

# **AGENDA ITEM 7**

## **APPENDIX 3**

**2018/0301/DET**

# **TRACK CONSTRUCTION**



## MAR LODGE ESTATE – TRACK CONSTRUCTION

Mar Lodge Estate, Braemar requires a new estate track to be constructed due to sections of the original track being severely damaged and washed out following past flood events. The proposed new estate track is to be re-aligned across higher ground levels to prevent future related flood related damage.

Due to the environmental sensitivity of the site the following investigations and mitigations must be first addressed:

- Proposed new route and proposal of the new track to be agreed by all relevant parties. Great importance is apportioned to how the new track visually integrates into the surrounding landscape and addresses the various site mitigations during the construction phase of works:.
- Protection of the existing trees along the new proposed track line, notably the mature Caledonia Pine trees.
- Protection to the surrounding landscape, vulnerable plant species, and rare habitats.
- Protection local birdlife, wildlife and habitats – Crossbills, ant hills, otters, nesting birds, bat roosts.
- Controlling water pollution during the construction phase.

### The New Estate Track Route

A site based survey is undertaken by a specialist construction company who has extensive experience and proven record in similar track construction and differing type construction techniques on similar type topography and locations.

The re-aligned path route will take into consideration, the required gradient, corner widths, and any applicable passing place location requirements for estate vehicle access.

The track line traversing across any cross slopes, will adopt a 'cut and fill' technique with the downslope side being adequately stabilised to prevent future subsidence, road surface collapse.

Materials for the track construction shall be site won i.e. suitable material obtained from installation of track side ditch construction, from high knolls along track route, and from nearby site borrow pits opened at strategic points along the new track line.

The careful removal and saving of any existing vegetation sods at initial new track line clearance is paramount, as vegetation saved will be re-utilised to landscape the new track surrounds, to assist in the rapid revegetation and re-naturalizing of area, whilst preventing potential ground erosion from future rainfall.

### Tree Protection

The proposed new estate track shall be realigned, where possible, so as to prevent any damage to the tree root systems, trunk and canopy of the existing mature Caledonia Pine. No mature Caledonia will be felled to allow for new track route.

Should it be necessary, due to site obstructions/topography to align the new track closer than anticipated to the Caledonia pine, a 'No Dig' method of track construction shall be adopted within the area of the tree thus preventing any potential tree root damage. Where the new 'No Dig' track is located, final reinstatement of track surrounds must ensure the existing ground level at trunk base is not raised, but remains the same. A tree protection zone will be formed around the tree trunk to ensure no plant accidentally damages the bark. The use of a smaller type machine must be considered in respect to preventing damage to existing low tree branches.

Any trees which have been identified within the track survey for removal must be first agreed in writing with the estate. Trees identified for removal will be first inspected to ensure that there is no evidence of roosting bats, bird nesting or nearby ant hills before approval to remove be given.

Where possible any branches, wood, from removed trees will be re-utilised to form habitat piles for wildlife.

### **Landscape and Flora Protection**

The proposed track route and immediate surrounds shall be surveyed in advance to identify potential rare flora species and vulnerable habitats. Ecologist report and subsequent controls to be adopted will be followed at all times. Prior to any construction works on site, areas of vulnerable flora will be cordoned off from construction works with temporary fencing/rope and post barrier, with appropriate signage being erected as an additional visual marker.

Construction works shall be undertaken within a narrow working corridor to ensure minimal impact and damage to surrounding landscape.

The locations of any borrow pits for track construction material procurement shall be firstly identified in advance and approval given in writing by the Client.

The opening of any borrow pits will entail the initial careful removal and storage of existing vegetation sods, and topsoil from the area. Upon the completion of material procurement, the borrow pit shall be closed, by first landscaping and grading down of any unstable pit sides, thereafter replacing the layer of previously saved topsoil and finally re-landscaping the area with previously saved vegetation sods. This method ensures quick regeneration and establishment of the area. Upon completion the reinstated borrow pit should blend seamlessly into the surrounding landscape and topography.

### **Protection local birdlife, wildlife and habitats**

An initial site survey will identify potential wildlife and habitats which may be affected during the construction works. Such areas of concern will be identified in advance of works on site to ensure the appropriate mitigations are implemented on site during works. Ongoing daily site inspections will be carried out along the track route as works progress to ensure any new concern is identified at an early timescale i.e. nesting birds, otter activity.

Ecologists Site report findings, and necessary controls to be adopted on site must be followed at all times during the construction phase.

### **Controlling of Water Pollution during the Construction phase**

Appropriate measures must be implemented so as to ensure any contaminated rainwater/groundwater runoff does not pollute any watercourse during the works. As track construction progresses, the appropriate side ditch, installation of culverts shall be introduced to ensure both prevailing and future water runoff is managed appropriately.

Areas of concern relating to silt runoff from the site must be adequately mitigated through the use of appropriate silt mitigation techniques and subsequent ongoing daily maintenance regime of same.

Each plant machine shall have a Spill Response Kit with it at all times to deal with any accidental spillages from machines. All re-fuelling of machines on site shall take place at least 20 metres away from any source of water or watercourse with fuel being stored within a purpose built double skinned fuel type bowser, complete with remote shut off valve fitted within nozzle trigger. A larger type Spill response Kit will be located by the fuel bowser at all times. Fuel storage bowsers shall be padlocked shut when not in use to ensure no malicious release of liquid onto the adjacent ground.

Emergency procedures relating to dealing with accidental spillages is held within the Project folder with further Toolbox Talk ongoing training being undertaken on site;

# Methodology

## Initial Site Set up

- Set up site welfare at agreed location. Install site safety signage to notify site visitors of works and potential hazards ahead.
- Mobilise plant machinery to site.
- Undertake Site Induction/briefing with all staff, followed by walk along track route, noting track construction techniques to be adopted, identification of potential borrow pit locations, and applicable mitigations to be adopted on site to protect landscape, existing trees, wildlife, water-life, Flora, habitats, silt pollution, and other site visitors during construction phase.
- Following Ecologist site inspection - Erect the appropriate protection/signage at areas requiring protection along the initial track route.
- Following Ecologist site inspection of trees requiring felling – fell trees – Branches left in neat stacks to form habitat piles.
- Open up first borrow pit, to allow procurement of required track construction aggregate. Undertake the grading of borrow pit won material ( where applicable)

## Track Construction

- Undertake initial removal of existing vegetation sods, and carefully set aside for re-use later  
*(Refer to Appendix 1 “Organic Material Removal”)*
- Undertake the subsequent removal of topsoil layer and set aside for re-use later.  
*(Refer to Appendix 1 “Organic Material Removal”)*
- Methods adopted to procure site won materials for path construction  
*(Refer to Appendix 2 “How Material is Won” & Appendix 3 “Won Material on Slopes”)*
- Depending on existing track line locations, and topography to cross the following methodology shall be adopted: “Cut and Fill” and “Track Stabilisation” techniques for cross slope track construction.  
*(Refer to Appendix 4, “Track Construction on Steep Cross Slopes”, Appendix 5 “Boulder Stabilisation on Steep Cross Slopes” & Appendix 6 “Turf Stabilisation on Steep Cross Slopes”)*
- “Floated Track” technique shall be adopted on track sections with soft damp, bog type, deep peat type areas.  
*(Refer to Appendix 7 “Track Construction Ground Shaping and Floating”)*
- For general track formation and final surface capping  
*(Refer to Appendix 8 “Track Formation & Surface Capping”)*
- Use of Borrow Pits (Refer to Appendix 9 “Borrow Pits”)*
- Track Drainage (Refer to Appendix 10 “Piped Culverts”)*

## Old Track Reinstatement

Upon completion of the new estate track, works will thereafter be undertaken to close off and re-vegetate the old existing washed out track.

To achieve a natural look to the closed off track and assist in the regeneration of area, works shall involve tracking initially along approximately 20metres from the track end, thereafter working back, carrying out movement of track materials, site won soils to blend the old track levels naturally into the surrounding ground levels and contours. Raised knolls, and natural looking low points will also be formed along the old track line to further provide a natural look to the area.

As close off re-grading works progresses back along the old track line, site won turves shall be utilised through careful ‘spot robbing’ from the adjacent vegetation at either side of the old track line. The new formed ground contours of the old track line will thereafter be ‘spot turfed’ to promote rapid regeneration of area.

Locations of bare spots from adjacent donor areas shall be carefully manipulated using the excavator bucket through teasing the surrounding vegetation to close up / reduce size of bare spot. This will again ensure quick regeneration of areas and prevent potential rainfall water erosion.

The completion of old track revegetation and closure will ensure the area naturalises quickly whilst assisting in directing site visitors along the new track.