUATION LAGOONS (8) SEDIMENT TRAPS, SILLING / SETTLEMENT PONDS
WATER TREATMENT CONTROLS	(1) TEMPORARY SUMP (2) ATTENUATION PONDS (3) TEMPORARY STORAGE LAGOONS (4) SEDIMENT TRAPS, SILLING / SETTLEMENT PONDS (5) PROPRIETARY SETTLEMENT SYSTEMS SUCH AS SILTBOILER, AND/OR OTHER SIMILAR/EQUIVALENT OR APPROPRIATE SYSTEMS (6) SALT DENSITATION BAGS
OUTFALL CONTROLS	(1) LEVELLED SPREADERS (2) BUFFERED OUTFALLS (3) VEGETATED FILTERS (4) SALT DENSITATION BAGS (5) FLOW LIMITERS AND WEIRS



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

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Date	Description	Chkd	Signed

Revisions

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Job: **ARDDREROO WF, Co. GALWAY**

Title: **Drainage Layout Sheet 1 of 10**

Figure No: **0815-20**

Drawing No: **P1227-8-1118-A1-0815-20-00A**

Sheet Size: **A1** Project No.: **P1227-8**

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

Date: **21/11/2018** Checked By: **MG**