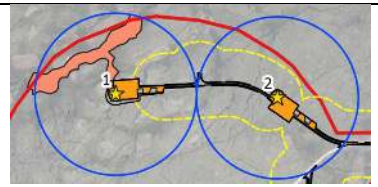
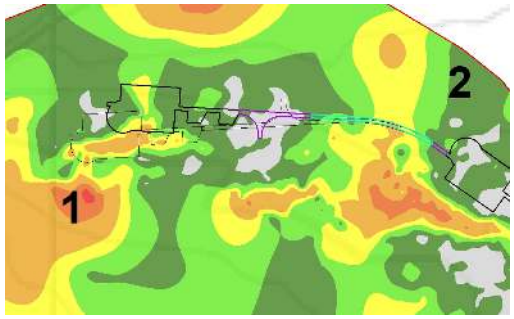
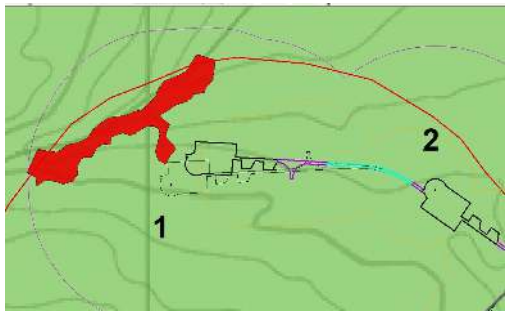
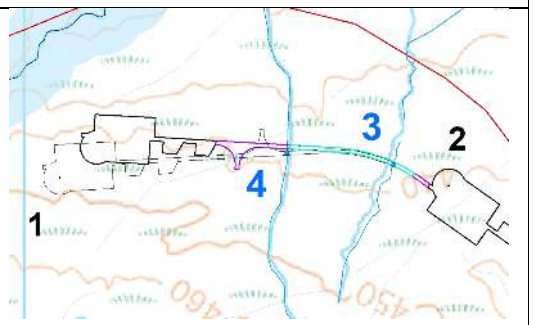
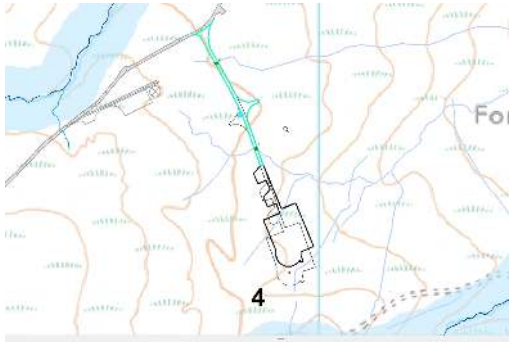
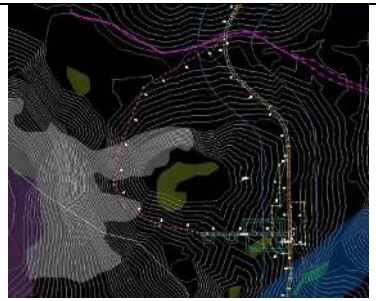
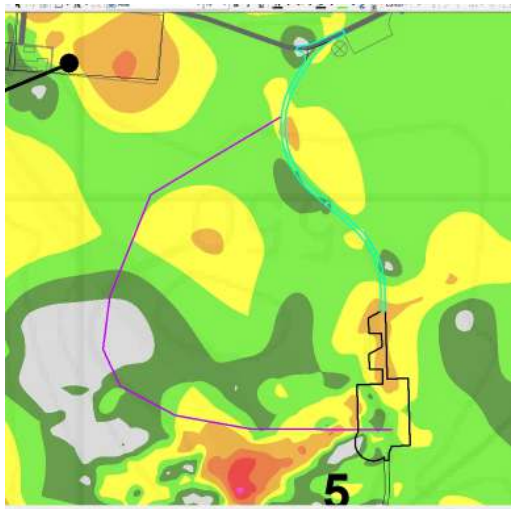
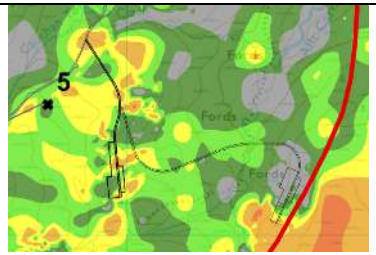
Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
Turbine on deep peat when there is an area to the north that is not deep peat. Note recent submission indicates that there are other environmental and technical constraints in this area – it may be helpful to understand these further (and if they relate to our interests they may effect our opinion) Turning T directly adjacent to watercourse.	 Figure inserted above shows location of GWDTE in relation to Turbine T1 sited for Proposed Development, acting as a constraint on micro-siting.	Turbine T1 relocated east to 287093 835457 to avoid as much peat as possible. This reduces the amount of peat that will be excavated in this location by 1,220m^3, from the previous volume of ~7,370 m^3 to ~6,150 m^3. The relocation also moves the infrastructure away from the GWDTE and the topography associated with the feature. The turning head has also been moved closer to the turbine hardstanding and away from watercourse and rotated to the south to avoid peat.	Offered & achievable  

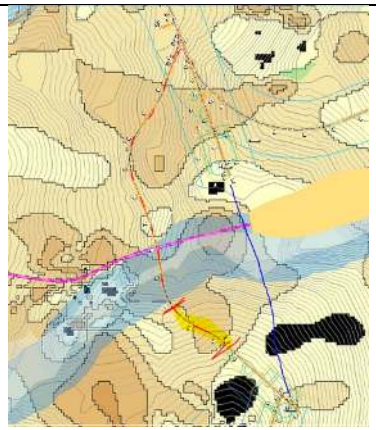
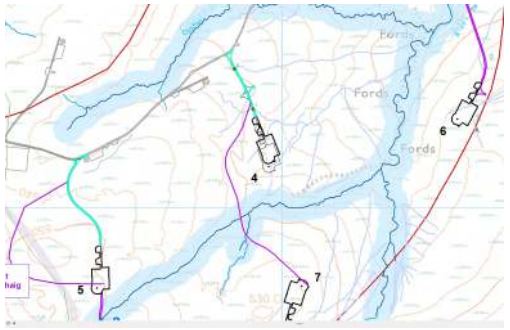
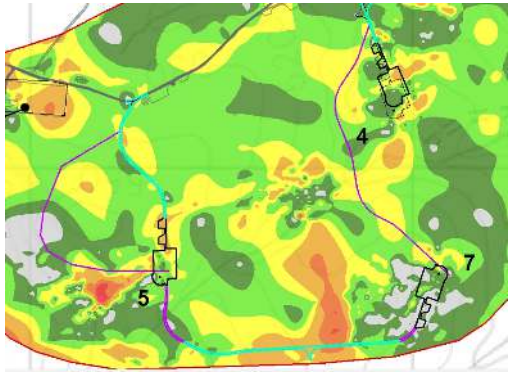
Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
			
Access track to turbine on deep peat although there is no peat and disturbed ground to the north and an existing track part of the way to the west.		This area (inserted left) was the location for the construction compound for the Operational Scheme. The Applicant does not have legal control to site *permanent wind farm infrastructure* (i.e. turbines or internal access tracks) in an area which is demarcated in a legal agreement for the siting of a decommissioning compound by the owner of the Operational Scheme. The owner of the Operational Scheme has also identified this area as a 'laydown area' for turbine components (storing blades, nacelles, gearboxes etc.) in case urgent upgrades are required during the operational lifetime of the Operational Scheme. A temporary construction compound in this area for the Proposed Development is acceptable to the owner of the Operational Scheme.	Not offered for reasons set out.

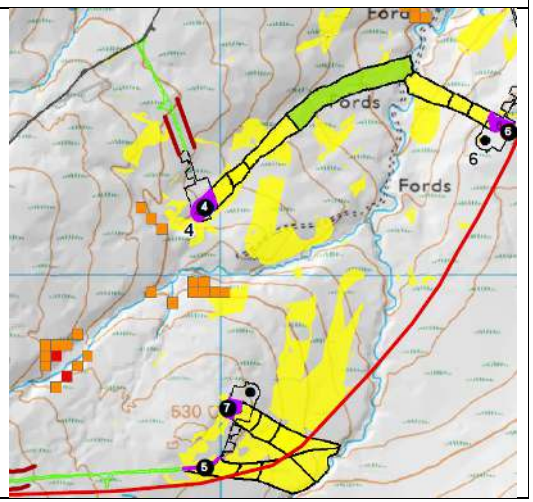
Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
Consideration only given to site being to the west of current substation – other areas might have shallower peat. Possibility to extend existing substation or locate directly adjacent to it so no new disturbed peat.		The Applicant has no legal control for areas east of existing sub-station for Tom nan Clach Wind Farm. The location for the Proposed Development, adjacent to existing sub-station, mitigates the Landscape Visual impact by not creating any 'gaps' between these two buildings. The design principle underpinning the Proposed Development is for it to be seen an Extension to the Operational Scheme in Landscape Visual Impact terms. The existing 'as built' substation is shown in the image, and where the Proposed Development substation is located.	Not offered for reasons set out.
Can you provide any further evidence (site photographs?) to support the proposal that these water features are man-made drains rather than natural water features that the layout needs to avoid? Note recent submission indicates peat gullies or manmade drainage will be diverted or restored (which is acceptable).	Below: Linear man made ditches that will be diverted around hardstanding  Below: more natural watercourse to the south that will remain intact due to relocation of T4 to the north	Turbine T4 has been relocated 32m north. This avoids the natural water feature to the south and allows the man-made drain to be diverted pre-construction. The turning head has also been moved to the east of the track to avoid the small pool.	Offered & achievable 

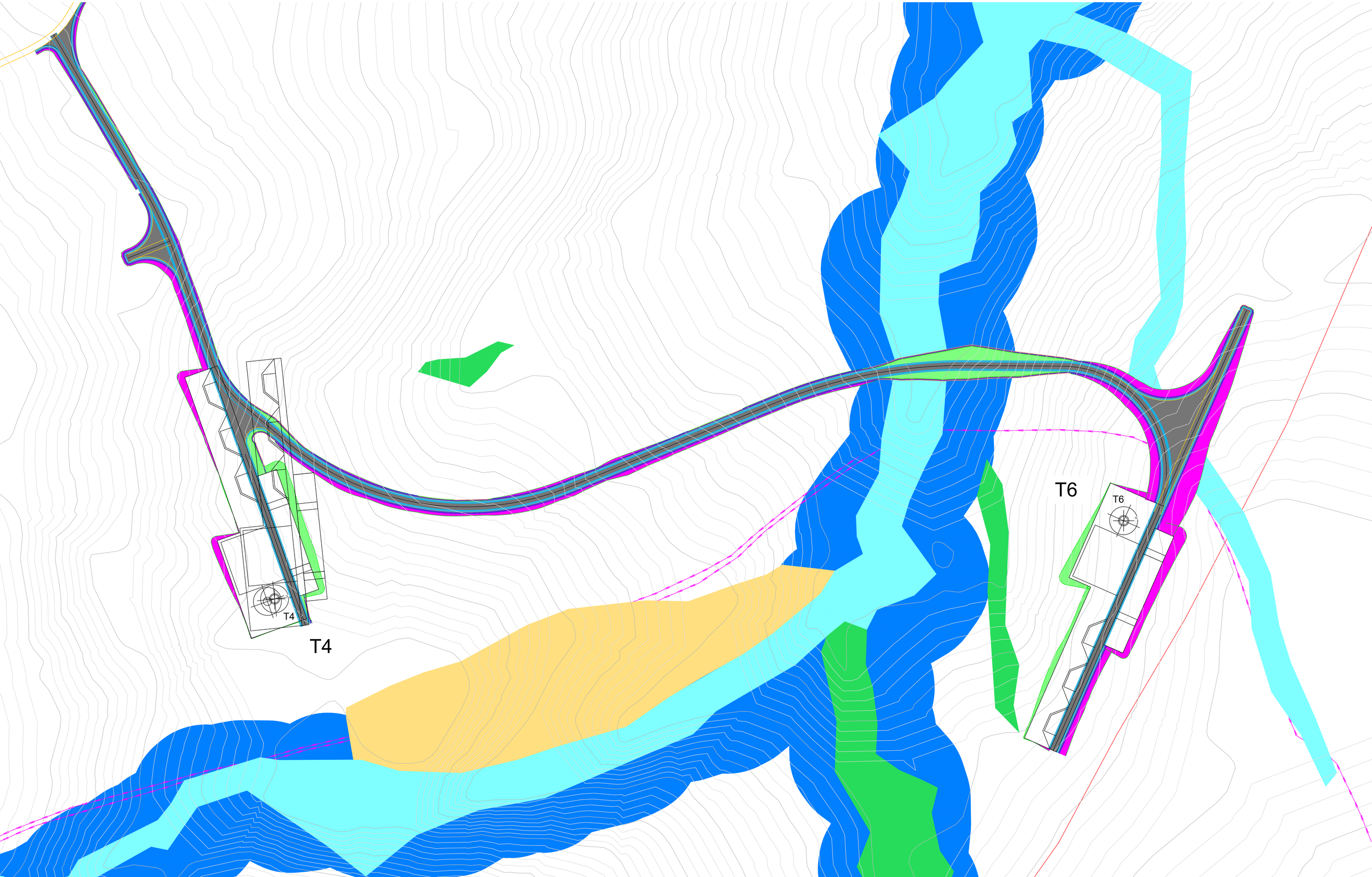
Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
			
A change in orientation of the supporting infrastructure could move it onto the shallower eroded peat, avoiding areas with intact vegetation cover and deeper peat.		Repositioning the crane pad to the west would require a new internal access track to be designed (see image, red curved line/existing track also shown). This is the only acceptable option in civil engineering terms to follow the steep gradients present to ensure the track is not too steep (>10%), once you have repositioned the crane pad to connect to the existing access track. There are restrictions in the south of the red-line/legal boundary which limit alternative internal access track options. The presence of deep peat in the west and south, once the crane pad has been repositioned, does not allow for the design of turning heads (not permitted in HSE terms). Repositioning the crane pad to the west would increase the length of access tracks required by >400m. A	Not offered for reasons set out. 

Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
		change in crane pad orientation would not achieve the desired outcome, it would increase the environmental impacts (increase in peat depth) and be unacceptable in civil engineering & HSE terms.	
Existing track directly to Turbine but new track proposed.		The Applicant did look at three possible options in achieving this in earlier site iteration of the internal access tracks. All options would dissect a GWDTE. What became the preferred option (in environmental/civil terms, inserted and see document **'TNC – T4 &T6 Plan' attached)** the turning head is located on a 10% vertical gradient (not permitted in HSE). The cut required for the track and hardstanding (@4m deep at the worst point) will have a knock-on effect on the existing tracks. The cut for this would create a ponding area which would need to be drained. Where the cut is located is where the existing 33kV underground cable connecting the Operational TNC Wind Farm is located (see **Figure 2.0 – Design Freeze 9** of the EIA Report). Designing & constructing an internal access track over a live underground	Not offered for reasons set out.

Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
		33kV cable is challenging but acceptable with appropriate mitigation (which the track North of Turbine T5 has incorporated). 4m of cut in this location, where the underground 33kV cable can be buried @1m deep (min. permitted is 600mm), presents an unacceptable commercial risk (the Operational TNC Wind Farm would need to be switched off, whilst any install/construction takes place for an undefined amount of time). The proposed new track does not achieve the outcome desired, and was discounted during the Design Iteration process for the Proposed Development.	

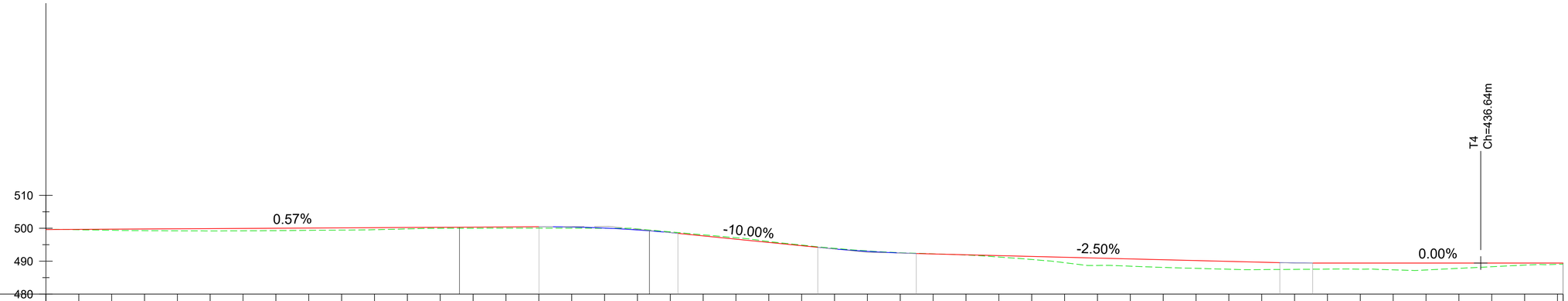
Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
Access track from T5 to T7 is over deep peat. An alternative access from T4 to T7 would be shorter – more probing information required to consider this alternative further.		Proposed track directly connecting Turbines T4 to T7 is not possible in civil engineering/turbine delivery (as the gradient exceed 20%). The alternative option (see red line, image inserted) is 750m in length compared to 800m in length for the current proposed track between T5 and T7. The alternative would be also be over deep peat (1.5-2m) and therefore similar to the existing T5 to T7 route would need floating road sections. In addition, the steepest gradient on this option is @12% which for some turbine suppliers is too steep for turbine component delivery and an unacceptable commercial and health & safety risk. This alternative track would also result in three watercourse crossings rather than a single crossing in the current T5 to T7 route. This alternative route would also be located on areas of Medium (orange) risk of peat landslide which is not recommended. The alternative internal access track does not achieve the outcome desired. On balance it would increase the number of watercourse crossing required and peat landslide risk.	Not offered for reasons set out.  

Issue for amendment or further environmental justification		Applicant's response to SEPA	Applicant reasoning
			


T4
T4
T6
T6

T4 SPUR

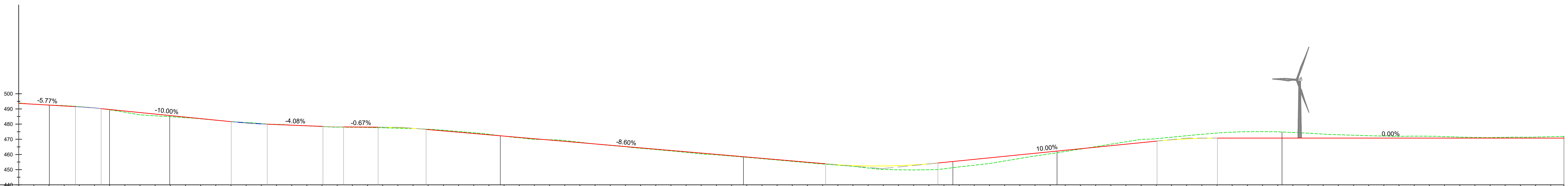
CH:0.000 - CH:461.711
SCALE H 1:1000,V 1:1000
DATUM: 480.000



Chainage	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	450.000	460.000
Existing Levels	499.553	499.391	499.299	499.239	499.182	499.235	499.288	499.370	499.455	499.567	499.809	499.986	500.018	500.035	500.047	500.040	500.019	499.819	498.910	498.020	497.129	495.967	494.907	493.913	493.123	492.576	492.241	491.869	491.271	490.521	489.536	488.715	488.485	488.099	487.823	487.549	487.445	487.516	487.600	487.576	487.378	487.333	487.826	488.319	488.812	489.048
Proposed Levels	499.664	499.721	499.777	499.834	499.890	499.947	500.004	500.060	500.117	500.173	500.230	500.286	500.343	500.399	500.456	500.389	500.072	499.505	498.688	497.694	496.694	495.694	494.694	493.727	492.980	492.482	492.203	491.953	491.703	491.453	491.203	490.953	490.703	490.453	490.203	489.953	489.703	489.478	489.440	489.440	489.440	489.440	489.440	489.440	489.440	489.440
Level Difference	0.111	0.329	0.478	0.595	0.708	0.712	0.715	0.690	0.662	0.606	0.420	0.300	0.325	0.364	0.409	0.348	0.052	-0.314	-0.222	-0.325	-0.435	-0.273	-0.213	-0.186	-0.143	-0.093	-0.038	0.083	0.432	0.932	1.667	2.238	2.217	2.354	2.379	2.404	2.258	1.962	1.840	1.864	2.062	2.107	1.614	1.121	0.628	0.392
Horizontal Geometry	L=125.9												R:300.0 L:57.8						L=278.0																												
Vertical Geometry	G=0.57% L=150.1															R=400.0 K=4.00 L=42.3			G=-10.00% L=42.6			R=400.0 K=4.00 L=30.0		G=-2.50% L=110.6											R=400.0 K=4.00 L=10.0		G=0.00% L=76.2						

T6 - OPTION C

CH:0.000 - CH:1018.665
SCALE H 1:1000,V 1:1000
DATUM: 440.000



Chainage	Existing Levels	Proposed Levels	Level Difference
10.000	493.123	493.117	-0.006
20.000	492.576	492.540	-0.035
30.000	492.153	491.963	-0.190
40.000	491.547	491.378	-0.168
50.000	490.669	490.613	-0.056
60.000	489.425	489.637	0.212
70.000	487.822	488.637	0.815
80.000	486.092	487.637	1.545
90.000	485.468	486.637	1.170
100.000	484.871	485.637	0.766
110.000	484.244	484.637	0.394
120.000	483.483	483.637	0.155
130.000	482.560	482.637	0.077
140.000	481.680	481.637	-0.043
150.000	481.049	480.758	-0.291
160.000	480.348	480.128	-0.220
170.000	479.852	479.702	-0.150
180.000	479.334	479.294	-0.040
190.000	478.814	478.886	0.072
200.000	478.351	478.479	0.128
210.000	477.969	478.181	0.212
220.000	477.911	478.092	0.181
230.000	477.780	478.025	0.245
240.000	477.548	477.946	0.398
250.000	477.273	477.679	0.406
260.000	477.098	477.161	0.063
270.000	476.608	476.394	-0.214
280.000	475.928	475.534	-0.395
290.000	475.127	474.673	-0.453
300.000	474.295	473.813	-0.482
310.000	473.285	472.952	-0.333
320.000	472.062	472.092	0.030
330.000	470.971	471.232	0.261
340.000	469.960	470.371	0.411
350.000	469.722	469.511	-0.211
360.000	469.139	468.650	-0.489
370.000	468.040	467.790	-0.251
380.000	466.942	466.929	-0.012
390.000	465.961	466.069	0.108
400.000	465.084	465.208	0.124
410.000	464.089	464.348	0.259
420.000	463.214	463.488	0.274
430.000	462.339	462.627	0.289
440.000	461.382	461.767	0.384
450.000	460.416	460.906	0.490
460.000	459.774	460.046	0.271
470.000	458.931	459.185	0.254
480.000	458.088	458.325	0.237
490.000	457.231	457.464	0.234
500.000	456.354	456.604	0.250
510.000	455.458	455.744	0.285
520.000	454.565	454.883	0.318
530.000	453.719	454.023	0.304
540.000	452.964	453.245	0.281
550.000	452.186	452.714	0.528
560.000	451.070	452.433	1.363
570.000	450.123	452.403	2.280
580.000	449.921	452.623	2.702
590.000	449.826	453.093	3.266
600.000	449.950	453.814	3.865
610.000	450.570	454.769	4.198
620.000	451.806	455.769	3.963
630.000	452.927	456.769	3.841
640.000	454.045	457.769	3.723
650.000	455.712	458.769	3.056
660.000	457.377	459.769	2.392
670.000	458.952	460.769	1.816
680.000	460.459	461.769	1.310
690.000	461.966	462.769	0.802
700.000	463.532	463.769	0.237
710.000	465.138	464.769	-0.369
720.000	466.754	465.769	-0.986
730.000	468.354	466.769	-1.585
740.000	469.948	467.769	-2.179
750.000	470.430	468.769	-1.661
760.000	471.388	469.653	-1.734
770.000	472.344	470.286	-2.058
780.000	473.258	470.668	-2.590
790.000	474.120	470.800	-3.320
800.000	474.683	470.800	-3.883
810.000	474.995	470.800	-4.195
820.000	475.031	470.800	-4.231
830.000	474.905	470.800	-4.105
840.000	474.477	470.800	-3.677
850.000	474.043	470.800	-3.243
860.000	473.421	470.800	-2.621
870.000	472.995	470.800	-2.195
880.000	472.673	470.800	-1.873
890.000	472.352	470.800	-1.552
900.000	472.172	470.800	-1.372
910.000	471.963	470.800	-1.163
920.000	472.076	470.800	-1.276
930.000	472.011	470.800	-1.211
940.000	471.765	470.800	-0.965
950.000	471.452	470.800	-0.652
960.000	471.183	470.800	-0.383
970.000	471.092	470.800	-0.292
980.000	471.245	470.800	-0.445
990.000	471.350	470.800	-0.550
1000.000	471.448	470.800	-0.648
1010.000	471.737	470.800	-0.937

Horizontal Geometry

Segment
L=20.2
R:75.0 L:39.7
L=39.6
R:200.0 L:218.0
L=160.3
R:350.0 L:138.0
L=68.7
R:75.0 L:148.3
L=185.8

Vertical Geometry

Segment
G=-5.77% L=37.5
R=400.0 K=4.00 L=16.9
G=-10.00% L=85.8
R=400.0 K=4.00 L=23.7
G=-4.08% L=36.7
R=400.0 K=4.00 L=13.6
G=-0.67% L=22.8
R=400.0 K=3.98 L=31.6
G=-8.60% L=263.3
R=400.0 K=3.98 L=74.1
G=10.00% L=144.4
R=400.0 K=3.98 L=39.8
G=0.00% L=228.4