

AGENDA ITEM 5

APPENDIX 2

2018/0286/DET

CONSTRUCTION METHOD STATEMENT

Appendix 6 – Method Statement

Speyside Way – Ruthven Barracks to RSPB Insh Marshes Hide

PATH - CONSTRUCTION METHOD STATEMENT

1. Aim of project

The aim of the project is to create a safe pedestrian / cycle route between Ruthven Barracks and RSPB Insh Marshes Hide and therefore another link in the wider Speyside Way Extension Project running from Aviemore to Newtonmore.

2. Rationale for project

A safe route linking local communities along the Spey Valley and the wider path network whilst also providing infrastructure to support the tourism industry.

3. Accessibility and use

The creation of an easy to follow cycle route is likely to be popular with locals and visitors of all ages and ability. Where possible the path will be built to reduce gradients however given the nature of the terrain steeper sections will be unavoidable.

4. Path alignment

From the east the proposed Speyside Way path starts at the RSPB Reserve at Insh Marshes and continues south west through private land for approximately 110m towards the B970. The path then runs alongside the B970 on the north side of the carriageway for approximately 270m to the west towards a pedestrian crossing over the B970. The proposed path then continues west following the alignment of the B970 on the south side of the carriageway for a further 850m. At the western end of the proposed scheme the path ties back in to the B970 carriageway.

5. Plant Access & Egress

It is proposed that access will be primarily via the B970 and the RSPB Car Park.

6. Tree Felling

Where trees will need to be felled to accommodate the path this will be carried out using the appropriate harvesting equipment, techniques and qualified personnel. Checks will be made for red squirrel dreys and bats prior to felling and appropriate action taken to avoid disturbance if found to be present. Where appropriate timber will either be extracted by the landowner or left on site in a safe state.

7. Path design and construction

Hand tools / Materials/ Landscaping

a. Hand Tools

All hand tools and materials are to be transported to site. Some hand tools will be carried to the path line.

b. Materials

Around 1680 tonnes of imported quarried aggregate will be required for the construction of the path, or 112 tipper truck loads; the delivery distance and works to extract the quarried material will use diesel fuel; whilst the quarry works will have an environmental impact until such time the quarry is re-instated. Wherever possible 'as dug' material that is considered suitable for a path proposal will be used to alleviate the amount and cost of imported aggregate material.

Recycled plastic drainage pipes will be used for the culvert pipes. Culvert pipes will be black plastic, twin walled, to the diameter and length specified for the path.

Locally sourced and/or FSC certified timber will be used for the finger posts, waymarkers and post and rail fences.

Gabion baskets will be used to retain embankments in some places.

Prior to the laying of the aggregate material (please see below) into the path tray a 2m width geotextile followed by a tensar geogrid will be laid in the path tray to give the greatest support to the aggregate material above over soft ground and on slopes.

The type of aggregate material used for the path will be sourced from local quarries. The aggregate will be grey granite crushed to the following specifications:

- Base material; Imported 4-inch crushed rock.
- Middle layer; Imported quarry Type 1 sub-base stone (D.O.T. specified Clause 803); using a well graded Type 1 containing a good mix of angular aggregate sized between 63mm and 'fines' (sand sized particles). The solid stone particles should not exceed 63mm in size and contain less than 9% of fines. This will ensure the material has an acceptable level of natural interlock between the angular aggregate particles and ensure no voids once compacted.
- Top layer; imported quarry grey granite dust stone (5mm to dust). A 270m length of footway adjacent to the B970 will be finished in bituminous macadam.

Aggregate materials must be stored away from water courses and covered when necessary to reduce sediment run-off. COSHH statements will be available for all hazardous materials.

As far as possible, materials when not required for site should be stored in a secured compound. Generally, materials are to be stored safely to ensure no injury occurs from falling items. Any materials considered hazardous are to be stored in a locked container within the contractor's compound.

c. Design - Landscaping and materials

A machine built 'hi and dry' footpath raises the path using where possible on-site material. Turfed ditches are excavated to provide base mineral material which is then capped with at least 100mm sub-base and 25mm grey granite dust. This type of technique is appropriate for

uncontained moorland, and elsewhere when the landscape and habitats are comparatively robust and the site topography lends itself to access.

This technique will provide a path sensitive to landscape. Recycling of the ditch aggregate material into the path base and soil/turfes recycled into the landscaping is a very environmentally and costs effective way of building this type of path where conditions and site sensitivity allow. Skilled path construction techniques have been developed and refined with specialised contractors in recent years, and with sensitive operators where use of tilting hitch and toothed buckets has been used to great effect in the Cairngorms, Wester Ross and Lochaber.

Outwith potential 'as-dug' sites the path construction reverts to a full build of imported crushed granite quarry material, however the overall affect will look the same. i.e. a grey granite surfaced path with landscaped edges over the majority of the route. Initially the path surface will have a fresh unoxidised pale grey surface however after six months to a year the brightness of the surface softens and dulls from weathering and the accumulation of leaf litter and organic debris.

Where the available terrain permits, the path has been designed to take longer sweeping turns avoiding sudden sharp turns.

The overall appearance in the landscape is one of a gently winding path sensitively landscaped on either side, using turfs from the path tray, with occasional features such as piped culverts. The plastic pipe culvert ends will be completely concealed with natural stone headwalls to give a natural appearance within the landscape.

d. Design – Pedestrian Crossing

A pedestrian crossing is proposed over the B970. The footway either side of the crossing will meet the B970 at a 90 degree angle and will be finished with a smooth bituminous macadam surface. Timber chicane barriers will be used to slow down cyclists and raise awareness of the carriageway in advance of the crossing.

The B970 carriageway will have high friction surfacing applied to it 50m either side of the crossing to assist vehicle braking within the pedestrian crossing zone.

8. Site Designations / Environmental Protection

Full environmental protection measures to be in place prior to any works taking place. These are as stated in SEPA's Special Requirements SG31 & 32. Reference should also be made to Pollution Prevention Guidelines (PPG) 5 & 6.

9. Path Construction Methods

The scale of the work will require the use of heavy plant for the majority of the path construction works. Large amounts of as-dug and imported material will be required for the path base and surface.

The path will be graded and rolled to leave an even surface with a crossfall to shed surface water away from the B970. The path will be approximately 2m wide. Path edges and side ditches will be carefully landscaped using turfs and top soil removed during construction.

Construction method

1. All trees and vegetation to be felled/cleared as necessary by qualified personnel to clear the path line prior to construction work and any timber extracted/removed as required.
2. The path tray and ditches will be excavated and the path edges formed using this material.
3. Gabions baskets to be installed to retain embankments where necessary.
4. Aggregate path material to be laid.
5. All other path infrastructure such as way-markers are to be installed.
6. Path surface to be levelled and compacted and the path edges landscaped.
7. Site to be tidied and all excess or waste materials to be removed from site.
8. Accesses to existing fields to be constructed with a bituminous macadam finish.
9. All aggregate materials will be transported by dumpers along the proposed development boundary/path line ensuring there is limited impact on the landscaping and adjacent vegetation.
10. The turfs, whether heather or grass, are removed for as brief a period as possible. They are part of a contiguous process of excavator removing the turfs and laying to one side, turf side up. Turf depth will relate to the first excavator bucket incision and therefore bucket depth. The average 8 tonne excavator rotating tilt bucket will take a turf up to 300 to 600mm depth depending on the depth of sub-base below.

The substantial peat and spoil attached to the turf will contribute substantially to the vegetation's recovery and survival. Nevertheless the process metre by metre of laying the path will ensure that the turfs are not left exposed for any period of time. A time efficient and skilled excavator operator can achieve up to 10 metres of path construction per hour and therefore any single turf might be left exposed for an average of 6 minutes. Nevertheless should there be any unforeseen delay to help retain moisture the turfs will be covered with synthetic material or matting.

Turfs will be carefully managed by type and care will be taken not to mix habitats. Turfs shall be removed and replanted as near to their original position as possible. Turf type, i.e. wet or dry, shall not be mixed or transplanted into unsuitable areas where the vegetation will die off. For example, wet, peat heavy, moss rich turfs would be unsuitable for transplant to a dry, free draining grassland area. Transplanted turf will aim to recreate a pattern sympathetic to the vegetation found in the location prior to the works being undertaken.

It is expected that the level of exposure to drying out is negligible, the quick re-use of the turfs in the side ditches and the edges of the path is key to their survival; ensuring no loss of habitat.

The rotating tilt bucket on excavators contributes greatly to ensuring each turf is re-laid efficiently; carefully landscaped along the path edge and within the turf lined ditch. To prevent the leading edge of the root system drying out, and vegetation dying, turfs will be fitted tightly together, with overlapping joints. The rotating tilting bucket helps the operator to place the turfs and fit together with good precision.

The practice of turf lined ditches has been carried out for many years; within months of construction the turfs show signs of bedding in, within a one or two year growing seasons the establishment has been exceptional.

For the imported aggregate sections there is a slightly longer process compared to the 'as-dug', however within 100m of path tray being excavated the side cast material, as discussed above, will be carefully put to one side 'vegetation side up' before being used for landscaping the side of the path once the aggregate has been laid.

10. Explanation of path build techniques

a. Raised Aggregate Path Construction (2m clear path width)

Please refer to submitted drawings.

The surface should be excavated to the specified tray width of 2m to the specified depth of 200mm. Excavated topsoil and turfs suitable for forming and landscaping the path edges should be stockpiled either side of the path formation tray for latter reuse.

Lay 2m width Terram 2000/ tensar into tray. Lay and compact 150mm 4" stone followed by 150mm of imported quarry Type 1 sub base (63mm to dust) stone; topped with a 25mm dust layer of imported quarry grey granite of maximum particle size 5mm; all layers compacted separately to form a 1:40 crossfall. On completion the surface should have a surface regularity of a maximum 5mm gap under a 3m straight edge laid along the length of the path.

The verges of the path should then be formed using suitable available topsoil and turfs generated from the formation of the path tray. The landscaped verges should not be raised above the path surface but constructed level with the surface and taper away from the path edge. The path surface crossfall should allow surface water to shed from the path surface onto the vegetated verge or gabion baskets unimpeded by landscaped materials.

b. Culvert Pipe

The culvert pipe should be rigid twin walled polypropylene non-perforated and be of the specified minimum length and specified diameter to extend each side of the path by 500mm.

The culvert pipe should be bedded and back-filled with 100mm of won aggregate sub-base material on a geotextile/tensar geo grid if required with path construction to a minimum depth of 150mm above.

Stone headwalls of dimensions to suit the diameter of the pipe should be constructed to disguise the pipe and must be secure enough to retain the aggregate path and backfill. The top stone should be lower than the path surface to allow for turfing over to match the adjoining path edge landscaping.

A stone splash plate should be set flush with the base of the culvert pipe at its entrance and exit to prevent scour. Water should be able to drain unimpeded through the culvert and away from the path and if necessary an exit ditch should be installed to ensure the water does not back up into the pipe thus causing potential overflow onto the path.

11. Preliminary & Temporary Site Measures

Health and Safety

- a. Site Induction:** - the Principle Contractor will carry out a site induction specific to the RSPB Insh Marshes to Ruthven Barracks site. Information will be provided to staff on the current hazards of the site and will be told the site rules, the following will be explained:

Explain to the inductees the requirement to observe site specific elements appropriate to their own work activities and/or site wide hazards. These may include but not be limited to the following;

- Open Excavations, Work at Height, Overhead Power Lines, Confined Spaces, Excessive Vehicle Movements, Traffic Management Systems, Fire Risks.
 - Ensure that inductees are made aware of specific requirements for the production of risk assessments and method statements where specific hazards are identified.
 - Make inductees aware of areas of work that will require specific authorisation to proceed. Ensure inductees are made aware of restricted areas and the reasons for the control measures in place.
- b. Site Briefings:** - the site supervisor/principle contractor will be required to conduct Site briefings on a daily basis as a means of sharing health and safety problems; fostering a good health and safety culture on site and encouraging staff to report potential health and safety failures. The process should cover the following:
- Remind staff to consider the SLAM technique i.e. **S**top the task and think. **L**ook at each step; **L**ook before, during and after completion of the task to identify potential hazards; **A**ssess. Are workers equipped to perform the task safely; check

they have the correct knowledge, skills, training, and tools; **Manage**. Managers should take appropriate action to eliminate or minimise any hazards on site.

- Any staff/site changeovers.
 - Check risk assessments and method statements are still relevant.
 - Weather conditions.
 - Ground conditions.
 - Excavations.
 - Existing buried or overhead services.
 - Working at heights.
 - Public safety.
 - Traffic on and off site.
 - Plant and machinery.
 - Site Health and Safety performance.
 - Any feedback/suggestions from staff.
 - Capture any information on near misses or dangerous occurrences.
 - Deliveries, visitors, arrival of specialist equipment, sub-contractors.
- c. Toolbox Talks** will cover specific issues that have been identified from walking around the site, issues raised during site briefings or those which cause the most accidents or near misses on site. The issues can include, however are not exclusive to:
- Manual handling.
 - Slips and trips.
 - Noise induced hearing loss.
 - Bad backs.
 - Hand arm Vibration Syndrome.

12. Pollution Control Plan

The works will be carried out to suit weather conditions and should heavy rainfall be an issue, methods will be taken to reduce run-off pollution e.g. from exposed soil/aggregate materials. If it appears that contaminated run-off may be an issue, Sedimat system and/or bales will be installed in the water course.

Where possible the excavation of the path tray, removal of existing structures and laying of the aggregate path will be carried out in sections to reduce the amount of exposed materials and the time they are exposed for.

The following general good working practices will be adopted:

1. All tools are to be washed off-site. On no account are they to be washed in the watercourses.
2. Appropriately qualified supervisors will oversee the project.

Any changes to the proposed methods of work will be discussed with SNH and SEPA prior to works commencing.

a. Pollution prevention – Dealing with surface run-off during construction

No muddy surface waters or discoloured ground water is to be admitted to the burn, surface water drain or other watercourse. Works will be scheduled to avoid excavation and exposure of soils during periods of heavy rainfall.

b. Works Waste Stream Identification

Work carried out near any watercourse is regarded as high risk with the potential to cause pollution, silting and erosion. All works are to be carried out in accordance with the following SEPA guidelines:

- PPG5 Works in, near or liable to affect watercourses.
- PPG6 Working at construction & demolition sites.

c. The Control of Fuel and Lubricating Fluids

Diesel for plant is to be stored in secure (lockable) steel bunded containers held within the designated compound sites; and all refuelling is to be carried out at suitable locations away from water courses. Spill kits must be available on site in case of accidental spillages and SEPA contacted in cases of large spills or spills near water courses.

d. Emergency Equipment

Contingency procedures are to be available for use in the event of a spillage. Spill kits, complete with absorbent material are to be provided and instruction of use known to contractors. Any spilled material is to be contained and reported to the SEPA hotline (Tel: 0800 807060) immediately.

13. Site Precautions

Excavators will be required for the excavation of the path tray, ditch and embankments, formation of path edges and movement of materials. Dumpers and power carriers will also be required for the transport of materials along the path line and will remain within the 'damage zone' where possible. Tipper trucks will be required for importing quantities of aggregate path material.

All vehicles, plant and equipment shall be strictly maintained and operated in accordance with authorised guidelines, instructions and directives; to be in a good working condition and

fully serviced before accessing the site. All plant must be inspected weekly for any faults, repairs and maintenance/servicing.

The site working area shall be signposted, taped off and warning notices posted to warn the public.

14. Timing/schedule of works

Timing will be dependent on funding. On that basis current predictions suggest a late Summer/ Autumn 2018 start to the build. Works will be undertaken over approximately a 8 week period weather permitting.

15. Hours of operation

Work will be carried-out during any day of the week, unless specifically specified, during daylight hours only. As a guide, 0800hrs to 1800hrs. No 'lone working' will be permitted at any time.

Works will be scheduled in succession:

- Any significant ecological constraints which require micro-siting of the route will be clearly excluded.
- Install warning signs both for public awareness and for 'heavy plant turning'
- Clear path working corridor of any trees.
- Set up compounds; secured with 'Heras' fencing.
- Excavators delivered to site to excavate path tray/form path base.
- Gabion baskets to be delivered to site.
- Gabion baskets to be installed.
- Tipper trucks to deliver aggregate to site.
- Dumpers to transport aggregate to path line.
- Excavators to re-distribute aggregate in path tray/over base material.
- Vibrating Roller to compact path layers.
- Apply bituminous surfacing to applicable footways.
- Work done to existing carriageway surface. Apply high friction surface / road signs and markings.
- Final landscaping/finishing by hand.
- Clear site/remove compounds.

16. Insurances

The Contractor shall display or make available, his Insurance Cover as appropriate to the works.

17. Compounds

There will be no compounds in the immediate vicinity of individual trees under tree canopies or within woodland areas.

18. Site Demobilisation

All contractor equipment plant, temporary works, waste etc and other traces of his occupation of the site will be removed from the site within one week of the path-works

finishing. Waste will be disposed of through the contractors business refuse disposal or via a local licenced landfill site.

All ground vegetation surface wear and tear will be repaired to its former natural state using the appropriate reinstatement technique such as spot turfing or blanket turfing and reseeded using an approved SNH grass seed mixture. This repair work will be immediately carried out by the contractor once the site infrastructure has been vacated; and to the satisfaction of the Outdoor Access Trust for Scotland, Cairngorms National Park Authority and the landowners.

19. Future maintenance

The Speyside Way Extension is being developed by Cairngorms National Park Authority (CNPA) who will then be responsible for the future maintenance of the path, and will carry this out to the best of its ability. In practice the maintenance burden is likely to be very low, provided the path and drainage features are built to the standard set out.

Once completed CNPA will undertake regular route inspections and maintenance as required. This will include the path surface, gates, bridges, fences, signs and all structures directly associated with the route. Where repairs are required these will be scheduled into a maintenance programme. All of the access facilities created by Cairngorms National Park Authority are covered by the Authorities public liability insurance policy in the event of any third party claims.

Maintenance schedule:

- After an annual maintenance check any encroaching tree branches and low shrubs such as gorse and broom will be cut back, especially within visibility splays on the road on approach to the pedestrian crossing.
- Reported windblow blocking the path will be removed at the earliest opportunity.
- Grass vegetation will be cut back 2 to 3 times per year.
- Grass growth onto path will be checked annually; if required will be scraped back at year five.
- Culverts/drains will be checked annually to ensure they are clear of debris or blockages.
- Re-surfacing requirement of 25mm top dust will be assessed annually however wear and tear more likely by year 10.
- Maintenance of adopted road areas will be as per Local Authority standards.