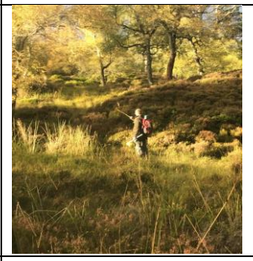
AGENDA ITEM 7

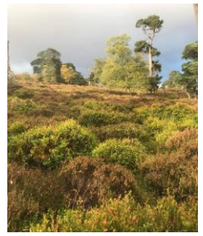
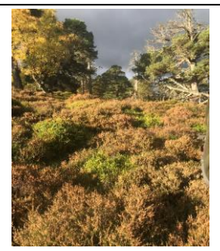
APPENDIX 4

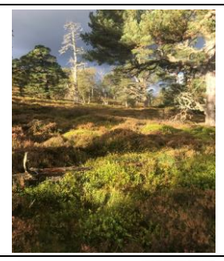
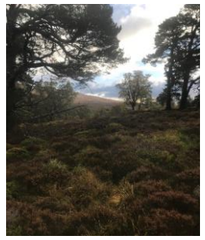
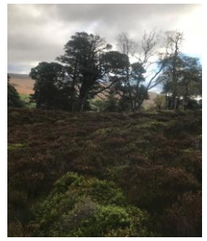
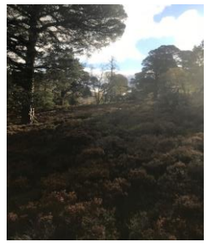
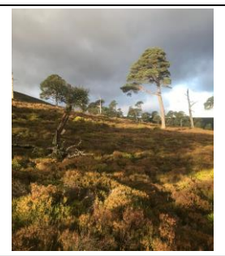
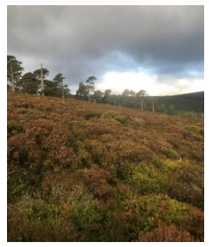
2018/0301/DET

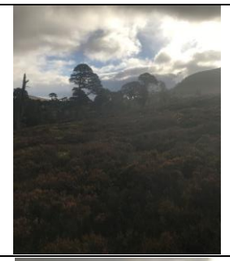
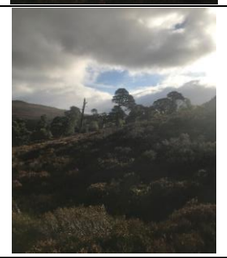
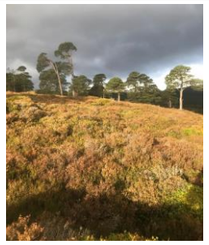
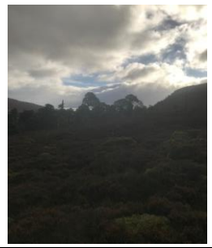
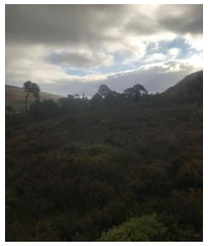
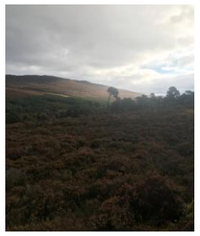
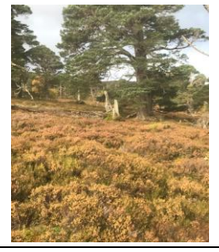
TRACK SURVEY

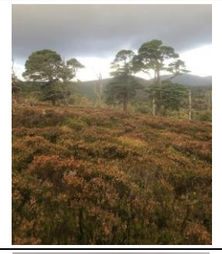
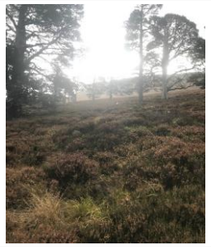
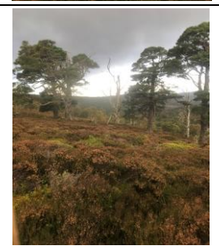
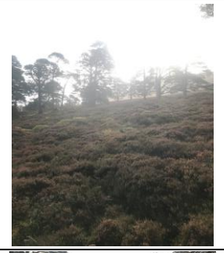
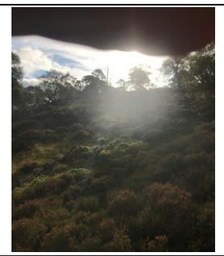
Cane No.	Location (Mapsheet Prefix NO)	Bearing	Approx Distance	Approximate Gradient	Description of work required	Indicative Qantities	Images
					<u>General Specification notes</u>: **The track will be constructed to 3m width using 4-600mm of as dug aggregate material won from the side ditch or borrowpits throughout, see annex's for detail.** **A side ditching along the top side of the full track length will be installed. A no dig approach avoiding any disturbance to root systems is done through a floating technique.All turf and organic soils to be stored and reused in a sensitive manner minimising habitat loss. All birch tree removal marked with yellow flags on the ground (minimal). No mature pines to be removed.** .		
1	10178 92081 - 10133 92069	255°	46m	4°	Install 450mm x 6m culvert pipe coming from topside of the new road. Culvert to go underneath the old road & take off the water from the track. No trees or root systems so okay to dig to mineral layer.	Pipe - **1 x 450mm** Cut Track - **46m** Ditching - **46m** Tree / Branch Removal - **N/A**	
2	10133 92069 - 10123 92060	228°	13m	11°	No trees or root system so okay to dig to mineral layer. Install 450mm x6m culvert pipe	Pipe - **1 x 450mm** Cut Track - **13m** Ditching - **26m (double sided)** Tree / Branch Removal - **N/A**	Image Quality Not Sifficunt
3	10123 92060 - 10113 92047	204°	20m		Possible requirement for Birch Tree Trimming but not tree removal. Corridor required approx 5m. Hard layer up to 600mm deep. Recommendation to float section to ensure minimal disruption using terram 1000 and aggregate material imported from nearest borrow pit. Install 300mm x 6 m culvert pipe	Pipe -**1 x 300mm** Floated Track **-20m** Ditching - **40m (double sided)** Tree / Branch Removal - **Minor branches**	
4	10113 92047 - 10108 92048	281°	10m	4°	Hard layer up to 600mm deep. Recommendation to float section to ensure minumal disruption.	Pipe - **N/A** Floated Track - **10m** Ditching - **10m** Tree / Branch Removal - **Trim branches**	
4	10108 92048 - 10092 92047	266°	20m	4°	Location of suitable borrow pit, import aggregate material throughout opened track to create running surface. Material to be graded with riddle bucket to give smooth finish. All turf and soil sensitively stripped and stored for reinstatement. Cut track technique.	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **1 no small birch tree**	

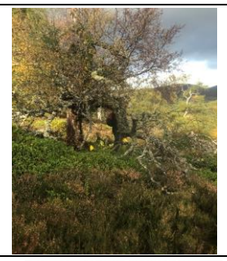
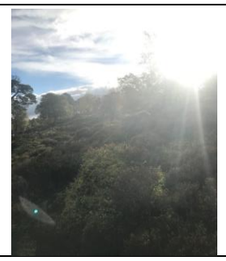
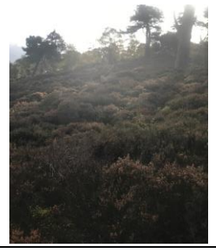
5	10092 92047 - 10073 92051	282°	20m	4°	Ok to dig as shallow mineral layer with minimal gradient	Pipe - **1 x 300mm** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **N/A**	Image Quality Not Sifficunt
6	10073 92051 - 10052 92044	252°	20m	2°	Ok to dig as shallow mineral layer with minimal gradient	Pipe - **N/A** Cut Track **-20m** Ditching - **20m** Tree / Branch Removal - **N/A**	Image Quality Not Sifficunt
7	10052 92044 - 09991 92049	275°	60m	2°	A slight cross slope on the hill approx 15°. The beginning of a condensed area of Granny pines - Floated track methodology to be adopted over tree root systems following initial removal of high turf levels. Locate a borrow pit , import gravel on the track line with the tracked dumper. Install 300mm x 6 m culvert pipe	Pipe - **1 x 300mm** Floated Track - **60m** Ditching - **60m** Tree / Branch Removal - **N/A**	Image Quality Not Sifficunt
8	09991 92049 - 09946 92051	273°	50m	6°	A slight cross fall on the hill of approx 20°. 2 birch in the corridor where we will be required to remove some branches to get the excavator through. No Granny pines present so can cut the track for most of section. On isolated area of birch tree, floating track technique to be adopted within this area. **Note - On all cut areas this technique will be adopted with no cutting within tree root system vacinities.** Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut/Floated Track - **50m** Ditching - **50m** Tree / Branch Removal - **Branch Removal**	
9	09946 92051 - 09913 92053	273°	30m	9°	A hollow section of track line which will require a ramp to be installed to reduce gradient. A dog leg may be required to reduce gradients within the area. This would however require the removal of a birch tree. Generally, an open section with no granny pines so a cut technique can be adopted and is a likely location of possible borrow pit.	Pipe - **N/A** Cut Track -**30m** Ditching - **30m** Tree / Branch Removal **- 1 no Birch Tree**	
10	09913 92053 - 09878 92036	244°	40m	15°	On maximum permissable slope. Birch tree to be removed. No Granny pines and no root systems. Can cut into the side of the hill for material as required, This will enable a reduction in gradient.	Pipe - **1 x 300mm** Cut Track - **40m** Ditching - **40m** Tree / Branch Removal - **1 no Small Birch Tree**	

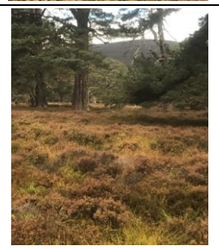
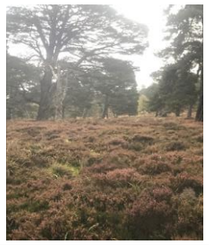
11	09878 92036 - 09849 92034	266°	30m	12°	Cross slope at 10- 15°. No large trees or pines so can cut into the hill. 1 dead birch which will need to be removed as very tight to at the edge of proposed track. The dead tree will carefully moved outwith the track line to form a habitat pile. Install 600mm x6m culvert pipe	Pipe - **1 x 600mm** Cut Track - **30m** Ditching - **30m** Tree / Branch Removal - **Replace dead birch**	
12	09849 92034 - 09831 92032	264°	20m	10°	Remove high knoll looking along the path. Possible borrow pit location. Remove Birch Tree Digging possible as closest Granny pine 50m away from track.	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **Remove 1 no Birch**	
13	09831 92032 - 09802 92028	262°	30m	4°	Remove small Birch. No substantial trees or root systems so cut along the cross along the route. Any small areas of roots to be left and no dig action. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **30m** Ditching - **30m** Tree / Branch Removal - **Remove 1 no Birch**	
14	09802 92028 - 09762 92012	248°	40m	9°	Open space area. No substantial trees or root systems so cut along the cross fall along the route. Any small areas of roots to be left and no dig action. Possible borrow pit location	Pipe - **N/A** Cut Track - **40m** Ditching - **40m** Tree / Branch Removal - **N/A**	
15	09762 92012 - 09742 92008	259°	20m	5°	As Item 14	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **N/A**	
16	09742 92008 - 09742 92000	180°	10m	6°	As Item 14. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track -**10m** Ditching - **10m** Tree / Branch Removal - **N/A**	

17	09742 92000 - 09689 91998	268°	50m	2°	Line to be altered to the LHS to minimise damage to trees and still allow for some digging. When traversing along a slope a floated technique may cause instability. Minimising floating to over root plate zones only. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut/Floated Track **-50m** Ditching - **50m** Tree / Branch Removal - **N/A**	 
18	09689 91998 - 09662 91991	255°	30m	2°	Track line to come between a pine on the right and a birch on the left. Digging to cease 20m short of trees in photograph, floated technique there after. Install 300mm x 6m culvert pipe	Pipe **- 1 x 300mm** Cut/Floated Track - **30m** Ditching - **30m** Tree / Branch Removal - **N/A**	
19	09662 91991 - 09629 91986	261°	30m	2°	Remove Tree Limb on birch on photograph. Cut technique once over root zone	Pipe - **N/A** Cut/Floated Track - **30m** Ditching - **30m** Tree / Branch Removal - **Birch Limb Removal**	
20	09629 91986 - 09598 91982	263°	30m	2°	Open space area. No substantial trees or root systems so cut along the cross fall along the route. Any small areas of roots to be left and no dig action. Possible borrow pit location. Install 300mm x 6m culvert pipe	Pipe - 1 x 300mm Cut Track - **30m** Ditching - **30m** Tree / Branch Removal - **N/A**	
21	09598 91982 - 09598 91980	°	45m	8°	Again, open space area. No substantial trees or root systems so cut along the cross fall along the route. Any small areas of roots to be left and no dig action. Possible borrow pit location. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **45m** Ditching - **45m** Tree / Branch Removal - **N/A**	
22	09598 91980 - 09524 91984	273°	70m	2°	As Item 21. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **70m** Ditching - **70m** Tree / Branch Removal - **N/A**	

23	09524 91984 - 09489 91993	284°	40m	2°	As Item 21. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **40m** Ditching - **40m** Tree / Branch Removal **- N/A**		
24	09489 91993 - 09470 91995	276°	20m	2°	As Item 21	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal **- N/A**		
25	09470 91995 - 09451 92000	285°	20m	3°	As Item 21 Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal **- N/A**		
26	09451 92000 - 09426 92006	283°	30m	2°	As Item 21	Pipe - **N/A** Cut Track - **30m** Ditching - **20m** Tree / Branch Removal - N/A		
27	09426 92006 - 09404 92000	255°	20m	2°	As Item 21	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **N/A**		
28	09404 92000 - 09342 91997	267°	60m	2°	Start of an area of mature pines so a floating technique to be used as per methodology Carefully Remove Fallen Tree and replace to the edge of the track to be maintained as habitat. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Floated Track - **60m** Ditching - **60m** Tree / Branch Removal **- N/A**		

29	09342 91997 - 09326 92009	307°	20m	4°	This Grid reference marks the highest point of the track, from here the decent to the end point begins. The general consensus is to traverse downhill along an even slope maintaining an even gradient. The majority of the cross slope will be cut into the hill, where areas of trees or root systems are present an overlaid method to be adopted. There is sufficient room to manoeuvre around mature pines minimising risk to root damage	Pipe - **N/A** Cut Track - **20m** Ditching - **20m** Tree / Branch Removal - **N/A**	 
30	09326 92009 - 09297 92026	300°	30m	4°	Slightly more condensed area of mature pines, adopt overlay method. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Floated Track -**30m** Ditching - **30m** Tree / Branch Removal - **N/A**	 
31	09297 92026 - 09271 92039	297°	30m	4°	As Item 30	Pipe - **N/A** Floated Track - **30m** Ditching - **30m** Tree / Branch Removal - **N/A**	
32	09271 92039 - 09256 92053	313°	20m	6°	Open space area, adopt cut track method. Install 600mm x 6m culvert pipe	Pipe - **1 x 600mm** Cut Track -**20m** Ditching - **20m** Tree / Branch Removal - **N/A**	No Image
33	09256 92053 - 09235 92081	323°	40m	10°	As Item 32. Possible borrow pit location	Pipe - **N/A** Cut Track - **40m** Ditching - **40m** Tree / Branch Removal - **N/A**	
34	09235 92081 - 09208 92101	307°	30m	12°	Increase in track gradient but still within threshold. Small birch to be removed by marker no 36. Large hollow on track line which will be built up to even out gradient Install 450mm x 6m culvert pipe Install 300mm x 6m culvert pipe	Pipe - **1 x 450mm, 1 x 300mm** Cut Track - **30m** Ditching - **30m** Tree / Branch Removal - **1 no Birch Tree**	

35	09208 92101 - 09180 92113	293°	30m	7°	Fallen birch on the track line, to be carefully removed and set to the side of the track as a habitat. A cut method along cross slope.	Pipe - **N/A** Cut Track - **30m** Ditching - **30m** Tree / Branch Removal **- 1 no Birch Tree**	 
36	09180 92113 - 09154 92138	314°	40m	14°	Large Mature pine on right hand side of marker 36. Due to severe cross slope and unfeasible overlaying methodology, the track line has to be pushed downhill to protect root system. This is turn increases gradient to 14° but as no room to play with this is deemed the most appropriate solution for the site. This is the maximum gradient for the entire track. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **40m** Ditching - **40m** Tree / Branch Removal **- N/A**	
37	09154 92138 - 09129 92152	299°	30m	12°	As Item 36. Right hand side of marker 37	Pipe - **N/A** Cut Track - **30m** Ditching - **30m** Tree / Branch Removal - **N/A**	
38	09129 92152 - 09097 92178	309°	40m	10°	Reaching the bottom of the traverse, less trees with more room to reduce gradient using cut technique. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut Track - **40m** Ditching - Tree / Branch Removal - **N/A**	
39	09097 92178 - 09048 92233	318°	70m	1°	Grid reference marks the end of the steep decent and out onto the flat towards the end of the track. General consensus here is to cut all open areas as mineral layer only 200-400mm deep throughout. Areas of pines to be overlaid. It is anticipated approx 30% of the following flat sections will be floated as a safety measure to protect root systems and assist it maintaining a well drained track. The majority will be double ditched. An increased number of pipes to be installed to maintain natural drainage and habitats on lower side of track. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut/FloatedTrack - **70m** Ditching - **140m** Tree / Branch Removal **- N/A**	
40	09048 92233 - 09020 92255	308°	40m	1°	As Item 39 Install 450mm x 6m culvert pipe	Pipe - **1 x 450mm** Cut/Floated Track - **40m** Ditching - **80m** Tree / Branch Removal - **N/A**	

41	09020 92255 - 08980 92283	305°	50m	1°	As Item 39. Remove dead pine fallen over line of track, carefully move to outer edge of track as a habitat	Pipe - **N/A** Cut/Floated Track - **50m** Ditching - **100m** Tree / Branch Removal - **1 no dead pine**	
42	08980 92283 - 08971 92314	344°	30m	1°	As Item 39. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut/Floated Track - **30m** Ditching - **60m** Tree / Branch Removal **- N/A**	
43	08971 92314 - 08928 92324	283°	40m	1°	As Item 39	Pipe - **N/A** Cut/Floated Track - **40m** Ditching - **80m** Tree / Branch Removal - **N/A**	
44	08928 92324 - 08900 92351	314°	40m	1°	As Item 39. Install 300mm x 6m culvert pipe	Pipe - **1 x 300mm** Cut/Floated Track - **40m** Ditching - **80m** Tree / Branch Removal **- N/A**	
45	0890 92351 - 08869 92378	311°	40m	1°	Change in ground conditions to a damper environment with deeper peat/soils. 600mm to mineral layer so a floated technique to be adopted	Pipe - **N/A** Floated Track - **40m** Ditching - **80m** Tree / Branch Removal **- N/A**	
46	08869 92378 - 08826 92420	314°	60m	1°	As Item 45	Pipe - **N/A** Floated Track - **60m** Ditching - **120m** Tree / Branch Removal - **N/A**	

47	08826 92420 - 08810 92452	333°	40m	°	As Item 45. 300mm x 6m culvert pipe Install	Pipe - **1 x 300mm** Floated Track - **40m** Ditching - **80m** Tree / Branch Removal - **N/A**	
48	08810 92452 - 08779 92482	314°	40m	°	End of Floating Section. track technique until End Cut	Pipe - **N/A** Cut Track - **40m** Ditching - **80m** Tree / Branch Removal **- N/A**	
49	08779 92482	°			End of new track. 300mm x 6m culvert pipe Install	Pipe - **1 x 300mm** Track - **N/A** Ditching - **N/A** Tree / Branch Removal **- N/A**	
						Track Totals: Total Length: 1684 mt Floated Sections: 565 mt Cut Sections: 1119 mt 300mm culverts 23nr 450mm culverts 4nr 600mm culverts 2nr	

Remarks
Hard Layer 200-400mm
Hard Layer 200-400mm
Hard Layer 500-600mm Possible Borrow Pit to right of standing man
Hard Layer 500-600mm
Hard Layer 200mm

Hard Layer 200mm
Hard Layer 200mm
Hard Layer 200-300mm
Hard Layer 300mm
Hard Layer 300mm

Hard Layer 300mm
Hard Layer 300mm
Hard Layer 200mm
Hard Layer 300mm
Hard Layer 200-300mm
Hard Layer 200-300mm

Hard Layer 200-300mm
Hard Layer 200-300mm
Hard Layer 200-300mm
Hard Layer 200-300mm
Hard Layer 300-400mm
Hard Layer 400mm

Hard Layer 300mm
Hard Layer 300mm
Hard Layer 200-300mm
Hard Layer 200-300mm
Hard Layer 200-300mm

Hard Layer 200-300mm
Hard Layer 200-300mm
Hard Layer 400mm

Hard Layer 300mm
Hard Layer 400mm
Hard Layer 300mm

Hard Layer 200mm
Hard Layer 200mm
Hard Layer 200mm
Hard Layer 300mm
Hard Layer 600mm
Hard Layer 600mm - 700mm

Hard Layer 600mm - 700mm
Hard Layer 300mm
Hard Layer 200mm